HP Education Services

Managing HP 3PAR StoreServ I (HK902S)

The Managing HP 3PAR StoreServ I course reviews HP 3PAR hardware (20000, 8000 and 7000 Series) and architecture along with providing administrators insight into the constructs within the HP 3PAR array family. This training reflects the 3PAR StoreServ OS 3.2.2 release.The course is approximately 50 percent lecture and 50 percent hands-on labs using HP 3PAR arrays. Note: hosts used are MS Windows.

The Managing HP 3PAR StoreServ I course includes the following topics:

- StoreServ Management Console (SSMC), the legacy GUI Management Console (MC), and Command Line Interface (CLI) for HP 3PAR array administration
- Common Provisioning Groups
- Thin Dedup
- Virtual Lock
- Dynamic Optimization
- Online Volume Conversion
- Host Sets and Virtual Volume Sets
- Local replication features of Snapshots (virtual copies) and Clones (physical copies)

Audience

- HP 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

At the conclusion of this course you should be able to:

- Explain the HP 3PAR current hardware offerings: including the 20000 series, 8000c series, and the 7000 Series
- Know the numbering schemes for the HP 3PAR hardware components (controllers, ports, physical disks)

Course title:	Managing HP 3PAR StoreServ I
HP product number:	HK902S
Category/Subcategory:	Storage
Course length:	3 days
Level:	Basic
Delivery language:	English
To order:	To review course schedules and to register for a course, visit **www.hp.com/learn/storage** and select your country from the drop down menu.

- Understand data flow and communication concepts in an HP 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 Un-export 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 (ie: from fully-provisioned to thin-provisioned or thin provisioned to thin dedup or vice versa)
- Use HP 3PAR info to analyze luns presented to hosts

Non-Objectives

The following topics are not included in this course:
- Hands-on hardware installation
- Hands on with hardware
- Array installation
- Service processor
- Hands-on Peer Motion (covered in Managing HP 3PAR StoreServ II-HK904S)
- On-line Import (covered in Managing HP 3PAR StoreServ II-HK904S)
- VMware labs
- Upgrades
- Adaptive Optimization (covered in Managing HP 3PAR StoreServ II-HK904S)
- Priority Optimization (covered in Managing HP 3PAR StoreServ II-HK904S)
- Remote Copy (remote replication) (covered in Managing HP 3PAR StoreServ II-HK904S)
- System Reporter (HP 3PAR reporting) (covered in Managing HP 3PAR StoreServ II-HK904S)

Benefits to you

- Gain the knowledge necessary to perform day-to-day administration functions on an HP 3PAR array

Why education services from HP?

- Recognized as an IDC MarketScape leader for IT education (IDC MarketScape: Worldwide IT Education and Training 2012 Vendor Analysis, doc #232870, February 2012)
- Unmatched technical expertise and support for HP products and technologies
- Comprehensive curriculum of job-specific training leading to vendor certification
- Training you need, when and where you need it with our Remotely Assisted Instructional Learning (RAIL)
- More than 30 years of Education Consulting
- Global training with more than 90 training locations worldwide

Next steps

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

Detailed course outline

HP 3PAR Solution Overview

- Current product line overviews
- Software suites and licensing overview
- Benefits and advantages of HP 3PAR virtualized storage architecture
- HP 3PAR hardware offerings (10000 Series and 7000 Series)
- Basic HP 3PAR high availability advantages
- Gen4 ASIC chip functionality
- Advantages of cache persistence and persistent ports
- Data flow and communication concepts in an HP 3PAR controller node
- Self-encrypting drives
- HP 3PAR component connectivity
- HP 3PAR remote support

HP 3PAR Array Management: SSMC, MC and CLI

- Installing
- Logging In
- Basic features and commands
- Wizards
- Benefits

2000/8000/7000 Series Hardware Overview

- HP 3PAR controller options
- Drive cage expandability options
- HP 3PAR hardware components basics
- HP 3PAR hardware components numbering schemes
- Current drive sizes

Storage Concepts and Terminology

- HP 3PAR provisioning terminology
- HP 3PAR concept of a disk chunklet and Logical Disk (LD)
- HP 3PAR concept of a Common Provisioning Group (CPG)
- HP 3PAR Virtual Volumes (VV) 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 HP 3PAR storage array
- Adding hosts in an HP 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 setup, enable, disable, remove, and monitor AFC

10000 Series Hardware (Appendix)

• 10000 Series controller options
• Drive cage expandability options
• 10000 Series hardware components basics
• 10000 Serieshardware components numbering schemes
• Current drive sizes

For more information

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down menu.