

VMware Integrated Openstack: Install, Configure, Manage [V7]

Course Duration: 40 Hours

Course code: V7

1. Course Overview

This five-day course provides you with the skills to build a private cloud using VMware® Integrated OpenStack on a proven VMware SDDC. Through a combination of lecture and hands-on labs, this course builds your skills in installing, configuring, and managing VMware Integrated OpenStack. You learn how to offer IaaS and PaaS with advanced networking and security features to end users using VMware Integrated OpenStack.

2. What you'll learn?

By the end of the course, you should be able to meet the following objectives:

- Describe how VMware Integrated OpenStack fits into the VMware SDDC and its use cases
- List the deployment options and how to install VMware Integrated OpenStack
- Describe the architecture of VMware Integrated OpenStack and its components
- Configure tenancy and manage user authentication
- Integrate the OpenStack Neutron Networking service with VMware NSX-T™ Data Center networking platform
- Deploy and manage virtual machine instances
- Monitor VMware Integrated OpenStack with OpenStack monitoring services
- Design an auto-scale, multitier application using built-in automation tools
- Manage a VMware Integrated OpenStack control plane using Kubernetes
- Use the HTML5 Web UI and CLI commands to view and edit the configuration, monitor log files, and view database tables used by VMware Integrated OpenStack components

3. Target Audience

Cloud architects, systems engineers, data center administrators, and cloud administrators with experience in a service provider or managed services environment.

4. Pre-Requisites

This course requires the completion of the following courses:

- VMware vSphere: Install, Configure, Manage [V7] or equivalent knowledge
- VMware Integrated OpenStack Fundamentals [V6]
- VMware Network Virtualization Fundamentals [2017]
- Substantial knowledge of Linux administration and TCP/IP networking is helpful.

5. Course content

Module 1: Course Introduction

- Introductions and course logistics
- Course objectives
- References and resources

Module 2: Introduction to VMware Integrated OpenStack

- Describe what an OpenStack is
- Describe the services that make up VMware Integrated OpenStack
- Describe what VMware Integrated OpenStack is
- Describe what NFV is and how VIO fits in
- Understand the licensing model of VIO
- Understand the use cases of VMware Integrated OpenStack

Module 3: VMware Integrated OpenStack Deployment

- Understand the role of Kubernetes in the VIO control plane
- List the VMware Integrated OpenStack deployment models
- How to perform VIO high-availability deployment
- How to perform VIO compact installation

- Pre-requisites for installing VMware Integrated OpenStack
- How to use the HTML5 web UI / VIOCLI to check the deployment configurations and deployment running status
- Explain steps involved in patching VIO high availability setup

Module 4: VMware Integrated OpenStack Architecture

- List the VMs deployed after a VMware Integrated OpenStack high-availability installation
- Describe the overall architecture of the VIO HA setup
- List the VIO services running within Kubernetes pods
- Describe the role of each service
- Understand SSL certificates in VIO

Module 5: Keystone Authentication

- Understand Keystone use cases and services
- List the features offered by Keystone in VIO
- How to integrate Keystone with LDAP
- List the configuration, view logs, and database tables related to Keystone

Module 6: Glance Images

- Understand Glance use case and its services
- List the features offered by Glance in VIO
- Explain how to create flavors and images
- Describe how to set up metadata (e.g., SPBM storage policy)
- List the custom resources, logs, and database tables related to Glance

Module 7: Networking with Neutron

- Understand the Neutron use case and its services
- Integrate Neutron with NSX-T Data Center
- List the custom resources, logs, and database tables related to Neutron

Module 8: Managing Instances with Nova

- Understand Nova use cases and services

- Understand regions, availability zones, and host aggregates
- Understand the concept of tenant VDC
- Nova support for multiple vCenter instances
- How to deploy an instance using Nova
- How to resize an instance and view the console logs
- Configuration and logs related to Nova service

Module 9: Cinder Block Storage

- Understand Cinder use cases and services
- List the features offered by Cinder
- Add a persistent volume to an instance
- Explain the snapshot of a Cinder volume and attach it to another instance
- List the custom resources, log files, and database tables related to Cinder

Module 10: Monitoring with Ceilometer

- List the Telemetry use cases and services
- How to enable Ceilometer in VIO
- How to monitor the VIO environment using Ceilometer
- Configuration and log files related to Ceilometer service

Module 11: Automating with Heat

- Define Heat use cases, templates, and services
- Describe use cases of Heat

Module 12: Troubleshooting Concepts

- List common issues in VMware Integrated OpenStack
- Use troubleshooting tools
- Describe simple troubleshooting procedures
- List and explain Day-2 operations

Module 13: Advanced Features

- Describe Load Balancer as a Service (Octavia)
- Explain Firewall as a Service

- Describe Designate (DNS as a Service)
- Describe automating scaling
- Describe selective vCPU pinning
- Explain SR-IOV network redundancy support
- Describe network trunk services support
- Describe live resize
- Describe hardware passthrough (GPU passthrough)
- Describe external REST API

