



DO316-Managing Virtual Machines with Red Hat OpenShift Virtualization OCPv4.14



## **Chapter 1: Red Hat OpenShift Virtualization**

Section 1.1: OpenShift Virtualization

Section 1.2: Quiz: OpenShift Virtualization

Section 1.3: Underlying Kubernetes Architecture

Section 1.4: Guided Exercise: Access and Identify Key OpenShift Cluster Services

Section 1.5: Deploying the OpenShift Virtualization Operator

Section 1.6: Guided Exercise: Deploy the OpenShift Virtualization Operator

Section 1.7: Quiz: Red Hat OpenShift Virtualization

Section 1.8: Summary

## **Chapter 2: Running and Accessing Virtual Machines**

Section 2.1: Virtual Machine Resources

Section 2.2: Quiz: Virtual Machine Resources

Section 2.3: Creating and Accessing Virtual Machines by Using the Web Console

Section 2.4: Guided Exercise: Create and Access a Virtual Machine by Using the Web Console

Section 2.5: Creating and Accessing Virtual Machines from the Command Line

Section 2.6: Guided Exercise: Create and Access a Virtual Machine from the Command Line

Section 2.7: Monitoring and Inspecting Virtual Machines

Section 2.8: Guided Exercise: Monitor and Inspect Virtual Machines

Section 2.9: Lab: Create, Configure, and Monitor Virtual Machines

Section 2.10: Summary

## **Chapter 3: Configuring Kubernetes Networking for Virtual Machines**



Section 3.1: Configuring Network Communication Between Virtual Machines Within the Cluster

Section 3.2: Guided Exercise: Configure Networking Communication Between Virtual Machines

Section 3.3: Restricting Access to Virtual Machines by Using a Network Policy

Section 3.4: Guided Exercise: Restrict Access to a Virtual Machine by Using a Network Policy

Section 3.5: Configuring External Access to Virtual Machines

Section 3.6: Guided Exercise: Configure External Access to a Virtual Machine

Section 3.7: Configure External Access with Load Balancer Services

Section 3.8: Guided Exercise: Configure SSH Access for a Virtual Machine with Load Balancer

Services

Section 3.9: Lab: Configure Kubernetes Networking for Virtual Machines

Section 3.10: Summary

## **Chapter 4: Connecting Virtual Machines to External Networks**

Section 4.1: Advanced Networking with Multus CNI

Section 4.2: Quiz: Advanced Networking with Multus CNI

Section 4.3: Configuring Multihomed Nodes and Virtual Machines

Section 4.4: Guided Exercise: Configure Multihomed Nodes and Virtual Machines

Section 4.5: Lab: Connect Virtual Machines to External Networks

Section 4.6: Summary

## **Chapter 5: Configuring Storage for Virtual Machines**

Section 5.1: Attaching Persistent Storage to Virtual Machines

Section 5.2: Guided Exercise: Attach Persistent Storage to Virtual Machines

Section 5.3: Managing Storage Devices on Virtual Machines

Section 5.4: Guided Exercise: Attach and Access Storage Devices on a Virtual Machine

Section 5.5: Connecting a Virtual Machine to External Storage



Section 5.6: Guided Exercise: Connect a Virtual Machine to External Storage

Section 5.7: Lab: Configure Storage for Virtual Machines

Section 5.8: Summary

#### **Chapter 6: Create and Restore Backups of Virtual Machines**

Section 6.1: Exporting and Importing Virtual Machine Data and Settings

Section 6.2: Guided Exercise: Export and Import Virtual Machine Data and Settings

Section 6.3: Managing Virtual Machine Snapshots

Section 6.4: Guided Exercise: Manage Virtual Machine Snapshots

Section 6.5: OADP Operator Deployment and Features

Section 6.6: Guided Exercise: Verify the OADP Operator Installation

Section 6.7: Back up and Restore with OADP

Section 6.8: Guided Exercise: Back up and Restore an OpenShift Project with OADP

Section 6.9: Lab: Back up and Restore a Virtual Machine with OADP

Section 6.10: Summary

## Chapter 7: Replicating Virtual Machines by Using Instance Types, Templates, and Clones

Section 7.1: Cloning Virtual Machines

Section 7.2: Guided Exercise: Clone a Virtual Machine

Section 7.3: Create Virtual Machines by Using Predefined Virtual Machine Templates and Instance Types

Section 7.4: Guided Exercise: Creating Virtual Machines with Predefined Virtual Machine Templates and Instance Types

Section 7.5: Creating Custom Templates and Instance Types

Section 7.6: Guided Exercise: Create a Custom Template and an Instance Type

Section 7.7: Lab: Replicating Virtual Machines by Using Instance Types, Templates, and Clones

Section 7.8: Summary



#### **Chapter 8: Advanced Virtual Machine Management**

Section 8.1: Migrating Virtual Machines from Foreign Hypervisors

Section 8.2: Guided Exercise: Migrate Virtual Machines from Foreign Hypervisors

Section 8.3: Controlling the Scheduling of Virtual Machines

Section 8.4: Guided Exercise: Control the Scheduling of a Virtual Machine

Section 8.5: Configuring Health Probes for Virtual Machines

Section 8.6: Guided Exercise: Configure Health Probes for Virtual Machines

Section 8.7: Live Migrating a Virtual Machine

Section 8.8: Guided Exercise: Live Migrate a Virtual Machine

Section 8.9: Lab: Advanced Virtual Machine Management

Section 8.10: Summary

## **Chapter 9: Configuring Kubernetes High Availability for Virtual Machines**

Section 9.1: Virtual Machine Load Balancing with Kubernetes Networking Resources

Section 9.2: Guided Exercise: Load Balance a Virtual Machine with Kubernetes Networking Resources

Section 9.3: Preparing for Node Maintenance

Section 9.4: Guided Exercise: Perform Node Maintenance

Section 9.5: Configuring Virtual Machines to Survive Node Failure

Section 9.6: Guided Exercise: Configure Virtual Machines to Survive a Node Failure

Section 9.7: OpenShift and OpenShift Virtualization Updates

Section 9.8: Quiz: OpenShift and OpenShift Virtualization Updates

Section 9.9: Lab: Configure Kubernetes High Availability for Virtual Machines

Section 9.10: Summary



# **Chapter 10: Comprehensive Review**

Section 10.1: Comprehensive Review

Section 10.2: Lab: Deploy OpenShift Virtualization and Configure External Network Access for a Virtual Machine

Section 10.3: Lab: Use a Template to Deploy a Virtual Machine and Prepare a Node for Maintenance

Section 10.4: Lab: Clone a Virtual Machine and Configure Load Balancing