



## **VMware**

### **Exam Questions 3V0-21.21**

Advanced Design VMware vSphere 7.x

#### NEW QUESTION 1

An architect is designing a vSphere environment for a customer and learns that the customer has:

- A single vSphere cluster
- Two storage arrays with different RAID capabilities

Which two design decisions should the architect make to maximize data availability and data performance for this customer? (Choose two.)

- A. Use Storage DRS.
- B. Use VMDK anti-affinity rules.
- C. Use multiple datastores for heartbeat.
- D. Use a minimum of three storage arrays.
- E. Use VM to host DRS rules.

**Answer:** AC

#### NEW QUESTION 2

During a transformation project kick-off meeting, an architect highlights specific areas on which to focus while developing the new conceptual design. Which two of the listed statements are business requirements? (Choose two.)

- A. The project should use the existing storage devices within the data center
- B. Sites must support a network latency of less than 12 ms round-trip time (RTT)
- C. The solution must allow data replication between sites
- D. There is no budget specifically assigned for disaster recovery
- E. There must not be a single point of failure for the virtual infrastructure

**Answer:** CE

#### NEW QUESTION 3

An architect is designing the expansion of an existing vSphere 7 environment. The customer is requesting a design for a new cluster to support the anticipated future business growth. The requirements specified for the existing environment design must be considered when designing the new cluster.

The existing design has the following requirements:

- REQ01 The environment has an availability target of 99.5% for all infrastructure.
- REQ02 The recovery time objective (RTO) for Tier 1 virtual machines is one hour.
- REQ03 Windows and Linux virtual machines must reside on separate clusters.
- REQ04 Access to the management cluster within the environment must be controlled. Which of the listed requirements would be classified as a functional requirement?

- A. The environment has an availability target of 99.5% for all infrastructure
- B. The recovery time objective (RTO) for Tier 1 virtual machines is one hour
- C. Access to the management cluster within the environment must be controlled
- D. Windows and Linux virtual machines must reside on separate clusters

**Answer:** D

#### NEW QUESTION 4

A customer is deploying a new cluster and wants to be able to patch and update two hosts in parallel. The cluster must be able to maintain N+1 resiliency across the remaining hosts while patching activities are performed. The current expected utilization of the platform requires a minimum of two hosts to support all of the virtual machines.

What is the minimum number of hosts the customer will require in the cluster in order to meet the required resiliency level?

- A. Five
- B. Six
- C. Four
- D. Seven

**Answer:** A

#### NEW QUESTION 5

An architect is designing a new greenfield environment that will install ESXi on local disks. There is a requirement to streamline initial and future installations of ESXi hosts.

Which configuration option should the architect recommend for installing ESXi hosts to meet these requirements?

- A. Installation with kick start script
- B. Auto Deploy with stateless caching mode
- C. Manual installation using boot from SAN
- D. Auto Deploy with stateful install mode

**Answer:** D

#### NEW QUESTION 6

Following a recent acquisition, the architect learns that both companies use vSphere on-premise and will need to combine the data centers into one. The acquired company's licenses will not be renewed for cost-savings related to the acquisition. All consumed vSphere licenses must have active support to support line-of-business operations. The merged environment must maintain 25% spare capacity. The architect has a small budget remaining unallocated for hardware.

The architect has calculated that the current vSphere environment can absorb the acquired company's virtual machines but the cluster will run at 90% memory utilization and at 50% CPU utilization.

Which design decision can the architect make to incorporate the new company's virtual machines into the combined vSphere environment?

- A. Migrate the acquired company's virtual machines into the vSphere environment as it will currently fit.
- B. Use the current budget to add memory to the cluster to increase each ESXi host's capacity and add the new virtual machines.
- C. Purchase extra hosts to add to the cluster in anticipation of adding the acquired company's virtual machines.
- D. Purchase new licenses for some of the acquired company's ESXi hosts and add them to the cluster to hold the acquired company's virtual machines.

**Answer: B**

#### NEW QUESTION 7

An architect is designing a new vSphere environment to meet the following requirements:

- The environment must support 5,000 virtual machines.
- The environment will be built initially using 350 hosts.

Which vCenter Server appliance deployment size should the architect specify for the design?

- A. Large
- B. Small
- C. Tiny
- D. Medium

**Answer: A**

#### Explanation:

<https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vcenter.install.doc/GUID-077C7523-E0EA-492>

#### NEW QUESTION 8

During a requirements gathering workshop, the customer provides the following requirement:

- A new vSphere platform must be designed securely and all interfaces must be protected against potential snooping.

How should this non-functional security requirement be documented?

- A. Interfaces must be audited.
- B. Encrypted channels must be used for all communications.
- C. Unauthorized access to interfaces must be reported within 15 minutes.
- D. Communications must be through Private VLANs (PVLAN).

**Answer: A**

#### NEW QUESTION 9

An architect is tasked with designing a greenfield VMware software-defined data center (SDDC) solution that will be used to deliver a private cloud service for a customer.

During the initial meeting with the service owner and business sponsor, the customer has provided the following information to help inform the design:

- The solution must support the concurrent running of 1,000 virtual machines
- The production environment must be delivered across two geographically dispersed data centers All virtual machines must be capable of running in either data center.
- The two data centers are currently connected to each other through a single but diversely routed, high bandwidth and low latency link.
- The link between the two data centers is capable of supporting a round-trip time (RTT) of 150 ms The existing server hardware standard document states that all virtual infrastructure hosts must be deployed using vSAN ReadyNodes
- The service owner has stated that it is critical to ensure the availability target of 99.9% All virtual machine backups must be completed using the existing backup service
- The recovery time objective (RTO) for the service is five minutes
- The recovery point objective (RPO) of the service is four hours

Which two elements represent risks to the successful delivery of this solution? (Choose two.)

- A. The use of only two data centers
- B. The network connectivity between data center sites
- C. The use of vSAN ReadyNodes
- D. The RTT on the link between the two data centers
- E. The use of the existing backup service

**Answer: DE**

#### NEW QUESTION 10

An architect is designing an environment for a retail customer. The design will use a single small vCenter Server Appliance and a cluster of eight ESXi hosts at a remote site. There is a single 10 GbE connected network at the remote site to support all management services. It is not possible to create additional management networks at the remote site. Virtual machine backups at the site will be dependent on the vCenter Server being available.

Which design decision should the architect make to maximize availability for backups?

- A. vCenter Server High Availability will be configured.
- B. The vCenter Server Appliance will be protected with vSphere Fault Tolerance.
- C. The cluster will be configured to use vSphere DRS in fully automated mode.
- D. The cluster will be configured with vSphere HA and set to restart virtual machines based on guest operating system heartbeat monitoring.

**Answer: C**

**NEW QUESTION 10**

A Cloud Service Provider wants to introduce backup as a service for a customer's vSphere-based virtual machines. The following information is noted:

- All top-of-rack (ToR) switches are 10 GbE and fully populated
- The backup traffic must not impact existing services

Which two recommendations should the architect make to help the customer incorporate the service? (Choose two.)

- A. Enable and tag traffic on the backup distributed port group
- B. Add a new two-port 10 GbE NIC per ESXi host
- C. Replace the existing NIC with a two-port 25 GbE NIC per ESXi host
- D. Match the Class of Service (CoS) and Differentiated Services Code Point (DSCP) values to the physical network
- E. Create a new virtual switch using the 1 GbE uplinks

**Answer:** AB

**NEW QUESTION 12**

What is a benefit of using a scale-out method for handling vSphere cluster growth?

- A. An increase in the recovery time objective (RTO) for the cluster
- B. Faster to reach the limit of virtual machines per host
- C. An overall reduction in the license costs for the cluster
- D. Less potential impact to virtual machines during a single host failure

**Answer:** B

**NEW QUESTION 14**

An architect is tasked with planning the design of a new vSphere environment. When commissioned, this environment will be used to migrate an existing set of virtual machines.

An inventory of the existing infrastructure, including configured vCPU, RAM and storage sizes has been provided.

In order for each virtual machine to be migrated, which two data sources with peak and average utilization data are required for sizing? (Choose two.)

- A. %Ready
- B. Disk Write latency
- C. CPU
- D. Ballooned memory
- E. IOPS

**Answer:** BE

**NEW QUESTION 19**

An architect is considering placement of virtual machines within an existing VMware software-defined data center (SDDC).

During the discovery phase, the following information is documented: Cluster One

- Six ESXi hosts
- vSphere HA with host failures cluster tolerates = 1
- Proactive HA is enabled and set to automated
- Fully Automated vSphere DRS
- Transparent Page Sharing (TPS) is enabled Cluster Two
- Eight ESXi hosts
- vSphere HA with host failures cluster tolerates = 1
- Proactive HA is disabled
- Partially Automated vSphere DRS
- Transparent Page Sharing (TPS) is disabled Cluster Three
- Three ESXi hosts
- vSphere HA with admission control is disabled
- Proactive HA is not supported
- Transparent Page Sharing (TPS) is disabled Virtual Machine Resource Profile 1
- Memory sharing techniques should not be used
- Automated initial virtual machine placement

Virtual Machine Resource Profile 2

- Memory sharing techniques should not be used
- Virtual machines should be automatically restarted in the event of host failure regardless of available resources
- Automated initial virtual machine placement

Which two recommendations should the architect make for placement of the virtual machines to meet resource profile requirements? (Choose two.)

- A. All virtual machines matching Virtual Machine Resource Profile 2 should be placed on Cluster One.
- B. All virtual machines matching Virtual Machine Resource Profile 1 should be placed on Cluster One.
- C. All virtual machines matching Virtual Machine Resource Profile 2 should be placed on Cluster Two.
- D. All virtual machines matching Virtual Machine Resource Profile 1 should be placed on Cluster Two.
- E. All virtual machines matching Virtual Machine Resource Profile 2 should be placed on Cluster Three.

**Answer:** DE

**Explanation:**

<https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.resmgmt.doc/GUID-FEAC3A43-C57E>

#### NEW QUESTION 21

An architect is designing a new VMware software-defined data center (SDDC) that will consist of 100 branch sites connected to a single VMware vCenter Server within the primary data center. To allow for the use of existing automation scripts, there is a requirement to replicate the names of the virtual distributed port groups across all sites. The procurement team purchases licensing and there is no further budget allocated.

Which design decision should the architect make to meet this requirement?

- A. A new vCenter Server will be deployed for each branch site
- B. A new host and cluster folder will be created for each branch site
- C. The automation script will be updated to reflect unique naming for each site
- D. A new virtual data center will be created for each branch site

**Answer: B**

#### NEW QUESTION 22

Which requirement would be classified as a functional requirement within the application design documentation?

- A. The application must be hosted with redundancy levels of N+1 or better.
- B. Penetration testing must be executed quarterly with a pass rate of 80% or higher.
- C. The application must be capable of handling 200 transactions per second.
- D. Administrators must monitor the network traffic of the desired systems.

**Answer: C**

#### NEW QUESTION 26

There is a request for approved virtual machine applications through a new vSphere platform's integrated automation portal. The platform was built following all provided company security guidelines and has been assessed against Sarbanes-Oxley Act of 2002 (SOX) regulations.

The platform has the following characteristics:

- vRealize Operations is being used to monitor all clusters.
- There is a dedicated ESXi cluster, supporting all management services.
- All network traffic is via distributed virtual switches (DVS). There is a dedicated ESXi cluster for all line-of-business applications.
- Network traffic is serviced by NSX-T.

There is a dedicated ESXi cluster for virtual desktop infrastructure (VDI).

- Network traffic is serviced by NSX-T.

The application owner is requesting approval to install a new service that must be protected as per the Payment Card Industry (PCI) Data Security Standard.

Which additional non-functional requirement should the architect include in the design to support the new service?

- A. The vSphere hosting platform and all PCI application virtual machines must be assessed against Payment Card Industry (PCI) Data Security Standard compliance.
- B. The vSphere hosting platform and all PCI application virtual machines must be assessed for SOX compliance.
- C. The vSphere hosting platform and all PCI application virtual machine network traffic must be routed via NSX-T.
- D. The vSphere hosting platform and all PCI application virtual machines must be monitored using the vRealize Operations Compliance Pack for Payment Card Industry.

**Answer: A**

#### NEW QUESTION 27

An architect is creating a network design for a new vSphere environment.

Based on customer requirements, the environment must support the following types of traffic:

- Management
- vMotion
- vSAN
- Fault Tolerance
- Virtual machine traffic, which cannot be impacted by other types of traffic

Which design recommendation can the architect make for a resilient infrastructure with vSphere network service tiering?

- A. Use different logical networks to ensure traffic is isolated with separate VLANs
- B. Use Network I/O Control and ensure appropriate share value is defined for different types of traffic giving priority to the virtual machines traffic
- C. Use two dedicated virtual switches with a single adapter each, dedicating one virtual switch for Management, vMotion, vSAN and Fault Tolerance traffic, and the second one for virtual machine traffic
- D. Use a NIC teaming policy based on the physical NIC load

**Answer: A**

#### NEW QUESTION 31

An architect is designing a new VMware solution for a customer that has a number of different resource profiles.

The following are the business requirements for the design:

The solution must support virtual machines with the following storage profiles:

- Write-intensive
- Backup
- Write-Once-Read-Many (WORM) archive
- The solution must support migration of virtual machine disks between storage profiles.

- > The WORM archive data must be located at an isolated secure site.
  - > The backup storage array must only be connected to a backup media server.
  - > All data should be recoverable from backup.
- Which design decision should the architect make to meet the business requirements?

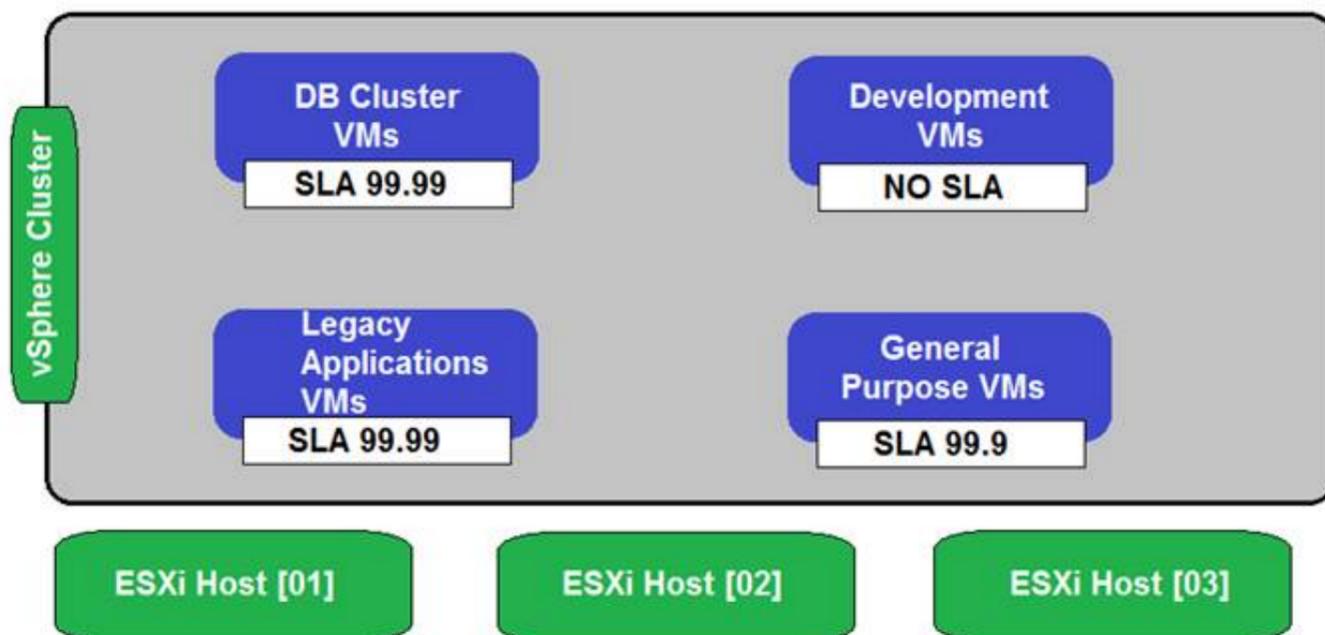
- A. The solution will leverage a single storage array for the WORM archive and write-intensive storage profiles
- B. The solution will leverage the same array for the backup and write-intensive storage profiles
- C. The solution will leverage a different array for each storage profile
- D. The solution will leverage a single storage array for all storage profiles

Answer: C

**NEW QUESTION 36**

Refer to the exhibit.

During a requirements gathering workshop, the customer shares the following diagram regarding their availability service-level agreements (SLAs):



The customer wants database application level availability to always take precedence. What should the architect recommend to meet the customer's requirement?

- A. Enable vSphere HA and add a VM Override with VM Restart Priority set to Highest.
- B. Enable Fault Tolerance.
- C. Enable Sphere HA and maintain the default settings.
- D. Enable vSphere HA and add a VM Override with VM Restart Priority set to Lowest.

Answer: D

**NEW QUESTION 39**

As part of a new hybrid cloud initiative for a large financial company, the customer technical team is presenting an overview of the current state of the infrastructure and their vision for a new solution.

The project team captures notes during the presentation and adds them to the discovery documentation. Which of the listed statements is a design constraint?

- A. The applications are created in-house with in-guest recovery protection
- B. The maximum tolerable data loss is 10 minutes
- C. The two data center locations have a network latency of 8 ms round-trip time (RTT)
- D. The existing storage is out of maintenance

Answer: D

**NEW QUESTION 43**

An architect is designing a series of new vSphere environments for an organization. The environments will be deployed in their US-East and US-West region data centers. Each data center may have one or more dedicated vSphere environments. Only the vSphere environments within a data center will be configured with Enhanced Linked Mode. The Chief Technology Officer (CTO) has authorized the use of VMware vRealize Automation Cloud for automation. The build team creates standardized virtual machine images for various operating systems in Open Virtualization Format (OVF) and publishes the latest version on an as-needed basis to an internal HTTPS-accessible repository.

The architect must design a content library topology that meets the following requirements:

- > A localized content library must be available in each data center.
- > Each content library must be updated when an image is updated and released by the build team.
- > It must leverage the existing build team processes.

What should the architect recommend to meet the requirements?

- A. Work with the build team to create a local content library for each vSphere environment. Import the OVF images when new image are published to the repository.
- B. Create a local content library for the primary vSphere environment in each data center. Create a subscribed content library for each additional vSphere environment in each data center.
- C. Configure the content library to download content automatically.
- D. Work with the build team to automate a JSON-based manifest to the repository when changes occur in the repository. Create a subscribed content library for each vSphere environment.
- E. Configure the content library to download content when needed.
- F. Work with the build team to automate a JSON-based manifest to the repository when changes occur in the repository. Create a subscribed content library for

each vSphere environmen  
G. Configure the content library to download content automatically.

**Answer:** B

#### NEW QUESTION 48

A new vSphere platform is being created. The platform will host virtual machines that will run management services and line-of-business applications. What should the architect consider when designing the number and type of clusters required?

- A. Maximum tolerable downtime
- B. Predicted platform growth
- C. Auditing requirements for the virtual machines
- D. The level of isolation required between virtual machine classifications

**Answer:** D

#### NEW QUESTION 51

Application owners require support of a Microsoft Windows Server Failover Cluster (WSFC). Their current environment consists of the following components:

- vSphere 7.0 and vSAN 7.0
- External array supporting NFS 3.0/4.1, Server Message Block (SMB) 2.1
- 10 GbE storage connectivity for all devices

The solution architect is tasked with coming up with a solution to meet this requirement while utilizing their existing investments. Which two recommendations could the architect make? (Choose two.)

- A. Use vSAN native support for WSFC
- B. Use NFS 4.1 shares for quorum and shared disk
- C. Use raw device mapping (RDM)
- D. Use the SMB 2.1 protocol for sharing disks
- E. Run WSFC on vSAN iSCSI Target Service

**Answer:** AE

#### Explanation:

<https://blogs.vmware.com/virtualblocks/2018/04/18/vsan-6-7-introducing-wsfc-support-vsan>

#### NEW QUESTION 54

An architect is designing a VMware software-defined data center (SDDC) solution based on the following customer requirements:

- The solution must initially support 1,000 virtual machines
- The solution must scale to support the concurrent running of up to 5,000 virtual machines
- The production environment should be delivered across two data centers
- The solution should have a maximum tolerable downtime (MTD) of four hours
- The solution should have a monthly service availability target of 99.8%

Which two assumptions could the architect make based on the information from the customer to help size the solution? (Choose two.)

- A. The number of vSphere hosts in a cluster
- B. The average resource utilization of a virtual machine
- C. The size (CPU/RAM/storage) of the average virtual machine
- D. The guest operating system for each virtual machine
- E. The size (CPU/RAM/storage) of the vSphere hosts

**Answer:** AE

#### NEW QUESTION 57

An architect is designing a new vSphere environment with the following resources:

- 600 vCPU
- 5,760 GB RAM

Average resource usage is:

- 60 vCPU
- 1,152 GB RAM

The design must meet the following requirements:

- The environment has the ability to burst by 25%.
- Each host can schedule 36 vCPUs and has 512 GB RAM.
- Management overhead is 20%.

What is the minimum number of hosts required to meet the design requirements?

- A. Three
- B. Five
- C. Four
- D. Two

**Answer:** D

#### NEW QUESTION 60

An architect has 50 ESXi hosts to deploy and DHCP servers are not allowed on any network. Which automated host deployment method should the architect use?

- A. Stateless vSphere Auto Deploy
- B. Stateful vSphere Auto Deploy
- C. Scripted installation
- D. Interactive installation

**Answer: C**

#### NEW QUESTION 62

A VMware Service Provider is tasked with delivering a solution for continuous availability for a subset of Tier 1 virtual machines (VMs) and vApps running in their vSAN environment. The VMs make up a mission-critical application and there can be no data loss in the event of an outage at their primary data center. In the event of a regional outage, they have established a 10-minute recovery point objective (RPO). Failover/failback to the third site must be automated.

They have the following in place:

- > Two local data centers (primary and secondary) connected with 100 Gb dedicated fiber
- > 2ms round-trip time (RTT) latency between the sites A third data center located on another power grid
- > 70ms latency between the primary and secondary data centers
- > Matching storage arrays at all locations

Which two solutions could be used to meet the requirements? (Choose two.)

- A. Site Recovery Manager
- B. Snapshots
- C. vSAN Metro Cluster
- D. vSphere Data Protection
- E. vStorage APIs for Array Integration (VAAI)

**Answer: BC**

#### NEW QUESTION 64

As part of a requirements gathering workshop, the customer provides the following requirements for the design of a new greenfield virtual infrastructure:

- > Some applications have a latency that must be less than 5 minutes.
- > The solution must be able to support a workload growth rate of 10% per year. Which requirement classification is being gathered for the design documentation?

- A. Performance
- B. Manageability
- C. Recoverability
- D. Availability

**Answer: A**

#### NEW QUESTION 68

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