

Implementing HPE MSA Storage Solutions U4226S

HPE course number	U4226S
Course length	2 Days
Delivery mode	ILT, VILT
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This course introduces the Modular Smart Array (MSA) solutions 2312fc, 2324, P2000, 1040/2040 and 1050/2050 and focuses on implementing and managing an MSA SAN solution. Gain an understanding of the features, benefits, and components of each of the systems. Learn the main considerations for installing, configuring, and troubleshooting the systems and how to use the various tools and utilities available for configuring and managing the array systems. The course is 60 percent lecture and 40 percent hands-on labs using HPE servers.

Audience

- CSG, ESS, and ISS technical
- Presales server
- Storage and SWD technical
- Partners
- Resellers

Prerequisites

- HPE Storage Full-Line Technical WBT (U4220AAE) or HPE Storage Software and Solutions Full-Line Technical WBT (U4221AAE)

or

- Working knowledge of Windows 2008, HP-UX, or Linux operating systems

Course objectives

- Explain the benefits of a Storage Area Network (SAN)
- Explain the product benefits and main features of the MSA products

- Identify, locate, and discuss the functions of the hardware components including: controllers, drive enclosures and hard drives, Fibre Channel and iSCSI controller modules, expansion controller modules, power and cooling units, and related interconnect devices
- Identify the software applications supported on the MSA products
- Navigate and utilize the Storage Management Utility (SMU)
- Discuss the sample configurations for the MSA products
- Discuss and utilize the command line interface commands
- Discuss basic operating procedures and associated considerations
- Discuss local and remote configuration
- Discuss how to perform troubleshooting
- Describe best practices

Certifications and related examinations

- HPE ASE—Storage Solutions Integrator V1
- HP0-J71—Implementing HPE Converged Storage Solution

Detailed course outline

Module 1: MSA Family Product overview	<ul style="list-style-type: none"> • Explain the positioning of the MSA family of arrays • Describe the customer benefits of the systems 	<ul style="list-style-type: none"> • Identify the basic features and capabilities of the MSA products
Module 2: MSA Hardware and Install	<ul style="list-style-type: none"> • Identify the hardware components of the MSA systems • Locate and explain the functions of the various components 	<ul style="list-style-type: none"> • Describe the possible configurations for the MSA products
Module 3: MSA Linear Storage Provisioning	<ul style="list-style-type: none"> • Describe Vdisk technologies used in MSA Linear Storage provisioning 	<ul style="list-style-type: none"> • Use the System Management Utility (SMU) v2 to configure storage
Module 4: MSA Virtual Storage Provisioning	<ul style="list-style-type: none"> • Get familiar with the Storage Management Utility (SMU) v3 • Describe what MSA Virtual storage is 	<ul style="list-style-type: none"> • Identify differences between Linear and Virtual storage provisioning
Module 5: MSA Virtual Storage Sub-LUN Tiering	<ul style="list-style-type: none"> • Learn the Sub-LUN or Automated Tiering capability of MSA • Describe Volume Tier Affinity and Page allocation rules 	<ul style="list-style-type: none"> • List the Best Practices associated with Automated Tiering
Module 6: MSA Virtual Storage Copy Services	<ul style="list-style-type: none"> • Describe Virtual Copy feature in Virtual Storage • Describe the Snapshot Space Management 	<ul style="list-style-type: none"> • Describe the Volume Copy feature
Module 7: MSA Virtual Storage Features	<ul style="list-style-type: none"> • Describe the following Virtualization features available on the MSA platform: <ul style="list-style-type: none"> – Large Virtual Pools – Thin Provisioning 	<ul style="list-style-type: none"> – SSD Read Cache – Thin Rebuilds – Instantaneous Capacity Addition
Module 8: MSA Remote Snap Replication	<ul style="list-style-type: none"> • Provide an overview of Remote Snap Replication, a form of asynchronous replication, for the MSA • Relate new features and functionality for the MSA 2050 	<ul style="list-style-type: none"> • Identify the components used in replication • Describe the steps involved in a replication
Module 9: MSA Firmware Update	<ul style="list-style-type: none"> • Explain the Firmware upgrade procedures 	
Module 10: MSA Service and Support	<ul style="list-style-type: none"> • Perform basic troubleshooting 	<ul style="list-style-type: none"> • Gather controller log files using the SMU and the CLI
Module 11: Appendix		

Detailed lab outline

Lab 1: MSA2000 Hardware Familiarization

Lab 2: MSA2000 FRU Removal and Replacement

Lab 3: MSA2040 Hardware Familiarization

Lab 4: MSA2040 FRU Removal and Replacement

Lab 5: Configuring the P2000 G3 FC

Lab 6: P2000 G3 iSCSI Configuration with SMU V2

Lab 7: MPIO Installation and Configuration

Lab 8: Configuring the MSA 2040 with SMU V3

Lab 9: Generate Thin Provisioning Capacity Alert

Lab 10: MSA 2040 Snapshots in SMU V3

Lab 11: Firmware Upgrades/Downgrades in SMU V3

Lab 12: MSA Family Log Retrieval

Lab 13: Appendix A - Configuring the MSA2012fc

Lab 14: Appendix B - MSA2012i Configuration with SMU

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