Enterprise Computing Solutions - Education Services

TRAINING OFFERING

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VMware vSAN: Install, Configure, Manage [V8]

CODE:	LENGTH:	PRICE:
EDU-VMW-VSANICM8	32 Hours (4 days)	$3,400.00

Description

During this four-day course, you will gain the knowledge, skills, and tools to plan and deploy a VMware vSAN cluster. You will learn about managing and operating vSAN. This course focuses on building the required skills for common Day-2 vSAN administrator tasks such as vSAN node management, cluster maintenance, security operations, troubleshooting and advanced vSAN cluster operations. You will learn these skills through the completion of instructor-led activities and hands-on lab exercises

Objectives

Upon completing this course, the learner will be able to meet these overall 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 ArchitectureTM concept

Audience

The primary audience for this course is as follows:

- Storage and virtual infrastructure consultants, solution architects, and administrators who are responsible for production support and administration of VMware vSAN 8.

Prerequisites

Completion of the following course is required:

- VMware vSphere: Install, Configure, Manage or equivalent knowledge

Program

Module 1: Course Introduction
• Introductions and course logistics
• Course objectives
Module 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
Module 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
Module 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 VMware vSphere Lifecycle ManagerTM 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
Module 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
Module 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
Module 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
Module 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
Module 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
Module 10: vSAN File Service and iSCSI Target Service

• Understand the purpose of vSAN File Services
• Detail vSAN File Services architecture
• Configure vSAN File Shares
• Describe vSAN iSCSI Target Service

Module 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 twonode clusters
• Explain storage policies for vSAN stretched cluster

Module 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

Module 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

Module 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

Module 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

Session Dates

On request. Please Contact Us

Additional Information

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