



# Tech Info Library

## MAE 2.0: Technical Note 2 of 3 (1/96)

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TOPIC -----

This article is the Macintosh Application Environment (MAE) 2.0 technical note.

DISCUSSION -----

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See Also

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- MAE 2.0 FAQ (Frequently-Asked Questions), available on <http://www.mae.apple.com> or via anonymous ftp from [ftp.support.apple.com](ftp://ftp.support.apple.com) in directory /pub/mae/info/FAQ/2.0.
- MAE 2.0 README.TXT (on MAE 2.0 product CD-ROM)

Networking

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Selecting AppleTalk Zones

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Under some circumstances, a user of MAE may not be able to select a different default AppleTalk zone even though there may be others available. For example, if two or more copies of MAE are executing on the same physical workstation, none of the MAE users will be able to change zones. Another possible scenario is that AppleTalk has not shut down properly (that is, it was still up even after all copies of MAE were shut down). To ensure that AppleTalk is not currently running, execute the command ``appletalk -D'`. (For more information on usage of the ``appletalk'` command, reference the next topic.)

Using the ``appletalk'` Unix Command

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As part of the MAE v2.0 distribution, Apple includes a utility to assist in management and diagnosis of problems with the AppleTalk services that are part of MAE. With this utility you can stop or start AppleTalk services independent of MAE, as well as obtain detailed information on the AppleTalk services

currently executing on that workstation. For more information, reference Chapter 5 of the 'MAE System Admin Guide', a DocViewer document included with your CD-ROM distribution of MAE.

#### (Sun only) File Modes For Non-le0 Interfaces

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By default, device drivers used for LAN interfaces under Solaris are designated as read-only for the superuser (root). As MAE allows any non-privileged user to bring up AppleTalk (which is normally done the first time MAE is started on each workstation), it is necessary that the file permissions be changed to world-readable. The MAE v2.0 installation script automatically changes the permission for the device 'le0'; all others need to be made world-readable before MAE will be able to use those devices.

#### Personal File Sharing and MAE

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For some system administrators, providing MAE users with the capability of sharing Unix directories via AppleShare File Sharing may present a possible security risk. To prevent this from happening, remove the file named 'File Sharing Extension' from the Extensions folder located inside the apple/sys directory. Now, when the System Folder for the new user is created, the Extension will not be present. This will prevent the user from sharing directories on the workstation.

#### Remote (Network) File System Performance and Timeouts

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When a user's System Folder or Apple directory (appledir) resides on a network file system (for example, NFS), performance will be affected by the configuration and by the loads on the file servers involved. In some cases, this affects MAE behavior. For example, to avoid "hanging" forever because of communication failure with an NFS host (a problem in MAE 1.0), MAE v2.0 periodically reviews ongoing file operations and will abort any file system operation that loses communication for a specified threshold time (called the "File System Timeout"). This timeout is ten seconds by default. This means that if MAE waits for a response from an NFS-mounted file system for more than the timeout, MAE gives up on the access and returns failure. If the operation is non-critical (for example, a directory listing), MAE treats that file system as inaccessible. If the access is critical to MAE's operation (such as the Finder) then MAE will hang.

In configurations with heavy network traffic (resulting in slow network response), MAE's default timeout setting may be too short. If so, you may see an error such as "... because the disk '/' cannot be found." Using the -fstimeout option at startup will increase the amount of time that MAE will wait before giving up on a remotely-mounted filesystem and help to prevent MAE from hanging. For example, you can start MAE with the command 'mae -fstimeout 30' which sets the timeout to 30 seconds. This value should be sufficiently high for networks where response time is variable due to heavy loads. If -fstimeout is set to 0, the heartbeat function is disabled and MAE will wait indefinitely for a remote file system (this is identical to MAE v1.0).

If network response time is still affecting the performance of MAE after you increase the value of -fstimeout, consider putting the System Folder or Apple

directory (appledir) on a local volume.

#### Appletalk Options

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The following AppleTalk command options are missing from the man pages:

appletalk - enables you to configure and display AppleTalk network interfaces

-b hardware-interface Identifies the hardware interface that EtherTalk is to use. The value of hardware-interface is a string, such as le0 through le9 for Solaris, lan0 through lan9 for HP-UX, that identifies the Ethernet hardware on a computer that has more than one Ethernet card. This option must be used with the -u option. The default hardware interface is le0 for Solaris and lan0 for HP-UX. Only interfaces 0 through 9 are supported.

-u Makes AppleTalk active and stores the state of AppleTalk in PRAM. AppleTalk will stay active until an appletalk -D is issued.

(Sun only) Unloading AppleTalk streams modules on Solaris systems

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On Solaris systems, the AppleTalk stream driver 'atalk' and three other AppleTalk stream modules, 'at\_atp', 'adsp' and 'at\_sig', are dynamically loaded into the system when MAE starts up. The driver and the modules will not be unloaded until the workstation is rebooted. If a 'modunload' command is issued on any one of the stream module, it will cause the system to crash.

Problems posting articles or sending mail using NewsWatcher

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Users are able to browse and select news groups to read, but are unable to post. This is due to an incompatibility between NewsWatcher and MAE 2.0.

MacTCP Ping

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MacTCP ping does not work correctly on HP-UX and Solaris. As a workaround, use the UNIX 'ping' command.

Floppy Disks and CD-ROMS

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(HP only) Using Older (Single Speed) CD-ROM Drives

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There may be a problem using older HP CD-ROM drives (single speed Toshiba XM-3301TA) in conjunction with an HP Model 715 workstation. Typically, this is manifested as a problem where MAE cannot mount a CD-ROM. HP's Support Center has verified that there is a known SCSI timing problem when the older drives are used with a Model 715. As a workaround, HP has suggested either (1) another SCSI device is placed between the 715 and the CD-ROM player, or (2) usage of a SCSI cable greater than one meter and less than six meters.

MAE and Microsoft Office

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Microsoft has instituted a new diskette format (known as DMF -- Distributed Media Format) that permits distribution of software on a smaller number of diskettes. This is accomplished by using a format of 1.6M which cannot be used by current PC-compatible (360K/720K/1.4M) or Apple (400K/800K/1.4M) floppy drives unless read by the installer program. The special installer modifies the hardware floppy driver to support the new format. MAE does not use standard Macintosh drivers to support floppy drives. As a result, the installer cannot be run from disks that support DMF.

To properly install MS Office for use with MAE, you can do one of the following:

- 1) Install from a CD
- 2) Install from a diskette set that does not use DMF
- 3) Install using a DMF diskette set onto a native Macintosh and use AppleShare to transfer the files to MAE.

When running the install, select a new folder when asked to specify the directory for installation. The directory created will then be the installation folder, and the install will proceed normally. Lastly, when asked to update Excel graphs, select 'No.'

(Sun only) Problems Using MS-DOS or Solaris File System Disks on MAE

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If you insert a floppy disk formatted for MS-DOS or Solaris into a Sun workstation and try to mount it in MAE by clicking the Mount Floppy/CD button, MAE displays an alert box. The alert box appears because Solaris mounts the floppy disk before MAE has the opportunity to mount it. Thus, MAE is not able to access the floppy disk. (The icon for the floppy disk appears on your Solaris desktop.) As a result, you can not reformat MS-DOS disks as Macintosh disks, and can not use them on the MAE desktop. You have several options for dealing with this situation. If you want to use the files on the disk, the contents of the disk will show up as UNIX files in /floppy in your Solaris file system. If you don't want to use the files on the disk, and you want to format it as a Macintosh disk, you can eject the disk, insert it into a Macintosh computer, and reformat it as a Macintosh disk using the Macintosh computer. If you don't want to use the files on the disk, and you want to format it as a UNIX disk, you can try to reformat the disk on a UNIX workstation that is not running the Solaris File Manager.

(Sun only) If you cannot access the files on an MAE CD mounted remotely on a Sun workstation

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You may have a problem accessing the files on a remotely-mounted MAE CD-ROM disc if the disc was mounted on a Sun workstation by using the Solaris Volume Manager. There are two possible solutions to the problem:

- 1) You can quit the Solaris Volume Manager and explicitly mount the MAE CD-ROM disc by using a command such as mount(1). You should then be able to access the files on the CD-ROM disc in order to perform a remote installation.
- 2) You can copy the MAE files from the CD-ROM disc to a directory on the Sun workstation and then access the files by remotely mounting the directory. For

more information about remotely installing MAE, see Chapter 1 in the MAE USER'S GUIDE.

(Sun only) If the Message "fd0: read failed" Appears

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When you try to mount a floppy disk on MAE, you may see the message "fd0: read failed" on your Sun console. This message alerts you that Solaris is unable to read certain sectors on the floppy disk. Try another floppy disk, or try the same disk on a different workstation. (If the disk does not contain data that you need, you may want to reformat the disk, and then try mounting it again with MAE.)

(Sun only) If MAE Displays an Alert Box about the Solaris Volume Manager

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When you try to mount a floppy disk in MAE running on a Sun workstation, MAE may display an alert box that contains the message: "You will not be able to use Macintosh floppies with MAE because the Solaris Volume Manager is not available now." If this alert box appears, use the ps (1) command to see if the process "vold" (/usr/sbin/vold) is running on your workstation.

If "vold" IS NOT running, start the "vold" process as the root user and try mounting the floppy disk again. (You may want to edit the appropriate Solaris configuration files so that "vold" starts automatically when you start up your workstation. For instructions, see the Solaris documentation.)

If "vold" is running, and you see an error message such as "/dev/volctl: Permission denied" on your console, the problem is with Solaris. As root, check the access permissions on the file named in the error message (for example, /dev/volctl). If necessary, change the permissions for the file by using the chmod (1) command and give yourself access to the file. (If the file is a symbolic link, you will need to change the access permissions on the file to which the link points.) After changing the access permissions, try mounting the floppy disk on MAE again.

(Sun only) Unable to access the floppy drive

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Be certain the permissions on the floppy device file symlinked to /dev/rdiskette are readable and writable by you.

In addition, software products that do not currently support the Solaris Volume Manager will conflict with MAE, which does use the Volume Manager. Until software products that are incompatible with the Volume Manager are upgraded to support it, you can work around this conflict by turning the Volume Manager on when using floppies or CDs in MAE and off when using other software. This work-around is only necessary when accessing a Macintosh floppy or CD since MAE doesn't use the Volume Manager until you try to access a Macintosh disk. Beware, too, that some software disables Volume Manager control at the device level by changing your /etc/vold.conf file, rather than starting or stopping the Volume Manager's vold process.

(Sun only) If Solaris Displays the "Unlabeled Floppy" Dialog Box on Your Console

When you insert and try to mount a Macintosh floppy disk on MAE, Solaris displays the "Unlabeled Floppy" dialog box if you didn't install the Solaris Volume Manager Extensions when you installed MAE. (See Chapter 1 of the MAE USER'S GUIDE for more information.) Click Cancel in the dialog box (do NOT click Cancel & Eject). The floppy disk icon should appear on your MAE desktop. To avoid this problem, you should eject disks that have been mounted on the MAE desktop by using MAE capabilities only. For example, drag the disk icon to the Trash or choose Eject Disk from the Special menu.

(Sun only) If MAE Hangs When a Mounted Floppy Disk Has Been Ejected

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If a Macintosh disk is somehow ejected without MAE being notified (for example, by typing "eject floppy" in a Solaris shell window or by clicking Cancel & Eject in the dialog box described earlier), MAE may hang until it is able to use the disk again. Reinsert the disk and type "volcheck" in a Solaris shell window. This step should allow MAE to continue to use the floppy disk on the MAE desktop. To prevent this situation, run the MAE Installer as root and install the Solaris Volume Manager Extensions package (according to the instructions in "Macintosh Application Environment: Installing and Setting Up").

(Sun only). If You Have Problems Using MS-DOS (Including Windows) or Solaris File System Disks on MAE

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If you insert a floppy disk formatted for MS-DOS or Solaris into a Sun workstation and try to mount it in MAE by clicking the Mount Floppy/CD button, MAE displays an alert box. To use MS-DOS files on MAE running on Solaris, use the capabilities provided by Solaris. (For example, do not use Macintosh PC Exchange or other Macintosh applications that read MS-DOS disks.)

Follow these steps:

- 1) Insert the disk that contains the MS-DOS files that you want to use.
- 2) In a Solaris window, type "volcheck floppy". The files on the disk will appear in the /floppy/<floppyname> directory on your UNIX file system.
- 3) To use the files on the MAE desktop, double click /, then double-click the folder called "floppy," and then double-click the folder called "<floppyname>."

Problems Using Floppy Disks Remotely

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Although Some X Terminals export floppies as NFS file systems, thus providing a convenient workaround, MAE does not in general provide remote floppy support . For example, you can start MAE on a workstation and display it remotely (using the -display option) on another workstation on the network. If you display MAE remotely, you can use only floppy disks that are inserted in a floppy drive attached to the workstation where you started MAE, not where you are displaying it.

Floppy drives and performance

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Floppy drives are much slower than hard disk, and leaving a floppy in an

Xterminal drive can slow down MAE. Since MAE periodically scans the directory(ies) which are displayed in open Finder windows, leaving a floppy in the drive when the Finder has your home directory displayed in a window will effect performance. Solution: don't leave floppies in the Xterminal's drive.

(HP only) Floppy drives on HP "Envizex" Xterminals

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Some HP "Envizex" Xterminals come with floppy drives. MAE is not able to directly access floppies in these drives: the Xterminal software, in cooperation with the host UNIX system, controls the hardware. MAE has no way to load executable code into the Xterminal to control the device without changing the operation of the drive. Thus, only MS-DOS floppies are accessible through the Xterminal's floppy drive. They are mounted by the host system software via NFS, and are accessable as \$HOME/floppy. If you are having problems using the floppy drive, contact your system administrator, or consult HP's documentation (for example, "HP ENWARE X Station Software 5.1, Technical Reference", chapter four "Using the X Station's Hardware Accessories").

MAE produces spurious dialog boxes when MOUNT button is pressed

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Launching an application and then IMMEDIATELY clicking on the MOUNT button on the MAE Toolbar, with a valid MAE floppy in the drive, can cause various spurious dialog boxes to appear in the MAE window. If this happens, wait for the application to finish launching, then press the MOUNT button again. Dismiss the remaining dialog boxes.

(Sun only) MAE hangs when MOUNT button is pressed

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If MAE seems to hang just after you click on the "mount" button in the toolbar, with a valid MAE floppy in the drive, type the following in a Solaris shell window:

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volcheck floppy ; eject ; volcheck floppy
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This should unstick the Solaris Volume Manager, and allow you to continue.

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