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Power Macintosh: Mixed Mode Manager (3/94)

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TOPIC -----

The Mixed Mode manager is a new system level manager that handles switches between the native PowerPC and 680x0 environment.

DISCUSSION -----

Applications, device drivers, and even portions of system software which were not ported to PowerPC code will run under the 680x0 emulator. The Mixed Mode manager will make sure that the code is properly routed to the correct environment.

The Mixed Mode Manager is designed to be completely transparent to 680x0 applications. If, for example, an application makes a toolbox trap call, the Mixed Mode Manager may be invoked to call a PowerPC version of the trap, but the application is not aware of that fact.

PowerPC applications, however, will have to be aware of the Mixed Mode Manager. The Mixed Mode Manager performs the same services for 680x0 applications as for PowerPC applications. For example, a PowerPC application making a toolbox call could end up in a 680x0 implementation of the call via the Mixed Mode Manager.

More importantly for PowerPC applications is the case where the application expects to be called-back by the system, for example, with a ModalDialog filter procedure. In this case, the application must make the filter procedure Mixed Mode compatible by creating a data structure called a routine descriptor that is used by Mixed Mode when the system calls the function.

Assistance in avoiding mode switches is provided by fat traps. A fat trap is a Toolbox routine that is available in both 68000 and native implementations. The two versions are enclosed in a "routine descriptor" that tells the mixed mode manager how to call it from either environment.

Article Change History:

21 March 1994 - Added in-depth description of Mixed Mode Manager and its function.

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