Red Hat OpenShift Virtualization

Course Duration: 8 Hours **Course code: OCP-VIRT-201**

1. Course Overview

The Red Hat OpenShift Virtualization course bridges the gap between traditional virtual machines and modern container environments. It covers deploying, managing, and scaling VM workloads within an OpenShift cluster, alongside container-based applications, using powerful UI and CLI tools. Through hands-on labs and real-world scenarios, learners gain the skills to manage hybrid environments efficiently. Ideal for system administrators, cloud architects, and DevOps professionals aiming to modernize infrastructure while supporting legacy applications.

2. What you'll learn?

By the end of this course, learners will:

- Understand the architecture and components of Red Hat OpenShift Virtualization.
- Learn how to deploy and manage virtual machines (VMs) within an OpenShift cluster.
- Configure storage and networking for VMs using OpenShift resources.
- Migrate traditional virtual machines into OpenShift Virtualization using tools like virt-v2v.
- Monitor VM health, scale virtual environments, and troubleshoot common issues.
- Integrate VMs with Kubernetes-native workloads for seamless hybrid application deployments.

- Ensure VM security and compliance within OpenShift environments.

3. Target Audience

This course is designed for IT professionals who want to expand their skills in managing virtual machines within an OpenShift container platform. It is ideal for:

- System administrators looking to integrate virtualization with container orchestration.
- DevOps engineers aiming to manage legacy workloads alongside containerized applications.
- Cloud infrastructure specialists who want to deploy and maintain hybrid infrastructure.
- Red Hat Certified Engineers (RHCE) and OpenShift administrators seeking advanced virtualization capabilities within Red Hat OpenShift.
- Professionals working in virtualized data center environments interested in transitioning to cloud-native platforms.

4. Pre-Requisites

Participants should have:

- A strong understanding of Linux system administration and command-line operations.
- Familiarity with Red Hat OpenShift Container Platform and Kubernetes basics.
- Experience with virtualization technologies such as KVM, VMware, or others.
- Completion of Red Hat OpenShift Administration I (DO180) or equivalent knowledge is recommended.
- Basic networking and storage knowledge in enterprise IT environments.

5. Course content

Module 01 – Introduction to OpenShift Virtualization

- Overview of OpenShift Virtualization Architecture
- Understanding VMs vs Containers
- Benefits of Hybrid Application Management

Module 02 – Installing and Configuring OpenShift Virtualization

- Deploy OpenShift Virtualization Operator
- Configure Storage and Networking for Virtual Machines
- Verify and Validate Virtualization Setup

Module 03 – Managing Virtual Machines in OpenShift

- Create and Deploy Virtual Machines
- Configure VM Templates
- Manage VM Lifecycle (Start, Stop, Delete)

Module 04 – Networking for Virtual Machines

- Configure VM Networking in OpenShift

- Integrate VM and Container Networking
- Manage Network Policies and Security

Module 05 – Storage Management for VMs

- Configure Persistent Volumes for Virtual Machines
- Manage Storage Classes
- Optimize VM Storage Performance

Module 06 – Monitoring and Troubleshooting VMs

- Use OpenShift Monitoring Tools
- Analyze VM Metrics and Logs
- Troubleshoot VM Performance Issues

Module 07 – Scaling and High Availability

- Scale VM Workloads in OpenShift
- Configure High Availability for Critical VMs
- Automate Scaling with OpenShift Tools

Module 08 – Security and Compliance

- Implement VM Security in OpenShift

- Manage Access and Permissions for VM Resources
- Apply Compliance Policies

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