



OpenJDK 11

Release notes for OpenJDK 11.0.20

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Abstract

The Release notes for OpenJDK 11.0.20 document provides an overview of new features in OpenJDK 11 and a list of potential known issues and possible workarounds.

Table of Contents

PREFACE	3
MAKING OPEN SOURCE MORE INCLUSIVE	4
PROVIDING FEEDBACK ON RED HAT DOCUMENTATION	5
CHAPTER 1. SUPPORT POLICY FOR OPENJDK	6
CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 11	7
CHAPTER 3. OPENJDK FEATURES	8
OpenJDK new features and enhancements	8
Reduced risk of JVM crash when using <code>GregorianCalendar.computeTime()</code>	8
Additional characters for GB18030-2022 support allowed	8
Support for GB18030-2022	8
Enhanced ZIP performance	8
Enhanced validation of JAR signature	9
Legal headers for generated files	9
GTS root certificate authority (CA) certificates added	9
Microsoft Corporation root CA certificates added	10
TWCA root CA certificate added	10
CHAPTER 4. ADVISORIES RELATED TO THIS RELEASE	11

PREFACE

OpenJDK (Open Java Development Kit) 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: OpenJDK 8u, OpenJDK 11u, and OpenJDK 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.

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](#).

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We appreciate your feedback on our documentation. To provide feedback, you can highlight the text in a document and add comments.

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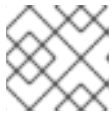
Prerequisites

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NOTE

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A documentation issue is created.
5. To view the issue, click the issue tracker link in the feedback view.

CHAPTER 1. SUPPORT POLICY FOR OPENJDK

Red Hat will support select major versions of OpenJDK in its products. For consistency, these versions will be the same ones that Oracle designates 'LTS' for the Oracle JDK.

A major version of OpenJDK will be supported for a minimum of six years from the time it is first introduced.

OpenJDK 11 is supported on Microsoft Windows and Red Hat Enterprise Linux until October 2024.



NOTE

RHEL 6 reached the end of life in November 2020. Due to this, OpenJDK is not supporting RHEL 6 as a supporting configuration.

See the [OpenJDK Life Cycle and Support Policy](#) .

CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 11

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

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

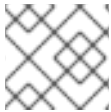
- FIPS support. Red Hat OpenJDK 11 automatically detects whether RHEL is in FIPS mode and automatically configures OpenJDK 11 to operate in that mode. This change does not apply to OpenJDK builds for Microsoft Windows.
- Cryptographic policy support. Red Hat OpenJDK 11 obtains the list of enabled cryptographic 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 OpenJDK builds for Microsoft Windows.
- Red Hat 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 OpenJDK.
- Red Hat OpenJDK on RHEL uses system-wide timezone data files as a source for timezone information.
- Red Hat OpenJDK on RHEL uses system-wide CA certificates.
- Red Hat OpenJDK on Microsoft Windows includes the latest available timezone data from RHEL.
- Red Hat 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. OPENJDK FEATURES

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



NOTE

For all the other changes and security fixes, see [OpenJDK 11.0.20 Released](#).

OpenJDK new features and enhancements

Review the following release notes to understand new features and feature enhancements that are included with the OpenJDK 11.0.20 release:

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

In 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 OpenJDK 11.0.20 release excludes the fix for the C2 compiler. Once the root cause of the JVM crash is resolved ([JDK-8307683](#)), 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, OpenJDK must support the use of five additional characters that are beyond the scope of Unicode 10, which OpenJDK 11 is based on. Maintenance Release 2 of the Java SE 11 specification adds support for these additional characters, which 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 OpenJDK 11.0.20 uses. However, this updated character set contains incompatible changes compared with GB18030-2000, which previous releases of OpenJDK 11 used. From 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 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-notice** command-line option to configure this feature.

See [JDK-8259530 \(JDK Bug System\)](#).

GTS root certificate authority (CA) certificates added

In the 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 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 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 4. 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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