





**MOVING JAVA  
FORWARD**

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**JDK 7 Updates: Director's Cut  
Java Forum Stuttgart, July 5th, 2012**

Dalibor Topic (@robilad)

Principal Product Manager @ Java Platform Group

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# Agenda

- Audience Survey
- How It All Started
- JDK 7 Updates In OpenJDK
- JDK 7 Updates By The Numbers
- JDK 7 Update Releases
- Related Efforts

# Audience Survey

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Thursday, June 28, 12

# Put Your Hands Up In The Air!

Have you ...

- Downloaded a JDK 7 (Update) Release?
  - Are you using it?
- Downloaded a Developer Preview Release Build?
  - Get them for 7u6 from <http://jdk7.java.net>
- Downloaded a JDK 8 Developer Preview Release Build?
  - Get them from <http://jdk8.java.net>
- Subscribed to Java Spotlight Podcast & Java Magazine?
- Followed @OpenJDK or @Java on Twitter?

# How It All Started

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# Moving to OpenJDK as Reference Implementation

June 2011

- *“In its role as the specification lead, Oracle is responsible for delivering the Java SE 7 Reference Implementation. In line with our strategy towards a more open Java ecosystem, we are going to provide a Reference Implementation that is based entirely on the OpenJDK open source code and make it available under the GPL open source license.”*
- Henrik Ståhl, Sr. Director of Product Management in the Java Platform Group at Oracle, at [blogs.oracle.com/henrik/entry/moving\\_to\\_openjdk\\_as\\_the](http://blogs.oracle.com/henrik/entry/moving_to_openjdk_as_the)

# Java SE 7 Reference Implementation

- Available at <http://jdk7.java.net/java-se-7-ri/>
- Based solely upon open-source code available from the [JDK 7 Project](#) in the [OpenJDK Community](#).
- Binaries are provided for both the linux-x64 and windows-i386 platforms.
- These binaries are provided primarily for use by implementors of the Java SE 7 Platform Specification and are recommended for reference purposes only.
- The Reference Implementations have been approved by the JCP and will receive no further updates, not even for security issues.

# Java SE 7 is GA

July 28th, 2011

- *“Oracle today announced the availability of Java Platform, Standard Edition 7 (Java SE 7), the first release of the Java platform under Oracle stewardship.”*
- *“The Java SE 7 release is the result of industry-wide development involving open review, weekly builds and extensive collaboration between Oracle engineers and members of the worldwide Java ecosystem via the OpenJDK Community and the Java Community Process (JCP).”*
- <http://www.oracle.com/us/corporate/press/444374>

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# Java SE 7 Release Contents

- Java Language
  - Project Coin (JSR 334)
- Class Libraries
  - NIO2 (JSR 203)
  - Fork/Join Framework, ParallelArray (JSR 166y)
- Java Virtual Machine
  - InvokeDynamic bytecode (JSR 292)
  - The DaVinci VM Project
- Miscellaneous things
- JSR 336: Java SE 7 Release Contents

# JDK 7 Updates in OpenJDK

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# JDK 7 Updates in OpenJDK

- Goal: Develop JDK 7 Updates in the open
  - JDK 7 Updates Project in OpenJDK
    - <http://openjdk.java.net/projects/jdk7u> : Website
      - Information on developers & development processes
      - Q&A & development status updates
    - <http://hg.openjdk.java.net/jdk7u/jdk7u> : Source code
      - jdk7u/jdk7u - Master forest
      - jdk7u/jdk7u-dev - Development forest
      - Changes come into jdk7u-dev forest after review
        - and proceed to jdk7u from there after integration into master
- Oracle JDK 7 updates are based on it
  - That was **not** the case for OpenJDK 6

# JDK 7 Updates Project

*“The goal of this Project is to develop updates to JDK 7.”*

- URL: <http://openjdk.java.net/projects/jdk7u/>
- Mailing list: [jdk7u-dev@openjdk.java.net](mailto:jdk7u-dev@openjdk.java.net)
- Project Lead: Dalibor Topic
- Technical Lead: Edvard Wendelin
- Forest Maintainers: Artem Ananiev & Sean Coffey
- Sponsored by: Build Group
- Developer Preview Release Builds of Oracle JDK 7u6 at <http://jdk7.java.net>

# Development Processes

- Goal: Transparent development process in OpenJDK
  - Public commit approvals & reviews
    - Get changes reviewed before asking for approval to push a commit
      - May happen on any appropriate mailing list
    - Get changes approved by a forest maintainer before pushing
      - Happens on jdk7u-dev mailing list
    - Bulk approval process in place for bulk updates
      - Used for HotSpot, JAXP/JAXB/JAX-WS and similar cases
  - Bug fixes typically go into JDK 8 first,
    - then get backported to JDK 7 Updates
- Always open for fixes mainline forest
  - Additional forests as needed (jdk7u-osx, jdk7u4, ...)

# JDK 7 Updates Timeline

- 2011
  - June: Project proposed & approved
  - July: Mainline jdk7u Mercurial forests created
  - August: Development processes put in place
  - September: 7u2 release forest created
  - October: 7u1 released (Critical Patch Update)
  - November: jdk7u-osx merge forest created
  - December: 7u2 released
- 2012
  - February: 7u3 released (CPU), Mac OS X Port Merged
  - April: 7u4 released
  - May: 7u4 is default JRE on Java.com
  - June: 7u5 released (CPU)

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# JDK 7 Updates By The Numbers

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# Ohloh Project Analysis

Source: <http://www.ohloh.net/p/openjdk7>

## Ohloh Analysis Summary

Updated 1 day ago

- ❗ Mostly written in Java
- ✅ Very large, active development team
- ✅ Established codebase
- ✅ Well-commented source code
- ⚠️ Decreasing year-over-year development activity
- ❗ Estimated project cost: \$70,070,555

👁️ View All Possible Factoids

# Recent Commit Activity

Source: <http://www.ohloh.net/p/openjdk7>

## 30-Day Commit Activity

May 28 — Jun 27

- Recent large commits
  - Merge
  - 7158800: Improve storage of...
  - Merge
  - Merge
  - Merge
- 2 new committers joined the project
  - vita — Jun 22
  - jonas — Jun 7
- 39 committers made 130 commits
  - 448 files modified
  - 16232 lines added
  - 2499 lines removed

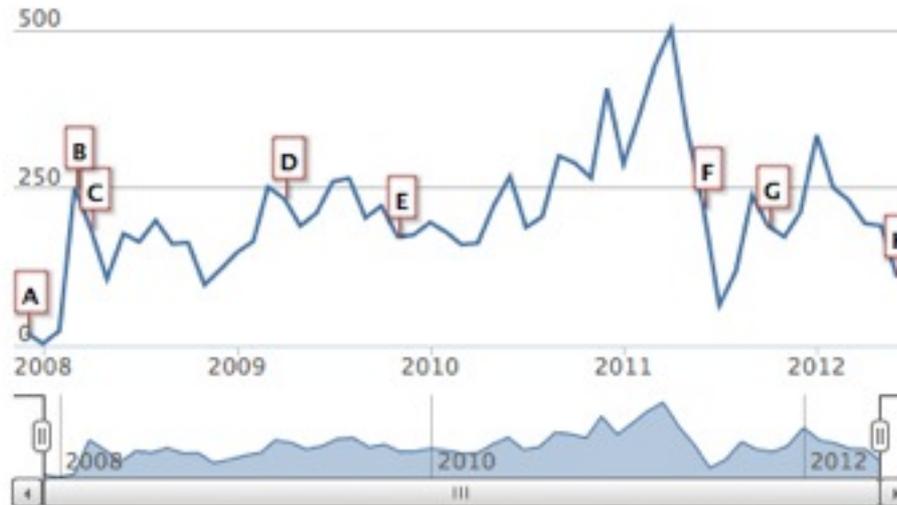
# Overall Commit Activity

Source: <http://www.ohloh.net/p/openjdk7>

## Code Analysis

Commits

Zoom 1yr 3yr All



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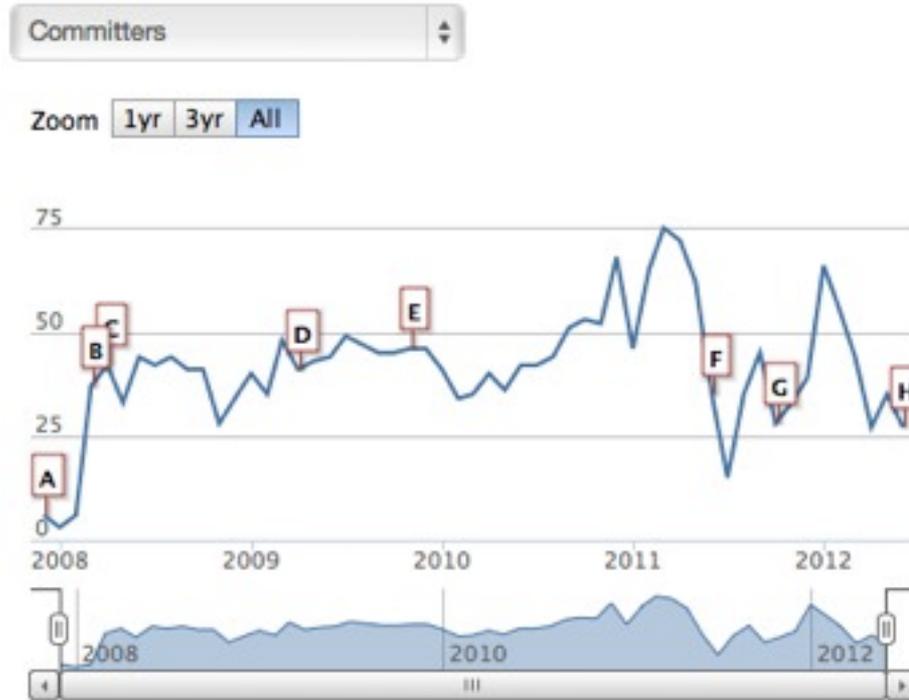


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# Overall Committer Activity

Source: <http://www.ohloh.net/p/openjdk7>

## Code Analysis

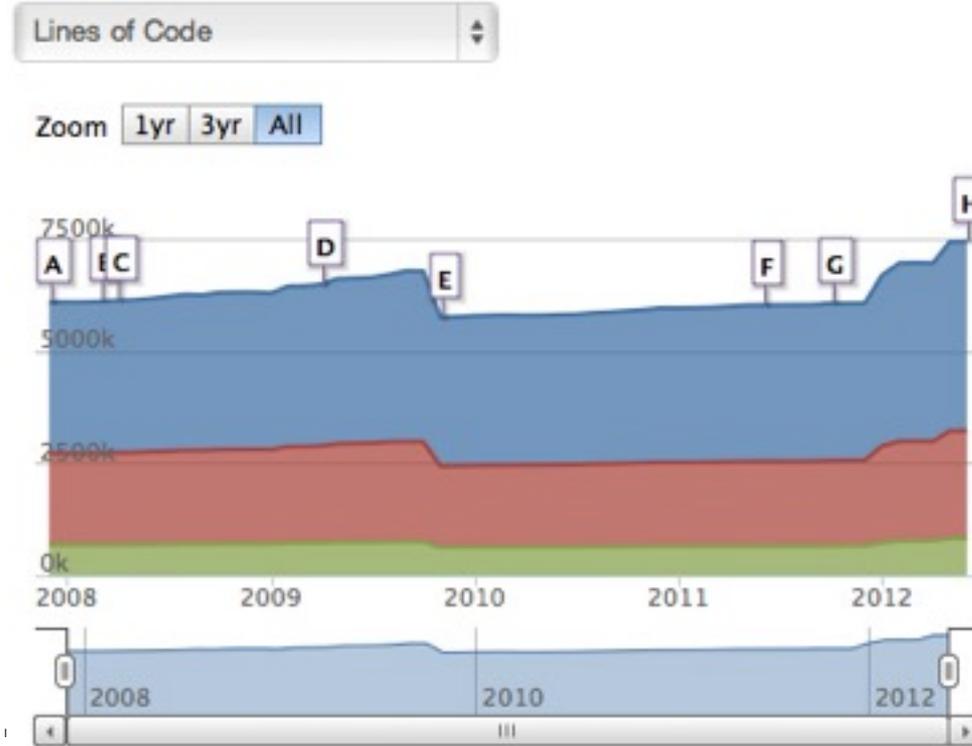


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# Lines Of Code Over Time

Source: <http://www.ohloh.net/p/openjdk7>

## Code Analysis



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# JDK 7 Update Releases



# OpenJDK 7u2 Release

- First ever JDK Update release in the open
- Released in December 2011
  - New HotSpot (v 22), reliability & performance ++
  - Support for Oracle Solaris 11
  - Olson time zone data 2011I
  - Bug fixes for Project Coin features
  - Includes fixes from 7u1
  - In total: 318 issues fixed in OpenJDK in 13 builds

# OpenJDK 7u4 Release

- Source bundle at <http://jdk7.java.net/source.html>
  - Mac OS X Port (developer preview - jdk)
  - New HotSpot, v23
  - New supported GC: Garbage First (G1)
  - JAXP upgraded to 1.4.6
  - Includes fixes from 7u3
  - Many bug fixes & other improvements

# OpenJDK 7u6 Release (Work In Progress)

- HotSpot updated to 23.2
- XML component upgrades:
  - JAXB 2.2.4-2, SAAJ 1.3.16, JAX-WS 2.2.4-1
- Full debug symbols as build option
- Many (Mac OS X) bug fixes & other improvements

# Planned OpenJDK 7u6 Release Timeline

- From Edvard Wendelin's (Technical Lead) post to [jdk7u-dev@openjdk.java.net](mailto:jdk7u-dev@openjdk.java.net) mailing list:
  - Current focus is on stabilizing 7u6 release
  - Open for general bug fixes up until mid-June
  - Followed by P1-P3 bugs until early July
  - Followed by critical fixes only
- Stabilisation forests for 7u6 coming soon
  - Edvard proposed `jdk7u/jdk7u6` and `jdk7u/jdk7u6-dev` forests based on `jdk7u/jdk7u` forest with tag `jdk7u6-b16` to be created
  - Proposal: On July 2nd - discussion on `jdk7u-dev` mailing list

# Oracle JDK 7u6 Release (Work In Progress)

- Mac OS X Port for end users
  - JRE
  - Plugin & Java WebStart
  - Improved OS integration & auto-update
- Early access developer preview builds
  - <http://jdk7.java.net>

# Related Efforts



# OCTLA for Java SE 7

- *“The OCTLA for Java SE 7 is now posted on the OpenJDK Legal page. The version for Java SE 7 is fundamentally the same as was for Java SE 6 with a few changes (mostly for clarification purposes related to FAQ’s from the SE 6 version). In particular, there are more details in the confidential information section clarifying some common use cases.”*
- Donald Smith, Director of Product Management in a blog post at <http://openj.dk/2012/01/10/openjdk-community-tck-license-for-java-se-7-available/>

- *“Now, with OpenJDK 7 serving as the basis for Oracle JDK 7 releases, and moving to run much closer in sync than OpenJDK 6 and Oracle JDK 6 did, the DLJ is no longer necessary. As a consequence, further Oracle JDK 6 (or Oracle JDK 7) releases on Linux and Solaris will not be provided under the DLJ. They will continue to be provided under the familiar Oracle JDK license, the BCL.”*
- Dalibor Topić, last jdk-distros project lead, in a blog post at <http://robilad.livejournal.com/90792.html>

# DLJ Retirement Feedback

- *“Over the course of time the OpenJDK project became really good and it was no longer necessary to maintain the DLJ project. There's nothing EVIL here .. it's simply that the DLJ project became irrelevant.”*
- David Herron, previous jdk-distros project lead in a blog post at <http://weblogs.java.net/blog/robogeek/archive/2011/12/19/dlj-project-dead-long-live-openjdk>

# Java SE 6 End Of Public Availability

- *“The Java SE Support Roadmap reflects an updated timeline for the EOL of public support and public releases for JDK 6. The EOL date has been extended from July 2012 to November 2012, to allow some more time for the transition to JDK 7. We have also updated the EOL policy to clarify our intent for this, and future major releases.”*
- Henrik Ståhl, in a blog post at [http://blogs.oracle.com/henrik/entry/updated\\_java\\_6\\_eol\\_date](http://blogs.oracle.com/henrik/entry/updated_java_6_eol_date)

# Java SE 7 Auto-update

- *“With the release of Java SE 7 Update 4, the Java SE 7 runtime is now available on java.com as the default JRE. We can now slowly begin the process of automatically upgrading Microsoft Windows Java users to the latest version of Java SE 7 through the auto update function. If you don't desire to be automatically upgraded to Java SE 7 just yet, you can learn more about your options in the FAQ.”*
- Henrik Ståhl, in a blog post at [https://blogs.oracle.com/henrik/entry/moving\\_to\\_java\\_7\\_as](https://blogs.oracle.com/henrik/entry/moving_to_java_7_as)

# OpenJDK 6

- *“As the vast majority of Oracle’s maintenance contributions in the OpenJDK community is for Java SE 7, users of the previous release, OpenJDK 6, should consider upgrading to OpenJDK 7, or - of course - to Oracle JDK 7, depending on their requirements. In line with no longer posting updates of Java SE 6 after November 2012 to Oracle’s public download sites, we don’t have plans to contribute further changes to the OpenJDK 6 Project after November 2012.”*
- Henrik Ståhl, in a blog post at [https://blogs.oracle.com/henrik/entry/moving\\_to\\_java\\_7\\_as](https://blogs.oracle.com/henrik/entry/moving_to_java_7_as)

# OpenJDK 7 Updates Community Adoption

- Default runtime in Fedora 17
- Planned to be default runtime in Ubuntu 12.10
- IcedTea 2.x releases based on OpenJDK 7 Updates
- Packaged for
  - Debian,
  - Oracle Linux,
  - RHEL,
  - and many more
- Get involved!

