



Transitioning The Missing Sync™ to Apple's Intel-based Mac Hardware Platform

Strategy and Technical Brief
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Background

At their 2005 Worldwide Developers Conference, Apple announced their strategy to transition from PowerPC to Intel processors. For many end users, there should be little to no change. For developers, however, the change may not be as simple. Applications will need to be recompiled and possibly modified to work on Intel processors. Simple applications or those that have already been targeted for cross-platform development should require only a minimal amount of time to port to the universal binaries format that runs on both PowerPC and Intel processors. Mark/Space's line of Missing Sync products have varying degrees of complexity and outside dependencies. This document outlines Mark/Space's strategy for transitioning its line of Missing Sync products that connect various handheld devices to computers running Mac OS X. Mark/Space is fully committed to the Mac OS on both PowerPC and Intel processors.

Product Line

Mark/Space's current line of Missing Sync products includes The Missing Sync for Palm OS, The Missing Sync for Windows Mobile and The Missing Sync for hiptop. Each product has components that make the transition to Intel challenging, especially their reliance on third-party devices and third-party synchronization conduits.

Timeline

Mark/Space plans on delivering products that run natively on Intel processors soon after the first Intel based Macintoshes are delivered to customers in order to allow Mark/Space to perform adequate testing on shipping hardware. According to Apple, this should be sometime during the first half of 2006.

Missing Sync for Palm OS

The Missing Sync for Palm OS is by far the most complex of the Missing Sync products to move to Intel processors, mostly because a large number of third-party developers have written conduits that Mark/Space intends to support on both PowerPC and Intel processors. By working with third-party developers sooner rather than later, Mark/Space hopes to have developers building conduits that run natively on both PowerPC and Intel processors by the time Mark/Space ships an Intel-native version of The Missing Sync for Palm OS.

All of the third-party conduits developed for Palm OS that run under The Missing Sync for Palm OS and also PalmSource's HotSync Manager are CFM binaries and can only run natively on PowerPC processors. In order for these conduits to be loaded on an Intel-based Mac, the application that loads them will need to be run in Apple's compatibility environment called Rosetta. While this is a fine short term solution, it won't allow The Missing Sync for Palm OS to run natively on Intel processors and will run slower than the same application running on PowerPC processors (the actual difference in performance is unknown at this time). As of this writing, Apple has not provided any information that would allow native Intel-based applications to execute CFM shared libraries (conduits are CFM shared libraries). While there may be a way

to accomplish this, Mark/Space believes it would be cumbersome and may lead to problems down the line.

Mark/Space has developed a bridge library that allows conduit developers to write conduits using Apple's Xcode development environment and compile their conduits as universal binaries. Conduits so compiled will run today under both The Missing Sync for Palm OS and HotSync Manager on PowerPC processors, and they will also run natively on Intel processors under The Missing Sync for Palm OS, once Mark/Space releases a version that runs natively on Intel.

In order to handle the situation where all conduits might not be universal binaries, The Missing Sync will make this determination when it starts and run all necessary components, in particular the user interface and the conduit manager, under Rosetta. This is not an ideal situation as one old conduit will cause a slowdown for the entire application. The user will be informed of this by the application and urged to contact the conduit developer about releasing a new version that is Intel-native. Mark/Space believes that with the bridge library it has developed (and is freely providing to developers), there is no downside for making conduits that are universal binaries and operate natively on both PowerPC and Intel processors.

As The Missing Sync for Palm OS consists of many components and has a lot of code that is dependent on the endianness of the processor, the conversion to Intel will take several months at a minimum. Mark/Space will have a beta program that will be open to qualified developers and selected individuals to test an Intel-native version when the product's development nears completion.

Missing Sync for Windows Mobile

The transition of The Missing Sync for Windows Mobile from PowerPC to Intel will be much more straightforward than for the Palm OS edition. Mark/Space can compile the application and all related components as universal binaries, modify routines that are endian specific and have an application ready to go much sooner. However, it is unknown at this time if the Entourage plugin will/can operate natively on Intel as the plugin currently relies on an SDK provided by Microsoft that is CFM only. Microsoft has announced that they will deliver an Entourage-to-Sync Services (Xsync) mechanism in the summer of 2005. Mark/Space will recommend that customers choosing to use Entourage use the Xsync plugin in The Missing Sync to sync to Xsync and then have Entourage sync to Xsync so that The Missing Sync does not have to communicate directly with Entourage. As with the Palm OS product, a beta program will be opened when development nears completion.

Missing Sync for hiptop

The Missing Sync for hiptop version 2 can easily be moved to Intel due to its lack of external dependencies except for the communications with the hiptop server. Since The Missing Sync for hiptop only talks to Xsync, there are no plugins or third-party conduits that need to be supported. Mark/Space expects the porting of this application to take a relatively short amount of time. As with the other products, a beta program will be announced when development is almost complete.

Conclusion

Mark/Space is fully committed to the Macintosh on both PowerPC and Intel processors and will move its entire Missing Sync product line to universal binaries as soon as possible so that any issues that arise can be worked out, hopefully prior to first customer ship of Intel based Macintoshes. The transition should be seamless to end users. For developers that have written Palm OS conduits that work with Missing Sync for Palm OS and HotSync Manager, some work will be needed to move development to Xcode and to compile the conduits as universal binaries. Mark/Space has written a separate whitepaper for these developers on developing conduits using Xcode which should assist developers.

For More Information

- Mark/Space has also published a whitepaper on Conduit Development using Xcode. That document should be used as a companion to this document for Palm OS conduit developers.
- Mark/Space hosts developer mailing lists for its Palm OS and Windows Mobile products. Please visit: <http://www.markspace.com/developers.html> for information on signing up. Mark/Space engineers regularly read and respond on these lists and are more than willing to help third-party developers.

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