



## Red Hat Fuse 7.7

# Release Notes for Red Hat Fuse 7.7

What's new in Red Hat Fuse



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## Abstract

These notes provide an overview of the changes between Red Hat Fuse releases.

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# CHAPTER 1. FUSE 7.7 PRODUCT OVERVIEW

## 1.1. FUSE DISTRIBUTIONS

Fuse 7.7 is provided in the form of three different distributions, as follows:

### Fuse standalone

The classic distribution of Fuse, supported on multiple operating systems. This distribution is supported for the following container types:

- Apache Karaf
- JBoss Enterprise Application Platform (EAP)
- Spring Boot

### Fuse on OpenShift

The distribution of Fuse for running integration applications on OpenShift (supported on the Red Hat Enterprise Linux operating system). In this case, the supported container types are provided in the form of docker-formatted container images:

- Java image (for Spring Boot)
- Apache Karaf image
- JBoss EAP image

### Fuse Online

The distribution of Fuse for non-expert integrators with a simplified workflow accessed through a browser based UI. This distribution is available for the following kinds of deployment:

- On a [Red Hat Managed Integration](#) cluster
- For installation on an on-premises OpenShift cluster

## 1.2. NEW FEATURES

Fuse 7.7 includes several major component upgrades and a large selection of new features. For details, consult the *new features* sections for each of the Fuse distributions:

- [New features for Fuse Online](#)
- [New features for Fuse on OpenShift](#)
- [New features for Fuse standalone](#)

## 1.3. SUPPORTED CONFIGURATIONS

For information about supported configurations, standards, and components in version 7.7, see the following Customer Portal articles:

- [Red Hat Fuse Supported Configurations](#)

- [Red Hat Fuse Supported Standards](#)
- [Red Hat Fuse Component Details](#)



## CHAPTER 2. FUSE ONLINE

Fuse Online provides a web browser interface that lets a business expert integrate two or more different applications or services without writing code. It also provides features that allow the addition of code if it is needed for complex use cases.

Fuse Online runs an integration on OpenShift as a Spring Boot application that uses Apache Camel. As a Technology Preview feature, Camel K is available as an additional runtime.

### 2.1. ABOUT FUSE ONLINE DISTRIBUTIONS

Fuse Online is Red Hat's web-based integration platform. [Synthesis](#) is the open source project for Fuse Online. Fuse Online runs in these OpenShift environments:

Host Environment	Installation
OpenShift Dedicated	Red Hat installs and provisions Fuse Online on Red Hat infrastructure.
OpenShift Container Platform	Customer installs and manages.

### 2.2. NEW FEATURES IN FUSE ONLINE 7.7

Fuse Online 7.7 provides the following new features:

- New ignoreTimestamp option for exporting integrations (Fuse Online on OCP)**  
 When running Fuse Online on OCP, a new [export endpoint option](#), [ignoreTimestamp](#), exports all integrations that are tagged for a particular environment regardless of when an integration was last marked for the specified environment. This makes it easy to duplicate all integrations that have a particular environment tag in another Fuse Online environment.
- Support for associating imported library extensions with an integration**  
 After you import a library [.jar](#) file as an extension into Fuse Online, you can select to associate the library extension with an integration when you save the integration.
- Kafka Broker connection supports TLS**  
 When you create a connection to a Kafka Broker, you have the option to use Transport Layer Security (TLS) to encrypt your data.

### 2.3. CHANGES IN FUSE ONLINE 7.7

Fuse Online 7.7 changes Fuse Online 7.6 features as follows:

- The user interface of the data mapper has been updated. For example, there are new icons for collections and for previewing mappings.
- When you create a condition for a mapping, the transformation options for Source and Target fields in the Mapping Details panel are disabled. If you want to add a transformation to the mapping, you must include it in the conditional expression.

### 2.4. UPGRADING FUSE ONLINE INTEGRATIONS

To upgrade a Fuse Online environment that is running on OCP on-site, you must download the latest Fuse Online release, run the update script, and then republish any running integrations as described in [Upgrading Fuse Online on OCP](#).

## 2.5. IMPORTANT NOTES FOR FUSE ONLINE

Important notes for the Fuse 7.7 release of the Fuse Online distribution:

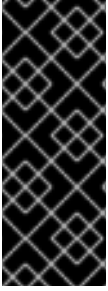
- Camel K runtime is deprecated in Fuse Online and may be removed in a future release.
- The following limitations apply when the Camel K runtime is installed with Fuse Online:
  - Fuse Online extensions are not supported by the Camel K runtime.
  - Extensions are not displayed in the Fuse Online user interface under **Customizations**.
- Enhanced activity tracking is not properly enabled, if you install Fuse Online from OperatorHub (see the [Fuse Online](#) section of Known Issues). To take advantage of enhanced activity tracking in this release, we recommend that you install Fuse Online using the command-line script instead. See [Installing Fuse Online on OCP](#) for details.
- When Fuse Online is installed and provisioned on Red Hat infrastructure, the account is limited to a specific number of integrations that can be running at one time. For details, see the pricing plan. If you are using a Fuse Online evaluation account, then only one integration at a time can be running.
- An OpenAPI schema that you upload to Fuse Online might not define input/output types. When Fuse Online creates a custom API client from an OpenAPI schema that does not specify input/output types then it is not possible to create an integration that maps integration data to fields that the API client can process or from fields that the API client processed. If an integration requires data mapping to or from a custom API, then when you upload the OpenAPI schema, click **Review/Edit** to open API Designer, which is an API editing tool, and add input/output type specifications.
- An OpenAPI document that you use for a custom API client connector or for an API provider integration cannot have cyclic schema references. For example, a JSON schema that specifies a request or response body cannot reference itself as a whole nor reference any part of itself through any number of intermediate schemas.

## 2.6. OBTAINING TECHNICAL SUPPORT FOR FUSE ONLINE

To obtain technical support, in the Fuse Online console, in the left navigation panel, click **Support**. Use the **Support** page to download diagnostic information for all integrations or for one or more integrations that you choose. The page also provides a link for opening a support ticket and providing the diagnostic information that you downloaded.

## 2.7. TECHNOLOGY PREVIEW FEATURES IN FUSE ONLINE

This release includes the Technology Preview features that are listed below.



## IMPORTANT

Technology Preview features are not supported with Red Hat production service level agreements (SLAs), might not be functionally complete, and 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, see [Red Hat Technology Preview features support scope](#).

- **Fuse Online Metering labels**

You can use the OpenShift Metering operator to analyze your installed Fuse Online operator and components to determine whether you are in compliance with your Red Hat subscription. For more information on Metering, see the [OpenShift documentation](#).

The Fuse Online operator and components now include the following metering labels:

- Component name:

**com.redhat.component-name: *syndesis-component***

where ***syndesis-component*** can be one of the following:

- **syndesis-db**
- **syndesis-server**
- **syndesis-meta**
- **syndesis-ui**
- **jaeger-operator**
- **syndesis-prometheus**
- **syndesis-operator**
- **application**

- Component type:

**com.redhat.component-type: infrastructure** (for all syndesis components except **application**) or **application** (for the **application** component)

- Component version:

**com.redhat.component-version: 1.7**

- Product name:

**com.redhat.product-name: "Red\_Hat\_Integration"**

- Product version:

**com.redhat.product-version: 7.7**

- **SOAP API client connector**

You can add a custom SOAP API client connector and then add a connection for a SOAP API client to Fuse Online integrations. For more information, see [Creating SOAP API client connectors](#).

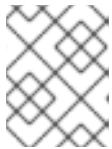
This Technology Preview release of the SOAP API client connector has some limitations as described in the [Fuse Online](#) section of Known Issues.

- **Data virtualization**

For Fuse Online environments that run on OpenShift Container Platform on-site, data virtualization is a container-native service. It integrates data from multiple heterogeneous sources, including relational databases, files, web services, and SaaS repositories. In Fuse Online, developers can create a virtual database image that defines a custom, logical view of their source data. They can then deploy that image on OpenShift. Applications connect to the virtual database over a standard OData, REST, or JDBC interface, and can run SQL queries across all of the data sources, even those that do not support SQL.

To enable data virtualization, see [Installing Fuse Online on OCP](#).

- **The Knative connector** lets you connect to a Knative channel to obtain or send messages, expose the integration as a Knative service, or call a Knative service.
- **Conditional expressions for mapping data fields**  
In the data mapper, you can specify a conditional expression and apply it to one data mapping. For example, a conditional expression can specify evaluation of a source field and how to populate the target field if the source field is empty. The limited set of expressions that you can specify are similar to Microsoft Excel expressions.
- Camel K is available as an additional runtime.  
To enable Camel K, see [Installing Fuse Online on OCP](#).

**NOTE**

Camel K runtime is deprecated in Fuse Online and may be removed in a future release.

- For a REST API client that uses OAuth, when you create an API client connector, you can change the default OAuth2 behavior of connections that you create from that connector. Fuse Online vendor extensions to the OpenAPI specification support the following:
  - Providing client credentials as parameters.
  - Obtaining a new access token based on HTTP response status codes.

## CHAPTER 3. FUSE ON OPENSHIFT

Fuse on OpenShift enables you to deploy Fuse applications on OpenShift Container Platform.

### 3.1. SUPPORTED VERSION OF OPENSHIFT

Fuse on OpenShift is supported on OpenShift Container Platform 4.x and OpenShift Container Platform 3.11. For details of the supported version (or versions) of OpenShift Container Platform to use with Fuse on OpenShift, see the [Supported Configurations](#) page.

### 3.2. SUPPORTED IMAGES

Fuse on OpenShift provides the following Docker-formatted images:

- **fuse7/fuse-java-openshift** – Spring Boot
- **fuse7/fuse-karaf-openshift** – Apache Karaf
- **fuse7/fuse-eap-openshift** – Red Hat JBoss Enterprise Application Platform
- **fuse7/fuse-console** – Fuse console
- **fuse7/fuse-console-operator** – Fuse console operator
- **fuse7/fuse-apicurito** – Apicurito REST API editor
- **fuse7/fuse-apicurito-generator** – Apicurito REST application generator
- **fuse7-tech-preview/fuse-apicurito-operator** – API Designer Operator

### 3.3. NEW FEATURES IN FUSE 7.7 ON OPENSHIFT

Fuse on OpenShift provides following new features in version 7.7:

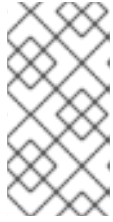
- Fuse now can be installed on OpenShift 4.x in a restricted environment, with no Internet access.



#### NOTE

The **MAVEN\_MIRROR\_URL** environment variable (used to configure applications to fetch Maven artifacts from a local Maven repository) works for the Spring Boot and Apache Karaf containers, but not for the JBoss EAP container.

- Fuse Console is now integrated with OpenShift authentication and authorization. For more details, see [Role-based access control for the Fuse Console on OpenShift 4.x](#).
- Spring Boot 2 runtime is now supported on OpenShift.
- Fuse Console operator  
Fuse Console operator simplifies the procedures for installing, upgrading, and uninstalling the Fuse Console on OpenShift. For details of how to use the Fuse Console operator, see [Set up the Fuse Console](#).

**NOTE**

In order to keep the connection between the Fuse Console proxy and the Jolokia agent secure, it is necessary to generate, sign and deploy a client certificate. This must be done manually, as an admin procedure, after installing Fuse Console on OCP 4.x.

### 3.4. TECHNOLOGY PREVIEW FEATURES

The following features of Fuse on OpenShift are *Technology Preview* only and are not supported in Fuse 7.7:

**Data Virtualization**

Red Hat Data Virtualization is a container-native data virtualization service, based on the Teiid data virtualization project. Red Hat Data Virtualization combines data from multiple heterogeneous sources, such as relational databases, files, web services, and SaaS repositories. For more details, see [Using Data Virtualization](#) and [Connecting to virtual databases](#).

**API Designer operator installation**

You can install the API Designer operator from the Operator Hub of OpenShift Container Platform 4.x. The API Designer operator provides you access to a Technology Preview of the API Designer operator for Fuse on OpenShift. The API Designer operator simplifies the procedures for installing, upgrading, and uninstalling API Designer on OpenShift. For details on how to install the API Designer operator, see [Installing Fuse Imagestreams and Templates on the OpenShift 4.x Server](#).

**NOTE**

Neither the API Designer operator nor the API Designer instance that it installs are supported. This technology preview feature is not suitable for testing on a production environment.

### 3.5. IMPORTANT NOTES

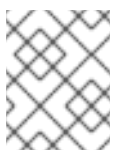
Important notes for the Fuse 7.7 release of the Fuse on OpenShift distribution:

**Spring Boot 1 is deprecated**

Spring Boot 1 is deprecated since Fuse 7.7 and will be removed in a future release. Both deployment options, Spring Boot 1 standalone and Spring Boot 1 on OpenShift are deprecated. We recommend that you migrate your Spring Boot applications to Spring Boot 2, following the guidance in the [Spring Boot 2.0 Migration Guide](#).

**Container Development Kit (CDK) 3.10 is the recommended version for use with Fuse 7.6 on OpenShift 3.11**

We recommend that developers use CDK 3.10 to try out applications on OpenShift 3.11. CDK is not available for OpenShift 4.x.

**NOTE**

CDK is provided only as a convenience for developers and is not a supported OpenShift distribution.

## CHAPTER 4. FUSE STANDALONE

### 4.1. SUPPORTED CONTAINERS

Fuse standalone 7.7 is supported on the following runtime containers:

- Spring Boot 1 and Spring Boot 2
- Apache Karaf
- Red Hat JBoss Enterprise Application Platform (JBoss EAP)

### 4.2. NEW FEATURES IN FUSE 7.7

The main new features of Fuse standalone in version 7.7 are:

#### Camel Pulsar component for Spring Boot 2

The **camel-pulsar** component is now fully supported for Spring Boot 2 (but *not* for any other container type).

For more information, see the [Apache Pulsar component](#) section of the *Apache Camel Component Reference*.

#### New allowlist setting for Jackson Data Formats

Fuse 7.7 provides a customized version of the **jackson-databind** library, which supports an allowlist mechanism for enabling polymorphic deserialization (in combination with the Jackson object mapper functionality). This new feature provides strong additional protection against deserialization security vulnerabilities, by blocking all gadget classes by default.

To configure the allowlist, set the **jackson.deserialization.whitelist.packages** system property to a comma-separated list of classes and packages. For example, to allow deserialization of the **Triangle**, **Square** classes, set the system property as follows:

```
-Djackson.deserialization.whitelist.packages=com.example.Triangle,com.example.Square
```

For more details of this new feature, see the section [Jackson ObjectMapper](#) in the *Apache Camel Component Reference*.

#### Set Cipher suites for JMX TLS connections on Apache Karaf

The new `enabledCipherSuites` property lets you specify the cipher suites to use on JMX TLS connections on Apache Karaf.

#### Advanced Undertow configuration

Configuration of Undertow to allow fine tuning of the XNIO **worker** and **buffer-pool** parameters used by the listeners.

### 4.3. TECHNOLOGY PREVIEW FEATURES

The following features of Fuse standalone are *Technology Preview* only and are not supported in Fuse 7.7:

#### Camel Weka component for JBoss EAP

For 7.7, the **camel-weka** component is a technology preview feature only. It is only available for JBoss EAP containers.

## Camel Pulsar component for Spring Boot 1 and Apache Karaf

For 7.7, the **camel-pulsar** component is available as a technology preview for the Spring Boot 1.x and Apache Karaf containers. Camel Pulsar is *not* available for JBoss EAP.

For more information, see the [Apache Pulsar component](#) section of the *Apache Camel Component Reference*.

## Saga EIP

The Saga Enterprise Integration Pattern (EIP) is a technology preview feature and features only the *In-Memory* Saga service (which is not suitable for a production environments). The LRA Saga service is *not* supported. For more details, see section [Saga EIP](#) of the "Apache Camel Development Guide".

## 4.3.1. Fuse Tooling support for Apache Camel

Fuse Tooling provides a cross-platform, cross-IDE approach to Camel application development, with Apache Camel language support extensions or plugins for Visual Studio Code, Eclipse IDE, and Eclipse Che.

For Visual Studio Code, you can also add an extension that provides WSDL to Camel Rest DSL support.

**Note:** These features are already included by default with Fuse Tooling for Red Hat CodeReady Studio.

### Visual Studio Code features



#### NOTE

VS Code Apache Camel extensions are community features. They are not supported by Red Hat.

The [Language Support for Apache Camel](#) extension provides features for Camel URIs, such as the following:

For XML DSL and Java DSL:

- When you type, the editor provides code completion for Camel components, attributes, and the list of attribute values.
- When you hover over a Camel component, the editor shows a brief description of the component (from the [Apache Camel component reference](#)).
- As you edit the file, the editor performs an Apache Camel validation check on the Camel code.
- You can specify a specific Camel Catalog version by selecting **File → Preferences → Settings → Apache Camel Tooling → Camel catalog version**.
- You can use "Quick fix" features to address invalid enum values and unknown Camel URI component properties.

For XML DSL only:

- You can navigate to Camel contexts and routes in the VS Code **Outline** panel and in the **Go > Go to Symbol in File** navigation panel.
- When you type, the editor provides code completion for referenced IDs of **direct**, **direct VM**, **VM** and **SEDA** components.



- You can find references for **direct** and **direct VM** components in all open Camel files.

For Properties:

- Completion for Camel component property
- Diagnostic

The [WSDL 2 Camel Rest DSL](#) extension ([wsdl2rest](#) implementation) provides WSDL to Camel Rest DSL support. By specifying an existing WSDL file, you can use this extension to generate a Camel Rest DSL + CXF solution for REST-style access. The WSDL file can be located either on your local file system or from an accessible web URL.

To access the **Language Support for Apache Camel** and **WSDL to Camel Rest DSL** features, you add one or more extensions.

The [Apache Camel Extension Pack](#) installs the following VS Code extensions:

- [Language Support for Apache Camel](#)
- [OpenShift Connector](#)
- [Java Extension Pack](#)
- [Spring Boot extension pack](#)
- [Project initializer by Red Hat](#)
- [WSDL 2 Camel Rest DSL](#)
- [XML Language Support](#)
- [AtlasMap Data Transformation editor](#)
- [Didact Tutorial](#)
- [Tooling for Apache Camel K](#)

Optionally, you can install the extensions individually.

For more details, see the following readme files:

- Readme for [Apache Camel Extension Pack](#)
- Readme for [Apache Camel Language Server Protocol for Visual Studio Code](#)
- Readme for [WSDL to Camel Rest DSL](#)

### Eclipse IDE features

The **Language Support for Apache Camel** Eclipse plug-in provides the following features for Camel URIs:

In the generic Eclipse text editor for both XML DSL and Java DSL:

- When you type, the editor provides code completion for Camel components, attributes, and the list of attribute values.

- When you hover over a Camel component, the editor shows a brief description of the component (from the [Apache Camel component reference](#)).

When you use the Eclipse XML or Java editor, only the auto-completion feature is provided.

To access the **Language Support for Apache Camel** features, you install the Eclipse plug-in from the Eclipse Marketplace. For more details, see the [readme file](#) for Apache Camel Language Server Protocol for Eclipse IDE.

### Eclipse Che features

The **Language Support for Apache Camel** plugin for Eclipse Che 7 provides features for Camel URIs in XML DSL and Java DSL.

- When you type, the editor provides code completion for Camel components, attributes, and the list of attribute values.
- When you hover over a Camel component, the editor shows a brief description of the component (from the [Apache Camel component reference](#)).
- When you save the file, the editor performs an Apache Camel validation check on the Camel code.

To activate this plugin for Eclipse Che, you can use the "Apache Camel based on Spring Boot" stack or edit your workspace configuration.

## 4.4. BOM FILES FOR FUSE 7.7

To configure your Maven projects to use the supported Fuse 7.7 artifacts, use the BOM versions documented in this section.

### 4.4.1. BOM File

To upgrade your Fuse standalone applications to use the 7.7 dependencies, edit the Maven **pom.xml** and change the versions of the BOMs and Maven plugins listed in the following table:

**Table 4.1. Maven BOM and plugin versions for 7.7 using the BOM**

Container Type	Maven BOM or Plugin Artifact groupId/artifactId	Version for Fuse 7.7
Spring Boot 1	<b>org.jboss.redhat-fuse/fuse-springboot-bom</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
	<b>org.jboss.redhat-fuse/fabric8-maven-plugin</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
	<b>org.jboss.redhat-fuse/spring-boot-maven-plugin</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
Spring Boot 2	<b>org.jboss.redhat-fuse/fuse-springboot-bom</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>

Container Type	Maven BOM or Plugin Artifact groupId/artifactId	Version for Fuse 7.7
	<b>org.jboss.redhat-fuse/fabric8-maven-plugin</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
	<b>org.jboss.redhat-fuse/spring-boot-maven-plugin</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
Apache Karaf	<b>org.jboss.redhat-fuse/fuse-karaf-bom</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
	<b>org.jboss.redhat-fuse/karaf-maven-plugin</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>
JBoss EAP	<b>org.jboss.redhat-fuse/fuse-eap-bom</b>	<b>7.11.1.fuse-sb2-7_11_1-00022-redhat-00002</b>

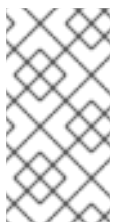
For more details about using the BOM, see [Fuse Migration Guide](#).

## 4.5. IMPORTANT NOTES

Important notes for the Fuse 7.7 release of the Fuse standalone distribution:

### Disable the Fuse Console's proxy servlet when deploying to AWS

If you want to deploy a standalone Fuse application to Amazon Web Services (AWS), you should disable the Fuse Console's proxy servlet by setting the **hawtio.disableProxy** system property to **true**.



#### NOTE

When you disable the Fuse Console proxy servlet, the Fuse Console's **Connect** tab is disabled and you cannot connect to other JVMs from the Fuse Console. If you want to deploy more than one Fuse application on AWS, you must deploy the Fuse Console for each application.

### Spring Boot 1 is deprecated

Spring Boot 1 is deprecated since Fuse 7.7 and will be removed in a future release.

## CHAPTER 5. DEPRECATED AND REMOVED FEATURES

If you need any assistance or have any questions about the upcoming changes in Fuse 7, contact [support@redhat.com](mailto:support@redhat.com).

### 5.1. DEPRECATED

The following features are deprecated in Fuse 7.7 and may be removed in a future release:

#### Spring Boot 1 is deprecated

Spring Boot 1 is deprecated since Fuse 7.7 and will be removed in a future release. Both deployment options, Spring Boot 1 standalone and Spring Boot 1 on OpenShift are deprecated. We recommend that you migrate your Spring Boot applications to Spring Boot 2, following the guidance in the [Spring Boot 2.0 Migration Guide](#).

#### Camel K runtime in Fuse Online

Camel K runtime in Fuse Online (technology preview feature) is deprecated since Fuse 7.7 and may be removed in a future release.

#### PHP, Python, and Ruby scripting languages are deprecated in Camel applications

The PHP, Python, and Ruby scripting languages are deprecated in Camel applications since Fuse 7.4 and will be removed in a future release. The Camel community has deprecated PHP, Python, and Ruby since Camel 2.19 (see [CAMEL-10973](#)). This applies to all Fuse containers types: Apache Karaf, JBoss EAP, and Spring Boot.

#### HP-UX OS is deprecated

The HP-UX operating system is deprecated since Fuse 7.2 and support for this operating system could be removed in a future release of Fuse. In particular, note that the JBoss EAP 7.2 container has already dropped support for HP-UX and, consequently, any future version of Fuse on JBoss EAP that runs on JBoss EAP 7.2 will *not* be supported on HP-UX.

#### Camel MQTT component is deprecated

The Camel MQTT component is deprecated in Fuse 7.0 and will be removed in a future release of Fuse. You can use the Camel Paho component instead, which supports the MQTT messaging protocol using the popular [Eclipse Paho](#) library.

#### Camel LevelDB component is deprecated on all operating systems except for Linux

Since Fuse 6.3, the Camel LevelDB (**camel-leveldb**) component is deprecated on all operating systems except for Red Hat Enterprise Linux. In future, the Camel LevelDB component will be supported only on Red Hat Enterprise Linux.

#### BatchMessage class from the Camel SJMS component is deprecated

The BatchMessage class from the Camel SJMS component is deprecated in Fuse 7 (deprecated in Apache Camel since version 2.17) and may be removed from a future version of Apache Camel and Fuse.

#### Camel XmlJson DataFormat component is deprecated

The **camel-xmljson** component is deprecated in Fuse 7 and may be removed from a future version of Fuse.

### 5.2. REMOVED IN FUSE 7.5

The following features were removed in Fuse 7.5:

#### Support for integration with MS SQL Server 2014 has been dropped in 7.5

MS SQL Server 2014 is no longer tested and supported for integrations with Fuse 7.5. We recommend that you use one of the more recent versions of MS SQL Server instead – for example, MS SQL Server 2016 or 2017.

### Camel LinkedIn component has been removed in 7.5

The **camel-linkedin** component has been removed in Fuse 7.5.



#### IMPORTANT

Although removed from Fuse 7.5, the **camel-linkedin** component is likely to be restored in a later release.

## 5.3. REMOVED IN FUSE 7.3

The following features were removed in Fuse 7.3:

### Camel YQL component has been removed in 7.3

The Camel YQL component has been removed in Fuse 7.3.

### OpenJPA and OpenJPA3 Karaf features have been removed in 7.3

The **openjpa** feature and the **openjpa3** feature have been removed from the Apache Karaf container in 7.3. For a Java Persistence Architecture (JPA) implementation, use the supported **hibernate** feature instead.

### camel-jetty Karaf feature has been removed in 7.3

The **camel-jetty** feature has been removed from the Apache Karaf container in 7.3, because it uses Jetty 8. Use the **camel-jetty9** feature instead.

### pax-jms-oracleaq Karaf feature has been removed in 7.3

The **pax-jms-oracleaq** feature has been removed from the Apache Karaf container in 7.3, because it requires 3rd party, non-free Oracle AQ libraries.

### camel-elasticsearch component has been removed from Fuse on EAP (Wildfly Camel) in 7.3

The **camel-elasticsearch** component has been removed from Fuse on EAP (Wildfly Camel) in 7.3. Use the newer **camel-elasticsearch-rest** component instead.

## 5.4. REMOVED IN FUSE 7.2

The following features were removed in Fuse 7.2:

### Camel XMLRPC component has been removed in 7.2

The Camel XMLRPC component has been removed in Fuse 7.2.

### Camel Netty component has been removed in 7.2

The Camel Netty component has been removed in Fuse 7.2. It is recommended that you use the Camel Netty4 component instead.

## 5.5. REMOVED IN FUSE 7.0

The following features were removed in Fuse 7.0:

### Support for Red Hat JBoss Operations Network (JON) has been removed in 7.0

Since Fuse 7.0, Fuse on Karaf no longer supports JON and no longer provides JON plugins for integrating with the JON runtime.

### Embedded ActiveMQ broker has been removed in 7.0

Since Fuse 7.0, Fuse on Karaf no longer provides an embedded ActiveMQ Broker. Customers should connect to a supported remote broker directly. For more information on our supported brokers, refer to the "Supported Messaging Providers" section of the [Red Hat Fuse Supported Configurations page](#).

### Fuse integration pack has been removed in 7.0

Support for running rules and processes is provided by components shipped with Red Hat JBoss BPM Suite and Red Hat JBoss BRMS.

### Karaf console commands for child container administration have been removed in 7.0

Since Fuse 7.0, the Karaf console commands for child container administration are *not* supported. That is, the console commands prefixed by **instance:** (Karaf 4.x syntax) and the console commands prefixed by **admin:** (Karaf 2.x syntax) are not supported.



#### NOTE

In the Fuse 7.0 GA release, the **instance:** commands are not removed. This is a known issue.

### SwitchYard has been removed in 7.0

Since Fuse 7.0, SwitchYard has been removed, and you should use Apache Camel directly instead. For more detailed information, see the knowledge base article, [SwitchYard Support Plan After Releasing Fuse 7](#).

### Support for Fabric8 1.x has been removed in 7.0

Since Fuse 7.0, Fabric8 v1 has been replaced by Fuse on OpenShift (previously, Fuse Integration Services), which includes components of Fabric8 v2 technology. Fuse on OpenShift provides a set of tools and Docker-formatted images that enable development, deployment, and management of integration microservices within OpenShift.

Although Fuse on OpenShift has a different architecture, it fulfills the same provisioning, automation, central configuration and management requirements that Fabric8 v1 provides. For more information, see [Fuse on OpenShift Guide](#).

### Camel components for Google App Engine have been removed in 7.0

The Camel components for Google App Engine (**camel-gae**) have been removed in Fuse 7.0.

### Camel jBPM component has been removed in 7.0

The Camel jBPM component (**camel-jbpm**) has been removed in Fuse 7.0.

### Tanuki based wrapper for installing Fuse as a service has been removed in 7.0

The Tanuki based wrapper scripts – generated using the **wrapper:install** Karaf console command – for installing Fuse as a service have been removed in Fuse 7.0. To install the Apache Karaf container as a service, it is recommended that you use the new **karaf-service-\*.sh** scripts from the **bin/contrib** directory instead.

### Smooks has been removed in 7.0

Since Fuse 7.0, the Smooks component for SwitchYard has been removed.

### BPEL has been removed in 7.0

BPEL (based on the [Riftsaw](#) project) has been removed from Fuse 7.0. If you are currently using BPEL, it is recommended that you consider migrating to the Red Hat JBoss BPM Suite.

### Design Time Governance has been removed in 7.0

The Design Time Governance component has been removed in 7.0.

**Runtime Governance has been removed in 7.0**

Since Fuse 7.0, the Runtime Governance (RTGov) component has been removed.

**S-RAMP has been removed in 7.0**

The SOA Repository Artifact Model and Protocol (S-RAMP) component has been removed in Fuse 7.0.

**bin/patch script has been removed in 7.0**

The **bin/patch** script (**bin\patch.bat** on Windows O/S) has been removed in a Fuse 7.0.

**Spring Dynamic Modules (Spring-DM) is not supported in 7.0**

Spring-DM (which integrates Spring XML with the OSGi service layer in Apache Karaf) is not supported in Fuse 7.0 and you should use the Blueprint framework instead. Using Blueprint XML does not prevent you from using the Java libraries from the Spring framework: the latest version of Spring is compatible with Blueprint.

**Apache OpenJPA is not supported in 7.0**

The [Apache OpenJPA](#) implementation of the Java Persistence API (JPA) is not supported in Fuse 7.0. It is recommended that you use the [Hibernate](#) implementation instead.

## 5.6. REPLACED IN FUSE 7.0

The following features were replaced in Fuse 7.0:

**Geronimo transaction manager has been replaced in 7.0**

In Fuse 7.0, the Geronimo transaction manager in the Karaf container has been replaced by [Narayana](#).

**Jetty container has been replaced in 7.0**

In Fuse 7.0, the Jetty container has been replaced by [Undertow](#). Initially, this change applies only to internal use of the Jetty container (for example, in the Karaf container). Other Jetty components might be removed in a future release.

## CHAPTER 6. UNSUPPORTED FEATURES IN FUSE 7.7

The following features are unsupported in Red Hat Fuse 7.7.

### **Apache Karaf EclipseLink feature is unsupported**

The Apache Karaf EclipseLink feature is **not** supported in Fuse, because this feature depends on JPA 2.2, while the Karaf container for Fuse 7.2 is aligned with JPA 2.1.

### **Apache Aries Blueprint Web module is unsupported**

The Apache Aries [Blueprint Web](#) module is **not** supported in Fuse. The presence of an example featuring Blueprint Web in the community edition of Apache Camel (provided as a separate download) does **not** imply that this feature is supported in Fuse.

### **The PHP scripting language is not supported in Apache Camel on Apache Karaf**

The PHP scripting language is **not** supported in Camel applications on the Apache Karaf container, because there is no OSGi bundle available for PHP. The PHP scripting language is deprecated in Camel applications on the JBoss EAP container and on the Spring Boot container.

### **The Python scripting language is not supported in Apache Camel on Apache Karaf**

The Python scripting language is **not** supported in Camel applications on the Apache Karaf container, because there is no OSGi bundle available for Python. The Python scripting language is deprecated in Camel applications on the JBoss EAP container and on the Spring Boot container.



## CHAPTER 7. KNOWN ISSUES

The following subsections describe the known issues in version 7.7.

### 7.1. CVE SECURITY VULNERABILITIES

As a middleware integration platform, Fuse can potentially be integrated with a large number of third-party components. It is not always possible to exclude the possibility that some third-party dependencies of Fuse could have security vulnerabilities. This section documents known security vulnerabilities affecting third-party dependencies of Fuse 7.7.

#### **ENTESB-8113 CVE-2018-10237 guava: Unbounded memory allocation in AtomicDoubleArray and CompoundOrdering classes allow remote attackers to cause a denial of service [fuse-7.0.0]**

Google Guava versions 11.0 through 24.1 are vulnerable to unbounded memory allocation in the **AtomicDoubleArray** class (when serialized with Java serialization) and the **CompoundOrdering** class (when serialized with GWT serialization). An attacker could exploit applications that use Guava and deserialize untrusted data to cause a denial of service – for more details, see [CVE-2018-10237](#). To avoid this security vulnerability, we recommend that you:

- Never deserialize an **AtomicDoubleArray** instance or a **CompoundOrdering** instance from an unknown source.
- Avoid using Guava versions 24 and earlier (although in some cases it is not possible to avoid the earlier versions).

To make it easier to avoid the earlier (vulnerable) versions of Guava, Fuse 7.7 has configured its Maven Bill of Materials (BOM) files for all containers to select Guava 27 by default. This means that if you incorporate a Fuse BOM into your Maven project (by adding a dependency on the BOM to the **dependencyManagement** section of your POM file) and then specify a dependency on the Guava artifact *without* specifying an explicit version, the Guava version will default to the version specified in the BOM, which is version 27 for the Fuse 7.7 BOMs.

But there is at least one common use case involving the Apache Karaf (OSGi) container, where it is not possible to avoid using a vulnerable version of Guava: if your OSGi application uses Guava and Swagger together, you are obliged to use Guava 20, because that is the version required by Swagger. Here we explain why this is the case and how to configure your POM file to revert the earlier (vulnerable) Guava 20 library. First, you need to understand the concept of a *double OSGi chain*.

#### Double OSGi chain

Bundles in the OSGi runtime are *wired* together using package constraints (package name + optional version/range) – imports and exports. Each bundle can have multiple imports and usually those imports wire a given bundle with multiple bundles. For example:

```
BundleA
+-- BundleB
|  +-- BundleCa
+-- BundleCb
```

Where **BundleA** depends on **BundleB** and **BundleCb**, while **BundleB** depends on **BundleCa**. **BundleCa** and **BundleCb** should be the same bundle, if the export the same packages, but due to version (range) constraints, **BundleB** uses (*wires to*) a different revision/version of **BundleC** than **BundleA**.

Rewriting the preceding diagram to reflect what happens when you include dependencies on both Guava and Swagger in an application:

```
org.jboss.qe.cxf.rs.swagger-deployment
+-- Guava 27
+-- Swagger 1.5
    +-- reflections 0.9.11
        +-- Guava 20
```

If you try to deploy this bundle configuration, you get the error, **org.osgi.framework.BundleException: Uses constraint violation**.

### Reverting to Guava 20

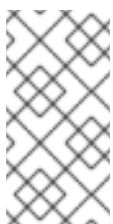
If your project uses both Guava and Swagger libraries (directly or indirectly), you should configure the **maven-bundle-plugin** to use an explicit version range (or no range at all) for the Guava bundle import, as follows:

```
<Import-Package>
  com.google.common.base;version="[20.0,21.0)",
  com.google.common.collect;version="[20.0,21.0)",
  com.google.common.io;version="[20.0,21.0)"
</Import-Package>
```

This configuration forces your OSGi application to revert to the (vulnerable) Guava 20 library. It is therefore particularly important to avoid deserializing **AtomicDoubleArray** instances in this case.

### [ENTESB-12489](#) Fuse Console standalone deployed to Amazon Web Services requires setting system property

If you want to deploy a standalone Fuse application to Amazon Web Services, you should disable the Fuse Console's proxy servlet by setting the **hawtio.disableProxy** system property to **true**. This requirement applies to all supported standalone environments (Spring Boot 1.x and 2.x, Karaf, and Red Hat JBoss Enterprise Application Platform).



#### NOTE

When you disable the Fuse Console proxy servlet, the Fuse Console's **Connect** tab is disabled and you cannot connect to other JVMs from the Fuse Console. If you want to deploy more than one Fuse application on AWS, you must deploy the Fuse Console for each application.

### [CVE-2017-12629](#) Solr/Lucene -security bypass to access sensitive data - CVE-2017-12629

Apache Solr is a popular open source search platform that uses the Apache Lucene search engine. If your application uses a combination of Apache Solr with Apache Lucene (for example, when using the Camel Solr component), it could be affected by this security vulnerability. Please consult the linked security advisory for more details of this vulnerability and the mitigation steps to take.



#### NOTE

The Fuse runtime does *not* use Apache Solr or Apache Lucene directly. The security risk only arises, if you are using Apache Solr and Apache Lucene together in the context of an integration application (for example, when using the Camel Solr component).

## 7.2. FUSE ONLINE

The Fuse Online distribution has the following known issues:

### **ENTESB-15232 Fuse Operators don't show up after upgrading to OCP 4.6**

If you have an existing deployment of Fuse 7.7 Online (or Fuse 7.7 on OpenShift) running on OCP 4.5 and you then upgrade your OpenShift cluster to OCP 4.6, you might find that the new operator channels for Fuse 7.7 (**fuse-console-7.7.x**, **fuse-apicurito-7.7.x**, and **fuse-online-7.7.x**) are not visible initially.

To work around this issue, see [ENTESB-15232](#)

### **ENTESB-14507 Auto-discovery of Kafka brokers does not work on OpenShift 4.5**

Fuse Online 7.7 uses fabric8 kubernetes 4.6.1 which is not updated with changes in the OpenShift 4.5 object model. For OpenShift 4.5, to connect to a Kafka broker, you must know the URI (in *host:port* format) for the Kafka broker.

On OpenShift 4.4, to enable auto-discovery of Kafka brokers see the [Enabling auto-discovery of Kafka brokers/AMQ Streams](#) section in [Connecting Fuse Online to Applications and Services](#).

### **ENTESB-14237 Missing patch body in FHIR Patch operation**

In Fuse 7.7, specifying the JSon Patch as described in step 7 of the procedure [Updating specified fields in a resource on a FHIR server](#) does not work, because the value of the JSon Patch is not used by the connector and the error **Unable to determine encoding of patch** is raised by the integration. To work around this issue, you can instead open up the settings for JSon Patch in the Data Mapper, as described in step 9.ii, and directly set the values of the fields, **op**, **path**, and **value** in the Data Mapper (see also the screenshots in [ENTESB-14237](#)).

### **ENTESB-13074 Upgrade db fails with sampledb integration active**

In Fuse 7.7, when upgrading Fuse Online from version 7.6 to version 7.7, the upgrade procedure fails, if there is a running integration that uses the PostgreSQL SAMPLEDB instance. To work around this problem, shut down any integrations connected to the PostgreSQL SAMPLEDB instance before performing the upgrade.

### **ENTESB-13966 Discovery of deployed integration API seems disabled but not really**

In Fuse 7.7, after creating a new integration containing an API, the integration detail page wrongly implies that 3scale discovery is disabled for this integration. Additionally, the integration detail page does not show the API URL. By clicking this button three times (click **Enable**, then click **Disable**, then click **Enable**), you can resynchronize the page so that 3scale discovery is enabled and the API URL is displayed.

### **ENTESB-13272 Jaeger is disabled by default on OperatorHub**

Starting in Fuse 7.6, if you install Fuse Online from OperatorHub, enhanced activity tracking (which depends on Jaeger) is disabled and cannot be re-enabled after installation, because of the related issue, [ENTESB-13275](#). To work around this issue, install Fuse Online using the command-line script, as described in [Installing Fuse Online on OCP](#).

### **ENTESB-13275 Missing Jaeger resources after OperatorHub installation**

Starting in Fuse 7.6, enhanced activity tracking (which depends on Jaeger) is not properly enabled after installing Fuse Online from OperatorHub. To work around this issue, install Fuse Online using the command-line script, as described in [Installing Fuse Online on OCP](#).

### **ENTESB-12072 Missing part of first activity records on OCP 4.2. in case the activity contains error**

Starting in Fuse 7.6, if you install Fuse Online from OperatorHub (which causes Fuse Online to revert to an older implementation of activity tracking), there can be missing log records in first activity logged by an integration running on Fuse Online. To work around this issue, install Fuse Online using the command-line script, as described in [Installing Fuse Online on OCP](#).

**ENTESB-11407 [1.7.8] No activities after small load (~80000 messages in 20hours)**

Starting in Fuse 7.6, if you install Fuse Online from OperatorHub (which causes Fuse Online to revert to an older implementation of activity tracking), the activity tracking logic can result in an exceptionally high number of dead tuples in the database used by Fuse Online to track activities. This issue causes a general slowdown in any operation that requires reads from the database, most notably accessing the list of integrations from the UI or refreshing the activities of an integration. To work around this issue, install Fuse Online using the command-line script, as described in [Installing Fuse Online on OCP](#).

**ENTESB-13110 Postgres version check runs on each reconcile even without upgrade**

Starting in Fuse 7.6, the Postgres version check is performed during a fresh install, although it is only required during an upgrade. This causes spurious error messages in the log, like the following, which can be safely ignored:

```
{"level":"error","ts":1583164580.847065,"logger":"configuration","msg":"Unable to determine current version of PostgreSQL running in syndesis-db pod","error":"dial tcp: lookup syndesis-db on 10.0.145.81:53: no such host"}
```

**ENTESB-12175 Camel-k integrations stay deployed even when deleted in UI**

Starting in Fuse 7.5, if Camel K is enabled and you delete an integration in the UI, the Camel K integration continues to run, but isn't displayed in Fuse Online. To work around this issue, first stop the integration in the UI and then delete it with the **kamel delete** command.

**ENTESB-12174 API Provider running on camel-k has empty parameters**

Starting in Fuse 7.5, if Camel K is enabled and you create an API Provider action that uses query parameters, the parameters are empty.

**ENTESB-10577 Apicurito does not support YAML Open API spec files**

Starting in Fuse 7.4 on OpenShift, Apicurito generates OpenAPI specification files in YAML format *by default*, but is not capable of re-importing the generated YAML file. Only JSON format can be imported into Apicurito at the moment.

**ENTESB-14117 Fuse Online returns successful validation when the connector ID is unknown**

When you click **Validate** for an API client connector, Fuse Online returns a successful validation, even if the connector ID is unknown.

**ENTESB-14116 To access the Edit option for API Client Connectors you must scroll down the page**

When you select an API Client Connector from the list of **Connectors > API Client Connectors**, Fuse Online opens the **Details** page for the API client Connector. However, you must then scroll down the page if you want to see the list of operations and the **Edit** button.

**ENTESB-13854 API Client Connector wizard security fields are hidden by default**

On the **Specify Security** page of the API Client Connector wizard, Fuse Online does not display the configure authentication options.

**ENTESB-14026 SOAP Connector - WSDL file must contain only one port**

If the WSDL file that you want to import contains more than one port, you must edit it to only specify one port. You can create a separate SOAP API client connector for each port by creating multiple copies of the WSDL file - each with a different port.

**ENTESB-14025 SOAP Connector - WSDL file extension must be lowercase**

If the WSDL file that you want to import uses an uppercase extension (**.WSDL**), you must change the file extension to lowercase (**.wsdl**). For example, download the **sample.WSDL** file and rename the file to **sample.wsdl**. Then, in the Fuse Online API Client Connectors page, you can import the **sample.wsdl** file.

**ENTESB-14114 SOAP connector - No icon auto-generated**

If you do not provide an icon for the SOAP connector, Fuse Online does not generate an icon for you.

## 7.3. FUSE ON OPENSIFT

This section lists issues that affect the deployment of Fuse applications on OpenShift. For details of issues affecting specific containers, see also the sections for Spring Boot, Fuse on Apache Karaf, and Fuse on JBoss EAP. The Fuse on OpenShift distribution has the following known issues:

### [ENTESB-15307](#) FMP not working with OCP4.6

In Fuse 7.7.0, the **fabric8-maven-plugin** is not compatible with OpenShift Container Platform (OCP) 4.6. That is, if you try to build and deploy a Fuse 7.7.0 Maven project by invoking the **mvn fabric8:deploy** command, the build fails with an error like this:

```
[ERROR] F8: Failed to execute the build [Unable to build the image using the OpenShift build service]
Exception in thread "OkHttp Dispatcher" java.util.concurrent.RejectedExecutionException: Task java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask@218c5d87 rejected from java.util.concurrent.ScheduledThreadPoolExecutor@15d41eae[Terminated, pool size = 0, active threads = 0, queued tasks = 0, completed tasks = 0]
```

This error will be fixed in Fuse 7.8.0 (see [ENTESB-14511](#)).

### [ENTESB-15232](#) Fuse Operators don't show up after upgrading to OCP 4.6

If you have an existing deployment of Fuse 7.7 on OpenShift (or Fuse 7.7 Online) running on OCP 4.5 and you then upgrade your OpenShift cluster to OCP 4.6, you might find that the new operator channels for Fuse 7.7 (**fuse-console-7.7.x**, **fuse-apicurito-7.7.x**, and **fuse-online-7.7.x**) are not visible initially and only the old operator channel (**alpha**) is visible. This is caused by known issues in OCP 4.6 ([BZ 1891993](#) and [BZ 1891995](#)). To work around this issue, perform the following procedure as a cluster administrator:

1. At the command line, log into your OCP 4.6 cluster as a cluster administrator.
2. Enter the following command:

```
oc patch operatorhub/cluster --type=merge -p '{"spec": {"disableAllDefaultSources": true}}'
```

3. Wait until OperatorHub lists no sources (or only custom sources) for the Fuse operators.
4. Now enter the following command:

```
oc patch operatorhub/cluster --type=merge -p '{"spec": {"disableAllDefaultSources": false}}'
```

### [ENTESB-14601](#) Fuse 7.7 on OpenShift quickstarts fail on OCP 4.4

In Fuse 7.7.0, if you follow the procedure for [creating and deploying an application using the S2I source workflow](#), the build on OpenShift fails and in the log you can see an error message like the following:

```
Caused by: org.eclipse.aether.resolution.ArtifactResolutionException: Could not find artifact org.jboss.redhat-fuse-springboot-bom:pom:7.7.0.fuse-sb2-770010-redhat-00001 in central (https://repo.maven.apache.org/maven2)
```

To work around this problem, we recommend that you switch to the S2I binary workflow for building the quickstarts (see [Creating and deploying an application using the S2I binary workflow](#) ).

Alternatively, if you want to stick with the S2I source workflow, you can revert to an earlier version of the relevant container image by setting the parameter, **BUILDER\_VERSION=1.6** in the **oc new-app** command. Because this alternative workaround uses an older version of the container images, however, it is **not recommended** for use in a production environment. For example, to build the **spring-boot-camel** quickstart for Spring Boot 2 in the S2I source workflow, enter the following command:

```
oc new-app --template=s2i-fuse77-spring-boot-2-camel -p APP_NAME=spring-boot-camel -p
BUILDER_VERSION=1.6
```

#### **ENTESB-14415** [Fuse Console] Hawtio is up/down continuously on Fuse OpenShift 4

In Fuse 7.7.0, the Fuse Console deployment on OpenShift becomes unstable after a while, continuously stopping and restarting accompanied by the error **Liveness probe failed**. This instability is caused by the Fuse Console pod exceeding its memory allocation on OpenShift. To fix the instability, modify the memory limits for the Fuse Console deployment as follows:

1. Use the **oc rollout pause** command to pause automatic redeployment of the Fuse Console pod.
2. Edit the Fuse Console's deployment configuration (YAML file) to increase the memory allocation to 100Mi.
3. Use the **oc rollout resume** command to resume automatic redeployment of the Fuse Console pod.

#### **ENTESB-11638** Fabric8 quickstart karaf-camel-amq does not work correctly (probably missing configuration)

In Fuse 7.7.0, the README files in the Spring Boot 1 and Spring Boot 2 quickstarts for Fuse on OpenShift contain incorrect instructions for importing and using the Java image. The following command for importing the Java image:

```
oc import-image fis-java-openshift:2.0 --from=registry.access.redhat.com/jboss-fuse-7/fis-java-
openshift:2.0 --confirm
```

Should be replaced by this command:

```
oc import-image fuse-java-openshift:1.7 --from=registry.redhat.io/fuse7/fuse-java-openshift:1.7 --
confirm
```

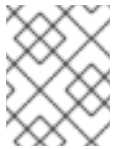
And the following command for running the quickstart using the downloaded image:

```
mvn clean -DskipTests fabric8:deploy -Popenshift -Dfabric8.generator.fromMode=istag -
Dfabric8.generator.from=MY_PROJECT_NAME/fis-java-openshift:2.0
```

Should be replaced by this command:

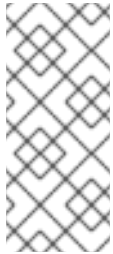
```
mvn clean -DskipTests fabric8:deploy -Popenshift -Dfabric8.generator.fromMode=istag -
Dfabric8.generator.from=MY_PROJECT_NAME/fuse-java-openshift:1.7
```

But neither of the above commands need to be run if you have already pre-installed the Fuse images, as described in the installation instructions from the *Fuse on OpenShift Guide*.



#### NOTE

For more details about pulling Fuse images, see the [Fuse for OpenShift](#) page in the Red Hat Ecosystem Catalog.



#### NOTE

The Apache Karaf quickstarts and JBoss EAP quickstarts for Fuse on OpenShift are not affected. The summary text of ENTESB-11638 originally referred to an issue with the Apache Karaf quickstarts, but those problems have subsequently been fixed and the only remaining problem relates to the README files for the Spring Boot quickstarts.

### **ENTESB-12238** [SB2] Quickstarts arquillian test fail

Starting in Fuse 7.5.0, some of the Spring Boot 2 quickstarts (generated either from Maven archetypes or quickstart templates) fail to build and deploy to OpenShift. The following Spring Boot 2 Maven archetypes are affected:

- **spring-boot-camel-archetype**
- **spring-boot-camel-infinspan-archetype**
- **spring-boot-cxf-jaxrs-archetype**
- **spring-boot-cxf-jaxws-archetype**

And the following Spring Boot 2 templates:

- **spring-boot-2-camel-template**
- **spring-boot-2-camel-infinspan-template**
- **spring-boot-2-cxf-jaxrs-template**
- **spring-boot-2-cxf-jaxws-template**

To work around this issue, after generating a Maven project for one of these quickstarts, edit the project's Maven **pom.xml** file to add the following dependency:

```
<dependency>
  <groupId>org.assertj</groupId>
  <artifactId>assertj-core</artifactId>
  <version>2.4.1</version>
  <scope>test</scope>
</dependency>
```

### **ENTESB-10577** Apicurito does not support YAML Open API spec files

Starting in Fuse 7.4 on OpenShift, Apicurito generates OpenAPI specification files in YAML format *by default*, but is not capable of re-importing the generated YAML file. Only JSON format can be imported into Apicurito at the moment.

## 7.4. FUSE ON SPRING BOOT

Fuse on Spring Boot has the following known issues:

## 7.5. FUSE ON APACHE KARAF

Fuse on Apache Karaf has the following known issues:

### **ENTESB-8140** Start level of hot deploy bundles is 80 by default

Starting in the Fuse 7.0 GA release, in the Apache Karaf container the start level of hot deployed bundles is 80 by default. This can cause problems for the hot deployed bundles, because there are many system bundles and features that have the same start level. To work around this problem and ensure that hot deployed bundles start reliably, edit the **etc/org.apache.felix.fileinstall-deploy.cfg** file and change the **felix.fileinstall.start.level** setting as follows:

```
felix.fileinstall.start.level = 90
```

### **ENTESB-7664** Installing framework-security feature kills karaf

The **framework-security** OSGi feature must be installed using the **--no-auto-refresh** option, otherwise this feature will shut down the Apache Karaf container. For example:

```
feature:install -v --no-auto-refresh framework-security
```

## 7.6. FUSE ON JBOSS EAP

Fuse on JBoss EAP has the following known issues:

### **ENTESB-14244** Add SOAP to Rest example that secures endpoint with Keycloak - update readme

In Fuse 7.7, there is an error in the README instructions for the new SOAP to Rest quickstart (**camel-soap-rest-bridge**). In the **Prerequisites** section, the command for installing the RH SSO EAP Adapter is given as:

```
./bin/jboss-cli.sh --file=bin/adapter-elytron-install-offline.cli
```

But the correct command is actually:

```
./bin/jboss-cli.sh --file=bin/adapter-elytron-install-offline.cli -Dserver.config=standalone-full.xml
```

### **ENTESB-13168** Camel deployment on EAP domain mode is not working on Windows

Starting in Fuse 7.6.0, for Fuse on JBoss EAP, the Camel subsystem cannot be deployed on JBoss EAP in domain mode on Windows OS.

## 7.7. APACHE CAMEL

Apache Camel has the following known issues:

### **ENTESB-11060** [camel-linkedin] V1 API is no longer supported

Since Fuse 7.4.0, the Camel LinkedIn component is no longer able to communicate with the LinkedIn server, because it is implemented using the LinkedIn Version 1.0 API, which is no longer supported by LinkedIn. The Camel LinkedIn component will be updated to use the Version 2 API in a future release



of Fuse.

#### **ENTESB-7469 Camel Docker component cannot use Unix socket connections on EAP**

Since Fuse 7.0, the **camel-docker** component can connect to Docker only through its REST API, not through UNIX sockets.

#### **ENTESB-5231 PHP script language does not work**

The PHP scripting language is **not** supported in Camel applications on the Apache Karaf container, because there is no OSGi bundle available for PHP.

#### **ENTESB-5232 Python language does not work**

The Python scripting language is **not** supported in Camel applications on the Apache Karaf container, because there is no OSGi bundle available for Python.

#### **ENTESB-2443 Google Mail API - Sending of messages and drafts is not synchronous**

When you send a message or draft, the response contains a Message object with an ID. It may not be possible to immediately get this message via another call to the API. You may have to wait and retry the call.

#### **ENTESB-2332 Google Drive API JSON response for changes returns bad count of items for the first page**

Google Drive API JSON response for changes returns bad count of items for the first page. Setting **maxResults** for a list operation may not return all the results in the first page. You may have to go through several pages to get the complete list (that is by setting **pageToken** on new requests).

## CHAPTER 8. FIXED ISSUES IN FUSE 7.7

The following sections list the issues that have been fixed in Fuse 7.7:

- [Section 8.1, "Enhancements in Fuse 7.7"](#)
- [Section 8.2, "Feature requests in Fuse 7.7"](#)
- [Section 8.3, "Bugs resolved in Fuse 7.7"](#)

### 8.1. ENHANCEMENTS IN FUSE 7.7

The following table lists the enhancements in Fuse 7.7.

**Table 8.1. Fuse 7.7 Enhancements**

Issue	Description
<a href="#">ENTESB-13099</a>	Extend certification of Spring Boot 2 on Windows and IBM JDKs
<a href="#">ENTESB-13543</a>	Backport CAMEL-14951 - WireTap - If thread pool reject task then Camel error handler should be able to react
<a href="#">ENTESB-13998</a>	Add license information to galleon pack
<a href="#">ENTESB-13645</a>	"[React-UI] Search in source/target could come without the ""search"" button
<a href="#">ENTESB-13782</a>	[React-UI] Atlasmap missing field search in mapping detail
<a href="#">ENTESB-13619</a>	"[React-UI] Disable ""create new mapping"" button in case the target is already mapped"
<a href="#">ENTESB-13701</a>	[React-UI] The search fields icon - highlight the icon when active
<a href="#">ENTESB-13640</a>	[React-UI] Collapse fields lists in source/target
<a href="#">ENTESB-12882</a>	Add metering labels to Fuse Online operator
<a href="#">ENTESB-13226</a>	io-threads/task-max-threads tuning capability for pax-web-undertow
<a href="#">ENTESB-13593</a>	Re-enable camel-infinispan in Fuse EAP
<a href="#">ENTESB-13212</a>	Upgrade Commons Configuration to 2.7
<a href="#">ENTESB-12339</a>	Provide ability to set JMX SSL/TSL Cipher Suites
<a href="#">ENTESB-13358</a>	TP to GA camel-amqp needs to be able to read AMPQ annotations

Issue	Description
<a href="#">ENTESB-12161</a>	Remove deprecated starters from SB2
<a href="#">ENTESB-13626</a>	Migrate fuse-patch feature pack to galleon
<a href="#">ENTESB-12885</a>	[Fuse Online] Add option for 'ignoreExportTimestamp' to API
<a href="#">ENTESB-13390</a>	Setup 7.7 release infrastructure
<a href="#">ENTESB-12896</a>	Migration from PF3 to PF4 for Fuse Online
<a href="#">ENTESB-13013</a>	Fuse Online: REST API to refresh connection after import
<a href="#">ENTESB-13728</a>	Prepare the changes for CLOUDBLD-26
<a href="#">ENTESB-12560</a>	[Fuse Console Operator] Automatically create a ConsoleLink for the Fuse Console in namespace mode
<a href="#">ENTESB-13757</a>	Add SOAP to Rest example that secures endpoint with Keycloak
<a href="#">ENTESB-11696</a>	Red Hat Fuse support for RH SSO with Spring Boot 1+2.
<a href="#">ENTESB-12346</a>	Red Hat Fuse support for RH SSO with Spring Boot. (Hawtio on SB2)
<a href="#">ENTESB-12795</a>	Red Hat Fuse support for RH SSO with Spring Boot. (Hawtio on SB1)
<a href="#">ENTESB-10290</a>	camel-netty4-http unable to handle large data streams
<a href="#">ENTESB-12532</a>	Integration test with Red Hat Data Grid 7.3.x
<a href="#">ENTESB-12615</a>	Install Fuse on Openshift in a restricted environment (no Internet access)
<a href="#">ENTESB-13758</a>	Add SOAP to REST quickstart for SpringBoot2 runtime
<a href="#">ENTESB-13014</a>	Bring camel-pulsar component to GA

## 8.2. FEATURE REQUESTS IN FUSE 7.7

The following table lists the features requests in Fuse 7.7.

**Table 8.2. Fuse 7.7 Feature Requests**

Issue	Description
<a href="#">ENTESB-13276</a>	OperatorHub overview doesn't contain information about all addons

Issue	Description
<a href="#">ENTESB-13965</a>	Create OLM metadata for 7.7 in the old format
<a href="#">ENTESB-12891</a>	""initialsize"" option for narayana connection pool and XA DataSources"
<a href="#">ENTESB-12813</a>	Create Metadata Tree for SQL Editor
<a href="#">ENTESB-12080</a>	Atlasmap move to react
<a href="#">ENTESB-11455</a>	API Provider ignores 204 as default status code
<a href="#">ENTESB-12977</a>	Based on LSP work provide the code templates for SQL Editor
<a href="#">ENTESB-11534</a>	[extension] Selected libraries in runtime classpath
<a href="#">ENTESB-12486</a>	[Synthesis] Kafka connector security enhancements
<a href="#">ENTESB-11940</a>	Collection Support for Conditional Mapping in Atlasmap
<a href="#">ENTESB-13148</a>	Add support for Weka Data Mining
<a href="#">ENTESB-12595</a>	camel-elasticsearch-rest - backport CAMEL-13071
<a href="#">ENTESB-11646</a>	SOAP Connector
<a href="#">ENTESB-12995</a>	Add Http/2 Protocol to cxf-http-undertow
<a href="#">ENTESB-8065</a>	Fuse Console support for OpenShift authentication and authorisation
<a href="#">ENTESB-12775</a>	Camel Azure Blob lack of feature
<a href="#">ENTESB-13081</a>	Add PostgreSQL V11 and V12 to supported database integration list for Fuse 7

### 8.3. BUGS RESOLVED IN FUSE 7.7

The following table lists the resolved bugs in Fuse 7.7.

**Table 8.3. Fuse 7.7 Resolved Bugs**

Issue	Description
<a href="#">ENTESB-13507</a>	[DV] OData request fails when Host header specifies also port
<a href="#">ENTESB-13929</a>	Versions not aligned in redhat-fuse

Issue	Description
<a href="#">ENTESB-13460</a>	Migrate wildfly-camel from feature to galleon packs
<a href="#">ENTESB-13895</a>	Unable to install features camel-spring-batch and camel-spring-ldap
<a href="#">ENTESB-13809</a>	[React-UI] Transformations on source and target mapped field are the same
<a href="#">ENTESB-13743</a>	[React-UI] Atlasmap-react-standalone doesn't retain imported files
<a href="#">ENTESB-13749</a>	"The ""Enable specific Java classes"" button should be hidden when embedded in Syndesis"
<a href="#">ENTESB-13934</a>	SB2 spring-boot-camel-soap-rest-bridge-archetype can't be instantiated
<a href="#">ENTESB-13802</a>	DV addon in Syndesis is not able to be enabled
<a href="#">ENTESB-12189</a>	Custom API connector integration securityDefinitions issue
<a href="#">ENTESB-13900</a>	[React-UI] Expression processing error: io.atlasmap.java.v2.JavaField cannot be cast to java.lang.Comparable
<a href="#">ENTESB-13681</a>	[React-UI] Improve responsiveness of the new UI
<a href="#">ENTESB-13718</a>	"[React-UI] When specifying multiple sources or targets
<a href="#">ENTESB-13913</a>	[React-UI] ISEMPTY is always false
<a href="#">ENTESB-13866</a>	SB2 application-templates are using non-productized quickstarts
<a href="#">ENTESB-14034</a>	fuse-console-namespace-rbac.yml requires the ROUTE_HOSTNAME
<a href="#">ENTESB-13682</a>	"Browser tab label ""Syndesis"" should be changed to ""Fuse Online"""
<a href="#">ENTESB-13763</a>	Linked documentation is for version 7.5 instead of version 7.7
<a href="#">ENTESB-13612</a>	[React-UI] Delete mapped fields in mapping detail not working
<a href="#">ENTESB-13991</a>	Fuse layer uses outdated slot naming
<a href="#">ENTESB-11408</a>	The title isn't updated
<a href="#">ENTESB-13912</a>	[React-UI] Error when trying to concatenate two strings with expression
<a href="#">ENTESB-13644</a>	[React-UI] It's possible to create constant and property with no values specified

Issue	Description
<a href="#">ENTESB-13932</a>	[React-UI] Delete mapping button doesn't delete mapping
<a href="#">ENTESB-13720</a>	[React-UI] The delete/transform icons in mapping details page are not aligned
<a href="#">ENTESB-13817</a>	One collection for adding pivot Google Sheet table cannot be expandable
<a href="#">ENTESB-13739</a>	[React-UI] The transformation for source → multiple targets isn't present in the mapping file
<a href="#">ENTESB-13919</a>	"[React-UI] Atlasmap generating mapping file with ""no data"" on page refresh"
<a href="#">ENTESB-13911</a>	SOAP Connector: API doesn't return defaultValue on uploading WSDL file
<a href="#">ENTESB-11167</a>	we should produce a camel-sap bom which does not include hamcrest internal dependency.
<a href="#">ENTESB-13617</a>	[React-UI] Concatenate delimiter dropdown values are not updating in mapping detail
<a href="#">ENTESB-13618</a>	[React-UI] Create new mapping button not working
<a href="#">ENTESB-14035</a>	Typos on fuse-console-namespace-rbac.yml
<a href="#">ENTESB-11829</a>	Timer connector allows to supply negative values
<a href="#">ENTESB-13646</a>	"[React-UI] After the source/target search is closed
<a href="#">ENTESB-13801</a>	[React-UI] Mapping not working when using conditional mapping expressions
<a href="#">ENTESB-13631</a>	[React-UI] Enable java classes button not working
<a href="#">ENTESB-13613</a>	[React-UI] Delete transformation in mapping detail not working
<a href="#">ENTESB-13633</a>	[React-UI] Add transformation button not working
<a href="#">ENTESB-11340</a>	"After deleting and recreating CR
<a href="#">ENTESB-13983</a>	Camel-CXF incorrectly returns HTTP 200 response when continuationTimeout expires

Issue	Description
ENTESB-13632	[React-UI] It's not possible to respecify the source in a one to many mappings
ENTESB-13371	"Misalignment on the ""Details"" tab row on the integration view screen"
ENTESB-13074	Upgrade db fails with sampledb integration active
ENTESB-13642	"[React-UI] In case the field is mapped to two different mappings ""Connect to selected mapping"" button always showing"
ENTESB-13933	SB2 Quickstart template has wrong json syntax
ENTESB-12590	Camel netty4 requestTimeout doesn't work as expected
ENTESB-13811	The error is not appeared in the integration log with Webhook step
ENTESB-14002	Synthesis server cannot list both OpenAPI and SOAP connectors in a single query
ENTESB-13808	[React-UI] Missing dropdown for selection in units converters
ENTESB-13813	The options for error handling in the Webhook are not shown
ENTESB-13797	[React-UI] Validation - Field mappings should not be empty
ENTESB-13648	[React-UI] Mapping preview tab - missing mapping preview
ENTESB-13841	API Provider step doesn't work
ENTESB-13997	[React-UI] Expression with collection returns only last element
ENTESB-13944	[React-UI] mapping details search fields overflow in case mappable fields names are too long
ENTESB-13939	ClassNotFoundException in syndesis-dv pod
ENTESB-12872	Data mapper adds ghost property after save
ENTESB-13842	Next button is disabled after the second click in the API Client Connector
ENTESB-13643	[React-UI] Fix add/edit constants and properties modal design
ENTESB-13737	"[React-UI] ""Invalid mapping"" warning"

Issue	Description
ENTESB-13634	"[React-UI] Empty transformation dropdown visible in case the ""many to one"" mapping changed to ""one to many"""
ENTESB-12088	Unproductized version of Netty in camel
ENTESB-13762	failing test on camel-cxf
ENTESB-13635	wildfly-camel-patch packages EAP artifacts
ENTESB-13135	Automatic encryption of users2.properties on windows makes you unable to login
ENTESB-13156	Fix Infinispan misalignment
ENTESB-13444	[CAMEL-12969] camel-core-osgi: Slow Memory Leak in OsgiServiceRegistry
ENTESB-13595	Restore wildfly-camel-patch for docker image
ENTESB-12850	[camel-telegram] Missing dependency on EAP
ENTESB-13205	wildfly-camel build requires -Dts.all to produce an updated wildfly-camel-patch file
ENTESB-13788	Kafka fails with NoSuchMethodError
ENTESB-13637	Dependency on wildfly-galleon-pack breaks client classpath
ENTESB-12961	[Hawtio] No error message of creation endpoint with wrong URI in some cases
ENTESB-13518	Unable to upgrade from 1.9 to 1.10 with external db
ENTESB-12900	DV view editor UX/UI enhancements
ENTESB-13431	(Fuse Online) SQL connector exceptions are visible only in DEBUG mode
ENTESB-13833	Fuse 7.7 Build #1 cannot be installed on JBoss EAP 7.2.7
ENTESB-12366	Download Troubleshooting Diagnostics zip file cannot be opened
ENTESB-13000	"AWS dynamo Db - the ""put item"" operation description should contain info regarding update item"



Issue	Description
ENTESB-13616	[React-UI] Changing the order of sources/targets in the mapping transformation causes an error
ENTESB-13789	Incorrect json lists in SOAP connector summary response
ENTESB-13856	wildfly-camel-patch does not package jars
ENTESB-12908	Importing the 1.9 TaskAPI-export.zip incorrectly sets operation return codes
ENTESB-13253	Error formatting in the activity log
ENTESB-13821	application-templates for Fuse 7.7 on Openshift point to 7.6 images
ENTESB-13164	Update Syndesis to use dom4j 1.6.1.redhat-8
ENTESB-13793	Avoid NPE in SOAP Connector when parsing WSDL with no name
ENTESB-12553	"Box upload action's ""filename from file"" only works with FTP connector"
ENTESB-13104	ErrorHandling
ENTESB-12854	Fuse online scripts break with space in path
ENTESB-11367	[Syndesis] confusing error in install_ocp.sh when oc is not on \$PATH
ENTESB-12019	Next button enabled only after changing the input
ENTESB-13532	Dashboards and rules for DB are created by operator when external database is used
ENTESB-13606	Retry subscribe to Salesforce event when server returns 503 Server too busy
ENTESB-12224	Fuse console - Select a container dropdown vague behaviour
ENTESB-12225	Fuse Console OCP 4.1 - Openshift button does not work
ENTESB-12208	FTP Component with 'streamDownload' mode seems unstable
ENTESB-13949	Undertow integration prevents use of keycloak
ENTESB-12699	[fuse7] Camel route does not consider the value of DefaultShutdownStrategy.
ENTESB-14095	Quickstarts are using old image streams

Issue	Description
<a href="#">ENTESB-13471</a>	API Designer is unable to generate Fuse projects
<a href="#">ENTESB-11770</a>	Duplicate contextpath for OpenAPI Spec in exported Camel Project
<a href="#">ENTESB-14069</a>	Illegal char in license file name prevents Windows install
<a href="#">ENTESB-13290</a>	JMX tree duplicates quoted objects when used with Artemis
<a href="#">ENTESB-13935</a>	Mappings are deleted after re-opening the datamapper step
<a href="#">ENTESB-13527</a>	Webhook connector doesn't get random generated token
<a href="#">ENTESB-13541</a>	Conditional flow page doesn't have buttons labeled
<a href="#">ENTESB-13406</a>	Settings page inconsistencies
<a href="#">ENTESB-13639</a>	Specify template type radiobuttons are stacked weird
<a href="#">ENTESB-12537</a>	List bullets in Period unit selection
<a href="#">ENTESB-13816</a>	Changes in API Provider connector JSON config are not in newest images
<a href="#">ENTESB-13404</a>	Log out option in help dropdown is not labeled
<a href="#">ENTESB-13085</a>	Server fails to generate integrations with Open APIs
<a href="#">ENTESB-11393</a>	Template editor doesn't report errors correctly
<a href="#">ENTESB-10113</a>	Can't use rest-swagger component with swagger.json provided over HTTPS protocol
<a href="#">ENTESB-7754</a>	Review and polish spring-boot-camel-config quickstart
<a href="#">ENTESB-12894</a>	[camel-xslt] Unable to disable external entity injection to prevent XXE attack-Karaf
<a href="#">ENTESB-13867</a>	Quickstarts fails on Openshift 4.4
<a href="#">ENTESB-13926</a>	Fabric Maven Plugin fails on build on Openshift 4.4
<a href="#">ENTESB-13755</a>	Fuse 7.6 encrypted property placeholder feature does no longer work
<a href="#">ENTESB-14077</a>	CNFE with Spring based AuthorizationPolicy

Issue	Description
<a href="#">ENTESB-11982</a>	Camel-SAP Component Error: Cannot serialize value to object without an EDataType eType
<a href="#">ENTESB-14248</a>	"Spring Boot 2 Camel Narayana: NoClassDefFoundError when build application on OCP 3.11
<a href="#">ENTESB-13943</a>	Arquillian cube test doesn't work with 7.6 on OCP 4.4
<a href="#">ENTESB-12362</a>	Mapping from XML Schema generates invalid XML
<a href="#">ENTESB-14036</a>	7.7 manifest folder is missing in the latest operator image
<a href="#">ENTESB-13977</a>	Client Connector List only shows Swagger connectors
<a href="#">ENTESB-14251</a>	Camel K catalog is not aligned with Fuse online build #8
<a href="#">ENTESB-13403</a>	Unable to override default maven repositories
<a href="#">ENTESB-13857</a>	Backport fixes needed for 3scale custom policy use case with TLS
<a href="#">ENTESB-14288</a>	Unable to use integration with split and datamapper due to jackson
<a href="#">ENTESB-14262</a>	ImmutableConnectorAction can't be deserialized when using Camel K
<a href="#">ENTESB-14276</a>	Fuse online fails to create Camel K Integration
<a href="#">ENTESB-13807</a>	Add activemq-http version to managed dependencies
<a href="#">ENTESB-13102</a>	"Exception on consuming a Rest service with return code 202
<a href="#">ENTESB-11189</a>	Fuse Camel elasticsearch-rest component - ClassNotFoundException and IllegalAccessException
<a href="#">ENTESB-13365</a>	unnecessary calls to classMap.computeIfAbsent() in Camels DefaultFactoryFinder class has performance impact
<a href="#">ENTESB-13265</a>	client.bat script does not works in Fuse 7.5 on Karaf for Windows
<a href="#">ENTESB-14094</a>	[Fuse 7] CNF exception from R13 if validator package is not defined in import-package
<a href="#">ENTESB-12584</a>	2 Fuse instances are not able to scan PID cfg files on a shared NFS folder at the same time.
<a href="#">ENTESB-14344</a>	APICurio operator pulls wrong operand images

Issue	Description
<a href="#">ENTESB-12839</a>	Kafka integration fails with inconsistent cluster id
<a href="#">ENTESB-14250</a>	[Apicurito] apicurito image can be rewritten with the old way (CR definition)
<a href="#">ENTESB-14308</a>	FHIR Transaction operation doesn't work due to Jackson deserialization
<a href="#">ENTESB-13784</a>	Dropped exchanges when aggregating with JdbcAggregationRepository
<a href="#">ENTESB-14249</a>	[Apicurito] apicurito-service cannot be created by default CR using operatorhub installation