Kubernetes/JBoss/OpenShift

Course Summary

Description

In this training, we introduce the student to JBoss, Docker, Kubernetes, and the Red Hat OpenShift Platform. This training will help you to understand how CI/CD operates in the world of microservices for the enterprise. Central to this training is the concept of Containers and it is therefore the pre-requisite. Containers are the key technology for the configuration and deployment of applications and microservices. Kubernetes is a container orchestration platform that provides foundational services in Red Hat OpenShift Container Platform, which allows enterprises to manage container deployments and scale their applications using Kubernetes.

Topics

- JBoss Server Introduction
- Learn about container, Docker, and OpenShift architecture.
- Docker Review
- Kubernetes Introduction
- Describe container technology
- Create containerized services
- Manage containers
- Manage container images
- Create custom container images
- Deploy multi-container applications
- Best Practices for Container Builds
- Explore OpenShift networking concepts
- Deploy containerized applications on OpenShift
- Deploy multi-container applications on OpenShift
- Execute commands
- Control resource access
- Allocate persistent storage
- Manage application deployments
- Manage OpenShift Container Platform
- Performance Tuning

Prerequisites

Required: Basic programming skills and Internet Access
Recommended: Docker, Container, and Operating System Skills

Duration

Four Days

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Course Outline

Kubernetes/JBoss/OpenShift

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I. *JBoss Server Introduction*

II. *Learn about container, Docker, and OpenShift architecture.*

III. *Docker Review*

IV. *Kubernetes Introduction*

V. *Describe container technology*
- A. Describe how software can run in containers orchestrated by the OpenShift Container Platform.

VI. *Create containerized services*
- A. Provision a server using container technology.

VII. *Manage containers*
- A. Manipulate pre-built container images to create and manage containerized services.

VIII. *Manage container images*
- A. Manage the life cycle of a container image from creation to deletion.

IX. *Create custom container images*
- A. Design and code a Dockerfile to build a custom container image.

X. *Deploy multi-container applications*
- A. Deploy applications that are containerized using multiple container images.
- B. Use templates for deployment and configuration

XI. *Best Practices for Container Builds*
- A. Discuss and demo builds and deploy through the full CI/CD lifecycle

XII. *Explore OpenShift networking concepts*
- A. Describe and explore OpenShift networking concepts.

XIII. *Deploy containerized applications on OpenShift*
- A. Deploy single container applications on OpenShift Container Platform.

XIV. *Deploy multi-container applications on OpenShift*
- A. Deploy applications that are containerized using multiple container images on an OpenShift cluster.

XV. *Execute commands*
- A. Execute commands using the command-line interface.

XVI. *Control resource access*
- A. Control access to OpenShift resources.

XVII. *Allocate persistent storage*
- A. Implement persistent storage.

XVIII. *Manage application deployments*
- A. Manipulate resources to manage deployed applications.

XIX. *Manage OpenShift Container Platform*
- A. Manage and monitor OpenShift resources and software.

XX. *Performance Tuning*
- A. Memory sizing guidelines
- B. Scaling and autoscaling limitations (Pods)
- C. Openshift/Kubernetes architectural features that allow for massive scalability, redundancy, and persistence

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