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Macintosh Application Environment (MAE): Description (10/94)

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TOPIC ----------

This article describes the Macintosh Application Environment (MAE).

DISCUSSION ----------

The Macintosh Application Environment (MAE) is an X-Windows client that currently runs on a Sun SPARCstation or an HP 9000/700. MAE provides you with a complete Macintosh environment in an X Window.

Within this environment you can use Macintosh applications, print, move files, create folders, and copy and paste between Macintosh applications and UNIX applications.

MAE works within the industry-standard X Window System running on UNIX workstations. This means that you realize all the benefits of the Macintosh desktop while still gaining access to the UNIX environment and X Windows. You are able to resize the Macintosh X Window to any size desired.

MAE Emulation
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MAE emulates the Motorola 68LC040, but a number of the most used instructions have been translated into native UNIX code, thereby taking advantage of the native performance of the system CPU.

The 68K emulator handles instructions from the application by reading the application’s 680x0 code, and performing the equivalent sequence of instructions for the host’s RISC processor. To increase efficiency and processing speed, the emulator works hand-in-hand with a Mixed Mode Manager to make direct calls to the RISC processor whenever possible.

System 7 Support

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MAE supports System 7 version 7.1 features on top of UNIX. It is well integrated into the standard UNIX graphics system and the X Window System. You have access to Macintosh System 7.0 features such as Aliases, TrueType, AppleEvents, publish-and-subscribe, Balloon Help, QuickDraw, and 32-bit addressing. Version 1.0 of MAE does not support system extensions such as QuickTime. The Sound Manager and Serial Managers are also not supported. Any software product that requires direct access to the Macintosh hardware does not work.

You can access Macintosh high-density floppy disks and CD-ROMs using MAE.

Because the native UNIX operating systems don't handle floppy or CD interrupts in the same way that the Macintosh operating system does, a new button has been added for CD and floppy inserts. The button appears at the bottom of the Macintosh X Window. You insert the floppy or CD, and choose this button to have it mount on your desktop, within the Macintosh X Window.

MAE supports the Network File System (NFS), which lets you access, display, and manipulate remote and local Macintosh, PC, and UNIX files. The first version of MAE does not support AppleTalk, and behaves just like a Macintosh with AppleTalk networking turned off. This means that the Network extension, the File Sharing control panel, the Sharing Setup control panel, and the Users & Groups control panel are not shipped with MAE. Other areas normally associated with the Finder that are a part of MAE include: Finder Help, Labels control panel, and the Views control panel.

MAE lets you print UNIX and Macintosh files on printers that support PostScript, using the Apple Chooser and the Print command. It also includes QuickDraw to manage all graphics operations required by Macintosh applications.

MAE Components

Macintosh Application Environment consists of three distinct components:

Macintosh Desktop Services

Windows, menus, general Macintosh look and feel.

Macintosh Application Engine

Complete Macintosh run-time layer existing within the X Window. Macintosh applications and control panels and other elements of the Macintosh run as if on a Macintosh computer.

Macintosh System Services

File management, memory management, and system services. This is the portion that lets you manipulate both Macintosh files and UNIX files and applications.

The file manager seamlessly integrates the UNIX file system with the Macintosh file system. Similarly, UNIX printing is be accessible to Macintosh applications

through the Print Manager. A Macintosh user who happens to be using MAE should not see a major difference between it and a Macintosh.

Hardware Requirements

- Sun SPARC workstation running Solaris 2.3 or later
- HP workstation running HP-UX 9.01
- X Window System 11 release 4 or later
- Window Manager such as Motif or Open Look
- RAM: 16 MB minimum, 32 MB recommended
- Hard disk space: 16 MB minimum, 22 MB recommended for greater performance

Performance

You can expect anywhere from Macintosh LC to Quadra performance, depending on the platform, processor speed, and system resources of the system that it is installed on.

Application performance on MAE very much depends on the system in which it is installed. MAE is designed so that key components execute as native RISC code. Therefore, the more powerful the system and the greater the system resources (system cache, hard disk, and RAM) the better the MAE performance. It also employs an Operating System Access library to further take advantage of the native performance. The library lets the Macintosh Application Environment directly access the services provided by the host operating system, such as system calls or graphics library routines.

Article Change History:
13 Oct 1994 - Added keyword; made several technical updates.

Support Information Services

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