Szkolenie: HPE

VMware vSAN: Install, Configure, Manage [V8]

Hewlett Packard Enterprise

Cel szkolenia:

During this course, you gain the knowledge, skills, and tools to plan and deploy a VMware vSAN™ cluster. You learn how to manage and operate 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 learn these skills 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:

- 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 twonode 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

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- Describe vSAN Express Storage ArchitectureTM concepts

Audience

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

Plan szkolenia:

- Course Introduction
  - Introduction and course logistics
  - Course objectives
- 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
- 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
- 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 Manager™ to perform upgrades
  - Deploy and configure a vSAN cluster using the Cluster QuickStart wizard
  - Manually configure a vSAN cluster using VMware vSphere® Client™

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- 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

- 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
- 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
- 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
- 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
- vSAN HCI Mesh
  - Understand the purpose of vSAN HCI Mesh

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- Detail vSAN HCI Mesh technology and architecture
- Perform mount and unmount of a remote datastore

- 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
- 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 two-node clusters
  - Explain storage policies for vSAN stretched cluster
- 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
- 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
- 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
- vSAN Express Storage Architecture
  - Understand the purpose of vSAN Express Storage Architecture

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- Describe the vSAN Express Storage Architecture components
- Identify storage policy differences
- Understand compression and encryption operation Differences

Wymagania:

Completion of the following course VMware vSphere: Install, Configure, Manage, or equivalent knowledge, is required.

Poziom trudności

Certyfikaty:

After completing the course, participants receive a certificate of completion of an authorized VMware course.

Prowadzący:

Authorized VMware Trainer.

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