



# Managing Virtual Machines with Red Hat OpenShift Virtualization (course ref: DO316)

## Course description

Create and manage virtual machines on OpenShift using the Red Hat OpenShift Virtualization operator. **Managing Virtual Machines with OpenShift Virtualization** 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.**

## 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.

Following course completion, **you will receive a 45-day extended access to hands-on labs** for any course that includes a virtual environment.

## Course content summary



Create **VMs from installation media** and disk images.



Access **text and graphical consoles** of a VM.



Connect to VMs using **Kubernetes networking.**



**Provision storage** to VMs using Kubernetes storage.



**Start, pause, and stop VMs.**



**Clone and snapshot** VMs.



Connect VMs to **external and extra networks.**



Connect VMs to **host storage and external storage.**



**Ansible management** of VMs.



**Create VMs from VM Templates.**

## Audience for this course

1

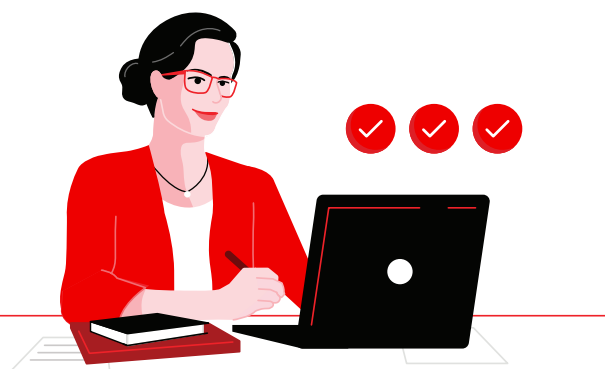
**Virtual Machine Administrators** interested in moving virtualized workloads from traditional Hypervisors to OpenShift Virtualization.

2

**Kubernetes Administrators (Cluster Administrators, Clusters Engineers)** interested in supporting containerized and virtualized workloads in the same OpenShift cluster.

3

**Site Reliability Engineers** interested in using GitOps and Ansible Automation to manage Virtual Machines on OpenShift.



## Prerequisites for this course

[Take our free assessment](#) to gauge whether this offering is the best fit for your skills.

[Red Hat OpenShift I: Containers & Kubernetes](#) and is recommended but not required.

## Outline for this course

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

## 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** and manage these workloads using both traditional ways, such as SSH and Ansible, and also modern DevOps practices, such as GitOps and CI/CD.

### Recommended next exam or course

- [Red Hat Certified Specialist in OpenShift Virtualization \(EX316\)](#)
- 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: Operating a Production Kubernetes Cluster \(DO280\)](#) is also a recommended follow-up course for security and resource management of OpenShift projects.
  - [Red Hat OpenShift Administration III: Scaling Kubernetes 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.



Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

**North America**  
1 888 REDHAT  
www.redhat.com

**Europe, Middle East,  
and Africa**  
00800 7334 2835  
europe@redhat.com

**Asia Pacific**  
+65 6490 4200  
apac@redhat.com

**Latin America**  
+5411 4329 7300  
info-latam@redhat.com