Red Hat build of OpenJDK 11

Release notes for Red Hat build of OpenJDK 11.0.16

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Abstract

This document provides an overview of new features in Red Hat build of OpenJDK 11 and a list of potential known issues and possible workarounds.

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PREFACE

Open Java Development Kit (OpenJDK) is a free and open source implementation of the Java Platform, Standard Edition (Java SE). The Red Hat build of OpenJDK is available in three versions: 8u, 11u, and 17u.

Packages for the Red Hat build of OpenJDK are made available on Red Hat Enterprise Linux and Microsoft Windows and shipped as a JDK and JRE in the Red Hat Ecosystem Catalog.

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.

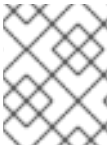
MAKING OPEN SOURCE MORE INCLUSIVE

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. SUPPORT POLICY FOR RED HAT BUILD OF OPENJDK

Red Hat will support select major versions of Red Hat build of OpenJDK in its products. For consistency, these are the same versions that Oracle designates as long-term support (LTS) for the Oracle JDK.

A major version of Red Hat build of OpenJDK will be supported for a minimum of six years from the time that version is first introduced. For more information, see the OpenJDK Life Cycle and Support Policy .



NOTE

RHEL 6 reached the end of life in November 2020. Because of this, Red Hat build of OpenJDK is not supporting RHEL 6 as a supported configuration.

CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 11

Red Hat build of OpenJDK in Red Hat Enterprise Linux (RHEL) 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 RHEL updates as closely as possible.

The following list details the most notable Red Hat build of OpenJDK 11 changes:

- FIPS support. Red Hat build of OpenJDK 11 automatically detects whether RHEL is in FIPS mode and automatically configures Red Hat build of OpenJDK 11 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 11 obtains the list of enabled cryptographic algorithms and key size constraints from RHEL. 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.
- Red Hat build of OpenJDK on RHEL dynamically links against native libraries such as **zlib** for archive format support and **libjpeg-turbo**, **libpng**, and **giflib** for image support. RHEL also dynamically links against **Harfbuzz** and **Freetype** for font rendering and management.
- The **src.zip** file includes the source for all 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 certificate from RHEL.

Additional resources

- For more information about detecting if a system is in FIPS mode, see the Improve system FIPS detection example on the Red Hat RHEL Planning Jira.
- For more information about cryptographic policies, see Using system-wide cryptographic policies.

CHAPTER 3. RED HAT BUILD OF OPENJDK 11.0.16.1 RELEASE NOTES

Review the following release notes for an overview of the changes from the Red Hat build of OpenJDK 11.0.16.1 patch release:

Fixed issue with the C2 JIT compiler

The Red Hat build of OpenJDK 11.0.16.1 release fixes a regression issue with the C2 Just-In-Time (JIT) compiler, which caused the HotSpot JVM to unexpectedly crash.

See, JDK-8292396 (JDK Bug System)

Advisories related to the Red Hat build of OpenJDK 11.0.16.1 release

The following advisories have been issued about bug fixes and CVE fixes included in this release:

- RHBA-2022:6294-01
- RHBA-2022:6349-01

CHAPTER 4. RED HAT BUILD OF OPENJDK FEATURES

The latest Red Hat build of OpenJDK 11 release might include new features. Additionally, the latest release might enhance, deprecate, or remove features that originated from previous Red Hat build of OpenJDK 11 releases.

NOTE

For all the other changes and security fixes, see OpenJDK 11.0.16 Released.

4.1. RED HAT BUILD OF OPENJDK NEW FEATURES AND ENHANCEMENTS

Review the following release notes to understand new features and feature enhancements that are included with the Red Hat build of OpenJDK 11.0.16 release:

Vector throws ClassNotFoundException for a missing class of an element

When the class of an element of a Vector isn't found, **java.util.Vector** now correctly reports the **ClassNotFoundException** that occurs during deserialization using **java.io.ObjectInputStream.GetField.get(name, object)**. Previously, a **StreamCorruptedException** error was displayed, which didn't provide any information about the missing class.

See, JDK-8277157 (JDK Bug System)

HTTPS channel binding support for Java Generic Security Services (GSS) or Kerberos

The Red Hat build of OpenJDK 11.0.16 release supports TLS channel binding tokens when Negotiate selects Kerberos authentication over HTTPS through **javax.net.HttpsURLConnection**.

Channel binding tokens enhance security by mitigating some man-in-the-middle (MITM) attacks. When a server receives details regarding the binding between a TLS server certificate and authentication credentials for a client, the server detects if a MITM attack has fooled the client and can shut down the connection.

The feature is controlled through the **jdk.https.negotiate.cbt** system property, which is described fully in Oracle documentation.

See, JDK-8285240 (JDK Bug System)

Incorrect handling of quoted arguments in ProcessBuilder

Before the Red Hat build of OpenJDK 11.0.16 release, arguments to **ProcessBuilder** on Windows that started with a double quotation mark and ended with a backslash followed by a double quotation mark passed to a command incorrectly, causing the command to fail. For example, the argument **"C:\\Program Files\"**, was processed as having extra double quotation marks at the end.

The Red Hat build of OpenJDK 11.0.16 release resolves this issue by restoring the previously available behavior, in which the backslash (\) before the final double quotation mark is not treated specially.

See, JDK-8283137 (JDK Bug System)

Default JDK compressor closes when IOException is encountered

The **DeflaterOutputStream.close()** and **GZIPOutputStream.finish()** methods have been modified to close out the associated default JDK compressor before propagating a **Throwable** up the stack. The **ZIPOutputStream.closeEntry()** method has been modified to close out the associated default JDK

compressor before propagating an **IOException**, not of type **ZipException**, up the stack.

See, JDK-8278386 (JDK Bug System)

New system property to disable Windows Alternate Data Stream support in java.io.File

The Windows implementation of **java.io.File** allows access to NTFS Alternate Data Streams (ADS) by default. These streams are structured in the format **filename:streamname**. The Red Hat build of OpenJDK 11.0.16 release adds a system property that allows you to disable ADS support in **java.io.File**. To disable ADS support in **java.io.File**, set the **jdk.io.File.enableADS** system property to **false**.

IMPORTANT

Disabling ADS support in **java.io.File** results in stricter path checking that prevents the use of special devices such as **NUL:**.

See, JDK-8285660 (JDK Bug System)

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