Purpose of the exam prep guide

The intent of this guide is to set expectations about the content and the context of the exam and to help candidates prepare for it. In this guide, you will find recommended HP training courses, reference and study material to help you achieve a successful passing score.

Studies conducted by HP and Prometric show that a combination of course attendance and self-study maximizes the likelihood of passing the exam on the first attempt.

Audience

The Supporting the Enterprise Virtual Array Storage (EVA) Family exam is for engineers who support, from a Services perspective, the Enterprise Virtual Array product line.

Examples of job roles:

- HP ASE engineer
- HP Services field engineers, call center personnel, and other field personnel who provide installation and/or operational support assistance
- HP Channel Partners supporting the EVA product line (e.g., engineers who perform warranty, break-fix, and installation services)

General areas of content include:

- EVA physical layout; hardware and software attributes and features
- HSV controller, disk drive enclosures and Fibre Channel loop switch
- Rack, cabling, configuration, and initial setup
- Storage Management Appliance
- Storage system configuration using Command View EVA
- Storage system management
- Error reporting and diagnostics
- Storage System Scripting Utility
- Best practices and storage tools
- Troubleshooting
Certification requirements

The Supporting the Enterprise Virtual Array (EVA) Storage Family (HP0-241) exam is an Accredited Systems Engineer (ASE) core elective exam. This exam is for individuals who, in addition to configuration, design, start-up, and implementation services, will also deliver warranty and break-fix services for the EVA family of arrays. Individuals who provide EVA start-up and implementation services only for the EVA arrays should consider the "less services-focused" HP0-690 exam instead of HP0-241.

Prerequisites

- AIS StorageWorks certification
- Knowledge of/completion of prerequisite Web-based and Instructor Led Training Courses specified in the Recommended Training and Study References section of this exam preparation guide.
- Knowledge of OpenView and SANworks software products through appropriate training courses

Exam details

At the beginning of the exam, you will be asked to answer several survey questions. The survey has been designed to assist the exam development team in accurately profiling test results and to improve future exams.

- **Number of items:** 58
- **Item types:** Multiple choice
- **Passing Score:** 70% (raw score of 41)
- **Time commitment:** 90 minutes
- **Reference Material:** No on-line or hard copy reference material will be allowed at the testing site.

Comments on the exam

During the exam, participants can make specific comments about the items (i.e., accuracy, appropriateness to audience, etc). HP welcomes these comments as part of our continuous improvement process.

Exam Registration

This exam is available at [Prometric](#).

Exam content

The following information represents specific areas of content covered in the exam. Use this outline to guide your study and to check your readiness for the exam. The exam measures your understanding of these areas.
Supporting the Enterprise Virtual Array (EVA) Storage Family (HP0-241) Exam Content

1.0 Product Overview
- EVA physical layout
- Small Form Factor Pluggable (SFP).
- EVA3000 configurations and requirements

2.0 HSV Controller
- Controller features, components, functions, differences, and FRUs
- Host port WWNs
- Cache battery features and operation
- VCS licenses and revisions
- Fibre Channel speed and connection types
- Mirror port connections between HSV controllers
- Hot-swapping controllers

3.0 Disk Drive Enclosures
- M5x14 disk drive enclosure features and functions
- Controller connections to disk drive enclosures
- EMU components and functions
- Disk enclosure blower assembly
- Assignment of enclosure addresses

4.0 Fibre Channel Loop Switch
- Loop switch features included with EVA models
- Loop switch functional characteristics

5.0 Rack, Cabling, Configuration and Initial Setup
- Cabling configuration rules, including expansion racks
- Supported FC-AL devices
- Characteristics of switched and non-switched EVA configurations
- Key components and processes for cabling drive enclosure configurations
- Key components for cabling expansion options
EVA system temperature ranges

6.0 Storage Management Appliance
- Hardware and software components of the HP OpenView Storage Management Appliance (SMA)
- CommandView EVA software features and rules
- Configuring the SMA
- Restore CD purpose and features

7.0 Concepts and Terminology
- Purpose, features, and functions of a disk group and default disk group
- Distributed RAID
- Virtual disk cache options
- Data protection
- Disk leveling
- Disk group configuration
- Primary features of virtual disks
- Replication methods used with EVA (snapshots and snapclones)

8.0 Storage System Configuration Using Command View EVA
- Command View EVA Host Wizard
- Command View EVA storage system passwords
- Command View EVA functions
- Use of Command View EVA to initiate and complete configuration process steps
- Steps in the configuration process of a storage system and host
- Properties of disk groups, virtual disks, and hosts
- Creating disk groups, virtual disks, hosts, snapshots and snapclones

9.0 Storage System Management
- Management agent options that can be set in Command View EVA
- Information displayed on a storage system's rack, controller, and disk drive properties pages
- Licensing HSV controllers
10.0 Error Reporting and Diagnostics
- Event logs and how they are viewed
- Tools and processes used to translate and read controller event logs
- Steps involved to set up notification events for SNMP traps
- Tools and processes used to set up EVA remote monitoring (ISEE)
- Diagnostics used for the HSV controller

11.0 Storage System Scripting Utility (SSSU)
- SSSU purpose, features and functions
- Selecting a storage system and displaying information about the elements in the selected storage system
- Capturing configuration information of a specified storage system into script

12.0 Best Practices and Storage Tools
- Key considerations for configuring disk groups
- Calculating disk counts needed for the given requirements of a disk group

13.0 Troubleshooting
- Event and error data used in troubleshooting
- Use of the controller and disk enclosure drive status indicators, tools, and references for troubleshooting
- SAN information used for troubleshooting
- Replaceable units (FRUs and CRUs)

Recommended training and study references
This section lists training courses and documents that can help you acquire a majority of the knowledge and skills needed to pass the exam. You must also gain the practical experience outlined in this guide.

You are not required to take the courses listed in this section. However, HP strongly recommends that you attend the classes, participate in class labs, and thoroughly review all course material and documents before taking the exam, even if you believe you have sufficient on-the-job experience.
Instructor-led Training

Use the information in this guide and the practical experience you have gained to determine your need for the instructor-led training.

<table>
<thead>
<tr>
<th>Title</th>
<th>Course Number</th>
<th>How to Enroll</th>
</tr>
</thead>
</table>

External
Americas:
www.hp.com/go/training

Web-based Training

<table>
<thead>
<tr>
<th>Title</th>
<th>Course Number</th>
<th>How to Enroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Basics for Better TCE</td>
<td>NEX2-STORAGEBASE vA</td>
<td><a href="http://www.hp.com/go/training">www.hp.com/go/training</a></td>
</tr>
<tr>
<td>Storage Change Management</td>
<td>NEX2-STORAGECHGva</td>
<td></td>
</tr>
<tr>
<td>Storage Technologies Web-based Training (WBT)</td>
<td>1822</td>
<td></td>
</tr>
<tr>
<td>HP StorageWorks Full-Line Technical WBT</td>
<td>488</td>
<td></td>
</tr>
<tr>
<td>Introduction to Storage Area Networks Computer Based Training (CBT)</td>
<td>NED1-SANCBTva</td>
<td></td>
</tr>
<tr>
<td>Storage Area Network Fundamentals</td>
<td>NES1-SANFUNDTLSvb</td>
<td></td>
</tr>
<tr>
<td>Compaq StorageWorks Virtualization Concepts WBT</td>
<td>6066</td>
<td></td>
</tr>
</tbody>
</table>
Sample Test Items

1. In what format is the G2 Management Appliance system name configured by default?
   A. SODITxxxx, where xxxx is the RIB board password
   B. SWMAxxxxxx, where xxxxxx is the last 6 digits of the serial number
   C. SMAxxxxxxxxx, where xxxxxxxxx is the full serial number of the appliance
   D. SMAWxxxxxx, where xxxxxx is the last 6 digits of the serial number reversed

2. What is the file extension of the superimage file used to update the EVA?
   A. .hsv
   B. .swf
   C. .sss
   D. .upd
   E. .cmd

3. When configuring disk groups on the EVA, which conditions are correct? Select TWO.
   A. minimum of 5 drives
   B. minimum of 8 drives
   C. minimum of 12 drives
   D. maximum of 8 disk groups
   E. maximum of 16 disk groups
   F. maximum of 32 disk groups

4. When there is an HSV controller and Command View EVA password mismatch, the HSV will _____.
   A. not show up
   B. will show up with a red X on it
   C. will show up as Unknown Storage
   D. will show up, but it will be grayed out
   E. will show up with yellow caution on it
5. What is the file name that corresponds to the Controller Event log on the Storage Management Appliance in c:\hsvmafiles when the HSV110 is at VCS 3.010?
   A. hsvmatracefile.txt
   B. <uuid>.bridgeLog.txt
   C. <wwn>.sceventfile.ascii
   D. <uuid>.termeventfile.txt
   E. <wwn>.sceventfile.binary
   F. <wwn>.sceventstatefile.txt

6. Which methods are available from the Storage Management Appliance to provide system administrators direct notification of FRU level failures? Select TWO.
   A. e-mail
   B. SCMI traps
   C. SNMP traps
   D. syslog event
   E. pager message

7. How many Power Distribution Units (PDUs) are installed in the main rack of an EVA?
   A. 2
   B. 3
   C. 4
   D. 5
   E. 8

8. Which tools are used for remote notification? Select TWO.
   A. WEBES-SEA
   B. Controller Event Log
   C. \NetView V3.01
   D. \SMA SNMP Notification Manager
   E. ISEE
9. Which software components must be installed on the Storage Management Appliance for remote event notification? Select TWO.
   A. NAPP
   B. ISEE Client
   C. WEBES-SEA
   D. EVA Basic License
   E. Command View 3.1

10. You have a disk group with double protection and six RSSs. It has only Vraid0 virtual disks configured. How many disk drives can you lose and still access the data on the Vraid0 disks?
   A. 0
   B. 1
   C. 2
   D. 4
   E. 6

11. Given that 36 GB disks yield approximately 33.91 GB of usable capacity and a 72 GB disk yields approximately 67.82, what is the maximum available space in a disk group with 10 x 36 GB drives and 2 x 72 GB disks and a protection level of Single?
   A. 203.46 GB
   B. 339.1 GB
   C. 474.74 GB
   D. 504 GB

12. Which items are stored in the quorum disk metadata? Select TWO.
   A. cell name
   B. event configuration list
   C. virtual disk members
   D. virtual disk chunk information
   E. licenses
ANSWERS:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Conclusion

HP wishes you success in the HP Certified Professional Program and in passing the exam for which you are preparing.