

HPE Nimble Storage Administration and Integration H6LH9S

HPE course number	H6LH9S
Subscription length	2 Days
Delivery mode	ILT ,VILT
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This course will provide additional knowledge of the advanced capabilities of the HPE Nimble Storage arrays, including MultiArray Groups and Pools, QOS, Volume Pinning, Replication, Disaster Recovery, VMWare VVOLs, configuration of Syslog and SNMP trap forwarding and explore the audit logs and event logs. Using extensive hand-on lab exercises that comprise over 70% of the course, you will gain a practical understanding of integrating HPE Nimble Storage with Microsoft Windows, Linux, VMWare and Veeam. In addition to the instructor supported lab time, students will receive 3 additional consecutive days of extended lab time starting immediately after the class finishes.

Audience

Storage administrators who desire additional training on the advanced features of HPE Nimble

Prerequisites

- H6LH8S: HPE Nimble Storage Introduction and Administration
or
- H9TH5S: HPE Nimble Storage Introduction and Administration (with extended lab time)
or
- H9TH6AAE: Introduction to HPE Nimble Storage and InfoSight Analytics, Rev. 18.41
or
- H9TH1S: Designing HPE Nimble Solutions, Rev. 18.21 (01113228)

Course objectives

- Review HPE Nimble Storage platforms and associated features
- Discuss and understand disaster Recovery RPO and RTO
- Describe, configure and perform replication between groups for both planned and unplanned disaster recovery scenarios
- Discuss and perform advance administration features including volume performance settings, SNMP, deduplication, encryption, etc
- Working with clones and Zero copy clones
- Create a volume snapshot and perform a file recovery, as well as a volume recovery from a snapshot
- Configure and manage multi-member groups, storage pools and discuss scale up and scale out guidelines and requirements
- Configure and perform volume moves between pools and volume striping in a multi-member pool
- Discuss network considerations and networking best practices and scenarios for HPE Nimble Storage
- Discuss Nimble QOS features
- Describe VSS and how it can be used in your storage environment, and how it integrates with Nimble Storage
- Perform Application integration with VMware, Linux and Veeam
- Evaluate design considerations and best practices

Detailed course outline

Module 0: HPE Nimble Storage Administration and Integration	<ul style="list-style-type: none"> Describe features available with the HPE Nimble Storage Platform 	<ul style="list-style-type: none"> Review Concepts and Terminology
Module 1: Introduction to HPE Nimble Storage Advanced Features	<ul style="list-style-type: none"> Use and configure key features of the HPE Nimble Storage Platform Describe and use Volume pinning 	<ul style="list-style-type: none"> Describe and use Qos Describe and use Deduplication
Module 2: Understanding Disaster Recovery and Business Continuity	<ul style="list-style-type: none"> Describe the objectives of a disaster recovery plan 	<ul style="list-style-type: none"> Describe recovery timeline objectives Disaster Recovery RPO and RTO
Module 3: Data Protection – Advanced Snapshot Usage	<ul style="list-style-type: none"> Understanding how space is used with Snapshots Creating a scheduled and unscheduled snapshot Connecting to a snapshot Using a snapshot to recover a file or a full volume 	<ul style="list-style-type: none"> Discuss VSS usage and Windows Integration Describe and demonstrate Zero Copy clones Create a Zero Copy clone
Module 4: Data Protection – Replication Usage	<ul style="list-style-type: none"> Describe basic replication concepts Understand SmartReplicate components Nimble Storage SmartReplicate features Configure SmartReplicate 	<ul style="list-style-type: none"> Understanding Replication space considerations Perform handover for a non disaster event Perform disaster recovery using SmartReplicate Describe Peer Persistence architecture and operation
Module 5: Scale-out, Multi-Array Groups and Pools	<ul style="list-style-type: none"> Describe the use and benefits of Nimble Storage's Scale-Out Architecture Describe the following Scale-Out concepts <ul style="list-style-type: none"> Groups Group Leader / Scale-Out Database Pools 	<ul style="list-style-type: none"> Describe the steps in the following group operations <ul style="list-style-type: none"> How new arrays can be added to and removed from groups How to merge storage pools How to merge groups Describe preconditions and limitations on the operations above
Module 6: Understanding Network Requirements and Usage	<ul style="list-style-type: none"> Discuss Network requirements and common network scenarios Identify Network Best Practice guidelines <ul style="list-style-type: none"> Group Level Between Groups 	<ul style="list-style-type: none"> Initiator-Group Subnet Segregation, why? Sub-netting for multiple Data Subnets Replication Best Practice for full Redundancy
Module 7: Windows Integration	<ul style="list-style-type: none"> Review HPE Nimble Storage Application and System integration products 	<ul style="list-style-type: none"> Perform integration tasks between key HPE Nimble Storage and <ul style="list-style-type: none"> Windows
Module 8: Linux, Oracle and Docker Integration	<ul style="list-style-type: none"> Review HPE Nimble Storage Application and System integration products 	<ul style="list-style-type: none"> Perform integration tasks between key HPE Nimble Storage and <ul style="list-style-type: none"> Linux
Module 9: VMware and VVol Integration	<ul style="list-style-type: none"> Review HPE Nimble Storage Application and System integration products 	<ul style="list-style-type: none"> Perform integration tasks between key HPE Nimble Storage and <ul style="list-style-type: none"> VMware VVols
Module 10: Veeam Integration	<ul style="list-style-type: none"> Review HPE Nimble Storage Application and System integration products 	<ul style="list-style-type: none"> Perform integration tasks between key HPE Nimble Storage and <ul style="list-style-type: none"> Veeam
Module 11: Review Appendix	<ul style="list-style-type: none"> Product Line Hardware Tour 	<ul style="list-style-type: none"> Introduction to Monitoring With the WebUI User Administration

Detailed lab outline

Lab 0: vLabs Access

Lab 1: Administrator Settings – Working with Users, Syslog and Event logs

- Task 1: Launch HPE Nimble graphical user interface (GUI)
- Task 2: Review Network configuration
- Task3: HPE Nimble Array Administration
- Task 4: Configuring and Starting a Syslog Server and SNMP Trap Receiver
- Task 5: Creating and connecting to a volume
- Task 6: Connect the server to the HPE Nimble Storage volume
- Task 7: Testing the Syslog and SNMP Trap Receiver
- Task 8: Event logs and Audit logs

Lab 2: Using and Understanding Snapshot and Zero-Copy Clone Data Protection Features

- Task 1: Create a volume for Snapshot Review
- Task 2: Connect the server to the HPE Nimble Storage array volume
- Task 3: Adding data to the volume and taking snapshots
- Task 4: Recovering files from a snapshot
- Task 5: Recovering from Volume Corruption

Lab 3: Replication and Disaster Recovery

- Task 1: Initialize a new array
- Task 2: Configure the Upstream Array
- Task 3: Configure the Downstream Array
- Task 4: Replicate a Volume Collection
- Task 5: Planned Outage Scenario – Temporary Transition to the Remote DR site.
- Task 6: Unplanned Outage Scenario – Disaster recovery

Lab 4: Multi-Array Groups and Pools

- Task 1: Review Current Pool Status
- Task 2: Adding an array to the Default pool
- Task 3: Observing capacity and volume behavior
- Task 4: Connect the server to the HPE Nimble storage volume
- Task 5: Understanding how new volumes and data placement is managed
- Task 6: Removing an array from a pool and assigning the array to a new pool
- Task 7: Moving a volume between pools
- Task 8: Merging two pools in a group
- Task 9: Removing or evacuating an array from a pool and group

Lab 5: Using and understanding advanced volume features

- Task 1: Create a volume
- Task 2: Working with Volume Pinning – volume performance attribute
- Task 3: Connect the server to the FSserver06 volume
- Task 4: Create volumes using volume performance attribute
- Task5: Connect the server to the FSserver10 volume
- Task 6: Connect the server to the FSserver11 volume
- Task 7: Working with Deduplication
- Task 8: Working with Volume limits – QoS
- Task 9: Working with Encryption

Lab 6: Working with Linux Integration

- Task 1: Logging into the Linux Server
- Task 2: Installing the HPE Nimble Storage Linux Toolkit (NLT)
- Task 3: Working with Nimble Connection Manager for Linux
- Task 4: Working with settings

Lab 7: VMware Integration

- Task 1: Register the Nimble Plug-in
 - Task 2: Nimble Connection Manager
 - Task 3: Create a Nimble-backed Datastore
 - Task 4: Clone a Nimble backed Datastore
 - Task 5: Grow a Nimble-backed Datastore
 - Task 6: Create a virtual machine on a Nimble-backed Datastore
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Lab 8: Working with VVol's

- Task 1: Register the Nimble Storage Protocol Endpoint with vCenter
- Task 2: Create a VVol container on a HPE Nimble storage array
- Task 3: Create a Nimble-backed VVol datastore
- Task 4: Create a VM storage Policy
- Task 5: Create a VM based on a storage policy
- Task 6: Delete and restore a VVol backed VM

Lab 9: Veeam – HPE Nimble Integration

- Task 1: Connect to the Veeam Backup System
- Task 2: Configure VMware vSphere as a managed server
- Task 3: Add the HPE Nimble storage array
- Task 4: Create a backup job
- Task 5: Remove a disk on a virtual machine
- Task 6: Validate the recovery of the lost disk

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