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Vendor:HP

Exam Code:HP0-J64

Exam Name:Designing HP Enterprise Storage
Solutions

Version:Demo

QUESTION 1

You are designing a new storage environment for an enterprise customer who deals with application delivery. Which questions should you ask the CEO during the consulting interview to get all of the information to design and position the solution? (Select two.)

- A. What are your business opportunities?
- B. Which cost and risk control mechanisms are in place?
- C. Which service-level improvements do you need?
- D. What is your application development backlog?
- E. What is your competitive business advantage?

Correct Answer: AE

CEO - Competitive business advantage; business opportunities CFO - Cost and risk control CIO - IT operating costs; application development backlog Clients - User; service-level consistency or improvement

QUESTION 2

A customer storage infrastructure consists of eight HP StoreVirtual 4000 nodes in a cluster, connected to an HP 2910-24G network environment. Server virtualization is done using VMware vSphere 5.1 on six hosts across two sites. Which drawbacks must the customer consider when upgrading the solution? (Select two.)

- A. When adding more nodes in the cluster, additional 1Gb network ports have to be added in each node.
- B. When using more than eight nodes in a cluster, a 10 Gb connection is recommended.
- C. When upgrading to VMware version 5.1, the iSCSI multipathing driver has to be configured.
- D. When using a server across the sites, VMware Site Recovery Manager is needed.
- E. When using 10 Gb the customer has to implement new network switches.

Correct Answer: BE

Recommended network switches for HP StoreVirtual 4000 Storage HP Networking has an extensive portfolio of Ethernet switches that are ideally suited for iSCSI deployments. These switches are designed to deliver high-performance, low-latency, and wire-speed Layer 2 to 4 network services. HP Networking top of rack series of switches offer unmatched combination of 1GbE and 10GbE ports density, high availability architecture, Intelligent Resilient Framework (IRF) technology as well as a full range of Layer 2 and or Layer 3 features depending on switch selection. These switches are built to support open and industry-standards networking protocol. These switches can be deployed within the network core or as a highperformance switch in the convergence layer or network edge of SMB and enterprise networks. Listed below is a selection of recommended top of rack models. These are the 3800, 5830, 5920, and 6600 series.

Another recommended switching platform is the HP Networking 2920 series, to learn more visit hp.com/go/networking.
<http://h17007.www1.hp.com/docs/products/4aa4-5213enw.pdf>

Networking 2910 <http://www8.hp.com/pt/pt/products/networking-switches/product-detail.html?oid=3901673#!tab=specs>

Recommended switch infrastructure for an HP P4000 SAN HP does not recommend any particular switch for use with HP P4000 SANs. However, there is a set of minimum switch capabilities that make building a high-performance, high-availability storage network a relatively easy and cost effective task. The following are three commonly recommended HP switches, but ultimately you will need to follow the recommended switch capabilities in Table 1 below which provides guidance for general switch selection based on your specific needs. As a rule of thumb, any enterprise-class managed switch typically has the capabilities required for most customer installations.

HP E2910 al Switch Series (10/100/1000Base-T and 4 x optional 10GbE)

HP A5810-48G Switch (10/100/1000Base-T and 2 x 10GbE)

HP E6600 Switch Series (10/100/1000Base-T and 10-GbE SFP+)

QUESTION 3

Which HP Service tool performs an operating system binary event log analysis?

- A. ISEE
- B. WEBES
- C. RISS
- D. OSEM

Correct Answer: B

Web Based Enterprise Services

WEBES is a tool suite aimed at preventing or reducing your system's down time. The tool suite has the following components:

SEA (for operating system binary event log analysis). If you have a warranty or service contract with HP you are entitled to these tools free of charge. You must, however, upgrade the tools at least once a year, because the software expires after one year

<http://www8.hp.com/us/en/support/svctools/webes.html>

QUESTION 4

Which device type for server-side deduplication does HP Data Protector use?

- A. OST
- B. Implicit
- C. Catalyst
- D. Explicit gateway

Correct Answer: D

QUESTION 5

Which HP storage array features HP Express Query?

- A. HP 3PAR StoreServ
- B. HP StoreAll
- C. HP StoreEver
- D. HP StoreVirtual

Correct Answer: B

Reference: <http://www8.hp.com/us/en/products/data-storage/storeall.html> (what's new)

QUESTION 6

A customer has an HP BladeSystem c7000 with HP Virtual Connect Flex-10 modules interconnect bays 1 and 2. The customer wants to install an HP Proliant BL460c Server Blade with no options. Which Feature is unavailable to the customer with this configuration?

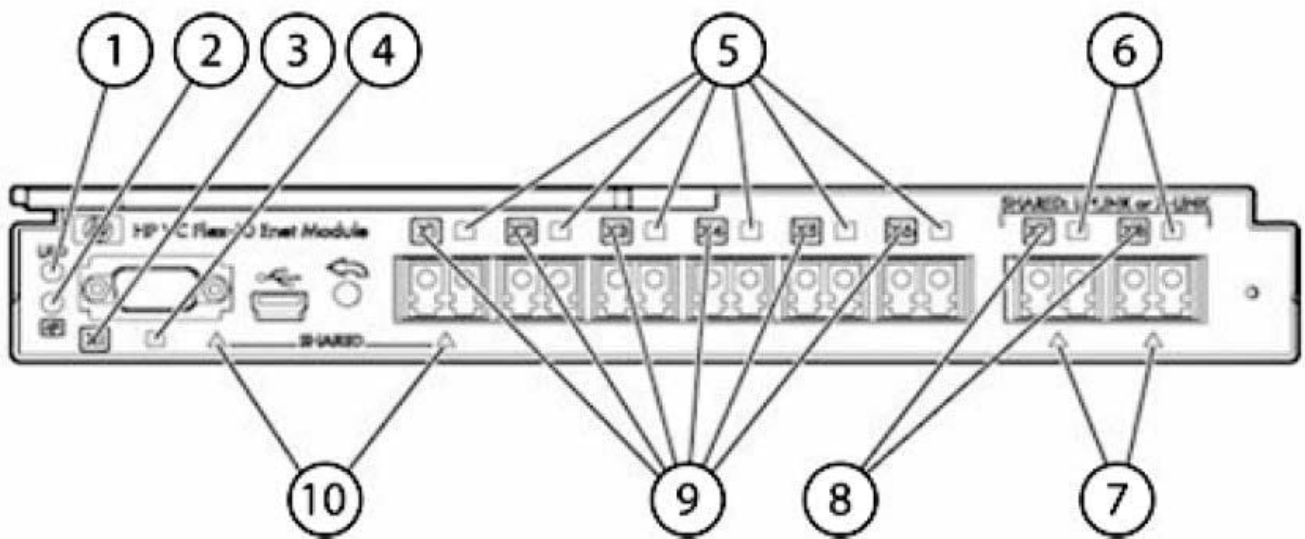
- A. Fibre Channel
- B. Ethernet
- C. iSCSI
- D. VLANs

Correct Answer: A

http://h18004.www1.hp.com/products/quickspecs/13127_div/13127_div.pdf <http://h18000.www1.hp.com/products/quickspecs/productbulletin.html#spectype=worldwideandty pe=htmlanddocid=13127>

Overview HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem

Simplify and make your data center change-ready. The HP Virtual Connect Flex-10 10Gb Ethernet Module for the c-Class BladeSystem is the simplest, most flexible connection to your networks. The Virtual Connect Flex-10 Ethernet Module is a new class of blade interconnect that simplifies server connections by cleanly separating the server enclosure from LAN, simplifies networks by reducing cables without adding switches to manage Virtual Connect wire-once connection management allows you to change servers in just minutes, not days, and tailors network connections and speeds based on application needs. HP Flex-10 technology significantly reduces infrastructure costs by increasing the number of NICs per connection without adding extra blade I/O modules, and reducing cabling uplinks to the data center network. The HP Virtual Connect Flex-10 10Gb Ethernet Module for c-Class BladeSystem is an innovative, new class of integrated interconnects from HP.



QUESTION 7

A small service provider customer is in the process of a merger and needs to purchase additional IT infrastructure components to support the expansion of their customer base. The goal is to offer same-day repair from any hardware failures and increased high availability from the servers to the local array.

The new proposal provides the following Bill of Materials (BOM):

- HP StoreSure 2000 - 155 TB of Midline SAS SFF Drives - FC Controller Pair
- A pair of HP SN6000B 16Gb 48-port/48-port Active Fibre Channel switches
-
- HP P2000 Remote Snap Software
-
- HP SN1000 2 Port 16 Gb HBAs
- 24 Fibre Channel cables
- 10 HP ProLiant DL360 Gen8s
- vSphere Enterprise Plus and vCenter licenses from HP
- Call-to-repair 24x7 coverage with four-hour on-site response

The customer operating budget is constrained, and the price of the BOM is too high. Which components do you propose to change to meet their budget goals without sacrificing their critical to quality goals? (Select two.)

- A. Modify the vSphere Enterprise Plus licenses to vSphere Enterprise.
- B. Modify the HP SN6000B 48/48 switches to 48/24 switches.
- C. Modify the HP SN600B 48/48 switch count to a quantity of one.

D. Modify the HBA connections by 50%.

E. Modify the Support to Next Business Day.

Correct Answer: AB

If you remove one fabric it's no longer a HA solution. But they need only activate 12 ports on each switch, and vSphere Enterprise Plus only add manageability http://h18000.www1.hp.com/products/quickspecs/14212_div/14212_div.pdf
http://h18004.www1.hp.com/products/quickspecs/14104_div/14104_div.pdf

QUESTION 8

Your customer has been working with a member of your technical team to size a new HP StoreOnce Backup System in an HP Data Protector 7 environment. The engineer is out of the office but provides you with the report that they generated from the HP Storage Sizing Tool.

StoreOnce System Overview

Sizing Mode => Type: BasicDeDupe
Product Line => HP StoreOnce Multi-Node
Target Emulation => Catalyst Highbw
Total Usable Capacity sized in StoreOnce => 67336 GB
Peak Throughput required => 2010 MB/sec

StoreOnce Dedupe Retention Table

Job Name	Job SizeGB	SizedFor Years	Housekeeping Hours*	Block ChangeRate	Compaction Ratio	Total StoreGB	NAS Overhead**
BasicJob	57881.00	3	3.05	2 % - Medium Band2	8.52	67335.77	0.00

Category	JobName	SetName	BackupType	ChangeRate	Retention	Differentials
Advanced	BasicJob	Daily	Incremental	20 %	5	N/A
Advanced	BasicJob	Weekly	Full	N/A	8	N/A
Advanced	BasicJob	Monthly	Full	N/A	1	N/A

* These housekeeping hours are worst case and apply only when tapes are overwritten and this will vary according to rotation policy and retention period in the backup schedule. To reduce the level of housekeeping activity, it is strongly recommended to not reformat cartridges and instead use overwrite on expiry mode and not use appends to tape modes. See best practices for performance optimization whitepaper on hp.com for details.
** This is the capacity overhead associated with the additional Metadata used in the StoreOnce NAS Store. It will vary according to Backup applications and Backup Size.

StoreOnce B6200 Backup Sizing Overview

Sizing	Couplet	Nodes	Pairs1	Pairs2	Thruput	Streams
	1	2	3	0	0	0

StoreOnce B6200 Backup Sizing Overview

Sizing	Couplet	Nodes	Pairs1	Pairs2	Thruput	Streams
Capacity	1	2	3	0	0	0
Performance	1	2	4	0	2222	48
Combined	1	2	4	0	0	0

Sizing - Performance is based on backup window and scheduling

Couplet - Pair of nodes

Nodes - Total number of nodes across all couplets

Pairs1 - Pair of disk shelves with 28.8TB usable - using 2TB raw disk type

Pairs2 - Pair of disk shelves with 14.4TB usable - using 1TB raw disk type

Thruput - Max potential backup throughput of this multi node configuration in MB/sec

Streams - Total number of streams across all nodes - equal number of streams per node

Which planning and configuration guideline has to be adhered to so this StoreOnce B6200 Backup System works as desired?

- A. A catalyst license is configured per node.
- B. Source Side Deduplication in Data Protector is disabled.
- C. The usage of VTLs and shares is avoided.
- D. An adequate number of streams are configured.

Correct Answer: D

An adequate number of streams are configured

QUESTION 9

A customer gas transaction-based application running on three blade servers that require very High I/O performance exceeding 75,000 IOPs. The customer has an HP BladeSystem c7000 with Flex-10 Virtual Connect and 16 HP ProLiant BL460 Gen8 servers with no externally attached storage because their storage capacity requirements are extremely low?

Which solution would achieve greater performance with minimal disruption for this customer?

- A. Add an HP IO Accelerator mezzanine card to the blade servers
- B. Add an HP X1800sb Network Storage Blade and attach it to the servers
- C. Add a SAS attached D2700 Disk Enclosure to the environment with 8 SSD drives
- D. Add additional HDD drives to the existing blade servers in a RAID 50 stripe set

Correct Answer: B

QUESTION 10

How does the HP StoreVirtual DSM for Windows compare to the native MPIO provided by the operating system?

- A. It opens iSCSI connections to all StoreVirtual nodes
- B. It modified the iSCSI routing policies
- C. It creates iSCSI bond groups
- D. It changes iSCSI transfer block size

Correct Answer: A

The HP StoreVirtual DSM for Microsoft MPIO provides enhanced MPIO functionality as follows:

Automatic creation of an I/O path to each storage system in the cluster on which the volume resides, plus a path for the administrative connection.

<http://h10032.www1.hp.com/ctg/Manual/c03687491.pdf>

1 Using MPIO

Description of the HP StoreVirtual DSM for Microsoft MPIO

The HP StoreVirtual DSM for Microsoft MPIO provides enhanced MPIO functionality as follows:

- Automatic creation of an I/O path to each storage system in the cluster on which the volume resides, plus a path for the administrative connection.
- Improved performance architecture over native MPIO solutions:
 - Read I/Os are always serviced by a storage system that holds a copy of the data being requested.
 - Write I/Os are always serviced by a storage system that receives a copy of the data. Remaining copies (replicas) of the data are forwarded to the appropriate storage system based on the data protection level of the volume.
- The ability to build a robust, fault-tolerant solution because an I/O path is built to every storage system in the cluster. For example, in a cluster with five storage systems, DSM for MPIO-connected volumes have six iSCSI MPIO connections to the SAN, one for each storage system and one for the administrative connection. Five of the six connections could go offline, and I/O would still be serviced.

The DSM for MPIO supports connecting multiple NICs in the application server to the SAN.

Configuring with multiple NICs improves fault-tolerant physical network connections in the server.

The DSM for MPIO can be used in a Multi-Site SAN with one or more subnets. In this configuration, the DSM for MPIO will only build I/O paths to the storage systems that are in the same subnet as the application server. Alternatively, you can assign an application server to a site. Application servers assigned to a site connect only to storage systems in the same site. Both of these configurations permit higher performance and lower network utilization by reducing the amount of I/Os that traverse the WAN link.

NOTE: Refer to the instructions specific to Multi-Site SAN configurations in the rest of this chapter. You can also refer to the *HP StoreVirtual Storage Multi-Site Configuration Guide*, available on the HP StoreVirtual Management Software DVD or on the HP StoreVirtual 4000 Storage Manuals page of the HP Business Support Center website.

<http://www.hp.com/support/StoreVirtualManuals>

QUESTION 11

A retail customer recently experienced a major flood in the area of their data center and lost some critical financial data. They are now planning to purchase an HP StoreVirtual multi-site configuration and rent collocation space in another city. As a part of the proposal, which component of the HP StoreVirtual architecture must be implemented to support automatic quorum management across the two sites?

- A. Management Group
- B. Centralized Management Console
- C. Failover Manager

D. Manager Quorum

Correct Answer: B

http://h20565.www2.hp.com/portal/site/hpsc/template.BINARYPORTLET/public/kb/docDisplay / resource.process/?javax.portlet.beginCacheTok=com.vignette.cachetokenandjavax.portlet.endCacheTok=com.vignette.cachetokenandjavax.portlet.rid_ba847bafb2a2d782fcbb0710b053ce01=docDisplayResURLandjavax.portlet.rst_ba847bafb2a2d782fcbb0710b053ce01=wsrp-resourceState%3DdocId %253Demr_na-c01727773-2%257CdocLocale %253Dandjavax.portlet.tpst=ba847bafb2a2d782fcbb0710b053ce01_ws_Blandac.admitted=1386206291390.876444892.492883150

CMC Centralized Management Console. See HP StorageWorks P4000 Centralized Management Console.

QUESTION 12

You have Proposed HP 3PAR StoreServ thin provisioning capability to achieve a 40 % reduction in raw storage requirements. The customer considers all storage vendors thin provisioning equal. What are the competitive differentiators of HP 3PAR StoreServ thin provisioning? (Select two)

- A. fills empty volume space with zeros for space reclaim identification
- B. does not require resource pools
- C. provides equivalent performance to a normally provisioned volume
- D. features dynamic RAID level conversion based on peak write demand statistics to maintain performance
- E. automatically converts fully provisioned volumes to thin volumes

Correct Answer: AC

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- **Start Thin:** HP 3PAR Thin Provisioning is the most comprehensive thin provisioning software solution available. Since its introduction in 2002, 3PAR Thin Provisioning has become widely considered the gold standard in thin provisioning. It leverages HP 3PAR's dedicate-on-write capabilities to make organizations more efficient and more green, allowing them to purchase only the disk capacity they actually need and only as they actually need it.
 - **Get Thin:** With HP 3PAR Thin Conversion, a technology refresh no longer requires a terabyte-for-terabyte replacement, but instead offers the opportunity to eliminate up to 75% of your legacy capacity, simply and rapidly. This savings alone can save up to 60% on the cost of a technology refresh. HP 3PAR Thin Conversion software makes this possible by leveraging the zero-detection capabilities within the HP 3PAR ASIC and Thin Engine - HP 3PAR's unique virtualization mapping engine for space reclamation - to power the simple and rapid conversion of inefficient, "fat" volumes on legacy arrays to more efficient, higher-utilization "thin" volumes on any HP 3PAR Storage System featuring Thin Built In™.
 - **Stay Thin:** With 3PAR Thin Persistence, customers can now leverage next-generation space reclamation technology to minimize storage TCO and maintain environmental responsibility targets they have worked so hard to achieve.

