Red Hat OpenShift Administration I: Operating a Production Cluster (DO180) Training

Duration: **5 Day**

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Overview

Learn how to **deploy, manage, and troubleshoot containerized applications** running as **Kubernetes workloads** in **Red Hat OpenShift clusters**.

Red Hat OpenShift Administration I: Operating a Production Cluster (DO180) provides the foundational knowledge and hands-on experience required to operate OpenShift clusters in production environments. This course teaches system and platform administrators how to manage Kubernetes-based workloads and ensure the reliability and scalability of modern, cloud-native applications.

Students will learn how to collaborate effectively with **developers, DevOps engineers, SREs**, and **cloud administrators** to maintain application availability, configure dependencies, and automate updates.

> *This course is based on Red Hat OpenShift 4.18 and is applicable to all variants, including Red Hat OpenShift on AWS (ROSA), Azure Red Hat OpenShift (ARO), and OpenShift Container Platform.*

Who Should Attend

This course is designed for:

Primary Audience:

- Platform Engineers
- System Administrators
- Cloud Administrators
- Infrastructure Engineers responsible for maintaining container platforms and application environments

Secondary Audience:

- Enterprise Architects
- DevOps Engineers
- Site Reliability Engineers (SREs)
- Developers new to container technology (recommended prerequisite: *Red Hat OpenShift Development I: Introduction to Containers with Podman [DO188]*)

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What You Will Learn

By completing this course, learners will be able to:

- Manage OpenShift clusters using both the **web console** and **command-line tools**.
- **Deploy and manage applications** from container images, templates, and Kubernetes manifests.
- **Troubleshoot networking** and connectivity issues between applications and external systems.
- **Configure storage** for application data and persistent volumes.
- Implement **high availability and reliability** configurations for workloads.
- Manage **application updates, rollouts, and rollbacks** for containers and configurations.

Impact on the Organization

Modern enterprises rely on **OpenShift** to unify operations across cloud, hybrid, and datacenter environments.
By completing this course, your IT teams will be able to:

- Manage **scalable and resilient containerized workloads** across multiple environments.
- Increase **operational consistency** with standardized OpenShift and Kubernetes APIs.
- Reduce downtime by implementing **automated updates and health monitoring**.
- Collaborate effectively with external SRE teams for managed OpenShift deployments such as **ROSA** or **ARO**.

This course builds the skills needed to maintain **enterprise-grade OpenShift environments** and ensure application uptime.

Impact on the Individual

After completing this course, you will:

- Understand the **architecture and components** of Red Hat OpenShift clusters.
- Deploy, manage, and troubleshoot Kubernetes-based workloads.
- Configure networking and storage for containerized applications.
- Manage rolling updates, perform rollbacks, and ensure workload reliability.
- Collaborate effectively with development and IT operations teams to maintain cluster health.

By the end of this course, you'll have the practical skills to **operate production OpenShift clusters** and keep business-critical applications running smoothly.

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Outline

1. Introduction to Kubernetes and OpenShift
Understand Kubernetes and OpenShift architecture, identify key services, and monitor them using the web console.

2. Kubernetes and OpenShift Command-Line Interfaces and APIs
Access clusters using the CLI, explore Kubernetes API resources, and evaluate the health of your cluster.

3. Running Applications as Containers and Pods
Deploy and troubleshoot unmanaged containers and pods within OpenShift.

4. Deploying Managed and Networked Applications on Kubernetes
Deploy networked applications and configure access both internally and externally to the cluster.

5. Managing Storage for Application Data
Provision persistent volumes and externalize application configurations with Kubernetes storage resources.

6. Configuring Applications for Reliability
Enable high availability and fault tolerance for Kubernetes workloads.

7. Managing Application Updates
Perform reproducible updates, monitor rollout progress, and manage rollbacks when necessary.