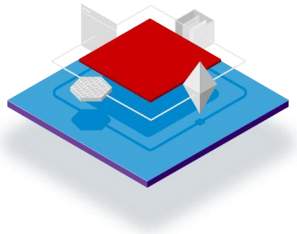


Red Hat Fuse – 7.x

A Distributed, Cloud-native Integration Platform

– Avadhut

Course Structure

- **Part – 3 : Core Concepts**
  - Core Concepts (To be covered in subsequent slides)
  - Fuse flavors/Offerings
  - Fuse Eco-system
  - Fuse Architecture
  - Role of Spring Boot
  - Role of Apache Camel
  - Fuse Management
  - Fuse Operations

Red Hat Fuse Theory

Core Concepts

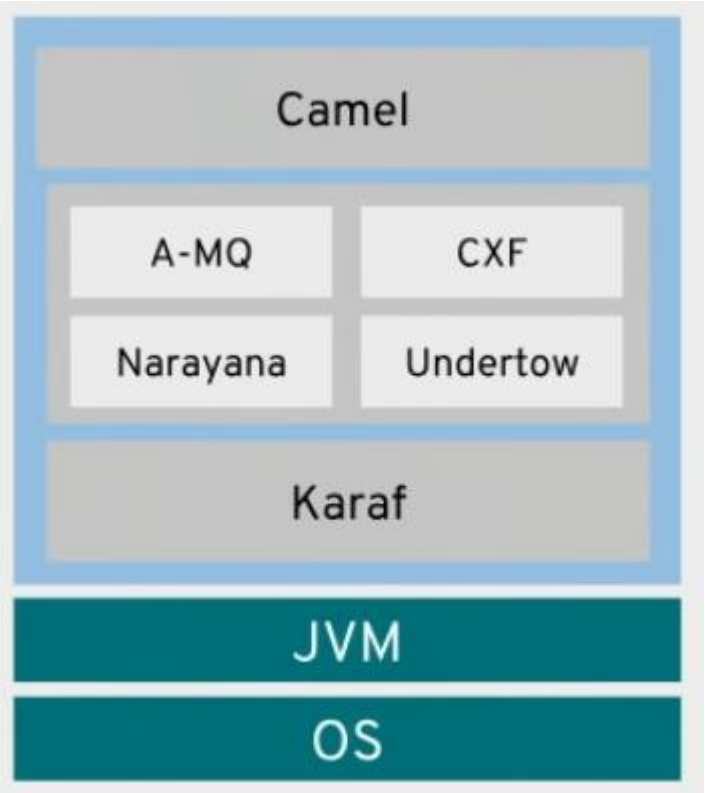
Fuse Flavors/Offerings

- Fuse Standalone
  - Fuse on Karaf
  - Fuse on EAP
  - Fuse on Spring Boot
- Fuse on Openshift
- Fuse Online/Fuse Ignite

Fuse Standalone

Fuse on Karaf

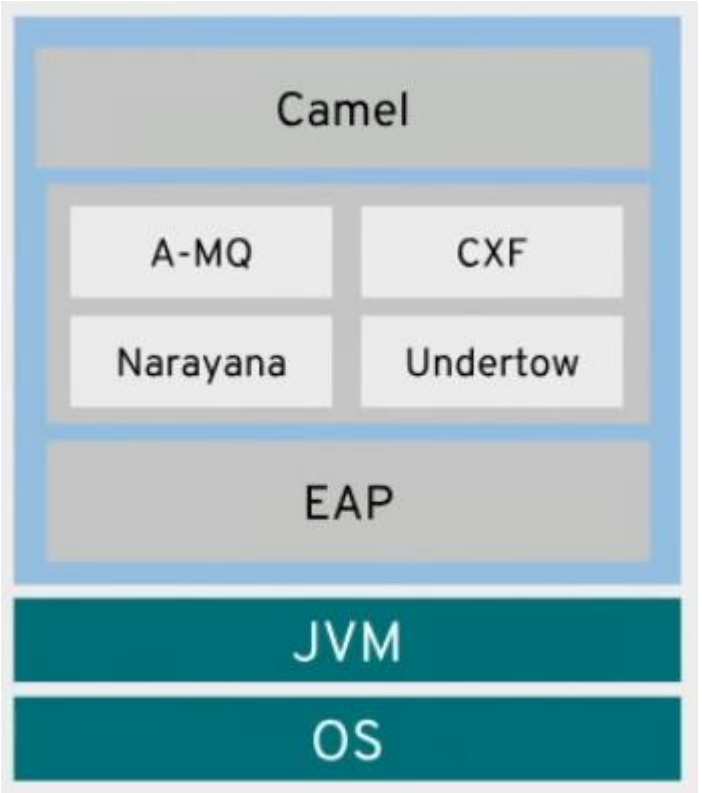
- Standalone OSGi R6 compliant/Karaf 4 container
- Classloader Isolation
- Highly dynamic module system
- Run the integration applications in local Karaf container
- Can generate small footprint servers
- Clustering is not possible in Karaf containers in standalone Fuse distribution



Fuse Standalone

Fuse on EAP

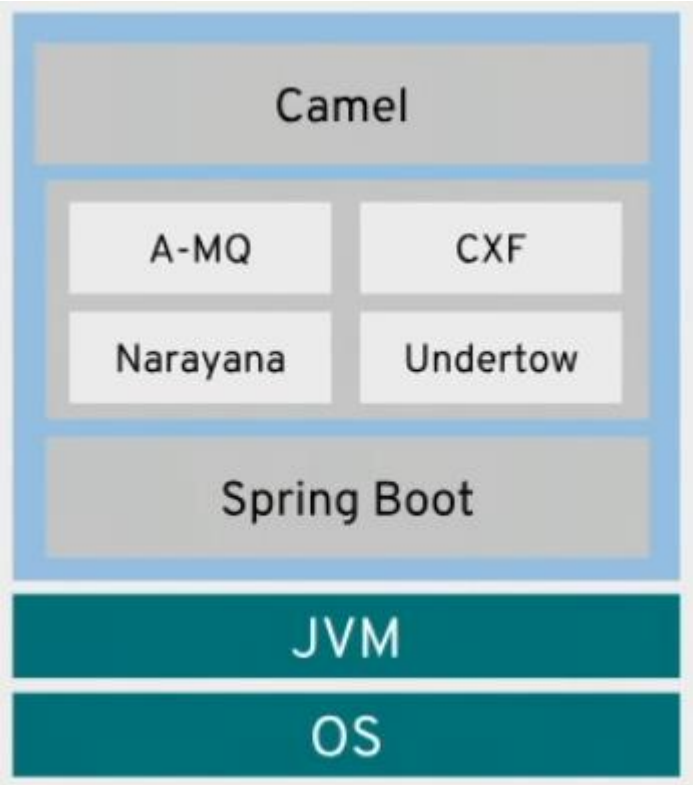
- J2EE/EAP-7.1 and OSGi compliant container
- Camel via Module System
- Integration logic can be written in web applications
- Slip Application WARs
- Deployment on JBoss EAP container
- Smooth Patching and upgrade experience
- Fuse on EAP offers enterprise J2EE applications to carry integration logic



Fuse Standalone

Fuse on Spring Boot

- Spring Boot application that provides embedded runtime tomcat container
- Spring Boot 1.5.x
- Flexible Integration Injection
- Generates flat classpath runtime
- Integration logic can be plugged as micro-services
- Deployment is can be done as same as running JAR
- Spring boot offers micro-services strategy to implement integration



Use Fuse Standalone When...

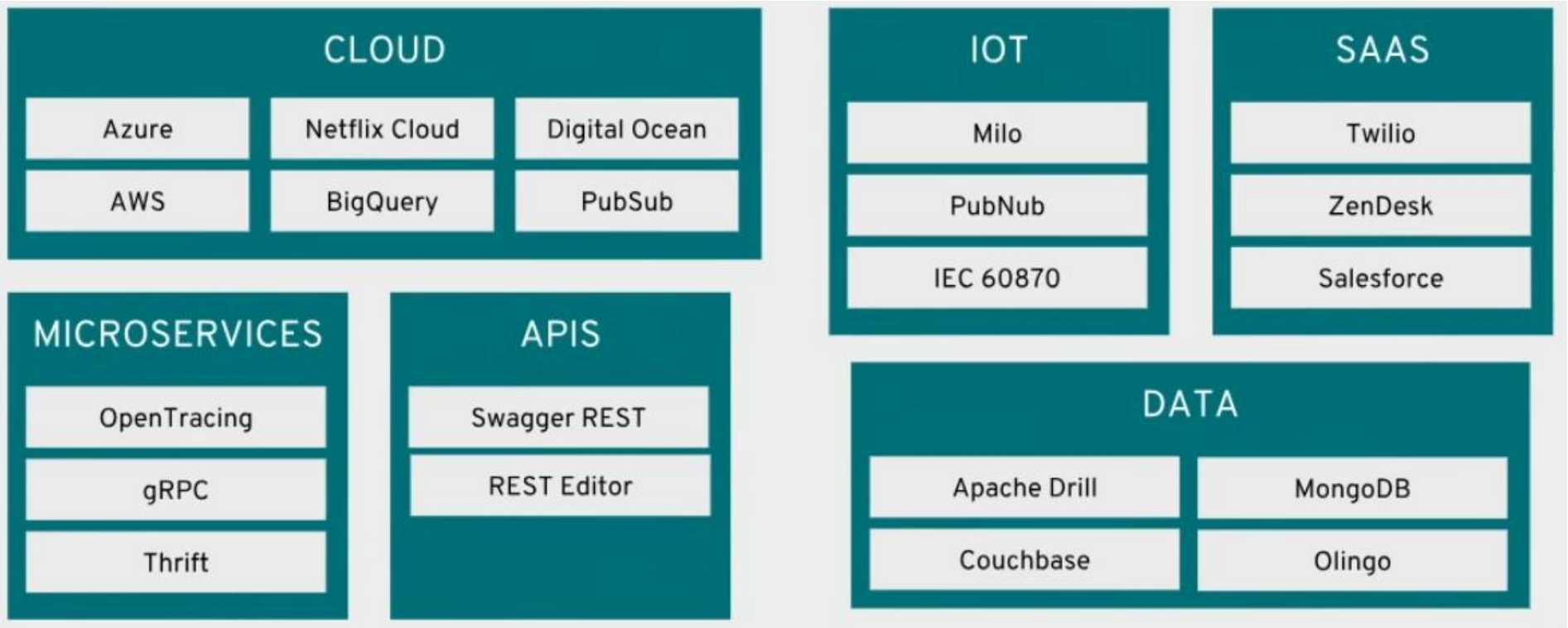
- I'm Integration developer or architect looking for maximum flexibility and control over how integration is deployed

- Camel based applications targeting single JVM deployment
- High level of control over integration runtime
- Adaptable to traditional (e.g. ESB) and embedded integration architecture
- Provisioning, clustering and automation handled outside of Fuse
- When you prefer pets over cattle

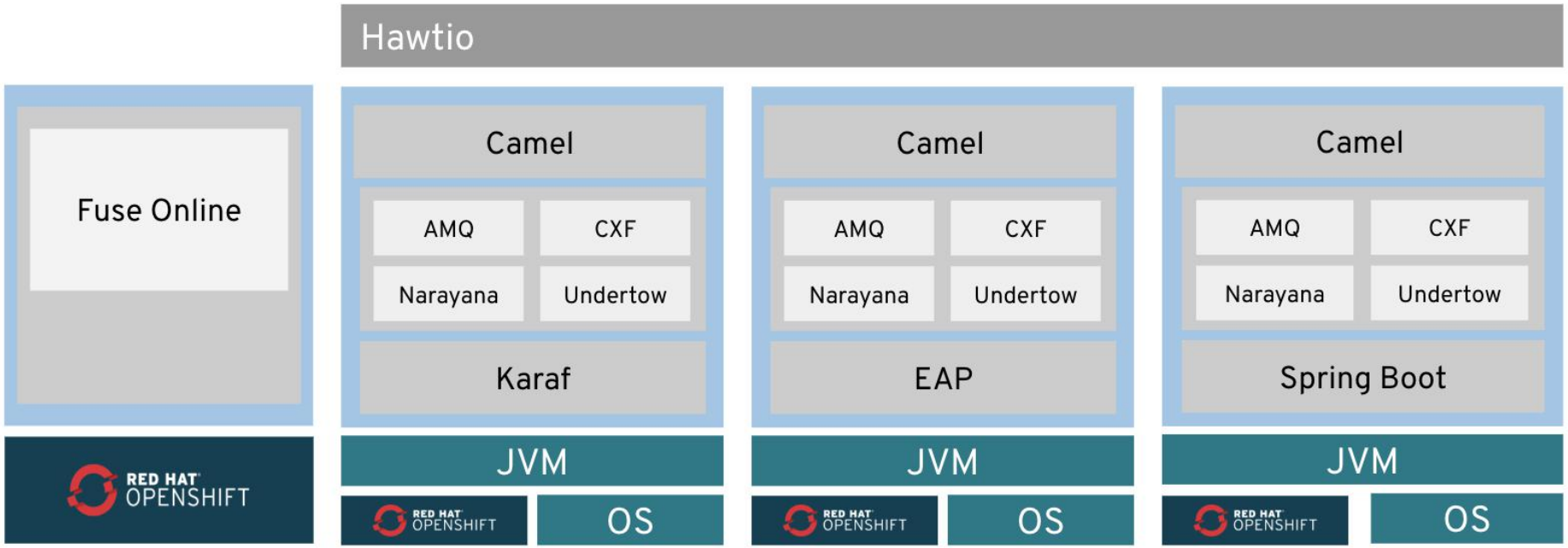
Fuse Standalone Highlights

- Update to latest version of Camel (2.21)
  - 35+ new connectors – including IoT, SaaS, and API
  - Micro-services/Container native technologies (Hystrix, Zipkin, Open Tracing, Sagas)
- Updated standalone management console based on HawtIO
- Connector parity across runtimes (EAP, Karaf, Spring Boot)
- JDK-8 supported with Fuse-7.x; JDK-11 is under consideration in upcoming 7.x releases
- Shared supporting services : Narayana, Undertow, CXF

Selection of New Capabilities



Fuse on Openshift



- Spring Boot application development with containerization
- Run the integration on OpenShift
- Deployment can be done on private openshift premises or Red Hat hosted openshift premises

Use Fuse on Openshift When ...

- I'm developer with integration requirements targeting cloud native applications that allow for self service, scalability and continuous delivery

- **Running Integrations in Cloud Native Way**
  - ➔Reproducible Deployments via Immutable Images
  - ➔Service Discovery
  - ➔Load Balancing
- **Scale out and Management of Integrations**
  - ➔Centralized Logging
  - ➔Centralized Metrics
  - ➔Health Checks

Fuse on Openshift Highlights

- **Fuse on Openshift replaces Fabric v1 in Fuse 7.x**
- **Significant focus on management and monitoring of Fuse containers**
  - ➔Centralized HawtIO console
  - ➔Prometheus Metrics Integration
- **Scalability and Performance critical with mature adoption**
  - ➔No breaking changes from Fuse-6.3/FIS
  - ➔JVM Memory optimizations

What is Fuse Online

- Fuse Online is browser based integration interface with Zero* coding.
- You can obtain data from application or service, operate on that data if you need to, and then send the data to a completely different application or service.
- This allow you integrate two or more different applications or services without writing code.
- It also provides features that allow you to introduce code if it is needed for complex use cases.
- Lets you enable data transfer between different applications

Who is Fuse Online For?

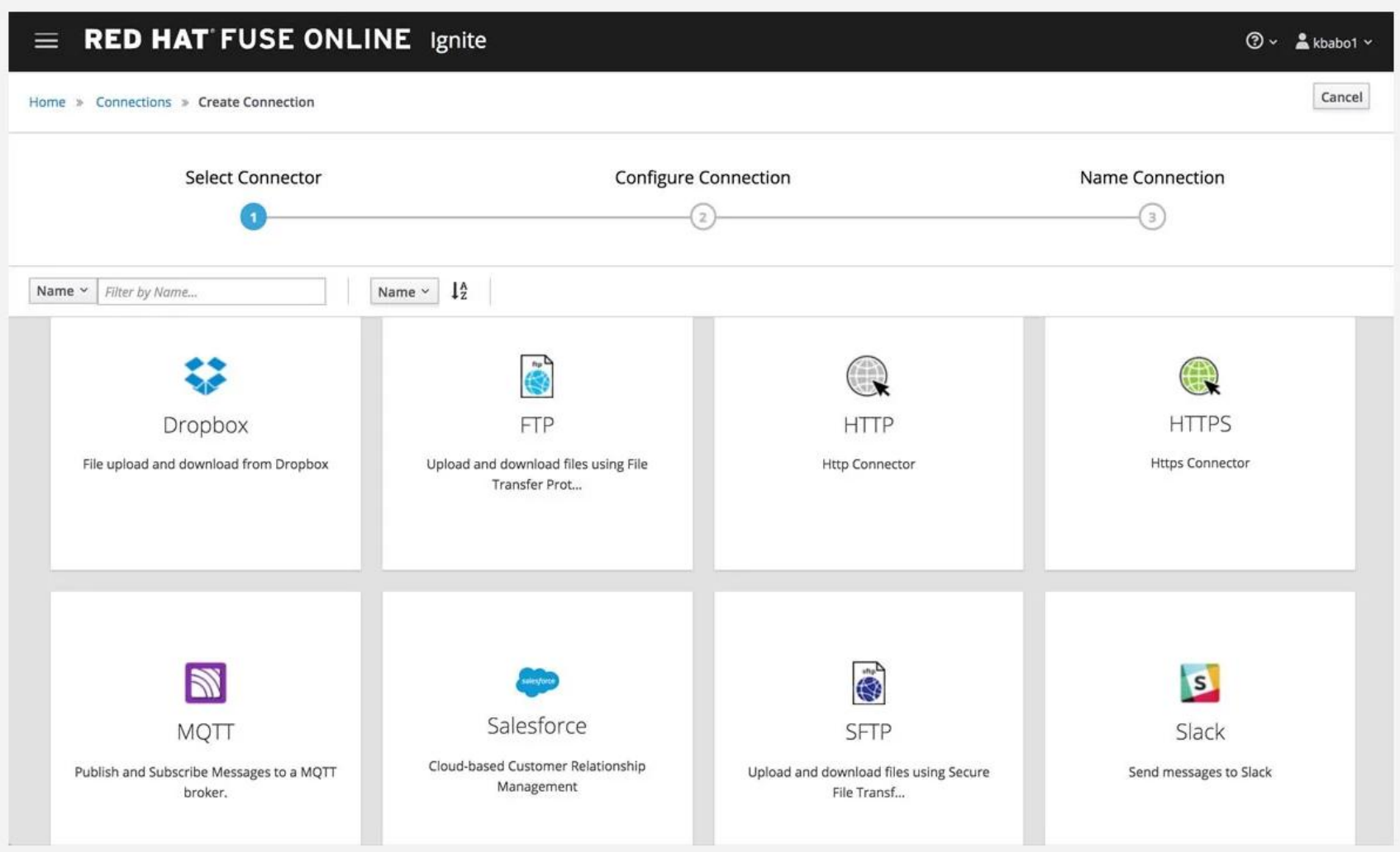
- Business experts in, for example, finance, human resources, or marketing, who do not want to write code in order to share data between two different applications.

- Their use of a variety of software-as-a-service (SaaS) applications gives them an understanding of business requirements, work-flows, and relevant data.

Benefits of Fuse Online

- Integrate data from different applications or services without writing code.
- Run the integration on OpenShift Online in the public cloud or on OpenShift Container Platform on site.
- Use the visual data mapper to map data fields in one application to data fields in another application.
- Leverage all the benefits of open source software. You can extend features, and customize interfaces. If Fuse Online does not provide a connector for an application or service that you want to integrate then a developer can create the connector that you need.

Fuse Online/Ignite Look



Red Hat Fuse

Installation - for Karaf Based Server only**

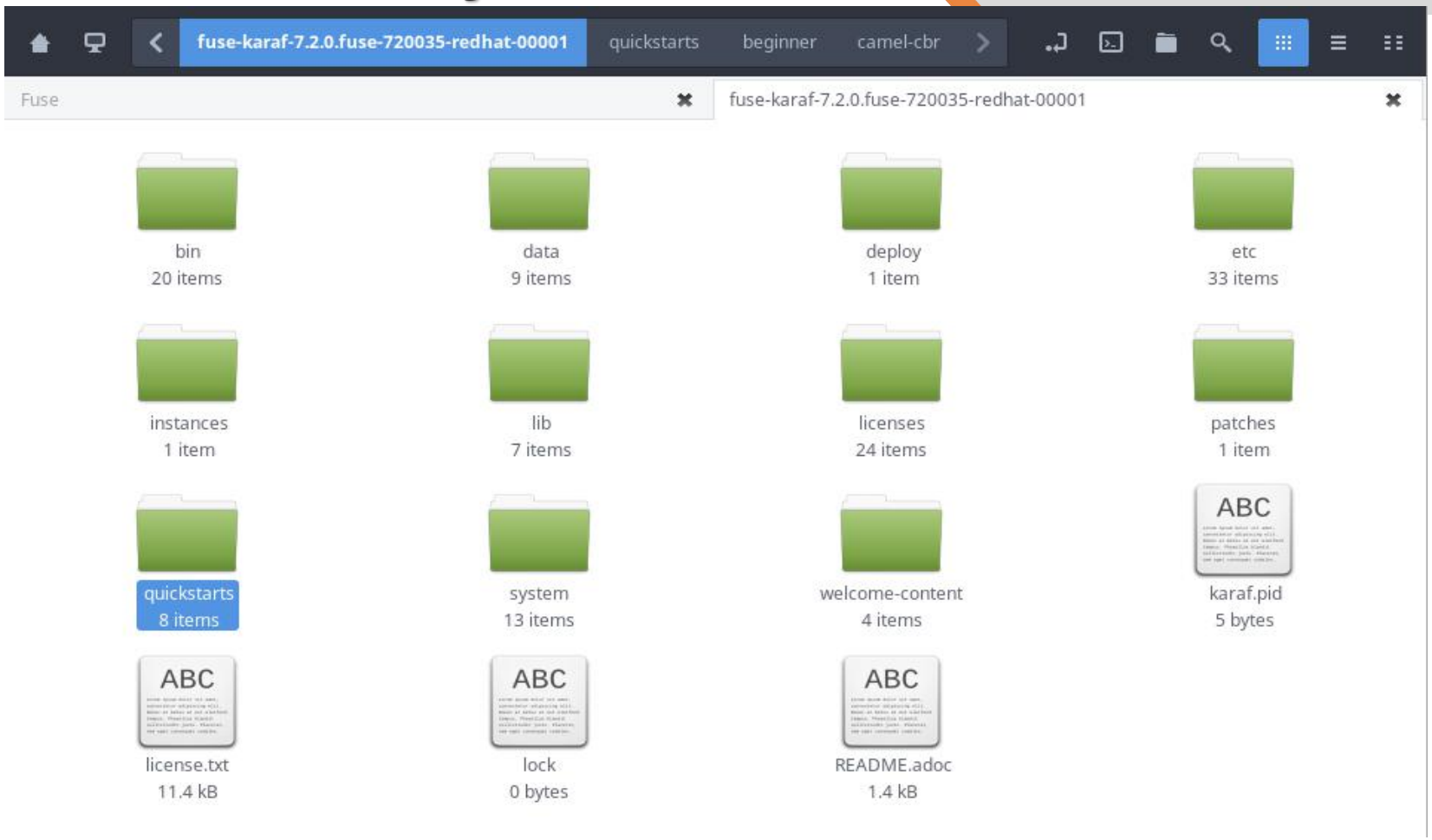
Fuse Installation – Karaf

- Download Fuse-7.2 from Red Hat Portal
- Extract it to installation directory
- Start your Fuse container first time

Red Hat Fuse

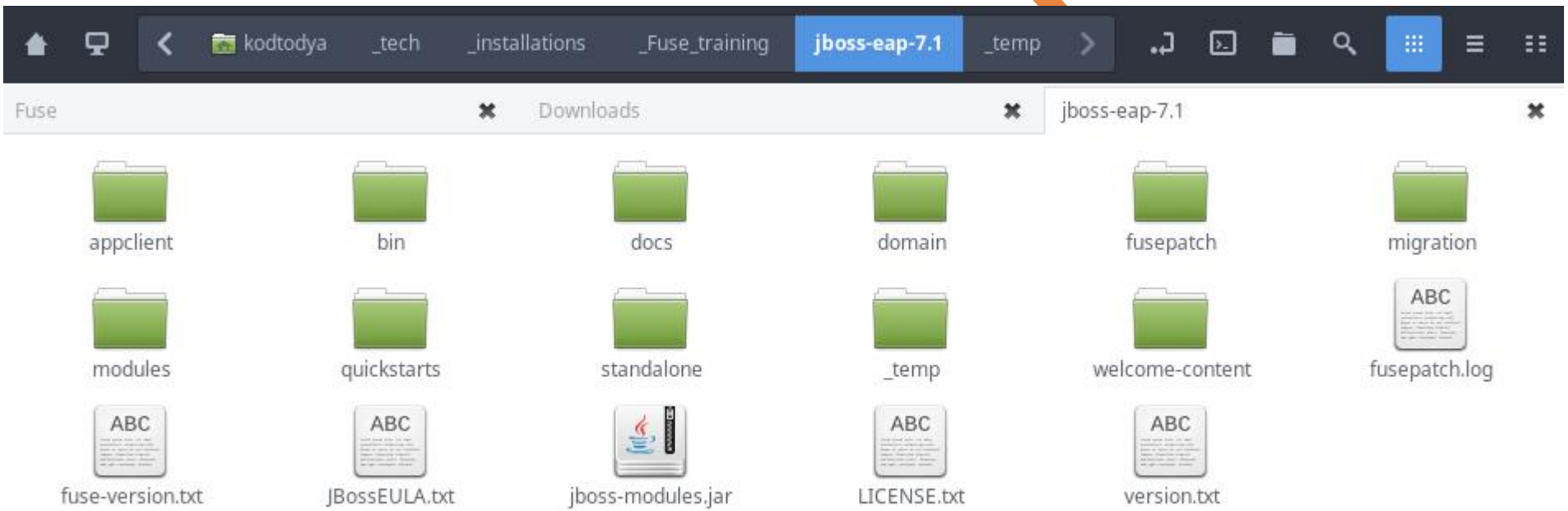
Eco-systems**

Fuse Eco-system



Standalone Fuse(Karaf)

Fuse Eco-system



Standalone Fuse on EAP

Red Hat Fuse

Roles of Sub-systems

Fuse Sub-systems

- **Karaf :** OSGi container to run your application
- **Spring Boot :** Java framework to simplify bootstrapping and development of new Spring applications
- **Camel :** Java framework for integration

Role of Spring Boot

- As we know, Spring boot provides us embedded tomcat run-time container
- People are free to use whatever they are happy with; though our preferred approach to integration and micro-services is to use either Spring Boot or WildFly Swarm by default
- Spring boot is additional top-up to Spring framework that actually takes care of bootstrapping and development of new applications
- Spring BOOT makes development and testing easier" & "avoiding XML configurations

Role of Apache Camel

- As we know, Apache Camel is java based integration framework and can be integrated with most of the well known Java frameworks
- Apache Camel offers us huge number of components to have connections with modern and legacy system
- Apache Camel comes with easy configuration of endpoint URIs that can help you to connect with more than 400 systems
- Camel is open-source and can be easily accommodated with any well known integration pattern and can be deployed as per any preferred approach of the user

Red Hat Fuse

Management & Operations using HawtIO

Let's revise Part-3

- **Part – 3 : Core Concepts**
  - Core Concepts (To be covered in subsequent slides)
  - Fuse flavors/Offerings
  - Fuse Eco-system
  - Fuse Sub-systems
  - Fuse Architecture
  - Role of Spring Boot
  - Role of Apache Camel
  - Fuse Management
  - Fuse Operations

Questions ?

https://kodtodya.github.io/talks/

Thank you..!!!

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