مشاوره ، تحقیقات ، طرح و اجرای شبکه های ارتباطی

و برگزار کننده دوره های آموزشی

HP 3PAR (I&II)

Managing HP 3PAR StoreServ I
Managing HP 3PAR StoreServ II

اعتبار دهنده: HP | پیش نیاز: HP SAN Essentials | مدت(ساعت): ۴۰

◼ امتیازات دوره :

◾ اعطای مدرک فارسی و انگلیسی با مجوز رسمی از :

• سازمان مدیریت و برنامه ریزی کشور (معاونت توسعه مدیریت و سرمایه انسانی رئیس جمهوری سابق)

• مجوز از اداره کل نظام مدیریت امنیت اطلاعات (نما)

• شورای عالی انفورماتیک

• قابلیت ترجمه وتایید قوه قضاییه وامور خارجه

◾ بهره گیری از لابراتوارسخت افزاری ونرم افزاری مجهز

◾ بهره گیری از اساتید مجرب و تأیید شده با سابقه حضور در پروژه‌های ملی

◼ مخاطبان دوره :

◾ کارشناسان دیتا سنتر و دستگاههای ذخیره سازی

◼ معرفی دوره :

این دوره در مورد دستگاه ذخیره ساز HP 3PAR می باشد که امروزه توسط شرکت HP به بازار عرضه شده و جایگزین مناسبی برای دستگاههای ذخیره ساز قدیمی تر مانند EVA است.

◼ اهداف دوره :

◾ آشنایی با دستگاه 3PAR ، و مدیریت و راه اندازی این دستگاه

محتوای دوره :

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: MC, SSMC and CLI
• Installing
• Logging In
• Basic features and commands

• Wizards
• Benefits

7000 Series Hardware Overview
• HP 3PAR controller options basics
• Drive cage expandability options
• HP 3PAR hardware components basics
• HP 3PAR hardware components numbering schemes

10000 Series Hardware Overview
• HP 3PAR controller options basics
• Drive cage expandability options
• HP 3PAR hardware components basics
• HP 3PAR hardware components numbering schemes

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

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Course Outline :	محتوای دوره :

Storage Configuration

• CPGs using Management Console, SSMC, and CLI

• Fully provisioned and thin provisioned VVs using Management Console, SSMC, 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

• Management Console, SSMC, 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

• Administering Virtual Volumes using the MC, SSMC, and CLI to manage space

Local Replication: Virtual and Physical Copy

• Virtual and Physical Copy benefits

• Creating, exporting, unexporting, and deleting a Virtual Copy volume

• Rules of Virtual Copy relationships

• Restore from a Virtual copy

• Resynchronize a PC to a base volume

• Promote a PC to a base volume

• Use the MC and CLI to manage physical and virtual copies

SSMC 2.0 Overview

• Installing SSMC

• Reviewing the dashboard within SSMC

• Managing hardware components within SSMC

• Reporting capabilities

Deduplication

• Deduplication Process

• Interpreting dedup output from CLI commands

• Purpose of the Garbage Collector

• How dedup works with virtual, physical, and remote Copies

Adaptive Flash Cache

• 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

Course Outline :	محتوای دوره :

Remote Copy (RC)

- FC-based Remote Copy (RCFC)
- Native IP-based Remote Copy (RCIP)
- Zero detection with Remote Copy
- Remote Copy: Synchronous mode
- Remote Copy: Asynchronous periodic mode
- HP 3PAR Remote Copy topologies and latency

System Reporter

- System Reporter overview and components
- Quick, custom, and scheduled reports
- Configuring email alerts
- Using the database sizing spreadsheet
- Use On-Node system reporters
- CLI on-node system reporter commands and interpretation

File Persona

- Installing and configuring File Persona
- Working with File Persona authorization and authentication
- Understanding the logical layers of File Persona
- Explaining how snapshots work with File Persona
- Configuring and using Antivirus capabilities
- Working with File Services Quota Management

Adaptive Optimization

- Dynamic Optimization vs. Adaptive Optimization
- Adaptive Optimization architecture

- AO configuration
- AO Sizing Recommendations
- Configuring and managing AO using Management Console and the CLI
- AO administration
- AO schedules in Tasks & Schedules of MC
- Adaptive Optimization CLI overview
- Adaptive Optimization Specifications Matrix
- AO Reports in Management Console

QoS and Priority Optimization

- Priority Optimization benefits and architecture
- Priority Optimization best practices and performance implications
- Working with PO using Management Console and the CLI
- QoS monitoring

Data Migration to HP 3PAR

- Peer Motion purpose and benefits
- Configuring Peer Motion using the Management Console
- Administering a Peer Motion configuration
- Peer Motion Command Line Interface (PMCLI)
- Online Windows Cluster Migration
- EVA to HP 3PAR Online import
- Migrating Data in Command View
- HP 3PAR Online Import Utility for EMC Storage