For Use with the Red Hat JBoss Web Server 6.0
Abstract

These release notes contain important information related to the Red Hat JBoss Web Server 6.0.
# Table of Contents

**PROVIDING FEEDBACK ON RED HAT DOCUMENTATION**  ............................................. 3

**MAKING OPEN SOURCE MORE INCLUSIVE**  ............................................................ 4

**CHAPTER 1. RED HAT JBOSS WEB SERVER 6.0**  ...................................................... 5

**CHAPTER 2. NEW FEATURES AND ENHANCEMENTS**  .............................................. 6

- 2.1. APACHE TOMCAT 10.1 SUPPORT  .............................................................. 6
- 2.2. JAVA PACKAGE NAMESPACE CHANGES FROM JAVAX TO JAKARTA  .................. 6
- 2.3. NAMING ENHANCEMENTS FOR JBOSS WEB SERVER NATIVE ARCHIVE FILES  ...... 6
- 2.4. ARM64 ARCHITECTURE SUPPORT  .............................................................. 6
- 2.5. JWS FOR OPENSIFT IMAGE FOR OPENJDK 17  ............................................ 6
- 2.6. JWS FOR OPENSIFT ENVIRONMENT VARIABLE ENHANCEMENTS  ................. 7
- 2.7. ENHANCED DEFAULT ACCESSLOGVALVE PATTERN  .................................... 7
- 2.8. STUCKTHREADDETECTIONVALVE ENABLED BY DEFAULT  ........................... 7

**CHAPTER 3. DEPRECATED FEATURES**  .................................................................... 8

- 3.1. RED HAT ENTERPRISE LINUX 7 SUPPORT  .................................................. 8
- 3.2. WINDOW 2016 SERVER SUPPORT  ................................................................. 8
- 3.3. JDK 8 SUPPORT  ......................................................................................... 8
- 3.4. APR CONNECTOR SUPPORT  ......................................................................... 8
- 3.5. JWS_HTTPS_SECRET ENVIRONMENT VARIABLE  ....................................... 8
- 3.6. APACHE CXF AND HIBERNATE ORM ARTIFACTS REMOVED FROM THE JBOSS WEB SERVER MAVEN REPOSITORY  ................................................................. 8

**CHAPTER 4. INSTALLING THE RED HAT JBOSS WEB SERVER 6.0**  ......................... 10

**CHAPTER 5. OS/JVM CERTIFICATIONS**  .................................................................. 11

**CHAPTER 6. RESOLVED ISSUES**  .......................................................................... 12

**CHAPTER 7. KNOWN ISSUES**  ............................................................................. 13

**CHAPTER 8. SUPPORTED COMPONENTS**  ............................................................. 14

**CHAPTER 9. ADVISORIES RELATED TO THIS RELEASE**  ...................................... 15
PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate your feedback on our technical content and encourage you to tell us what you think. If you’d like to add comments, provide insights, correct a typo, or even ask a question, you can do so directly in the documentation.

NOTE
You must have a Red Hat account and be logged in to the customer portal.

To submit documentation feedback from the customer portal, do the following:

1. Select the Multi-page HTML format.
2. Click the Feedback button at the top-right of the document.
3. Highlight the section of text where you want to provide feedback.
4. Click the Add Feedback dialog next to your highlighted text.
5. Enter your feedback in the text box on the right of the page and then click Submit.

We automatically create a tracking issue each time you submit feedback. Open the link that is displayed after you click Submit and start watching the issue or add more comments.

Thank you for the valuable feedback.
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.
Welcome to the Red Hat JBoss Web Server version 6.0 release.

Red Hat JBoss Web Server is a fully integrated and certified set of components for hosting Java web applications. It consists of an application server (Apache Tomcat servlet container) and the Apache Tomcat Native Library.

JBoss Web Server includes the following key components:

- **Apache Tomcat** is a servlet container in accordance with the Java Servlet Specification. JBoss Web Server contains Apache Tomcat 10.1.

- The **Apache Tomcat Native Library** improves Tomcat scalability, performance, and integration with native server technologies.

- **Tomcat-vault** is an extension for the JBoss Web Server that is used for securely storing passwords and other sensitive information used by a JBoss Web Server.

- The **mod_cluster** library enables communication between JBoss Web Server and the Apache HTTP Server **mod_proxy_cluster** module. The **mod_cluster** library enables you to use the Apache HTTP Server as a load balancer for JBoss Web Server. For more information about configuring **mod_cluster**, or for information about installing and configuring alternative load balancers such as **mod_jk** and **mod_proxy**, see the Apache HTTP Server Connectors and Load Balancing Guide.

- **Apache portable runtime (APR)** is a runtime that provides an OpenSSL-based TLS implementation for the HTTP connectors. JBoss Web Server provides a distribution of APR for supported Windows platforms only. For Red Hat Enterprise Linux, you can use the APR package that the operating system provides.

- **OpenSSL** is a software library that implements the Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols and includes a basic cryptographic library. JBoss Web Server provides a distribution of OpenSSL for supported Windows platforms only. For Red Hat Enterprise Linux, you can use the OpenSSL package that the operating system provides.

This release introduces support for Apache Tomcat 10.1 and fixes some security issues.

This release of JBoss Web Server provides OpenShift images based on Red Hat Enterprise Linux 8.
CHAPTER 2. NEW FEATURES AND ENHANCEMENTS

Red Hat JBoss Web Server 6.0 includes the following new features and enhancements.

2.1. APACHE TOMCAT 10.1 SUPPORT

The JBoss Web Server 6.0 release is based on Apache Tomcat 10.1.8. This version of Apache Tomcat implements the following specifications that the Jakarta Enterprise Edition (EE) 10 platform requires:

- Jakarta Servlet 6.0
- Jakarta Server Pages 3.1
- Jakarta Expression Language 5.0
- Jakarta WebSocket 2.1
- Jakarta Authentication 3.0

2.2. JAVA PACKAGE NAMESPACE CHANGES FROM JAVAX TO JAKARTA

With the introduction of Apache Tomcat 10.1 support, which implements Jakarta EE 10, a major difference between JBoss Web Server 6.0 and previous product versions is the renaming of the Jakarta EE API Java packages from `javax.` to `jakarta.`

**NOTE**

This change does not affect `javax` packages that are part of Java Standard Edition (SE).

Adapting to this namespace change is the biggest change involved in migrating applications to JBoss Web Server 6.0. For more information, see Migrating applications from Red Hat JBoss Web Server 5.x to Red Hat JBoss Web Server 6.

2.3. NAMING ENHANCEMENTS FOR JBOSS WEB SERVER NATIVE ARCHIVE FILES

From JBoss Web Server 6.0 onward, the native archive files that you can download from the Red Hat Customer Portal use the following naming format:

`jws-6.X.x-optional-native-components-<platform>-<architecture>.zip`

This supersedes the behavior in previous releases where the native archive files used the following naming format:

`jws-5.X.x-application-server-<platform>-<architecture>.zip`

2.4. ARM64 ARCHITECTURE SUPPORT

JBoss Web Server 6.0 introduces support for using JBoss Web Server with the ARM64 (aarch64) architecture in the OpenShift environment.

2.5. JWS FOR OPENSHIFT IMAGE FOR OPENJDK 17
JBoss Web Server 6.0 introduces support for importing JWS for OpenShift images that are compatible with OpenJDK 17. In this release, you can import a jboss-webserver60-openjdk17-tomcat10-openshift-ubi8 image.

### 2.6. JWS FOR OPENSHIFT ENVIRONMENT VARIABLE ENHANCEMENTS

Because of modifications in Apache Tomcat connector settings, the JWS for OpenShift environment variables include the following enhancements for secure HTTPS connections:

- **JWS_HTTPS_CERTIFICATE_CHAIN** is a new variable that specifies the name of the certificate chain file (for example, ca-chain.cert.pem).
- **JWS_HTTPS_CERTIFICATE_DIR** is a new variable that specifies the name of the directory where the certificate is stored (for example, cert).
- **JWS_HTTPS_CERTIFICATE** now specifies the name of the certificate file (for example, rsa-cert.pem). This supersedes the behavior in previous releases where the **JWS_HTTPS_CERTIFICATE** variable specified the name of the certificate file within a secret (for example, server.crt).
- **JWS_HTTPS_CERTIFICATE_KEY** now specifies the name of the certificate key file (for example, rsa-key.pem). This supersedes the behavior in previous releases where the **JWS_HTTPS_CERTIFICATE_KEY** variable specified the name of the certificate key file within a secret (for example, server.key).

### 2.7. ENHANCED DEFAULT ACCESSLOGVALVE PATTERN

From JBoss Web Server 6.0 onward, the default AccessLogValve pattern in the JWS_HOME/tomcat/conf/server.xml file also contains %S, %l, and %T replacement strings. These replacement strings enable JBoss Web Server to include the following information in access logs to help diagnose session or performance issues:

- User session ID
- Current Request thread name
- Length of time (in seconds) to process the request

Similar to previous releases, the default AccessLogValve pattern in JBoss Web Server 6.0 still contains %h, %l, %u, %t, "%r", %s, and %b replacement strings for logging other diagnostic information.

For more information about the Access Log Valve, see the Apache Tomcat documentation.

### 2.8. STUCKTHREADDETECTIONVALVE ENABLED BY DEFAULT

From JBoss Web Server 6.0 onward, the StuckThreadDetectionValve setting is enabled by default in the JWS_HOME/tomcat/conf/server.xml file. This feature is useful for detecting requests that take an excessively long time to process, which might indicate that a processing thread is stuck. By default, if the StuckThreadDetectionValve setting is enabled and a request takes more than 600 seconds (10 minutes) to process, JBoss Web Server considers that a thread is stuck.

For more information about the Stuck Thread Detection Valve, see the Apache Tomcat documentation.
CHAPTER 3. DEPRECATED FEATURES

The following features are being deprecated in this release.

3.1. RED HAT ENTERPRISE LINUX 7 SUPPORT

This release removes support for the Red Hat Enterprise Linux 7 operating system. From JBoss Web Server 6.0 onward, Red Hat does not support the installation of JBoss Web Server from an archive file or RPM packages on Red Hat Enterprise Linux 7 hosts.

For more information about supported operating system versions, see OS/JVM certifications.

3.2. WINDOW 2016 SERVER SUPPORT

This release removes support for the Windows 2016 Server operating system. From JBoss Web Server 6.0 onward, Red Hat does not support the installation of JBoss Web Server from an archive file on Windows 2016 Server hosts.

For more information about supported operating system versions, see OS/JVM certifications.

3.3. JDK 8 SUPPORT

This release removes support for using JBoss Web Server with any of the following JDK versions:

- OpenJDK 1.8.x
- Oracle JDK 1.8.x
- IBM JDK 1.8.x

For more information about supported JDK versions, see OS/JVM certifications.

3.4. APR CONNECTOR SUPPORT

With the introduction of Apache Tomcat 10.1 support, JBoss Web Server no longer supports use of the Apache Portable Portable (APR) native connector. From JBoss Web Server 6.0 onward, JBoss Web Server only supports use of the NIO connector or the NIO2 connector.

3.5. JWS_HTTPS_SECRET ENVIRONMENT VARIABLE

From JBoss Web Server 6.0 onward, JWS for OpenShift no longer supports the JWS_HTTPS_SECRET environment variable. In previous releases, this environment variable specified the name of the secret that contained the certificate files for secure HTTPS connections (for example, jws-app-secret).

For more information, see JWS for OpenShift environment variable enhancements.

3.6. APACHE CXF AND HIBERNATE ORM ARTIFACTS REMOVED FROM THE JBOSS WEB SERVER MAVEN REPOSITORY
From JBoss Web Server 6.0 onward, Red Hat no longer provides Apache CXF and Hibernate JAR files in the `jboss-web-server-6.0.x-maven-repository.zip` file that you can download from the Red Hat Customer Portal.
CHAPTER 4. INSTALLING THE RED HAT JBOSS WEB SERVER 6.0

You can install the JBoss Web Server 6.0 on Red Hat Enterprise Linux or Microsoft Windows. For more information see the following sections of the installation guide:

- Installing JBoss Web Server on Red Hat Enterprise Linux from archive files
- Installing JBoss Web Server on Red Hat Enterprise Linux from RPM packages
- Installing JBoss Web Server on Microsoft Windows
CHAPTER 5. OS/JVM CERTIFICATIONS

This release is supported for use with the following operating system and Java Development Kit (JDK) versions:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Chipset Architecture</th>
<th>Java Virtual Machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux 9</td>
<td>x86_64</td>
<td>Red Hat OpenJDK 11, Red Hat OpenJDK 17, Oracle JDK 11, Oracle JDK 17</td>
</tr>
<tr>
<td>Red Hat Enterprise Linux 8</td>
<td>x86_64</td>
<td>Red Hat OpenJDK 11, Red Hat OpenJDK 17, Oracle JDK 11, Oracle JDK 17</td>
</tr>
<tr>
<td>Microsoft Windows 2019 Server</td>
<td>x86_64</td>
<td>Red Hat OpenJDK 11, Red Hat OpenJDK 17, Oracle JDK 11, Oracle JDK 17</td>
</tr>
</tbody>
</table>

**NOTE**

Red Hat Enterprise Linux 7 and Microsoft Windows 2016 Server are not supported.
# CHAPTER 6. RESOLVED ISSUES

The following issues are resolved for this release:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JWS-2579</td>
<td>Naming convention issue in JBoss Web Server download page in customer portal</td>
</tr>
<tr>
<td>JWS-2245</td>
<td>Remove CXF and Hibernate from JWS maven-repo zip</td>
</tr>
</tbody>
</table>
This release includes the following known issue:

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JWS-3092</td>
<td>Race condition in stop under stress: Context checks block Container stop</td>
</tr>
</tbody>
</table>
CHAPTER 8. SUPPORTED COMPONENTS

For a list of component versions that are supported in this release of Red Hat JBoss Web Server, see the JBoss Web Server Component Details page.
CHAPTER 9. ADVISORIES RELATED TO THIS RELEASE

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

- RHBA-2023:6210
- RHBA-2023:6211
- RHEA-2023:6212