

## Managing Virtual Machines with Red Hat OpenShift Virtualization with Exam (DO317),

**Duration: 5 Days    Course Code: DO317    Delivery Method: Virtual Learning**

### Overview:

#### Create and manage virtual machines on OpenShift using the Red Hat OpenShift Virtualization operator.

Managing Virtual Machines with OpenShift Virtualization with exam teaches the essential skills required to create and manage virtual machines (VM) on OpenShift using the Red Hat OpenShift Virtualization operator. This course does not require previous knowledge of containers and Kubernetes. The Red Hat Certified Specialist in OpenShift Virtualization (EX316) is included in this offering.

This course provides: Skills required to create, access, and manage VMs on OpenShift clusters Skills required to control usage and access of cpu, memory, storage, and networking resources from VMs using the same Kubernetes features that would also control usage and access to these resources for containers Sample architectures to manage High Availability (HA) of VMs using standard Kubernetes features and extensions from OpenShift Virtualization Strategies to connect VMs on OpenShift to data center services outside of their OpenShift cluster, such as storage and databases

#### Virtual Learning

This interactive training can be taken from any location, your office or home and is delivered by a trainer. This training does not have any delegates in the class with the instructor, since all delegates are virtually connected. Virtual delegates do not travel to this course, Global Knowledge will send you all the information needed before the start of the course and you can test the logins.

### Target Audience:

Virtual Machine Administrators interested in moving virtualized workloads from traditional Hypervisors to OpenShift Virtualization Kubernetes Administrators (Cluster Administrators, Clusters Engineers) interested in supporting containerized and virtualized workloads in the same OpenShift cluster Site Reliability Engineers interested in using GitOps and Ansible Automation to manage Virtual Machines on OpenShift

### Objectives:

- Create VMs from installation media and disk images
- Access text and graphical consoles of a VM
- Connect to VMs using Kubernetes networking (services, ingress, and routes)
- Provision storage to VMs using Kubernetes storage (PVC, PV, and storage classes)
- Start, pause, and stop VMs
- Clone and snapshot VMs
- Connect VMs to external and extra networks (outside of the Kubernetes pod and service networks)
- Provision load balancer services for VMs and then use the services to enable SSH access to VMs
- Connect VMs to host storage and external storage
- Create VMs from VM Templates
- Migrate VMs from compatible hypervisors

### Prerequisites:

#### Recommended training

- Red Hat OpenShift Administration I: Operating a Production Cluster (DO180) is recommended but not required.

#### Technology considerations

- All deliveries require access to ROLE for the remote classroom environment. There is no local ILT version of the DO316

### Testing and Certification

Red Hat Certified Specialist in OpenShift Virtualization (EX316) included

classroom.

- DO180 - Red Hat OpenShift Administration I: Operating a Production Cluster

## Follow-on-Courses:

VM Administrators using OpenShift Virtualization require deeper Kubernetes and OpenShift skills than provided by DO316, even if they do not intend to manage containerized, cloud-native applications, and these skills are provided by existing OpenShift Administration courses:

- Red Hat OpenShift Administration II: Configuring a Production Cluster (DO280) is also a recommended follow-up course for security and resource management of OpenShift projects
- Red Hat OpenShift Administration III: Scaling Deployments in the Enterprise (DO380) and Enterprise Kubernetes Storage with Red Hat OpenShift Data Foundation (DO370) are recommended follow-up courses for node, storage, and security management of OpenShift clusters
- Red Hat OpenShift Installation Lab (DO322) is a recommended follow-up course for installing and configuring OpenShift clusters

Linux skills are not required to managing OpenShift clusters and OpenShift Virtualization but managing individual Linux VMs requires Linux sysadmin skills provided by:

- Red Hat System Administration I (RH124) and Red Hat System Administration II (RH134) for managing the OS inside a Linux VM
- Red Hat Linux Automation with Ansible and exam (RH295) for using Ansible to manage the OS inside a Linux VM
- DO280 - Red Hat OpenShift Administration II: Configuring a Production Cluster
- DO316 - Managing Virtual Machines with Red Hat OpenShift Virtualization
- DO322 - Red Hat OpenShift Installation Lab
- DO370 - Enterprise Kubernetes Storage with Red Hat OpenShift Data Foundation
- DO380 - Red Hat OpenShift Administration III: Scaling Deployments in the Enterprise
- RH124 - Red Hat System Administration I
- RH134 - Red Hat System Administration II
- RH295 - Red Hat Enterprise Linux Automation with Ansible and exam

## Content:

|                                                                                                                    |                                                                                                  |                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Introduction to OpenShift Virtualization                                                                           | Connect Virtual Machines to external networks                                                    | Advanced Virtual Machine management                                                                |
| Describe the features and use cases of OpenShift Virtualization.                                                   | Configure node networking to connect virtual machines and nodes to networks outside the cluster. | Import, export, snapshot, clone, and live migrate a virtual machine and initiate node maintenance. |
| Run and access Virtual Machines                                                                                    |                                                                                                  |                                                                                                    |
| Create, manage, inspect, and monitor virtual machines in Red Hat OpenShift Virtualization.                         | Configure Kubernetes storage for Virtual Machines                                                | Configure Kubernetes high availability for Virtual Machines                                        |
| Configure Kubernetes network for Virtual Machines                                                                  | Manage storage and disks for VMs in Red Hat OpenShift.                                           | Configure Kubernetes resources to implement high availability for virtual machines.                |
| Configure standard Kubernetes network objects and external access for VMs and virtual machine-backed applications. | Virtual Machine template management                                                              |                                                                                                    |
|                                                                                                                    | Create and manage templates to provision virtual machines.                                       |                                                                                                    |

## Additional Information:

**Impact on the Organization** OpenShift Virtualization allows organizations to realize operational savings by managing virtualized workloads and containerized workloads together using the same orchestration and clustering infrastructure provided by Red Hat OpenShift. Deploying Virtual Machines (VMs) on OpenShift also eases integration of traditional server-based applications with more modern cloud-native applications and their supporting practices such as CI/CD, DevOps, and SRE to take advantage of quicker time-to-market and other benefits from these practices, without having to first redesign virtualized workloads as container-native workloads.

**Impact on the Individual** IT professionals will learn to deploy and manage virtualized workloads on OpenShift

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### Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

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