VMware vSphere with Tanzu: Deploy, Configure, Manage

Duration: 3 Days   **Course Code: VMVKDM**   **Version: 8**   **Delivery Method: Company Event**

Overview:

During this 3-day course, you focus on deploying and managing VMware vSphere® with Kubernetes. You learn about how vSphere with Kubernetes can be used to orchestrate the delivery of Kubernetes clusters and containerized applications in a VMware vSphere® environment.
Product Alignment
- VMware vSphere 8

Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

Target Audience:

Experienced system administrators and system integrators responsible for designing and implementing vSphere with Kubernete

Objectives:

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

- Describe vSphere with Kubernetes and use cases in on-premises environments

- Deploy vSphere with Kubernetes

- Describe the VMware NSX® networking requirements for vSphere with Kubernetes

- Create and manage vSphere with Kubernetes namespaces

- Deploy and run container applications on vSphere with Kubernetes

- Deploy and configure VMware Harbor

- Describe the VMware Tanzu™ Kubernetes Grid™ service

- Deploy a Tanzu Kubernetes Grid cluster

- Deploy and run container applications on a Tanzu Kubernetes Grid cluster

- Describe the vSphere with Kubernetes lifecycle

- Use logs and CLI commands to monitor and troubleshoot vSphere with Kubernetes

Prerequisites:

This course requires completion of one of the following courses:

- VMware vSphere: Install, Configure, Manage
- VMware vSphere: Optimize and Scale
- VMware vSphere: Install, Configure, Manage
- VMware vSphere: Optimize and Scale
Experience working at the command line is helpful.

This course requires that a student be able to perform the following tasks with no assistance or guidance before enrolling in this course:

- Create VMware vCenter Server® objects, such as data centers and folders
- Create a virtual machine using a wizard or a template
- Modify a virtual machine's hardware
- Migrate a virtual machine with VMware vSphere® vMotion®

- Migrate a virtual machine with VMware vSphere® Storage vMotion®
- Configure and manage a vSphere DRS cluster with resource pools
- Configure and manage a VMware vSphere® High Availability cluster

If you cannot perform all of these tasks, VMware recommends that you complete one of the prerequisite courses before enrolling in VMware vSphere with Kubernetes: Deploy & Manage.

- VSICM - VMware vSphere: Install, Configure, Manage
- VSOS - VMware vSphere: Optimize & Scale
- VSICM - VMware vSphere: Install, Configure, Manage
- VSOS - VMware vSphere: Optimize and Scale

Content:

1- Course Introduction

- Introductions and course logistics
- Course objectives

2- Introduction to Containers and Kubernetes

- Describe Virtual Machines and Containers
- Describe Container Hosts
- Describe Container Engines
- Describe Dockerfile
- Describe Container Images
- Describe Image Registry
- Describe the purpose and functionality of Kubernetes
- Describe Manifest YAML files
- Explain Pod YAML files
- Explain ReplicaSets
- Explain Services
- Explain Deployments

3- Introduction to vSphere with Kubernetes

- Describe the purpose and functionality of vSphere with Kubernetes
- Explain the integration with VMware Tanzu™ Mission Control™
- Describe the capabilities of vSphere with Kubernetes
- Describe the components of vSphere with Kubernetes
- Contrast vSphere with Kubernetes to traditional Kubernetes
- Describe the requirements for vSphere with Kubernetes
- Prepare a vSphere cluster for vSphere with Kubernetes
- Describe the NSX components required for vSphere with Kubernetes
- Describe the network topology of vSphere with Kubernetes
- Explain the networking requirements of vSphere with Kubernetes
- Compare NSX networking objects with Kubernetes networking objects

4- vSphere with Kubernetes Core Services

- Explain the architecture of the vSphere with Kubernetes Core Services
- Describe the Container Service
- Describe the Volume Service
- Describe the Network Service
- Describe the Registry Service
- Describe the use cases of vSphere with Kubernetes
- Enable vSphere with Kubernetes
- Deploy VMware Harbor Registry

5- vSphere with Kubernetes Namespaces

- Describe a vSphere with Kubernetes namespace
- Contrast a vSphere with Kubernetes namespace to a traditional Kubernetes namespace
- Describe Resource Quotas
- Explain Authentication and Authorization to vSphere with Kubernetes
- Explain the use cases of namespaces
- Create a namespace
- Describe kubectl
- Use kubectl to interact with vSphere with Kubernetes
- Describe using kubectl pod deployment
- Explain scaling a pod deployment
- Explain managing pod lifecycle
- Explain deleting pods
- Use kubectl to deploy a pod
- Use kubectl to scale a pod
- Use kubectl to switch between namespaces

6- VMware Tanzu Kubernetes Grid service

- Explain Tanzu Kubernetes Grid service
- Describe the use cases for Tanzu Kubernetes Grid clusters
- Describe the integration with Tanzu Mission Control
- Explain the lifecycle of Tanzu Kubernetes Grid clusters
- Deploy Tanzu Kubernetes Grid cluster
- Deploy pods to a Tanzu Kubernetes Grid cluster

7- Monitoring and Troubleshooting

- Describe the monitoring tools for vSphere with Kubernetes
- Describe the troubleshooting tools for vSphere with Kubernetes
- Explain cluster, node, and namespace health
- Explain usage and capacity monitoring
- Describe vCenter Server events
- Describe vSphere with Kubernetes events
- Gather support information

8- vSphere with Kubernetes Lifecycle

- Describe the vSphere with Kubernetes lifecycle
- Describe the Tanzu Kubernetes Grid lifecycle
- Describe scaling a vSphere with Kubernetes cluster
- Update vSphere with Kubernetes
- Update Tanzu Kubernetes Grid clusters

Remove vSphere with Kubernetes

Further Information: