Containers, Kubernetes and Red Hat OpenShift Technical Overview

Course Duration: 8 Hours **Course code DO080**

1. Course Overview

The Containers, Kubernetes and Red Hat OpenShift Technical Overview course provides a clear understanding of containerization, Kubernetes orchestration, and the Red Hat OpenShift platform. It introduces the core concepts, architecture, and advantages of adopting these technologies in modern application development. Through interactive lessons and demonstrations, you will learn how containers are built, deployed, and managed, along with how Kubernetes and OpenShift work together to deliver scalable, secure, and efficient applications.

2. What you'll learn?

This course aims to provide participants with a fundamental understanding of container technology, Kubernetes orchestration, and the Red Hat OpenShift platform. Learners will explore how containers work, how Kubernetes automates container management, and how OpenShift enhances Kubernetes with enterprise-grade features. By the end of the course, participants will be prepared to evaluate and adopt container-based architectures to streamline application development, deployment, and operations.

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3. Target Audience

- System administrators
- DevOps engineers
- Cloud administrators
- Infrastructure and platform engineers
- IT architects
- Professionals seeking to modernize application deployment using containers

4. Pre-Requisites

Participants should have:

To fully benefit from this course, participants should have a basic understanding of Linux system administration and command-line skills, as these are critical for working with containers and orchestration tools. Prior knowledge of virtualization technologies and familiarity with fundamental networking concepts will also help in grasping the course topics more effectively.

- Basic knowledge of Linux command-line tools
- Familiarity with fundamental networking concepts
- Prior exposure to virtualization (helpful but not mandatory)

5. Course content

Module 1: Introduction to Containers

- What containers are and how they work
- Benefits of containers over traditional virtualization
- Enterprise use cases

Module 2: Kubernetes Fundamentals

- Kubernetes architecture and components
- Pods, services, and deployments
- Scaling and orchestration basics

Module 3: Understanding Red Hat OpenShift

- Overview of OpenShift and its features
- OpenShift vs. vanilla Kubernetes
- Architecture and key components

Module 4: Deploying Applications on OpenShift

- Deployment workflows
- Managing resources via CLI and web console
- Scaling and updates

Module 5: DevOps Integration

- CI/CD pipeline concepts in OpenShift
- Automating builds and deployments
- Monitoring and logging

Module 6: Hands-On Demonstrations

- Creating container images
- Deploying applications on OpenShift
- Real-time scaling and updates

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