Red Hat JBoss Enterprise Application Platform 7.4

Red Hat JBoss EAP XP 4.0.0 Release Notes

For Use with JBoss EAP XP 4.0.0

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Legal Notice

Abstract

This document provides general information about the JBoss EAP XP 4.0.0 release.

Table of Contents

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 .

PROVIDING FEEDBACK ON JBOSS EAP 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. Please include the **Document URL**, the **section number** and **describe the issue**.

3. Enter a brief description of the issue in the **Summary**.

4. Provide a detailed description of the issue or enhancement in the **Description**. Include a URL to where the issue occurs in the documentation.

5. Clicking **Submit** creates and routes the issue to the appropriate documentation team.

CHAPTER 1. NEW FEATURES AND ENHANCEMENTS

1.1. MIGRATION

Migration tools
You can choose any one of the following tools to upgrade and migrate your JBoss EAP XP 3.0.0 product to the JBoss EAP XP 4.0.0 product:

- JBoss Server Migration Tool

- Migration Toolkit for Applications (MTA)

You cannot use the JBoss EAP XP manager to upgrade and migrate your JBoss EAP XP 3.0.0 product to the JBoss EAP XP 4.0.0 product.

Additional resources

- For more information about the JBoss Server Migration Tool, see Use the JBoss Server Migration Tool to migrate your server configurations in the *JBoss EAP XP Migration Guide* .

- For more information about the Migration Toolkit for Applications, see Use the Migration Toolkit for Applications to analyze applications for migration in the *JBoss EAP XP Migration Guide*.

1.2. MICROPROFILE

Support for MicroProfile 4.1
JBoss EAP XP 4.0 is compatible with MicroProfile 4.1 specifications.

Support for MicroProfile OpenAPI 2.0
JBoss EAP supports MicroProfile OpenAPI 2.0, which is part of MicroProfile 4.1. For more information about the changes see Release Notes for MicroProfile OpenAPI 2.0 .

Support for MicroProfile Config 2.0
JBoss EAP supports MicroProfile Config 2.0, which is part of MicroProfile 4.1. This Config interface introduces new methods.

For more information about the changes, see Release Notes for MicroProfile Config 2.0 .

Support for MicroProfile Metrics 3.0
JBoss EAP supports MicroProfile Metrics 3.0, which is part of MicroProfile 4.1. The breaking changes of the new release include the following :

- Removed everything related to reusability from the API code. All metrics are now considered reusable.

- Changed metric registration. The CDI producers annotated with **@Metric** no longer trigger metric registration. You must use the **MetricRegistry** methods for registering a metric.

- Changed **MetricRegistry** from abstract class to interface.

For a complete list of changes, see Changes in 3.0 .
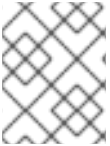
NOTE

MicroProfile Metrics is being deprecated because it might be removed or updated by the Eclipse MicroProfile community.

Support for MicroProfile Health 3.1

JBoss EAP supports MicroProfile Health 3.1, which is part of MicroProfile 4.1. One major change for this release includes the addition of the new **Startup** health check probe.

This component upgrade also covers the upgrade of smallrye-health 3.1.1 that implements MicroProfile Health 3.1. For more information, see Release Notes for MicroProfile Health 3.1 .

Support for MicroProfile OpenTracing 2.0

JBoss EAP supports MicroProfile OpenTracing 2.0, which is part of MicroProfile 4.1. The new release removes the following APIs:

- **Scope = ScopeManager.active()**

- **Scope = ScopeManager.activate**(Span, boolean)

- **Span = Scope.span()**

- **Scope = SpanBuilder.startActive()**

- **Span = Tracer.startManual()**

- **AutoFinishScopeManager**

For more information, see Release 2.0 .
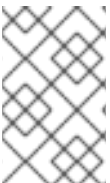
NOTE

MicroProfile OpenTracing is being deprecated because it might be removed or updated by the Eclipse MicroProfile community. For tracing, you can use OpenTelemetry Tracing. For more information, see Support for OpenTelemetry Tracing .

Support for MicroProfile Fault Tolerance 3.0

JBoss EAP supports MicroProfile Fault Tolerance 3.0, which is part of MicroProfile 4.1. The new release has the following breaking changes:

- Metric names and scopes changed. MicroProfile Metrics 2.0 added metric tags, and as a result, some information, previously included in the metric name, is now included in tags.

- Life cycle of circuit breakers and bulkheads is specified. The circuit breakers and bulkheads hold state between invocations, so their life cycle is important for correct functioning.

For more information, see Release Notes for MicroProfile Fault Tolerance 3.0 .

Support for MicroProfile reactive messaging 2.0

When you upgrade to JBoss EAP XP 4.0.0, you can now enable the newest version of MicroProfile Reactive Messaging, which includes reactive messaging extensions and subsystems. After you upgrade your instance, you can do the following:

- Provision a server with MicroProfile Reactive Messaging for the Apache Kafka data-streaming platform; for example, the Red Hat OpenShift Streams for Apache Kafka server, or the Red Hat AMQ Streams server. For more information, see Red Hat OpenShift Streams for Apache Kafka

or Red Hat AMQ .

- Interact with reactive messaging in-memory and backed by Apache Kafka topics through the latest reactive messaging APIs.

- Use MicroProfile Metrics to find out how many messages are streamed on a given channel.

For more information, see Release Notes for MicroProfile Reactive Messaging 2.0 .

1.3. NATIVE OPENID CONNECT CLIENT

You can now secure applications deployed to JBoss EAP XP with OpenID Connect (OIDC) using the new native support for OIDC instead of installing the previously required Keycloak client adapter. The new **elytron-oidc-client** subsystem provides native support. The Keycloak adapter is deprecated in this release. For information about the native OpenID Connect (OIDC) client, see OpenID Connect in JBoss EAP.

1.4. OPENSHIFT IMAGES

OpenJDK11 OpenShift images support multiple architectures

OpenJ9 images for IBM Z and IBM Power Systems will be deprecated. The following   **OpenJDK11** Builder and Runtime images have been updated to support multiple architectures:

- **jboss-eap-7/eap-xp4-openjdk11-openshift-rhel8** (Builder image)

- **jboss-eap-7/eap-xp4-openjdk11-runtime-openshift-rhel8** (Runtime image)

You can use the **OpenJDK11** images with the following architectures:

- x86 (x86_64)

- s390x (IBM Z)

- ppc64le (IBM Power Systems)

If you want to use the **OpenJ9** Java Virtual Machine (JVM) with the   **OpenJDK11** images, see Java Change in Power and Z OpenShift Images.

1.5. RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM METERING LABELS FOR RED HAT OPENSHIFT

You can add metering labels to your Red Hat JBoss Enterprise Application Platform pods and check Red Hat subscription details with the OpenShift Metering Operator.
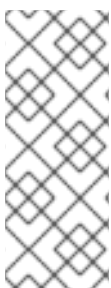
> **NOTE**
>
> - Do not add metering labels to any pods that an operator or a template deploys and manages.
>
> - You can apply labels to pods using the Metering Operator on OpenShift Container Platform version 4.8 and earlier. From version 4.9 onward, the Metering Operator is no longer available without a direct replacement.

Red Hat JBoss Enterprise Application Platform can use the following metering labels:

- **com.company: Red_Hat**

- **rht.prod_name: Red_Hat_Runtimes**

- **rht.prod_ver: YYYY-Q1**

- **rht.comp: EAP**

- **rht.comp_ver: <not_applicable>**

- **rht.subcomp: <not_applicable>**

- **rht.subcomp_t: application**

Additional resources

- Configuring and using Metering in OpenShift Container Platform

1.6. TECHNOLOGY PREVIEW FEATURES

IMPORTANT

The following configurations and features are provided as a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process. For more information about the support scope of Red Hat Technology Preview features, see https://access.redhat.com/support/offerings/techpreview .
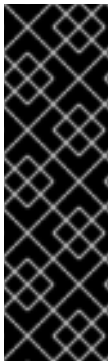
MicroProfile Reactive Messaging 2.0.1 for AMQ Streams integration

MicroProfile Reactive Messaging 2.0.1 for AMQ Streams integration is available as a technology preview feature on the Red Hat OpenShift Container Platform.

JBoss EAP XP supports MicroProfile Reactive Messaging 2.0.1; therefore, you can use MicroProfile Reactive Messaging 2.0.1 APIs to interact with AMQ Streams 2021.Q4. When JBoss EAP XP is used as a message relayer, you can consume, process, and produce messages within your application.

OpenTelemetry tracing in JBoss EAP XP

JBoss EAP XP provides OpenTelemetry tracing through the new **opentelemetry** subsystem. With OpenTelemetry Tracing, you can track the progress of client requests as they pass through different parts of your application.

JBoss EAP XP automatically and implicitly traces REST calls to your Jakarta RESTful Web Services applications and container-managed Jakarta RESTful Web Services client invocations. You can also create custom spans by injecting a **Tracer** instance into your application for granular tracing. For more information, see OpenTelemetry Tracing in JBoss EAP .

CHAPTER 2. MAINTENANCE SUPPORT

2.1. MAINTENANCE SUPPORT FOR JBOSS EAP XP

When a new JBoss EAP XP major version is released, maintenance support for the previous major version begins. Maintenance support usually lasts for 12 weeks.

If you use a JBoss EAP XP major version that is outside of its maintenance support length, you might experience issues as the development of security patches and bug fixes no longer apply. To avoid such issues, upgrade to the newest JBoss EAP XP major version release that is compatible with your JBoss EAP version.

Additional resources

- For information about maintenance support, see the Red Hat JBoss Enterprise Application Platform expansion pack (JBoss EAP XP or EAP XP) Life Cycle and Support Policies located on the Red Hat Customer Portal.

CHAPTER 3. UNSUPPORTED FEATURES AND DEPRECATED FEATURES

3.1. UNSUPPORTED FEATURES

Support for some technologies is removed due to the high maintenance cost, low community interest, and better alternative solutions. The following features are not supported in JBoss EAP XP 4.0.0:

Platforms and features
Oracle Solaris
JBoss EAP deprecated the following platforms in version 7.1. These platforms are not tested in JBoss EAP 7.4.

- Oracle Solaris on x86_64

- Oracle Solaris on SPARCv9

JBoss EAP 7.4 does not include the WildFly SSL natives for these platforms. As a result, SSL operations in Oracle Solaris platforms might be slower than they were on previous versions of JBoss EAP.

Java Development Kits
Since JBoss EAP XP 4.0.0, Java Development Kit 8 (JDK 8) is now unsupported.

> **NOTE**
>
> JBoss EAP XP 3.0.0 will be supported for 3 months or 2 cumulative patches after JBoss EAP XP 4.0.0 is released.

RESTEasy parameters
RESTEasy provides a Servlet 3.0 **ServletContainerInitializer** integration interface that performs an automatic scan of resources and providers for a servlet. Containers can use this integration interface to start an application. Therefore, use of the following RESTEasy parameters is no longer supported:

- resteasy.scan

- resteasy.scan.providers

- resteasy.scan.resources

Red Hat JBoss Operations Network
Using Red Hat JBoss Operations Network (JON) for JBoss EAP management is deprecated since JBoss EAP version 7.2. For JBoss EAP 7.4, support for Red Hat JON for JBoss EAP management is deprecated.

MS SQL Server 2017
MS SQL Server 2017 is not supported in JBoss EAP 7.4.

For a complete list of unsupported features in JBoss EAP 7.4, see the Unsupported features section in JBoss EAP 7.4 Release Notes.

3.2. DEPRECATED FEATURES

Some features have been deprecated with this release. This means that no enhancements are made to these features, and they might be removed in the future, usually the next major release.

Red Hat continues to provide full support and bug fixes under our standard support terms and conditions. For more information about the Red Hat support policy for JBoss EAP XP, see the Red Hat JBoss Enterprise Application Platform expansion pack life cycle and support policies located on the Red Hat Customer Portal.

Keycloak OIDC client adapter

The **keycloak-client-oidc** layer is deprecated and has been replaced with the new **elytron-oidc-client** subsystem.

MicroProfile

- MicroProfile Metrics

- MicroProfile OpenTracing
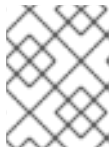
> **NOTE**
>
> MicroProfile Metrics and OpenTracing are being deprecated because it might be removed or updated by the Eclipse MicroProfile community.

Galleon layers

The **jms-activemq** decorator layer is deprecated, and this layer has been replaced with the **messaging-activemq** layer.

Operating systems

- Microsoft Windows Server on i686

- Red Hat Enterprise Linux (RHEL) 6 on i686

Databases and database connectors

- IBM DB2 11.1

- PostgreSQL / EnterpriseDB 11

- MariaDB 10.1

- MS SQL 2017

Server Side JavaScript

JBoss EAP Server Side JavaScript support, which was provided as a Technology Preview functionality, is deprecated.

Lightweight Directory Access Protocol (LDAP) servers

- Red Hat Directory Server 10.0

- Red Hat Directory Server 10.1

Spring BOM

The following Spring BOM that is located in the Red Hat Maven repository is now deprecated:

- jboss-eap-jakartaee8-with-spring4

Although Red Hat tests that Spring applications run on JBoss EAP XP 4.0.0, you must use the latest version of the Spring Framework and its BOMs (for example, **x.y.z.RELEASE**) for developing your applications on JBoss EAP XP 4.0.0.

For more information about versions of the Spring Framework, see Spring Framework Versions on *GitHub*.

Java Development Kits

- Java Development Kit 11 (JDK 11)

> **NOTE**
>
> In future major JBoss EAP releases, Java SE requirements will be reevaluated based on the industry (for example, Jakarta EE, MicroProfile and so on) and market needs.

JBoss EAP OpenShift templates
JBoss EAP templates for OpenShift are deprecated.

.json templates
The **eap-xp2-third-party-db-s2i.json** template is deprecated and removed in JBoss EAP XP 4.0.0.

The **eap74-beta-starter-s2i.json** and **eap74-beta-third-party-db-s2i.json** templates are deprecated and are removed in JBoss EAP 7.4.0.

Legacy security subsystem
The **org.jboss.as.security** extension and the legacy **security** subsystem it supports are now deprecated. Migrate your security implementations from the **security** subsystem to the **elytron** subsystem.

PicketLink
The **org.wildfly.extension.picketlink** extension, and the **picketlink-federation** and **picketlink-identity-management** subsystems this extension supports, are now deprecated. Migrate your single sign-on implementation to Red Hat Single Sign-On.

PicketBox-based security vault
PicketBox-based security vault, both through the legacy security subsystem and the **core-service=vault** kernel management resources is deprecated.

Managed domain support for previous versions of JBoss EAP
Support for hosts running JBoss EAP 7.3 and earlier versions in a JBoss EAP 7.4 managed domain is deprecated. Migrate the hosts in your managed domains to JBoss EAP 7.4.

Server configuration files using namespaces from JBoss EAP 7.3 and earlier
Using server configuration files (**standalone.xml**, **host.xml**, and **domain.xml**) that include namespaces from JBoss EAP 7.3 and earlier is deprecated in this release. Update your server configuration files to use JBoss EAP 7.4 namespaces.

Agroal subsystem
The Agroal subsystem is deprecated.

application-security-domain resources
The **application-security-domain** resources in **ejb3** and **undertow** subsystems are deprecated.

Resources in the clustering subsystems

The following resources in the clustering subsystems are deprecated:

- The **infinispan** subsystem

  - /**subsystem=infinispan**/remote-cache-container=*/component=transaction

  - /**subsystem=infinispan**/remote-cache-container=**/near-cache=**

- The **jgroups** subsystem

  - /**subsystem=jgroups**/stack=*/protocol=S3_PING

  - /**subsystem=jgroups**/stack=*/protocol=GOOGLE_PING

- The **modcluster** subsystem

Codehaus Jackson
The Codehaus Jackson 1.x module, which is currently unsupported, is deprecated in JBoss EAP 7.4.

SCRAM mechanisms
The following SCRAM mechanisms and their channel-binding variants are deprecated:

- **SCRAM-SHA-512**

- **SCRAM-SHA-384**

Hibernate ORM 5.1
The Hibernate ORM 5.1 native API bytecode transformer has always been deprecated since it was originally introduced.

HornetQ client
The HornetQ client module is deprecated.

For a complete list of functionalities deprecated in JBoss EAP 7.4, see the Deprecated features section in JBoss EAP 7.4 Release Notes.

Legacy patching for bootable jar
The legacy patching feature for bootable jar is deprecated in JBoss EAP XP 4.0.0.

CHAPTER 4. RESOLVED ISSUES AND KNOWN ISSUES

4.1. RESOLVED ISSUES

See Resolved issues for JBoss EAP XP 4.0.0 to view the list of issues that have been resolved for this release.

4.2. KNOWN ISSUES

See Known issues for JBoss EAP XP 4.0.0 to view the list of known issues for this release.