

Module Title : DO285-Containers, Kubernetes, and Red Hat OpenShift Administration I

Duration : 5 days

Overview

This course helps you build core knowledge and skills in managing containers through hands-on experience with Docker, Kubernetes, and the Red Hat OpenShift Container Platform. OpenShift Container Platform is a containerized application platform that allows enterprises to manage container deployments and scale their applications using Kubernetes. OpenShift Container Platform provides predefined application environments and builds upon Kubernetes to provide support for DevOps principles such as reduced time to market, infrastructure as code, continuous integration (CI), and continuous delivery (CD). Red Hat OpenShift Administration I (DO285) is a hands-on, lab-based course that teaches system administrators how to install, configure, and manage OpenShift clusters.

Course summary

- Container, Docker, and OpenShift architecture
- Creating containerized services
- Managing containers and container images
- Creating custom container images
- Deploying multi-container applications
- Installing an OpenShift cluster
- Configuring and managing masters and nodes
- Securing OpenShift Container Platform
- Controlling access to resources on OpenShift Container Platform
- Monitoring and collecting metrics on OpenShift Container Platform
- Deploying applications on OpenShift Container Platform using source-to-image (S2I) Managing storage on OpenShift Container Platform

Audience

- Developers who wish 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
- System architects
- Architects and developers who want to install and configure OpenShift Container Platform

Prerequisites

Red Hat recommends these prerequisites:

- Ability to use a Linux[®] terminal session and issue operating system commands
- [RHCSA[®] certification](#) or equivalent knowledge
- Experience with web application architectures and their corresponding technologies

Outline

Getting started with container technology

Describe how software can run in containers orchestrated by OpenShift Container Platform.

Creating containerized services

Provision a server using container technology.

Managing containers

Manipulate pre-build container images to create and manage containerized services.

Managing container Images

Manage the lifecycle of a container image from creation to deletion.

Creating custom container images

Design and code a Dockerfile to build a custom container image.

Deploying containerized applications on OpenShift

Deploy single container applications on OpenShift Container Platform.

Deploying multi-container applications

Deploy applications that are containerized using multiple container images.

Troubleshooting containerized applications

Troubleshoot a containerized application deployed on OpenShift.

Comprehensive review of Introduction to Container, Kubernetes, and Red Hat OpenShift

Demonstrate how to containerize a software application, test it with Docker, and deploy it on an OpenShift cluster.

Introducing Red Hat OpenShift Container Platform

List the features and describe the architecture of the OpenShift Container Platform.

Installing OpenShift Container Platform

Install OpenShift and configure the cluster.

Describing and exploring OpenShift networking concepts

Describe and explore OpenShift networking concepts.

Executing commands

Execute commands using the command-line interface.

Controlling access to OpenShift resources

Control access to OpenShift resources.

Allocating persistent storage

Implement persistent storage.

Managing application deployments

Manipulate resources to manage deployed applications.

Installing and configuring the metrics subsystem

Install and configure the metrics gathering system.

Managing and monitoring OpenShift Container Platform

Manage and monitor OpenShift resources and software.

Comprehensive review of Red Hat OpenShift Administration I

Install, configure, and deploy an application on a cluster.

Impact of this training

Impact on the organization

This course is intended to expose you to container and container orchestration technologies such as Docker, Kubernetes, and Red Hat OpenShift. You are taught how to containerize software applications and services. Moving applications and services from traditional deployment platforms to container deployments make the applications deployable on a single clustered cloud architecture instead of many disparate sets of hardware configurations. Red Hat OpenShift Container Platform enables rapid application development and deployment, as well as portability of an application across environments. It also offers simplified application scaling, administration, and maintenance of adapted or cloud-native applications.

Red Hat has created this course in a way intended to benefit our customers, but each company and infrastructure is unique, and actual results or benefits may vary.

Impact on the individual

As a result of attending this course, you should be able to install, configure, and manage a Red Hat OpenShift Container Platform cluster and deploy applications on it.

You should be able to demonstrate these skills:

- Install OpenShift Container Platform to create a simple cluster.
- Configure and manage OpenShift Container Platform masters and nodes.
- Secure OpenShift Container Platform with a simple internal authentication mechanism.
- Control access to resources on OpenShift Container Platform.
- Deploy applications on OpenShift Container Platform using source-to-image (S2I).

- Configure and manage OpenShift Container Platform pods, services, routes, secrets, and other resources.