Course Outline

ProTech Professional Technical Services, Inc.

RHDO285 Containers Kubernetes and Red Hat OpenShift Administration II

Course Summary

Description

Through an introduction to Docker, Kubernetes, and Red Hat OpenShift Platform, this course helps you understand one of the key tenets of the DevOps movement: continuous integration and continuous deployment. Containers have become a 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. In addition to gaining an understanding of these tools, you will build core administration skills through the installation, configuration, and management of an OpenShift cluster.

Objectives

At the end of this course, students will be able to:

- Learn about container, Docker, and OpenShift architecture.
- Create containerized services.
- Manage containers and container images.
- Create custom container images.
- Deploy multi-container applications.
- Install an OpenShift cluster.
- Configure and manage masters and nodes.
- Secure OpenShift.
- Control access to resources on OpenShift.
- Monitor and collect metrics on OpenShift.
- Deploy applications on OpenShift using source-to-image (S2I).
- Manage storage on OpenShift.

Topics

- Describe container technology
- Creating containerized services
- Managing containers
- Managing container Images
- Creating custom container images
- Deploying containerized applications on OpenShift
- Deploying multi-container applications
- Troubleshooting containerized applications
- Comprehensive review of Introduction to Container, Kubernetes, and Red Hat OpenShift
- Introducing Red Hat OpenShift Container Platform
- Installing OpenShift Container Platform
- Describing and exploring OpenShift networking concepts
- Executing commands
- Controlling access to OpenShift resources
- Allocating persistent storage
- Managing application deployments
- Installing and configuring the metrics subsystem
- Managing and monitoring OpenShift Container Platform
- Comprehensive review of Red Hat OpenShift Administration I

Audience

- Developers who want to containerize software applications
- Administrators who are new to container technology and container orchestration
- Architects who are considering using container technologies in software architectures
- System administrators who want to learn more about OpenShift
- System architects who want to learn more about OpenShift
- Architects and developers who want to install and configure OpenShift

Prerequisites

- Have ability to use a Linux terminal session and issue operating system commands
- Become a Red Hat Certified System Administrator (RHCSA) or demonstrate equivalent knowledge
- Have experience with web application architectures and their corresponding technologies

Duration

Five days

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

II. *Creating containerized services*
   A. Provision a server using container technology.

III. *Managing containers*
   A. Manipulate pre-build container images to create and manage containerized services.

IV. *Managing container Images*
   A. Manage the lifecycle of a container image from creation to deletion.

V. *Creating custom container images*
   A. Design and code a Dockerfile to build a custom container image.

VI. *Deploying containerized applications on OpenShift*
   A. Deploy single container applications on OpenShift Container Platform.

VII. *Deploying multi-container applications*
   A. Deploy applications that are containerized using multiple container images.

VIII. *Troubleshooting containerized applications*
   A. Troubleshoot a containerized application deployed on OpenShift.

IX. *Comprehensive review of Introduction to Container, Kubernetes, and Red Hat OpenShift*
   A. Demonstrate how to containerize a software application, test it with Docker, and deploy it on an
   B. OpenShift cluster.

X. *Introducing Red Hat OpenShift Container Platform*
   A. List the features and describe the architecture of the Openshift Container Platform.

XI. *Installing OpenShift Container Platform*
   A. Install OpenShift and configure the cluster.

XII. *Describing and exploring OpenShift networking concepts*
   A. Describe and explore OpenShift networking concepts.

XIII. *Executing commands*
   A. Execute commands using the command-line interface.

XIV. *Controlling access to OpenShift resources*
   A. Control access to OpenShift resources.

XV. *Allocating persistent storage*
   A. Implement persistent storage.

XVI. *Managing application deployments*
   A. Manipulate resources to manage deployed applications.

XVII. *Installing and configuring the metrics subsystem*
   A. Install and configure the metrics gathering system.

XVIII. *Managing and monitoring OpenShift Container Platform*
   A. Manage and monitor OpenShift resources and software.

XIX. *Comprehensive review of Red Hat OpenShift Administration I*
   A. Install, configure, and deploy an application on a cluster.

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