Flash Player 11 and AIR 3 Release Notes for Adobe Labs

July 13, 2011. **Welcome to Adobe® Flash® Player 11 and Adobe AIR 3!** This release includes new features as well as enhancements and bug fixes related to security, stability, performance, and device compatibility.

This document is for users developing content for Flash Player 11 and AIR 3 and addresses issues that are not discussed in the Flash Professional or Flex documentation. This document may be updated periodically as more information becomes available.

System Requirements

For current Flash Player system requirements, visit http://www.adobe.com/products/flashplayer/systemreqs/
For current AIR system requirements, visit http://www.adobe.com/products/air/systemreqs/

Flash Player 11 has the following minimum system requirements:

	Windows	Macintosh	Linux
Processor	2.33 Ghz or faster x86-compatible processor, or Intel Atom 1.6GHz or faster processor for netbook class devices	Intel Core Duo 1.33GHz or faster processor	2.33 Ghz or faster x86-compatible processor, or Intel Atom 1.6GHz or faster processor for netbook class devices
Operating System	Microsoft® Windows® XP, Windows Server® 2003, Windows Server 2008, Windows Vista® , Windows 7	Mac OS X 10.7, Mac OS X 10.6	Red Hat® Enterprise Linux (RHEL) 5.6 or later, openSUSE® 11.3 or later, Ubuntu 10.04 LTS or later
Browser	Internet Explorer 7.0 and above, Mozilla Firefox 3.6 and above, Google Chrome, Safari 5.0 and above, Opera 11	Safari 5.0 and above, Mozilla Firefox 3.6 and above, Google Chrome, Opera 11	Mozilla Firefox 3.6 and above, Google Chrome

Memory	128MB of RAM (1GB RAM recommended for netbook class devices), 128MB of graphics memory	256MB of RAM, 128MB of graphics memory	512MB of RAM, 128MB of graphics memory

AIR 3 has the following minimum system requirements:

	Windows	Macintosh
Processor / Device Hardware	2.33GHz or faster x86-compatible processor or Intel Atom 1.6GHz or faster processor for netbook class devices	Intel Core™ Duo or faster processor
Operating System	Microsoft® Windows® XP Home, Professional, or Tablet PC Edition with Service Pack 3, Windows Server® 2003, Windows Server® 2008, Windows Vista® Home Premium, Business, Ultimate, or Enterprise (including 64-bit editions) with Service Pack 2, or Windows 7	Mac OS X 10.6 and 10.7
RAM	512MB of RAM (1GB recommended)	512MB of RAM (1GB recommended)

Supported Languages

Flash Player 11 and the Adobe AIR 3 installation and runtime user experience support the following languages: Brazilian Portuguese, Chinese Simplified, Chinese Traditional, Czech, Dutch, English, French, German, Italian, Japanese, Korean, Polish, Russian, Spanish, Swedish, Turkish.

Runtime Versions

This prerelease version of Flash Player is 11.0.1.60.
This prerelease version of AIR is 3.0.0.345.

New Features in Flash Player 11 and AIR 3

Stage3D Accelerated Graphics Rendering — Stage3D ("Molehill") is a new architecture for hardware accelerated graphics rendering developed by Adobe. Stage3D provides a set of low-level APIs that enable advanced 2D/3D rendering capabilities across screens and devices (desktop, mobile, and TV). It gives 2D and 3D app and framework developers access to high performance GPU hardware acceleration, enabling the creation of new classes of rich, interactive experiences.

H.264/AVC Software Encoding for Cameras (desktop) — Stream high quality video from your computer's camera with higher compression efficiency and industry-wide support, enabling both immersive real-time communications (e.g., video chat and video conferencing) and live video broadcasts.

Native JSON (JavaScript Object Notation) Support — Allows ActionScript developers to take advantage of high performance native parsing and generation of JSON-formatted data. Developers can integrate existing data seamlessly into their projects.

G.711 Audio Compression for Telephony — Support interoperability with legacy phone systems via the Flash Media Gateway (FMG) and other third-party clients (through the open RTMP protocol) without the need for transcoding.

Garbage Collection Advice — Provides smoother, more responsive user experiences by allowing developers to provide hints to optimize garbage collection scheduling.

Cubic Bezier Curves — The cubicCurveTo drawing API allows developers can easily create complex cubic Beziers without requiring custom ActionScript code.

Secure Random Number Generator — Developers can now take advantage of cryptographically secure random number generation to build more secure algorithms and protocols.

Protected HTTP Dynamic Streaming (HDS) and Flash Access Enhancements — Protected HTTP Dynamic Streaming (HDS) provides protection for streaming video across screens while eliminating the deployment complexity of a license server. New Flash Access content protection features include key rotation support, V3 license chaining, domain support, and enhanced output protection and device filtering.

Socket Progress Events — Improve management of data transfer using the Socket class by providing a new property to determine the number of bytes remaining in the write buffer and a new event for when data is being sent to the network layer. The new APIs allow applications can easily track progress and provide responsive feedback.

JPEG-XR support — Flash Player and AIR now include support for the JPEG-XR advanced image compression standard (International Standard ISO/IEC 29199-2). The computationally lightweight JPEG-XR format provides more efficient compression than JPEG, enables both lossy and lossless compression support, and adds support for alpha channel transparency.

Enhanced high resolution bitmap support — BitmapData objects are no longer limited to a maximum resolution of 16 megapixels (16,777,215 pixels), and maximum bitmap width/height is no longer limited to 8,191 pixels, enabling the development of apps that utilize very large bitmaps.

High efficiency SWF compression support — Developers can now take advantage of LZMA compression for their SWF files. LZMA compression can reduce SWF size by up to 40%, enabling users to benefit from richer experiences with shorter download times and reduced bandwidth consumption.

DisplayObjectContainer.removeChildren and MovieClip.isPlaying — DisplayObjectContainer now implements a removeChildren API allowing developers to quickly remove all of a container's children using a single API call. A new MovieClip.isPlaying property returns the MovieClip's current playing state.

New Features in Flash Player 11

Native 64-bit Support (Flash Player desktop) — Take advantage of native support for 64-bit operating systems and 64-bit web browsers on Linux, Mac OS, and Windows.

Asynchronous Bitmap Decoding (new for Flash Player) — Improve app responsiveness and deliver smoother animation by decoding images on initial load instead of on demand. Images are cached as needed.

TLS Secure Sockets Support (new for Flash Player) — Enables secure communications for client/server applications.

New Features in AIR 3

Stage Video Hardware Acceleration (new for AIR) — Leverage hardware acceleration of the entire video pipeline to deliver efficient, best-in-class high-definition (HD) video playback experiences. Decrease processor usage and enable smoother video, reduced memory usage, and higher fidelity on mobile*, desktop, and TV devices (*supported on Android 3.1, BlackBerry Tablet OS, and iOS).

Security Enhancements

This version of Flash Player includes security enhancements described in [Security Bulletin APSB11-12](#).
This version of AIR includes security improvements described in Security Bulletin [APSB11-12](#).

Installation and Uninstallation

For Flash Player installation instructions,
visit http://www.adobe.com/products/flashplayer/productinfo/instructions/
For uninstallation instructions, visit http://www.adobe.com/go/flashplayer_uninstall_en

For AIR installer troubleshooting, visit http://kb2.adobe.com/cps/403/kb403150.html.
If you still encounter issues, please visit the AIR installation forum to ask questions and review solutions:http://forums.adobe.com/community/air/installation

Authoring for Flash Player 11

To use the new Flash Player, you will need to target SWF version 13 by passing in an extra compiler argument to the Flex compiler: -swf-version=13. Directions are below.
If you are using the Adobe Flex SDK:

- Download the new playerglobal.swc for Flash Player 11.
- Download Flex 4.5 SDK (4.5.0.20967) from the [Flex 4.5 SDK table](#).
- Install the build in your development environment
  - In Flash Builder, create a new ActionScript project: File -> New -> ActionScript project.
  - Open the project Properties panel (right-click and chose 'Properties'). Select 'ActionScript Compiler' from the list on the left.
  - Use the 'Configure Flex SDK's' option in the upper right hand corner to point the project to Flex build 20967. Click ok.
- Configure your project to target SWF version 13
  - Open the project Properties panel (right-click and chose 'Properties'). Select 'ActionScript Compiler' from the list on the left.
  - Add to the 'Additional compiler arguments' input: -swf-version=13. This ensures the outputted SWF targets SWF version 13. If you compile on the command-line and not in Flash Builder, you need to add the same compiler argument.
  - Ensure you have installed the new Flash Player 11 build in your browser.

Known Issues

Flash Access

- Flash Access is not supported in this Labs release, except on 32-bit Windows Flash Player. For other platforms of Flash Player and Adobe AIR, creating a DRMErrorEvent object will generate the following error code: "DRM.UpdateNeededButIncompatible"

Secure Sockets (TLS) and Secure Socket Policy Files:

- When a connection is being established using client-supplied certificates which has had either the leaf or ICA certificate revoked at an available and reachable OCSP server, the connection is incorrectly successful on some platforms (2854802, 2869667)
- If the certification revocation status of the clients certificates cannot be validated because the OCSP or CRL servers are unreachable (or down), a secure connection can be incorrectly allowed (2878924).
- Linux: Linux does not contain browser certificates common to the Mac and Windows platforms, which are required in order for Secure Policy Files and TLS to work seamlessly (2827902).
- Mac: When a client supplies Root and ICA certificates to a validating server which has a certificate Subject CN starting with a wildcard character (for example, "*.somesite.com"), the connection fails with a principalMismatch status. The correct behavior would be to successfully establish a trusted connection if the client certificate matches this name (2890784).
- Windows: Incorrect Serial number information is returned from certificates (2880969).
- Windows: Limitation: On Windows Vista and Windows 7, when using client supplied certificates to supply trusted Root and Intermediate certificates, if the certificates contain a "Authority Info Access" field to support OCSP, and the OCSP Response is properly signed as conforming to RFC 2560, these certificates must also be installed in the Windows System Store as Trusted Root Certification Authority and Intermediate Certification Authority. If they are not installed, it is treated as though the OCSP responder cannot be reached to verify the revocation status of the given certificate. Some operating systems, such as Windows 7, come with VeriSign CA certificates pre-installer and will not encounter this problem.
- Windows: Limitation: Microsoft natively supports only CRL in operating systems prior to the Windows Vista® operating system. Online Certificate Status Protocol (OCSP) is supported only for Windows Vista and newer operating systems.

H.264/AVC Encoding

- Mac: When encoding on Macs, very high frame rates will cause the video to stop playing (2870751).

Stage3D

- *General authoring note:* This release includes an update to the Stage3D APIs that removes the Stage3D.viewport property. Developers should instead use the Stage3D.x and Stage3D.y properties. Width and height can only be set using the Context3D object. Existing content using the

Stage3D.viewport API will need to be updated to run with this and future builds of Flash Player and AIR.

- Hardware accelerated rendering of Stage3D is not supported for graphics drivers released prior to 2009, due to incompatibilities in older drivers. These systems will utilize software rendering.
- Mac: In Firefox 4 and Chrome on Mac, Flash content may flicker black when disposing and recreating Context3Ds. This can happen when your screen saver activates with molehill content running or other 3D applications that enter fullscreen (2856526).
- Mac: Attempting to run hardware accelerated content (wmode=direct or wmode=gpu) when hardware acceleration has been turned via the Settings Menu may cause a crash on the Mac platform (2890194).
- Mac: When running content with certain AGAL shader instructions with AIR, you may experience issues due to a software rendering failure (2897662).
- Mac: On Mac OS X, hardware accelerated rendering is not supported on Intel GMA, ATI Radeon x1600, and ATI Radeon 2400 cards.

64-bit Support (Flash Player)

- The installer for the 64-bit version of the Flash Player installs both the 64 and 32 bit versions of the binary to ensure support for both 32-bit and 64-bit browsers that may be installed on a system. Likewise, the uninstaller will uninstall both versions.

Resources for Learning About Flash Player and AIR

	Description
Adobe Developer Connection	The Adobe AIR and Flash Player Developer Centers connect you to a wealth of information about developing rich, engaging experiences on the Flash Platform. Flash Player: http://www.adobe.com/devnet/flashplayer AIR: http://www.adobe.com/devnet/air
Product Information	Learn more about the core benefits and capabilities of AIR and Flash Player Flash Player: http://www.adobe.com/products/flashplayer AIR: http://www.adobe.com/products/air/
Forums	The Flash Player and AIR forums are a great resource for education and troubleshooting. You can interact with Flash Player and AIR community experts and Adobe employees on development topics, discuss and report problems and bugs found and solve troublesome installation issues. Flash Player: http://forums.adobe.com/community/flash AIR: http://forums.adobe.com/community/air

Help and Support	The Adobe help and support pages provide a search portal for information about AIR and Flash Player. Flash Player: http://www.adobe.com/support/flashplayer AIR: http://www.adobe.com/support/air
ActionScript Reference and Documentation	The ActionScript 3.0 Reference for the Adobe Flash Platform is a platform-wide reference combining the ActionScript language elements, core libraries, and component packages and classes for all the Flash Platform tools, runtimes (Flash Player and AIR), and servers. http://www.adobe.com/devnet/actionscript/documentation
Adobe Community Help	Adobe Community Help is Adobe's next generation help experience. It's an AIR application that provides the following features: • Access up-to-date definitive reference content online and offline • Find the most relevant content contributed by experts from the Adobe community, on and off Adobe.com • Comment on, rate, and contribute to content in the Adobe community • Download Help content directly to your desktop for offline use • Find related content with dynamic search and navigation tools • Enjoy content updates and feature enhancements without reinstalling the AIR app Community Help is installed by default in Creative Suite CS5 and Flash Builder 4. If you're using the AIR SDK separate from those tools, you can install Community Help yourself here: Install Adobe Community Help.

Reporting Issues

Found a bug? Please send the detailed bug information via the instructions stated in this prerelease program.

Flash Player and AIR may leverage your graphics hardware to decode and play H.264 video. There may be video issues that can only be reproduced with your particular graphics hardware and driver. When reporting an issue involving video, it is essential to note your graphics hardware and driver, along with your operating system and browser (when using Flash Player), so that we can reproduce and investigate issues. Please be sure to include this information as described in Instructions for Reporting Video Playback Issues. Note: Due to the high volume of email we receive, we are unable to respond to every request.

Thank you for using Adobe Flash Player and AIR and for taking the time to send us your feedback!

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