Abstract

This document provides an overview of new features in OpenJDK 11, as well as a list of potential known issues and possible workarounds.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREFACE</td>
<td>3</td>
</tr>
<tr>
<td>MAKING OPEN SOURCE MORE INCLUSIVE</td>
<td>4</td>
</tr>
<tr>
<td>CHAPTER 1. SUPPORT POLICY FOR OPENJDK</td>
<td>5</td>
</tr>
<tr>
<td>CHAPTER 2. DIFFERENCES FROM UPSTREAM OPENJDK 11</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER 3. OPENJDK FEATURES</td>
<td>7</td>
</tr>
<tr>
<td>3.1. NEW FEATURES AND ENHANCEMENTS</td>
<td>7</td>
</tr>
<tr>
<td>3.1.1. Added -groupname option to keytool key pair generation command</td>
<td>7</td>
</tr>
<tr>
<td>3.1.2. Added support for X25519 and X448 in TLS</td>
<td>7</td>
</tr>
<tr>
<td>3.1.3. Added default native GSS-API library on Windows</td>
<td>8</td>
</tr>
<tr>
<td>3.1.4. Added jarsigner to preserve POSIX file permission and symlink attribute</td>
<td>8</td>
</tr>
</tbody>
</table>
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 two versions, OpenJDK 8u and OpenJDK 11u.

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 Container 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 contains a number of structural changes from the upstream distribution of OpenJDK. The Windows version of OpenJDK tries to follow Red Hat Enterprise Linux as closely as possible.

The most notable changes are the following:

- On Red Hat Enterprise Linux, external native libraries are used for archive format support (zlib) and image formats (libjpeg-turbo, libpng, and giflib). Red Hat Enterprise Linux 8 uses additional font rendering (harfbuzz) external library.
  On Microsoft Windows, these libraries are built from the sources of the corresponding Red Hat Enterprise Linux RPMs and packaged as dynamic-link libraries (DLLs).

- On Red Hat Enterprise Linux, system-wide timezone data files are used as a source for timezone information.
  On Microsoft Windows, the latest available timezone data from Red Hat Enterprise Linux is included.

- On Red Hat Enterprise Linux, system-wide CA certificates are used.
  On Microsoft Windows, the latest available CA certificate from Red Hat Enterprise Linux is used.

- The src.zip file includes the source for all of the JAR libraries shipped with OpenJDK.
CHAPTER 3. OPENJDK FEATURES

3.1. NEW FEATURES AND ENHANCEMENTS

This section describes the new features introduced in this release. It also contains information about changes in the existing features.

NOTE

For all the other changes and security fixes, see https://mail.openjdk.java.net/pipermail/jdk-updates-dev/2021-January/004689.html.

3.1.1. Added -groupname option to keytool key pair generation command

A new -groupname option has been added to the keytool -genkeypair command. Use the -groupname option to specify a named elliptic curve (EC) group when generating a key pair.

For example, the following command generates an EC key pair using the secp384r1 curve: keytool -genkeypair -keyalg EC -groupname secp384r1

It is recommended that you use the -groupname option over the -keysize option, because there might be multiple curves of the same size.

For more information, see JDK-8213821.

3.1.2. Added support for X25519 and X448 in TLS

The named elliptic curve groups x25519 and x448 are now available for JSSE key agreement in TLS versions 1.0 to 1.3.

The curve group x25519 is the most preferred of the default enabled named groups. The default ordered list is as follows:

- x25519
- secp256r1
- secp384r1
- secp521r1
- x448
- secp256k1
- ffdhe2048
- ffdhe3072
- ffdhe4096
- ffdhe6144
- ffdhe8192
Use the system property `jdk.tls.namedGroups` to override the default list.

For more information, see JDK-8225764.

### 3.1.3. Added default native GSS-API library on Windows

A native GSS-API library has been added to JDK on the Windows platform. The library is client-side only and uses the default credentials. It is activated by setting the `sun.security.jgss.native` system property to "true". A user can still make use of a third-party native GSS-API library instead by setting the system property `sun.security.jgss.lib` to its path.

For more information, see JDK-8214079.

### 3.1.4. Added jarsigner to preserve POSIX file permission and symlink attribute

When signing a file that contains POSIX file permission or symlink attributes, jarsigner now preserves these attributes in the newly signed file but warns that these attributes are unsigned and not protected by the signature. The same warning is printed during the `jarsigner -verify` operation for such files.

**NOTE**

The `jar` tool does not read or write these attributes. This change is more visible to tools like `unzip` where these attributes are preserved.

For more information, see JDK-8248263.

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