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MacX 1.2 Features, from Release Notes (4/93)

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TOPIC -----

This article describes the new features and other improvements of MacX 1.2, configured to broaden compatibility with X client applications and to provide you with increased ease of use. You may even notice some improvements in performance. In most cases, you'll never have to adjust the MacX 1.2 default settings. Advanced users, however, may want to study the following feature descriptions to see if their special needs might be met by changing the default settings.

DISCUSSION -----

This section provides information about improvements and features not described in the MacX 1.1.7 Release Notes or the MacX User's Guide:

- If your Macintosh computer has a color monitor and video card, MacX 1.2 makes color graphics capabilities available to X client applications by default. No special "screen" designations are required. Advanced users, however, can change the screen designation to meet special needs.
- MacX 1.2 provides further display improvements with a special option preset to disable non-zero screens. With this option as the default, the server only recognizes screen 0. This is helpful for those clients that experience programmatic conflicts caused by the presence of multiple screens. Advanced users, however, can change this option to enable multiple screens.
- MacX 1.2 provides standard X Window System Backing Store and Save Under capabilities. With these features, graphics don't have to be redrawn every time an overlapping window or pop-up menu is moved or closed. Some X client applications rely on these capabilities to support complex graphical operations.
- MacX 1.2 makes all 256 entries of each screen's default colormap available for use by X client applications. This treatment of screen colormaps represents a change in the default function of MacX 1.1.7.
- By default, MacX 1.2 disables the Smoother Animation feature in order to

provide better graphics performance. This represents a change in the default setting from the MacX 1.1.7 setting.

- MacX 1.2 allows client applications to connect to your Macintosh computer without any action on your part. If you want to control which X client applications are displayed on your MacX server, you can enable Access Control from the MacX Remote menu. As a result, a host access alert box will be presented to you before an X client is allowed to be displayed on your screen. This treatment of host access alert boxes represents a change in the default setting from MacX 1.1.7.
- New window-menu commands give you more ways to manage windows. The Circulate Up and Circulate Down commands give you easy ways to switch between windows. The Maximum Height / Restore Height command gives you an easy way to resize windows.
- MacX 1.2 reports the size of a window as you resize it.

More Flexible Screen Configurations

MacX 1.2 provides greater compatibility for X client applications that are unable to support more than one X server screen. This improvement is especially useful for clients that only check the default screen for color support. MacX now supports clients that expect color capability on the default screen, also called screen zero, or the screen corresponding to the display host:0.0.

The default settings for screen zero are as follows:

- Match Best Monitor. If you have a color monitor connected to your Macintosh computer, the default screen is configured for color. If you don't have a color monitor, MacX displays the screen in black and white. If you have more than one monitor attached to your Macintosh, the MacX Window Manager places clients on the color monitor by default.
- Rootless Mode. The default screen is a rootless screen that uses the MacX Window Manager to adorn client windows in the Macintosh style.

Advanced users can change the screen designation to meet special needs. To change the default screen configuration, follow these steps:

- 1) Open the MacX application program by double-clicking its icon.
- 2) Choose the Display Preferences command from the Edit menu.
- 3) Click the Screen Zero options that correspond to the configuration you want.

Once you choose Screen Zero options, the attributes of the other MacX screens are established according to the following table.

- Note - If you have the Disable Non-zero Screens option (the default setting) turned on, then only the screen 0 column has meaning.

MacX Screens - ("Monochrome/" is represented in the table as "Monochrm/")

Screen Zero options -----	Video card -----	Screen 0 -----	Screen 1 -----	Screen 2 -----	Screen 3 -----
Match Best Monitor (Rootless)	8-bit/pixel (256 colors)	Color/ Rootless	Color/ Rooted	Monochrm/ Rootless	Monochrm/ Rooted
	1-bit/pixel (monochrome)	Monochrm/ Rootless	Monochrm/ Rooted	Color/ Rootless	Color/ Rooted
Match Best Monitor (Rooted)	8-bit/pixel (256 colors)	Color/ Rooted	Color/ Rootless	Monochrm/ Rooted	Monochrm/ Rootless
	1-bit/pixel (monochrome)	Monochrm/ Rooted	Monochrm/ Rootless	Color/ Rooted	Color/ Rootless
Color (Rootless)	Any	Color/ Rootless	Color/ Rooted	Monochrm/ Rootless	Monochrm/ Rooted
Color (Rooted)	Any	Color/ Rooted	Color/ Rootless	Monochrm/ Rooted	Monochrm/ Rootless
Monochrome (Rootless)	Any	Monochrm/ Rootless	Monochrm/ Rooted	Color/ Rootless	Color/ Rooted
Monochrome (Rooted)	Any	Monochrm/ Rooted	Monochrm/ Rootless	Color/ Rooted	Color/ Rootless

- Click the Black and White button, and screen zero (the default screen) will support X client applications that only require 1 bit per pixel.
- Click the Color button, and screen zero (the default screen) will support X client applications requiring 8-bit color.
- The Screen Zero option is preset to Match Best Monitor. With this selection, MacX configures the default screen in either of two ways:
 - as an 8-bit color screen if your monitor is set for greater than 1 bit per pixel
 - as a 1-bit monochrome screen if your monitor is set for 1 bit per pixel (black and white)
- The screen zero option is preset to Rootless. With this selection, X clients that connect to the default screen are displayed in rootless mode; that is, they are managed by the Macintosh Window Manager alongside other Macintosh application windows.
- Click the Rooted button, and X clients that connect to the default screen are displayed in rooted mode; that is, they are drawn on an X root window and must be managed by a foreign (remote) window manager.
- The Disable Non-zero Screens option is preset to "enabled." With this selection, all screens other than the default screen (screen zero) are ignored by MacX. As a result, client applications that are designed to connect only with screen zero are displayed correctly on the MacX

server because multiple screens are no longer available. To turn off this option, click the checkbox to remove the "X" from the box.

- 4) Click the OK button to confirm your preferences.
An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.
- 5) Click the OK button to dismiss the alert box.
- 6) Save, close, then reopen the MacX document to enable your new display preferences.

For more information about rooted and rootless windows, see Chapter 1 of your MacX User's Guide.

Support for Backing Store and Save Under to Preserve Client Windows

MacX now provides Backing Store and Save Under features as defined by the X Window System standard.

By default, Backing Store and Save Under support are given to those client applications that require the MacX server to preserve window contents. Typically, these X clients create complex graphic images that can take a substantial amount of time to refresh. By taking advantage of Backing Store and Save Under, X client applications can greatly reduce the time they need to refresh their windows.

These new capabilities, however, may incur an additional memory cost to your MacX application program because the MacX server must set aside additional memory to preserve portions of client windows.

- Backing Store and Save Under may consume additional memory. In the course of providing Backing Store and Save Under to X client applications, MacX may use additional memory. As a result, you may want to increase the "application memory size" of MacX. For more information, see "Can't Use a MacX Feature," in Chapter 6 of your MacX User's Guide.

Backing Store and Save Under features are set by default to provide you with the level of support required by most X client applications. Experienced users of the X Window System, however, may want to adjust this level. For example, you can disable Backing Store entirely or force it on every window of every X client. In addition, you can disable Save Under entirely.

Follow these steps to change the level of Backing Store capability.

- 1) Open the MacX application program by double-clicking its icon.
- 2) Choose the Display Preferences command from the Edit menu.
- 3) Click the Backing Store option that corresponds to the level of feature support needed.

- Click the Off button to disable the Backing Store feature entirely. With the feature in this state, client applications must redraw their windows each time they are exposed. You save computer memory, but you may have to wait for some client windows to redraw themselves when Backing Store is turned off. The amount of computation time needed to redraw the client window depends on the client application itself, the network bandwidth, and the speed of your computer.
 - The Backing Store feature is preset to Requesting Clients. This selection enables the Backing Store feature only for the windows of client applications that request it. Clients that do not request Backing Store may redraw their windows more slowly than those with the feature enabled.
 - Click the All Windows button to provide Backing Store capability for all client application windows, regardless of whether or not they request it. With the feature in this state, you typically use additional computer memory but get the benefit of not having to wait for client windows to redraw themselves each time they are exposed. Because many clients (particularly those that primarily draw text) perform worse with Backing Store enabled, this setting should be used with caution.
- 4) Click the Save Under option that corresponds to the level of feature support needed.
- Click the Off button to disable the Save Under feature. With the feature in this state, client applications must redraw their windows each time they are exposed. You save computer memory when Save Under is turned off, but you may have to wait for some client windows to redraw themselves.
 - The Save Under feature is preset to Requesting Clients. This selection enables the Save Under feature only for the windows of client applications that request it. When a window requesting Save Under is displayed on your monitor, the contents of windows behind it are saved (even if they didn't request Backing Store); when the window is dismissed, the saved contents are restored. Save Under is used mainly for transient windows such as menus and dialog boxes.
- 5) Click the OK button to confirm your preferences.
An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.
- 6) Click the OK button to dismiss the alert box.
- 7) Save, close, then reopen the MacX document to enable your new display preferences.

Greater Client Compatibility with colormaps

MacX 1.2 makes all 256 entries of each screen's default colormap available for use by X client applications. A default "standard" colormap is no

longer installed automatically by MacX. This change provides support for those X client applications that require many free colormap entries in the screen's default colormap.

Earlier versions of MacX installed a standard colormap as the screen default colormap, leaving only 128 empty colormap entries available for client allocation. This caused problems with clients requiring that more than 128 colormap entries be available in the default colormap.

If your particular X application expects a standard colormap to be present in the screen default colormap, follow these steps to load the standard colormap:

- 1) Open the MacX application program by double-clicking its icon.
 - 2) Choose the Misc. Preferences command from the Edit menu.
 - 3) Click the Load Standard Colormap at Startup checkbox.
 - 4) Click the OK button to confirm your preferences.
An alert box appears to report that your preferences will not be enabled until the MacX file, or document, is reopened.
 - 5) Click the OK button to dismiss the alert box.
 - 6) Save, close, then reopen the MacX document to load the standard colormap.
- Are you having trouble displaying a color X client on your MacX server alongside other color clients? Try displaying the troublesome client application on your MacX server by itself. Your other X clients may have filled up the colormap, and the troublesome application, finding the colormap already full and not requesting MacX to create a new one, fails to run. By running only the troublesome X client application, you allow it to take advantage of all the colormap entries it needs since no other applications are competing for colormap entries.

Faster Display of Client Applications, with Smoother Animation Turned Off

Smoother (but Slightly Slower) Animation is no longer enabled by default, with the result that client applications may be displayed more quickly on your MacX screen.

The Smoother Animation option regulates how often MacX responds to client graphics requests. With this option turned off, client graphics requests are batched for approximately one-sixth of a second before executing to prevent constant screen refreshing—a time-consuming process.

With Smoother Animation turned on, client graphics requests are rendered immediately, meaning that client applications may be displayed more slowly on your monitor than with the feature turned off.

Depending on your needs, you can enable Smoother Animation anytime. Follow

these steps:

- 1) Open the MacX application program by double-clicking its icon.
- 2) Choose the Misc. Preferences command from the Edit menu.
- 3) Click the Smoother (but Slightly Slower) Animation checkbox.
- 4) Click the OK button to enable your new preference and to dismiss the preferences window.

For more information about animation preferences, see the section "Animation and Mouse-Movement Preferences" in Appendix A of the MacX User's Guide.

Easy Client Access to MacX, with Host Access Alert Boxes Turned Off

Host access alert boxes are no longer enabled by default, allowing unrestricted access by client applications to MacX. As a security feature, the following alert box, if enabled, appears automatically when clients attempt to connect to MacX. The alert box requests your permission to accept connections from the client.

This alert box may appear several times in the course of establishing a connection. With the alert box suppressed, you no longer have to respond to it before clients can connect to MacX. However, this also means that you no longer have control over client connections.

Depending on your needs, you can enable the host access alert box at any time. Follow these steps:

- 1) Open the MacX application program by double-clicking its icon.
- 2) Choose the Access Control command from the Remote menu.

New Window Commands for Easier Window Control

Three new commands have been added to the Window menu to give you greater convenience when controlling windows.

Circulate Up (Cmd-U) This command causes the window farthest back in the collection of MacX windows to be brought to the front of the stack. This is handy for switching between windows easily without removing your hands from the keyboard to use the mouse.

Circulate Down (Cmd-D) This command causes the front most window in the collection of MacX windows to be sent to the back of the stack. This is handy for switching between windows easily without removing your hands from the keyboard to use the mouse.

Maximize Height/Restore Height (Cmd-M) This command, which is only enabled when the front most window is a rootless X client window, makes the front most window taller by extending its bottom edge to the bottom of the

screen. If the front most window has already been extended in this way, the command restores the window's previous height.

Window Dimensions Reported During Resizing

While rootless X windows are being resized, the size of the window in client-specified units (normally, pixels for graphics or characters for text-oriented clients such as terminal emulators) is displayed in the menu bar.

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