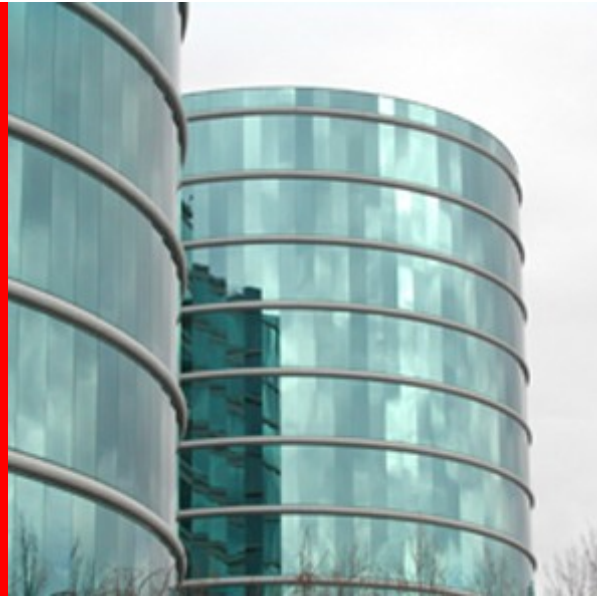


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JDK 7

DOAG Konferenz 2010, November 16th, 2010

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JavaOne 2010: Oracle Announces JDK Roadmap for Advancing Java SE

- <http://www.oracle.com/us/corporate/press/173782>
- Oracle is announcing its plans for advancing the Java Platform, Standard Edition (Java SE) and optimizing it for new application models and hardware, including extended support for scripting languages, increased developer productivity and lower operational costs.
- The announced roadmap for the OpenJDK accelerates the availability of Java SE with two releases, one in 2011 and one in 2012. These OpenJDK releases will continue to serve as the basis for the Oracle Java Development Kit (JDK) 7 and JDK 8.
- The decisions regarding the features to be included in the JDK 7 and JDK 8 releases were made with active participation of the Java community.
- The OpenJDK project continues to thrive with contributions from Oracle, as well as other companies, researchers and individuals. The OpenJDK licensing model remains the same.

JavaOne 2010: Oracle Announces JDK Roadmap for Advancing Java SE

- <http://www.oracle.com/us/corporate/press/173782>
- Proposed JDK 7 Features
 - InvokeDynamic byte code and supporting features for dynamic languages
 - Fork/Join Framework and related concurrency and collections API enhancements for improved multi-threaded Java code
 - Small Language Enhancements (most of “Project Coin”) for higher developer productivity and cleaner, more concise Java code
 - Session Description Protocol (SDP) and Stream Control Transport Protocol (SCTP) support
 - New I/O APIs – A flexible filesystem API, and asynchronous I/O
 - Support for updated standards - Unicode, localization, security, cryptography, XML and JDBC
 - JVM performance improvements

JavaOne 2010: Oracle Announces JDK Roadmap for Advancing Java SE

- <http://www.oracle.com/us/corporate/press/173782>
- Proposed JDK 8 Features
 - Lambda expressions (“closures”) for higher developer productivity and better leveraging of multi-core CPUs
 - Small language enhancements (Remaining parts of “Project Coin”)
 - A Java-native module system (“Project Jigsaw”) to simplify the construction, packaging, and deployment of applications
 - JVM start-up time and ergonomics improvements
- The lists above are examples and not exhaustive, see <http://openjdk.java.net/projects/jdk7/features/> for more detail.

JavaOne 2010: Oracle Announces JDK Roadmap for Advancing Java SE

- <http://www.oracle.com/us/corporate/press/173782>
- Oracle is currently working to merge the Oracle Java HotSpot Java Virtual Machine (JVM) and the Oracle JRockit JVM into a converged offering that leverages the best features of each of these market-leading implementations.
- Oracle plans to contribute the results of the combined Oracle Java HotSpot and Oracle JRockit JVMs to the OpenJDK project.
- The Oracle JDK and Java Runtime Environment (JRE) will continue to be available as free downloads, with no changes to the existing licensing models.
- Premium offerings such as JRockit Mission Control, JRockit Real Time, Java for Business and Enterprise Support will continue to be made available for an additional charge.

Oct 11th, 2010: Oracle and IBM Collaborate to Accelerate Java Innovation Through OpenJDK

- <http://www.oracle.com/us/corporate/press/176988>
- Specifically, the companies will collaborate in the OpenJDK community to develop the leading open source Java environment.
- With today's news, the two companies will make the OpenJDK community the primary location for open source Java SE development. The Java Community Process (JCP) will continue to be the primary standards body for Java specification work and both companies will work to continue to enhance the JCP.
- The collaboration will center on the OpenJDK project, the open source implementation of the Java Platform, Standard Edition (Java SE) specification, the Java Language, the Java Development Kit (JDK) and the Java Runtime Environment (JRE).
- Oracle and IBM will support the recently announced OpenJDK development roadmap, which accelerates the availability of Java SE across the open source community.

JDK 7 & OpenJDK

- Website: OpenJDK.java.net
 - “The place to collaborate on an open-source implementation of the Java Platform, Standard Edition, and related projects.”
- Historical background
 - 2006: Initial open source release (javac, HotSpot)
 - 2007: JDK 7 Project created in OpenJDK
 - 2007-2010: Ideas, Code, Builds, Milestones, Re-Planning
- <http://openjdk.java.net/projects/jdk7/>

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- VM
 - JSR 292: Support for dynamically-typed languages (InvokeDynamic)
 - VM and language extensions to support the implementation of dynamically-typed languages at performance levels near to that of the Java language itself
 - Lead: John Rose @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Language
 - JSR TBD: Small language enhancements (Project Coin) [UPDATED]
 - A set of small language changes intended to simplify common, day-to-day programming tasks:
 - Strings in switch statements, automatic resource management, improved type inference for generic instance creation ("diamond"), simplified varargs method invocation, better integral literals, and improved exception handling (multi-catch) [UPDATE: Language support for collections has been deferred]
 - Lead: Joe Darcy @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Core
 - Upgrade class-loader architecture
 - Modifications to the ClassLoader API and implementation to avoid deadlocks in non-hierarchical class-loader topologies
 - Lead: Karen Kinnear @ Oracle
 - Method to close a URLClassLoader
 - A method that frees the underlying resources, such as open files, held by a URLClassLoader
 - Lead: Michael McMahon @ Oracle
 - Concurrency and collections updates (jsr166y)
 - A lightweight fork/join framework, flexible and reusable synchronization barriers, transfer queues, a concurrent-reference HashMap, and thread-local pseudo-random number generators
 - Lead: Doug Lea @ SUNY Oswego

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- I/O and Networking
 - JSR 203: More new I/O APIs for the Java platform (NIO.2)
 - New APIs for filesystem access, scalable asynchronous I/O operations, socket-channel binding and configuration, and multicast datagrams
 - Lead: Alan Bateman @ Oracle
 - NIO.2 filesystem provider for zip/jar archives [NEW]
 - A fully-functional and supported NIO.2 filesystem provider for zip and jar files
 - Lead: Alan Bateman @ Oracle
 - SCTP (Stream Control Transmission Protocol)
 - An implementation-specific API for the Stream Control Transmission Protocol on Solaris
 - Lead: Chris Hegarty @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- I/O and Networking
 - SDP (Sockets Direct Protocol)
 - Implementation-specific support for reliable, high-performance network streams over Infiniband connections on Solaris and Linux
 - Lead: Alan Bateman @ Oracle
 - Use the Windows Vista IPv6 stack [NEW]
 - Upgrade the networking code to use the Windows Vista IPv6 stack, when available, in preference to the legacy Windows stack
 - Lead: Michael McMahon @ Oracle
 - TLS 1.2 [NEW]
 - Add support for TLS 1.2, which was standardized in 2008 as RFC 5246
 - Lead: Brad Wetmore @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Internationalization
 - Unicode 6.0 [UPDATED]
 - Upgrade the supported version of Unicode to 6.0 [UPDATE: Changed from the original goal of Unicode 5.1)
 - Lead: Yuka Kamiya @ Oracle
 - Locale enhancement [NEW]
 - Upgrade the java.util.Locale class to support IETF BCP 47 and UTR 35 (CLDR/LDML)
 - Separate user locale and user-interface locale [NEW]
 - Upgrade the handling of locales to separate formatting locales from user-interface language locales, as is done on Vista and later versions of Windows

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Security & Cryptography
 - Elliptic-curve cryptography (ECC)
 - A portable implementation of the standard Elliptic Curve, Cryptographic (ECC) algorithms, so that all Java applications can use ECC out-of-the-box
 - Lead: Vincent Ryan @ Oracle
- JDBC
 - JDBC 4.1 [NEW]
 - Upgrade to JDBC 4.1 and Rowset 1.1
 - Lead: Lance Andersen @ Oracle
- Web
 - Update the XML stack
 - Upgrade the JAXP, JAXB & JAX-WS APIs to the most recent stable versions
 - Lead: Joe Wang @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Client
 - XRender pipeline for Java 2D
 - A new Java2D graphics pipeline based upon the X11 XRender extension, which provides access to much of the functionality of modern GPUs
 - Lead: Clemens Eisserer
 - Nimbus look-and-feel for Swing
 - A next-generation cross-platform look-and-feel for Swing
 - Lead: Jasper Potts @ Oracle

Planned JDK 7 Features

- <http://openjdk.java.net/projects/jdk7/features/>
- Client
 - Create new platform APIs for 6u10 graphics features
 - Create new platform APIs for features originally implemented in the 6u10 release: Translucent and shaped windows, heavyweight/lightweight mixing, and the improved AWT security warning
 - Lead: Anthony Petrov @ Oracle
 - Swing JLayer component
 - Add the SwingLabs JXLayer component decorator to the platform
 - Lead: Alexander Potochkin @ Oracle

Keeping up to date with development

- JavaOne and Oracle Develop 2010
- OpenJDK News blog
 - blogs.sun.com/openjdk : General project news
- Oracle TechCast Live video podcast
 - www.oracle.com/technetwork/techcastlive/index.html
 - Interviews & Q&A
- PlanetJDK.org blog aggregator
- OpenJDK & Java Twitter accounts
- Mailing lists
 - mail.openjdk.java.net
- Code
 - Mercurial repository at hg.openjdk.java.net
 - hg.openjdk.java.net/jdk7/jdk7 Mercurial forest for JDK 7

Contributing to OpenJDK

- How does it work
 - <http://openjdk.java.net/contribute/>
 - Become a contributor
 - Find something interesting to work on
 - Discuss your intended change
 - Submit a patch
 - bugs.openjdk.java.net is used to track patches
 - Work with your sponsor
 - Know what to expect
- Who does it
 - Companies like Oracle
 - Academics
 - Individual developers

Building the OpenJDK code

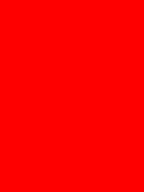
- <http://openjdk.java.net/groups/build/>
- Get the sources
 - Bundle download at <http://download.java.net/openjdk/jdk7/>
 - Raw code from JDK 7 Mercurial forest in repo
 - hg fclone <http://hg.openjdk.java.net/jdk7/jdk7>
- Get the dependencies
 - On Windows, by hand, or
 - On Linux, by 'magic' (example from Ubuntu)
 - `sudo aptitude build-dep openjdk-6`
 - `sudo aptitude install openjdk-6-jdk`
- Tell the build where to find JDK 6
 - `export LANG=C ALT_BOOTDIR=/usr/lib/jvm/java-6-openjdk`
- `make ALLOW_DOWNLOADS=true`

Playing with JDK 7 development builds

- Where to get them
 - <http://download.java.net/jdk7/binaries/>
- What you can play with in current builds
 - See <http://openjdk.java.net/projects/jdk7> for details
 - Most of small language changes from Project Coin
 - Compressed 64-bit object pointers
 - Invokedynamic
 - NIO.2
 - JSR 166y
 - XRender pipeline for Java 2D
 - ... and more

Providing (useful) feedback

- I have found a bug in a JDK 7 build ...
 - Please file a bug report on bugs.sun.com
- I have an idea for a feature for the JDK ...
 - Please file a RFE on bugs.sun.com
- I have a comment on a feature in development
 - Mailing list of the OpenJDK Project implementing the feature
 - Example:
 - You decide to try a Project Lambda prototype
 - Please provide feedback to lambda-dev mailing list
- I have found a bug in OpenJDK 6 on my Linux distro
 - Please file it in your Linux distro's bug tracker
- Something else?
 - Ask on the discuss@openjdk.java.net mailing list for pointers



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