

Adobe ActionScript Compiler 2.0 Release Notes

February 2013 - Adobe® ActionScript® Compiler 2.0 (Build 2.0.0.352231)

Welcome to the Adobe ActionScript Compiler 2.0 (ASC 2.0) release.

ASC 2.0 is a new compiler for ActionScript® 3.0 (AS3). It has stricter adherence to the AS3 language specification, includes compilation performance improvements, is more stable under memory pressure, and contains some demonstration optimizations that can be optionally enabled (in-lining, dead code elimination). This is the same compiler that is included with Flash Builder® 4.7, packaged up as a stand-alone command-line compiler and made available in a distribution combined with the AIR SDK. Look for this distribution on the AIR Technology Previews section of [Adobe Labs](#).

ASC 2.0 supports compiling AS3 applications only. While it exposes familiar `mxm1c` and `compcc` command-line entry points, it does not support compiling Flex applications. ASC 2.0 replaces the legacy compiler entry points and is not supported as an overlay to a Flex SDK.

This document may be updated periodically as more information becomes available.

Release Notes (Build 2.0.0.352231) - February 2013

The Adobe ActionScript Compiler 2.0 which has been previewed on Adobe Labs as part of the AIR SDK with ASC 2.0 offering, will now be available from Adobe.com as the Adobe AIR SDK & Compiler going forward. The ASC 2.0 Compiler will continue to be included as part of periodic updates to the latest AIR SDK version. The release version of Adobe AIR 3.6 SDK & Compiler can be downloaded here: <http://www.adobe.com/devnet/air/air-sdk-download.html>;

Release Notes - Preview 5 - January 2013

- The following fixes have been made since Preview 4:
 - Fixed an intermittent incremental compilation issue with SWCs in Flash Builder 4.7.
 - Fixed an issue where 9-slice DefineScalingGrid SWF tags were not being retained in the compiled application.
 - Fixed an issue with DefineButton SWF tags as the wrong character reference ids could have been written out.
 - Fixed an issue with missing dependencies where Flash Pro SWCs that used a PlaceObject3 SWF tag with a className reference as the only means of introducing a dependency on an AS3 type.
 - Fixed an issue with ActionScript 3.0 `for` loops where continue label targeting was incorrect if the loop had an empty increment statement.
 - Fixed an issue where invalid type assignment errors were not being reported for accesses of values from an ActionScript 3.0 Vector.
 - Addressed an issue with Flash Pro SWCs that have DefineShape SWF tags with unused bitmap-based FillStyle records with character reference ids set to 65535.
 - Added an `-advanced-anti-alias [true|false]` option to fontswf CLI tool for DefineFont3 based fonts.
 - Avoid issues with embedded asset filenames that contain `@`, `^` or ``` characters which caused issues downstream in ADT mobile application packaging.
 - Changed the command-line compiler to use `-compress=false` by default to avoid issues with LZMA compression and ADT mobile application packaging. This matches Flash Builder 4.7 behavior. (The command-line knows you are targeting a mobile scenario from setting `+configname=airmobile`, which causes the default configuration `frameworks/airmobile-config.xml` to be loaded instead).
 - Added awareness of target-player 11.6 which implies `swf-version 19` by default.

Release Notes - Preview 4 - November 2012

- The following fixes have been made since Preview 3:
 - Fixed switch statements with dense ranges of negative int cases.
 - Fixed a bug in the optimizer where during export release SWFs some jump rewriting was causing invalid jumps (which would confuse the verifier and also cause problems in publishing iOS builds).
 - Fixed the code generation of synthetic 'arguments' for nested functions.
 - We now report an error when the incorrect number of arguments are passed to a constructor in a static context.
 - Fixed conditional compilation for constructors.
 - Included `core.swc` in `frameworks/libs` to assist in the workflow of taking embedded assets from Flash Professional created libraries.
 - Fixed inlining of global functions and improved errors when invalid global constructs are attempted to be inlined.
 - Fixed issues with inlined code and iOS export builds.
 - Allow the `fontWeight` attribute to accept 'normal' as a valid value in [Embed] metadata.
 - Fixed the initialization of local declarations hoisted out of control flow.
 - Fixed cast errors seen with logical and ternary operators by appeasing the runtime verifier through the addition of type coercion instructions for the result to the result type.

Release Notes - Preview 3 - October 2012

- The following fixes have been made since Preview 2:
 - Fixed E4X binding syntax in XML literal values.
 - Fixed processing of key-less unquoted metadata values (e.g. [Foo(bar)] now parses as if one had typed [Foo("bar")]).
 - Fixed a code generation issue when a method had a rest parameter but used no locals in the method body.
 - Fixed a stack overflow issue when in-lining setters.
 - Updated inlining to ignore the limit on inlining large functions if [Inline] metadata is present.
 - Fixed an issue with the optimization of integer-based switch statements when all of the cases are constant but not necessarily integers.
 - Added support for SWF PlaceObject3 tag visible and opaqueBackground options.
 - Handled the reading of (technically invalid) SWFs that include bitmap fill styles that have invalid character id references (that appeared as 65535).
 - Silenced non-actionable warnings for incorrect SWF tags by default.
 - Fixed an intermittent issue during parallel code generation.
 - Updated FDB to support launching debugger in Flash Builder on Windows 8.
 - Corrected the output encoding to support non-English locales when compiling on the command-line.

Release Notes - Preview 2 - September 2012

- The following fixes have been made since Preview 1:
 - Restored support for [Embed] metadata on local definitions.
 - Fixed an issue with cached embedded assets in incremental compilation.
 - Fixed an issue with ASDoc comments inside method bodies that were causing compiler errors.
 - Fixed an issue with metadata attributes with unquoted values that were not retained.
 - Constructing new Vectors with a reference to a definition of type Class should now work.
 - Fixed code hinting for Vector types.
 - Open Declaration functionality should now work for more kinds declarations, including interfaces and non-class package members.
 - Fixed invoking a static function from a nested function in the same class.
 - Add the inline option to the compiler ant tasks.
 - Inline should now work for functions that return void.
 - Allow final class members to be inlined when only the class is marked final.
 - Fixed inlining functions when the return value is not needed.
 - Fixed an integer overflow issue when optimizing switch case statements.
 - Fixed embedding of SWF Button assets by ensuring their references are also retained.
 - Fixed named SWF PlaceObject assets by ensuring the generated SymbolClass has a property of the same name.
 - Restored the backgroundColor attribute in [SWF] metadata.
 - Added support for reading Alchemy SWCs.
 - Made several small fixes to the ABC parser to handle byte code produced by legacy tools.
 - Accept "super" as an actual parameter to a method call located within an instance method.
- Font transcoding has been restored for the [Embed] metadata syntax. However, font settings in the compiler configuration, including language-range aliases, are ignored. To embed a subset of characters you can use unicode ranges in your [Embed] metadata. Developers can pre-transcode fonts to SWF using a tool like `fontswf` or Flash Professional CS6 to avoid the transcoding cost on each clean compile.

Release Notes - Preview 1 - August 2012

- This is the first public preview of the new ASC 2.0 compiler.
- Flash Builder 4.7 and the ASC 2.0 command-line compiler now share the same code model. This avoids duplicate representations of a program and means the IDE has an accurate representation of the language - matching the compiler.
- A new multi-threaded architecture allows multiple files to be compiled at once, improving compilation time.
- Better constant-folding and constant-propagation results in better performing code at runtime.
- Reduces function overhead by removing unnecessary activation records.
- Contains some demonstration byte-code optimizations for in-lining and dead code elimination.
- Non-linear control flow added to AS3 through a new 'goto' keyword.
- SWF 13 with LZMA compression is now supported.
- A new symbol management system means Flash Builder 4.7 ActionScript workspaces that mix Flash and AIR projects should incrementally compile much faster.
- ASC 2.0 based versions of `fontswf`, `optimizer`, `swfdump` and `swcdepends` command-line tools are available.
- Legacy versions of `asdoc` and `fdb` command-line tools are also still included.
- ~~Font transcoding has been removed from [Embed] syntax. Fonts should be pre-transcoded and embedded as a SWF, which can be performed using a tool like fontswf or Flash Professional CS6.~~
- Relative paths in source code ([Embed] assets, includes, etc..) resolve relatively from the including file. To specify a path relative from a source root, prefix your path with a forward slash '/'.
- US English compiler error messages have been translated into French, Japanese, and Simplified Chinese. The locale is determined by the JVM and can be overridden using the `-tools-locale` configuration option.

Installation Instructions

Flash Builder 4.7

Note:

- Flash Builder 4.7 Release includes AIR 3.4 SDK with ASC 2.0 Preview 3 Build 348902.
- All Flash Builder 4.7 ActionScript projects now use ASC 2.0 by default.

To manually apply a later preview of AIR SDK with ASC 2.0 to a Flash Builder 4.7 release, backup the original AIR SDK by first closing Flash Builder and then copying the existing directory to a new name. Then, unzip the AIR SDK so that it has the same directory name and structure as the original.

The default locations of the AIR SDK in Flash Builder 4.7 Release are outlined below:

Mac OSX: /Applications/Adobe Flash Builder 4.7/eclipse/plugins/com.adobe.flash.compiler_4.7.0.349722/AIRSDK

Windows 7 (64-Bit): C:\Program Files\Adobe\Adobe Flash Builder 4.7 (64 Bit)\eclipse\plugins\com.adobe.flash.compiler_4.7.0.349722\AIRSDK

Note: The distribution of the AIR SDK with ASC 2.0 is for pure-ActionScript development only. It should not be combined with an existing Flex SDK. To update a Flex SDK with a later version of the AIR SDK, use a standard AIR SDK overlay distribution that does not include ASC 2.0. See <http://www.adobe.com/devnet/air/air-sdk-download.html>.

If you are updating an AIR SDK to a new version number, pay attention to the `-target-player` configuration option and the corresponding location of `playerglobal.swc`.

For example:

AIR 3.4 SDK contains `frameworks/libs/player/11.4/playerglobal.swc`

AIR 3.5 SDK contains `frameworks/libs/player/11.5/playerglobal.swc`

AIR 3.6 SDK contains `frameworks/libs/player/11.6/playerglobal.swc`

For Flash application development, the default `-external-library-path` should point to the correct version of `playerglobal.swc`. Check your `frameworks/flex-config.xml` to make sure this version information matches.

Command-line Compiler

- Download the AIR SDK with ASC 2.0 distribution and un-compress it on your machine.
- This distribution of the AIR SDK includes a new compiler that does not support Flex development. It should not be combined with an existing Flex SDK.
- Java 1.6.0 (or later) must be installed.
- ASC 2.0 versions of the command-line tools are in the SDK's bin directory.
- ASC 2.0 versions of the ant tasks `<mxmmlc>` and `<compcc>` are in `ant/lib/flexTasks.jar`

Ant tasks are defined as:

```
mxmmlc=com.adobe.flash.compiler.ant.MXMLCTask
```

```
compcc=com.adobe.flash.compiler.ant.COMPCTask
```

Known Issues

- Flex compilation is not supported.
- AS3 Backwards Compatibility - please see the [AS3 Compatibility Document](#) for the list of compatibility differences in compiling AS3 in ASC 2.0 or Flash Builder 4.7.