HPE Digital Learner Nimble Storage Administration and Integration Content Pack

This course will provide additional knowledge of the advanced capabilities of the HPE Nimble Storage arrays, including multi-array groups and pools, QoS, volume pinning, replication, disaster recovery, VMware® VVOLs, configuration of Syslog and SNMP trap forwarding. You will also 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.

HPE Digital Learner Nimble Storage Administration and Integration Content Pack has two components:

- **Web-based training**—available online.
- **Hands-on labs**, via a virtual environment—available through the HPE vLabs.

You will enjoy access to this self-paced, web-based training for one year from your purchase date. The content of this training is identical to the instructor-led version of this course. During this time, you can repeat sections of the training for reinforcement at your own pace and on your own schedule.

You have 60 sequential days of access to the HPE vLabs virtual environment.

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*Realize Technology Value with Training, IDC Infographic 2017, Sponsored by HPE, October 2017*
**Audience:**

This Content Pack is recommended for infrastructure administrators and system engineers who need to learn how to administer HPE SimpliVity.

**Prerequisites:**

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

**Content Pack objectives:**

After completing this content pack, students will be able to:

- 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, 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

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<td>• Describe the following scale-out concepts</td>
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<td>– Groups</td>
<td>– How to merge storage pools</td>
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<td></td>
<td>– Group leader/scale-out database</td>
<td>– How to merge groups</td>
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<td>– Pools</td>
<td>– Describe preconditions and limitations on the operations above</td>
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## 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
- Task 3: 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 array 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
- Task 5: 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

### 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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