Red Hat OpenShift Virtualization Boot Camp (DO730) Training

Duration: **10 Day**

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Adopting a Cloud-Native Virtual Machine Infrastructure with Kubernetes and DevOps

Red Hat OpenShift Virtualization Boot Camp (DO730) is an intensive, hands-on training program for IT professionals who want to run and manage virtual machine workloads on a modern cloud-native platform.

The course focuses on enterprise-scale administration of the **OpenShift Virtualization Operator** and **OpenShift Virtualization Engine** running on **Red Hat OpenShift Container Platform**, Red Hat's implementation of Kubernetes.

Participants develop the skills required to migrate and manage traditional virtual machines on a hybrid cloud application platform such as OpenShift Virtualization. The knowledge gained in the course can be applied to both OpenShift Container Platform and OpenShift Virtualization Engine.

DO730 also extends these skills into multicluster environments. Participants learn how to install and use **Red Hat Advanced Cluster Management for Kubernetes (RHACM)** to centrally manage clusters, enforce policies, and operate virtual machines across hybrid cloud environments.

Enrollment includes one year of **Red Hat Learning Subscription Standard**, providing unlimited access to Red Hat's online training catalog, participation in up to five unique exams, and the ability to retake exams that are not passed successfully.

Organizational Impact

OpenShift Virtualization enables organizations to manage virtualized and containerized workloads through the same orchestration and clustering infrastructure provided by Red Hat OpenShift.

This integrated approach can help simplify the administration of mixed workload environments, support infrastructure modernization, and contribute to operational savings.

The multicluster capabilities covered in DO730 also help organizations use RHACM to centrally manage clusters, policies, and virtual machines across hybrid cloud environments.

Individual Impact

After completing DO730, IT professionals will be able to deploy and manage virtualized workloads on Red Hat OpenShift, including across multicluster environments.

Participants develop practical skills in virtual machine creation, networking, storage, authentication, backup, migration, scheduling, and high availability.

The course also provides the knowledge required to use RHACM for centralized cluster and virtual machine management in multicluster environments.

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Recommended Next Course or Exam

After completing DO730, participants can continue with the following certification exam and courses:

- **Red Hat Certified Specialist in OpenShift Virtualization (EX316)**
- **Red Hat OpenShift Administration I: Operating a Production Cluster (DO180)** – Recommended for deeper skills in deploying and managing containerized workloads in OpenShift clusters.
- **Red Hat OpenShift Administration II: Configuring a Production Cluster (DO280)** – Recommended for advanced security and resource management of OpenShift projects.
- **Red Hat OpenShift Administration III: Scaling Kubernetes Deployments in the Enterprise (DO380)** – Provides deeper knowledge of enterprise Kubernetes and OpenShift administration.
- **Enterprise Kubernetes Storage with Red Hat OpenShift Data Foundation (DO370)** – Recommended for advanced storage management in OpenShift clusters.

Prerequisites

Participants should consider the following skills and training:

- Taking the Red Hat skills assessment is recommended to determine whether this course matches your current experience
- Linux skills are not required for administering OpenShift clusters or OpenShift Virtualization itself
- However, operating individual Linux virtual machines requires Linux system administration knowledge
- These skills are provided by **Red Hat System Administration I (RH124)** and **Red Hat System Administration II (RH134)**

Who Should Attend

This course is particularly suitable for:

- Virtual machine administrators who want to migrate workloads from traditional hypervisors to OpenShift Virtualization
- Platform engineers supporting virtualized workloads on OpenShift
- Cloud administrators responsible for hybrid cloud and virtualization environments
- System administrators who need to support virtualized workloads independently or alongside containerized workloads in the same OpenShift cluster

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What You Will Learn

The course covers the following key areas:

- Introduction and overview of container technologies
- Container orchestration with Kubernetes and OpenShift
- Managing OpenShift clusters through both command-line tools and the web console
- Introduction to Red Hat OpenShift Virtualization
- Managing authentication and authorization for virtual machines
- Running and accessing virtual machines
- Configuring Kubernetes networking for virtual machines
- Isolating virtualized applications by using network policies and user-defined networks
- Configuring storage resources for virtual machines
- Advanced virtual machine and boot source management
- Configuring high availability for virtual machines with Kubernetes resources
- Managing multiple clusters and virtual machines with Red Hat Advanced Cluster Management for Kubernetes

Training Outline

Introduction to Kubernetes and OpenShift

Identify the main Kubernetes cluster services and OpenShift platform services and monitor them through the web console.

Kubernetes and OpenShift Command-line Interfaces and APIs

Access an OpenShift cluster through the command line and query Kubernetes API resources to evaluate cluster health.

Run Applications as Containers and Pods

Run containerized applications as unmanaged Kubernetes pods and troubleshoot common application issues.

Deploy Managed and Networked Applications on Kubernetes

Deploy applications and provide network access from both inside and outside the Kubernetes cluster.

Introduction to Red Hat OpenShift Virtualization

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Deploy the OpenShift Virtualization operator and explore the available configuration options.

Creating, Managing, and Monitoring Virtual Machines in Red Hat OpenShift Virtualization

Create, operate, and monitor virtual machines within a Red Hat OpenShift Virtualization environment.

Virtual Machine Networking in Red Hat OpenShift Virtualization

Use flexible and comprehensive networking capabilities for virtual machines running within OpenShift.

Managing Storage for Virtual Machines in Red Hat OpenShift Virtualization

Configure and manage persistent storage for virtual machines. Protect VM data with snapshots, export and import virtual machine images, and create reusable golden images through cloning.

Authentication and Authorization for Virtual Machines in Red Hat OpenShift Virtualization

Explore OpenShift OAuth server concepts and related custom resources. Understand their role in Kubernetes authentication and implement role-based access controls and user permissions.

Advanced Virtual Machine Networking in Red Hat OpenShift Virtualization

Configure advanced networking capabilities for both OpenShift nodes and virtual machines.

Migrating Virtual Machines to Red Hat OpenShift Virtualization

Use the Migration Toolkit for Virtualization (MTV) operator to migrate virtual machines from another supported hypervisor environment into Red Hat OpenShift Virtualization.

Creating and Restoring Backups of Virtual Machines in Red Hat OpenShift Virtualization

Use the OpenShift APIs for Data Protection (OADP) operator to back up and restore virtual machines.

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Creating Custom Instance Types, Templates, and Boot Sources in Red Hat OpenShift Virtualization

Create and manage custom instance types, templates, and boot sources that can be used to provision virtual machines.

Controlling Scheduling of Virtual Machines in Red Hat OpenShift Virtualization

Use Kubernetes resources to control VM placement across cluster nodes and enable descheduler evictions to rebalance virtual machine workloads.

Configuring High Availability for Virtual Machines

Build highly available virtual machines that can remain resilient during failures, planned maintenance, and cluster upgrades by configuring Kubernetes resources.

Installing Red Hat Advanced Cluster Management for Kubernetes

Explore the RHACM architecture and core components and apply recommended practices to install the platform.

Managing Clusters by Using Red Hat Advanced Cluster Management for Kubernetes

Import and manage clusters through the RHACM web console, configure user access, and troubleshoot common cluster import issues.

Deploying and Managing Policies for Multiple Clusters with Red Hat Advanced Cluster Management for Kubernetes

Use RHACM governance capabilities to deploy and manage policies across multicluster environments.

Managing Virtual Machines for Multiple Clusters with Red Hat Advanced Cluster Management for Kubernetes

Use RHACM and GitOps to deploy and manage virtual machines across multiple clusters.