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Native, Conventional, & Fat Applications: Description (6/95)

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TOPIC -----

This article clarifies the terminology used in referring to Power Macintosh-compatible applications.

DISCUSSION -----

The Power Macintosh can run two kinds of compatible software:

- Native
- Conventional

Native Applications

Native software is software written for specifically the PowerPC chip; it only runs on a computer that has a PowerPC chip on its logic board.

Conventional Applications

On Power Macintosh computers, conventional software is software written for Macintosh computers that have a 68000, 68020, 68030, or 68040 chip on their logic boards. Conventional software is sometimes referred to as "68K" software. It runs on Macintosh computers that have either a 680xx chip or a PowerPC chip.

Emulation Mode

Conventional software runs in an "emulation" mode, which is functionally similar to the 68020 processor. The main differences between the 68020 processor and later processors (68030 and 68040) are:

- It does not have a PMMU (Paged Memory Management Unit)

This point is necessary because the PowerPC has a newer, better, memory management model.

- It does not support the SWAP16 instruction

This point is addressed by improvements in the PowerPC chip.

- It does not support a floating point unit

This point requires different steps to work around; such as software emulation of an FPU, or, more commonly, software floating-point routines.

Even though the speed of emulation mode is compared to the speed of a Macintosh with a 68020 processor, conventional software generally runs faster in emulation mode than a Macintosh with a 68020 chip. The performance depends on how many references the software can make to native routines in the computer's software "toolbox". The more native routines that are performed; the faster the software runs.

"Fat" Applications

As new software is written, you will find references to "fat" applications. These are programs that can be run on either a 68K or Power Macintosh computers without modification. The operating system automatically determines which part to use.

Since "Fat" applications are really two programs in one, many installers offer either a "Power Macintosh" or "Conventional" installation. If you have installed a software application that claims to be "Accelerated for Power Macintosh", and it does not recognize features that definitely exist (such as an FPU), make sure you have installed the correct version.

Both versions run on the Power Macintosh, but only the "native" version benefits from all the special features of the Power Macintosh.

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