Red Hat build of OpenJDK 21

Getting started with Red Hat build of OpenJDK 21

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Abstract

Red Hat build of OpenJDK is a Red Hat offering on Microsoft Windows and Red Hat Enterprise Linux platforms. The Getting Started with Red Hat build of OpenJDK 21 guide provides an overview of this product and explains how to install the software and start using it.

Table of Contents

PROVIDING FEEDBACK ON RED HAT BUILD OF OPENJDK DOCUMENTATION 3

MAKING OPEN SOURCE MORE INCLUSIVE 4

CHAPTER 1. RED HAT BUILD OF OPENJDK OVERVIEW 5

CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 21 6

CHAPTER 3. DISTRIBUTION SELECTION 7

PROVIDING FEEDBACK ON RED HAT BUILD OF OPENJDK DOCUMENTATION

To report an error or to improve our documentation, log in to your Red Hat Jira account and submit an issue. If you do not have a Red Hat Jira account, then you will be prompted to create an account.

Procedure

1. Click the following link to **create a ticket**.
2. Enter a brief description of the issue in the **Summary**.
3. Provide a detailed description of the issue or enhancement in the **Description**. Include a URL to where the issue occurs in the documentation.
4. Clicking **Submit** creates and routes the issue to the appropriate documentation team.

MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see our CTO Chris Wright's message.

CHAPTER 1. RED HAT BUILD OF OPENJDK OVERVIEW

The Red Hat build of OpenJDK is a free and open source implementation of the Java Platform, Standard Edition (Java SE). It is based on the upstream OpenJDK 8u, OpenJDK 11u, OpenJDK 17u, and OpenJDK 21u projects and includes the Shenandoah Garbage Collector in all versions.

- **Multi-platform** - The Red Hat build of OpenJDK is now supported on Windows and RHEL. This helps you standardize on a single Java platform across desktop, datacenter, and hybrid cloud.
- **Frequent releases** - Red Hat delivers quarterly updates of JRE and JDK for the Red Hat build of OpenJDK 8, Red Hat build of OpenJDK 11, Red Hat build of OpenJDK 17, and Red Hat build of OpenJDK 21 distributions. These are available as **rpm**, portables, **msi**, **zip** files and containers.
- **Long-term support** - Red Hat supports the recently released Red Hat build of OpenJDK 8, Red Hat build of OpenJDK 11, Red Hat build of OpenJDK 17, and Red Hat build of OpenJDK 21 distributions. For more information about the support lifecycle, see OpenJDK Life Cycle and Support Policy.
- **Java Web Start** - Red Hat build of OpenJDK supports Java Web Start for RHEL.

CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 21

Red Hat build of OpenJDK in Red Hat Enterprise Linux contains a number of structural changes from the upstream distribution of OpenJDK. The Microsoft Windows version of Red Hat build of OpenJDK attempts to follow Red Hat Enterprise Linux updates as closely as possible.

The following list details the most notable Red Hat build of OpenJDK 21 changes:

- FIPS support. Red Hat build of OpenJDK 21 automatically detects whether RHEL is in FIPS mode and automatically configures Red Hat build of OpenJDK 21 to operate in that mode. This change does not apply to Red Hat build of OpenJDK builds for Microsoft Windows.
- Cryptographic policy support. Red Hat build of OpenJDK 21 obtains the list of enabled cryptographic algorithms and key size constraints from the RHEL system configuration. These configuration components are used by the Transport Layer Security (TLS) encryption protocol, the certificate path validation, and any signed JARs. You can set different security profiles to balance safety and compatibility. This change does not apply to Red Hat build of OpenJDK builds for Microsoft Windows.
- The **src.zip** file includes the source for all of the JAR libraries shipped with Red Hat build of OpenJDK.
- Red Hat build of OpenJDK on RHEL uses system-wide timezone data files as a source for timezone information.
- Red Hat build of OpenJDK on RHEL uses system-wide CA certificates.
- Red Hat build of OpenJDK on Microsoft Windows includes the latest available timezone data from RHEL.
- Red Hat build of OpenJDK on Microsoft Windows uses the latest available CA certificates from RHEL.

Additional resources

- See, Improve system FIPS detection (RHEL Planning Jira)
- See, Using system-wide cryptographic policies (RHEL documentation)

CHAPTER 3. DISTRIBUTION SELECTION

Red Hat provides several distributions of Red Hat build of OpenJDK. This module helps you select the distribution that is right for your needs. All distributions of OpenJDK contain the JDK Flight Recorder (JFR) feature. This feature produces diagnostics and profiling data that can be consumed by other applications, such as JDK Mission Control (JMC).

Red Hat build of OpenJDK RPMs for RHEL 8

RPM distributions of Red Hat build of OpenJDK 8, Red Hat build of OpenJDK 11, Red Hat build of OpenJDK 17, and Red Hat build of OpenJDK 21 for RHEL 8.

Red Hat build of OpenJDK 8 JRE portable archive for RHEL

Portable Red Hat build of OpenJDK 8 JRE archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 8 portable archive for RHEL

Portable Red Hat build of OpenJDK 8 archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 11 JRE portable archive for RHEL

Portable Red Hat build of OpenJDK 11 JRE archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 11 portable archive for RHEL

Portable Red Hat build of OpenJDK 11 archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 17 JRE portable archive for RHEL

Portable Red Hat build of OpenJDK 17 JRE archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 17 portable archive for RHEL

Portable Red Hat build of OpenJDK 17 archive distribution for RHEL 7 and 8 hosts.

Red Hat build of OpenJDK 21 JRE portable archive for RHEL

Portable Red Hat build of OpenJDK 21 JRE archive distribution for RHEL 8 and 9 hosts.

Red Hat build of OpenJDK 21 portable archive for RHEL

Portable Red Hat build of OpenJDK 21 archive distribution for RHEL 8 and 9 hosts.

Red Hat build of OpenJDK archive for Windows

Red Hat build of OpenJDK 8, Red Hat build of OpenJDK 11, Red Hat build of OpenJDK 17, and Red Hat build of OpenJDK 21 distributions for all supported Windows hosts. Recommended for cases where multiple Red Hat build of OpenJDK versions may be installed on a host. This distribution includes the following:

- Java Web Start
- Mission Control

Red Hat build of OpenJDK installers for Windows

Red Hat build of OpenJDK 8, Red Hat build of OpenJDK 11, Red Hat build of OpenJDK 17, and Red Hat build of OpenJDK 21 MSI installers for all supported Windows hosts. Optionally installs Java Web Start and sets environment variables. Suitable for system wide installs of a single Red Hat build of OpenJDK version.

Additional resources

- For more information about the JDK Flight Recorder (JFR), see Introduction to JDK Flight Recorder.
- For more information about the JDK Flight Recorder (JFR), see Introduction to JDK Mission Control.

- JDK Mission Control is available for RHEL with Red Hat Software Collections 3.2 .
- Where is JDK Mission Control (JMC) in JDK 21?

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