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# J2SE 5.0 Release 1 for Mac OS X Release Notes

Java



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# Introduction to J2SE 5.0 Release 1 for Mac OS X Release Notes

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This release of Java for Mac OS X introduces support for Java 2 Platform, Standard Edition 5.0 on Mac OS X. It features Apple's implementation of Sun's J2SE Version 1.5.0\_02.

## What is J2SE 5.0 Release 1 for Mac OS X?

J2SE 5.0 Release 1 for Mac OS X is the first version of J2SE 5.0 for Mac OS X v.10.4. This release includes compatibility with Sun's Java 2 Platform Standard Edition, version 5.0 (1.5.0\_02). To download J2SE 5.0 Release 1, visit <http://www.apple.com/support/downloads/java2se50release1.html>.

For general information about Java changes in J2SE 5.0, see *Release Notes - Java 2 SDK, Standard Edition Version 5.0* at <http://java.sun.com/j2se/1.5.0/relnotes.html>.

**Note:** After installing J2SE 5.0 Release 1, Java 1.4.2 remains the default version of Java used for applications and applets unless J2SE 5.0 specifically requested by the application or configured for use system-wide. For more on using J2SE 5.0 Release 1, consult *"Java Versioning"* (page 10).

## Who Should Read This Document?

Any developer who wants to distribute J2SE 5.0 applications for Mac OS X should read this document since various issues and fixes found in this release may effect your application. Anyone interested in new Java development (either J2SE or Cocoa Java) should read this document for the most current information on new features and outstanding issues with Java on Mac OS X.

## Organization of This Document

This document contains the following chapters:

- *"New Features"* (page 9) details significant features present in J2SE 5.0 Release 1 for Mac OS X. This chapter is broken down by category and provides a brief description of the feature and its impact.
- *"Resolved Issues"* (page 13) highlights a selection of high-visibility bugs that have been addressed in this release. This chapter is broken down by the category where the bug occurs and provides a brief description of what the issue was and how it was resolved.
- *"Outstanding Issues"* (page 17) presents a selection of high-visibility bugs that you may need to work around with this release. This chapter is broken down by the category where the bug occurs and provides a brief description of what the issue is and often provides a workaround for the issue.

This document also contains a revision history.

If you are just beginning Java development for Mac OS X, you can probably just read the “[Outstanding Issues](#)” (page 17) chapter. Otherwise, it is recommended that Java developers read all chapters.

## See Also

The Following Apple Java documentation may be helpful:

- *Java Development Guide for Mac OS X*
- *Java Property, VM Option, and Info.plist Key Reference for Mac OS X*
- Previous Java Release Notes
- *Java on Mac OS X Frequently Asked Questions* (<http://developer.apple.com/java/faq/>)



# New Features

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This chapter details significant improvements present in J2SE 5.0 Release 1 for Mac OS X.

## Java Applets

### Radar #4066779

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Cocoa Java Plugin Public API

**Description:**

Previously, there was no public API for using the Java Plugin in a Cocoa application.

**Resolution:**

There is a new Cocoa Java Plugin public API. This API can be used to embed Java into your Cocoa application. It's documented in:

```
/System/Library/Frameworks/WebKit.framework/Headers/WebJavaPlugIn.h  
/System/Library/Frameworks/WebKit.framework/Headers/WebPlugin.h  
/System/Library/Frameworks/WebKit.framework/Headers/WebPluginContainer.h  
/System/Library/Frameworks/WebKit.framework/Headers/ WebPluginViewFactory.h
```

Documentation for the behavior of plug-ins can be found in *WebKit Plug-In Programming Topics*.

## Java Printing

### Radar #4035773

---

javax.print Support

**Description:**

Previous Java releases for Mac OS X didn't support the `javax.print` package.

**Resolution:**

J2SE 5.0 Release 1 supports `javax.print` via Mac OS X's CUPS implementation.

## Java Versioning

### Radar #4030615

The current JDK and JRE after installing J2SE 5.0 Release 1

#### Description:

Java 1.4.2 remains the current JDK and JRE after installing J2SE 5.0 Release 1.

#### Resolution:

This allows applications built for Java 1.4.2 to continue running in Java 1.4.2.

To use the J2SE 5.0 version of any command-line Java utility, such as `java` or `javac`, specify the full path to the J2SE 5.0 version of the command. This usually means prepending the command with the path `/System/Library/Frameworks/JavaVM.framework/Versions/1.5/`.

The `JVMVersion Info.plist` key allows you to specify which JVM your application uses. Using either the `1.3+`, `1.4+`, or `1.5+` keys results in the VM being used according to a precedence list set in the Java Application Settings portion of the Java Preferences application, found in `/Applications/Utilities/Java/J2SE 5.0`. By default in J2SE 5.0 Release 1, the precedence list follows this order:

```
J2SE 1.4.2  
J2SE 5.0
```

Though not listed, Java 1.3.1 is considered to be the last entry on the list.

This works by trying to match the given key versus VM versions in the list:

- Having `1.4+` specified first matches the “J2SE 1.4.2” value, so that is the VM used. Specifying `1.5+` means that 1.4.2 is skipped and the next choice, “J2SE 5.0,” is used.
- If a user switches these values so that “J2SE 5.0” is first, an application that specifies `1.4+` runs in J2SE 5.0, since it’s the first entry and numerically superior to J2SE 1.4.2.

Table 1-1 (page 10) lists the possible combinations of values when working with `JVMVersion` values and the Java Version Precedence List found in Java Preferences.

**Table 1-1** Java VM behavior, based on the `JVMVersion` key and the Java Version Precedence List in Java Preferences

Possible <code>JVMVersion</code> Value	VM used if “J2SE 1.4.2” is listed first in Java Version Precedence List (Default)	VM used if “J2SE 5.0” is listed first in Java Version Precedence List
<code>1.5+ (5.0 or “higher”)</code>	J2SE 5.0	J2SE 5.0
<code>1.5* (newest 5.0)</code>	J2SE 5.0	J2SE 5.0
<code>1.4+ (1.4 or “higher”)</code>	J2SE 1.4.2	J2SE 5.0
<code>1.4* (newest 1.4)</code>	J2SE 1.4.2	J2SE 1.4.2
<code>1.3+ (1.3 or “higher”)</code>	J2SE 1.4.2	J2SE 5.0

Possible JVMVersion Value	VM used if “J2SE 1.4.2” is listed first in Java Version Precedence List (Default)	VM used if “J2SE 5.0” is listed first in Java Version Precedence List
1.3* ( <i>newest 1.3</i> )	Java 1.3.1	Java 1.3.1

You can specify a specific version of Java as your `JVMVersion` key (such as `1.4.2` or `1.5.0`), but if that precise version is not installed on the system, your application will fail to launch. *This is not recommended.*

To use an applet in Safari using J2SE 5.0, use the Applet portion of the Java Preferences application, found in `/Applications/Utilities/Java/J2SE 5.0`, to select J2SE 5.0 as the virtual machine for applets.

For information on configuring Xcode projects for use with J2SE 5.0, read [“Radar #4090917”](#) (page 17).



# Resolved Issues

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This chapter lists high-visibility bugs that have been addressed in this release. It is not a complete listing of all of the bugs addressed. If you still have issues with any of these bugs, please file a new bug at <http://bugreport.apple.com/> under the Java (new bugs) component, version X. Refer to the bug number indicated below in your new bug if you believe it is the same issue.

## Java Aqua Look-and-Feel

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### Radar #4040621

Dragging JTable and JList Elements

**Description:**

Dragging multiple rows in a JTable or JList caused the selection to be lost.

**Resolution:**

Multiple selected rows are now preserved during a drag.

## Java AWT

---

### Radar #3974688

POSIX Locales in JNI

**Description:**

From inside of a JNI call, the POSIX locale was always set to C. This was a result of linking against Core Foundation.

**Resolution:**

Java sets the POSIX locale, based on the Apple Languages user default, as set in System Preferences. This affects all categories except for LC\_NUMERIC, which remains set to C.

---

### Radar #4008177

MouseInfo.getNumberOfButtons Return Values

**Description:**

`MouseInfo.getNumberOfButtons` is a new class in J2SE 5.0 that returns information about the number of mouse buttons.

**Resolution:**

Because Mac OS X can have multiple mice connected and in use, as well as using Universal Preferences instead of the mouse, `MouseInfo.getNumberOfButtons` is generally inapplicable. Thus, it always returns 0.

**Radar #4027192**

---

`Window.setLocationByPlatform` on Mac OS X

**Description:**

`Window.setLocationByPlatform` is a new API for J2SE 5.0 that attempts to place windows according to the native operating system's preferences.

**Resolution:**

On Mac OS X, `Window.setLocationByPlatform` attempts to cascade all windows with this property set as best as possible. Windows without this property set are ignored.

**Radar #4027194**

---

`Window.setAlwaysOnTop` on Mac OS X

**Description:**

`Window.setAlwaysOnTop` is a new API for J2SE 5.0 that sets a window's level to always be higher than its peers.

**Resolution:**

On Mac OS X, non-modal windows with `Window.setAlwaysOnTop` are set one window level higher than normal modal dialogs. Modal windows with this property are set two window levels higher than normal modal dialogs. Note that some windows (alert windows, the Dock, the menu bar) still appear above windows using `Window.setAlwaysOnTop`.

## Java Swing

**Radar #3813244**

---

JTable and Contextual Menus

**Description:**

Showing a contextual menu over multiple JTable rows caused the selection to be lost.

**Resolution:**

Multiple selected rows are now preserved when a contextual menu is invoked.

## Java Text

### Radar #4068592

---

Font.deriveFont() Issues

**Description:**

Fonts created using `Font.deriveFont(Tx)`, where `Tx` is an `AffineTransform` that has rotation, didn't work correctly. Fonts either get rotated incorrectly or they would be rotated correctly, but drawn at the wrong `x` and `y` coordinates.

Also, fonts created using `Font.deriveFont(Tx)`, where `Tx` is an `AffineTransform` that has `scaleX` and `scaleY` different from each other, weren't working correctly. The `scaleY` value was used for both `x` and `y` dimensions.

**Resolution:**

Fonts created in these circumstances now work correctly.

## Java Virtual Machine

### Radar #3880141

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Revised HotSpot Error Messages

**Description:**

Crashes occurring within the VM result in error messages reported in `~/Library/Logs/CrashReporter/java.crash.log`. The log includes information on reporting the crash to Apple.

**Resolution:**

The crash report has been enhanced to include questions you should answer before filing a bug with Apple.





# Outstanding Issues

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This chapter provides a listing of bugs that you may need to work around in your Java code for Mac OS X. Where possible, workarounds are provided.

## Java AWT

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### Radar #4031021

`Window.setAlwaysOnTop` is ignored by `FileDialog` and `PrintDialog`

**Description:**

`Window.setAlwaysOnTop` allows for windows to appear above all other windows. However, because `FileDialog` and `PrintDialog` use system-defined windows, they do not respect this property.

**Workaround:**

Use the Swing equivalents of `FileDialog` and `PrintDialog`.

---

### Radar #4205435

Nested Dialogs

**Description:**

Nested modal dialogs don't behave properly if they all use a common parent.

**Workaround:**

Use the previous modal dialog as the current dialog's parent.

## Java Developer

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### Radar #4090917

Xcode Java Projects in J2SE 5.0

**Description:**

The Java projects in Xcode are set up for use with J2SE 1.4.2.

**Workaround:**

Follow these steps to modify projects for use with J2SE 5.0:

**Target Settings:**

Double click the target to edit and provide  
`/System/Library/Frameworks/JavaVM.framework/Versions/1.5/Commands/javac` as the  
 value for the `JAVA_COMPILER` build setting. Change the Target VM Version and Source Version  
 in the Java Compiler Setting to use 1.5.

**Executable Settings:**

Double click the executable named `java` and enter  
`/System/Library/Frameworks/JavaVM.framework/Versions/1.5/Commands/java` as the  
 Executable Path in the *General* tab of Executable info.

**Applet Development:**

Double click the executable named `appletviewer` and enter  
`/System/Library/Frameworks/JavaVM.framework/Versions/1.5/Commands/appletviewer`  
 as the Executable Path in the *General* tab of Executable info.

**Radar #4090919****J2SE 5.0 Reference Documentation****Description:**

The J2SE 5.0 Reference Documentation is not installed automatically.

**Workaround:**

Install the latest J2SE 5.0 Developer package, available from <http://connect.apple.com>.

**Note:** J2SE 5.0 symbols are not used in the Xcode Documentation window by default. To use the 5.0 symbols instead of the 1.4.2 symbols, you need to modify which version of Java is indexed. To do this, follow the directions outlined in the workaround for “[Radar #4124800](#)” (page 18).

**Radar #4124800****J2SE 5.0 symbols not visible in Xcode Documentation window.****Description:**

After installing the J2SE 5.0 Reference documentation or a documentation update in Xcode, J2SE 5.0 symbols are not present in the Xcode documentation window.

**Workaround:**

You need to manually run the `pbhelpindexer` utility in order for J2SE 5.0 symbols to appear in the Xcode Documentation window. First, open `MacOSXDeveloper.pbHelpIndexerList`, located at:

`/Developer/ADC Reference Library/indexes/`

**Replace this path:**

`/System/Library/Frameworks/JavaVM.framework/Versions/CurrentJDK/Resources/`

**With this path:**

`/System/Library/Frameworks/JavaVM.framework/Versions/1.5.0/Resources/`

Finally, run this command in Terminal:

```
sudo /Developer/Tools/pbhelpindexer
```

## Java Graphics

### Radar #3726347

---

Java2D OpenGL Pipeline Not Supported

**Description:**

The `sun.java2d.opengl` package is not supported in J2SE 5.0 Release 1.

**Workaround:**

None.

## Java Security

### Radar #4078337

---

Certificates for SSL client authentication and Keychain

**Description:**

J2SE 5.0 Release 1 looks in Keychain for certificates when attempting to establish trust for signed applets and `https` sessions. It currently does not look in the Keychain for sites that also need client authentication.

**Workaround:**

Create a keystore at `~/Library/Caches/Java/security/trusted.clientcerts` and import certificates for client authentication.

## Java Virtual Machine

### Radar #3499564

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jvmstat Tools Not Supported

**Description:**

Executing the `jinfo`, `jmap`, and `jstack` commands found in `/System/Library/Frameworks/JavaVM.framework/Versions/1.5.0/Commands` results in `java.lang.NoClassDefFoundError`.

**Workaround:**

None.

**Radar #4084603**

---

JMX Remote Access Configuration File Missing

**Description:**

Executing J2SE 5.0 applications using the `-Dcom.sun.management.jmxremote` argument set results in this error:

```
Error: Config file not found: /System/Library/Frameworks/JavaVM.framework/Versions/1.5.0/Home/lib/management/management.properties
```

**Workaround:**

None.

## Java Web Start

**Radar #4074412**

---

'association' Element of 'information' Descriptor Ignored

**Description:**

Java Cache Viewer does not support JNLP applications that have an 'association' element in their 'information' descriptor. The application works as desired, but any declared associations are not registered with LaunchServices when a desktop application is created.

**Workaround:**

None.

**Radar #4075884**

---

JNLP Application Memory Settings

**Description:**

If a JNLP application specifies a custom memory setting, that setting is not copied into the Java dictionary of the `Info.plist` when a user creates a desktop application.

**Workaround:**

Use Property List Editor to add the memory settings to the `VMOptions` entry of the Java dictionary.

**Radar #4088809**

---

Resaving Desktop Web Start Applications

**Description:**

Launching a double-clickable JNLP application after it's been modified causes the Save dialog to appear again.

**Workaround:**

Save the double-clickable Web Start application again. Cancelling causes the original double-clickable Web Start application to be deleted.



# Document Revision History

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This table describes the changes to *J2SE 5.0 Release 1 for Mac OS X Release Notes*.

Date	Notes
2005-10-04	Added additional information about obtaining J2SE 5.0 Release 1 and using it with Java applets and from the command line.
2005-09-08	Includes information on nested dialogs.
2005-06-04	Added information about using the J2SE 5.0 Reference Documentation with the Xcode document window.
2005-04-29	First version of J2SE 5.0 Release 1 for Mac OS X Release Notes.

