

Tytuł szkolenia: Managing HPE 3PAR StoreServ III: Performance and Health Management

Kod szkolenia: H9P97S

Wprowadzenie

This 3-day training covers advanced topics that a storage administrator will encounter after performing the tasks covered in the HPE 3PAR basic courses (HK902S and HK904S). Topics included are: Space Explained, Performance, Alerts, Troubleshooting, Upgrading, Adaptive Flash Cache (AFC) and Configuration Rebalancing. The course is 50% lecture with 50% hands-on labs. Additional Scenario Labs compliment the Module Labs. These Lifecycle Labs include Adaptive optimization, Quality of Service and Adaptive Flash.

Adresaci szkolenia

A storage administrator who has been managing HPE 3PAR StoreServ arrays on a daily basis for at least a year. This training is not for an individual who has no experience managing a HPE 3PAR array.

Prerequisites

Students must have attended HK902S and HK904S.

Cel szkolenia

At the conclusion of this course, the student should be able to:

- Explain how space is allocated and mapped
- Identify data reduction
- Understand performance
- Discuss best practices
- Explain HPE 3PAR events and alerts and how to get notifications about them
- Use CLI and GUI to troubleshoot your storage system
- Perform rebalancing
- Use Adaptive Flash Cache to increase performance
- Upgrade your hardware and software of your storage system
- Employ tools that can be used to troubleshoot and respond to HPE 3PAR performance issues

Czas i forma szkolenia

- 21 godzin (3 dni x 7 godzin), w tym wykłady i warsztaty praktyczne.

Plan szkolenia

Module 1: Overview

- Course Introduction
- Course Agenda
- Lab roadmap

Module 2: Space Explained

- Understand space utilization
- Volume space

- Large volumes
- Logical disk space
- CPG space
- Overprovisioning
- Distributed sparing
- Adaptive sparing
- Adaptive data reduction
- Thin deduplication
- Space reclamation
- Mapping space
- SR Space forecasting

Module 3: Performance

- Understanding performance bottleneck
- Servicing I/O
- Express layout
- RAID
- Initiators
- Front end vs back end
- CPU
- Cache
- Adaptive Flash Cache
- WriteBack single node
- SSD Performance
- Unbalanced systems
- Express writes
- Benchmarks
- Hardware FC Links
- I/O Queueing
- Interactive response law
- CLI Counters
- Troubleshooting discussion

Module 4: Lifecycle Discussion

- Lifecycle of a System
- Introduction Lab
- Introduction to the Ninja Stars output
- Roadmap

Module 5: Alerts

- View, interpret, and manage system events and alerts
- Alert tiering, Internationalization
- Spare Part Notification
- Single Click Locate
- Use the checkhealth command for troubleshooting
- Alert notifications for System Reporter
- Alerts threshold criteria editing
- SR Alert space metrics
- SSMC email notifications
- Event log monitoring and management
- SNMP settings and capabilities
- Syslog support
- SMI-S standard, WBEM Initiative and 3PAR CIM Support

Module 6: Rebalancing

- Balanced HPE 3PAR array definition

- Large volumes rebalancing
- Phases and options of the tunesys command
- Express Layout: Active-Active PDs
- New options
- Limitations
- System tuning and related tasks from the HPE 3PAR SSMC and the CLI
- Tunesys and tunevv options and limitations
- New options
- Tuning operations troubleshooting
- Tuning scenarios

Module 7: Adaptive Flash Cache

- AFC benefits • What can/cannot be moved into AFC
- Different LRU (Least Recently Used) queues description and the concept of LRU queue demotion
- CLI commands to setup, enable, disable, remove and monitor AFC
- Guidelines and rules regarding AFC
- Improvements
- Working with AFC using SSMC
- Monitoring AFC using the statcache and srstatcache commands

Module 8: Upgrading HPE 3PAR

- Servicing options for your HPE 3PAR 7000/8000 components
- Repair/replace procedures of CSR components
- Customer Self Repair
- Combo cards
- Hardware Schematics
- Safe to Remove
- Storage system disks upgrade
- Express Layout: Active-Active PDs
- Best practices when upgrading
- Contact Management
- HPE 3PAR OS update operation
- Customer Self-Upgrade
- Remote Support
- SP Upgrade
- HPE 3PAR Service Console