VMware vSAN: Deploy and Manage plus VMware vSAN: Troubleshooting Workshop [v6.6]

Duration: **5 Days**

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.

Pre-requisites:

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 workings 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 Web Client
- Create and manage VMware vCenter Server Objects, such as data centers, clusters, hosts, and virtual machines
- Create and modify a standard switch

Module 1: Course Introduction

Lessons:

- Introductions and course Logistics
- Course Objectives
- Describe the software-defined data center

Module 2: Storage Fundamentals

Lessons:

- 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

Module 3: Introduction to vSAN

Lessons:

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

Module 4: vSAN configuration

Lessons:

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

Module 5: vSAN Policies and Virtual Machines

Lessons:

- 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

Module 6: Managing and Operating vSAN

Lessons:

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

- Connect a VMware ESXi host to NAS, iSCI, 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

Audience:

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

Course Completion:

After completing this course, students will be able to:

- 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 resynchronisation 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

Module 7: Stretched Clusters and Two-Node Clusters

Lessons:

- 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

Module 8: Monitoring and Troubleshooting vSAN

Lessons:

- Use vSphere Web Client to Detect issues
- 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

Module 9: Interoperability with vSphere Features

Lessons:

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

Module 10: Designing a vSAN Deployment

Lessons:

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

Module 11: vSAN Software Architecture

Lessons:

- 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 failure affect object states

Module 12: Troubleshooting Methodology

Lessons:

- Characterise problems
- Determine the cause of problems
- Solve problems

Module 13: Troubleshooting Tools

Lessons:

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