

## VMware vSphere with Tanzu: Deploy, Configure, Manage

**Durée: 30 Jours**    **Réf de cours: VMVKDM**    **Version: 8**    **Méthodes d'apprentissage: E-learning**

### Résumé:

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

e-Learning

Interactive self-paced content that provides flexibility in terms of pace, place and time to suit individuals and organisations. These resources also consist of online books, educational podcasts and vodcasts, and video-based learning.

### Public visé:

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

### Objectifs pédagogiques:

- 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

### Pré-requis:

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 : Installation, Configuration et Administration
- VSOS - VMware vSphere : Optimize & Scale

## Contenu:

### 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