

# VMware vSAN: Management and Operations

## Course Overview

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 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

## Target Audience

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

## Prerequisites

Completion of the following courses is required:

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

### Course Delivery Options

- Classroom
- Live Online
- [Onsite](#)
- [On Demand](#)

### Product Alignment

- VMware ESXi™ 7.0 U1
- VMware vCenter Server® 7.0 U1
- VMware vSAN 7.0 U1

## Course Modules

### 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



VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 [www.vmware.com](http://www.vmware.com)

© 2020 VMware, Inc. All rights reserved. The product or workshop materials is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/download/patents.html>. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.

- 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

## Contact

If you have questions or need help registering for this course, click [here](#).



VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 [www.vmware.com](http://www.vmware.com)  
© 2020 VMware, Inc. All rights reserved. The product or workshop materials is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/download/patents.html>. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.