AD082 - Event-Driven Architecture with Apache Kafka and Red Hat OpenShift Application Services Technical Overview Course Overview

Course Duration: 24 Hours **Course Code: AD082**

1. Course Overview

The **AD082 - Event-Driven Architecture with Apache Kafka and Red Hat OpenShift Application Services Technical Overview** course provides a foundational understanding of building and managing event-driven applications. It introduces learners to Apache Kafka and Red Hat OpenShift Application Services, showcasing how event-driven architectures improve responsiveness, scalability, and real-time data processing. This course equips participants with essential knowledge to design, deploy, and manage event-driven solutions effectively.

2. What You'll Learn?

By the end of this course, you will be able to:

- Understand the fundamentals of **event-driven architecture (EDA)**.
- Explore the role of **Apache Kafka** in enabling real-time communication.
- Learn how to integrate **Red Hat OpenShift Application Services** with Kafka.
- Discover use cases of event-driven systems in modern enterprises.
- Gain insights into designing scalable, resilient, and responsive applications.

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- Understand the benefits of adopting EDA for cloud-native applications.

3. Target Audience

This course is designed for:

- **Developers** looking to build event-driven applications.
- **Cloud architects** and **solution architects** who want to leverage event-driven systems.
- **DevOps engineers** interested in integrating Kafka with OpenShift.
- **IT professionals** seeking to understand real-time data streaming solutions.
- **Decision-makers** exploring the adoption of event-driven architecture for business agility.

4. Pre-Requisites

Participants should have:

- Basic understanding of **cloud computing** and **container platforms**.
- Familiarity with **application development** concepts.
- Knowledge of **Kubernetes** and **OpenShift** is helpful but not mandatory.
- No prior knowledge of Kafka required (introductory level).

5. Course Content

Module 1: Introduction to Event-Driven Architecture (EDA)

- Understanding event-driven systems
- Benefits and challenges of EDA

- Key use cases across industries

Module 2: Apache Kafka Fundamentals

- Overview of Kafka architecture
- Topics, partitions, and brokers explained
- Kafka producers and consumers

Module 3: Red Hat OpenShift Application Services

- Introduction to OpenShift Application Services
- Integration with Apache Kafka
- Real-world event-driven deployments

Module 4: Designing Event-Driven Applications

- Event flow and data streaming patterns
- Building scalable, resilient EDA applications
- Best practices for event-driven design

Module 5: Use Cases and Hands-on Demonstrations

- Event streaming in cloud-native environments
- Business applications of Kafka and OpenShift
- Demonstration of real-time event processing