VMware vSAN: Management and Operations

Course Description

In this three-day course, you learn about managing and operating VMware vSAN™ 7. This course focuses on building the required skills for common Day-2 vSAN administrator tasks such as, vSAN node management, cluster maintenance, security operations and advanced vSAN cluster operations. You also gain practical experience through the completion of instructor-led activities and hands-on lab exercises.

Course Duration:

3 days

Prerequisites:

Completion of the following courses is required:

- VMware vSphere: Install, Configure, Manage [v7] or equivalent knowledge
- VMware vSAN: Plan and Deploy [v7]

Objectives:

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

- Define the tasks involved in vSAN node management
- Updating and upgrading vSAN using VMware vSphere Lifecycle Manager™
- Explain vSAN resilience and data availability features
- Reconfigure vSAN storage policies and observe the cluster-wide impact
- Perform vSAN cluster scale-out and scale-up operations
- Describe common vSAN cluster maintenance operations
- Control vSAN resync operations
- Manage two-node cluster and stretched cluster advance operations
- Configure vSAN storage efficiency and reclamation features
- Use VMware Skyline™ Health to monitor cluster health, performance, and storage capacity
- Describe vSAN security operations
- Configure vSAN Direct for cloud native applications
- Configure remote vSAN datastore and vSAN native file services

Course Outline:

1. Course Introduction
   - Introductions and course logistics
   - Course objectives
2. vSAN Node Management
   - 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
3. vSAN Resilience and Data Availability Operations
   - Describe vSAN storage policies
   - Recognize the impact of a vSAN storage policy change

- 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
- Configure the vSAN fault domains

4. 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
5. HCI Mesh Using Remote vSAN
   - Discuss the use cases for Remote vSAN
   - Understand the high-level architecture
   - Describe remote datastore operations
   - Discuss the network requirement
   - Interoperability between Remote vSAN and VMware vSphere-High Availability
6. Managing Advanced vSAN Cluster Operations
   - Describe the architecture for stretched clusters and two-node clusters
   - Understand the importance of Witness Node
   - Describe how stretched cluster storage policies affect vSAN objects
   - Create and apply a vSAN stretched cluster policy to meet specific needs
   - Discuss stretched cluster failure scenarios and responses
7. Managing vSAN Storage Space Efficiency Operations
   - 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 Cluster Monitoring
   - Describe how the Customer Experience Improvement Program (CEIP) enables VMware to improve products and services
   - Use vSphere Skyline Health for monitoring vSAN Cluster Health
   - Manage alerts, alarms, and notifications related to vSAN in vSphere Client
   - Create and configure custom alarms to trigger vSAN health issues
   - Use IO Insight metrics for monitoring vSAN performance
   - Analyse vsantop performance metrics
   - Use vSAN Proactive Test to detect and diagnose cluster issues
10. vSAN Direct

- Discuss the use cases for vSAN Direct
- Understand the overall architecture of vSAN Direct
- Describe the workflow of vSAN Direct datastore creation
- Explore how vSAN Direct works with storage policy tagging

11. Native vSAN File Service
    - Discuss the use cases for vSAN file service
    - Understand the high-level architecture of vSAN file service
    - Discuss the authentication model
    - Configure file shares
    - Monitor file share health and capacity utilization

Who Should Attend

Storage and virtual infrastructure administrators who are responsible for production support and administration of VMware vSAN 7.