Hewlett Packard Enterprise

Managing HPE 3PAR StoreServ I HK902S

HPE course number	HK902S
Course length	3 days
Delivery mode	ILT
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The Managing HPE 3PAR StoreServ I course reviews HPE 3PAR hardware (20000, 8000, and 7000 Series) and architecture along with providing administrators insight into the constructs within the HPE 3PAR array family. This training reflects the HPE 3PAR StoreServ OS 3.2.2 release. The course is approximately 50 percent lecture and 50 percent hands-on labs using HPE 3PAR arrays.

Audience

- HPE 3PAR administrators who desire training on basic concepts and best practices needed to administer the array.

Prerequisites

- An understanding of general storage concepts including Fibre Channel technologies, and RAID.
- Operator level functionality in a Windows® environment. (Labs are performed on a Windows host.)

Course objectives

- Explain the HPE 3PAR current hardware offerings: including the 20000 series, 8000 series, and the 7000 Series
- Know the numbering schemes for the HPE 3PAR hardware components (controllers, ports, physical disks)
- Understand data flow and communication concepts in an HPE 3PAR controller node
- Use SSMC, Management Console and CLI to perform administrative tasks
- Set up a Common Provisioning Group (CPG)
- Create a Thin Provisioned Virtual Volume (TPVV) and a Thin Dedup Virtual Volume (TDVV)
- Export and unexport virtual volumes from hosts
- Use Autonomic Groups (Host Sets and Volume Sets) to simplify provisioning storage
- Change volume RAID, availability, and service levels using Dynamic Optimization
- Work with Virtual Lock for Virtual Volumes and Snapshots
- Administer Virtual Volumes using the SSMC Management Console CLI
- Create a Snapshot (virtual copy) and promote (restore) from a Snapshot
- Create a clone (physical copy) and promote a Clone
- Convert a Virtual Volume
- Use HPE 3PAR info to analyze LUNs presented to hosts

Next steps

- Managing HPE 3PAR StoreServ II (HK904S)
- Managing HPE 3PAR StoreServ III (H9P97S)

*Realize Technology Value with Training, IDC Infographic 2037, Sponsored by HPE, January 2016

Detailed course outline

HPE 3PAR Solution Overview	• Current product line overviews • Software suites and licensing overview • Benefits and advantages of HPE 3PAR virtualized storage architecture • HPE 3PAR hardware offerings (10000 Series and 7000 Series) • Basic HPE 3PAR high availability advantages • Gen4 ASIC chip functionality • Advantages of cache persistence and persistent ports • Data flow and communication concepts in an HPE 3PAR controller node • Self-encrypting drives • HPE 3PAR component connectivity • HPE 3PAR remote support
HPE 3PAR Array Management: SSMC, MC, and CLI	• Installing • Logging In • Basic features and commands • Wizards • Benefits
2000/8000/7000 Series Hardware Overview	• HPE 3PAR controller options • Drive cage expandability options • HPE 3PAR hardware components basics • HPE 3PAR hardware components numbering schemes • Current drive sizes
Storage Concepts and Terminology	• HPE 3PAR provisioning terminology • HPE 3PAR concept of a disk chunklet and Logical Disk (LD) • HPE 3PAR concept of a Common Provisioning Group (CPG) • HPE 3PAR Virtual Volumes (VVs) types • Thin Provisioning
Storage Configuration	• CPGs using SSMC, Management Console, and CLI • Fully provisioned and thin provisioned and thin deduplicated VVs using SSMC, Management Console, and CLI
Host Connectivity and Storage Allocation	• Supported operating systems • How to prepare a host to access an HPE 3PAR storage array • Adding hosts in an HPE 3PAR storage array • Adding FC ports to a host • Export VVs to a host as VLUNs • Unexport VVs/VLUNs from a host • Using Management Console, SSMC, and CLI to work with hosts and storage • Use Host Explorer to add hosts • Use HP3PARInfo to gather information
Autonomic Groups and Virtual Lock	• Host and volume sets advantages • Creating and maintaining host and volume sets • SSMC, Management Console, and CLI to work with host and volume sets • Host and volume sets guidelines and rules • Understand the Virtual Lock feature

Dynamic Optimization	• Dynamic Optimization (DO) benefits • Changing VV RAID level • Changing VV setsize and availability level • Changing VV service level • Changing VV user data and copy space • Online VV Conversion
Thin Technologies	• Benefits of the Zero Detection/Thin Persistence feature • Thin dedup deep-dive
Local Replication: Snapshots and Clones	• Snapshots and Clones benefits • Creating, exporting, unexporting, and deleting a snapshot • Rules and relationships regarding snapshots • Restore from a snapshot • Resynchronize a clone to a base volume • Promote a clone to a base volume • Use the SSMC, MC, and CLI to manage physical and virtual copies • Scheduling snapshots and clones
Adaptive Flash Cache (Appendix)	• Understanding what and what cannot be moved into AFC • Explaining the different LRU queues and queue demotion • Using CLI commands to set up, enable, disable, remove, and monitor AFC
10000 Series Hardware (Appendix)	• 10000 Series controller options • Drive cage expandability options • 10000 Series hardware components basics • 10000 Series hardware components numbering schemes • Current drive sizes

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