



# JavaOne™

[java.sun.com/javaone](http://java.sun.com/javaone)

## OpenJDK™ Community Update

Mark Reinhold  
Principal Engineer  
Sun Microsystems

TS-5214

# OpenJDK



# OpenJDK™

- What** A fully-free JDK™ implementation
- Why** Platform ubiquity & developer mindshare
- How** Build a vibrant OpenJDK Community

# History Code Licenses Governance Community

# History

## Code

## Licenses

## Governance

## Community

# May 2006

*“It is not a question of whether,  
but it is a question of how.”*

— R. Green

**November 2006**

**GPLv2**

**HotSpot™ VM**  
**Java™ compiler**

**[openjdk.dev.java.net](http://openjdk.dev.java.net)**

**8 May 2007**

# The rest of the code Interim Governance Board

[openjdk.java.net](http://openjdk.java.net)

# 8 May 2007

## The rest of the code\* Interim Governance Board

[openjdk.java.net](http://openjdk.java.net)

\* Well, almost.



History  
**Code**  
Licenses  
Governance  
Community

# The rest of the code (almost)

Fully buildable != fully free

25,169 source files

894 (4%) binary only (“plugs”)

# Encumbrances

Graphics rasterizer

Font rasterizer

Imaging APIs

Sound engine

Crypto providers

Some SNMP code

# Encumbrances

Graphics rasterizer

Font rasterizer

Imaging APIs

Sound engine

Crypto providers

Some SNMP code

# Iced Tea

[icedtea.classpath.org](http://icedtea.classpath.org)

“We intend this build repository, based on OpenJDK, to provide a basis on which to experiment. It’s not a fork from OpenJDK, and doesn’t contain the OpenJDK source code.”

— Andrew Haley



# OpenJDK 6

Joe Darcy  
*Lead Engineer*

Fully free	<i>No binary plugs</i>
Reasonably stable	<i>Unlike 7</i>
Eventually compatible	<i>But not right away</i>

Sun's goal: Integration into as many  
Linux distributions as possible

# OpenJDK 6: Quality

- Product test — “Pretty good”
  - Handful of regressions compared to Sun’s proprietary binaries
- JCK™ test suite — ~30 test failures
  - Due mainly to missing color profiles & sound engine
- Application testing
  - OpenOffice™ suite, GlassFish™ App Server, Tomcat
    - Look good
  - NetBeans™ IDE and Eclipse work well
    - A few bugs identified and fixed

# OpenJDK 6: Stability

## **Future changes will be limited**

Replace an encumbrance (sound, SNMP)

Improve an encumbrance replacement

Improve OS integration

Fix a security bug

Fix a JCK failure



# OpenJDK 6: Success!



8.04 LTS  
“Hardy Heron”



Fedora 9  
“Sulfur”

# OpenJDK 6: Remaining work

Integrate new sound engine

Minimize downstream patch sets

Fix remaining copyright/license nits

Package for additional distributions

Debian, OpenSUSE, OpenSolaris™ OS, ...

`jdk6-dev@openjdk.java.net`

`http://openjdk.java.net/projects/jdk6`

`joe.darcy@sun.com`

History  
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# Community TCK License

- For implementations “substantially derived” from the OpenJDK™ code base
- Must be distributed under GPLv2
- Free of charge
- Compatible implementations may use the brand
  - Subject to trademark license
- Signed by Red Hat
  - We hope others will follow!



# Trademark Notice

- No signature, no click-through
  - Just another LICENSE-type file in the tree
- Allows limited use for the obvious things
  - Package names: *openjdk-6-jre.rpm*
  - Version strings: *OpenJDK 6 Runtime Environment*
- Requires the vast majority of the code to be identical to upstream
  - Allows new OS/arch ports
  - Allows mixing of VMs and libraries from different trees

<http://openjdk.java.net/legal/openjdk-trademark-notice.html>

History  
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# Governance

*“A republic, madam,  
if you can keep it.”*

— B. Franklin

# Governance Board

Legislature + Judiciary  
!Executive



# Governance Board

Legislature + Judiciary  
!Executive

Significant non-Sun representation

Two Sun employees, appointed  
Three elected from Community

# The OpenJDK Charter

WHEREBY Sun Microsystems, Inc. (“Sun”) has granted license to a particular subset of its Java SE Development Kit, known henceforth as OpenJDK, to all under terms compatible with Open Source ideals, and whereby open and constructive development and dissemination of this code base is desired by all, Sun does by the execution of this Charter all of the following: First, establish an OpenJDK Governance Board (“GB”) to supervise the OpenJDK Community (“Community”) in its efforts to improve upon and advocate in favor of OpenJDK, so that the Community may long endure. Second, grant to the GB certain powers and rights as are necessary to discharge its duties. Third, appoint to the GB a suitable interim membership until such time as a Constitution may be constructed and ratified. Last, establish a time at which this Interim GB shall have discharged its responsibilities and ceded to its successor the powers and rights granted herein.

1. The GB shall be comprised of five natural persons. The GB shall conduct its affairs in accordance with democratic principles and shall represent the interests of the Community.

1.1. Two members of the GB shall be employees of Sun. These appointees shall be selected by Sun and may be replaced at any time by Sun, at its sole discretion. These appointees shall represent Sun's interests but shall not have the power to speak for Sun Microsystems, Inc.

1.2. The three remaining members of the GB shall be members of the Community who shall be elected via a democratic process defined in a properly ratified Constitution.

1.3. Should the GB number fewer than five persons at any time then Sun shall, at its sole discretion, appoint to the GB additional Community members sufficient in number to increase the GB's membership to five. Appointees who fill elected seats shall serve only until processes to elect members to those seats can be carried out.

2. The GB shall construct and maintain a Constitution defining all of the following:

2.1. A process by which the Constitution may be amended from time to time.

2.2. Methods and processes by which the elected positions of the GB shall be filled. These must at all times ensure satisfaction of the constraints imposed by this Charter, including but not limited to those described in Section 1.

# Interim Governance Board

Write a Constitution  
Get it ratified by the Community  
Hold elections for open seats

In the meantime,  
Sun remains the  
benevolent dictator

# Interim Governance Board

**Prof. Doug Lea**  
*SUNY Oswego*

**Fabiane Biznella Nardon**  
*CTO, ZILICS*

**Dalibor Topić**  
*Java F/OSS Ambassador, Sun Microsystems*

**Simon Phipps**  
*Chief Open-Source Officer, Sun Microsystems*

**Mark Reinhold**  
*Java SE Chief Engineer, Sun Microsystems*

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~~*Max-Planck Institute for Computer Science*~~  
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*Java SE Chief Engineer, Sun Microsystems*

## The OpenJDK Charter

alter the licensing of any intellectual property of OpenJDK; (c) Control of or interest in any asset, tangible or intangible, of Sun Microsystems, Inc. or any of its subsidiaries; or (d) Control of or interest in Sun Microsystems, Inc. or any of its subsidiaries.

7. In order to facilitate the construction and ratification of the initial Constitution, Sun shall appoint members of the Community on an interim basis to the three elected GB positions in any manner it shall deem appropriate, thereby forming the Interim GB.

7.1. No GB member so appointed may retain his or her membership beyond **8 May 2008**, or after such time as the first GB members elected in accordance with the terms of a properly ratified Constitution take office, whichever occurs first. However, if such a member shall be so elected, he or she may serve as he or she otherwise would.

8. Notwithstanding any part of provisions 7 or 7.1, the Interim GB shall be dissolved on **8 May 2008**.

9. If the Interim GB shall be dissolved before an initial Constitution is properly ratified, Sun shall appoint a new set of interim members in any manner it shall deem appropriate, and the terms of this Charter shall be applied to this new Interim GB with the following exceptions:

9.1. Provision 7.1 shall be altered such that the termination date shall be extended by 6 months.

9.2. Provision 8 shall be altered such that the dissolution date shall be extended by 6 months.

10. This Charter may be amended by mutual agreement between the GB and Sun Microsystems, Inc. If agreement on a proposed amendment cannot be reached, or if the GB fails to approve an amended Charter, the previous version of the Charter remains in force.

# The OpenJDK Charter: First Amendment

Sun Microsystems, Inc. (“Sun”) hereby agrees to amend the OpenJDK Charter as follows.

A. (to Provision 1) The Governance Board (“GB”) shall be comprised of **seven natural persons. Three members shall be employees of Sun, and four shall be elected** from the OpenJDK Community (“the Community”). Provision 1 is otherwise unchanged.

B. (to Provision 7) Sun shall appoint members of the Community on an interim basis to the four elected GB positions. No GB member so appointed may retain his or her membership beyond **7 May 2009**. Provision 7 is otherwise unchanged.

C. (to Provision 8) The Interim GB shall be dissolved on **7 May 2009**.

On 7 May 2008, Sun Microsystems, Inc., agreed to this Amendment. On behalf of Sun,

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ONNO KLUYT  
Director, Community Growth  
Client Software Group  
Sun Microsystems, Inc.

History  
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**Community**



# Community structure

**Groups**  
**Projects**

# Community structure

## Group

A collection of participants  
who share a common interest

## Project

A collaborative effort  
to create a specific artifact

# Community structure

## Group

- Might be associated with code—or not
- Members participate in governance
- Has web content, mailing lists
- Does not have a file repository
- May sponsor Projects

## Project

- Typically bounded in time
- Has Authors (committers), not Members
- Has web content, mailing lists, file repository
- May be sponsored by one or more Groups

# The big bang

- Initial Groups are Sun's existing teams
  - More or less
  - HotSpot™ VM, Compiler, Networking, Security, I18n, 2D, AWT, Swing, ...
- Initial Projects
  - Free font rasterizer
  - Free graphics rasterizer
  - Free sound engine
  - Modules (JSRs 277 & 294)

# Expanding the universe

- Add a new Member to a Group
  - Three-vote consensus (three yays, no nays) of the existing Members
- Create a new Group
  - Proposed by a Member of an existing Group
  - Seconded by two others
  - Simple majority of the IGB
- Create a new Project
  - One or more Groups decide to sponsor
  - or: Simple majority of all Members

# New Groups & Projects (so far)

## Groups

Porters  
Conformance

## Projects

Framebuffer Toolkit  
Multi-Language VM  
JDK 7  
JDK 6  
Port: Haiku  
Port: MIPS  
Closures  
New I/O  
XRender Pipeline  
VisualVM

# Mercurial

2007/12/4  
2008/2/27

Read-only repositories  
Gates open

kelly.ohair@sun.com  
<http://hg.openjdk.java.net>  
<http://selenic.com/mercurial>



# Developers' Guide (draft 0.01)

<http://openjdk.java.net/guide>  
[guide-discuss@openjdk.java.net](mailto:guide-discuss@openjdk.java.net)  
Iris Clark <[iris@sun.com](mailto:iris@sun.com)>



# Innovators' Challenge

# \$175,000

## August 2008

Closures

Neal Gafter

XRender Pipeline

Clemens Eisserer

Date/Time Library

Stephen Colebourne

Michael Santos

Portable GUI Backends

Roman Kennke

Mario Torre

Virtual Machine Interface

Andrew Hughes

Gervill Synthesizer

Karl Helgason

OpenJDK on Windows

Ted Neward

# History Code Licenses Governance Community



# Still to come ...

Fill new GB seats

Draft & ratify Constitution

Infrastructure improvements

Code reviews, OpenGrok™ server, bug database, wiki, ...

Externalize processes & tools

Finish work on encumbrances

Release deployment code

JDK™ 7 Project



<http://openjdk.java.net>

# How to get involved



**openjdk.java.net**

planetjdk.org

mail.openjdk.java.net

irc.oftc.net #openjdk

# How to get involved



**openjdk.java.net**

Sun Contributor Agreement

Non-exclusive copyright assignment

Questions, comments, suggestions  
and patches most welcome!

# THANK YOU



**Mark Reinhold**

Principal Engineer  
Sun Microsystems

<http://blogs.sun.com/mr>

<http://openjdk.java.net>

<http://planetjdpk.org>

OpenJDK

