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
Course Outline

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