Red Hat Cloud-native Microservices Development with Quarkus

Course Duration: 40 Hours **Course Code: DO378**

1. Course Overview

The **Red Hat Cloud-native Microservices Development with Quarkus** course is designed for developers who want to build, deploy, and optimize Java-based microservices for cloud-native environments. Using **Quarkus**, a Kubernetes-native Java framework, this course provides hands-on experience in developing high-performing, lightweight, and container-ready microservices that integrate seamlessly with Red Hat OpenShift. Participants will gain practical skills in reactive programming, RESTful services, event-driven architecture, and cloud-native design patterns.

2. What You'll Learn?

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

- Develop and deploy **cloud-native Java microservices** with Quarkus.
- Build **RESTful and reactive applications** optimized for containers.
- Integrate microservices with **databases, messaging, and APIs**.
- Secure microservices using **OpenID Connect and JWT**.
- Implement **event-driven and reactive programming** with Quarkus.
- Package and deploy applications on **Red Hat OpenShift**.
- Optimize microservices for **high performance and low memory usage**.

- Apply **microservices architecture patterns** for scalability and resilience.

3. Target Audience

This course is ideal for:

- **Java developers** building cloud-native applications.
- **Application developers** transitioning to microservices and containers.
- **DevOps engineers** integrating Java applications into OpenShift pipelines.
- **Solution architects** designing microservices architectures.

4. Pre-Requisites

Participants should have:

- Proficiency in **Java programming**.
- Basic knowledge of **Red Hat OpenShift and containers**.
- Understanding of **microservices and RESTful APIs**.
- Familiarity with **Maven, Git, and CI/CD concepts** is helpful.

5. Course Content

Module 1: Introduction to Quarkus and Cloud-native Development

- Overview of Quarkus and Kubernetes-native Java
- Benefits of Quarkus for microservices

Module 2: Building Cloud-native Applications

- Creating RESTful services with Quarkus
- Using Hibernate ORM and Panache for database access

Module 3: Reactive and Event-driven Microservices

- Implementing reactive programming
- Building event-driven microservices

Module 4: Securing Cloud-native Applications

- Authentication and authorization with OpenID Connect
- Securing microservices with JWT

Module 5: Integration and Messaging

- Connecting microservices to external APIs
- Integrating with Kafka and messaging services

Module 6: Deploying on OpenShift

- Packaging applications as containers
- Deploying and scaling on Red Hat OpenShift

Module 7: Optimizing and Monitoring Microservices

- Performance tuning and memory optimization
- Monitoring and troubleshooting Quarkus applications

Module 8: Best Practices for Microservices Architecture

- Designing scalable, resilient cloud-native systems
- Applying microservices patterns with Quarkus

Phone: +91-999-911-1686 **Mail Us:** info@ssdntech.com