



Red Hat OpenShift Application Runtimes 1

Red Hat OpenShift Application Runtimes Release Notes

For use with Red Hat OpenShift Application Runtimes

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Abstract

This Release Note contains important information related to Red Hat OpenShift Application Runtimes

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CHAPTER 1. SUPPORTED RUNTIME COMPONENT CONFIGURATIONS AND INTEGRATIONS

The following resources define the support scope for RHOAR runtime components:

- [Supported Eclipse Vert.x and Thorntail configurations and integrations](#)
- [Supported Spring Boot configurations and integrations](#)
- [Supported Node.js configurations and integrations](#)
- [Supported Spring Boot configuration for use with Red Hat JBoss Fuse](#)

CHAPTER 2. TECHNOLOGY PREVIEW

Red Hat does not provide support for Technology Preview components provided with this release of Red Hat OpenShift Application Runtimes. Items designated as *Technology Preview* in the sections below have limited supportability, as defined by the [Technology Preview Features Support Scope](#).

Technology preview features and components provided with this release include:

- a [subset of the Maven artifacts](#) provided with the RHOAR release of Eclipse Vert.x,
- the **keycloak-authz-client** library provided with [RHOAR Thorntail](#),
- Red Hat JBoss Fuse runtime support for [deploying Spring Boot applications](#),
- a set of **io.opentracing** and **io.jaegertracing** artifacts provided with [Thorntail](#).

CHAPTER 3. RHOAR DEPLOYMENT PLATFORMS

Container Development Kit

RHOAR runtimes have been tested on [Red Hat Container Development Kit](#) (CDK). CDK configures a pre-built Single-node OpenShift Cluster cluster on a local machine. CDK includes [Minishift](#) and the [oc CLI tool](#). CDK provides users with a means of deploying Booster applications locally. CDK is available for [download](#) from the Red Hat Developer Portal. A free Red Hat developer account is required to access the download.

OpenShift Online Pro

RHOAR runtimes have been tested on OpenShift Online Pro.

OpenShift Online Starter

It is possible to use RHOAR on the zero-cost OpenShift Online Starter cluster, although issues may arise due to resource quotas for some boosters and for executing advanced commands (scale up, rolling upgrade, etc).

OpenShift Container Platform

RHOAR runtimes are fully supported on the OpenShift Container Platform.

CHAPTER 4. REQUIRED INFRASTRUCTURE COMPONENT VERSIONS

The following versions of infrastructure components are required for all runtimes distributed as part of a RHOAR release. Red Hat does not provide support for components listed below, with the exception of components explicitly designated as supported.

Component name	Version
Fabric8 Maven Plugin	3.5.40
Maven	3.3.1 or later
Node.js v8 ^[a]	8.12.0 LTS
Node.js v10 ^[b]	10.11.0 LTS
Nodeshift	1.12.0
npm 5 ^[c]	6.4.1
npm 6 ^[d]	6.4.1
OpenShift Container Platform (OCP) ^[e]	3.10 or later
Minishift	1.25.0 or later
CDK ^[f]	3.6.0
JDK ^{[g][h]}	Java 8 JDK ^[i]
git	2.0 or later
oc command line tool	3.10 or later ^[j]

Component name	Version
[a] The RHOAR Node.js v8 release is supported by Red Hat	
[b] The RHOAR Node.js v10 release is supported by Red Hat	
[c] Distributed with RHOAR as a supported RPM for Node.js 8	
[d] Distributed with RHOAR as a supported RPM for Node.js 10	
[e] OCP is supported by Red Hat	
[f] CDK is supported by Red Hat	
[g] A full JDK installation is required, as JRE does not provide tools for compiling Java applications from source.	
[h] Red Hat OpenJDK is supported by Red Hat	
[i] All versions of Java 8 are supported. Runtimes provided with this release do not support Java 9.	
[j] The version of the oc CLI tool should correspond to the version of OCP that you are using.	

CHAPTER 5. COMMON RHOAR COMPONENTS

5.1. FABRIC8 MAVEN PLUGIN

5.1.1. Known Fabric8 Maven Plugin Issues

5.1.1.1. Error pulling image when redeploying an application on OpenShift 3.7

Description

When deploying an application on OpenShift, the initial deployment succeeds, but re-deploying application using the Fabric8 Maven plugin results in the pod becoming stuck in the **ImgPullErr** state for extended periods of time. After several retries, the re-deployment completes successfully. The issue occurs on OpenShift 3.7.

Workaround

Before applying this workaround, ensure that you are using the latest version of the Fabric8 Maven Plugin. After deploying your application using `mvn fabric8:deploy`, re-deploy it manually using:

```
mvn -Dfabric8.openshift.trimImageInContainerSpec=true fabric8:deploy
```

CHAPTER 6. ECLIPSE VERT.X

The Eclipse Vert.x runtime artifacts provided with this release of RHOAR are all based on community version **3.5.4**.

6.1. SUPPORTED MAVEN ARTIFACTS PROVIDED WITH ECLIPSE VERT.X

GroupID	ArtifactID	Version
io.vertx	vertx-auth	3.5.4.redhat-00002
io.vertx	vertx-auth-htdigest	3.5.4.redhat-00002
io.vertx	vertx-auth-htpasswd	3.5.4.redhat-00002
io.vertx	vertx-auth-jwt	3.5.4.redhat-00002
io.vertx	vertx-auth-oauth2	3.5.4.redhat-00002
io.vertx	vertx-circuit-breaker	3.5.4.redhat-00002
io.vertx	vertx-config	3.5.4.redhat-00002
io.vertx	vertx-config-kubernetes-configmap	3.5.4.redhat-00002
io.vertx	vertx-config-yaml	3.5.4.redhat-00002
io.vertx	vertx-core	3.5.4.redhat-00002
io.vertx	vertx-dependencies	3.5.4.redhat-00002
io.vertx	vertx-grpc	3.5.4.redhat-00002
io.vertx	vertx-health-check	3.5.4.redhat-00002
io.vertx	vertx-infinispan	3.5.4.redhat-00002
io.vertx	vertx-jdbc-client	3.5.4.redhat-00002
io.vertx	vertx-mongo-client	3.5.4.redhat-00002
io.vertx	vertx-mqtt	3.5.4.redhat-00002
io.vertx	vertx-proton	3.5.4.redhat-00002

GroupID	ArtifactID	Version
io.vertx	vertx-rx	3.5.4.redhat-00002
io.vertx	vertx-service-proxy	3.5.4.redhat-00002
io.vertx	vertx-service-discovery	3.5.4.redhat-00002
io.vertx	vertx-service-discovery-bridge-kubernetes	3.5.4.redhat-00002
io.vertx	vertx-sockjs-service-proxy	3.5.4.redhat-00002
io.vertx	vertx-web	3.5.4.redhat-00002
io.vertx	vertx-web-client	3.5.4.redhat-00002
io.vertx	vertx-web-templ-freemarker	3.5.4.redhat-00002
io.vertx	vertx-web-templ-handlebars	3.5.4.redhat-00002

6.2. TECHNOLOGY PREVIEW MAVEN ARTIFACTS PROVIDED WITH ECLIPSE VERT.X

Red Hat provides [limited support](#) for Eclipse Vert.x artifacts designated as Technology Preview:

Group ID	Artifact ID	Version
io.vertx	vertx-kafka-client	3.5.4.redhat-00002
io.vertx	vertx-rx-java2	3.5.4.redhat-00002
io.vertx	vertx-config-vault	3.5.4.redhat-00002
io.vertx	vertx-micrometer-metrics	3.5.4.redhat-00002
io.vertx	vertx-redis-client	3.5.4.redhat-00002

6.3. ECLIPSE VERT.X MAVEN ARTIFACTS PROVIDED WITH DEVELOPER SUPPORT

The following artifacts are available with RHOAR Eclipse Vert.x within the [Development Support scope](#) for Red Hat products. Red Hat provides no support for use of the listed artifacts in production-level environments. Red Hat may provide a limited level of support for the use of these artifacts in application development. Such support is typically limited to providing knowledge about the component to the developer for the purposes of development only, and without any commitment to guarantee the functionality of the component in question outside of a development environment.

Group ID	Artifact ID	Version
io.vertx	vertx-junit5	3.5.4.redhat-00002
io.vertx	vertx-unit	3.5.4.redhat-00002

6.4. DEPRECATED ECLIPSE VERT.X MAVEN ARTIFACTS

Group ID	Artifact ID	Version
io.vertx	vertx-rx-java	3.5.4.redhat-00002

6.5. ECLIPSE VERT.X FEATURE AND COMPONENT UPGRADES

This release of RHOAR Eclipse Vert.x introduces the following new component upgrades:

JBoss Data Grid Infinispan 8.5.3

The **vertx-infinispan** component provided with this release of RHOAR Eclipse Vert.x uses artifacts provided by the JBoss Data Grid 7.2. In RHOAR Eclipse Vert.x 3.5.4, productized artifact dependencies of **vertx-infinispan** have been updated to version 8.5.3.Final-redhat-00002, to match the artifact versions available with the latest product release of JBoss Data Grid Infinispan.

Jackson 2.9.6

The **jackson** artifact provided with this release of RHOAR Eclipse Vert.x is updated to 2.9.6 from 2.9.5.

6.6. RESOLVED ECLIPSE VERT.X ISSUES

The RHOAR Eclipse Vert.x **3.5.4** release serves as a replacement for RHOAR Eclipse Vert.x **3.5.3**, and includes bug fixes and enhancements. For a detailed list of issues resolved in the community Eclipse Vert.x **3.5.4** release, see the [community release notes](#).

6.6.1. CVE-2018-12541

Affected component

vertx

Issue Summary

WebSocket HTTP upgrade implementation holds the entire http request in memory before the handshake

Red Hat CVE database entry

[CVE-2018-12541](#)

Bugzilla Bug ID

[1638391](#)

6.6.2. CVE-2018-12544

Affected componet

vertx

Issue Summary

API Validation XML Schemas do not forbid file system access

Red Hat CVE database entry

[CVE-2018-12544](#)

Bugzilla Bug ID

[1638384](#)

6.7. KNOWN ECLIPSE VERT.X ISSUES

6.7.1. False *Connection reset by peer* error messages when calling application endpoint

Description:

Making an HTTP request on an endpoint of a Vert.x application using either **curl** or a Java HTTP client, produces the following error in the logs after each request:

```
io.vertx.core.net.impl.ConnectionBase  
SEVERE: java.io.IOException: Connection reset by peer
```

This behavior is caused by the interaction of the Netty application framework and the HAProxy load-balancer used by OpenShift. The error occurs due to existing HTTP connections being re-used by HAProxy without closing. Even though the error message is logged, no error condition occurs. HTTP requests are handled correctly and the application responds as expected.

CHAPTER 7. THORNTAIL

The Thorntail runtime artifacts provided with this release of RHOAR are all based on upstream version **2.2.0.Final**.

7.1. MIGRATING YOUR APPLICATION FROM WILDFLY SWARM TO THORNTAIL

7.1.1. Naming and versioning changes in Thorntail 2.2.0

With this release, the name of the WildFly Swarm runtime changes to Thorntail. The product release versioning scheme also changes, as RHOAR Wildfly Swarm **7.1.0** is followed by Thorntail **2.2.0**. From a technical perspective, the new versioning scheme is intended to be a continuation of the **7.x.x** scheme and does not constitute a new major product version. Subsequent Thorntail product releases will follow the new versioning scheme.

The name change has the following impact:

- The **groupId** of productized artifacts changes to **io.thorntail** from **org.wildfly.swarm**.
- The **artifactId** for the Maven plugin changes to **thorntail-maven-plugin**.
- The suffix of generated uberjars and hollow JAR files changes to **-thorntail.jar**.

You need to:

- [perform an automated upgrade](#) using Maven, or,
- [update the build configuration](#) of your application manually.

The name change does **NOT** impact:

- class names
- package names
- the set of productized artifacts shipped with Thorntail.
- configuration properties

7.1.2. Updating the build configuration of your application

Manually migrate your application project from WildFly Swarm **7.1.0** to Thorntail **2.2.0**.

Prerequisites

- A Maven-based application project using the WildFly Swarm runtime.

Procedure

1. Update the **groupId** and version of the BOM referenced in the **pom.xml** file of your application project.

■ ...

```

<dependency>
  <groupId>io.thorntail</groupId>
  <artifactId>bom</artifactId>
  <version>2.2.0.Final-redhat-00021</version>
</dependency>
...

```

2. Change the **groupId** of each fraction defined as a dependency in the pom file of your application project from **org.wildfly.swarm** to **io.thorntail**. For example:

```

...
<dependency>
  <groupId>io.thorntail</groupId>
  <artifactId>jaxrs</artifactId>
</dependency>
...

```

3. Change **groupId** and **artifactId** of the Maven plugin in the **pom.xml** to the values appropriate for Thorntail:

```

...
<plugin>
  <groupId>io.thorntail</groupId>
  <artifactId>thorntail-maven-plugin</artifactId>
</plugin>
...

```

4. Update the suffix of JAR file names in commands that you use to run your apps to - **thorntail.jar** so that it refers to Thorntail.

```
java -jar target/MY_APP_NAME-1.0.0-thorntail.jar
```

5. Update the name of the Maven plugin in commands that invoke it. For example:

```
mvn thorntail:start
```

6. If you use Fabric8 Maven Plugin to deploy your apps to OpenShift, ensure that you upgrade it to version **3.5.40** or later. Earlier FMP versions do not support the current release of Thorntail.

```

<project>
  <build>
    ...
    <plugins>
      ...
      <plugin>
        <groupId>io.fabric8</groupId>
        <artifactId>fabric8-maven-plugin</artifactId>
        <version>3.5.40</version>
      </plugin>
      ...
    </plugins>
    ...
  </build>
</project>

```

-

Note that the set of features that FMP supports for deploying Thorntail applications is not impacted by the rename. You must, however, update the names of these features if you refer to them directly in your project.

Table 7.1. Fabric8 Maven Plugin name changes

FMP concept	Name in WildFly Swarm	Name in Thorntail
Docker image generator	wildfly-swarm	thorntail-v2
Health Check enricher name	f8-wildfly-swarm-health-check	f8-thorntail-v2-health-check
Reference to health check enricher in pom.xml	<wildfly-swarm-health-check>	<thorntail-v2-health-check>

- If you use a parser to parse the log output of your application, ensure that you update the prefixes of log messages to match the prefixes used by Thorntail:

Table 7.2. Log message prefix changes

WildFly Swarm	Thorntail
WFSWARMnnnnnn	THORNnnnnnn
WFSxxxxnnnnnn	TTxxxxnnnnnn

7.1.3. Migrating your application project to Thorntail automatically using the Thorntail Maven Plugin.

Migrate your application project from WildFly Swarm **7.1.0** to Thorntail **2.2.0** automatically using the Thorntail Maven Plugin.

Prerequisites

- A Maven-based application project using the WildFly Swarm runtime.

Procedure

- Modify your local **settings.xml** file to point to the Red Hat General Availability Maven Repository to enable Maven to download the latest Thorntail Maven Plugin version. By default, the local repository settings file is located at **~/.m2/settings.xml**.

```
<settings>
  <profiles>
    ...
    <profile>
      <id>redhat-maven-repository</id>
      <repositories>
        <repository>
```

```

        <id>redhat-ga</id>
        <name>Red Hat General Availability Maven
Repository</name>
        <url>https://maven.repository.redhat.com/ga/</url>
    </repository>
</repositories>
<pluginRepositories>
    <pluginRepository>
        <id>redhat-ga</id>
        <name>Red Hat General Availability Maven
Repository</name>
        <url>https://maven.repository.redhat.com/ga/</url>
    </pluginRepository>
</pluginRepositories>
</profile>
...
</profiles>
<activeProfiles>
    ...
    <activeProfile>redhat-maven-repository</activeProfile>
    ...
</activeProfiles>
</settings>

```

2. Execute the Maven command for the upgrade goal.

```

mvn io.thorntail:thorntail-maven-plugin:2.2.0.Final-redhat-
00021:migrate-from-wildfly-swarm

```

To preview the migration actions without making changes, append the **-DdryRun=true** parameter to the automated upgrade command.

It is recommended that you review the changes to your application project configuration once the automated migration is complete.

3. If you use Fabric8 Maven Plugin to deploy your apps to OpenShift, ensure that you upgrade it to version **3.5.40** or later. Earlier FMP versions do not support the current release of Thorntail.

```

<project>
  <build>
    ...
    <plugins>
      ...
      <plugin>
        <groupId>io.fabric8</groupId>
        <artifactId>fabric8-maven-plugin</artifactId>
        <version>3.5.40</version>
      </plugin>
      ...
    </plugins>
    ...
  </build>
</project>

```

Note that the set of features that FMP supports for deploying Thorntail applications is not

impacted by the rename. The automated migration goal does not update any direct references to FMP features that you may have in your project. You must update the names of these features manually.

Table 7.3. Fabric8 Maven Plugin name changes

FMP concept	Name in WildFly Swarm	Name in Thorntail
Docker image generator	wildfly-swarm	thorntail-v2
Health Check enricher name	f8-wildfly-swarm-health-check	f8-thorntail-v2-health-check
Reference to health check enricher in pom.xml	<wildfly-swarm-health-check>	<thorntail-v2-health-check>

7.2. BREAKING CHANGES TO OPENTRACING COMPONENTS IN THORNTAIL 2.2.0

In previous releases, the **jaeger** fraction automatically introduced the **opentracing** fraction as a dependency to your project. In the Thorntail **2.2.0** release, the **jaeger** and **opentracing** fractions are decoupled to allow the **jaeger** fraction to be reused by any other tracing fraction. The change is required to improve the way Thorntail supports both the old **opentracing** and the new **microprofile-opentracing** fractions. In this release, the **jaeger** fraction only provides tracer configuration.

You must manually specify one of the 2 OpenTracing fractions provided by Thorntail **2.2.0** as a dependency in the **pom.xml** file of your project:

- **opentracing**
- **microprofile-opentracing**

To retain the behavior of the tracing functionality in your application, in instances where you previously only specified the **jaeger** fraction, you must also explicitly specify a dependency on the **opentracing** fraction.

7.3. BREAKING CHANGES TO JAX-RS COMPONENTS.

In RHOAR Thorntail **2.2.0**, subclasses of the JAX-RS **Application** class are no longer generated by default. To enable Thorntail to generate the subclass of the JAX-RS **Application** class, you must:

- not have a custom **Application** subclass in your project,
- have the **swarm.deployment.WAR_FILE_NAME.jaxrs.application-path** key set in **project-defaults.yml**.

7.4. NEW THORNTAIL FEATURES AND FEATURE UPGRADES

This release of RHOAR Thorntail introduces the following new features and feature upgrades:

MicroProfile 1.3

This release of RHOAR Thorntail implements the MicroProfile version **1.3** specification.

Enterprise Application Platform 7.1.4.GA

EAP dependencies used by RHOAR Thorntail have been updated and aligned with the **7.1.4.GA** release of Red Hat JBoss Enterprise Application Platform.

Red Hat SSO 7.2.4.GA

This RHOAR Thorntail release uses components provided by Red Hat Single Sign-On release version **7.2.4.GA**.

7.5. RESOLVED THORNTAIL ISSUES**7.5.1. Notable non-security issue fixes****7.5.1.1. MicroProfile JWT: cannot use different roles for different methods with the same @Path but different @Produces and/or @Consumes annotations.****Description**

The implementation of MicroProfile JWT used in RHOAR WildFly Swarm **7.1.0** was previously unable to honor the **@RolesAllowed** annotations properly. This led to a situation where separation of access roles to different methods did not work for methods that shared a common **@Path**, but had different **@Produces** and/or **@Consumes** annotations. This issue has been fixed in the RHOAR Thorntail **2.2.0** release.

7.5.1.2. MicroProfile JWT: cannot use different roles for different methods with parameterized @Paths that share a common prefix**Description**

Our implementation of MicroProfile JWT used in WildFly Swarm **7.1.0** was unable to honor the **@RolesAllowed** annotations properly. This led to a situation where separation of access roles to different endpoints did not work for methods with parameterized **@Paths** that shared a common prefix. This issue has been fixed in the RHOAR Thorntail **2.2.0** release.

7.5.1.3. Maven build fails on downloading the org.wildfly.swarm:config-api-runtime artifact**Description**

When building your application, Maven failed to download the **org.wildfly.swarm:config-api-runtime** artifact, causing the build to fail. This issue occurred when you managed the dependency versions in the **pom.xml** file of your application manually, that is, without importing the BOM. This issue has been fixed in the RHOAR Thorntail **2.2.0** release.

7.5.2. Security issues fixes**7.5.2.1. CVE-2018-7489****Affected component**

jackson-databind

Issue Summary

Incomplete fix for [CVE-2017-7525](#) permits unsafe serialization via c3p0 libraries

Red Hat CVE database entry

[CVE-2018-7489](#)

Bugzilla Bug ID

[1462702](#)

7.5.2.2. CVE-2018-1047

Affected component

undertow

Issue Summary

Path traversal in ServletResourceManager class

Red Hat CVE database entry

[CVE-2018-1047](#)

Bugzilla Bug ID

[1528361](#)

7.6. KNOWN THORNTAIL ISSUES

7.6.1. Thorntail Arquillian adapter ignores `mvn -s settings.xml`

Issue Key:

[THORN-1546](#)

NOTE: You do not have to log into JIRA to view this issue.

7.6.2. MicroProfile Fault Tolerance: CDI contexts not available in `@Timeout` methods

Description

If your application contains a `@Timeout` method that uses a contextual service, such as the `@RequestScoped MyService` shown in the example below, the contexts are not activated for that service.

```
@Inject
private MyService service;

@Timeout
public String doSomething() throws InterruptedException {
    return "Hello " + service.call();
}
```

The method is not `@Asynchronous` and should, therefore, be executed on the caller thread, which would make the CDI (Context and Dependency Injection) contexts available. However, the following debug message indicates that the contexts are not available:


```
2018-04-03 21:16:35,976 ERROR [io.undertow.request] (default task-1)
UT005023: Exception handling request to /:
org.jboss.weld.context.ContextNotActiveException: WELD-001303: No active
contexts for scope type javax.enterprise.context.RequestScoped
```

Cause

This issue is caused by **@Timeout** methods always being invoked on a separate thread, even if they are not **@Asynchronous**.

Workaround

At the time of this release, there is no workaround available for this issue.

7.6.3. MicroProfile Metrics: Application metric behavior does not conform to metrics specification

Description

When you build and package your application and then run the resulting **-thorntail.jar** uberjar, the application metric is not registered immediately upon deployment. The application metric is registered only after the monitored method is called.

For example, your Thorntail application contains a simple application metric, such as:

```
@ApplicationScoped
public class HelloService {
    @Counted(monotonic = true, name = "hello", absolute = true,
    displayName = "HELLO", description = "Number of hello invocations")
    public String hello() {
        return "Hello from counted method";
    }
}
```



NOTE

You can test whether application metrics are registered by issuing an **OPTIONS** HTTP request to the **/metrics** REST endpoint. For example, **localhost:8080/metrics**, when running your application locally.

Cause

The implementation does not conform to the current version of the MicroProfile Metrics specification. The specification will likely change in the future to allow this behavior.

Workaround

At the time of this release, there is no workaround available for this issue.

7.6.4. Harmless error message in application log: Missing

org.glassfish:javax.el-api:3.0.1.b08-redhat-1

Description

If your application, or any of its dependencies, depends on the Java Expression Language, it will display the following warning message during startup.

```
Failed downloading org/glassfish/javax.el-api/3.0.1.b08-redhat-1/javax.el-api-3.0.1.b08-redhat-1.pom from
https://repository.jboss.org/nexus/content/groups/public/. Reason:
org.eclipse.aether.transfer.ArtifactNotFoundException: Could not find
artifact org.glassfish:javax.el-api:pom:3.0.1.b08-redhat-1 in jboss-
public-repository-group
(https://repository.jboss.org/nexus/content/groups/public/)
Failed downloading org/glassfish/javax.el-api/3.0.1.b08-redhat-1/javax.el-api-3.0.1.b08-redhat-1.pom from http://repo.gradle.org/gradle/libs-
releases-local/. Reason:
org.eclipse.aether.transfer.ArtifactNotFoundException: Could not find
artifact org.glassfish:javax.el-api:pom:3.0.1.b08-redhat-1 in gradle
(http://repo.gradle.org/gradle/libs-releases-local)
Failed downloading org/glassfish/javax.el-api/3.0.1.b08-redhat-1/javax.el-api-3.0.1.b08-redhat-1.pom from https://repo.maven.apache.org/maven2/.
Reason:
org.eclipse.aether.transfer.ArtifactNotFoundException: Could not find
artifact org.glassfish:javax.el-api:pom:3.0.1.b08-redhat-1 in central
(https://repo.maven.apache.org/maven2)
Failed downloading org/glassfish/javax.el-api/3.0.1.b08-redhat-1/javax.el-api-3.0.1.b08-redhat-1.pom from http://repo1.maven.org/maven2/. Reason:
org.eclipse.aether.transfer.ArtifactNotFoundException: Could not find
artifact org.glassfish:javax.el-api:pom:3.0.1.b08-redhat-1 in central
(http://repo1.maven.org/maven2)
```

The message is harmless and does not impact the functionality of the application.

Cause

The likely cause of this issue is related to the way dependency resolution works in Thorntail. During the dependency resolution phase, Thorntail ignores dependency exclusions, and thus pulls in **javax.el-api**, despite **javax.el-api** being excluded in the EAP BOM. Since it is interpreted as a valid dependency, it is indicated as missing due to being absent from the repository, which causes the error messages displayed in the build log.

Workaround

At the time of this release, there is no workaround available for this issue.

7.7. SUPPORTED MAVEN ARTIFACTS PROVIDED WITH THORNTAIL

Group ID	Artifact ID	Version
io.thorntail	bean-validation	2.2.0.Final-redhat-00021
io.thorntail	bom-certified	2.2.0.Final-redhat-00021
io.thorntail	bom	2.2.0.Final-redhat-00021
io.thorntail	cdi-config	2.2.0.Final-redhat-00021

Group ID	Artifact ID	Version
io.thorntail	cdi	2.2.0.Final-redhat-00021
io.thorntail	connector	2.2.0.Final-redhat-00021
io.thorntail	container	2.2.0.Final-redhat-00021
io.thorntail	datasources	2.2.0.Final-redhat-00021
io.thorntail	ee	2.2.0.Final-redhat-00021
io.thorntail	ejb	2.2.0.Final-redhat-00021
io.thorntail	elytron	2.2.0.Final-redhat-00021
io.thorntail	hibernate-validator	2.2.0.Final-redhat-00021
io.thorntail	io	2.2.0.Final-redhat-00021
io.thorntail	jaeger	2.2.0.Final-redhat-00021
io.thorntail	jaxrs-cdi	2.2.0.Final-redhat-00021
io.thorntail	jaxrs-jaxb	2.2.0.Final-redhat-00021
io.thorntail	jaxrs-jsonp	2.2.0.Final-redhat-00021
io.thorntail	jaxrs-multipart	2.2.0.Final-redhat-00021
io.thorntail	jaxrs-validator	2.2.0.Final-redhat-00021
io.thorntail	jaxrs	2.2.0.Final-redhat-00021
io.thorntail	jca	2.2.0.Final-redhat-00021
io.thorntail	jmx	2.2.0.Final-redhat-00021
io.thorntail	jpa	2.2.0.Final-redhat-00021
io.thorntail	jsf	2.2.0.Final-redhat-00021
io.thorntail	jsonp	2.2.0.Final-redhat-00021
io.thorntail	keycloak	2.2.0.Final-redhat-00021

Group ID	Artifact ID	Version
io.thorntail	logging	2.2.0.Final-redhat-00021
io.thorntail	management	2.2.0.Final-redhat-00021
io.thorntail	microprofile-config	2.2.0.Final-redhat-00021
io.thorntail	microprofile-fault-tolerance	2.2.0.Final-redhat-00021
io.thorntail	microprofile-health	2.2.0.Final-redhat-00021
io.thorntail	microprofile-jwt	2.2.0.Final-redhat-00021
io.thorntail	microprofile-metrics	2.2.0.Final-redhat-00021
io.thorntail	microprofile-openapi	2.2.0.Final-redhat-00021
io.thorntail	microprofile-opentracing	2.2.0.Final-redhat-00021
io.thorntail	microprofile-restclient	2.2.0.Final-redhat-00021
io.thorntail	microprofile	2.2.0.Final-redhat-00021
io.thorntail	msc	2.2.0.Final-redhat-00021
io.thorntail	naming	2.2.0.Final-redhat-00021
io.thorntail	opentracing	2.2.0.Final-redhat-00021
io.thorntail	remoting	2.2.0.Final-redhat-00021
io.thorntail	request-controller	2.2.0.Final-redhat-00021
io.thorntail	resource-adapters	2.2.0.Final-redhat-00021
io.thorntail	security	2.2.0.Final-redhat-00021
io.thorntail	spi	2.2.0.Final-redhat-00021
io.thorntail	topology-openshift	2.2.0.Final-redhat-00021
io.thorntail	topology-webapp	2.2.0.Final-redhat-00021
io.thorntail	topology	2.2.0.Final-redhat-00021

Group ID	Artifact ID	Version
io.thorntail	transactions	2.2.0.Final-redhat-00021
io.thorntail	undertow	2.2.0.Final-redhat-00021
io.thorntail	web	2.2.0.Final-redhat-00021

7.8. TESTED MAVEN ARTIFACTS PROVIDED WITH THORNTAIL

Maven artifacts designated as Tested that are provided with a RHOAR Thorntail release are not supported.

Group ID	Artifact ID	Version
io.thorntail	ribbon	2.2.0.Final
io.thorntail	ribbon-secured	2.2.0.Final
io.thorntail	ribbon-secured-client	2.2.0.Final
io.thorntail	arquillian	2.2.0.Final

7.9. TECHNOLOGY PREVIEW MAVEN ARTIFACTS PROVIDED WITH THORNTAIL

Red Hat provides [limited support](#) for Thorntail artifacts designated as Technology Preview:

Group ID	Artifact ID	Version
io.jaegertracing	jaeger-core	0.30.6.redhat-00001
io.jaegertracing	jaeger-thrift	0.30.6.redhat-00001
io.opentracing	opentracing-api	0.31.0.redhat-00008
io.opentracing	opentracing-noop	0.31.0.redhat-00008
io.opentracing	opentracing-util	0.31.0.redhat-00008
io.opentracing	parent	0.31.0.redhat-00008
io.opentracing.contrib	opentracing-concurrent	0.1.0.redhat-00002
io.opentracing.contrib	opentracing-tracerresolver	0.1.4.redhat-7

Group ID	Artifact ID	Version
io.opentracing.contrib	opentracing-tracerresolver-parent	0.1.4.redhat-7
io.opentracing.contrib	opentracing-web-servlet-filter	0.1.0.redhat-00027
io.opentracing.contrib	opentracing-web-servlet-filter-parent	0.1.0.redhat-00027
io.opentracing.contrib	opentracing-jaxrs2	0.1.6.redhat-00001
io.opentracing.contrib	opentracing-jaxrs-parent	0.1.6.redhat-00001
io.opentracing.contrib	opentracing-jaxrs2	0.1.6.redhat-00001
org.keycloak	keycloak-authz-client	3.4.12.Final-redhat-2

7.10. DEPRECATED THORNTAIL MAVEN ARTIFACTS

Group ID	Artifact ID	Version
io.thorntail	monitor ^[a]	2.2.0.Final-redhat-00021
io.thorntail	hystrix	2.2.0.Final-redhat-00021
io.thorntail	archaius	2.2.0.Final-redhat-00021
<p>[a] The monitor fraction has been removed from the BOM. It is still shipped with this release of Thorntail, but it will not be automatically imported when you specify the BOM as a dependency in your application project.</p>		

CHAPTER 8. SPRING BOOT

8.1. SUPPORTED SPRING BOOT MAVEN ARTIFACTS

Artifacts listed below are supported by Red Hat for direct use in RHOAR Spring Boot application projects. Spring Boot starters provide functionalities that rely on supported Spring Boot features. To use the supported starters in your application:

1. Import the Spring Boot BOM to ensure artifact versions resolve correctly.
2. Specify the supported starter directly as dependencies without the artifact version in the `pom.xml` file of your application project. The artifact version is resolved automatically based on the imported BOM.

Group ID	Artifact ID	Version
org.springframework.boot	spring-boot-starter	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-test	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-tomcat	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-undertow	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-web	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-websocket	1.5.16.RELEASE
org.apache.cxf	cxf-spring-boot-starter-jaxrs	3.1.12.redhat-1
org.springframework.boot	spring-boot-starter-data-jpa	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-jdbc	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-actuator	1.5.16.RELEASE
io.opentracing.contrib	opentracing-spring-jaeger-web-starter	0.2.0.redhat-00010
org.springframework.cloud	spring-cloud-starter-kubernetes	0.2.0.RELEASE
org.springframework.cloud	spring-cloud-starter-kubernetes-config	0.2.0.RELEASE
org.infinispan	infinispan-spring-boot-starter-embedded	2.0.0.Alpha1
org.infinispan	infinispan-spring-boot-starter-remote	2.0.0.Alpha1

Group ID	Artifact ID	Version
org.springframework.boot	spring-boot-starter-activemq	1.5.16.RELEASE
org.springframework.boot	spring-boot-starter-artemis	1.5.16.RELEASE
org.amqphub.spring	amqp-10-jms-spring-boot-starter	1.0.0
me.snowdrop	narayana-spring-boot-starter	1.0.1
org.keycloak	keycloak-spring-boot-starter	3.4.3.Final-redhat-2
org.springframework.boot	spring-boot-starter-validation	1.5.16.RELEASE

8.2. REMOVED SPRING BOOT MAVEN ARTIFACTS

The following artifacts are no longer shipped with RHOAR Spring Boot and have been removed from the BOM in the **1.5.16.RELEASE** release.

Group ID	Artifact ID	Version
org.springframework.cloud	spring-cloud-starter-netflix-hystrix	1.4.5.RELEASE
org.springframework.cloud	spring-cloud-starter-netflix-ribbon	1.4.5.RELEASE
org.springframework.cloud	spring-cloud-kubernetes-core	0.2.0.RELEASE
org.springframework.cloud	spring-cloud-starter-kubernetes-netflix	0.2.0.RELEASE
org.springframework.cloud	spring-cloud-sleuth-zipkin	1.3.4.RELEASE

8.3. DEPLOYING SPRING BOOT APPLICATIONS ON RED HAT JBOSS FUSE

As a Technology Preview feature, RHOAR allows you to build and deploy Spring Boot applications packaged as JAR files on Red Hat JBoss Fuse, both in standalone mode and on OpenShift. For additional information, see [Red Hat JBoss Fuse documentation](#).

8.4. DEPLOYING SPRING BOOT APPLICATIONS FROM WAR FILES

RHOAR allows you to repackage your Spring Boot application as an executable WAR file. This feature is currently provided with the RHOAR release of Spring Boot as a Technology Preview and is not supported by Red Hat.

8.5. KNOWN SPRING BOOT ISSUES

8.5.1. Missing APR/native library in the `openshift-openjdk` image

Issue Key:

[SB-379](#)

NOTE: You do not have to log into JIRA to view this issue.

CHAPTER 9. NODE.JS

9.1. SUPPORTED NODE.JS BASE IMAGES

Table 9.1. Node.js 8 LTS

Node.js base image	Release
registry.access.redhat.com/rhoar-nodejs/nodejs-8	8.12.0-0

Table 9.2. Node.js 10 LTS

Node.js base image	Release
registry.access.redhat.com/rhoar-nodejs/nodejs-10	10.11.0-1

9.2. SUPPORTED NODE.JS RPM PACKAGES

Table 9.3. Node.js 8 LTS

Package name	Architecture/Type	Version	Description
rhoar-nodejs-8.12.0-4.el7.src.rpm	SRPMS	8.12.0	RHOAR Node.js 8 (LTS) sources
rhoar-nodejs-docs-8.12.0-4.el7.noarch.rpm	noarch	8.12.0	RHOAR Node.js 8 API documentation
npm-6.4.1-1.8.12.0.4.el7.x86_64.rpm	x86_64	6.4.1	npm package manager
rhoar-nodejs-8.12.0-4.el7.x86_64.rpm	x86_64	8.12.0	RHOAR Node.js (LTS) 8 binaries
rhoar-nodejs-debuginfo-8.12.0-4.el7.x86_64.rpm	x86_64	8.12.0	debug information for the RHOAR Node.js 8 package

Table 9.4. Node.js 10 LTS

Package name	Architecture/Type	Version	Description
rhoar-nodejs-10.11.0-1.el7.src.rpm	SRPMS	10.11.0	RHOAR Node.js 10 (LTS) sources

Package name	Architecture/Type	Version	Description
rhoar-nodejs-docs-10.11.0-1.el7.noarch.rpm	noarch	10.11.0	RHOAR Node.js 10 API documentation
npm-6.4.1-1.10.11.0.1.el7.x86_64.rpm	x86_64	6.4.1	npm package manager
rhoar-nodejs-10.11.0-1.el7.x86_64.rpm	x86_64	10.11.0	RHOAR Node.js 10 (LTS) binaries
rhoar-nodejs-debuginfo-10.11.0-1.el7.x86_64.rpm	x86_64	10.11.0	debug information for the RHOAR Node.js 10 package
npm-6.4.1-1.10.11.0.1.el7.ppc64le.rpm	PPC64LE	6.4.1	npm package manager
rhoar-nodejs-10.11.0-1.el7.ppc64le.rpm	PPC64LE	10.11.0	RHOAR Node.js 10 (LTS) binaries
rhoar-nodejs-debuginfo-10.11.0-1.el7.ppc64le.rpm	PPC64LE	10.11.0	debug information for the RHOAR Node.js 10 package

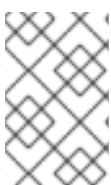
9.3. COMMUNITY NODE.JS NPM MODULES

The RHOAR Node.js base image allows you to develop a Node.js application for OpenShift using any of the community Node.js modules available through npm. Community npm modules are not supported by Red Hat.

9.4. RESOLVED NODE.JS ISSUES

Node.js 8.12.0

The RHOAR Node.js release is a Red Hat product release aligned with the community Node.js LTS release version **8.12.0**. The current productized release contains aggregated bug fixes and enhancements introduced in community versions **8.11.4** through **8.12.0**. For a list of issues resolved in this release, see the [Node.js 8.12.0 changelog](#).



SECURITY BUG FIXES

Bugfixes listed below for 8.12.0 applicable to 10.11.0 are addressed in both releases, but listed only once. Bugfixes specific to 10.11.0 only are listed separately under the Node.js 10 subsection.

9.4.1. CVE-2018-14634

Affected component

kernel

Issue summary

Integer overflow in Linux's `create_elf_tables` function

Red Hat CVE database entry

[CVE-2018-14634](#)

Bugzilla Bug ID

[1624498](#)

9.4.2. CVE-2018-12384

Affected component

nss

Issue summary

ServerHello.random is all zeros when handling a v2-compatible ClientHello

Red Hat CVE database entry

[CVE-2018-12384](#)

Bugzilla Bug ID

[1622089](#)

Node.js 10.11.0

The RHOAR Node.js release is a Red Hat product release aligned with the community Node.js LTS release version **10.11.0**. The current productized release contains aggregated bug fixes and enhancements introduced in the upstream between versions **10.10.0** and **10.11.0**. For a list of issues resolved in this release, see the [Node.js 10.11.0 changelog](#).

9.4.3. CVE-2018-14634

Security Bug Fixes

Affected component

kernel

Issue summary

Integer overflow in Linux's `create_elf_tables` function

Red Hat CVE database entry

[CVE-2018-14634](#)

Bugzilla Bug ID

[1624498](#)

9.5. KNOWN NODE.JS ISSUES

9.5.1. Deployment fails when an npm dependency specifies a git repository.

Description:

If a **package.json** file contains dependencies that specify a git repository, a deployment error occurs when packaging and deploying the application to OpenShift.

Workaround:

Install the **rh-git29-git** package available from [Red Hat Software Collections](#).