



Modular Messaging for the Avaya MSS

Release 3

Messaging Application Server (MAS)
Catastrophic Disk Failure Recovery

Issue 1
April 2006

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- 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)

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The final responsibility for securing both this system and its networked equipment rests with you — Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
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- Telecommunications security experts

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COMPAS

This document is also available from the COMPAS database. The COMPAS ID for this document is 116612.

Avaya support

Avaya provides a telephone number for you to use to report problems or to ask questions about your product. The support telephone number is 1-800-876-2835 in the United States. For additional support telephone numbers, see the Avaya Support Web site:

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About this book

This book, *Avaya Modular Messaging for Avaya MSS Release 3 Messaging Application Server (MAS) Catastrophic Disk Failure Recovery*, Issue 1, contains instructions for returning an Avaya server to full service after a catastrophic hard disk failure. Servers include:

- Avaya Messaging Application Server (MAS)
- Avaya-provided supplementary tracing server

Note:

Instructions in this document apply *only* to an Avaya-provided MAS-like server that is part of an Avaya Message Storage Server (MSS) configuration.

Disk recovery procedures apply to:

- Modular Messaging systems that are running Release 3 software
- Modular Messaging systems that have only one Avaya MAS or multiple MASs
- Any Avaya MAS that might have failed in such a system. The Avaya MAS might be the first MAS in the system (MAS#1), a subsequent MAS, or a supplementary tracing server.

Intended audience

This book is intended primarily for on-site technical support staff who are responsible for maintaining the hardware and software for Avaya Modular Messaging systems. Avaya assumes that the users of this book have completed a relevant hardware installation training course. For information on training, see [Related resources](#) in this preface.

How to use this book

This book summarizes the procedure for restoring an Avaya Messaging Application Server (MAS) if the hard disk drive failed and must be replaced. The procedures vary depending on the type of MAS that you are restoring. You can restore the only MAS in the system, the first MAS in a multiple-MAS system, or a subsequent MAS in a multiple-MAS system.

MAS disk recovery summary

To restore an Avaya MAS after a catastrophic disk failure:

1. Prepare to restore the faulty MAS. See [Chapter 1: Preparing to recover from an MAS disk failure](#) on page 1.
2. Replace the faulty drive and turn on the system. See [Chapter 2: Replacing the disk drive](#) on page 7.
3. Install the operating system on the new disk drive. See [Chapter 3: Reloading the MAS software](#) on page 19.
4. Configure the server that you repaired. See [Chapter 4: Restoring an MAS](#) on page 25.
5. Complete the restoration of server and customer data. See [Chapter 5: Restoring data on the MAS](#) on page 35.
6. *If MAS#1 suffered the hard disk failure*, complete the restoration of the system on all additional MASs, including the supplementary tracing server, if present. See [Chapter 6: Completing MAS#1 restoration in a multiple-MAS system](#) on page 41.
7. Verify system operation and make new backups. See [Chapter 7: Doing acceptance tests and backing up the server](#) on page 55.

Using links in this document

For your convenience, this guide provides direct linking to other files or pages if you view the document in PDF form. Links are shown 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.
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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 1-800-876-2835, choose prompt **2**, and then choose **2** again.
- 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.
- **MSS:** On the Web interface pages, click the **Help** button. On the administrative command-line interface, press **F6** (Choices) from the field for which you want help.

Training

For information about product training, go to the Avaya Web site at <http://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, issue number, and date of this book:

*Avaya Modular Messaging for Avaya MSS Release 3 Messaging Application Server (MAS)
Catastrophic Disk Failure Recovery*, Issue 1, April 2006.

Chapter 1: Preparing to recover from an MAS disk failure

This chapter describes the requirements and prerequisites for repairing an Avaya Messaging Application Server (MAS) that has suffered a catastrophic disk failure.

The Avaya MAS must be part of an Avaya Modular Messaging system that uses:

- an Avaya Message Storage Server (MSS) as the message store
- Modular Messaging Release 3 software
- Avaya-provided hardware, either an Avaya S3500-family message server or an Avaya S3400-family message server.

Note:

In this document, hardware for either Avaya S3500-family servers and Avaya S3400-family servers uses the term *Avaya S3x00-family message server*.

Topics in this chapter include:

- [Effects of an MAS disk failure](#) on page 1
- [Preparing to recover from an MAS disk failure](#) on page 2
- [Obtaining the required documentation](#) on page 5

Effects of an MAS disk failure

An MAS hard disk failure has the following effects on the Avaya Modular Messaging system, depending on which MAS in the system has failed:

- If the first and only MAS in the Modular Messaging system fails, the system can provide no messaging service until the MAS is repaired.
- If a subsequent MAS in a multiple-MAS Modular Messaging system fails, the system continues to function, but at a reduced capacity. Users might notice various problems with the system, depending on the services that were installed on the MAS that failed. For example, they might lose message waiting indication (MWI) or fax services.
- If the first MAS (MAS#1) in a multiple-MAS Modular Messaging system fails, the system continues to function as if a subsequent MAS failed. The system runs at a reduced capacity, and various features are missing, depending on which services were installed on MAS#1. Because MAS#1 is the domain controller for the system, you must take additional steps to return the system to service, as described in this document.

Preparing to recover from an MAS disk failure

System administrators and technicians might notice the following events, if an MAS failed in a multiple-MAS Modular Messaging system:

- The Modular Messaging services that are installed on the functional MASs continue to run.
- You can restart services or reboot any functional MAS in the system. The server will start up again normally.
- If the first MAS (MAS#1) in a multiple-MAS Modular Messaging system fails:
 - It takes longer to log on to any remaining functional MAS. It is also slower to connect to the Voice Mail System Configuration program (VMSC). The delay is caused by the MAS trying to contact the domain controller (MAS#1), which is no longer on the network.
 - The system cannot back up data on any subsequent MASs to the MSS while MAS#1 is inoperative.

Preparing to recover from an MAS disk failure

This section describes how to successfully prepare to restore a Modular Messaging system after an MAS has suffered a catastrophic disk failure. Tasks include:

- [Gathering the required information](#) on page 2
- [Collecting the required software](#) on page 3
- [Preparing to restore an MAS](#) on page 4

Gathering the required information

To repair the MAS and restore the system, you must obtain the following information:

1. This document: *Avaya Modular Messaging for Avaya MSS Release 3 Messaging Application Server (MAS) Catastrophic Disk Failure Recovery*.
2. Other required documentation for system restoration. For a complete list, see [Obtaining the required documentation](#) on page 5.
3. A copy of the completed planning forms, which the customer and remote technical support should have on file.
 - Verify that the planning forms are accurate and up-to-date by comparing them to what is administered on the system, if possible. When you restore the MAS, you must exactly duplicate the information from the original setup to avoid problems. Data includes computer and domain names, passwords, and so on.
 - If the planning forms are missing, fill them out completely before proceeding. Verify that you fill out the correct forms for this software release. The fields change slightly between

releases. Always check the table title of each planning form to ensure that you are using the correct data.

Collecting the required software

Collect the following software and tools to support the system recovery. For convenience, download all required software to a USB storage device, such as a flash drive, memory stick, or equivalent. Bring the USB storage device with you to the customer site.

1. Check the Avaya Support Web site at <http://www.avaya.com/support> and obtain the latest software updates for the system. Also check the product correction notices and support notices. To obtain the latest Avaya Service Pack (SP), software patches, and hotfixes:
 - a. Access the Modular Messaging page for Release 3.
 - b. Download any files needed to update a Release 3 system. For example, download the MMDCTDistribute.exe self-extracting zip file to update the DCT program. Ensure that you download any instructions required to install the Service Pack or software update.
 - c. Copy the downloaded files to a USB storage device, such as a flash drive, memory stick, or equivalent. Bring the USB storage device with you to the installation site.
2. You must install the latest Avaya-approved updates for Microsoft Windows, including operating system updates, security patches, and hotfixes on the restored server. These software updates protect the system from known security weaknesses. Check with the appropriate Windows administrator for the software update procedures to use at this site.
3. Obtain the most recent DCT data file for the server that failed.
 - For an MAS, you *must* contact the remote support organization for this system. The group must obtain the most recent DCT data file from the MSS backup directory, and then deliver the file to the technician who must do the repair.

CAUTION:

Each MAS does an automatic weekly self-analysis of the server. The updated data is placed in the usual directory on the server for data files:

C:\Program Files\Avaya Modular Messaging\Install\MISCM\cfg.

The analyzed data file uses a unique naming convention such as *%MASNAME%ANALYSED.mmdct*. You *must* use this file to reconfigure an MAS that failed. The analyzed data file contains the most current information for each server, including registry settings. This specialized information will be lost if you try to restore the server using a different data file.

- For a supplementary tracing server, obtain the most current DCT data file from one of the MASs in the system. For example, obtain the data file from MAS#1 from the directory **C:\Program Files\Avaya Modular Messaging\Install\MISCM\cfg**. A supplementary server does not create an analyzed DCT data file of its own, so just use the most current data file available for that system.

Preparing to recover from an MAS disk failure

4. You must restore data on the server using the most recent backup file for the MAS. The backup file contains customized customer data such as custom prompts, tone files, and caller applications. The most current MAS backup file is stored on the MSS in the directory \\mss1\masbackup.



CAUTION:

Customers who do *not* have a current backup file will lose any configuration data or customized prompts that they changed after their last backup.

5. Obtain the required Modular Messaging software:
 - *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software with an Avaya MSS media*, used for the Messaging Application Server (MAS)— 3-DVD set
 - *Avaya Modular Messaging Messaging Application Server Software media* for the Avaya Messaging Application Server (MAS)— 2-DVD set
6. Collect any software media you will need during the restoration, such as for Microsoft Windows SP updates, and anti-virus software.

Preparing to restore an MAS

Before you start to restore the MAS:

1. Review this document before you start. Ensure that you understand what each step requires and are clear about how to do each task.
2. Review the configuration notes for any changes that might be needed regarding board configuration, switch programming, and application configuration. For more information, see [Information on the Web](#) on page 5.
3. Using the planning forms, verify as many key settings on the MSS and MAS as possible. Important information includes:
 - switch integration settings
 - port board extensions and groups
 - domain information
 - basic system setup

Note:

You cannot log in to the MAS whose hard disk failed.

4. Print the checklist from [Appendix A: MAS disk failure recovery checklist](#) on page 59 and use it to track your progress.
5. Unplug all the modems to the Modular Messaging system. Otherwise, the remote technical support group will receive unnecessary alarms throughout the repair procedure.

Obtaining the required documentation

You require the following documentation to maintain an Avaya Modular Messaging system. Some of this information can be obtained only from the Avaya Web site. Other information is available on the *Avaya Modular Messaging Documentation* media that ships with the system. However, you can access required documentation online and print it out for use on-site.

Information on the Web

Documentation that supports Avaya Modular Messaging is available as follows:

Note:

Always check the Avaya Support Web site at <http://www.avaya.com/support> for recent updates and current information before starting any repair procedure. Note that links and paths might change.

- Configuration notes 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:
 - a. Go to the Avaya Support Web site at <http://www.avaya.com/support>.
 - b. Click the link to **Find documentation and downloads by product name**.
 - c. Under **M**, click **Modular Messaging**.
 - d. On the Modular Messaging page, select Release **3.0** from the drop-down list.
 - e. Click **Configuration Notes**.
 - f. 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.

- Additional information needed for configuring a Modular Messaging system is on the *Avaya Modular Messaging Documentation* media. To access this information online:
 - a. On the Modular Messaging page, click **Documentation Library (CD Collections)**.
 - b. Click **Avaya Modular Messaging Release 3 Documentation**.
 - c. Click **View HTM**.
 - d. On the Modular Messaging documentation menu, click the link to view the document set.
 - e. Click **Reference** for a list of downloadable documents.
 - f. Either click to view or print files, or right-click to download the files you need:
 - Any Dialogic port board documents appropriate for this site.

Preparing to recover from an MAS disk failure

- *Avaya Modular Messaging Subscriber Options User Guide* ([PDF](#)), used for acceptance testing
- The planning forms and checklists in Microsoft Word or PDF format

Documentation and software shipped with the system

The software and documentation listed in [Table 1](#) ships with each Modular Messaging system.

Table 1: Required Modular Messaging software

Disk	Purpose
<i>Avaya Modular Messaging Messaging Application Server Software</i> —2 DVD set	● Installing the Modular Messaging software and optional application programs, such as Subscriber Options ● Installing Text-to-Speech (TTS) software—Disk 2
<i>Avaya Modular Messaging Documentation CD</i> Two copies are shipped, one for the customer and one for the technician.	Accessing required documentation, including: ● Dialogic port board documents ● <i>Avaya Modular Messaging Subscriber Options User Guide</i> (PDF), used for acceptance testing ● Feature administration and ongoing maintenance procedures for the system
<i>Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software with an Avaya MSS</i> —3 DVD set	Reinstalling the boot-image software on an Avaya MAS in an MSS configuration. You must do this to repair a catastrophic hard disk failure.
<i>Avaya Modular Messaging Message Storage Server Software DVD</i>	Updating software on the Avaya MSS, or reinstalling the boot-image software on the MSS. You do <i>not</i> need this CD to help restore the system after an MAS disk failure.

Chapter 2: Replacing the disk drive

This chapter describes how to replace a faulty hard disk drive in an Avaya Messaging Application Server (MAS) or an Avaya-provided supplementary tracing server.

Overview

An Avaya Messaging Application Server (MAS) or supplementary tracing server contains a single Integrated Drive Electronics (IDE) disk drive. If the drive fails, the server cannot function until you replace the drive and reinstall the operating system.

Avaya Modular Messaging systems support two types of Avaya-provided hardware:

- Avaya S3500-family message server—introduced in Release 3
- Avaya S3400-family message server—supports Release 3 software and previous releases of Modular Messaging software.

Note:

In this document, hardware for either Avaya S3500-family servers and Avaya S3400-family servers uses the term *Avaya S3x00-family message server*.

The procedures for replacing the disk drive in the MAS vary, depending on the hardware used.

Gathering the required tools

You must have the following tools on site to work on a Avaya S3x00-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.

Identifying the faulty server and removing AC power

Do the following for every hard disk drive repair:

1. Verify that the replacement equipment is on site and appears to be in usable condition, with no obvious shipping damage.
2. If the system has more than one MAS, identify the server with the faulty drive.
 - a. Switch the monitor to show each MAS or supplementary tracing server in turn. For more information, see [Accessing the correct server](#) on page 19.

Note:

You cannot display or log in to the server with the faulty drive.

- b. Verify that the green power lamp on the front of the server with the faulty disk drive is off. If the lamp is lit, press and hold the power button to turn off the server.

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.
4. Continue with the appropriate section, depending on the Avaya hardware used:
 - [Replacing an MAS drive in an S3500-family server](#) on page 8
 - [Replacing an MAS drive in an S3400-family server](#) on page 11

Replacing an MAS drive in an S3500-family server

Follow the procedures in this section to replace the IDE hard disk drive in an MAS that uses Avaya S3500-family server hardware. For more information about S3500-family servers, see *Avaya Modular Messaging S3500-Family Hardware Maintenance and Additions* ([PDF](#)).

Removing the IDE drive

To remove the faulty IDE hard disk drive in an S3500-family server:

1. *For a rack-mount setup*, slide the server forward on the rails. You must remove the server from the cabinet only if you cannot reach the IDE disk drive connectors inside the chassis.
2. Remove the top cover. Push the blue release buttons on the cover and slide the cover towards the back.

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.

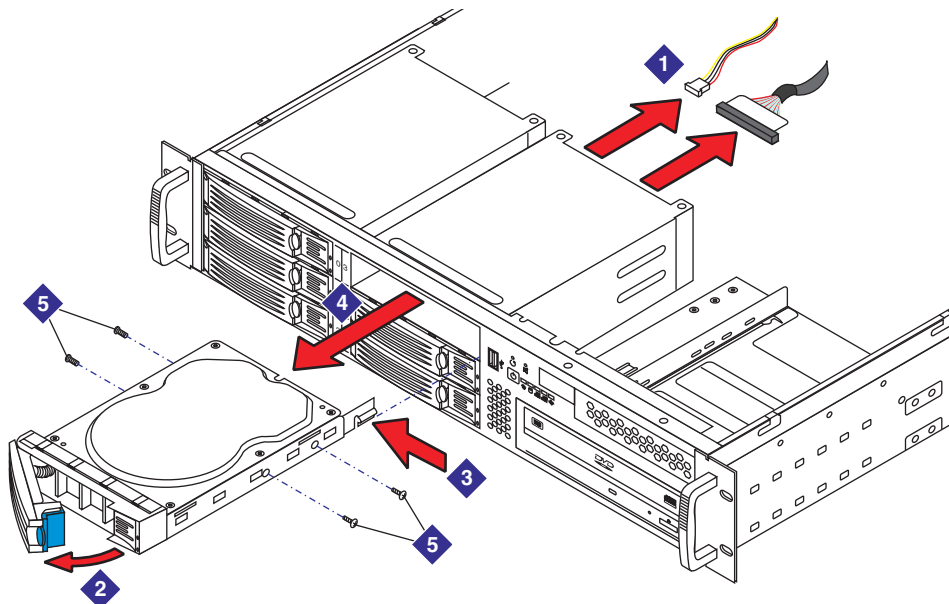
3. Unplug the power cable and IDE signal cable for the faulty IDE drive. See Item 1 in [Figure 1: Replacing an IDE hard disk drive in an S3500-family server](#) on page 9.

Note:

Pull on the tab to remove the 80-pin IDE cable connector.

4. To remove the IDE drive tray:
 - a. Press the front release latch for the disk drive bay. See Item 2 in [Figure 1](#).
 - b. Press the safety latch at the back of the drive tray to release the IDE disk drive. The latch prevents the IDE drive from being accidentally pulled out. See Item 3 in [Figure 1](#).
 - c. Holding the safety latch inwards, pull on the handle to remove the tray from the server.
5. Place the drive tray on a clean, static-free surface. Remove the 4 mounting screws, 2 on each side, that secure the IDE disk drive to the tray. See Item 5 in [Figure 1](#).
6. Lift out the faulty drive. Set the faulty drive aside.

Figure 1: Replacing an IDE hard disk drive in an S3500-family server



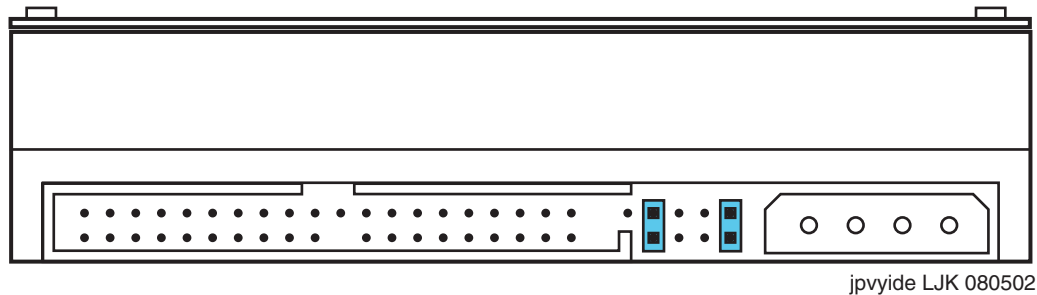
h3mmider LAO 121905

Setting IDE drive jumper settings

Configure the replacement IDE drive as the bus master. See [Figure 2](#).

1. Locate the 9-pin master/slave connector on the back of the drive.
2. 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.

Figure 2: Jumper settings for the IDE drive in an MAS or supplementary server



Note:

Always set the IDE drive to be the bus master as shown by the shaded jumpers.

Installing a new IDE drive

To install the replacement IDE disk drive:

1. Remove the new IDE drive from the anti-static bag. Do not touch the circuit board surface.
2. Place the replacement IDE drive into the drive tray. Replace the 4 mounting screws, 2 on each side, to secure the IDE disk drive to the tray. See Item 5 in [Figure 1: Replacing an IDE hard disk drive in an S3500-family server](#) on page 9.
3. Slide the IDE drive tray completely into the chassis until you hear a click. Push the front latch for the drive bay closed. See Item 2 in [Figure 1](#).
4. Connect the power cable and IDE signal cable for the IDE drive. See Item 1 in [Figure 1](#).
5. Replace the top cover.
6. *For a rack-mount setup*, slide the server into the cabinet.
7. Plug in the AC power cord to restore power to the server.
8. Continue with [Chapter 3: Reloading the MAS software](#) on page 19.

Replacing an MAS drive in an S3400-family server

Follow the procedures in this section 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* ([PDF](#))
- the **Maintenance** section on the *Avaya Modular Messaging Documentation* media

Removing the front bezel and top cover

You must 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:

Replacing the disk drive

- *Integrated video and LAN model:* See [Figure 3: S3400-family MAS drive cage cables—integrated video and LAN](#) on page 13.
- *Nonintegrated video and LAN model:* See [Figure 4: S3400-family MAS drive cage cables—nonintegrated video and LAN](#) on page 14.

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 5: Removing or replacing the S3400-family drive cage](#) on page 15.
 - 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 3: S3400-family MAS drive cage cables—integrated video and LAN

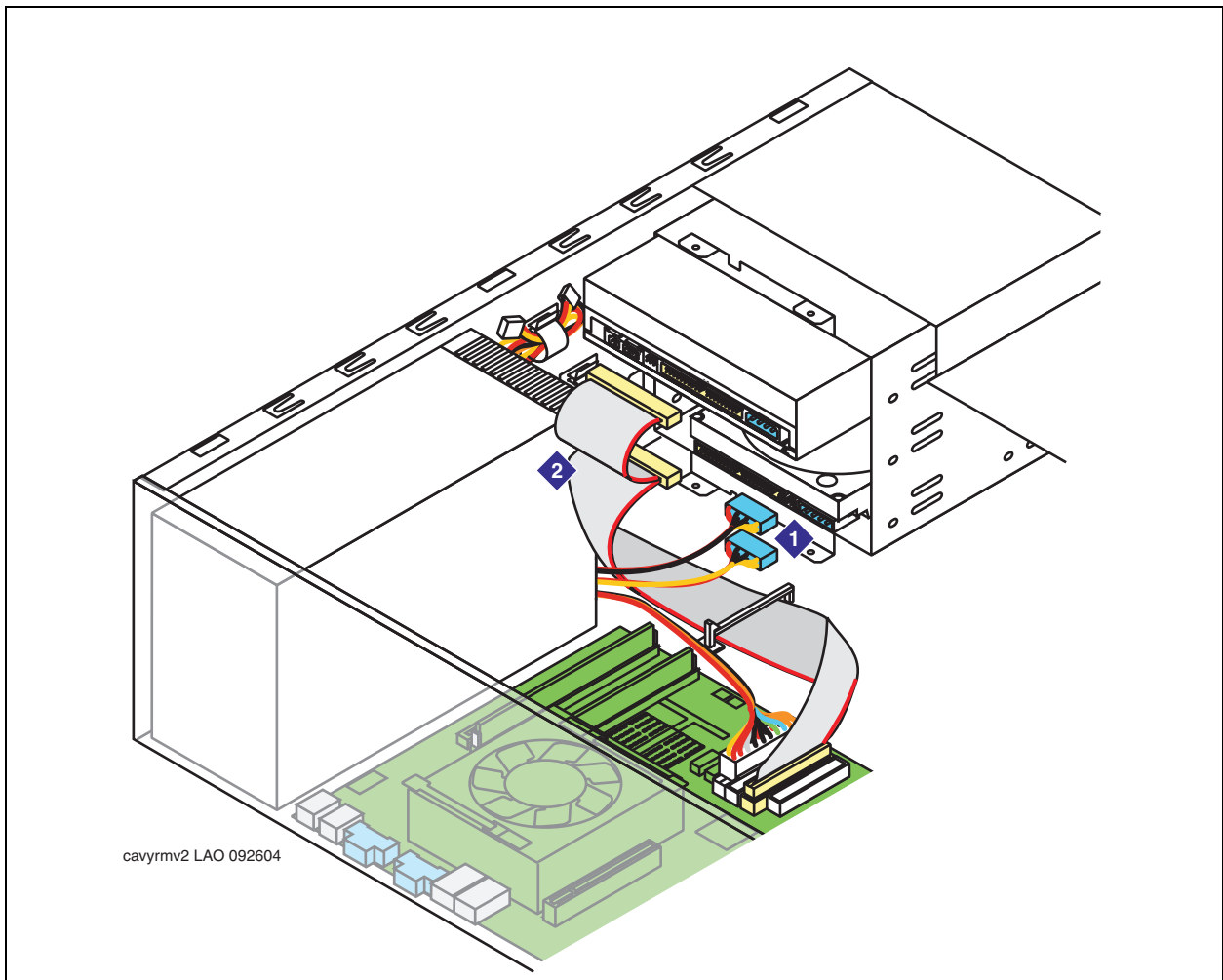


Figure notes:

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 4: S3400-family MAS drive cage cables—nonintegrated video and LAN

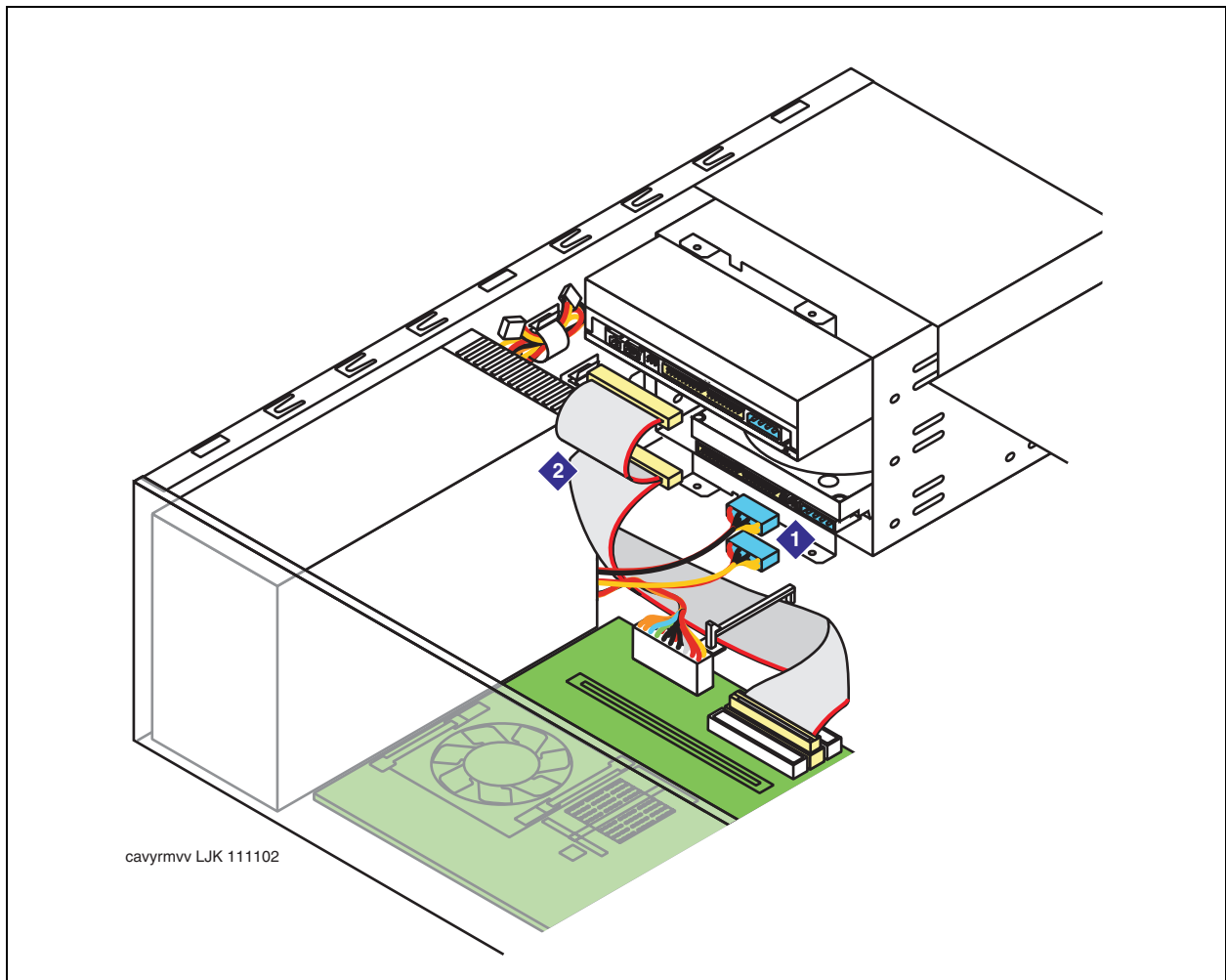
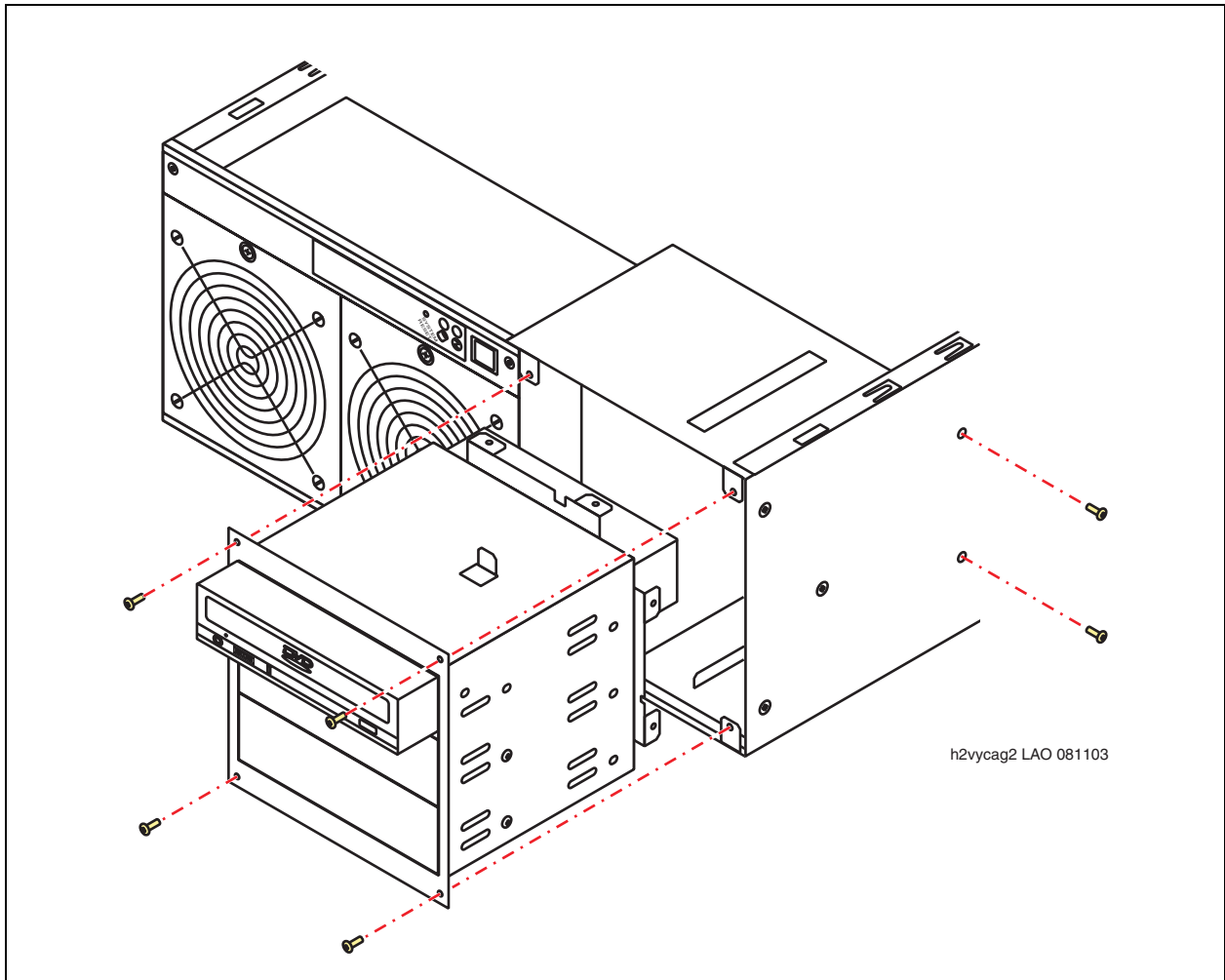


Figure notes:

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 5: 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 6: Removing or replacing an S3400-family IDE drive](#) on page 16.

Replacing the disk drive

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 7: IDE drive jumper settings](#) on page 17.
 - 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 6: Removing or replacing an S3400-family IDE drive

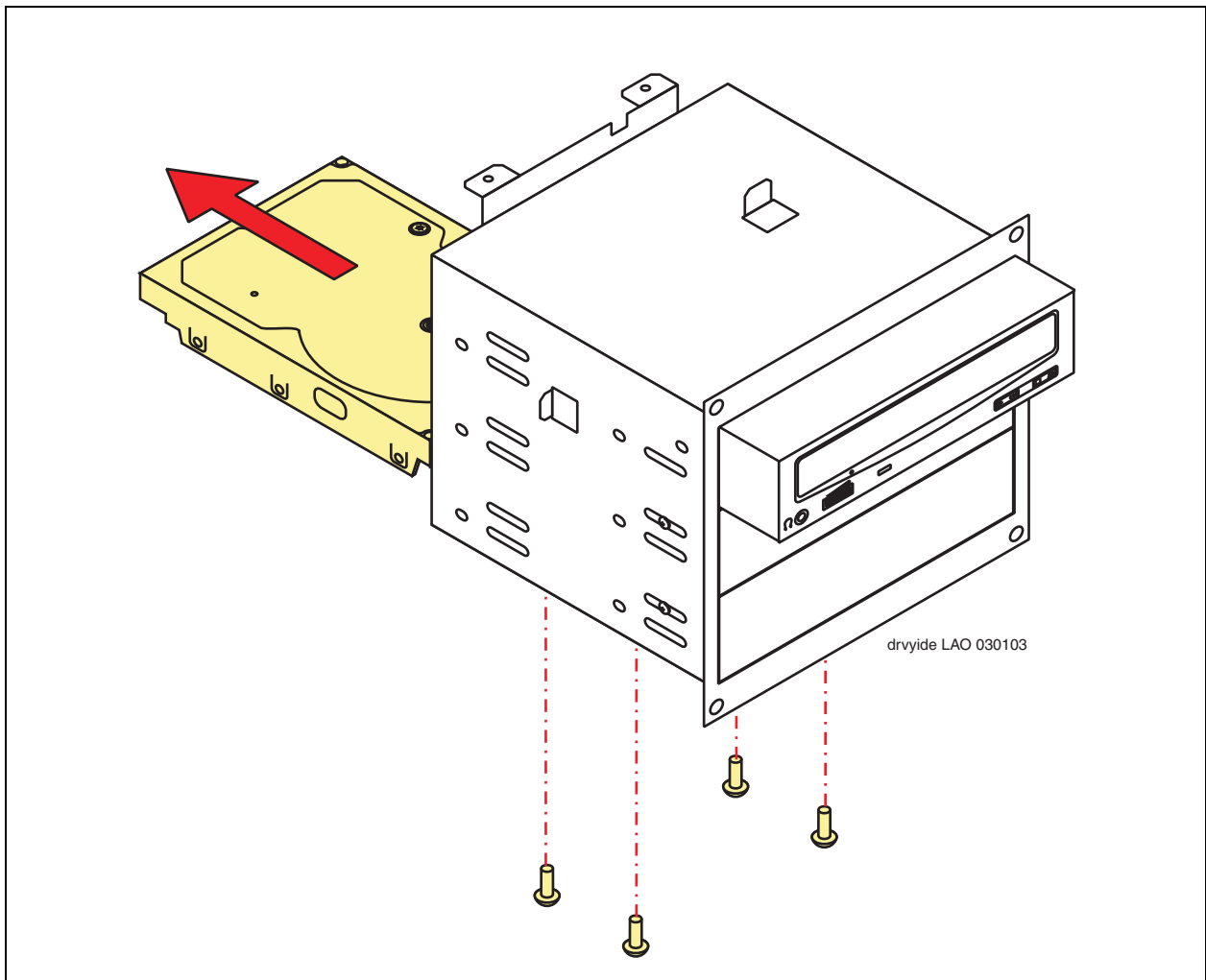
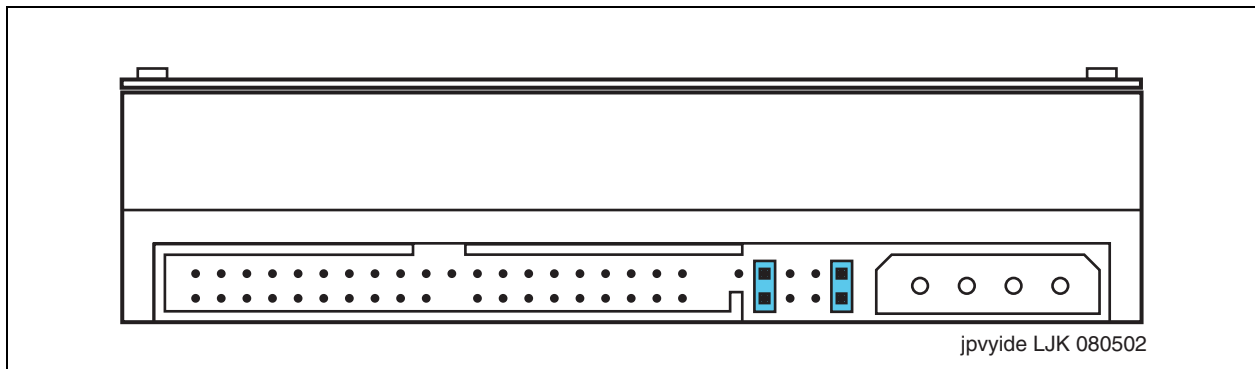


Figure 7: IDE drive jumper settings



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 3: S3400-family MAS drive cage cables—integrated video and LAN](#) on page 13.
 - *Nonintegrated video and LAN model:* See [Figure 4: S3400-family MAS drive cage cables—nonintegrated video and LAN](#) on page 14.

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.

Replacing the disk drive

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 5: Removing or replacing the S3400-family drive cage](#) on page 15.
 - 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. Continue with [Chapter 3: Reloading the MAS software](#) on page 19.

Chapter 3: Reloading the MAS software

This chapter describes how to reload the operating system and application software on an Avaya Messaging Application Server (MAS) or supplementary tracing server. Use this procedure to put the required software on the replacement hard disk in the server.

To do this procedure, you need the following media:

- *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software with an Avaya MSS media*, used for the Messaging Application Server (MAS)— 3-DVD set
- *Avaya Modular Messaging Messaging Application Server Software media* for the Avaya Messaging Application Server (MAS)— 2-DVD set

Note:

If the server you must access is turned off, turn on the server now. Press the power button on the front of the server.

Accessing the correct server

Access the correct server, such as an Avaya Messaging Application Server (MAS) or the supplementary tracing server, if present. The Modular Messaging system might use a Belkin KVM switch or a customer-provided KVM switch.

- For a 2-port Belkin KVM switch, the MSS and MAS are each connected to one of the two computer ports. The 2-port Belkin KVM switch is available only for two-server systems.
- For an 8-port Belkin KVM switch, the MSS usually is connected to port **VGA 01** and the first MAS is connected to port **VGA 02**. Subsequent MASs and the supplementary tracing server, if present, are connected to computer ports **VGA 03**, **VGA 04**, and so on.

To access the appropriate server, switch the monitor display to show the correct server:

1. 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 **1** for port 1 to show the MSS.
 - Type **2** for port 2 to show MAS#1.

- Type **3** for port 3 to show a subsequent MAS or a supplementary tracing server.
- 2. 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.

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

Loading the new software

Copy the Release 3 software to the new hard disk as follows:

1. Insert Disk 1 of the *Avaya Modular Messaging Messaging Application Server (MAS) and Boot Software with an Avaya MSS* media into the DVD drive.

Wait for green LED on the drive to go out.

2. 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 disk 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.

3. When the system prompts you to insert the next disk:

- a. Open the DVD door and remove the current disk. Replace the DVD in its container.
- b. Insert the next DVD carefully between the clips. Close the DVD drive door.
- c. Wait for the DVD drive light to turn off.
- d. Click **OK**.

4. Repeat Step 3 for media Disk 3.

5. After the software is copied, the program prompts you to remove the media before the system reboots.

- a. Remove the DVD from the drive and close the drive door.
- b. Press any key to continue.

The system reboots, and runs a Windows Setup program.

6. If a modem is connected, a Hardware Installation window opens. Click **Yes** to continue the installation.

7. A Windows Setup wizard runs. To complete the wizard:
 - a. On the Welcome screen, click **Next**.
 - b. On the License Agreement screen, select **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. Record the product key in the planning forms for future reference.

- 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 3 upgrade, the Windows 2003 sticker ships loose 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.

8. 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**.

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 restart the MAS.

The Microsoft Windows activation procedure requires you to use either the Internet or a telephone. Use the most appropriate method for the customer site:

- [Activating Microsoft Windows through the Internet](#) on page 22
- [Activating Microsoft Windows using a telephone](#) on page 22

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 the Internet Explorer window, 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. If connectivity fails, you can set up or adjust the Internet connections. Complete the screen and click **Next** to continue.
6. On the Thank you screen, click **OK**.

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**.

Preparing the server to boot

Prepare to run the server configuration program:

1. Insert the USB storage device that contains the most current DCT data file for this system. You can use any of the available USB ports on the server.



CAUTION:

You must insert the USB storage device before the next server reboot, or the server might fail to recognize the USB storage device. Servers that use S3400-family hardware sometimes do not recognize the USB storage device.

2. As a precaution, copy the DCT data file to the server:
 - a. Open Windows Explorer.
 - b. Navigate to the USB storage device, **Removable Disk (E:)**.
 - c. Right-click the correct data file for this site, such as *sitefile.mmdct*. Select **Copy**.
 - d. Navigate to a directory on the server hard disk, such as C:\ or the desktop.

Note:

Ensure that you copy the most current DCT data file to the server.

- e. Right-click in a blank area in the right pane, and select **Paste**.
 - f. Verify that the correct DCT file is copied to the server. You can retrieve the data file from this location if the server fails to recognize the USB storage device after the reboot.
3. Update the Modular Messaging Data Collection Tool with the latest version. For more information, see [Collecting the required software](#) on page 3.
 - a. Copy the MMDCTDistribute.exe self-extracting zip file from your USB storage device to the server, such as the C:\Avaya_Support directory.
 - b. Double-click the executable file **MMDCTDistribute.exe** and then click **Unzip**.
The new DCT program replaces the MMDCT.exe file in C:\Program Files\Avaya Modular Messaging\Install\MISCM directory.
 4. To complete the software reload, double-click the **MM_Setup** icon on the desktop.
An MM_Setup window opens.

Reloading the MAS software

- a. When the system prompts you, press any key to continue.

The program reports that Modular Messaging configuration program will run after the server reboots.

- b. Press any key to continue.

The computer stores the information and shuts down.

5. Continue restoring the system in [Chapter 4: Restoring an MAS](#) on page 25.

Chapter 4: Restoring an MAS

This chapter describes how to restore an Avaya Messaging Application Server (MAS) or an Avaya-provided supplementary tracing server.

Note:

Do the procedures in this chapter after you have replaced the faulty disk drive and reloaded the software. For these tasks, see [Chapter 2: Replacing the disk drive](#) on page 7 and [Chapter 3: Reloading the MAS software](#) on page 19.

Topics in this chapter include:

- [Overview](#) on page 25
- [Restoring an Avaya MAS](#) on page 26
- [Completing an Avaya server restoration](#) on page 33

Overview

To successfully restore an Avaya MAS or an Avaya-provided supplementary tracing server, you need:

- An up-to-date and complete copy of all the planning forms.
- The most current copy of the most recent DCT data file.

 CAUTION:

You *must* use the DCT data file that the remote support organization provides. For more information, see [Collecting the required software](#) on page 3.

- The checklist from [Appendix A: MAS disk failure recovery checklist](#) on page 59. Check off steps as you complete them to track your progress.
- The software and documentation listed in [Obtaining the required documentation](#) on page 5.

Restoring an Avaya MAS

To restore an Avaya Messaging Application Server (MAS) or an Avaya-provided supplementary tracing server, follow the general procedure for configuring a new Avaya server.

- For more information about specific tasks, see Chapter 4, "Configuring the Avaya MAS," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).
- For a checklist of required tasks, use the [Appendix A: MAS disk failure recovery checklist](#) on page 59.

Note:

Some tasks in this section are unique to a hard disk recovery. Other tasks are relevant only to MAS#1. Unique tasks are marked clearly in the task list.

Restoring an Avaya server—summary of tasks

This section summarizes the overall procedure, and describes exceptions to the process as documented in the installation guide.

Doing tasks from the installation guide

For the following tasks, use Chapter 4, "Configuring the Avaya MAS," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).

1. After the server boots, the Avaya Modular Messaging Configuration wizard runs automatically. Use the DCT data file for this server from the remote support group.



CAUTION:

You *must* use the DCT data file that the remote support organization provides. For more information, see [Collecting the required software](#) on page 3.

The server automatically reboots and logs in several times during this process.

2. After the Avaya Modular Messaging Wizard completes, prepare the server as follows:
 - a. Install and administer anti-virus software
 - b. Install the latest Avaya-approved updates for Microsoft Windows, including operating system updates, security patches, and hotfixes.
 - c. Change the label of the **My Computer** desktop icon to the name of this server.



CAUTION:

If this server uses S3400-family hardware, the hardware device names are different from those listed in Chapter 4 of the installation guide. To set up the LAN connections on a server that uses S3400-family hardware, see [Changing LAN names and bindings—S3400-family hardware only](#) on page 27.

- d. Rename the corporate and private LAN connections so they are easier to identify.
- e. Edit the preprogrammed RAS IP addresses to use the correct addresses that the technical support organization requires for remote access.
3. If this MAS does *not* use one of the automatic-configuration switch integrations, manually configure the Dialogic port boards.
4. Configure the Voice Mail System Configuration (VMSC) parameters for this server. Modify the procedures in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)) as follows:
 - a. Most domain-wide features are already configured for a restored server.
 1. Always complete the first task in this section. Specify your preferred language and verify that Modular Messaging service is started.
 - b. Configure specific features required for this server, as specified in the planning forms and DCT data file. Configure only the Modular Messaging services required on this server.
 - c. Configure specific features for this MAS, such as INADS alarming, port boards, and switch integration.
 1. In the Voice Mail System Configuration window, expand **Message Application Servers**. Expand the entry for the restored server.
 2. Update the values as needed, using the planning forms and the current configuration notes for this PBX integration.
5. Continue with [Doing tasks unique to disk-failure recovery](#) on page 28.

Changing LAN names and bindings—S3400-family hardware only

To set up the corporate and private LAN connections on a server that uses S3400-family hardware:

1. Click **Start > Settings > Network Connections**.
The Network Connections window opens. Two connections are present: **Local Area Connection** and **Local Area Connection 2**.
2. Identify and rename the corporate and private LANs on this server:
 - a. Identify the corporate LAN:
 - *Integrated video and LAN model:* The **Device Name** is **Intel(R) PRO/1000 CT Network Connection**. This interface is usually **Local Area Connection**.
 - *Nonintegrated video and LAN model:* The **Device Name** is **Intel(R) PRO/100 VE Network Connection**. This interface is usually **Local Area Connection2**.

Rename this item as follows:

1. Right-click the text **Local Area Connection** or **Local Area Connection2** and select **Rename**.
2. Change the name to **Corporate LAN**.

b. Identify the private LAN:

- *Integrated video and LAN model:* The device is **Intel(R) PRO100 M Network Connection**. This interface is usually **Local Area Connection2**.
- *Nonintegrated video and LAN model:* The device is **Intel(R) PRO/100+ PCI Adapter**. This interface is usually **Local Area Connection**.

Rename this item as follows:

1. Right-click the text **Local Area Connection** or **Local Area Connection2** and select **Rename**.
2. Change the name to **Private LAN**.
3. Specify the search order for the two LANs:
 - a. From the toolbar, click **Advanced > Advanced Settings**.
 - b. In the Advanced Settings window, on the **Adapters and Bindings** tab, verify that the **Private LAN** is listed first in the **Connections** box.

If the private LAN is *not* the first entry, select **Private LAN**. Use the up or down arrow keys to move this item to the first position.
 - c. Click **OK**.
4. Close this window.
5. Return to Step 2-e in [Doing tasks from the installation guide](#) on page 26.

Doing tasks unique to disk-failure recovery

The following tasks are unique to restoring a server after a hard disk failure. Do these tasks in the VMSC before you restart messaging service:

1. Update the access permissions for the restored server.
 - a. In the Voice Mail System Configuration window, expand **Security**.
 - b. Double-click **System Administration**.
 - c. Add the local service account for the restored server.
 1. In the Permissions for System Administration window, click **Add**.
 2. In the Select Users, Computers, or Groups window, click **Object Types**.
 3. In the Object Types window, select **Computers** so the box is checked. Click **OK**.
 4. In the Select Users, Computers, or Groups window, type the first letter of the server name in the **Enter the object names to select** box. For example, type **m** for *mymas2*. Click **Check Names**.

5. In the Multiple Names Found window, double-click the server name.
The **Logon Name** field shows the local account for this server in the form *MASNAME\$(privdom1\masname\$)*, such as *MYMAS2\$(PRIVDOM1\MYMAS#2\$)*.
6. Verify that the local server name is listed underlined in the list box. Click **OK**.
- d. *If you restored MAS#1*, add the appropriate Modular Messaging logon accounts. See [Table 23: MAS logon accounts form](#) in the planning forms.

**CAUTION:**

For a multiple-MAS system, wait to do this task until after you complete the restoration of all other servers in the VMD. The other computer accounts will not be present until the other servers join the new voice mail domain on MAS#1.

In an MSS configuration, the Microsoft Windows **Domain Admins** account includes the other logon accounts. To add the **Domain Admins** account:

1. In the Permissions for System Administration window, click **Add**.
2. In the Select Users, Computers, or Groups window, type the first letter of the account to add in the **Enter the object names to select** box. For example, type **d** for **Domain Admins**. Click **Check Names**.
3. In the Multiple Names Found window, double-click the correct account.
4. Verify that the account is listed underlined in the list box. Click **OK**.
5. *Optional:* Repeat this task to add other logon accounts, if required.
- e. For each restored server, complete the Permissions for System Administration:
 1. Select each **Account Unknown** entry, if present. Click **Remove**.
 2. Select the **Everyone** account. Click **Remove**.
 3. Click **OK** to close the Permissions for System Administration window.
- f. *If you restored MAS#1*, double-click **Subscriber Administration**.
In the Permissions for Subscriber Administration window:
 1. Add the local account for the restored server, as you did in Step 1-c.
 2. Add the same Modular Messaging logon accounts as you did in Step 1-d.
 3. Select each **Account Unknown** entry. Click **Remove**.
 4. Select the **Everyone** account. Click **Remove**.
 5. Click **OK** to close the Permissions for Subscriber Administration window.
2. Set up the TTS sessions for the restored MAS. This task is required only for an MAS that handles calls.
 - a. In the Voice Mail System Configuration window, double-click **Licensing**.
 - b. Click the **Text-to-Speech** tab. Each MAS in the voice mail domain is listed.

Restoring an MAS

1. For the restored MAS, double-click the TTS engine to set up, such as **Text to speech**, **ScanSoft RealSpeak**, **Any Language**.
2. In the Edit Sessions window, enter the number of TTS sessions required for this MAS. For an MSS-type server, enter 2 sessions for each MAS that handles calls.
3. Repeat Step b for each licensed TTS engine.
- c. Click **OK** to close the Licensing - Voice Mail Domain window.
3. Update the Offline Access feature, as appropriate for the server you restored:
 - If you restored a subsequent server in a multiple-MAS system:
 - a. Create the offline message store, if the folder was on this server. To create the shared offline folder and assign the correct access permissions, see [Creating the offline message share, if required on this server](#) on page 50.
 - b. Resynchronize all the offline message stores with the specified share:
 1. Click **Start > Run** to open the Run window.
 2. In the **Open** field, type the following in quotes, and press **Enter**:
"C:\Program Files\Avaya Modular Messaging\VServer\OfflineMsgSync.exe /FULL"
 - If you restored MAS#1 in a multiple-MAS system:

Disable the Offline Access feature until after all the servers are updated. You cannot correctly set up the offline store until all servers in the system are functional.
 - c. In the Voice Mail System Configuration window, double-click **Messaging**.
 - d. In the Messaging - Voice Mail Domain window, click the **Offline Access** tab.
 - e. Clear the checkbox to **Enable offline access to messages**. Click **OK**.

Note:

For more information on creating the offline message store, see [Creating and updating the offline message store](#) on page 50.

Completing tasks from the installation guide

For more information about following tasks, see Chapter 4, "Configuring the Avaya MAS," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).

1. Restart messaging 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**.



CAUTION:

Do not use the **Restart** option. Always stop, and then start service, as described.

- b. After service stops, right-click **MM Messaging Application Server** and select **Start**.

- c. Track the startup progress under **Event Viewer (Local) > Application**. Refresh the window display periodically until you see **Telephony User Interface** event 1241, **TUI service has been enabled**.
2. Verify that the correct messaging services required for this server are started:
 - a. In the Monitor window, click **Services (Local)** in the left pane.
 - b. In the right pane, scroll down to the list of Modular Messaging services that start with the abbreviation **MM**. Verify that the **Status** column shows the correct state for each service.
 - Services that are required for this server must show **Started** and a startup type of **Automatic**. Verify this list against the planning forms.
 - Services that are *not* required on this server must show a blank status and a startup type of **Disabled**. For more information, see [Table 2](#).

Table 2: 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
MM Alarming Server MM Event Monitor Server 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 Mailbox Monitor ² MM MWI ² MM Fax Sender ³ MM Tracing Server	Enable this set of services <i>only once</i> in each voice mail domain, either on an MAS or on the supplementary tracing server

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 service currently is unavailable for IP H.323 and IP SIP integrations.

- 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**. Click **OK**.
 3. 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. Run the **C:\Avaya_Support\Scripts\serverrecovery.vbs** script to set up all **MM** services correctly.
2. Refresh the screen to verify that all **MM** services required for this server are **Started** and set to **Automatic**. If any required services are not set up correctly, repeat Step d.
3. *For a multiple-MAS system*, after you complete configuration for this server, reboot all servers in the VMD. A reboot ensures that the voice mail domain-wide properties are consistent across the VMD, and that offline access parameters are set on all servers.
4. Verify basic operation of the server, as appropriate for this server. Tasks include verifying call-handling, alarming, and Tracing System operation.

Note:

For a multiple-MAS system, you can wait to test alarming until after all servers in the VMD are restored.

5. Synchronize the time on the MSS and MAS servers:
 - a. Click **Start > Run** to open a Command prompt window.
 - b. In the Run window **Open** field, type the following and press **Enter**:

C:\Avaya_Support\cmd\time.bat

The clocks on the message servers soon show the same time.

6. Install the Avaya Modular Messaging Subscriber Options package to facilitate remote subscriber support.
7. When all configuration is complete, reboot the server.
8. Continue with [Completing an Avaya server restoration](#) on page 33.

Completing an Avaya server restoration

Complete the MAS or supplementary server restoration, as described in this section.

Sending MAS host information

After you restore a server, you must send the updated MAS host information to all servers in the Modular Messaging system.

To send updated MAS host information to all Modular Messaging servers:

1. Switch the monitor to show the MSS. For more information, see [Accessing the correct server](#) on page 19.

2. At the login prompt, log in to the MSS as **craft** using the current password.

The server displays the Messaging Administration main menu.

3. Starting from the Messaging Administration main menu, click **Basic System Administration > TCP/IP Administration > MAS Host Information Send**.

The system displays the MAS Host Information Send page.

4. Click **Send**.

The MSS updates its internal information, and then sends the updated information to all MASs in the network. Verify that the information was updated successfully.

5. Click **Return to Main**.

Placing the MSS in the Windows domain—MAS#1 only

Do this task only if you restored MAS#1.

You must add the MSS to the Windows domain whenever you replace the operating system on MAS#1. The MSS must join the Windows domain for backup and restore procedures to work.

To add the MSS to the Windows domain:

1. From the Messaging Administration main menu, click **Basic System Administration > TCP/IP Administration > Windows Domain Setup**.

The system displays the Windows Domain Setup page.

2. Verify that all field entries on the Windows Domain Setup page look correct.

3. In the **Domain Controller Administrator Password** field, type the password for this account. See [Table 23: MAS logon accounts form](#) in the planning forms.

4. Click **Save**.

5. *If the password is incorrect*, you must re-enter the following information in each field:

- a. For **Private LAN NetBIOS Name**, type the MSS host name for the private network, which is *mss1*. See [Table 18: Private network settings for the Avaya MSS](#).
- b. For **NetBIOS Domain Name**, type the NetBIOS domain name for the private Windows network that was created on MAS#1, such as *privdom1*. See [Table 16: Corporate network planning form](#) in the planning forms.
- c. For **Fully Qualified Domain Controller Name**, type the full computer name for MAS#1 on the private network, such as *mymas1.privdom1.local*. See [Table 16: Corporate network planning form](#) in the planning forms.
- d. For **Domain Controller Administrator**, type the domain administrator account name, such as *dom-admin*. See [Table 23: MAS logon accounts form](#) in the planning forms.



CAUTION:

You must enter this exact account name and no other, or MAS backups will not work. You *must* use the same account to set up system backups on each MAS. For more information, see [Backing up the restored MAS](#) on page 55.

- e. For **Domain Controller Administrator Password**, type the password for this account.
 - f. After you correctly enter all values, click **Save** again.
6. After you see the verification message, click **Return to Main**.

Completing the server restoration

To complete restoring an Avaya server:

- For an MAS that handles calls, continue with [Chapter 5: Restoring data on the MAS](#) on page 35.
- For a supplementary tracing server, you do not need to restore any data. Continue with [Chapter 7: Doing acceptance tests and backing up the server](#) on page 55.

Chapter 5: Restoring data on the MAS

This chapter describes how to restore required software updates and customer data onto an Avaya Messaging Application Server (MAS) after a hard disk failure.

Topics described in this chapter include:

- [Restoring data on the restored server](#) on page 35
- [Continuing the restoration as required](#) on page 40

**Tip:**

On a multiple-MAS system, you can copy the required data from one of the functioning MASs, if the data is current and available. Information that might be present on another MAS includes:

- Caller Applications folders and files
- Customized prompt and tone files, if required at this site
- Avaya Service Pack updates, software patches, and hotfixes, if current

Restoring data on the restored server

After you reconfigure the repaired MAS, you must restore customer data and then install any required software updates. Tasks include:

- [Stopping all MM services](#) on page 35
- [Restoring backed-up MAS data](#) on page 36
- [Restoring Caller Applications](#) on page 38
- [Installing Avaya software updates, if needed](#) on page 39
- [Restarting messaging service](#) on page 39
- [Continuing the restoration as required](#) on page 40

Stopping all MM services

To stop all Modular Messaging services:

1. Run the StopMMServices script:

Restoring data on the MAS

- 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 Intel Dialogic services and some Windows services.

2. 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, if the item is not already selected.
 - c. If the Monitor window was already open, refresh the screen.
 - d. In the right pane, scroll down to the list of installed Modular Messaging services. These all start with the abbreviation **MM**.
 - e. Verify that the **Status** column is blank. If any service is *not* stopped, repeat this task.

Note:

After you run this script, the services stay stopped, even after a reboot. You must run the **serverrecovery.vbs** script to start all required services correctly.

Restoring backed-up MAS data

Restore the data on the repaired MAS from the most recent backup. Data includes any customized caller applications, prompts, and tone files.

To restore backed-up MAS data after a catastrophic disk failure:

1. Map to the backup drive for this MAS on the MSS:
 - a. On the desktop, right-click the **My Computer** icon and select **Map Network Drive**.

Note:

If you renamed the icon label, the computer icon shows the server name, such as *mymas1*.

- b. In the Map Network Drive window, in the **Folder** field, type **\\mss1\masbackup**.
 - c. Clear the **Reconnect at logon** checkbox.
 - d. Click **Connect using a different user name**.
 - e. In the Connect As window, for **User name**, enter the Windows domain name and the domain administrator account name in the format **domain\account name**. For example, type *privdom1\dom-admin*. See [Table 16: Corporate network planning form](#) and [Table 23: MAS logon accounts form](#) in the planning forms.

- f. Enter the password for this account. Click **OK**.
- g. In the Map Network Drive window, click **Finish**.

The system opens a window to the designated drive letter, such as Z:\.

2. Double-click the **Backup** icon on the desktop.
3. In the Backup Utility window, on the **Welcome** tab, click **Restore Wizard**.
4. On the Welcome screen for the Restore Wizard, click **Next**.
5. On the What to Restore screen, click **Browse**.
 - a. In the Open Backup File window, click **Browse**.
 - b. In the Select file to catalog window, under **Look in**, navigate to the mapped drive.
 - c. Double-click the backup file that contains the data you want to restore:
 - For MAS#1, the backup program generates two files on the MSS. You must restore each of these files to completely restore the server:
 - *MYMAS#1MASSingle.bkf* contains deployed Caller Applications data for the system, the *.uma files. Only MAS#1 generates this file.
 - *MYMAS#MASAll.bkf* contains tone files and custom prompts. Each MAS in the system generates its own MASAll.bkf file.
 - For a subsequent MAS, the backup program generates only the **MASAll.bkf** file.

Note:

This directory also contains copies of the *.mmdct data files. You do not need to restore the DCT data files, just the customized data for this server.

- d. In the Open Backup File window, click **OK**.
- The system returns to the What to Restore screen.
6. Verify that the system displays the full name of the MAS backup file in the right pane under **Media Location**. For example, Z:\MYMAS#MASAll.bkf.
 7. In the left pane under **Items to restore**, expand **File**.
 - a. Expand the correct entry for the daily backup of this MAS.
 - b. Expand C:.
 8. Select the specific directories and files to restore as follows:
 - a. Select the checkbox next to **Avaya_Support** so the box is checked. This directory includes the Tone_Files folder, which contains any custom tone files.
 - b. Select the checkbox next to **Program Files** so the box is checked.
 - c. Click **Next**.
 9. On the Completing the Restore Wizard screen, click **Advanced**.
 - a. On the Where to Restore screen, select **Original location**. Click **Next**.

Restoring data on the MAS

- b. On the How to Restore screen, select **Replace existing files**. Click **Next**.
- c. On the Advanced Restore Options screen, verify the following settings:
 1. Clear the checkboxes for **Restore security setting** and **Restore junction points, not the folders and file data they reference**.
 2. Leave **Preserve existing volume mount points** selected.
 3. Click **Next**.
10. On the Completing the Restore Wizard screen, review the restore information. Click **Finish**.
The Restore Progress window displays restore information.
11. If you are restoring MAS#1, repeat Steps 3 through 10 to restore the second backup file, if customized data is in both backup files.
12. When the data restoration is complete, close the Restore Progress window.
13. Close the Backup Utility window.
14. Close the mapped drive window, such as Z:\.



CAUTION:

You *must* disconnect the mapped drive, or automatic nightly backups might fail.

15. Disconnect the mapped drive:
 - a. On the desktop, right-click the **My Computer** icon and select **Disconnect Network Drive**.
 - b. In the Disconnect Network Drives window, under **Network Drives**, select **\\mss1\masbackup**. Click **OK**.

Restoring Caller Applications

To restore Caller Applications files and the folder structure on an MAS, run the Caller Applications restore script:

1. Click **Start > Run** to open a Command prompt window.
2. In the Run window **Open** field, type the following and press **Enter**:

C:\Avaya_Support\CMD\CARestore.bat

A command window opens. The script shuts down all Modular Messaging services, and copies the Caller Applications to the server. The script takes a few seconds to run. The system then deploys any previously deployed Caller Applications automatically.

**CAUTION:**

If needed, copy the Caller Application *.uma files to a different computer for editing. Use the Caller Applications Editor to make changes only to an inactive copy of the *.uma files. Do not edit any Caller Applications that are actively deployed, or the server will fail.

Installing Avaya software updates, if needed

The Modular Messaging software is the most current version available at the time of shipment. However, the software often must be updated after initial release to include the latest changes. The updates might be in the form of an Avaya Service Pack (SP) or a software patch (hotfix).

If the server requires a Modular Messaging software update:

1. Locate any relevant Avaya software update files that you downloaded from the Avaya Support Web site at <http://www.avaya.com/support>. For more information, see [Collecting the required software](#) on page 3.
2. If the Modular Messaging system requires a software update, do the update procedure now, before you do acceptance testing.
 - Ensure that you download and follow any instructions required to install the Service Pack or software patch.
 - For more information about this task, see Appendix G, "Updating Modular Messaging software," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).

Restarting messaging service

After you restore all data, you must restart the Modular Messaging services for this MAS.

1. To restart Modular Messaging services:
 - 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
The script takes a few seconds to run.
2. Verify that all Modular Messaging services required for this MAS are started:
 - a. Double-click the **Monitor** icon on the desktop.
 - b. Click **Services (Local)** in the left pane, if the item is not already selected.
 - c. If the Monitor window was already open, refresh the screen.

- d. In the right pane, scroll down to the list of Modular Messaging services. These 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**. See [Table 24: MAS features list](#) in the planning forms.
 - Services that are *not* required on this server must show a blank status and a startup type of **Disabled**. For more information, see [Table 2: When to enable Modular Messaging services in a VMD](#) on page 31.
- e. If the **Status** for any **MM** service that is required for this server is **Stopped** or blank, repeat Steps 1 and 2.
- f. Track the startup progress under **Event Viewer (Local) > Application**. Refresh the window display periodically until you see **Telephony User Interface** event 1241, **TUI service has been enabled**.
- g. Close the Monitor window.

Continuing the restoration as required

Continue restoring the Modular Messaging system as follows:

- If you restored MAS#1 in a Modular Messaging system that has multiple MASs, continue with [Chapter 6: Completing MAS#1 restoration in a multiple-MAS system](#) on page 41.
- If you restored *any other* server, or if you restored MAS#1 in a one-MAS system, continue with [Chapter 7: Doing acceptance tests and backing up the server](#) on page 55.

Chapter 6: Completing MAS#1 restoration in a multiple-MAS system

This chapter describes how to complete the restoration of the Modular Messaging system if MAS#1 suffered the hard disk failure. These procedures take about 1 hour for each subsequent MAS in the system.

**CAUTION:**

Do the tasks in this chapter *only* to complete the restoration of a multiple-MAS system, if MAS#1 had the hard disk failure.

For any other condition, continue with [Chapter 7: Doing acceptance tests and backing up the server](#) on page 55.

Topics described in this chapter include:

- [Restoring a multiple-MAS system](#) on page 41
- [Completing a multiple-MAS system restoration](#) on page 50

Restoring a multiple-MAS system

Do the tasks in this section *only* if you restored MAS#1 in a Modular Messaging system that has multiple MASs.

If you restored the first MAS in a multiple-MAS system, you *must* do the following additional tasks to return the system to full service. You *must* do these tasks on each subsequent MAS and supplementary server in the Modular Messaging system:

1. [Logging on to a subsequent server](#) on page 42
2. [Stopping all MM services](#) on page 43
3. [Unsharing the offline message store, if on this server](#) on page 44
4. [Adding the server to a workgroup](#) on page 44
5. [Joining the private Windows domain](#) on page 45
6. [Restarting messaging service](#) on page 46
7. [Resetting passwords and backing up subsequent MASs](#) on page 48
8. [Completing a multiple-MAS system restoration](#) on page 50

Because MAS#1 is the domain controller, the configuration program recreated the Windows domain when you restored the server. The new domain created globally unique identifiers (GUID) for each of the objects in the Active Directory. Although the names look the same, such as account names and the private Windows domain name, they are different to the system. You *must* replace them using the tasks described in this section. Otherwise, the system will not work.

Note:

This procedure assumes familiarity with navigating and using Windows Server interfaces, including the use of the command prompt and system registry.

Logging on to a subsequent server

Log on to the subsequent MAS or supplementary tracing server:

1. Switch the monitor to show the first working server in the system. For more information, see [Accessing the correct server](#) on page 19.



CAUTION:

It is crucial to verify the local administrator account names and passwords for each subsequent server. If you do *not* enter the correct local administrator logon name and password, you will lose the ability to logon to that server. You then must rebuild that server from scratch.

2. Log on to each subsequent server as the local administrator:
 - a. Click **Start** > **Log off current-account**, such as *custacct*.
 - b. On the Log Off Windows screen, click **Yes**.
 - c. Press **Ctrl+Alt+Del** to log back on.
 - d. In the Log On to Windows window, change the **User** name to the local administrator account logon name for this server, such as *mas2-admin*. See [Table 23: MAS logon accounts form](#) in the planning forms.
 - e. Enter the correct password for this account.
 - f. Click **Options**.
 - g. Expand the **Log on to** drop-down list and select the host name for this server, such as *mymas2*. See [Table 16: Corporate network planning form](#) or [Table 17: Corporate network planning form—additional MASs](#) in the planning forms.

Note:

You must log on to the local computer, *not* the Windows domain.

- h. Press **Enter** or click **OK**.

3. Continue as follows:
 - If you successfully logged on, continue with [Stopping all MM services](#) on page 43.
 - If the logon fails, continue with Step 4.
4. *If you cannot log on to a subsequent server as the local administrator, you must give it a new, good account name and password now:*
 - a. In the Log On to Windows window, change the **User** name to the customer account name, such as *custacct*. See [Table 23: MAS logon accounts form](#) in the planning forms.
 - b. Enter the correct password for this account.
 - c. Press **Enter** or click **OK**.
5. Change the password for the local account:
 - a. Right-click **My Computer** and select **Manage**.
 - b. In the Computer Management window, in the left pane under **System Tools**, expand **Local Users and Groups**. Select **Users**.
 - c. In the right pane, identify the local administrator account. The correct account has the description **Built-in account for administering the computer/domain**.

Note:

If needed, rename this account to match the planning forms, or update the forms to show the correct account name. See [Table 23: MAS logon accounts form](#) in the planning forms.

 - d. Right-click the administrator account and select **Set Password**.
 - e. In the Reset Password window, enter and confirm the password.
 - f. Click **OK**.
6. Return to Step 2, and log on as the local administrator for this server.

Stopping all MM services

Stop all Modular Messaging services.

1. Run the StopMMServices script:
 - 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 Intel Dialogic services and some Windows services.

2. 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, if the item is not already selected.
 - c. If the Monitor window was already open, refresh the screen.
 - d. In the right pane, scroll down to the list of installed Modular Messaging services. These all start with the abbreviation **MM**.
 - e. Verify that the **Status** column is blank and that the services are set to **Manual**. If any service is *not* stopped or correctly set, repeat this task.

Note:

After you run this script, the services stay stopped, even after a reboot. You must run the **serverrecovery.vbs** script to start all required services correctly.

Unsharing the offline message store, if on this server

Do this task only if the offline message store is located on this server.

To locate the offline share, see [Table 15: Modular Messaging system planning form](#) in the planning forms. If the shared folder for offline access is on this server, break the share:

1. Using Windows Explorer, locate the shared folder for offline access to messages on this server. For example, *OfflineStore* on the C: drive.
2. Right-click the folder name and select **Sharing**.
3. In the Properties window, on the **Sharing** tab, select **Do not share this folder**.
4. Click **OK**.

Adding the server to a workgroup

Make this server a member of a workgroup *before* you join the new Windows domain on MAS#1. This procedure takes about 15 minutes.

1. To make this server a member of a workgroup:
 - a. Right-click **My Computer** and select **Properties**.

Note:

If you renamed the icon label, the computer icon shows the server name, such as *mymas2*.

- b. In the System Properties window, click the **Computer Name** tab.
 - c. Click **Change**.
 - d. In the Computer Name Changes window, verify the **Computer Name**.
 - e. Under **Member of**, click **Workgroup**.
 - f. Name the workgroup *WORKGROUP*. Click **OK**.
 - g. A message states that the computer was disjoined from the domain, but the computer account could not be disabled. The message is normal. Click **OK**.
 - h. If the system displays a confirmation or welcome message, click **OK**.
 - i. If the system displays a message stating that you must reboot this computer for changes to take effect, click **OK**.
 - j. Click **OK** to close all open windows.
2. Reboot the server using any method you like.
 3. Log back on as the local administrator for this server. Use the *same* account you used for Step 2 in [Logging on to a subsequent server](#) on page 42.

Joining the private Windows domain

To have this server join the new Windows domain on the restored MAS#1:

1. Right-click **My Computer** and select **Properties**.
 - a. In the System Properties window, click the **Computer Name** tab.
 - b. Click **Change**.
2. In the Computer Name Changes window, under **Member of**, click **Domain**.
 - a. Enter the name of the private Windows domain, such as *privdom1*. See [Table 16: Corporate network planning form](#) in the planning forms.
 - b. Click **OK**.
 - c. In the Domain Username And Password window:
 1. Enter the name of the Modular Messaging customer account in the format **domain\account name**, such as *privdom1\custacct*. See [Table 23: MAS logon accounts form](#) in the planning forms.
 2. Enter the password for this account.
 3. Click **OK**.

The server might take several minutes to join the domain.
 - d. A Network Identification box welcomes you to the domain. Click **OK**.
 - e. When the system prompts you to reboot, click **OK**.

- f. Click **OK** to close the System Properties window.
3. When the system prompts you to restart the server, click **Yes**.
4. When the reboot completes, press **Ctrl+Alt+Del** to log on.
 - a. In the Log On to Windows window, click **Options**.
 - b. Expand the **Log on to** drop-down list and select the Windows domain, such as *privdom1*.

Note:

It might take a few minutes for the personal settings to load.

- c. Change the **User** name to the Modular Messaging customer account, such as *custacct*. See [Table 23: MAS logon accounts form](#) in the planning forms.
- d. Enter the password for this account.
- e. Click **OK**.

Restarting messaging service

Restart messaging service. Verify that the Modular Messaging services start up correctly and appear to work.

1. Restart messaging service:
 - a. Double-click the **Monitor** icon on the desktop.
 - b. Click the **Services (Local)** item in the left pane, if the item is not already selected.
 - c. In the right pane of the Monitor window, scroll down to **MM Messaging Application Server**. Right-click it and select **Stop**.



CAUTION:

Do not use the **Restart** option. Always stop, and then start service, as described.

- d. After the **Status** column shows that service is stopped, right-click **MM Messaging Application Server** again and select **Start**.
- e. Track the startup progress under **Event Viewer (Local) > Application**. Refresh the window display periodically until you see **Telephony User Interface** event 1241, **TUI service has been enabled**.
2. For an MAS, verify that you can dial in:
 - a. Display the port monitor to ensure that the test call actually comes in on this MAS. For more information, see Chapter 6, "Doing acceptance tests," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).
 - b. From a telephone on the system, dial the message retrieval number for the S3x00-family server system.
 - c. Enter the password for this mailbox and press the pound key (#).

- d. The system voices the name of the subscriber.
- e. Hang up.

**CAUTION:**

All **MM** services that are *not* required for this server must be set to **Disabled** before you do Step 3. Serious problems occur if you activate a service that is supposed to run on only one server in the VMD on multiple servers. For more information, see [Completing tasks from the installation guide](#) on page 30.

3. Restart the Modular Messaging services:
 - 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
4. Verify that only the correct Modular Messaging services required for this server are started:
 - a. Return to the Monitor window. Refresh the screen.
 - b. In the right pane, scroll down to the list of Modular Messaging services. These 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**. See [Table 24: MAS features list](#) in the planning forms.
 - Services that are *not* required on this server must show a blank status and a startup type of **Disabled**. For more information, see [Table 2: When to enable Modular Messaging services in a VMD](#) on page 31.
 - c. If the **Status** for any **MM** service that is required for this server is **Stopped** or blank:
 1. Repeat Steps 3 and 4.
 2. Refresh the screen to verify that all **MM** services required for this server are **Started** and set to **Automatic**.
 - d. Track the startup progress under **Event Viewer (Local) > Application**. Refresh the window display periodically until you see **Telephony User Interface** event 1241, **TUI service has been enabled**.

Verifying that the server is operational

Verify that the subsequent server can operate without errors:

1. Synchronize the time on the MSS and MAS servers:
 - a. Click **Start > Run** to open a Command prompt window.

- b. In the Run window **Open** field, type the following and press **Enter**:
C:\Avaya_Support\cmd\time.bat
The clocks on the message servers soon show the same time.
2. Verify that this server can communicate with MAS#1:
 - a. Return to the Monitor window.
 - b. In the left pane, expand **Event Viewer (Local)**, and then click **Application**.
 - c. Check the window display for Windows NT Event 1000 errors or login failures. Attempt to correct the problem, if one is indicated.
 - d. If no serious errors exist, close this window.

Resetting passwords and backing up subsequent MASs

After you restore MAS#1, you *must* reenter the domain-administrator account and password for each subsequent server in the system. Otherwise, their scheduled backups will not run.

To reset the password and schedule backups on each subsequent MAS:

1. Log on to each subsequent MAS as the local administrator:
 - a. Click **Start > Log off current-account**, such as *custacct*.
 - b. In the Log Off Windows window, click **Yes**.
 - c. Press **Ctrl+Alt+Del** to log back on.
 - d. In the Log On to Windows window, change the **User** name to the local administrator account logon name for this MAS, such as *mas2-admin*. See [Table 23: MAS logon accounts form](#) in the planning forms.
 - e. Enter the correct password for this account.
 - f. Click **Options**.
 - g. Expand the **Log on to** drop-down list and select the host name for this MAS, such as *mymas2*. See [Table 16: Corporate network planning form](#) or [Table 17: Corporate network planning form—additional MASs](#) in the planning forms.

Note:

You must log on to the local computer, *not* the Windows domain.

- h. Press **Enter** or click **OK**.
2. Double-click the **Scheduled Tasks** icon on the desktop.
3. In the Scheduled Tasks window, double-click the task **MAS Backup**.

- a. In the MAS Backup window, on the **Task** tab, verify that the account in the **Run as** field is the domain-administrator account for MAS#1.

The account name must be in the format **domain\account name**. Enter the Windows domain name, such as *privdom1*, and the domain administrator account name, such as *dom-admin*. Use the format **domain\account name**. For example, you might type *privdom1\dom-admin*. See [Table 16: Corporate network planning form](#) and [Table 23: MAS logon accounts form](#) in the planning forms. If the account is incorrect, type the correct value now.

- b. On the **Task** tab, click **Set Password**.
 - c. In the Set Password window, enter and confirm the password for the domain-administrator account. Click **OK**.
 - d. Click **OK** to close the MAS Backup window.
4. Run an attended backup on this MAS. Right-click the task named **MAS Backup** and select **Run**.

The system immediately starts to back up the data on this MAS to the MSS. The backup status windows close and the **Status** column goes blank when the backup is complete.

5. Close the Scheduled Tasks window.
6. Close all open windows.

Completing a multiple-MAS system restoration

To complete restoring a multiple-MAS system:

- If the system has additional MASs or a supplementary tracing server, repeat the tasks in this chapter to update them. Return to [Restoring a multiple-MAS system](#) on page 41.
- If each subsequent server in the system is now updated, continue with [Creating and updating the offline message store](#) on page 50.

Creating and updating the offline message store

Do this task only after you update all the MASs in this system.

Reconfigure the Offline Access feature for the system.

Creating the offline message share, if required on this server

*Do this task **only** on the server that is to host the offline message store.*

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 server, 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. Using Windows Explorer, create a new folder on this server. For example, create *OfflineStore* on the C: drive. For the correct folder name and location, see [Table 15: Modular Messaging system planning form](#) in the planning forms.
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**, such as *OfflineStore*.
 - c. Click **Permissions**.
1. In the Permissions window, add the appropriate Modular Messaging logon accounts. See [Table 23: MAS logon accounts form](#) in the planning forms.

In an MSS configuration, the Microsoft Windows **Domain Admins** account includes the other logon accounts. To add the **Domain Admins** account:

 - In the Permissions window, click **Add**.

- In the Select Users, Computers, or Groups window, type the first letter of the account to add in the **Enter the object names to select** box. For example, type **d** for **Domain Admins**. Click **Check Names**.
 - In the Multiple Names Found window, double-click the correct account.
 - Verify that the account is listed underlined in the list box. Click **OK**.
 - *Optional:* Repeat this task to add other logon accounts, if required.
2. Add the local service account for each MAS in the Modular Messaging system that handles calls. Only servers that handle calls must access the offline share folder.
 - In the Permissions window, click **Add**.
 - In the Select Users, Computers, or Groups window, click **Object Types**.
 - In the Object Types window, select **Computers** so the box is checked. Click **OK**.
 - In the Select Users, Computers, or Groups window, type the first letter of the server name in the **Enter the object names to select** box. For example, type **m** for **mymas2**. Click **Check Names**.
 - In the Multiple Names Found window, double-click the server name.
The **Logon Name** field shows the local account for this server in the form *MASNAME\$(privdom1\masname\$)*, such as *MYMAS2\$(PRIVDOM1\MYMAS#2\$)*.
 - Verify that the local server name is listed underlined in the list box. Click **OK**.
 - Repeat this procedure to add the local service account for each MAS that handles calls.
-  **CAUTION:**
- The MAS must have joined the Windows domain before the system can add the local account for that server. You never need to add the local account for the supplementary tracing server. Even if the supplementary tracing server hosts the offline store, the server handles no messages and does not require access.
3. Give the correct share permissions to the accounts. In the Permissions window:
 - Select each account in turn.
 - In the **Permissions** box, under **Allow**, select the permissions **Change** and **Read**, so the boxes are checked.
 - Repeat this task for each logon account and each MAS local service account.
 4. Select the **Everyone** account. Click **Remove**.
 5. Click **OK** to close the Permissions window.
4. In the Properties window, click the **Security** tab.
 - a. Click **Add**.
 - b. Add the same Modular Messaging logon accounts, as you did in Step 3.
 - c. Add the local service account for each MAS in the system, as you did in Step 3.

Completing MAS#1 restoration in a multiple-MAS system

- d. 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**, select the following permissions so the boxes are checked:
 - Modify
 - Read & Execute
 - List Folder Contents
 - Read
 - Write
 3. Repeat this task for each logon account and each MAS local service account.
- e. Select the **Everyone** account. Click **Remove**.
- f. Select each **Account Unknown** entry. Click **Remove**.
5. Click **OK** to close the Properties window.
6. Reboot each MAS in the system for the offline access permissions to take effect.

Updating the offline message share

After all servers in the system are rebooted, re-enable the Offline Access feature:

1. Log on to any MAS.
2. Click **Start > Programs > Avaya Modular Messaging > Voice Mail System Configuration** to open the VMSC window.
 - a. In the VMSC window, double-click **Messaging**, and then click the **Offline Access** tab.
 - b. Click the checkbox to **Enable offline access to messages**.
 - c. Click the checkbox to **Synchronize offline messages with remote store**.
 - d. Click **Browse** to select the shared folder for the offline message store. The name *must* use the format **\\locationname\sharename**, such as **\\mymas2\OfflineStore**. See [Table 15: Modular Messaging system planning form](#) in the planning forms.
 - e. Click **OK** to close this window.
3. Resynchronize all the offline message stores with the specified share:
 - a. Click **Start > Run** to open the Run window.
 - b. In the **Open** field, type the following in quotes, and press **Enter**:
"C:\Program Files\Avaya Modular Messaging\VServer\OfflineMsgSync.exe /FULL"

Adding all servers to the remote access group on MAS#1

*Do this task on MAS#1 **after** you update all other servers in this system.*

Add all the servers in the system to the remote access group on MAS#1:

1. Switch the monitor to show MAS#1.
2. Double-click the **Configure** icon on the desktop.
3. In the left pane of the Configure window:
 - a. Expand **Active Directory Users and Computers**.
 - b. Expand the directory for the Windows domain, such as *privdom1.local*. See [Table 16: Corporate network planning form](#) in the planning forms.
 - c. Click **Users**.
4. In the right pane of the Configure window, double-click **RAS and IAS Servers** to open the properties window.
5. In the RAS and IAS Servers Properties window, add all servers in the system to the remote access group. MAS#1 might already be present:
 - a. Click the **Members** tab.
 - b. Click **Add**.
 - c. In the Select Users, Contacts, Computers or Groups window, double-click the entry for the server to add, such as *MYMAS2*. Each server entry has a blue terminal icon.
 - d. Verify that the correct server name is shown underlined in the list box.
 - e. Repeat Steps c and d as needed to add all servers in the system to this list. See [Table 16: Corporate network planning form](#) and [Table 17: Corporate network planning form—additional MASs](#) in the planning forms.
 - f. Click **OK** to close this window.
6. After all servers in the Modular Messaging system are added, click **OK** to close the RAS and IAS Servers Properties window.
7. Close the Configure window.
8. Continue with [Chapter 7: Doing acceptance tests and backing up the server](#) on page 55.

Chapter 7: Doing acceptance tests and backing up the server

This chapter describes how to verify that the Modular Messaging system is fully operational after a hard disk failure. Use these procedures for any Avaya MAS or the supplementary tracing server. After you verify system operation, back up the data on the restored server.

Topics described in this chapter include:

- [Doing acceptance tests](#) on page 55
- [Backing up the restored MAS](#) on page 55
- [Completing the system restoration](#) on page 57

Doing acceptance tests

After restoring the data, verify that the system is working correctly. Do the acceptance tests that are appropriate for the server that you restored. For example:

- For an MAS, test that the server can send and receive calls.
- For all servers, including a supplementary tracing server, verify that the services installed on that server are working. For example, if Message Waiting Indication (MWI) or Tracing Service is installed on a server, verify that these services work.

For complete instructions about running acceptance tests, see Chapter 6, "Doing acceptance tests," in *Avaya Modular Messaging Installation and Upgrades* ([PDF](#)).

Backing up the restored MAS

Do this task on each restored MAS.

When you are satisfied that the restored MAS is running correctly, back up the data on the MAS that you just restored.

CAUTION:

The new backup overwrites the previous backup file. Ensure that the system is working correctly before you do this task.

As a precaution, label and file the latest DVD backup from the MSS. This backup contains a copy of the MAS backup file from before the restore procedure, so you can repeat the restoration if needed.

Note:

You do not back up a supplementary tracing server.

To back up the data on the restored MAS:

1. Switch the monitor to show the MAS you repaired.
2. Double-click the **Scheduled Tasks** icon on the desktop.
3. In the Scheduled Tasks window, run an attended backup on this MAS:
 - a. Right-click the backup task that is already set up. This task is named **MAS Backup** on most systems. Upgraded servers might have a customer-specified name for this task.
 - b. Select **Run**.

The system immediately starts to back up the data on this MAS to the MSS. The **Status** column shows **Running**. When the backup is complete, the **Status** column goes blank.

4. *Optional:* To verify the success of the backup:
 - a. Double-click the **Monitor** icon on the desktop.
 - b. In the left pane, expand **Event Viewer (Local)**, and then click **Application**.
 1. Refresh the window display periodically until you see the following events:
 - **ntbackup 8009, End Verify: The operation was successfully completed.**
 - **ntbackup 8019, End Operation: The operation was successfully completed.**

Note:

On MAS#1, the event viewer shows two sets of backup events because the backup program generates two files on the MSS: *MYMAS#1MASSingle.bkf* and *MYMAS#1MASAll.bkf*. Backups on subsequent MASs generate only the *MASAll.bkf* file for each MAS, so only one set of backup events is present.

- c. *If the backup fails to run*, verify the account settings:
 1. Double-click the task **MAS Backup** to view the properties window.
 2. In the MAS Backup window, click the **Task** tab. Verify that the account in the **Run as** field is the correct account that has permissions to run backups manually, such as *privdom1\dom-admin*. If the account is incorrect, type the correct value now. For more information, see [Placing the MSS in the Windows domain—MAS#1 only](#) on page 33.

3. If you change the account, or want to verify the password, click **Set password**. In the Set Password window, enter and confirm the password for the required account. See [Table 23: MAS logon accounts form](#) in the planning forms. Click **OK**.
4. Click **OK** to close the MAS Backup window.
5. In the Scheduled Tasks window, right-click the **MAS Backup** task and select **Run** to run the backup again. Verify that the backup completes successfully.
5. Close the Scheduled Tasks window.

Completing the system restoration

To complete the Modular Messaging system restoration:

1. Connect any disconnected modems to restore normal alarming for the Modular Messaging system. Verify that alarming works correctly for each server.
2. Reinstall any other software that was previously installed on this server. For example, an optional software application package such as Mailbox Manager might have been installed. To determine the optional applications to install on this server, see [Table 20: Client and software applications for this site](#) in the planning forms.

Doing acceptance tests and backing up the server

Appendix A: MAS disk failure recovery checklist

This appendix contains a checklist to help you return an Avaya Modular Messaging system to full service after a catastrophic hard disk failure. This checklist applies to a hard disk failure on an Avaya Messaging Application Server (MAS) or a supplementary tracing server.

- Before starting the disk failure recovery procedure, print the checklist.
- Check off the steps as you complete them to ensure that you do not overlook any important tasks.

MAS disk failure recovery checklist

Use this checklist to restore an Avaya Modular Messaging server to full service after a catastrophic hard disk failure. As you complete a task, make a checkmark in the “✓” column.

Disk failure recovery checklist for Avaya MAS in an MSS configuration

✓	Description	Page	Comments
Prepare for server recovery			
	Assemble and review the required documentation.	2	Web access required.
	Verify that the planning forms are up-to-date and match what is administered on the system.	2	
	Download any required Avaya software updates.	2	Web access required.
	Obtain the most current backup of the DCT data file from remote technical support. Copy to a USB storage device.	3	Use only the most current backup for that server.
	Locate the most current MSS backup file for the MAS.	4	Usually on MSS.
	Assemble the required Modular Messaging software media.	4	
	Collect any software media needed to restore the server, such as Microsoft Windows updates and anti-virus software.	4	Leave customer CDs and DVDs on-site.
	Review the latest configuration notes for recent changes.	4	
	Verify key settings on the MSS and MAS, such as switch integration, port board extensions, and domain information.	4	Use the planning forms.
	Unplug all system modems to prevent unnecessary alarms.	4	
1 of 5			

Disk failure recovery checklist for Avaya MAS in an MSS configuration

✓	Description	Page	Comments
Replace the faulty hard disk drive			
	Gather the necessary tools.	7	
	Verify that the replacement equipment is on site and in usable condition, with no obvious shipping damage.	8	
	Identify the server with the faulty hard disk.	8	
	Remove AC power to the server, even if the server is off.	8	
	Open the server and replace the hard disk drive. Configure the new drive to be the bus master.	8	Repair procedures vary depending on hardware.
	Restore AC power to the server.	18	
Reload the operating system and application software			
	Collect the required Modular Messaging software media for the OS boot software and the application software.	19	
	Switch the monitor to show the correct server.	19	
	Reload the operating system onto the new drive.	20	
	Activate the Microsoft Windows operating system.	21	
	Prepare the server for automatic configuration: ● Insert the USB storage device with the analyzed DCT data file before the next reboot. ● Run MM_Setup to prepare for server configuration.	23	
Reconfigure the Avaya MAS or supplementary tracing server			
	Turn on the server. The configuration wizard runs.	26	
	Use the analyzed DCT data file to configure each server.	26	
	Install and administer anti-virus software.	26	Local procedures vary.
	Install the latest Avaya-approved updates for Microsoft Windows: system updates, security patches, and hotfixes.	26	Local procedures vary.
	Change the label of the My Computer desktop icon to this server name for easy identification.	26	Recommended for multiple-MAS systems.
	Change the default names of the private and corporate LAN. Verify the search order of the two LANs.	27	Names vary depending on the hardware.
	Enter the correct RAS IP addresses to allow remote access.	27	
2 of 5			

Disk failure recovery checklist for Avaya MAS in an MSS configuration

✓	Description	Page	Comments
	Configure and test the port boards if required, including: ● For <i>analog boards</i>, create or use a valid tone file. ● Configure each port board. ● Test incoming and outgoing calls on each board.	27	Configuration notes required. Skip this step for IP-type or automatically configured integrations.
	Specify the preferred language for administration.	27	
	Verify that Modular Messaging service is started.	27	Restart if required.
	Use the Voice Mail System Configuration (VMSC) program to configure specific features for this server, including: ● Call Me, MWI, or Fax service ● Languages or Text-to-Speech (TTS)	27	Set up the features and services that are required on this server.
	Configure specific parameters for this MAS, including: ● INADS alarming, if used ● Port boards and switch integration settings. Use the configuration notes. MM voice service restart required.	27	Do for each MAS. Configuration notes required.
	In the VMSC, update access permissions for the server. Add required accounts and remove unknown accounts.	28	
	For an MAS, edit the number of TTS sessions on the server.	29	
	Update the offline access feature, appropriate to this server. Requires all servers to be in VMD to set up offline share.	30	Procedure varies for MAS#1 recovery.
	After VMSC configuration, restart messaging service. ● Verify that all services not required on this server are disabled. Do not start MM services until this is done. ● Verify that all MM services required on this server are started and set to automatic.	30	Use the planning forms to ensure that only the correct services are enabled on each server in the voice mail domain.
	Restart service on all MASs in the VMD after you configure the last server in the voice mail domain.	32	This task updates VMSC values on all servers.
	Verify the basic operation of the server, including: ● ability of a restored MAS to handle calls ● alarming setup for the restored server ● Tracing Service operation, if installed on any server	32	Not applicable for supplementary server.
	Synchronize the time on the MAS and MSS.	32	
	Install the Subscriber Options package on each MAS.	32	Reboot server afterwards.
	Send the updated MAS host information file to all servers.	33	
	Place the MSS in the Windows domain—do on MAS#1.	33	
Restore data on each MAS			
	Stop all Modular Messaging services.	35	
3 of 5			

Disk failure recovery checklist for Avaya MAS in an MSS configuration

✓	Description	Page	Comments
	Restore data on each MAS from most current backup. Do <i>not</i> restore the system state!	36	
	Restore Caller Applications on MAS#1, if used on the system.	38	Do this once on MAS#1.
	Install any Avaya software updates. Follow the instructions you downloaded with the software.	39	Do as required.
	Restart messaging service. Verify correct services are started.	39	
Complete multiple-MAS restoration—Do ONLY if MAS#1 failed in a multiple-MAS system			
	<i>On a multiple-MAS system</i>, do the following additional tasks: ● Log on to each subsequent server as the local administrator. Verify the account is valid before you proceed, or you must restore the server from scratch. ● On each server, stop all Modular Messaging services. ● If the shared folder for the offline message store is on this server, break the share. ● Add the server to a workgroup. ● Join the new private Windows domain on MAS#1.	42	Do these tasks <i>only</i> on a multiple-MAS system if MAS#1 failed. Repeat this task as often as necessary to update each subsequent MAS and supplementary tracing server in the system.
	Complete the restoration of this subsequent server: ● Restart the Messaging Application Server service. ● For an MAS, verify that you can dial in. Use the port monitor to verify a test call. ● Verify that all services not required on this server are Disabled. Use the planning forms to double check. ● Restart MM services using the server recovery script. ● Verify that only services required for this server are started and show a startup type of Automatic. ● Synchronize the time on the MAS and MSS. ● Verify that this server can access MAS#1 without errors. ● Reset the domain-administrator account and password. ● Back up this MAS.	46	Some procedures vary for an MAS and a supplementary server. Repeat this task as often as necessary to update each server in the system.
	Complete the restoration of the multiple-server system: ● Create the offline message store on the appropriate server. Assign the correct permissions to each MAS. ● In the VMSC, re-enable Offline Access. Synchronize all MASs with the new message store. ● Add all the servers to the remote access group on MAS#1.	50	Do these tasks after each server in the multiple-MAS system is restored.
4 of 5			

Disk failure recovery checklist for Avaya MAS in an MSS configuration

✓	Description	Page	Comments
Do acceptance tests and back up data			
	<i>Optional:</i> Set up monitoring tools to track test calls, such as the port monitor and operation history viewer.	55	Useful for multiple-MAS systems.
	Do messaging acceptance tests, including: ● Create and receive test messages in both integrated and nonintegrated mode. ● Create and print faxes, if fax service is installed. ● Test system outcalling using Subscriber Options.	55	Tests vary per server and system setup.
	Perform an attended backup on the restored server. This task overwrites the previous backup file on the MSS.	55	Do only after good operation is verified.
	Connect any unplugged modems to restore normal alarming.	57	Verify alarming works.
	Install any additional software or client applications on the server, such as Mailbox Manager.	57	Do if required.
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