

# VMware vSAN: Deploy and Manage plus VMware vSAN: Troubleshooting Workshop

## Course Overview

In this five-day course, you will focus on deploying and managing a software-defined storage solution with VMware vSAN™ 6.6. You will learn how vSAN functions as an important component in the VMware software-defined data center. You will gain practical experience with vSAN concepts and troubleshooting methodology and diagnostic tools through the completion of hands-on lab exercises.

## Course Objectives

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

- Describe the vSAN architecture
- Identify vSAN features and use cases
- Configure vSAN networking components
- Configure a vSAN cluster
- Deploy virtual machines on a vSAN datastore
- Configure virtual machine storage policies
- Perform ongoing vSAN management tasks
- Outline the tasks for upgrading to vSAN 6.6
- Configure vSAN encryption
- Control vSAN resynchronization tasks
- Create and manage nested fault domains
- Use the vSAN health service to monitor health and performance
- Configure a stretched cluster and observe failover scenarios
- Describe vSAN interoperability with VMware vSphere® features and other products
- Plan and design a vSAN cluster
- Use diagnostic and troubleshooting tools to resolve vSAN deployment and architectural issues

## Target Audience

Storage and virtual infrastructure administrators who want to use software-defined storage with vSAN

## Prerequisites

This course requires completion of one of the following prerequisites:

- Storage administration experience on block or file storage devices
  - Understanding of concepts presented in the [VMware vSphere: Install, Configure, Manage \[V6.5\]](#) course
- Experience working at the command line is helpful.

The course material presumes that a student can perform the following tasks with no assistance or guidance before enrolling in this course:

- Use VMware vSphere® Web Client
- Create and manage VMware vCenter Server® objects, such as data centers, clusters, hosts, and virtual machines

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- Create and modify a standard switch
- Connect a VMware ESXi™ host to NAS, iSCSI, or Fibre Channel storage
- Create a VMware vSphere® VMFS datastore
- Use a wizard or a template to create a virtual machine
- Migrate a virtual machine with VMware vSphere® vMotion®
- Migrate a virtual machine with VMware vSphere® Storage vMotion®

## Certifications

No certifications are tied to this course.

## Course Delivery Options

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

## Product Alignment

- ESXi 6.5
- vCenter Server 6.5
- vSAN 6.6



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## Course Modules

### 1 Course Introduction

- Introductions and course logistics
- Course objectives
- Describe the software-defined data center

### 2 Storage Fundamentals

- Define common storage technologies
- Identify characteristics of storage devices: magnetic and flash-based devices
- Identify and explain various types of storage architectures
- Identify SAN performance factors

### 3 Introduction to vSAN

- Describe the vSAN architecture and components
- Describe the differences between the vSAN hybrid and all-flash architectures
- Describe the space-efficiency features of vSAN

### 4 vSAN Configuration

- Identify physical network configuration requirements
- Configure vSAN networking
- Configure a vSAN cluster
- Test and validate the vSAN configuration and functionality

### 5 vSAN Policies and Virtual Machines

- Explain how storage policies work with vSAN
- Define and create a virtual machine storage policy
- Apply and modify virtual machine storage policies
- Discuss the vsanSparse snapshot format
- Explain the considerations for vsanSparse snapshots

### 6 Managing and Operating vSAN

- Manage hardware storage devices
- Manage hardware device failures
- Identify vCenter Server alarms for vSAN events
- Configure fault domains
- Upgrade to vSAN 6.6

### 7 Stretched Clusters and Two-Node Clusters

- Describe the architecture for stretched clusters and two-node clusters
- Create a stretched cluster using a two-node configuration

- Configure VMware vSphere® High Availability and VMware vSphere® Distributed Resource Scheduler™ for a stretched cluster
- Demonstrate stretched cluster failover scenarios

### 8 Monitoring vSAN

- Use vSphere Web Client to detect problems
- Use the vSAN health service to monitor health and performance
- Monitor vSAN with VMware vRealize® Operations Manager™
- Use ESXi commands to monitor the vSAN environment
- Monitor vSAN with Ruby vSphere Console

### 9 Interoperability with vSphere Features

- Identify vSphere features and VMware products that interoperate with vSAN
- Describe how vSAN interoperates with third-party products and solutions

### 10 Designing a vSAN Deployment

- Understand vSAN design considerations
- Plan and design vSAN clusters
- Identify the design and sizing tools for vSAN
- Describe vSAN use cases

### 11 vSAN Software Architecture

- Describe the software components
- Understand how the components relate to each other
- Understand vSAN object placement
- Understand the differences between object states
- Explain how storage policies affect object placement and states
- Predict how specific failures affect object states

### 12 Troubleshooting Methodology

- Characterize problems
- Determine the cause of problems
- Solve problems

### 13 Troubleshooting Tools

- Understand the use of various troubleshooting tools
- Use the tools provided to resolve problems with the lab environment



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## Contact

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