Tytuł szkolenia: HPE XP8 Storage Array Administration and Configuration

Kod szkolenia: H9TJ8S

Wprowadzenie

This course introduces students to the HPE XP8 array terminology, function, architecture, and configuration. Students get hands-on practice with LUN and volume management, data replication, cache partitioning, thin provisioning, Auto LUN, Performance Monitor, and Performance Advisor. In addition, we cover the concepts and setup of XP High Availability and Command View Advanced Edition. This course is 60% lecture and 40% hands-on labs.

Adresaci szkolenia

Storage administrators responsible for the configuration and management of HPE XP8 disk arrays.

Prerequisites

Knowledge of networks and the storage administration tasks for the operating system being served by the array is useful.

Cel szkolenia

• Understand the hardware architecture of the HPE XP8 disk array
• Use Remote Web Console user interface to manage and view XP configuration information
• Use RAID Manager command line to manage the array configuration
• Set the fibre port topology for the XP ports
• Configure LUNs
• Use the Volume Manager to create custom size volumes
• Understand how to implement LUN security
• Handle multiple paths to a LUN
• Understand XP replication products: Business Copy, Fast Snap and Continuous Access
• Understand how to use external storage

Czas i forma szkolenia

- 35 godzin (5 dni x 7 godzin), w tym wykłady i warsztaty praktyczne.

Plan szkolenia

Module 1: XP8 Array Concepts and Hardware

• Architecture overview
• XP8 building blocks
• Component details
• Terminology

Module 2: Remote Web Console

• Management options
• Web console architecture
• Web client requirements
• Web console navigation

Module 3: Command Line Interface

- Setup RAID Manager
- Send commands to SVP in-band and out of band
- Authenticate with SVP
- List array configuration

Module 4: Introduction to Intelligent Storage Manager (ISM)

- Intelligent Storage Manager features
- Architecture
- GUI highlights
- Logical Group concept

Module 5: Volume Management

- Custom volumes
- Custom volume overview
- Volume usage
- Capacity expansion enabled parity groups
- Command line for volume management
- Volume Shredder
- Data retention

Module 6: LUN Management

- Fibre port management
- Host groups
- Host modes
- Fibre port topology and settings
- Create LUNs and command devices
- Command line for LUN management
- Use of the XPInfo tool
- Multi-pathing solutions

Module 7: XP Thin Provisioning and SMART Tiers

- What is thin provisioning (THP)?
- THP operation sequence
- THP pools
- Subscription limits
- Rebalancing THP pools
- Monitoring pool and THP volume space usage
- THP Smart Tiers
- Capacity expansion enabled FMD pools

Module 8: Cache Partitioning

- With and without cache partitions
- Cache Logical Partitions (CLPRs)

Module 9: External Storage

- Overview and features
- External storage path modes
- Cache mode
- Use with cache partitions
- Configure external ports
- Configure external volumes
- Power on and off order

Module 10: Performance Monitor and Performance Control (PFC)

- Data collection
- Viewing collected data
- XP QOS Performance Control (PFC)
- Performance Control RAID Manager commands

Module 11: Performance Advisor

- Product overview
- Collecting array and host information
- Management Station: components
- Host agents and clients
- Installing and logging on to Performance Advisor
- Performance Advisor GUI
- PA licensing
- Configuration data collection
- Creating charts
- Generating and scheduling reports

Module 12: Business Copy

- Business Copy terminology
- Full copy vs. Fast Snap comparison
- Business Copy operations and states
- Configuring Business Copy with RWC
- Configuring Business Copy with RAID Manager

Module 13: Auto LUN

- Tiered storage approach
- Auto LUN migration
- Auto LUN tasks
- Auto LUN migration configuration

Module 14: Fast Snap (Snapshots)

- Fast Snap overview
- Fast Snap components
- Floating snapshots
- Snapshot states
- Cascade snapshots
- Fast Snap Clone

Module 15: Performance Advisor

- Continuous Access overview
- Continuous Access Synchronous overview
- Fence levels
- Continuous Access Journal overview
- CA Journal link requirements
- 3 Data Center CA model

Module 16: XP High Availability Concepts

- HA vs CA Synchronous comparison
- Virtual DKC (virtual storage machine) concepts
- HA I/O operation walkthrough
- HA components
- HA failure scenarios
- 3 Data Center HA model

Module 17: High Availability Setup (Lecture Only)

- Array to array connections
- Setup quorum device
- Configuring Virtual DKC (VSM)
- Pair creation
- ALUA configuration
- HA configuration with CVAE

Module 2 Lab: Remote Web Console
- Remote web console navigation

Module 3 Lab: RAID Manager CLI
- Installing and configuring RAID manager – Windows – Linux
- Using raidcom commands

Module 4 Lab: Volume Management
- Creating basic volumes
- Creating thin provisioned volumes

Module 5 Lab: LUN Management and Host Connectivity
- Finding the WWNs of your HBAs – Windows – Linux
- XP ports
- Allocate volumes
- Xpinfo

Module 6 Lab: Thin Provisioning
- Creating thin provisioning pools
- Creating thin provisioning V:VOLs
- Monitoring pool usage using the raidcom CLI
- Writing to ThP volumes: consuming space in the pool
- Maintaining the pool
- Expanding a thin provisioned volume

Module 9 Lab: Performance Monitor and Performance Control
- Lab setup
- Run a workload
- Monitor performance using Performance Monitor
- Configure PFC
- Experiment with performance monitor

Module 10 Lab: Using Performance Advisor
- XP PA data import
- Observe the performance of the array through PA charts
- Creating report from XP PA
- Performance advisor graphical view
- Preparing to collect PA data
- XP PA host agent installation
- Setup collection configuration and performance collection

Module 11 Lab: Business Copy
- XP BC: create, split, and resync pair
- XP BC resync pair: reverse copy

Module 12 Lab: AutoLUN Manual Migration
- Perform a manual migration
- Verify migration

Module 13 Lab: Fast Snap (Snapshot)
- Setup
- Snap operations
- Cascade
- Clone
- Filling the pool