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System 7.1: System Enablers Described (7/93)

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TOPIC -----

System enablers are software modules, each specific to a given CPU (hardware model). A system enabler overrides system resources at startup to allow existing system software to support new Macintosh models. This mechanism eliminates the need to release CPU-specific system software each time a new Macintosh model is released. System Enablers are located at the top level of the System Folder -- not in the Extensions folder.

The System 7.1 base system has built-in support for all Macintosh models that shipped before the release of System 7.1 (from the Macintosh Plus through the Macintosh Quadra 950 and PowerBook 145). All new Macintosh models shipping after the release of System 7.1 will include System Enabler software specific for that model or a particular family of models, like the Macintosh PowerBook family.

This article describes System Enablers in more detail.

DISCUSSION -----

New CPUs No Longer Require New System Releases

System enablers (which were called "gibblies" in early documentation and system development releases) replace the release strategy that Apple used in the past for minor system changes needed for new hardware. The old strategy was to release a new version of the system software, such as version 6.0.8 or 7.0.1. With enablers, the differences in hardware no longer require a new system release, but instead each new computer has its own enabler (if necessary) to make the system work for that hardware.

This change was made for two reasons:

- Creating an enabler instead of a whole new system release reduces Apple's quality assurance and testing time. By creating an enabler, we're testing new code only on new computers. Past computers aren't affected since the new enabler won't run on those computers. This also reduces third-party testing time, since they will no longer have to install a new system release on all older computers and test for compatibility.

- Enablers reduce user confusion and unnecessary upgrades. In the past, every time a computer was released, with its corresponding new software release, users of older computers were unsure if they needed to upgrade to the new system. Many assumed that since it was newer, it was better. This usually wasn't the case. For instance, upgrading from 7.0 to 7.0.1 on a Macintosh IIcx, gives you nothing new.

Apple will continue to use system extensions or components to add new functionality across the product line, as with QuickTime and Macintosh Easy Open.

Some General Rules About Their Behavior

System enablers are system software, designed and intended solely for the use of Apple Computer. Their functionality and implementation will change. An enabler is essentially an extension to the System file; from a programmatic standpoint it is the System file.

The Resource Manager was changed slightly to recognize references to the System file (CurResFile(0), for example) as being references to the System file and the current enabler. The code or other resources included in the enabler file appear to actually reside in the System file.

If there are multiple enablers in a computer's System Folder, the system will use only one of them. The system software (System file plus enabler) is responsible for arbitrating which enabler is used on a specific computer. It looks at the computer type it's currently running on, the computers that the enabler supports, and some enabler-internal applicability flags. Note that this is how the decision is currently made; as enablers are used for more computers and in different situations, more variables may be added to the decision process.

Enablers and Reference Releases

A specific enabler may not stay around forever. Apple has announced its intention to have "reference releases" every year to 18 months. These are the system upgrades that all users will be encouraged to install. Some enablers may be rolled into a reference release, so a computer that needed an enabler for System 7.1 may not need one for System 8. This isn't a hard and fast rule; some enablers may stay around forever, depending on the functionality they enable.

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