Cloud-native Integration with Red Hat Fuse and Apache Camel

Course Duration: 32 Hours   **Course code: AD221**

1. Course Overview

Cloud-native Integration with Red Hat Fuse and Apache Camel (AD221) equips developers and solution architects with skills to build, test, and deploy integration solutions using Apache Camel and OpenShift. The course covers camel routes, processors, and components, along with RESTful services and messaging systems. Participants gain hands-on experience in connecting diverse systems, managing integration solutions, and designing scalable, cloud-ready architectures for hybrid environments.

2. What you'll learn?

By the end of this course, learners will:

This course aims to empower participants with the skills to design, develop, and deploy cloud-native integration solutions using Red Hat Fuse and Apache Camel. Learners will explore how to build lightweight, scalable, and resilient integration patterns for containerized and cloud environments. The course also focuses on best practices for integrating microservices architectures, leveraging Red Hat's technology stack to streamline integration workflows and accelerate delivery in modern, agile IT environments.

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4. Target Audience

- Integration developers and architects
- Java developers looking to build cloud-native integration solutions
- Enterprise application developers
- DevOps engineers working with container platforms
- Middleware and SOA professionals
- IT professionals interested in Red Hat technologies and microservices

5. Pre-Requisites

Participants should have:

- Participants should ideally have prior experience with Java development and a basic understanding of enterprise integration patterns to fully benefit from this course. Familiarity with container platforms such as OpenShift or Kubernetes will also be helpful, as the course content includes deploying integration solutions in a containerized, cloud-native ecosystem.
- Proficiency in Java programming (mandatory)
- Basic understanding of enterprise integration patterns (recommended)
- Familiarity with containers and Kubernetes/OpenShift (recommended)

6. Course content

Module 01 – Introduction to Java EE and Red Hat Environment
- Overview of Java EE Features and Architecture
- Setting Up the Development Environment on Red Hat JBoss EAP
- Understanding Multi-Tier Enterprise Applications

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Module 02 – Java EE Core Concepts

- Java SE Review: Syntax, Classes, and Interfaces
- Building Enterprise Applications from a Java SE Base
- Understanding Java EE Application Structure

Module 03 – Enterprise Java Beans (EJB)

- Introduction to EJB and Business Logic Implementation
- Creating Stateless and Stateful Session Beans
- Managing Transactions and Persistence

Module 04 – Java Persistence API (JPA)

- Mapping Entities and Relationships
- Managing Data Persistence in Enterprise Applications
- Implementing CRUD Operations with JPA

Module 05 – RESTful Web Services with JAX-RS

- Introduction to REST Architecture
- Creating and Consuming RESTful Services
- Integrating APIs into Enterprise Applications

Module 06 – Contexts and Dependency Injection (CDI)

- Overview of CDI in Java EE
- Injecting Dependencies for Component Management
- Managing Scopes and Qualifiers

Module 07 – Application Security with JAAS

• Introduction to Java Authentication and Authorization Service

• Implementing Role-Based Access Control

• Securing Application Components