

# VMware vSphere 8 Training - Initiation

3 days (21 hours)

## Overview

VMware vSphere 8, the version named Tanzu, uses virtualization to transform individual data centers into aggregated IT infrastructures including CPU, storage and networking resources. VMware vSphere manages these infrastructures as a unified operating environment, and provides the tools to administer the data centers that participate in this environment.

The VMware vSphere stack comprises virtualization, management and interface layers. The two main components of vSphere are ESXi and vCenter Server. ESXi is the virtualization platform on which you create and run virtual machines and devices. vCenter Server is the service that lets you manage multiple hosts connected in a network and host resources in a pool.

With the VMWare with vSphere introductory course, you'll be able to:- Pool processing and storage resources from multiple physical hosts.- Benefit from centralized management of multiple hosts via VMware vCenter Server.- Improve service levels and operational efficiency.- Perform hot migration of virtual machines.- Take advantage of automatic load balancing and business continuity features, and advanced backup and restore capabilities for your virtual machines.

## Objectives

- Describe the Software-Defined Data Center
- Describe devCenter Server architecture
- Install and configure the components of a VMware vSphere 7 virtual infrastructure
- Use vCenter Server to manage an ESXi host
- Configure and manage the virtual network in vSphere
- Configure, manage and optimize storage in VMware vSphere
- Manage virtual machines, templates, clones and snapshots
- Migrate virtual machines with VMware vSphere® vMotion®.
- Migrate virtual machine storage with VMware vSphere® Storage vMotion®
- Monitor resource usage and manage resource pools

# Target audience

- Administrators and Architects

# Prerequisites

- Basic knowledge of Linux/Unix or Windows system administration.

# To go further:

- Reinforce your knowledge with our [VMware Intermediate](#) course
- Discover VMware vSphere High Availability with our [VMware Advanced](#) course

# Syllabus of our VMware Vsphere 7 - Introduction course Module

## 1: Introduction to the course

## Module 2: Introduction to vSphere and Software-Defined Data Center

- Introduction to virtualization
- Virtualization domains
- Types of virtualization
- Virtual machine
- Datacenter topologies: physical & virtual
- About the Software-Defined Data Center
- Introduction to Cloud Computing
- VMware vSphere 6.7 product overview
- vSphere 6.7 distributed infrastructure services
- Networking with vSphere 6.7
- Storage with vSphere 6.7
- vSphere 6.7 Hypervisor architecture
- VMware vSphere 6.7 licensing

## Module 3: Introduction to vSphere and the Software-Defined Data Center

- Creating, provisioning and deleting virtual machines
- VMware Tools
- Identify virtual machine files
- Import a virtual appliance OVF/OVA model

## Practical exercises

- Installing and configuring an ESXi server
- Creating a standard virtual switch
- Creating a VM
- VMware tools installation
- Importing an OFV model

## Module 4: vCenter Server

- Describe the architecture of vCenter Server and PSC (Platform Services Controller).
- vCenter and PSC deployment topologies
- vCenter HA cluster
- vCenter Server Appliance
- vSphere Web Client
- Creating data centers, clusters, hosts and organizational objects
- Permission enforcement rules
- Custom roles
- vCenter Server Backup/Restore
- Infrastructure access security

## Tutorial

- Access vCenter Server Appliance
- Install vCenter Server Appliance and host license keys
- Create a datacenter object
- Add your ESXi host to the vCenter Server inventory
- Configure your ESXi host as an NTP client
- Create folders for datacenter objects

## Module 5: Configuring and managing virtual networks

- Standard switches (VSS) vs. distributed switches
- Virtual switch security, traffic shaping and load balancing policies
- Virtual switch connection types
- Describing the new TCP/IP stack architecture
- Using VLANs and PVLANS with virtual switches

## Practical exercises

- Create and configure a distributed switch
- Add ESXi hosts to the new distributed switch
- Review your distributed switch configuration
- Migrate virtual machines to a distributed switch port group

## Module 6: Configuring and managing virtual networks

- Introduce storage protocols and types of storage architectures
- Introduction to ESXi hosts via iSCSI, NFS and Fibre Channel storage
- Create and manage VMFS and NFS datastores
- Describe the new features of VMFS 6.7
- Advantages of virtual SAN

## Practical exercises

- Creating, configuring and managing NFS and iSCSI datastores
- Creating and configuring vSAN

## Module 7: Configuring and managing virtual networks

- Using templates and cloning to deploy new virtual machines
- Modifying and managing virtual machines
- Clone a virtual machine
- Update virtual machine hardware
- Delete virtual machines from the vCenter inventory
- Customize a new virtual machine by customizing specification files
- Enhance vSphere vMotion and vSphere Storage vMotion migrations
- Create and manage virtual machine snapshots
- Create, clone and export vApps
- Introduce content library types, how to deploy and use them

## Practical exercises

- VM and template creation
- Cloning, backup and cold migration of VMs
- Monitoring and managing resource usage

## Module 8: Resource management and monitoring

- Introducing virtual CPUs and memory concepts
- Describe memory over-allocation and resource competition
- Configure and manage resource pools
- Describe methods for optimizing CPU and memory usage
- Use various tools to monitor resource usage
- Create and use alarms to report on certain conditions or events

## Practical exercises

- Create resource pools
- Check resource pool functionality
- Implementing alarms
- Monitor CPU consumption on a VM

- Create an event-driven alarm

## Companies concerned

This training course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the forthcoming course, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical training: 60% hands-on, 40% theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Certification

A certificate will be awarded to each trainee who has completed the entire course.