



## Overview

Apple Computer's implementation of X Window System™, Version 11, Release 4 for the A/UX® operating system provides two distinct products: X11 and MacX™.

The first, X11, delivers a native X Window System environment that is well-suited for technical users and software developers. X11 provides a full development environment, including X programming libraries, the X Toolkit intrinsics, and the Athena Widget Set.

The second, MacX, allows X applications to share the A/UX software Finder™ desktop with Macintosh® and UNIX® applications. With MacX, users can open frequently-used X client applications by just choosing a command from a Macintosh pull-down menu.

Both X11 and MacX allow users to take advantage of the highly portable, network-transparent X Window System.

The X Window System is the result of years of development work by researchers from the computer industry and from the Massachusetts Institute of Technology (MIT).

Apple Computer's X Window System for A/UX complies with the standards and conventions set by the MIT X Consortium.

# Product Details

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## *X11 for A/UX*

### **Environment**

► X11 for A/UX offers the native X Window System environment with the improved performance of the X Window System, Version 11, Release 4 server. X11 controls the display and does not allow access to the A/UX Finder.

### **Network transparency**

► X11 client applications can reside on any system on the network—on a local computer or a remote host computer. The applications can also be displayed on a local or remote system.

### **X libraries and applications**

► Standard libraries, standard include files, applications, and utilities are provided for X client application development. These include `libX11`, `libXau`, `libXaw`, `libXdmcp`, `libXext`, `libXinput`, `libXmu`, `libXt`, and `liboldX`.

► X11 display font families include Charter, Clean, Courier, Helvetica®, Lucida, New Century Schoolbook, Symbol, and Times®.

### **Screen options**

► X11 supports both monochrome and 8-bit color video cards and displays. The 8-bit color option allows simultaneous display of up to 256 colors or shades of gray from a palette of 16 million colors.

### **Documentation**

► X11 documentation includes *X11 User's Guide for A/UX*, which describes how to use X11; and two reference guides, *X11 Command Reference for A/UX* and *X11 Programmer's Reference for A/UX*, which describe command usage and the programming libraries.

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## *MacX for A/UX*

### **Environment**

► MacX allows X client applications to share the A/UX Finder with multiple Macintosh and UNIX applications. MacX is appropriate for novice and experienced users alike.

### **Documentation**

► MacX documentation includes *MacX User's Guide*, which describes how to use MacX features.

► *MacX for A/UX Supplement* describes how to use the MacX server in the A/UX Finder environment.

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### **Required equipment**

To use the X Window System for A/UX, you'll need the following:

► Macintosh IIfx, Macintosh IIfx, Macintosh IIfx, Macintosh IIfx, Macintosh IIfx, Macintosh IIfx, or Macintosh SE/30 personal computer; or Macintosh II with PMMU

► At least 4 megabytes of RAM (5 megabytes recommended)  
► Apple 80-megabyte (or larger) hard disk or the equivalent (160 megabytes recommended)  
► A/UX operating system Version 2.0, A/UX Version 2.0.1, or later versions

### **Optional equipment**

► Optional: an Apple® EtherTalk® NB Card for the Macintosh II family of computers, or an equivalent Ethernet card for the Macintosh SE/30 (the use of Ethernet is recommended)

## Features

## Benefits

### ***X11 for A/UX***

- |   |   |
|---|---|
| ▶ X Window System, Version 11, Release 4 server   | ▶ Optimizes graphics performance and memory usage   |
| .....   |   |
| ▶ Native X Window System user environment   | ▶ Provides X Window System environment suitable for displaying client application running on other hardware platforms   |
| .....   |   |
| ▶ Complete X11 Release 4 development tools  | ▶ Allow users to develop X applications using the Xlib library and the Xtk Toolkit  |
| .....   |   |
| ▶ Sample widget set   | ▶ Includes MIT Athena Widget Set, suitable for customization  |
| .....   |   |
| ▶ X Window System, Version 11, Release 4 client applications                                | ▶ Provides desktop client applications, such as <code>oclock</code> and <code>xcalc</code> ; utilities, such as <code>xterm</code> (X terminal emulator); and development tools |
| .....   |   |
| ▶ Support for 1-bit black-and-white display, and 256-color display with an 8-bit video card | ▶ Permits display of X client applications on any monitor connected to an A/UX system   |
| .....   |   |
| ▶ Support for multiple-screen display   | ▶ Lets users display an X client application on any monitor connected to an A/UX system   |
| .....   |   |
| ▶ User and reference manuals  | ▶ Provide documentation on using Apple Computer's X Window System for A/UX  |
|   | ▶ Provide reference pages that describe X11 commands, client applications, and programming libraries  |

### ***MacX for A/UX***

- |                           |   |
|---------------------------|---|
| ▶ A/UX Finder integration | ▶ Lets users run X client applications, Macintosh productivity applications, and UNIX applications concurrently on A/UX |
|---------------------------|---|



# X Window System 2.1 for A/UX

## Technical Specifications

### X11 for A/UX

#### Environment

- ▶ Network transparency
- ▶ Color support
- ▶ Support for "backing store" and "save under" features that dramatically improve window system performance

#### Window manager

- ▶ User control of screen configuration and customization

- ▶ Ability to manage multiple screens (using `twm`) from a single window manager process

#### Client applications

- ▶ All client applications are based on X11 Release 4
- ▶ Terminal emulator with DEC™ VT102™ and Tektronix 4014 compatibility (`xterm`)
- ▶ Mouse-based screen editor (`xedit`)
- ▶ Manual page browser (`xman`)

- ▶ Bitmapped image manipulation utilities, including conversion from screen image to PostScript® format (`bitmap`, `xdpr`, `xwd`, `xwud`, `xpr`)
- ▶ Widget browser (`viewres`)
- ▶ Font displayer (`xfid`)

#### C libraries

- ▶ Full application development toolkit (X Toolkit intrinsics and Xaw Athena Widget Set)
- ▶ Graphics library (Xlib)
- ▶ Include files

### MacX for A/UX

#### Environment

- ▶ Network transparency
- ▶ Integrated with the A/UX Finder

- ▶ Color support
- ▶ Full international character set support

#### Window Manager

- ▶ User control of screen configuration and customization

## Ordering Information

### X Window System 2.1 for A/UX

Order No. M0411LL/B

With your order, you'll receive X Window System 2.1 for A/UX software:

- 15 installation disks for X11
- 6 installation disks for MacX

—X Window System 2.1 for A/UX documentation, which includes

- ▶ *Getting Started with X Window System for A/UX*
- ▶ *MacX User's Guide*
- ▶ *MacX for A/UX Supplement*
- ▶ *X11 User's Guide for A/UX*
- ▶ *X11 Command Reference for A/UX*
- ▶ *X11 Programmer's Reference for A/UX*

### X Window System Site License

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Order No. M0749LL/B

### X Window System 2.1 for A/UX Manual Set

Order No. M0748LL/B

For the name of your nearest authorized Apple A/UX and X Window System dealer, call 800-538-9696.

## Apple Computer, Inc.

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January 1990. Product specifications are subject to change without notice. Printed in the U.S.A.  
M0659LL/B