



**Enterprise Computing Solutions - Education Services**

## **TRAINING OFFERING**

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CODE:	LENGTH:	PRICE:
VMW_VSANICM8	32 Hours (4 days)	£2,590.00

## 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.

## 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

## Programme

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| <b>1 Course Introduction</b> <ul style="list-style-type: none"> <li>• Introduction and course logistics</li> <li>• Course objectives</li> </ul> | <b>2 Introduction to vSAN</b> <ul style="list-style-type: none"> <li>• Describe vSAN architecture</li> <li>• Describe the vSAN software components: CLOM, DOM, LSOM, CMMDS, and RDT</li> <li>• Identify vSAN objects and components</li> <li>• Describe the advantages of object-based storage</li> <li>• Describe the difference between All-Flash and Hybrid vSAN architecture</li> <li>• Explain the key features and use cases for vSAN</li> <li>• Discuss the vSAN integration and compatibility with other VMware technologies</li> </ul> |
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### 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

### 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

### 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

### 10 vSAN File Services

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

### 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

### 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

This class supports the below certification <https://www.vmware.com/learning/certification/vcp-dcv.html>

## Further Information

### Product Alignment

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

## Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
08 Jul 2024	Virtual Classroom	BST	English	Instructor Led Online		£2,590.00
25 Nov 2024	Virtual Classroom	GMT	English	Instructor Led Online		£2,590.00

## Additional Information

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