Flash Player "Square" 64-bit Support FAQ

Why can't you put a 32-bit plug-in into a 64-bit browser?

64-bit software is coded differently from 32-bit software. Generally, programs that work together must have the same architecture (e.g., 32-bit or 64-bit).

In most cases, a compatibility layer allows 32-bit software to run on 64-bit operating systems. For example, most browsers on Windows are 32-bit (such as Internet Explorer 32-bit, Firefox, and Chrome), and they run well on 64-bit Windows with Flash Player 10.1. Accordingly, Flash Player 10.1 currently runs well on Windows 7 64-bit using any of these 32-bit browsers. Similarly, 64-bit browsers like Safari on Mac OS Snow Leopard run Flash Player 10.1 using a transparent compatibility layer.

Flash Player "Square" adds native 64-bit support so that it runs without need for compatibility software in 64-bit browsers.

What are the difficulties of moving Flash Player from 32-bit to 64-bit architecture?

There are a number of significant changes that are required to move from 32-bit to 64-bit architecture. It's not just a simple recompile. For example, Flash Player relies on many code libraries for functionality like audio and video playback or hardware acceleration. If a library that Flash Player depends isn't available for 64-bit, we need to rewrite code for new libraries. Flash Player is used to create powerful, beautiful applications and content, but it can also play back a wide array of media, ranging from video clips from Flash Player 6 to the latest and greatest H.264 video streaming live with hardware acceleration. To do so natively in 64-bit, all of the many library dependencies must be available or rewritten for 64-bit. For example, on Mac OS X, we rewrote code that used the older, 32-bit only Carbon libraries to instead use modern Cocoa libraries. Except for compatibility code we include for non-Cocoa browsers, Flash Player 10.1 is now fully rewritten for Cocoa, setting the stage for a 64-bit Flash Player.

Do you get any performance improvements or memory footprint problems with the move?

The major benefit of 64-bit is to allow programs to use more than 4 GB of addressable memory. Despite the bigger number, 64-bit doesn't necessarily make software run faster. Accordingly, simply converting most non-data intensive programs, such as most productivity applications, media players, and web browsers, to 64-bit does not intrinsically yield performance improvements. 64-bit does help applications that use large amounts of memory, such as large databases or professional image and video editing applications. For example, Photoshop CS5 and Premiere Pro CS5 now support 64-bit, taking advantage of this to perform many tasks in less than half the time.

For Flash Player, a 64-bit version will enable native compatibility with 64-bit browsers, so that Flash Player will install and work seamlessly across browsers without the need for compatibility layers,

allowing Flash Player to perform even faster. It can also open the door to optimizations made specifically for 64-bit capable processors, analogous to the performance optimizations we've made for 32-bit. And beyond the move to 64-bit, we are continuing to advance the Flash Player architecture. For example, the recently released Flash Player 10.1, now available at http://get.adobe.com/flashplayer/, includes enhancements that cut memory usage by half in many cases. We're also benefiting from the work we've done to bring Flash Player to mobile, which directly translates to faster performance, reduced resource usage, and longer battery life across desktops and devices. The 64-bit version of Flash Player will benefit from the same improvements.

Safari is now 64-bit with Snow Leopard. So how does 32-bit Flash Player work with it?

Flash Player runs in 64-bit Safari on Snow Leopard through a compatibility layer. Flash Player 10.1 introduces significant optimizations specifically for Mac OS. As part of our engineering work for 64-bit, Flash Player 10.1 has been rewritten entirely to use the modern Mac OS X Cocoa framework. It also takes advantage of Mac OS technologies such as Core Audio, Core Graphics, Core Foundation, and Core Animation, leveraging native technologies while improving performance.

Is there a debugger version of the 64-bit Flash Player available?

We do not currently have plans to release a preview of 64-bit debugger version of Flash Player. Developers can continue to debug content with existing debuggers.

What Linux distributions and browsers have been tested with this prerelease?

We have tested this 64-bit Flash Player "Square" preview on Ubuntu 10 with the Firefox 3.6.6 browser. Please submit any bugs you find on these or other Linux distributions and browsers supported by Flash Player to http://bugs.adobe.com/flashplayer/.

Will performance improve with the 64-bit Flash Player?

The major benefit of 64-bit is to allow programs, such as Flash Player, to use more than 4 GB of addressable memory. In general, moving non-data intensive programs to 64-bitdoes not necessarily result in performance improvements. The major benefit is that Flash Player will be natively compatible with 64-bit operating systems and web browsers so that it is both easier to install and works as expected without requiring compatibility software. In addition, native 64-bit releases of Flash Player will also include other unrelated performance enhancements.

Does the Tamarin JIT compiler now produce 64-bit code?

Yes. The open source Tamarin Just-In-Time compiler can now produce 64-bit code.

On Linux, does this mean I no longer need to use nspluginwrapper for Flash Player?

Yes. Flash Player "Square" runs natively on 64-bit Linux platforms, so there is no longer a need to use nspluginwrapper.

When will there be native 64-bit versions of Adobe AIR available?

AIR is a native application runtime and currently supports 64-bit platforms as a 32-bit process. AIR is not a browser plugin, so 64-bit support is not essential for it to function on 64-bit operating systems. We currently have no announced plans to release a 64-bit version of Adobe AIR; however, we are evaluating future 64-bit support as part of our ongoing commitment to the cross-platform compatibility of AIR.