Applications for iPhone – MAX 2009 FAQ

Overview

Q: What did Adobe announce about Flash Platform and the iPhone?

At the 2009 Adobe MAX Developer Conference, Adobe announced that Flash Platform tooling will be able to build applications for iPhone that can be distributed through Apple's App Store. A beta version of Flash Professional CS5 with this new capability is planned for later this year.

Adobe also announced that a number of applications built with this technology are currently available for download within Apple's App Store.

Visit adobe.com/go/iphone for more information.

Q: How does this help Flash developers?

This new tooling allows developers use their preferred Flash Platform tools and technologies to develop content for a device that was previously closed to them. Because the source code and assets are reusable for applications that run on Flash Platform runtimes, Adobe AIR and Flash Player, it also allows them to more easily target other mobile and desktop environments.

Q: What applications in the App Store are built with Flash tooling?

At the time of the MAX announcement, participants in the Adobe pre-release program had submitted 7 applications and all of them have been accepted into the App Store. The applications currently available for download are: South Park Avatar Creator, Chroma Circuit, Just Letters, Trading Stuff, Red Hood, Fickleblox, and That Roach Game.

Following the announcment at MAX, additional applications are being submitted including the Acrobat Connect application. From a consumer standpoint, there is no easy way to determine whether an iPhone application was built with Flash tooling or another tooling solution.

Q: Was the Livecycle ES 2 iPhone application built using Flash Platform tooling?

No, that application was built with Objective C. They were in development at the same time as support for iPhone applications in Flash tooling, so it wasn't possible

to build it with ActionScript 3. We will evaluate whether to transition to ActionScript 3 for future releases of the application.

Q: How is this different from Flash Player 10 coming to the iPhone? Will I be able to view Flash Web content in the iPhone browser?

The Flash Professional CS5 beta allows developers to build applications for the iPhone that run outside the browser. Applications that are created with Flash Platform tooling can be accessed by users after downloading them from Apple's App Store.

A Flash browser plug-in for the iPhone would enable virtually all Flash based applications and web content inside the mobile web browser. A browser plug-in for Safari Mobile is not being made available today. While we have been working hard to make Flash available on the iPhone, without increased co-operation from Apple, it will not be possible.

Q: How does this affect Apple? How do you expect Apple will respond?

This new technology allows more developers to build applications for the iPhone increasing the number of applications and the value of the ecosystem around the iPhone. We think that Apple and iPhone users will benefit significantly from Adobe's investment and will respond positively.

Q: What is the status of Flash Player for iPhone and other smartphones?

Adobe is committed to working with all industry players to bring Flash Player and virtually all Flash based web content to smartphone-class devices. Flash Player 10.1 was announced at MAX, and a beta for Windows Mobile and Palm WebOS is planned for later this year. Betas for Android, Symbian are expected in 2010.

Adobe needs full support from Apple beyond what is available through the SDK to enable Flash based Web content and applications on the iPhone. While we have been working hard to make Flash available on the iPhone, without increased co-operation from Apple, it will not be possible.

With more than 75 percent of all videos on the Web delivered using Adobe Flash, and over 70 percent of web games built with Flash, we believe that Flash Player on the iPhone would greatly benefit the millions of joint Apple and Adobe customers.

Q: Why did Adobe provide tooling to build native iPhone applications rather than provide Flash Player or Adobe AIR for iPhone?

The iPhone SDK License does not currently allow runtimes such as Flash Player or Adobe AIR. This tooling provides an interim solution that will work until Adobe runtimes are available on iPhone.

Q: Why did Adobe add this capability to Flash Platform tooling?

Flash developers want to target iPhone and other mobile devices with their applications. There are over a million Flash developers and many of them have requested the ability to build applications for iPhone using Flash.

Q: Did Adobe use this approach rather than the Flash Player because the Flash Player is too slow or resource intensive for the iPhone?

No. This technique was used due to the license restrictions of the iPhone developer program.

Applications for the iPhone are converted to native executables using the same technology that is within the Flash Platform runtimes, so they have essentially the same performance characteristics as an application running on the Flash Player or Adobe AIR.

Capabilities of applications for iPhone

Q: Will applications built with Flash Platform tools work on the iPod touch? iPhones 1.0? iPhone 3G? iPhone 3Gs?

Applications should work on all iPhone and iPod Touch devices -- all references to "iPhone" in this FAQ apply to all versions of iPhone and iPod Touch devices in market at the time of this announcement. However, as the hardware (particularly CPU and Memory) specifications of the devices are widely divergent, content performance may vary widely between devices and device generations.

Q: Can these applications for iPhone built with Flash Platform tooling be delivered through Apple's App Store?

Yes. Developers can build applications with Flash Platform tooling just like any other iPhone application. This will require the developer to be a member of the Apple developer program, and have an iPhone developer certificate.

At the time of the announcement, there were already a number of applications built with Flash Platform tools available within Apple's App Store. There are also a number of applications that have been submitted to Apple that are awaiting approval in the app store. Visit adobe.com/go/iphone for more information.

Q: Can these applications for iPhone be accessed through the Safari browser on iPhone?

No. Applications for iPhone built with Flash Platform tools cannot be accessed through the browser; they are native applications and must be installed. Installation most commonly occurs after downloading them from Apple's App Store.

Q: Does the Flash Platform tooling build AIR apps or Flash apps for the iPhone?

The packager outputs native applications for iPhone, built from AS3 source code. They are similar to Flash and AIR apps in that they are written in AS3, use the Flash rendering model, and have access to the Flash Platform APIs. Unlike apps deployed on Flash Player or Adobe AIR which use a runtime JIT compiler to translate platform independent bytecode into native instructions, this approach uses a build time compiler to produce an ARM executable that can be installed on iPhone.

Q: Are applications for iPhone built with Flash Platform tools interpreted at runtime?

No. iPhone applications built with Flash Platform tools are compiled into standard, native iPhone executable packages, just like any other iPhone application.

Q: Can applications load SWFs or other code at runtime, such as a module from a web site?

No. iPhone applications built with Flash Platform tools are compiled into standard, native iPhone executable packages and there is no runtime that could be used to run Flash bytecode within the application.

Q: Which version of the iPhone SDK / operating system is supported by the applications?

Applications can be built targeting iPhone OS 3.0 and above.

Q: Are applications for iPhone built with Flash Platform tooling able to playback H.264 video?

Apple does not provide access to the native H.264 decoder in their public SDK, so H.264 video cannot be played directly within an application for the Iphone. Applications that need to play H.264 video can use the native device video player, by pointing to a URL that contains the video

{{var videoURL:URLRequest = new
URLRequest("http://www.foo.com/path/to/my/video.mp4");

navigateToURL(videoURL);}}

Applications for iPhone built with the Flash Platform tooling are able to use the On2 and Sorenson codecs for video as those have been implemented in software by Adobe.

Q: Are all Flash Platform runtime APIs available to applications on iPhone?

Restrictions on runtime interpretation of code within the iPhone Developer SDK license limit the ability of Adobe to provide iPhone applications with all of the functionality available to applications delivered on the Flash Platform runtimes on other platforms. The following features are not available to applications on the iPhone:

- Embedded HTML content (via webkit) will not be supported in applications for iPhone
- RTMPE (this one is a call we made, not due to the SDK license)
- H.264 Video
- Dynamically loading SWFs that contain ActionScript
- PixelBender

Q: Which device-specific APIs are available to iPhone applications built with the Flash Platform tools?

The final release of the Flash Platform tooling with support for creating iPhone applications will provide access to a subset of AIR 2.0 APIs appropriate to the device, and ensuring that performance and memory utilization is optimized.

The following device-specific APIs will not be available in the first full release, but may be included in future updates to the Flash Platform tooling:

- Photo selection from file system
- Contact selection from the address book
- Camera
- Cut/copy/paste
- Accessory support
- In app purchase support
- Peer to peer
- Maps
- iPod library access
- Compass
- Push notifications
- Audio recording
- Video recording
- Parental controls

Q: Do applications have access to private APIs beyond those in the Apple SDK?

Adobe used only the public APIs available in the iPhone SDK to provide this capability within the Flash Platform tooling. Developers write their code using ActionScript and the Flash Platform runtime APIs, the Flash Platform tooling maps those APIs to the public iPhone APIs. The Flash Platform APIs does include some higher level APIs that provide developer productivity and creative expression.

The application development process

Q: How does Flash Professional CS5 allow developers to build applications for iPhone?

New capabilities in Flash Platform tooling allow developers to build applications for iPhone using ActionScript 3. Flash Professional CS5 can output a native ARM executable for the iPhone ready for distribution via Apple's App Store.

Q: Can I use Flex framework to build applications for the iPhone?

Adobe is working on a version of the Flex framework targeting mobile devices. This will allow for development targeting CPU and memory constrained devices such as the iPhone. Applications can be built using the current Flex framework, but they are likely to encounter performance issues and may not be compatible with the Apple interface guidelines.

Q: What types of iPhone applications can be built with Flash Platform tools?

While a broad range of applications can be built using the Flash Platform tools, the creative expression possible with the Flash Platform tooling make it uniquely suited to building content that uses heavily custom UIs and UI components. Therefore, Adobe expects that many developers will choose to create games and entertainment content.

There are thousands of casual games and a broad ecosystem of other web-based content that is well suited for rapidly being delivered to the iPhone using the new Flash Platform tooling.

Q: Which Flash Platform tools can developers use to create applications for iPhone?

Currently, it is expected that the most commonly used tool for developing applications for iPhone content will be Flash Professional CS5. We are also planning to provide the ability to build Applications for the iPhone using Flash Builder.

Q: Apple's development tools for iPhone only work on Mac OSX. Which operating systems will Adobe support for building applications for iPhone?

With the Flash Professional CS5 Beta, developing applications for the iPhone is supported on both Mac and Windows. In the future it will be possible to develop applications for the iPhone on Linux using the Flash Platform tools.

Currently a Mac or Windows machine will be needed to deploy content to the iPhone App Store because the Apple Supported workflow requires iTunes.

Q: Do developers need a developer certificate from Apple in order to develop or deploy applications for the iPhone using the Flash Platform tools?

Yes. A developer certificate from Apple is required in order to test and deploy applications to the device. Apple provides information on its developer programs at http://developer.apple.com/iphone/index.action and http://developer.apple.com/iphone/manage/overview/index.action .

Q: Can I use native iPhone OS controls in iPhone applications built with Flash Platform tools?

Native iPhone OS controls and components are not currently supported.

Q: Can developers debug applications while they are running on the iPhone?

Currently, developers cannot debug content directly while it is running on the device. However, content running on the device can connect to other machines using a socket connection, and thus it is possible for third party debuggers to add support for introspecting content on the device, via the socket connection.

Q: Can developers use the iPhone emulator with Flash Platform tooling?

Currently content built with Flash Platform tools cannot be run on the iPhone emulator.

However, we plan to add support within the ADL tool used by AIR developers for emulating some of the device APIs, such as rotation and accelerometer. This will allow some level of testing content on the desktop.

Relationship to other Flash Platform technologies

Q: Does Adobe AIR or the Flash Player need to be installed on the iPhone for apps to work?

No. Due to technical limitations and licensing restrictions of the iPhone Developer SDK, there is no AIR or Flash Player runtime for iPhone currently available. iPhone applications built with Flash Platform tools are compiled into a standard native iPhone application bundle with no external dependencies.

Q: Which of the Flash Platform runtime APIs are accessible to iPhone applications?

The APIs exposed to iPhone applications in the Flash Platform tooling are based on Adobe AIR 2.0 APIs. In general, developers can target Adobe AIR 2.0 APIs and deliver both an AIR application and an application for the iPhone from the same source code.

Q: Which version of ActionScript can be used to build applications for iPhone?

The Flash Platform tooling currently supports development of iPhone applications with ActionScript 3. ActionScript 2 is not supported, and cannot be used to create an application for iPhone.

Q: Does this allow developers to build an application for iPhone using existing code that was used to build an application targeting Adobe AIR or the Flash Player?

Yes, assuming that that code and content is written in ActionScript 3, and does not use any of the APIs or functionality not available on the iPhone (as documented on Adobe Labs).

Developers may need to re-factor the design and interactions of the content in order to provide a good user experience on the smaller form factor and different interaction models of the device.

Any content should also adhere to the [Apple iPhone Human Interface Guidelines | http://developer.apple.com/iphone/library/documentation/userexperience/conceptual/mobilehig/Introduction/Introduction.html] before being submitted to the iPhone app store.

Q: How does this relate to Alchemy?

The technologies and the goals are quite different. Alchemy allows applications to be written in C/C++ and run as ActionScript bytecode on the Flash Platform runtimes – the primary goal of Alchemy is to allow legacy libraries to run in a cross-platform manner using the Flash Platform. This enhancement to the Flash Platform tools allows developers to use ActionScript 3 source code to build applications that

are compiled to native ARM / iPhone executables. The applications that result from this new feature are not cross-platform and can only run on the iPhone.

Future development and roadmap

Q: What is the timeline for updates to the tooling to support applications for iPhone?

A beta version of the capability will be Flash Professional CS5 beta, planned for later this year. We plan a full release in the 2010. All times and dates are tentative and subject to change.

Q: Will Adobe use this approach (outputting native code applications) for other devices or operating systems?

Adobe does not currently have plans to provide output of native applications from the Flash Platform for other platforms. In general, our developers prefer to deliver applications using the Flash Platform's consistent, cross-platform runtime. This allows the developers to more easily reach a large audience of users with a minimal amount of development and testing effort.