Hewlett Packard Enterprise

HPE Storage Solutions, Rev. 20.41

Course description

This course teaches students how to identify, recommend, and explain HPE Enterprise Storage Solutions architectures and technologies, and translate business requirements into storage solution designs that support applications and data across physical, virtual and cloud environments with a common architecture and converged management. The course also covers designing HPE Backup Solutions including the right Backup, Recovery, and Archive (BURA) strategies for various customer scenarios.

The course uses participant centered learning with 30% lecutre and 70% hands-on lab exercises.

Ideal candidate for this course

Typical candidates for this course are channel partners, customers, and HPE employees who interpret customer requirements to design, install, configure, and manage HPE storage and backup solutions. The candidate will be able to demonstrate critical-thinking skills required to design, optimize, deploy, manage, and troubleshot storage solutions.

Course ID	0001132323
Course format, Typical duration	**Select one:** ILT - Instructor Led, 5 days VILT - Virtual Instructor Led, 5 days
Skill level	Intermediate
Delivery languages	English
Lab required	Yes
Related certifications	• HPE ASE - Storage Solutions V4 • HPE ASE - Storage Solutions V4 - upgrade from HPE ASE - Storage Solutions Architect V3, V2 and HPE ASE - Storage Solutions Integrator V2
In preparation for these exams	Selected items from this course are included in these exams: • Delta - HPE Storage Solutions • HPE Storage Solutions

Suggested prerequisites

The HPE ATP - Hybrid IT Solutions V1 or V2 certification.

Topics

- **Storage architectures and technologies**
  - Compare different storage technologies
    - File-based storage
    - Block-based storage
    - Object-based storage
    - Comparison

  - Describe and evaluate use cases for various disk related technologies
    - Interfaces
    - Disk (HDD) types and technologies
    - Flash-based technologies
    - Memory types

  - Describe storage related technologies
    - Storage virtualization options
    - Storage scalability options
    - Thin provisioning
    - Compression
    - Deduplication
    - Data migration
    - Comparison to traditional approach
    - Use-cases

- **HPE storage products review**
  - Identify product and discuss features of:
    - Modular Smart Array (MSA)

- Nimble Storage
- 3PAR StoreServ
- Primera
- XP (overview only)
- SimpliVity (overview only)
- Software-defined Storage

- **Storage networking architectures and technologies**
  - Describe SAN transport technologies and components
    - Transport technologies
    - Interconnect devices and adapters
    - StoreFabric portfolio overview

  - Describe and characterize the different SAN technologies
    - Used transport protocols
    - Available features
    - Zoning

  - Describe and characterize the different SAN topologies
    - HPE supported topologies
    - Redundancy and high availability
    - Scalability
    - Advantages and disadvantages

  - Describe storage presentation to hosts in SAN context
    - Basic concepts
    - Storage based presentation
    - Multi-pathing options and technologies

- **Data protection**
  - Describe the data protection terminology
    - Availability and downtime
    - RPO and RTO
    - 3-2-1 rule
    - Disaster Recovery

  - Describe backup, archiving, and data availability technologies
    - Malware protection
    - Archiving concepts
    - Backup vs archiving
    - Available technologies and features
    - Tiering
    - Security aspects
    - Data protection aspects

- **HPE backup solutions – disk**
  - Review the HPE StoreOnce product
    - Overview
    - Portfolio and Positioning
    - Features and functions
    - Emulation types
    - Networking

  - Explain the features of Deduplication technology in backup context
    - Deduplication: What is it?
    - Deduplication technology types
    - Key Benefits of Data Deduplication
    - How hash based chunking works
    - Target/server/source-side deduplication
    - How deduplication integrates into backup software

  - Explain the features of Catalyst technology
    - Overview

- StoreOnce Catalyst features and benefits
- StoreOnce Integrations

- **HPE backup solutions – tape**
  - Describe HPE StoreEver Tape solutions
    - HPE StoreEver Tape portfolio
    - LTO Ultrium
    - Management
    - Features
    - Linear Tape File System
    - HPE Library and Tape Tools
    - Enterprise Secure Key Manager

- **Backup and archiving software solutions – part 1**
  - HPE Recovery Manager Central Software
    - Overview
    - Building blocks
    - Features overview
    - Basic integration with HPE products

  - Veeam Backup & Replication
    - Overview
    - Building blocks
    - Features overview
    - Basic integration with HPE products

- **Backup and archiving software solutions – part 2**
  - Micro Focus Data Protector
    - Overview
    - Building blocks
    - Features overview
    - Basic integration with HPE products

  - Commvault Complete Backup & Recovery
    - Overview
    - Building blocks
    - Features overview
    - Basic integration with HPE products

  - SimpliVity protection and integration
  - iTernity Compliant Archive Software (iCAS)
  - Cloud offerings and integrations

- **Advanced administering and monitoring**
  - Infrastructure monitoring protocols and standards review
    - SNMP, SMI-S and REST API

  - Storage and backup products monitoring options
    - Modular Smart Array (MSA)
    - Nimble Storage
    - 3PAR StoreServ / Primera
    - StoreOnce

  - SAN Monitoring
    - B, C and M -Series

  - Insight Remote Support review
  - InfoSight

- **Staging an effective storage consulting engagement**
  - Describe the goals of HPE presales consultants and storage architects
  - Identify Consultative selling

- Explain how to use HPE sizing and planning tools during a consulting engagement
- Calculate Payback period and ROI
- Use Storage Assessment Foundry
- List the available return on investment and total cost of ownership tools
- Direct others to HPE resources online
- List steps for a Proof of Concept test
- List HPE storage services
- HPE Partner Ready Delivery Services program

- **Planning and designing HPE storage solutions**
  - Position the different HPE Storage arrays
  - Storage planning and sizing tools
  - Array planning and sizing

  - Describe SAN design principles and considerations
  - Talk about licensing

- **Planning and designing HPE BURA solutions – theory**
  - Identify data tiering and retention
  - List challenges in Data Protection
    - Discovering data protection opportunities
    - Not all data are equal: Classifying information
    - Solution and categorization
    - Recovery operations
    - The effectiveness of recovery
    - Steps in disaster recovery
    - Backup strategy planning
    - Protection and recovery methods
    - Data protection and retention challenges
    - Delivering agility and efficiency

  - Present HPE backup and restore strategy
    - Backup and recovery strategy planning
    - Understanding the factors that influence the backup solution
    - Preparing the backup design
    - Backup topologies
    - Zoning for backup

- **Planning and designing HPE BURA solutions – practice**
  - Perform StoreOnce planning and sizing
    - HPE StoreOnce backup device emulation options
    - HPE StoreOnce performance and sizing guidelines
    - Networking
    - Resource prerequisites for HPE StoreOnce VSA
    - Sizing considerations
    - Reference documents and sizing tools
    - Emulation options
    - Performance and sizing guidelines
    - NinjaProtected Tool and Get Protected Guarantee
    - What is the NinjaProtected Tool?
    - What does it do? What does it deliver?
    - Why use the NinjaProtected Tool?

  - Perform RMC sizing
    - Sizing considerations
    - Deployment and integrations
    - Best Practices

  - Discuss licensing

- **Upgrading, optimizing, and tuning HPE storage and BURA solutions**
  - Upgrade HPE 3PAR StoreServ and Primera system
  - Nimble Timeless Storage program

- Upgrade HPE Nimble array
- Describe Nimble Scale-to-Fit options
- Upgrade HPE StoreOnce system
- Tune HPE 3PAR StoreServ and Primera
- Optimize HPE Storage systems
- Optimize StoreOnceDeduplication ratio
- Update HPE 3PAR and Primera OS
- Update HPE 3PAR Service processor
- Optimize HPE Backup systems and backup jobs

Objectives

After you successfully complete this course, expect to be able to:
- Identify, recommend, and explain HPE Enterprise Storage Solutions architectures and technologies.
- Translate business requirements into storage solution designs that support applications and data across physical, virtual and cloud environments with a common architecture and converged management.
- Explain the HPE Storage Management tools.
- Explain HPE 3PAR and Primera OS and configuration.
- Explain Nimble storage features.
- Explain the fundamentals of virtualization and virtualization management capabilities.
- Describe SAN Fabric Topologies, SAN design principles and considerations.
- Describe planning a RAID configuration.
- Identify Drive I/O and Performance.
- Provide an overview of HPE Reference Architectures.
- Describe the goals of HPE presales consultants and storage architects.
- Explain how to use HPE sizing, planning and ROI tools.

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Policies, fees and cancellations

Course fees may vary. Fees are established and collected by the training center that delivers the course. Cancellation fees may apply. Contact your HPE Authorized Training Partner for their respective policies.

For more information

Contact our program