

Customer environment

This appendix lists the minimum hardware requirements and supported software configurations for Avaya Modular Messaging.

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Important:

Customers are responsible for obtaining and installing anti-virus software on any Microsoft Windows computer that runs Modular Messaging software, in accordance with their local policy. In addition, Microsoft Windows security patches must be installed and routinely updated to protect the operating system from known security weaknesses. For recommended Microsoft Service Packs and Security updates, see <http://www.avaya.com/support>. For more information about security, see 'System security' document on the *Avaya Modular Messaging Release 3 Documentation* CD-ROM.

Avaya support policy for third-party clients

Avaya MSS

Avaya Modular Messaging is standards based, which includes IMAP4 access to messages from user client software packages (for example, Microsoft Outlook and IBM Lotus Notes). Avaya has conducted successful interoperability testing with Microsoft Outlook 2002, Microsoft Outlook 2000, Microsoft Outlook Express 5.0, IBM Lotus Notes R6, and IBM Lotus Notes R5. Furthermore, Avaya acknowledges that customers have reported successful integration of GroupWise with Avaya Modular Messaging and acknowledges that our customers may integrate other IMAP4 user client software packages with Avaya Modular Messaging. Avaya, however, makes no representations, warranties, or guarantees regarding specific capabilities with specific IMAP4 clients or successful integration or interoperability thereof. Avaya's product

support is limited to IMAP4 as it is implemented on Avaya Modular Messaging and does not include support for specific e-mail clients.

Site requirements for Avaya S3500 servers

This section describes the physical requirements for the hardware, including environmental, weight, space, and power considerations for Avaya S3500 servers.

Environmental requirements

[Table 1](#) lists the environmental conditions that must be maintained in the area where the Avaya S3500 servers are installed.

Table 1: Environmental requirements

Operating state	Temperature	Humidity (noncondensing)
Operating	+10 to +35°C (+50 to +95°F)	20% to 80% RH
Nonoperating (in storage or being shipped)	-20 to +50°C (-4 to +122°F)	20% to 90% RH

[Table 2](#) lists the maximum heat output for each type of server in British thermal units (BTUs).

Table 2: Heat output in BTUs

Server model	Maximum heat output
Avaya messaging application server (MAS)	1498 BTU per hour
Avaya Message Storage Server Standard Availability version (MSS—S)	1211 BTU per hour
Avaya Message Storage Server High Availability version (MSS—H)	1573 BTU per hour

Weight and space considerations

[Table 3](#) lists the weight and spatial dimensions of the MAS and MSS on Avaya S3500 servers.

Table 3: Server weight and space considerations

Server	Weight (full)	Height	Width	Depth
Avaya MAS	36 lb (16.3 kg) without port boards	3.5 in. (9 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)
Avaya MSS—S	38 lb (17.2 kg)	3.5 in. (9 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)
Avaya MSS—H	42 lb (19.1 kg)	3.5 in. (9 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)

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

Customer-provided cabinet requirements

If the Avaya MAS and MSS are to be installed in a rack-mount configuration, the customer-provided cabinet must meet the following requirements:

- The cabinet must contain a four-post rack to support the weight of the server.
- The cabinet must be secured to the floor before attempting to mount any units.
- The sliding rails provided with each server are designed for mounting in cabinets 26 to 36 inches in depth.
- The cabinet height must accommodate the number of units to be mounted. It might also need to hold the MAS modems, Uninterruptible power supply (UPS), and optional equipment, such as the KVM switch.

Power requirements

[Table 4](#) lists the power requirements for the Avaya S3500 servers. Use these figures for equipment room planning, not for UPS sizing. The AC power supply source must be a single-phase three conductor consisting of line, neutral, and ground connections.

Table 4: Server power requirements

Server	Number of power supply units	Volts AC	Hertz	Maximum amperes 120V/240V
Avaya MAS	1	90 to 264 Vac	47 to 63 Hz	8.0/4.0
Avaya MSS—S	1	90 to 264 Vac	47 to 63 Hz	8.0/4.0
Avaya MSS—H	2	90 to 264 Vac	47 to 63 Hz	8.0/4.0

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

Note:

All Modular Messaging systems must use a UPS. To size a UPS, use the maximum power dissipation figures in watts. For example, 400 watts divided by 120 Vac is about 3 amps per server.

S3500 servers	Maximum power dissipation in watts, assuming 65% power supply efficiency
Avaya MAS with port boards	450 watts
MSS-S	400 watts
MSS-H	500 watts



Tip:

For more information about the site requirements, see *Modular Messaging for the Avaya Message Storage Server (MSS) Configuration Release 3 Installation and Upgrades*.

Site requirements for Avaya S3400 servers

This section describes the physical requirements for the hardware, including environmental, weight, space, and power considerations for Avaya S3400 servers.

Environmental requirements

[Table 5](#) lists the environmental conditions that must be maintained in the area where the Avaya servers are installed.

Table 5: Environmental requirements

Operating state	Temperature	Humidity (noncondensing)
Operating	+50°F to +95°F +10°C to +35°C	20% to 80% relative humidity (RH)
Nonoperating (in storage or being shipped)	-4°F to +122°F -20°C to +50°C	20% to 90% RH

[Table 6](#) lists the maximum heat output for each type of server in British thermal units (BTUs).

Table 6: Heat output in BTUs

Server model	Maximum heat output
Nonintegrated video and LAN	MAS: 730 BTU/hour MSS-S: 352 BTU/hour MSS-H: 682 BTU/hour
Integrated video and LAN	MAS: 1150 BTU/hour MSS-S: 887 BTU/hour MSS-H: 1242 BTU/hour

Weight and space considerations

[Table 7](#) lists the weight, height, width, and depth of the MAS and MSS on S3400 servers.

Table 7: Avaya MAS weight and space considerations

Server	Weight (full)	Height	Width	Depth
Avaya MAS	40 lb (18.1 kg) (without port boards)	6.8 in. (17 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)
Avaya MSS-S	41 lb (18.6 kg)	6.8 in. (17 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)
Avaya MSS-H	52 lb (23.6 kg)	6.8 in. (17 cm)	16.9 in. (43 cm)	18.9 in. (48 cm)

For safety considerations, at least two technicians should be on site and available to mount the units.

Customer-provided cabinet requirements

If the Avaya MAS and MSS are to be installed in a rack-mount configuration, the customer-provided cabinet must meet the following requirements:

- The cabinet must contain a four-post rack to support the weight of the server.
- The cabinet must be secured to the floor before attempting to mount any units.
- The sliding rails and extender brackets provided with each server are designed for mounting in cabinets 22.5 to 32 inches in depth.
- The cabinet height must accommodate the number of units to be mounted. It might also need to hold the MAS modems, UPS, and optional equipment such as the KVM switch.

Power requirements

[Table 8](#) lists the power requirements for the Avaya S3400 servers. The AC power supply source must be a single-phase three conductor (line, neutral, and ground), with a 15 A circuit breaker for 100-127 Vac installations or a 10-A circuit breaker for 200 to 240 Vac installations.

Table 8: Server power requirements

Server	Number of power supply units	Volts AC	Hertz	Amperes 120V/240V
Avaya MAS	1	100–240 +/- 10%	50/60 +/- 3 Hz	10/5
Avaya MSS—S	1	100–240 +/- 10%	50/60 +/- 3 Hz	10/5
Avaya MSS—H	2	100–240 +/- 10%	50/60 +/- 3 Hz	6/3 (for each vertically stacked model of power supply) or 7/3.5 (for each side-by-side model)

Consider the server connection to a branch circuit with regard to overload or overcurrent protection. Verify the system ratings to ensure that, together with other equipment connected to the same branch circuit, an overcurrent or overload condition is nonexistent.

Modular Messaging and the Microsoft Windows domain infrastructure

Different versions of Modular Messaging relate differently to the Microsoft Windows domain infrastructure at the customer site.

The relationship that a Modular Messaging system shares with the Windows domain affects subscriber and administrator authentication.

Note:

All Modular Messaging servers must be in the same Windows domain and on the same LAN segment, whether provided by the customer or Avaya.

Modular Messaging—MSS

Avaya MSS

When installing a Modular Messaging—MSS system, technicians create a private Microsoft Windows domain that does not require any interaction with a Microsoft Windows domain that the customer network might already have.

In fact, the Modular Messaging—MSS system does not require that the customer even have an existing Windows network. MAS units are added to the Microsoft Windows domain that is created for Modular Messaging. MAS administrators use logins that are configured in this Microsoft Windows domain.

The Modular Messaging Windows domain can be configured to trust one or more customer Microsoft Windows domains, allowing MAS administrators to use their normal Windows desktop login when administering the MAS.

Subscribers using graphical user interface (GUI) clients, Subscriber Options, or Web Subscriber Options must provide their mailbox numbers and passwords for authentication. This authentication is unrelated to any Microsoft Windows log-in mechanisms. User credentials of MAS administrators are authenticated against the Microsoft Windows login in the domain created during the Modular Messaging installation.



CAUTION:

Do not use the same Data Collection Tool (DCT) data file for multiple systems in a networked environment. The name for the private Windows domain must be unique throughout the entire messaging network, or errors will occur. If the private domain name is duplicated anywhere in the network, all Modular Messaging software must be reloaded on all affected servers to correct the problem. Ensure that a unique private domain name is used on each Modular Messaging system.

Modular Messaging—Exchange and Modular Messaging—Domino

Microsoft Exchange

IBM Lotus Domino

Modular Messaging—Microsoft Exchange and Modular Messaging—IBM Lotus Domino systems join an existing customer Microsoft Windows domain. MAS units function as members of the Microsoft Windows domain set up by the customer.

Subscribers and administrators authenticate against the existing Microsoft Windows domain. Such authentication is based on the security standards established by the customer for the existing Microsoft Windows domain.

Note:

Users for Web Subscriber Options need to provide their mailbox numbers and passwords for authentication.

Considerations when implementing Modular Messaging—MSS

Avaya MSS

Modular Messaging—MSS uses a dedicated server and private network to isolate critical components from reliance on the customer's IT and e-mail infrastructure. Basic voice mail features including Call Answer and telephone retrieval of messages operate completely independently of this infrastructure. However, certain features rely on and interoperate with aspects of the customer's infrastructure.

IT and e-mail infrastructure considerations when implementing Modular Messaging—MSS are:

- Administrators must add the MSS and MAS hosts to the customer's Domain Name Servers (DNSs) for:
 - Using any desktop client
 - Sending networked messages
 - Directory updating between multiple, separate Modular Messaging systems or between Modular Messaging and Message Networking systems in the customer network.

For networking between Modular Messaging systems or Modular Messaging and Message Networking systems, administrators can also add these systems to each other's `/etc/hosts` files without relying on DNS.

- Modular Messaging—MSS delivers all messages sent outside its voice mail domain (VMD) with the standard SMTP/MIME e-mail protocols using the customer's IT and e-mail infrastructure. Messages sent outside the VMD include networked messages and Notify Me messages. Depending on the MSS configuration options, these messages are sent in any of the following ways:
 - Using DNS mail exchanger (MX) lookups of the recipient's host.domain
 - Using an administered e-mail gateway, which then relays the message to its recipient

A configuration in which networked messages are sent directly to the destination messaging system and Notify Me messages are sent to a gateway is not explicitly supported. However, this behavior can be achieved using DNS MX routing. To do this, the customer must provide a DNS server that responds to MX queries for all hosts with the host name of the gateway. In addition, customers must either administer networked computers through `/etc/hosts` or have the DNS server return the actual IP address for networked Modular Messaging hosts.

- Messages sent outside a voice mail domain using SMTP/MIME carry an e-mail *from*: address that identifies the sender's Modular Messaging mailbox. This address is usually in the form `first.last@mmsystem.domain.company.com`. If these messages are sent through an e-mail gateway in the customer's network that modifies the outbound *from*: addresses,

replies to these messages are redirected to an incorrect address. For example, if the e-mail gateway replaces the host.domain portion with a fixed string such as *company.com*.

Many companies use *first.last@company.com* as the e-mail address for a user's Exchange or IBM Lotus Notes mailbox. These addresses have the same e-mail handle, that is, *first.last@* part, so if the host.domain portion of a message sent from a user's Modular Messaging mailbox is replaced, replies will go to the user's regular e-mail mailbox.

Customers must ensure that messages sent between Modular Messaging systems are not sent through such e-mail gateways. Alternatively, customers must ensure that the gateway is configured to retain the original, unmodified *from:* address of messages sent between Modular Messaging systems.

- The Notify Me feature allows notification messages to be sent to any e-mail address, including addresses outside the customer's network. Such messages must be sent through an outbound e-mail gateway in the customer's network. Consideration should be given to what the *from:* address indicates in this case. The *from:* address when sent by the Modular Messaging system identifies the subscriber's Modular Messaging mailbox. Many companies' outbound e-mail gateways are configured to replace the host.domain portion of *from:* addresses with a fixed string such as *company.com*. If the host.domain portion of the message is replaced, replies will go to the user's regular e-mail mailbox. However, if the Modular Messaging and e-mail addresses are coordinated, this might be precisely what is wanted. Administrators can change the gateway processing rules to modify *from:* addresses for messages sent from Modular Messaging systems into a form that cannot be replied to, such as *do_not_reply@company.com*. With this approach, users would not receive indication of problems with their notification messages. Alternatively, administrators can change the gateway to modify *from:* addresses for messages sent from Modular Messaging into an administrative mailbox, for example *postmaster@company.com*. With this approach, failures related to notification messages would be delivered to the company's e-mail postmaster.
- When deploying a Modular Messaging—MSS system, the customer must choose whether the e-mail address for subscriber mailboxes specifies the actual host.domain of the MSS or is an e-mail host alias. This e-mail address is used for networking and when sending messages using desktop clients. The default is to use the actual host.domain name of the MSS. If an e-mail host alias is used, administrators must add this name to the customer's DNS servers or remote systems' */etc/hosts* files. Multiple Modular Messaging systems within a single customer's network cannot share identical e-mail host aliases.
- The customer must choose whether to allow incoming Internet e-mail to be delivered to subscribers' Modular Messaging mailboxes. Internet e-mail includes Notify Me messages that are returned because they were sent to incorrect addresses and possibly replies to such messages. If the customer chooses to allow such messages to be delivered, the customer's external e-mail infrastructure must be able to associate an incoming address to the subscriber's Modular Messaging mailbox. One way to do this is to use an e-mail host alias, such as *mm.company.com*, and register this domain with the customer's external DNS servers. Another way is to use Modular Messaging e-mail addresses with e-mail handles distinct from those used for regular e-mail addresses. For example, a user's e-mail address might be *first.last@company.com* while the Modular Messaging mailbox might be *first.last.mm@company.com*. If the customer allows Internet e-mail into Modular

Customer environment

Messaging mailboxes, Avaya strongly suggests that all such e-mail be filtered for spam and viruses before being delivered to the Modular Messaging system.

Considerations when implementing Modular Messaging with e-mail servers

Microsoft Exchange

IBM Lotus Domino

Modular Messaging—Exchange and Modular Messaging—Domino systems fit within the existing IT infrastructure at the customer site. These systems are more sensitive to the customer environment than a Modular Messaging—MSS system is, where a dedicated server and private network are used to isolate critical operations.

Some additional considerations when implementing Modular Messaging with e-mail servers are:

- To confirm that the Microsoft Exchange and IBM Lotus Domino e-mail systems have been deployed and are being operated according to Microsoft and IBM specifications, respectively.
- To assess the impact that the Modular Messaging solution will have on the existing e-mail environment. The messaging requirements of a unified message store increase the utilization of the e-mail server, mailboxes, and system administration. Thus, the CPU utilization and memory requirements of the e-mail servers need to be able to support the additional processing requirements for the voice mail application.

Note:

Customers must keep their systems within performance operating ranges recommended by Microsoft and IBM Lotus. To support the extra load for voice messaging, Avaya requires that the CPU utilization be no more than 50%.

- To evaluate the customer's LAN environment to ensure that it can support the application. In Modular Messaging with e-mail servers, all the communications for the application run on the customer's network. Thus, the occupancy of the customer's IP network needs to be assessed to determine if it can support the additional load and to provide the responsiveness for the real-time aspects of the solution.

Note:

The customer's estimated busy-hour LAN occupancy, including the incremental traffic due to voice messaging, must be less than 25%.

- To ensure that certain factors are in harmony and meet the specifications for the solution to perform reliably. These factors include the release level of e-mail, how it is configured, operating systems, what is being used for directory authentication, and other hardware, software, and operating system elements that will be involved in the overall architecture and its topology.

The assessment of the customer environment might determine that it meets the operational specifications for a Modular Messaging system with e-mail servers. However, customers must

Customer environment

maintain the reliability of their environment and ensure that the e-mail environment and data network are not in a constant state of flux.

Best practices for Modular Messaging customer responsibilities

This section provides information about best practices for Modular Messaging customer responsibilities.

Customer participation

Successful planning and implementation of a Modular Messaging system require cross-functional participation from a variety of disciplines from within the customer organization. The following disciplines may be represented by single or multiple individuals or organizations:

- Telephony management
- Voice mail management
- E-mail management
- Desktop computing
- Server management
- Help desk
- IP network management
- SMTP gateway
- Data network security
- User community

System planning forms

In preparation for a Modular Messaging implementation, customers must have some very specific information available related to their system implementation and data network. The necessary items are identified in System Planning forms for Modular Messaging, as provided in Appendix A of the installation guides, or available as a downloadable file from the Avaya Support Web site at <http://www.avaya.com/support>.

Considerations for switch integration

When integrating the Modular Messaging system with the host private branch exchange (PBX), planners and customers must consider the following:

- Switch hardware and software to support required provisioning
- Features supported by a particular integration type

For more information, see the topic Switch integration matrix in *Avaya Modular Messaging Release 3 Concepts and Planning Guide*.

Customer environment

- Programming of translations for networked PBXs or IP gateways for centralized deployments
- Any updates that the dial plan requires, especially when Modular Messaging is to be networked with a Message Networking system

For the latest switch integration information, see the configuration notes available on the Avaya Support Web site at <http://www.avaya.com/support>.

Current system review

If an existing messaging system at the customer site is to be retained along with the Modular Messaging system, a review of the existing messaging system is recommended, to assess what functionality needs to be accounted for. For example:

- Hosting Automated Attendant on the messaging servers or on the PBX.
- The impact of any change in voice mail access numbers on abbreviated dial buttons and call coverage paths.

Establishing system parameters

With the introduction of a new messaging system, existing system parameters, if any, might need to be updated. For example, certain size limits might no longer be appropriate with Modular Messaging. The definition of Class-of-Service (COS) templates helps in determining the features that are available within the different Classes-of-Service. For information about the features that are set on a COS basis, see the topic Options set on a Class-of-Service basis in *Avaya Modular Messaging Release 3 Concepts and Planning Guide*.

E-mail management

When implementing a Modular Messaging system with a Microsoft Exchange or an IBM Lotus Domino message store, customers might need to make changes to the existing e-mail infrastructure. Avaya recommends an assessment of the network bandwidth and e-mail resources to ensure optimal network performance for message transport between desktop applications and the e-mail servers.

Security processes

Prior to the implementation of a Modular Messaging system, security staff at the customer organization must review and approve the Modular Messaging deployment. Customers must engage the expertise of their security staff early in the implementation process to allow them to include the messaging servers in their internal approval processes. Security staff must consider how the Modular Messaging system fits into their routine for virus protection, patches, and service packs.

For more information, see Security and Avaya Modular Messaging with the Avaya S3400 Message Server available in the Messaging White Papers Resource Library on the Avaya Web site at <http://www.avaya.com>.

Minimum hardware requirements and supported software (MSS)

This section provides information about the minimum hardware requirements and supported software for Modular Messaging—MSS.

MAS specifications with Modular Messaging—MSS

Avaya MSS

Modular Messaging—MSS uses Avaya-provided MAS units for which Avaya provides the Modular Messaging software and the hardware. For Modular Messaging Release 3, Avaya provides the S3500 hardware.

Modular Messaging continues to support Avaya S3400 servers for systems that have upgraded from earlier versions of Modular Messaging to Modular Messaging Release 3.

Specifications of an S3500 MAS

[Table 9](#) provides the hardware specifications of an Avaya-provided S3500 MAS.

Table 9: S3500 MAS hardware specifications

Clock speed	RAM
Intel Pentium IV 3.4-GHz processor	2 GB

[Table 10](#) lists the supported voice cards.

Table 10: Supported voice cards for an S3500 MAS with Modular Messaging—MSS

Protocol	Voice card	Maximum cards per MAS, any telephone user interface (TUI)	Maximum ports ¹ per MAS, any TUI
SIP ²	—	—	48
H.323 integration ²	—	—	30
T1 QSIG	Dialogic D/480JCT-1T1	2	46
E1 QSIG	Dialogic D/600JCT-1E1-120	2	60
Digital Set Emulation (DSE)	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	2	16
Analog	12-port Dialogic D/120JCT	2	24
	4-port Dialogic D/41JCT-LS	2	8

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.

2. SIP and H.323 transmit voice as IP packets over the LAN cards; thus separate port cards are not required.

Note:

For upgrades from Modular Messaging Release 1, the only Dialogic voice card supported is Dialogic D/82JCT/U.

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 megabits per second (mbps) speed
- 80 GB of free disk space
- Dialogic drivers: 6.0

[Table 11](#) provides the software specifications of an S3500 MAS.

Table 11: Software specifications of an S3500 MAS

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 Server Appliance Kit (SAK) with Service Pack 1 (SP1) ¹
Internet browser	Microsoft Internet Explorer 6 Note: Microsoft Internet Explorer 6 is included with Microsoft Windows Server 2003.

1. Internet Information Services (IIS) 6.0 is required and is included with Microsoft Windows Server 2003.

Note:

Avaya-provided S3500 hardware is installed from an image, which installs Microsoft Windows 2003 Server and the latest service packs and hotfixes.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Specifications of an S3400 MAS

[Table 12](#) provides the hardware specifications of an Avaya-provided S3400 MAS.

Table 12: S3400 MAS hardware specifications

Clock speed	RAM
Intel Pentium IV 2.00-GHz processor	512 MB

[Table 13](#) lists the recommended voice cards for an Avaya S3400 MAS.

Table 13: Recommended voice cards for an S3400 MAS

Protocol	Voice card	Maximum cards per MAS		Maximum ports ¹ per MAS	
—	—	Aria TUI	AUDIX or Serenade TUI	Aria TUI	AUDIX or Serenade TUI
SIP ²	—	—	—	20	20
H.323 integration ²	—	—	—	20	20
T1 QSIG	Dialogic D/480JCT-1T1	2	1	46	23
E1 QSIG	Dialogic D/600JCT-1E1-120	1	1	30	30
DSE	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	4	3	32	24
Analog	12-port Dialogic D/120JCT	4	2	48	24
	4-port Dialogic D/41JCT-LS	4	4	16	16

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.

2. SIP and H.323 integration transmit voice as IP packets over the LAN cards; thus separate port cards are not required.

Note:

For upgrades from Modular Messaging Release 1, the only Dialogic voice card supported is Dialogic D/82JCT/U.

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed

- 80 GB of free disk space
- Dialogic drivers: 6.0

[Table 14](#) provides the software specifications of an S3400 MAS.

Table 14: Software specifications of an S3400 MAS

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 ¹
Internet browser	Microsoft Internet Explorer 6.0 Note: Microsoft Internet Explorer 6.0 is included with Microsoft Windows Server 2003.

1. IIS 6.0 is required and is included with Microsoft Windows Server 2003.

Note:

Avaya-provided S3400 hardware is installed from an image, which installs Microsoft Windows Server 2003 and the latest service packs and hotfixes.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Modular Messaging Outlook Client requirements

Avaya MSS

This section provides the system requirements for Modular Messaging Outlook Client with Modular Messaging—MSS.

The hardware specifications for Modular Messaging Outlook Client with Modular Messaging—MSS are:

- Processor speed: As per standard Microsoft recommendations
- 512 MB of RAM
- 200 MB of free disk space (minimum)

[Table 15](#) lists the software specifications for Modular Messaging Outlook Client.

Table 15: Supported software for Modular Messaging Outlook Client (MSS)

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N ¹ Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4
Microsoft Outlook	Microsoft Outlook 2003 SP1 Microsoft Outlook 2002 SP3 Microsoft Outlook 2000 SP3 ²

1. Microsoft Windows XP N includes Microsoft Windows XP SP2.

2. Modular Messaging Outlook Client supports only Microsoft Outlook 2000 installed for the Corporate Workgroup mode. Microsoft Outlook 2000 installed for the Internet mode is not supported.

Note:

Microsoft Outlook must already be installed and the user profile must be configured before the Voice Form component is installed.

Modular Messaging Lotus Notes Client requirements

Avaya MSS

This section provides information about the system requirements for Modular Messaging Lotus Notes Client with Modular Messaging—MSS.

Microsoft recommendations for the operating system apply.

[Table 16](#) lists the software specifications for Modular Messaging Lotus Notes Client.

Table 16: Supported software for Modular Messaging Lotus Notes Client (MSS)

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N ¹ Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4
Lotus Notes	Lotus Notes 6.5.1 Lotus Notes 6.0.3 Lotus Notes 5.0.10

1. Microsoft Windows XP N includes Microsoft Windows XP SP2.

Modular Messaging Web Client requirements

Avaya MSS

Avaya support policy for Modular Messaging Web Client: Avaya Modular Messaging Web Client is standards based, which includes IMAP4 access to messages stored on the Avaya MSS. Modular Messaging Web Client can also be used to access messages stored on an IMAP4 compatible e-mail system. Avaya has conducted successful interoperability testing with Microsoft Exchange. Customers may integrate other IMAP4 e-mail systems with Modular Messaging Web Client. However, Avaya makes no representations, warranties, or guarantees regarding specific capabilities with specific IMAP4 e-mail systems or successful integration or interoperability thereof. Avaya's product support is limited to IMAP4 as it is implemented on Avaya Modular Messaging and Avaya Modular Messaging Web Client and does not include support for specific e-mail systems.

Web Client user requirements

Microsoft recommendations for the operating system apply.

[Table 17](#) lists the supported software for using Modular Messaging Web Client.

Table 17: Supported software for Modular Messaging Web Client

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4
Internet browser	Internet Explorer 6.0 SP1

Web server requirements for Modular Messaging Web Client

The Web server for Modular Messaging Web Client can be installed on a customer-provided computer, provided that computer does *not* belong to the VMD.

Note:

The Web Server for Modular Messaging Web Client cannot reside on an MAS or with other MAS applications or services, such as Tracing Service.

[Table 18](#) lists the minimum recommended hardware requirements for installing the Web server on a customer-provided computer.

Table 18: Minimum hardware requirements for the Web server

Clock speed	RAM
Intel Pentium IV 2-GHz processor	512 MB

Customer environment

Also required are:

- CD-ROM drive to install the software
- Network interface card (NIC) to connect to the corporate LAN
- LAN connectivity of 100 mbps speed
- 80 GB of free disk space
- A modem for remote services

[Table 19](#) lists the supported software for installing the Web server for Modular Messaging Web Client.

Table 19: Supported software for the Web server

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1, with IIS 6.0 Microsoft Windows Server 2003 Web Edition SP1, with IIS 6.0
Internet browser	Internet Explorer 6.0

Note:

If remote access is required, PC Anywhere must be installed.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

For more information, see *Modular Messaging Web Client Release 3 Server Installation and Upgrades* available on the Modular Messaging Web Client software CD.

Subscriber Options requirements

Avaya MSS

Modular Messaging subscribers that do not use Microsoft Outlook as an e-mail client can install Subscriber Options as a standalone component.

[Table 20](#) lists the supported software for installing Subscriber Options.

Table 20: Supported software for Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

Web Subscriber Options requirements

Avaya MSS

Web Subscriber Options client requirements

Microsoft recommendations for the operating system apply.

[Table 21](#) lists the supported software for using the Web Subscriber Options application.

Table 21: Supported software for Web Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Professional SP4
Internet browser	Internet Explorer 6.0 SP1

Web Subscriber Options server requirements

[Table 22](#) lists the minimum recommended hardware requirements for installing the Web server for Web Subscriber Options on either of the following computers:

- an Avaya S3500 or S3400 MAS
- a customer-provided computer

Table 22: Minimum hardware requirements for the Web server for Web Subscriber Options

Clock speed	RAM
For an Avaya S3500 MAS	
Intel Pentium IV 3.4-GHz processor	1 GB
For an Avaya S3400 MAS or a customer-provided computer	
Intel Pentium IV 2-GHz processor	512 MB

Also required are:

- DVD-ROM drive to install the software
- NIC to connect to the corporate LAN
- LAN connectivity of 100 mbps speed

Customer environment

- 80 GB of free disk space
- A modem for remote services

[Table 23](#) lists the supported software for installing the Web server for Web Subscriber Options.

Table 23: Supported software for the Web server for Web Subscriber Options

Supported software	Version
For an Avaya S3500 or S3400 MAS	
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 ¹
For a customer-provided computer	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1, with IIS 6.0 Microsoft Windows Server 2003 Web Edition SP1, with IIS 6.0

1. IIS 6.0 is required and is included with Microsoft Windows Server 2003.

The following software is also required:

- The Microsoft .NET 1.1 framework



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Note:

The MAS must be configured for Web Subscriber Options to work.

Supplementary Server requirements

Avaya MSS

For systems of large configurations, Avaya recommends that Tracing Service be installed on a separate system, known as Supplementary Server. The separate system for hosting Tracing Service can be either of the following:

- Avaya-provided S3500 or S3400 system that customers must purchase.
- Customer-provided computer

If Tracing Service is installed on Supplementary Server, Avaya recommends that Offline Call Answer Store and Modular Messaging Administration Clients also be located on Supplementary Server. For Modular Messaging Release 3, Avaya recommends that services such as MWI Service, Call Me Service, and Fax Sender Service, if applicable, also reside on Supplementary Server.

Supplementary Server must not have any port cards or the MAS service installed on it.

[Table 24](#) provides the hardware requirements for Supplementary Server.

Table 24: Minimum hardware requirements for Supplementary Server

Clock speed	RAM
For an Avaya S3500 MAS	
Intel Pentium IV 3.4-GHz processor	1 GB
For an Avaya S3400 MAS or a customer-provided computer	
Intel Pentium IV 2-GHz processor	512 MB

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed
- 80 GB of free disk space

[Table 25](#) lists the supported software for Supplementary Server.

Table 25: Supported software for Supplementary Server

Supported software	Version
For an Avaya S3500 or S3400 MAS	
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1
For a customer-provided computer	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1

Consider the following:

- Available disk space requirements will vary, depending on the expected size of the Tracing Service databases and Offline Call Answer Store.
- Supplementary Server must be in the same Microsoft Windows domain as all MAS units.
- Supplementary Server must be on the private LAN that connects the MAS units and the MSS.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Administration Client requirements

Avaya MSS

Administration Clients include the Voice Mail Configurator, Voice Editor, Port Monitor, Reporting Tool, Operation History Viewer, and Caller Applications Editor.

[Table 26](#) lists the software requirements for installing Modular Messaging Administration Clients. Minimum hardware requirements follow the Microsoft recommendations for the operating system.

Table 26: Supported software for Modular Messaging Administration Clients

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

Note:

If customers purchase Supplementary Server for Tracing Service, Avaya recommends installing Administration Clients on that same server due to their intensive resource requirements. For more information, see [Supplementary Server requirements](#) on page 26.

Caller Applications Editor requirements

Avaya MSS

Caller Applications Editor can be installed as a separate component.

[Table 27](#) lists the software requirements for installing Caller Applications Editor. Minimum hardware requirements follow the Microsoft recommendations for the operating system.

Table 27: Supported software for Caller Applications Editor

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

Data Collection Tool requirements

Avaya MSS

[Table 28](#) lists the minimum recommended hardware requirements for the Data Collection Tool.

Table 28: Minimum hardware requirements for the Data Collection Tool

Clock speed	RAM
On an Avaya S3400 server	
Intel Pentium IV 2-GHz processor	512 MB
On an Avaya S3500 server	
Intel Pentium IV 3.4-GHz processor	1 GB

Also required are:

- DVD-ROM drive
- 80 GB of free disk space
- LAN connectivity

[Table 29](#) lists the supported software for creating the Data Collection Tool on an MAS.

Table 29: Supported software for Data Collection Tool

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1 Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows 2000 Professional SP4 Microsoft Windows 2000 Server SP4



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Requirements for the MSS administration interface

Avaya MSS

[Table 30](#) lists the supported software for the MSS administration interface.

Table 30: Supported software for MSS administration interface

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4
Internet browser	Internet Explorer 6.0 SP1 Mozilla Firefox 1.0

Mailbox Manager minimum requirements

Avaya MSS

This section provides the minimum requirements for a single-user implementation of the Mailbox Manager application.

Hardware requirements

The minimum hardware requirements for a single-user implementation of the Mailbox Manager application are:

- Pentium III processor 533 MHz Intel-based or faster
- 256 MB of RAM or more
- CD-ROM drive
- Super VGA card and monitor with 800 x 600 minimum resolution display
- Mouse
- External or removable backup of the Mailbox Manager database
- Network connectivity
- Fixed IP address on the corporate network
- 15 GB of hard disk space or more
- LAN access to the Avaya MSS
- For access to other Avaya messaging systems: one or more modems, RS-232 communication connections, or TCP/IP (telnet) connections to send changes to systems being managed.

Supported software

[Table 31](#) lists the supported software for a single-user implementation of the Mailbox Manager application.

Table 31: Supported software for single-user implementation of Mailbox Manager

Supported software	Version
Microsoft Windows	Microsoft Windows 2003 Microsoft Windows XP Microsoft Windows XP Professional Microsoft Windows 2000 Microsoft Windows 2000 Professional
Internet browser	Internet Explorer 5 or later

Note:

For client/server implementations supporting multiple administrators, remote, or WAN access to the message store, request specifications from Unimax (sales@unimax.com).

Compatibility with Avaya Integrated Management

Avaya MSS

- Avaya Site Administration Release 2.0 or later
- Avaya Multi-Site Administration Release 2.1 or later
- Avaya Fault and Performance Manager Release 2.0 or later with use of either Secure Services Gateway (SSG) or Avaya Proxy Agent

Note:

Avaya Fault and Performance Manager Release 3.0 or later supports trap reception directly from Modular Messaging—MSS.
Avaya Fault and Performance Manager Release 3.0 or later does not require either SSG or Avaya Proxy Agent for trap reception from Modular Messaging—MSS.

Minimum hardware requirements and supported software (Exchange)

This section provides the minimum hardware requirements and supported software for Modular Messaging—Exchange.

Messaging application server requirements

Microsoft Exchange

With Modular Messaging—Microsoft Exchange, Release 3, the customer can purchase software and S3500 servers from Avaya or can choose to provide a computer that will serve as the MAS. In such cases, Avaya provides the Modular Messaging software that must be installed on such customer-provided MAS units.

A customer-provided computer must meet certain minimum hardware and software requirements for successful installation of the Modular Messaging software.

Modular Messaging continues to provide support to Avaya S3400 servers when customers are upgrading from earlier versions of Modular Messaging to Modular Messaging Release 3.

Minimum hardware requirements for an MAS

[Table 32](#) lists the minimum recommended hardware requirements for installing the MAS software on an Avaya server or on a customer-provided MAS.

Table 32: Minimum system requirements for the MAS

Server	Clock speed	RAM
Avaya S3500	Intel Pentium IV 3.4-GHz processor	2 GB
Avaya S3400	Intel Pentium IV 2-GHz processor	1 GB
Customer-provided MAS	Intel Pentium IV 2.0-GHz processor	1 GB

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed

Note:

With Modular Messaging—Exchange, an MAS must be located on the same LAN as the e-mail server.

Customer environment

- 80 GB of free disk space
- Dialogic drivers: SR 6.0

[Table 33](#) lists the recommended voice cards for an Avaya S3500 MAS.

Table 33: Recommended voice cards for an S3500 server

Protocol	Voice card	Maximum cards per MAS	Maximum ports ¹ per MAS
SIP ²	—	—	48
H.323 ² integration	—	—	30
T1 QSIG	Dialogic D/240JCT-1T1	2	46
E1 QSIG	Dialogic D/300JCT-1E1-120	2	60
DSE	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	2	16
Analog	12-port Dialogic D/120JCT	2	24
	4-port Dialogic D/41JCT-LS	2	8

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.

2. SIP and H.323 transmit voice as IP packets over the LAN cards; thus separate port cards are not required.

[Table 34](#) lists the recommended voice cards for an Avaya S3400 MAS.

Table 34: Recommended voice cards for an S3400 MAS

Protocol	Voice card	Maximum cards per MAS		Maximum ports ¹ per MAS	
—	—	Aria TUI	AUDIX or Serenade TUI	Aria TUI	AUDIX or Serenade TUI
SIP ²	—	—	—	20	20
H.323 integration ²	—	—	—	20	20
T1 QSIG	Dialogic D/480JCT-1T1	2	1	46	23
E1 QSIG	Dialogic D/600JCT-1E1-120	1	1	30	30
DSE	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	4	3	32	24
Analog	12-port Dialogic D/120JCT	4	2	48	24
	4-port Dialogic D/41JCT-LS	4	4	16	16

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.

2. SIP and H.323 transmit voice as IP packets over the LAN cards; thus separate port cards are not required.

[Table 35](#) lists the recommended voice cards.

Table 35: Recommended voice cards for customer-provided MAS units

Protocol	Voice card	Maximum cards per MAS	Maximum ports ¹ per MAS
SIP ²	—	—	48
H.323 integration ²	—	—	30
T1 QSIG	Dialogic D/240JCT-T1 Dialogic D/480JCT-1T1	2	46
E1 QSIG	Dialogic D/300JCT-E1-120 Dialogic D/600JCT-1E1-120	2	60
DSE	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	4	32

Table 35: Recommended voice cards for customer-provided MAS units

Protocol	Voice card	Maximum cards per MAS	Maximum ports ¹ per MAS
Analog	12-port Dialogic D/120JCT	4	48
	4-port Dialogic D/41JCT-LS	4	16

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.
2. SIP and H.323 transmit voice as IP packets over the LAN cards; thus separate port cards are not required.



Important:

Install Dialogic drivers from the Modular Messaging application software media that Avaya provides.

Note:

Modular Messaging supports only Dialogic analog cards for new installations.

Software requirements

[Table 36](#) lists the software requirements for an S3500 or S3400 MAS.

Table 36: Software requirements for an S3500 or S3400 MAS

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1
System Management tools	Microsoft Exchange 2003 SP2 System Management Tools. This software is provided by the customer.

Note:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

[Table 37](#) lists the software requirements for installing the MAS software on a customer-provided computer.

Table 37: Software requirements for customer-provided MAS

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1
System Management tools	Microsoft Exchange 2003 SP2 System Management tools. This software is provided by the customer.

Also required are ASP.NET services with the following properties:

Windows Components

Application Server

- Application Server console
- ASP.NET
- Enable COM+ access
- IIS
 - Common Files
 - IIS Manager
 - NNTP
 - SMTP
 - WWW
 - WW Web Services

Management and Monitoring tools

- Simple Network Management Protocol

Note:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Modular Messaging Outlook Client requirements

Microsoft Exchange

This section provides the software requirements for installing Modular Messaging Outlook Client with Modular Messaging—Exchange.

The hardware specifications for Modular Messaging Outlook Client with Modular Messaging—Exchange are:

- Processor speed: As per standard Microsoft recommendations
- 512 MB of RAM
- 200 MB of free disk space (minimum)

[Table 38](#) lists the supported software for installing Modular Messaging Outlook Client with Modular Messaging—Exchange.

Table 38: Supported software for Modular Messaging Outlook Client with Modular Messaging—Exchange

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N ¹ Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4
Microsoft Outlook e-mail client	Microsoft Outlook 2000 SP3 Microsoft Outlook 2002 SP3 Microsoft Outlook 2003 SP1

1. Microsoft Windows XP N includes Microsoft Windows XP SP2

Consider the following:

- With Microsoft Windows XP, clients must log in to a Microsoft Windows domain to which the Modular Messaging system belongs.
- When running Modular Messaging Outlook Client with Microsoft Outlook 2002, the client must be Microsoft Office 2002 SP2. Alternatively, Microsoft Outlook Hotfix Q317106 must be installed on the client computer.

Subscriber Options requirements

Microsoft Exchange

Modular Messaging subscribers that do not use Microsoft Outlook as an e-mail client can install Subscriber Options as a standalone component.

[Table 39](#) lists the supported software for installing Subscriber Options.

Table 39: Supported software for Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

For Modular Messaging—Exchange, minimum hardware requirements follow the Microsoft recommendations for the operating system.

Web Subscriber Options requirements

Microsoft Exchange

Web Subscriber Options client requirements

Microsoft recommendations for the operating system apply.

[Table 40](#) lists the supported software for installing the Web Subscriber Options application.

Table 40: Supported software for Web Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4 Microsoft Windows 2000 Server SP4
Internet browser	Internet Explorer 6.0 SP1

Web Subscriber Options server requirements

[Table 41](#) lists the minimum recommended hardware requirements for installing the Web server for Web Subscriber Options on either of the following computers:

- Avaya S3500 or S3400 MAS
- Customer-provided computer

Table 41: Minimum hardware requirements for the Web server for Web Subscriber Options

Clock speed	RAM
For an Avaya S3500 MAS	
Intel Pentium IV 3.4-GHz processor	1 GB
For an Avaya S3400 MAS or a customer-provided computer	
Intel Pentium IV 2.0-GHz processor	512 MB

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed
- 80 GB of free disk space

[Table 42](#) lists the supported software for installing the Web server for Web Subscriber Options.

Table 42: Supported software for the Web server for Web Subscriber Options

Supported software	Version
For an Avaya S3500 or S3400 MAS	
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1
Internet browser	Internet Explorer 6.0
For a customer-provided computer	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1, with IIS 6.0 Microsoft Windows Server 2003 Web Edition SP1, with IIS 6.0
Internet browser	Internet Explorer 6.0

Also required are ASP.NET services with the following properties:

Windows Components

Application Server

- Application Server console
- ASP.NET
- Enable COM+ access
- IIS
 - Common Files
 - IIS Manager
 - WWW
 - WW Web Services

Management and Monitoring tools

Note:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Note:

The MAS must be configured for Web Subscriber Options to work.

Supplementary Server requirements

Microsoft Exchange

For systems of large configurations, Avaya recommends that Tracing Service be installed on a separate system, known as Supplementary Server. The separate system for hosting Tracing Service can be either of the following:

- Avaya-provided S3500 or S3400 system that customers must purchase.
- Customer-provided computer

If Tracing Service is installed on Supplementary Server, Avaya recommends that Offline Call Answer Store and Modular Messaging Administration Clients also be located on Supplementary Server. For Modular Messaging Release 3, Avaya recommends that services such as MWI Service and Call Me Service also reside on Supplementary Server.

Supplementary Server must not provide telephony or must not have any port cards or the MAS service installed on it.

[Table 43](#) provides the hardware requirements for Supplementary Server.

Table 43: Minimum hardware requirements for Supplementary Server

Clock speed	RAM
For an Avaya S3500 MAS	
Intel Pentium IV 3.4-GHz processor	1 GB
For an Avaya S3400 MAS or a customer-provided computer	
Intel Pentium IV 2.0-GHz processor	512 MB

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed
- 80 GB of free disk space

[Table 44](#) lists the supported software for Supplementary Server.

Table 44: Supported software for Supplementary Server

Supported software	Version
For an Avaya S3500 or S3400 MAS	
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1
For a customer-provided computer	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1

Note:

Supplementary Server must also have Microsoft Exchange 2003 SP2 System Management Tools installed on it. This software is provided by the customer.

Consider the following:

- Available disk space requirements will vary, depending on the expected size of the Tracing Server databases and the Offline Access Remote Store.
- Supplementary Server must be in the same Windows domain as all MAS units.
- Supplementary Server must be on the same LAN segment as all MAS units.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Administration Client requirements

Microsoft Exchange

Administration Clients include administration tools and diagnostic tools, such as:

- Operation History Viewer
- Port Monitor
- Reporting Tool
- Visual Voice Editor
- Voice Mail Configuration System
- Caller Applications Editor

Hardware requirements follow the Microsoft recommendations for the operating system.

[Table 45](#) lists the supported software for installing Modular Messaging Administration Clients.

Table 45: Supported software for Modular Messaging Administration Clients

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1 Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

Caller Applications Editor requirements

Microsoft Exchange

Caller Applications Editor can be installed as a separate component. Hardware requirements follow the Microsoft recommendations for the operating system.

[Table 46](#) lists the supported software for installing Caller Applications Editor.

Table 46: Supported software for Caller Applications Editor

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1 Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Professional SP4

Data Collection Tool requirements

Microsoft Exchange

[Table 47](#) lists the minimum recommended hardware requirements for the Data Collection Tool.

Table 47: Minimum hardware requirements for the Data Collection Tool

Clock speed	RAM
On a customer-provided computer	
Intel Pentium IV 2-GHz processor	512 MB
On an Avaya S3400 server	
Intel Pentium IV 2-GHz processor	512 MB
On an Avaya S3500 server	
Intel Pentium IV 3.4-GHz processor	1 GB

Also required are:

- DVD-ROM drive
- 80 GB of free disk space
- LAN connectivity

[Table 48](#) lists the supported software for creating the Data Collection Tool on an MAS.

Table 48: Supported software for Data Collection Tool

Supported software	Version
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1 Microsoft Windows XP Professional N Microsoft Windows XP Professional SP2 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows 2000 Professional SP4 Microsoft Windows 2000 Server SP4



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Subscriber Administration Extension requirements

Microsoft Exchange

For hardware requirements for Microsoft Exchange Subscriber Administration Extension to Exchange System Management Tools, use Microsoft recommendations for the Microsoft Exchange Administrator program.

Also required is 50 MB of free disk space for Microsoft Exchange 2003 and Microsoft Exchange 2000.

[Table 49](#) lists the supported software for installing Microsoft Exchange Subscriber Administration Extension to Exchange System Management Tools.

Table 49: Supported software for Subscriber Administration Extension

Supported software	Version
For Microsoft Exchange 2003	
Microsoft Windows	Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1
Microsoft Exchange System Management tools	Exchange 2003 SP2 System Management tools
For Microsoft Exchange 2000	
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows Server 2003 SAK SP1 Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1
Microsoft Exchange System Management tools	Exchange 2003 SP2 System Management tools

Note:

Modular Messaging extensions to Microsoft Exchange Administrator work only when Microsoft Exchange Administrator is installed on Intel-based computers.

Peer Exchange Server requirements

Microsoft Exchange

For hardware requirements, use Microsoft recommendations for Microsoft Exchange Server.

[Table 50](#) lists the supported software for a peer Microsoft Exchange server.

Table 50: Supported software for peer Microsoft Exchange server

Supported software	Version
Modular Messaging for Microsoft Exchange 2003	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1
Microsoft Exchange Server	Microsoft Exchange 2003 Server SP2
Modular Messaging for Microsoft Exchange 2000	
Microsoft Windows	Microsoft Windows Server 2003 Standard Edition SP1 Microsoft Windows Server 2003 Enterprise Edition SP1 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows 2000 Server SP4 or
Microsoft Exchange Server	Microsoft Exchange 2000 Server SP3 roll-up Microsoft Exchange 2000 Enterprise Server SP3 roll-up

Note:

Customers must keep their systems within performance operating ranges recommended by Microsoft. In order to support the extra load for voice messaging, Avaya requires that the CPU utilization is no more than 50%.

Minimum hardware requirements and supported software (Domino)

This section provides information about the minimum hardware requirements and supported software for Modular Messaging—Domino.

Messaging application server requirements

IBM Lotus Domino

With Modular Messaging—Domino, the customer can purchase software and S3400 servers from Avaya or can choose to provide a computer that will serve as the MAS. In such cases, Avaya provides the Modular Messaging software that must be installed on these customer-provided MAS units.

A customer-provided computer must meet certain minimum hardware and software requirements for successful installation of the Modular Messaging software.

Minimum hardware requirements

[Table 51](#) lists the minimum recommended hardware requirements for installing the MAS software.

Table 51: Minimum system requirements for the MAS

Ports	Clock speed	RAM
Up to 12 ports	Intel Pentium II 400-MHz single- or dual-processor	128 MB
13 to 24 ports	Intel Pentium III 400-MHz single- or dual-processor	256 MB
25 to 48 ports	Intel Pentium III 500-MHz single- or dual-processor	512 MB
49 to 69 ports	Intel Pentium III 800-MHz dual-processor	512 MB

[Table 52](#) lists the recommended voice cards.

Table 52: Recommended voice cards for customer-provided MAS units

Protocol	Voice card	Maximum cards per MAS	Maximum ports ¹ per MAS
H.323 ² integration	—	—	20
T1 QSIG	Dialogic D/240JCT-T1	3	69
E1 QSIG	Dialogic D/300JCT-E1-120	2	60
DSE	Dialogic D/82JCT-U (5v card) Dialogic D82JCTPCIUNIV (3.3v and 5v universal card)	4	32
Analog	12-port Dialogic D/120JCT	4	48
	4-port Dialogic D/41JCT-LS	4	16

1. The number of ports that an MAS can support is restricted by the number of PCI slots available and the number of cards supported.

2. H.323 transmits voice as IP packets over the LAN cards; thus separate port cards are not required.

Also required are:

- DVD-ROM drive to install the software
- LAN connectivity of 100 mbps speed

Note:

The MAS must be located on the same LAN as the e-mail server.

- 30 GB of free disk space
- Dialogic drivers: V5.1.1 FP1

Modular Messaging supports only Dialogic analog cards for new installations.

Software requirements

[Table 53](#) lists the software requirements for the MAS.

Table 53: Software requirements for MAS

Supported software	Version
Microsoft Windows	Microsoft Windows 2000 Server service pack (SP) 4 Microsoft Windows 2000 Advanced Server SP4
Internet browser	Microsoft Internet Explorer 5 or later

Note:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

For Modular Messaging—Domino versions, IBM Lotus Notes Client 6.0.1 Critical Fixpack 3 (CF3) must also be installed on the MAS.

This applies to IBM Lotus Domino 6.5, IBM Lotus Domino 6.0, and IBM Lotus Domino 5.0.10 environments.

Tracing Service or Offline Call Answer Store requirements

IBM Lotus Domino

For systems of large configurations, Avaya recommends that Tracing Service be installed on a separate system. The separate system for hosting Tracing Service can be either an Avaya-provided S3400 system that customers must purchase or a customer-provided computer.

If Tracing Service is installed on a separate system, Avaya recommends that Offline Call Answer Store also be located on that same system.

The additional system that is used to host Tracing Service or Offline Call Answer Store, or both, must not have any port cards or the MAS service installed on it.

[Table 54](#) lists the minimum recommended hardware requirements for installing either Tracing Service or Offline Call Answer Store, or both, on a separate computer.

Table 54: Minimum hardware requirements for Tracing Service and Offline Call Answer Store

Clock speed	RAM
Intel Pentium II 400-MHz single- or dual-processor	128 MB

Also required are:

- DVD-ROM drive to install the software
- 30 GB of free disk space

The available disk space requirements may vary depending on the expected size of the Tracing Service database.

- LAN connectivity

[Table 55](#) lists the supported software for installing Tracing Service.

Table 55: Supported software for Tracing Service

Supported software	Version
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4
Internet browser	Microsoft Internet Explorer 5 or later

Consider the following:

- Available disk space requirements will vary depending on the expected size of the Tracing Service databases and Offline Access Remote Store.
- Tracing Service and Offline Call Answer Store must be running on the same operating system as the MAS units in the VMD.
- Tracing Service and Offline Call Answer Store must be in the same Windows domain as all MAS units.
- Tracing Service and Offline Call Answer Store must be on the same LAN segment as all MAS units.



Tip:

Avaya recommends customer-provided virus protection for all Microsoft Windows servers.

Administration Client requirements

IBM Lotus Domino

Administration Clients include administration tools and diagnostic tools.

[Table 56](#) lists the minimum recommended hardware requirements for installing the following Modular Messaging Administration Clients:

- Voice Mail Configurator
- Voice Editor
- Port Monitor
- Reporting Tool
- Operation History Viewer

Table 56: Minimum hardware requirements for Modular Messaging Administration Clients

Clock Speed	RAM
Intel Pentium 200-MHz single- or dual-processor	128 MB

Also required are:

- DVD-ROM drive to install the software.
- 1 GB of free disk space
- LAN connectivity
- RAM as Microsoft recommends for the operating system

[Table 57](#) lists the supported software for installing Modular Messaging Administration Clients.

Table 57: Supported software for Modular Messaging Administration Clients

Supported software	Version
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows XP Professional
Internet browser	Microsoft Internet Explorer 5 or later

Caller Applications Editor requirements

IBM Lotus Domino

Hardware requirements follow the Microsoft recommendations for the operating system.

[Table 58](#) lists the supported software for installing Caller Applications Editor.

Table 58: Supported software for Modular Messaging Caller Applications Editor

Supported software	Version
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4 Microsoft Windows 2000 Professional SP4 Microsoft Windows XP Professional

Subscriber Options requirements

IBM Lotus Domino

With Modular Messaging—Domino, the installation of Domino Unified Communications (DUC) automatically installs Subscriber Options.

Minimum hardware requirements follow the IBM Lotus Domino recommendations for the operating system.

[Table 59](#) lists the supported software for installing IBM Lotus Domino Subscriber Options

Table 59: Supported software for IBM Lotus Domino Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows 2000 Professional SP4 Microsoft Windows XP Professional

Note:

DUC 1.2.2 must be installed for Modular Messaging—Domino. DUC is supplied by IBM and is implemented according to IBM specifications. For information about DUC, see *Administrator's Guide, Domino Unified Communications for Avaya*, which is available from IBM Lotus.

For subscribers that do not use Lotus Notes

Modular Messaging subscribers that do not use Lotus Notes as an e-mail client can install Subscriber Options as a standalone component.

[Table 60](#) lists the supported software for installing Subscriber Options.

Table 60: Supported software for Subscriber Options

Supported software	Version
Microsoft Windows	Microsoft Windows Millennium Edition Microsoft Windows 2000 Professional SP4 Microsoft Windows XP Professional

Peer Domino Server requirements

IBM Lotus Domino

For minimum hardware requirements, use IBM Lotus recommendations for Domino Server.

[Table 61](#) lists the supported software for a peer IBM Lotus Domino server.

Table 61: Supported software for peer IBM Lotus Domino server

Supported software	Version
Modular Messaging for Domino 6.5	
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4
IBM Lotus Domino Server	IBM Lotus Domino Server 6.5
Modular Messaging for Domino 6.0	
Microsoft Windows	Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4
IBM Lotus Domino Server	IBM Lotus Domino Server 6.0
Modular Messaging for Domino 5.0.10	
Microsoft Windows	Microsoft Windows NT 4.0 SP6a - Intel Microsoft Windows 2000 Server SP4 Microsoft Windows 2000 Advanced Server SP4
IBM Lotus Domino Server	IBM Lotus Domino Server 5.0.10

Note:

DUC 1.2.2 must be installed for Modular Messaging—Domino. DUC is supplied by IBM and is implemented according to IBM specifications. For information about DUC, see *Administrator's Guide, Domino Unified Communications for Avaya*, which is available from IBM Lotus.

Note:

Customers must keep their systems within performance operating ranges recommended by IBM Lotus. To support the extra load for voice messaging, Avaya requires that the CPU utilization be no more than 50%.

Other hardware and software considerations

Other hardware and software considerations include:

- Virus protection software
- DUC software from IBM, for Modular Messaging—Domino

DUC is supplied by IBM and is implemented according to IBM specifications.

- Extended Battery Modules and Bypass Distribution Module for backup power management

Avaya requires that customers use a UPS regardless of the Modular Messaging version. Customers can purchase the UPS from Avaya, or they can purchase it elsewhere. For more information, see [Table 4](#).

- Server administration: monitors, keyboards, KVM switch, modem, rack
- Customer-provided fax server, for Modular Messaging—Exchange and Modular Messaging—Domino

For information about the hardware and software support and telephony boards for third-party fax servers, see the topic Providing interoperability with third-party fax servers in *Avaya Modular Messaging Release 3 Concepts and Planning Guide*.

- Client and server hardware and software required for the multi-administrator implementation of the Mailbox Manager application
- Unified Communication Center (UCC) Speech Access hardware and software requirements

For more information, see <http://www.avaya.com/support>.

- Networking by means of a Message Networking server
- Remote access to all servers

Avaya requires remote access to all servers to provide support for the Modular Messaging system. Avaya S3400 servers include a Universal Serial Bus (USB) modem for this purpose. For configurations with the MSS, the Remote Monitoring Board (RMB) for the United States and Canada includes an on-board modem. For the Avaya MSS in international markets, an external modem needs to be connected to the RMB.

Note:

For more information about remote access to the Modular Messaging system, see *Modular Messaging for the Avaya Message Storage Server (MSS) Configuration Release 3 Installation and Upgrades*.