Red Hat Fuse 7.3

Release Notes

What's new in Red Hat Fuse

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Legal Notice

Abstract

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

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CHAPTER 1. FUSE 7.3 PRODUCT OVERVIEW

1.1. FUSE DISTRIBUTIONS

Fuse 7.3 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:

- Pre-installed on the OpenShift Online Professional tier

- On a Red Hat Managed Integration cluster

- For installation on an on-premises OpenShift cluster

1.2. NEW FEATURES

Fuse 7.3 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 standalone

1.3. SUPPORTED CONFIGURATIONS

For information about supported configurations, standards, and components in version 7.3, see the following Customer Portal articles:

- Red Hat JBoss Fuse Supported Configurations

- Red Hat JBoss Fuse Supported Standards

- Red Hat JBoss Fuse Component Details

- Red Hat JBoss Fuse Supported Standards

- Red Hat JBoss 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. Syndesis is the open source project for Fuse Online. Fuse Online runs in these OpenShift environments:

Host Environment	Installation
OpenShift Online 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 7.3

Fuse Online 7.3 provides the following new features:

- API provider integrations are now supported. This type of integration was a Technology Preview feature in the previous release. An API provider integration publishes a REST API service for which you provided an OpenAPI schema. A call from a REST API client triggers execution of an API provider integration.
  An integration that is not an API provider integration is now referred to as a simple integration.

- There are new connectors for:

  - Google Sheets
    A connection to Google Sheets can return spreadsheet data or spreadsheet properties, update spreadsheet values or properties, or insert a chart or pivot table into a spreadsheet.

  - Apache Kudu
    Apache Kudu is a columnar storage manager developed for the Apache Hadoop platform. A Fuse Online integration can connect to a Kudu data store to scan a table, which returns all records in the table to the integration, or to insert records into a table.

- The IRC connector, which connects to text-based Internet Relay Chat to receive and send messages, is now supported. It was a Technology Preview feature in the previous release.

- Support for processing collections in an integration includes the following new features:

  - In a data mapper step, you can now map from/to a collection of primitive types and you can map from/to the fields that are in a complex collection. During execution, the data mapper iterates over the source collection to populate the target.

- The new split step divides a collection into separate elements. The integration processes subsequent steps once for each element. When a collection is returned from a connection to one of the following services, the split step can separate the collection:

    - Amazon S3

    - Google Sheets

    - Kudu

    - OData

    - ServiceNow

    - SQL database

- The new aggregate step joins elements into a collection and passes the collection to the next step in the flow. The integration executes subsequent steps once for the collection. You must add a split step to a flow before you can add an aggregate step. After an aggregate step, an integration typically requires a data mapper step. An aggregate step's output collection can be direct input (without an intervening data mapper step) to only a Google Sheets connection.

- In a template step, Fuse Online now supports Freemarker and Velocity templates, as well as Mustache templates.

- When you are running Fuse Online on OpenShift Container Platform (OCP) on premise, the following new features are available:

    - Mark an integration for a Continuous Integration/Continuous Deployment (CI/CD) pipeline .

    - Expose the Fuse Online public API for use by external tools.

    - Use external tools, such as Ansible, Jenkins, a **cron** job, to export and import integrations in CI/CD pipelines.

    - Configure OpenShift so that users bypass the page that prompts them to authorize access from Fuse Online to their OpenShift account.

2.3. CHANGES IN FUSE ONLINE 7.3

Fuse Online 7.3 changes 7.2 features as follows:

- In previous releases, when a connection to one of the following services returned a collection, Fuse Online split the returned collection into separate elements and executed subsequent integration steps once for each element:

    - Amazon S3

    - SQL databases

    - ServiceNow

    In Fuse Online 7.3, these connections now return a collection that can be input to

    - A data mapper step. You can map to/from a collection of primitives, or to/from the fields in a complex collection.

- A split step, which is new in 7.3.

  To preserve behavior in existing and imported integrations, Fuse Online automatically adds the new 7.3 split step to an integration after one of these connections. This happens as part of the upgrade to Fuse Online 7.3, or when you import a 7.2 integration into a Fuse Online 7.3 environment.

  If you want the integration to operate on the collection, edit the upgraded integration to remove the split step. In most cases, you also need to add or reconfigure a data mapper step.

  For details, see How to process a collection in a flow .

- When one of the following returns data that is specified as a collection, you can now map that collection in a data mapper step:

  - API provider integrations

  - AMQP Message Broker connection

  - HTTP/HTTPS connection

  - Red Hat AMQ connection

  - Webhook connection

- A data mapper step can now provide a collection as input to the following when their input is specified as a collection:

  - API provider integration return paths. This is the last step in each API provider integration operation flow.

  - AMQP Message Broker connections that publish messages.

  - HTTP/HTTPS connections that store, update or remove content.

  - Red Hat AMQ connections that publish messages.

- You can now add a log step as a simple integration's finish connection, as well as in the middle of an execution flow. Log connections are no longer available to be added to integrations. They are deprecated in this release and it is expected that they will be removed in a future release. After an upgrade to 7.3, a running integration that has a log connection in its flow continues to run. You can edit a log connection that is already in a flow and you can edit and publish an integration that has a log connection. While you do not need to remove log connections from integrations in this release, you should plan to do so eventually. Replace a log connection with a log step when you are editing an integration. In the integration's visualization flow, click the plus sign where you want to add a log step. When Fuse Online prompts you to choose a step, click **Log**.

  A log step does not provide all logging that was provided by a log connection:

  - A log step cannot log the ID of each message. (Internally, this ID is the exchange ID.)

  - A log step does not let you specify the level (**ERROR**, **WARN**, **INFO**, **DEBUG**, **TRACE**) of messages that you want to log.

- In an API provider integration, a connection to a SQL database that executes a **SELECT** statement now returns a collection that contains the result set. In the previous release, the connection returned only the first record in the result set.

- In the previous release, when you added a template step to an integration, you were required to prefix each placeholder in the template with **body.**. This is no longer necessary, and **.** in a placeholder is not allowed. The editor displays a syntax error if you specify **.** in a placeholder.

- If you are running Fuse Online on OCP on premise, there is a new prerequisite for running the script that installs or upgrades Fuse Online. You must have an account for https://developers.redhat.com and you must know your user name and password for **https://developers.redhat.com**. The script prompts you for your credentials. For details about creating an account, see Accessing and Configuring the Red Hat Registry .

2.4. UPGRADING EXISTING INTEGRATIONS THAT ARE RUNNING ON OPENSHIFT ONLINE

When Fuse 7.3 is released, the Fuse Online infrastructure on OpenShift Online is automatically upgraded. During the infrastructure upgrade, any existing integrations that are running on OpenShift Online continue to run both during and after the upgrade. However, the existing integrations continue to run with the *older* versions of Fuse libraries and dependencies.

After you receive an email message that lets you know that the Fuse Online infrastructure has been upgraded to the new release, upgrade your existing integrations by republishing them (not just restarting them). Do this as soon as you can.

To republish your integrations, in your Fuse Online environment, in the left navigation panel, click **Integrations**. Then do the following for each integration:

1. To the right of the integration entry, click ⋮ and select **Edit**.

2. When Fuse Online displays the integration for editing, in the upper right, click **Publish**.

Publishing forces a rebuild that uses the latest Fuse Online dependencies.

> **NOTE**
>
> The Fuse Online user interface shows a warning if any element of an integration has a newer dependency that needs to be updated.

2.5. IMPORTANT NOTES

Important notes for the Fuse 7.3 release of the Fuse Online distribution:

- A Fuse Online 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 Apicurito, which is an API design 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

To obtain technical support, in Fuse Online, in the upper right, click and then click **Support** to display the Fuse Online support page. Use this page to download diagnostic information for all integrations or for one or more integrations that you choose. The page provides instructions for opening a support ticket and providing the diagnostic information that you downloaded.

2.7. TECHNOLOGY PREVIEW FEATURES

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.

- Connectors for:

  - FHIR – connects to a Fast Healthcare Interoperability Resources (FHIR) server.

  - OData – connects to an Open Data Protocol (OData) service.

- Camel K is available as an additional runtime. For details, see Enabling Apache Camel K to speed up Fuse Online deployments on OCP in *Integrating Applications with Fuse Online*.

- 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 (the new name for Fuse Integration Services since 7.0) enables you to deploy Fuse applications on OpenShift Container Platform.

3.1. SUPPORTED VERSION OF OPENSHIFT

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** — Hawtio console

- **fuse7**/**fuse-apicurito** — Apicurito REST API editor

- **fuse7**/**fuse-apicurito-generator** — Apicurito REST application generator

3.3. TECHNOLOGY PREVIEW FEATURES

The following features of Fuse on OpenShift are *Technology Preview* only and are not supported in Fuse 7.3:

Data Integration

Red Hat Data Integration is a container-native data virtualization service, based on the Teiid data virtualization project. Red Hat Data Integration combines data from multiple heterogeneous sources, such as relational databases, files, web services, and SaaS repositories. For more details, see Data Integration.

Hawtio Operator installation

A Kubernetes Operator is a script that simplifies the installation and management of an OpenShift (or Kubernetes) application. From the Hawtio community, you can access a Technology Preview of the Hawtio Operator for Fuse on OpenShift, which simplifies the procedures for installing, upgrading, and uninstalling the Hawtio Console on OpenShift. For details of how to use the Hawtio Operator, see the README on the Hawtio community site.

> **NOTE**
>
> Neither the Hawtio Operator nor the Hawtio Console that it installs are supported. This technology preview feature is not suitable for testing on a production environment.

Apicurito Operator installation

From the Apicurito project, you can access a Technology Preview of the Apicurito Operator for Fuse on OpenShift, which simplifies the procedures for installing, upgrading, and uninstalling Apicurito on OpenShift. For details of how to use the Apicurito Operator, see the README on the Apicurito
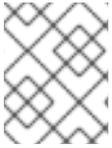
community site.

> **NOTE**
>
> Neither the Apicurito Operator nor the Apicurito instance that it installs are supported. This technology preview feature is not suitable for testing on a production environment.

3.4. IMPORTANT NOTES

Important notes for the Fuse 7.3 release of the Fuse on OpenShift distribution:

Container Development Kit (CDK) 3.8 is the recommended version for use with Fuse 7.3

We recommend that developers use CDK 3.8 for trying out applications on OpenShift. As explained in Section 7.3, "Fuse on OpenShift", earlier CDK versions are likely to be affected by CDK-397.

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

Redeploying an application using the Fabric8 Maven plugin

When deploying a Fuse on OpenShift application to OpenShift Container Platform using the Fabric8 Maven plugin, you cannot redeploy the application using just the command **mvn fabric8:deploy**. Use the following sequence of commands instead:

```
mvn fabric8:undeploy
mvn fabric8:deploy
```

CHAPTER 4. FUSE STANDALONE

4.1. SUPPORTED CONTAINERS

Fuse standalone 7.3 is supported on the following runtime containers:

- Spring Boot (standalone)

- Apache Karaf

- Red Hat JBoss Enterprise Application Platform (JBoss EAP)

4.2. NEW FEATURES IN FUSE 7.3

The main new features of Fuse standalone in version 7.3 are:

New Karaf console commands to support Elytron credentials store

The following new console commands have been added to support the Elytron credentials store in Karaf:

- **jasypt:list-algorithms**

- **jasypt:digest**

- **jasypt:encrypt**

- **jasypt:decrypt**

- **credential-store:create**

- **credential-store:list**

- **credential-store:store**

- **credential-store:remove**

Additional Camel components for Fuse on JBoss EAP

The following additional Camel components are now supported for Fuse on JBoss EAP (Wildfly Camel):

- **camel-cmis**

- **camel-fhir**

- **camel-ganglia**

- **camel-ipfs**

- **camel-lra**

- **camel-pgevent**

- **camel-solr**

- **camel-tika**

- **camel-wordpress**

Support for securing camel-undertow consumer endpoints with Elytron on Fuse on JBoss EAP

In Fuse 7.3, it is now possible to secure Camel Undertow consumer endpoints with Elytron security on Fuse on JBoss EAP.

4.3. TECHNOLOGY PREVIEW FEATURES

The following features of Fuse standalone are *Technology Preview* only and are not supported in Fuse 7.3:

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 Camel LSP

Fuse Tooling provides a cross-platform, cross-IDE approach to Camel application development, with Camel language server protocol (LSP) 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

The Language Support for Apache Camel extension provides the following features for Camel URIs:

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.

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.

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 Camel LSP**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

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 6 provides features for Camel URIs and XML DSL only.

- 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 need to edit your workspace's configuration. For details on how to activate it, see the "Use in OpenShift.io" section in this Red Hat Developers blog entry .

4.4. BOM FILES FOR FUSE 7.3

To configure your Maven projects to use the supported Fuse 7.3 artifacts, use the BOM versions documented in this section.

4.4.1. Old-style BOM

To upgrade your Fuse standalone applications to use the 7.3 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 7.3 using the old-style BOM

Container Type	Maven BOM or Plugin Artifact groupId/artifactId	Version for Fuse 7.3	Version for Fuse 7.3.1
Spring Boot	**io.fabric8/fabric8-project-bom-camel-spring-boot**	**3.0.11.fuse-730075-redhat-00001**	**3.0.11.fuse-731003-redhat-00004**
	io.fabric8/fabric8-maven-plugin	**3.5.33.fuse-730073-redhat-00001**	**3.5.33.fuse-731003-redhat-00004**
	org.springframework.boot/spring-boot-maven-plugin	**1.5.17.RELEASE**	**1.5.17.RELEASE**
Apache Karaf	**org.jboss.fuse/jboss-fuse-parent**	**7.3.0.fuse-730079-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
	io.fabric8/fabric8-project-bom-fuse-karaf	**3.0.11.fuse-730075-redhat-00001**	**3.0.11.fuse-731003-redhat-00004**
	org.apache.karaf.tooling/karaf-maven-plugin	**4.2.0.fuse-730036-redhat-00001**	**4.2.0.fuse-731003-redhat-00003**
JBoss EAP	**org.wildfly.camel/wildfly-camel-bom**	**5.3.0.fuse-730041-redhat-00001**	**5.3.0.fuse-731003-redhat-00002**

4.4.2. New-style BOM

To upgrade your Fuse standalone applications to use the 7.3 dependencies, edit the Maven **pom.xml** and change the versions of the BOMs and Maven plugins listed in the following table:

Table 4.2. Maven BOM and plugin versions for 7.3 using the new-style BOM

Container Type	Maven BOM or Plugin Artifact groupId/artifactId	Version for Fuse 7.3	Version for Fuse 7.3.1
Spring Boot	**org.jboss.redhat-fuse/fuse-springboot-bom**	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
	org.jboss.redhat-fuse/fabric8-maven-plugin	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
	org.jboss.redhat-fuse/spring-boot-maven-plugin	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
Apache Karaf	**org.jboss.redhat-fuse/fuse-karaf-bom**	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
	org.jboss.redhat-fuse/karaf-maven-plugin	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**
JBoss EAP	**org.jboss.redhat-fuse/fuse-eap-bom**	**7.3.0.fuse-730058-redhat-00001**	**7.3.1.fuse-731003-redhat-00003**

For more details about using the new-style BOM, see Migrate Maven Projects in "Migration Guide".

4.5. IMPORTANT NOTES

Important notes for the Fuse 7.3 release of the Fuse standalone distribution:

Fuse on EAP is upgraded to use JBoss EAP 7.2 (from JBoss EAP 7.1)

The Fuse 7.3 release now runs on the JBoss Enterprise Application Platform (EAP) 7.2 container (upgraded from JBoss EAP 7.1 in the previous release of Fuse). For more details, see JBoss EAP 7.2.0 Release Notes.

Upgrade to Servlet API 4.0 (from Java EE 8) and Undertow 2.0 on Apache Karaf

Fuse 7.3 has been upgraded to use Servlet API 4.0 (from Java EE 8) instead of 3.1 (from Java EE 7). Because the Servlet API 4.0 is backward compatible with Servlet API 3.1, and because of certain modifications we have made to the Karaf container, the risk that this upgrade poses to application migration is small. Here are some of the key points to bear in mind when migrating your Karaf-based applications:

- Undertow 2 server is an implementation of the newer Servlet API 4.0.

- From a Karaf user's or administrator's point of view, there are absolutely no changes to the **etc/undertow.xml** or **etc/org.ops4j.pax.web.cfg** configuration files — everything in this configuration remains exactly the same.

- From a developer's point of view, Servlet API 4.0 introduces a few minor changes:

  - **javax.servlet.http.HttpServletRequest** and **javax.servlet.http.HttpServletResponse** interfaces have a few new methods, but they are marked as **default**. So if a developer implements these interfaces, there will be no problems. In any case, it is unlikely that you would ever need to implement these interfaces (though they might be implemented by a third-party library).

- **javax.servlet.ServletContext** interface has a few new methods, which are **not** marked as **default**. In the unlikely event that you have some application code that implements the 3.1 version of this interface and you also invoke one of the new methods in your Fuse application, the **java.lang.AbstractMethodError** exception would be thrown. All Fuse components (including Camel, CXF, pax-web) have properly implemented the new methods (where required).

- The biggest potential impact is related to OSGi constraints (Import-Package ↔ Export-Package). In the Fuse distribution of the Karaf container, this problem has been solved by modifying the Karaf container so that applications are wired to use the Servlet API 4.0 JAR, regardless of whether they specify a dependency on the 3.1 version or the 4.0 version. This works, because Servlet API 4.0 is **backward compatible** and there is no risk with using it instead of 3.1. Read on if you want to know more of the technical details.
  Fuse 7.3 now provides a *Servlet API fragment bundle*, which is a Fuse specific fragment bundle (**mvn:org.jboss.fuse.modules/fuse-servlet-compatibility/7.3.0.fuse-730xxx**) that attaches to the **mvn:javax.servlet/javax.servlet-api/4.0.1** bundle:

  ```
  karaf@root()> la|grep Servlet

   42 │ Active   │ 30 │ 4.0.0              │ Java Servlet API, Fragments: 191

  191 │ Resolved │ 35 │ 7.3.0.fuse-730076  │ Red Hat Fuse :: Modules :: Servlet
  Compatibility, Hosts: 42
  ```

  The role of the **Red Hat Fuse :: Modules :: Servlet Compatibility** bundle is simply to extend the manifest of the Servlet API 4.0 bundle, so that all other bundles see that the Servlet API is both at version 4.0 and 3.1.

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.

5.1. DEPRECATED

The following features are deprecated in Fuse 7.3 and may be removed in a future release:

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.

5.2. 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 blacklisted in 7.3

The **openjpa** feature and the **openjpa3** feature have been blacklisted (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 blacklisted in 7.3

The **camel-jetty** feature has been blacklisted (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 blacklisted in 7.3

The **pax-jms-oracleaq** feature has been blacklisted (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.

5.3. 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.

5.4. 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.
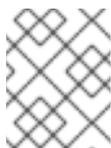
> **NOTE**
>
> In the Fuse 7.0 GA release, the **instance:** commands are not blacklisted. This is a known issue.

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 Fuse7.0. It is recommended that you use the Hibernate implementation instead.

5.5. 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 7.3

The following features are unsupported in Red Hat Fuse 7.3.

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 7.3.

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 7.3.

ENTESB-12489 CVE-2019-9827 – Fuse Console standalone on Amazon Web Services

> Due to security concerns, you should not deploy a standalone Fuse application to Amazon Web Services (AWS). This restriction applies to all supported standalone environments (Spring Boot 1.x and 2.x, Karaf, and Red Hat JBoss Enterprise Application Platform). If you want to deploy the Fuse Console standalone on AWS, it is highly recommended that you upgrade to Fuse 7.7 or later and disable the Fuse Console's proxy servlet by setting the **hawtio.disableProxy** system property to **true**.

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).

Multiple CVEs Multiple CVEs related to jackson-databind security vulnerability

> Applications that that use the FasterXML **jackson-databind** library to instantiate Java objects by deserializing JSON content are potentially vulnerable to a *remote code execution* attack. The vulnerability is not automatic, however, and it can be avoided if you take the appropriate mitigation steps.
>
> At a minimum, the following prerequisites must all be satisfied before an attack becomes possible:
>
> 1. You have enabled polymorphic type handling for deserialization of JSON content in **jackson-databind**. There are two alternative ways of enabling polymorphic type handling in Jackson JSON:
>
>   a. Using a combination of the **@JsonTypeInfo** and **@JsonSubTypes** annotations.
>
>   b. By calling the **ObjectMapper.enableDefaultTyping()** method. This option is particularly dangerous, as it effectively enables polymorphic typing globally.
>
> 2. There are one or more *gadget classes* in your Java classpath, which have not yet been blacklisted by the current version of **jackson-databind**. A gadget class is defined as any class that performs a sensitive (potentially exploitable) operation as a side effect of executing a constructor or a setter method (which are the methods that can be called during a deserialization). The gadget blacklist maintained by the Jackson JSON library is the last line of defence against the remote code execution vulnerability.

It is the existence of a large number of gadget classes which explains why there are many individual CVEs related to the **jackson-databind** vulnerability. There are different CVEs related to different kinds of gadget class.

If you do need to use the **jackson-databind** library in your application, the most important measure you can take to mitigate the risk is this: *avoid polymorphic type handling in Jackson JSON and on no account should you call the **ObjectMapper.enableDefaultTyping()** method*.

7.2. FUSE ONLINE

The Fuse Online distribution has the following known issues:

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

In Fuse 7.3.0 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.

667 'null' when using "ItemAt" transformation from List<> ➞ Number

When mapping from a **List** to a **Double** type field using the **ItemAt** transformation, an exception gets thrown by the data mapper.

1558 "Save as draft" and "Publish" buttons

Both the **Save as draft** button and the **Publish** button remain active, even after a user has clicked on one of the buttons and started stepping through the procedure.

698 DB Connector: SQL parser doesn't recognize parameters for LIKE

In SQL statements containing the **LIKE** keyword (for example, **DELETE FROM TODO WHERE task LIKE ':#param'**), the **LIKE** keyword cannot be used with datamapper parameters, such as **:#param**.

7.3. FUSE ON OPENSHIFT

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-10577 Apicurito does not support YAML Open API spec files

In Fuse 7.3.0 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-9420 karaf-camel-rest-sql: Build creation stuck on "Receiving source from STDIN as archive"

When attempting to build and deploy Fuse applications on some early micro versions of OpenShift Container Platform (OCP) 3.10, it is possible that the build will hang with this error. If you encounter this problem, we recommend that you upgrade to OCP 3.10.34 (or later), where this problem is fixed.

CDK-397 OCP preflight check uses docker v1 API which is no longer available

With using some older CDK versions, you are likely to encounter the following error when you try to start **minishift**:

```
minishift start
-- Starting profile 'minishift'
-- Check if deprecated options are used ... OK
-- Checking if https://mirror.openshift.com is reachable ... OK
-- Checking if requested OpenShift version 'v3.11.16' is valid ... FAIL
```

To avoid this issue, use CDK 3.8 (or later) with Fuse 7.3.

ENTESB-10362 **multiple class javax/activation/DataHandler from different bundles**

Karaf-based applications deployed to Fuse on OpenShift are affected by this issue, if they use message attachments (implying a dependency on the javax.activation package). A typical symptom of this issue would be an error message like the following:

> Caused by: java.lang.LinkageError: loader constraint violation: when resolving overridden method "org.apache.cxf.jaxrs.provider.JAXBAttachmentMarshaller.addMtomAttachment(Ljavax/activation/DataHandler;Ljava/lang/String;Ljava/lang/String;)Ljava/lang/String;" the class loader (instance of org/apache/felix/framework/BundleWiringImpl$BundleClassLoader) of the current class, org/apache/cxf/jaxrs/provider/JAXBAttachmentMarshaller, and its superclass loader (instance of <bootloader>), have different Class objects for the type javax/activation/DataHandler used in the signature

If you get an error message like this from your Karaf-based application deployed on OpenShift, you can fix the issue by modifying the application's Maven project as follows. In your Maven project, create a new **jre.properties** file at the following location:

> src/main/resources/assembly/etc/jre.properties

And add the content from this sample jre.properties file.

When the application is redeployed, this custom **jre.properties** file overrides the default JRE properties of the Karaf micro-container. In particular, the custom **jre.properties** file adds the following line to the **jre-1.8** property, which is missing from the default:

> javax.activation;version="1.1", \
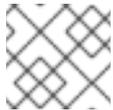
> **NOTE**
>
> Fuse standalone Apache Karaf is not affected by this issue.

7.4. FUSE ON SPRING BOOT

Fuse on Spring Boot has the following known issues:

ENTESB-10486 **Failing CXF tests on AIX using Karaf runtime**

In the Fuse 7.3 GA release, the following workaround is required to use Apache CXF with the Spring Boot standalone container on the IBM AIX 7.2 platfform. When you run a Spring Boot application, set the Java system property, **java.version=1.8.0_131**. For example, to run a Spring Boot application from a Maven project, enter:

> mvn spring-boot:run -Djava.version=1.8.0_131

7.5. FUSE ON APACHE KARAF

Fuse on Apache Karaf has the following known issues:

ENTESB-10487 **keycloak-cxf quickstart test fails with RH-SSO 7.3.0.GA**

In the Fuse 7.3 GA release, the Quickstarts package for Apache Karaf includes the **quickstarts/security/keycloak/keycloak-cxf** quickstart. If you test this quickstart against Red Hat Single Sign-On (RH-SSO) 7.3.0.GA, you must make sure that the **verify-token-audience** property is set to **false** in the **etc/jaxws-keycloak.json** file and the **etc/jaxrs-keycloak.json** file. For more details, see ENTESB-10487.

ENTESB-10486 Failing CXF tests on AIX using Karaf runtime

In the Fuse 7.3 GA release, the following workaround is required to use Apache CXF with the Apache Karaf container on the IBM AIX 7.2 platfform. Edit the **$KARAF_HOME/etc/system.properties** file and add the following line:

```
java.version=1.8.0_131
```

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

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-10400 Performance regression in camel-cbr-xpath integration example on EAP

Testing has revealed a performance regression affecting the integration of XPath with Camel on Fuse 7.3 on JBoss EAP. The test case involves a Camel content-based route that evaluates the message's content against a specified XPath expression.

ENTESB-10401 Performance regression in camel-cxf-proxy-xslt integration example on EAP

Testing has revealed a performance regression affecting the integration of the Camel XSLT component with Fuse 7.3 on JBoss EAP. The test case involves sending a SOAP message to a CXF endpoint, where the messages is then processed by an XSL script that is invoked through the Camel XSLT component.

ENTESB-10402 Performance regression in Fuse Http Camel SSH integration example on EAP

Testing has revealed a performance regression affecting the integration of the Camel SSH component with Fuse 7.3 on JBoss EAP. The test case involves sending a HTTP message to a Jetty HTTP endpoint, where the message is then used to invoke an SSH endpoint (using the Camel SSH component).

7.7. APACHE CAMEL

Apache Camel has the following known issues:

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 reponse 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. ISSUES RESOLVED IN FUSE 7.3.1

The following table lists the issues that are resolved in Fuse 7.3.1.

Table 8.1. Fuse 7.3.1 resolved issues

Issue	Description
ENTESB-10745	Non-existing tags in application-templates.
ENTESB-10716	F-M-P points to **1.3.1** tag instead of **1.3**.
ENTESB-10613	Unable to install Fuse Online 7.3.
ENTESB-10591	CVE-2016-2510 camel: bsh2: remote code execution via deserialization [fuse-7.2.0].
ENTESB-10590	CVE-2017-15691 uimaj: uima: XML external entity expansion (XXE) can allow attackers to execute arbitrary code [fuse-7.2.0].
ENTESB-10558	CVE-2018-11798 camel-thrift: thrift: Improper Access Control grants access to files outside the webservers docroot path [fuse-7.2.0].
ENTESB-10557	CVE-2018-11798 libthrift: thrift: Improper Access Control grants access to files outside the webservers docroot path [fuse-7.2.0].
ENTESB-10489	Concurrent Modification Exception thrown by camel cxf.
ENTESB-10401	Performance regression in camel-cxf-proxy-xslt integration example on EAP.
ENTESB-10400	Performance regression in camel-cbr-xpath integration example on EAP.
ENTESB-10316	Fuse Online: Null Pointer Exception using connector extension with a third-party(custom) camel component.
ENTESB-10847	Spring-boot-camel-xa quickstart references outdated bom version (**7.3.1.fuse-731003-redhat-00002**).
ENTESB-10809	[Hawtio on Karaf + RHSSO] FileNotFoundException with RHSSO and Hawtio integration.
ENTESB-10823	[Hawtio] Direct url gives an access to Hawtio without authentication [7.3.1].
GH-5365	Fuse Online syndesis: setting a mapping using the embedded Atlasmap starts an infinite loop of ajax requests that may cause a server reboot.

CHAPTER 9. FIXED ISSUES IN FUSE 7.3

The following sections list the issues that have been fixed in Fuse 7.3:

- Section 9.1, "Enhancements in Fuse 7.3"

- Section 9.2, "Feature requests in Fuse 7.3"

- Section 9.3, "Bugs resolved in Fuse 7.3"

9.1. ENHANCEMENTS IN FUSE 7.3

The following table lists the enhancements in Fuse 7.3.

Table 9.1. Fuse 7.3 Enhancements

Issue	Description
ENTESB-9342	Support securing Undertow endpoints with Elytron
ENTESB-9809	[camel-slack] Parametrize hardcoded url.
ENTESB-9731	Installer should verify supported version of EAP
ENTESB-9729	HTTP producer - Ignore content length header
ENTESB-9846	Remove usage of classifier of all Camel/Fuse SpringBoot based quickstarts/templates/boosters
ENTESB-9826	Data source creation registers multiple DS under the same name
ENTESB-9825	black-list Karaf commands that allow to create child containers in Fuse 7
ENTESB-9913	Please consider certifying DB2 11.1
ENTESB-7299	Evaluate the possibility of moving fuse 7 quickstarts in their own repository(ies)
ENTESB-9770	Port AS2 Component to Fuse Camel
ENTESB-9394	Please consider certifying MySQL 8.0
ENTESB-9923	Make Camel RAW() parser more flexible
ENTESB-9132	Use Elytron Credential Store in custom PersistenceManager with new felix.configadmin 1.9.0
ENTESB-10265	Backport KARAF-6167

Issue	Description
ENTESB-10081	[Hawtio] ProxyWhitelist - Exclude/Control the IP addresses that are automatically collected
ENTESB-9346	Add camel-rest-swagger
ENTESB-9638	Update AMQ 7.1.1 clients in Fuse to AMQ 7.2 so that their are aligned with AMQ 7.2 Broker
ENTESB-8155	Create Fuse launcher booster - Istio - Distributed Tracing

9.2. FEATURE REQUESTS IN FUSE 7.3

The following table lists the features requests in Fuse 7.3.

Table 9.2. Fuse 7.3 Feature Requests

Issue	Description
ENTESB-9560	Update quickstarts that generate openapi docs so that they are discoverable by 3scale
ENTESB-10270	Add support for camel-ipfs
ENTESB-9480	MDC custom properties logging not visible from Hawtio Console
ENTESB-10260	Upgrade to Artemis/QPid/Proton libraries from EAP 7.2

9.3. BUGS RESOLVED IN FUSE 7.3

The following table lists the resolved bugs in Fuse 7.3.

Table 9.3. Fuse 7.3 Resolved Bugs

Issue	Description
ENTESB-9249	Use fuse-bom in camel-wildfly examples
ENTESB-9803	Create a set of generic camel REST DSL tests
ENTESB-9758	Test CXF RS endpoints with Elytron
ENTESB-9747	Remove redundant dependency redefinitions from fuse-eap-bom
ENTESB-9739	Create Grafana dashboard for Fuse
ENTESB-9722	Remove unused CXF interceptors from cxf-jaxws-secure example

Issue	Description
ENTESB-9721	remove quickstarts dir from https://github.com/jboss-fuse/fuse-karaf/
ENTESB-9720	Update karaf-quickstarts to use new repackeged BOM org.jboss.redhat-fuse
ENTESB-9714	Add CXF RS example secured by Elytron
ENTESB-9850	[camel-irc] cherry-pick camel fix
ENTESB-9834	Provide template SIFT logging configuration
ENTESB-9573	Rest DSL Quickstart: Update to productised FMP version that supports service discovery
ENTESB-10126	Backport camel-sjms test refactor
ENTESB-10079	Decide/align between javax.annotation 1.2 and 1.3
ENTESB-10055	Backport CAMEL-13066
ENTESB-10057	Backport CAMEL-13072
ENTESB-10056	Backport CAMEL-13077
ENTESB-10043	Align with Hibernate from EAP 7.2
ENTESB-10040	google-calendar-stream is not working on Karaf
ENTESB-10013	Backport CAMEL-12498
ENTESB-10006	"Backport CAMEL-12980 to jboss-fuse/camel
ENTESB-10004	Backport CAMEL-13044
ENTESB-10000	Backport CAMEL-13041
ENTESB-9973	Deprecate / remove YQL component
ENTESB-9947	Backport CAMEL-12932
ENTESB-9946	Backport CAMEL-12631
ENTESB-9928	make system tests on FUSE 7.3 CXF branch run against http-undertow transport
ENTESB-9909	Update the documentation link for Fuse Online to point to 7.2

Issue	Description
ENTESB-10169	Fuse console on Karaf/EAP: Partial upgrade to PatternFly 4
ENTESB-10262	Backport Salesforce Maven plugin improvements
ENTESB-10307	Backport CAMEL-13284
ENTESB-10271	Karaf exit command has no effect
ENTESB-9835	Backport CAMEL-12774
ENTESB-9175	Openshift Online Catalog should contains only Fuse 7 entries
ENTESB-10035	Camel leaks invalid CXF runtime version (cxf-rt-ws-policy)
ENTESB-10015	Remove dependency on hibernate-jpa-2.1-api
ENTESB-9180	Spring-Boot - Narayana: upgrade to latest version and use internal check for orphan detection
ENTESB-10030	Backport CAMEL-13012
ENTESB-10029	Backport CAMEL-13008
ENTESB-10027	Backport CAMEL-13005
ENTESB-10028	Backport CAMEL-13006
ENTESB-10026	Backport CAMEL-13063
ENTESB-10025	Backport CAMEL-13061
ENTESB-10024	Backport CAMEL-13059
ENTESB-10023	Backport CAMEL-13058
ENTESB-10022	Backport CAMEL-13054
ENTESB-9866	Fuse console operator
ENTESB-10197	Update activemq-client to 630377 (Fuse 6.3.R11)
ENTESB-10038	Geocoder may fail when endpoint is offline
ENTESB-10065	Backport CAMEL-13123

Issue	Description
ENTESB-10021	Backport CAMEL-13042
ENTESB-10205	Align to AMQ 7.2.3 release
ENTESB-10311	Backport utility methods used by Camel K Runtime
ENTESB-10300	Remove the support of camel-jbpm in Fuse 7.3
ENTESB-9843	Adjust jboss-fuse/camel/2.21.x.redhat-7-x to work with CXF 3.2
ENTESB-9730	Investigate using CXF 3.2 from EAP 7.2
ENTESB-9734	Investigate using Undertow 2 from EAP 7.2
ENTESB-9732	Update camel-linkedin quickstart after changes in ENTESB-8088
ENTESB-10112	Convert example-camel-distro artifact to zip
ENTESB-8162	"Verify if we ship camel-infinispan in our kits (standalone
ENTESB-10255	Syndesis integration-bom not aligned to productised atlasmap
ENTESB-10280	Backport CAMEL-13082
ENTESB-10281	Backport CAMEL-13185
ENTESB-10070	Backport CAMEL-13132
ENTESB-9510	Exposing camel-servlet as OSGI service
ENTESB-9481	ValidationException is not thrown when EndpointValidation fails
ENTESB-9818	Metric label values enclosed in double quotes twice
ENTESB-9814	"Hawtio: OSGi Features tab no longer has ""Add repository"" and ""Remove repository"" buttons"
ENTESB-9765	Change to org.osgi.service.http.port is not reflected on Fuse branding
ENTESB-9757	BusDeploymentAspect creates CXF DefaultBus using wrong class loader
ENTESB-9750	Swagger doesn't work in karaf-camel-rest-sql
ENTESB-9748	Fix CAMEL-12911 after upgrading to Jetty 9.4.12

Issue	Description
ENTESB-9719	[camel-salesforce] limits API throws InvalidFormatException
ENTESB-9643	[camel-jcache] MBeans are not properly undeployed
ENTESB-9885	Typo in Apicurito wizard
ENTESB-9869	[camel-rest, camel-swagger-java] Wrong protocol in swagger.json
ENTESB-9868	Camel rest DSL does not work with SSL configuration and API doc on spring-boot
ENTESB-9867	the build for fabric8-quickstarts/karaf-cxf-rest is broken.
ENTESB-9851	secure-soap quickstart throws NPE in 7.3
ENTESB-9848	Fix compilation failure in CamelCxfClientImpl of camel in 2.21.xredhat-7-x branch
ENTESB-9845	Getting ClassNotFoundException after camel route restart
ENTESB-9837	Intermittent failures when using CXF JAX-RS over JMS connecting to external AMQ-7
ENTESB-9829	"Fix ""No tests found in org.apache.camel.impl.validator.ValidatorXmlSchemaTest"""
ENTESB-9828	Fix issue detected by failing test CamelInfinispanTest
ENTESB-9821	[camel-dropbox] Fix DropboxAPIFacade.java
ENTESB-9820	[camel-dropbox] Problem with put operation
ENTESB-10272	Camel-hl7 quickstart fails to install with new fuse-karaf
ENTESB-10124	[Hawtio EAP] Disabled buttons are active in right drop-down menu with actions
ENTESB-10118	[karaf] unzip of karaf doesn't work on OSX
ENTESB-10116	[FUSE-KARAF] ssh connection lost
ENTESB-10114	Unable to install feature cxf-wsn
ENTESB-10093	Encryption Commands not Present in Fuse 7 Karaf Console
ENTESB-10064	Unable to deploy any blueprint.xml file due to IllegalArgumentException: Not supported: http://javax.xml.XMLConstants/property/accessExternalDTD"
ENTESB-10050	camel-telegram not works on spring-boot

Issue	Description
ENTESB-10044	Backport CAMEL-13093 TO Red Hat Fuse 7.x and 6.3.
ENTESB-10041	Backport CAMEL-13098
ENTESB-9238	CVE-2018-1131 camel: infinispan: deserialization of data in XML and JSON transcoders [fuse-6.3.0]
ENTESB-9237	CVE-2018-1131 camel: infinispan: deserialization of data in XML and JSON transcoders [fuse-7.0.0]
ENTESB-10011	Backport IRC connector fix from upstream
ENTESB-10008	Fuse 7.x freezing during initialization in Windows10
ENTESB-9998	[REGRESSION] Unable to run camel-servicenow on spring-boot
ENTESB-9997	Camel-Salesforce Karaf feature doesn't work
ENTESB-9984	application-templates should contain productized fixes
ENTESB-9983	application-templates refer to old quickstarts
ENTESB-9979	Fix issue detected by org.apache.camel.itest.karaf.CamelOptaplannerTest.test
ENTESB-9976	[Hawtio on Spring Boot] Not found page after Refresh and Click to go back in a web browser
ENTESB-9964	[Fuse_on_EAP] Camel FTPS throws java.lang.NoClassDefFoundError: javax/net/ssl/SSLException
ENTESB-9962	karaf - ${karaf.home}/etc should use ${karaf.etc} in etc configs
ENTESB-9961	[Hawtio Springboot] Authentication for new connection doesn't work
ENTESB-9960	Align javax.ws.rs-api-version
ENTESB-9955	spring-boot-camel-xa - 2 found in /deployments (expected 1)
ENTESB-9952	karaf-cxf-rest quickstart missing probes
ENTESB-9950	[Fuse Karaf] There are no quickstarts in 7.3 dev builds
ENTESB-9945	spring-boot-cxf-jaxrs quickstart doesn't work
ENTESB-9943	camel-linkedin: fields property behaves differently on EAP

Issue	Description
ENTESB-9941	nullpointer with cxf-transport-jetty
ENTESB-9933	Fuse metaspace is filled with ProxyClassLoader classes
ENTESB-9927	Missing module dependency in camel-irc on EAP
ENTESB-10306	the replacement for org.glassfish javax.el 3.x isn't correct
ENTESB-10264	camel-sql cannot resolve nested simple expression
ENTESB-9289	CVE-2017-7656 jetty: HTTP request smuggling using the range header [fuse-7.0.0]
ENTESB-9287	CVE-2017-7658 jetty: Incorrect header handling [fuse-7.0.0]
ENTESB-9288	CVE-2017-7657 jetty: HTTP request smuggling [fuse-7.0.0]
ENTESB-10267	Servlet API resolution failures in OSGi
ENTESB-10177	"Keycloak-cxf quickstarts fails with ""Unable to initialize bean kc-cxf-endpoint-config"""
ENTESB-10287	Problems with keycloak-httpservice quickstart
ENTESB-9852	keycloak-cxf quickstart fails after upgrading to CXF 3.2.x
ENTESB-10108	CXF JAX-RS priority doesn't work again in Karaf
ENTESB-9830	Fix issue detected by failing test MllpTcpClientProducerConnectionErrorTest.testConnectionResetAndServerShutdownBeforeSendingHL7Message
ENTESB-10328	commons-lang artifact version mismatch between cxf-parent-3.1.11.fuse-720057-redhat-00001.pom and a bundled package for Fuse 7.2 karaf container
ENTESB-9987	Different versions of Undertow across platforms
ENTESB-10297	karaf-camel-log: ClassNotFoundException: javax.servlet.Servlet
ENTESB-10007	javax.ws.rs-api should be 2.1.1
ENTESB-9528	Patch method is missing in restlet
ENTESB-10198	Unaligned version of Narayana in Spring Boot BOM
ENTESB-10357	Incorporate fuse-extras-distro prod license changes in profile

Issue	Description
ENTESB-10380	Unable to install 18 features
ENTESB-10160	camel-linkedin - IllegalArgumentException: Error authorizing application during linkedin authentication
ENTESB-10379	manager role can execute setStartLevel with start level below 50
ENTESB-10308	Wrong artifact version for pax-jdbc-postgresql comes with Fuse 7.2
ENTESB-10161	[Fuse Online] The button view_log_on_openshift redirect to the wrong page
ENTESB-9965	**org.apache.karaf.specs.timeout** should be removed
ENTESB-9174	camel yammer component is accessing non-existent page
ENTESB-10181	Camel Undertow tests fail after upgrading to Undertow 2
ENTESB-10168	Path resolution in rest-swagger fails to include the whole path
ENTESB-10075	ClassNotFoundException: com.sun.el.ExpressionFactoryImpl not found by org.hibernate.validator
ENTESB-9975	[Hawtio Spring Boot] Debug attribute is changing its readonly state
ENTESB-10121	Cxf-soap, keycloak-httpservice quickstart - there is a java.io.FileNotFoundException in log during servlet alias change
ENTESB-9745	Fuse Online install doesn't work when "oc version" contains other "oc" occurences
ENTESB-10292	Can't install karaf features
ENTESB-9993	Different versions of Spring across platforms
ENTESB-10095	Karaf BOM contains wrong version javax.ws.rs-api dependency
ENTESB-9990	Different versions of Narayana across platforms
ENTESB-9727	Please ship org.apache.servicemix.bundles.jasypt-1.9.3.redhat_3.jar or get associated fixes
ENTESB-10289	Camel-linkedin quickstart rely on jetty and terefore on servlet-api < 4.0
ENTESB-9629	Maven wrappers not working on Windows for boosters
ENTESB-10294	Upgrade javassist to 3.24.0-GA

Issue	Description
ENTESB-9992	Different versions of Hibernate across platforms
ENTESB-9766	narayana-spring-boot not aligned to fuse version of kubernetes-client
ENTESB-10185	Camel BAM test fails after Hibernate upgrade
ENTESB-10309	Unable to install features
ENTESB-10299	FMP expects image stream 1.3
ENTESB-10338	fuse karaf: Warning with ServletContainerInitializer
ENTESB-10356	karaf-camel-amq, karaf-camel-rest-sql: Readiness probe doesn't work
ENTESB-9953	fabric8-maven-plugin - no RBAC policy matched
ENTESB-10371	Spring Boot BOM doesn't define hibernate-core
ENTESB-10361	camel-undertow: xnio-nio not installed
ENTESB-9622	karaf image has wrong KARAF_FRAMEWORK_VERSION env
ENTESB-10422	No license information available for: org.apache.kafka:kafka-clients
ENTESB-10419	Syndesis uses different version of spring boot than Fuse dists
ENTESB-10352	Fuse 7.3 blacklisted features
ENTESB-10440	spring-camel-dozer: javax.el missmatch
ENTESB-10438	karaf-camel-rest-sql: No bean could be found in the registry for: servlet of type: org.apache.camel.spi.RestConsumerFactory
ENTESB-10439	karaf-camel-amq: ClassNotFoundException: io.netty.handler.ssl.OpenSslX509KeyManagerFactory not found by io.netty.handler
ENTESB-10017	CVE-2018-11788 karaf: XML external entity processing [fuse-7.2.0]
ENTESB-10396	ReadConsoleInput error in Karaf Console on Windows Server 2016
ENTESB-10332	Hawtio: error while installing feature from general Features page
ENTESB-10276	"Hawtio + Keycloak - no ""logout"" button/link"
ENTESB-9137	Hawtio: Installation of some features disconnects the Hawtio console

Issue	Description
ENTESB-9453	"Version in Fuse Online support page still contains ""Ignite"""
ENTESB-9208	XA transaction doesn't work with MSSQL database
ENTESB-9736	org.apache.kafka:kafka_2.11:jar:2.0.0.redhat-00003 not built for Camel
ENTESB-9211	"Failure in loading native library db2jcct2
ENTESB-10472	application-templates: points to wrong spring-boot-camel-xa tag
ENTESB-10078	Missing javax.annotation 1.3 version in Karaf
ENTESB-10086	"One of the dependency ""json-smart-action"" for camel-jsonpath feature is not listed in redhat-fuse-7.2.0-offline-manifest file."
ENTESB-10444	Include this upstream jira https://issues.apache.org/jira/browse/CAMEL-12638 in fuse 7.3
ENTESB-9926	Incorrect label - Generate Fuse 7.1 Camel Project
ENTESB-10127	CXF http-undertow transport does not work with mutual SSL when setting both want and required attributes to true
ENTESB-10429	Camel version not substituted for productized version in syndesis' integration-bom
ENTESB-10468	[Hawtio] Direct url gives an access to Hawtio without authentication
ENTESB-10184	CxfEndpointBeansTest tests fail after upgrading to blueprint.core 1.10
ENTESB-10533	istio booster documentation issues
ENTESB-10393	Fuse 7.3 CR1 on EAP doesn't contain productized quickstarts
ENTESB-10249	Jackson bundle is missing in rhba-features file
ENTESB-10576	Quickstarts are pointing to non-productized BOMs
ENTESB-10009	Restore Fusesource components for EAP-7.2
ENTESB-10549	CVE-2018-11788 karaf: XML external entity processing [fuse-6.3.0]
ENTESB-10383	EAR deployments may fail with NPE in deployment settings
ENTESB-9191	Multiple Elytron security domains per WAR for CXF endpoints

Issue	Description
ENTESB-9733	Update to EAP 7.2
ENTESB-10512	In Fuse Karaf, etc/key.properties admin role is missing the 'ssh' role by default.