



OpenJDK 11

Release notes for OpenJDK 11.0.14

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Abstract

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

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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](#).

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

For more information, 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 11.0.14.1 RELEASE NOTES

Review the following release notes to understand changes from this OpenJDK 11.0.14 patch release:

3.1. RESOLVED HTTPS://GOOGLE.COM CONNECTION ISSUE

The OpenJDK 11.0.14.1 release resolves an issue that was identified when using the Java HTTP client, `java.net.HTTPClient`, to connect to the `https://google.com` URL. This issue persisted on the OpenJDK build for Microsoft Windows and on the OpenJDK build for RHEL.

The initial OpenJDK 11.0.14 release contained a regression that was introduced by improvements to the HTTP client. This regression caused both the `:authority` and the `Host` header fields to be sent in HTTP/2 requests, which are rejected by some HTTP servers, such as Google's server. When you attempted to establish this connection, you would receive an exception message. This exception message would indicate that the Java HTTP client could not successfully communicate by using the HTTP/2 protocol.

Example of an exception message when attempting to connect to `https://google.com` with `java.net.HTTPClient`

```
java.util.concurrent.ExecutionException: java.io.IOException: Received RST_STREAM: Protocol error
```

The OpenJDK 11.0.14.1 release resolves the issue by reverting to the original behavior of only setting the `:authority` header field to be sent in an HTTP/2 request.

For more information about this issue and how it was resolved, see [JDK-8218546](#) and see the advisories related to the OpenJDK 11.0.14.1 release.

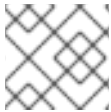
3.2. ADVISORIES RELATED TO THE OPENJDK 11.0.14.1 RELEASE

The following advisories have been issued to bugfixes and CVE fixes included in this release:

- [RHBA-2022:0732](#)
- [RHBA-2022:0733](#)

CHAPTER 4. OPENJDK FEATURES

The latest OpenJDK 11 release might include new features. Additionally, this 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 11.0.14 Released](#).

4.1. NEW FEATURES AND ENHANCEMENTS

Review the following release notes to understand new features and feature enhancements that have been included with the OpenJDK 11.0.14 release:

Archive file system provider

For OpenJDK 11.0.14, the archive file system provider rejects existing archive files with file name elements that include a dot (.) or two dots (..). If you attempt to use existing archive files that include these named elements as system files, and you invoke the `java.nio.file.FileSystems.newFileSystem(...)` method, the method throw a **ZipException** error message on your command-line interface.

For more information about the change to the archive file system provider, see [JDK-8271517](#).

IANA Time Zone Database

The Internet Assigned Numbers Authority (IANA) updated its Time Zone Database to version 2021c. Red Hat OpenJDK date and time libraries depends on IANA's Time Zone Database for determining local time for various regions around the world.



NOTE

The 2021b release of the Time Zone Database updated time zone rules that existed before 1970. For more information about the 2021b release, see [2021b release of tz code and data available](#) on the *IANA* website.

For more information about IANA's Time Zone Database, see [Time Zone Database](#) on the *IANA* website.

For more information about IANA's 2021c Time Zone Database release, see [JDK-8274857](#).

OpenJDK's identification of Microsoft Windows versions

Before the OpenJDK 11, the `os.name` system property that is retrieved from `System.getProperty()` and the HotSpot error logs would report **Windows 10.0** on Microsoft Windows 11 and **Windows Server 2019** on Microsoft Windows Server 2022. OpenJDK now identifies the correct version on these systems.

New option for the `GC.heap_dump` diagnostic command

OpenJDK 11.0.14 adds the `gz` integer option to the `GC.heap_dump` diagnostic command of the `jcmd` utility.

You can use this option to enable `gzip` compression and to set a compression level when creating a heap dump. Compression level values range from 1 through 9, with the value of 1 as the fastest setting and the value of 9 as the slowest setting.

For more information about the `gz` integer option, see [JDK-8250554](#).

Microsoft Windows version

OpenJDK that runs on either Microsoft Windows 11 or Microsoft Windows Server 2022 now displays the

correct Microsoft Windows version in the **os.name** value of the **System.getProperty()** system property and any HotSpot error logs. Before the OpenJDK 11.0.14 release, this behavior was not possible if you updated your Microsoft Windows operating system or Microsoft Windows Server to a later version.

System properties for disabling TLS extensions

You can use two new system properties to disable Transport Layer Security (TLS) extensions for the TLS protocol. These system properties are detailed as follows:

- **jdk.tls.client.disableExtensions** that disables TLS extensions used by TLS clients.
- **jdk.tls.server.disableExtensions** that disables TLS extensions used by TLS servers.

A disabled TLS extension does not form part of a TLS handshake process. You must not disable mandatory TLS extensions, because these TLS extensions are essential for establishing a TLS handshake.

Both system properties ignore duplicated, misspelled, unknown, and unsupported TLS extension names. Extension names must conform to the Internet Assigned Numbers Authority (IANA) specification.

For more information about these new system properties, see [JDK-8260310](#).

For more information about the TLS extensions that comply with the IANA specification, see [Transport Layer Security \(TLS\) Extensions](#) on the *IANA* website.

SunPKCS11 provider configuration attributes

The **SunPKCS11** provider includes new configuration attributes that enhance the usage of native resources, such as key objects. The **SunPKCS11** provider must use native resources for it to work with native PKCS11 libraries.

Table 4.1. New **SunPKCS11** provider configuration attributes

Attribute	Type
destroyTokenAfterLogout	Boolean
cleaner.shortInterval	Integer
cleaner.longInterval	Integer

For more information about the new **SunPKCS11** provider configuration attributes, see [JDK-8272907](#).

4.2. DEPRECATED AND REMOVED FEATURES

Review the following release notes to understand pre-existing features that have been either deprecated or removed in the OpenJDK 11.0.14 release:

Google GlobalSign root certificate

OpenJDK 11.0.14 removes the following root certificate from the **cacerts** keystore:

Alias name

globalsignr2ca [jdk]

Distinguished name

CN=GlobalSign, O=GlobalSign, OU=GlobalSign Root CA - R2

For more information about this removed Google GlobalSign root certificate, see [JDK-8272535](#).

CHAPTER 5. ADVISORIES RELATED TO THIS RELEASE

The following advisories have been issued to bugfixes and CVE fixes included in this release.

- [RHSA-2022:0204](#)
- [RHSA-2022:0185](#)
- [RHSA-2022:0209](#)
- [RHSA-2022:0211](#)
- [RHSA-2022:0228](#)
- [RHSA-2022:0229](#)

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