The Red Hat build Of OpenJDK

An alternative to Oracle JDK

Benefits

- Open source innovation
- Cost savings
- Multiplatform support
- Long-term support
- Frequent releases

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Overview

An estimated 15 billion devices run Java™ worldwide[1]. Until January 2019, no one had to pay for access to a current Java Virtual Machine (JVM), but Oracle implemented a significant change to its release cadence and support model. Oracle JDK is no longer free for production workloads and patches, leaving organizations with a choice to either pay Oracle for continued production support and updates for Oracle JDK, adopt OpenJDK and upgrade every six months, or migrate to an alternative OpenJDK implementation.

The impact to the Java community is tremendous because 70% of Java developers use the Oracle JDK JVM[2]. The Red Hat® build of OpenJDK is a free and open source implementation of the Java Platform, Standard Edition (Java SE). It is an alternative that will allow your organization to stabilize and standardize your Java environments for years to come with little to no transition effort.

Benefits

The Red Hat build of OpenJDK offers a number of features and benefits.

Table 1. Benefits

Benefit	Description
Open source innovation	Red Hat is a member of the OpenJDK Governing Board and is the second largest contributor (behind Oracle).[3]
Cost savings	OpenJDK support is included in Red Hat Enterprise Linux®, Red Hat Middleware, and Red Hat Application Runtimes subscriptions. A standalone Windows subscription is also available for purchase
Multiplatform support	OpenJDK is tightly integrated with Red Hat Enterprise Linux and is supported on Windows.
Application management	OpenJDK includes Mission Control[4] which is a tool suite for managing, monitoring, profiling, and troubleshooting Java applications. It is useful for understanding application behavior such as memory leaks, deadlock, and much more.

1 *"Java Resources for Students, Hobbyists and More." Java, 2019, https://go.java/index.html.*

2 *Maple, Simon, and Andrew Binstock. "JVM Ecosystem Report 2018," sponsored by Snyk and Oracle.. Snyk and Java Magazine, 2018, https://snyk.io/blog/jvm-ecosystem-report-2018.*

3 *BellSoft. "External contributions to OpenJDK jdk/jdk Aug '17–Aug '18." Twitter, Sept. 12, 2018, https://twitter.com/bellsoftware/status/1039789683910365184?lang=en.*

4 *Red Hat is distributing Mission Control for OpenJDK 11, and is working on supporting OpenJDK 8.*

Benefit	Description
Long-term support	Red Hat provides long-term support for OpenJDK versions 7, 8, and 11. Support duration is 6 years from the time that a major version of OpenJDK is first introduced in the particular version of Red Hat Enterprise Linux, or until the retirement date of the underlying version of Red Hat Enterprise Linux, whichever comes first.
Frequent releases	Red Hat expects to deliver 4 updates per year and timely security fixes for the OpenJDK 8 and 11 distributions.

Life-cycle support

All Red Hat distributions of OpenJDK are supported for development and production for all Java workloads, giving you the confidence to develop, test, and deploy in Windows or Linux-based environments. The JRE[5] and JDK distributions are made available via rpm and zip files. Red Hat expects to deliver four updates per year, approximately three months apart, for the OpenJDK 8 and 11 distributions.

Table 2. Red Hat Enterprise Linux version support and life-cycle dates

OpenJDK Version	Red Hat Enterprise Linux 5	Red Hat Enterprise Linux 6	Red Hat Enterprise Linux 7	Red Hat Enterprise Linux 8	End of support
6 (1.6)	5.3	6.0	7.0	N/A	December 2016
7 (1.7)	5.9	6.3	7.0	N/A	June 2020
8 (1.8)	N/A	6.6	7.1	8.0	June 2023
11	N/A	N/A	7.6	8.0	October 2024

Table 3. Windows version support and life-cycle dates

OpenJDK version	Windows Server 2012 R2	Windows Server 2016	Windows 7, 8, 10	End of Support
8 (1.8)	August 2018	August 2018	December 2018	June 2023
11	October 2018	October 2018	December 2018	October 2024

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5 *JRE distributions are only available for version 1.8. JRE's are no longer separately installed for version 1.11.*

Entitlements

Support for the Red Hat build of OpenJDK is included or available via the following subscriptions:

- Red Hat Enterprise Linux

- Red Hat Middleware

- Red Hat Application Runtimes

- Red Hat build of OpenJDK for Windows (for all non-Red Hat Middleware Java workloads)
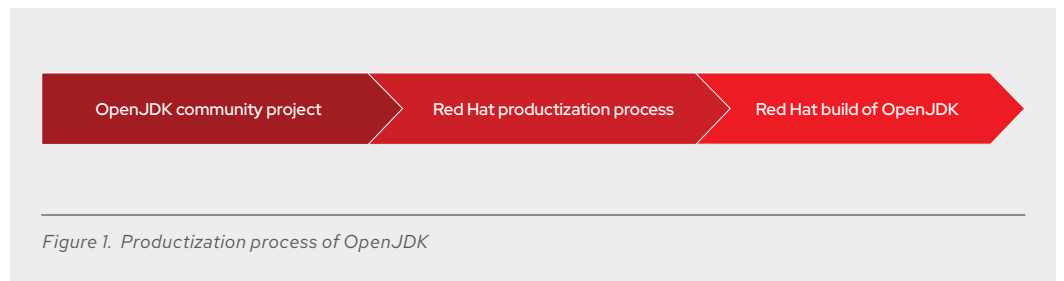
An Oracle JDK Alternative

OpenJDK and Oracle JDK are implementations of the same Java SE specification. In 2017, Oracle committed to open sourcing the remaining Java SE tools with the goal of making Oracle JDK and OpenJDK interchangeable. While some minor differences still exist, OpenJDK 11 and Oracle JDK 11 are now functionally interchangeable. The builds are nearly identical except for a few features (e.g., Advanced Management Console) that are shipped separately via the Java SE Advanced commercial offering.

The Red Hat build of OpenJDK is also baselined from the OpenJDK project. All of the additional work done by Red Hat is implemented first in the OpenJDK community, which means our customers can run their applications on a certified OpenJDK distribution. The Red Hat build has passed the Java Technology Compatibility Kit (TCK) from Oracle to ensure it is in compliance with the Java specification.

The Red Hat build Of OpenJDK productization process

Red Hat offers full production support for the Red Hat build of OpenJDK, which is our productized version of OpenJDK. Support includes vulnerability exposures, security notifications and fixes, service-level agreements, and more.
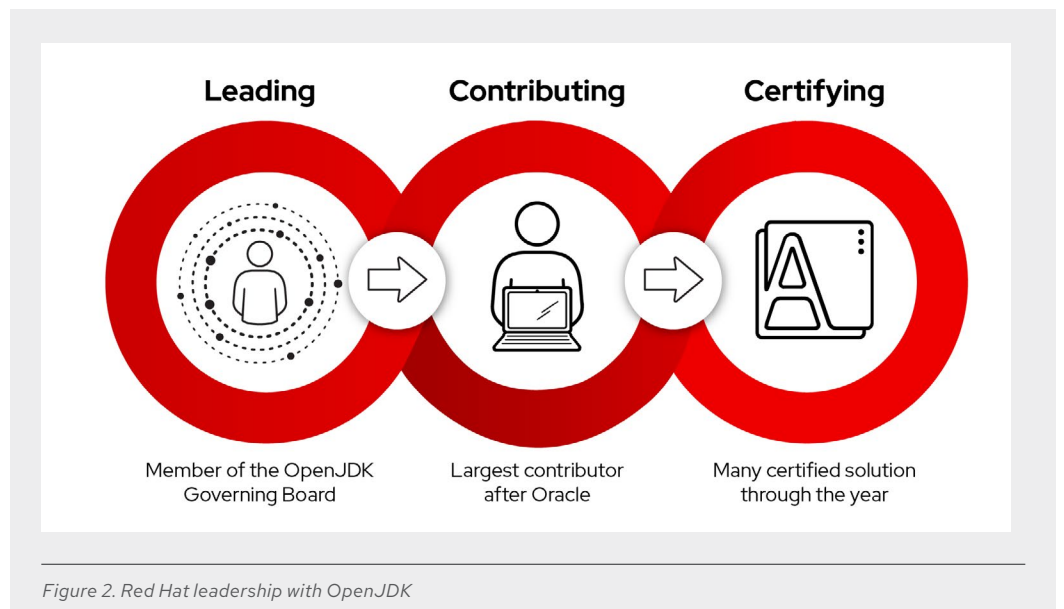

Figure 1. Productization process of OpenJDK

Our productization process includes activities such as feature engineering, security, testing, creation of deployment artifacts, product integration, documentation, and more. Red Hat is fully committed to the open source community and is the second leading contributor (behind Oracle) to the OpenJDK[6] project. Red Hat has provided many certified solutions over the years, and we contribute most of our productization work to the OpenJDK upstream project.

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6 *BellSoft. "External contributions to OpenJDK jdk/jdk Aug '17–Aug '18." Twitter, Sept. 12, 2018,*
https://twitter.com/bellsoftware/status/1039789683910365184?lang=en.

Long history with OpenJDK

Red Hat's history with OpenJDK dates to 2007, when we became the first major software vendor to contribute to the OpenJDK community. Red Hat is also a member of the OpenJDK Governing Board[7] and will serve as the steward of the OpenJDK 8 and OpenJDK 11 projects after a transition of leadership from Oracle.[8]
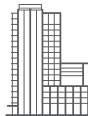

Figure 2. Red Hat leadership with OpenJDK

7 *"OpenJDK Governing Board." OpenJDK, 2019, https://openjdk.java.net/groups/gb/.*

8 *"Leadership of OpenJDK 8 and OpenJDK 11 Transitions to Red Hat." Red Hat, April 17, 2019, https://www.redhat.com/en/about/press-releases/leadership-openjdk-8-and-openjdk-11-transitions-red-hat.*

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

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