

Modular Messaging for Microsoft Exchange

Release 4.0

Installation and Upgrades

May 2008

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An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who might be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions might be either to/through synchronous (time-multiplexed and/or circuit-based), or asynchronous (character-, message-, or packet-based) equipment, or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there might be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it might result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

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- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

TCP/IP Facilities

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Federal Communications Commission Statement

Part 15:

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CE

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About this book

This book, *Avaya Modular Messaging for Microsoft Exchange Release 4.0 Installation and Upgrades* contains instructions for installing or upgrading the Avaya Modular Messaging software in a Microsoft Exchange environment.

The Avaya-provided hardware for new systems is the Avaya S3500-family message server hardware. Upgraded Avaya-hardware systems can use Avaya S3400-family message server hardware, or upgrade to the new Avaya hardware.

Customer-provided equipment (CPE) for a Modular Messaging install or upgrade must match the specifications described in *Avaya Modular Messaging Concepts and Planning Guide*.

Information in this book includes:

- Instructions for installing a new system, including equipment assembly, set up and configuration, initial administration, and acceptance testing
- Instructions for upgrading a system from Modular Messaging Release 1.1, Release 3.0 or Release 3.1 software
- Instructions for implementing Modular Messaging with Exchange 2007.

Note:

Use this document to get a Modular Messaging system up and running. After the installation, customers must tailor the Modular Messaging parameters for their site. For more information, see the *Avaya Modular Messaging MAS Administration Guide*. For additional information about installing and initial administration for Web Subscriber Options, see *Modular Messaging Web Subscriber Options Server Installation*. Copies of these guides are available from the Avaya Support web site at http://www.avaya.com/support.

Intended audiences

This book is intended for system administrators and on-site technical support staff. The content is targeted to those who install, configure, or upgrade the hardware and software for an Avaya Modular Messaging system.

Users of this book must be familiar with administering Microsoft Windows 2000 or 2003 and Microsoft Exchange systems. Avaya assumes that users have read the *Avaya Modular Messaging Concepts and Planning Guide*.

Technicians who install an Avaya-provided Messaging Application Server should have completed a relevant hardware installation training course. For information on training, see Related resources on page xvi.

Changes to this book

Changes from the Release 3.1 issue of this book, published in August 2007, include:

- New Release 4.0 software installation procedures for Avaya and customer-provided servers.
- New procedures for upgrades to Release 4.0 for Avaya and customer-provided servers.
- Elimination of the Planning Forms Appendix. All Planning Form information is now recorded in the Data Collection Tool data file. For more information, see *Avaya Modular Messaging Data Collection Tool Help.*

How to use this book

Review the appropriate section, depending on whether you are installing a new Avaya Modular Messaging system, or upgrading a system that is already in operation.

Installing a new system

This document describes how to install Avaya Modular Messaging software either on a customer-provided Messaging Application Server (MAS), or on hardware provided by Avaya. Avaya-provided hardware is called the *Avaya MAS* in this guide. Although most steps are similar for both types of installation, this guide contains sections that are applicable only to one or another of these specific hardware types, as noted in the text.

Before you start a new installation:

1. Verify that the system meets the requirements specified in the *Avaya Modular Messaging Concepts and Planning Guide*. The planning guide explains important concepts and provides information that is crucial for planning a Modular Messaging installation.
2. The project planner, system administrator and other designated experts create a Data Collection Tool (DCT) data file prior to the installation. Send this file to the on-site technical support representative.
3. Print the checklist for a new installation from Appendix A: Installation and upgrade checklists on page 255. Use it to track your progress. There are different checklists for the Avaya MAS and CPE MAS. Be sure to print the checklist for your configuration.
4. Read Chapter 1: Preinstallation requirements on page 1. This chapter lists installation prerequisites, including the required documentation, software, tools, and equipment that you need to complete an installation.

Using the checklist as a guide, follow the directions in each subsequent chapter to install, configure, and test the Modular Messaging software.

Upgrading or recovering a system

To upgrade a Modular Messaging system for either the Avaya MAS or customer-provider MAS:

1. Obtain a copy of the filled-out worksheets that were completed for the original system installation.
2. Print the relevant upgrade checklist from Appendix A: Installation and upgrade checklists on page 255. Use it to track your progress. There are different checklists for the Avaya MAS and CPE MAS upgrade. Be sure to print the checklist for your configuration.
3. Obtain the software and documentation listed in the chapter overview of the configuration you are upgrading.
4. Follow the instructions in the appropriate chapter to upgrade the system.
   - *For an* Avaya MAS*, see* Chapter 10: Upgrading Modular Messaging software on an Avaya MAS on page 159
   - For a CPE MAS, see Chapter 11: Upgrading Modular Messaging software on a customer-provided server on page 215

To recover an MAS from a catastrophic disk failure:

1. Print a copy of the disk failure recovery checklist in Appendix G: Disk failure recovery on page 339.
   - For an Avaya MAS, see Recovering from a catastrophic disk failure on an Avaya MAS on page 340
   - For a customer-provided MAS, see Recovering from a catastrophic disk failure on a customer-provided MAS on page 347
2. Follow the procedures in the references chapters to recover the MAS.

Using links in this document

For your convenience, the guide provides direct linking to other files or pages if you view the document in PDF form. Links appear in blue text and operate as follows:

- Internal links within this document always work when you are using the PDF version of this guide. Internal links include those to tables, figures, or other sections of the book.
- You might view the PDF version of this guide on the documentation media or on a Web site that contains the complete document set. If you do, you can click any blue link to an external file, such as another PDF file or HTML file to view the linked page or document.

- You might use the PDF version of this guide on a system that is connected to the Internet. If you do, you can click the blue link for any Web site address, such as www.avaya.com, to go directly to the linked page.

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Related resources

This section describes additional documentation and training available to you.

Documentation

For information about items in the documentation set for this product, go to the Avaya Support Web site at http://www.avaya.com/support. Always use the appropriate CD or book to obtain specific information about planning, installing, administering, or maintaining an Avaya system.

Technical assistance

The following technical assistance is available if needed.

Remote support center

Your project manager or systems consultant is responsible for providing you with the telephone number of the appropriate remote support center.

The following numbers are available for technical assistance with Avaya products and services:

- Within the United States and Canada: call 1-800-242-2121.
- Within any other country: call your local distributor.

Help on the system

Online help is available as follows:

- *MAS:* Use the Help menu, press **F1**, or click the **Help** button (if available) for the application or wizard you are in.
- *DCT:* Press the **Help** button on any page of the DCT application.

Training

For information about product training, go to the Avaya Web site at www.avaya.com and click **Training**.

How to comment on this book

Avaya is interested in your suggestions for improving this information. Use one of the following methods to communicate with us:

Method	Contact
E-mail	infodev@avaya.com
Voice mail or fax	303-538-9625

Be sure to include the name and date of this book:

Avaya Modular Messaging for Microsoft Exchange Release 4.0 Installation and Upgrades May 2008.

Chapter 1: Preinstallation requirements

This chapter describes requirements and prerequisites for installing Avaya Modular Messaging software in a Microsoft Exchange environment.

Topics in this chapter include:

- Software shipped with the system on page 2
- Downloading required software and documentation on page 3
- Obtaining the DCT data file on page 6
- Security considerations on page 7
- Test equipment recommendations on page 8
- Installation tools requirements on page 8
- Initial switch and LAN administration on page 9
- Hardware requirements on page 10

Software shipped with the system

The following software ships with each Modular Messaging system:

Table 1: Required Modular Messaging software that ships with the system

Disk	Purpose
Avaya Modular Messaging Messaging Application Server Software (two-DVD set)	• Installing the Modular Messaging software, Dialogic port board drivers, and Text-to-Speech (TTS) software • Upgrading an MAS from Modular Messaging Release 1.1, Release 3.0, or Release 3.1 to Release 4.0
Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino (four-DVD set)	This software reinstalls the boot-image on an Avaya MAS in a Microsoft Exchange configuration. Use it to upgrade a system from Release 1.1 to Release 4.0 or to repair a hard-disk failure. For more information, see Appendix F: Reloading software on an Avaya MAS on page 333.

Downloading required software and documentation

You must download and use the software and documentation described in this section to install or upgrade an Avaya Modular Messaging system. You can obtain most of this information only from the Avaya Support Web site. Download this information before you go to the customer site because some Modular Messaging sites do not have Internet access.

Important:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates and current information before starting an installation or upgrade. Be aware that links and paths on the Avaya Support Web site might change.

The following topics explain how to download or print out from the Web the required software and documentation:

- Downloading software updates on page 3
- Downloading configuration notes on page 4
- Downloading the installation and upgrade checklists on page 4
- Downloading documentation on page 5

You may require additional third-party software downloads for certain installation and upgrade procedures. For information about downloading software required when installing Modular Messaging with Exchange 2007 mail servers, see Installing third-party software on page 372.

Downloading software updates

You must update the Avaya Modular Messaging software for each installation or upgrade to bring it up to date with the latest changes. To obtain the latest Avaya Service Pack (SP), software patches, hotfixes and client software:

1. Go to the Avaya Support Web site at http://www.avaya.com/support.
2. In the RESOURCE LIBRARY, click the link for **Downloads**.
3. Beneath DOWNLOAD BY PRODUCT NAME, under **M**, click **Modular Messaging**.
4. On the Modular Messaging: Downloads page, select Release **4.0** from the drop-down list.
5. Download any files needed to update a Release 4.0 system. For example, download the latest DCT executable file (MMDCT.exe) and the latest Modular Messaging 4.0 Service Pack. Ensure that you download any instructions required to install the Service Pack or software update.
6. Download the latest **Modular Messaging 4.0 Client** software package.
7. Copy the downloaded files to a USB storage device such as a flash drive, memory stick, or equivalent.
8. Bring the USB storage device with you to the installation site.

Downloading configuration notes

Obtain configuration notes, which are required for integrating the MAS and any installed Dialogic port boards with the PBX or switch at this site. To obtain the most current copy:

1. Go to the Avaya Support Web site at http://www.avaya.com/support.
2. In the RESOURCE LIBRARY, click the link to **Find Documentation and Technical Information by Product Name**.
3. Under **M**, click **Modular Messaging**.
4. On the Modular Messaging page, select Release **4.0** from the drop-down list.
5. Click **Configuration Notes**.
6. Download or print the configuration notes for the switch integration you need.

Note:

This information is available *only* on the Avaya Support Web site and *must* be obtained before you install the software.

Downloading the installation and upgrade checklists

The Avaya Support Web site provides access to a PDF version of the installation and upgrade checklists. You can also find the checklists in Appendix A: Installation and upgrade checklists on page 255. To download the checklists:

1. Go to the Avaya Support Web site at http://www.avaya.com/support.
2. In the RESOURCE LIBRARY, click the link to **Find Documentation and Technical Information by Product Name**.
3. Under **M**, click **Modular Messaging**.
4. On the Modular Messaging page, select Release **4.0** from the drop-down list.
5. On the Modular Messaging page, click **Installation, Migrations, Upgrades and Configurations**.
6. Click the following link: **Modular Messaging with Microsoft Exchange Release 4.0 Installation and Upgrade Checklists**.
7. Click the **Download** link.
8. From the File Download pop-up window, you can open or save the checklists file.

Downloading documentation

You can obtain documentation needed for installing or upgrading a system online:

1. Go to the Avaya Support Web site at http://www.avaya.com/support.
2. In the RESOURCE LIBRARY, click the link to **Find Documentation and Technical Information by Product Name**.
3. Under **M**, click **Modular Messaging**.
4. On the Modular Messaging page, select Release **4.0** from the drop-down list.
5. On the Modular Messaging page, click **Documentation Library (CD Collections)**.
6. Click **Avaya Modular Messaging Release 4.0 Documentation**.
7. Click **View HTM**.
8. On the Modular Messaging documentation menu, click the link to view the document set.
9. Click **Reference** for a list of downloadable documents.
10. Either click to view or print files, or right-click to download the files you need:

Table 2: Modular Messaging documentation

Document (alphabetical list)
Avaya Modular Messaging Client Microsoft Outlook User Guide
Avaya Modular Messaging Concepts and Planning Guide
Avaya Modular Messaging Data Collection Tool Help
Avaya Modular Messaging Documentation media
Avaya Modular Messaging for Microsoft Exchange Release 4.0 Installation and Upgrades
Avaya Modular Messaging S3400-Family Hardware Maintenance and Additions
Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions
Avaya Modular Messaging MAS Administration Guide
Avaya Modular Messaging Subscriber Options User Guide
Avaya Modular Messaging Web Subscriber Options Server Installation
Avaya Unified Communication Center Speech Access (UCC SA) Site Preparation Guide
Dialogic guides (to access use the Quick Install Cards Search Tool on the Intel Telecom Boards Web site)

Obtaining the DCT data file

Usually a person responsible for installation planning uses the Modular Messaging Data Collection Tool (DCT) to create a DCT data file in advance of the installation. This person might be the project manager, customer representative, or other responsible party. The DCT data file has the extension **mmdct**, such as *sitefile.mmdct*. You will need the DCT data file to configure each MAS.

1. Obtain the DCT data file from the appropriate person.
2. Copy the DCT data file to a USB storage device such as a flash drive, memory stick, or equivalent that you bring with you to the customer site.

Note:

For more information about the DCT, see the DCT online help, or the printed document, *Avaya Modular Messaging Data Collection Tool Help*, available on the Avaya Support Web site.

Security considerations

The following security-related issues apply to all Modular Messaging installations.

On-site security considerations

On-site installers must take precautions to protect passwords and restrict access to the system.

Password security

To protect password security:

- Do not leave written passwords lying out or allow anyone to see them.
- At the first opportunity, give the passwords directly to the designated customer representative.
- If you suspect that the security of the system was compromised, notify the project manager or system administrator.

System security during installation

To protect system security during the installation:

- Remove all test subscribers and test mailboxes from the system when the procedures instruct you to do so.
- Always log off or lock the server if you leave it unattended, even for a short period of time.
- Give a copy of the most current DCT data file (*.mmdct) to the customer and the appropriate support organization after you finish an installation or upgrade. Afterwards, remove the DCT data file from your USB storage device or laptop.

Ongoing system security considerations

Customers are responsible for obtaining and installing anti-virus software on any Microsoft Windows computer that is to run Avaya Modular Messaging software. Customers must also routinely install Avaya-approved updates for Microsoft Windows systems to protect the system from known security weaknesses. Updates include operating system updates and security patches. For more information, see “Modular Messaging and security“on the *Avaya Modular Messaging Documentation* media.

Note:

Avaya technical support representatives must follow their specified internal procedures for verifying the software that is installed. If required, they must update the software with the latest patches as instructed.

Test equipment recommendations

Recommended test equipment for a successful installation includes:

- At least two telephones connected through the switch or private branch exchange (PBX). The telephones must be of the same type as the majority of telephones the customer plans to use on the system.
  - Preferably the test telephones will have a data display for testing integration and the Find Me and Call Me features.
  - If the message waiting indicator (MWI) for the system is a lamp, the test telephones must be equipped with a lamp. If the MWI is a stutter tone, the telephones must be able to provide the stutter notification.
  - Place the test telephones so you can easily see the monitor while using the telephones.
- Access to a fax machine, if fax messaging is to be installed.

Installation tools requirements

You must have the following tools on site to successfully install a new system:

- A medium-width flat-blade screwdriver
- A No. 2 Phillips screwdriver
- A small pair of needlenose pliers
- A small pair of wire cutters
- A sharp, pointed instrument, such as a ballpoint pen

CAUTION:

Do *not* use the point of a lead pencil to operate the system reset switch. The graphite can damage a circuit board and cause problems, such as electrical shorts.

Initial switch and LAN administration

This section describes the initial switch or Private Branch Exchange (PBX) and local area network (LAN) administration that is required. Customers must complete this administration before or during a new Avaya Modular Messaging installation.

CAUTION:

It is crucial to coordinate the IP addresses that are to be used with the Avaya Modular Messaging system with those on the corporate LAN. If you specify an IP address for a message server that conflicts with another Ethernet endpoint, the resulting traffic problems on the local area network can be extremely difficult to diagnose and solve.

Initial switch or PBX administration

Initial switch or PBX administration might or might not be complete when you arrive on site, depending on the contract or customer agreements. When you install a new server, the switch administration must support:

- Testing the system with at least one test subscriber.
- Cut to service procedures that provide the subscribers with an active coverage path.
- For configurations that use analog and DSE port boards, the ability for testers to call each channel individually. The appropriate party must test each channel to be connected to the system before assigning the channels to the server or another application.

Verify that initial switch administration and testing is complete before you start.

Initial LAN administration

The LAN administrator must administer the corporate LAN for the messaging system. Some LANs might be administered before the on-site installation starts. Other LANs require that the administration for a new server be done at the time of installation.

Note:

Avaya is not responsible for the installation, administration, or test of communications between customer computers and the LAN.

Hardware requirements

A Modular Messaging software installation requires the following hardware:

- One or more Messaging Application Server (MAS) units that will run the Modular Messaging software. These MASs can be:
  - An Avaya-provided Messaging Application Server, called the *Avaya MAS* in this guide. An Avaya MAS has the port boards and much of the required software already installed. Some preinstallation requirements for this configuration are covered in Chapter 2: Installing Avaya-provided hardware on page 11.
  - A customer-provided equipment (CPE) server that meets the minimum requirements specified in the *Avaya Modular Messaging Concepts and Planning Guide*. A CPE server requires that you install the appropriate port boards before you install the Modular Messaging software. For more information, see Chapter 3: Installing Dialogic port boards in a customer-provided MAS on page 41.

  Note:

  No hardware installation is required if you are using an IP H.323 or IP SIP switch integration on a customer-provided MAS.
- A server that is running a compatible release of Microsoft Exchange software. This server is hereafter referred to as the *Exchange server*.
- A server that contains the subscriber mailboxes, such as Active Directory or the Microsoft Exchange Administrator application. This server is hereafter referred to as the *directory server*. This server can be the same as the Exchange server, or it can be a separate computer.

Both the Exchange server and the directory server must be in place and operational before installing the Modular Messaging software.

Note:

Chapter 4: Preparing to install Modular Messaging software on page 53 describes prerequisite steps that must be performed by the directory server administrator or other authorized personnel. This work can be done before or during hardware installation, but *must* be completed before any other Modular Messaging software is installed.

Because a Modular Messaging installation requires many steps, print a copy of the checklist relevant to this configuration. See Appendix A: Installation and upgrade checklists on page 255. Check off items as you complete them to track your progress.

Chapter 2: Installing Avaya-provided hardware

Avaya Inc. can provide the hardware for the Modular Messaging system. Avaya-provided hardware includes one or more Avaya Messaging Application Servers, called the *Avaya MAS* in this guide, and other optional peripheral devices. Any required port boards and much of the required software are already installed in an Avaya-provided MAS.

Note:

Before you can successfully complete the tasks described in this section, you must verify that all preinstallation requirements were met. See Chapter 1: Preinstallation requirements on page 1.

CAUTION:

This chapter applies *only* to installing Avaya-provided hardware. The hardware can include one or more Avaya Messaging Application Server (Avaya MAS) units and any Avaya-provided peripheral equipment.

To install port boards in a *customer-provided MAS*, continue with Chapter 3: Installing Dialogic port boards in a customer-provided MAS on page 41.

Topics in this chapter include:

- Overview on page 11
- Site requirements for Avaya message servers on page 12
- Identifying Avaya S3500-family message servers on page 17
- Unpacking the system hardware on page 21
- Installing S3500-family servers on page 24

Overview

A new system installation follows these basic steps:

- Preparing the site for the Avaya Modular Messaging system
- Identifying the servers and unpacking the system components
- Installing the Avaya MAS and its peripheral equipment.

Note:

Because a Modular Messaging installation requires many steps, print a copy of the checklist from Appendix A: Installation and upgrade checklists on page 255. Check off items as you complete them to track your progress.

Site requirements for Avaya message servers

This section describes the physical requirements for Avaya-provided equipment, including environmental, weight, space, and power considerations. These specifications apply to any Avaya-provided server that uses Avaya S3500-family message server hardware.

Environmental requirements

Table 3 lists the environmental conditions that must be maintained in the area where an Avaya S3500-family message server is installed and operated. Maximum heat output is shown in British thermal units (BTUs).

Table 3: Environmental requirements for S3500-family servers

Operating state	Temperature	Humidity (noncondensing)	Maximum heat output
Operating	+10 to +35ºC (+50 to +95ºF)	20% to 80% RH	1498 BTU per hour
Nonoperating — in storage or being shipped	-20 to +50ºC (-4 to+122ºF)	20% to 90% RH	N/A

Weight and space considerations

Table 4 lists the weight and spacial dimensions of an Avaya S3500-family message server.

Table 4: Weight and space considerations for S3500-family servers

Server	Weight (full)	Height	Width	Depth
Avaya Messaging Application Server (Avaya MAS) or supplementary server	36 lb (16.3 kg) without port boards	3.5 in. (9 cm)	16.9 in. (43 cm)	26 in. (66 cm)

For safety considerations, at least two technicians must be available to mount the units.

Customer-provided cabinet requirements

If an Avaya S3500-family message server is to be installed in a rack-mount configuration, the customer-provided cabinet must meet the following requirements:

- The cabinet must contain a 4-post rack to support the weight of the servers.
- The cabinet must be secured to the floor before you attempt to mount any units.
- The sliding rails provided with each server are designed for mounting in cabinets 26 to 36 inches in depth.
- The cabinet height must accommodate the number of units to be mounted. For more information about server height, see Table 4. The cabinet might also need to hold the MAS modems, UPS, and optional equipment, such as the KVM switch. For an example of a rack-mount system, see Figure 3: Example of a rack-mount system with S3500-family servers—front view on page 25.

Installation area requirements

Observe the following when determining where to place the system:

- Maintain an air-distribution system that provides adequately cooled, filtered, and humidity-controlled air.
- Do *not* install Avaya S3500-family message servers in such a way that the ventilation or fan openings are blocked.
- For T1 and E1 QSIG connections, the circuits require isolation from exposed lines. For T1 lines, the customer must provide a CSU (T1) at the building point of entry. This CSU must be UL Listed, CSA Certified, or both. For E1 lines, either the network provider or the customer must provide a CSU (E1) or other equivalent protection. The protection must have the product safety approvals required by the local jurisdictions.

  CAUTION:

  To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

- Systems in Finland, Norway, Sweden, and Australia must be installed in a restricted-access location. A restricted-access location is an installation site where only technical support staff or customers who are instructed on the reasons for the restricted access can gain access. Authorized personnel must also be trained in all required safety precautions. A restricted-access location also allows access through the use of a tool, such as a lock and key, or other means of security.

Power requirements

Table 5 lists the power requirements for Avaya S3500-family message servers. Use these figures for equipment room planning, not for UPS sizing. The AC power supply source must be a single phase 3-conductor consisting of line, neutral, and ground connections.

Table 5: Power requirements for S3500-family servers

Server	Number of power supply units	Volts AC	Hertz	Maximum amperes 120V/240V
Avaya MAS or supplementary server	1	90 to 264 Vac	47 to 63 Hz	8.0/4.0

For equipment room planning, the AC power source requires a 15 A circuit breaker for 100-127 Vac installations or a 10 A circuit breaker for 200-240 Vac installations. Consider the server connection to a branch circuit with regard to overload or overcurrent protection. Verify the system ratings to ensure that, together with other equipment connected to the same branch circuit, an overcurrent or overload condition does not exist.

Note:

All Modular Messaging systems must use an uninterruptible power supply (UPS). To size a UPS, use the maximum power dissipation figures in watts. For example, an Avaya MAS with port boards dissipates up to 450 watts, assuming 65% power supply efficiency. This figure divided by 120 Vac is about 4 amps per server.

Grounding requirements

An Avaya S3500-family message server relies on the ground connection through the mains socket-outlet for safe operation. Ensure that the AC main outlet used to power the system, through the power cord or the UPS, is a grounded outlet. If you are unsure of the ground integrity of the outlet, have a trained and certified electrician check the outlet.

DANGER:

You *must* connect the S3500-family servers to an earthed mains socket-outlet. If you fail to do so, you allow a hazard to be present that might cause severe personal injury or death.

In addition, observe the following grounding requirements for the server location:

- Use only the power cord provided with each unit to connect that unit to the universal power supply (UPS) or to an AC mains outlet. Avaya supplies localized power cords for the Avaya S3500-family message server hardware.

WARNING:

The power cord set provided with this product must be used with this product only. Do not use the cord set with any other product, and do not use a different cord set with this product. Using the wrong cord set could lead to hazardous incidents such as electric shock, fire, and faulty operation.

警告
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- Install the server within 6 feet (2 m) of a grounded AC mains socket-outlet.
- Do *not* use extension cords with the system.

CAUTION:

System grounding must comply with the general rules for grounding. For more information, see article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA). Alternatively, see the applicable electrical code in the country of installation.

Demarcation points

This section lists the demarcation points for switches (PBXs) and LAN connectivity.

Demarcation point for switches (PBXs)

For Avaya switches, the demarcation point for switch (PBX) connections to an Avaya Modular Messaging server is the wall field.

For non-Avaya switches, the demarcation point is the end of the connector of the Avaya-provided cables for the port boards. Avaya technical support representatives dispatched for the system installation are not responsible for making any connections directly to switches that Avaya does not maintain.

Note:

Avaya recommends joint acceptance testing for systems integrated with switches that Avaya does not maintain.

Demarcation point for LAN connectivity

The demarcation point for the LAN connection to an Avaya Modular Messaging server is the physical Ethernet interface on the server that connects to the corporate LAN. The customer is responsible for:

- Providing the LAN cables that connect the Avaya Modular Messaging server to the corporate system. If the customer uses Avaya-provided cables, the demarcation point is the modular connector at the end of the LAN cables.
- Doing LAN administration that is not done on the Modular Messaging server.
- Maintaining the TCP/IP addresses and administration on the server after cutover, unless otherwise specified by contract.
- Providing the IP address, subnet mask, and gateway information for administration on the server.
- Providing any DNS server IP information and corporate domain names.

Avaya technical support representatives dispatched for system installation are not responsible for troubleshooting the customer LAN.

Identifying Avaya S3500-family message servers

An Avaya Modular Messaging system contains the following S3500-family servers:

- One to ten Avaya Messaging Application Server (Avaya MAS) units, depending on the system configuration. The MASs handle voice calls. They might contain telephony port boards, depending on the type of switch integration that is to be used.
- *Optional:* One or more additional servers that provide other messaging-related services. There can be one supplementary server and multiple optional servers. The additional servers might be customer-provided servers or Avaya MAS-like units. For more information, see Identifying Avaya MAS-like servers on page 17.

  Note:

  A supplementary server might use customer-provided equipment. For more information, see Using customer-provided equipment (CPE) servers on page 18.

Identifying Modular Messaging servers

If a system ships with several S3500-family servers, it is crucial to correctly identify each server. The installation and configuration procedures vary for different types of servers.

To help you identify each server, the S3500-family servers come with labels. Check the label on each server to identify the purpose and content of the server. Use the label as a guide to correctly install the server and load any required application software:

- A label on the right side of the server near the front identifies the type of S3500-family server, such as an Avaya Modular Messaging (MM) MAS.
- A label on the left side of the server near the middle identifies the software that is preinstalled on the Avaya server.

Identifying Avaya MAS-like servers

Characteristics to identify an Avaya MAS that handles calls:

- A label on the box identifies it as such.
- The server contains telephony port boards, unless it uses IP H.323 or IP SIP switch integration, which do not use port boards.

Characteristics of an Avaya-provided supplementary server:

- A label identifies it as an Avaya store supplementary server
- There are no telephony port boards in the server (be careful, however: IP and SIP configurations do not have boards, either)

- You can configure the server to run tracing service by following documented installation procedures.
- The server is not configured to run the MAS service.
- For load balancing, you can move other services, such as Call Me or MWI, to the supplementary server by following documented procedures. See the *Avaya Modular Messaging Concepts and Planning Guide* for full details of the services that you can and cannot run on an Avaya MAS supplementary server.

Identifying and installing optional servers

Customers might order a separate server to run the following services. These optional servers can use either S3500-family server hardware or customer-provided equipment (CPE):

- Web Subscriber Options—can be on its own server or co-resident on an MAS. For more information, see *Avaya Modular Messaging Web Subscriber Options Server Installation*.
- Any server that provides only storage for offline access to messages. This server is called the offline access (OLA) server. An OLA server might also support resource-intensive administrative tools such as the Reporting Tool.

Using customer-provided equipment (CPE) servers

Some customers might choose to provide their own servers to support messaging-related services or other applications. Any server that does *not* use Avaya-provided hardware is considered customer-provided equipment (CPE). The customer is responsible for installing and maintaining all CPE servers. For more information about installing or configuring CPE servers, see Chapter 7: Configuring a customer-provided MAS on page 95.

Identifying key components of S3500-family servers

This section describes the key components of Avaya-provided S3500-family servers.

CAUTION:

The same S3500-family server hardware can be used both as an Avaya Messaging Application Server (Avaya MAS), and as an optional server, such as the supplementary server that provides special services. To distinguish the Avaya MAS units from any optional servers, see Identifying Modular Messaging servers on page 17.

Figure 1 shows the front view of an Avaya S3500-family message server.

Figure 1: S3500-family server—front view with bezel removed

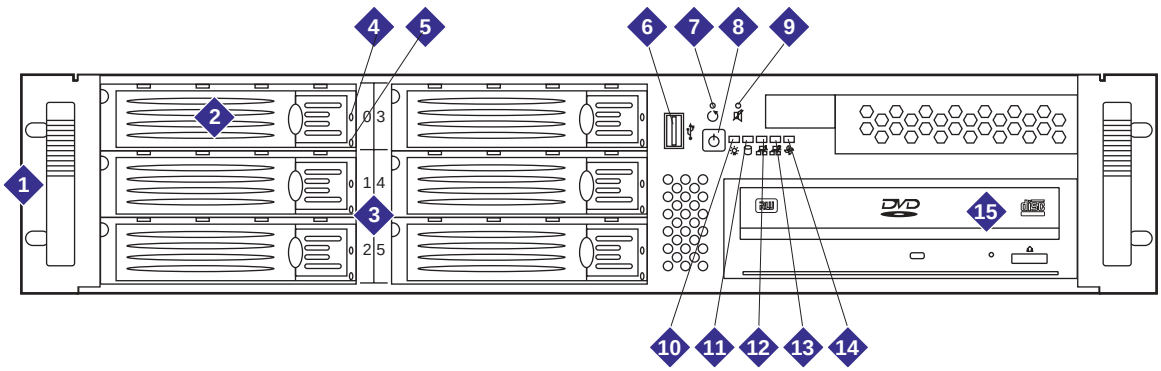


Figure notes:

1. **Chassis handles**
2. **Hard disk drive bays—the MAS uses only bay 3 on the upper-right**
3. **Label for disk drive bays 0 through 5**
4. **Disk drive presence indicator—not used on the MAS**
5. **Disk drive activity indicator—not used on the MAS**
6. **USB port**
7. **System reset switch**
8. **System power on/off button**
9. **Audible alarm reset switch for power supply—not used on the MAS**
10. **System power indicator**
11. **Disk drive access indicator**
12. **Corporate LAN indicator—always on when corporate LAN cable is connected**
13. **Private LAN indicator—not used in this configuration**
14. **Power supply failure indicator—not used on the MAS**
15. **DVD player**

Figure 2 shows the back view of an Avaya Messaging Application Server (Avaya MAS).

Figure 2: S3500-family MAS—back view

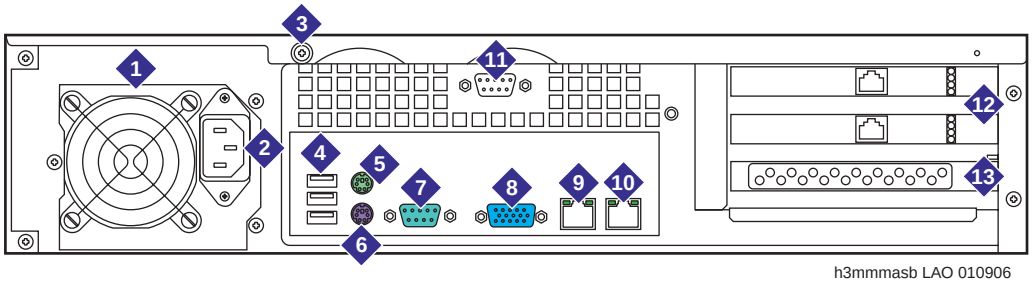


Figure notes:

1. **Power supply**
2. **AC power receptacle**
3. **Screw for top cover**
4. **USB ports—one is used for the required modem on the MAS**
5. **Mouse connector**
6. **Keyboard connector**
7. **Serial port (COM1)—Used for serial PBX integration**
8. **Video connector**
9. **Corporate LAN interface**
10. **Private LAN interface**
11. **Serial port (COM2)—not used on the MAS**
12. **Port boards—type varies. Port boards are *not* present for IP H.323 or IP SIP integrations.**

    Up to two (2) port boards can be installed in an MAS as needed. The middle PCI slot is filled first, if the MAS has only one port board. For more information, see Supported MAS port boards on page 42.
13. **Extra PCI card slot—not used on the MAS**

Unpacking the system hardware

This section lists required and optional hardware needed to install an Avaya Modular Messaging system that uses S3500-family server hardware.

Note:

Label each component as you identify it, particularly on a system that has multiple MAS-like units. For more information, see Identifying Modular Messaging servers on page 17.

Required and optional hardware

Table 6 lists required and optional hardware needed to set up an Avaya Modular Messaging system. Verify that all components needed for this installation are on site.

Table 6: Required and optional Avaya MAS hardware

Item	Quantity	Required/optional
Required equipment:		
Avaya Messaging Application Server (Avaya MAS)	1 minimum, 10 maximum	Required
Additional MAS-like units, such as the *supplementary* server—might be Avaya-provided hardware or customer-provided equipment (CPE)	Varies	Optional—can be customer-provided
Server AC power cables—one per power supply	1 per Avaya server	Required
Front bezel	1 per server	Required
Rack-mount assembly including rails, slides, and connecting hardware, *and* rubber spacers for stackable desktop configuration	1 set of each per server—use mount type required	Required
Ethernet LAN cable	1 per server	Required
USB modem—includes USB cable	1 per server	Required
Port board cables, if port boards are present—see Table 7: Supported MAS port boards—S3500-family servers on page 23. IP H.323 or IP SIP switch integrations do *not* use port boards.	1 set per port board	Required to connect port boards—type varies
Optional or customer-provided equipment:		

Table 6: Required and optional Avaya MAS hardware

Item	Quantity	Required/optional
Monitor—includes power cord and VGA cable	1	Optional—can be customer-provided
Keyboard and mouse—includes cords and Y cable	1 set	Optional—can be customer-provided
2-port KVM switch for two-server system	1 KVM switch with attached cables	Optional—used for a two-server system
8-port KVM switch for multiple-server system	1 KVM switch, 1 cable per 2 servers, 1 power transformer, 1 set mounting brackets if needed	Optional—other models of switching devices can be used
Uninterruptible power supply (UPS) with required power cord—includes 1 set of rack-mount brackets *and* rubber spacers for a stackable desktop configuration	1	Required—model can vary
Extended battery module (EBM) with required power cord—includes 1 set of rack-mount brackets *and* rubber spacers for a stackable desktop configuration	1 to 4	Optional—can be ordered with the UPS

Identifying MAS port boards

Table 7: Supported MAS port boards—S3500-family servers on page 23 lists the Dialogic port boards that S3500-family servers support. The type of port boards used varies depending on the switch integration, but each MAS can have only one type of port board installed.

For new systems, the appropriate port boards, if required, are preinstalled in an Avaya MAS. Inspect each MAS-like unit to determine if port boards are present:

- If port boards are present, identify this unit as an MAS. You must connect the external cables for the port boards as part of server installation.
- If port boards are not present, this unit might be the supplementary server or an optional server. Or, it might be an MAS that uses an IP H.323 or IP SIP switch integration. In either case, no external cables are needed. For more information, see Identifying Modular Messaging servers on page 17.

Table 7: Supported MAS port boards—S3500-family servers

Protocol	Ports per MAS	Supported port boards	Maximum number	Dialogic files on documentation media
Analog	12 - 24 4 - 8	Dialogic D/120JCT-LS 12-port board Dialogic D/41JCT-LS 4-port board	2	**D/120JCT-LS** (PDF) **D/41JCT-LS** (PDF)
Digital Set Emulation	8 - 16	Dialogic D/82JCT-U-PCI-UNIV	2	**D/82JCT-U PCI Univ** (PDF)
E1-QSIG	30 - 60	Dialogic D/600JCT-1E1 or D/600JCT-2E1	2	**D/600JCT-1E1** or **D/600JCT-2E1**(PDF)
T1-QSIG	23 - 46	Dialogic D/480JCT-1T1	2	**D/480JCT-1T1** (PDF)

The Dialogic documents provide details about installing and connecting the port boards. The documents are available on the *Avaya Modular Messaging Documentation* media or from the www.avaya.com/support Web site. For instructions on how to obtain Avaya documents, see Downloading required software and documentation on page 3. For the latest version of the Dialogic guides, see the Quick Install Cards Search Tool on the Intel Telecom Boards Web site.

Note:

The Dialogic documentation describes more setups than the ones used for Avaya Modular Messaging. If information in a Dialogic document conflicts with this Avaya document, follow the steps in the Avaya documentation. Use the Dialogic documentation to locate various items on the board or verify cable connections.

Saving the packing materials

Save the shipping cartons and all packing materials in case any hardware must be returned to the manufacturer. If you ordered more than one Avaya MAS, saving one carton and one set of packing materials is sufficient.

Packing materials include:

- Antistatic bags
- Cardboard and foam inlays

Note:

The packing materials might include a plastic bag designed to protect the system from moisture during shipment. Discard this bag. It is not reusable.

Also save the shipping cartons for all peripheral devices. Devices include the monitor, keyboard and mouse, all required modems, uninterruptible power system (UPS), and one or more optional extended battery modules (EBMs).

Installing S3500-family servers

This section describes how to install system components for Avaya S3500-family message server hardware. Optional components are noted in the text. For more information about required and optional system components, see Table 6: Required and optional Avaya MAS hardware on page 21.

CAUTION:

Because an Avaya Modular Messaging installation requires many steps, use the new system installation checklist. See Appendix A: Installation and upgrade checklists on page 255. Check off items as you complete them to track your progress.

Sample installed system

The Modular Messaging hardware can be installed in the following configurations:

- Inside one or more customer-provided commercial cabinets. This setup is called a rack-mount configuration.
- Without a commercial cabinet. This setup is called in a stackable desktop configuration.

This section includes instructions about installing both rack-mount and stackable desktop configurations.

Figure 3: Example of a rack-mount system with S3500-family servers—front view on page 25 shows an example of an installed rack-mount configuration.

Note:

The sample figure shows the Avaya MAS S3500-family servers with their front bezels removed.

Figure 3: Example of a rack-mount system with S3500-family servers—front view

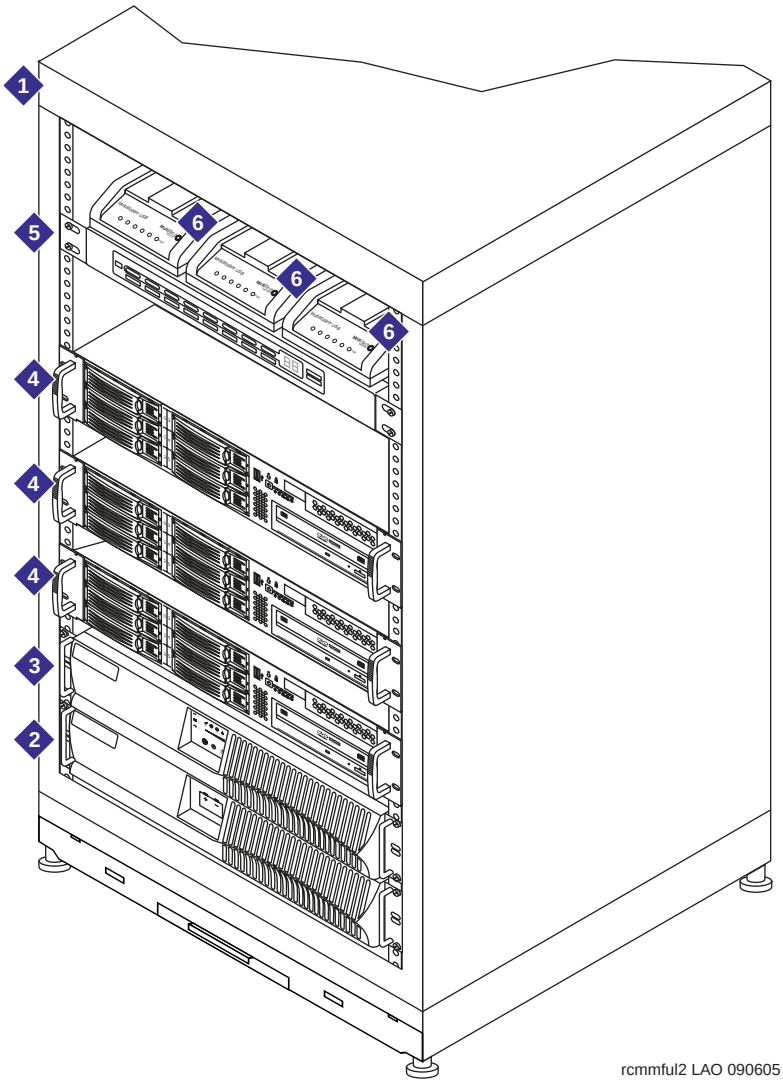


Figure notes:

1. **Customer-provided cabinet. Type can vary. For more information, see physical requirements in Installation area requirements on page 13.**
2. **EBM—optional. 0 to 4 can be installed with a UPS.**
3. **UPS—required. Model can vary.**
4. **Avaya Messaging Application Server (Avaya MAS). Up to 10 MASs can be present. Additional supplementary servers might also be present (not shown).**
5. **KVM switch—optional. Model can vary.**
6. **External modem. One is required for each Avaya MAS.**

Installing the UPS and optional EBMs

This section describes how to install an uninterruptible power system (UPS) and one or more optional extended battery modules (EBMs).

Note:

Customers might order a different model of UPS than the one described in this section, or they can supply their own. For more information, see the documentation provided with the UPS.

- The UPS is a required component for all Avaya Modular Messaging systems. The UPS protects the system from most common power problems, including power failures, power sags, and power surges.
- The EBM is an optional component that works in conjunction with the UPS to add additional run time for the system. The customer can add up to four EBMs per UPS. For more information, see the documentation provided with the EBM and UPS.

To install the UPS and EBMs:

- For a rack-mount configuration, see Installing the UPS and any EBMs into a rack on page 26.
- For a stackable desktop configuration, see Installing the UPS and any EBMs as a stackable configuration on page 28.

Installing the UPS and any EBMs into a rack

In a rack-mount configuration, the UPS and EBMs must be positioned in the rack below the Avaya Modular Messaging servers. Install the EBM units in the lowest-available position.

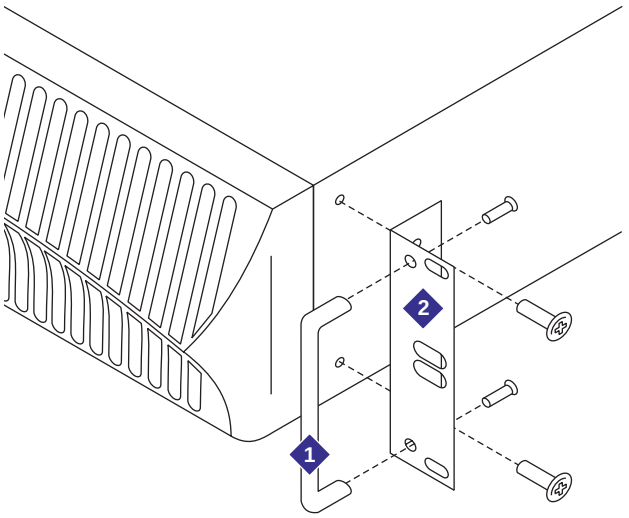
To install the UPS and EBMs into a rack:

1. Gather the necessary rack-mount hardware, including the mounting handles, brackets, and screws.
2. Place the UPS on a flat, stable surface with the front of the UPS towards you.
3. Attach the mounting handle to each bracket using the supplied screws. See Item 1 in Figure 4.
4. Align the mounting brackets with the screw holes on the side of the UPS and secure using the supplied screws. See Item 2 in Figure 4.
5. If you are installing one or more EBMs, repeat Steps 1 through 4 for each EBM.

   Note:

   You must install any EBMs below the UPS.

Figure 4: Attaching mounting handles and bracket for a rack-mount UPS



6. Place the EBM into the rack in the lowest-available position. Attach the EBM to the rack using customer-provided screws.

   Note:

   If you must install additional EBMs into the rack, install them above the first installed EBM.

7. Place the UPS into the rack in the lowest-available position above any EBMs. Attach the UPS to the rack using customer-provided screws.
8. Continue with Connecting any EBMs to the UPS on page 29.

Installing the UPS and any EBMs as a stackable configuration

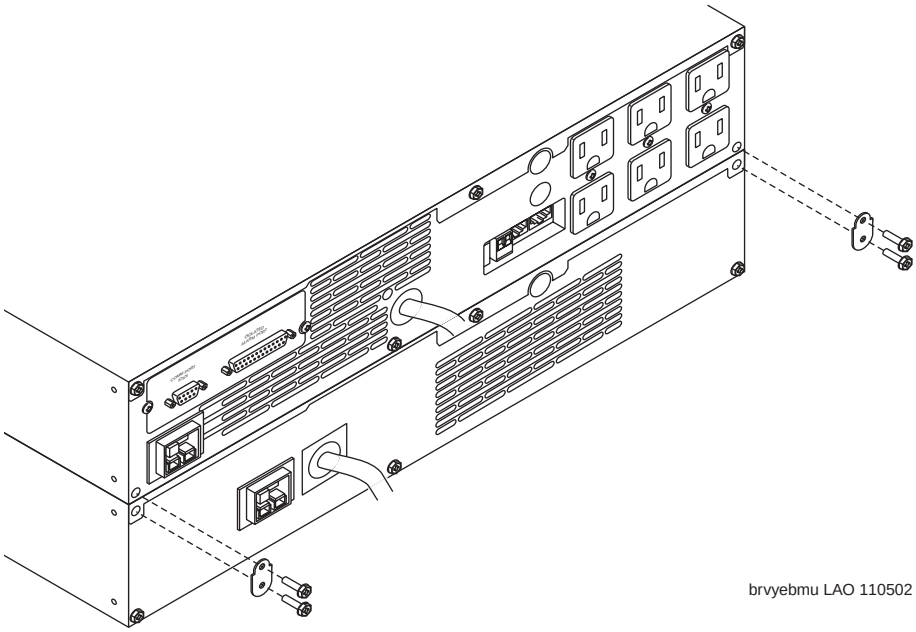
To configure the UPS and any EBMs in a stackable configuration:

1. If you are installing one or more EBMs:
   a. Remove the adjacent corner screws from the rear panels, as shown in Figure 5.
   b. Install the EBM brackets by aligning each bracket with the screw holes. Secure the bracket using the supplied screws.
   c. Repeat Step 1 for each additional EBM, if present.

   Note:

   If you do not have any EBM units, continue with Step 2.

Figure 5: Attaching connecting brackets between a UPS and EBM—back view



2. On the bottom unit, either the UPS or an optional EBM, secure four rubber spacers to the bottom of the unit, one at each corner.
3. Set the unit on a stable platform. This unit is the base of the stackable desktop configuration.

Connecting any EBMs to the UPS

To connect any EBM units to the UPS:

1. Connect the EBM cable to the battery connector on the UPS. See Item 3 in Figure 6.
2. To connect additional EBMs, plug the EBM cable of the second EBM into the battery connector on the first EBM. See Item 4 in Figure 6.
3. Repeat Step 2 for each additional EBM. Up to four EBMs can be present.

Figure 6: Connecting a UPS and an EBM—back view

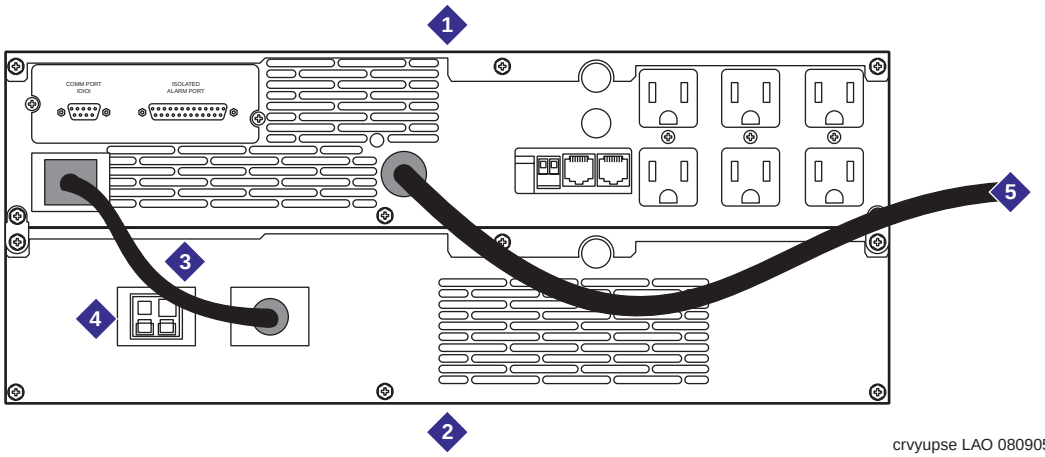


Figure notes:

1. **UPS. Model can vary. For more information, see the documentation provided with the UPS.**
2. **EBM—optional. 0 to 4 can be installed.**
3. **EBM battery cable to UPS.**
4. **Battery connectors for additional EBMs if needed—optional.**
5. **UPS power cable to a grounded AC power source—Do not connect yet.**

Installing the S3500-family servers

This section describes how to install each Avaya S3500-family message server in a customer-provided commercial cabinet or in a stackable desktop configuration.

Attaching the front bezel

The front bezel ships loose to prevent damage during shipment. The bezel curves inward slightly to fit snugly to the chassis. You must bend the bezel slightly outwards to attach it.

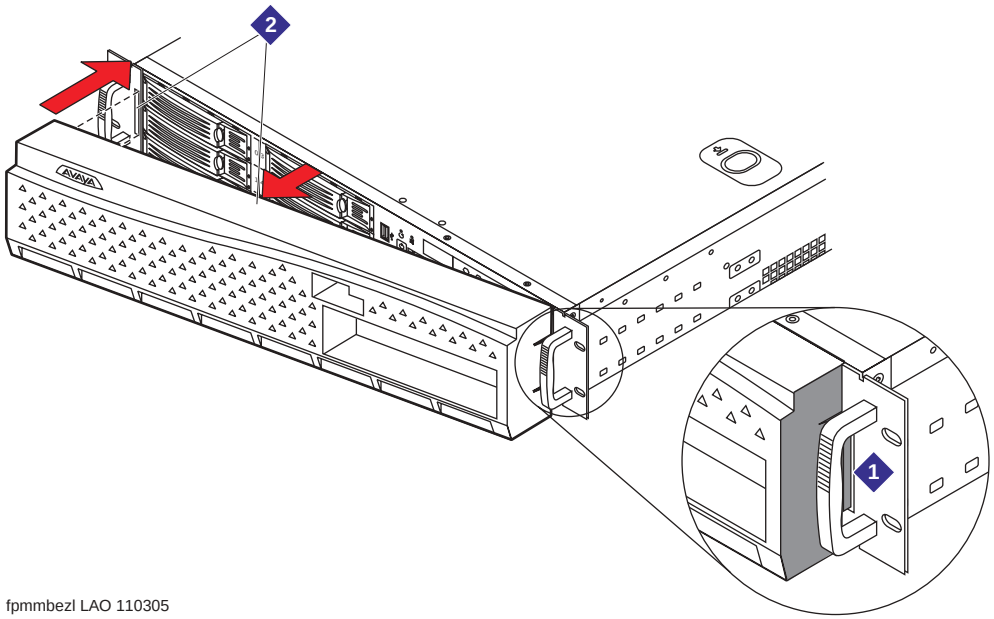
Note:

The bezel covers the front USB port on the server. If you want to use this port for the USB storage device, attach the bezel at the end of the installation.

To attach the front bezel to each S3500-family server:

1. Hook one end of the bezel into the notch near the chassis handle. See Figure 7.
2. Bend the middle of the bezel slightly outwards, and push the other end into place.

Figure 7: Attaching the front bezel on an S3500-family server



Installing S3500-family servers in a rack-mount or stackable setup

You can install S3500-family servers in a commercial cabinet in a rack-mount configuration. Alternatively, you can stack servers on top of each other in a desktop configuration. Continue with the appropriate section based on the installation method to be used at this site:

- Installing servers in a rack-mount configuration on page 31
- Installing servers in a stackable desktop configuration on page 33

CAUTION:

The Avaya Modular Messaging servers are heavy. Get another person to assist you with lifting the servers into place.

Installing servers in a rack-mount configuration

The task describes how to install one or more Avaya S3500-family message servers inside a commercial cabinet. This setup is called a *rack-mount configuration*.

The S3500-family servers fit into a standard 19-inch (48 cm) cabinet.

Note:

The first MAS is usually installed directly above the UPS. If more than one MAS is present, you usually install each additional MAS above the first MAS. However, all the servers in the system do not have to be in the same cabinet.

To install an S3500-family server into a rack:

1. Remove the rail assembly and screws from their packaging.

   Note:

   If more than one set of screws is provided, identify the set of 12 screws that fits the S3500-family server hardware. Only one set of thick Phillips round head screws fits tightly to the rails. Any other screws are not needed.

2. Release and detach the inner rail from the slide:
   a. Fully extend the rail.
   b. Pull the release lock out, the rear arrow tab, forward. See Item 1 in Figure 8: Attaching a rack-mount rail assembly on an S3500-family server on page 32.
   c. Separate the inner rail from the slide.
3. Attach the inner rail to the server:
   a. Place the S3500-family server on a flat, stable surface.
   b. Align the inner rail against the side of the server.

   Note:

   Only four holes in the rail line up with corresponding holes in the server chassis.

c. Starting with the hole nearest the front of the server, insert a screw into each of the four holes. Because the first hole is not a slot, starting with this hole makes the rail easier to attach. See Item 2 in Figure 8.

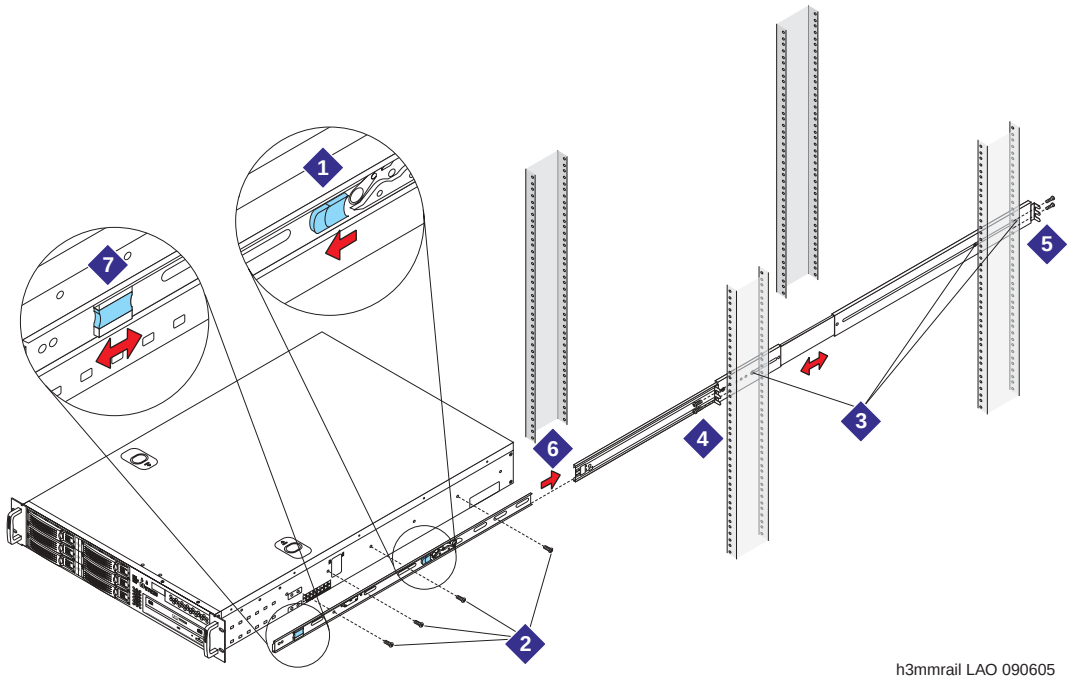
4. Attach the slide to the frame of the customer-provided cabinet:

a. Loosen the two Phillips screws inside the front bracket. Extend the bracket to fit the frame. See Item 3 in Figure 8.

b. Secure the bracket to the front and rear posts in the customer-provided cabinet. Tighten all four screws. See Items 4 and 5 in Figure 8.

c. After the bracket is in place, tighten the two screws inside each rear bracket. See Item 5 in Figure 8.

Figure 8: Attaching a rack-mount rail assembly on an S3500-family server



CAUTION:

You need two people for the next step.

5. Mount the server in the cabinet:

a. Fully extend the slide out the front of the cabinet. See Item 6 in Figure 8.

b. Have one person hold up the front of the server. Have a second person help support the server, and guide the server onto the slide.

c. Push in the release lock, the front latch, to slide the server into the cabinet. See Item 7 in Figure 8.

6. Repeat Steps 1 through 5 for each server that must be installed.
7. When all servers are mounted, continue with Connecting the system power cables on page 34.

Installing servers in a stackable desktop configuration

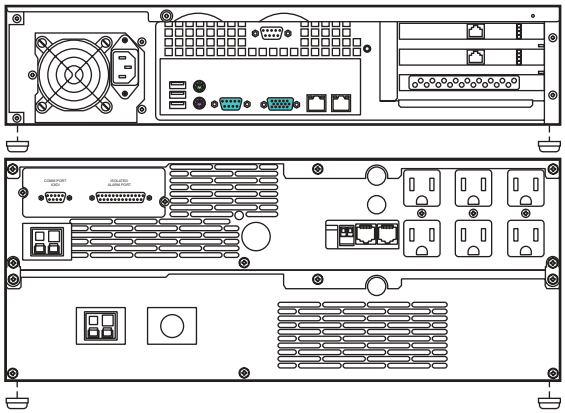
For a stackable desktop configuration, install four rubber spacers on the bottom on each of the servers. The spacers enable you to stack the servers on top of one another.

CAUTION:

For safety, do not stack more than two Avaya servers on top of each other. Create multiple stacks if needed.

For a sample desktop configuration, see Figure 9.

Figure 9: Attaching rubber spacers for a stackable desktop configuration



prmmfet2 LAO 010906

To install the servers in a stackable desktop configuration:

1. Gather the rubber spacers shipped with each server.
2. Attach the rubber spacers to the bottom of each of the servers, one at each corner. For an example, see Figure 9.
3. Position the UPS, and its attached EBMs if present, in an appropriate location. For more information about placement, see Site requirements for Avaya message servers on page 12.

Note:

If you have a UPS *and* an EBM, stack only one server on top of them. *Never* stack servers more than two high.

4. Place the first MAS on top of the UPS.
5. .If more MASs or optional servers are present, create another stack, placing each additional server on top of the last one. Create as many stacks as needed, so there are never more than two servers in one stack.

Connecting the system power cables

Attach the power connections on the back of each server.

To connect the power cables for the Modular Messaging system:

1. Connect the female end of the server power cable to the male power connector on the back of the S3500-family server.
2. Connect the male end of the server power cable to an AC receptacle located on the back of the UPS. For a sample configuration, see Figure 10: Attaching power cables to a UPS—sample configuration on page 35.
3. *If you have more than one server,* repeat Steps 1 and 2 for each MAS.
4. After all equipment is connected, plug the UPS power cable into an appropriate AC power outlet.

Figure 10: Attaching power cables to a UPS—sample configuration

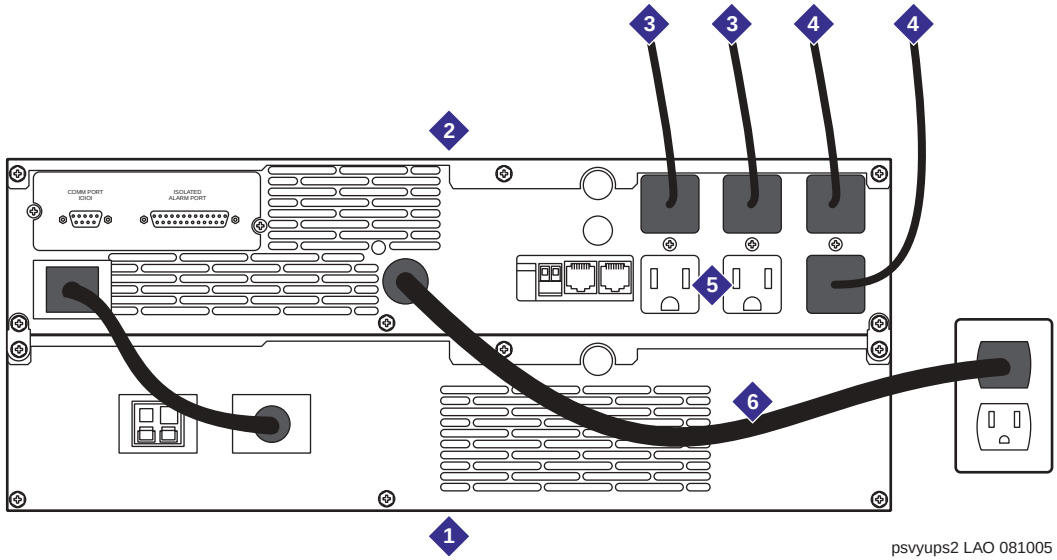


Figure notes:

1. **EBM—optional. 0 to 4 can be installed.**
2. **UPS. Model can vary. For more information, see the documentation provided with the UPS.**
3. **AC power cable to each MAS or the supplementary server, if present.**
4. **AC power cable to other equipment, such as the required external modem for each MAS.**
5. **Additional AC sockets. Use as needed for external modems, monitor, optional 8-port KVM switch, or any additional servers.**
6. **UPS power cable to a grounded AC power outlet. Plug in this cable last.**

Connecting the MAS port boards, if present

Do this task only if port boards are present in the Avaya MAS.

Connect any MAS port boards to the PBX (switch). For more information about Dialogic port boards, see Identifying MAS port boards on page 22.

Note:

If this MAS uses an IP H.323 or IP SIP switch integration, no port boards are present. Continue with Connecting the Ethernet cable on page 37.

To connect the MAS port boards to the switch:

1. Assemble the required cables.

   Note:

   Port boards ordered through Avaya ship with the correct cables.

2. Connect each port on the port boards to the switch (PBX) as required.

   Note:

   Check the numbering on the port board faceplate to verify that you are connecting the correct cord to the correct port.

- **For E1-QSIG or T1-QSIG boards:**

  a. Connect the port on the Dialogic T1-QSIG or E1-QSIG board using an RJ-48C Ethernet cable.

  b. The other end of the cable must be connected to the QSIG board on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

- **For set emulation boards:**

  a. Connect each port on the Dialogic set emulation (DSE) board using the D/82U cable (Intel part number 86-0155-001).

  b. The other end of the cable must be connected to a 4-wire punch-down block on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

- **For analog boards:**

  a. Connect each port on the installed analog boards to one end of a standard RJ-11 tip/ring cord. You can also use individual tip/ring cables and a 12-port harmonica. Note which cables connect to which ports.

  b. The other end of the cable must be connected to an analog line on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

Connecting the Ethernet cable

A standard Ethernet cable ships with each Avaya S3500-family message server. You can use this cable or a customer-provided cable to connect each server to the corporate LAN.

To connect each server to the corporate LAN:

1. Connect one end of the Ethernet cable to the appropriate RJ45 connector on the back of the server. See Figure 11.

   Note:

   Verify that you connect the Ethernet cable for the corporate LAN to the correct Ethernet interface on the back of the server. The two Ethernet interfaces on an S3500-family server operate at different speeds. Use the interface with the highest speed to connect to the corporate LAN.

2. Connect the other end of the Ethernet cable to the corporate LAN.

   Note:

   The organization that is responsible for maintaining the corporate LAN must make this connection. See the customer contract or the statement of work.

3. Repeat Steps 1 and 2 for each Avaya MAS and optional server in the system.

Figure 11: Connecting an S3500-family MAS to the corporate LAN—back view

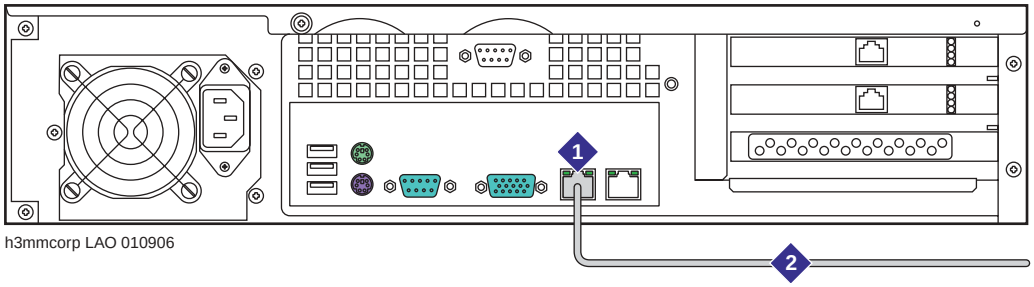


Figure notes:

1. **Ethernet interface for the corporate LAN**
2. **Cable to the corporate LAN**

Installing a KVM switch

You use a keyboard, video, and mouse (KVM) switch to view the different servers in a Modular Messaging system. However, the model of KVM switch and the specific monitor, keyboard, and

mouse used can vary from site to site. If this system has only two servers, you can install a 2-port KVM switch. If this system has more than two servers, you can install an 8-port KVM switch.

To install a KVM switch, use the instructions shipped with the switch.

Connecting the USB modem on the MAS

For international customers, Avaya recommends the MultiTech MT5634ZBA-V.92, MT9234MU or MT9234ZBA-USB modem.

A USB modem is required for each Avaya MAS. The type of modem varies, depending on the installation location. This section describes the MultiTech USB modem setup. For more specific information, see the documentation provided with the modem.

To connect a USB modem (see Figure 12 for an example):

1. Attach the rubber spacers to the four marked areas in each corner on the bottom of the modem, if spacers are not already in place.
2. Place the USB modem on top of the KVM switch or in a secure location, as required.
3. Connect one end of the USB cable to the back of the USB modem.
4. Connect the other end of the USB cable to the back of the MAS.
5. Connect the RJ-11 cable to the LINE connector on the modem.
6. The other end of the cable must be connected to an analog line on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.
7. Repeat Steps 1 through 6 for each Avaya MAS modem.

Figure 12: Connecting a USB modem to an S3500-family MAS—back view

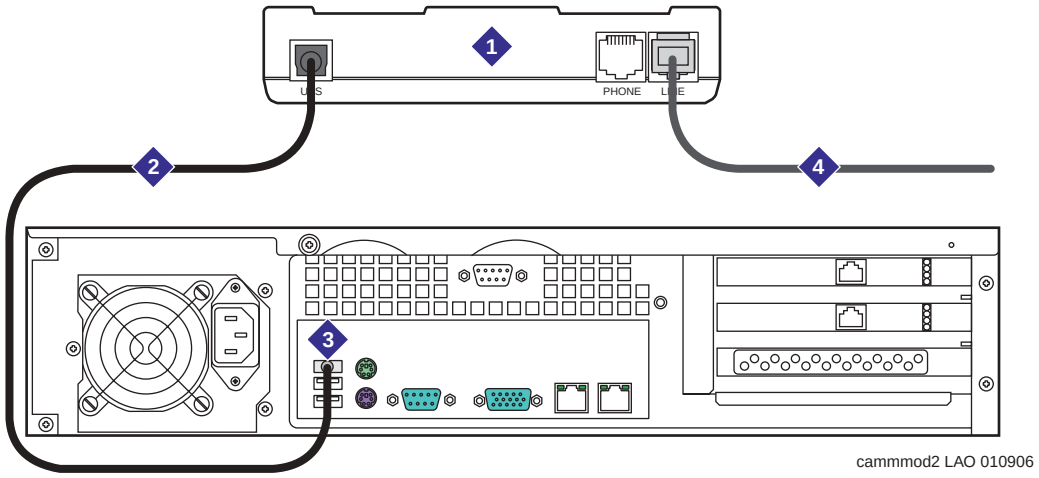


Figure notes:

1. **USB modem**
2. **USB cable to the MAS**
3. **USB connector on the server**
4. **RJ-11 cable to the corporate switch**

Turning on the S3500-family server system

After all hardware components are installed, turn on the Modular Messaging system:

1. Verify that the power cables for the servers and all peripheral devices are connected. Cables might go to the UPS or to an appropriate AC power outlet. For an example, see Figure 10: Attaching power cables to a UPS—sample configuration on page 35.
2. Press the **On** button on the front of the UPS. The appropriate lamps should light. For more information, see the UPS documentation.

   Note:

   Always turn on the UPS first.
3. Press the power button on the monitor.

   The power lamp on the monitor should light.
4. *For each external modem,* press the **On** button, if present. Verify that the appropriate lamps light. For more information, see the modem documentation.
5. Verify that the power lamp for the KVM switch is lit. The Belkin KVM switch does not have on/off buttons.

6. Verify that all Avaya S3500-family message servers are running.

   The LEDs on the front of the server flash once when power is applied. Afterwards, the LEDs light to indicate system power and drive activity. For more information about the different LEDs, see Figure 1: S3500-family server—front view with bezel removed on page 19.

   Note:

   The S3500-family servers start as soon as they receive AC power. You do not need to press the server power button unless the power LED on the front of a server is not lit.

7. To turn on an S3500-family server if needed:

   a. Press the power button on the front of the server.

   b. Verify that the LEDs on the front of the server flash once, and then show system activity.

   c. Wait up to 1 minute for the display to appear on the monitor.

   Note:

   The Avaya Modular Messaging Configuration Wizard runs automatically when you turn on an Avaya MAS. For more information, see Chapter 6: Configuring a new Avaya MAS on page 79. However, you must complete the steps in Chapter 4: Preparing to install Modular Messaging software on page 53 before you configure the Modular Messaging software on the Avaya MAS.

Chapter 3: Installing Dialogic port boards in a customer-provided MAS

This chapter describes how to install Dialogic port boards and their drivers in a customer-provided equipment (CPE) server, also called a customer-provided MAS. A customer might have several servers that support Avaya Modular Messaging software and services.

- One to ten servers that handles call-processing functions. These are called *Messaging Application Server (MAS)* servers. An MAS can contain port boards, depending on the switch integration.
- One supplementary server that is configured like an MAS, but does not handle calls and does not contain port boards.
- Multiple optional servers that handle special services only. An optional server never contains port boards.

CAUTION:

Use the procedures in this chapter *only* to install Dialogic port boards into a customer-provided equipment (CPE) server that is to handle calls.

Continue with Chapter 4: Preparing to install Modular Messaging software on page 53 if:

- you are using Avaya-provided hardware, or
- this Avaya Modular Messaging system is to use an IP H.323 or IP SIP integration. These IP switch integration methods do not use port boards.

CAUTION:

Avaya does not support Brooktrout port boards for Modular Messaging systems that run Release 4.0 software. Install only the currently supported Dialogic port boards in a CPE server.

Avaya recommends that you connect a modem to each server to support remote dial in.

Note:

Before you can do the tasks described in this section, verify that all preinstallation requirements were met. See Chapter 1: Preinstallation requirements on page 1.

Topics in this chapter include:

- Supported MAS port boards on page 42
- Installing MAS port boards on page 43
- Connecting MAS port boards to the switch on page 51
- Completing the hardware installation on page 52

Supported MAS port boards

Table 8 lists the Dialogic port boards that Avaya supports for all new installations that use customer-provided equipment (CPE) servers. The type of port boards required depends on the switch integration, but each MAS can have only one type of port board installed. For example, all the boards in the server must be T1-QSIG or DSE.

Table 8: Supported MAS port boards for customer-provided servers

Protocol	Ports per MAS	Port boards	Maximum Number	Dialogic files on documentation media
Analog	12 - 48	Dialogic D/120JCT-LS 12-port board	4	**D/120JCT-LS** (PDF)
	4 - 16	Dialogic D/41JCT-LS 4-port board	4	**D/41JCT-LS** (PDF)
Digital Set Emulation	8 - 32	Dialogic D/82JCT-U-PCI-UNIV	4	**D/82JCT-U PCI Univ** (PDF)
E1-QSIG	30 - 60	Dialogic D/600JCT-1E1 [1] or D/600JCT-2E1	2	**D/600JCT-1E1** or **D/600JCT-2E1** (PDF)
T1-QSIG	23 - 46	Dialogic D/480JCT-1T1 [1]	2	**D/480JCT-1T1** (PDF)

1. Early D/600JCT-1E1 and D/480JCT-1T1 QSIG port boards have a plug in the unused connector on the faceplate. Dialogic D/600JCT-1E1 or D/480JCT-1T1 QSIG port boards that ship after mid-2005 have only a single connector. Both types of QSIG boards operate identically.

Note:

To support the capacities shown in Table 8, the minimum CPE server hardware specifications must match the specifications for the S3500-family MAS. For more information, see the *Avaya Modular Messaging Concepts and Planning Guide*.

The Dialogic documents provide details about installing and connecting the port boards. The documents are available on the *Avaya Modular Messaging Documentation* media or from the www.avaya.com/support Web site. For instructions on how to obtain the documents, see Downloading required software and documentation on page 3. For the latest version of the Dialogic guides, see the Quick Install Cards Search Tool on the Intel Telecom Boards Web site.

Note:

The Dialogic documentation describes more setups than the ones used for Avaya Modular Messaging. If information in a Dialogic document conflicts with this Avaya document, follow the steps in the Avaya documentation. Use the Dialogic documentation to locate various items on the board or verify cable connections.

Installing MAS port boards

Do this task only on a customer-provided server.

Before you can install the Modular Messaging software on a customer-provided equipment (CPE) server, you must first install any required port boards in each MAS.

Note:

The number of port boards you can install in a customer-provided MAS depends on the type of board and the number of PCI slots in the server. These instructions assume that up to four PCI slots are available in the server, and that board installation starts with the fourth PCI slot. Modify these instructions as appropriate for the server that you are using.

Preparing for the installation

To install Dialogic port boards in a customer-provided MAS:

1. Verify that this MAS meets the minimum requirements needed to support Modular Messaging software. For more information, see the *Avaya Modular Messaging Concepts and Planning Guide*.
2. Print out the appropriate Dialogic PDF file for more information. For a list of the Dialogic documents that support each type of board, see Table 8: Supported MAS port boards for customer-provided servers on page 42.
3. If the server is already in operation, take it out of service to install the port boards. Schedule and publicize a time.
4. When you are ready to start the installation, shut down the system software and turn off the server. Unplug the AC power cord for safety.

   CAUTION:

   Electrostatic discharge can severely damage sensitive electronic circuits. Before handling any electronic hardware, be sure to wear a grounding wrist strap or other static-dissipating device. The antistatic wrist strap must touch your bare skin and the strap cable must connect to an earth ground. For complete ESD instructions, see "Protecting against ESD damage" on the documentation media.
5. Open the chassis to access the PCI card slots.
6. Remove the cover for the PCI slot in which you want to install the new board. Set the retaining screw aside.
   - If you are installing multiple boards, remove as many card slot covers as are needed.
   - Note the maximum number of boards of a certain type that you can install in one MAS. See Table 8: Supported MAS port boards for customer-provided servers on page 42.

Note:

When you insert boards, start from the right-most slot if possible. For example, if six PCI slots are in the server, start with PCI slot 6 to insert the port boards.

Setting jumpers and switches

Set the jumpers and switches for board position, bus termination, and other features as described in this section. For more information about jumper or switch locations, see the Dialogic documentation listed in Table 8: Supported MAS port boards for customer-provided servers on page 42.

Note:

The Dialogic documentation describes more setups than the ones used for Avaya Modular Messaging. If information in a Dialogic document conflicts with this Avaya document, follow the steps in the Avaya documentation. Use the Dialogic documentation to locate various items on the board or verify cable connections.

To set the jumpers and switches on each board:

1. Remove the new port board from its packaging. Do not touch the circuit board surface.
2. Set the jumpers and switches as required for this type of board:
   - D/480JCT-1T1 and D/600JCT-1E1 or D/600JCT-2E1 QSIG board settings on page 44
   - D/82JCT-U PCI Univ set emulation board settings on page 45
   - D/120JCT-LS 12-port analog board settings on page 46
   - D/41JCT-LS 4-port analog board settings on page 47

D/480JCT-1T1 and D/600JCT-1E1 or D/600JCT-2E1 QSIG board settings

To set up Dialogic T1 or E1 QSIG boards, you must set only the board ID for the port board.

1. Turn the rotary switch, located on the top of the port board. Set the board ID according to the slot number in which the board is installed.

   The Dialogic port boards usually are placed in the PCI slots starting from the right side of the cabinet. For the board ID numbers for a 6-PCI slot MAS, see Table 9.

Table 9: D/480JCT-1T1 and D/600JCT-1E1 or D/600JCT-2E1 QSIG board ID settings

Card number	Board ID number	PCI slot number
1	0	6
2	1	5

Note:

Do *not* set the Computer Telephony (CT) bus for bus termination.

2. Continue with Installing the port boards on page 49.

D/82JCT-U PCI Univ set emulation board settings

To set up Dialogic digital set emulation (DSE) boards, you must set only the bus termination.

1. If the server contains more than one port board, set the boards on both ends of the Computer Telephony (CT) bus for bus termination. Use jumper **P8** to set CT bus termination as shown in Table 10.

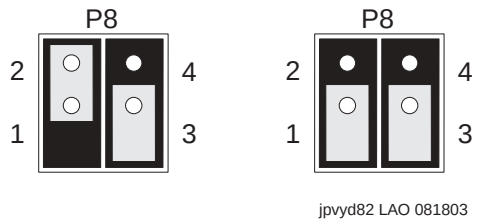
Table 10: D/82JCT-U set emulation board settings for CT bus termination

Number of cards	P8 jumper	CT bus termination
1	OFF	Do not terminate bus.
2	Card 1: ON pins 1 and 2 Card 2: ON pins 1 and 2	Terminate bus on both boards.
3	Card 1: ON pins 1 and 2 Card 2: OFF Card 3: ON pins 1 and 2	Terminate bus on boards 1 and 3.
4	Card 1: ON pins 1 and 2 Card 2: OFF Card 3: OFF Card 4: ON pins 1 and 2	Terminate bus on boards 1 and 4.

Figure 13 shows the **P8** jumper settings.

- The setting on the left is ON. Pins 1 and 2 are jumpered. If set, the CT bus is terminated.
- The setting on the right is OFF.

Figure 13: D/82JCT-U board settings for CT bus termination: ON or OFF



2. Continue with Installing the port boards on page 49.

D/120JCT-LS 12-port analog board settings

To set up Dialogic 12-port analog boards:

1. Set the unique board ID for the port board. Turn the rotary switch, located on the top of the board. Set the board ID according to the slot number in which the port board is installed.

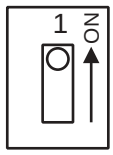
   The Dialogic port boards usually are placed in the PCI slots starting from the right side of the cabinet. For the board ID numbers for a 6-PCI slot MAS, see Table 11.

Table 11: D/120JCT-LS 12-port analog board ID settings

Card number	Board ID number	PCI slot number
1	0	6
2	1	5
3	2	4
4	3	3

2. Set the hook-switch state of the port board to **ON** so callers hear a busy signal when the board is not initialized. Use the **SW1** switch, located at the top of the board, to set the hook-switch state. See Figure 14.

Figure 14: D/120JCT-LS analog board setting for on-hook switch



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3. Continue with Installing the port boards on page 49.

D/41JCT-LS 4-port analog board settings

To set up Dialogic 4-port analog boards:

1. Set the unique board ID for the port board. Turn the **SW30** rotary switch, located on the top of the board. Set the board ID according to the slot number in which the board is installed.

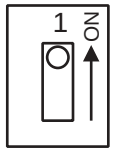
   The Dialogic port boards usually are placed in the PCI slots starting from the right side of the cabinet. For the board ID numbers for a 6-PCI slot MAS, see Table 12.

Table 12: D/41JCT-LS 4-port analog board ID settings

Card number	Board ID number	PCI slot number
1	0	6
2	1	5
3	2	4
4	3	3

2. Set the hook-switch state of the port board to **ON** so callers hear a busy signal when the board is not initialized. Use the red **SW4** switch, located near the top of the board, to set the hook-switch state. See Figure 15: D/41JCT-LS analog board setting for on-hook switch on page 47.

Figure 15: D/41JCT-LS analog board setting for on-hook switch



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3. If the server contains more than one port board, set the boards on both ends of the Computer Telephony (CT) bus for bus termination. Use jumper **JP2** to set CT bus termination as shown in Table 13.

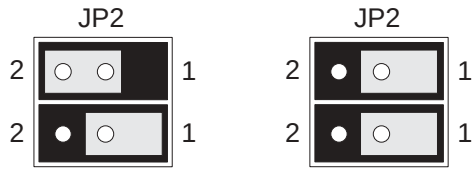
Table 13: D/41JCT-LS analog board settings for CT bus termination

Number of cards	JP2 jumper	CT bus termination
1	OFF	Do not terminate bus.
2	Card 1: ON pins 1 and 2 Card 2: ON pins 1 and 2	Terminate bus on both boards.
3	Card 1: ON pins 1 and 2 Card 2: OFF Card 3: ON pins 1 and 2	Terminate bus on boards 1 and 3.
4	Card 1: ON pins 1 and 2 Card 2: OFF Card 3: OFF Card 4: ON pins 1 and 2	Terminate bus on boards 1 and 4.

Figure 16 shows the **JP2** jumper settings.

- The setting on the left is ON. Pins 1 and 2 are jumpered. If set, the CT bus is terminated.
- The setting on the right is OFF.

Figure 16: D/41JCT-LS analog board settings for CT bus termination: ON or OFF



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Installing the port boards

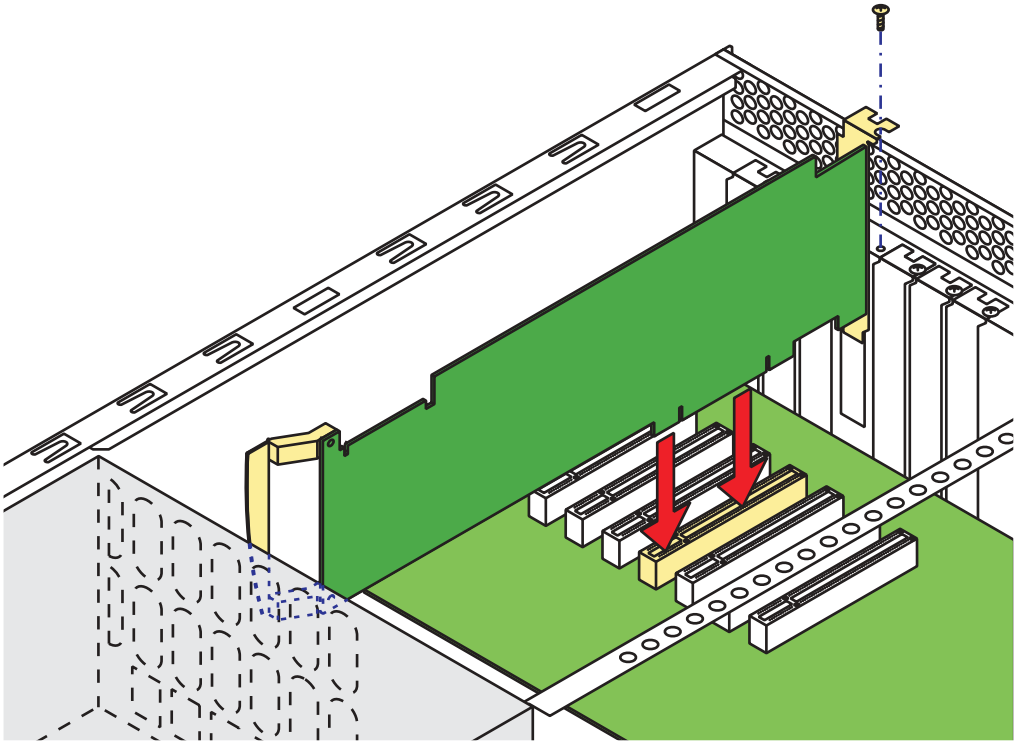
After you verify that the settings are correct, install the MAS port boards:

CAUTION:

Verify that all port boards in an MAS are of the same type. You cannot mix board types within the same MAS, such as analog boards with DSE or QSIG.

1. Slide the slot retainer bracket on the port board into the slot guide on the chassis.
2. Align the edge connector on the port board with the slot connector. Apply pressure to the top of the board only. Push down until the edge connector is firmly seated. See Figure 17.

Figure 17: Installing a port board in a CPE MAS



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3. Replace and tighten the retaining screw for the port board.
4. Repeat Steps 1 through 3 to install any additional port boards.

5. *If the MAS has multiple port boards,* attach the Computer Telephony (CT) bus cable to connect all the port boards:
   a. Position the CT bus cable so the colored stripe on the ribbon cable faces the ports at the back of the chassis.
   b. Start with the board in the highest numbered slot. Attach the end connector on the bus cable to the CT bus edge connector at the top of the board.
   c. Connect the next bus connector to the next port board, and so on.
   d. If the cable has extra connectors or loose ribbon cable, tuck down the cable so it does not snag when you replace the cover.
6. Replace the chassis cover.
7. Plug in the AC power cord.
8. Restore power to the server.

   The server boots.

Disabling the Dialogic hardware

The Microsoft Windows software automatically detects the Dialogic port boards that you just installed. You configure these boards later as part of the Modular Messaging software installation. Do *not* install the Dialogic drivers at this time.

To temporarily disable the Dialogic port boards:

1. After the server boots, log on using an account that has permission to install software, such as the local administrator.
2. The system runs a **Found New Hardware Wizard** once for each new Dialogic port board installed in the MAS. To complete the wizard:
   a. On the Welcome screen, use the default option to **Install the software automatically**. Click **Next**.
   b. Wait while the system searches for a driver.
   c. When the wizard reports that it **Cannot Install this Hardware**, click **Finish**.
3. Repeat Step 2 for each repetition of the Found New Hardware Wizard.

   Note:

   You install the Dialogic drivers later with the rest of the Modular Messaging software.

Connecting MAS port boards to the switch

Connect the MAS port boards to the PBX (switch), as described in this section.

To connect MAS port boards to the switch:

1. Assemble the required cables.

   Note:

   Port boards ordered through Avaya ship with the correct cables.

2. Connect each port on the port boards to the switch (PBX) as required:

   Note:

   Check the numbering on the board faceplate to verify that you are connecting the correct cable to the correct port.

- **For E1-QSIG or T1-QSIG boards:**

  a. Connect the port on the Dialogic E1-QSIG or T1-QSIG board using an RJ-48C Ethernet cable.

  b. The other end of the cable must be connected to the QSIG board on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

- **For set emulation boards:**

  a. Connect each port on the Dialogic set emulation (DSE) board using the D/82U cable (Intel part number 86-0155-001).

  b. The other end of the cable must be connected to a 4-wire punch-down block on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

- **For analog boards:**

  a. Connect each port on the installed analog boards to one end of a standard RJ-11 tip/ring cord. You can also use individual tip/ring cables and a 12-port harmonica. Note which cables connect to which ports.

  b. The other end of the cable must be connected to an analog line on the corporate switching system. The organization responsible for maintaining the corporate switch must make this connection. See the customer contract or the statement of work.

Completing the hardware installation

To complete the hardware installation on a customer-provided equipment (CPE) server:

1. The Dialogic port boards require their own drivers and software for board configuration. You install the Dialogic drivers and software as part of the Modular Messaging software installation. For more information, see Installing and Running the Modular Messaging Configuration Wizard on page 106.
2. If you intend to access this server remotely using a modem, verify that the modem is correctly installed and configured. For example, a remote support center might need to dial in to this server for troubleshooting or maintenance.
   a. For information about modem installation, setup, and operation, see the documentation provided with the modem.
   b. For information about configuring the Modular Messaging software to use a modem, see Chapter 8: Configuring the voice mail system on page 119.

Chapter 4: Preparing to install Modular Messaging software

This chapter describes how to set up Modular Messaging accounts on the directory server and prepare the directory server to support the Modular Messaging software. The steps in this chapter must be completed by the directory server administrator or other authorized customer personnel before a technician can install Modular Messaging software on the first MAS in the system.

Topics in this chapter include:

- Overview on page 53
- Setting up Modular Messaging accounts on page 55
- Assigning permissions to the customer account group on page 60
- Creating the voice mail domain container manually if required on page 66
- Creating MAS computer accounts on page 67
- Setting up each server for remote access on page 68
- Updating the Active Directory and data schema on page 69

Overview

This chapter describes the following system preparation steps:

1. For all installations, you must create a Modular Messaging security group, customer account and technical support account on the directory server and add the correct permissions for each account. For information about the correct permissions, see Appendix I: Administrator reference on page 359.
2. Depending on local requirements, you must create computer accounts for each MAS in the Active Directory and set up each MAS to allow remote access by technical support staff.
3. You must update the data schema before you install any Modular Messaging software on any Messaging Application Server (MAS) in the domain.

Note:

This procedure can be done only on a machine that is running the Microsoft Windows 2000 or 2003 Server operating system.

Log on to the Active Directory using an account that has permission to do Active Directory and data schema administration. This is usually the Windows domain administrator account. The account must have both Domain Admin and Schema Admin rights.

CAUTION:

Avaya does not recommend installing the Active Directory Extensions on a domain controller since a reboot of the server will be required.

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

To successfully set up the Windows system to support the Modular Messaging software, you need:

- Access to the *Avaya Modular Messaging Messaging Application Server Software* media.
- The names and passwords for accounts and groups that will be created by the procedures in this chapter, including the customer account, customer account group, technical support account, and test subscribers. If necessary, see the Data Collection Tool data file for account and group names and passwords.

Setting up Modular Messaging accounts

You must create two Windows domain user accounts on the directory server to support Modular Messaging and you must assign sufficient permissions to the accounts.

- Create a customer account to install and administer the Modular Messaging software.

  Note:

  In pre-3.0 releases this account was referred to as the service account.

- Create a technical support account to allow remote support staff to access and administer the Modular Messaging system.

At this time you can also optionally create a test subscriber account for each Telephone User Interface (TUI) that will be used at this site. The test subscriber accounts are required to support acceptance testing after the MAS is configured. For more information about creating accounts, see the Microsoft Windows documentation.

Note:

If you do not create the Modular Messaging accounts using the procedure in this section (for example, if the Modular Messaging customer account does not have sufficient privileges), you must create the Modular Messaging voice mail domain container manually. See Creating the voice mail domain container manually if required on page 66.

Note:

If using Exchange 2007 as a peer mail server, you can use an Exchange PowerShell script to automate some of the steps required to set up the Modular Messaging accounts. For more information, see Using Power Shell to create the customer account group on page 370.

Creating Modular Messaging customer and technical support accounts

To prepare for creating these accounts, complete the following steps:

1. Log on to the Active Directory server using an account that has privileges to create new user accounts (such as *administrator*).
2. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Users and Computers**.
3. In the **Active Directory Users and Computers** window, expand the Windows domain you intend to use for Modular Messaging. This is the Corporate Windows domain entry in the DCT data file.

Creating the Modular Messaging customer account

To create the Modular Messaging customer account, you must first create a new security group for the account and then create the account and assign appropriate permissions.

Creating the Modular Messaging customer account group

Create a new security group that will give the Modular Messaging customer account the appropriate permissions. For example:

1. In the left pane, right-click **Users** > **New** > **Group**.
2. In the **New Object - Group** window, create a new security group as follows:
   a. Enter the customer account group name (such as *MM Service Permissions*). If necessary, for the correct value, see the customer account group field in the DCT.
   b. Select the group scope appropriate for this site.
   c. Select group type **Security**. Click **Next**.
   d. On the next screen, do *not* create a mailbox (clear the checkbox if it is checked). Click **Next**.
   e. Click **Finish**.
3. In the left pane, click **Users**.
4. In the right pane, find the new group (such as *MM Service Permissions*) and double-click it.
5. In the **Properties** window, click the **Member Of** tab.
   a. Click **Add**.
   b. In the **Select Groups** window, add the following groups to assign the necessary permissions. Double-click each group to add it to the permissions list:
      - *Administrators* (required for the domain that contains the Global Catalog servers that will be used as peer directory servers for Modular Messaging)

        Note: This is the built-in administrators account. It is NOT the Windows domain administrator (Domain Admins) account.
      - *Account Operators* (required for each domain that will contain user accounts to be enabled for Modular Messaging)
      - *Exchange Recipient Administrators* (required only for systems using Exchange 2007 mail servers)
   c. Click **OK** to close the **Select Groups** window.
6. Click **OK** to close the **Properties** window.

Creating the Modular Messaging customer account

Create a new account for installing and administering the Modular Messaging software (this is the Modular Messaging customer account). For example:

1. In the left pane, right-click **Users** > **New** > **User**.
2. In the **New Object - User** window, create a new Modular Messaging customer account using a secure logon name. For example:
   a. First name: Customer
   b. Last name: Account
   c. User logon name: *customer-provided* (such as *mmacct*). If necessary, for the correct value, see the customer account field in the DCT.

   Note:

   Ensure that you are satisfied with the Modular Messaging account names and passwords that you choose now. They are not easy to change later.

   d. Click **Next**.
   e. Enter and confirm the password.

   Note:

   Passwords for Modular Messaging accounts must be at least 8 characters long. Do not create passwords composed of easily guessed words or numeric combinations, including sequential or repeated numbers. You must use a combination of at least three of the following character types: uppercase and lowercase letters, numbers, and special characters or symbols.

   f. Select **Password never expires**.

   Note:

   If you change the password for a Modular Messaging customer account at some point, contact the software-provider for the password-changing procedure.

   g. Click **Next**.
   h. On the following page, clear the checkbox for **Create an Exchange mailbox**.

   Note:

   You do not need to create an Exchange mailbox for a Modular Messaging customer account.

   i. Click **Next**.
   j. When the summary is displayed, click **Finish**.
3. In the left pane, click **Users**.
4. In the right pane, locate the new account and double-click it.
5. In the **Properties** window, click the **Member Of** tab.

6. Verify that the **Domain Users** entry is present. If the Domain Users entry is missing:
   a. Click **Add**.
   b. In the **Select Groups** window, add **Domain Users** to this account.
   c. Click **OK** to close the **Select Groups** window.
7. Add the customer account to the customer account group you just created:
   a. Click **Add**.
   b. In the **Select Groups** window, add the Modular Messaging customer account group that you just created (such as *MM Service Permissions*).
   c. Click **OK** to close the **Select Groups** window.
8. Click **OK** to close the **Properties** window.

   You will assign permissions to the Modular Messaging customer account in Assigning permissions to the customer account group on page 60.

Creating the Modular Messaging technical support account

Create a new account to allow remote support staff to access and administer the Modular Messaging system. For example:

1. In the left pane, right-click **Users** > **New** > **User**.
2. In the **New Object - User** window, create a new Modular Messaging remote access account using a secure logon name. For example:
   a. First name: Support
   b. Last name: Account
   c. User logon name: *customer-provided* (such as *techacct*). If necessary, for the correct value, see the technical support account field in the DCT.
   d. Click **Next**.
   e. Enter and confirm the password.
   f. Select **Password never expires**.

   Note:

   If you ever change the password for the remote access account, be sure to notify the appropriate technical support organization.

   g. Click **Next**.
   h. On the following page, clear the checkbox for **Create an Exchange mailbox**.
   i. Click **Next**.
   j. When the summary is displayed, click **Finish**.
3. In the left pane, click **Users**.

4. In the right pane, double-click the name of the new account.
5. In the **Properties** window, click the **Member Of** tab.
6. Verify that the **Domain Users** entry is present. If the Domain Users entry is missing:
   a. Click **Add**.
   b. In the **Select Groups** window, add **Domain Users** to this account.
   c. Click **OK** to close the **Select Groups** window.
7. Click **OK** to close the **Properties** window.

Creating test subscriber accounts

Create at least one new test subscriber account for each telephone user interface (TUI) that will be used at this site. The test subscriber accounts will be used for acceptance testing later in the installation. You may need to create up to three account, one for the MM Aria telephone user interface (TUI), one for the MM AUDIX TUI, and one for the MM Serenade TUI. For example:

1. In the left pane, right-click **Users > New** > **User**.
2. In the **New Object - User** window, create a new account, such as:
   a. First name: *Aria Test*
   b. Last name: *Subscriber*
   c. User logon name: *customer-provided* (such as *testsub1*).
   d. Click **Next**.
   e. Enter and confirm the password for the account (*customer-provided*).
   f. Set up other parameters as required for this site.
   g. Click **Next**.
   h. On the third page, verify that **Create an Exchange mailbox** is selected.
   i. Select the required **Server** (Exchange organization) and **Mailbox Store** (Exchange server).
   j. Click **Next**.
   k. When the summary is displayed, click **Finish**.

   A new account is added to the list in the right pane.

   Note:

   The extension for the test subscriber must be administered on the PBX by the appropriate party.
3. Repeat Steps 1 and 2 to set up test subscribers for AUDIX and Serenade if required for this site.

4. Click **OK** to close this window.
5. Assign Modular Messaging characteristics to this account after the Modular Messaging software is installed. See Adding a test subscriber on page 146.

Assigning permissions to the customer account group

Use the steps in this section to assign permissions to the Modular Messaging customer account by assigning permissions to the customer account group you created in Creating the Modular Messaging customer account group on page 56. Sufficient permissions must be assigned to the group for the customer account to function as required. For details on permission requirements, see Appendix I: Administrator reference on page 359.

To assign permissions to the customer account group complete the following procedures:

- Assigning Send As permission on page 60
- Assigning additional permissions on page 62

Assigning Send As permission

You must assign *Send As* permission to the customer account group to allow Modular Messaging to deliver call answer messages to Modular Messaging enabled mailboxes. For additional information, see Send As permission on page 361. Complete the following steps to assign *Send As* permission:

1. Log on to the Active Directory server using an account that has Domain Administrator privileges.
2. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Users and Computers**.
3. On the **View** pull-down menu, verify that **Advanced Features** is selected.
4. In the left pane of the **Active Directory Users and Computers** window, select the domain and right-click. Select **Properties**.
5. On the **Properties** window, select the **Security** tab.
6. Click **Advanced**.
7. On the **Advanced Security Settings** window, click **Add**.
8. In the **Select Users, Computers, and Groups** window, add the Modular Messaging customer account group (such as *MM Service Permissions*).
9. Click **OK** to close this window.
10. In the **Apply onto** field, select **User objects**.

11. In the **Permissions** box, allow **Send As** permissions
12. Click **OK** to close the **Permission Entry** window.
13. Click **OK** to close the **Advanced Security Settings** window.
14. Click **OK** to close the **Properties** window.

A security descriptor is periodically applied to the protected groups and users listed below. As a result, *Send As* permissions are removed from these objects.

Protected Groups and Users:

- Administrators
- Account Operators
- Server Operators
- Print Operators
- Backup Operators
- Domain Admins
- Schema Admins
- Enterprise Admins
- Cert Publishers
- Administrator account
- Krbtgt account

If any of the protected groups and users listed above is enabled for Modular Messaging, complete the following steps to prevent *Send As* permissions from being removed. You must be a member of the domain administrators group to complete this procedure:

Note:

The dsacls utility is not standard with Windows 2003 server. It is part of the Windows 2003 support tools that ship on the Windows 2003 installation media.

1. Click **Start > Run**, enter **cmd** and click **OK**.
2. In the command window, enter the following:

   C:\Program Files\Support Tools>dsacls "cn=adminsdholder,cn=system,dc=<*xxx*>,dc=<*yyy*>" /G "\<*MM Security Group*>:CA;Send As"

   where **dc=<xxx>,dc=<yyy>** is the customer's fully qualified domain name (for example, **dc=Avaya,dc=com**) and **<MM Security Group>** is the name of the customer account group.

   It will take at least an hour for the security permissions to replicate to the protected groups and their members.

Assigning additional permissions

Procedures for assigning permissions are different for Exchange 2000/2003 and Exchange 2007 message stores. Select the procedure that applies to your environment:

- Assigning Permissions with Exchange 2000 and Exchange 2003 on page 62
- Assigning Permissions with Exchange 2007 on page 64

Assigning Permissions with Exchange 2000 and Exchange 2003

With an Exchange 2000 or Exchange 2003 mail server, to assign permissions to the group, you must:

1. Edit the registry to display the security tab.
2. Add required permissions.

Editing the registry

By default, the **Security** tab for the Exchange organization container and some of the key sub containers are not visible using Exchange System Manager or Active Directory Sites and Services. The following registry change enables the **Security** tab at all levels within the Microsoft Exchange container.

To update the registry:

1. Log on as the Microsoft Exchange administrator.
2. Click **Start** > **Run**.
3. In the **Run** window **Open** field, type **regedit** and press **Enter**.
4. In the **Registry Editor** window, locate the following key:

   HKEY_CURRENT_USER\Software\Microsoft\Exchange\ExAdmin
5. Right-click **ExAdmin** and select **New** > **DWORD Value**.
6. Enter the following value name: **ShowSecurityPage**
7. Double-click the **ShowSecurityPage** value.
8. In the **Edit DWORD Value** window, set the Value data to **1**.
9. Click **OK** to close this window.
10. Click **OK** to close the **Registry Editor** window.

Adding permissions

Use Active Directory Sites and Services to add the required permissions. The permissions listed in Step 7 are the absolute minimum required for the Modular Messaging software to function. For convenience, all the properties should be created at the Exchange Organization level. You

can choose to apply them at a level lower down the tree if required, but this might affect your ability to manage Modular Messaging using Exchange System Manager.

To assign permissions to the Modular Messaging customer account:

1. Log on to the Active Directory server using an account that has privileges to assign permissions to accounts (such as *administrator*).
2. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Sites and Services**.
3. In the left pane, select **Active Directory Sites and Services**.
4. From the **View** pull-down menu, select **Show Services Node** (the menu item shows a check mark after you select it).
5. In the left pane, expand **Services**, expand **Microsoft Exchange**, and then locate the appropriate *Exchange Organization* object that Modular Messaging will connect to. Right-click it and select **Properties**.
6. In the **Properties** window, click the **Security** tab. This tab is visible only if you edited the registry as directed in the previous procedure.
   a. Click **Add**.
   b. In the **Select Users, Computers, and Groups** window, add the Modular Messaging customer account group (such as *MM Service Permissions*).
   c. Click **OK** to close this window.
7. Under **Permissions** for the group, **Allow** only the following permissions. Clear any checkboxes that do not apply. For details on these permission requirements, see Appendix I: Administrator reference on page 359.

   Note:

   You may find it easier to verify the permissions by working from the bottom of the list to the top.

   - Read
   - Execute
   - Read permissions
   - Create children
   - List contents
   - Read properties
   - Write properties
   - Administer information store
   - Create named properties in the information store
   - View information store status
   - Receive As
   - Send As

8. Click **Apply** to verify the settings.
9. Click **OK** to close this window.
10. Close the **Active Directory Sites and Services** window.
11. Wait 10 minutes for the directory cache to expire.

Assigning Permissions with Exchange 2007

With an Exchange 2007 mail server, assign permissions to the group by adding the required permissions.

Note:

In systems with Exchange 2007 mail servers, the customer account group must be a member of the Exchange Recipient Administrators group. For more information, see Creating the Modular Messaging customer account on page 56.

Adding permissions

Use Active Directory Sites and Services to add the required permissions. The permissions listed in Step 14 are the absolute minimum required for the Modular Messaging software to function. For convenience, all the properties should be created at the Exchange Organization level. You can choose to apply them at a level lower down the tree if required, but this might affect your ability to manage Modular Messaging using Exchange System Manager.

To assign permissions to the Modular Messaging customer account:

1. Log on to the Active Directory server using an account that has privileges to assign permissions to accounts (such as *administrator*).
2. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Sites and Services**.
3. In the left pane, select **Active Directory Sites and Services**.
4. From the **View** pull-down menu, select **Show Services Node** (the menu item shows a check mark after you select it).
5. In the left pane, expand **Services**, expand **Microsoft Exchange**, and then locate the appropriate *Exchange Organization* object that Modular Messaging will connect to. Right-click it and select **Properties**.
6. In the **Properties** window, click the **Security** tab.

   Note:

   In an environment with both Exchange 2003 and Exchange 2007 mail servers, the Security tab may not be visible. Enable it by adding the **ShowSecurityPage** registry key. For more information see, Editing the registry on page 62. You can complete this procedure only on an MAS that has Exchange 2003 System Management Tools installed.
7. Click **Add**.

8. In the **Select Users, Computers, and Groups** window, add the Modular Messaging customer account group (such as *MM Service Permissions*).
9. Click **OK** to close this window.
10. Under **Permissions** for the group, **Allow** permission for **Read** and click **Apply**.
11. Click **Advanced**.
12. On the **Advanced Security Settings** window, on the **Permissions** tab, check the box at the bottom of the window that will **Allow inheritable permissions from the parent to propagate to this object and all child objects**.
13. Click **Add** and add the Modular Messaging customer account group (such as *MM Service Permissions*). Click **OK** to close the window.
14. Complete the following steps to add permissions to the customer account group:
    a. In the **Apply onto** field, select **This object and children objects**.
    b. Verify that the following box is *not* checked, **Apply these permissions to objects and/or containers within this container only**.
    c. In the Permissions box, allow the following. Note that certain selections will result in the application of additional permissions. If you have only Exchange 2007 mail servers, select the permission names as indicated in parentheses.
       - List contents
       - Read properties (Read all properties)
       - Write properties (Write all properties)
       - Read permissions
       - Create children (Create all child objects)
       - Administer information store
       - Create named properties in the information store
       - Receive As
       - Send As
       - View information store status

       If you are running a mixed environment of Exchange 2000/2003 and Exchange 2007 mail servers, also select the following permissions, which are only displayed for Exchange 2007 in the mixed environment:

       - Read
       - Execute
    d. Click **OK** to close the **Permission Entry** window.
    e. Click **OK** to close the **Advanced Security Settings** window.
    f. Click **OK** to close the **Properties** window.

Creating the voice mail domain container manually if required

Do the task in this section only if you did not create the Modular Messaging customer account using the procedure in *Creating Modular Messaging customer and technical support accounts* on page 55.

If you do not assign the permissions Avaya recommends to the Modular Messaging customer account for security reasons, you can create the voice mail domain container for the Modular Messaging system manually and assign it appropriate security settings. Use this procedure if the Modular Messaging customer account does not have sufficient privileges to create container objects at the voice mail domain base location.

To use this procedure, you must install ADSIEdit. ADSIEdit is a Microsoft Management Console (MMC) snap-in available as part of Microsoft Windows 2000 or 2003 Server and Microsoft Windows Advanced 2000 or 2003 Server Support Tools.

To assign security settings to the voice mail domain container:

1. Run the **ADSIEdit** Windows support tool.
2. Connect to the **Domain NC** of the domain containing the Modular Messaging customer account.
3. Locate the base location for the voice mail domain container.

   Note:

   If you have not selected a custom location, by default the voice mail domain container is the root container of the Microsoft Windows 2000 or 2003 domain.
4. From the **Action** menu, select **New** > **Object** > **Container**.
5. Give the container the value *Octel* and click **Next**.

   Note:

   The name of the container is case sensitive.
6. Display the properties for the new container.
7. Ensure that the *Account Operators Group* is assigned Full Control in the security settings for the new container.

Creating MAS computer accounts

Before the Modular Messaging software is installed, the domain administrator must create computer accounts for each MAS and define the Modular Messaging customer account as a user that has permission to join the Windows domain. This procedure facilitates remote access setup (see Setting up each server for remote access on page 68) and Modular Messaging software installation.

For example, to add a new computer account to the Active Directory on a Windows 2003 system (note that options differ for a Windows 2000 system):

1. Log on to the Active Directory server using an account that has privileges to add a computer account to a domain (such as *Administrator*).
2. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Users and Computers**.
3. In the **Active Directory Users and Computers** window, expand the directory for the Windows domain that you will use for Modular Messaging.
4. To create a new computer account, right-click **Computers**, and then select **New** > **Computer**.
   a. In the **New Object - Computer** window, type the computer name for the MAS.
   b. Click **Next**.
   c. Do not select “this is a managed computer.” Click **Next**.
   d. Click **Finish** to close this window.
   e. In the left pane, click **Computers**.
   f. Right-click the computer name. Select **Properties**. In the **Properties** window, select the **Managed by** tab.
   g. Click **Change** to specify that a different user or group can add this computer to the domain.
   h. In the **Select User or Group** window, enter the customer account name (such as *mmacct*). Then click to select that name.
   i. Click **OK** to close this window.
   j. Click **OK** to close the **Properties** window.
5. If more than one MAS is to be installed, repeat Step 4 until all MASs are added.

Setting up each server for remote access

Remote access allows technical support staff to dial into a system to correct problems and perform routine maintenance. Unless other arrangements were made, use the following procedure to allow each Modular Messaging server to support remote access calls.

1. The **Active Directory Users and Computers** window should already be open. If not, repeat Steps 1 through 3 in Creating MAS computer accounts on page 67 to log on to an account with the appropriate privileges and access the Active Directory.
2. In the left pane of the **Active Directory Users and Computers** window:
   a. Expand the directory for the domain that will be used for Modular Messaging.
   b. Click **Users**.
3. In the right pane, double-click **RAS and IAS Servers**.
4. In the **RAS and IAS Servers Properties** window:
   a. Click the **Members** tab.
   b. Click **Add**.
   c. In the **Select Users, Contacts, Computers, or Groups** window, double-click the entry for this server (for example, *MYMAS1*). It has a blue terminal icon.
   d. Verify that the correct computer name is shown underlined in the list box.
   e. Repeat Steps c and d to add all Modular Messaging servers to this list.
   f. Click **OK** to close this window.
   g. Click **OK** to close the **RAS and IAS Servers Properties** window.
5. In the right pane, double-click the account to be used for remote technical support, such as example *Services Account* or *Support Account*.
6. In the **Properties** window for the remote access account:
   a. Click the **Dial-in** tab.
   b. Under **Remote Access Permission (Dial-in or VPN)**, select **Allow access**.
   c. Leave CallBack Options set at **No Callback**.
   d. Close this and the next window.

Updating the Active Directory and data schema

Complete this task only once in the Active Directory Forest, on the directory server domain controller, before installing the Modular Messaging software on any MAS.

The Active Directory must be updated as described in this section.

Note:

This procedure can be done only on a machine that is running the Windows 2000 or 2003 Server operating system. These components cannot be installed on a workstation OS.

Note:

To complete this update, you must log on to the directory server using an account that has permission to do Active Directory and data schema administration. This is usually the Windows domain administrator account. The account must have both Domain Admin and Schema Admin rights.

If you are running Windows 2000 or 2003 with Active Directory, the data schema must be updated before you install any Modular Messaging software on any Messaging Application Server (MAS) in the domain. The schema defines the objects and properties stored in Active Directory, and contains definitions of object attributes. The schema is updated only once in the *forest*.

For details about the changes made to the schema for a Modular Messaging software update, see Appendix I: Administrator reference on page 359.

CAUTION:

If you do not update the schema first when required, the Modular Messaging software will not install correctly. It will have to be completely removed and then reinstalled following an Active Directory schema update.

Logging on and preparing to update

To update the Active Directory for Modular Messaging:

1. Log on to the directory server using an account that has permission for Domain Administration and Schema Administration.
   - This account is usually the Windows domain administrator account. The account requires both Domain Administration and Schema Administration rights.
   - If you are updating the messaging software in a child domain, the account must have Domain Admin rights for both the parent domain and the child domain. If the Active Directory update is executed from the child domain controller, enter the account name in the format: *Parent Domain\Domain Admin*.

- If you are using Octel Analog Networking with an Exchange 2000 or 2003 message store, this procedure must be performed on the domain controller that is acting as the schema master. Octel Analog Networking is not supported with Exchange 2007.

2. Close applications or stop monitoring as follows:
   - Close the Active Directory Users and Computers application and the Microsoft Exchange System Management Tools.
   - Close any open windows for other applications.
   - Stop any monitoring tools that are running, such as anti-virus software.

Adding the Schema Update registry key

This procedure is required only when applying schema updates on a domain controller. Complete the following steps to add the registry key that will allow schema updates:

1. Click **Start** > **Run**.
2. In the **Run** window **Open** field, type **regedit** and press **Enter**.
3. In the **Registry Editor** window, locate the following path:

   HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\NTDS\Parameters
4. In the right panel look for the REG_DWORD Name **Schema Update Allowed**. If it exists, double-click it and verify that the **Value data** field is set to **0**.
5. If the DWORD value does not appear in the right panel, right-click **Parameters** and select **New** > **DWORD Value**.
6. Enter the following name: **Schema Update Allowed**.
7. Double-click the **Schema Update Allowed** value.
8. In the **Edit DWORD Value** window, set the **Value data** to **0**.
9. Click **OK** to close this window.
10. Click **OK** to close the **Registry Editor** window.

Running the Modular Messaging installation wizard

When all preparations are complete, run the Modular Messaging Installation Wizard as follows:

1. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) into the DVD drive of the directory server.
2. Run the Modular Messaging Installation Wizard as follows:
   a. Navigate to the **Install** directory on the DVD drive.
   b. Double-click the file **Setup.exe**.
3. On the main screen, verify that the Configuration drop-down box shows **Microsoft Exchange**.

Updating the Active Directory

To update the Active Directory and data schema (if required) on this machine:

1. Click the plus sign (**+**) to expand the **Active Directory updates** folder.

   Note:

   Do this task only once in the Active Directory Forest.

2. Select the following checkboxes to install the appropriate software components to support Modular Messaging:

   - *Enable Modular Messaging:* Click this box to enable extension data replication among Active Directory servers. This allows Modular Messaging to store subscriber configuration information and support the correct operation of and access to client applications.
   - *Enable Octel Analog Networking:* For systems using an Exchange 2000 or 2003 message store, if Octel Analog Networking is used at this site, click this box to add the appropriate classes and attributes to the schema. This causes a Modular Messaging Octel Analog Networking tab to appear in the Microsoft Exchange administration program. Octel Analog Networking is not supported for Exchange 2007.
   - *Enable User Administration:* Click this box to enable objects that will appear on the Modular Messaging tab in the Active Directory. This allows administrators to use Microsoft Exchange administration to enable Modular Messaging features for users, groups, or contacts.

   Note:

   Although Octel Analog Networking is an optional feature, you might choose to install it at this time in case Octel Analog Networking is ever added to the system. The other schema updates are always required.

3. When all required components are selected, click **Install**.

4. Each component you select causes a Modular Messaging Active Directory installation wizard to run. Complete each wizard as follows:
   a. On the welcome screen, click **Next**.
   b. If prompted, enter the name and password of an account that has both Domain Admin and Schema Admin rights. (For example, *windowsdomain**schemaAdmin* and password.) Click **Next**.
   c. After the Active Directory registration process is complete, click **Next**.
   d. To complete the wizard, click **Finish**.
   e. Repeat Steps a through d for each occurrence of the wizard.
5. When component installation is complete, click **Close**.
6. Continue with Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

Chapter 5: Adding Exchange extensions for Modular Messaging

This chapter describes how to install the Microsoft Exchange extensions that support user administration for Modular Messaging software. Installing the Subscriber Administration extensions creates a Modular Messaging tab in the Active Directory. However, the page is not functional until the Modular Messaging software is installed and operational.

Do this task on any machine that you will use for administering subscribers (such as the Exchange server, an MAS, or a client machine). You can do this task multiple times per network.

Note:

You will not be able to add the extensions to an MAS until you install the Modular Messaging software. See Chapter 6: Configuring a new Avaya MAS on page 79, or Chapter 7: Configuring a customer-provided MAS on page 95.

For new installations, you must have successfully completed the tasks in Chapter 4: Preparing to install Modular Messaging software on page 53 before you can add the Exchange extensions.

Topics in this chapter include:

- Overview on page 74
- Adding the Exchange extensions on page 75

Overview

This task assumes that you have already created a Modular Messaging customer account and updated the directory server as described in Chapter 4: Preparing to install Modular Messaging software on page 53.

CAUTION:

If the Active Directory has not been updated as described in Chapter 4: Preparing to install Modular Messaging software on page 53, do not proceed with the steps in this chapter. The Modular Messaging software will not install correctly, and it will have to be completely removed and reinstalled after the Active Directory updates have been made.

To successfully install the Modular Messaging Microsoft Exchange Subscriber Administration extensions, you need:

- Access to the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1).
- Downtime scheduled for the Microsoft Exchange server
  - *Exchange 2000 or 2003 server:* This release of Exchange does not require the Subscriber Administration extensions or Octel Analog Networking Administration component to be installed on the Exchange server. If you choose to install them, the Exchange server may need to be rebooted (see the following note).

Note:

You can install the Modular Messaging Subscriber Administration extensions component on any machine that has the Microsoft Exchange 2000 or 2003 System Management Tools installed. The Subscriber Administration extensions add a tab to the Active Directory Users and Computers property page that is used for Modular Messaging subscriber administration. Any machine on which you install the Subscriber Administration extensions may require a reboot.

To use the Modular Messaging Active Directory Extensions for administration, you must have sufficient rights on the Active Directory to modify users.

Note:

If Octel Analog Networking is used at this site, you can install the Octel Analog Networking Administration component on any machine where the Microsoft Exchange System Management Tools are installed.

Octel Analog Networking is not supported with the IP H.323 switch integration or Exchange 2007.

- *Exchange 2007 server:* Modular Messaging Subscriber Administration Extensions are not supported on 64 bit Windows 2003 servers.

Install the Modular Messaging Subscriber Administration extensions component on a machine that has the Microsoft Exchange 2007 Management Tools installed. Modular Messaging supports installation of the tools only on machines running a 32-bit operating system, not a 64-bit operating system. You must install the 32-bit version of the Exchange 2007 Management Tools, which can be downloaded from Microsoft. For more information about downloading and installing the Exchange 2007 Management Tools, see Installing third-party software on page 372.

The Subscriber Administration extensions add a tab to the Active Directory Users and Computers property page that is used for Modular Messaging subscriber administration. Any machine on which you install the Subscriber Administration extensions may require a reboot.

To use the Modular Messaging Active Directory Extensions for administration, you must have sufficient rights on the Active Directory to modify users.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

Note that the Microsoft Exchange 2000/2003 System Management Tools or Exchange 2007 Management Tools must be installed on the machine where you install the Modular Messaging Exchange extensions.

Adding the Exchange extensions

Complete this task for any machine that you will use for administering subscribers (such as the Exchange server, or a client machine). You can do this task multiple times per network.

Update the Microsoft Exchange extensions as follows:

- *For new installations:* Install these tools on the Exchange server, or other machine where they are required.
- *For upgrades:* Update the Exchange extensions software on any machines where it is installed.

Note:

Review the conditions for installing these Modular Messaging software components in the Overview on page 74. For an MAS, you will install the Subscriber Administration extensions component when you install the rest of the Modular Messaging software. See Chapter 6: Configuring a new Avaya MAS on page 79, or Chapter 7: Configuring a customer-provided MAS on page 95.

*Although this procedure creates a Modular Messaging tab in the Active Directory, the page will **not** be functional until after the rest of the Modular Messaging software is installed and operational.*

Logging on and preparing to update

To update the Microsoft Exchange extensions for Modular Messaging:

1. Log on to the appropriate machine using an account that has permission to install software.
2. Close applications and stop monitoring on this machine as follows:
   - Close the **Active Directory Users and Computers** window, if that application is installed on this machine.
   - Close any open Exchange applications including the Microsoft Exchange Management Tools.
   - Close any open windows for other applications.
   - Stop any monitoring tools that are running, such as anti-virus software.

Running the Modular Messaging installation wizard

When all preparations are complete, run the Modular Messaging Installation Wizard:

1. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) into the DVD drive of this machine.
2. To run the Modular Messaging Installation Wizard:
   a. Navigate to the DVD drive (such as D:) and, from there, to the **Install** directory.
   b. Double-click the file **Setup.exe**.
3. On the main screen, verify that the Configuration drop-down box shows **Microsoft Exchange**.

Adding the Exchange extensions

To add the Exchange extensions tools to this machine:

1. Click the plus sign (**+**) to expand the appropriate Exchange extensions folder. Select the correct extensions for the version of Exchange that is installed on this machine:
   - Active Directory / Exchange 2000 extensions (also used for Exchange 2003 and 2007 systems)
2. To install the Modular Messaging software components required for Microsoft Exchange systems on this machine, select the appropriate checkbox:
   - *Octel Analog Networking Administration:* If Octel Analog Networking is used at this site, click this box to allow administrators to administer an Octel Analog Networking gateway. This allows Modular Messaging subscribers to exchange voice messages with any other Octel Analog Networking-enabled voice mail system. Not supported with Exchange 2007.
   - *Subscriber Administration:* Click this box to add a Modular Messaging property page in Active Directory Users and Computers for each user that is assigned a mailbox. This tool allows administrators to set up and administer Modular Messaging accounts, configure subscriber properties, and run the MM Client software (the Subscriber Options package).
3. When all required components are selected, click **Install**.
4. When all components finish installing, click **Close**.
5. If you are prompted to restart the system, click **Restart**.

   Note:

   After the Exchange extensions are installed, a Modular Messaging tab appears. However, it is not functional until installation of the MAS is complete.

Chapter 6: Configuring a new Avaya MAS

This chapter applies only to an Avaya-provided Messaging Application Server (Avaya MAS) installation. It describes how to set up an Avaya MAS to support Avaya Modular Messaging software.

If you are installing a customer-provided MAS, do not use the procedures in this chapter, see Chapter 7: Configuring a customer-provided MAS on page 95.

If you are installing a supplementary server, see Appendix E: Configuring a supplementary server on page 313.

If you are installing a Modular Messaging system with Exchange 2007 servers, see Appendix J: Installing Modular Messaging with Exchange 2007 on page 363.

CAUTION:

Before you can proceed with the tasks described in this section, a system administrator must have successfully completed the tasks in Chapter 4: Preparing to install Modular Messaging software on page 53.

Topics in this chapter include:

- Overview on page 80
- Disabling hyper-threading for IP H.323 on page 82
- Running the Modular Messaging Configuration Wizard on page 84
- Completing server setup on page 88

Overview

You must configure each new Avaya Messaging Application Server (Avaya MAS) for local operating settings and to work correctly on the corporate local area network (LAN) as described in this section. In addition, you must prepare it to operate correctly in the Microsoft Windows and Exchange environment.

The majority of the MAS configuration is automated by the Modular Messaging Configuration Wizard (MMCW). The MMCW configures the MAS from information in a site-specific configuration file, called a Data Collection Tool (DCT) data file (*.mmdct). This file is created using the DCT executable file (MMDCT.exe). Typically the DCT data file is created prior to the installation by the project manager, customer administrator and other experts responsible for the installation.

See the DCT online help system or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure and specifications for creating a DCT data file.

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe).

To successfully set up an Avaya MAS, you need:

- A complete and valid DCT data file.
- All required hardware installed as described in Chapter 2: Installing Avaya-provided hardware on page 11.
- A printout of the Avaya MAS installation checklist (see New Modular Messaging installation on an Avaya MAS on page 256). Check off steps as you complete them to track your progress.
- The *Avaya Modular Messaging Messaging Application Server Software* DVD.
- The following software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - Avaya software updates that are required to bring the Modular Messaging software up to date after an installation. Download this software to a USB storage device. For more information about downloading the updates, see Appendix D: Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support Web site to a USB storage device. Download the executable file to the same USB storage device as the DCT data file.
  - The Modular Messaging 4.0 Client software.

- Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.) When installing a system with Exchange 2007 mail servers, you will require the 32-bit version of the Exchange 2007 Management Tools and additional software downloads. For more information, see Installing third-party software on page 372.
- Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.) When installing a system with Exchange 2007 mail servers, you will require Microsoft Exchange 2007 Service Pack 1.

Switching the monitor to show the correct server

Use whatever method is required at this site to have the monitor display the Avaya MAS that you are installing.

For an 8-port Belkin KVM: the KVM switch is usually connected to the first Avaya MAS (MAS#1) through the first computer port (VGA 01). Subsequent MASs (if present) are connected to computer ports VGA 02, VGA 03, and so on.

To show a different server on the monitor:

1. Slowly press **Scroll Lock**, then **Scroll Lock** again, and then the up (or down) arrow key to change to the server connected to a higher (or lower) port number.

   Alternatively you can type the port number instead of pressing the up or down arrow key (such as *01* for port 1). For complete user instructions, see the KVM switch documentation.

2. If you cannot access the correct server, verify that the cable connections are correct. To correct cable problems, power down the system and correct the cable connections. Then turn on the system again.

   For complete user and troubleshooting instructions, see the KVM switch documentation.

   Note:

   You might see the error message **System Event Log Full** when the system boots. You can ignore this message. Modular Messaging does not use this log.

Starting up the system

Be sure the USB storage device with the DCT data file (*.mmdct) is inserted in a USB port on the server before starting the system. This device should also hold the latest DCT executable file (MMDCT.exe).

- You can use any of the available USB ports on the back of the server.
- You must remove the front bezel to access the USB port on the front of the Avaya S3500-family message server.

The Avaya MAS starts to boot after you turn it on.

1. The S3500-family message servers turn on as soon as they receive AC power. However, if the power LED is not lit on the server you are configuring, press the power button on the front of the server. For more information, see Turning on the S3500-family server system on page 39.
2. *Optional:* When the system starts to boot, you can:
   a. Press **Esc** when the splash screen is displayed.
   b. Press the space bar to skip the memory check.
3. If you receive a warning that the Dialogic drivers are not supported, click **Yes** to continue.

Disabling hyper-threading for IP H.323

Important:
If you have S3500-family servers that use IP H.323 switch integration, complete this task BEFORE doing anything with the Avaya Modular Messaging Configuration wizard.

The S3500-family server ships with hyper-threading enabled. Before you configure any MAS, disable hyper-threading on those MASs in the VMD that use IP H.323 switch integration. This will help ensure a more stable environment. Hyper-threading is not supported on older hardware, such as the S3400-family server.

1. Using the MAS Console, either boot the MAS or, if it is already running, reboot the MAS.
2. During the initial boot process and immediately after the Client MAC Address appears, press the **F2** key to start BIOS Setup.

   If you pressed the F2 key in time, the system starts the BIOS Setup following the memory test. If this does not happen, you must reboot and try again.
3. At the **Enter CURRENT Password** prompt, type **freedom** and then press **Enter**.

4. Using the up, down, left, and right arrow keys, navigate to and highlight the **Advanced** tab and then press **Enter**.
5. Highlight **CPU Configuration** and then press **Enter**.
6. Highlight **Hyper-Threading Technology** and then press **Enter**.
7. Highlight **Disabled** and then press **Enter**.
8. Press the **F10** key.
9. On the **Save configuration changes and exit setup?** message, highlight **Ok** and then press **Enter**.

   The system automatically reboots.
10. Repeat this process for any other S3500-family server MASs in the VMD that uses the IP H.323 switch integration.

Installing modem drivers on the MAS

When the Found New Hardware Wizard launches, complete the following procedures to install drivers for the modem you connected to the MAS (see Connecting the USB modem on the MAS on page 38):

- Installing drivers for the serial adapters on page 83
- Installing the driver for the serial port on page 84
- Installing the driver for the modem on page 84

Installing drivers for the serial adapters

Complete the following steps to install the driver for the serial adapters:

1. From the **Found New Hardware Wizard**, when prompted "Can Windows connects to Windows Update to search for software?" select **No, not at this time** and click **Next**.
2. Select **Install software automatically (recommended)**, and click **Next**.
3. When prompted that software has not passed Windows Logo testing, click **Continue Anyway**.
4. When installation is complete, click **Finish**.

   The next wizard, for installing the serial port, starts automatically.

Installing the driver for the serial port

Complete the following steps to install the driver for the serial port:

1. From the **Found New Hardware Wizard**, when prompted "Can Windows connects to Windows Update to search for software?" select **No, not at this time** and click **Next**.
2. Select **Install software automatically (recommended)**, and click **Next**.
3. When prompted that software has not passed Windows Logo testing, click **Continue Anyway**.
4. When installation is complete, click **Finish**.

   The next wizard, for installing the modem, starts automatically. If the wizard does not start, unplug the modem and then plug it back in.

Installing the driver for the modem

Complete the following steps to install the driver for the modem:

1. From the **Found New Hardware Wizard**, when prompted "Can Windows connects to Windows Update to search for software?" select **No, not at this time** and click **Next**.
2. Select **Install software automatically (recommended)**, and click **Next**.
3. When prompted that software has not passed Windows Logo testing, click **Continue Anyway**.
4. When installation is complete, click **Finish**.

Running the Modular Messaging Configuration Wizard

The Modular Messaging Configuration Wizard (MMCW) launches automatically when the system starts. The MMCW controls the next steps in the installation process. In running the wizard you must complete the following procedures:

1. Selecting a DCT data file on page 85
2. Installing third-party software on page 86
3. Completing the MMCW Configuration on page 87

Selecting a DCT data file

Complete the following steps to configure the MAS from the DCT data file:

1. When the Modular Messaging Configuration Wizard (MMCW) launches, the Modular Messaging Welcome screen is displayed. Click **Next**.
2. On the **Locate Configuration Data** screen, highlight the DCT data file for this installation. If the file is not displayed, click **Browse** and browse to the directory where the file is stored. By default, the MMCW searches the hard drive for all files with the file type **.mmdct.*
3. Click **Next**. You are prompted to verify the file selection. Click **Yes** to select the file.
4. The DCT executable file (MMDCT.exe) launches with the DCT data file that you selected. Review and make any necessary changes to the file.
5. On the last screen, click **complete** and then save the file again if you have made any changes.
6. Click **complete** to continue.
7. On the **Messaging Application Server Number** screen, in the **MAS Number** field, select the number of the MAS that you are installing and click **Next**.

   The MAS configuration starts, the **Sysprep** window opens, then the server reboots.
8. After the reboot starts, a Windows Setup wizard runs. To complete the wizard:
   a. On the **License Agreement** screen, select **I accept this agreement**. Click **Next**.
   b. On the **Your Product Key** screen, type the Windows product key for this server.

   Note:

   Each Windows computer has a unique product key for the Windows 2003 operating system. Enter the number exactly as shown.

   On a new S3500-family server, the product key sticker is located inside the empty drive tray on the lower-left of the server chassis. You can remove the drive tray to easily read the sticker.

   c. Click **Next**.

   The Avaya Modular Messaging Configuration Wizard displays its configuration status on the Configuring System screen.
9. If the **Found New Hardware** wizard launches, complete the wizard to install the Dialogic driver software:
   a. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) is in the MAS DVD drive.
   b. When prompted to use Windows update, select **No, not at this time** and click **Next**.
   c. When prompted to choose the software, select **Install the software automatically** and click **Next**.

d. In the **Security Alert - Driver Installation** window, select **Yes** to install the driver.

e. After the board is set up, click **Finish**.

f. Repeat these steps for all Dialogic boards on this MAS.

Installing third-party software

Note:

If you are installing Modular Messaging with an Exchange 2007 peer mail server, before you proceed with the installation, see Installing third-party software on page 372.

After the reboot, the MMCW prompts you to install third-party software. Do *not* press **Continue with installation** until you do the following:

- Update Windows Internet Explorer 7 security — Required only when installing third-party software from a mapped network drive.
- Install Exchange System Management Tools
- Install Exchange Server 2003 Service Pack 2 (Or, Exchange Server 2000 Service Pack 3 for Exchange 2000 System Management Tools.)
- Install Anti-virus software

Updating Windows Internet Explorer 7 security

If you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.
3. A window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Installing Exchange Management Tools

Note:

If you are installing Modular Messaging with an Exchange 2007 peer mail server, before proceeding, see Installing third-party software on page 372.

The Microsoft Exchange 2003 System Management Tools or Microsoft Exchange 2007 Management Tools must be installed on any MAS that will run any of the following services:

- Messaging Application Server
- Call Me Server
- Message Waiting Indicator (MWI) Server.

Complete the following steps to install the management tools:

1. Insert the customer-provided Microsoft Exchange Server media in the MAS drive.
2. Install the management tools by completing the Microsoft Exchange Installation Wizard.
3. If you receive a compatibility warning, click **Continue**.
4. For details about this procedure, see the Microsoft Exchange documentation.

Installing Exchange Server Service Pack and anti-virus software

Complete the following steps:

1. Follow site-specific procedures to install Exchange Server 2003 Service Pack 2. (For Microsoft Exchange 2000 System Management Tools, install Exchange Server 2000 Service Pack 3 instead.)
2. Install anti-virus software that is specified by your local site requirements and implementation. Avaya strongly recommends that you install anti-virus software on any Microsoft Windows computer that runs Avaya Modular Messaging software. For more information about anti-virus software on an Avaya MAS, see Administering anti-virus software on page 89.

Completing the MMCW Configuration

After third-party software is installed, continue with the following steps to complete the configuration.

1. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) is in the MAS DVD drive. Click **Continue with installation after installing 3rd party software** on the third-party dialog box. The MMCW resumes with the following sequence of events:
   - The **Setup** screen displays and proceeds directly to the **System Upgrade** screen.

- The system reboots without user intervention.
- MMCW restarts automatically and runs the MM Application Setup, installing all MM services.
- After another reboot and auto log on, the MMCW continues the system configuration, displaying informational messages as each component, such as dialogic drivers or remote access is configured.

2. When MAS configuration is complete, the progress bar stretches across the window and the **Next** button becomes active. Click **Next**.
3. On the **Modular Messaging Wizard Completed** screen, click **Finish**.
4. To complete setup of the Modular Messaging server, proceed to Completing server setup on page 88.

Completing server setup

To complete setup of the server complete the following tasks as necessary:

- Administering anti-virus software on page 89
- Installing software updates on page 90
- Updating Microsoft Windows on page 90
- Changing LAN settings on page 91
- Entering RAS IP addresses on each MAS on page 92
- Configuring port boards on page 93
- Continuing the installation on page 94

When you have completed the procedures required for your system, proceed to Chapter 8: Configuring the voice mail system on page 119

Administering anti-virus software

Avaya strongly recommends that anti-virus software be installed on any Microsoft Windows computer that runs Avaya Modular Messaging software. The type of virus-checking software used and the method of installation depends on customer requirements and the local implementation.

Guidelines for using anti-virus software on a computer that is running Avaya Modular Messaging software include:

- Consider the impact that anti-virus scanning has on the performance of the Avaya messaging servers. Avaya recommends the use of “on-demand” scanning, where scans are run at scheduled intervals. Avoid using a message-scanning method that could drastically impact the performance of the Avaya servers. For example, do *not* use “on-access” scanning, where scans are run whenever a file is accessed.

  Note:

  Some anti-virus software applications default to scan on startup. Disable this feature, or it increases the time that it takes a system to come back online after a reboot.

- Avaya recommends administering the anti-virus software as follows:
  - Scan the hard disk at least once per week during off peak hours. Avaya recommends a daily scan. You can run scans on multiple Modular Messaging servers at the same time. However, avoid scheduling the anti-virus scan at the same time as when a scheduled backup occurs on the MAS.
  - Schedule virus definition updates to occur automatically at least once per week. The updates must occur before the next scheduled scan time to ensure that the latest data (DAT) files are used during the scan. However, do not schedule updates to occur during a virus scan.
  - If the anti-virus software locates a virus, it should first attempt to clean the file. If that fails, the software should move the file to a different directory.

Information about anti-virus interoperability of Avaya Modular Messaging software with various anti-virus products and performance testing is available. The information addresses security issues such as reporting concerns and receiving notifications. For more information, see *Anti-Virus Software on Microsoft Windows-based Avaya Messaging Products.*

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an installation or upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch (hot fix).

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

   Note:

   If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Updating Microsoft Windows

A new Avaya MAS contains the most current Microsoft Windows software at the time it is shipped. After installation, you must install the latest Microsoft Windows system updates, security patches, and hot fixes to protect the operating system from known security weaknesses. Check with the appropriate Windows administrator for the software update procedures to use at this site.

Note:

Avaya technical support representatives must follow their specified internal procedures for verifying the software that is installed. If required, they must update the software with the latest patches as instructed.

Changing LAN settings

Changing default LAN name and Power Management settings

Rename the corporate LAN connection for this MAS so that it is easier to identify and change the LAN power management settings. Complete the following steps:

1. . Click **Start > Settings > Network Connections**.

   The **Network Connections** window opens.

2. Identify the corporate LAN on this server. This LAN has device name **Intel(R) PRO/1000 CT Network Connection**. The corporate LAN is labelled **Local Area Connection**.

   Rename this item as follows:

   a. Right-click the text **Local Area Connection** and select **Rename**.

   b. Change the name to **Corporate LAN**.

3. Change the Power Management settings for the LAN connection:

   a. Right-click the LAN connection and select **Properties**.

   b. Click **Configure**.

   c. Click the **Power Management** tab.

   d. Deselect the **Allow the computer to turn off this device to save power** checkbox.

4. Close any LAN-connection windows.

Disabling the private LAN

The Modular Messaging private LAN is not used with Microsoft Exchange configurations. Disable the private LAN by completing the following steps:

1. In the **Network Connections** window highlight either **Intel(R) PRO100M Network Connection**, or **Intel(R) 100+ PCI Adapter,** whichever appears in the window. Right-click your selection. From the drop-down list, select **disable**.
2. In the **Network Connections** window, from the toolbar menu, select **Advanced** > **Advanced Settings**. Verify that the corporate LAN is listed at the top of the list of connections. If not, highlight the name of the corporate LAN and use the arrows to move it up in the list. When finished, close the **Advanced Settings** and **Network Connections** windows.

Entering RAS IP addresses on each MAS

The Avaya Modular Messaging Configuration Wizard automatically sets up inbound remote access to each MAS modem. You must edit the preprogrammed RAS IP addresses to use the correct addresses that the technical support organization requires.

CAUTION:

If Avaya is to support this system, you must enter the RAS IP addresses assigned by the Avaya Automatic Registration Tool (ART). Otherwise remote access for Avaya technical support will not work.

Complete this task for each MAS.

1. Double-click the **Configure** icon on the desktop.
2. In the left pane of the **Configure** window, expand **Routing and Remote Access**.
3. Expand the server name.
4. Verify authentication:
   a. Highlight **Remote Access Policies**.
   b. From the right pane, double-click **Connections to Microsoft routing and remote access**.
   c. Click the **Edit Profile..** button.
   d. Select the **Authentication** tab.
   e. Verify that all checkboxes (except for the **Unauthenticated access** checkbox) are selected. If necessary, deselect the **Unauthenticated access** checkbox.
   f. Click **OK**.
   g. If a dialog box appears, click **No**.
   h. Click **OK** again.
5. Right-click the server name from the pop-up menu and select **Properties**.
6. Set up PAP security:
   a. In the **Local Properties** window, click the **Security** tab.
   b. Click **Authentication Methods...**
   c. Select **Unencrypted Password (PAP)**.
   d. Verify that all other checkboxes are blank. If necessary, deselect the checkboxes.
   e. Click **OK**.
7. Set up a static IP address pool as follows:
   a. In the local **Properties** window, click the **IP** tab.
   b. Under **IP address assignment**, select **Static address pool**.

c. Add or edit the address range as follows:

- If the window shows an incorrect IP address range, select the displayed range and click **Edit**.

CAUTION:

If Avaya will support this server, do not use the preprogrammed IP addresses. You must Edit and Remove these addresses for remote access to work.

- If no address range is already entered, click **Add**.

d. In the **Address Range** window, enter the correct start and end IP addresses for this server.

e. Verify that the number of addresses is **2**.

f. Click **OK**.

g. For the **Adapter** field, select **Allow RAS to select adapter**.

h. Click **OK** to close the **Properties** window.

i. If a dialog box appears, click **No**.

8. Close the **Configure** window.

Configuring port boards

The Avaya Modular Messaging Configuration Wizard automatically configures some integrations. The switch integrations may or may not have Dialogic port boards.

Switch integrations without Dialogic port boards

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO NOT** have Dialogic port boards:

- Avaya CM (IP SIP)
- Avaya (IP H323)

Switch integrations with Dialogic port boards

Important:

If this MAS does not contain Dialogic port boards, skip the rest of this section and continue with Chapter 8: Configuring the voice mail system on page 119.

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO** have Dialogic port boards:

- Avaya (QSIG)

- Cisco (QSIG)
- Nortel NT M-1 (QSIG)
- Siemens Hipath (QSIG)

If this MAS does *not* use one of the automatic-configuration switch integrations, you must configure the Dialogic port boards manually.

1. Continue with Appendix C: Configuring and testing port boards on page 295.
2. After you configure and test the Dialogic port boards, continue with Configuring the voice mail system on page 119.

Continuing the installation

When you have finished installing the MAS, you must continue with configuring the voice mail system. See Configuring the voice mail system on page 119.

Chapter 7: Configuring a customer-provided MAS

This chapter applies only to a customer-provided equipment (CPE) MAS installation. It describes how to set up a customer-provided server to support Avaya Modular Messaging software.

If you are installing an Avaya S3500 MAS, do not use the procedures in this chapter. See Chapter 6: Configuring a new Avaya MAS on page 79.

If you are installing a supplementary server, see Appendix E: Configuring a supplementary server on page 313.

If you are installing a Modular Messaging system with Exchange 2007 servers, see Appendix J: Installing Modular Messaging with Exchange 2007 on page 363.

CAUTION:

Before you can proceed with the tasks described in this section, a system administrator must have successfully completed the tasks in Chapter 4: Preparing to install Modular Messaging software on page 53.

Topics in this chapter include:

- Overview on page 96
- Preparing the CPE server on page 98
- Setting up the server for Modular Messaging on page 98
- Adding Modular Messaging accounts to the local administrators group on page 102
- Installing Windows prerequisite software on page 103
- Installing and Running the Modular Messaging Configuration Wizard on page 106
- Completing server setup on page 111

Overview

You can use a customer-provided equipment (CPE) server to support Modular Messaging software. However, you must first configure the server to support Modular Messaging in an Microsoft Exchange environment. To do this, you must complete the following tasks described in this section:

- Prepare the CPE server by configuring a network card and running disk checks. See Preparing the CPE server on page 98.
- Join the server to the Windows domain that will contain the Modular Messaging system. See Joining the Windows domain on page 99
- Adjust the server system values to accommodate Modular Messaging. See Adjusting system values on page 100.
- Add the Modular Messaging customer and technical support accounts to the local administrators group. See Adding Modular Messaging accounts to the local administrators group on page 102.
- Install and enable required Microsoft Windows software and services. See Installing Windows prerequisite software on page 103.

After completing these steps, the majority of the Modular Messaging server configuration is completed by the Modular Messaging Configuration Wizard (MMCW). The MMCW configures the MAS from information in a site-specific configuration file called a Data Collection Tool (DCT) data file (*.mmdct). This file is created using the DCT executable file (MMDCT.exe). Typically the DCT data file (*.mmdct) is created prior to the installation by the project manager, customer administrator and other experts responsible for the installation.

See the DCT online help system or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure and specifications for creating a DCT data file.

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe).

To successfully set up a customer-provided server, you need:

- A complete and valid DCT data file.
- All required hardware installed as described in Chapter 3: Installing Dialogic port boards in a customer-provided MAS on page 41.
- A printout of the customer-provided MAS installation checklist. See New Modular Messaging installation on a customer-provided MAS on page 261. Check off steps as you complete them to track your progress.
- The *Avaya Modular Messaging Messaging Application Server Software* DVD.

- The following software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - Avaya software updates that are required to bring the Modular Messaging software up to date after an installation. Download this software to a USB storage device. For more information about downloading the updates, see Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support Web site to a USB storage device. Download the executable file to the same USB storage device as the DCT data file.
- Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.) When installing a system with Exchange 2007 mail servers, you will require the 32-bit version of the Exchange 2007 Management Tools and additional software downloads. For more information, see Installing third-party software on page 372.
- Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.) When installing a system with Exchange 2007 mail servers, you will require Microsoft Exchange 2007 Service Pack 1.
- Microsoft Windows 2003 Service Pack 2, if not previously installed.

Preparing the CPE server

Complete the following procedures to set up this customer-provided equipment (CPE) server to support Avaya Modular Messaging services.

Configuring the network card

For each customer-provided server, you must configure a network card to support a corporate LAN connection.

Assign IP addresses and other TCP/IP properties for the corporate LAN interface that this MAS will use.

Running recommended disk checks

Avaya recommends that the hard disk drive in the server be maintained to prevent possible problems. The system administrator must run the following on a regular basis:

- Disk Defragmenter system tool
- **chkdsk** command

If this server is in service and has not been recently maintained, run the two recommended procedures.

Disabling hyper-threading for IP H.323

Important:

If you have CPE servers that support hyper-threading and that use IP H.323 switch integration, complete this task BEFORE doing anything with the Avaya Modular Messaging Configuration wizard.

Follow hardware-specific requirements to disable hyper-threading.

Setting up the server for Modular Messaging

You must set up the customer-provided server to support Modular Messaging software as described in this section.

Joining the Windows domain

You must manually add this server to the appropriate Windows domain for this Modular Messaging system:

1. Switch the monitor to show this server.

   Use whatever method is required at this site to have the monitor display the MAS that you are administering.

2. Log on to the local administrator account for this server:

   a. In the **Log On to Windows** window, change the user name to the local administrator account name, such as *mas1-admin*.

   b. Enter the password for this account.

   c. If the **Log in to:** field shows a different domain, use the drop-down box to select this server.

   d. Press **Enter** or click **OK**.

3. Right-click **My Computer** and select **Properties**.

4. In the **System Properties** window:

   a. Click the **Computer Name** tab.

   b. Click **Change**.

5. In the **Computer Name Changes** window:

   a. Under **Member of**, select **Domain**.

   b. Type the name for the corporate Windows domain.

   Note:

   Depending on the local configuration, you might need to enter the fully qualified name here.

   c. Click **OK**.

   d. Another **Computer Name Changes** window might open. If it does:

      1. Enter the name of an account that has permissions to join the Windows domain. You usually use the Modular Messaging customer account, if the domain administrator has set up the account as described in Creating Modular Messaging customer and technical support accounts on page 55. The account name must be in the format ***domain\account name***, such as *domain1\mmacct*.

      2. Enter the password for this account. Click **OK**.

6. If a Welcome to the domain message is displayed, click **OK**.

7. When prompted to restart, click **OK**.

8. Click **OK** to close the **System Properties** window.

9. If you are prompted to restart the server, click **Yes**.

Adjusting system values

You must adjust some default values on the server to support Modular Messaging. Verify the following settings, and adjust them if needed:

Note:

Modular Messaging Release 4.0 configures the server to use a 3GB address space. If you require additional information about this change, contact your Avaya support organization.

1. Adjust the values for the Event Viewer:
   a. Right-click **My Computer** and select **Manage**.
   b. In the **Computer Management** window, in the left pane, expand **Event Viewer**.
   c. Adjust the application log values:
      1. Right-click **Application** and select **Properties**.
      2. On the **General** tab of the **Application Properties** window, under **Log size**, adjust the following values:
         - Avaya recommends that you set **Maximum log size** to at least 102400 KB.
         - Select **Overwrite events as needed**.
      3. Click **OK** to close this window.
   d. Adjust the system log values:
      1. In the right pane, right-click **System** and select **Properties**.
      2. On the **General** tab of the **System Properties** window, under **Log size**, adjust the following values:
         - Set **Maximum log size** to at least 4032 KB.
         - Select **Overwrite events as needed**.
      3. Click **OK** to close this window.
   e. Close the **Computer Management** window.
2. Right-click **Start** and select **Explore**. Adjust File and Printer Sharing properties:
   a. Right-click **My Network Places** and select **Properties**.
   b. Right-click **Local Area Connection** and click **Properties**.
   c. Select **File and Printer Sharing for Microsoft Networks** in the list box and click **Properties**.
   d. On the **Server Optimization** tab, select **Maximize data throughput for network applications**.
   e. Click **OK** to close this window.

f. Close the **Local Area Connection Properties** and **Network Connections** windows.

3. Adjust the Windows 2003 Server operating system values:
   a. Right-click **My Computer** and select **Properties**.
   b. Click the **Advanced** tab.
   c. Under **Performance**, click **Settings**.
   d. In the **Performance Options** window, click the **Advanced** tab.
      1. Under **Processor Scheduling**, select **Background services**.
      2. Under **Virtual memory**, click **Change**.
      3. The **Initial size** and **Maximum size** fields for the **Paging file size for selected drive** value vary by machine. Tailor these fields by adding 11 to the default value that is displayed as follows:
         - Under **Paging file size for selected drive**, set both the **Initial size** and **Maximum size** to the default value plus **11** MB.
         - Click **Set**.
         - Click **OK** to close this window.
      4. Click **OK** to close the **Performance Options** window.
   e. On the **Advanced** tab of the **System Properties** window, under **Startup and Recovery**, click **Settings**.
   f. In the **Startup and Recovery** window, under **System Failure**, verify that the checkbox to **Automatically restart** is checked. Click **OK**.
   g. Click **OK** to close this window.
4. Restart the server before continuing:
   - If you are prompted to restart the server, click **Yes**.
   - If the system does not prompt you, manually restart the server now. For example:
     a. Press **Ctrl** + **Alt** + **Del**, and then click **Shut Down**.
     b. Select **Restart** from the drop-down list and click **OK**.

   The server restarts.

Adding Modular Messaging accounts to the local administrators group

For the accounts to work correctly, you must add the Modular Messaging customer account and the technical support account to the local administrators group:

1. Log on to the local administrator account for this server. For details, see Joining the Windows domain on page 99.
2. Click **Start** > **Control Panel**.
3. Double-click **Administrative Tools**.
4. Double-click **Computer Management**.
5. Under **System Tools**, expand **Local Users and Groups**, and then click **Groups**.
6. Double-click the **Administrators** group in the right pane.
7. In the **Administrators Properties** window, click **Add**.
8. In the **Enter object names to select** pane, enter the names of the customer account and technical support remote access account. The account names must be in the format ***domain\account name*** (such as *domain1\mmacct*).

   Note:

   You can search for the accounts by entering a portion of the name in the **Enter the object names to select** pane, and clicking **Check Names**.

   After names are entered, click **OK**.
9. Click **OK** to close this window.
10. Close the **Computer Management** and **Administrative Tools** windows.

Installing Windows prerequisite software

Microsoft Windows Service Pack 2 (SP2) and specific Windows services must be installed on each customer-provided MAS that will handle voice calls.

Note:

You must install the required Windows software before installing the required Microsoft Exchange software in the next section.

Installing and enabling required Microsoft Windows services

You must install and enable the Microsoft Windows services described in this section on this MAS.

To install and enable all required Windows services:

1. Log on to an account that has permissions to install software on this computer, such as the local administrator account.
2. Remove any external hard drives from the MAS.
3. Insert the Microsoft Windows Operating System CD in the MAS drive.
4. Click **Start** > **Settings** > **Control Panel** > **Add or Remove Programs**.
5. In the **Add or Remove Programs** window, in the left column, click **Add/Remove Windows Components**.
6. To install Microsoft Windows services:
   a. In the **Windows Components Wizard** window, highlight **Application Server**. Click **Details**.
   b. Verify that the following items are checked:
      - Application Server Console
      - ASP.NET
      - Enable COM+ access
      - Message Queuing

      The **Internet Information Services (IIS)** checkbox becomes checked.
   c. Highlight **Internet Information Services (IIS)**. Click **Details**. Verify that the following items are checked:
      - Common Files
      - Internet Information Services Manager
      - World Wide Web Server

Note:

When you check these items, IIS gets checked automatically.

The Internet Information Services items listed above are always required.

If you plan to install the Microsoft Exchange 2003 System Management Tools, click the checkboxes for **NNTP Service** and **SMTP Service**. The SMTP Service automatically selects other required components as needed.

If you plan to install the Microsoft Exchange 2007 Management Tools, do *not* install NNTP Service and SMTP Service.

d. In the same window, highlight **World Wide Web Server** and click **Details**. Verify that World Wide Web Services is checked.

e. Close this and the next two windows.

7. Install the Windows services to support SNMP:

   a. in the **Windows Components Wizard** window, highlight **Management and Monitoring Tools** and click **Details**.

   b. Click the checkbox to select **Simple Network Management Protocol** and click **OK**.

8. Install the Windows Fax Service, in the **Windows Components Wizard** window:

   a. Check **Fax Services**. Click **Next**.

   b. Select **Do Not Share Fax Printer** and click **Next**.

9. Complete the wizard to install the selected services.

   Note:

   If the required services were already installed (all the appropriate boxes were checked), click **Cancel** to close the wizard.

10. When the installation is complete, close the **Add or Remove Programs** window.

11. After the software is installed, enable each installed service as follows:

    a. Right-click **My Computer** and select **Manage**.

    b. In the left (Tree) pane, expand **Services and Applications**, and click **Services**.

    c. In the right pane, scroll down to the first new service that you installed. Double-click the service.

    d. In the **Properties** window:

       1. On the **General** tab, set the **Startup type** to **Automatic**. Click **Apply**.

       2. Under **Service status**, click **Start**.

       3. Wait for service to start, and then click **OK** to close this window.

    e. Repeat Steps c and d to enable each of the services you installed. Note that only a subset of these services might be present on a particular MAS.

12. When all services are enabled, close all open windows.

Installing Microsoft Windows Server 2003 Service Pack 2

SP2 might already be installed on this computer. To verify the service pack version and install an update if needed:

1. Verify the Microsoft Windows service pack version that is installed:
   a. Right-click **My Computer** and select **Explore**.
   b. In Windows Explorer, click **Help** > **About Windows**.
   c. In the version description, verify that Service Pack 2 is installed.
   d. Click **OK** to close this window.
2. If needed, install Microsoft Windows Service Pack 2 on this MAS. Check with the Windows administrator for the appropriate software update procedures to use at this site.

   Note:

   After the required Windows services are installed and enabled and SP2 is verified, apply any Windows system updates, security patches, and hot fixes. Check with the Windows administrator for the appropriate software update procedures to use at this site.

Installing and Running the Modular Messaging Configuration Wizard

The Modular Messaging Configuration Wizard controls the next steps in the installation process. In installing and running the Modular Messaging Configuration Wizard you must complete the following procedures:

1. Installing and launching the Modular Messaging Configuration Wizard on page 106
2. Selecting a DCT data file on page 107
3. Installing third-party software on page 109
4. Completing the MMCW Configuration on page 110

Installation procedures for Dialogic drivers and the RealSpeak engine differ if you have chosen to install modular messaging to a drive other than the default C: drive. Differences are described in each procedure. The drive location for the Modular Messaging installation is set in the DCT data file.

Installing and launching the Modular Messaging Configuration Wizard

Be sure that the DCT data file (*.mmdct) is accessible to the MAS that you are installing. In most cases this means inserting a USB storage device with the file into a USB port on the server. This device should also hold the latest DCT executable file (MMDCT.exe).

Complete the following steps to install the Modular Messaging Configuration Wizard:

1. Verifying that the USB storage device with the DCT data file (*.mmdct) and most recent DCT executable file (MMDCT.exe) is inserted in the USB port.
2. Turn the server on.
3. Log on to the MAS using the Modular Messaging customer account created in Creating Modular Messaging customer and technical support accounts on page 55.
4. Copy the DCT data file from the USB storage device to the C:\ directory. Some servers will not recognize a USB drive after a system restart.To copy the DCT data file to the server:
   a. Navigate to the USB drive, **Removable Disk (_:)**.
   b. Right-click the most current DCT data file for this site, such as *sitefile.mmdct*.
   c. Copy the DCT data file to the C:\ directory.
   d. Verify that the correct DCT data file is listed in the C:\ directory.
5. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the MAS DVD drive.

6. On the DVD drive, navigate to the Install\MISCM directory. Double-click the **MMConfigurationWizard.msi** file. Check the checkbox that launches the MMCW. This installs the wizard to the C:\Program Files\Avaya Modular Messaging\Install\MISCM directory.

Selecting a DCT data file

Complete the following steps to configure the MAS from the DCT data file:

1. On the Modular Messaging Welcome screen, click **Next**.
2. On the **Locate Configuration Data** screen, highlight the DCT data file for this installation. If the file is not displayed, click **Browse** and browse to the directory where the DCT data file is stored. By default, the Modular Messaging Configuration Wizard searches the hard drive for all files with the file type **.mmdct*.
3. After selecting the DCT data file that was created for this installation, click **Next**. You are prompted to verify the file selection. Click **Yes**, to select the file.
4. The DCT executable file (MMDCT.exe) launches with the DCT data file that you selected. Review and make any necessary changes to the data file.
5. On the last screen, click **complete** and then save the file again if you have made any changes.
6. Click **complete** to continue.
7. On the **Messaging Application Server Number** screen, in the **MAS Number** field, select the number of the MAS that you are installing and click **Next**.

   The MMCW proceeds with the installation of the specified MAS based on information in the DCT data file. The progress of the installation is displayed by informational messages.
8. The MMCW launches the dialogic driver installation for all switch integrations, except IP H.323 or IP SIP. When the MMCW launches the dialogic driver installation wizard, if you are installing Modular Messaging to the default C: drive, complete the wizard by accepting all default values. If you are installing Modular Messaging on an alternate drive, complete the following steps:

   a. Move through the dialogic driver installation wizard until you see the **Choose Destination Location** screen.

   b. On the **Choose Destination Location** screen click **Browse**.

   c. On the **Choose Folder** screen in the **Path:** field, change the letter of the drive to match the drive where Modular Messaging is being installed. This drive is set in the DCT data file. Do not browse to find the new location. The path will read ***<drive letter>*:\Program Files\Dialogic.**

   d. Click **Next** and continue to accept default values to complete the wizard.

9. If the **Found New Hardware** launches, complete the wizard to install the Dialogic driver software:
   a. At the prompt to use Windows update, select **No, not at this time** and click **Next**.
   b. At the prompt to choose the software, select **Install the software automatically** and click **Next**.
   c. In the **Security Alert - Driver Installation** window, select **Yes**.
   d. After the board is set up, click **Finish**.
   e. Repeat these steps for all Dialogic boards on this MAS.
10. When prompted on the **Setup Complete** screen, select **No, I will restart my computer later**, and click **Finish**.
11. **Cancel** out of the **remote shutdown** dialog window.

    The installation continues. After a while an **Open** window appears with **InstallRSEngine.bat** displayed in the **File name** field.
12. When you receive the error message that the **<drive>:\Realspeak** location is not available:
    a. Insert disk 2 of the *Avaya Modular Messaging Messaging Application Server Software* media into the DVD drive to install the RealSpeak engine and languages.
    b. Click **OK** to close the dialog box.
    c. In the **Look In** field, choose the DVD drive and double-click the **Realspeak** directory.
    d. Click **Open**.

    The **RealSpeak 4.0 InstallShield** wizard starts.
13. If you are installing Modular Messaging to the default C: drive, complete the wizard by accepting all default values. If you are installing Modular Messaging to an alternate drive, complete the following steps:
    a. Move through the RealSpeak installation wizard accepting defaults until you see the **Custom Setup** screen.
    b. On the **Custom Setup** screen, highlight RealSpeak Common Components. Click the arrow next to **RealSpeak Common Components** and select **This feature and all subfeatures will be installed on local hard drive**. Click **Change**.
    c. On the **Change Current Destination Folder** screen, in the **Folder name:** field change the letter of the drive to match the drive where Modular Messaging is being installed. This drive is set in the DCT data file. Do not browse to find the new location. The path will read ***<drive letter>*:\Program Files\ScanSoft\RealSpeak 4.0**.
    d. Click **OK** and continue to accept default values to complete the wizard.
14. After the RealSpeak engine is installed, at the prompt to reboot the system, choose to reboot.
15. After the system reboots, log on using the customer account, for example *mmacct*. The RealSpeak languages install.
16. Continue with installing third-party software.

Installing third-party software

Note:

If you are installing Modular Messaging with an Exchange 2007 peer mail server, before you proceed with the installation, see Installing third-party software on page 372.

When installing third-party software, complete the following steps:

- Update Windows Internet Explorer 7 security — Required only if the MAS has been upgraded to Internet Explorer 7 and you are installing third-party software from a mapped network drive.
- Install Exchange System Management Tools
- Install Exchange Server 2003 Service Pack 2 (Or, Exchange Server 2000 Service Pack 3 for Exchange 2000 System Management Tools.)
- Install Anti-virus software

Updating Windows Internet Explorer 7 security

If you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.
3. If a window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Installing Exchange Management Tools

Note:

If you are installing Modular Messaging with an Exchange 2007 peer mail server, before proceeding, see Installing third-party software on page 372.

The Microsoft Exchange 2003 System Management Tools or Microsoft Exchange 2007 Management Tools must be installed on any MAS that will run any of the following services:

- Messaging Application Server
- Call Me Server
- Message Waiting Indicator (MWI) Server.

Complete the following steps to install the management tools:

1. Insert the customer-provided Microsoft Exchange 2003 Server media in the MAS drive.
2. Install the management tools by completing the Microsoft Exchange Installation Wizard.
3. If you receive a compatibility warning, click **Continue**.
4. For details about this procedure, see the Microsoft Exchange documentation.

Installing Exchange Server Service Pack and anti-virus software

Complete the following steps:

1. Follow site-specific procedures to install Exchange Server 2003 Service Pack 2. (For Microsoft Exchange 2000 System Management Tools, install Exchange Server 2000 Service Pack 3 instead.)
2. Install anti-virus software that is specified by your local site requirements and implementation. Avaya strongly recommends that you install anti-virus software on any Microsoft Windows computer that runs Avaya Modular Messaging software. For more information about anti-virus software on the MAS, see Administering anti-virus software on page 116.

Completing the MMCW Configuration

After third-party software is installed, continue with the following steps to complete the configuration

1. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) is still in the MAS DVD drive.
2. In the third-party dialog box, click **Continue with installation after installing 3rd party software**. The MMCW resumes with the following sequence of events:
   - The **Setup** screen displays, followed by the **System Upgrade** screen.

- The system reboots without user intervention.
- MMCW restarts automatically and runs the MM Application Setup, installing all MM services.
- After another reboot and auto log on, the MMCW continues the system configuration, displaying informational messages as each component, such as dialogic drives or remote access is configured.

3. When MAS configuration is complete, the progress bar stretches across the window and the **Next** button becomes active. Click **Next**.
4. On the **Modular Messaging Wizard Completed** screen, click **Finish**.
5. To complete setup of the Modular Messaging server, proceed to Completing server setup on page 111.

Completing server setup

To complete setup of the server complete the following task as necessary:

- Installing software updates on page 112
- Updating Microsoft Windows on page 112
- Changing default LAN name and Power Management settings on page 112
- Entering RAS IP addresses on each MAS on page 113
- Setting logging location on page 114
- Administering anti-virus software on page 116
- Configuring port boards on page 117
- Continuing the installation on page 117

When you have completed the procedures required for your system, proceed to Chapter 8: Configuring the voice mail system on page 119

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an installation or upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch (hot fix).

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

   Note:

   If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Updating Microsoft Windows

After installation, you must install the latest Microsoft Windows system updates, security patches, and hot fixes to protect the operating system from known security weaknesses. Check with the appropriate Windows administrator for the software update procedures to use at this site.

Changing default LAN name and Power Management settings

Rename the corporate LAN connection for this MAS so that it is easier to identify. To rename the LAN entry:

1. . Click **Start > Settings > Network Connections**.

   The **Network Connections** window opens.

2. Identify the corporate LAN on this server. The corporate LAN is labelled **Local Area Connection**.

   Rename this item as follows:

   a. Right-click the text **Local Area Connection** and select **Rename**.

   b. Change the name to **Corporate LAN**.

3. Change the Power Management settings for the LAN connection:
   a. Right-click the LAN connection and select **Properties**.
   b. Click **Configure**.
   c. Click the **Power Management** tab.
   d. Deselect the **Allow the computer to turn off this device to save power** checkbox.
4. Close any LAN-connection windows.

Entering RAS IP addresses on each MAS

Remote access allows technical support staff to dial into a system to correct problems and perform routine maintenance. You must provide a method for remote services to access the system. Follow site-specific requirements to set up remote access or complete the following procedure.

The Avaya Modular Messaging Configuration Wizard automatically sets up inbound remote access to each MAS modem. You must edit the preprogrammed RAS IP addresses to use the correct addresses that the technical support organization requires.

CAUTION:

If Avaya is to support this system, you must enter the RAS IP addresses assigned by the Avaya Automatic Registration Tool (ART). Otherwise remote access for Avaya technical support will not work.

To set up IP addresses on each MAS to allow remote access:

1. Double-click the **Configure** icon on the desktop.
2. In the left pane, expand **Routing and Remote Access**.
3. Expand the server name.
4. Verify authentication:
   a. Highlight **Remote Access Policies**.
   b. From the right pane, double-click **Connections to Microsoft routing and remote access**.
   c. Click the **Edit Profile..** button.
   d. Select the **Authentication** tab.
   e. Verify that all checkboxes (except for the **Unauthenticated access** checkbox) are selected. If necessary, deselect the **Unauthenticated access** checkbox.
   f. Click **OK**.
   g. If a dialog box appears, click **No**.
   h. Click **OK** again.

5. Right-click the server name from the pop-up menu and select **Properties**.
6. Set up PAP security:
   a. In the **Local Properties** window, click the **Security** tab.
   b. Click **Authentication Methods...**
   c. Select **Unencrypted Password (PAP)**.
   d. Verify that all other checkboxes are blank. If necessary, deselect the checkboxes.
   e. Click **OK**.
7. Set up a static IP address pool as follows:
   a. In the **Local Properties** window, click the **IP** tab.
   b. Under **IP address assignment**, select **Static address pool**.
   c. Add or edit the address range as follows:
      - If the window shows an incorrect IP address range, select the displayed range and click **Edit**.

      CAUTION:
      If Avaya will support this server, do not use the preprogrammed IP addresses. You must Edit and Remove these addresses for remote access to work.

      - If no address range is already entered, click **Add**.
   d. In the **Address Range** window, enter the correct start and end IP addresses for this server.
   e. Verify that the number of addresses is **2**.
   f. Click **OK**.
   g. For the **Adapter** field, select **Allow RAS to select adapter**.
   h. Click **OK** to close the properties window.
   i. If a dialog box appears, click **No**.
8. Close the **Configure** window.

Setting logging location

CAUTION:
You must have adequate space on the drive where your logs are located. If you do not, your system may fail to operate correctly. Check the location where your system is recording logs to be sure you don't overrun your allotted space.

You may want to change the default location for recording logs if you do not have adequate space on the default C: drive location. Likewise, if you installed Modular Messaging to a drive

other than the default C: drive, the logging location is not automatically changed. In this case you may want to change the location for recording logs to the same drive as the software installation.

To change the location for recording logs, complete the following steps:

1. Navigate to the following location on the drive where Modular Messaging was installed: ***<drive letter>*:\Avaya_Support\Tools**
2. Double-click the **MM_Logging.exe** file.

   The Modular Messaging **Verbose Logging** Window opens.
3. Complete the following steps for each type of log displayed at the top of the screen with the exception of the **Client**.

   a. Click the log-type button.

   b. In the **Folder for Log Files:** field, edit the drive letter to the drive where you want logs stored. If you have installed Modular Messaging to an alternate drive, edit the field to show the drive where Modular Messaging was installed.

   c. Click **Apply** at the bottom of the screen.
4. When the log location has been changed for all log types, click **Close** at the bottom of the screen.

The MM Debug Log Viewer should be set up to open log files automatically after installation. If for some reason this association is not made or it becomes changed, do the following manual setup.

To manually set up MM Debug Log Viewer:

1. From the desktop, open **My Documents** (or any Windows Explorer window).
2. Click **Tools > Folder Options > File Types**.
3. Is LOG4 listed in the extensions list?
   - If YES, skip to step 7.
   - If NO, continue with step 4.
4. Click **New**.
5. In the **Create New Extension** box, type **log4**. Click **OK**.
6. In the extensions list, at the top, highlight **LOG4**. Click **Change**.
7. Click **Select the program from a list**.
8. In the **Open With** window, highlight **MM Debug Log Viewer**. If that selection is not present, click **Browse** and navigate to and select C:\AVAYA_Support\Tools\LogViewer\MMLogViewer.exe.
9. Click **OK**.
10. Close all windows.

Administering anti-virus software

Avaya strongly recommends that anti-virus software be installed on any Microsoft Windows computer that runs Avaya Modular Messaging software. The type of virus-checking software used and the method of installation depends on customer requirements and the local implementation.

Guidelines for using anti-virus software on a computer that is running Avaya Modular Messaging software include:

- Consider the impact that anti-virus scanning has on the performance of the Avaya messaging servers. Avaya recommends the use of “on-demand” scanning, where scans are run at scheduled intervals. Avoid using a message-scanning method that could drastically impact the performance of the Avaya servers. For example, do *not* use “on-access” scanning, where scans are run whenever a file is accessed.

  Note:

  Some anti-virus software applications default to scan on startup. Disable this feature, or it increases the time that it takes a system to come back online after a reboot.

- Avaya recommends administering the anti-virus software as follows:
  - Scan the hard disk at least once per week during off peak hours. Avaya recommends a daily scan. You can run scans on multiple Modular Messaging servers at the same time. However, avoid scheduling the anti-virus scan at the same time as when a scheduled backup occurs on the MAS.
  - Schedule virus definition updates to occur automatically at least once per week. The updates must occur before the next scheduled scan time to ensure that the latest data (DAT) files are used during the scan. However, do not schedule updates to occur during a virus scan.
  - If the anti-virus software locates a virus, it should first attempt to clean the file. If that fails, the software should move the file to a different directory.

Information about anti-virus interoperability of Avaya Modular Messaging software with various anti-virus products and performance testing is available. The information addresses security issues such as reporting concerns and receiving notifications. For more information, see *Anti-Virus Software on Microsoft Windows-based Avaya Messaging Products.*

Configuring port boards

The Avaya Modular Messaging Configuration Wizard automatically configures some integrations. The switch integrations may or may not have Dialogic port boards.

Switch integrations without Dialogic port boards

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO NOT** have Dialogic port boards:

- Avaya CM (IP SIP)
- Avaya (IP H323)

Switch integrations with Dialogic port boards

Important:
If this MAS does not contain Dialogic port boards, skip the rest of this section and continue with Chapter 8: Configuring the voice mail system on page 119.

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO** have Dialogic port boards:

- Avaya (QSIG)
- Cisco (QSIG)
- Nortel NT M-1 (QSIG)
- Siemens Hipath (QSIG)

If this MAS does *not* use one of the automatic-configuration switch integrations, you must configure the Dialogic port boards manually.

1. Continue with Appendix C: Configuring and testing port boards on page 295.
2. After you configure and test the Dialogic port boards, continue with Chapter 8: Configuring the voice mail system on page 119.

Continuing the installation

When you have finished installing the MAS, you must continue with configuring the voice mail system. See Configuring the voice mail system on page 119.

Chapter 8: Configuring the voice mail system

This chapter describes how to configure the basic Voice Mail System Configuration (VMSC) parameters and complete initial Modular Messaging software administration.

Note:

Before you can successfully complete the tasks described in this section, you must have completed the tasks in Chapter 6: Configuring a new Avaya MAS on page 79, Chapter 7: Configuring a customer-provided MAS on page 95, or Chapter 10: Upgrading Modular Messaging software on an Avaya MAS on page 159. Additionally, if port boards are installed on the MAS and they are not automatically configured by the Modular Messaging Configuration Wizard (MMCW) you must complete the tasks in Appendix C: Configuring and testing port boards on page 295 before configuring the voice mail system. See When to configure port boards on page 295 for a list of automatically configured integrations.

Topics in this chapter include:

- Overview on page 119
- Configuring the voice mail system on page 120
- Verifying basic operation of this MAS on page 141
- Continuing the installation on page 143

Overview

To successfully complete voice mail configuration, you need the configuration notes for this PBX or switch. For instructions on how to obtain these, see Downloading required software and documentation on page 3.

Configuring the voice mail system

Voice mail system configuration falls into three areas:

1. Domain-wide administration that must be done once for each new installation. You usually do these procedures on MAS#1, although you can adjust them later if needed.
2. Administration of domain-wide features that can be installed on any MAS, such as Call Me or Message Waiting Indicator (MWI).
3. Configuration information specific to each MAS, such as INADS alarming or port board administration.

This section describes how to configure key parameters to make the new system operational.

Note:

Complete the tasks in this section to get the Modular Messaging system up and running with the basic required features. After the installation is complete, Avaya encourages customers to tailor the Voice Mail System Configuration (VMSC) parameters for their site. For more information, see the *Avaya Modular Messaging MAS Administration Guide*.

Note:

Although the system prompts you to restart service several times during this procedure, you actually must restart service only as directed in this guide. You restart service before entering the port board extension numbers in Configuring MAS-specific parameters on page 135. You restart service again at the end, when configuration is complete.

CAUTION:

Some procedures in this section can only be completed by using the required configuration notes for this PBX or switch. For instructions on obtaining the configuration notes, see Downloading required software and documentation on page 3.

Configuring required domain-wide features

This section describes how to configure domain-wide features that are required for each Modular Messaging system. Required features are:

- Specifying languages on page 121
- Configuring TUI and access settings on page 121
- Configuring the broadcast mailbox on page 122
- Configuring the PBX type on page 124

- Configuring serviceability settings on page 125
- Obtaining and installing a license on MAS#1 on page 127

Note:

For a new installation, do these procedures on the first MAS that is installed to ensure the configuration of all required system features. However, with the exception of initial PBX administration, most domain-wide features can be configured on any MAS.

Specifying languages

Important:

If you change the language of the Modular Messaging system, be sure to also change the language settings for Windows (see your Windows documentation for this information).

Specify the preferred language for this MAS, if it is running a non-English Windows operating system.

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Languages**.
2. In the **Modular Messaging User Properties** window, select the **Preferred language** from the drop-down list.
3. Click **OK** to close this window.

Configuring TUI and access settings

You must configure the settings in this section once for each Modular Messaging system (VMD).

1. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.

   The **Voice Mail System Configuration** window opens. All MASs present in the messaging system are listed under the voice mail domain.

   Note:

   Do the steps in this section for entries under the voice mail domain, such as *vmdom*. Do *not* click the similar entries for a specific MAS under **Message Application Servers** at this time.

2. Under the voice mail domain name, double-click **Telephone User Interface**.

   a. On the **General** tab, set **Number of Digits in a Mailbox** to match the number of digits in the extension numbers on the customer PBX.

   b. Click the **Class of Service** tab.

   c. Set up classes of service (COS) for subscribers as follows.

1. Select the **COS Number**.
2. Update the **COS Name** to reflect this type of telephone user interface (such as *Aria TUI*, *AUDIX TUI,* or *Serenade TUI*).
3. Select any required features for this COS and TUI.
4. Select the appropriate **TUI type** for this COS (*Aria, AUDIX, or Serenade*).
5. Repeat Steps 1 through 4 to set up multiple COSs. Create at least one class of service for each TUI that will be used at this site.

Note:

To set up a mixed environment of Aria, AUDIX, and Serenade TUIs, just assign the appropriate TUI to each COS.

d. When finished, click **OK**.

e. If the system notifies you that the extension number changes will invalidate all previous mailboxes, click **Yes** to continue.

3. In the Voice Mail System Configuration window, double-click **Audio Encoding**.

a. In the **Audio Encoding** window, change the **Default Audio Encoding Format** to:

- **G.711 µ-Law** (mu-Law) for the United State and Japan
- **G.711 A-Law** for most other countries, especially those in Europe

Note:

The default Microsoft GSM encoding produces smaller files but poorer voice quality. Update the audio encoding to provide better sound quality, especially for IP SIP integrations. G.711 encoding is required to support TTY/TDD devices.

b. Click **OK**.

c. If you changed the audio encoding, a restart box appears. Click **OK**, but you do not have to restart now.

Note:

Although the system prompts you to restart MM Messaging Application Server service several times during this procedure, you actually must restart MM Messaging Application Server service only as directed in this guide. You must restart MM Messaging Application Server service before entering the port board extension numbers in Configuring MAS-specific parameters on page 135. You restart MM Messaging Application Server service again at the end, when configuration is complete.

Configuring the broadcast mailbox

Complete the procedure that applies to your system:

- Configuring the broadcast mailbox with a Microsoft Exchange 2000/2003 System on page 123

- Configuring the broadcast mailbox with a Microsoft Exchange 2007 System on page 123

Configuring the broadcast mailbox with a Microsoft Exchange 2000/2003 System

Complete the following steps to assign a numeric address to the broadcast mailbox. Enter the numeric address you will use to send a message to a broadcast list.

Note:

You must complete this procedure on a machine where you have installed the Modular Messaging Active Directory extensions. For information about installing the Modular Messaging extensions, see Adding the Exchange extensions on page 75.

1. Click **Start** > **Programs** > **Microsoft Exchange**> **Active Directory Users and Computers**.
2. In the **Active Directory Users and Computers** window, highlight the Windows domain used for Modular Messaging.
3. Select **View** and then select **Advanced Features**.
4. In the right-hand pane, double-click **Octel**.
5. In the right-hand pane, double-click the **BDL** group.
6. Select the **Modular Messaging** tab.
7. Type the numeric address for the broadcast mailbox.
8. Click **OK** to close the window.

Complete the following steps to restrict access to the broadcast mailbox. Enter the users with permission to send messages to the broadcast list:

1. In the **Properties window,** select the **Exchange General** tab.
2. In the **Message Restrictions** field, select **Only from**.
3. **Add** the users you want to be able to send messages to the broadcast list.
4. When finished adding users, click **OK** to close the window.

Configuring the broadcast mailbox with a Microsoft Exchange 2007 System

Complete the following steps to assign a numeric address to the broadcast mailbox. Enter the numeric address you will use to send a message to a broadcast list.

Note:

You must complete this procedure on a machine where you have installed the Modular Messaging Active Directory extensions. For information about installing the Modular Messaging extensions, see Adding the Exchange extensions on page 75.

1. Click **Start** > **All Programs**> **Microsoft Exchange Server 2007**> **Exchange Management Console**.
2. In the left panel, select **Recipient Configuration** > **Distribution Group**.

3. In the center panel, right-click the **BDL** group and select **Properties**.
4. In the **Properties** window, select the **E-Mail Addresses** tab.
5. **Add** a **Custom Address**.
6. In the **Custom Address** window in the **E-mail address** field, type the numeric address for the broadcast mailbox. In the **E-mail type** field, type **NUMERIC**.
7. Click **OK** to return to the **Properties** window.

Complete the following steps to restrict access to the broadcast mailbox. Enter the users with permission to send messages to the broadcast list:

1. In the **Properties** window, select the **Mail Flow Settings** tab.
2. Highlight **Message Delivery Restrictions** and click **Properties**.
3. In the **Accept messages from** field, select **Only senders in the following list**.
4. Click **Add** and select the users you want to be able to send messages to the broadcast list.
5. Click **OK** to return to the **Properties** window.

By default broadcast lists are not displayed in the Exchange address list. Optionally, complete the following steps to show the broadcast lists in the Exchange address list.

1. In the **Properties** window, select the **Advanced** tab.
2. Uncheck the **Hide group from Exchange address lists** box and click **OK**.

Configuring the PBX type

You must configure the PBX service settings for each Modular Messaging system using the configuration notes.

1. In the **Voice Mail System Configuration** window, expand the **PBXs** item under the voice mail domain, such as *vmdom*.
2. The Modular Messaging Configuration Wizard automatically configures many settings for the certain switch integrations. Proceed as appropriate:
   - If you are using one of the automatically configured switch types, the appropriate entry is already listed under **PBXs**. Continue with Step 5.
   - If no PBX type is listed, continue with Step 3.
3. Right-click **PBXs** and select **Add New PBX Type**.
   a. For **Telephony Type**, select the type of port board that is installed in this MAS, such as *Dialogic Set Emulation*.
   b. In the PBXs list box, select the type of switch integration that you have, such as *Avaya G3 Set Emulation*.
   c. Click **OK** to close this window.
4. In the **Voice Mail System Configuration** window, expand **PBXs**.

5. Double-click the PBX entry under **PBXs**.
6. Using the configuration notes for this PBX or switch, set up the specific PBX parameters required for this integration of the system.

Configuring serviceability settings

You must set up serviceability (alarming) settings once for each Modular Messaging system.

1. In the **Voice Mail System Configuration** window, click the voice mail domain (VMD)
2. Double-click **Serviceability**.
3. In the **Serviceability - Voice Mail Domain** window:
   a. On the **General** tab, select the type of alarming to be used for the Modular Messaging system:
      - Inactive — No alarm notification sent
      - SNMP — Send alarm traps to an NMS using SNMP
      - INADS — Use the INADS to send alarm notifications to an alarm collection server for analysis and corrective action
      - Internet (Default for new installations) — Relay alarm information through the internet capabilities of the Avaya SPIRIT Agent.

   Note:

   The MAS must have a modem for you to select INADS alarming.

   b. If alarming is activated, enter the unique MAS product ID for this system.

   Note:

   If Avaya is to support this system, you must enter the product ID that the Avaya Automatic Registration Tool (ART) provides.

   c. Unless directed otherwise, you can accept the default values for the following parameters:
      - The conditions for sending an alarm notification
      - The alarm level at which notification is to be sent: minor or major
      - The system behavior for stopping Modular Messaging service
   d. *If you selected SNMP alarming,* click the **SNMP Trap Destinations** tab. Complete the following fields:

   Note:

   For an upgrade, specify the SNMP trap destination and community details that you recorded from the R1.1, R3.0 or R3.1 system in the **SNMP Trap Destinations** tab.

- **IP Address/Host** — Enter the IP address or host name of the trap destination. Type either the IP address or the fully qualified domain name for the NMS in the field. Alternatively, click **Browse** to navigate to and select the correct NMS.
- **Community** — Select a community name. The name is used as security validation in communication between the SNMP client and the SNMP server.
- **Type** — Select the type of trap destination.
- **Port** — Enter the port number.

  For additional information about completing the Serviceability General and SNMP Trap Destination information, see the VMSC — Serviceability topic in the Avaya Modular Messaging documentation.

e. *If you selected SNMP alarming,* complete the following steps to start SNMP service:

1. Restore the **Monitor** window if you minimized it, or double-click the **Monitor** icon on the desktop.
2. Click **Services (Local)** in the left pane, if the item is not already selected.
3. In the right pane, scroll down to **SNMP Trap Service**. Double-click it to open the **Properties** window.
4. On the **General** tab, set the **Startup type** to **Automatic**.
5. Click **Apply**.
6. Under **Service status**, click **Start**.
7. Wait for service to start, and then click **OK**.
8. Minimize the **Monitor** window for later use.

f. *If you selected Internet alarming,* click the **Internet Proxies** tab. Complete the following fields:

- **Primary Address** — Enter the Avaya proxy primary IP address or fully qualified domain name (FQDN).
- **Secondary Address** — Enter the Avaya proxy secondary IP address or FQDN.
- **Enable HTTP/HTPPS proxies** — Click to enable customer internet proxies.
- **Primary HTTP/HTTPS Address** — Enter the customer proxy primary IP address or FQDN
- **Secondary HTTP/HTTPS Address** — Enter the customer proxy secondary IP address or FQDN

  For additional information about completing the Serviceability Internet Proxies information, see the VMSC — Serviceability topic in the Avaya Modular Messaging documentation.

g. Click **OK** to close the **Serviceability - Voice Mail Domain** window.

Obtaining and installing a license on MAS#1

You must obtain and install a license for each Modular Messaging system.

Note:

You must use Remote Feature Activation (RFA) to obtain a license for all new systems. For the latest information, go to the http://rfa.avaya.com Web site. For complete licensing steps and contact information for RFA assistance, see *Getting Started with RFA for Modular Messaging* on the RFA Web site.

If the Modular Messaging system is being implemented with an Avaya Communication Manager server, and if a T1-QSIG, E1-QSIG, or IP H.323 switch integration is used, the person who requests the Modular Messaging RFA license must also request the QSIG Supplementary Services package. The QSIG Supplementary Services package is an entitlement captured within the Communication Manager RFA license. It must be set to **ON** and uploaded to the Communication Manager server, separate from the Modular Messaging RFA License. Contact your Avaya representative for more information.

Obtaining the license

To obtain a license for this system.

1. An authorized person who is trained and registered must generate a license request for the new system using RFA. The request must include all the required information described in *Getting Started with RFA for Modular Messaging*. The exact procedure varies per location. However, the on-site installer *must* provide the voice mail domain identifier (VMD ID) to complete a license request.
2. You must obtain the unique VMD ID that identifies this particular system to complete a license request. To obtain the VMD ID:
   a. In the **Voice Mail System Configuration** window, right-click **Licensing** and select **Copy Host ID to clipboard**.
   b. Open the document where you want to record this information. For example, use a text-editor application such as Notepad.

   CAUTION:

   Use the copy-and-paste method of recording the VMD ID if possible. If you try to manually enter the VMD ID, it is easy to make mistakes. The VMD ID in the generated license *must* exactly match that of the target system, or the license fails to install.

   c. Right-click and select **Paste** to copy the VMD ID from the clipboard to the document.
   d. Save the file. For example, save the file into **My Documents** as *mymas1-vmdid.txt*.
   e. Transmit the file that contains the VMD ID to a location that can access the Internet or e-mail location. Use any method that is required, such as FTP, memory stick, and so on.

Send the file to the RFA-authorized party, or use the file yourself to complete the RFA license request through the RFA Web site. Procedures vary per location.

3. The authorized person completes the license request using RFA. The person then downloads or sends the license file by e-mail to the appropriate location.
4. If another party must complete the license request, you can continue with the installation until you receive a valid license file. At that time, return to Installing the license on page 128.

CAUTION:

For most switch integrations, you can continue the installation through acceptance testing using a dummy license that supports up to ten subscribers. For IP SIP integrations, however, you *must* receive and install a valid license before you can add any test subscribers and do acceptance testing.

Installing the license

After the license file is obtained, install the license as follows:

1. Transmit the license file, such as *wlmNNNNNlicense.xml*, to the MAS using the preferred customer method, such as FTP, memory stick, and so on. The recommended location for the license file is on MAS#1 in the C:\Avaya_Support directory.
2. To install the license, in the **Voice Mail System Configuration** window, right-click **Licensing** and select **Import License**.
3. On the **License Import Wizard welcome** screen, click **Next**.
4. On the **Importing the license** screen, click **Browse**.
5. Navigate to where the license file is stored, such as *C:\Avaya_Support*.
6. Double-click the appropriate **.xml* license file. If more than one file is present, verify that you select the correct one.
7. Click **Next** to install the license.
8. When the procedure is complete, click **Finish**.

CAUTION:

If an error message states that the license is not valid, you must obtain a new license file. The event log on the MAS on which the license import failed might contain additional information about the failure reason. Verify that the license request contains the correct VMD ID for this system. Return to Step 2 and submit a new license request through RFA.

9. Continue with Verifying license installation and specifying TTS sessions on page 128.

Verifying license installation and specifying TTS sessions

Release 4.0 does not support the following TTS engines: DecTalk and TTS3000. If you were using either of these TTS engines, a Release 4.0 upgrade automatically removes them and installs the ScanSoft RealSpeak TTS engine. However, you must obtain new licenses for the

RealSpeak TTS engines, or the TTS sessions will fail. For more information about obtaining licenses, see Obtaining and installing a license on MAS#1 on page 127.

After the license file is installed, verify the license installation. Next, set up the TTS sessions per MAS:

1. In the **Voice Mail System Configuration** window, double-click **Licensing**.
2. In the **Licensing - Voice Mail Domain** window, on the **General** tab, verify that the system displays the correct values, according to the license agreement.
3. Click the **Text-to-Speech** tab. Each MAS in the voice mail domain is listed.
   a. For each MAS, double-click the TTS engine to set up, such as **Text to speech, ScanSoft RealSpeak, Any Language**.
   b. In the **Edit Sessions** window, enter the number of TTS sessions required for this MAS. You can enter up to 12 TTS sessions for each MAS.
   c. Click **OK**.
   d. Repeat Step 3 for each MAS in the VMD.
4. Click **OK** to close this window.
5. Restart service to put the changes into effect.

Configuring specific features as needed

During installation, MMCW enables services and TTS languages specified in the DCT data file. However, further configuration of features is required after installation. Use the procedures in this section to manually configure the other features and TTS, if necessary. Unless otherwise specified, you can configure these features on any MAS in the VMD.

Note:

The following are important notes about configuring these features:

- You must have the relevant permissions to configure screens in the VMSC application. For more information about security roles required for VMSC configuration, see *Avaya Modular Messaging MAS Administration Guide*.
- If any of these features is enabled improperly or on the wrong server by the MMCW, use the procedures in *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*, Chapter 6, to manually reconfigure the affected feature.
- In a multiple-MAS system, configure the features described in this section only after you complete basic configuration of all MASs in the system. Some features, such as MWI, TTS, and offline access to messages, require all MASs in the VMD to be working.

To configure specific features:

1. Use the Voice Mail System Configuration program.

   If this window is not already open, click **Start** > **Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.

2. After all MASs in the system have been installed, configure the features that are required for the VMD.

   - Configuring Call Me service on page 130
   - Configuring Notify Me on page 130
   - Configuring MWI service on page 131
   - Configuring languages or TTS on page 131
   - Configuring Audit Service on page 132
   - Configuring MM Fax Service on page 132
   - Configuring offline access to messages on page 134

Configuring Call Me service

Complete the following steps to configure Call Me Service for the VMD:

1. Under the voice mail domain, double-click **Call Me**.
2. On the **General** tab, click the checkbox to **Enable Call Me**.
3. For **MAS Call Me server**, enter the name of the MAS or supplementary server on which the MM Call Me Server service is installed. You can use the browse button (...) to locate the server.
4. Click **OK**.

Note:

Because the Call Me server and Message Waiting Indicator (MWI) Server both use the Mailbox Monitor Server, they must be installed on the same server.

Configuring Notify Me

Complete the following steps to configure Notify Me for the VMD:

1. Under the voice mail domain, double-click **Notify Me**.
2. On the **General** tab, click the **Enable Notify Me** checkbox.
3. Click **OK**.

Configuring MWI service

Complete the following steps to configure MWI service for the VMD:

1. Under the voice mail domain, double-click **Message Waiting Indicator**.
2. On the **General** tab, click the checkbox to **Enable Message Waiting Indicator (MWI)**.
3. For **MAS MWI server**, enter the name of the MAS or supplementary server on which the MM Message Waiting Indicator Server service is installed. You can use the browse button (...) to locate the server.
4. For the **Limit requests** and **Maximum requests per minute** fields, use the values specified in the configuration notes for your PBX integration type.
5. In the **Messaging Application Servers that support MWI** box, list all MASs that have a port group set up to support MWI. To add a server name:
   a. Double-click inside the top of the big list box, or click the **Add** button just above the list box. The **Add** button looks like a dashed box.
   b. The list box displays a data entry field and a **...** button. Click the **...** button.
   c. In the **Select Computer** window, double-click the name of each MAS that has ports allocated to support MWI.
   d. Repeat Steps b and c to add any other MASs that support MWI, such as *MYMAS2*.
   e. Click **OK** to close this window.

      The arrow icons move the selected MAS up or down the list. MWI requests start with the first MAS in the list, and continue to each additional MAS if needed.
6. Click **OK** to close the **Message Waiting Indicator - Voice Mail Domain** window.

Configuring languages or TTS

To configure multiple languages or the optional Text-to-Speech (TTS) feature:

Note:
Enable Multi-Lingual TTS only if it is required at the site.

1. Under the voice mail domain, double-click **Languages**.
2. In the **Languages - Voice Mail Domain** window:
   a. For **Primary Language**, select the primary announcement language (prompt set) that is to be used at this site.
   b. *If the Multi-Lingual Text-to-Speech (TTS) feature is required at this site:*
      1. Click the checkbox to **Enable Multilingual Text-to-Speech**.
      2. In the list box, select all the languages to use for TTS at this site.
3. Click **OK** to close this window.

Configuring Audit Service

Complete the following steps to configure MAS auditing for the VMD.

1. In the **Voice Mail System Configuration** window, under the VMD, double-click **Auditing**.
2. On the **General** tab, click the checkbox to **Enable Auditing**.
3. In the **Audit server** field, enter the name of the server that will run the MM Audit service, or use the browse button (...) to select the name.

   MM Audit service is installed on each MAS in the VMD. The name that you enter here is the name of the MAS or supplementary server that acts as the MM Audit Server.
4. In the **Audit event retention (days)** field, enter the number of days before events are purged from the audit database.
5. In the **Database server** field, enter the name of the server where the database resides or use the browse button (...) to select the server.
6. In the **Database name** field, enter the name of the SQL server instance. The default is MMAUDIT.

   Modular Messaging stores the log using Microsoft SQL Server. There can be a number of SQL server instances on the same machine.
7. In the **Database instance** field, enter the name of the database containing audit events. The default is MMAUDIT.
8. Click **OK** to close this window.

Audit service can be configured to use the syslog protocol to allow third-party system administration tools to be used with Modular Messaging. For more information, see *Avaya Modular Messaging MAS Administration Guide*.

Configuring MM Fax Service

These steps describe how to configure Avaya's native fax support. When configuring third-party fax support, see the appropriate Fax Configuration Note on the Avaya support website. For additional information, see *Avaya Modular Messaging MAS Administration Guide*.

Complete these steps on only one MAS in your VMD, the one that is running the Modular Messaging Fax Sender Service.

Note:

To configure the Fax dialog box in VMSC, you must be a member of a security role that is assigned the Fax-Administer task.

To configure MM Fax Service:

- Configure the service with the Voice Mail System Configuration application
- Share the Microsoft Fax Printer
- Assign permissions to the Fax Service Manager

- Create a dialing rule

To configure MM Fax Service, complete the following steps:

1. In the **Voice Mail System Configuration** window, under the VMD, double-click **Fax**.
2. On the **General** tab:
   a. Click the checkbox for **Fax Enable**.
   b. Click the checkbox to **Use native fax support**.
   c. For **MAS Fax Sender server**, enter the name of the MAS where MM Fax Sender Server service is installed, or **Browse** to locate the server.
   d. **Fax Mailbox** displays the name of the fax mailbox, which is used for outgoing faxes on the Exchange message store server. This field is populated automatically and cannot be edited.
   e. For **Company Fax Number** enter the externally dialable number that callers must use to send faxes to subscribers. This number appears on outgoing fax cover pages.
3. Click the **Advanced** button.
   a. In the Advanced Fax window, change the **Max Concurrent Outgoing Calls** number to the customer-specified number.
   b. Adjust other options if required.
   c. Click **OK** to close this window.
4. Click **OK** to close the **Fax - Voice Mail Domain** window.

   The system displays a "restart" window.
5. Click **OK**.

Complete the following steps to share the Microsoft Fax Printer:

1. Verify that Windows Fax Service is **Started** and set to **Automatic**.
2. Click **Start** > **Settings** > **Printers and Faxes**.
3. In the **Printers and Faxes** window, right-click the Fax and select **Properties**.
4. Click the **Sharing** tab.
5. Select the **Share this printer** checkbox. Leave the share name as **Fax**.
6. If not already added, add **Everyone** to the list of users and groups with access.
7. Assign **Fax** permission to **Everyone**.

Complete the following steps to assign permissions to the Fax Service Manager:

1. Select the **Configuration** tab.
2. Select **Fax Service Manager**.
3. Right-click **Fax (local)** and select **Properties**.
4. Click the **Security** tab.

5. Add the Network Service Account to the list of users and groups with access
6. Assign **Fax**, **Manage Fax Configuration** and **Manage Fax Documents** permissions to the Network Service Account.
7. Ensure that **Everyone** is assigned **Fax** permissions for the Fax Service Manager.
8. Exit all windows.

Note:

If the System Administrator wants to restrict access to the Fax printer at a later date, complete the following changes to the Fax printer share and Fax Service Manager:

1. Remove **Everyone** from the list of users and groups with access.
2. Add Active Directory users and groups that need to print faxes using the MM Fax Printer to the list of users and groups with access.
3. Assign **Fax** permission to the Active Directory users and groups.

Complete the following steps to create a dialing rule for the Phone and Modem:

1. Click **Start > Settings > Control Panel > Phone and Modem Options**.
2. If a dialing rule is not already created, click **New** on the **Dialing Rules** tab to create a dialing rule.
3. Specify the location details and dialing rules for the MAS.
4. Click **OK** to save the dialing rule and close the **New Location** window.
5. Click **OK**.

Configuring offline access to messages

CAUTION:

Set up offline access only after all servers in the system are configured, including the supplementary server, if used.

To configure offline access to subscriber messages:

1. Under the voice mail domain, such as *vmdom*, double-click **Messaging**.
2. In the **Messaging - Voice Mail Domain** window, click the **Offline Access** tab.
3. Click the checkbox to **Enable offline access to messages**.
4. If this system has multiple MASs:
   a. Click the checkbox to **Synchronize offline messages with remote store**.
   b. Click **Browse** to select an existing, shared directory in the domain for the remote offline message store. If the directory does not exist, create it first, then browse to it.

   The name must use the format ***locationname*\s*harename***, such as *mymas2**RemoteOfflineStore*.

5. Alter any other parameters in this window as needed. For more information, see the *Avaya Modular Messaging MAS Administration Guide*.
6. Click **OK** to close this window.

Configuring MAS-specific parameters

After the domain-wide parameters are configured, complete the configuration of this specific MAS in the VMSC. Do the procedures in this section under the specific entry for this MAS, and not under the voice mail domain.

Note:

Complete the tasks in this section on each MAS as required.

MAS-specific procedures include:

- Configuring INADS alarming, if used on page 135
- Configuring port boards and switch integration on page 136

When you configure some MAS-specific parameters, you will need to select the MAS in the Voice Mail System Configuration window. If the MAS you are configuring does not appear in this window, complete the following procedure:

1. In the **Voice Mail System Configuration** window, click the voice mail domain.
2. Click **Message Application Servers**.
3. Click the **Edit>Add Message Application Server** menu or use the right-click menu. The system displays the **Add New Message Application Server** dialog box.
4. Enter the name of the MAS in the **Message Application Server** field or browse to and select it.
5. Click **OK**.

Configuring INADS alarming, if used

If this MAS uses INADS alarming, configure the service now. You must administer INADS alarming individually for each server that uses it. The server requires a modem and the Messaging Application Server service to be installed for INADS alarming to work.

To set up INADS alarming on this MAS:

1. In the **Voice Mail System Configuration** window, expand **Message Application Servers**.
2. Expand the entry for this MAS, such as *MYMAS1*.
3. Double-click **Serviceability**.
4. Click the **INADS** tab.
5. Complete the following fields:

a. **COM port** — Select the communications port you want the modem is to use to send and receive alarm notifications. This is usually COM3 on an Avaya MAS if you used recommended USB port A. For more information with an Avaya MAS, see Connecting the USB modem on the MAS on page 38.

b. **Phone number** — Enter the complete telephone number the modem must dial to place an alarm notification with the remote service center. Include any special characters needed. For example, to access an outside line, insert pauses, and so on.

c. **Modem setup** — Enter the modem initialization (setup) string required for the modem to make alarm notification calls.

   For additional information about completing the MAS - Serviceability - General and MAS - Serviceability - INADS information, see the VMSC — Serviceability topic in the Avaya Modular Messaging documentation.

6. Click **OK** to close this window.
7. If prompted, restart the MAS service.

Configuring port boards and switch integration

Note:

You must restart service as indicated at the end of the previous procedure before continuing.

The Modular Messaging Configuration Wizard might have automatically configured many of the port board and PBX settings for this MAS. However, you must always verify the configuration settings against the current configuration notes.

Note:

The configuration notes for this PBX or switch might include some of these steps. However, read through this section first to get an overview of the whole configuration procedure. Some of the configuration notes contain some of these steps, while others do not. You can repeat steps to verify the setup. You can also update or change this information later if required.

Automatic configuration

The Modular Messaging Configuration Wizard automatically configures the MAS settings for the following switch integrations:

- Avaya CM (IP SIP)
- Avaya (IP H323)
- Avaya (QSIG)
- Cisco (QSIG)
- Nortel NT M-1 (QSIG)
- Siemens Hipath (QSIG)

If you are using one of these switch types:

1. Verify the MAS settings against the configuration notes in case of changes.
2. Administer all required settings on the switch.

Manual configuration

If you specified **Other** for the switch integration type, you must always configure both the MAS settings and the switch settings for each MAS.

To set up the basic PBX integration details for each MAS in this domain:

1. In the **Voice Mail System Configuration** window, expand **Message Application Servers**.
2. Expand the entry for this MAS, such as *MYMAS1*.
3. Right-click the server name, and then select **Telephony Configuration Wizard**.
4. Complete all steps in the wizard, as prompted. Use the configuration notes as required.
5. After you complete the wizard, restart messaging service so that you can configure the voice ports:
   a. Restore the **Monitor** window if you minimized it, or access the window to monitor services using one of these methods:
      - Double-click the **Monitor** icon on the desktop (if present). In the left pane, click **Services** if it is not already selected.
      - Right-click **My Computer** and select **Manage**. In the left (Tree) pane, expand **Services and Applications**, and then click **Services**.
   b. Click **Service (Local)** in the left pane, if the item is not already selected.
   c. In the right pane, scroll down to **MM Messaging Application Server**. Right-click it and select **Stop**.
   d. When service is stopped, right-click **MM Messaging Application Server** again and select **Start**.

      The system restarts the MM Messaging Application Server service.

   Note:

      When you restart MM Messaging Application Server service, the window immediately shows a status of **Started**. However, the service might actually take several minutes to start, depending on the number of port boards installed and the integration type.

   e. Track the startup progress as follows:
      1. Access the event viewer using one of these methods:
         - In the **Monitor** window, in the left pane, expand **Event Viewer (Local)**.
         - In the **Computer Management** window, in the left pane, expand **System Tools**, and then **Event Viewer**.

2. In the left (Tree) pane, click **Application**.
3. Refresh the window display periodically until you see Telephony User Interface event 1241, **TUI service has been enabled**. You can then proceed.

f. When service is restarted, minimize this window.

6. In the **Voice Mail System Configuration** window, expand **Message Application Servers**.

Note:

Some values might already be set. Follow the configuration notes for this PBX integration.

a. Expand the entry for the MAS (such as *MYMAS1*).

b. Double-click **Telephony Interface**. Configure the port boards in this MAS. Use the configuration notes.

c. Double-click **PBX Type**. Select the same type of PBX service as you did in Configuring the PBX type on page 124. Verify that the entry in the **PBXs** box is highlighted, and click **OK**.

d. *If multiple port groups are used,* double-click **Port Groups**. For example, you might use a unique group to support MWI.

e. Double-click **PBX Integration** and configure the integration type for this system. Use the configuration notes to specify or confirm the settings this switch integration requires.

Restarting service

When all configuration for this server is complete, restart MM Messaging Application Server service:

1. Restore the **Monitor** window if you minimized it, or access the window to monitor MM Messaging Application Server service using one of these methods:
   - Double-click the **Monitor** icon on the desktop (if present). In the left pane, click **Services** if it is not already selected.
   - Right-click **My Computer** and select **Manage**. In the **Computer Management** window, the left (Tree) pane, expand **Services and Applications**, and then click **Services**.
2. In the left pane, click **Service (Local)**.
3. Restart MM Messaging Application Server service to accept any changes you made in the VMSC:
   a. In the right pane of the **Monitor** window, scroll down to **MM Messaging Application Server**. Right-click it and select **Stop**.

b. When service is stopped, right-click **MM Messaging Application Server** again and select **Start**.

   The system restarts the messaging service.

   When you restart MM Messaging Application Server service, the **Monitor** window immediately shows a status of **Started**. However, service might actually take several minutes to start, depending on the number of port boards installed and the integration method.

c. Track the startup progress as follows:

   1. Access the event viewer using one of these methods:

      - In the **Monitor** window, in the left pane, expand **Event Viewer (Local)**.
      - In the **Computer Management** window, in the left pane, expand **System Tools**, and then **Event Viewer**.

   2. In the left (Tree) pane, click **Application**.
   3. Refresh the window display periodically until you see Telephony User Interface event 1241, **TUI service has been enabled**. You can then proceed.

4. Verify that all messaging services required for this MAS are started:

   a. In the **Monitor** window, click **Services (Local)** in the left pane, if the item is not already selected.

   b. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**. Verify that the **Status** column shows the correct state for each messaging service:

      - Services that are required for this server must show **Started** and a startup type of **Automatic**.
      - Services that are not required on this server must show a blank status and a startup type of **Disabled**.

      Complete the following steps if necessary to change the status.

   c. If the **Startup Type** for any **MM** service that is *not* required for this server is **Manual**:

      1. Double-click the service to open the **Properties** window.
      2. Set the **Startup type** to **Disabled**.
      3. Click **OK** to close this window.
      4. Refresh the screen to verify that all **MM** services *not* required for this server are **Disabled**. Repeat Step c as needed.

CAUTION:

All **MM** services that are *not* required for this server must be set to **Disabled** before you do Step d. Serious problems occur if you activate a service that is supposed to run on only one server in the VMD on multiple servers.

d. If the **Status** for any **MM** service that is required for this server is **Stopped** or blank:

1. Click **Start** > **Run** to open the **Run** window.
2. In the **Open** field, type the following and press **Enter**:

   C:\Avaya_Support\Scripts\serverrecovery.vbs

   The script takes a few seconds to run. The program sets up all **MM** services correctly.
3. Refresh the screen to verify that all **MM** services required for this server are **Started** and set to **Automatic**.
4. If any **MM** services are not set up correctly, repeat Step d.

5. When configuration is complete, close all open windows.
6. *For a multiple-MAS system,* after you configure the last MAS and install the license file, restart MM Messaging Application Server service on all servers in the VMD. The following properties require a restart of all servers in the voice mail domain:

   - Audio Encoding
   - Languages
   - Licensing
   - Messaging
   - Offline Access
   - PBXs
   - Per MAS features including Telephony Interface, Port Groups, PBX Integrations, PBX Type, and Tracing File Size.

   Note:

   Any feature that you alter in the VMSC that produces a prompt to restart voice service requires a restart of all servers in the VMD. For convenience, you can restart all the MASs in the VMD once at the end of the installation.

   To restart service on all MASs in the voice mail domain:

   a. Switch the monitor to show the next MAS in the system.

   b. Repeat Steps 3 and 4 to restart service.

   c. Repeat this procedure for each MAS in the system.

Verifying basic operation of this MAS

Complete the following tests to verify the basic functionality of this MAS.

- Verifying call-handling capability on page 141
- Verifying alarming setup on page 141
- Verifying Tracing Service operation on page 142
- Verifying Audit Service on page 143

Verifying call-handling capability

Do this task on any MAS that is set up to handle calls.

This test confirms basic connectivity between the MAS and the switch.

1. If this MAS is in a multiple-MAS system, display the port monitor to ensure that the test call comes in on this MAS. For this procedure, see Setting up the port monitor on page 149.
2. From a telephone on the system, dial the message retrieval number for the Modular Messaging system.
3. Listen for the Modular Messaging system to answer.
4. Hang up.

Verifying alarming setup

Do this task on any MAS that is set up for INADS or SNMP alarming. This test will not work if the alarming service is not installed or if alarming is set to **None**. To confirm the serviceability settings used at this site, see Configuring serviceability settings on page 125.

This test requires the receiving computer, either INADS or SNMP, to be set up by the appropriate party and ready to receive alarms.

To verify that alarm notification is working:

1. Click **Start** > **Run**.
2. In the **Run** window **Open** field, type **cmd** and press **Enter**.
3. In the command prompt window, type the following and press **Enter**:

   testaom -v

   The test shows the type of alarming that is set up (INADS or SNMP), the product ID for the MAS, and the alarming settings. The test takes about 1 minute to run.

4. Verify that the last line of the test reads:

   Alarm origination test successful

   Continue with Step 6.

5. *If the alarm test fails,* the last line of the test reads:

   Negative acknowledgement of transmission

   If the test fails, check your alarming settings, and then run the test again:

   - *For all systems,* see Configuring serviceability settings on page 125.
   - *For systems that use INADS,* also check Configuring INADS alarming, if used on page 135.

6. Type **exit** and press **Enter** to close this window.

   Note:

   For instructions on accessing the MAS alarm or error logs, see the *Avaya Modular Messaging MAS Administration Guide*.

Verifying Tracing Service operation

If you enabled the Tracing Server software on an MAS or a supplementary Tracing server, test the Tracing System operation as follows:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Operational History Viewer**.
2. Set up a live mode session for all MASs in the voice mail domain (VMD):
   a. In the history viewer window, click **File** > **New**.
   b. In the **Session Properties** window, verify that **Message Application Server** shows **All Servers** is selected.
   c. Click the checkbox for **Live Mode**.
   d. Verify that all the **Select Types** checkboxes are checked.
   e. Under **Selection Activities**, verify that the **All Activities** checkbox is checked.
   f. Click **OK** to close this window.
3. Confirm that the Tracing Server can connect to all MASs in the VMD.
4. Confirm that the Operation History Viewer (OHV) displays the collected operation history events.
5. You can close the OHV, or keep it open to monitor acceptance tests. For more information, see Using the Operational History Viewer on page 148.
6. If you close the OHV, the system might prompt you to save the session. Click **No**.

Note:

For more information about using the Operation History Viewer, see the *Avaya Modular Messaging MAS Administration Guide*.

Verifying Audit Service

Use the MM Audit Log Viewer to view information captured by the MM Audit Service:

1. Click Start > Programs > Avaya Modular Messaging > MM Audit Log Viewer.
2. To connect to the database on the Audit server (complete these steps only if you are running the viewer on an MAS that is not the Audit server):
   a. On the **MM Audit Log Viewer** window, in the left-hand pane, right-click **All Events**.
   b. Click **Connect to Database**.
   c. In the **Server** field, enter the name of the MAS you set up as the Audit server.
   d. Click **Connect**.
3. On the **MM Audit Log Viewer** window, in the left-hand pane, click **All Events**.
4. In the right-hand pane, verify that events appear in the Audit Log.
5. Close the MM Audit Log Viewer.

For more information, see *Avaya Modular Messaging MAS Administration Guide*.

Continuing the installation

If you have additional MASs to configure, return to Configuring a new Avaya MAS on page 79 or Configuring a customer-provided MAS on page 95.

If you have configured all MASs, continue to Testing and backing up the system on page 145.

Chapter 9: Testing and backing up the system

This chapter describes how to perform acceptance tests to verify that the Modular Messaging system is providing full service. After functionality is verified, back up the system to protect the Modular Messaging configuration data.

Note:

Before you can successfully complete the tasks described in this section, you must have successfully completed the tasks in Chapter 8: Configuring the voice mail system on page 119.

Topics in this chapter include:

- Adding a test subscriber on page 146
- Setting up monitoring tools—optional on page 148
- Performing acceptance tests on page 150
- Removing the test subscribers on page 156
- Backing up the system on page 157
- Turning over the system to the customer on page 158

Adding a test subscriber

For a new installation, the directory server administrator previously created test subscriber accounts for each telephone user interface. See Creating test subscriber accounts on page 59. Before you can complete the acceptance tests, the administrator must assign Modular Messaging characteristics to these accounts.

Note:

If you are performing tests following a Modular Messaging software upgrade, you might want to test the system using subscribers that are already administered.

For details on administering Modular Messaging features, see Chapter 15, “Creating subscriber accounts for Microsoft Exchange," in the *Avaya Modular Messaging MAS Administration Guide*.

Complete the following sets to set up the test subscribers.

1. Log in to the Active Directory server using an account that has privileges to create new user accounts (such as *administrator*).

   Note:

   The Modular Messaging Active Directory Extensions must have been installed on the server before you can administer any subscribers. For additional information about the Modular Messaging Extensions, see Adding the Exchange extensions on page 75.

2. Click **Start** > **Programs** > **Microsoft Exchange**> **Active Directory Users and Computers**.
3. In the **Active Directory Users and Computers** window, expand the directory for the Windows domain you used for Modular Messaging.
4. In the left pane, click **Users**.
5. In the right pane, double-click a test subscriber account, such as *Aria Test Subscriber (testsub1),* to open the **Properties** window.
6. Click the **Modular Messaging** tab.

   Note:

   The first time you access this tab, you might see a **Choose Message Application Server** window. Enter the name of an MAS (or click **Browse** to select it), and then click **OK**.

   There might be a delay as the server logs in.

7. Set up the test subscriber with Modular Messaging features as follows:
   a. Click the checkbox to **Enable Modular Messaging**.
   b. Verify the voice mail domain (VMD).
   c. Enter the extension number, mailbox number, numeric address, and TUI password.

Note:

The numeric address must be unique among all the addresses in the messaging network. For example, you could prepend a **1** or the area code to the mailbox number.

All extensions for the test subscribers must be administered on the PBX by the appropriate party.

d. Click **Advanced**. In the **Advanced Properties** window:

1. Select the appropriate **Class of service** for this test subscriber (for example, *Aria TUI*, *AUDIX TUI, or Serenade TUI*).
2. In the **Capabilities** list box, under **Message assistant**, click the checkbox to **Allow Message Waiting Indicator**.
3. Click the appropriate checkboxes to activate any other features that you have installed and must test at this site.
4. Click **OK** to close this window.

e. When finished setting up this test subscriber, click **OK**.

8. To set up another test subscriber (for example, to test the MM AUDIX or MM Serenade telephone user interface), repeat Steps 5 through 7.
9. Although Message Waiting Indicator has been allowed, it must also be enabled for each test subscriber.
   a. Right-click **My Computer** and select **Manage**.
   b. In the **Computer Management** window, in the left pane, expand **Event Viewer**.
   c. Refresh the window display periodically until you see a **1027** event. You must see the 1027 event before you can proceed.
   d. In the **Active Directory Users and Computers** window, double-click the first test subscribers.
   e. Select the **Modular Messaging** tab.
   f. On the Modular Messaging tab, click **User Options**.
   g. In the **Assistant** window, click the **Message Waiting Indicator** box and the box for any other capabilities that you have previous activated and that you intend to test.
   h. Click **OK** to close this window.
   i. Repeat steps d through h for each test subscriber.
10. When finished, click **OK** to close the **Active Directory Users and Computers** window.

Setting up monitoring tools—optional

You can use the monitoring aids described in this section to help you complete the acceptance tests.

Using the Operational History Viewer

You can use the Operational History Viewer (OHV) to monitor call progress for any MAS. The viewer can help to identify the cause of the problem if errors occurs during testing.

Note:

If you are running the OHV on an MAS that is not running the tracing server service, you must first configure your data sources. For additional information, see the discussion about selecting a data source and ODBC tracing in the *Avaya Modular Messaging MAS Administration Guide*.

To open the Operational History Viewer:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Operational History Viewer**.
2. Set up a live mode session for all MASs in the voice mail domain (VMD):
   a. In the history viewer window, click **File** > **New**.
   b. In the **Session Properties** window, verify that **Message Application Server** shows **All Servers** is selected.
   c. Click the checkbox for **Live Mode**.
   d. Verify that all the **Select Types** checkboxes are checked.
   e. Under **Selection Activities**, verify that the **All Activities** checkbox is checked.
   f. Click **OK** to close this window.
3. During testing, monitor Operation History events in the Viewer. The OHV displays events as they happen on the system.
4. After testing is complete, close the OHV.
5. If the system prompts you to save the session, click **No**.

Setting up the port monitor

This task is optional for a one-MAS system, but is recommended for a system that has multiple MASs that are set up to take calls.

Tests calls can come in through the ports on various MASs in the system, depending on how the hunt group is set up on the PBX. If the Modular Messaging system has more than one MAS, use the port monitor to verify that the test calls you make are coming in on the ports of the MAS that you want to test.

To display the port monitor:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
2. When the system prompts for the Message Application Server, select the MAS that you want to test (such as *MYMAS1*). Click **Select**.

   The **Port Monitor** window for this MAS is displayed.
3. You can repeat Steps 1 and 2 to bring up **Port Monitor** windows for multiple MASs if desired.
4. When you dial the Modular Messaging system message retrieval number during the acceptance tests, check the **Port Monitor** window to verify that the call is coming in on a port of the MAS that you want to test.
5. If the port monitor does *not* show that the test call is coming in on the desired MAS, hang up and dial the Modular Messaging system message retrieval number again.

   The number of times you might have to dial depends on the switch administration. For example, the hunt group might be administered to send each new call to the next MAS in the system, or it might be administered to send all the calls to one MAS before it moves on to a subsequent MAS.

Performing acceptance tests

Complete the following tests on each MAS that is set up to handle calls.

CAUTION:

Wait 5 minutes after completing the tasks in Chapter 8: Configuring the voice mail system on page 119 to give the system time to update all servers in the voice mail and Windows domains with the correct Modular Messaging information.

Creating and sending a call-answer message

The following test works only if call coverage has been assigned on the switch to route unanswered calls to the extension for the test subscriber.

To create and send a call-answer test message:

1. Call the MM Aria test-subscriber extension from any other telephone. Allow the Modular Messaging system to answer.
2. Speak into the telephone and record the following or a similar test message after the tone:

   "This is a test call answer message."
3. Hang up the telephone to disconnect.
4. Repeat Steps 1 through 3 for each TUI that you are testing.

Retrieving test messages in integrated mode

Test the fully integrated operation of the system as directed. You need access to the actual telephone whose extension number is assigned to the test-subscriber mailbox to perform this test.

To verify the receipt of the test messages in integrated mode:

1. *If MWI is installed:* Check the message waiting indicator (MWI) on the test-subscriber telephone. The MWI can be a light, a screen display, or a dial-tone stutter that you hear when you pick up the phone.

   Note:

   The message-waiting lamp might take up to 1 minute to light on the appropriate telephone after a test message is sent.

   If the MWI does not indicate that a call was received:

   a. Verify that the Mailbox Monitor and MWI services are started.

1. Access the window to monitor services using one of these methods:
   - Double-click the **Monitor** icon on the desktop (if present). In the left pane, click **Services** if it is not already selected.
   - Right-click **My Computer** and select **Manage**. In the **Computer Management** window, the left (Tree) pane, expand **Services and Applications**, and then click **Services**.
2. In the right pane, scroll down to the Modular Messaging (MM) services. Verify that the Status column shows that service is **Started** for each installed messaging service.
3. If service is stopped or if the Status column is blank, right-click the appropriate MM service and select **Start**.
4. When finished, click **OK** to close this window.

b. If service is started, check for a problem with the test subscriber administration, the switch integration or switch integration software, or the switch number administration for the test telephone.

2. From the test-subscriber telephone, dial the Modular Messaging system message retrieval number.
3. Enter the password for this mailbox and press #

   The system voices the name of the test subscriber.
4. The first time you access this mailbox, you answer a series of prompts to set up the mailbox for operation. Answer all voice prompts as directed.
5. After the mailbox is set up, retrieve the test message.

   The system uses different commands to retrieve messages depending on whether you are using the Aria or AUDIX user interface.

To retrieve a test message using the MM Aria interface:

1. After the mailbox is set up:
   a. Press **1** to review the new messages.
   b. Press **1** to retrieve a voice message.
   c. Listen to the message. If the message does not play properly, contact the remote support center.
   d. Press **7** to erase this message.
   e. Repeat Steps c and d to review the next message (if any), or press ***** to return to the main menu.
2. Hang up the telephone to disconnect when finished.
3. If MWI is installed, check the MWI on the test-subscriber telephone. The MWI should be off. If it is not off, check the MWI administration on the MAS and the PBX.

To retrieve a test message using the MM AUDIX interface:

1. After the mailbox is set up:
   a. Press **2** to review the new messages.
   b. Press **0** to listen to the test message. If the message does not play properly, contact the remote support center.
   c. Press *** D** (or *** 3**) to erase this message.
   d. Repeat Steps b and c to review the next message (if any), or press *** R** (or *** 7**) to return to the main menu.
2. Hang up the telephone to disconnect when finished.
3. *If MWI is installed:* Check the MWI on the test-subscriber telephone. The MWI should be off. If it is not off, check the MWI administration on the MAS and the PBX.

To retrieve a test message using the MM Serenade interface:

1. After the mailbox is set up:
   a. Press **5** to review the new messages.
   b. Listen to the test message. If the message does not play properly, contact the remote support center.
   c. Press **3** to erase this message.
   d. Repeat Steps b and c to review the next message, if any.
   e. Press the pound key (#) to return to the Ready menu.

Creating and sending a test message in nonintegrated mode

The system uses slightly different commands, depending on the telephone user interface you have. Differences are noted in the text.

To create and send a test message in nonintegrated mode:

1. Dial the Modular Messaging system message retrieval number from any telephone that is not administered on the system.

   The system voices the "Welcome to Avaya Messaging" prompt.
2. Press # to skip the system introduction.
3. Enter the extension number for test-subscriber mailbox.
4. Enter the password for this mailbox and press #.

   The system voices the name of the test subscriber.
5. To create a new message:

- On the MM Aria interface, press **2**.
- On the MM AUDIX interface, press **1**.
- On the MM Serenade interface, press **6**.

6. Speaking into the telephone, record the following or a similar test message after the tone: "This is a test voice mail message."
7. Press # to approve the message.
8. When the system prompts you, enter the mailbox number for any other test subscriber when prompted for the extension. Then press #.

   The system voices the name of the test subscriber.
9. To approve the message and address list:
   - On the MM Aria interface, press # twice (as prompted).
   - On the MM AUDIX interface, press #.
   - On the MM Serenade interface, press the pound key (#) twice.
10. Press # again to send the test message to the test-subscriber mailbox.
11. Hang up the telephone to disconnect.
12. Retrieve the message as described in Retrieving test messages in integrated mode on page 150.

Testing the outcalling capability

Test the outcalling capability of the system using the Modular Messaging (MM) Client software, also known as the Avaya Modular Messaging Subscriber Options package.

To test system outcalling:

1. Run this test from any machine where the Subscriber Administration extensions are installed. For details, see Adding the Exchange extensions on page 75.
2. Click **Start** > **Programs** > **Microsoft Exchange**> **Active Directory Users and Computers**.
3. In the **Active Directory Users and Computers** window, expand the directory for the Windows domain you used for Modular Messaging.
4. In the left pane, click **Users**.
5. In the right pane, double-click a test subscriber account and open the **Properties** window. For complete steps, see Steps 3 through 5 in Adding a test subscriber on page 146.
6. Click the **Modular Messaging** tab.
7. Click **User Options** to run the Modular Messaging client software.
8. Click the **Media Setup** tab.

9. Set up the recording and playback options to use a telephone near you:
   a. For **When composing voice messages**, select **Telephone**.
   b. Click **Configure**.
   c. In the **Telephone Properties** window, enter the extension number of a telephone near you.
   d. Select or enter the name of this MAS if needed. Click **OK**.
   e. For **When reviewing voice messages**, select **Telephone**.
   f. Repeat Steps b through d to set up telephone playback.
10. Re-record the recorded name. For example:
    a. *On an Exchange 2000 or 2003 system:* In the **Modular Messaging User Properties** window, click the **Record Greetings** tab.
    b. Verify that the telephone will be used for recording and playback:
       1. Check the icon to the left of the status display. If it shows a telephone, continue with Step c.
       2. If the icon shows a terminal, right-click and select **Telephone**. The icon changes to show a telephone. Continue with Step c.
    c. Under Standard Greetings, select **Spoken Name**.
       1. Click **Record** (the red circle) on the player near the bottom of the window.
       2. When the telephone rings, answer it and record a name for the test subscriber after the tone.
       3. When finished, click **Stop** (the black square) on the player.
       4. Click **OK**.
11. Play back the spoken name to test outcalling, as follows:
    a. Click the **Play** button (large black single arrow) on the player near the bottom of the window.
    b. Answer the telephone when it rings.

       The picture of the phone changes to become off-hook.
    c. Listen for the system to play the spoken name of the test subscriber.
    d. Hang up the telephone.

       The picture of the phone changes back to being on-hook (this might take a couple of seconds).
    e. Click **OK** to close the **Modular Messaging User Properties** window.
12. When finished, close all open windows.

Creating and printing a fax message

Do this test only under the following circumstances:

- The MM Fax Sender server is installed in the VMD
- Perform this test on the MAS hosting the fax printer

To create and send a test fax message:

1. From a fax machine, send a fax to the test subscriber mailbox. This subscriber mailbox must be set up to be fax enabled.
2. Wait a few minutes for the fax to be delivered. The MWI lamp, if present, on the test subscriber telephone should light.
3. From a telephone (NOT the fax machine), dial the message retrieval number for the Modular Messaging system.
4. Press the pound key (#) to access the test subscriber mailbox.
5. Enter the extension number for the test subscriber mailbox.
6. Enter the password and press the pound key (#).

   The system voices the name of the test subscriber.
7. Retrieve and print the fax as follows:
   - On the MM Aria interface:
     a. Press **1** to retrieve new messages.
     b. Press **3** to retrieve the fax message.
     c. After the prompt finishes, press **2** and follow the prompts.
   - On the MM AUDIX interface:
     a. Press **2** to retrieve new messages.
     b. Press star (*****) **1** to print the fax.
     c. Press star star (******) **6** and follow the prompts.
   - On the MM Serenade interface:
     a. Press **1 9** to retrieve new messages.
     b. Press **8** to print the fax.
     c. Press **3** and follow the prompts.
8. Verify that the fax prints correctly.
9. *If MWI is installed,* check the MWI on the test subscriber telephone again. The MWI should be off.

Running additional tests

You might want to run additional tests to verify the correct operation of features that are particularly important to the customer. For example:

- Automated Attendant
- Call Me
- Find Me
- Octel Analog Networking

To test these or other features, see the *Avaya Modular Messaging MAS Administration Guide* for feature setup and operation instructions.

Removing the test subscribers

When acceptance testing is complete, remove any test subscribers using the normal procedures for this version of Microsoft Exchange. For example:

1. Log in to the directory server using an account that has privileges to delete user accounts (such as *administrator*).
2. Access Active Directory Users and Computers.
3. Expand the directory for the Windows domain you used for Modular Messaging.
4. In the left pane, click **Users** or **Recipients** as required.
5. In the right pane, right-click each test subscriber and select **Delete**.

Backing up the system

Before you back up the system, perform a complete DCT analysis of the supplementary server and all MASs. For more information, see Creating a DCT data file on page 165 or see the DCT online help system or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure to analyze a system.

As a final installation task, set up the system to perform regular, scheduled backups of MAS-specific information using the normal backup procedures for this site. Avaya recommends that you do an attended backup now on each MAS to preserve the configuration information and to verify the backup function.

Customers should consider the following when designing their backup program:

- *DCT data file*: Be sure to include the most recent DCT data file in your regular backups. Periodically analyze your system with the DCT executable file (MMDCT.exe) to create a new updated data file to use in case of a disk failure. This is particularly important when changes are made to the Modular Messaging system. See the DCT online help system or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure to analyze a system.
- *Customized tone files*: If analog port boards are installed in any MAS and you have created customized tone files, keep a copy of the tone files (*.tsf for Dialogic boards) in a network location where they are part of the normal backup procedure. Avaya suggests that all tone files be stored in the \Avaya_Support\Tone_Files directory. You might choose to back up this location or store a copy of the tone files elsewhere for backup.
- *Customized prompt files:* Keep a copy of customized prompt files stored in the **CustomPrompts.ovf** and **CustomPrompts_G711.ovf** files. The files are stored in the path c:\program files\avaya modular messaging\vserver.
- *Caller applications:* Caller Applications (*.uma files), once deployed, are stored on each MAS within a folder that has a GUID. The location for this folder is \Program Files\Avaya Modular Messaging\VServer\CallerApps. Avaya recommends that you back up a copy of this folder as follows:

  Deployed caller applications cannot be backed up using NTBackup while the Modular Messaging (MM) Messaging Application Server service is running. However, you can make a copy of the CallerApps folder while this service is running, and then make a backup of that (you could choose to create scripts to carry out this function).
- *Licensing files:* Keep a backup of the licensing files (*.xml) safe on another device or in another location.
- *SIP certificates :* For SIP implementations only, backup certificates and related files. From \Program Files\Avaya Modular Messaging\OpenSSL, backup the following files:
  - **AVA\dh1024.pem**, **certchain.crt**, and **certchain.key**
  - **CommonTrust\AvayaRoot\avayaprca.crt** and **sip_product_root.crt**.

  - **CommonTrust\CaHash\465bb314.0** and **ffbc7d70.0**
- *WSO:* Backup **\Program Files\Avaya Modular Messaging\Web Subscriber Options\masinfo.cfg**.
- *Audit Database*: Follow Microsoft recommended SQL Server procedures to backup the MM Audit Database.
- *Operation History* and *Transaction Databases*: Used by the MM Tracing Server and MM Reporting Tool. From \Program Files\Avaya Modular Messaging\Tracing, backup the following files:
  - trxdb.mdb
  - ophist.mdb

  Schedule the backup of these files before nightly cleanup processes are scheduled to run.

Running periodic checks

Perform scheduled maintenance on the MAS routinely to keep the hard disk in good condition. Run the following on a regular basis:

- Disk Defragmenter system tool
- **chkdsk** command

Turning over the system to the customer

At this point, the system is considered ready for handoff to the customer. Handoff considerations include:

1. Hand over the latest analyzed DCT data file to the customer. Then erase the file from your USB storage device.
2. Advise the customer about the initial administration that was completed. The customer might want to customize features such as:
   a. Any feature parameters in the Voice Mail System Configuration (VMSC) program.
   b. The classes of service to use for subscribers might need to be updated or expanded.
3. Advise the customer about the ongoing administration that is required, such as customizing parameters, installing client packages, and maintaining the system. For more information, direct the customer to the administration topics on the documentation media.

The system is set up to send alarming information and receive incoming technical support calls. Customers who do not want this service in place must disconnect the USB modem from the MAS.

Chapter 10: Upgrading Modular Messaging software on an Avaya MAS

This chapter describes how to upgrade an Avaya MAS that is running Modular Messaging Release 1.1, Release 3.0, or Release 3.1 software to Modular Messaging Release 4.0.

If you are upgrading a customer-provided MAS, do not use the procedures in this chapter. See Chapter 11: Upgrading Modular Messaging software on a customer-provided server on page 215.

When upgrading an Avaya MAS there are different procedures depending upon the current system's release.

First review the Upgrade requirements on page 159.

Next, complete the procedures in one of the following sections:

- Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 161
- Upgrading from Release 1.1 to Release 4.0 on page 179

Finally, after upgrading all MASs in the system, update the client software on all subscriber machines where it is installed. For more information, see Updating client software on page 214.

CAUTION:

If you are upgrading to Exchange 2007 or adding Exchange 2007 mail servers, complete the upgrade to Modular Messaging Release 4.0 before you begin the Exchange 2007 upgrade or additions. These are separate upgrade procedures and should not be completed concurrently. For additional information, see Appendix J: Installing Modular Messaging with Exchange 2007 on page 363.

Upgrade requirements

To successfully upgrade a system to Modular Messaging Release 4.0, you need:

- *For a 1.1 to 4.0 upgrade only,* one of the following:
  - A replacement hard disk drive with preloaded Avaya Modular Messaging Application Server (MAS) and boot software.
  - If a replacement drive is not available, the *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino* media.
- *For a 1.1 to 4.0 upgrade only,* all account names and passwords must conform to Windows 2003 security rules. If your account names and passwords do not conform to the new

rules, you must change them before you analyze your system with the DCT executable file (MMDCT.exe). If you must change your Modular Messaging account names or passwords, contact your support organization for more information.

- The planning forms used to install the existing Modular Messaging system.
- Release 4.0 of the Modular Messaging application software and documentation.
  - *Avaya Modular Messaging Messaging Application Server Software* media
  - *Avaya Modular Messaging Documentation* media
- The following information and software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - The most current copy of the configuration notes for this switch integration.
  - Avaya software updates that are required to bring the Avaya Modular Messaging software up to date after an upgrade. Download this software to a USB storage device. For more information about downloading the updates, see Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support site to a USB storage device.
  - The latest Modular Messaging 4.0 Client software package.
- A printed copy of the upgrade checklist for an Avaya MAS. See Modular Messaging upgrade (R3.0/3.1-->R4.0) on an Avaya MAS on page 267.
- *Release 1.1 upgrade only.* Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.)

  Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.)
- You must obtain a new RFA license for your upgraded system. For additional information, see Obtaining and installing a license on MAS#1 on page 127.

  Release 4.0 does not support the following TTS engines: DecTalk and TTS3000. If you were using either of these TTS engines, the upgrade automatically removes them and installs the ScanSoft RealSpeak TTS engine.
- Prepare the server for the upgrade by running recommended disk checks. See Running recommended disk checks on page 167.

Upgrading from Release 3.0 or 3.1 to Release 4.0

Use the following procedures to upgrade from Release 3.0 or Release 3.1 to Release 4.0. The upgrade from Release 3.0 or Release 3.1 to Release 4.0 is a software-only upgrade.

Do not use this procedure when upgrading from an S3400-family server to an S3500-family server. If you are upgrading hardware, for more information, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*.

If you are upgrading from Release 1.1, do not perform this procedure. Instead, go to Upgrading from Release 1.1 to Release 4.0 on page 179.

Overview

Note:

A Modular Messaging software upgrade requires several server restarts. Plan to do the software upgrade during low-usage hours.

To upgrade the system to Modular Messaging Release 4.0:

1. Review the configuration notes for any changes that might be needed in the areas of board configuration, switch programming, and application configuration. For more information, see Upgrade requirements on page 159.
2. Complete pre-upgrade tasks to verify and save data, create a DCT data file (*.mmdct), busy out ports, back up the MAS, run recommended disk checks, and stop and reset Modular Messaging services. For more information, see Completing Release 3.0/3.1 to Release 4.0 pre-upgrade tasks on page 163.

   Note:

   When creating the DCT data file, include in the analysis any S3400 MASs that will be replaced with S3500 MASs. Also include the supplementary server if one is present. A DCT data file is not required for the upgrade. However, create one prior to the upgrade to save important system information for backup.

   If you are replacing Brooktrout boards with new Dialogic port boards, replace the boards before you begin the software upgrade.
3. Upgrade software on each MAS including: RealSpeak software, Dialogic drivers, and Modular Messaging software. For more information, see Upgrading Modular Messaging software on page 169.
4. Complete server setup by deleting old logs files, administering anti-virus software, installing Modular Messaging software updates, updating Microsoft Windows, disabling the private LAN, and enabling ports.
5. Configuring new Release 4.0 features and verify that required services are running.

Note:

Completely upgrade and test one MAS first, and let it run for 15 minutes before upgrading any additional MASs.

6. Update the Exchange extensions on each MAS and any other computer where Modular Messaging was previously installed (such as administrator machines or the Exchange server). Update client software on client machines where it was previously installed. See detailed steps in Chapter 5: Adding Exchange extensions for Modular Messaging on page 73 and Updating client software on page 214.

   Note:

   Schedule downtime for the Microsoft Exchange server if the Exchange Subscriber Administration extensions must be updated.

7. Perform acceptance tests on the entire system. See Completing the Release 3.0 or 3.1 to Release 4.0 upgrade on page 176.
8. Back up the new data. See Completing the Release 3.0 or 3.1 to Release 4.0 upgrade on page 176.

Because an upgrade includes many steps, print the upgrade checklist from Appendix A: Installation and upgrade checklists on page 255 and use it to track your progress.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

Considerations for multiple-MAS upgrades

In a multiple-MAS configuration, Avaya strongly recommends that all MASs that are running Release 3.0 or 3.1 software be upgraded to Modular Messaging Release 4.0 software as soon as possible. During an upgrade MASs in the same Voice Mail Domain can run different releases of Modular Messaging. However, at the completion of an upgrade, all MASs in the Voice Mail Domain must be running Release 4.0.

All MASs in the voice mail domain must be upgraded to the same release of Modular Messaging software before you can enable the new Release 4.0 features.

Switching the monitor to show the correct server

Use whatever method is required at this site to have the monitor display the Avaya MAS that you are installing.

For an 8-port Belkin KVM: the KVM switch is usually connected to the first Avaya MAS through the first computer port (VGA 01). Subsequent MASs (if present) are connected to computer ports VGA 02, VGA 03, and so on.

To show a different server on the monitor:

1. Slowly press **Scroll Lock**, then **Scroll Lock** again, and then the up (or down) arrow key to change to the server connected to a higher (or lower) port number.

   Alternatively you can type the port number instead of pressing the up or down arrow key (such as *01* for port 1). For complete user instructions, see the KVM switch documentation.

2. If you cannot access the correct server, verify that the cable connections are correct. To correct cable problems, power down the system and correct the cable connections. Then turn on the system again.

   For complete user and troubleshooting instructions, see the KVM switch documentation.

Completing Release 3.0/3.1 to Release 4.0 pre-upgrade tasks

It is crucial that you record all critical system settings and back up all data in advance. Complete the following tasks to prepare the Modular Messaging system for an upgrade:

- Verifying and saving data on page 163
- Creating a DCT data file on page 165
- Busying out ports on page 167
- Backing up the MAS on page 167
- Running recommended disk checks on page 167
- Logging off all remote logins on page 168
- Stopping Modular Messaging services on page 168
- Updating Windows Internet Explorer 7 security on page 168
- Applying Microsoft Windows Server 2003 Service Pack 2 on page 169

Verifying and saving data

Complete the following tasks before you start a Release 4.0 upgrade:

1. Verify key settings on the MAS, including:
   - Switch integration settings
   - Port board settings and extensions
   - Domain information
   - Basic system setup

- Modular Messaging service account and group
- Exchange settings

Ensure that you record the following items:

- Record the IP addresses for the MAS modems in the remote access service (RAS) group.
- In the VMSC for each MAS, record any *non-default* port groups and their names, such as the MWI port group.
- Record which Modular Messaging services are running on each MAS.
- SNMP trap destination and community details from the **Serviceability — Voice Mail Domain** window.

2. For a Release 3.0 only, complete the following steps to record all personal operator schedules. This information will be required to verify the schedules following the upgrade.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Personal Operator Schedules** tab.
   d. Click each schedule listed in the Schedules box and record the times set for each schedule.
   e. Close all windows.
3. If you use this MAS to create, administer and deploy caller applications, back up all your working files to a location other than the MAS. Additionally, on the MAS you must have a current backup of the Caller Apps folder that contains the deployed caller applications that the MAS uses when it is running. For example, you might have a backup of C:\Program Files\Avaya Modular Messaging\vserver\callerapps. Make a copy of the entire callerapps directory.

   If you do not have the original versions of the caller apps files that were used to administer caller apps, you can use a copy of the deployed **.uma* files found in the CallerApps folder. However, never administer caller applications files directly from the deployed location C:\ Program Files\Avaya Modular Messaging\vserver\callerapps.
4. Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Verify configuration and make any necessary changes as part of the upgrade.
5. Make a complete backup of all caller applications, customized tone files, customized prompt files, licensing files, WSO files and SIP certificates for SIP implementations. Also back up the system state and spool. See Backing up the system on page 157 for information about where to locate these files on your system.
6. Check for errors or warnings on the system. Resolve major and minor alarms.
7. Review product functionality with the customer, including:

- Differences that will be noticeable to the customer
- Known issues; see Product Support Notices (PSNs) on the Avaya support website
- Rollout plan for new features
- Security concerns

Creating a DCT data file

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe). A DCT data file (*.mmdct) is not required for the upgrade. However, create a data file prior to the upgrade to save important system information for backup.

To create a DCT data file:

1. Verify that the Modular Messaging system is working properly. All MASs, the supplementary server if one is present, and the Exchange message store must be running.
2. Switch the monitor to show MAS1. For more information, see Switching the monitor to show the correct server on page 162.
3. Log on using the customer account (for example, *mmacct*).
4. Verify that the messaging services on the MAS are running:
   a. Double-click the **Monitor** icon on the desktop or click **Start** > **Programs**> **Administration tools** > **Services**.
   b. In the left pane, click **Services (Local)**.
   c. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**.
   d. Verify that the **Status** column shows that service is **Started** for each messaging service that belongs on this MAS.
   e. If service is not started for a required messaging service, right-click that **MM** service and select **Start**.
5. Insert the USB storage device with the DCT executable file (MMDCT.exe) into a USB port on MAS1. You can use any of the available USB ports.
6. Navigate to where you stored the executable file and double-click it.
7. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
8. When asked if you want to use an existing DCT data file (*.mmdct), click **No**.

9. On the **MM System Analysis** screen, select MAS#1 from the dropdown list at the bottom of the window. Click **Start**.

   The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected,” The DCT displays the newly created DCT data file.

10. For a single-MAS upgrade, proceed to step 12. For a multiple-MAS system, save the DCT data file to a USB storage device.
11. For a multiple-MAS system, update the DCT data file with information from additional MASs:

    Note:

    Analyze all MASs in numeric order, first to last.

    a. Insert the USB storage device with the DCT data file created for MAS#1 into the USB port on the next MAS that you are going to analyze.
    b. Verify that the correct services are running on the MAS.
    c. On the USB storage device, double-click **MMDCT.exe**.
    d. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
    e. When asked if you want to use an existing DCT data file, click **Yes**.
    f. Navigate to where you saved the DCT data file that you created for MAS#1. Double-click it.
    g. In the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

       The system displays the process of data collection. When analysis is complete, you see the message that “information has been successfully collected.” The DCT displays the newly updated file.

    h. Save the DCT data file by overwriting the previous file.

    CAUTION:

    In multiple-MAS systems, review and revise the DCT data file after analyzing all MASs that will be upgraded. Information that is manually entered before the final analysis might be overwritten in the analysis of subsequent MASs.

    Do not change any data that was populated by the DCT system analysis.

12. Review the completed file. Enter information in empty fields if necessary.

Note:

Verify that there are no red x's next to the screen names in the left panel. Red x's indicate data that is incomplete or not valid. Information must be complete and valid before you can proceed with the upgrade. The DCT does not populate all fields when analyzing a system. It will be necessary to enter information, for example, passwords

13. When all fields in the DCT are complete, click **Complete** at the bottom of the screen. *S*ave the file to a location where it will be included in the backup. A DCT data file is not required for the upgrade. However, create one prior to the upgrade to save important system information for backup.

Busying out ports

Busy out the ports on the MAS that you are upgrading and on the switch before you start the upgrade. Otherwise, messages will spool on the MAS, and add to the upgrade time.

To busy out the ports:

1. The PBX administrator must use the procedures appropriate for this PBX to busy out the ports. Depending on the switch integration, the administrator might be able to temporarily reroute calls to other MASs. If an MAS is unavailable, callers into the system might hear ring-no answer or a busy signal.
2. Switch the monitor to show the MAS.
3. Use the port monitor to disable the MAS ports:
   a. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
   b. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
   c. Right-click the port list and select **Disable**.
   d. Verify that the status of all ports is **Disabled**.
   e. Click **OK** to close this window.

Backing up the MAS

Before beginning the software upgrade, make a current backup of the important system files, including any customized tone files and the DCT data file that you just created. For this procedure, see Backing up the system on page 157.

Running recommended disk checks

Avaya recommends that the hard disk drive in the server be maintained to prevent possible problems. Run the two following procedures if they were not previously run in preparation for the upgrade. See Upgrade requirements on page 159.

- Disk Defragmenter system tool
- **chkdsk** command

Logging off all remote logins

Log off all remote logins:

1. Bring up your Windows Task Manager and select the **Users** tab.
2. Select remote logins and click **Logoff**.

Stopping Modular Messaging services

Stop and reset all Modular Messaging (MM) services as follows:

Note:

If you have not already recorded the Modular Messaging services running on this MAS, do so now before stopping services.

1. Navigate to the **C:\Avaya_Support\tools\servicecontrol** directory.
2. Double-click the **StopMMServices.exe** file.

Updating Windows Internet Explorer 7 security

If your Avaya MAS has been upgraded to Internet Explorer 7 and if you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.
3. If a window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Applying Microsoft Windows Server 2003 Service Pack 2

All MASs in the Voice Mail Domain must be running Microsoft Windows Server 2003 with Service Pack 2 for Modular Messaging Release 4.0. Install Microsoft Windows Service Pack 2 on this MAS. Check with the Windows administrator for site-specific procedures.

Upgrading Modular Messaging software

Note:

If you plan to run the upgrade overnight, use the Voice Mail System Configuration application to disable the tracing database nightly tasks. After you complete the upgrade, reenable these tasks.

Use the following procedures to upgrade from Release 3.0 or Release 3.1 to Release 4.0 software.

- Upgrading RealSpeak software on page 169
- Upgrading Dialogic drivers on page 170
- Upgrading MAS software on page 172

Upgrading RealSpeak software

This section describes how to update the RealSpeak driver and languages as part of a Release 4.0 software upgrade.

To upgrade RealSpeak software, complete the following steps:

1. Log on to the MAS using the account that was originally used to install RealSpeak software. If you do not know which account was used, complete the following steps:
   a. Log on as the customer account (for example, *mmacct*).
   b. Click **Start** > **Control Panel** > **Add or Remove Programs.**
   c. In the list of currently installed programs, look for the **RealSpeak** program. If it is in the list continue with step 2 to delete the program.
   d. If the program was not in the list, repeat steps a through c with different accounts until you locate the RealSpeak program.
2. Insert the *Avaya Modular Messaging Messaging Application Server Software* (DVD 2 of 2).
3. From the DVD, run the **RealSpeak\uninstallRealspeak.bat** file.
4. Reboot the MAS.
5. Log back on to the MAS using the account that was originally used to install RealSpeak software.
6. On the MAS, delete the folder ***<drive letter>*:\Program Files\ScanSoft**.

7. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 2) is in the DVD drive of the MAS.
8. In the media's **Realspeak** directory, double-click the **installRSEngine.bat** file.
9. Complete the wizard, accepting all defaults and the license agreement.
10. On **Ready to Install the Program**, click **Install**.
11. When installation is complete, click **Finish**.
12. Click **Yes** to restart the server.
13. Log back on to the MAS using the customer account.
14. In the **Realspeak** directory, double-click the **installRSLangs.bat** file.
15. After the RealSpeak languages are installed, remove the *Avaya Modular Messaging Messaging Application Server Software*.

Starting all Modular Messaging services

Restart Modular Messaging services and verify that they are running:

1. Click **Start** > **Run** to open the **Run** window.
2. In the **Open** field, type the following and press **Enter**:

   C:\Avaya_Support\Scripts\serverrecovery.vbs

   The script takes a few seconds to run.
3. Verify that the services are set correctly.

Upgrading Dialogic drivers

Do this task on each MAS that contains Dialogic port boards.

Complete these steps on any MAS that contains Dialogic port boards to update the drivers.

1. Log on to the MAS using the customer account (for example *mmacct*).
2. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
3. Uninstall Dialogic drivers:
   a. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUninstall.bat** file.
   b. On the Question window, click **No**.
   c. On the Confirm Uninstall window, click **OK**.
   d. On the Maintenance Complete window, select **Yes, I want to restart my computer now** and then click **Finish**.

4. Log onto the MAS using the customer account.

   The **Clean-up Utility** runs automatically.

5. On the Hardware Update Wizard, click **Cancel**.
6. Reinstall Dialogic drivers:
   a. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUpgrade.bat** file.
   b. Complete the wizard, accepting all defaults.
   c. If a warning window about Java appears, click **OK**.

      A **Setup Status** window appears and installation begins.

      After the Dialogic files install, a **Found New Hardware** window appears.

   d. Select **No, not this time**, and click **Next**.
   e. Select **Install the software automatically**, and click **Next**.
   f. In the unsigned driver dialog box, click **Yes**.
   g. After the board is set up, click **Finish**.
   h. Repeat these steps for all Dialogic boards on this MAS.
   i. On the Setup Complete window, select Not to restart the computer and click **Finish**.
7. Apply the Dialogic firmware patch:
   a. Open the command prompt window and use the cd command to navigate to the dialogic drivers folder on the DVD.
   b. Enter the following commands at the prompt:
      - **`MMDialogicPatch.bat "%INTEL_DIALOGIC_FWL%" "%INTEL_DIALOGIC_LIB%"`**
      - **`copy /Y "%TEMP%\DIALOGIC\*.prm" "%INTEL_DIALOGIC_FWL%"`**
8. Restart the MAS and log on using the customer account.
9. From the media's **\Dialogic Drivers\mm_install** directory, double-click the **SetDialogicSettings.exe** file. This restores the Dialogic configuration to the MAS.
10. Start the Dialogic drivers:
    a. Click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

       The Intel Dialogic product **Configuration Manager** window opens.

    b. On the button bar, click the green **> (Start)** button.

       Wait for the devices to start and the installed boards to show a green light.

    c. Close the **DCM** window.
11. Reboot the MAS.

Upgrading MAS software

Note:

If anti-virus software is installed, Avaya recommends that you disable it while you upgrade the Modular Messaging software to prevent possible negative interactions. Enable the virus-checking software again after the upgrade is complete.

To upgrade the software on this MAS to Modular Messaging Release 4.0:

1. If you changed any logging settings before the upgrade, complete the following steps:
   a. Launch **c:\avaya_support\tools\MM_Logging\MMLogging.exe**.
   b. Record any values that you changed, such as **Log file size** and **Number of log files**.
2. Close all monitoring tools, such as the port monitor.
3. Log on to the MAS using the customer account (for example *mmacct*).
4. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
5. In the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) **Install** directory, double-click the **Setup.exe** file.

   The Avaya Modular Messaging Installation Wizard launches. All components that were previously installed on this machine, and the Diagnostic tools, are automatically selected. These selections cannot be changed. The currently installed version is displayed to the right of the specific tool or application. The version that will be installed is displayed at the top of the page following the Avaya Modular Messaging title.

   a. Verify that the **Select Configuration** field displays **Microsoft Exchange**.
   b. For all upgrades check the following boxes:
      - **Enable Windows Installer logging**
      - **Fax Sender Service**
   c. For Release 3.0 to Release 4.0 upgrades also check the following boxes:
      - **MM Configuration Tools**
      - **Snapshot Utility**
      - **Web Subscriber Options User Interface**
      - Any additional components that are necessary for this MAS
   d. Click **Install**.
   e. Click **Run System Upgrade**.
   f. When prompted, click **Restart** to continue the upgrade.

6. When the reboot is complete, log on as the Modular Messaging customer account (such as *mmacct*).

   The Installation Wizard starts automatically. If the wizard does not automatically start, double-click the **Setup.exe** file.

7. Follow prompts to remove service packs and patches as needed. Depending on the patch, if the system requests it, restart the server.

   The system upgrades the Modular Messaging software components. This step can take several minutes.

8. If prompted by the system, enter the password of the account used by Modular Messaging services.

9. Follow the installation Configuration Wizard prompts.

   The system upgrades the Modular Messaging software components. The components window shows which component is being installed. The system will pause for several minutes when installing Avaya SPIRIT Agent. This is normal. Also, this step might take several minutes for a large database or global address list (GAL).

10. If you installed Web Subscriber Options, follow the prompts to complete the installation wizard.

11. When the Installation Wizard flashes a warning that installation is not complete, restart the system and log back on as the Modular Messaging customer account (such as *mmacct*).

    The Installation Configuration Wizard runs automatically displaying the Service Configuration window.

12. When the update is complete, click **Finish**.

13. Remove the media from the DVD drive.

14. Verify the settings of the MM Services. If any are incorrect, reset them to the correct setting.

15. If you disabled the anti-virus software on this MAS, enable it again now.

Completing server setup

Complete the following tasks as necessary to finish server setup:

- Deleting old logs on page 174
- Administering anti-virus software on page 174
- Installing software updates on page 175
- Updating Microsoft Windows on page 175
- Disabling the private LAN on page 175
- Enabling ports on page 176

Deleting old logs

For Release 3.0 upgrades only, older logs might remain on the system because of a change in file names. Remove older logs by going to the **c:\avaya_support\logs** folder on the MAS and deleting any logs that are older than the upgrade's start time.

Administering anti-virus software

Avaya strongly recommends that anti-virus software be installed on any Microsoft Windows computer that runs Avaya Modular Messaging software. The type of virus-checking software used and the method of installation depends on customer requirements and the local implementation.

Guidelines for using anti-virus software on a computer that is running Avaya Modular Messaging software include:

- Consider the impact that anti-virus scanning has on the performance of the Avaya messaging servers. Avaya recommends the use of "on-demand" scanning, where scans are run at scheduled intervals. Avoid using a message-scanning method that could drastically impact the performance of the Avaya servers. For example, do *not* use "on-access" scanning, where scans are run whenever a file is accessed.

  Note:

  Some anti-virus software applications default to scan on startup. Disable this feature, or it increases the time that it takes a system to come back online after a reboot.

- Avaya recommends administering the anti-virus software as follows:
  - Scan the hard disk at least once per week during off peak hours. Avaya recommends a daily scan. You can run scans on multiple Modular Messaging servers at the same time. However, avoid scheduling the anti-virus scan at the same time as when a scheduled backup occurs on the MAS.
  - Schedule virus definition updates to occur automatically at least once per week. The updates must occur before the next scheduled scan time to ensure that the latest data (DAT) files are used during the scan. However, do not schedule updates to occur during a virus scan.
  - If the anti-virus software locates a virus, it should first attempt to clean the file. If that fails, the software should move the file to a different directory.

Information about anti-virus interoperability of Avaya Modular Messaging software with various anti-virus products and performance testing is available. The information addresses security issues such as reporting concerns and receiving notifications. For more information, see *Anti-Virus Software on Microsoft Windows-based Avaya Messaging Products.*

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch (hot fix).

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

   Note:

   If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Updating Microsoft Windows

A new Avaya MAS contains the most current Microsoft Windows software at the time it is shipped. After installation, you must install the latest Microsoft Windows system updates, security patches, and hot fixes to protect the operating system from known security weaknesses. Check with the appropriate Windows administrator for the software update procedures to use at this site.

Note:

Avaya technical support representatives must follow their specified internal procedures for verifying the software that is installed. If required, they must update the software with the latest patches as instructed.

Disabling the private LAN

The Modular Messaging private LAN is not used with the Microsoft Exchange configurations. If upgrading from Release 3.0, disable the LAN by completing the following steps:

1. On the desktop, right-click the **Network Places** icon. Select **Properties**.
2. In the **Network Connections** window:
   a. Highlight either **Intel(R) PRO100M Network Connection**, or **Intel(R) 100+ PCI Adapter,** whichever appears in the window. Right-click your selection. From the drop-down list, select **disable**.
   b. From the toolbar menu, select **Advanced** > **Advanced Settings**. Verify that the corporate LAN is listed at the top of the list of connections. If not, highlight the name of

the corporate LAN and use the arrows to move it up in the list. When finished, click **OK** to close this window.

3. Click **OK** to close the **Network Connections** window.

Enabling ports

Enable the ports on the MAS that you are upgrading.

Use the port monitor to enable the MAS ports:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
2. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
3. Right-click the port list and select **Enable**.
4. Verify that the status of all ports is **Enabled**.
5. Close the **Port Monitor** window.

Completing the Release 3.0 or 3.1 to Release 4.0 upgrade

Continue the Modular Messaging software upgrade as appropriate:

1. If you have more than one MAS:
   a. ***For the first MAS upgraded only,*** let the Modular Messaging software run for 15 minutes. Return to Switching the monitor to show the correct server on page 162 to begin upgrading the next MAS.
   b. Repeat the Modular Messaging software upgrade procedure until all MASs are upgraded.
2. Enable and configure MM Fax Service. If this MAS will be running MM Fax Sender Service, complete the following steps:
   a. Navigate to the **C:\Avaya_Support\Utils** directory.
   b. Double-click the **FaxSenderEnable.exe** file.
   c. Restart Microsoft Windows Fax Service.
   d. Configure MM Fax Service by completing the steps described in Configuring MM Fax Service on page 132.

Note:

Fax Sender Service running with a QSIG T1 or QSIG E1 integration requires the D480JCT-1T1, D/600JCT-1E1 or D/600JCT-2E1 dual span QSIG board. If you are running with the D/240JCT-T1 or D/300JCT-1E1 board, you must upgrade your board before the system can run Fax Sender Service. The dual span QSIG boards also require configuration of the **FirmwareFile 2** parameter on the **Intel Dialogic product Configuration Manager - Properties** window. For more information, see Configuring T1-QSIG or E1-QSIG boards on page 298.

3. Configure Audit service by completing the steps described in Configuring Audit Service on page 132.
4. Configure and activate additional new Release 4.0 features as needed using the Voice Mail System Configuration program.
5. Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade. For additional information, see Configuring serviceability settings on page 125.
6. For a Release 3.0 to Release 4.0 upgrade only, complete the following steps to verify all personal operator schedules.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Personal Operator Schedules** tab.
   d. Verify that all personal operator schedules recorded before the upgrade are included in the list. If a schedule is missing, complete the following steps:
      1. Click the **Add** button
      2. In the **Enter Personal Operator Schedule Name** dialog box in the **Schedule Name** field, enter the name of the missing schedule.
      3. Click **OK** to return to the **Personal Operator Schedules** tab.
      4. In the schedule grid, enter the schedule times.
   e. Click each personal operator schedule in the schedule list and verify that the schedule times correspond to the times recorded before the upgrade. Correct any discrepancies in the schedule grid.
   f. Close all windows.

   For additional information about configuring personal operator schedules, see the *Avaya Modular Messaging MAS Administration Guide.*
7. When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.
8. Enable all scheduled tasks that you disabled before starting the upgrade.

9. Update the Modular Messaging Active Directory Exchange extensions on any machines where they are installed. See Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

   Note:

   The Modular Messaging Active Directory Exchange extensions are updated along with any other Modular Messaging software that is installed on this machine (multiple Modular Messaging software component checkboxes might be checked). This ensures that all currently installed components are upgraded. The components are installed in the correct order when you click **Install**.

10. Update the client software on any non-MAS machines where it is installed. See Updating client software on page 214.
11. Set up test subscribers and perform all acceptance tests that are relevant to the system. See Chapter 9: Testing and backing up the system on page 145.
12. When acceptance tests are complete, back up each MAS using the regular backup procedures for this site. For guidelines, see Backing up the system on page 157.
13. When finished with each MAS, verify that the MAS disk is in good condition by running the following:
    - Disk Defragmenter system tool
    - **chkdsk** command
14. If you are adding a new MAS to this system, begin the installation now. For more information, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*.

Upgrading from Release 1.1 to Release 4.0

Use the following procedures to upgrade from Release 1.1 to Release 4.0.

Note:

If you are upgrading from Release 3.0 or Release 3.1, do not perform this procedure. Instead, go to Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 161.

A Modular Messaging software upgrade requires several server restarts. Plan to do the software upgrade during low-usage hours.

CAUTION:

Release 1.1 upgrades to Release 4.0 require a new operating system and application software on each MAS. Therefore, you must reinstall the operating system on all servers as part of the system upgrade. It is crucial that you record all critical system settings and back up all data in advance. All information is erased from the servers during the software upgrade.

Overview

This section describes how to upgrade a Modular Messaging system that is running Modular Messaging Release 1.1 software to Modular Messaging Release 4.0.

Note:

If you are upgrading a system that will include Exchange 2007 mail servers, complete the upgrade to Modular Messaging Release 4.0 before adding the Exchange 2007 mail servers. For additional information, see Appendix J: Installing Modular Messaging with Exchange 2007 on page 363.

To upgrade the system to Modular Messaging Release 4.0:

1. Review the configuration notes for any changes that might be needed in the areas of board configuration, switch programming, and application configuration. For more information, see Upgrade requirements on page 159.
2. Complete pre-upgrade tasks to verify and save data, create a DCT data file, busy out ports, and back up the MAS. For more information, see Completing Release 1.1 to Release 4.0 pre-upgrade tasks on page 181.

   Note:

   When creating the DCT data file, include in the analysis any S3400 MASs that will be replaced with S3500 MASs. Also include the supplementary server if one is present.

3. Prepare the MAS for the upgrade by installing a replacement disk drive or reloading the boot image software. For more information, see Preparing the MAS for the upgrade on page 186. If you are replacing an S3400 server with an S3500 server, see Upgrading to an S3500 server on page 211.
4. Upgrade the software on each MAS. For more information, see Continuing the Release 1.1 to 4.0 upgrade on page 196 and Upgrading Modular Messaging Software on page 198.

   Note:

   Completely upgrade and test one MAS first, and let it run for 15 minutes before upgrading any additional MASs.
5. Complete server setup by administering anti-virus software, installing Modular Messaging software updates, updating Microsoft Windows, disabling the private lan, and configuring ports boards.
6. Configure the voice mail system and verify that required services are running.
7. Update the Exchange extensions on each MAS and any other computer where Modular Messaging was previously installed (such as administrator machines or the Exchange server). For more information, see Completing the Release 1.1 to Release 4.0 upgrade on page 207 and Updating client software on page 214.

   Note:

   Schedule downtime for the Microsoft Exchange server if the Exchange Subscriber Administration extensions must be updated. For a Release 1.1 to Release 4.0 upgrade, the extension must be updated. See Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.
8. Perform acceptance tests on the entire system. See Completing the Release 1.1 to Release 4.0 upgrade on page 207.
9. Back up the new data. See Completing the Release 1.1 to Release 4.0 upgrade on page 207.

Because an upgrade includes many steps, print the upgrade checklist from Appendix A: Installation and upgrade checklists on page 255 and use it to track your progress.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

Considerations for multiple-MAS upgrades

In a multiple-MAS configuration, Avaya strongly recommends that all MASs that are running Release 1.1 software be upgraded to Modular Messaging Release 4.0 software as soon as possible. During an upgrade MASs in the same Voice Mail Domain can run different releases of

Modular Messaging. However, at the completion of an upgrade, all MASs in the Voice Mail Domain must be running Release 4.0.

All MASs in the voice mail domain must be upgraded to the same release of Modular Messaging software before you can enable the new Release 4.0 features.

If you are adding a new Modular Messaging machine to a multiple-MAS configuration, it cannot join an existing voice mail domain that only has Release 1.1 MAS servers in it. You must first upgrade one or more of the existing servers, leave the system running for at least 15 minutes, and then add the new Avaya Modular Messaging server. For more information about adding a new server, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*.

Switching the monitor to show the correct server

Use whatever method is required at this site to have the monitor display the Avaya MAS that you are installing.

For an 8-port Belkin KVM: the KVM switch is usually connected to the first Avaya MAS through the first computer port (VGA 01). Subsequent MASs (if present) are connected to computer ports VGA 02, VGA 03, and so on.

To show a different server on the monitor:

1. Slowly press **Scroll Lock**, then **Scroll Lock** again, and then the up (or down) arrow key to change to the server connected to a higher (or lower) port number.

   Alternatively you can type the port number instead of pressing the up or down arrow key (such as *01* for port 1). For complete user instructions, see the KVM switch documentation.

2. If you cannot access the correct server, verify that the cable connections are correct. To correct cable problems, power down the system and correct the cable connections. Then turn on the system again.

   For complete user and troubleshooting instructions, see the KVM switch documentation.

Completing Release 1.1 to Release 4.0 pre-upgrade tasks

It is crucial that you record all critical system settings and back up all data in advance. All information is erased from the servers during the software upgrade.

Complete the following tasks to prepare the Modular Messaging system for an upgrade:

- Verifying and saving data on page 182
- Creating a DCT data file on page 183
- Busying out ports on page 185
- Backing up the MAS on page 185

Verifying and saving data

Complete the following tasks before you start a Release 4.0 upgrade:

1. Verify key settings on the MAS, including:
   - Switch integration settings
   - Port board settings and extensions
   - Domain information
   - Basic system setup
   - Modular Messaging service account and group
   - Exchange settings

   Ensure that you record the following items:
   - Under **Routing and Remote Access**, record the IP addresses for the MAS modems in the remote access service (RAS) group.
   - In the VMSC for each MAS, record any *non-default* port groups and their names, such as the MWI port group.
   - Record which Modular Messaging services are running on each MAS.
   - SNMP trap destination and community details from the **Serviceability — Voice Mail Domain** window.
2. Complete the following steps to record all personal operator schedules. This information will be required to verify the schedules following the upgrade.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Attendant Schedules** tab.
   d. Click each schedule listed in the Schedules box and record the times set for each schedule.
   e. Close all windows.
3. If you use this MAS to create, administer and deploy caller applications, back up all your working files to a location other than the MAS. Additionally, on the MAS you must have a current backup of the Caller Apps folder that contains the deployed caller applications that the MAS uses when it is running. For example, you might have a backup of C:\Program Files\Avaya Modular Messaging\vserver\callerapps. Make a copy of the entire callerapps directory. The entire folder and its structure must be restored.

   If you do not have the original versions of the caller apps files that were used to administer caller apps, you can use a copy of the deployed **.uma* files found in the CallerApps folder. However, never administer caller applications files directly from the deployed location C:\ Program Files\Avaya Modular Messaging\vserver\callerapps.

4. Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.
5. Make a complete backup of all caller applications, customized tone files, customized prompt files, licensing files, WSO files and SIP certificates for SIP implementations. Also back up the system state and spool. See Backing up the system on page 157 for information about where to locate these files on your system.
6. Check for errors or warnings on the system. Resolve major and minor alarms.
7. Review product functionality with the customer, including:
   - Differences that will be noticeable to the customer
   - Known issues; see Product Support Notices (PSNs) on the Avaya support website
   - Rollout plan for new features
   - Security concerns

Creating a DCT data file

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe). A DCT data file (*.mmdct) is required for a Release 1.1 to Release 4.0 upgrade.

To create the DCT data file:

1. Verify that the Modular Messaging system is working properly. All MASs, the supplementary server if one is present, and the Exchange message store must be running.
2. Switch the monitor to show MAS1. For more information, see Switching the monitor to show the correct server on page 181.
3. Verify that the messaging services on the MAS are running:
   a. Double-click the **Monitor** icon on the desktop.
   b. In the left pane, click **Services (Local)**, if the item is not already selected.
   c. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**.
   d. Verify that the **Status** column shows that service is **Started** for each messaging service that belongs on this MAS.
   e. If service is not started for a required messaging service, right-click that **MM** service and select **Start**.

      The system starts the messaging service.
4. Insert the USB storage device with the DCT executable file (MMDCT.exe) into a USB port on MAS1. You can use any of the available USB ports.

5. Navigate to where you stored the executable file and double-click it.
6. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
7. When asked if you want to use an existing DCT data file, click **No**.
8. On the **MM System Analysis** screen, select MAS#1 from the dropdown list at the bottom of the window. Click **Start**.

   The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected,” The DCT displays the newly created DCT data file.
9. Save the DCT data file to a USB storage device. (Do not save the file to the MAS.)
10. For a multiple-MAS system, update the DCT data file with information from additional MASs:
    a. Insert the USB storage device with the DCT data file created for MAS#1 into the USB port on the next MAS that you are going to analyze.
    b. Verify that the correct services are running on the MAS.
    c. On the USB storage device, double-click **MMDCT.exe**.
    d. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
    e. When asked if you want to use an existing DCT data file, click **Yes**.
    f. Navigate to where you saved the DCT data file that you created for MAS#1. Double-click it.
    g. In the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

    Note:

    Analyze the MASs in numeric order, first to last.

    Analyze MASs that you plan to replace with new S3500 servers.

    When upgrading to an S3500 server, you can decrease the number of MASs in the voice mail domain (VMD). For more information, see *Modular Messaging S3500-Family Hardware Maintenance and Additions.*

    At the completion of the upgrade, all MASs in the VMD must be running Modular Messaging Release 4.0.

    The system displays the process of data collection. When analysis is complete, you see the message that “information has been successfully collected.” The DCT displays the newly updated file.
    h. Save the DCT data file by overwriting the previous file.

CAUTION:

In multiple-MAS systems, review and revise the DCT data file after analyzing all MASs that will be upgraded. Information that is manually entered before the final analysis might be overwritten in the analysis of subsequent MASs.

Do not change any data that was populated by the DCT system analysis.

11. Review the completed file. Enter information in empty fields if necessary.

Note:

Verify that there are no red x's next to the screen names in the left panel. Red x's indicate data that is incomplete or not valid. Information must be complete and valid before you can proceed with the upgrade.

12. When all fields in the DCT are complete, click **Complete** at the bottom of the screen. *S*ave the DCT data file to a location that will be accessible to the MAS that you are upgrading. Usually, save the file to a USB storage device. Do not save the file to the MAS.

Busying out ports

Busy out the ports on the MAS that you are upgrading and on the switch before you start the upgrade. Otherwise, messages will spool on the MAS, and add to the upgrade time.

To busy out the ports:

1. The PBX administrator must use the procedures appropriate for this PBX to busy out the ports. Depending on the switch integration, the administrator might be able to temporarily reroute calls to other MASs. If an MAS is unavailable, callers into the system might hear ring-no answer or a busy signal.
2. Switch the monitor to show the MAS. For more information, see Switching the monitor to show the correct server on page 181.
3. Use the port monitor to disable the MAS ports:
   a. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
   b. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
   c. Right-click the port list and select **Disable**.
   d. Verify that the status of all ports is **Disabled**.
   e. Click **OK** to close this window.

Backing up the MAS

Before beginning the software upgrade, make a current backup of the important system files, including any customized tone files and the DCT data file that you just created. For this procedure, see Backing up the system on page 157.

Preparing the MAS for the upgrade

The Modular Messaging Release 4.0 software requires a new operating system and application software on each MAS. You must perform one of the following procedures to prepare the MAS for the Modular Messaging software upgrade.

- If you have a new hard disk drive with the Modular Messaging boot image already installed, replace the existing hard drive with the new one. For more information, see Replacing an MAS drive in an S3400-family server on page 186.
- If you do not have a replacement hard disk drive, install the new Avaya boot image on the existing hard drive. For more information, see Installing new Avaya boot image on page 195.

  Note:

  If you are replacing an S3400 server with an S3500 server, see Upgrading to an S3500 server on page 211.

After completing either the installation of the new drive, or the reload of the boot image, continue with Continuing the Release 1.1 to 4.0 upgrade on page 196.

Replacing an MAS drive in an S3400-family server

Follow the procedures in this section only if you received a replacement hard disk drive for the upgrade. If you did not receive a replacement drive, see Installing new Avaya boot image on page 195. Complete the following procedures to replace the IDE hard disk drive in an MAS that uses Avaya S3400-family server hardware. For more information about S3400-family server hardware, see:

- *Avaya Modular Messaging S3400-Family Hardware Maintenance and Additions*
- The **Maintenance** section on the *Avaya Modular Messaging Documentation* media

  Note:

  If you experience problems and must back out of the upgrade, you can recover temporarily by reinstalling the old drive back into the MAS. Contact your Avaya or business partner support organization for assistance with completing the upgrade.

Gathering the required tools

You must have the following tools on site to work on a Avaya S3500-family message server:

- A medium-width flatblade screwdriver
- A No. 2 Phillips screwdriver

- A small pair of needlenose pliers
- A small pair of wire cutters
- A sharp, pointed instrument, such as a ballpoint pen

CAUTION:

Do *not* use the point of a lead pencil to operate the system reset switch. The graphite can damage a circuit board and cause problems, such as electrical shorts.

Removing AC power

Do the following for every hard disk drive that is being replaced:

1. Verify that the replacement equipment is on site.
2. Verify that the green power lamp on the front of the server is off. If the lamp is lit, complete the following steps:
   a. Click **Start** > **Shut Down**
   b. In the **Shut Down Windows** window select **Shut Down** and click **OK**.

      The server shuts down the software and turns off automatically.
   c. If the server fails to turn off automatically, push and hold down the power button on the front of the server for a few seconds.

   Note:

   In the United Kingdom, if a modem is attached to the server, disconnect the telephone line before you unplug the power cord.
3. Unplug the power cord from the AC connector on the back of the server.

Removing the front bezel and top cover

Remove the front bezel and top cover to access the internal components:

1. *For a stackable desktop setup,* remove any units stacked on top of the server that you must access.
2. Remove the bezel, the plastic cover, on the front of the chassis.
   a. Press down on the two tabs on the top of the bezel.
   b. Tilt the bezel forward, and then lift it out.
3. Loosen the screw latch for the top cover, located on the back of the chassis.
4. *For a rack-mount setup,* slide the server forward.

Note:

To get sufficient cable slack, you might need to unplug the cables on the back of the MAS. You can then slide the server all the way forward.

5. Slide the top cover towards the front of the server, and then lift the cover off the chassis.

Removing the drive cage

CAUTION:

Observe proper electrostatic discharge (ESD) precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground. For more information, see "Protecting against ESD damage" on the documentation media.

To remove the drive cage:

1. Disconnect the signal and power cables to all drives in the cage assembly. The connections vary per model of MAS. See the appropriate figure:
   - *Integrated video and LAN model:* See Figure 18: S3400-family MAS drive cage cables—integrated video and LAN on page 189.
   - *Nonintegrated video and LAN model:* See Figure 19: S3400-family MAS drive cage cables—nonintegrated video and LAN on page 190.

   To disconnect the drive cables:

   a. Unplug the power connectors from the DVD player and lower drive (hda).

   b. Unplug the 80-pin IDE ribbon cable from the DVD and the lower drive.

2. Remove the drive cage retaining screws. See Figure 20: Removing or replacing the S3400-family drive cage on page 191.

   a. Remove the 4 screws from the front of the drive cage.

   b. Remove the 2 flathead screws from the side of the chassis, located about 6 inches from the front of the cage.

   Note:

   For rack-mount setups, you might need to loosen or remove some of the screws that attach the rail handle to the server. Then you can slide out the drive cage.

3. Gently slide the drive cage assembly forward and out of the server.
4. Place the drive cage assembly on a clean, static-free surface.

Figure 18: S3400-family MAS drive cage cables—integrated video and LAN

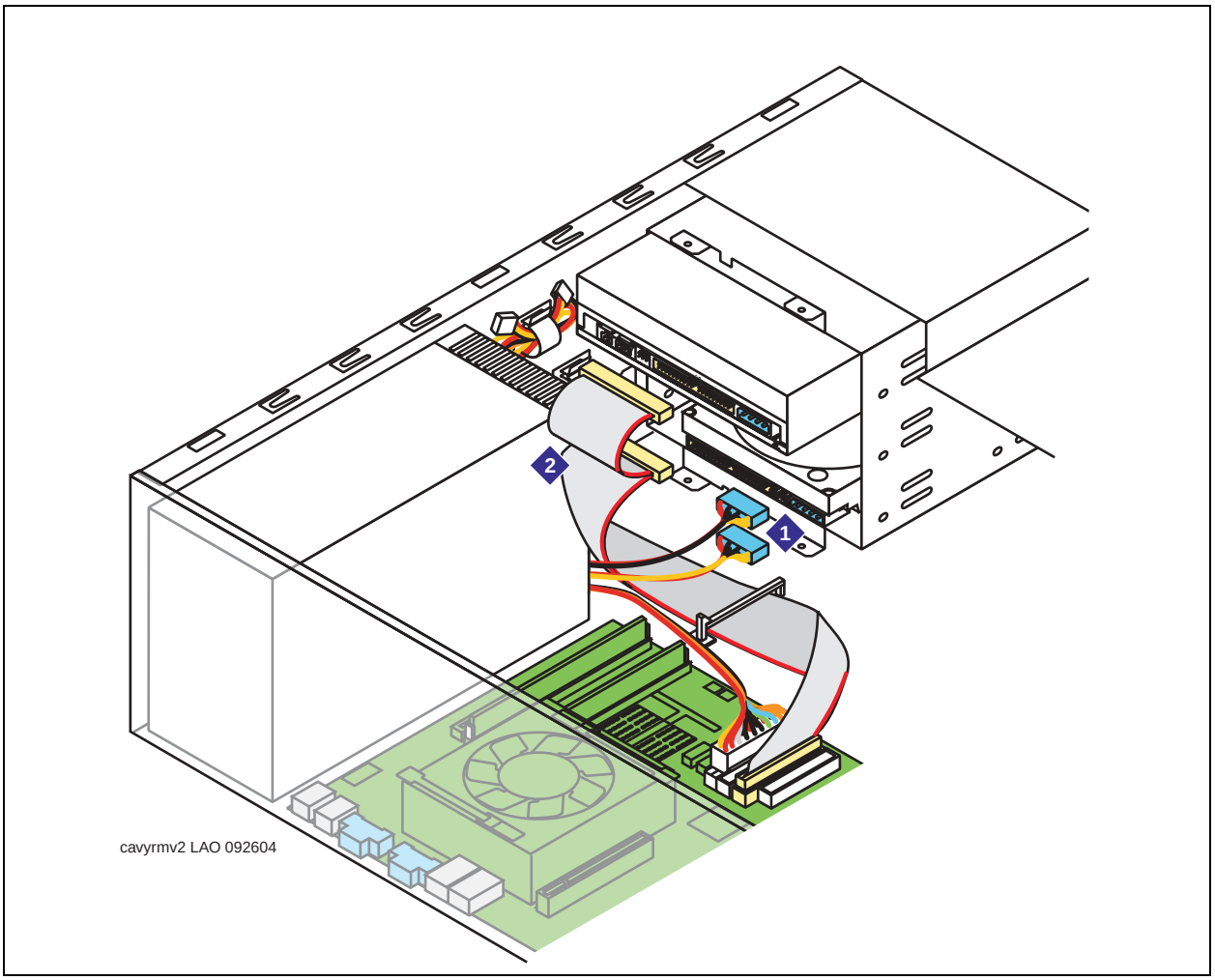


Figure notes:

1. **Disk drive and DVD player power connectors**
2. **80-pin IDE ribbon cable to the DVD and hard disk drive (hda), and the primary IDE connector PRI IDE on the motherboard**

Figure 19: S3400-family MAS drive cage cables—nonintegrated video and LAN

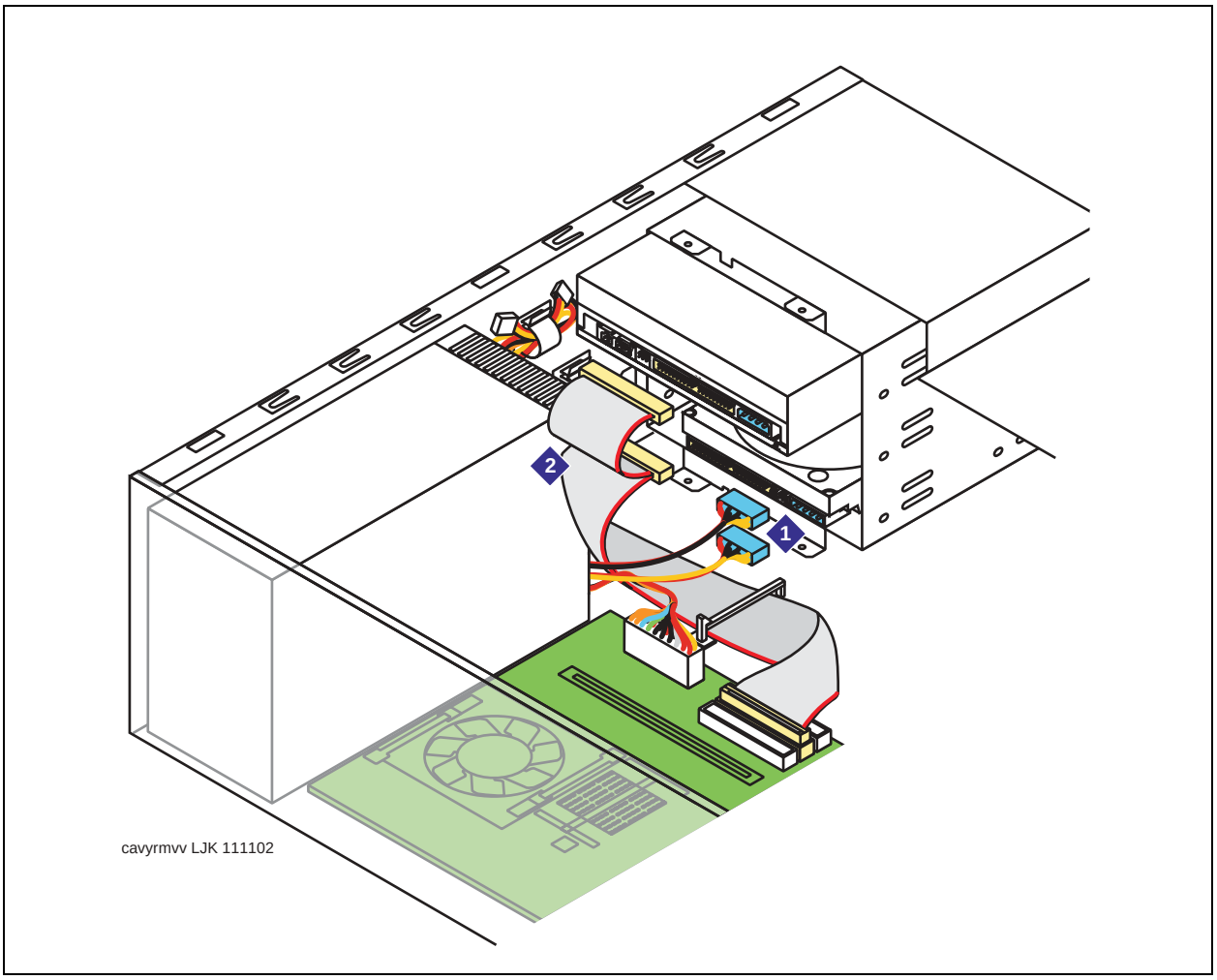
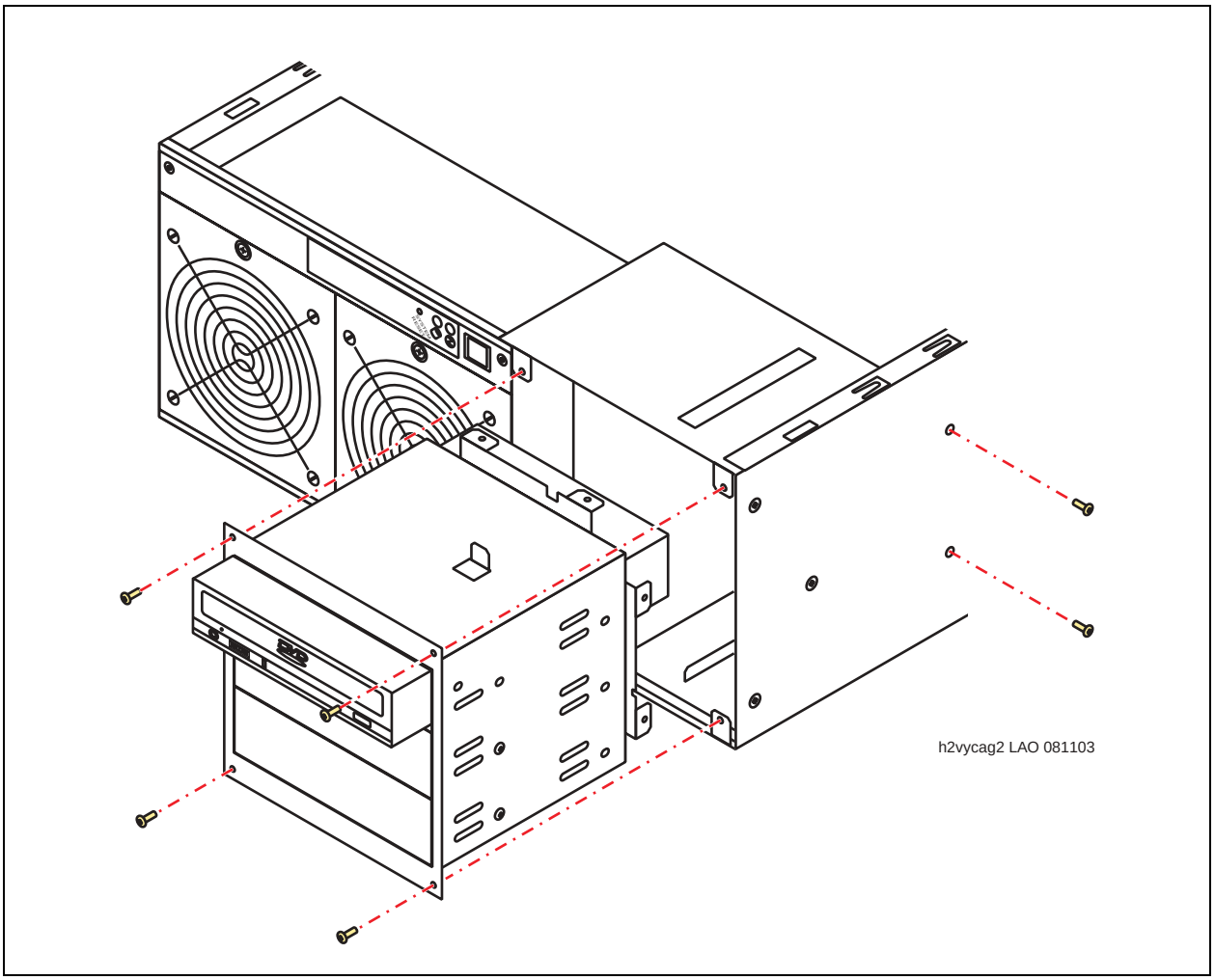


Figure notes:

1. **Disk drive and DVD player power connectors**
2. **80-pin IDE ribbon cable to the DVD and hard disk drive (hda), and the primary IDE connector PRI IDE on the motherboard**

Figure 20: Removing or replacing the S3400-family drive cage



Replacing the hard disk drive

To replace the IDE drive:

1. Place the drive cage assembly on a clean, static-free surface.

   CAUTION:
   Support the drive when you remove the screws. Otherwise, the drive might drop when it comes loose.

2. Remove the 4 mounting screws that secure the disk drive to the bottom of the drive cage. See Figure 21: Removing or replacing an S3400-family IDE drive on page 192.

3. Configure the replacement drive as the IDE bus master.

a. Locate the 9-pin master/slave connector on the back of the drive. See Figure 22: IDE drive jumper settings on page 193.

b. Place a jumper over the set of pins at either end of this connector to set up this drive as a master. Figures on the drive identify the different jumper settings.

4. Insert the new IDE drive in the drive cage. The connector on the disk drive must face the back of the cage.

5. Reattach the 4 mounting screws to secure the drive to the bottom of the cage.

Figure 21: Removing or replacing an S3400-family IDE drive

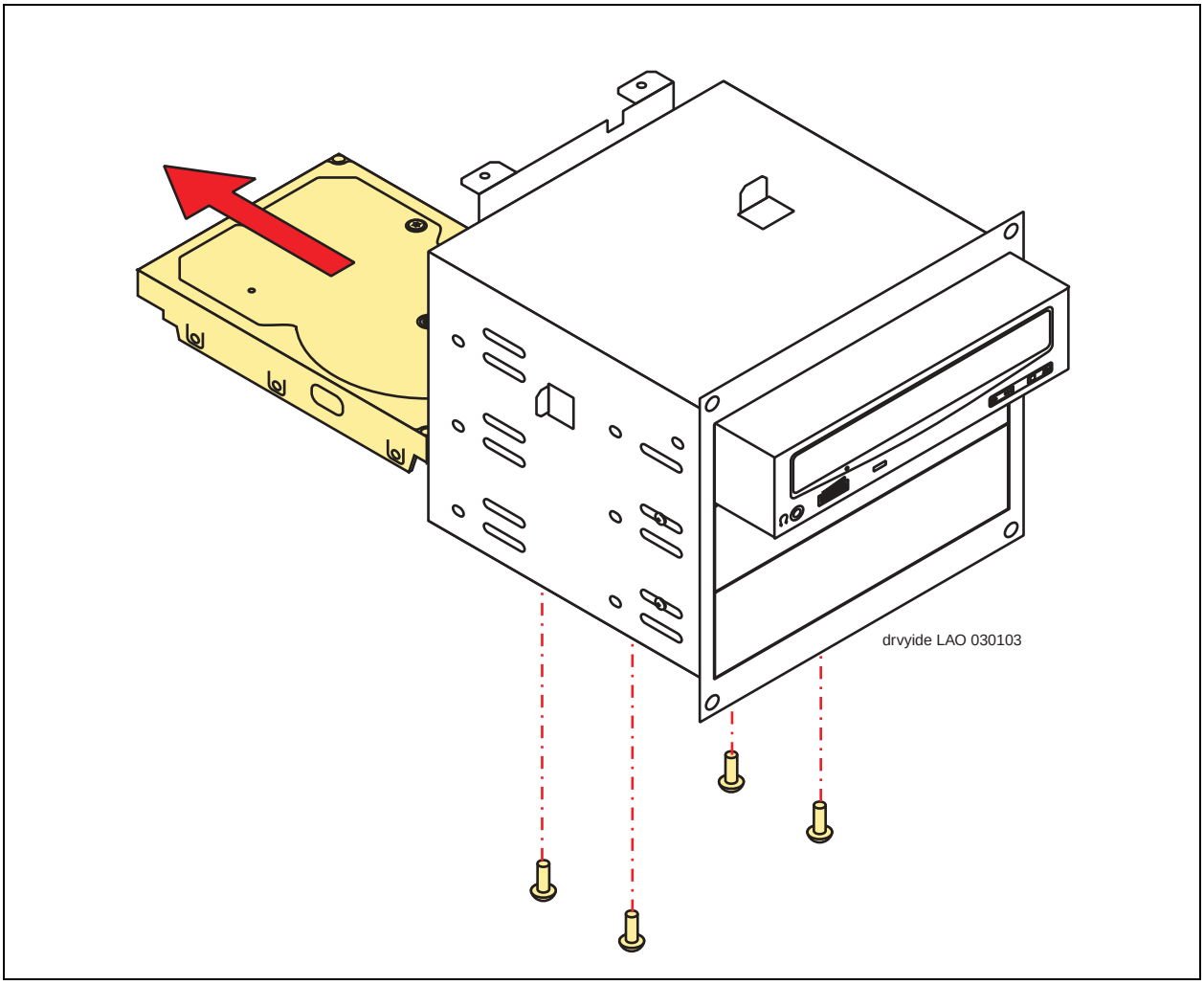
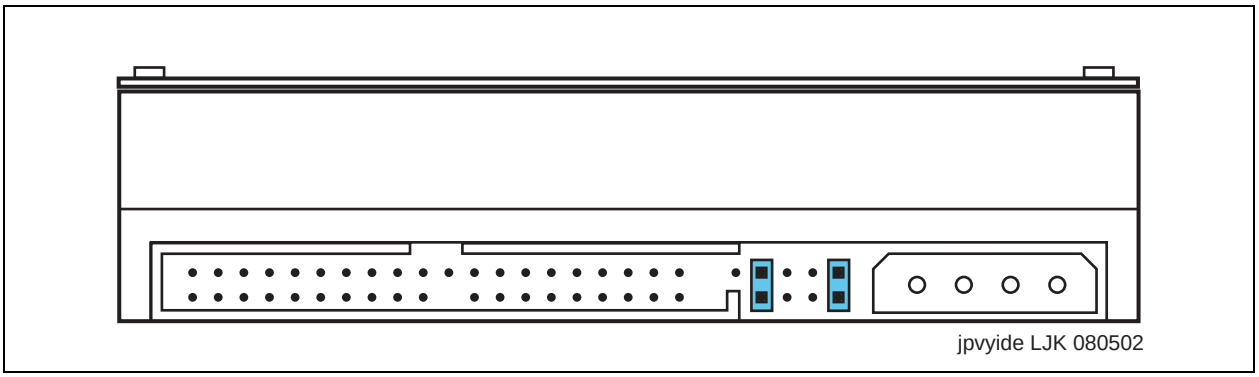


Figure 22: IDE drive jumper settings



Note:

Always set the IDE drive to be the bus master as shown by the shaded jumpers.

Reinstalling the drive cage

To reinstall the drive cage:

1. Position the drive cage assembly in front of the chassis. The slot on the bottom of the cage must align with the guide rail inside the chassis.
2. Gently slide the drive cage assembly into the server.
   a. Lift up the assembly to slide the angled foot on the left side of the drive cage into the slotted tab on the chassis.
   b. The drive cage is properly seated when it is flush with the front of the chassis.
3. Reconnect the signal and power cables to all drives in the cage. See the appropriate figure for your model of MAS:
   - *Integrated video and LAN model:* See Figure 18: S3400-family MAS drive cage cables—integrated video and LAN on page 189.
   - *Nonintegrated video and LAN model:* See Figure 19: S3400-family MAS drive cage cables—nonintegrated video and LAN on page 190.

   To reconnect the drive cables:

   a. Plug the 80-pin IDE ribbon cable to the DVD player and the lower drive (hda) into the primary connector **PRI IDE** on the motherboard.
   b. Plug in the power connectors to the DVD and lower drive.

   Note:

   The harness has an extra 4-pin power connector for an optional hard disk. You can plug either connector into the IDE drive. The DVD drive always uses the terminating connector.

4. Verify that all cables are neatly dressed, either in the power harness or under the tie-down strap for the IDE ribbon cables as appropriate.
5. Reattach the drive cage retaining screws. See Figure 20: Removing or replacing the S3400-family drive cage on page 191.
   a. Reattach the 4 screws to the front of the drive cage.
   b. Reattach the 2 flathead screws to the holes in the side of the chassis, about 6 inches from the front of the cage.
   c. *For rack-mount setups,* if you loosened or removed some of the screws that attach the rail handle to the MAS, replace or tighten the screws.

Replacing the top cover and front bezel

To replace the chassis cover and bezel:

1. Position the top cover so that the latch hook is in back, and the rail hooks face toward the back of the server.
2. Set the cover on the chassis so the cover is aligned with the sides and slightly overhangs the front of the server.
3. Slide the cover towards the back of the server until the cover is flush with the chassis.
4. *For a rack-mount setup,* slide the server back into the cabinet.
5. Tighten the screw latch on the back of the chassis to secure the top cover.
6. Replace the bezel on the front of the chassis.
   a. Insert the tabs on the bottom of the bezel into the chassis.
   b. Push the bezel upright until the two upper tabs snap into place under the top cover.
7. *For a stackable desktop setup,* replace any units that were stacked on top of this server.

Restoring power to the system

To restore power to the system:

1. *For a rack-mount setup,* reattach any cables you unplugged from the back of the server.
2. Plug the AC power cord back into the power outlet on the server.
3. Press the power button on the front of the server.

   The green power lamp on the front of the server should light.
4. When the server boots, continue with Upgrading Modular Messaging Software on page 198.

   Note:

   Leave the old hard disk drive with the customer.

Installing new Avaya boot image

Follow the procedures in this section only if you did not receive a replacement hard disk drive for the upgrade. If you did receive a replacement drive, see Replacing an MAS drive in an S3400-family server on page 186.

You must reload the boot image on each S3400-family server MAS to upgrade the server to the Microsoft Windows operating system. New application software is installed as part of the software reload.

Take the MAS out of service before beginning this procedure.

CAUTION:

You must have a current and complete DCT data file (*.mmdct) before you reload the boot image.

To copy new software to the Avaya Messaging Application Server (Avaya MAS):

1. If the server is not on, turn on the server by pressing the power button on the front of the server.
2. Verify that the monitor is showing the correct server.
3. Insert Disk 1 of the *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino* media into the DVD drive.

   Wait for green LED on the drive to go out.
4. When the computer starts to boot, the system displays a warning that the hard drive contents will be overwritten.

   a. Press any key to continue.

      A message confirms that the hard drive will be overwritten.

   b. Press any key to continue.

   The MAS starts to copy the disk image to the hard disk. The entire copy procedure takes up to 30 minutes per DVD.
5. When the system prompts you, insert the next disk. When the DVD drive light turns dark, click **OK**.
6. Repeat step 5 for disk 3.
7. When prompted, remove the media before the system reboots.

Continuing the Release 1.1 to 4.0 upgrade

Continue the Release 1.1 to Release 4.0 upgrade by completing the following procedures:

Running the Windows Setup Wizard on page 196

Disabling hyper-threading for IP H.323 on page 197

Copying the DCT data file to the MAS on page 198

Running the setup program on page 198

Running the Windows Setup Wizard

Continue with the following steps to complete the Windows setup wizard and activate Windows:

1. After the system reboots, press any key to continue.

   The system reboots and runs the Windows Setup program.

2. If Dialogic cards are installed, you receive a warning that the Dialogic drivers are not supported. Click **Yes** to continue the installation.
3. If a modem is connected, a **Hardware Installation** window opens. Click **Yes** to continue the installation.
4. The **Windows Setup** wizard runs. To complete the wizard:
   a. On the **Welcome** screen, click **Next**.
   b. On the **License Agreement** screen, choose **I accept this agreement**. Click **Next**.
   c. On the **Your Product Key** screen, type the Windows product key for this server.

   Note:

   Each Windows computer has a unique product key for the Windows 2003 operating system. Enter the number exactly as shown.
   For a Release 4.0 upgrade, the Windows 2003 sticker ships with the software. Paste this sticker onto the server. Do not enter the old Windows 2000 product key.

   d. Click **Next**.

   The server automatically reboots.

   Note:

   You might see the error message **System Event Log Full** when the system boots. You can ignore this message. Modular Messaging does not use this log.

5. When the system prompts you to log on:
   a. Press **Ctrl**+**Alt**+**Del**.
   b. In the **Log On to Windows** window, leave the user name as **Administrator**.

c. Leave the password field blank.

d. Press **Enter** or click **OK**.

6. Activate the Microsoft Windows operating system before you restart the server. Use the site-specific procedures to activate Windows. For more information, see Activating Microsoft Windows on page 336.

Disabling hyper-threading for IP H.323

Important:

If you have S3500-family servers that use IP H.323 switch integration, complete this task BEFORE doing anything with the Avaya Modular Messaging Configuration wizard.

Before you configure any MAS, disable hyper-threading on those S3500-family servers in the VMD that use IP H.323 switch integration. This will help ensure a more stable environment.

1. Using the MAS Console, either boot the MAS or, if it is already running, reboot the MAS.
2. During the initial boot process and immediately after the Client MAC Address appears, press the **F2** button to start BIOS Setup.

   If you pressed the F2 button in time, the system starts the BIOS Setup following the memory test. If this does not happen, you must reboot and try again.
3. At the **Enter CURRENT Password** prompt, type **freedom** and then press **Enter**.
4. Using the up, down, left, and right arrow keys, navigate to and highlight the **Advanced** tab and then press **Enter**.
5. Highlight **CPU Configuration** and then press **Enter**.
6. Highlight **Hyper-Threading Technology** and then press **Enter**.
7. Highlight **Disabled** and then press **Enter**.
8. Press the **F10** key.
9. On the **Save configuration changes and exit setup?** message, highlight **Ok** and then press **Enter**.

   The system automatically reboots.
10. Repeat this process for any other S3500-family server MASs in the VMD that uses the IP H.323 switch integration.

Copying the DCT data file to the MAS

You must copy the DCT data file to the hard disk on the server before you continue the upgrade.

CAUTION:

Copy the DCT data file to the hard disk on the server before the next reboot. Some S3400-family servers fail to recognize a USB storage device after the server reboots.

1. Insert the USB storage device that contains the final DCT data file for this system. You can use any of the available USB ports on the server.
2. To copy the DCT data file to the server:
   a. Navigate to the USB drive, **Removable Disk (E:)**.
   b. Right-click the most current DCT data file for this site, such as *sitefile.mmdct*.
   c. Copy the file to the C:\ directory.
   d. Verify that the correct file is listed in the C:\ directory.

Running the setup program

Complete the following steps to run MM_Setup.exe.

1. To complete the software reload, double-click the **MM_Setup** icon on the desktop.

   The **MM_Setup** window opens.

   a. When the system prompts you, press any key to continue.

      The program reports that Modular Messaging configuration will start after the server reboots.

   b. Press any key to continue.

   After the MM_Setup utility runs, the server shuts down.

2. Continue with Upgrading Modular Messaging Software on page 198.

Upgrading Modular Messaging Software

Note:

If you plan to run the upgrade overnight, use the Voice Mail System Configuration application to disable the tracing database nightly tasks. After you complete the upgrade, reenable these tasks.

To upgrade the Modular Messaging software from Release 1.1 to Release 4.0, complete the following procedures described in this section:

1. Running the Modular Messaging Configuration Wizard on page 199

2. Installing third-party software on page 200
3. Completing the MMCW configuration on page 202

Running the Modular Messaging Configuration Wizard

Physically power up the MAS. The Modular Messaging Configuration Wizard (MMCW) launches automatically when the system starts. The MMCW controls the next steps in the installation process.

Complete the following steps to configure the MAS from the DCT data file:

1. When the Modular Messaging Configuration Wizard (MMCW) launches, the Modular Messaging Welcome screen is displayed. Click **Next**.
2. On the **Locate Configuration Data** screen, highlight the DCT data file that you created for this upgrade by analyzing the MAS, or click Browse and browse to the directory where the DCT data file is stored. By default, the MMCW searches the hard drive for all files with the file type **.mmdct*.
3. Click **Next**. You are prompted to verify the file selection. Click **Yes**, to select the file.
4. The DCT executable file (MMDCT.exe) launches with the DCT data file that you selected. Review and make any necessary changes to the file.

   Note:

   Verify that there are no red x's next to the DCT screen names in the left panel. The red x's indicate data that is incomplete or not valid. Information must be complete and valid before you can proceed with the installation.
5. On the last screen, click **complete** and then save the file again if you have made any additions.
6. Click **complete**.
7. On the **Messaging Application Server Number** screen, in the **MAS Number** field, select the number of the MAS that you are installing and click **Next**.

   The MAS configuration starts, the **Sysprep** window opens, then the server reboots.
8. After the reboot, a Windows Setup wizard runs. To complete the wizard:

   a. On the **License Agreement** screen, select **I accept this agreement**. Click **Next**.

   b. On the **Your Product Key** screen, type the Windows product key for this server.

   Note:

   Each Windows computer has a unique product key for the Windows 2003 operating system. Enter the number exactly as shown.

   On a new S3500-family server, the product key sticker is located inside the empty drive tray on the lower-left of the server chassis. You can remove the drive tray to easily read the sticker.

c. Click **Next**.

The Avaya Modular Messaging Configuration Wizard displays its configuration status on the Configuring System screen.

Information contained in the DCT data file is validated against the system at this time. This may result in errors that will require you to correct the data in the file or make system corrections before the configuration can proceed. If you receive an error, see the DCT screen-specific help for information about field parameters and conditions that may result in errors or warnings.

9. If the **Found New Hardware** launches, complete the wizard to install the Dialogic driver software:
   a. When prompted to use Windows update, select **No, not at this time** and click **Next**.
   b. When prompted to choose the software, select **Install the software automatically** and click **Next**.
   c. When the **Security Alert - Driver Installation window appears**, select **Yes** to install the driver.
   d. After the board is set up, click **Finish**.
   e. Repeat these steps for all Dialogic boards on this MAS.

Installing third-party software

After the reboot, the MMCW prompts you to install third-party software. Do *not* press **Continue with installation** until you do the following:

- Update Windows Internet Explorer 7 security — Required only when installing third-party software from a mapped network drive.
- Install Exchange System Management Tools
- Install Exchange Server 2003 Service Pack 2 (Or, Exchange Server 2000 Service Pack 3 for Exchange 2000 System Management Tools.)
- Install Anti-virus software

Updating Windows Internet Explorer 7 security

If you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.

3. A window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Installing Exchange System Management Tools

Note:

The Microsoft Exchange System Management Tools must be installed on any MAS that will run any of the following services:

- Messaging Application Server
- Call Me Server
- Message Waiting Indicator (MWI) Server.

Exchange 2003 System Management Tools are highly recommended.

Complete the following steps to install the system management tools:

1. Insert the customer-provided Microsoft Exchange Server media in the MAS drive.
2. Install the Management tools by completing the Microsoft Exchange Installation Wizard.
3. If you receive a compatibility warning, click **Continue**.
4. For details about this procedure, see the Microsoft Exchange documentation.

Installing Exchange Server Service Pack and anti-virus software

Complete the following steps:

1. Follow site-specific procedures to install Exchange Server 2003 Service Pack 2. (For Microsoft Exchange 2000 System Management Tools, install Exchange Server 2000 Service Pack 3 instead.)
2. Install anti-virus software that is specified by your local site requirements and implementation. Avaya strongly recommends that you install anti-virus software on any Microsoft Windows computer that runs Avaya Modular Messaging software. For more information about anti-virus software on an Avaya MAS, see Administering anti-virus software on page 89.

Completing the MMCW configuration

After third-party software is installed, continue with the following steps to complete the configuration.

1. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) is in the MAS DVD drive. Click **Continue with installation after installing 3rd party software** on the third-party dialog box. The MMCW resumes with the following sequence of events:
   - The **Setup** screen displays and proceeds directly to the **System Upgrade** screen.
   - The system reboots without user intervention
   - MMCW restarts automatically and runs the MM Application Setup, installing all MM services
   - After another reboot and auto log on, the MMCW continues the system configuration, displaying informational messages as each component, such as dialogic drivers or remote access is configured.
2. When MAS configuration is complete, the progress bar stretches across the window and the **Next** button becomes active. Click **Next**.
3. On the **Modular Messaging Wizard Completed** screen, click **Finish**.

Completing server setup

Complete the following tasks to finish server setup:

- Administering anti-virus software on page 203
- Installing software updates on page 204
- Updating Microsoft Windows on page 204
- Changing default LAN name and Power Management settings on page 204
- Disabling the private LAN on page 205
- Entering RAS IP addresses on each MAS on page 205
- Configuring port boards on page 207

Administering anti-virus software

Avaya strongly recommends that anti-virus software be installed on any Microsoft Windows computer that runs Avaya Modular Messaging software. The type of virus-checking software used and the method of installation depends on customer requirements and the local implementation.

Guidelines for using anti-virus software on a computer that is running Avaya Modular Messaging software include:

- Consider the impact that anti-virus scanning has on the performance of the Avaya messaging servers. Avaya recommends the use of “on-demand” scanning, where scans are run at scheduled intervals. Avoid using a message-scanning method that could drastically impact the performance of the Avaya servers. For example, do *not* use “on-access” scanning, where scans are run whenever a file is accessed.

  Note:

  Some anti-virus software applications default to scan on startup. Disable this feature, or it increases the time that it takes a system to come back online after a reboot.

- Avaya recommends administering the anti-virus software as follows:
  - Scan the hard disk at least once per week during off peak hours. Avaya recommends a daily scan. You can run scans on multiple Modular Messaging servers at the same time. However, avoid scheduling the anti-virus scan at the same time as when a scheduled backup occurs on the MAS.
  - Schedule virus definition updates to occur automatically at least once per week. The updates must occur before the next scheduled scan time to ensure that the latest data (DAT) files are used during the scan. However, do not schedule updates to occur during a virus scan.
  - If the anti-virus software locates a virus, it should first attempt to clean the file. If that fails, the software should move the file to a different directory.

Information about anti-virus interoperability of Avaya Modular Messaging software with various anti-virus products and performance testing is available. The information addresses security issues such as reporting concerns and receiving notifications. For more information, see *Anti-Virus Software on Microsoft Windows-based Avaya Messaging Products.*

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an installation or upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch (hot fix).

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

   Note:

   If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Updating Microsoft Windows

A new Avaya MAS contains the most current Microsoft Windows software at the time it is shipped. After installation, you must install the latest Microsoft Windows system updates, security patches, and hot fixes to protect the operating system from known security weaknesses. Check with the appropriate Windows administrator for the software update procedures to use at this site.

Note:

Avaya technical support representatives must follow their specified internal procedures for verifying the software that is installed. If required, they must update the software with the latest patches as instructed.

Changing default LAN name and Power Management settings

Rename the corporate LAN connection for this MAS so that it is easier to identify. To rename the LAN entry:

1. . Click **Start > Settings > Network Connections**.

   The **Network Connections** window opens.

2. Identify the corporate LAN on this server. This LAN has device name **Intel(R) PRO/1000 CT Network Connection**. The corporate LAN is labelled **Local Area Connection**.

   Rename this item as follows:

   a. Right-click the text **Local Area Connection** and select **Rename**.

b. Change the name to **Corporate LAN**.

3. Change the Power Management settings for the LAN connection:
   a. Right-click the LAN connection and select **Properties**.
   b. Click **Configure**.
   c. Click the **Power Management** tab.
   d. Deselect the **Allow the computer to turn off this device to save power** checkbox.

Disabling the private LAN

The Modular Messaging private LAN is not used with the Microsoft Exchange configurations. Disable the private LAN by completing the following steps:

1. In the **Network Connections** window highlight either **Intel(R) PRO100M Network Connection**, or **Intel(R) 100+ PCI Adapter,** whichever appears in the window. Right-click your selection. From the drop-down list, select **disable**.
2. From the toolbar menu, select **Advanced** > **Advanced Settings**. Verify that the corporate LAN is listed at the top of the list of connections. If not, highlight the name of the corporate LAN and use the arrows to move it up in the list. When finished, click **OK** to close this window.
3. Click **OK** to close the **Network Connections** window.

Entering RAS IP addresses on each MAS

The Avaya Modular Messaging Configuration Wizard automatically sets up inbound remote access to each MAS modem. You must edit the preprogrammed RAS IP addresses to use the correct addresses that the technical support organization requires.

CAUTION:

If Avaya is to support this system, you must enter the RAS IP addresses assigned by the Avaya Automatic Registration Tool (ART). Otherwise remote access for Avaya technical support will not work.

Complete this task for each MAS.

1. Double-click the **Configure** icon on the desktop.
2. In the left pane of the **Configure** window, expand **Routing and Remote Access**.
3. Expand the server name.
4. Verify authentication:
   a. Highlight **Remote Access Policies**.
   b. From the right pane, double-click **Connections to Microsoft routing and remote access**.

c. Click the **Edit Profile..** button.

d. Select the **Authentication** tab.

e. Verify that all checkboxes (except for the **Unauthenticated access** checkbox) are selected. If necessary, deselect the **Unauthenticated access** checkbox.

f. Click **OK**.

g. If a dialog box appears, click **No**.

h. Click **OK** again.

5. Right-click the server name from the pop-up menu and select **Properties**.
6. Set up PAP security:
   a. In the **Local Properties** window, click the **Security** tab.
   b. Click **Authentication Methods...**
   c. Select **Unencrypted Password (PAP)**.
   d. Verify that all other checkboxes are blank. If necessary, deselect the checkboxes.
   e. Click **OK**.
7. Set up a static IP address pool as follows:
   a. In the local Properties window, click the **IP** tab.
   b. Under **IP address assignment**, select **Static address pool**.
   c. Add or edit the address range as follows:
      - If the window shows an incorrect IP address range, select the displayed range and click **Edit**.

      CAUTION:

      If Avaya will support this server, do not use the preprogrammed IP addresses. You must Edit and Remove these addresses for remote access to work.

      - If no address range is already entered, click **Add**.

   d. In the **Address Range** window, enter the correct start and end IP addresses for this server.
   e. Verify that the number of addresses is **2**.
   f. Click **OK**.
   g. For the **Adapter** field, select **Allow RAS to select adapter**.
   h. Click **OK** to close the properties window.
   i. If a dialog box appears, click **No**.
8. Close the **Configure** window.

Configuring port boards

The Avaya Modular Messaging Configuration Wizard automatically configures some integrations. The switch integrations may or may not have Dialogic port boards.

Switch integrations without Dialogic port boards

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO NOT** have Dialogic port boards:

- Avaya CM (IP SIP)
- Avaya (IP H323)

Switch integrations with Dialogic port boards

The Avaya Modular Messaging Configuration Wizard automatically configures the following switch integrations, which **DO** have Dialogic port boards:

- Avaya (QSIG)
- Cisco (QSIG)
- Nortel NT M-1 (QSIG)
- Siemens Hipath (QSIG)

If this MAS contains Dialogic port boards that do not use one of the automatic-configuration switch integrations, you must configure the port boards manually. Continue with Appendix C: Configuring and testing port boards on page 295.

Completing the Release 1.1 to Release 4.0 upgrade

Continue the Modular Messaging software upgrade as appropriate:

1. If you have more than one MAS:
   a. ***For the first MAS upgraded only,*** let the Modular Messaging software run for 15 minutes. Return to Switching the monitor to show the correct server on page 181 to begin upgrading the next MAS.
   b. Repeat the Modular Messaging software upgrade procedure until all MASs are upgraded.
2. Configure the voice mail system. For more information, see Configuring the voice mail system on page 119.
3. Complete the following steps to verify all personal operator schedules.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.

c. Select the **Personal Operator Schedules** tab.

d. Verify that all personal operator schedules recorded before the upgrade are included in the list. If a schedule is missing, complete the following steps:

   1. Click the **Add** button
   2. In the **Enter Personal Operator Schedule Name** dialog box in the **Schedule Name** field, enter the name of the missing schedule.
   3. Click **OK** to return to the **Personal Operator Schedules** tab.
   4. In the schedule grid, enter the schedule times.

e. Click each personal operator schedule in the schedule list and verify that the schedule times correspond to the times recorded before the upgrade. Correct any discrepancies in the schedule grid.

f. Close all windows.

   For additional information about configuring personal operator schedules, see the *Avaya Modular Messaging Documentation* media.

4. When finished with each MAS, verify that all Modular Messaging services that are required for that MAS are running.
5. Enable all scheduled tasks that you disabled before starting the upgrade.
6. Update the Modular Messaging Active Directory Exchange extensions software on any machines where it is installed. See Adding the Exchange extensions on page 75.
7. Restore customer data to the appropriate location on the system. See Restoring customer data on page 209.
8. Implement additional TUIs if necessary. See Implementing additional TUIs on page 209.
9. Update the client software on any non-MAS machines where it is installed. See Updating client software on page 214.
10. Set up test subscribers and perform all acceptance tests that are relevant to the system. See Testing and backing up the system on page 145.
11. When acceptance tests are complete, back up each MAS using the regular backup procedures for this site. For guidelines, see Backing up the system on page 157.
12. When finished with each MAS, verify that the MAS disk is in good condition by running the following:
    - Disk Defragmenter system tool
    - **chkdsk** command
13. If you are upgrading an S3400 MAS to an S3500 server, see Upgrading to an S3500 server on page 211.
14. If you are adding a new MAS to this system, begin the installation now. For more information, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*.

Restoring customer data

After the new operating system is installed, you must restore the customer data to the system. Follow your site-specific procedures to restore data, or complete the following steps:

1. Access the location where you saved backups before beginning the upgrade. You will need to restore the customized tone files, customized prompt files and caller applications.
2. Stop the **MM Messaging Application Server Service**.
3. From the backup location, copy the following files to the designated location:
   - Copy tone files to: **\Avaya_Support\Tone_Files**
   - Copy the **CustomPrompts.ovf** and **CustomPrompts_G711.ovf** prompt files to: **\Program Files\Avaya Modular Messaging\Vserver**
   - Copy caller applications to: **\Program Files\Avaya Modular Messaging\VServer\CallerApps**.
4. Restart the **MM Messaging Application Server Service**.

For more information, refer to the *Avaya Modular Messaging Documentation* media.

Implementing additional TUIs

This task applies to systems that are running only the Aria TUI on S3400-family servers.

A Release 1.1 Modular Messaging system always uses S3400-family hardware. If the current system runs only the MM Aria TUI, the customer might want to implement additional Telephone User Interfaces (TUIs) after the upgrade. Before you can add new TUIs, you must verify that the MAS port maximums are within prescribed limits. If any MAS does not have the capacity to support the additional TUIs, you must take the steps described in this section.

To verify that the system can support additional TUIs:

1. Verify that MAS port maximums are within prescribed limits. For more information, see Table 14: Supported Dialogic port boards: S3400-family and CPE hardware on page 296. If any MAS that has more than 30 ports:
   a. Remove any extra port boards from the over-capacity MAS. Install the boards in another MAS if possible. You can use either an under-capacity MAS that is already on-site, or a new MAS if one was purchased for this purpose.
      - For more information about hardware procedures, see *Avaya Modular Messaging S3400-Family Hardware Maintenance and Additions*.
      - For procedures to bring the moved port boards into service, see Appendix C: Configuring and testing port boards on page 295.

b. If no additional MASs are available to accommodate the extra ports, the customer must either:

- Refrain from deploying the additional TUIs until additional MASs are installed.
- Remove the extra port boards and operate at reduced capacity until additional MASs are installed.

2. The PBX administrator must reallocate the port administration on the switch to reflect the changes made to the Modular Messaging system.

Upgrading to an S3500 server

Use these procedures to replace an existing S3400 server with an S3500 server. Do not install any additional new servers now. You can replace the existing hardware, but you must install additional servers only after the upgrade is complete. Do not replace the server until after you have completed the analysis of all MASs using the DCT executable file (MMDCT.exe). For more information about creating the DCT data file, see Creating a DCT data file on page 183.

Before shutting down the S3400, complete the following steps:

1. Ensure that you record the following items:
   - Under **Routing and Remote Access**, record the IP addresses for the MAS modems in the remote access service (RAS) group. In the VMSC for each MAS, record any *non-default* port groups and their names, such as the MWI port group.
   - Record which Modular Messaging services are running on the S3400 server.
2. If you used this MAS to create, administer and deploy caller applications, back up all your working files to a location other than the MAS. Additionally, on the MAS you must have a current backup of the Caller Apps folder that contains the deployed caller applications that the MAS uses when it is running. For example, you might have a backup of C:\Program Files\Avaya Modular Messaging\vserver\callerapps. Make a copy of the entire callerapps directory.

   If you do not have the original versions of the caller apps files that were used to administer caller apps, you can use a copy of the deployed **.uma* files found in the CallerApps folder. However, never administer caller applications files directly from the deployed location C:\Program Files\Avaya Modular Messaging\vserver\callerapps.
3. Make a complete backup of all caller applications, customized tone files, customized prompt files, licensing files, WSO files and SIP certificates for SIP implementations. Also back up the system state and spool. See Backing up the system on page 157 for information about where to locate these files on your system.

Removing Hardware

Complete the following steps to remove the S3400 server:

1. Shut down the server software. Click **Start** > **Shut Down**, and then click **OK**.
2. Turn off the S3400-family server.
3. Label and unplug all cables to the server.
4. Remove the S3400-family MAS from the stacked configuration or customer cabinet.

Note:

For complete instructions about replacing an S3400-family MAS, see *Avaya Modular Messaging S3400-Family Hardware Maintenance and Additions*.

Transferring port boards

If the MAS contains Dialogic port boards, you must transfer the port boards from the S3400-family server to the S3500-family server:

CAUTION:

Observe proper electrostatic discharge (ESD) precautions when you handle computer components. Wear an antistatic wrist strap that touches your bare skin and connect the strap cable to an earth ground.

Complete the following steps to transfer port boards to the new server:

1. Open the S3400-family MAS and remove the port boards.
2. If multiple boards are present, identify which board is first. You might need to adjust the option settings if you have more than two boards and must install them in a new server.
3. Remove the handle from the port board, or the board cannot fit into the PCI card cage in the S3500-family server.
4. Remove the top cover of the S3500-family server. Push on the blue release buttons and slide the cover towards the back.
5. Remove the PCI card cage by pulling straight up on the lifting straps.
6. Remove the retaining bracket on the card cage by loosening the thumb screw.
7. Install a maximum of two port boards into the PCI card cage. Use the two upper slots, **PCI2** and **PCI3**. To install only one port board in the server, use the middle slot, **PCI2**.
8. If two boards are present, connect the boards using the CT bus cable from the old server.

Continuing the S3500 Upgrade

See Installing S3500-family servers on page 24 for instructions for installing the S3500 server into the messaging system.

After installing the hardware, you must configure the MAS using the DCT data file created during the upgrade.

If you are using Dialogic port boards, before you configure the server you must complete the following steps to prepare the DCT data file for use in configuring the S3500 server.

1. Download the following tool from the support site: **MMS3500DialogicUpgrade.exe**.

2. Copy the file to the same directory as your DCT data file.
3. Access a command line prompt:
   a. Click **start-Run**.
   b. In the **Open** window, type **cmd**.
   c. Click **OK**.
4. Navigate to the directory where you saved the **MMS3500DialogicUpgrade.exe** file.
5. Type **MMS3500DialogicUpgrade.exe <dctfilename.mmdct>**, where **<dctfilename.mmdct>** is the name of the file created when you analyzed the MAS.
6. Press **Enter**.

The tool creates a new DCT data file, adding **S3500** to the file name. Use this file to configure the S3500.

To continue, complete the following steps:

1. Be sure that the USB storage device with the DCT executable file (MMDCT.exe) and the new S3500 DCT data file is inserted in a USB port on the MAS before starting the system.
2. The S3500-family message servers turn on as soon as they receive AC power. However, if the power LED is not lit on the server you are configuring, press the power button on the front of the server.
3. If you receive a warning that the Dialogic drivers are not supported, click **Yes** to continue.
4. Continue with Running the Modular Messaging Configuration Wizard on page 199.

After configuring the MAS, complete the following steps:

1. Configure the voice mail system, see Chapter 8: Configuring the voice mail system on page 119.
2. Complete the following procedures described in this chapter:
   - Installing software updates on page 204
   - Updating Microsoft Windows on page 204
   - Disabling the private LAN on page 205
   - Configuring port boards on page 207
   - Restoring customer data on page 209

Updating client software

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for the latest Modular Messaging Client software package.

Do this task on each subscriber machine where client software is installed.

The Modular Messaging client software packages must be updated on each subscriber machine where they are already installed.

To update the client software to the latest release, use the normal software installation procedures for this site. For example:

1. If you have not already done so, download the most recent version of the client software package from the support website. When you download the software, copy it to a USB storage device.
2. Insert the USB storage device with the client software into any USB port on the subscriber machine where a Modular Messaging client software package from the previous release is installed.
3. Log on to the subscriber machine. You must use an account with administrator rights to install software (such as the local administrator account for the client machine).
   a. Navigate to the directory where you saved the client software on the USB storage device.
   b. Double-click the **setup.exe** file.
   c. The Avaya Modular Messaging Client Installation Wizard runs. Follow the prompts.
4. Repeat this procedure until all existing versions of client software have been replaced with the version for the newest release.

For details on installing or using a client software package, see the appropriate user guide.

Chapter 11: Upgrading Modular Messaging software on a customer-provided server

This chapter describes how to upgrade a customer-provided server that is running Modular Messaging Release 1.1, Release 3.0 or Release 3.1 software to Modular Messaging Release 4.0.

If you are upgrading an Avaya MAS, do not use the procedures in this chapter. See Chapter 10: Upgrading Modular Messaging software on an Avaya MAS on page 159.

When upgrading a customer-provided server, there are different procedures depending upon the current system's release.

First review the Upgrade requirements on page 215.

Next, complete the procedures in one of the following sections:

- Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 217
- Upgrading from Release 1.1 to Release 4.0 on page 233

Finally, after upgrading all MASs in the system, update the client software on all subscriber machines where it is installed. For more information, see Updating client software on page 253.

Note:

If you are upgrading to Exchange 2007, complete the upgrade to Modular Messaging Release 4.0 before you begin the Exchange 2007 upgrade. These are separate upgrade procedures and should not be completed concurrently.

Upgrade requirements

Note:

Modular Messaging Release 4.0 configures the server to use a 3GB address space. If you require additional information about this change, contact your Avaya support organization.

To successfully upgrade a system to Modular Messaging Release 4.0, you need:

- *Release 1.1 upgrade only,* all account names and passwords must conform to Windows 2003 security rules. If your account names and passwords do not conform to the new rules, you must change them before you analyze your system with the DCT executable file (MMDCT.exe). If you must change your Modular Messaging account names or passwords, contact your support organization for more information.
- The planning forms used to install the existing Modular Messaging system.

- Release 4.0 of the Modular Messaging application software and documentation.
  - *Avaya Modular Messaging Messaging Application Server Software* media
  - *Avaya Modular Messaging Documentation*
- The following information and software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - The most current copy of the configuration notes for this switch integration.
  - Avaya software updates that are required to bring the Avaya Modular Messaging software up to date after an upgrade. Download this software to a USB storage device. For more information about downloading the updates, see Appendix D: Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support site to a USB storage device.
  - The latest Modular Messaging Client software package.
- A printed copy of the upgrade checklist for a customer-provided MAS. See Modular Messaging upgrade (R3.0/3.1-->R4.0) on a customer-provided MAS on page 271.
- *Release 1.1 upgrade only.* Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.)

  Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.)

  Microsoft Windows Server 2003 Service Pack 2 if not previously installed.
- You must obtain a new RFA license for your upgraded system. For additional information, see Obtaining and installing a license on MAS#1 on page 127.

  Release 4.0 does not support the following TTS engines: DecTalk and TTS3000. If you were using either of these TTS engines, the upgrade automatically removes them and installs the ScanSoft RealSpeak TTS engine.

Upgrading from Release 3.0 or 3.1 to Release 4.0

Use the following procedures to upgrade from Release 3.0 or Release 3.1 to Release 4.0.

Note:

If you are upgrading from Release 1.1, do not perform this procedure. Instead, go to Upgrading from Release 1.1 to Release 4.0 on page 233.

Overview

Note:

A Modular Messaging software upgrade requires several server restarts. Plan to do the software upgrade during low-usage hours.

To upgrade the system to Modular Messaging Release 4.0:

1. Review the configuration notes for any changes that might be needed in the areas of board configuration, switch programming, and application configuration. For more information, see Upgrade requirements on page 215.
2. Complete pre-upgrade tasks to verify and save data, run recommended disk checks, create a DCT data file (*.mmdct), busy out ports, back up the MAS, stop and reset Modular Messaging services, and verify anti-virus software. For more information, see Completing Release 3.0 or 3.1 to Release 4.0 pre-upgrade tasks on page 218.
3. Upgrade software on each MAS including RealSpeak software, Dialogic drivers and Modular Messaging software. For more information, see Upgrading Modular Messaging software on page 224.
4. Complete server setup by deleting old logs files, installing Modular Messaging software updates, and enabling ports.
5. Configure new Release 4.0 features and verify that required services are running.

   Note:

   Completely upgrade and test one MAS first, and let it run for 15 minutes before upgrading any additional MASs.
6. Update the Exchange extensions on each MAS and any other computer where Modular Messaging was previously installed (such as administrator machines or the Exchange server). Update client software on client machines where it was previously installed. See detailed steps in Updating client software on page 253 and Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

   Note:

   Schedule downtime for the Microsoft Exchange server if the Exchange extensions must be updated.

7. Perform acceptance tests on the entire system. See Completing the upgrade on page 251.
8. Back up the new data. See Completing the upgrade on page 251.

Because an upgrade includes many steps, print the upgrade checklist from Appendix A: Installation and upgrade checklists on page 255 and use it to track your progress.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

Considerations for multiple-MAS upgrades

In a multiple-MAS configuration, Avaya strongly recommends that all MASs that are running Release 3.0 or 3.1 software be upgraded to Modular Messaging Release 4.0 software as soon as possible. During an upgrade MASs in the same Voice Mail Domain (VMD) can run different releases of Modular Messaging. However, at the completion of an upgrade, all MASs in the Voice Mail Domain must be running Release 4.0.

All MASs in the VMD must be upgraded to the same release of Modular Messaging software before you can enable the new Release 4.0 features.

Completing Release 3.0 or 3.1 to Release 4.0 pre-upgrade tasks

It is important that you record all critical system settings and back up all data in advance.

Complete the following tasks to prepare the Modular Messaging system for an upgrade:

Verifying and saving data on page 219

Running recommended disk checks on page 220

Creating a DCT data file on page 220

Busying out ports on page 222

Backing up the MAS on page 222

Logging off all remote logins on page 223

Stopping Modular Messaging services on page 223

Installing Microsoft Windows prerequisite components on page 223

Applying Microsoft Windows Server 2003 Service Pack 2 on page 223

Updating Windows Internet Explorer 7 security on page 224

Verifying and saving data

Complete the following tasks before you start a Release 4.0 upgrade. (Record and copy information in the event that the upgrade fails and a new installation of the software is required.)

1. Verify key settings on the MAS, including:
   - Switch integration settings
   - Port board settings and extensions
   - Domain information
   - Basic system setup
   - Modular Messaging service account and group
   - Exchange settings

   Ensure that you record the following items:
   - Record the IP addresses for the MAS modems in the remote access service (RAS) group.
   - In the VMSC for each MAS, record any *non-default* port groups and their names, such as the MWI port group.
   - Record which Modular Messaging services are running on each MAS.
   - SNMP trap destination and community details from the **Serviceability — Voice Mail Domain** window.
2. For a Release 3.0 only, complete the following steps to record all personal operator schedules. This information will be required to verify the schedules following the upgrade.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Personal Operator Schedules** tab.
   d. Click each schedule listed in the Schedules box and record the times set for each schedule.
   e. Close all windows.
3. If the site has caller applications, ensure that a copy of all editable files is on a separate computer, *not* the MAS.
4. Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.
5. Make a complete backup of all caller applications, customized tone files, customized prompt files, licensing files, WSO files, and SIP certificates for SIP implementations. Also back up the system state and spool. See Backing up the system on page 157 for information about where to locate these files on your system.

6. Check for errors or warnings on the system. Resolve major and minor alarms.
7. Review product functionality with the customer, including:
   - Differences that will be noticeable to the customer
   - Known issues; see Product Support Notices (PSNs) on the Avaya support website
   - Rollout plan for new features
   - Security concerns

Running recommended disk checks

Avaya recommends that the hard disk drive in the server be maintained to prevent possible problems. The system administrator must run the following on a regular basis:

- Disk Defragmenter system tool
- **chkdsk** command

If this server is in service and has not been recently maintained, run the two recommended procedures before the upgrade.

Creating a DCT data file

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe). A DCT data file (*.mmdct) is not required for the upgrade. However, create one prior to the upgrade to save important system information for backup.

To create a DCT data file:

1. Verify that the Modular Messaging system is working properly. All MASs, the supplementary server if one is present, and the Exchange message store must be running.
2. Switch the monitor to show MAS1.
3. Verify that the messaging services on the MAS are running:
   a. Click **Start** > **Programs**> **Administration tools** > **Services**.
   b. In the left pane, click **Services (Local)**, if the item is not already selected.
   c. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**.
   d. Verify that the **Status** column shows that service is **Started** for each messaging service that belongs on this MAS.
   e. If service is not started for a required messaging service, right-click that **MM** service and select **Start**.

      The system starts the messaging service.

4. Insert the USB storage device with the DCT executable file (MMDCT.exe) into a USB port on MAS1. You can use any of the available USB ports.
5. Navigate to where you stored the DCT executable file and double-click it.
6. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
7. When asked if you want to use an existing DCT data file, click **No**.
8. On the **MM System Analysis** screen, select MAS#1 from the dropdown list at the bottom of the window. Click **Start**.

   The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected,” The DCT displays the newly created DCT data file.
9. For a single-MAS upgrade, proceed to step 11. For a multiple-MAS system, save the DCT data file to a USB storage device. (Do not save the file to the MAS.)
10. For a multiple-MAS system, update the DCT data file with information from additional MASs:

    a. Insert the USB storage device with the DCT data file created for MAS#1 into the USB port on the next MAS that you are going to analyze.

    b. Verify that the correct services are running on the MAS.

    c. On the USB storage device, double-click **MMDCT.exe**.

    d. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.

    e. When asked if you want to use an existing DCT data file (*.mmdct), click **Yes**.

    f. Navigate to where you saved the DCT data file that you created for MAS#1. Double-click it.

    g. On the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

    Note:

    Analyze all MASs in numeric order, first to last.

    The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected.” The DCT displays the newly updated DCT data file.

    h. Save the DCT data file by overwriting the previous file.

CAUTION:

In multiple-MAS systems, review and revise the DCT data file after analyzing all MASs that will be upgraded. Information that is manually entered before the final analysis might be overwritten in the analysis of subsequent MASs.

Do not change any data that was populated by the DCT system analysis.

11. Review the completed file. Enter information in empty fields if necessary.

    Note:

    Verify that there are no red x's next to the screen names in the left panel. Red x's indicate data that is incomplete or not valid. Information must be complete and valid before you can use this file for a recovery, if needed.

12. When all fields are complete, click **Complete** at the bottom of the screen. Save the DCT data file to a location that will be included in a system backup. This file is not used during the upgrade, but is an important backup.

Busying out ports

Busy out the ports on the MAS that you are upgrading and on the switch before you start the upgrade. Otherwise, messages will spool on the MAS, and add to the upgrade time.

To busy out the ports:

1. The PBX administrator must use the procedures appropriate for this PBX to busy out the ports. Depending on the switch integration, the administrator might be able to temporarily reroute calls to other MASs. If an MAS is unavailable, callers into the system might hear ring-no answer or a busy signal.
2. Switch the monitor to show the MAS.
3. Use the port monitor to disable the MAS ports:
   a. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
   b. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
   c. Right-click the port list and select **Disable**.
   d. Verify that the status of all ports is **Disabled**.
   e. Close the **Port Monitor** window.

Backing up the MAS

Before beginning the software upgrade, make a current backup of the important system files, including customized tone files, and the DCT data file that you just created. For this procedure, see Backing up the system on page 157.

Logging off all remote logins

Log off all remote logins:

1. Bring up your Windows Task Manager and select the **Users** tab.
2. Select remote logins and click **Logoff**.

Stopping Modular Messaging services

Stop and reset all Modular Messaging (MM) services as follows:

Note:

If you have not already recorded the Modular Messaging services running on this MAS, do so now before stopping services.

1. Navigate to the **C:\Avaya_Support\tools\servicecontrol** directory.
2. Double-click the **StopMMServices.exe** file.

Installing Microsoft Windows prerequisite components

Complete the following steps to install Microsoft Windows prerequisite components on the MAS.

1. Insert the Microsoft Windows operating system installation disk in the MAS DVD drive.
2. Click **Start** > **Control Panel** > **Add or Remove Programs**.
3. In the **Add or Remove Programs** window, in the left column, click **Add/Remove Windows Components**.
4. In the **Windows Components Wizard** window, highlight **Application Server** and click **Details**.
5. Select the **Message Queuing** check box and press **OK**.
6. in the **Windows Components Wizard** window, select the **Fax Services** check box and click **Next**.
7. Select **Do Not Share Fax Printer** and click **Next**.
8. When installation is complete, click **Finish**.
9. Verify that fax service is **Started** and set to **Automatic**.

Applying Microsoft Windows Server 2003 Service Pack 2

All MASs in the Voice Mail Domain must be running Microsoft Windows Server 2003 with Service Pack 2 for Modular Messaging Release 4.0. Install Microsoft Windows Service Pack 2 on this MAS. Check with the Windows administrator for site-specific procedures.

Updating Windows Internet Explorer 7 security

If your MAS has been upgraded to Internet Explorer 7 and if you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.
3. If a window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Upgrading Modular Messaging software

Note:

If you plan to run the upgrade overnight, use the Voice Mail System Configuration application to disable the tracing database nightly tasks. After you complete the upgrade, reenable these tasks.

Use the following procedures to upgrade from Release 3.0 or Release 3.1 to Release 4.0 software.

- Upgrading RealSpeak software on page 225
- Upgrading Dialogic drivers on page 226
- Upgrading MAS software on page 227

Upgrading RealSpeak software

This section describes how to update the RealSpeak driver and languages as part of a Release 4.0 software upgrade.

To upgrade RealSpeak software, complete the following steps:

1. Log on to the MAS using the account that was originally used to install RealSpeak software. If you do not know which account was used, complete the following steps:
   a. Log on as the customer account (for example, *mmacct*).
   b. Click **Start** > **Control Panel** > **Add or Remove Programs.**
   c. In the list of currently installed programs, look for the **RealSpeak** program. If it is in the list continue with step 2 to delete the program.
   d. If the program was not in the list, repeat steps a through c with different accounts until you locate the RealSpeak program.
2. Insert the *Avaya Modular Messaging Messaging Application Server Software* (DVD 2 of 2).
3. From the DVD, run the **RealSpeak\uninstallRealspeak.bat** file.
4. Reboot the MAS.
5. Log back on to the MAS using the account that was originally used to install RealSpeak software.
6. On the MAS, delete the folder ***<drive letter>*:\Program Files\ScanSoft**.
7. Verify that the *Avaya Modular Messaging Messaging Application Server Software* media (disk 2) is in the DVD drive of the MAS.
8. In the media's **Realspeak** directory, double-click the **installRSEngine.bat** file.
9. Complete the wizard, accepting all defaults and the license agreement.
10. On **Ready to Install the Program**, click **Install**.
11. When installation is complete, click **Finish**.
12. Click **Yes** to restart the server.
13. Log back on to the MAS using the customer account.
14. In the **Realspeak** directory, double-click the **installRSLangs.bat** file.
15. After the RealSpeak languages are installed, remove the *Avaya Modular Messaging Messaging Application Server Software*.

Starting all Modular Messaging services

Restart Modular Messaging services and verify that they are running:

1. Click **Start** > **Run** to open the **Run** window.
2. In the **Open** field, type the following and press **Enter**:

   C:\Avaya_Support\Scripts\serverrecovery.vbs

   The script takes a few seconds to run.
3. Verify that the services are set correctly.

Upgrading Dialogic drivers

Do this task on each MAS that contains Dialogic port boards.

Complete these steps on any MAS that contains Dialogic port boards to update the drivers.

1. Log on to the MAS using the customer account (for example *mmacct*).
2. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
3. Uninstall Dialogic drivers:
   a. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUninstall.bat** file.
   b. On the Question window, click **No**.
   c. On the Confirm Uninstall window, click **OK**.
   d. On the Maintenance Complete window, select **Yes, I want to restart my computer now** and then click **Finish**.
4. Log onto the MAS using the customer account.

   The **Clean-up Utility** runs automatically.
5. On the Hardware Update Wizard, click **Cancel**.
6. Reinstall Dialogic drivers:
   a. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUpgrade.bat** file.
   b. Complete the wizard, accepting all defaults.
   c. If a warning window about Java appears, click **OK**.

      A **Setup Status** window appears and installation begins.

      After the Dialogic files install, a **Found New Hardware** window appears.
   d. Select **No, not this time**, and click **Next**.
   e. Select **Install the software automatically**, and click **Next**.

f. In the unsigned driver dialog box, click **Yes**.

g. After the board is set up, click **Finish**.

h. Repeat these steps for all Dialogic boards on this MAS.

i. On the Setup Complete window, select Not to restart the computer and click **Finish**.

7. Apply the Dialogic firmware patch:

   a. Open the command prompt window and use the cd command to navigate to the dialogic drivers folder on the DVD.

   b. Enter the following commands at the prompt:

      - **MMDialogicPatch.bat "%INTEL_DIALOGIC_FWL%" "%INTEL_DIALOGIC_LIB%"**
      - **copy /Y "%TEMP%\DIALOGIC*.prm" "%INTEL_DIALOGIC_FWL%"**

8. Restart the MAS and log on using the customer account.
9. From the media's **\Dialogic Drivers\mm_install** directory, double-click the **SetDialogicSettings.exe** file. This restores the Dialogic configuration to the MAS.
10. Start the Dialogic drivers:

    a. Click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

       The Intel Dialogic product **Configuration Manager** window opens.

    b. On the button bar, click the green **> (Start)** button.

       Wait for the devices to start and the installed boards to show a green light.

    c. Close the **DCM** window.

11. Reboot the MAS.

Upgrading MAS software

Note:

If anti-virus software is installed, Avaya recommends that you disable it while you upgrade the Modular Messaging software to prevent possible negative interactions. Enable the virus-checking software again after the upgrade is complete.

To upgrade the software on this MAS to Modular Messaging Release 4.0:

1. If you changed any logging settings before the upgrade, complete the following steps:

   a. Launch **c:\avaya_support\tools\MM_Logging\MMLogging.exe**.

   b. Record any values that you changed, such as **Log file size** and **Number of log files**.

2. Close all monitoring tools, such as the port monitor.

3. Log on to the MAS using the customer account (for example *mmacct*).
4. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
5. In the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) **Install** directory, double-click the **Setup.exe** file and complete the following steps to run the wizard:

   The Avaya Modular Messaging Installation Wizard launches. All components that were previously installed on this machine, and the Diagnostic tools, are automatically selected. These selections cannot be changed. The currently installed version is displayed to the right of the specific tool or application. The version that will be installed is displayed at the top of the page following the Avaya Modular Messaging title.

   a. Verify that the **Select Configuration** field displays **Microsoft Exchange**.
   b. For all upgrades check the following boxes:
      - **Enable Windows Installer logging**
      - **Fax Sender Service**
   c. For Release 3.0 to Release 4.0 upgrades also check the following boxes:
      - **MM Configuration Tools**
      - **Snapshot Utility**
      - **Web Subscriber Options User Interface**
      - Any additional components that are necessary for this MAS
   d. Click **Install**.
   e. Click **Run System Upgrade**.
   f. If a window appears prompts you to remove patches, follow the prompts.
   g. Depending on the patch, if the system requests it, restart the server.
   h. When prompted, click **Restart** to continue the upgrade.
6. When the reboot is complete, log on as the Modular Messaging customer account (such as *mmacct*).

   The Installation Wizard starts automatically. If the wizard does not automatically start, double-click the **Setup.exe** file.
7. Follow prompts to remove service packs as needed.

   The system upgrades the Modular Messaging software components. This step can take several minutes.
8. Follow the installation Configuration Wizard prompts.

   The system upgrades the Modular Messaging software components. The components window shows which component is being installed. The system will pause for several

minutes when installing Avaya SPIRIT Agent. This is normal. Also, this step might take several minutes for a large database or global address list (GAL).

9. If you installed Web Subscriber Options, follow the prompts to complete the installation wizard.
10. When the Installation Wizard flashes a warning that installation is not complete, restart the system and log back on as the Modular Messaging customer account (such as *mmacct*).

    The Installation Configuration Wizard runs automatically displaying the Service Configuration window.
11. When the update is complete, click **Finish**.
12. Remove the media from the DVD drive.
13. Verify the settings of the MM Services. If any are incorrect, reset them to the correct setting.
14. If you disabled the anti-virus software on this MAS, enable it again now.

Completing server setup

Complete the following tasks as necessary to finish server setup:

- Deleting old logs on page 229
- Installing software updates on page 229
- Enabling ports on page 230

Deleting old logs

For Release 3.0 upgrades only, older logs might remain on the system because of a change in file names. Remove older logs by going to the **c:\avaya_support\logs** folder on the MAS and deleting any logs that are older than the upgrade's start time.

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch.

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

Note:

If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Enabling ports

Enable the ports on the MAS that you are upgrading.

Use the port monitor to enable the MAS ports:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
2. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
3. Right-click the port list and select **Enable**.
4. Verify that the status of all ports is **Enabled**.
5. Close the **Port Monitor** window.

Completing the Release 3.0 or 3.1 to Release 4.0 upgrade

Continue the Modular Messaging software upgrade as appropriate:

1. If you have more than one MAS:
   a. ***For the first MAS upgraded only,*** let the Modular Messaging software run for 15 minutes. Begin upgrading the next MAS.
   b. Repeat the Modular Messaging software upgrade procedure until all MASs are upgraded.
2. Enable and configure MM Fax Service. If this MAS will be running MM Fax Sender Service, complete the following steps:
   a. Navigate to the **C:\Avaya_Support\Utils** directory.
   b. Double-click the **FaxSenderEnable.exe** file.
   c. Restart Microsoft Windows Fax Service.
   d. Configure MM Fax Service by completing the steps described in Configuring MM Fax Service on page 132.

Note:

Fax Sender Service running with a QSIG T1 or QSIG E1 integration requires the D480JCT-1T1, D/600JCT-1E1 or D/600JCT-2E1 dual span QSIG board. If you are running with the D/240JCT-T1 or D/300JCT-1E1 board, you must upgrade your board before the system can run Fax Sender Service. The dual span QSIG boards also require configuration of the **FirmwareFile 2** parameter on the **Intel Dialogic product Configuration Manager - Properties** window. For more information, see Configuring T1-QSIG or E1-QSIG boards on page 298.

3. Configure Audit service by completing the steps described in Configuring Audit Service on page 132.
4. Configure and activate additional new Release 4.0 features using the Voice Mail System Configuration program.
5. Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade. For additional information, see Configuring serviceability settings on page 125.
6. For a Release 3.0 to Release 4.0 upgrade only, complete the following steps to verify all personal operator schedules.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Personal Operator Schedules** tab.
   d. Verify that all personal operator schedules recorded before the upgrade are included in the list. If a schedule is missing, complete the following steps:
      1. Click the **Add** button
      2. In the **Enter Personal Operator Schedule Name** dialog box in the **Schedule Name** field, enter the name of the missing schedule.
      3. Click **OK** to return to the **Personal Operator Schedules** tab.
      4. In the schedule grid, enter the schedule times.
   e. Click each personal operator schedule in the schedule list and verify that the schedule times correspond to the times recorded before the upgrade. Correct any discrepancies in the schedule grid.
   f. Close all windows.

   For additional information about configuring personal operator schedules, see the *Avaya Modular Messaging MAS Administration Guide*.
7. When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.
8. Enable all scheduled tasks that you disabled before starting the upgrade.

9. Update the Modular Messaging Active Directory Exchange extensions on any machines where they are installed. See Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

   Note:

   The Modular Messaging Active Directory Exchange extensions are updated along with any other Modular Messaging software that is installed on this machine (multiple Modular Messaging software component checkboxes might be checked). This ensures that all currently installed components are upgraded. The components are installed in the correct order when you click **Install**.

10. Update the client software on any non-MAS machines where it is installed. See Updating client software on page 253.
11. For any MAS that does not have Web Subscriber Options installed, close TCP port 80 to increase system security. For complete instructions for closing the port, see your Microsoft documentation. For information about how Modular Messaging uses TCP/IP ports, contact your Avaya or business partner account team.
12. Set up test subscribers and perform all acceptance tests that are relevant to the system. See Chapter 9: Testing and backing up the system on page 145.
13. When acceptance tests are complete, back up each MAS using the regular backup procedures for this site. For guidelines, see Backing up the system on page 157.
14. When finished with each MAS, verify that the MAS disk is in good condition by running the following:
    - Disk Defragmenter system tool
    - **chkdsk** command
15. If you are adding a new MAS to this system, begin the installation now.

Upgrading from Release 1.1 to Release 4.0

Use the following procedures to upgrade from Release 1.1 to Release 4.0.

Note:

If you are upgrading from Release 3.0 or Release 3.1, do not perform this procedure. Instead, go to Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 217.

Overview

This section describes how to upgrade a Modular Messaging system that is running Modular Messaging Release 1.1 software to Modular Messaging Release 4.0. A Modular Messaging software upgrade requires several server restarts. Plan to do the software upgrade during low-usage hours.

Note:

If you are upgrading a system that will include Exchange 2007 mail servers, complete the upgrade to Modular Messaging Release 4.0 before adding the Exchange 2007 mail servers. For additional information, see Appendix J: Installing Modular Messaging with Exchange 2007 on page 363.

To upgrade the system to Modular Messaging Release 4.0:

1. Review the configuration notes for any changes that might be needed in the areas of board configuration, switch programming, and application configuration. For more information, see Upgrade requirements on page 215.
2. Complete pre-upgrade tasks to verify and save data, run recommended disk checks, create a DCT data file (*.mmdct), busy out ports, back up the MAS, stop and reset Modular Messaging services, and verify anti-virus software. For more information, see Completing Release 1.1 to Release 4.0 pre-upgrade tasks on page 235.
3. Upgrade and install Microsoft Windows software including: uninstall Internet Information Services (IIS); upgrade to the Windows Server 2003 operating system; install and enable Microsoft Windows software components; apply Microsoft Windows Server 2003 SP2; install Microsoft updates, security patches and hot fixes. For more information, see Upgrading and installing Microsoft Windows software on page 240.
4. Upgrade RealSpeak software on the MAS. For more information, see Upgrading RealSpeak software for a 1.1 to 4.0 upgrade on page 243.
5. Install Microsoft Exchange System Management Tools. For more information, see Installing Microsoft Exchange System Management Tools on page 244.
6. Install Microsoft Exchange 2003 SP2 or Microsoft Exchange 2000 SP3. For more information, see Applying Microsoft Exchange 2003 Service Pack 2 on page 245.

7. Upgrade Modular Messaging software on each MAS. For more information, see Upgrading Modular Messaging software on page 246.
8. Stop and reset Modular Messaging services. For more information, see Stopping and resetting Modular Messaging services on page 248.
9. Upgrade Dialogic software on the MAS and restart services, verifying that required services for the MAS are running. For more information, see Upgrading Dialogic software for a 1.1 to 4.0 upgrade on page 248 and Restarting services on page 249.
10. Configure new Release 4.0 features.

    Note:

    Completely upgrade and test one MAS first, and let it run for 15 minutes before upgrading any additional MASs.

11. Update the Exchange extensions on the MAS. Update the client software and the Exchange extensions on any other computer where Modular Messaging was previously installed (such as administrator machines or the Exchange server). See detailed steps in Updating client software on page 253 and Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

    Note:

    Schedule downtime for the Microsoft Exchange server if the Exchange extensions must be updated.

12. Perform acceptance tests on the entire system. See Completing the upgrade on page 251.
13. Back up the new data. See Completing the upgrade on page 251.

Because an upgrade includes many steps, print the upgrade checklist from Appendix A: Installation and upgrade checklists on page 255 and use it to track your progress.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that all Exchange servers, directory servers, MASs, and client machines are ready to support Modular Messaging software.

Considerations for multiple-MAS upgrades

In a multiple-MAS configuration, Avaya strongly recommends that all MASs that are running Release 1.1 software be upgraded to Modular Messaging Release 4.0 software as soon as possible. During an upgrade MASs in the same Voice Mail Domain (VMD) can run different releases of Modular Messaging. However, at the completion of an upgrade, all MASs in the Voice Mail Domain must be running Release 4.0.

All MASs in the VMD must be upgraded to the same release of Modular Messaging software before you can enable the new Release 4.0 features.

If you are adding a new Modular Messaging machine to a multiple-MAS configuration, it cannot join an existing VMD that only has Release 1.1 MAS servers in it. You must first upgrade one or more of the existing servers, leave the system running for at least 15 minutes, and then add the new Modular Messaging server.

Completing Release 1.1 to Release 4.0 pre-upgrade tasks

It is important that you record all critical system settings and back up all data in advance.

Complete the following tasks to prepare the Modular Messaging system for an upgrade:

Verifying and saving data on page 219

Running recommended disk checks on page 220

Creating a DCT data file on page 220

Busying out ports on page 222

Backing up the MAS on page 222

Logging off all remote logins on page 239

Stopping Modular Messaging services on page 239

Verifying anti-virus software on page 240

Verifying and saving data

Complete the following tasks before you start a Release 4.0 upgrade. (Record and copy information in the event that the upgrade fails and a new installation of the software is required.)

1. Verify key settings on the MAS, including:
   - Switch integration settings
   - Port board settings and extensions
   - Domain information
   - Basic system setup
   - Modular Messaging service account and group
   - Exchange settings

   Ensure that you record the following items:
   - Record the IP addresses for the MAS modems in the remote access service (RAS) group.
   - In the VMSC for each MAS, record any *non-default* port groups and their names, such as the MWI port group.
   - Record which Modular Messaging services are running on each MAS.

- SNMP trap destination and community details from the **Serviceability — Voice Mail Domain** window.

2. Complete the following steps to record all personal operator schedules. This information will be required to verify the schedules following the upgrade.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
   b. Under the voice mail domain name, double-click **Telephone User Interface**.
   c. Select the **Attendant Schedules** tab.
   d. Click each schedule listed in the Schedules box and record the times set for each schedule.
   e. Close all windows.
3. If the site has caller applications, ensure that a copy of all editable files is on a separate computer, *not* the MAS.
4. Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.
5. Make a complete backup of all caller applications, customized tone files, customized prompt files, licensing files, WSO files and SIP certificates for SIP implementations. Also back up the system state and spool. See Backing up the system on page 157 for information about where to locate these files on your system.
6. Check for errors or warnings on the system. Resolve major and minor alarms.
7. Review product functionality with the customer, including:
   - Differences that will be noticeable to the customer
   - Known issues; see Product Support Notices (PSNs) on the Avaya support website
   - Rollout plan for new features
   - Security concerns

Running recommended disk checks

Avaya recommends that the hard disk drive in the server be maintained to prevent possible problems. The system administrator must run the following on a regular basis:

- Disk Defragmenter system tool
- **chkdsk** command

If this server is in service and has not been recently maintained, run the two recommended procedures before the upgrade.

Creating a DCT data file

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for recent updates to the DCT executable file (MMDCT.exe). A DCT data file (*.mmdct) is not required for the upgrade. However, create one prior to the upgrade to save important system information for backup.

To create a DCT file:

1. Verify that the Modular Messaging system is working properly. All MASs, the supplementary server if one is present, and the Exchange message store must be running.
2. Switch the monitor to show MAS1.
3. Verify that the messaging services on the MAS are running:
   a. Click **Start** > **Programs**> **Administration tools** > **Services**.
   b. In the left pane, click **Services (Local)**, if the item is not already selected.
   c. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**.
   d. Verify that the **Status** column shows that service is **Started** for each messaging service that belongs on this MAS.
   e. If service is not started for a required messaging service, right-click that **MM** service and select **Start**.

      The system starts the messaging service.
4. Insert the USB storage device with the DCT executable file (**MMDCT.exe**) into a USB port on MAS1. You can use any of the available USB ports.
5. Navigate to where you stored the DCT executable file. Double-click it.
6. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
7. When asked if you want to use an existing DCT data file (*.mmdct), click **No**.
8. On the **MM System Analysis** screen, select MAS#1 from the dropdown list at the bottom of the window. Click **Start**.

   The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected,” The DCT displays the newly created DCT data file.
9. For a single-MAS upgrade, proceed to step 11. For a multiple-MAS system, save the DCT data file to a USB storage device. (Do not save the file to the MAS.)
10. For a multiple-MAS system, update the DCT data file with information from additional MASs:

a. Insert the USB storage device with the DCT data file created for MAS#1 into the USB port on the next MAS that you are going to analyze.

b. Verify that the correct services are running on the MAS.

c. On the USB storage device, double-click **MMDCT.exe**.

d. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.

e. When asked if you want to use an existing DCT data file, click **Yes**.

f. Navigate to where you saved the DCT data file that you created for MAS#1. Double-click it.

g. On the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

Note:

Analyze the MASs in numeric order, first to last.

At the completion of the upgrade, all MASs in the VMD must be running Modular Messaging Release 4.0.

The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected.” The DCT displays the newly updated DCT data file.

h. Save the DCT data file by overwriting the previous file.

CAUTION:

In multiple-MAS systems, review and revise the DCT data file after analyzing all MASs that will be upgraded. Information that is manually entered before the final analysis might be overwritten in the analysis of subsequent MASs.

Do not change any data that was populated by the DCT system analysis.

11. Review the completed file. Enter information in empty fields if necessary.

Note:

Verify that there are no red x’s next to the screen names in the left panel. Red x’s indicate data that is incomplete or not valid. Information must be complete and valid before you can use this file for a recovery, if needed.

12. When all fields are complete, click **Complete** at the bottom of the screen. Save the DCT data file to a location that will be included in a system backup. This file is not used during the upgrade, but is an important backup.

Busying out ports

Busy out the ports on the MAS that you are upgrading and on the switch before you start the upgrade. Otherwise, messages will spool on the MAS, and add to the upgrade time.

To busy out the ports:

1. The PBX administrator must use the procedures appropriate for this PBX to busy out the ports. Depending on the switch integration, the administrator might be able to temporarily reroute calls to other MASs. If an MAS is unavailable, callers into the system might hear ring-no answer or a busy signal.
2. Switch the monitor to show the MAS.
3. Use the port monitor to disable the MAS ports:
   a. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
   b. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
   c. Right-click the port list and select **Disable**.
   d. Verify that the status of all ports is **Disabled**.
   e. Close the **Port Monitor** window.

Backing up the MAS

Before beginning the software upgrade, make a current backup of the important system files, including customized tone files, and the DCT data file that you just created. For this procedure, see Backing up the system on page 157.

Logging off all remote logins

Log off all remote logins:

1. Bring up your Windows Task Manager and select the **Users** tab.
2. Select remote logins and click **Logoff**.

Stopping Modular Messaging services

Stop and reset all Modular Messaging (MM) services as follows:

1. Log on to the MAS using the customer account (for example, *mmacct*).
2. Navigate to the **C:\Avaya_Support\tools\servicecontrol** directory.
3. Double-click the **StopMMServices.exe** file.

Updating Windows Internet Explorer 7 security

If your MAS has been upgraded to Internet Explorer 7 and if you are installing third-party software from a mapped network drive complete the following steps to update Explorer 7 security. If you do not make this update and you use a domain account to install third-party software, Windows will not allow the installation. This procedure is not necessary if you are

installing third-party software from a disk or other removable media such as a USB storage device.

1. Map to the network drive where the third-party software resides.
2. Launch Windows Internet Explorer 7.
3. If a window appears that states Windows Internet Explorer Enhanced Security is enabled: click **OK**.
4. From the browser, select **Tools > Internet Options**.
5. On the **Internet Options** window, select the **Security** tab.
6. In the **Select a zone to view or change security settings** box, click **Local intranet**.
7. Click **Sites**.
8. On the **Local intranet** window, in the **Add this website to the zone** field, type the universal naming convention (UNC) path of your mapped network drive, using the format: \\<***computername***>\<***share***>. Click **Add**.
9. Click **OK** to close the Local intranet and Internet Options windows.

Verifying anti-virus software

Verify that the anti-virus software is current. The virus-checking software used and the update methods required vary per local implementation.

Upgrading and installing Microsoft Windows software

To upgrade and install prerequisite Microsoft Windows software, you must complete the following procedures described in this section:

1. Uninstall Internet Information Services. See Uninstalling Internet Information Services (IIS) on page 241.
2. Upgrade Microsoft Windows operating system to Microsoft Windows Server 2003. See Upgrading Microsoft Windows operating system on page 241.
3. Install and enable Microsoft Windows software components. See Installing Microsoft Windows software components on page 241 and Enabling Microsoft Windows software components on page 243.
4. Apply Microsoft Windows Server 2003 Service Pack 2. See Applying Microsoft Windows Server 2003 Service Pack 2 on page 243.
5. Install Microsoft Windows system updates, security patches, and hot fixes. See Updating Microsoft Windows on page 243.

CAUTION:

Take care that you install the new software on the same drive where the Modular Messaging software resides and MM system analysis was performed.

Uninstalling Internet Information Services (IIS)

You must uninstall IIS before continuing. It will be reinstalled in the following procedures. To uninstall IIS:

1. Click **Start** > **Control Panel** > **Add or Remove Programs**.
2. In the **Add or Remove Programs** window, highlight **Application Server** and click **Details**.
3. Deselect **Internet Information Services (IIS)**. Click **Okay** and then **Next**.

Upgrading Microsoft Windows operating system

All MASs in the Voice Mail Domain must be running Microsoft Windows Server 2003 for Modular Messaging Release 4.0. Check with the Windows administrator for site-specific procedures to upgrade the operating system.

Installing Microsoft Windows software components

You must install the Microsoft Windows services described in this section on this MAS.

To install all required Windows services:

1. Log on to an account that has permissions to install software on this computer, such as the local administrator account.
2. Remove any external hard drives from the MAS.
3. Insert the Microsoft Windows Operating System CD in the MAS drive.
4. Click **Start** > **Control Panel** > **Add or Remove Programs**.
5. In the **Add or Remove Programs** window, in the left column, click **Add/Remove Windows Components**.
6. To install Microsoft Windows services:
   a. In the **Windows Components Wizard** window, highlight **Application Server**. Click **Details**.
   b. Verify that the following items are checked:
      - Application Server Console
      - ASP.NET
      - Enable COM+ access

- Message Queuing

The **Internet Information Services (IIS)** checkbox becomes checked.

c. Highlight **Internet Information Services (IIS)**. Click **Details**. Verify that the following items are checked:

- Common Files
- Internet Information Services Manager
- World Wide Web Server

Note:

When you check these items, IIS gets checked automatically.

The Internet Information Services items listed above are always required.

If you plan to install the Microsoft Exchange 2003 System Management Tools, click the checkboxes to select **NNTP Service** and **SMTP Service**. The SMTP Service automatically selects other required components as needed.

d. In the same window, highlight **World Wide Web Server**. Click **Details**. Verify that World Wide Web Services is checked.

e. Click **OK** to close the **World Wide Web Service** window.

f. Click **OK** to close the **Internet Information Services (IIS)** window.

g. Click **OK** to close the **Application Server** window.

7. Install the Windows services to support SNMP:

a. In the **Windows Components Wizard** window, highlight **Management and Monitoring Tools**, and click **Details**.

b. Click the checkbox to select **Simple Network Management Protocol**. Click **OK**.

8. Install the Windows Fax Service, in the **Windows Components Wizard** window:

a. Check **Fax Services**. Click **Next**.

b. Select **Do Not Share Fax Printer** and click **Next**.

9. Complete the wizard to install the selected services.

Note:

If the required services were already installed (all the appropriate boxes were checked), click **Cancel** to close the wizard.

10. When installation is complete, close the **Add or Remove Programs** window.

Enabling Microsoft Windows software components

After the software is installed, enable each installed service as follows:

1. Right-click **My Computer** and select **Manage**.
2. In the **Computer Management** window, the left (Tree) pane, expand **Services and Applications**, and then click **Services**.
3. In the right pane, scroll down to the first new service that you installed. Double-click the service to open the **Properties** window.
4. In the **Properties** window:
   a. On the **General** tab set the **Startup type** to **Automatic**.
   b. Click **Apply**.
   c. Under **Service status**, click **Start**.
   d. Wait for service to start, and then click **OK** to close this window.
5. Repeat Steps 3 and 4 to enable each of the services you installed. Note that only a subset of these services might be present on a particular MAS.
6. When all services are enabled, close all open windows.

Applying Microsoft Windows Server 2003 Service Pack 2

Install Microsoft Windows Service Pack 2 on this MAS. Check with the Windows administrator for site-specific procedures.

Updating Microsoft Windows

Install the latest Microsoft Windows system updates, security patches, and hot fixes to protect the operating system from known security weaknesses. Check with the Windows administrator for site-specific procedures.

Upgrading RealSpeak software for a 1.1 to 4.0 upgrade

This section describes how to upgrade the RealSpeak driver and languages as part of a Release 1.1 to Release 4.0 upgrade.

To upgrade RealSpeak Software, complete the following steps:

1. Log on to the MAS using the account that was originally used to install RealSpeak software. If you do not know which account was used, complete the following steps:
   a. Log on as the customer account (for example, *mmacct*).
   b. Click **Start** > **Control Panel** > **Add or Remove Programs.**

c. In the list of currently installed programs, look for the **Realspeak** program. If it is in the list continue with step 2 to delete the program.

d. If the program was not in the list, repeat steps a through c with different accounts until you locate the RealSpeak program. Continue with step 2 to delete the program.

2. Uninstall the RealSpeak software:

   a. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 2) in the DVD drive of the MAS.

   b. In the media's **Realspeak** directory, double-click the **uninstallRS3.bat** file and wait for the files to be removed.

3. Reboot the MAS.

4. Log on using the customer account (for example, *mmacct*).

5. Verify that the folder **\\Program Files\Avaya Modular Messaging\Vserver\Realspeak** has been removed. If it has not, manually delete the folder.

6. Reinstall the RealSpeak software:

   a. In the **Realspeak** directory, double-click the **installRSEngine.bat** file.

   b. If a warning dialog box appears, click **Run**.

   c. Complete the wizard, accepting all defaults.

   d. When installation is complete, click **Finish**.

   e. Click **Yes** to restart the server.

   f. After the restart, log on using the customer account.

7. Reinstall the RealSpeak languages:

   a. Log back on.

   b. In the **Realspeak** directory, double-click the **installRSlangs.bat** file.

   c. If a warning dialog box appears, click **Run**.

8. After the RealSpeak languages are installed, remove the *Avaya Modular Messaging Messaging Application Server Software*.

Installing Microsoft Exchange System Management Tools

Complete the following steps to install Exchange System Management Tools.

Note:

The Microsoft Exchange System Management Tools must be installed on any MAS that will have any of the following services installed on it:

- Messaging Application Server

- Call Me Server
- Message Waiting Indicator (MWI) Server

1. Insert the customer-provided Microsoft Exchange Server media in the MAS drive.
2. Install the Management tools by completing the Microsoft Exchange Installation Wizard.
3. If you receive a compatibility warning, click **Continue**.
4. For details about this procedure, see the Microsoft Exchange documentation.

Applying Microsoft Exchange 2003 Service Pack 2

Install Microsoft Exchange 2003 Service Pack 2 on this MAS. Check with the Windows administrator for the appropriate software update procedures to use at this site. For details about this procedure, see the Microsoft Exchange documentation.

Note:

If you installed Microsoft Exchange 2000 System Management Tools, install Microsoft Exchange 2000 Service Pack 3 instead for this step.

Restarting services

You must reset services on the MAS, and verify that the required services are running:

1. Disable any nonrequired services on the MAS.
2. Reset services on the MAS by running the **serverrecovery.vbs** script from the **C:\Avaya_Support\Scripts** directory.
3. Reboot the MAS.
4. Log back on to the MAS using the customer account.
5. Verify that all Modular Messaging services you previously recorded as required for this MAS are **Started** and set to **Automatic**.

Upgrading Modular Messaging software

Note:

If anti-virus software is installed, Avaya recommends that you disable it while you upgrade the Modular Messaging software to prevent possible negative interactions. Enable the virus-checking software again after the upgrade is complete.

If you plan to run the upgrade overnight, use the Voice Mail System Configuration application to disable the tracing database nightly tasks. After you complete the upgrade, reenable these tasks.

To upgrade the software on this MAS to Modular Messaging Release 4.0:

1. If you changed any logging settings before the upgrade, complete the following steps:
   a. Launch **c:\avaya_support\tools\MM_Logging\MMLogging.exe**.
   b. Record any values that you changed, such as **Log file size** and **Number of log files**.
2. Close all monitoring tools, such as the port monitor.
3. Log on to the MAS using the customer account (for example *mmacct*).
4. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
5. In the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) **Install** directory, double-click the **Setup.exe** file and complete the following steps to run the wizard:

   The Avaya Modular Messaging Installation Wizard launches. All components that were previously installed on this machine, and the Diagnostic tools, are automatically selected. These selections cannot be changed. The currently installed version is displayed to the right of the specific tool or application. The version that will be installed is displayed at the top of the page following the Avaya Modular Messaging title.

   a. Verify that the **Select Configuration** field displays **Microsoft Exchange**.
   b. Check the following checkboxes:
      - **Enable Windows Installer logging**
      - **MM Configuration Tools**
      - **Snapshot Utility**
      - **Web Subscriber Options User Interface**
      - **Fax Sender Service**
      - Any additional components that are necessary for this MAS

c. Click **Install**.

d. Click **Run System Upgrade**.

e. If the system prompts you to remove patches, follow the prompts.

f. Depending on the patch, if the system requests it, restart the server.

g. When prompted, click **Restart** to continue the upgrade.

6. When the reboot is complete, log on as the Modular Messaging customer account (such as *mmacct*).

   The Installation Wizard starts automatically. If the wizard does not automatically start, double-click the **Setup.exe** file.

7. Follow prompts to remove service packs as needed.

   The system upgrades the Modular Messaging software components. This step can take several minutes.

8. Follow the installation Configuration Wizard prompts.

   The system upgrades the Modular Messaging software components. The components window shows which component is being installed. The system will pause for several minutes when installing Avaya SPIRIT Agent. This is normal. Also, this step might take several minutes for a large database or global address list (GAL).

9. If you installed Web Subscriber Options, follow the prompts to complete the installation wizard.

10. When the Installation Wizard flashes a warning that installation is not complete, restart the system and log back on as the Modular Messaging customer account (such as *mmacct*).

    The Installation Configuration Wizard runs automatically displaying the Service Configuration window.

11. If the **Missing Prompts** screen is displayed (the upgrade procedure compares the prompts installed on the MAS with the existing voice mail domain prompts and reports if any prompts are absent), do the following:

    a. Note the missing prompt sets. The Configuration wizard automatically attempts to locate the installation packages for these prompts.

    b. If any installation packages cannot be found, and a **Locate Installation Package** message is displayed, do the following:

       1. Click the text and then click **Browse**.
       2. Browse to and select the folder containing the missing prompts.
       3. Click **OK**.
       4. Repeat for all prompts that cannot be found.

    c. When finished, click **Next**. (This button is not enabled until all the prompt installations are found.)

12. When the update is complete, click **Finish**.

13. Remove the media from the DVD drive.

Stopping and resetting Modular Messaging services

Stop and reset all Modular Messaging (MM) services as follows:

1. Log on to the MAS using the customer account (for example, *mmacct*).
2. Navigate to the **C:\Avaya_Support\tools\servicecontrol** directory.
3. Double-click the **StopMMServices.exe** file.

   The StopMMServices tool stops all Modular Messaging services and resets their startup type to manual.

Upgrading Dialogic software for a 1.1 to 4.0 upgrade

Use the following procedures to upgrade Dialogic from Release 1.1 to Release 4.0 software.

1. Log on to the MAS using the customer account (for example, *mmacct*).
2. Uninstall Dialogic drivers:
   a. Insert the *Avaya Modular Messaging Messaging Application Server Software* media (disk 1) in the DVD drive of the MAS.
   b. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUninstall.bat** file.
   c. On the Question window, click **No**.
   d. On the Confirm Uninstall window, click **OK**.
   e. On the Maintenance Complete window, select **Yes, I want to restart my computer now** and then click **Finish**.
   f. Log back on to the server using the customer account (for example *mmacct*).
   g. On the Hardware Update Wizard, click **Cancel**.
   h. Search for the **\Program Files\Dialogic** folder. If the folder is on the system, delete it.
3. Reinstall Dialogic drivers:
   a. In the media's **\Dialogic Drivers** directory, double-click the **MMDialogicUpgrade.bat** file. If a dialog box asks if you want to run this file, click **Run**.

      The Dialogic Setup wizard launches.
   b. Complete the wizard, accepting all defaults.
   c. If a warning window about Java appears, click **OK**.

      A **Setup Status** window appears and installation begins.

      After the Dialogic files install, a **Found New Hardware** window appears.

d. Select **No, not this time**, and click **Next**.

e. Select **Install the software automatically**, and click **Next**.

f. In the unsigned driver dialog box, click **Yes**.

g. After the board is set up, click **Finish**.

h. Repeat these steps for all Dialogic boards on this MAS.

i. On the Setup Complete window, select Not to restart the computer and click **Finish**.

4. Apply the Dialogic firmware patch:

   a. Open the command prompt window and use the cd command to navigate to the dialogic drivers folder on the DVD.

   b. Enter the following commands at the prompt:

      - **MMDialogicPatch.bat "%INTEL_DIALOGIC_FWL%" "%INTEL_DIALOGIC_LIB%"**
      - **copy /Y "%TEMP%\DIALOGIC*.prm" "%INTEL_DIALOGIC_FWL%"**

5. Restart the MAS and log on using the customer account.

6. From the media's **\Dialogic Drivers\mm_install** directory, double-click the **SetDialogicSettings.exe** file. This restores the Dialogic configuration to the MAS.

7. Start the Dialogic drivers:

   a. Click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

      The Intel Dialogic product **Configuration Manager** window opens.

   b. On the button bar, click the green **> (Start)** button.

      Wait for the devices to start and the installed boards to show a green light.

   c. Close the **DCM** window.

8. Reboot the MAS.

Restarting services

Restart Modular Messaging services and verify that they are running:

1. Click **Start** > **Run** to open the **Run** window.

2. In the **Open** field, type the following and press **Enter**:

   C:\Avaya_Support\Scripts\serverrecovery.vbs

   The script takes a few seconds to run.

3. Verify that all Modular Messaging services you previously recorded as required for this MAS are **Started** and set to **Automatic**.

Completing server setup

Complete the following tasks as necessary to finish server setup:

- Deleting old logs on page 250
- Installing software updates on page 250
- Enabling ports on page 250

Deleting old logs

Older logs might remain on the system because of a change in file names. Remove older logs by going to the **c:\avaya_support\logs** folder on the MAS and deleting any logs that are older than the upgrade's start time.

Installing software updates

A new Modular Messaging system ships with the most current software that is available at the time. However, the software must be updated after an upgrade to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch.

To determine if a Modular Messaging software update is needed:

1. Locate any relevant Avaya software updates on the Avaya Support Web site at http://www.avaya.com/support. For complete steps, see Obtaining software updates from the Web on page 309.

   Note:

   If you followed the procedure for Downloading software updates on page 3, you already downloaded any required software updates.

2. If the Modular Messaging system requires a software update, complete the update procedure now before you do acceptance testing. Follow the instructions in Appendix D: Updating Modular Messaging software on page 309 to update the system with the latest changes.

Enabling ports

Enable the ports on the MAS that you are upgrading.

Use the port monitor to enable the MAS ports:

1. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Port Monitor**.
2. In the **Port Monitor** window, hold down the **Shift** key or Control (**Ctrl**) key and click to select all the ports.
3. Right-click the port list and select **Enable**.

4. Verify that the status of all ports is **Enabled**.
5. Close the **Port Monitor** window.

Completing the upgrade

Continue the Modular Messaging software upgrade as appropriate:

1. If you have more than one MAS:
   a. ***For the first MAS upgraded only,*** let the Modular Messaging software run for 15 minutes. Begin upgrading the next MAS.
   b. Repeat the Modular Messaging software upgrade procedure until all MASs are upgraded.
2. Enable and configure Fax Sender Service. If this MAS will be running MM Fax Sender Service, complete the following steps:
   a. Navigate to the **C:\Avaya_Support\Utils** directory.
   b. Double-click the **FaxSenderEnable.exe** file.
   c. Restart Microsoft Windows Fax Service.
   d. Configure Fax Sender Service by complete the steps described in Configuring MM Fax Service on page 132.

   Note:

   Fax Sender Service running with a QSIG T1 or QSIG E1 integration requires the D480JCT-1T1, D/600JCT-1E1 or D/600JCT-2E1 dual span QSIG board. If you are running with the D/240JCT-T1 or D/300JCT-1E1 board, you must upgrade your board before the system can run Fax Sender Service. The dual span QSIG boards also require configuration of the **FirmwareFile 2** parameter on the **Intel Dialogic product Configuration Manager - Properties** window. For more information, see Configuring T1-QSIG or E1-QSIG boards on page 298.
3. Configure Audit service by completing the steps described in Configuring Audit Service on page 132.
4. Configure and activate additional new Release 4.0 features using the Voice Mail System Configuration program.
5. Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade. For additional information, see Configuring serviceability settings on page 125.
6. Complete the following steps to verify all personal operator schedules.
   a. Click **Start > Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.

b. Under the voice mail domain name, double-click **Telephone User Interface**.

c. Select the **Personal Operator Schedules** tab.

d. Verify that all personal operator schedules recorded before the upgrade are included in the list. If a schedule is missing, complete the following steps:

1. Click the **Add** button
2. In the **Enter Personal Operator Schedule Name** dialog box in the **Schedule Name** field, enter the name of the missing schedule.
3. Click **OK** to return to the **Personal Operator Schedules** tab.
4. In the schedule grid, enter the schedule times.

e. Click each personal operator schedule in the schedule list and verify that the schedule times correspond to the times recorded before the upgrade. Correct any discrepancies.

f. Close all windows.

For additional information about configuring personal operator schedules, see the *Avaya Modular Messaging MAS Administration Guide*.

7. When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.
8. Enable all scheduled tasks that you disabled before starting the upgrade.
9. Update the Modular Messaging Active Directory Exchange extensions on any machines where they are installed. This might include Exchange servers and client machines used for subscriber administration. See Chapter 5: Adding Exchange extensions for Modular Messaging on page 73.

Note:

The Modular Messaging Active Directory Exchange extensions are updated along with any other Modular Messaging software that is installed on the MAS (multiple Modular Messaging software component checkboxes might be checked). This ensures that all currently installed components are upgraded. The components are installed in the correct order when you click **Install**.

10. Update the client software on any non-MAS machines where it is installed. See Updating client software on page 253.
11. For any MAS that does not have Web Subscriber Options installed, close TCP port 80 to increase system security. For complete instructions for closing the port, see your Microsoft documentation. For information about how Modular Messaging uses TCP/IP ports, contact your Avaya or business partner account team.
12. Set up test subscribers and perform all acceptance tests that are relevant to the system. See Chapter 9: Testing and backing up the system on page 145.
13. Back up each MAS using the regular backup procedures for this site. See Backing up the system on page 157.

14. When finished with each MAS, verify that the MAS disk is in good condition by running the following:
    - Disk Defragmenter system tool
    - **chkdsk** command
15. If you are adding a new MAS to this system, begin the installation now.

Updating client software

Note:

Always check the Avaya Support Web site at http://www.avaya.com/support for the latest Modular Messaging Client software package.

Do this task on each subscriber machine where client software is installed.

The Modular Messaging client software packages must be updated on each subscriber machine where they are already installed.

To update the client software to the latest release, use the normal software installation procedures for this site. For example:

1. If you have not already done so, download the most recent version of the client software package from the support website. When you download the software, copy it to a USB storage device.
2. Insert the USB storage device with the client software into any USB port on the subscriber machine where a Modular Messaging client software package from the previous release is installed.
3. Log on to the subscriber machine. You must use an account with administrator rights to install software (such as the local administrator account for the client machine).
    a. Navigate to the directory where you saved the client software on the USB storage device.
    b. Double-click the **setup.exe** file.
    c. Complete the Avaya Modular Messaging Client Installation Wizard.
4. Repeat this procedure until all existing versions of client software have been replaced with the version for the newest release.

For details on installing or using a client software package, see the appropriate user guide.

Appendix A: Installation and upgrade checklists

This appendix contains checklists to help guide you through the various installation and upgrade tasks.

- Before starting a new Modular Messaging installation or upgrade, print the checklist relevant to the procedure that you must do.
- Check off the steps as you complete them to ensure that you do not overlook any important tasks.

Note:

If you are adding a new MAS to an existing Modular Messaging system and an upgrade is required, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*, Chapter 6.

Checklists include:

- New installation:
  - New Modular Messaging installation on an Avaya MAS on page 256
  - New Modular Messaging installation on a customer-provided MAS on page 261
- Upgrade from Release 3.0 or Release 3.1 to Release 4.0:
  - Modular Messaging upgrade (R3.0/3.1-->R4.0) on an Avaya MAS on page 267
  - Modular Messaging upgrade (R3.0/3.1-->R4.0) on a customer-provided MAS on page 271
- Upgrade from Release 1.1 to Release 4.0:
  - Modular Messaging upgrade (R1.1-->R4.0) on an Avaya MAS on page 275
  - Modular Messaging upgrade (R1.1-->R4.0) on a customer-provided MAS on page 281

New Modular Messaging installation on an Avaya MAS

This checklist applies to a new Modular Messaging installation using an Avaya Messaging Application Server (Avaya MAS). As you complete a procedure, make a check mark in the "✔" column.

Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
Complete preinstallation planning:			
	If Avaya is to maintain this system, preregister the system in ART. The registration process produces product IDs for the servers and IP addresses for remote access.		You can obtain all required information for each MAS in advance.
	Assemble and review the required documentation.	3	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	3	Web access required.
	Obtain the DCT data file (*.mmdct) for this site.		
	Review security considerations.	7	
	Obtain virus-checking software for the MAS if required.	7	Customer obtains.
	Gather the necessary test equipment and tools.	8	
	Arrange for initial switch and LAN administration. Register corporate FQDNs on the DNS if required. **Note:** Avaya is not responsible for the installation, administration, or test of communications between customer computers and the LAN.	9	See LAN administrator. Time of administration and site requirements vary.
	Verify that the switch or PBX is administered.	9	See switch administrator.
	Arrange for the Active Directory data schema update. Schedule downtime for the directory server and for the Exchange server if required.	N/A	Review requirements in Chapters 4 and 5.
	Review hardware requirements.	10	
1 of 6			

Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
	Collect any software media that is needed for the installation, such as MS Windows updates or anti-virus software.	80	Leave customer CDs and DVDs on-site.
Install any required hardware:			
	Review site requirements, including the following: • Environmental requirements • Weight and space considerations • Customer-provided cabinet requirements • Installation area requirements • Power requirements • Grounding requirements • Demarcation points	12	
	Identify each Avaya S3500-family server in the system, as well as its key components.	17	
	Unpack the system hardware. Identify the MAS port boards and save the packing materials.	21	
	Install the UPS and optional EBMs.	26	A UPS is required. EBMs are optional.
	Install the S3500-family servers.	30	
	Install a KVM switch (8-port or 2-port).	37	Procedure varies, depending on type of KVM switch purchased.
	Connect the USB modem on the MAS.	38	Do for each MAS.
	Turn on the S3500-family server system.	39	The Avaya Modular Messaging Configuration Wizard starts automatically.
Prepare to install the Modular Messaging software: Note: The customer Active Directory administrator may be required to perform these tasks.			
	Create the Modular Messaging customer account security group and customer account on the Active Directory server.	56	
	Create the technical support account on the Active Directory server.	58	
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Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
	Create test subscriber accounts on the Active Directory server (set up at least one for each TUI used on the site).	59	
	Assign permissions to the customer account group.	60	
	If required, create a voice-mail-domain container manually.	66	Do only if you did not create the account using the procedure on page 55.
	Add a computer account for each MAS to the Active Directory server.	67	
	Set up each server for remote access.	68	
	Update the Active Directory and data schema for Windows 2000 or Windows 2003.	69	Do this before installing other Modular Messaging software. System restart required.
	Update the Modular Messaging Active Directory Exchange extensions on any machine used to administer subscribers (and on Exchange server if required).	75	Most extension updates require a system restart. You must wait to update the extensions on the MAS until the MM software is being installed.
Configure a new Avaya MAS:			
	Switch the monitor to show the correct server.	81	
	Start up the system.	82	
	Disable hyper-threading for IP H323 integration	82	
	Install modem drivers on the MAS	83	
	Select a DCT data file (*.mmdct).	85	
	Update Windows Internet Explorer 7 security if necessary.	86	
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Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
	For an Exchange 2000 or 2003 system, install third-party software: • Exchange System Management Tools • Exchange Server 2003 SP2 (see comment) • Anti-virus software	86	For Exchange 2000 System Management Tools, install Exchange Server 2000 SP3.
	For an Exchange 2007 system, install third-party software: • MAPI client • Exchange 2007 Management Tools • Exchange Server 2007 SP1 • Additional components as prompted by installation • Anti-virus software	372	
	Complete the MMCW configuration.	87	
	Administer anti-virus software.	89	
	Install software updates.	90	
	Update Microsoft Windows.	90	
	Change LAN settings.	91	
	Enter RAS IP addresses on each MAS	92	
	Configure port boards, if needed.	93	
Configure the voice mail system: Note: The customer domain administrator may be required to perform these tasks.			
	Specify languages and verify that service is started.	121	For a non-English Windows operating system.
	Configure TUI and access settings.	121	Configuration notes required.
	Configure the broadcast mailbox.	122	
	Configure the PBX type.	124	
	Configure serviceability settings.	125	
	Obtain and install a license for this system.	127	Local procedures vary.
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Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
	Configure specific features: • Call Me service • Notify Me • MWI service • Languages or TTS • Audit service • MM Fax Service • Offline access to messages	129	Configure features as needed.
	Configure MAS-specific parameters: • INADS alarming (if used) • Port boards and switch integration	135	
	Restart service.	138	
	Verify call-handling capability.	141	
	Verify alarming setup.	141	
	Verify Tracing Service operation.	142	
	Verify Audit Service.	143	
	Repeat installation for any additional MASs.	143	
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
	Set up monitoring tools: • Operational History Viewer • Port monitor	148	Optional.
	Perform acceptance tests: • Create and send a call-answer message. • Retrieve test messages in integrated mode. • Create and send a test message in nonintegrated mode. • Test the outcalling capability. • Create and print a fax message • Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
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Modular Messaging on an Avaya MAS installation checklist

✔	Description	Page	Comments
	Perform a complete DCT analysis of the supplementary server and all MASs.	157, 165	
	Back up the system.	157	Use local procedures.
	Set up the system to perform regularly, scheduled backups.	157	Use local procedures.
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
6 of 6			

New Modular Messaging installation on a customer-provided MAS

Use this checklist to install a new Modular Messaging system on a customer-provided MAS. As you complete a task, make a check mark in the "✔"column.

Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
Complete preinstallation requirements:			
	If Avaya is to maintain this system, preregister the system in ART. The registration process produces product IDs for the servers and IP addresses for remote access.		You can obtain all required information for each MAS in advance.
	Assemble and review the required documentation.	3	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	3	Web access required.
	Obtain the DCT data file (*.mmdct) for this site.		
	Review security considerations.	7	
	Obtain virus-checking software for the MAS if required.	7	Customer obtains.
1 of 6			

Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
	Gather the necessary test equipment and tools.	8	
	Arrange for initial switch and LAN administration. Register MAS corporate FQDNs on the DNS if required. **Note:** Avaya is not responsible for the installation, administration, or test of communications between customer computers and the LAN.	9	See LAN administrator. Time of administration and site requirements vary.
	Verify that the switch or PBX is administered.	9	See switch administrator.
	Arrange for the Active Directory data schema update. Schedule downtime for the directory server and for the Exchange server if required.	N/A	Review requirements in Chapters 4 and 5.
	Review hardware requirements.	10	
	Collect any software media that is needed for the installation, such as MS Windows updates or anti-virus software.	96	Leave customer CDs and DVDs on-site.
Install any required hardware:			
	Install the Dialogic port boards. Set jumpers and switches.	43	For details, see the Dialogic documentation. IP H.323 or IP SIP switch integrations skip this step.
	Connect the MAS port boards to the switch or PBX.	51	Do as required.
	Complete the hardware installation by installing and configuring each MAS modem.	52	Do as required.
Prepare to install the Modular Messaging software: Note: The customer Active Directory administrator may be required to perform these tasks.			
	Create the Modular Messaging customer account security group and customer account on the Active Directory server.	56	
	Create the technical support account on the Active Directory server.	58	
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Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
	Create test subscriber accounts on the Active Directory server (set up at least one for each TUI used on the site).	59	
	Assign permissions to the customer account group.	60	
	If required, create a voice-mail-domain container manually.	66	Do only if you did not create the account using the procedure on page 55.
	Add a computer account for each MAS to the Active Directory server.	67	
	Set up each server for remote access on the Active Directory server.	68	
	Update the Active Directory and data schema for Windows 2000 or Windows 2003.	69	Do this before installing other Modular Messaging software. System restart required.
	Update the Modular Messaging Active Directory Exchange extensions on any machine used to administer subscribers (and on Exchange server if required).	75	Most extension updates require a system restart. You must wait to update the extensions on the MAS until the MM software is being installed.
Configure a new MAS: Note: The customer domain administrator may be required to perform these tasks.			
	Ensure that you have the needed hardware, software, and forms.	96	
	Configure the network card on the MAS if needed.	98	
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	98	
	Disable hyper-threading for IP H.323 configuration.	98	
	Join the server to the MS Windows domain.	99	
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Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
	Adjust the following system values: • Event Viewer values • File and Printer Sharing properties • Windows 2003 Server operating system values	100	
	Add the Modular Messaging customer and technical support accounts to the local administrators group for this MAS.	102	
	Install and enable the following Windows software: • Required MS Windows services • MS Windows SP2 (if not already on the server)	103	Requires Microsoft Windows media.
	Install and launch the Modular Messaging Configuration Wizard.	106	
	Select a DCT data file (*.mmdct).	107	
	Update Windows Internet Explorer 7 security if necessary.	109	
	For a system with an Exchange 2000 or 2003 peer mail server, install third-party software: • Exchange System Management Tools • Exchange Server 2003 SP2 (see comment) • Anti-virus software	109	For Exchange 2000 System Management Tools, install Exchange Server 2000 SP3.
	For a system with an Exchange 2007 peer mail server, install third-party software: • MAPI client • Exchange 2007 Management Tools • Exchange Server 2007 SP1 • Additional components as prompted by installation • Anti-virus software	372	
	Complete the MMCW configuration.	110	
	Install software updates.	112	
	Update Microsoft Windows.	112	
	Change corporate LAN name and power settings	112	
	Enter RAS IP addresses on each MAS	113	
	4 of 6		

Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
	Set the logging location if other than default.	114	
	Administer anti-virus software.	116	
	Configure port boards.	117	
Configure the voice mail system: Note: The customer domain administrator may be required to perform these tasks.			
	Specify languages and verify that service is started.	121	For a non-English Windows operating system.
	Configure TUI and access settings.	121	Configuration notes required.
	Configure the broadcast mailbox.	122	
	Configure the PBX type.	124	
	Configure serviceability settings.	125	
	Obtain and install a license for this system.	127	Local procedures vary.
	Configure specific features: • Call Me service • Notify Me • MWI service • Languages or TTS • Audit Service • MM Fax Service • Offline access to messages	129	Configure features as needed.
	Configure MAS-specific parameters: • INADS alarming (if used) • Port boards and switch integration	135	
	Restart service.	138	
	Verify call-handling capability.	141	
	Verify alarming setup.	141	
	Verify Tracing Service operation.	142	
	Verify Audit Service	143	
	Repeat for any additional MASs.	143	
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Modular Messaging on a customer-provided MAS installation checklist

✔	Description	Page	Comments
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
	Set up monitoring tools: • Operational History Viewer • Port monitor	148	Optional.
	Perform acceptance tests: • Create and send a call-answer message. • Retrieve test messages in integrated mode. • Create and send a test message in nonintegrated mode. • Test the outcalling capability. • Create and print a fax message • Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
	Perform a complete DCT analysis of the supplementary server and all MASs.	157, 165	
	Back up the system.	157	Use local procedures.
	Set up the system to perform regularly, scheduled backups.	157	Use local procedures.
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
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Modular Messaging upgrade (R3.0/3.1-->R4.0) on an Avaya MAS

Use this checklist when you upgrade a system with an Avaya MAS that is running Modular Messaging Release 3.0 or 3.1 to Modular Messaging Release 4.0. As you complete a procedure, make a check mark in the "✔" column.

Note:

If you are adding a new MAS to an existing Modular Messaging system, do the software upgrade first if an upgrade is required. When the upgrade is complete, install the new MAS using the appropriate new installation checklist.

Modular Messaging Avaya MAS upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
Complete pre-upgrade tasks:			
	If the Exchange extensions must be updated, schedule downtime for the Exchange server.	74	If required.
	Collect any software media that is needed for the upgrade, such as MS Windows updates or anti-virus software.	159	Leave customer CDs and DVDs on-site.
	Assemble and review the required documentation.	159	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	159, 3	Web access required.
	Review the considerations for a multiple-MAS upgrade.	162	
	Switch the monitor to show the correct server.	162	
	Verify and save key settings on the MAS. Record the following: • RAS IP addresses for each MAS • Non-default port groups and their names • MM services running on each MAS • SNMP trap destination and community details from the **Serviceability — Voice Mail Domain window**	163	
	For Release 3.0 upgrade only, record all personal operator schedules.	163	
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Modular Messaging Avaya MAS upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	If you use this MAS to create, administer, and deploy caller applications, back up all working files to a location other than the MAS. Additionally, ensure that you have on the MAS a current backup of the Caller Apps folder that contains the deployed caller applications that the MAS uses when it is running.	163	
	Review configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.	163	
	Back up all caller applications, customized tone files, customized prompt files, licensing files, WSO files, and SIP certificates for SIP implementations. Also back up the system state and spool.	163	
	Check for errors or warnings on the system. Resolve major and minor alarms.	163	
	Set expectations and review product functionality with customer.	163	
	Create a DCT data file (*.mmdct), using the DCT executable file (MMDCT.exe) to analyze each MAS.	165	
	Busy out the ports for this MAS.	167	Use PBX procedures.
	Back up the MAS.	167. 157	
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	167	
	Log off all remote logins	168	
	Stop Modular Messaging services.	168	
	Update Windows Internet Explorer 7 security	168	
Upgrade software:			
	Upgrade RealSpeak software	169	
	2 of 4		

Modular Messaging Avaya MAS upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	Start Modular Messaging services	170	
	Upgrade Dialogic drivers.	170	
	Upgrade MAS software.	172	
Complete server setup:			
	Delete old logs (Release 3.0 upgrade only)	174	
	Administer anti-virus software.	174	
	Install software updates.	175	
	Update MS Windows.	175	
	Disable the private LAN.	175	
	Enable ports.	176	
Complete the upgrade:			
	If you have more than one MAS: • Let MAS#1 run for 15 minutes. • Upgrade each additional MAS.	176	
	Configure MM Fax service.	132	
	Configure Audit service and verify its operation.	132 143	
	Configure and activate additional new Release 4.0 features using the Voice Mail Configuration program.		
	Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade.	125	
	Verify all personal operator schedules. (Release 3.0 upgrade only.)	176	
	When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.	176	
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Modular Messaging Avaya MAS upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	Update Modular Messaging Active Directory Exchange extensions on any machines where they are installed.	176, 73	
	Update client software on any non-MAS machines where it is installed.	176, 214	As required.
	Disable unused MS Windows services on this MAS.		Optional.
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
	Set up monitoring tools: • Operational History Viewer • Port monitor	148	Optional.
	Perform acceptance tests: • Create and send a call-answer message. • Retrieve test messages in integrated mode. • Create and send a test message in nonintegrated mode. • Test the outcalling capability. • Create and print a fax message • Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
	Back up the system.	176, 157	Use local procedures.
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	176	
	If you are upgrading an S3400 MAS to an S3500 server, do so now.	176, 211	
	If you are adding a new MAS to the system, begin the installation.	176	
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
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Modular Messaging upgrade (R3.0/3.1-->R4.0) on a customer-provided MAS

Use this checklist when you upgrade a system with a customer-provided server that is running Modular Messaging Release 3.0 or 3.1 to Modular Messaging Release 4.0. As you complete a procedure, make a check mark in the "✔" column.

Note:

If you are adding a new MAS to an existing Modular Messaging system, do the software upgrade first if an upgrade is required. When the upgrade is complete, install the new MAS using the appropriate new installation checklist.

Modular Messaging CPE server upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
Complete pre-upgrade tasks:			
	If the Exchange extensions must be updated, schedule downtime for the Exchange server.	74	If required.
	Collect any software media that is needed for the upgrade, such as MS Windows updates or anti-virus software.	215	Leave customer CDs and DVDs on-site.
	Assemble and review the required documentation.	215	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	215, 3	Web access required.
	Review the considerations for a multiple-MAS upgrade.	218	
	Verify and save key settings on the MAS. Record the following: • RAS IP addresses for each MAS • Non-default port groups and their names • MM services running on each MAS • SNMP trap destination and community details from the **Serviceability — Voice Mail Domain window**	219	
	Record all personal operator schedules. (Release 3.0 upgrade only.)	219	
	Back up caller-applications files on a non-MAS PC.	219	
1 of 4			

Modular Messaging CPE server upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	Review configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.	219	
	Back up all caller applications, customized tone files, customized prompt files, licensing files, WSO files, and SIP certificates for SIP implementations. Also back up the system state and spool.	219, 157	
	Check for errors or warnings on the system. Resolve major and minor alarms.	219	
	Set expectations and review product functionality with customer.	219	
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	220	
	Create a DCT data file (*.mmdct) by using the DCT executable file (MMDCT.exe) to analyze each MAS.	220	The DCT data file serves as a backup but is not required for the upgrade. All MASs and Exchange message store must be running normally.
	Busy out the ports for this MAS.	222	Use PBX procedures.
	Back up the MAS.	222, 157	
	Log off all remote logins	223	
	Stop all Modular Messaging services.	223	
	Install MS Windows prerequisite components	223	
	Update Windows Internet Explorer 7 security	224	
Upgrade software:			
	Upgrade RealSpeak software.	225	
	Start Modular Messaging services	226	
	Upgrade Dialogic drivers.	226	
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Modular Messaging CPE server upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	Upgrade MAS software.	227	
	Delete old logs. (Release 3.0 upgrade only.)	229	
	Install software updates.	229	
	Disable unused MS Windows services on this MAS.		Optional.
	Enable ports.	230	
Complete the upgrade:			
	If you have more than one MAS: • Let MAS#1 run for 15 minutes. • Upgrade each additional MAS.	230	
	Enable and configure MM Fax service.	230	
	Configure Audit service and verify its operation.	132 143	
	Configure and activate additional new Release 4.0 features.		
	Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade.	125	
	Verify all personal operator schedules. (Release 3.0 only.)	230	
	When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.	230	
	Update the Modular Messaging Active Directory Exchange extensions software on any machines where it is installed (including the Exchange server).	230, 75	Most extension updates require a system restart.
	Update client software.	230, 253	Do on each subscriber machine where client software is installed.

Modular Messaging CPE server upgrade (R3.0/3.1-->R4.0) checklist

✔	Description	Page	Comments
	For any MAS that does not have Web Subscriber Options installed, close TCP port 80 to increase system security.	230	
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
	Set up monitoring tools: ● Operational History Viewer ● Port monitor	148	Optional.
	Perform acceptance tests: ● Create and send a call-answer message. ● Retrieve test messages in integrated mode. ● Create and send a test message in nonintegrated mode. ● Test the outcalling capability. ● Create and print a fax message ● Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
	Back up the system.	157	Use local procedures.
	Run recommended disk checks: ● Disk Defragmenter system tool ● **chkdsk** command	230, 158	
	If you are adding a new MAS to this system, begin the installation.	230	Use the new system installation checklist.
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
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Modular Messaging upgrade (R1.1-->R4.0) on an Avaya MAS

Use this checklist when you upgrade a system with an Avaya MAS that is running Modular Messaging Release 1.1 to Modular Messaging Release 4.0. As you complete a procedure, make a check mark in the " ✔ " column.

Note:

If you are adding a new MAS to an existing Modular Messaging system, do the software upgrade first if an upgrade is required. When the upgrade is complete, install the new MAS using the appropriate new installation checklist.

Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
Complete pre-upgrade tasks:			
	If the Exchange extensions must be updated, schedule downtime for the Exchange server.	74	If required.
	Collect any software media that is needed for the upgrade, such as MS Windows updates or anti-virus software.	159	Leave customer CDs and DVDs on-site.
	Assemble and review the required documentation.	159	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	159, 3	Web access required.
	Review the considerations for a multiple-MAS upgrade.	180	
	Obtain the Exchange System Management Tools and appropriate Service Pack from the customer.	159	Microsoft Exchange 2003 System Management Tools are highly recommended. The 2003 System Management Tools require Exchange 2003 SP2. The 2000 System Management Tools require Exchange 2000 SP3.
	Switch the monitor to show the correct server.	181	
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Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Verify and save key settings on the MAS. Record the following: • RAS IP addresses for each MAS • Non-default port groups and their names • MM services running on each MAS • SNMP trap destination and community details from the **Serviceability — Voice Mail Domain window**	182	
	Record all personal operator schedules.	182	
	If you use this MAS to create, administer, and deploy caller applications, back up all working files to a location other than the MAS. Additionally, ensure that you have on the MAS a current backup of the Caller Apps folder that contains the deployed caller applications that the MAS uses when it is running.	182	
	Review configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. Make any necessary changes as part of the upgrade.	182	
	Back up all caller applications, customized tone files, customized prompt files, licensing files, WSO files, and SIP certificates for SIP implementations. Also back up the system state and spool.	182	
	Check for errors or warnings on the system. Resolve major and minor alarms.	182	
	Set expectations and review product functionality with customer.	182	
	Create a DCT data file (*.mmdct), using the DCT executable file (MMDCT.exe) to analyze each MAS.	183	
	Busy out the ports for this MAS.	185	Use PBX procedures.
	Back up the MAS.	185. 157	
Prepare the MAS for the upgrade			
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Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	If you have a replacement hard disk drive with the Modular Messaging boot image already installed, replace the existing hard drive with the new one.	186	Otherwise skip to the next step.
	If you do not have a replacement hard disk drive, install the new Avaya boot image on the existing hard drive.	195	Otherwise return to the previous step.
Continue the upgrade:			
	Run the Windows Setup Wizard.	196	
	Disable hyper-threading for IP H.323 configuration	197	
	Copy the DCT data file to the MAS.	198	
	Run the setup program.	198	
Upgrade Modular Messaging software:			
	Run the Modular Messaging Configuration Wizard.	199	At powerup, the wizard launches automatically.
	Update Windows Internet Explorer 7 security	201	
	Install third-party software: • Exchange System Management Tools • Exchange Server 2003 SP2 (see comment) • Anti-virus software	200	For Exchange 2000 System Management Tools, install Exchange Server 2000 SP3.
	Complete the MMCW configuration.	202	
Complete the server setup:			
	Administer anti-virus software.	203	
	Install software updates.	204	
	Update MS Windows.	204	
	Change the default LAN name and Power Management settings.	204	
	Disable the private LAN	205	
	Enter RAS IP addresses on each MAS	205	
	Configure port boards, if needed.	207	
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Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
Complete the upgrade:			
	If you have more than one MAS: • Let the MAS#1 Modular Messaging software run for 15 minutes. • Upgrade each additional MAS.	207	
	Disable unused MS Windows services on this MAS.		Optional.
Configure the voice mail system: Note: The customer domain administrator may be required to perform these tasks.			
	Specify languages and verify that service is started.	121	For a non-English Windows operating system.
	Configure TUI and access settings.	121	Configuration notes required.
	Configure the broadcast mailbox.	122	
	Configure the PBX type.	124	
	Configure serviceability settings.	125	
	Obtain and install a license for this system.	127	
	Configure specific features: • Call Me service • Notify Me • MWI service • Languages or TTS • MS Windows Fax Service • Offline access to messages	129	Configure features as needed.
	Configure MAS-specific parameters: • INADS alarming (if used) • Port boards and switch integration	135	
	Restart service.	138	
	Verify call handling.	141	
	Verify the alarming setup on the MAS.	141	
	Verify tracing service operation.	142	
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Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
Complete the upgrade (continued):			
	Verify all personal operator schedules.	207	
	When finished with each MAS, verify that all Modular Messaging services that are required for that MAS are running.	207	
	Update the Modular Messaging Active Directory Exchange extensions software on any machines where it is installed.	207, 75	
	Restore customer data to the system.	207, 209	
	Implement additional TUIs if necessary.	207, 209	
	Update client software on any non-MAS machines where it is installed.	207, 214	As required.
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
	Set up monitoring tools: • Operational History Viewer • Port monitor	148	Optional.
	Perform acceptance tests: • Create and send a call-answer message. • Retrieve test messages in integrated mode. • Create and send a test message in nonintegrated mode. • Test the outcalling capability. • Create and print a fax message • Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
	Back up the system.	207, 157	Use local procedures.
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Modular Messaging Avaya MAS upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	207	
	S3400-to-S3500 upgrades only: Upgrade to an S3500 server.	207, 211	
	If you are adding a new MAS to the system, begin the installation.	207	
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
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Modular Messaging upgrade (R1.1-->R4.0) on a customer-provided MAS

Use this checklist when you upgrade a system with a customer-provided server that is running Modular Messaging Release 1.1 to Modular Messaging Release 4.0. As you complete a procedure, make a check mark in the "✔" column.

Note:

If you are adding a new MAS to an existing Modular Messaging system, do the software upgrade first if an upgrade is required. When the upgrade is complete, install the new MAS using the appropriate new installation checklist.

Modular Messaging CPE server upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
Complete pre-upgrade tasks:			
	If the Exchange extensions must be updated, schedule downtime for the Exchange server.	74	If required.
	Collect any software media that is needed for the upgrade, such as MS Windows updates or anti-virus software.	215	Leave customer CDs and DVDs on-site.
	Assemble and review the required documentation.	215	Web access required.
	Download required software updates, including the latest version of the DCT executable file (MMDCT.exe) and client software.	215, 3	Web access required.
	Obtain the Exchange System Management Tools and appropriate Service Pack from the customer.	215	Microsoft Exchange 2003 System Management Tools are highly recommended. The 2003 System Management Tools require Exchange 2003 SP2. The 2000 System Management Tools require Exchange 2000 SP3.
	Review the considerations for a multiple-MAS upgrade.	234	
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Modular Messaging CPE server upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Verify and save key settings on the MAS. Record the following: • RAS IP addresses for each MAS • Non-default port groups and their names • MM services running on each MAS • SNMP trap destination and community details from the **Serviceability — Voice Mail Domain window**	235	
	Record all personal operator schedules.	235	
	If the site has caller applications, ensure that a copy of all editable files is on a separate computer, *not* the MAS.	235	
	Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration.	235	
	Back up all caller applications, customized tone files, customized prompt files, licensing files, WSO files and SIP certificates for SIP implementations. Also back up the system state and spool.	235	
	Check for errors and warnings. Resolve alarms.	235	
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	236	
	Create a DCT data file (*.mmdct) by using the DCT executable file (MMDCT.exe) to analyze each MAS.	237	The DCT data file serves as a backup but is not required for the upgrade. All MASs and Exchange message store must be running normally.
	Busy out the ports for this MAS.	238	Use PBX procedures.
	Back up the MAS.	239, 157	
	Log off all remote logins	239	
	Stop all Modular Messaging services.	239	
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Modular Messaging CPE server upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Update Windows Internet Explorer 7 security	239	
	Verify anti-virus software.	240	Software and update methods vary per local implementation.
Upgrade software:			
	Uninstall Internet Information Services (IIS).	241	
	Upgrade the MS Windows operating system.	241	
	Install MS Windows software components.	241	
	Enable MS Windows software components.	243	
	Apply MS Windows Server 2003 SP2.	243	If not done already.
	Update MS Windows.	243	
	Upgrade RealSpeak software.	243	Follow the correct procedure for your upgrade.
	Install MS Exchange System Management Tools.	244	Exchange 2003 System Management Tools are highly recommended.
	Apply MS Exchange 2003 SP2.	245	If you installed MS Exchange 2000 System Management Tools, install MS Exchange 2000 Service Pack 3 instead.
	Restart services.	245	
	Upgrade Modular Messaging software.	246	Avaya recommends that you first disable anti-virus software.
	Stop and reset Modular Messaging services.	248	
	Upgrade Dialogic software.	248	
	Restart services.	249	
	Delete old logs	250	
	Install software updates.	250	
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Modular Messaging CPE server upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Disable unused MS Windows services on this MAS.		Optional.
	Enable ports.	250	
Complete the upgrade:			
	If you have more than one MAS: • Let MAS#1 run for 15 minutes. • Upgrade each additional MAS.	251	
	Enable and configure Fax service	251	
	Configure Audit service and verify its operation.	132 143	
	Configure and activate additional new Release 4.0 features.		
	Configure the SNMP trap destination and community details using the **Serviceability - Voice Mail Domain** window of the Voice Mail System Configuration program. Enter the SNMP trap destination and community information you recorded before beginning the upgrade.	125	
	Verify all personal operator schedules.	251	
	When finished with each MAS, verify that all Modular Messaging services that are required for this MAS are running.	251	
	Update the Modular Messaging Active Directory Exchange extensions software on any machines where it is installed (including the Exchange server).	251, 75	Most extension updates require a system restart.
	Update client software on any non-MAS machines where it is installed.	251, 253	
	For any MAS that does not have Web Subscriber Options installed, close TCP port 80 to increase system security.	251	
Test and back up the system:			
	Add a test subscriber on the directory server for each TUI used at this site.	146	MM Aria is the default.
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Modular Messaging CPE server upgrade (R1.1-->R4.0) checklist

✔	Description	Page	Comments
	Set up monitoring tools: • Operational History Viewer • Port monitor	148	Optional.
	Perform acceptance tests: • Create and send a call-answer message. • Retrieve test messages in integrated mode. • Create and send a test message in nonintegrated mode. • Test the outcalling capability. • Create and print a fax message • Run additional tests.	150	Do on each MAS that is set up to handle calls.
	Remove the test subscribers from the directory server.	156	
	Back up the system.	157	Use local procedures.
	Run recommended disk checks: • Disk Defragmenter system tool • **chkdsk** command	251, 158	
	If you are adding a new MAS to this system, begin installation now.	251	Use the new system installation checklist.
	Turn the system over to the customer.	158	Be sure to give the customer an updated DCT data file.
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Appendix B: Creating a new tone file

This appendix describes how to build a tone file for Dialogic analog port boards by using the PBXpert utility to learn PBX tones.

Do this procedure after the port boards are administered on the switch, but before you configure them using the Intel Dialogic product Configuration Manager. For more information, see Configuring analog port boards on page 301.

CAUTION:

Use the configuration notes for this particular PBX or switch integration to administer the port boards. For instructions on obtaining the configuration notes, see Downloading configuration notes on page 4. The port boards *must* be administered on the switch before you can proceed.

PBXpert learns the call progress tones for this PBX and store them in a Tone Set File (TSF). Many tone sets can be stored in a single TSF file.

You can use the PBXpert utility either automatically or manually:

- *Automatic Learning:* PBXpert uses two different channels on the Dialogic port board to set up tones and learn the resulting call progress tones automatically. To use this procedure, see Learning tones automatically on page 288.
- *Manual Learning:* PBXpert uses one channel on the Dialogic port board and a telephone to set up tones and learn the resulting call progress tones manually. PBXpert prompts you how and when to use the telephone. To use this procedure, see Learning tones manually on page 291.

  Note:

  If only one line is connected to the Dialogic port board, you must use Manual Learning.

Learning tones automatically

This section describes:

- Running the PBXpert wizard on page 288
- Consolidating and saving the TSF file on page 290
- Using the new TSF in Dialogic Configuration Manager on page 290

Running the PBXpert wizard

The PBXpert wizard guides you through learning the tones used by this PBX and saving the information as a TSF file. PBXpert can learn the following tones:

- Dial tone
- Ringback
- Busy
- Reorder (fast busy)
- Disconnect

To run the PBXpert wizard:

1. Start the Dialogic port boards:
   a. The Intel Dialogic product Configuration Manager window must be open.

      To open the DCM application, click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

   b. Click the green **Start** button on the button bar.

   When service is started, the **Stop** button becomes active and the installed boards show a green light.
2. Click **Start** > **Programs** > **Intel Dialogic System Release** > **PBX Expert**.

   The PBXpert main window opens. Most fields are blank until tones are learned.

   - If you are using PBXpert for the first time after installation, the PBXpert wizard starts automatically.
   - If the PBXpert wizard does not start automatically, click **Tones** > **Tone Wizard**.

   Note:

   You can change the default settings in the wizard if you are familiar with this PBX environment and the Dialogic API. The program saves any settings that you change when you exit PBXpert. For help on a particular screen, click the **Help** button in the wizard.

After the PBXpert Wizard window opens, complete the screens as follows:

1. On the Welcome screen, click **Next**.
2. On the PBX Information screen:
   - Under **PBX**, enter the name of the **Manufacturer**, such as *Mitel*.
   - Enter the **Model** of the PBX, such as *SX-2000*.
   - You can use the automatically created **Tone Set File** name shown on the screen, or alter the file name as desired.
   - Click **Next**.
3. On the Select a Board screen:
   - Select the port board to use.
   - Click **Next**.
4. On the Select the Calling Resource screen, for the Line A (Calling Channel):
   - For **Select the Channel**, enter the port number or channel to use.
   - For **Phone Number**, enter the extension number of this port.
   - Click **Next**.
5. On the Select the Called Resource screen, for the Line B (Called Channel):
   - For **Select the Channel**, enter a port number or channel that is different from Line A.
   - For **Phone Number**, enter the extension number of this port.
   - Click **Next**.
6. On the Settings Confirmation screen:
   - Verify the settings. Click **Back** if you need to change anything.
   - Verify that the **Run Wizard Auto-Test** box is checked.
   - Click **Next**.
7. The Auto Line Test window opens while PBXpert verifies the connection between the two specified channels.
   - If you see a **Test finished successfully!** message, click **OK**. Close this window and proceed.
   - If the line test fails:
     a. Click **OK**. Close this window.
     b. Click **Back** on the wizard, adjust the settings, and try the test again.
8. On the Learning Tones screen, click **Next** to start learning tones automatically.

   The Learn Tones window opens.

Note:

You can click **Cancel** at any time during the test to stop automated learning.

9. When PBXpert completes learning, choose to keep or discard the data.
   - If the tones were learned without errors, select **Keep Data**. The Learn Tones window closes and you can proceed.
   - If errors occurred, select **Discard Data**. The window closes.
     - Click **Back** on the wizard, adjust the settings, and try to learn the tones again.
     - You cannot test or save the tone file if it contains errors.
10. On the Verifying the Learn screen, click **Next** to test the learned tones.
    - If the test succeeds, click **OK** to close the test window and proceed.
    - If the test fails, click **OK** to close this window. Click **Back** on the wizard, adjust the settings, and try the test again.
11. The Summary of Results screen shows the final wizard status and tone definitions. Click **Finish**.

    The PBXpert main window displays the tone definitions.

Consolidating and saving the TSF file

You must consolidate and save the new TSF file so you can use it with the Dialogic voice driver. To do this:

1. Click **Tones** > **Consolidate**.
2. After consolidation is complete, click **File** > **Save** to save the new TSF file.
   a. In the Save As window, navigate to the following directory to ensure that the file is backed up: **C:\Avaya_Support\Tone_Files**
   b. Specify a file name with file type of TSF, such as *Mitel-SX-2000.tsf*.

Using the new TSF in Dialogic Configuration Manager

To use the new TSF that you just created:

1. Return to the Intel Dialogic product Configuration Manager window.
2. Click the red **Stop** button on the button bar.
3. Return to Step 6 in Configuring analog port boards on page 301 and complete board configuration and testing.

Learning tones manually

This section describes:

- Running PBXpert on page 291
- Adding a new tone set on page 292
- Learning tone definitions on page 292
- Testing the tone set on page 293
- Consolidating and saving the TSF file on page 293
- Using the new TSF in Dialogic Configuration Manager on page 294

Running PBXpert

To run PBXpert manually:

1. Start the Dialogic port boards.
   a. The Intel Dialogic product Configuration Manager window must be open.

      To open the DCM application, click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

   b. Click the green **Start** button on the button bar.

   When service is started, the **Stop** button becomes active and the installed boards show a green light.
2. Click **Start** > **Programs** > **Intel Dialogic System Release** > **PBX Expert**.

   The PBXpert main window opens. Most fields are blank until tones are learned.
3. If you are using PBXpert for the first time after installation, the PBXpert wizard starts automatically. If the PBXpert Wizard starts, click the **Don't run wizard at startup** checkbox and click the **Cancel** button.

   A new, empty TSF is now active.
4. In the PBXpert main window, click **Settings** on the button bar.
5. In the Settings window, on the **Dialing** tab:
   a. Under **Line A**, enter the **Board Number**, such as *1*.
   b. Enter the **Channel Number** or **Port number**.
   c. Verify that the **Manual mode** checkbox is checked.

d. For **Phone Number**, enter the extension for this port or channel.

You can use the default values for all the other fields in this window. Click **Help** for more information if needed.

e. Repeat Steps a through d for **Line B**.

Note:

If you are familiar with this PBX environment and the Dialogic API, you can change these default settings. The program saves any settings that you change when you exit PBXpert.

f. Click **OK**.

Adding a new tone set

To add a new tone set to a TSF:

1. From the PBXpert main window, click **Edit** > **New Tone Set**.
2. In the New Toneset window:
   a. Enter the PBX **Manufacturer**, such as *Mitel*, and the **Model** name, such as *SX-2000*.
   b. Click **OK**.

   The **PBXpert** main window shows the manufacturer and model names you entered. The tone definitions are set to zero.

Learning tone definitions

To add tone definitions to the new tone set:

1. From the PBXpert main window, click **Tones** > **Learn**.
2. On the Start Learn window:
   a. Select the tones for the Dialogic boards to learn. The default is all tones.
   b. Click **Start Learn** to have PBXpert start learning tones.

   The Learn Tones window opens.

   Note:

   Click **Cancel** at any time to stop learning.
3. The system prompts you to listen for ringing, and to pick up or replace the telephone handset, during the test. When a message box pops up, do the requested action, and then click **OK**.

4. When the learning process is complete, the system displays the tone definitions in the Learn Tones window. Choose to keep or discard the data:
   - If the tones were learned without errors, select **Keep Data**. The Learn Tones window closes and you can proceed.
   - If errors occurred, select **Discard Data**. The window closes.
     - Click **Back** on the wizard, adjust the settings, and try to learn the tones again.
     - You cannot test or save the tone file if it contains errors.

   The **Learn Tone** window closes. The **PBXpert** main window displays the new tone definitions.

Testing the tone set

The Test function verifies that the consolidated tone set in the active TSF works correctly with Perfect Call, a call progress analysis utility.

To test the newly learned tones:

1. In the main PBXpert window, click **Tones** > **Test**.
2. A Test window opens.

   When testing is complete, the Test window displays the test results.
3. Verify that the tone definitions of the learned tones are correct.

Consolidating and saving the TSF file

You must consolidate and save the new TSF file so you can use it with the Dialogic voice driver. To do this:

1. Click **Tones** > **Consolidate**.
2. Click **File** > **Save** to save the new TSF file.
   a. In the Save As window, navigate to the following directory to ensure that the file is backed up: **C:\Avaya_Support\Tone_Files**

   Note:

   If you use the default DATA directory, the system will *not* back up the customized tone file automatically.

   b. Specify a file name with file type of TSF, such as *Mitel-SX-2000.tsf*.

Using the new TSF in Dialogic Configuration Manager

To use the new TSF that you just created:

1. Return to the Intel Dialogic product Configuration Manager window.
2. Click the red **Stop** button on the button bar.
3. Return to Step 6 in Configuring analog port boards on page 301 and complete board configuration and testing.

Appendix C: Configuring and testing port boards

Overview

This appendix describes how to configure and test Dialogic port boards. Dialogic port boards are installed in some MASs, depending on the switch integration.

Note:

An MAS that uses an IP H.323 or IP SIP switch integration has no port boards. You do all configuration for these switch integrations using the Voice Mail System Configuration (VMSC) program. For more information, see Configuring port boards and switch integration on page 136.

When to configure port boards

In Release 4.0, you must configure Dialogic port boards only if:

- Dialogic port boards are installed in this MAS *and*
- The Avaya Modular Messaging Configuration Wizard does not automatically configure the Dialogic port boards.

The Avaya Modular Messaging Configuration Wizard automatically configures any installed Dialogic port boards for several switch integrations, including:

- Avaya (QSIG)
- Cisco (QSIG)
- Nortel NT M-1 (QSIG)
- Siemens Hipath (QSIG)

To verify if a particular switch integration supports automatic configuration of the Dialogic port boards, open the Data Collection Tool (DCT) executable file.

1. On the MAS, navigate to the directory
   C:\Program Files\Avaya Modular Messaging\Install\MISCM
2. Double-click the executable file (MMDCT.exe) to open the Data Collection Tool.
3. Click the **Switch integration method** screen to see the list of supported switch integrations.
4. Close the DCT executable file and close all open windows.

Supported port boards

The number and type of supported port boards varies, depending on the hardware used and the release during which the port boards were installed.

- Systems with Avaya MASs that were upgraded from an earlier release might use either customer-provided or S3400-family server hardware. Upgraded MASs can have a varying number of port boards installed. The number of port boards depends on the original software release when the boards were installed, and the number of TUIs in use. Table 14 lists supported Dialogic port boards for CPE and S3400-family message servers.

Table 14: Supported Dialogic port boards: S3400-family and CPE hardware

Protocol	Ports per MAS	Supported port boards	Maximum number	Dialogic files on documentation media
Analog	12 - 48 (Aria) 12 - 24 (other) [1] 4 - 16 or 4 - 20 (any TUI) [2]	Dialogic D/120JCT-LS 12-port board Dialogic D/41JCT-LS 4-port board	4 or 2 4 or 5 [2]	**D/120JCT-LS** (PDF) **D/41JCT-LS** (PDF)
Digital Set Emulation	8 - 32 (Aria) 8 - 24 (other) [1] 8 - 32 or 8 - 40 (Aria) [2]	Dialogic D/82JCT-U-PCI-UNIV *or* Dialogic D/82JCT-U	4 or 3 4 or 5 [2]	**D/82JCT-U PCI Univ** (PDF) **D/82JCT-U** (PDF) *Supported for upgrades only. CPE servers support up to 6.* [3]
E1-QSIG	30 (any TUI) [4]	Dialogic D/600JCT-1E1 [5] or D/600JCT-2E1 Dialogic D/300JCT-E1	1	**D/600JCT-1E1** or **D/600JCT-2E1** (PDF) **D/300JCT-E1** (PDF) *Supported for CPE upgrades only.*
T1-QSIG	46 (Aria) 23 (other) [4]	Dialogic D/480JCT-1T1 [5] Dialogic D/240JCT-T1	2 or 1	**D/480JCT-1T1** (PDF) **D/240JCT-T1** (PDF) *Supported for CPE upgrades only.*

1. The number of ports supported per MAS varies depending on the telephone user interface (TUI). Systems that use only the MM Aria TUI support more ports. Systems that use the MM AUDIX TUI, MM Serenade TUI, or any combination of TUIs support fewer ports per MAS.
2. The maximum number of 4-port analog boards and DSE boards varies. All Release 2 or later systems support up to four (4) port boards per MAS, if S3400-family hardware is used. For Release 1 upgrades only, each MAS can have up to five (5) port boards, if five boards were installed before the upgrade.
3. A CPE server can support up to six (6) DSE boards for 48 ports, if the server has sufficient PCI slots.
4. The S3500-family server supports two (2) QSIG port boards per MAS. If the server you are upgrading has S3400-family server specifications, you must upgrade from the S3400-family server or equivalent CPE server to an S3500-family server or equivalent CPE server to get greater QSIG port capacity.

5. Early D/600JCT-1E1 and D/480JCT-1T1 QSIG port boards have a plug in the unused connector on the faceplate. Dialogic D/600JCT-1E1 or D/480JCT-1T1 QSIG port boards that ship after mid-2005 have only a single connector. Both types of QSIG boards operate identically.

   - New Release 4.0 systems can use the following hardware:
     - New Avaya-provided MASs always use S3500-family server hardware. All S3500-family MASs support a maximum of two port boards each. For more information, see Table 7: Supported MAS port boards—S3500-family servers on page 23.
     - New Release 4.0 systems that use a customer-provided server might support a larger number of port boards per MAS. The number depends on the board type and the number of PCI slots available in the CPE server. For more information about CPE servers, see Table 8: Supported MAS port boards for customer-provided servers on page 42.

   The Dialogic documents provide details about installing and connecting the port boards. The documents are available on the *Avaya Modular Messaging Documentation* media or from the Avaya Support Web site at http://www.avaya.com/support. For instructions on obtaining Avaya documents, see Downloading required software and documentation on page 3. For the latest version of the Dialogic guides, see the Quick Install Cards Search Tool on the Intel Telecom Boards Web site.

   Note:

   Avaya does not support Brooktrout port boards for Modular Messaging systems that run Release 4.0 software. All servers must use Dialogic port boards.

Configuring port boards

Manual port board configuration involves three phases:

1. The appropriate party must administer the switch for the port boards using the configuration notes for this particular switch (PBX) integration. For instructions on obtaining the most recent configuration notes, see Downloading configuration notes on page 4.

   CAUTION:

   You can install this system only by using the required configuration notes for this switch or PBX. The PBX administrator *must* have administered the ports on the switch before you can proceed.

2. Configure and test the port boards as described in this section. Some steps require you to use the configuration notes.
3. Complete the port board configuration as described in Chapter 8: Configuring the voice mail system on page 119.

Continue based on the type of port boards installed in this MAS:

- Configuring T1-QSIG or E1-QSIG boards on page 298
- Configuring set emulation boards on page 300
- Configuring analog port boards on page 301

CAUTION:

If the window displays no port boards when you run the Dialogic Configuration Manager, you might need to reseat or replace some of the boards. For more information, see the appropriate maintenance information for this Modular Messaging system on the documentation media:

- For S3500-family servers, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions*
- For S3400-family servers, see "Circuit card replacement" in the **Maintenance** section on the *Avaya Modular Messaging Documentation* media

Configuring T1-QSIG or E1-QSIG boards

Either of the following QSIG port boards might be installed in an MAS:

- Dialogic D/480JCT-1T1 board
- Dialogic D/600JCT-1E1 or D/600JCT-2E1 board

Note:

Avaya supports the D/240JCT-T1 and D/300JCT-E1 QSIG boards *only* for CPE upgrades from Release 1. Avaya-provided servers do *not* support these boards

The maximum number of port boards per MAS varies, depending on the server hardware. For more information, see Supported port boards on page 296.

To configure QSIG boards:

1. Click **Start > Programs > Intel Dialogic System Release > Configuration Manager - DCM**.

   The **Intel Dialogic product Configuration Manager** window opens.

2. If a popup window opens, connect to the MAS as follows:

   a. In the **Computer Name** window, verify that **Local** is selected and that the correct server name is shown, such as *MYMAS1*.

   b. Click **Connect**.

   Note:

   The system displays this window only the first time that you access the Dialogic Configuration Manager application.

   The Dialogic software locates any installed port boards.

3. Verify that all Dialogic services are stopped. All boards should show a red icon.

   Note:

   If the board icon shows an X, the board is disabled. To enable it, right-click the board and select **Enable device(s)**.

4. Under Configured Devices, double-click the name of the first Dialogic board, such as *#0*.
5. In the **Intel Dialogic product Configuration Manager - Properties** window:
   a. Click the **Interface** tab and select the **ISDNProtocol** parameter.
   b. Select the correct value for this board from the pull-down list:
      - For E1-QSIG: select **QTE**
      - For T1-QSIG: select **QTU**
   c. Click the **Telephony Bus** tab and select the **PCMEncoding** parameter.
   d. Select the correct value for the installed board from the pull-down list:
      - For E1-QSIG: select **A-Law** for most countries, particularly Europe
      - For T1-QSIG: select **μ-Law** (mu-Law) for the United States and Japan
   e. Click the **Misc** tab. For the **FirmwareFile** parameter, verify that the value is **default**.
   f. On the **Misc** tab for the **FirmwareFile2** parameter, verify that the value is **spfax.fwl.** This parameter will only appear for the D480JCT-1T1, D/600JCT-1E1 or D/600JCT-2E1 dual span QSIG boards.
   g. Click the **Country** tab and select the **Country** parameter.
   h. On the pull-down list of values, always use **United States** for either type of board.
   i. Click **OK** to close the properties window.
6. Repeat Steps 4 and 5 for any other installed Dialogic boards, such as *#1*.
7. After all boards are configured, click the green **Start** button on the button bar.

   Wait for service to start. When service is started, the **Stop** button becomes active and the installed boards show a green light.
8. Verify that the port boards are operating correctly.
   a. Check the LED display on the Dialogic board faceplate.
      - A red status LED lights on the back of the port board during driver startup.
      - If the drivers start successfully, the board whose port is connected to the PBX shows a green LED within 30 seconds. LEDs on the other boards remain red.
   b. If a problem occurs, check the board configuration, the physical connections between the board and the PBX, or the PBX configuration. Repeat Steps 4 through 8 as needed.
9. Close the **Intel Dialogic product Configuration Manager** window.
10. Continue with Testing the port boards on page 305.

Configuring set emulation boards

An MAS supports 8-port Dialogic Digital Set Emulation (DSE) boards. The maximum number of port boards per MAS varies, depending on the server hardware. For more information, see Supported port boards on page 296.

Note:

Avaya supports the non-universal D/82JCT-U board for upgrades only.

To configure digital set emulation boards:

1. Click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

   The **Intel Dialogic product Configuration Manager** window opens.

2. If a popup window opens, connect to the MAS as follows:

   a. In the **Computer Name** window, verify that **Local** is selected and that the correct server name is shown, such as *MYMAS1*.

   b. Click **Connect**.

   Note:

   The system displays this window only the first time that you access the Dialogic Configuration Manager application.

   The Dialogic software locates any installed port boards.

3. Verify that all Dialogic services are stopped. All boards should show a red icon.

   Note:

   If the board icon shows an X, the board is disabled. To enable it, right-click the board and select **Enable device(s)**.

4. Under Configured Devices, double-click the name of the first Dialogic board, such as *#0*.

5. In the **Intel Dialogic product Configuration Manager - Properties** window:

   a. Click the **Telephony Bus** tab and select the **PCMEncoding** parameter.

   b. On the pull-down list of values, select either **A-Law** or **μ-Law**, depending on your location. Usually, **A-Law** is Europe and **μ-Law** (mu-Law) is United States and Japan.

   c. Click the **Misc** tab.

      1. Select the **FirmwareFile** parameter. In the **Value** field, select or type **D82U.fwl**. The **Value** field is editable.

      2. Select the **PBXSwitch** parameter. On the pull-down list of values, select the name of the PBX. For example, use *Lucent 2-wire* for an Avaya G3 switch.

   Note:

   For a Siemens Hicom 300/9006 PBX, select Siemens Rolm 9006.

d. Click the **Country** tab and select the **Country** parameter. On the pull-down list of values, select the country.

e. Click **OK** to close the properties window.

6. Repeat Steps 4 and 5 for any other installed Dialogic boards, such as *#1*.

CAUTION:

If the DSE boards are connected to a Nortel (NTM-1) PBX, you must reboot the MAS before you start the Dialogic drivers. Close the DCM and reboot the system now. When the reboot is complete, log back in and reopen the DCM as in Step 1, and then continue with Step 7.

7. After all boards are configured, click the green **Start** button on the button bar.

   Wait for service to start. When service is started, the **Stop** button becomes active and the installed boards show a green light.

8. Verify that the port boards are operating correctly.

   a. Check the LED display on the Dialogic board faceplate. Verify the code for each port:

   - Ports that are connected to a telephone line and functioning correctly show 0 and the port number, such as *00* or *01*.
   - Ports that are not connected to a telephone line or not functioning correctly show *En*, where *n* is the port number. For example, the display reads *E3* if port 3 has an error.

   b. If any *En* error codes are present, check the board configuration, the physical connections between the board and the PBX, or the PBX configuration. For example, verify that you configured the correct PBX. Repeat Steps 4 through 8 as needed.

9. Close the window.

10. Continue with Testing the port boards on page 305.

Configuring analog port boards

The following analog port boards might be installed in an MAS:

- Dialogic D/41JCT-LS 4-port Tip/Ring board
- Dialogic D/120JCT-LS 12-port Tip/Ring board

The maximum number of port boards per MAS varies, depending on the server hardware. For more information, see Supported port boards on page 296.

To configure either of these analog boards:

1. Click **Start** > **Programs** > **Intel Dialogic System Release** > **Configuration Manager - DCM**.

   The **Intel Dialogic product Configuration Manager** window opens.

2. If a popup window opens, connect to the MAS as follows:
   a. In the **Computer Name** window, verify that **Local** is selected and that the correct server name is shown, such as *MYMAS1*.
   b. Click **Connect**.

   Note:
   The system displays this window only the first time that you access the Dialogic Configuration Manager application.

   The Dialogic software locates any installed port boards.
3. Verify that all Dialogic services are stopped. All boards should show a red icon.

   Note:
   If the board icon shows an X, the board is disabled. To enable it, right-click the board and select **Enable device(s)**.
4. *For a D/120JCT-LS board:* You must load the new firmware separately in Release 4.0, or the 12-port boards will not work correctly. For example, fax service will not work.

   Note:
   The D/41JCT-LS board uses the default.fwl file and does not need to be set. If this server uses 4-port analog boards, continue with Step 6.

   To load the new firmware for a 12-port analog board in Release 4.0:
   a. Under Configured Devices, double-click the name of the Dialogic board, such as *#0*.
   b. In the **Intel Dialogic product Configuration Manager - Properties** window, click the **Misc** tab.
      1. Click the **FirmwareFile** parameter. In the value field, select or type **spfax.fwl**.
      2. Click **OK** to close the window.
   c. Repeat Steps a and b for any other installed Dialogic boards, such as *#1*.

   CAUTION:
   Make no other property changes at this time.
5. Reload firmware:
   a. After you set the firmware parameter on all installed boards, close the **Intel Dialogic Product Configuration Manager** window.
   b. Wait 30 seconds for all the Dialogic processes to completely stop.
   c. Reopen the Intel Dialogic product Configuration Manager application to load the new firmware file. For more information, see Step 1.
   d. Click the green **Start** button on the button bar.
   e. Wait for the device to start. When service is started, the **Stop** button becomes active and the installed boards show a green light.

Note:

If the drivers fail to start, complete Steps 6 through 11. You must then completely power down and power up the MAS. After the server boots, continue with Testing the port boards on page 305.

f. Click the **Stop** button to stop the Dialogic drivers.

g. After all boards show a red icon, continue with Step 6.

6. Under Configured Devices, double-click the name of the first Dialogic board, such as *#0*.

CAUTION:

If you cannot find a suitable TSF file for this PBX, you must build an appropriate tone file now or the integration will not work. Click **Cancel** in this window, and see Appendix B: Creating a new tone file on page 287.

7. In the **Intel Dialogic product Configuration Manager - Properties** window:

a. Click the **Files** tab.

b. Select the **TSFFileName** parameter, if it is not already selected.

Note:

For a D/41JCT-LS board, you must highlight the **Configured Devices** parameter on the DCM display when you select **Configure Device**. You can then view the **TSFFileName** parameter.

c. Locate the prerecorded TSF file for this PBX or switch:

1. Click the**...** button to browse. In the **Look in** field, navigate to the C:\Avaya_Support\Tone_Files directory.
2. In the **Search File** window, select a TSF file that is appropriate for the PBX to which you are connecting, such as *Avaya-G3-US.tsf*. Double-click the file name.

The system displays the appropriate TSF file in the **Value** field.

Note:

You can type in the **Value** field. This field is editable.

8. After an appropriate TSF file is selected, click the **Misc** tab.

a. Click the **TSFFileSupport** parameter.

CAUTION:

You must have selected an appropriate TSF file for this PBX *before* you set the TSFFileSupport value to **Yes**, or errors might occur.

b. From the **Value** drop-down list, select **Yes**.

c. Click the **DisconnectTone** parameter. From the **Value** drop-down list, select **Yes**.

d. Click **OK** to close the window.

9. Repeat Steps 6 through 8 for any other installed Dialogic boards, such as *#1*. Verify that the settings are correct, and set any values if needed.
10. After all boards are configured, click the green **Start** button on the button bar.

    Wait for service to start. When service is started, the **Stop** button becomes active and the installed boards show a green light.

    Note:

    For a D/120JCT-LS board: If the drivers failed to start in Step 4, you must completely power down and power up the MAS. After the server boots, continue with Testing the port boards on page 305.
11. Close the **Intel Dialogic product Configuration Manager** window.
12. Continue with Testing the port boards on page 305.

S3500 Dialogic port board placement and numbering

The following tables show where you place and how you number S3500-family Dialogic port boards.

Table 15: S3500 port board placement

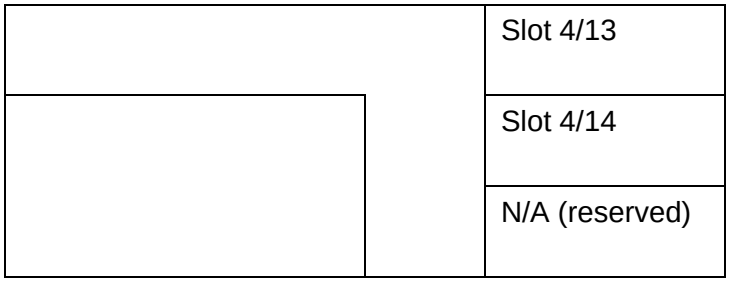


Table 16: S3500 Dialogic port board numbering

Cards	Numbering Scheme
1 Card	D/82JCT-U #0 in slot 4/14
2 Cards	D/82JCT-U #0 in slot 4/13 D/82JCT-U #1 in slot 4/14

Testing the port boards

Test all port boards and channels to verify that they can send and receive calls.

Note:

Sometimes after you apply settings to a port board, the board comes up in a bad state. The Dialogic drivers consistently fail to start, and the Event Viewer shows **dlgc_log** errors. If this problem occurs, take the power off the boards. Turn off the server, and then turn on the server again. The power cycle corrects the port board problems.

Preparing for the test

Prepare for port board testing as follows:

1. Stop Modular Messaging voice service:
   a. Access the window to monitor services using one of these methods:
      - Double-click the **Monitor** icon on the desktop. In the left pane, click **Services**.
      - Right-click **My Computer** and select **Manage**. In the **Computer Management** window, in the left (Tree) pane, expand **Services and Applications**, and click **Services**.
   b. In the right pane, scroll down to **MM Messaging Application Server**.
   c. Right-click **MM Messaging Application Server** and select **Stop**.
2. *For software-only upgrades,* the Dialogic Line Tester program is not yet installed. Access the test program on the application media as follows:
   a. Insert Disk 1 of the *Avaya Modular Messaging Messaging Application Server Software* media into the MAS drive.
   b. Close the drive door and wait for the green LED to go out. Click **OK**.
   c. Navigate to the MAS drive.
   d. Navigate to the **Install** directory, and then to the **DLTest** subdirectory.
   e. Double-click the file **DLTest.exe**.

   The **Dialogic Line Test Application** window opens.
3. *For T1-QSIG or E1-QSIG boards,* set up the test options as follows:
   a. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Dialogic Line Tester**.
   b. In the **Dialogic Line Test Application** window, click **Tools** > **Options**.

c. In the **Options** window, select the correct values for each field. Use the configuration notes to identify the correct values:
   - For **Layer 1 Protocol**, select the required ISDN protocol from the drop-down list.
   - For **Number Type**, select the destination number type.
   - For **Number Plan**, select the destination number plan.

Note:

The values you select here must be the same as those entered on the PBX or switch. Check the configuration notes.

d. After you select the correct values, click **OK**.

Testing the ports

To test Dialogic port board functionality:

1. Access the Dialogic Line Test application using one of these methods:
   - Click **Start** > **Programs** > **Avaya Modular Messaging** > **Dialogic Line Tester**.
   - *For software-only upgrades,* access the Dialogic Line Tester program from the applications media. For this procedure, see Step 2 in Preparing for the test on page 305.

   The **Dialogic QSIG - Line Test Application (or DLTest)** window opens. The name of the window varies, depending on the type of port boards installed.
2. Verify that all port numbers and channel designations are listed.
3. Test the incoming call connectivity of all ports as follows:
   a. From a handset on the same PBX, dial each port individually.
      - For QSIG boards, repeatedly dial the number for that group of ports. The switch connects to the next port in the list for each new call.
      - For analog and set emulation boards, use the individual port extensions.
   b. Check the **Status** column.
      - Verify that each port shows **Received call** followed by **Connected**.
      - For different status conditions, see Table 17: Status messages for Dialogic Line Test on page 307.

      The system should answer each connected call with a standard welcome message.

Table 17: Status messages for Dialogic Line Test

Status	Description	Highlight
Channel starting…	The channel is being started.	Normal
Channels idle…	The channel is idle.	Normal
Waiting for call…	The channel is waiting for an incoming call.	Normal
Received call…	An incoming call is being processed.	Normal
Dialling number…	A number is being dialed to make an outgoing call.	Normal
Resetting…	The user reset the channel.	Normal
Line Busy.	An outgoing call was made, but a busy tone was detected.	Normal
No Answer.	An outgoing call was made, but the call was not answered.	Normal
Connected.	An incoming or outgoing call was answered, so the call is now connected.	Normal
Call was disconnected.	An incoming or outgoing call was disconnected.	Normal
Error.	A general error with the channel occurred.	Error
Error, No Dial tone detected.	An outgoing call was made, but no dial tone was detected before dialing.	Error

4. Test the outcalling capability of all ports.
   a. Select a port in the **Dialogic Line Test Application** window under **Port Number**.
   b. Type the number of an extension on this PBX in the **Dial Number** field.
   c. Click **Dial Number**.
   d. When the dialed extension rings, answer the call and hang up.
   e. Select the next port number, and click **Dial Number** again.
   f. Repeat Steps d and e until all ports are tested.
5. After testing is complete, close the **Dialogic Line Test Application** window.
6. If a problem occurs, check:
   - the board configuration
   - the physical connections between the board and the PBX
   - the PBX configuration itself

   For example, verify that you have configured the correct PBX type and administered the values according to the current configuration notes.
7. Continue with Chapter 8: Configuring the voice mail system on page 119.

Appendix D: Updating Modular Messaging software

You must update the Avaya Modular Messaging software after an installation or upgrade to bring it up to date with the latest changes. Software updates might include the latest Avaya Service Pack (SP) or Avaya software patches (hotfixes).

Topics in this appendix include:

- Obtaining software updates from the Web on page 309
- Installing software updates on each MAS on page 310

Considerations for applying updates include:

- You can apply multiple hotfixes to a system.
- Modular Messaging components can have multiple updates applied to them.
- If you apply a Service Pack, the program automatically uninstalls all previously applied hotfixes, patches, and Service Packs.

Obtaining software updates from the Web

Obtain the latest Avaya software updates from the Web.

To obtain any Avaya software updates for this system:

1. Use a computer that can access the Internet.
2. Go to the Avaya Support Web site at http://www.avaya.com/support.
3. In the RESOURCE LIBRARY, click the link for **Downloads**.
4. Beneath DOWNLOAD BY PRODUCT NAME, under **M**, click **Modular Messaging**.
5. On the Modular Messaging: Downloads page, select Release **4.0** from the drop-down list.
6. Download any files needed to update a Release 4.0 system. For example, download the latest DCT executable file (MMDCT.exe) and the latest Modular Messaging 4.0 Service Pack. Ensure that you download any instructions required to install the Service Pack or software update.
7. Copy the downloaded files to a USB storage device such as a flash drive, memory stick, or equivalent.

   The files are often bundled in a compressed archive, such as a zip file. Use the appropriate tools on your computer to extract the files into an appropriate directory.

Installing software updates on each MAS

To start the update procedure, you must copy the Avaya software updates to each MAS. You then run an installation wizard to install the updates.

Copying files to the MAS

To copy the Avaya software updates to an MAS:

1. Switch the monitor to show the appropriate MAS.
2. Insert the USB drive into any USB port on the server.
   - You can use any of the available USB ports on the back of the server.
   - Remove the front bezel to access the USB port on the front of an Avaya S3500-family message server.
3. Copy the software update files to the MAS:
   a. Navigate to the appropriate directory on the USB storage device.
   b. Right-click the software update file that you downloaded in Obtaining software updates from the Web on page 309. For example, file *MAS300100.exe*. Select **Copy**.
   c. Navigate to the C:\Avaya_Support directory.
   d. Right-click in a blank area in the right pane, and select **Paste**.
   e. Verify that the correct file is listed in the C:\Avaya_Support directory.
   f. If you downloaded more than one file, repeat Steps b through e to copy all the software files and the update instructions to the MAS.
4. Safely remove the USB drive from the server:
   a. Double-click the icon on the task bar to **Safely Remove Hardware**.
   b. Follow the prompts to safely remove the USB drive.
5. Repeat Steps 1 through 4 for each MAS in the system.
6. Open and review the installation instructions for this specific software update.

Installing the updates on each MAS

Important:

Always read the Release Notes that come with each software update. The following are general instructions for installing updates on each MAS. The Release Notes provide specific software update information.

To install the Avaya software updates on this MAS:

1. Double-click the software update file.

   The program unpacks the file, and then runs the Modular Messaging Installation Wizard.

2. In the Modular Messaging Installation Wizard window:

   a. Verify that all applicable patches for this system are selected.

   b. Click **Install**.

   If the **Install** button is not active, you do not need to apply these software updates to the system. Continue with Step 6.

   Note:

   For installation procedures and a description of components that can be installed, click the **Help** button on the installation wizard window.

3. If you are installing a Service Pack (SP), an **Installation Wizard - Update Warning** window opens. The window displays the hotfixes and Service Packs that the program must uninstall before the update can proceed. Click **Continue**.

   Note:

   If hotfixes are applied to the system that are not included in the SP update, the program lists them with a warning.

4. If this system does not have the correct version of Windows Installer, install it now. Otherwise, continue with Step 5:

   a. The **Open File - Security Warning** window prompts you to install a WindowsInstaller application from Microsoft Corporation. Click **Run**.

   b. Follow any additional prompts to install the new Windows Installer application. If the program prompts you to restart the server, reboot the system.

   c. If the new version of Windows Installer fails to install, install the updated WindowsInstaller application before you proceed. For example, you might need to download the application separately, and install it using the local administrator account for this MAS.

5. After you click **Install**, monitor the software update progress:

   a. In the **Services** window, the wizard stops all appropriate Modular Messaging and related services.

b. Windows Installer installs all relevant software updates on the MAS.

c. In the **Services** window, click **Continue with installation**. You do not have to wait for all services to restart.

d. After the installation is complete, click **Close**.

6. To verify the software updates that are installed on this MAS:

a. Log on to the MAS.

b. Select **Start > Programs > Avaya Modular Messaging.**

c. Click **About Modular Messaging** and verify the version of MM installed.

d. Click **Patches** and verify that service packs and patches are installed.

7. After installation and verification is complete, close all open windows.

Appendix E: Configuring a supplementary server

This appendix describes how to configure a new supplementary server. The supplementary server can be an Avaya-provided S3500 server, or customer-provided equipment. Also use the procedures in this appendix to upgrade an Avaya-provided supplementary server from Release 1.1 to Release 4.0.

To upgrade a Release 3.0 or Release 3.1 Avaya-provided supplementary server or Release 1.1, Release 3.0 or Release 3.1customer-provided supplementary server complete the steps in the appropriate chapters, with the following exception. Only upgrade Dialogic Drivers and RealSpeak it they are already installed on the server:

- To upgrade an Avaya-provided supplementary server from Release 3.0 or Release 3.1 to Release 4.0, see Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 161.
- To upgrade a customer-provided server from Release 3.0 or Release 3.1 to Release 4.0, see Upgrading from Release 3.0 or 3.1 to Release 4.0 on page 217.
- To upgrade a customer-provided server from Release 1.1 to Release 4.0, see Upgrading from Release 1.1 to Release 4.0 on page 233.

Topics in this chapter include:

- Overview on page 313
- Configuring the supplementary server on page 315
- Adding the supplemental server name into the security configuration on page 320
- Moving Modular Messaging services on page 321

Overview

Complete the installation and configuration of all MASs in the VMD before configuring the supplementary server. When configuring the MASs, assign all services to the MASs and do not use the DCT executable file to assign services to the supplementary server. After all MASs are configured, move services to the supplementary server using the procedures described in this appendix.

To configure a supplementary server:

1. For a customer-provided equipment (CPE) server, prepare the server for Modular Messaging.
2. Analyze all MASs in the VMD using the DCT executable file (MMDCT.exe).
3. Edit the DCT data file (*.mmdct) to include information for the supplementary server.
4. Install Modular Messaging software including third-party software.

5. Complete the server configuration.
6. Verify that the supplementary server is working.
7. Move required services to the supplementary server.
8. Perform acceptance tests of the entire system.
9. Create a new system back up.

CAUTION:

All servers must meet the requirements listed in the *Avaya Modular Messaging Concepts and Planning Guide*. Review this document to verify that customer-provided supplementary servers are ready to support Modular Messaging software.

To successfully set up a supplementary server, you need:

- All required hardware installed.
- The *Avaya Modular Messaging Messaging Application Server Software* DVD.
- The following software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - Avaya software updates that are required to bring the Modular Messaging software up to date after an installation. Download this software to a USB storage device. For more information about downloading the updates, see Appendix D: Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support Web site to a USB storage device. If a DCT data file was created for this installation, download the executable file to the same USB storage device as the data file.
- Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.) When installing a system with Exchange 2007 peer mail servers, you will require the 32-bit version of the Exchange 2007 Management Tools and additional software downloads. For more information, see Installing third-party software on page 372.
- Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.)
- Microsoft Windows Service Pack 2, if not previously installed (CPE only)

Configuring the supplementary server

The section describes how to configure a supplementary server in a Modular Messaging system. Steps are:

- Preparing the CPE supplementary server on page 315
- Using the DCT executable file to analyze the current configuration on page 315
- Configuring the server on page 318
- Completing new server configuration on page 319

Preparing the CPE supplementary server

If you are using an Avaya-provided supplementary server, skip these steps and continue with Using the DCT executable file to analyze the current configuration on page 315.

If you are using a CPE supplementary server, first configure the server to support Modular Messaging in an Microsoft Exchange environment. To do this, complete the following tasks described in Chapter 7: Configuring a customer-provided MAS:

- Configuring the network card on page 98
- Running recommended disk checks on page 98
- Joining the Windows domain on page 99
- Adjusting system values on page 100
- Adding Modular Messaging accounts to the local administrators group on page 102
- Installing Windows prerequisite software on page 103

Using the DCT executable file to analyze the current configuration

Before you can configure the supplementary server, you must update the installation DCT data file by analyzing all MASs.

To update the DCT data file:

1. Verify that the Modular Messaging system is working normally. All MASs and the Exchange message store must be running.
2. Switch the monitor to show MAS1.

CAUTION:

Do not stop or disable any Modular Messaging services that you plan to move at this time. All currently installed services must be running normally for the DCT analysis to be successful.

3. Verify that the required messaging services on this server are running:
   a. Double-click the **Monitor** icon on the desktop, or click **Start** > **Programs**> **Administration tools** > **Services**.
   b. Click **Services (Local)** in the left pane.
   c. In the right pane, scroll down to the list of Modular Messaging services. All services start with the abbreviation **MM**.
   d. Verify that the **Status** column shows that service is **Started** for each messaging service that belongs on this server.

   Note:

   If service is *not* started for a required messaging service, right-click that **MM** service and select **Start**. The system starts the messaging service.
4. Insert the USB storage device with the DCT executable file (MMDCT.exe) into any available USB port on MAS1.
5. Navigate to where you stored the DCT executable file (MMDCT.exe) and double-click it.
6. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.
7. When asked if you want to use an existing DCT data file, click **No**.
8. In the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

   The system displays the process of data collection. When analysis is complete, you see the message “information has been successfully collected,” The DCT displays the newly created DCT data file.

   CAUTION:

   In multiple-MAS systems, do not revise the DCT data file at this point. Do so only after analyzing all MASs. If you are working from an existing DCT data file, information that you enter manually before the final analysis might be overwritten in the analysis of subsequent MASs.
9. Save the DCT data file to a USB storage device.
10. For a multiple-MAS system, update the DCT data file with information from additional MASs:
    a. Insert the USB storage device with the DCT data file updated for the previous MAS into the USB port on the next MAS that you are going to analyze.

b. On the USB storage device, launch the DCT executable file (MMDCT.exe) by double-clicking it.

c. On the **Select the DCT Configuration to use** screen, select **Analyze existing system**. Click **OK**.

d. When asked if you want to use an existing DCT data file, click **Yes**.

e. Navigate to where you saved the DCT data file that you updated for the previous MAS. Double-click it.

f. In the **MM System Analysis** window, choose the number of the MAS that you are analyzing from the dropdown list at the bottom of the window. Click **Start**.

Note:

Analyze the MASs in numeric order, first to last.

The system displays the process of data collection. When analysis is complete, you see the message that “information has been successfully collected.” The DCT displays the newly updated file.

g. Save the DCT data file by overwriting the previous file.

11. Review the completed file. Verify information for the MASs. Complete MAS information, if necessary.

Note:

Verify that there are no red x’s next to the DCT screen names in the left panel. Red x’s indicate data that is incomplete or not valid. Information must be complete and valid before you can proceed.

12. Update information in the following screens:

a. On the **Message store** screen:

b. Complete this step only if you are installing a customer-provided supplementary server in a system with Avaya-provided MASs.

Select **Microsoft Exchange using own hardware**. This selection tells the system that you want to install customer-provided equipment.

c. On the **Voice Mail Domain** screen:

1. Update the **Number of MASs in the VMD** to include the supplementary server.

2. The system displays a warning that you are changing the number of MAS servers in the Voice Mail Domain. Analyze the system at the end of this procedure to ensure that the data file reflects the changes you make. Click **OK**.

d. On the **Corporate MM server networking details** screen. Enter the Full Computer Name and IP address of the supplementary server.

e. On the **MAS accounts and passwords** screen. Enter the supplementary server Local administrator accounts Logon name and Password.

f. On the **MM service selection** screen. Do *not* click the **Message Application** checkbox. Do not select any other services, even if the server is to become a Tracing server. Leave the entire **MAS** column for the new server blank. Services will be moved to the supplementary server later in this procedure.

CAUTION:

Do not attempt to move services using this screen! Leave all Modular Messaging services set exactly as they are. Do not move services from one column to another, or you will jeopardize operation of the system.

13. When all fields in the DCT are complete and updated, click **Complete** at the bottom of the DCT screen.
14. Save the data file.

Configuring the server

Before using the DCT data file and the Avaya Modular Messaging Configuration wizard to configure the server, complete the following procedures.

- Be sure that the DCT data file that you just created by analyzing the system is accessible to the supplementary server that you are installing. In most cases this means inserting a USB storage device with the file into a USB port on the server. This USB storage device should also hold the latest DCT executable file (MMDCT.exe).
- For a customer-provided server only, install and launch the Modular Messaging Configuration Wizard. See Installing and launching the Modular Messaging Configuration Wizard on page 106.
- For an Avaya-provided server, turn on the server. The Modular Messaging Configuration Wizard runs automatically.

Running the configuration wizard

When the Modular Messaging Configuration Wizard launches, to configure the server:

1. On the Welcome screen, click **Next**.
2. On the Locate Configuration Data screen, click **Browse**.
   a. In the Open window, click the drop-down list next to **Look in**.
   b. Navigate to the USB storage device.

      If the server fails to recognize the USB storage device, you can:

      1. In the Open window, click **My Computer** in the left pane. After the **Look in** field shows **My Computer**, press **F5** to refresh the screen.
      2. If the USB storage device still fails to appear, unplug and then insert the device again.

c. Double-click the most current DCT data file.

3. On the **Locate Configuration Data** screen, click **Next**.
4. At the prompt to confirm the data file, click **Yes**.

   The **Avaya Modular Messaging Data Collection Tool** window opens.
5. Click complete and save the data file to the USB storage device.

   The system returns you to the Avaya Modular Messaging Configuration Wizard.
6. On the **Messaging Application Server Number** screen:

   a. Change the **MAS number** field to show the correct number for this server.

   b. Click **Next**.

   The Configuring System screen shows the MAS configuration starting.

Completing new server configuration

The steps required to complete the configuration of the supplementary server vary depending upon whether you are installing an Avaya-provided server or a customer-provided server. Complete the steps outlined in the appropriate chapters with the following exceptions:

- When completing server setup, do not configure port boards.
- Do not configure the voice mail system on the supplementary server.

Follow the procedures in the installation guide as follows:

- *For an Avaya-provided supplementary server,* continue with step 8 on page 85.
- *For a customer-provided supplementary server,* continue with step 8 on page 107.

After completing configuration of the new supplementary server, add the server into the security configuration. See Adding the supplemental server name into the security configuration on page 320.

Adding the supplemental server name into the security configuration

When installing a supplementary server into an existing VMD, you must add the supplementary server name to the Security Admin ACL in the VMSC. Otherwise, services installed on the supplementary server fail to run. To overcome this issue, the supplementary server name can be added manually to the Security ACL in VMSC.

To add the supplementary server to the access control list in VMSC:

1. Open VMSC on an MAS.
2. Click the **Security** icon and open **System Administration**.
3. Click **Add**.
4. Click **Object Types** and check the **Computers** checkbox.
5. In the **Enter object** field, enter the supplementary server machine name (that is, name$).
6. Click **Check Names**.
7. Click **OK**.

After adding the server name, move the required Modular Messaging services to the server. See Moving Modular Messaging services on page 321.

Moving Modular Messaging services

After adding the supplementary server, you must distribute the Modular Messaging services across all installed MASs, and the supplementary server. This practice balances the load on the system for optimum performance.

Disabling Modular Messaging services you plan to move

Before you move any Modular Messaging services, you must disable the service to be moved on the server where it is currently running.

CAUTION:

You must set any **MM** services that you intend to move to another server to **Disabled** before you enable them on a different server. Serious problems occur if you activate a service that is supposed to run on only one server in the VMD on multiple servers.

To disable services to be moved on the server where the service is currently running:

1. Log on to each server that you intend to move Modular Messaging services from.
2. Double-click the **Monitor** icon on the desktop.
3. Click **Services (Local)** in the left pane.
4. In the right pane of the Monitor window, scroll down to the service you plan to move.
   a. Right-click the service and select **Stop**.
   b. Double-click the service to open the **Properties** window.
   c. Set the **Startup type** to **Disabled**.
   d. Click **OK**.
5. Repeat Step 4 to disable each service you intend to move. Services you can move include:
   - MM Call Me—must be on the same server with the Mailbox Monitor Server
   - MM Mailbox Monitor—must be on the same server with either Call Me or MWI
   - MM MWI—must be on the same server with the Mailbox Monitor Server
   - MM Fax Sender Service —enable on a server with voice ports that support Fax calls
   - MM Auditing Service—enable on each server in the VMD
   - MM Tracing Server—must be enabled on only one server at a time in the VMD
6. Refresh the screen to verify that all **MM** services that you plan to move are **Disabled**.

7. Repeat this procedure on the next MAS, if the Modular Messaging services to be moved reside on more than one server.
8. If you are moving Fax Sender service, complete the following steps to stop sharing the Microsoft Fax Printer on the MAS the service is being moved from:
   a. Click **Start** > **Settings** > **Printers and Faxes**.
   b. In the **Printers and Faxes** window, right-click the Fax and select **Properties**.
   c. Click the **Sharing** tab.
   d. Remove the check from the **Share this printer** checkbox and click **OK**.
   e. Exit all windows.

Moving Modular Messaging services among servers

To move services:

1. Log on to the supplementary server you intend to move Modular Messaging services to.
2. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
3. Move the following services as required:
   - Moving Call Me, MWI, and Mailbox Monitor on page 322
   - Moving MM Fax Sender service on page 324
   - Moving Audit service on page 326
   - Moving Tracing Server service on page 326

Moving Call Me, MWI, and Mailbox Monitor

You must enable the Call Me Server, Message Waiting Indicator (MWI) Server, and Mailbox Monitor services only once in the voice mail domain. All three services must be enabled on the same server, or serious problems will occur.

Updating the Call Me Server

To change the Call Me Server parameters:

1. Under the voice mail domain, such as *vmdom*, double-click **Call Me**.
2. In the Call Me - Voice Mail Domain window, on the **General** tab, click the checkbox to **Enable Call Me**.
3. For **MAS Call Me Server**, specify the server on which to enable the Call Me service:
   a. Click the **...** button next to the field.

b. In the **Select Computer** window, double-click the name of the supplementary server.

c. Click **OK** to close this window.

Note:

Because Call Me Server and Message Waiting Indicator (MWI) Server both use the Mailbox Monitor Server, you must enable both services on the same server.

Updating the MWI Server

To change the Message Waiting Indicator (MWI) Server parameters:

1. Under the voice mail domain double-click **Message Waiting Indicator**.
2. In the **Message Waiting Indicator - Voice Mail Domain** window, on the **General** tab, click the checkbox to **Enable Message Waiting Indicator (MWI)**.
3. For **MAS MWI server**, specify the server on which to enable the MWI Server:
   a. Click the **...** button next to the field.
   b. In the **Select Computer** window, double-click the name of the server.
4. For the **Limit requests** and **Maximum requests per minute** fields, use the values specified in the configuration notes for your PBX integration type.
5. In the **Messaging Application Servers that support MWI** box, list all MASs that have a port group set up to support MWI. To add a server name:
   a. Double-click inside the top of the big list box, or click the **Add** button just above the list box. The **Add** button looks like a dashed box.
   b. The list box displays a data entry field and a **...** button. Click the **...** button.
   c. In the **Select Computer** window, double-click the name of each MAS that has ports allocated to support MWI.
   d. Repeat Steps b and c to add any other MASs that support MWI.
   e. Click **OK** to close the **Select Computer** window.

   Note:

   The arrow icons move the selected MAS up or down the list. MWI requests start with the first MAS in the list, and continue to each additional MAS if needed.
6. Click **OK** to close this window.

Updating the MAS port groups

Update the MAS port groups as required:

1. In the **Voice Mail System Configuration** window, expand **Message Application Servers**.
2. Expand the entry for this MAS.

3. Double-click **Port Groups**. Update the values as required.

   For example, you might move all the MWI ports to the new server. Depending on the integration type, you might leave the MWI ports that are already active enabled. You can then add MWI ports to the new server to increase the ports available for MWI.

4. If required, expand the entries for the other servers in the system. Return to Step 2, and update the **Port Groups** for each server as required.

Moving MM Fax Sender service

The supplementary server is **not** an Avaya-recommended location for the fax service as it is recommended for the fax service to run on a system that has voice boards. IP H.323 switch integration does not support fax service. To move MM Fax Sender service:

- Enable MM Fax Sender service on the new location
- Remove the MM Fax Printer from the old location
- Share the MM Fax Printer on the new location
- Stop MM Fax Sender on the old location
- Start MM Fax Sender on the new location
- Configure dialing rules on the new location
- Configure the new MM Fax Sender server using VMSC

Enable MM Fax Sender service on the MAS that will now host MM Fax Sender service:

1. Run **C:\Avaya_Support\Utils\FaxSenderEnable.exe** on the MAS that will now host MM Fax Sender.
2. Restart the Microsoft Fax Service.

Remove the MM Fax Printer from the MAS that will no longer host MM Fax Sender service:

1. Click **Start > Settings > Printers and Faxes**.
2. In the Printers and Faxes window, right-click the Fax and select **Properties**.
3. Click the **Security** tab.
4. Remove the Network Service user.
5. Click the **Sharing** tab.
6. Remove the **Share this printer** check from the checkbox.
7. Click the **Security** tab.
8. Remove any Fax permissions.

Share the MM Fax Printer on the MAS that will now host MM Fax Sender:

1. Verify that Windows Fax Service is **Started** and set to **Automatic**.
2. Click **Start > Settings > Printers and Faxes**.

3. In the Printers and Faxes window, right-click the Fax and select **Properties**.
4. Click the **Security** tab.
5. Add the Network Service user and assign that user **Print**, **Manage Printers**, and **Manage Documents** permissions.
6. Click the **Sharing** tab.
7. Click the **Share this printer** checkbox. Leave the share name as Fax.
8. Click the **Security** tab.
9. Verify that **Everyone** is assigned Fax permissions on the share.

Note:

To reduce access to the Fax printer share, remove the Everyone group and add Fax permission to the Active Directory Users or Groups you want to have access to print faxes using the MM Fax Printer.

Start MM Fax Sender on the MAS that will now host it:

1. Disable MM Fax Sender on the server that was previously running it; see Disabling Modular Messaging services you plan to move on page 321
2. Open the Monitor window on the MAS that will now host MM Fax Sender.
3. Click **Services (Local)** in the left pane, if the item is not already selected.
4. In the right pane, scroll down to **MM Fax Sender Server**.
5. Right-click **MM Fax Sender Server** and select **Start**.
6. Double-click **MM Fax Sender Server** to open the Properties window.
7. Set the **Startup type** to **Automatic**.
8. Click **OK** and then close the Monitor window.

Create the Phone and Modem dialing rule on the MAS that will now host MM Fax Sender:

1. On the on the MAS that will now host MM Fax Sender, click **Start** > **Settings** > **Control Panel** > **Phone and Modem Options**.
2. If a dialing rule is not already created, click **New** in the Dialing Rules tab.
3. Specify the location details and the dialing rules for the MAS.
4. Click **OK** to save the dialing rule and close the New Location window.
5. Click **OK**.

Configure MM Fax Sender on the new location:

1. In the **Voice Mail System Configuration** window, under the voice mail domain, such as *vmdom*, double-click **Fax**.
2. In the Fax - Voice Mail Domain window, on the **General** tab:
   a. Next to **MM Fax Sender server,** click **Browse**.

b. In the Select Computer window, enter the name of the MAS you now chose as your MM Fax Sender server.

c. Click **Check Names**.

d. Click **OK** to accept the MAS name and close the window.

3. Click **OK** to close the Fax - Voice Mail Domain window.
4. On the "resart" window, click **OK**.

Moving Audit service

Audit service is installed on each MAS in the VMD. Complete the following steps to change the MAS that will act as the MM Audit Server:

1. Under the voice mail domain double-click **Auditing**.
2. In the **Auditing - Voice Mail Domain** window, on the **General** tab, click the checkbox to **Enable Auditing**.
3. In the **Audit server** field, enter the name of the server that you want to run the MM Audit service, or use the browse button (...) to select the name.
4. In the **Database server** field, enter the name of the server where the database resides or use the browse button (...) to select the server.
5. Click **OK** to close this window.

Moving Tracing Server service

To move the Tracing Server service to a different server:

1. Log on to the supplementary server that you intend to move the Tracing Server service to.

   Note:

   You must have already disabled the Tracing Server service on the server that was previously running it. For more information, see Disabling Modular Messaging services you plan to move on page 321.

2. Enable the new instance of the Tracing Server service:

   a. Double-click the **Monitor** icon on the desktop.

   b. Click **Services (Local)** in the left pane.

   c. In the right pane, scroll down to the list of Modular Messaging services.

   d. Double-click the **MM Tracing Server** service to open the **Properties** window.

      1. Set the **Startup type** to **Enabled**.
      2. Click **OK**.

   e. In the Monitor window, right-click **MM Tracing Server** and select **Start**.

3. Access the Voice Mail System Configuration program. Click **Start** > **Programs** > **Avaya Modular Messaging** > **Voice Mail System Configuration**.
4. Under the voice mail domain double-click **Tracing System**.
5. The system displays a warning that the current Home Message Application Server is not valid. Click **OK**.
6. In the **Tracing System - Voice Mail Domain** window, on the **General** tab:
   - The **MAS Tracing Server Machine Name** field displays the name of the server that is now running the tracing system. The new server can be an MAS or a supplementary tracing server.
   - The **Home Message Application Server** field shows the first MAS that the tracing system connects to when doing an operation. You do not have to update this field.
7. Click **OK** to close this window.
8. Remove the scheduled tasks from the server that previously hosted the Tracing Service:
   a. Click **Start** > **Run** to open the Run window.
   b. In the **Open** field, type the following and press **Enter**:

      C:\Avaya_Support\Tools\Tracing\RemoveSchedTasks.exe

      CAUTION:
      This script automatically removes the tasks that were assigned to the original tracing server, so you do not have to set up the scheduled tasks again on the new server. If you fail to run this script after you move Tracing Service from one server to another, errors occur when the originally scheduled tasks fail.

Enabling the services on the correct server

After you set up the services correctly in the VMSC, you must enable the services on the appropriate servers. You must stop all Modular Messaging services to do this task.

Stopping all Modular Messaging services

You must stop all Modular Messaging services on all servers that you are moving services to or from. Stopping and then restarting all services gets the entire voice mail domain configured with the correct services running on the correct servers.

To stop all Modular Messaging services:

1. Switch the monitor to show the first MAS.
2. Stop all Modular Messaging services as follows:
   a. Click **Start** > **Run** to open the Run window.

b. In the **Open** field, type the following and press **Enter**:

C:\Avaya_Support\Tools\ServiceControl\StopMMServices.exe

A command window displays the status of the Modular Messaging services shutdown. The script might take several minutes to complete.

Note:

This script also stops Dialogic services and some Windows services.

3. Confirm that all Modular Messaging services are stopped:
   a. Double-click the **Monitor** icon on the desktop.
   b. Click **Services (Local)** in the left pane.
   c. In the right pane, scroll down to the list of installed Modular Messaging services. These all start with the abbreviation **MM**.
   d. Verify that the **Status** column is blank. If any service is *not* stopped, repeat Steps 2 and 3.
4. Repeat this procedure on each server that you are moving services to or from.

Enabling the appropriate services

After all Modular Messaging services are stopped, you must enable the appropriate services on each server. To enable the appropriate Modular Messaging services:

1. In the Monitor window, click **Services (Local)** in the left pane.
2. In the right pane, scroll down to the list of Modular Messaging services. These services start with the abbreviation **MM**.

CAUTION:

Verify that you enable and disable the correct services on the supplementary server. Enable some Modular Messaging services only once in a voice mail domain, or serious problems will occur. For more information, see Table 18.

Table 18: When to enable Modular Messaging services in a VMD

Modular Messaging service name	Condition for enabling service [1]
MM Messaging Application Server	Enable on each MAS that handles calls. Do not enable on the supplementary server.
MM Alarming Server MM Audit Service MM Event Monitor Server MM Fault Monitor MM Performance Monitor Server MM Process Monitor Server MM Service Connector	Enable this set of services on each server in the voice mail domain.
MM Call Me [2] MM Fax Server[3] MM Mailbox Monitor [2] MM MWI [2] MM Tracing Server	Enable this set of services *only once* in each voice mail domain, either on an MAS or on the supplementary tracing server. Enable MM Fax Server on a server with voice ports that support Fax calls.

1. Each enabled service must have a startup type of **Automatic** and show a status of **Started**.
2. The Call Me, MWI, and Mailbox Monitor services always must be enabled on the same server.
3. Fax Sender service must be co-resident with the MM Fax Service Provider (MM FSP).

3. To enable an **MM** service on this server:
   a. Double-click the service to open the Properties window.
   b. Set the **Startup type** to **Automatic**.
   c. Click **OK**.
   d. Repeat Step 3 to update the status for each MM service as required.
4. To disable an **MM** service on this server:
   a. Double-click the service to open the Properties window.
   b. Set the **Startup type** to **Disabled**.
   c. Click **OK**.
   d. Repeat Step 4 to update the status for each MM service as required.

5. Refresh the screen. Verify that the **Status** column shows the correct state for each Modular Messaging service.
   - Services that are required for this server must show a startup type of **Automatic**.
   - Services that are *not* required on this server must show a blank status and a startup type of **Disabled**.

   CAUTION:

   You must set all **MM** services to the correct state before you restart Modular Messaging services. Serious problems occur if you activate a service that is supposed to run on only one server in the VMD on multiple servers.
6. Repeat this procedure on each server that you are moving services to or from.

Restarting messaging service

After you verify and update all required settings on all servers in the voice mail domain, you must restart the services on each server.

To restart messaging service:

1. Click **Start** > **Run** to open the Run window.
2. In the **Open** field, type the following and press **Enter**:

   C:\Avaya_Support\Scripts\serverrecovery.vbs

   The script takes a few seconds to run. The program sets up all **MM** services correctly.
3. Refresh the screen to verify that all **MM** services required for this server are **Started** and set to **Automatic**.
4. If any required **MM** services are not set up correctly, return to Enabling the appropriate services on page 328. Correct the problem, and then restart service again.
5. Restart all Modular Messaging services on each Modular Messaging server in the voice mail domain after you finish moving services. A restart ensures that the voice mail domain-wide properties are consistent across the VMD.

Completing the move services procedure

To complete the procedure for moving Modular Messaging services:

1. Verify basic server operation and do the appropriate acceptance tests. For more information, see Chapter 9: Testing and backing up the system on page 145.
2. Because you moved Modular Messaging services, the DCT data file currently on the system is now out of date. To update the system configuration data:

   a. Use the most recent DCT data file, which is on your USB storage device.

b. Use the DCT executable file (MMDCT.exe) to analyze all the servers in the system again. For more information, see Using the DCT executable file to analyze the current configuration on page 315.

3. Update and turn over the DCT data file. Send a copy of the most current DCT data file to the appropriate technical support group. Afterwards, erase the copy of the DCT data file from your USB storage device.

Appendix F: Reloading software on an Avaya MAS

This appendix describes how to reload the operating system and application software on an Avaya Messaging Application Server (Avaya MAS) or an Avaya-provided supplementary server. You might install new software after a hard disk is replaced or as part of the upgrade of an Avaya MAS.

Loading new MAS software

To copy new software to the Avaya Messaging Application Server (Avaya MAS) or Avaya-provided supplementary server:

1. If the server is not on, turn on the server now by pressing the power button on the front of the server. For more information, see Turning on the S3500-family server system on page 39.
2. Verify that the monitor is showing the correct server.
   - For a 2-port Belkin KVM switch, the MAS is connected to one of the two computer ports.
   - For an 8-port Belkin KVM switch, the first MAS port is labeled **VGA 02**. Subsequent MASs and any supplementary servers, if present, are connected to computer ports **VGA 03**, **VGA 04**, and so on.
3. If the monitor displays a different server, toggle the ports to show the correct server.
   - To have a 2-port Belkin KVM switch show a different server:
     a. Slowly press **Scroll Lock** twice.

        The LED on top of the Belkin KVM switch starts to blink.

     b. Type the port number on the keyboard. For example, type **2** for port 2.
   - To have an 8-port Belkin KVM switch show a different server:
     a. Slowly press **Scroll Lock** twice within 2 seconds.

     b. Select the server to display using one of these methods:
        - Press the up (or down) arrow key to change to the server connected to a higher (or lower) port number.
        - Type the port number on the keyboard. For example, type **2** for port 2.

     For complete user and troubleshooting instructions, see the KVM switch documentation.

Loading the new software

To load the new software:

1. Insert Disk 1 of the *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino* media into the DVD drive. Wait for the green LED on the drive to go out.
2. Press **Ctrl**+**Alt**+**Del** to reboot the system.
   a. In the Windows Security window, click **Shut Down...**
   b. In the Shut Down Windows window, select **Restart**. Click **OK**.
3. When the computer starts to boot, the system might display a warning that the hard drive contents will be overwritten.
   a. Press any key to continue.

      A message confirms that the hard drive will be overwritten.
   b. Press any key to continue.

   The MAS starts to copy the disk image to the hard disk. The entire copy procedure takes up to 30 minutes per DVD.
4. At the prompts, insert the next disk. When the DVD drive light turns dark, click **OK**.
5. Repeat step 4 for disk 3.
6. When prompted, remove the media before the system reboots. Press any key to continue.

   The system reboots and runs the Windows Setup program.
7. If Dialogic cards are installed, you receive a warning that the Dialogic drivers are not supported. Click **Yes** to continue the installation.
8. If a modem is connected, a **Hardware Installation** window opens. Click **Yes** to continue the installation.
9. The **Windows Setup** wizard runs. To complete the wizard:
   a. On the **Welcome** screen, click **Next**.
   b. On the **License Agreement** screen, choose **I accept this agreement**. Click **Next**.
   c. On the **Your Product Key** screen, type the Windows product key for this server.

   Note:

   Each Windows computer has a unique product key for the Windows 2003 operating system. Enter the number exactly as shown.

   - For a new S3500-family server, the product key sticker is located inside the empty drive tray on the lower-left of the server chassis. You can remove the drive tray to easily read the sticker.

- For a Release 4.0 upgrade, the Windows 2003 sticker ships with the software. Paste this sticker onto the server. Do not enter the old Windows 2000 product key.

d. Click **Next**.

The server automatically reboots.

Note:

On servers that use the latest motherboard, you might see the error message **System Event Log Full** when the system boots. You can ignore this message. Modular Messaging does not use this log.

Preparing the server to boot

You must load all required information and activate the operating system before you proceed with server configuration:

1. When the system prompts you to log on:
   a. Press **Ctrl**+**Alt**+**Del**.
   b. In the **Log On to Windows** window, leave the user name as **Administrator**.
   c. Leave the password field blank.
   d. Press **Enter** or click **OK**.

   CAUTION:

   If you are completing an upgrade or recovery that requires a DCT file, you must copy the latest DCT data file to the C:\ directory now. Some servers do not recognize a USB drive after a system restart.
2. Activate the Microsoft Windows operating system before you restart the server. Use site-specific procedures. For more information, see Activating Microsoft Windows on page 336.
3. After the Microsoft Windows operating system is active, double-click the **MM_Setup** icon on the desktop.

   An **MM_Setup** window opens.
   a. At the prompt, insert the *Avaya Modular Messaging Messaging Application Server Software* (DVD 1 of 2) into the MAS and press any key to continue.
   b. Follow any instructions that appear.
   c. When the system prompts you, remove the DVD from the MAS and press any key to continue.

   MM_Setup reports that Modular Messaging configuration program will run after the server reboots.

d. Press any key to continue.

The computer stores the information and shuts down.

4. To bring the MAS into service, continue with the appropriate procedure:
   - For an Avaya MAS upgrade, see Running the Modular Messaging Configuration Wizard on page 199.
   - For an Avaya MAS disk failure recovery, see Appendix G: Disk failure recovery on page 339.

Activating Microsoft Windows

You must activate the Microsoft Windows operating system whenever you reload the operating system. You must activate the Windows operating system before you run MM_Setup.

The Microsoft Windows activation procedure requires you to use either the Internet or, if the customer site does not have an Internet connection, a telephone.

- For telephone activation, continue with Activating Microsoft Windows using a telephone on page 336.
- For Internet activation, continue with Activating Microsoft Windows through the Internet on page 337.

Activating Microsoft Windows using a telephone

To activate the Microsoft Windows operating system using a telephone:

1. Click **Start** > **Activate Windows**.
2. In the Activate Windows window:
   a. Click **Yes, I want to telephone a customer service representative to activate Windows**.
   b. Click **Next**.

   The program generates a new installation ID.
3. On the **Activate Windows by Phone** screen:
   a. Select the country in which this Modular Messaging system is installed.
   b. Call the appropriate telephone number shown on the screen.
   c. Follow the voice prompts or the directions from the customer service representative to provide the unique installation ID shown on the screen.
   d. Enter the confirmation ID that the automated system or customer service representative gives you.
   e. Click **Next**.

4. On the confirmation screen, click **Finish**.
5. Return to Preparing the server to boot on page 335, Step 3.

Activating Microsoft Windows through the Internet

To activate the Microsoft Windows operating system through the Internet:

1. Double-click the **Internet Explorer** icon on the desktop.
2. At the Enhanced Security message, click **OK**.
3. In Internet Explorer, click **Tools** > **Internet Options**.
   a. In the **Internet Options** window, click the **Connections** tab.
   b. Click **LAN Settings**.
   c. In the **Local Area Connection (LAN) Settings** window, specify the settings to use for this site. Click **OK**.
   d. Click **OK** to close the **Internet Options** window.
   e. Close Internet Explorer.
4. Click **Start** > **Activate Windows**.
5. In the **Activate Windows** window:
   a. Click **Yes, let's activate Windows over the Internet now**.
   b. Click **Next**.
   c. When the system prompts you to register the system, click **No**.

   The program checks for Internet connectivity.
6. If connectivity fails, set up or adjust the Internet connections. Complete the screen and click **Next**.
7. On the **Thank you** screen, click **OK**.
8. Return to Preparing the server to boot on page 335, Step 3.

Appendix G: Disk failure recovery

This appendix describes the procedure for recovering from a catastrophic disk failure on a system that is running Modular Messaging Release 4.0 software. See the checklist that is appropriate for your MAS:

- For an Avaya MAS, see Recovering from a catastrophic disk failure on an Avaya MAS on page 340.
- For a customer-provided MAS, see Recovering from a catastrophic disk failure on a customer-provided MAS on page 347.

If this MAS contained the Offline Folder Share, you must recreate the folder manually. When you reach that point in the procedure, see Creating the offline message share, if needed on page 354.

Recovering from a catastrophic disk failure on an Avaya MAS

Overview

In summary, to restore an Avaya MAS you need to:

1. Replace the failed drive
2. Install a new Avaya boot image
3. Perform Windows Product Activation (WPA)
4. Run the Modular Messaging setup utility
5. Run the Modular Messaging Configuration wizard
6. Administer anti-virus software
7. Install Modular Messaging Active Directory Exchange extensions
8. Restore customer data
9. Configure the voice mail system
10. Configure services
11. Perform acceptance tests on the entire system
12. Back up the restored system and hand it off to the customer

Table 19: Avaya MAS restore procedure on page 342 lists the steps necessary to restore an Avaya MAS. It contains page references to detailed instructions for each step.

Requirements for restore of Avaya MAS

To successfully restore a system to Modular Messaging Release 4.0, you need:

- A replacement hard disk drive.
- Release 4.0 of the Modular Messaging application software.
  - *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino* media.
  - *Avaya Modular Messaging Messaging Application Server Software* media.
  - *Avaya Modular Messaging Documentation*

- The following information and software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - The most current copy of the configuration notes for this switch integration.
  - Avaya software updates that are required to bring the Avaya Modular Messaging software up to date after a restore. Download this software to a USB storage device. For more information about downloading the updates, see Appendix D: Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support Web site to a USB storage device.
- Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.) When installing a system with Exchange 2007 mail servers, you will require the 32-bit version of the Exchange 2007 Management Tools and additional software downloads. For more information, see Installing third-party software on page 372.
- Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.)
- Access to the most recent backup DCT data file as well as any backup files that will need to be restored to the system.

To restore an MAS configuration after a catastrophic disk failure, you must have a previously saved and updated DCT data file. For information about maintaining a current DCT data file, see Creating a DCT data file on page 165 or see the Data Collection Tool Online Help or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure to analyze a system with the DCT executable file.

CAUTION:

You cannot restore the MAS without a DCT data file that was created by analyzing the system.

Include the updated DCT data file in any regular, scheduled backups administered for this site so that the file is available if needed for a restore.

Restoring the Avaya MAS

To restore the MAS, complete the tasks in the following checklist. As you complete a task, make a check mark in the "✔"column. For additional information or detailed procedures, see the referenced page number.

Table 19: Avaya MAS restore procedure

✔	Procedure	Page	Comments
	Download required Avaya software updates. This includes the latest DCT executable file (MMDCT.exe).	3	Web access required.
	Collect any software media that is needed, such as Microsoft Windows updates or anti-virus software.	159	Leave customer media on-site.
	For a system with an Exchange 2000 or 2003 peer mail server, obtain the Exchange System Management Tools and Exchange 2003 Service Pack 2 or Exchange 2000 Service Pack 3 from the customer. For a system with an Exchange 2007 peer mail server, download Management Tools and additional required software including MAPI Client, Powershell 1.0, Microsoft Management Console 3.0 and .NET 2.0 as needed.	372	
	Obtain and review the configuration notes for any changes.		Web access required.
	Replace the hard drive. (For instructions for replacing an Avaya S3500 MAS hard drive, see the *Modular Messaging S3500-Family Hardware Maintenance and Additions* manual. For instructions for replacing an Avaya S3400 MAS hard drive, see Replacing an MAS drive in an S3400-family server on page 186.)		
	Copy the backup DCT data file (*.mmdct) to a USB storage device with the latest DCT executable file (MMDCT.exe).		

Table 19: Avaya MAS restore procedure

✔	Procedure	Page	Comments
	Verify that all additional backup files that must be restored are at a location accessible to the MAS, including: • customized tone files • customized prompt files • caller applications • Avaya license files. • SIP certificate files • WSO system services data file • Audit database • Operation history and transaction databases	157	See Backing up the system on page 157, for a complete list of the file names and their locations on the system.
	Switch the monitor to display the Avaya MAS that you are restoring.	162	
	Install a new boot image 1. Insert the *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software for Microsoft Exchange and IBM Domino* media in the DVD drive of the MAS. 2. Start the computer and insert or remove disks as prompted.	195	
	Enter the Windows product key.	195	
	Copy the backup DCT data file (*.mmdct) to the MAS.	198	
	Run MM_Setup from the desktop. The machine shuts down after the utility runs.	196	
	Perform Windows Product Activation.	195	
	Disable hyper-threading for IP H.323	197	
	When the Modular Messaging Configuration Wizard launches, click **Next** on the Welcome screen. Select the backup DCT data file by selecting the file if it is displayed or by browsing to it.	199	
	Review the DCT data file and complete any empty fields. Save the file.	199	
	On the MAS Number screen, select the number of the MAS that you are recovering.	199	
	Complete the Windows Setup wizard and continue with the Modular Messaging Configuration Wizard.	199	

Table 19: Avaya MAS restore procedure

✔	Procedure	Page	Comments
	For a system with an Exchange 2000 or 2003 peer mail server, install Exchange System Management Tools.	200	
	For a system with an Exchange 2000 or 2003 peer mail server, install Exchange Server 2003 SP2 or Exchange Server 2000 SP3.	200	
	For a system with an Exchange 2007 peer mail server, install Exchange 2007 Management Tools and additional required software.	372	
	Install anti-virus software.	200	
	Complete the configuration wizard.	202	
	Administer anti-virus software.	203	
	Install Modular Messaging software updates.	204	
	Update Microsoft Windows.	204	Follow site-specific procedures.
	Disable the private LAN.	205	
	Enter RAS IP address on the MAS		
	Create an offline message share, if needed.	354	
	Install Modular Messaging Active Directory Exchange extensions on the MAS.	73	
	Configure port boards, if necessary.	117	Step is required only for port boards that do not use one of the automatic-configuration switch integrations. This is first step in port board configuration. Configuration is completed later in procedure.

Table 19: Avaya MAS restore procedure

✔	Procedure	Page	Comments
	Restore customer data including: • customized tone files • customized prompt files • caller applications • SIP certificate files • WSO system services data file • Audit database • Operation history and transaction databases	209	
	Specify the preferred language for the MAS.	121	For a non-English Windows operating system.
	If this is the MAS that held the Avaya license file, transmit the backup license file to the MAS using the preferred customer method. The recommended location for the license file is on MAS #1 in the C:\Avaya_Support directory. Install the license.	127	
	Verify license installation.	128	
	Configure MAS-specific parameters: • INADS alarming, if used • Port boards • Switch integration	135	
	Restart messaging service.	138	
	Verify call-handling capability.	141	
	Verify alarming setup.	141	
	Verify Tracing Service operation, if you installed Tracing Server software on this server.	142	
	Verify Audit Service	143	
	Run all acceptance tests that are relevant to the system.	150	
	Back up the MAS using the regular backup procedures for this site. Be sure to include the revised DCT data file in this backup.	157	

Table 19: Avaya MAS restore procedure

✔	Procedure	Page	Comments
	Run the following tests: • Disk defragmenter system tool • chkdsk command	208	
	Complete steps necessary to turn the system over to the customer.	158	

Recovering from a catastrophic disk failure on a customer-provided MAS

Overview

There may be site-specific requirements and procedures for recovering from a catastrophic disk failure. Use the procedures appropriate to your site. The following is one procedure that can be used to recover the CPE MAS.

In summary, to restore a customer-provided MAS you will need to:

1. Replace the failed drive.
2. Configure a network card to support the corporate LAN connection
3. Manually join the Windows domain
4. Install and enable Windows services
5. Install and run the Modular Messaging Configuration Wizard
6. Administer anti-virus software
7. Install Modular Messaging Active Directory Exchange extensions
8. Restore customer data
9. Configure the voice mail system
10. Configure services
11. Perform acceptance tests on the entire system.
12. Back up the restored system and hand it off to the customer.

Table 20: CPE MAS restore procedure on page 349 lists the steps necessary to restore a customer-provided MAS. It contains page references to detailed instructions for each step.

Requirements for restore of CPE MAS

To successfully restore a system to Modular Messaging Release 4.0, you need:

- A replacement hard disk drive.
- Release 4.0 of the Modular Messaging application software.
  - *Avaya Modular Messaging Messaging Application Server Software* media
  - *Avaya Modular Messaging Documentation*

- The following information and software from the Avaya Support Web site at http://www.avaya.com/support. For more information about how to access these items on the Web site, see Downloading required software and documentation on page 3.
  - The most current copy of the configuration notes for this switch integration.
  - Avaya software updates that are required to bring the Avaya Modular Messaging software up to date after a restore. Download this software to a USB storage device. For more information about downloading the updates, see Appendix D: Updating Modular Messaging software on page 309.
  - The latest copy of the DCT executable file (MMDCT.exe). Download the file from the Avaya support Web site to a USB storage device.
- Customer-provided Microsoft Exchange System Management Tools. (Microsoft Exchange 2003 System Management Tools are highly recommended. The procedures in this chapter describe installation with the 2003 tools.) When installing a system with Exchange 2007 peer mail servers, you will require the 32-bit version of the Exchange 2007 Management Tools and additional software downloads. For more information, see Installing third-party software on page 372.
- Microsoft Exchange 2003 Service Pack 2 for Exchange 2003 System Management Tools. (If you are using Microsoft Exchange 2000 System Management Tools, you will require Microsoft Exchange 2000 Service Pack 3 instead.)
- Access to the most recent backup DCT data file as well as any backup files that will need to be restored to the system.

To restore an MAS configuration with this procedure after a catastrophic disk failure, you must have a previously saved and updated DCT data file. For information about maintaining a current DCT data file, see Creating a DCT data file on page 220 or see the DCT online help system or its printed version, *Avaya Modular Messaging Data Collection Tool Help*, for a complete description of the procedure to analyze a system with the DCT executable file.

CAUTION:

You cannot restore the MAS without a DCT data file that was created by analyzing the system.

Include the updated DCT data file in any regular, scheduled backups administered for this site so that the file is available if needed for a restore.

Restoring the CPE MAS

To restore the MAS, complete the tasks in the following checklist. As you complete a task, make a check mark in the "✔"column. For additional information or detailed procedures, see the referenced page number.

Table 20: CPE MAS restore procedure

✔	Procedure	Page	Comments
	Download required Avaya software updates, including the latest version of the planning forms and the DCT executable file (MMDCT.exe).	3	Web access required.
	Collect any software media that is needed, such as Microsoft Windows updates or anti-virus software.		Leave customer media on-site.
	Obtain and review the configuration notes for any changes.		
	Copy the backup DCT data file (*.mmdct) to a USB storage device with the latest DCT executable file (MMDCT.exe).		
	For a system with an Exchange 2000 or 2003 peer mail server, obtain the Exchange System Management Tools and Exchange 2003 Service Pack 2 or Exchange 2000 Service Pack 3 from the customer. For a system with an Exchange 2007 peer mail server, download Management Tools and additional required software including MAPI Client, Powershell 1.0, Microsoft Management Console 3.0 and .NET 2.0 as needed.	372	
	Obtain virus-checking software for the MAS if required.	7	Customer obtains.
	Replace the hard drive.		For instructions, see the manufacturer instructions.
	Install the Windows 2003 Server operating system.		
	Configure a network card to support the corporate LAN connection.	98	
	Disable hyper-threading for IP H.323	98	
	Join the server to the Microsoft Windows domain.	99	

Table 20: CPE MAS restore procedure

✔	Procedure	Page	Comments
	Adjust system values: • Event Viewer values • File and Printer Sharing properties • Windows 2003 Server operating system values	100	
	Add the Modular Messaging customer account and technical support account to the local administrators group.	102	
	Install and enable Windows services.	103	
	Install Microsoft Windows SP2.	105	
	Verify that the USB storage device with the DCT data file and most recent DCT executable file is inserted in the USB port.	107	
	Copy the backup DCT data file (*.mmdct) to a directory on the MAS.	106	
	Verify that all additional backup files that must be restored are at a location accessible to the MAS. This includes: • customized tone files • customized prompt files • caller applications • Avaya license files. • SIP certificate files • WSO system services data file • Audit database • Operation history and transaction databases	157	
	Log on to the MAS using the Modular Messaging customer account.		
	Install the Modular Messaging Configuration Wizard and enable the checkbox to launch the wizard.	106	
	When the Modular Messaging Configuration Wizard launches click **Next** on the Welcome screen. Select the backup DCT data file by selecting the file, if displayed, or by browsing to it.	107	
	Review the DCT data file and complete any empty fields. Save the file.	107	
	On the MAS Number screen, select the number of the MAS that you are recovering.	107	

Table 20: CPE MAS restore procedure

✔	Procedure	Page	Comments
	For a system with an Exchange 2000 or 2003 peer mail server, install Exchange System Management Tools.	109	
	For a system with an Exchange 2000 or 2003 peer mail server, install Exchange Server 2003 SP2 or Exchange Server 2000 SP3.	109	
	For a system with an Exchange 2007 peer mail server, install Exchange 2007 Management Tools and additional required software including MAPI Client, Powershell 1.0, Microsoft Management Console 3.0 and .NET 2.0 as needed.	372	
	Install Anti-virus software.	109	
	After third party software is installed, complete the configuration wizard.	110	
	Install updates to Modular Messaging software.	112	
	Update Microsoft Windows software	112	
	Change LAN name and power management settings	112	
	Enter RAS IP addresses for this MAS	113	
	Set the logging location if other than default.	114	
	Administer anti-virus software.	116	
	Create an offline message share, if needed.	354	
	Install Modular Messaging Active Directory Exchange extensions on the MAS.	73	
	Configure port boards, if necessary.	117	Step is required only for port boards that do not use one of the automatic-configuration switch integrations. This is first step in port board configuration. Configuration is completed later in procedure.

Table 20: CPE MAS restore procedure

✔	Procedure	Page	Comments
	Restore customer data including: • customized tone files • customized prompt files • caller applications • SIP certificate files • WSO system services data file • Audit database • Operation history and transaction databases		
	Specify the preferred language for the MAS.	121	For a non-English Windows operating system.
	If this is the MAS that held the Avaya license file, transmit the backup license file to the MAS using the preferred customer method. The recommended location for the license file is on MAS #1 in the C:\Avaya_Support directory. Install the license.	127	
	Verify license installation.	128	
	Configure MAS-specific parameters: • INADS alarming, if used • Port boards • Switch integration	135	
	Restart MM Messaging Application Server service.	138	
	Verify call-handling capability.	141	
	Verify alarming setup.	141	
	Verify Tracing Service operation, if you installed Tracing Server software on this server.	142	
	Verify Audit Service	143	
	Run all acceptance tests that are relevant to the system.	150	
	Back up the MAS using the regular backup procedures for this site. Be sure to include the revised DCT data file in this backup.	157	

Table 20: CPE MAS restore procedure

✔	Procedure	Page	Comments
	Run the following tests: • Disk defragmenter system tool • chkdsk command		
	Complete steps necessary to turn the system over to the customer.	158	

Creating the offline message share, if needed

Do this task only if the Offline Message Store is to be located on this MAS.

In a multiple-MAS system that uses the Offline Access feature, the system requires an offline message store to synchronize messages among the MASs. If the folder for offline message access is to be located on this MAS, you must first create the shared folder for the offline messages. The folder must be available before you can administer the Offline Access feature.

To create a shared folder for offline messages with the correct permissions:

1. In Windows Explorer, create a new folder on this MAS. For example, create *OfflineStore* on the C: drive.
2. Right-click the folder name and select **Sharing and Security**.
3. In the **Properties** window, on the **Sharing** tab:
   a. Select **Share this folder**.
   b. Verify the **Share name**. For example, *OfflineStore.*
   c. Click **Permissions**.
   d. In the **Permissions** window, add the appropriate Modular Messaging logon accounts.
   e. Give the correct share permissions to the accounts:
      1. Select each account in turn.
      2. In the **Permissions** box, under **Allow**, click to select the following permissions:
         - **Change**
         - **Read**
      3. Repeat for each logon account.
   f. Click **OK** to close the **Permissions** window.
4. In the **Properties** window, click the **Security** tab.
   a. Click **Add**.
   b. Add all the Modular Messaging computer accounts that will access the offline storage server.
   c. Give the correct share permissions to these accounts. In the Properties window:
      1. Select each account in turn.
      2. In the **Permissions** box, under **Allow**, click to select the following permissions:
         - **Modify**
         - **Read & Execute**
         - **List Folder Contents**

- **Read**
- **Write**

3. Repeat for each logon account and each MAS local service account.

5. Click **OK** to close the **Properties** window.
6. Stop and restart MM Message Application Service on each MAS in the system for the offline access permissions to take effect.

Appendix H: Removing Modular Messaging components from an MAS

This appendix describes how to remove Modular Messaging software components from a server where they are currently installed. Normally this procedure is used to prepare a server for reassignment to another purpose.

CAUTION:

Do not uninstall any of the following Modular Messaging services from an MAS that is running the Messaging Application Server service.

To stop running unneeded services on an in-service MAS, move services to other servers using the Modular Messaging administration tools and disable the services that the server does not need.

- MM Alarming Server service
- MM Audit Service
- MM Call Me
- MM Event Monitor Server
- MM Fault Monitor Service
- MM Fax Service
- MM Mailbox Monitor
- MM Messaging Application Server
- MM MWI
- MM Performance Monitor Server
- MM Process Monitor Server
- MM Service Connector
- MM Tracing Server

Removing software components

To remove Modular Messaging software components, use the Modular Messaging Uninstallation Wizard.

1. Click **Start** > **Settings** > **Control Panel**.
2. From the Control Panel window, double-click **Add/Remove Programs**.
3. In the **Add/Remove Programs** window, scroll down the list of currently installed programs to **MM Uninstallation Wizard**.

   Important:
   Do not use **Add/Remove Programs** to uninstall the **MM** services listed. Use only the **MM Uninstallation Wizard**.
4. Select the Modular Messaging software components that you want to remove.
5. Click **Uninstall** and follow the prompts to confirm your choices.
6. The removed components will continue to appear in the **Add/Remove Programs** list until you close and reopen **Add/Remove Programs**.

Appendix I: Administrator reference

This appendix details the permissions and data schema modifications that are required to support Modular Messaging software in a Microsoft Exchange environment.

Exchange 2000, 2003 and 2007 group permissions

Avaya Modular Messaging customer account permissions are covered in Assigning permissions to the customer account group on page 60. This section details why the Modular Messaging customer account must be added to the following groups:

- The BuiltIn/Account Operators group in each domain that contains accounts that will be enabled for Avaya Modular Messaging. This ensures that the Modular Messaging software has rights to perform the following operations:
  - Provide full access to the ms-Exch-Extension-Data attribute for user objects that are to be enabled for Modular Messaging. This access right is required to enable Modular Messaging subscriber accounts.
  - Create container objects. Avaya Modular Messaging creates a voice mail domain container. By default, the voice mail domain container is located at the root of the domain for which the Modular Messaging customer account is a member. This container stores the directory objects required for the Messaging Application Server and Mailbox Monitor Server software components.

    If the Modular Messaging customer account does not have sufficient privileges to create container objects at the base location of the domain that contains the customer account, a voice mail domain container must be created manually. For this procedure, see Creating the voice mail domain container manually if required on page 66.
  - Create User objects, and mailbox-enable User objects, in the voice mail domain container. This right is required for the operation of the Messaging Application Server and Mailbox Monitor Server software.
- The BuiltIn/Administrators group in the domain that contains the Global Catalog servers, that will be used as peer-directory servers for Avaya Modular Messaging servers. This can be the domain that contains the customer account, or any sub-domain that contains the customer account. The right enables the Modular Messaging software to obtain search results from the peer-directory server, including recently deleted objects. This allows Avaya Modular Messaging to maintain consistency in its Front End Database (FEDB).
- The BuiltIn/Exchange Recipient Administrators group, new to Exchange 2007, gives Modular Messaging full control of Exchange properties on Active Directory user objects and is required to manage mailbox settings for Modular Messaging. Modular Messaging

requires membership in this group only in an environment with an Exchange 2007 peer mail server.

The following table details the property permissions required to support Modular Messaging and their purpose. It also indicates the lowest level in the Exchange Service property tree that this permission should be applied. Parentheses indicate permission names with an Exchange 2007 system.

Table 21: Required switch and messaging information

Permission	Description	Applies to this object and subcontainers	Modular Messaging requirement
Read	Read permission for items in container	Mailbox Store	Core requirement
Execute	Execute permission for items in container	Mailbox Store	Automatic with “Read”
Read Permissions	Ability to read the permissions for an object	Mailbox Store	Automatic with “Read”
Create Children (Create all child objects)	Ability to create an object below the current object	Connectors	Octel Analog Networking
List Contents	Displays the contents and children of an object	Exchange Organization	Exchange System Manager
Read Properties (Read all properties)	Allows for Properties to be read from the class object	Administrative Group	Core requirement
Write Properties (Write all properties)	Allows for existing class object Properties to be written to	Connectors	Octel Analog Networking
Administer Information Store	Allows creation of objects at root of folder	Mailbox Store	Voicemail Domain Mailbox
Create Named Properties in the Information Store	Allows new properties to be added to the class object	Mailbox Store	User Admin
View Information Store Status	Required for MAPI Logon	Mailbox Store	External Caller Mailbox
Receive As	Receive on behalf of privilege	Mailbox Store	Core requirement
Send As	Send on behalf of privilege	Mailbox Store	Core requirement

Send As permission

You must assign *Send As* permission to the customer account group to allow Modular Messaging to deliver call answer messages to Modular Messaging enabled mailboxes. For procedures for assigning *Send As* permission see Assigning Send As permission on page 60.

Previously *Send As* permission was included when *Full Mailbox Access* was granted to a user. However, in current and future fixes and releases of Exchange 2000, 2003 and 2007 *Send As* permission must be added separately to the customer account group. If it is not, any Exchange server with the most recent Microsoft patches applied will not be able to deliver call answer messages to Modular Messaging enabled mailboxes. Messages in the Spool folder cannot be delivered and will be continually retried. Additionally, users that log into the TUI will not be able to send messages to other users and will receive a *Message Cancelled* statement from the system.

Send As permission is added at the Root of the Forest to allow it to populate to every object in the Forest. However distribution is dependent on restrictions within the Forest. By default inheritance throughout the Forest is enabled for basic users. However, if inheritance has been disabled anywhere in the Forest, a user object will not receive *Send As* permission. In this case, inheritance must be enabled or *Send As* permission must be applied to that specific user.

Additionally, the accounts and groups listed below are protected by a background process that periodically checks and applies a security descriptor based on the AdminSDHolder object. This process removes Send As permission from these groups and members and reverts back to permissions configured for the AdminSDHolder object. Therefore the Send As permission must be added to the AdminSDHolder object using the Dsacls.exe utility if an account belonging to any of the protected groups is Modular Messaging enabled. For details on this procedure, see Assigning Send As permission on page 60.

Protected Groups and users:

- Administrators
- Account Operators
- Server Operators
- Print Operators
- Backup Operators
- Domain Admins
- Schema Admins
- Enterprise Admins
- Cert Publishers
- Administrator account
- Krbtgt account

Active Directory schema updates

Avaya Modular Messaging software requires the following changes to be made to the schema in an Exchange environment before any other Modular Messaging server components are installed, you must:

- Enable replication of the ms-Exch-Extension-Data attribute in the Global Catalog.
- Increase the maximum amount of data that can be stored in the ms-Exch-Extension-Data attribute to 64KB. This increased storage is used for G7.11 audio encoding format, which is typically used only on systems that support Teletypewriter (TTY).
- Add classes and attributes for Octel Analog Messaging (if applicable).

The Modular Messaging software stores information about subscriber configurations in the ms-Exch-Extension-Data attribute. So that Modular Messaging MASs can obtain this information, this attribute must be replicated in the Global Catalog, a central repository for information about objects in the Windows 2000 or 2003 forest. When the replication is enabled, the system instructs the Global Catalog servers to include the ms-Exch-Extension-Data attribute in the list of objects replicated in the Windows 2000 or 2003 forest.

Replication of the ms-Exch-Extension-Data in the Global Catalog is also necessary for the correct operation of the Modular Messaging Client software (formerly called the Subscriber Options package). This is because the MAPI address book provider for Active Directory uses the Global Catalog as its data source. Replication is required for MAPI to support access to client applications, such as the MM Client software, through the PR_EMS_AB_EXTENSION_DATA property.

When the Modular Messaging Subscriber Administration extensions software component is installed, the software makes the following changes:

- Adds a Modular Messaging property page for each user in Active Directory Users and Computers. More specifically, the guide “A6688A44-CEDE-456E-AE57-3567D9909AE7” is added to the multi-valued attribute adminPropertyPages on the user-Display object, which has the dn: CN=user-Display,CN=409, CN=DisplaySpecifiers,CN=Configuration,DC=mycorp,DC=com.
- Copies files for the software components required to display the Modular Messaging property page to the Program Files\Avaya Modular Messaging directory.

Appendix J: Installing Modular Messaging with Exchange 2007

This appendix describes how to install Modular Messaging in a network with Exchange 2007 mail servers or a combination of Exchange 2000, 2003 and 2007 mail servers. Select the procedure that describes your environment:

- Installing Modular Messaging with Exchange 2007 on page 364

  Provides instructions for installing a new Modular Messaging system in a network that contains either only Exchange 2007 mail servers, or a combination or Exchange 2000, 2003 and 2007 mail servers.

- Installing Modular Messaging with a separate Exchange 2007 VMD on page 366

  Provides instructions for installing a new Voice Mail Domain (VMD) in an existing Modular Messaging system where the new VMD will use an Exchange 2007 server as the peer mail server.

- Migrating Modular Messaging to Exchange 2007 on page 368

  Provides instructions for migrating an existing Modular Messaging system from Exchange 2000/2003 mail servers to use Exchange 2007 servers as the peer mail servers. In most cases it is the eventual goal to remove the Exchange 2000/2003 servers.

Installing Modular Messaging with Exchange 2007

Use the instructions in this section to install a new Modular Messaging system in a corporate infrastructure with Exchange 2007 mail servers or a combination of Exchange 2000, 2003 and 2007 mail servers.

Installation Requirements:

The installation requires the following:

- All Exchange servers must be functioning correctly
- You must have the following software available during the installation:
  - Microsoft Exchange Server MAPI Client
  - Microsoft Exchange 2007 Management Tools, 32-bit version
  - Microsoft Exchange Server 2007 Service Pack 1
  - During the installation you may be required to install additional components on your system if they have not been previously installed. These include Powershell 1.0, Microsoft Management Console 3.0, and .NET 2.0
  - Modular Messaging Release 4.0 Service Packs and patches

  For additional information about downloading required Microsoft software, see Installing third-party software on page 372. For additional information about downloading Modular Messaging Service Packs and patches, see Appendix D: Updating Modular Messaging software on page 309.
- These instructions assume that the peer mail server is running Exchange 2007, and that Modular Messaging has never been installed in the Exchange organization.

What's new with Exchange 2007

During the installation follow all the procedures in the chapters of this book that describe how to install, configure and test a Modular Messaging system including those in Chapter 6: Configuring a new Avaya MAS on page 79 or Chapter 7: Configuring a customer-provided MAS on page 95. However, note the following procedures that have changed when installing Modular Messaging with an Exchange 2007 peer mail server:

- The customer account group must be a member of the *Administrators, Account Operators,* and *Exchange Recipient Administrator* groups. Also, the permissions assigned to the customer account group differ with Exchange 2007. Follow the procedures in Chapter

4: Preparing to install Modular Messaging software on page 53 to set up the Modular Messaging accounts and assign permissions.

- Microsoft provides a PowerShell command that you can use to automate many of the steps needed to create and assign permissions to the customer account group. For more information, see Using Power Shell to create the customer account group on page 370.
- Exchange 2007 does not support Octel Analog Networking (OAN). Follow the procedures in Updating the Active Directory and data schema on page 69. Do not select the checkbox to enable Octel Analog Networking.
- The NNTP and SMTP services are not required for Exchange 2007 Management Tools. See Installing and enabling required Microsoft Windows services on page 103.
- When installing third-party software, you must install the 32-bit version of Exchange 2007 Management Tools and additional software and Microsoft Exchange Server 2007 Service Pack 1. For more information, see Installing third-party software on page 372.
- An MAS that is configured to communicate with an Exchange 2007 peer mail server also can be used to monitor Exchange 2000/2003 non-peer mail servers. To do this you must create a monitor mailbox for each Exchange 2000/2003 non-peer mail server you want to monitor. For more information, see Creating the non-peer Exchange 2000/2003 monitor mailbox on page 379.
- When installing Avaya software updates, be sure to include the most recent Modular Messaging Release 4.0 service packs and patches.

Installing Modular Messaging with a separate Exchange 2007 VMD

Use the instructions in this section to install a new Modular Messaging system into a new Voice Mail Domain (VMD) that will be hosted on Exchange 2007 where there is already an existing VMD hosted on Exchange 2000/2003 in the same Exchange organization.

Installation Requirements:

The installation requires the following:

- All Exchange servers must be functioning correctly
- Microsoft Exchange transport between Exchange 2000/2003 servers and Exchange 2007 servers must be functioning correctly
- Modular Messaging Release 3.0, 3.1, or 4.0 is running on all MASs and supplementary servers in the existing VMD and is functioning correctly
- You must have assigned *send as* permission to the customer account group for the existing VMD. For instructions, see Assigning Send As permission on page 60.
- You must have the following software available during the installation:
  - Microsoft Exchange Server MAPI Client
  - Microsoft Exchange 2007 Management Tools, 32-bit version
  - Microsoft Exchange Server 2007 Service Pack 1
  - During the installation you may be required to install additional components on your system if they have not been previously installed. These include Powershell 1.0, Microsoft Management Console 3.0, and .NET 2.0
  - Modular Messaging Release 4.0 Service Packs and patches

  For additional information about downloading required Microsoft software, see Installing third-party software on page 372. For additional information about downloading Modular Messaging Service Packs and patches, see Appendix D: Updating Modular Messaging software on page 309.
- These instructions assume that when you begin the installation:
  - Modular Messaging MASs in the existing VMD are using Exchange 2000/2003 servers as peer mail servers
  - All Modular Messaging user Exchange mailboxes in the existing VMD are located on Exchange 2000/2003 servers

Note:

Subscribers in the existing Modular Messaging 3.0 VMD hosted by 2000/2003 mail servers cannot be assigned mailboxes in the new VMD hosted on Exchange 2007 until all MASs in the existing VMD are upgraded to Modular Messaging Release 4.0.

What's new with Exchange 2007

During the installation follow the procedures in Chapter 6: Configuring a new Avaya MAS on page 79 or Chapter 7: Configuring a customer-provided MAS on page 95 as well as procedures to configure and test the Modular Messaging system. However, note the following procedures that have changed when installing Modular Messaging with an Exchange 2007 peer mail server:

- You must add the customer account group to the *Exchange Recipient Administrator* group. See Creating the Modular Messaging customer account on page 56 for instructions for adding the customer account group to the *Exchange Recipient Administrator* group.
- The NNTP and SMTP services are not required for Exchange 2007 Management Tools. See Installing and enabling required Microsoft Windows services on page 103.
- When installing third-party software, you must install the 32-bit version of Exchange 2007 Management Tools, Microsoft Exchange Server 2007 Service Pack 1, and additional software. For more information, see Installing third-party software on page 372.
- If you will be using an MAS with an Exchange 2007 peer mail server to monitor an Exchange 2000/2003 non-peer mail server, you must create a non-peer mail server monitor mailbox. For more information, see Creating the non-peer Exchange 2000/2003 monitor mailbox on page 379.
- When installing Avaya software updates, be sure to include the most recent Modular Messaging Release 4.0 service packs and patches.

Continuing the installation

After the new Modular Messaging VMD has been installed and tested, complete the following optional procedures. These procedures are not required as part of the installation procedure. They can be completed now or over time in the future.

1. Move Modular Messaging enabled mailboxes to the Exchange 2007 mail server. For more information, see Moving mailboxes to the Exchange 2007 server on page 374.
2. Move Modular Messaging enabled mailboxes to the Exchange 2007 VMD. For more information, see Moving mailboxes to a new Exchange 2007 VMD on page 378.

Migrating Modular Messaging to Exchange 2007

Use the instructions in this section to migrate an existing Modular Messaging system from Exchange 2000/2003 peer mail servers to use Exchange 2007 peer mail servers. In most cases it is the eventual goal to remove the Exchange 2000/2003 servers.

Installation Requirements:

The installation requires the following:

- All Exchange servers must be functioning correctly. Exchange 2007 servers are installed and fully tested.
- Modular Messaging Release 4.0 is running on all MASs and supplementary servers and is functioning correctly
- You must have the following software available during the installation:
  - Microsoft Exchange Server MAPI Client
  - Microsoft Exchange 2007 Management Tools, 32-bit version
  - Microsoft Exchange Server 2007 Service Pack 1
  - During the installation you may be required to install additional components on your system if they have not been previously installed. These include Powershell 1.0, Microsoft Management Console 3.0, and .NET 2.0
  - Modular Messaging Release 4.0 Service Packs and patches

  For additional information about downloading required Microsoft software, see Installing third-party software on page 372. For additional information about downloading Modular Messaging Service Packs and patches, see Appendix D: Updating Modular Messaging software on page 309.
- These instructions assume that when you begin the migration:
  - Modular Messaging MASs are using Exchange 2000/2003 servers as peer mail servers
  - All Modular Messaging user Exchange mailboxes in the existing VMD are located on Exchange 2000/2003 servers
  - There are no Exchange 5.5 servers in the environment

What's new with Exchange 2007

Complete the following procedures when migrating Modular Messaging to the Exchange 2007 mail server:

- You must add the customer account group to the *Exchange Recipient Administrator* group. See Creating the Modular Messaging customer account on page 56 for instructions for adding the customer account group to the *Exchange Recipient Administrator* group.
- If you have not previously assigned *send as* permissions to the customer account group, do so now. For instructions, see Assigning Send As permission on page 60.
- After adding the new group and assigned *send as* permissions, restart all MASs and supplementary servers to populate permission changes to all MASs.
- If you will be using an MAS with an Exchange 2007 peer mail server to monitor an Exchange 2000/2003 non-peer mail server, you must create a non-peer mail server monitor mailbox. For more information, see Creating the non-peer Exchange 2000/2003 monitor mailbox on page 379.

Continuing the installation

Migrate the Modular Messaging system to the Exchange 2007 mail servers by completing the following procedures:

1. Optionally move Modular Messaging enabled mailboxes to the Exchange 2007 mail server. This step is not required as part of the installation procedure. It can be completed now or over time in the future. For more information, see Moving mailboxes to the Exchange 2007 server on page 374.
2. Assign the MASs to the Exchange 2007 peer mail servers. For more information, see Assigning MASs to Exchange 2007 peer mail server on page 375.
3. When you are ready to remove the Exchange 2000/2003 servers from the Exchange organization, verify that there are no Modular Messaging MASs that are using them as their peer mail server. For additional information, see the *Servers Tab* section of the *Modular Messaging online help*. Also remove non-peer monitor mailboxes. Follow the Microsoft recommended procedures to remove the Exchange 2000/2003 servers from the Exchange organization. The Exchange 2000/2003 servers do not need to be removed as part of the installation procedure. They can be removed at any time in the future.

Using Power Shell to create the customer account group

You can use an Exchange PowerShell script to complete some tasks that are part of creating and assigning permissions to the customer account group. The PowerShell script can:

- Create the customer account group
- Assign the required Exchange Organization permissions to the group
- Add the customer account group to the Exchange Recipient Administrators group.

Before you can use the script to create the security group, you must create the customer account and the technical support account. For more information, see Creating Modular Messaging customer and technical support accounts on page 55. Ignore the instructions for creating the customer account group, creating only the accounts. When creating the customer account ignore the steps for adding the account to the customer account group. You will add the account to the group later.

After creating the customer account and technical support account, complete the following steps to run the PowerShell script:

1. Log on to the Exchange 2007 server using an account with Exchange Organization Administration privileges.
2. Click **Start** > **All Programs**> **Microsoft Exchange Server 2007**> **Exchange Management Shell**.
3. Run the script **createsecuritygroup.ps1** from the **C:\Avaya_Support\Exchange2007Migration** directory. Run the script with the following parameters in the order they are listed:
   - customer account name
   - technical support account name
   - customer account group name
   - customer account group alias
   - container to create customer account group in
   - domain name
   - Exchange organization name

   For example:

   ```
   C:\Avaya_Support\Exchange2007Migration> createsecuritygroup.ps1
   'mmacct' 'mmtech' 'MM Group' 'MMGroup' 'fighter.local/users'
   'fighter.local' 'fighter-exchange-2007'
   ```

   For information about using the Exchange Management Shell, see your Microsoft Exchange documentation.

After running the script, you must:

1. Manually add the customer account to the customer account group. For more information, see Creating the Modular Messaging customer account on page 57 beginning with step 3.
2. Manually add the customer account group to the Administrators and Account Operators groups. For more information, see Creating the Modular Messaging customer account group on page 56.
3. Manually assign *send as* permissions to the customer account group, see Assigning Send As permission on page 60.

Installing third-party software

Use the procedures in this section to install third-party software when installing Modular Messaging with an Exchange 2007 peer mail server. You must download and install the following components:

- Microsoft Exchange Server MAPI Client. The MAPI client can be downloaded from the following site:

  http://www.microsoft.com/downloads/details.aspx?FamilyID=e17e7f31-079a-43a9-bff2-0a110307611e&DisplayLang=en

- Microsoft Exchange 2007 Management Tools, 32-bit version. Modular Messaging requires the 32-bit version of the Exchange 2007 Management Tools. Downloaded the file from:

  http://www.microsoft.com/downloads/details.aspx?FamilyID=444C259E-605F-4A82-96D5-A2F448C9D4FF&displaylang=en

- Microsoft Exchange Server 2007 Service Pack 1
- During the installation you may be required to install additional components on your system if they have not been previously installed. These include Powershell 1.0, Microsoft Management Console 3.0, and .NET 2.0. The installation of the Management Tools will guide you through the installation of the required components and patches.

When prompted to install third-party software:

Note:

If this is a new Avaya MAS, or if your MAS has been upgraded to Internet Explorer 7, update Windows Internet Explorer 7 security before installing third-party software from a mapped network drive. For more information see Updating Windows Internet Explorer 7 security on page 86.

1. Install the MAPI client by double-clicking the MAPI executable file.
2. Install Microsoft Exchange 2007 Management Tools:

   a. Double-click the tools executable file.

   b. Double-click the extracted Microsoft Exchange Installation wizard.

   c. Complete the Microsoft Exchange Installation Wizard selecting **Custom Exchange Server Installation**. Elect to install the **Management Tools**. For details about this procedure, see the Microsoft Exchange documentation.

   You may be prompted to download and install additional components and hotfixes. Follow the installation prompts. Be sure to download the Windows 2003 32-bit version of each component.

3. If prompted, reboot the system.
4. Verify that the Exchange Management Tools can communicate with the Exchange 2007 mail server.

5. Follow site-specific procedures to install Microsoft Exchange Server 2007 Service Pack 1
6. Install antivirus software by completing the steps in one of the following sections:
   - Installing third-party software on page 86 for Avaya-provided equipment
   - Installing third-party software on page 109 for customer-provided equipment
7. After installing third-party software, continue with your normal installation procedure.

Moving mailboxes to the Exchange 2007 server

To move Modular Messaging enabled Exchange mailboxes to the Exchange 2007 server:

1. Click **Start** > **All Programs**> **Microsoft Exchange Server 2007**> **Exchange Management Console**.
2. In the left panel, select **Recipient Configuration**.
3. In the center panel, select the mailboxes that you want to move.
4. In the right panel, click **Move Mailbox**.
5. In the **Move Mailbox** window, in the **Server** field, select the name of the Exchange 2007 server you want to host the mailbox.
6. Click **Next** and follow the prompts to complete the Move Mailbox wizard.
7. Test the functionality of the moved mailbox using the telephone user interface (TUI) and client software.
8. Repeat this procedure as needed to move mailboxes to the Exchange 2007 mail server. It is not necessary to move all mailboxes immediately. Migration to the server can be phased.

   Note:

   You can also use the Exchange Shell move_mailbox command to move mailboxes, or the Exchange Shell script move_mailbox command to bulk move mailboxes. For additional information, see your Microsoft Exchange documentation.

Assigning MASs to Exchange 2007 peer mail server

Complete the procedures in this section only when you are ready to remove your Exchange 2000/2003 peer mail servers and replace them with Exchange 2007 peer mail servers. To move the MASs to the Exchange 2007 peer mail server, you must:

- Install Exchange 2007 Management Tools on the MAS. See Installing Exchange 2007 Management Tools on page 375.
- Change the MAS to access the Exchange 2007 peer mail server. See Changing to the Exchange 2007 peer mail server on page 377.

Move and test each MAS separately. It is not necessary to move all MASs to the Exchange 2007 peer mail servers at the same time.

Required Software

The following software downloads are required:

- Microsoft Exchange Server MAPI Client. The MAPI client can be downloaded from the following site:

  http://www.microsoft.com/downloads/details.aspx?FamilyID=e17e7f31-079a-43a9-bff2-0a110307611e&DisplayLang=en

- Microsoft Exchange 2007 Management Tools, 32-bit version. Downloaded the file from:

  http://www.microsoft.com/downloads/details.aspx?FamilyID=444C259E-605F-4A82-96D5-A2F448C9D4FF&displaylang=en

- Microsoft Exchange Server 2007 Service Pack 1
- During the installation you will be required to install additional components on your system if they have not been previously installed. These include Powershell 1.0, Microsoft Management Console 3.0, and .NET 2.0. The installation of the Management Tools will guide you through the installation of the required components and patches.

Installing Exchange 2007 Management Tools

Modular Messaging requires the 32-bit version of the Exchange 2007 Management Tools. To upgrade your MASs to the new management tools, complete the following steps:

1. Record which Modular Messaging services are running on the MAS.
2. Navigate to the **C:\Avaya_Support\tools\servicecontrol** directory.
3. Double-click the **StopMMServices.exe** file to stop all services on the MAS.

4. Uninstall the Exchange 2003 System Management Tools:
   a. Click **Start** > **Control Panel** > **Add or Remove Programs**.
   b. In the **Add or Remove Programs** window, select **Microsoft Exchange** and click **Change/Remove**.
   c. Complete the Microsoft Exchange Installation Wizard to remove the Exchange 2003 Management Tools.
5. Install Microsoft Exchange 2007 Management Tools:
   a. Double-click the tools executable file.
   b. Double-click the extracted Microsoft Exchange Installation wizard.
   c. Complete the Microsoft Exchange Installation Wizard selecting **Custom Exchange Server Installation**. Elect to install the **Management Tools**. For details about this procedure, see the Microsoft Exchange documentation.

   You may be prompted to download and install additional components and hotfixes. Follow the installation prompts. Be sure to download the Windows 2003 32-bit version of each component.
6. If prompted, reboot the system.
7. Install the MAPI client by double-clicking the MAPI executable file.
8. Verify that the Exchange 2007 Management Tools are working by completing the following procedure:
   a. Click **Start** > **All Programs**> **Microsoft Exchange Server 2007**> **Exchange Management Console**.
   b. Expand **Recipient Configuration** > **Mailboxes**.
   c. Verify that all Exchange mailboxes are listed.
9. Install Microsoft Exchange Server 2007 Service Pack 1.
10. Restart services by completing the following steps:
    a. Click **Start** > **Run** to open the **Run** window.
    b. In the **Open** field, type the following and press **Enter**:

       C:\Avaya_Support\Scripts\serverrecovery.vbs

Changing to the Exchange 2007 peer mail server

Use the Voice Mail System Configuration program to change the peer mail server for the MAS to the Exchange 2007 mail server:

1. On the MAS, launch the **Voice Mail System Configuration** program.
2. Expand **Message Application Servers** and the name of the MAS you are moving.
3. Under the MAS name, double-click **Messaging**.
4. On the **Messaging** window **General** tab in the **Mail Server Name** field, enter the name of the Exchange 2007 peer mail server.
5. Click **OK** to save the change and close the **Messaging** window. Close the VMSC window.
6. Navigate to the **C:\Avaya_Support\Tools\ServiceControl** directory.
7. Double-click the **StopMMServices.exe** file to stop all services on the MAS.
8. Using the Move Mailbox wizard on the Exchange Management Console, move the VMD mailbox from the old Exchange 2000/2003 server to the new Exchange 2007 peer mail server. Complete this step only once for the Voice Mail Domain (VMD). For more information about moving mailboxes, see Moving mailboxes to the Exchange 2007 server on page 374.
9. Using the Move Mailbox wizard on the Exchange Management Console, move the External Caller mailbox from the old Exchange 2000/2003 server to the new Exchange 2007 peer mail server. For more information about moving mailboxes, see Moving mailboxes to the Exchange 2007 server on page 374.
10. Restart all services by running the **serverrecovery.vbs** script. (If you have installed the patch, it will automatically restart services.)
11. Verify that the correct services are running on the MAS.
12. Repeat the steps in Installing Exchange 2007 Management Tools on page 375 and Changing to the Exchange 2007 peer mail server on page 377 for each MAS you are moving to the Exchange 2007 peer mail server. It is not necessary to move all the MASs at the same time.
13. After moving all required MASs to the Exchange 2007 peer mail server, perform a complete DCT analysis of the supplementary server and all MASs. All MASs, the supplementary server if one is present, and the Exchange message store must be running. For more information, see:
    - Creating a DCT data file on page 165 for an Avaya MAS
    - Creating a DCT data file on page 220 for a customer-provided MAS

Moving mailboxes to a new Exchange 2007 VMD

To move Modular Messaging enabled Exchange mailboxes to the new Exchange 2007 VMD:

1. Click **Start** > **Programs** > **Administrative Tools** > **Active Directory Users and Computers**.
2. In the **Active Directory Users and Computers** window, expand the directory for the Modular Messaging Windows domain and select the VMD that contains the mailboxes that you want to move.
3. In the right pane, double-click the mailbox you want to move to the new VMD.
4. In the **Properties** window, click the **Modular Messaging** tab.
5. In the **Voice mail domain** field, select the new VMD from the drop-down list.
6. Click **OK** to save changes and close the **Properties** window. Close the **Active Directory Users and Computers** window.
7. Right-click **My Computer** and select **Manage**.
8. In the **Computer Management** window, in the left pane, expand **Event Viewer**.
9. Refresh the window display periodically until you see a **1027** event (gv_vserver) reporting that the FEDB update has occurred.
10. Test the functionality of the moved mailbox using the telephone user interface (TUI) and client software.
11. Repeat this procedure for each mailbox you are moving to the new VMD.

Note:

You can also use the VMEnable tool to bulk move Modular Messaging mailboxes to the new VMD.

Creating the non-peer Exchange 2000/2003 monitor mailbox

If you will be using an MAS with an Exchange 2007 peer mail server to monitor a new Exchange 2000 or 2003 non-peer server, complete the following steps to create the non-peer Exchange monitor mailbox:

1. Copy the file **C:\Avaya_Support\Exchange2007Migration\Add-Monitor-Mbx.exe** from the MAS to a machine that is running the Exchange 2003 System Management Tools.

   Note:

   This can be an Exchange 2000/2003 server running the Exchange 2003 System Management Tools, or a machine with the Exchange 2003 System Management Tools that is used to administer the Exchange servers.

2. Click **Start > Run**, enter **cmd** and click **OK**.
3. In the command window, enter the following:

   `Add-Monitor-Mbx <Exchange server> <peer directory server> <Octel container>`

   where:

   `<Exchange server>` is the name of the non-peer Exchange 2000 or Exchange 2003 server you want to monitor.

   `<peer directory server>` is the peer directory server used by the MASs

   `<Octel container>` is an optional entry that is not required if you are using the default Octel container location. Enter the location of the Octel container if you are not using the default location. For example: **`cn=octel,cn=avaya,DC=ncis,DC=local`**

   The non-peer Exchange server monitor mailbox is created. MASs will start monitoring the non-peer Exchange server when mailboxes located on the server are Modular Messaging enabled.

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