



X Window System 2.1 for A/UX[®] Release Notes

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About the X Window System 2.1 for A/UX Release Notes

The Apple® X Window System 2.1 for A/UX provides two different X products, MacX™ 1.1 and X11. You can create your own personalized X Window System using either MacX, X11, or a combination of both products.

This document presents late-breaking information about the X Window System 2.1 for A/UX. Read this document before you install and use either MacX 1.1 or X11 on your Macintosh® computer running A/UX. After you read these release notes, insert them behind the tab labeled “Release Notes” in *Getting Started with X Window System for A/UX*.

For more information, see Chapter 1, “Introduction to X Window System for A/UX,” in *Getting Started with X Window System for A/UX*.

△ **Important** The Apple X Window System 2.1 for A/UX works on A/UX software version 2.0 or later. If you are running an A/UX version earlier than A/UX 2.0, you must upgrade your A/UX system in order to run MacX 1.1 and X11. △

MacX 1.1

MacX 1.1 is an X Window System display server that allows you to use X client applications on your Macintosh desktop. MacX 1.1 is based on X Window System, Version 11, Release 4, and includes

- the display server
- the `xcalc` client application

You receive the following documentation to help you use MacX 1.1:

- *MacX for A/UX Supplement*
- *MacX User's Guide*

For more information about what MacX 1.1 provides, see “MacX for A/UX” in Chapter 1, “Introduction to X Window System for A/UX,” of *Getting Started with X Window System for A/UX*.

The following sections provide information about

- MacX 1.1 installation
- New MacX features
- MacX hints
- MacX limitations

MacX 1.1 installation

This section includes tips for installing MacX 1.1 on A/UX.

MacX Communications disk

The MacX for A/UX software is distributed on six floppy disks; one of these disks is called *MacX Communications*. When you open the *MacX Communications* disk, you see two folders labeled “for System Folder” and “for Communications Folder.” The instructions in *Getting Started with X Window System for A/UX* warn you not to install any files from the “for System Folder” folder; they are intended for users running MacX under the Macintosh Operating System (OS).

Changes to the MacX installation disks

If you installed MacX 1.0, recall that you dragged files from MacX floppy disks onto your hard disk. Installing MacX 1.1 requires that you perform the same procedure, except that different files are now stored on different disks. For example, the MacX Read Me file now appears on the *MacX Communications* disk, not on the *MacX Application* disk. Table 1 lists the files and folders that appear on the MacX 1.1 disks.

■ **Table 1** MacX 1.1 installation disks

Title of disk	Files on disk
<i>MacX Application</i>	MacX Application
<i>MacX Communications</i>	Read Me TeachText MacX Colors Sample for System Folder for Communications Folder MacX Fonts (Font Directory)
<i>MacX Fonts 1</i>	Charter Clean Misc
<i>MacX Fonts 2</i>	Courier Helvetica LucidaTypeWriter NewCenturySchoolbook
<i>MacX Fonts 3</i>	Lucida LucidaBright Symbol Terminal Times

Getting Started with X Window System for A/UX includes installation instructions that reflect these changes to the MacX disks. Make sure you follow the installation instructions carefully in that guide.

New MacX 1.1 features

This section presents information about using these new MacX 1.1 features:

- copying and pasting images on your desktop to the Macintosh Clipboard
- compiling directories of font files
- displaying nonrectangular windows

Copying images to the Macintosh Clipboard

With MacX 1.1 you can copy images appearing on your desktop to the Macintosh Clipboard. You can copy an image of a client application, select a specific area on your screen to copy, or copy the entire desktop. You can then paste the image that you copied into other Macintosh and X applications.

Follow these steps to copy an image from your screen to the Clipboard while running MacX.

- 1. Open MacX by double-clicking its icon.**
- 2. Open a client application.**

To open a client application, create a remote command or enter a command at a command line in a terminal emulator window.

- 3. Choose Copy Screen to Clipboard from the MacX Window menu, or press COMMAND-B.**

The pointer changes from an arrow to a crosshair pointer. You can perform any of the three tasks listed below to copy an image on your screen to the Clipboard.

- ◆ *Note:* Remember that the Macintosh Clipboard holds only one image at a time. If you copy one image to the Clipboard and then copy a second image, the second image replaces the first.
- **To copy an image of a client application, position the crosshair pointer in a client application's window, and press the mouse button.**

This copies the contents of the client application window to the Macintosh Clipboard. When you copy an image of a client application to the Clipboard using this method, the image of the client application does not include the Macintosh window borders.

- **To copy an image of the desktop, position the crosshair pointer in the menu bar or on the desktop, and press the mouse button.**

This copies an image of your entire desktop, including the menu bar, windows, and icons, to the Macintosh Clipboard.

- **To copy a specific area on your screen, position the crosshair pointer on the desktop, press the mouse button, drag a “box” around the area you want to copy, and release the mouse button.**

This copies an image of the selected area to the Macintosh Clipboard.

You can paste an image from the Macintosh Clipboard into another Macintosh application by using the Paste command or by pressing COMMAND-V. Depending on whether a particular X application offers a method for pasting the PRIMARY or CLIPBOARD selection, you can also paste an image into an X application.

Compiling directories of BDF files

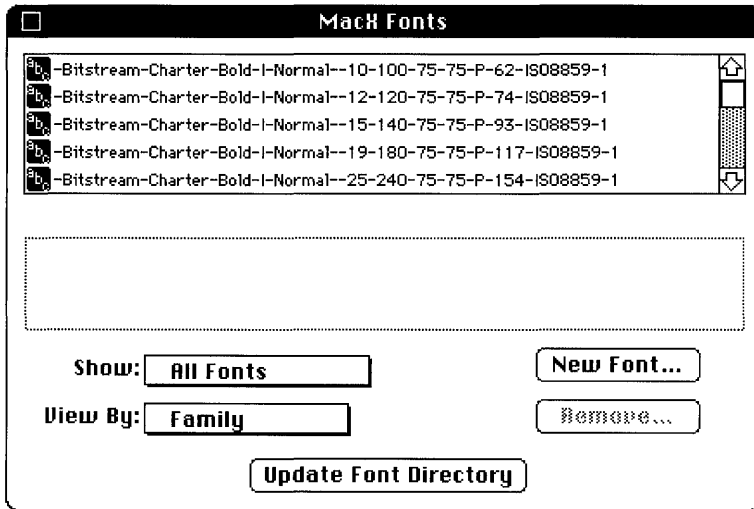
In MacX 1.1 you can compile an entire directory of bitmap distribution format (BDF) files. Using the Font Director window, you choose a folder of font files to compile instead of compiling each font file individually.

After you have installed MacX 1.1, follow these steps to compile a directory of BDF files.

- 1. Open MacX by double-clicking its icon.**
- 2. Choose Fonts from the Edit menu, or press COMMAND-F.**

The window shown in Figure 1 appears on your desktop. This is the Font Director window.

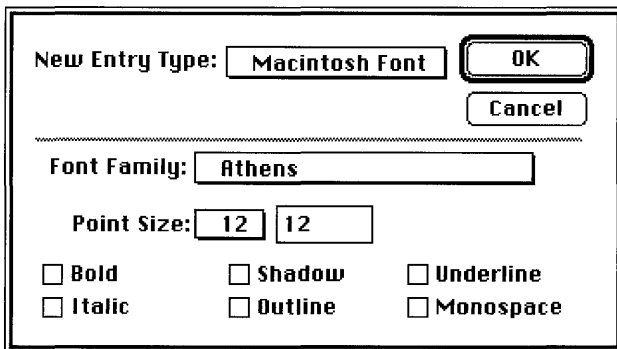
- **Figure 1** The Font Director window



3. Click the New Font button in the Font Director window.

The dialog box shown in Figure 2 appears.

- **Figure 2** The New Font dialog box

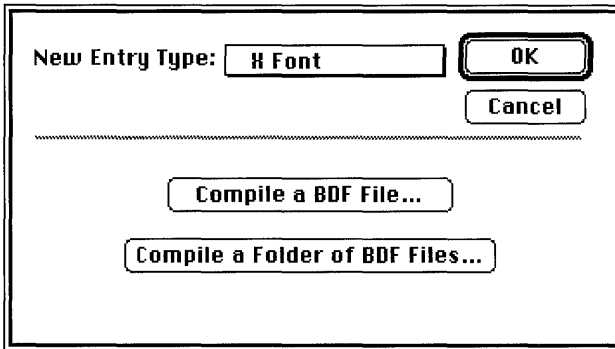


4. Choose X Font from the New Entry Type pop-up menu.

Position the pointer over the New Entry Type box, and press and hold down the mouse button. The New Entry Type menu “pops up,” allowing you to choose X Font.

The New Entry dialog box appears, as shown in Figure 3.

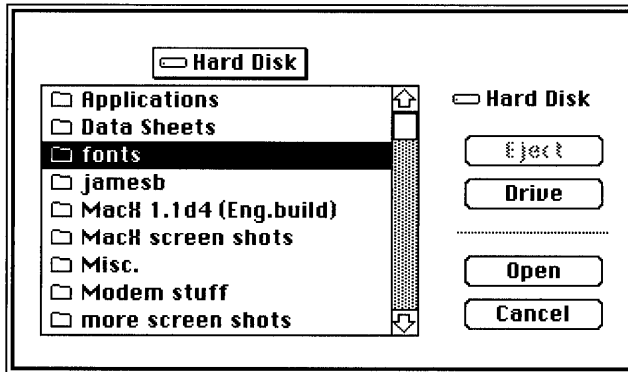
■ **Figure 3** The New Entry dialog box



5. Click Compile a Folder of BDF Files.

The dialog box shown in Figure 4 appears.

- **Figure 4** Finding the folder of BDF files



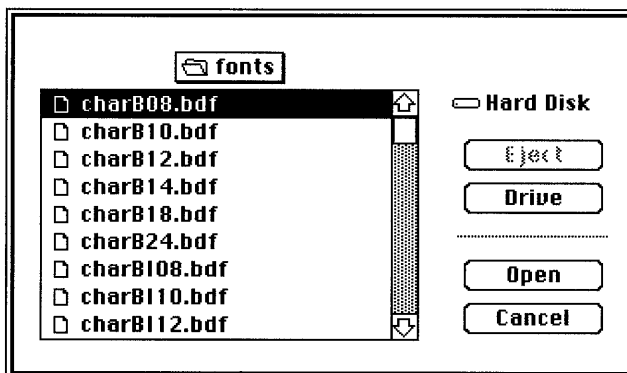
6. **Locate the folder containing the BDF files you want to compile.**

In Figure 4, the BDF files to be compiled are located in the “fonts” folder on Hard Disk.

7. **Open the folder containing the BDF files by double-clicking.**

You can also open the folder by selecting it and clicking Open. The dialog box in Figure 5 appears, showing the names of the font files inside the folder.

- **Figure 5** Selecting a font file



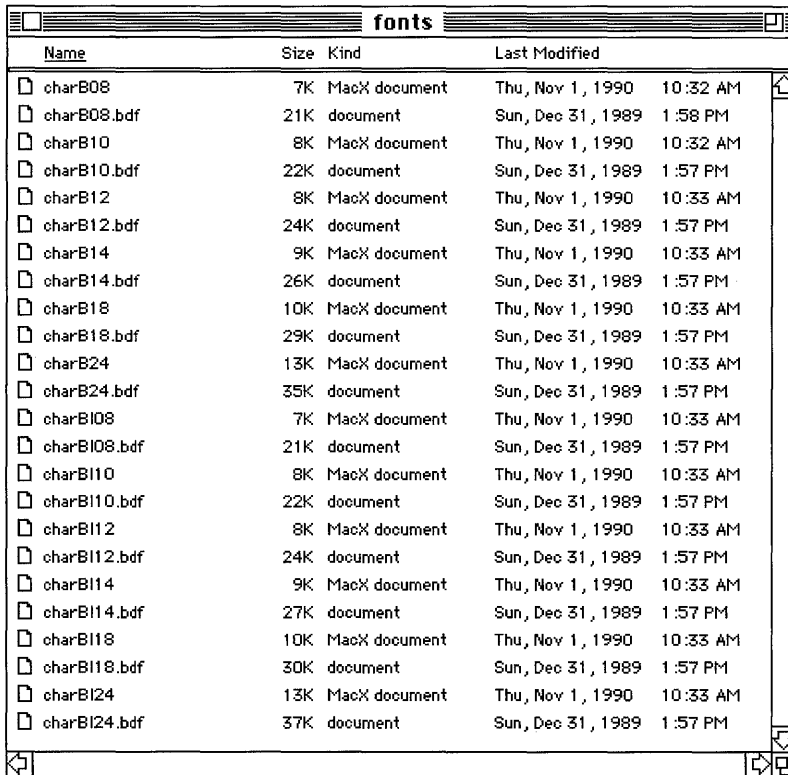
8. Select any of the font files in the dialog box, and click Open.

By selecting one of the font files, you are actually specifying that the entire folder of font files be compiled. You see a box that contains a message about compiling the BDF source files you selected. The box disappears after the fonts are compiled.

9. Click OK in the New Entry dialog box.

The New Entry dialog box disappears. The newly compiled fonts appear in their original folder without the suffix `.bdf`. For example, the `charB10.bdf` font files appear in the “fonts” folder as `charB10`. The type of file also changes from “document” to “MacX document.” Figure 15 shows the new MacX font names in the “fonts” folder.

■ **Figure 6** MacX font names in the “fonts” folder



Name	Size	Kind	Last Modified
charB08	7K	MacX document	Thu, Nov 1, 1990 10:32 AM
charB08.bdf	21K	document	Sun, Dec 31, 1989 1:58 PM
charB10	8K	MacX document	Thu, Nov 1, 1990 10:32 AM
charB10.bdf	22K	document	Sun, Dec 31, 1989 1:57 PM
charB12	8K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB12.bdf	24K	document	Sun, Dec 31, 1989 1:57 PM
charB14	9K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB14.bdf	26K	document	Sun, Dec 31, 1989 1:57 PM
charB18	10K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB18.bdf	29K	document	Sun, Dec 31, 1989 1:57 PM
charB24	13K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB24.bdf	35K	document	Sun, Dec 31, 1989 1:57 PM
charB108	7K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB108.bdf	21K	document	Sun, Dec 31, 1989 1:57 PM
charB110	8K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB110.bdf	22K	document	Sun, Dec 31, 1989 1:57 PM
charB112	8K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB112.bdf	24K	document	Sun, Dec 31, 1989 1:57 PM
charB114	9K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB114.bdf	27K	document	Sun, Dec 31, 1989 1:57 PM
charB118	10K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB118.bdf	30K	document	Sun, Dec 31, 1989 1:57 PM
charB124	13K	MacX document	Thu, Nov 1, 1990 10:33 AM
charB124.bdf	37K	document	Sun, Dec 31, 1989 1:57 PM

10. On the desktop, drag the newly created font files into the MacX Fonts folder on your hard disk.

The MacX Fonts folder is located in the MacX 1.1 folder that you created on your hard disk.

You can also drag the entire folder of new font files into the MacX Fonts folder; the new font files just need to be located somewhere in the directory hierarchy of the MacX Fonts folder.

11. Click the Update Font Directory button in the Font Director window.

MacX updates the Font Directory file. The new MacX font files appear in the Font Director window. You can also quit and restart MacX to update the Font Directory file.

12. If you're done compiling fonts, close the Font Director window by clicking its close box.

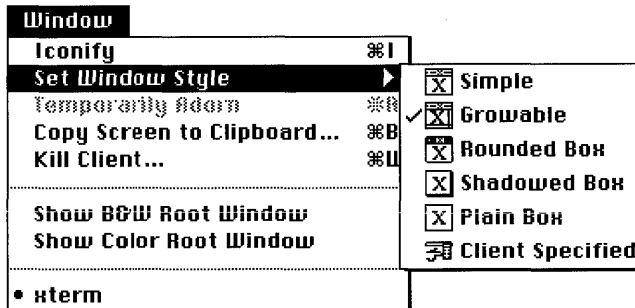
Displaying nonrectangular windows

MacX 1.1 provides support for X Window System, Version 11, Release 4 shaped window extension, allowing client applications to display nonrectangular windows. To implement this feature, MacX 1.1 includes the Client Specified menu item in the Set Window Style pop-up menu. This pop-up menu is a submenu of the Window menu. The Client Specified menu item allows you to specify that a client application determine its own style of window, such as the circular window used for the `oclock` client application.

Figure 7 shows the Window menu and the Set Window Style pop-up menu, which displays the Client Specified option. You can apply the Client Specified option on a per-window basis using the Set Window Style pop-up menu. For example, you display the `oclock` client application on your screen. You click the title bar in the `oclock` window to make it active, and choose Client Specified from the Set Window Style menu. The `oclock` window changes to its own specific style. If you open subsequent client applications, they will *not* appear in their own style of windows unless you select Client Specified as the default window style in the Preferences window.

For more information about setting window styles using the Set Window Style pop-up menu and the Preferences window, see Chapter 4, "Handling Windows," in *MacX User's Guide*.

■ **Figure 7** The Set Window Style pop-up menu



△ **Important** If you are running MacX on A/UX version 2.0 or earlier, the nonrectangular support is not available. Only users of A/UX version 2.0.1 or later are able to take advantage of this feature. △

MacX 1.1 hints

This section presents hints for using MacX 1.1.

Low memory warnings

When performing some operations in MacX, your computer may run low on memory. You can attempt to prevent this problem by increasing MacX's application memory size using the Get Info window. (See Chapter 6, "Troubleshooting," in *MacX User's Guide*.)

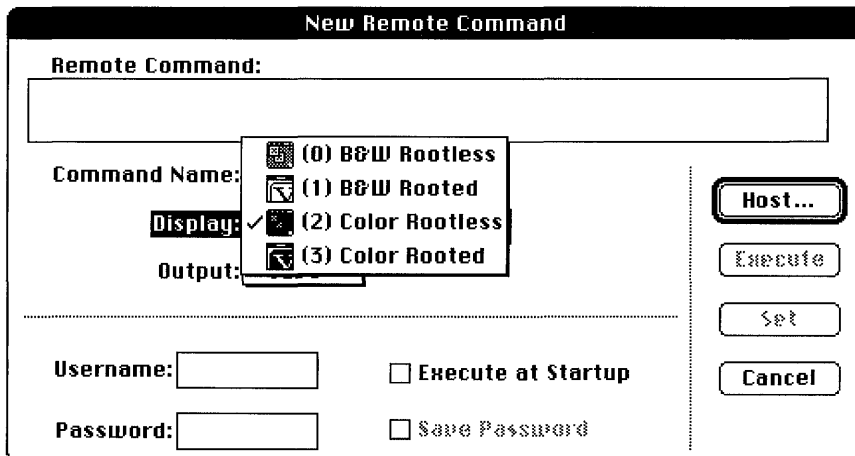
It is not always possible to predict memory requirements before performing some types of operations, so it's important that you not allow memory space to become critically low. If you receive the low-memory warning, indicated by a flashing "caution" symbol in your menu bar, you should take steps to free up memory, as described in Chapter 6, "Troubleshooting," in *MacX User's Guide*. If MacX runs out of application memory, you see an alert box. You should save in a MacX settings document any modifications you may have made and restart your computer as soon as possible to avoid a possible system crash or corruption of data.

Displaying client applications on color screens

If you're using MacX 1.1 on a color monitor, you can display client applications in color. Depending on how you open the client application, you can specify its window appear in color using one of two methods.

- If you are using the New Remote Command window, as shown in the Figure 18, you choose (2) Color Rootless or (3) Color Rooted from the Display pop-up menu. For more information about displaying client applications in color, see "Special Uses of the `-display` Option" in Chapter 3 of *MacX User's Guide*. That guide also contains descriptions of MacX rooted and rootless modes.

- **Figure 8** Choosing a display screen in the New Remote Command window



- If you want to open a client application from the command line in a terminal emulator window, you need to specify the display number at the command line. For example, enter `xclock -display server:0.2`

to display the `xclock` client application in color rootless mode [(2) Color Rootless]. Type the name of your computer in place of *server* in order to display the client's window on your computer screen.

To display the `xclock` client application in color rooted mode [(3) Color Rootless], enter `xclock -display server:0.3`

Type the name of your computer in place of *server* in order to display the client's window on your computer screen.

Optimizing client application performance on multiple monitors

MacX 1.1 allows you to display client applications on multiple monitors connected to your computer. You can display a client application on one monitor and drag its window onto another monitor. A client window can even “straddle” monitor boundaries, appearing on more than one monitor at the same time.

Suppose you have two monitors attached to your Macintosh computer. One monitor is set to a depth of 1 bit per pixel and the other monitor is set to a depth of 8 bits per pixel. You open MacX and create a remote command for the `maze` client application. You specify `maze` to appear on the 8-bit color monitor, using either the color rooted screen or the color rootless screen. You run the command and `maze` appears in a window on your 8-bit color monitor.

Since you set `maze` to appear on a color monitor at 8 bits per pixel, MacX draws `maze` fastest on the 8-bit color monitor. If `maze` had been set to display on a 1 bit per pixel monochrome monitor, the optimal speed would have been achieved on the 1-bit monitor.

To optimize the speed with which MacX draws windows in a multiple monitor setup, position the window on a screen of the same type (color or monochrome) and depth as the screen on which the window was originally displayed.

Running foreign window managers

MacX includes a built-in window manager for rootless screens designated screen number 0 and screen number 2. If you start a foreign window manager, such as `twm`, and specify that the window manager should manage either of these screens, you see the following messages in the Command Output window or in your terminal emulator window:

```
twm: another window manager is already running on screen 0?  
twm: another window manager is already running on screen 2?
```

You may also see these messages if the window manager you are attempting to start is set by default to manage all screens. As long as the window manager is running in the location (screen) that you want, you may safely ignore these messages.

You can start some foreign window managers so that they only manage the screen that you specify. The `twm` window manager allows you to do this by providing the `-s` flag option. For example, enter

```
twm -s -display server:0.1
```

to start `twm` only on the black-and-white rooted screen [(1) B&W Rooted]. For more information, see `twm(1)` in *X11 Command Reference for A/UX*.

- ◆ *Note:* For more information about how MacX deals with screens, see the *MacX User's Guide*. That guide contains a complete description of the four screens (black-and-white rootless, black-and-white rooted, color rootless, and color rooted) available in MacX.

Client applications can't connect to MacX

If the client applications running on your host computer are having a problem connecting to MacX, check the Communications Folder in your System Folder. Make sure you have only one connection tool for each network protocol (TCP/IP, ADSP, and so on). If you have more than one connection tool for a particular network protocol, remove one of the tools from the Communications Folder and restart MacX.

Displaying motion-sensitive client applications

Some client applications are designed to “follow” the movements of the pointer on the desktop. For example, the `xeyes` client application displays a pair of eyes that move as you move the pointer on the desktop. Depending on the applications appearing on your desktop and the type of screen on which you opened the applications, the motion-sensitive applications may not follow the pointer.

When you open a client application in MacX, you choose the type of screen on which its window appears: black-and-white rootless, black-and-white rooted, color rootless, or color rooted. MacX treats these screen types as four distinct physical screens, even though you may have any arrangement of monitors attached to your Macintosh computer. If you're displaying a motion-sensitive client window on one type of screen and click a client window (making it active) that is displayed on a different type of screen, the motion-sensitive window does not respond to the movements of the pointer. To make the motion-sensitive client follow the pointer, you must click the motion-sensitive client window to make the application active. (When you make a client application active, any operations you subsequently perform, such as typing at the keyboard or choosing a command from a menu, are performed on that active client application.)

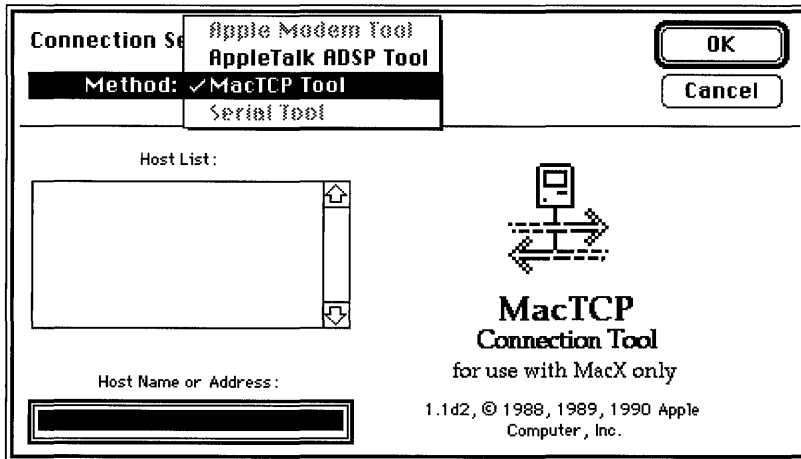
MacX 1.1 limitations

This section provides information about certain limitations of MacX 1.1.

Dimmed connection tools in the Host dialog box

To create a remote command, you choose a connection tool from the Method pop-up menu in the Connection Settings box. Some connection tools do not fully support the remote command facility in MacX. The names of these connection tools appear dimmed in the Method pop-up menu, as shown in Figure 9.

- **Figure 9** The Method pop-up menu in the Connection Settings box



Conflicts between the X11 protocol and Macintosh keyboard characters

In order to conform to the X11 protocol, MacX translates keypresses into a predefined set of X11 “keysyms.” This set contains the X11 character set (ISO Latin-1) and a number of special-purpose keys, such as the RETURN key. If you type a character on a Macintosh keyboard that MacX cannot translate into the X11 keysym set, MacX sounds the system beep to inform you that the character is unavailable in the MacX environment and has been ignored.

Macro software incompatibility

Do not use MacroMaker to simulate keypresses in MacX. Other keyboard macro software may also cause problems in MacX. These types of keyboard macro programs simulate keypresses but do not include key-release simulations. When MacX receives a keypress simulation and then does not receive a subsequent key-release simulation, it “thinks” that the key is being pressed continuously.

Conflicts between `xclipboard` and the Macintosh Clipboard

MacX uses the built-in Macintosh Clipboard when you cut and paste text. If you run the `xclipboard` client application with MacX, it conflicts with the Clipboard. To prevent this problem, *do not* run `xclipboard` with MacX. (In other words, do not open the `xclipboard` client application.)

Closing MacX while client applications are active

MacX won't allow you to open any new client applications if you close a MacX session, disconnect all active client applications simultaneously, and then open a new MacX session.

To prevent this problem, close each client application individually using one of several methods, such as clicking the close box of a client application's window, or by selecting a window and pressing COMMAND-W. After closing the last active client application, wait a couple of minutes before you close the current MacX session and open a new one.

MacX does not implement certain X requests

Certain incompatibilities exist between the Macintosh and X environments. For example, certain X applications attempt to change keyboard and bell sound settings, interfering with the functions of the Macintosh Operating System. MacX ignores the following requests:

- `ChangeHost`
- `SetAccessControl`
- `SetScreenSaver`
- `ForceScreenSaver`
- `SetFontPath`
- `ChangeKeyboardControl`

For rootless screens, MacX ignores these requests:

- `CirculateWindow`
- `GrabPointer`
- `GrabButton`

MacX ignores any attempts by the `ConfigureWindow` request to change the stacking order of top-level rootless windows. MacX recognizes all other features of `ConfigureWindow`.

Limits to color-table animation

In MacX 1.1, color-table animation works only on monitors of 8 bits per pixel that are based on a color look-up table (CLUT).

Client applications appear “grainy” on color screens

MacX loads standard color maps for the color rooted and color rootless screens. These standard color maps use a certain number of color map entries, and leave the remaining entries free. Some client applications, such as `xgif`, attempt to allocate more than the number of free colormap entries. If a client application attempts to do this, it will appear “grainy” on your screen. The client application also may display an error message.

Client applications will have this problem if they are written to make use of all (or nearly all) of the colormap entries in a standard default colormap. If you are an advanced X user or X programmer, you can modify client applications so that each one creates and sets the contents of its own color map. For information about displaying client applications on color screens, see “Displaying Client Applications on Color Screens” earlier in this document.

Problems displaying sample text in Font Director window

When you examine fonts in the Font Director window, you see a sample of the font. For example, if you select Geneva, you see the phrase “The quick brown fox” displayed in the Geneva font. Don’t worry if samples for some fonts contain blank spaces instead of characters. The Font Director attempts to create a sample of a particular font whether or not a character used in the sample actually exists in the font that has been selected. For example, if you select the Cursor font, the Font Director attempts to display the phrase “The quick brown fox jumps over the lazy dog” in that font. If the character *T* does not exist in the Cursor font, a blank space appears in its place.

X11

X11 is a full X environment for developers and advanced users, providing the native X Window System user interface. X11 is based on X Window System, Version 11, Release 4. It includes

- a display server
- client applications
- programming libraries
- Xt and Xaw toolkit libraries

X11 also includes A/UX Commando dialogs for each X client application.

- ◆ *Note:* The majority of the client applications and commands that were included in Release 3 of X11 have been updated to Release 4 in this new release of X11 for A/UX. The following Release 3 client applications are no longer a part of X11: `uwm`, `wm`, `reborder`, `pseudoroot`, and `x10tox11`.

You receive the following documentation to help you use X11 on your Macintosh computer running A/UX:

- *X11 User's Guide for A/UX*
- *X11 Command Reference for A/UX*
- *X11 Programmer's Reference for A/UX*

For more information about X11, see "X11" in Chapter 1, "Introduction to X Window System for A/UX," in *Getting Started with X Window System for A/UX*.

This document presents tips for

- installing X11
- using X11
- programming in X11

Read the following information before installing and using X11 on your Macintosh computer running A/UX.

Installing X11

This section presents information about installing X11 on A/UX.

Installing X11 on an 80 MB hard disk

If you are installing X11 on an 80 megabyte (MB) hard disk, you need to ensure that you have the required amount of free disk space. You can create the necessary disk space by leaving out the manual pages and games when you install A/UX from CD-ROM, tape, or floppy disk. The simplest way to do this is to enter `n` (for *no*) when the following prompt appears during the A/UX installation procedures:

```
Do you wish to accept the standard A/UX file configuration? [y/n,  
default=y, ? for help]>>>
```

After you enter `n`, the system displays additional prompts about leaving off manual pages and games. This step is described in Chapter 4, “Installing from the CD-ROM, Tape, or Floppy Product,” in *A/UX Installation Guide*, even though X11 is not mentioned. You can find additional information about leaving out the manual pages and games in Appendix B, “Nonstandard Procedures,” in *A/UX Installation Guide*.

If you purchased A/UX factory installed on an 80 MB hard disk, you can archive the manual pages and games (copy them to another hard disk) to create the required amount of free disk space. Once you have archived the manual pages and games, you can remove them from your hard disk and install X11. See Chapter 2, “Getting Around in A/UX,” in *A/UX Essentials* for information about archiving, copying, and restoring files. For instructions about installing X11, read *Getting Started with X Window System for A/UX*.

New `.twmrc` files

Both `Sample.twmrc` and `Expert.twmrc` include small modifications in this release of X11. If you’ve customized your current X11 `.twmrc` file and want to keep those customizations after installing the new release of X11, back up your current `.twmrc` file (for example, rename it `.twmrc.old`), install X11, and then compare your old `.twmrc` file to the new `.twmrc` file in X11.

When a previous release of X11 has been installed

The installation procedure for this release of X11 is designed to replace all the components present in previous releases of X11, with the exception of fonts. If you have modified any files in the `/usr/bin/X11`, `/usr/lib/X11` or `/usr/include/X11` hierarchies, you should move or copy your modified files to a safe place before installing X11.

In this release of X11, the standard font collections are stored in compressed format and have been given new names in the directory `/usr/lib/X11/fonts`. Before you install this latest release of X11, you can remove the existing fonts from any previous releases of X11 to obtain additional free disk space. Take care not to remove any custom fonts that you may have installed under `/usr/lib/X11`.

If you have added custom fonts to `/usr/lib/X11/fonts`, you must run the `mkfontdir` command in the appropriate font directory after installing X11. For example, suppose you had added custom fonts to the directory `/usr/lib/X11/fonts/misc`. After you complete the X11 installation, you would enter

```
cd /usr/lib/X11/fonts/misc
/usr/bin/X11/mkfontdir
```

Tips for using X11

This section presents information about using X11 on A/UX.

“Uncompressing” fonts before you use them

To save disk space, the fonts in `/usr/lib/X11/fonts` are stored in a compressed format. Each time X11 requires a font, it reads a compressed font file and “uncompresses” the font at that moment. If you have sufficient free disk space, you can uncompress all of the fonts ahead of time and store them in their uncompressed form. This improves the performance of X11.

For example, to uncompress the directory of fonts called `75dpi`, enter the following commands in either an `xterm` or CommandShell window.

```
cd /usr/lib/X11/fonts/75dpi
uncompress *.Z
```

```
/usr/bin/X11/mkfontdir
```

If you are working in a CommandShell window, these changes are put into effect the next time you start X11.

If you are working in an `xterm` window in X11, you need to exit X11 and restart the server in order to put the changes into effect.

Table 2 shows the directories of fonts that are distributed with X11 (`misc`, `75dpi`, and `100dpi`) and the additional free disk space (in blocks and megabytes) required to uncompress and store each font directory.

■ **Table 2** X11 fonts and sizes

Font directory	Additional disk space (blocks)	Additional disk space (MB)
<code>misc</code>	1100	.55
<code>75dpi</code>	3500	1.75
<code>100dpi</code>	4000	2

Problems created by using `screenrestore` in X11

Do not run the A/UX command `screenrestore` while working in X11. This command resets the Macintosh video card and corrupts the X screen.

Problems created by using `shutdown` and `init s` in X11

Do not run the A/UX commands `shutdown` or `init s` while working in X11. These commands can disrupt processes critical to the proper shutdown of the X server.

Problems that arise when `/shlib/libX11_s` is missing

With this release of X11, all client applications require that the run-time shared library `/shlib/libX11_s` be present and have “world execute” permission. The new X11 installation procedure installs and configures the `/shlib/libX11_s` file correctly. Make sure you do not remove the `/shlib/libX11_s` file at any time.

When you start X11 using the `x` startup script, the `x` startup script checks for the `/shlib/libX11_s` file. If the file is absent or executable, X11 exits immediately. If you start X11 using a method other than the `x` startup script, and a suitable `/shlib/libX11_s` file is not present on your A/UX system, any client application that you attempt to open exits with the message `Process killed`.

Problems that arise when the scroll region of `xterm` is changed

Sometimes an `xterm` window taller than 24 lines appears not to use lines near the bottom of its window. This problem can occur when you use `xterm` to remotely log on to a host computer that sets the `xterm` scroll region at exactly 24 lines. After logging off that remote host computer, you can choose Do Soft Reset from the `xterm` VT Options menu to restore use of the entire `xterm` window.

Tips for X11 programmers

Compiling X11 client applications on A/UX

If you are developing an X application, define the C-preprocessor symbol `macII` when compiling or loading an X application on an A/UX system. For more details, see the example in the following section, “Using Shared Libraries in A/UX.”

Using shared libraries in A/UX

A/UX 2.0 and later versions support run-time shared libraries. If you are developing an X application, you may wish to take advantage of the performance gains and memory reductions of shared libraries by linking applications with shared `libX11` and shared `libc`. Specify these shared libraries by using the `-lX11_s` and `-lc_s` flag options with the C compiler. For example,

```
cc -DmacII xgranite.c -o xgranite -lX11_s -lc_s
```

Make sure you type the letter `l`, not the digit `1`, for the first character in the last two flag options.

Using features of the `xmacII` server

The X11 server, called `xmacII`, supports screen depths of 1 bit and 8 bits, as well as all the appropriate X11 visual types. The `xdpyinfo` client application lists screen and visual characteristics. For more details, see `xdpyinfo(1X)` in *X11 Command Reference for A/UX*.

`xmacII` supports both save-under and backing-store capabilities.

`xmacII` supports connections from a maximum of 23 client applications. Because each client application can create many windows and subwindows through its connection, your screen can display more than 23 *windows* at one time; however, it can't display more than 23 individual *applications*.

By default, `xmacII` operates in "backward compatibility" mode. Certain client applications (particularly `xterm`) from earlier releases of X11 issued `ChangeWindowAttribute` requests with an invalid value for the `do_not_propagate` field. Enabling backward compatibility permits these client applications to run successfully with the current release of X11. For more information, see `xmacII(1X)` in *X11 Command Reference for A/UX*.

`xmacII` can support per-user access authorization using the `MIT-MAGIC-COOKIE` protocol. By default, this option is disabled. For more information, see `xmacII(1X)`, `xdm(1X)`, `xauth(1X)` in *X11 Command Reference for A/UX*.

Changing arrow key functions using `-optionmouse`

The X11 server, `xmacII`, accepts a new command line flag option: `-optionmouse`. You can use this flag option with the startup script `x`. For example, to specify `-optionmouse` when you start up X11 on an 8-bit color monitor using the `x` startup script, enter

```
X -screen 0 -depth 8 -optionmouse
```

In X11, the arrow keys (normally) simulate the middle and right buttons on a three-button mouse. To move the cursor using an arrow key, you must hold down the `OPTION` key while pressing an arrow key.

When you specify `-optionmouse`, the opposite is true. Pressing an arrow key moves the cursor, and pressing arrow keys in combination with `OPTION` simulates the action of a three-button mouse.

Finding additional information about X11

After installing X11, you can find additional update information in the file `/usr/lib/X11/README`. You can read the file in one of the two ways described here. These steps assume that you are at a command prompt in either an `xterm` window, a `CommandShell` window, or the A/UX System Console (console emulator window).

- **Enter more `/usr/lib/X11/README`.**

This command lets you see the file one page at a time. To see more of the file, press the Space bar at the `--more--` prompt. When you reach the end of the text file, you see the command prompt. To quit before the end of the file, press `q`.

- **Use an A/UX text editor to read the file.**

If you are working in X11, you do *not* have access to the A/UX default editor, `TextEditor`. In X11, you can use a typical UNIX® editor like `vi` or an X editor like `xedit`. For information about using `xedit`, see Chapter 7, “Desktop Client Applications,” in *X11 User's Guide for A/UX* and `xedit(1X)` in *X11 Command Reference for A/UX*.

- ◆ *Note:* If you are in the A/UX Finder™, you can use `TextEditor` to edit the file by entering `TextEditor /usr/lib/X11/README` in a `CommandShell` window. For information about using `TextEditor`, see *A/UX Essentials*.