

## Containers, Kubernetes, and Red Hat OpenShift Administration II (DO285)

### COURSE OVERVIEW:

Containers, Kubernetes, and Red Hat OpenShift Administration I (DO285) helps you build core knowledge in building and managing Linux® containers and Red Hat® OpenShift Container Platform. This hands-on, lab-based course shows you how to deploy sample applications to either a local container runtime or an OpenShift cluster, as well as how to configure and manage OpenShift clusters. If you're a developer, administrator or site reliability engineer, you will benefit from learning these skills.

This course is based on Red Hat OpenShift Container Platform 4.5 and combines the content from Introduction to Containers, Kubernetes, and Red Hat OpenShift (DO180) and Red Hat OpenShift Administration I (DO280).

- Learn about container and OpenShift architecture.
- Manage containers and container images.
- Create custom container images.
- Deploy and troubleshoot applications on OpenShift.
- Configure authentication using local users.
- Control access to projects using role-based access control.
- Configure service and container networking.
- Configure pod scheduling using labels and selectors.
- Limit compute resource usage.
- Scale a cluster.
- Monitor cluster events and alerts.

### TARGET AUDIENCE:

- System and software architects interested in understanding features and functionality of an OpenShift cluster
- System administrators who want to learn about the initial establishment of a cluster
- Cluster operators responsible for the ongoing maintenance of a cluster
- Site reliability engineers interested in the ongoing maintenance and troubleshooting of a cluster

### PREREQUISITES:

- Become a Red Hat Certified System Administrator (RHCSA), or demonstrate equivalent Red Hat Enterprise Linux system administration experience

### OBJECTIVES:

After completing this course, you should be able to demonstrate the skills to create and manage local containers using Podman, establish a new OpenShift cluster, perform initial configuration of the cluster, and manage the cluster on a day-to-day basis. One major focus of the course is troubleshooting common problems that will be encountered beyond day one.

You should be able to demonstrate these skills:

- 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.
- Red Hat Certified Specialist in OpenShift Administration exam (EX280)
- Red Hat OpenShift Administration II: High Availability (DO380)
- Red Hat Security: Securing Containers and OpenShift (DO425)

## **COURSE OUTLINE:**

Introduction to container technology

- Describe how applications run in containers orchestrated by the Red Hat OpenShift Container Platform.

Create containerized services

- Provision of service using container technology.

Manage containers

- Modify pre-built container images to create and manage containerized services.

Manage container image

- Manage the life cycle of a container image from creation to deletion.

Create custom container images

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

Deploy containerized applications on OpenShift

- Use OpenShift Container Platform to deploy single container applications.

Deploy multi-container applications

- Deploy applications that are containerized using multiple container images.

Explore Red Hat OpenShift Container Platform

- Describe the architecture of the OpenShift Container Platform.

Verify the health of a cluster

- Describe OpenShift installation methods and verify the health of a newly installed cluster.

Configure authentication and authorization

- Configure authentication with the HTTPasswd identity provider and assign roles to users and groups.

Configuring application security

- Restrict permissions of applications using security context constraints and protect access credentials using secrets.

Configure OpenShift networking for applications

- Troubleshoot OpenShift software-defined networking (SDN) and configure network policies.

Control pod scheduling

- Control the nodes on which a pod runs.

Scale an OpenShift cluster

- Control the size of an OpenShift cluster.

Describe cluster updates

- Describe how to perform a cluster update.

Manage a cluster with the web console

- Use the web console to manage a Red Hat OpenShift cluster.

Execute a comprehensive review

- Verify, manage, and troubleshoot an OpenShift cluster for enterprise use.

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