



HPE Nimble II: Remote Replication and Integrations

HJ7C6S

HPE course ID	HJ7C6S
Course length	2 days
Format	ILT/VILT
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This course provides additional knowledge of the advanced capabilities of HPE Nimble Storage arrays, including multi-array groups and pools, replication, disaster recovery, VMware® vVols, configuration of syslog and SNMP trap forwarding, and audit logs and event logs. Using extensive hands-on lab exercises that comprise over 70% of the course, you gain a practical understanding of HPE Nimble Storage integration with Microsoft Windows, Linux, VMware, and Veeam®.

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Audience

This course is ideal for storage administrators who desire additional training on the advanced features of HPE Nimble Storage.

Prerequisites

Before attending this course, you should have completed one or more of the following courses:

- HJ7C5S: HPE Nimble I: Management and Local Replication
- H6LH8S: HPE Nimble Storage Introduction and Administration
- H9TH5S: HPE Nimble Storage Introduction and Administration (with extended lab time)
- H9TH6AAE: Introduction to HPE Nimble Storage and InfoSight Analytics, Rev. 18.41

H9TH1S: Designing HPE Nimble Solutions, Rev. 18.21 (01113228)

Course objectives

After completing this course, you should be able to:

- Review HPE Nimble Storage topics
- Discuss and understand disaster terminology
- Describe, configure, and perform replication between groups for both planned and unplanned disaster recovery scenarios
- Discuss peer persistence
- Discuss and perform advanced administration features, including volume performance settings, SNMP, deduplication, encryption, and more
- 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, networking best practices and scenarios for HPE Nimble Storage
- Describe integrations with Windows, Linux, VMware, and Veeam.

Detailed course outline

Module 1: Course Introduction	<ul style="list-style-type: none"> • Agenda • Course topics review 	<ul style="list-style-type: none"> • Access to array documentation
Module 2: Architecture and Advanced Features	<ul style="list-style-type: none"> • AF-Series read and write operations • HF-Series read and write operations • Triple+Parity RAID • Integrated spare rebuild operations • Quick Raid Rebuild 	<ul style="list-style-type: none"> • Data reduction • Quality of service (QOS) • Volume pinning • Encryption • Data Services Cloud Console
Module 3: Scale-out, Multi-Array Groups and Pools	<ul style="list-style-type: none"> • Scale-to-fit review • Scale-out introduction • Scale-out technology • Overview of group/pool operations 	<ul style="list-style-type: none"> • Nondisruptive data migrations • Host operation in pools • Scale-out – managing hosts & paths
Module 4: HPE Nimble Storage Replication and Peer Persistence	<ul style="list-style-type: none"> • Replication introduction • Replication components • Replication considerations • SmartReplicate disaster recovery 	<ul style="list-style-type: none"> • Replication in WebUI • Peer persistence architecture and operations • Automatic switchover scenarios
Module 5: Windows Integration	<ul style="list-style-type: none"> • HPE Storage Toolkit and HPE Storage Connection Manager review • Microsoft Volume Shadow-Copy Service (VSS) overview • VSS components 	<ul style="list-style-type: none"> • VSS in use on HPE Nimble • Powershell CMDlets • Diagnostics utility • Space reclamation
Module 6: Linux Integration, Oracle, and Docker Integration	<ul style="list-style-type: none"> • HPE Nimble Storage Linux Toolkit (NLT) • HPE Nimble Storage Connection Manager (NCM) for Linux • HPE Nimble Storage Oracle Application Data Manager 	<ul style="list-style-type: none"> • HPE Nimble Host Tuning Utility (Nimbletune) • Linux space reclamation
Module 7: VMware Integration	<ul style="list-style-type: none"> • VMware integration features • HPE Nimble Storage Connection Manager (NCM) for VMware • VMware vCenter® integration • vStorage APIs and space reclamation 	<ul style="list-style-type: none"> • Synchronized snapshots • vSphere Virtual Volumes (vVols) • SRM integration • HPE Nimble Storage dHCI introduction
Module 8: Backup Solution Integration	<ul style="list-style-type: none"> • HPE Recovery Manager Central (RMC) overview and basic architecture 	<ul style="list-style-type: none"> • Veeam Backup and Replication overview and basic architecture

Detailed lab outline

Lab 0: vLabs Access	<ul style="list-style-type: none"> Objectives 	<ul style="list-style-type: none"> Accessing the vLabs
Lab 1: Environment Preparation	<ul style="list-style-type: none"> Task 1: launch NWT installer Task 2: Create an initiator and an initiator group 	<ul style="list-style-type: none"> Task 3: Launch NCM and connect to the production HPE Nimble Storage array
Lab 2: Using and Understanding Advanced Volume Features	<ul style="list-style-type: none"> Task 1: Initial preparation for recovery array data access Task 2: Working with Volume Pinning – volume performance attribute Task 3: Create volumes using volume performance attribute 	<ul style="list-style-type: none"> Task 4: Connect the server to the FSserver10 and FSserver11 volume Task 5: Working with deduplication Task 6: Working with encryption
Lab 3: Replication and Disaster Recovery	<ul style="list-style-type: none"> Task 1: Configure the upstream array Task 2: Configure the downstream array Task 3: Creating and managing replication collections 	<ul style="list-style-type: none"> Task 4: Failover to the remote site Task 5: Recovery after the source system is back online Task 6: Clean-up
Lab 4: Multi-Array Groups and Pools	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Task 5: Understanding how new volumes and data placement is managed
Lab 6: Working with Linux Integrations	<ul style="list-style-type: none"> Task 1: Configure Linux iSCSI initiator Task 2: Create an initiator group for the Linux host Task 3: Create a volume for the Linux host 	<ul style="list-style-type: none"> Task 4: Perform iSCSI discovery, work with multipathing, and configure the disk device
Lab 7: Working with VMware Integrations	<ul style="list-style-type: none"> Task 1: HPE Storage Connection Manager for VMware Task 2: Setting up vVols on HPE Nimble Task 3: Using the HPE Storage vCenter plugin Task 4: Creating a vVol container on an HPE Nimble array and vVol datastore 	<ul style="list-style-type: none"> Task 5: Working with policy-based storage provisioning Task 6: Deploying and working with a vVol-based VM
Lab 8: Working with Veeam Integrations	<ul style="list-style-type: none"> Task 1: Initial Veeam and Nimble Preparation Task 2: Creating Backups Using Veeam and Nimble 	<ul style="list-style-type: none"> Task 3: Instant Virtual Machine Recovery with Nimble

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