Tytuł szkolenia: HPE Nimble II: Remote Replication and Integrations

Kod szkolenia: HJ7C6S

Wprowadzenie

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, Veeam, and Commvault.

Adresaci szkolenia

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

Prerequisites

Prior to attending this course, students should complete one 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)

Cel szkolenia

Upon completion of this course, students will 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, Veeam, and Commvault

Czas i forma szkolenia

- 14 godzin (2 dni x 7 godzin), w tym wykłady i warsztaty praktyczne.

Plan szkolenia

Module 1: Course Introduction

- Agenda

- Topics review

Module 2: Architecture and Advanced Features

- Read and write operations
- HPE Nimble FS
- Triple+ Parity RAID
- Sparing
- Deduplication
- Encryption

Module 3: HPE Nimble Storage Replication and Peer Persistence

- Disaster recovery terminology (planning, RPO, RTO, etc.)
- SmartReplicate overview
- Async replication
- Sync replication
- Replication capabilities (architecture, topologies including fan-out, etc.)
- SmartReplicate operations
- Peer persistence architecture and operations

Module 4: Scale-out, Multi-Array Groups and Pools

- Scale-to-fit review
- Scale-out groups
- Scale-out pools
- Scale-out operations
- Scale-out limitations and rules
- Group merge
- Host operation in pools
- Multi-array groups and pools

Module 5: Windows Integration

- VSS theory
- VSS in use on HPE Nimble
- NWT components review
- Space reclamation

Module 6: Linux Integration, Oracle and Docker Integration

- HPE Nimble Storage Linux Toolkit (NLT)
- NCM
- HPE Nimble Storage Oracle Application Data Manager
- HPE Nimble Host Tuning Utility/Nimbletune
- Space reclamation

Module 7: VMware Integration

- VMware integration features
- NCM
- VMware vCenter® integration
- SRM integration
- Synchronized snapshots
- APIs and space reclamation
- vVols
- dHCI introduction

Module 8: Backup Solution Integration

- HPE RMC overview and basic architecture
- Veeam overview and basic architecture
- Commvault overview and basic architecture
- Additional data protection training

Lab 1-1: HPE vLabs Access

• Objectives
• Accessing HPE vLabs

Lab 1-2: Environment Preparation

• Task 1: Launch HPE Nimble graphical user interface (GUI)
• Task 2: HPE Nimble array administration
• Task 3: Creating an initiator in HPE Nimble Storage
• Task 4: Working with users of different roles

Lab 2: Using and Understanding Advanced Volume Features

• Task 1: Create a volume
• Task 2: Working with volume pinning - volume performance attribute
• Task 3: Create volumes using volume performance attribute
• Task 4: Connect the server to the FSserver10 and FSserver11 volume
• Task 5: Working with deduplication
• Task 6: Working with volume limits – QoS
• Task 7: Working with encryption

Lab 3: Replication and Disaster Recovery

• Task 1: Configure the upstream array
• Task 2: Configure the downstream array
• Task 3: Create volume, volume collection and replicate
• Task 4: Planned outage scenario - temporary transition to the remote DR site
• Task 5: 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 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 HPE Nimble Connection Manager for Linux
• Task 4: Working with settings--Nimbletune

Lab 7-1: Working with VMware Integrations

• Task 1: Register the HPE Nimble plug-in
• Task 2: HPE Nimble Connection Manager
• Task 3: Create an HPE Nimble-backed datastore
• Task 4: Clone an HPE Nimble backed datastore
• Task 5: Grow an HPE Nimble-backed datastore
• Task 6: Create a virtual machine on an HPE Nimblebacked datastore

Lab 7-2: Working with vVols

• Task 1: Register the HPE Nimble Storage Protocol Endpoint with VMware vCenter
• Task 2: Create a VMware vVol container on an HPE Nimble Storage array
• Task 3: Create an HPE 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 8-1: Working with 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

Lab 8-2: Working with Commvault - HPE Nimble Integration

• Task 1: Connect to the Commvault user interfaces
• Task 2: Create a new client machine for backing up the VMware virtual machines
• Task 3: Connect the HPE Nimble array
• Task 4.1 Create a storage pool
• Task 4.2 Create a snapshot enabled storage policy
• Task 5: Enable the VMware client for IntelliSnap, create a new subclient, and assign the subclient to the snapshot enabled storage policy
• Task 6: Prepare the HPE Nimble array for third-party snapshots
• Task 7: Run a backup
• Task 8: Perform an out of place restore of some files Optional: Do the below labs only when time permits
• Task 9: Remove a disk from the virtual machine
• Task 10: Restore the virtual machine disk to the Windows 2019 serve