Red Hat build of OpenJDK 11

Release notes for Red Hat build of OpenJDK 11.0.20

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Red Hat build of OpenJDK 11 Release notes for Red Hat build of OpenJDK 11.0.20

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Abstract

The Release notes for Red Hat build of OpenJDK 11.0.20 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.

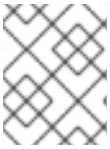
MAKING OPEN SOURCE MORE INCLUSIVE

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 11.0.20.1 RELEASE NOTES

Review the following release notes for an overview of the changes from the Red Hat build of OpenJDK 11.0.20.1 patch release.

NOTE

For all the other changes and security fixes, see OpenJDK 11.0.20.1 Released.

Fixed Invalid CEN header error on valid .zip files

Red Hat build of OpenJDK 11.0.20 introduced additional validation checks on the **ZIP64** fields of **.zip** files (JDK-8302483). However, these additional checks caused validation failures on some valid **.zip** files with the following error message: **Invalid CEN header (invalid zip64 extra data field size)**.

To fix this issue, Red Hat build of OpenJDK 11.0.20.1 supports zero-length headers and the additional padding that some **ZIP64** creation tools produce. From Red Hat build of OpenJDK 11.0.20 onward, you can disable these checks by setting the **jdk.util.zip.disableZip64ExtraFieldValidation** system property to **true**.

See JDK-8313765 (JDK Bug System)

Increased default value of jdk.jar.maxSignatureFileSize system property

Red Hat build of OpenJDK 11.0.20 introduced a **jdk.jar.maxSignatureFileSize** system property for configuring the maximum number of bytes that are allowed for the signature-related files in a Java archive (JAR) file (JDK-8300596). By default, the **jdk.jar.maxSignatureFileSize** property was set to 8000000 bytes (8 MB), which was too small for some JAR files.

Red Hat build of OpenJDK 11.0.20.1 increases the default value of the **jdk.jar.maxSignatureFileSize** property to 16000000 bytes (16 MB).

See JDK-8313216 (JDK Bug System)

Fixed NullPointerException when handling null addresses

In Red Hat build of OpenJDK 11.0.20, when the serviceability agent encountered null addresses while generating thread dumps, the serviceability agent produced a **NullPointerException**.

Red Hat build of OpenJDK 11.0.20.1 handles null addresses appropriately.

See JDK-8243210 (JDK Bug System)

Advisories related to Red Hat build of OpenJDK 11.0.20.1

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

- RHBA-2023:5225
- RHBA-2023:5227
- RHBA-2023:5229

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 11.0.20 Released.

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 11.0.20 release:

Reduced risk of JVM crash when using GregorianCalendar.computeTime()

In Red Hat build of OpenJDK 11.0.19, a virtual machine crash could occur when using the **GregorianCalendar.computeTime()** method (JDK-8307683). Even though an old issue is the root cause of this JVM crash, a recent fix for a rare issue in the C2 compiler (JDK-8297951) significantly increased the probability of the JVM crash. To mitigate risk, the Red Hat build of OpenJDK 11.0.20 release excludes the fix for the C2 compiler. Once the root cause of the JVM crash is resolved (JDK-8307683), Red Hat build of OpenJDK will reintroduce the fix for the C2 compiler (JDK-8297951).

See JDK-8308884 (JDK Bug System).

Additional characters for GB18030-2022 support allowed

To support "Implementation Level 1" of the GB18030-2022 standard, Red Hat build of OpenJDK must support the use of five additional characters that are beyond the scope of Unicode 10, which Red Hat build of OpenJDK 11 is based on. Maintenance Release 2 of the Java SE 11 specification adds support for these additional characters, which Red Hat build of OpenJDK 11.0.20 implements.

The additional characters are as follows:

- 0x82359632 U+9FEB
- 0x82359633 U+9FEC
- 0x82359634 U+9FED
- 0x82359635 U+9FEE
- 0x82359636 U+9FEF

See JDK-8301401 (JDK Bug System).

Support for GB18030-2022

The Chinese Electronics Standardization Institute (CESI) recently published GB18030-2022 as an update to the GB18030 standard, synchronizing the character set with Unicode 11.0. The GB18030-2022 standard is now the default GB18030 character set that Red Hat build of OpenJDK 11.0.20 uses. However, this updated character set contains incompatible changes compared with GB18030-2000, which previous releases of Red Hat build of OpenJDK 11 used. From Red Hat build of OpenJDK 11.0.20 onward, if you want to use the previous version of the character set, ensure that the new system property **jdk.charset.GB18030** is set to **2000**.

See JDK-8301119 (JDK Bug System).

Enhanced ZIP performance

The Red Hat build of OpenJDK 11.0.20 release includes enhanced checks on the **ZIP64** fields of **.zip** files. If these checks cause failures on trusted **.zip** files, you can disable these checks by setting the new system property **jdk.util.zip.disableZip64ExtraFieldValidation** to **true**.

JDK bug system reference ID: JDK-8302483.

Enhanced validation of JAR signature

You can now configure the maximum number of bytes that are allowed for the signature-related files in a Java archive (JAR) file by setting a new system property, **jdk.jar.maxSignatureFileSize**. By default, the **jdk.jar.maxSignatureFileSize** property is set to **8000000** bytes (8 MB).

JDK bug system reference ID: JDK-8300596.

Legal headers for generated files

The **javadoc** tool now supports the inclusion of legal files, which pertain to the licensing of files that the standard doclet generates. You can use the new **--legal-notices** command-line option to configure this feature.

See JDK-8259530 (JDK Bug System).

GTS root certificate authority (CA) certificates added

In the Red Hat build of OpenJDK 11.0.20 release, the **cacerts** truststore includes four Google Trust Services (GTS) root certificates:

Certificate 1

- Name: Google Trust Services LLC
- Alias name: gtsrootcar1
- Distinguished name: CN=GTS Root R1, O=Google Trust Services LLC, C=US

Certificate 2

- Name: Google Trust Services LLC
- Alias name: gtsrootcar2
- Distinguished name: CN=GTS Root R2, O=Google Trust Services LLC, C=US

Certificate 3

- Name: Google Trust Services LLC
- Alias name: gtsrootcar3
- Distinguished name: CN=GTS Root R3, O=Google Trust Services LLC, C=US

Certificate 4

- Name: Google Trust Services LLC
- Alias name: gtsrootcar4
- Distinguished name: CN=GTS Root R4, O=Google Trust Services LLC, C=US

See JDK-8307134 (JDK Bug System).

Microsoft Corporation root CA certificates added

In the Red Hat build of OpenJDK 11.0.20 release, the **cacerts** truststore includes two Microsoft Corporation root certificates:

Certificate 1

- Name: Microsoft Corporation
- Alias name: microsoftecc2017
- Distinguished name: CN=Microsoft ECC Root Certificate Authority 2017, O=Microsoft Corporation, C=US

Certificate 2

- Name: Microsoft Corporation
- Alias name: microsoftrsa2017
- Distinguished name: CN=Microsoft RSA Root Certificate Authority 2017, O=Microsoft Corporation, C=US

See JDK-8304760 (JDK Bug System).

TWCA root CA certificate added

In the Red Hat build of OpenJDK 11.0.20 release, the **cacerts** truststore includes the Taiwan Certificate Authority (TWCA) root certificate:

- Name: TWCA
- Alias name: twcaglobalrootca
- Distinguished name: CN=TWCA Global Root CA, OU=Root CA, O=TAIWAN-CA, C=TW

See JDK-8305975 (JDK Bug System).

CHAPTER 5. ADVISORIES RELATED TO THIS RELEASE

The following advisories are issued to document bug fixes and CVE fixes included in this release:

- RHSA-2023:4157
- RHSA-2023:4158
- RHSA-2023:4161
- RHSA-2023:4162
- RHSA-2023:4163
- RHSA-2023:4164
- RHSA-2023:4165
- RHSA-2023:4175
- RHSA-2023:4208
- RHSA-2023:4233

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