

# VMware vCloud NFV with vCloud Director [V9.7]

Duration 5 Days

## COURSE DESCRIPTION

This five-day, hands-on training course discusses Network Functions Virtualization (NFV), a network architecture concept that specifies how virtualization technologies can be used to virtualize network service functions.

This course also covers interfacing VMware vCloud Director® with other systems using various APIs and the integration and use of VMware vCloud® Availability for vCloud Director®. You will also understand how to manage multisite, cross-VDC (Virtual Data Center) networking for vCloud Director and how to configure Central Point of Management (CPOM) to define a software-defined datacenter (SDDC) for tenant and provider users of vCloud Director. This course also discusses how to monitor various vCloud Director objects using VMware vRealize® Operations™, Tenant vApp, and VMware vRealize® Log Insight™.

## COURSE OBJECTIVES

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

- Describe the VMware vCloud® NFV™ architecture
- Describe the vCloud Director architecture as Virtualized Infrastructure Manager (VIM)
- Secure the deployment of multivendor virtual network functions (VNFs) on the vCloud NFV platform
- Manage vCloud Director to support NFV workloads in a secure, multitenant environment
- Configure VMware vSAN™ to enable multiple tiers in provider virtual data centers
- Create and manage vCloud Director organizations and vApps to satisfy business needs
- Create and manage vCloud Director catalogs
- Use advanced services to manage VMware NSX® from vCloud Director

## COURSE OUTLINE

### 1 Course Introduction

- Introductions and course logistics
- Course objectives

### 2 vCloud NFV Overview

- Define the benefits of vCloud NFV
- Describe a sample vCloud NFV solution
- Describe the vCloud NFV architecture

### 3 NFV Infrastructure

- Compare physical and virtual infrastructures
- Describe the advantages and components of the NFV infrastructure (NFVI)
- Explain the role of network virtualization in the NFVI
- Compare physical and virtual infrastructures
- Describe the vSAN architecture and the differences between the vSAN hybrid and all-flash architectures
- Explain the purpose of virtual machine storage policies
- Describe network virtualization with NSX

## 4 Virtualized Infrastructure Manager (VIM)

- Describe the VMware products for the VIM layer
- Explain basic concepts related to vCloud Director
- Describe the relationship between provider VDCs (Virtual Data Centers) and organization VDCs
- Describe how vSAN integrates with vCloud Director
- Create vSAN storage policies
- Describe the components and basic configuration of the vCloud Director architecture
- Create resource pools

## 5 vCloud Providers

- Describe how compute and storage resources are provided to vCloud Director
- Describe provider VDC requirements and best practices
- Create provider VDCs
- Describe the VNF on-boarding process

## 6 vCloud Director Organizations

- Describe and create vCloud Director organizations
- Discuss vCloud Director HTML5 UI
- Discuss HTML5-based provider portal
- Discuss tenant portal
- Discuss the use cases of a vCloud Director organization VDC
- Discuss organization VDC allocation models
- Recognize resource allocations for an organization
- Examine the function and requirements of network pools.
- Describe the network types available in vCloud Director (external, organization, and vApp)
- Discuss the organization network types
- Create and manage organization VDC networks
- Add a catalog to an organization
- Populate, share, and publish catalogs
- Manage access to vApps and catalogs
- Modify the configuration of vApps and their virtual machines (VMs)
- Manage organization VDC networking
- Create affinity and anti-affinity rules

## 7 vCloud Director Security

- Describe role-based access
- Create custom security roles
- Integrate Directory Service with vCloud Director
- Integrate LDAP, SAML, SSL, Kerberos, and OAuth2 with vCloud Director
- Configure SSO

## 8 vCloud Director Networking

- Describe the use and placement of NSX® Edge™ services gateways in relation to vCloud Director
- Review routing with the distributed logical router and Edge services gateways in combination with vCloud
- Director
- Firewall management in vCloud Director with Edge services gateways and the distributed firewall
- Architecture of VMware NSX-T™ (Basic)
- vCloud Director supported features of NSX-T

- Discuss multisite
- Configure Cross VDC networking

## 9 Resource Management and Monitoring

- Manage provider and organization VDCs
- Manage VMware vCenter Server® instances and VMware ESXi™ hosts
- Manage vSphere datastores
- Manage resource pools at the vSphere level
- Monitor usage information at provider and organization VDCs
- Use the cell management tool
- Manage provider VDC and Org-VDC
- Monitor vCloud Director environments with VMware vRealize® Operations Manager™
- Monitor vCloud Director environments with vRealize Log Insight
- Describe the components for NVFI operations management
- Use VMware vRealize® Business™ for cost management
- Review historical virtual machine metrics in vCloud Director
- View vCloud Director logs

## 10 vCloud Extensibility

- Introduce container service extension
- Explore vCloud Director CLI
- Use Python SDK for vApp deployment
- Discuss Terraform vCloud Director capabilities
- Use VMware vRealize® Orchestrator™ Plug-in for vCloud Director

## 11 Day 2 Operations

- Identify log locations for vCloud Director
- Navigate through vCloud Director logs
- Capture vCloud Director log bundles

### WHO SHOULD ATTEND

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

### PREREQUISITES

Completion of the following course is required:

- VMware vSphere: Install, Configure, Manage [V6.x] or equivalent knowledge

Completion of the following eLearning courses is recommended:

- VMware vCloud Director: Fundamentals [V8.x]
- VMware vSAN and HCI Fundamentals
- VMware Network Virtualization Fundamentals

Substantial knowledge of TCP/IP networking is helpful.