



Enterprise Computing Solutions - Education Services

## TRAINING OFFERING

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<b>CODE:</b>	<b>LENGTH:</b>	<b>PRICE:</b>
VMW_VSANICM8	32 Hours (4 days)	€1,600.00

## Description

During this four-day course, you gain the knowledge, skills, and tools to plan and deploy a VMware vSAN™ cluster. You learn how to manage and operate vSAN. This course focuses on building the required skills for common Day-2 vSAN administrator tasks. Administrator tasks include vSAN node management, cluster maintenance, security operations, troubleshooting, and advanced vSAN cluster operations. You acquire the course skills through the completion of instructor-led activities and hands-on lab exercises.

### Product Alignment

- VMware ESXi™ 8.0
- VMware vCenter Server® 8.0
- VMware vSAN 8.0

## Objectives

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

- Describe vSAN concepts • Detail the underlying vSAN architecture and components
- Explain the key features and use cases for vSAN • Identify requirements and planning considerations for vSAN clusters
- Explain the importance vSAN node hardware compatibility • Describe the different vSAN deployment options
- Explain how to configure vSAN fault domains • Detail how to define and create a VM storage policy
- Discuss the impact of vSAN storage policy changes • Detail vSAN resilience and data availability
- Describe vSAN storage space efficiency • Explain how vSAN encryption works
- Detail VMware HCI Mesh™ technology and architecture • Detail vSAN File Service architecture and configuration
- Describe how to setup a stretched and a two-node vSAN cluster
- Describe vSAN maintenance mode and data evacuation options • Define the steps to shut down a vSAN cluster for maintenance
- Explain how to use proactive tests to check the integrity of a vSAN cluster
- Use VMware Skyline Health™ for monitoring vSAN health
- Use VMware Skyline Health to investigate and help determine failure conditions • Discuss vSAN troubleshooting best practices
- Describe vSAN Express Storage Architecture concepts

## Audience

Storage and virtual infrastructure consultants, solution architects, and administrators who are responsible for production support and administration of VMware vSAN 8.0.

## Prerequisites

Equivalent knowledge or completion of the following course is required:

- VMware vSphere: Install, Configure, Manage [V7]

## Programme

## 2 Introduction to vSAN

- Describe vSAN architecture
- Describe the vSAN software components: CLOM, DOM, LSOM, CMMDS, and RDT
- Identify vSAN objects and components
- Describe the advantages of object-based storage
- Describe the difference between All-Flash and Hybrid vSAN architecture
- Explain the key features and use cases for vSAN
- Discuss the vSAN integration and compatibility with other VMware technologies

## 1 Course Introduction

- Introduction and course logistics
- Course objectives

## 3 Planning a vSAN Cluster

- Identify requirements and planning considerations for vSAN clusters
- Apply vSAN cluster planning and deployment best practices
- Determine and plan for storage consumption by data growth and failure tolerance
- Design vSAN hosts for operational needs
- Identify vSAN networking features and requirements
- Describe ways of controlling traffic in a vSAN environment
- Recognize best practices for vSAN network configurations

## 4 Deploying a vSAN Cluster

- Recognize the importance of hardware compatibility
- Ensure the compatibility of driver and firmware versioning
- Use tools to automate driver validation and installation
- Apply host hardware settings for optimum performance
- Use vSphere Lifecycle Manager to perform upgrades
- Deploy and configure a vSAN Cluster using the Cluster QuickStart wizard
- Manually configure a vSAN Cluster using VMware vSphere® Client™
- Explain and configure vSAN fault domains
- Using VMware vSphere® High Availability with vSAN
- Understand vSAN Cluster maintenance capabilities
- Describe the difference between implicit and explicit fault domains
- Create explicit fault domains

## 5 vSAN Storage Policies

- Describe a vSAN object
- Describe how objects are split into components
- Explain the purpose of witness components
- Explain how vSAN stores large objects
- View object and component placement on the vSAN datastore
- Explain how storage policies work with vSAN
- Define and create a virtual machine storage policy
- Apply and modify virtual machine storage policies
- Change virtual machine storage policies dynamically
- Identify virtual machine storage policy compliance status

## 6 vSAN Resilience and Data Availability

- Describe and configure the Object Repair Timer advanced option
- Plan disk replacement in a vSAN cluster
- Plan maintenance tasks to avoid vSAN object failures
- Recognize the importance of managing snapshot utilization in a vSAN cluster

## 7 Managing vSAN Storage Space Efficiency

- Discuss deduplication and compression techniques
- Understand deduplication and compression overhead
- Discuss compression only mode
- Configure erasure coding
- Configure swap object thin provisioning
- Discuss reclaiming storage space with SCSI UNMAP
- Configure TRIM/UNMAP

## 9 vSAN HCI Mesh

- Understand the purpose of vSAN HCI Mesh
- Detail vSAN HCI Mesh technology and architecture
- Perform mount and unmount of a remote datastore

## 11 vSAN Stretched and Two Node Clusters

- Describe the architecture and uses case for stretched clusters
- Detail the deployment and replacement of a vSAN witness node
- Describe the architecture and uses case for two-node clusters
- Explain storage policies for vSAN stretched cluster

## 8 vSAN Security Operations

- Identify differences between VM encryption and vSAN encryption
- Perform ongoing operations to maintain data security
- Describe the workflow of data-in transit encryption
- Identify the steps involved in replacing Key Management Server

## 10 vSAN File Services

- Understand the purpose of vSAN File Services
- Detail vSAN File Services architecture
- Configure vSAN File Shares

## 12 vSAN Cluster Maintenance

- Perform typical vSAN maintenance operations
- Describe vSAN maintenance modes and data evacuation options
- Assess the impact on cluster objects of entering maintenance mode
- Determine the specific data actions required after exiting maintenance mode
- Define the steps to shut down and reboot hosts and vSAN clusters
- Use best practices for boot devices
- Replace vSAN nodes

## 13 vSAN Cluster Monitoring

- Describe how the Customer Experience Improvement Program (CEIP) enables VMware to improve products and services
- Use VMware Skyline Health for monitoring vSAN cluster health
- Manage alerts, alarms, and notifications related to vSAN in VMware vSphere® Client™
- Create and configure custom alarms to trigger vSAN health issues
- Use IOInsight metrics for monitoring vSAN performance
- Use a vSAN proactive test to detect and diagnose cluster issues

## 14 vSAN Troubleshooting

- Use a structured approach to solve configuration and operational problems
- Apply troubleshooting methodology to logically diagnose faults and optimize troubleshooting efficiency
- Use VMware Skyline Health to investigate and help determine failure conditions
- Explain which log files are useful for vSAN troubleshooting

## 15 vSAN Express Storage Architecture

- Understand the purpose of vSAN Express Storage Architecture
- Describe the vSAN Express Storage Architecture components
- Identify Storage Policy differences
- Understand compression and encryption operation differences

## Test and Certification

<https://www.vmware.com/learning/certification/vcp-dcv.html>

## Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
16 Dec 2024	Virtual Classroom (CET / UTC +1)		English	Instructor Led Online		€1,600.00
03 Feb 2025	Virtual Classroom (CET / UTC +1)		English	Instructor Led Online		€1,600.00
12 May 2025	Virtual Classroom (CET / UTC +1)		English	Instructor Led Online		€1,600.00

## Additional Information

This training is also available as onsite training. Please contact us to find out more.