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Macintosh II Managers: Changes From Macintosh Plus ROMs

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TOPIC -----

A number of existing managers in the Macintosh Plus ROM have been expanded for use in the Macintosh II. This article provides a short description of these managers and the changes.

DISCUSSION -----

Font Manager

Fonts in ROM now include Monoco 9, Geneva 9 and 12, as well as Chicago 12. There are also 4 and 8-bit versions of Chicago 12 and a 4-bit Geneva 9 font. No new data structures are defined within the Font Manager, but the `fontType` structure has been modified to support color fonts. It now includes a field that indicates the depth of the font.

Window Manager

A new data type, `CWindowRecord`, has the same structure and size as the old `WindowRecord`, except the field `port` is now defined as a `CGrafPort` rather than the old `GrafPort`. Two other new types related to `CWindowRecord` are `CWindowPtr` and `CWindowPeek`. Another new data structure, `AuxWinRec`, stores the necessary information for drawing windows in color. Its primary function is to hold the handle to the window's individual color table.

Control Manager

The Control Manager has been expanded to include color support with the definition of a new data structure, `AuxCtlRec`, and its corresponding resource type `cctb`. These structures define a color table associated with the control and determine the border color, fill color, and text color for the control.

Menu Manager

The Menu Manager now uses scrollable menus instead of `QuickDraw` to display menu text. Scrollable menus means that scrolling is possible with

an up or down arrow at the top or bottom of the menu. The Menu Manager now implements up to five levels of hierarchical menus

A new data structure, MbarProc, holds information pertaining to the menu bar. Menu items themselves have been disassociated from the menu bar definition to permit hierarchical menus to be handled more easily.

Color menus are implemented through the Menu Color Information Table. A distinct MCInfoRec may exist for the menu bar and for each menu title and item. Within each MCInfoRec, you find RGBColor information for the item in question and its background color.

TextEdit

A TextEdit record may now have style information associated with it. A handle to a TEstyleRec structure can replace the TextEdit fields txFont and txFace. This style record holds an array of "runs", each of which may use a different text style (font, face, size, color, line height, and font ascent).

Style information can be passed from TextEdit to the application through a TextStyle record, which includes font, face, size, and color information. When the scrap is used to cut and paste style information, a new scrpSTElement type is used to transfer style and start character information.

Dialog Manager

Two new resource types, actb and ictb, add color and style information to alerts and dialogs, and dialog item lists. These resources are associated with a dialog or alert by assigning them the same resource ID as the parent ALRT or DITL.

International Utilities Package

The International Utilities Package has been extended to support the new Script Manager. It now includes multiple resources within a given script, and new date and time formatting options. International scripts with non-Roman sorting rules may specify the details via hooks in this package, so that the many diacritical forms of the same letter may be treated for sorting purposes as equals regardless of diacritical marks, accents, umlauts, circumflexes, etc., e.g. a umlauted can be equated with a accented.

File Manager

The Macintosh II File Manager can be used with an external file system other than the traditional Macintosh code.

Print Manager

The Printing Manager has added one call to ROM: the print glue file (called PRLINK or PRSCREEN) has moved from the system file into the

Macintosh II ROM.

Device Manager

The Device Manager has been modified to include support for NuBus cards, both as boot devices, and through the interrupt process.

The Device Manager gains control of the Macintosh II bootup process shortly after video and boot drivers have been initialized. If the Startup Device has been set to one of the NuBus slots, and the configuration ROM found there contains boot code, the Device Manager will pass control to that NuBus device. If the Macintosh II continues its boot process from a Macintosh disk, the Device Manager will search all NuBus slots, looking for device drivers in the configuration ROM of each NuBus device. Any that are found there are installed into the system heap and initialized for later use by an application.

The Device Manager is the software interface for tracking the interrupt queue, determining the priority level that is proper to address, and, if necessary, posting an error when the interrupt cannot be serviced.

SCSI Manager

The Macintosh II and Macintosh SE ROMs implement an SCSI "blind" transfer mode. The types of SCSI drives used in these computers may support hardware handshaking, when blind transfer mode will result in faster transfer rates.

AppleTalk Manager

The AppleTalk Manager supports several changes to its code to assist servers, workstations, and spoolers:

- The node number of the computer may be requested in the server range.
- Packets may be sent to one's own node, or through a client-specified socket.
- The Name Binding Protocol can now accept multiple active requests.
- An Echo Protocol and an AppleTalk Session Protocol have been added.
- An Extended Protocol Package (XPP) combines portions of the AppleTalk Session Protocol and AppleTalk Filing Protocol.

Vertical Retrace Manager

The Vertical Retrace Manager has been changed slightly to take into account the flexible video interface on the Macintosh II. Since certain tasks on the Macintosh depend on the vertical retrace interrupt that occurs on the Macintosh 60 times every second, the Macintosh II must continue to supply that signal. The Vertical Retrace Manager can attach

tasks to that pseudo VBL signal.
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