

Red Hat OpenShift Administration II: High Availability



Days: 4

Description:

- Manage OpenShift cluster operators and add operators.
- Automate OpenShift management tasks using Ansible® playbooks.
- Create and schedule cluster administration jobs.
- Implement GitOps workflows using Jenkins.
- Integrate OpenShift with enterprise authentication.
- Query and visualize cluster-wide logs, metrics, and alerts.
- Manage both shared, file-based storage and non-shared, block-based storage.
- Manage machine sets and machine configurations

Audience:

- Cluster engineers (systems administrators, cloud administrators, or cloud engineers) focused on planning, designing, and implementing production-grade OpenShift clusters. Cluster engineers require automation skills to scale their manpower to provision and manage an increasing population of clusters, applications, and users, at the same time ensuring these clusters remain in compliance with corporate standards.
- Site reliability engineers (SREs) focused on keeping OpenShift clusters and applications running without disruption. SREs are interested in troubleshooting infrastructure and application issues with OpenShift clusters and require automation skills to reduce the time to identify, diagnose, and remediate issues.

Prerequisites:

- Complete Red Hat OpenShift Administration I (DO280) and become a Red Hat Certified Specialist in OpenShift Administration.
- Complete Red Hat System Administration II (RH134) and become a Red Hat Certified System Administrator.
- Recommended, but not required: become a Red Hat Certified Systems Engineer or a Red Hat Certified Specialist in Ansible Automation. Basic knowledge about writing and running Ansible playbooks is required.

Technology Requirements:

- This course requires internet access to access the cloud-based classroom environment that provides an OpenShift cluster and a remote administrator's workstation.
- This course also requires that the classroom environment can access the Red Hat registry, Red Hat Quay, and GitHub.
- You are also required to have personal, free accounts at GitHub.

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Course Objectives:

This course builds upon the essential skills required to configure and manage an OpenShift 4.x cluster, teaching the enhanced skills needed to operate production environments at scale, including:

- Automating Day 2 tasks to establish production clusters with higher performance and availability.
- Integrating OpenShift with enterprise authentication, storage, CI/CD, and GitOps systems to improve productivity of IT operations and compliance with organization's standards.
- Troubleshooting techniques to identify issues with cluster operators and compute capacity.

OUTLINE:

MOVE FROM KUBERNETES TO OPENSIFT

- Demonstrate that OpenShift is Kubernetes by deploying Kubernetes-native applications on OpenShift.

INTRODUCE AUTOMATION ON OPENSIFT

- Automate OpenShift administration tasks using bash scripts and Ansible playbooks.

MANAGE OPERATORS WITH OPENSIFT

- Deploy Kubernetes Operators and configure OpenShift cluster operators.

IMPLEMENT GITOPS WITH JENKINS

- Implement a GitOps workflow using containerized Jenkins to administer an OpenShift cluster.

CONFIGURE ENTERPRISE AUTHENTICATION

- Integrate OpenShift with enterprise identity providers.

CONFIGURE TRUSTED TLS CERTIFICATES

- Configure OpenShift with trusted TLS certificates for external access to cluster services and applications.

CONFIGURE DEDICATED NODE POOLS

- Add nodes to an OpenShift cluster with custom configurations tuned for special workloads.

CONFIGURE PERSISTENT STORAGE

- Configure storage providers and storage classes to ensure cluster user access to persistent storage.

MANAGE CLUSTER MONITORING AND METRICS

- Configure and manage the OpenShift monitoring stack.

PROVISION AND INSPECT CLUSTER LOGGING

- Deploy, query, and troubleshoot cluster-wide logging.

RECOVER FAILED WORKER NODES

- Inspect, troubleshoot, and remediate worker nodes in a variety of failure scenarios.