

## Exam Questions 3V0-21.21

Advanced Design VMware vSphere 7.x

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#### NEW QUESTION 1

The Chief Information Security Officer (CISO) for an organization is concerned about the security posture of the operating system images that are used for the provisioning of their Software-as-a-Service (SaaS) applications. The organization is in a growth period. The organization is opening a new data center to launch its next phase of new SaaS-based solutions.

The DevOps team currently creates encrypted virtual machine (VM) templates that are used for various operating systems and adds these to the vSphere inventory. The DevOps team already uses a published content library and has been granted a role with the ability to add and delete library items.

The following requirements have been noted:

- Impacts to the DevOps team's operational processes must be kept to a minimum.
- The DevOps team must be able to regularly check out a copy of the image for updates and check in a new version of the image.
- Images must be synchronized from the primary data center to the new data center.

Which three recommendations should the architect make to design a content library solution that will meet these requirements? (Choose three.)

- A. Clone virtual machines as VM templates to the published content library
- B. Create a subscribed library from the published library and synchronize Open Virtualization Format (OVF) templates on-demand
- C. Create a subscription and publish VM templates to a subscribed content library
- D. Create a subscribed library from the published library and synchronize Open Virtualization Format (OVF) templates automatically
- E. Clone virtual machines as Open Virtualization Format (OVF) templates to the published content library
- F. Update the role for the DevOps team with new privileges

**Answer:** BEF

#### NEW QUESTION 2

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 3

An architect is designing a new vSphere platform for a customer to meet the following requirements:

- The platform must be deployed into five physically separate sites.
- The sites are spread across multiple regions.
- Some sites require more than one vCenter Server.
- The platform must provide an administrator with the ability to access virtual infrastructure components across all sites from a single management tool instance.

Which single sign-on (SSO) design recommendation will meet these requirements?

- A. Use an SSO domain across all vCenter Server instances
- B. Use an SSO domain per region
- C. Use an SSO domain per vCenter Server instance
- D. Use an SSO domain per site

**Answer:** C

#### NEW QUESTION 4

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 5

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 6**

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 7**

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 8**

In a meeting to discuss the minimum viable product (MVP) deployment of a new customer-facing application, the key stakeholder shares details of the application components and the application administrators share details of performance and integrity tests for the application.

The application will be made up of the following components:

- A web server
- Steps to confirm the web server is operating correctly will take 15 minutes after the application server is online.
- An application server
- Steps to confirm application server integrity will take 15 minutes after the database is online.
- A database server
- The database server will be managed by a database administrator, with an agreed service-level agreement (SLA) to restore and validate database services within one hour.
- The existing VMware infrastructure offers a recovery point objective (RPO) of 5 minutes and recovery time objective (RTO) of 15 minutes through a combination of backups and replication.
- In the event of an outage impacting all three application components, how long will it take for the application to recover and complete all checks?

- A. 15 minutes
- B. 60 minutes
- C. 105 minutes
- D. 90 minutes

**Answer:** C

**Explanation:**

15 restore VMs + 60 restore and test DB + 15 test app server + 15 test web server

**NEW QUESTION 9**

The Chief Operating Officer (COO) at an organization raises concerns that their virtual infrastructure environment is vulnerable. Recently, a security-related issue with a virtual machine caused all management services to become unavailable. No budget is available in the short term for additional platform investment. An architect is asked to review the current environment and make recommendations to mitigate concerns.

A virtualization administrator has provided the following details:

- There is a single four node cluster of ESXi servers

- There are two, Layer 2, physical network switches connecting resources
- The data center network is presented as a single /16 subnet

Given the information provided, which functional requirement should the architect include in the design to mitigate the COOs concerns?

- A. The virtual infrastructure environment must connect application virtual machines and management services to new physical network switches
- B. The virtual infrastructure environment must connect application virtual machines and management services to separate distributed virtual switches (DVS)
- C. The virtual infrastructure environment must connect application virtual machines and management services to separate VLANs
- D. The virtual infrastructure environment must connect management services to a vSphere standard switch (VSS)

**Answer: D**

#### NEW QUESTION 10

An architect is preparing a design for a company planning digital transformation. During the requirements gathering workshop, the following requirements (REQ) and constraints (CON) are identified:

- REQ01 The platform must host different types of workloads including applications that must be compliant with internal security standard.
- REQ02 The infrastructure must initially run 100 virtual machines.
- REQ03 Ten of the virtual machines must be compliant with internal security standard.
- CON01 The customer has already purchased the licenses as part of another project.
- CON02 The customer has five physical servers that must be reused.

Additionally, based on resource requirements, four physical servers will be enough to run all workloads. Which recommendation should the architect make to meet requirements while minimizing project costs?

- A. Use Network I/O Control to ensure the internal security zone has higher share value
- B. Purchase additional servers and plan separate, isolated clusters for workloads that must be compliant with internal security
- C. Use a single cluster and ensure that different security zones are separated at least with dedicated VLANs and firewall
- D. Use a single cluster and configure DRS anti-affinity rules to ensure internal security compliant virtual machines cannot migrate between ESXi hosts.

**Answer: C**

#### NEW QUESTION 10

During a requirements gathering workshop, the customer provides the following requirement that is pertinent to the design of a new vSphere environment:

- The Maximum Tolerable Downtime (MTD) for all Tier 1 applications is one hour. Which requirement classification is being gathered for the design documentation?

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

**Answer: C**

#### NEW QUESTION 11

A architect is designing a new VMware software-designed data center (SDDC) using vSphere 7 to meet the following requirements:

- The SDDC must be deployed at two locations: primary and secondary.
- vSphere Replication must be used to replicate virtual machines between the two locations.
- Site Recovery Manager must be used to orchestrate disaster recovery (DR) activities.
- One single-sign on (SSO) domain must be used to authenticate access at both locations. Which design decision should the architect make to meet these requirements?

- A. A vCenter Server Appliance will be deployed to each sit
- B. Unique SSO domains will be created per site.
- C. A vCenter Server will be installed on Windows virtual machines deployed to both sites.
- D. A vCenter Server Appliance will be deployed to each site.
- E. A vCenter Server Appliance will be deployed to the primary site only.

**Answer: D**

#### NEW QUESTION 14

A customer has a database cluster with 40/60 read/write ratio and a high IOPs requirement with no contention on an all-flash vSAN cluster. Which two storage settings should be configured for best performance? (Choose two.)

- A. IOPs limits enabled
- B. RAID 1
- C. Deduplication and Compression disabled
- D. RAID 5/6
- E. Deduplication and Compression enabled

**Answer: AB**

#### NEW QUESTION 18

An architect is designing a new vSphere cluster. The requirement is to provide a total of 96 CPU cores and 1.5 TB RAM across all hosts. The following information has been provided:

Two different physical hardware profiles are available for the ESXi hosts in the cluster.

-Profile 1: 16 CPU cores and 256 GB RAM



-Profile 2: 32 CPU cores and 512 GB RAM

Profile 2 is twice as expensive to purchase as Profile 1.

Which two aspects should the architect consider when selecting the hardware profile? (Choose two.)

- A. The manufacturer and model of the CPUs in the hosts
- B. The amount of capacity available for failover of virtual machines within the cluster
- C. The downtime allowed for virtual machines that will be running within the cluster
- D. The cost to procure and maintain the hardware
- E. The number of virtual machines that will be running within the cluster

**Answer:** BE

#### NEW QUESTION 20

An architect is tasked with reviewing the design of a VMware software-defined data center (SDDC) for a software development company. The platform is used to developing applications and services. It is important that the customer be able to accurately benchmark performance of developed applications.

The platform has recently commissioned new hosts to update the development cluster. The development cluster host configuration is:

- 4 ESXi hosts with 2 sockets × 16 cores
- 512 GB RAM divided evenly between sockets
- There is no resource contention

The benchmarking cluster host configuration is:

- 8 ESXi hosts with 2 sockets × 8 cores
- 256 GB RAM divided evenly between sockets
- There is no resource contention

The customer is developing an application that includes a database virtual machine. The application developer states that the database virtual machine performs as required only when allocated 8 vCPUs 256 GB RAM. The database virtual machine performance meets the required levels when run from the development cluster. Performance benchmarking for the database virtual machine yields highly variable results when run from the benchmarking cluster. The application cannot be released without reliable performance benchmarking data.

What is a possible reason for the difference in performance test results between the development and benchmarking clusters?

- A. The database tier breaches a single NUMA node boundary for the benchmarking cluster
- B. The database tier breaches a single NUMA node boundary for the development cluster
- C. The development cluster can support a lower %Ready time per vCPU
- D. The development cluster has more available RAM per host

**Answer:** C

#### NEW QUESTION 24

A customer defines a requirement to minimize the vMotion migration time during a maintenance period. The servers being used are equipped with eight 1 GbE network adapters.

Per the defined logical network configuration, there are two network adapters each used for:

- Management traffic
- vMotion traffic
- iSCSI traffic
- Virtual machine traffic

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

- A. Use Network I/O Control to define a reservation for vMotion traffic.
- B. Implement Multi-NIC vMotion by adding additional vMotion VMkernels.
- C. Configure a dedicated TCP/IP stack for vMotion traffic.
- D. Combine vMotion and Management traffic to make use of four adapters.

**Answer:** A

#### NEW QUESTION 27

An architect is designing a vSphere environment for a customer based on the following information:

- The vSphere cluster will have three hosts only due to budget considerations.
- A database cluster (node majority) consisting of three virtual machines will be running on the vSphere cluster.

Which two recommendations can the architect make so that the customer achieves the highest level of application availability while taking into consideration operational resiliency? (Choose two.)

- A. Create VM-VM anti-affinity rules
- B. Set das.respectvmvantiiaffinityrules to false
- C. Create VM-Host anti-affinity rules
- D. Disable vSphere HA during maintenance
- E. Set das.ignoreinsufficienthbdastore to true

**Answer:** BC

#### NEW QUESTION 32

A new real-time financial service application is being developed by the engineering team at a financial firm and will be released as a public Software-as-a-Service (SaaS) offering. The solutions architect has designed and deployed a new vSphere environment and the supporting network infrastructure for hosting all public services. ESXi hosts are configured to use Precision Time Protocol (PTP) and a local stratum-1 network time server.

Application provisioning and scaling will be managed by VMware vRealize Automation and can be run on Microsoft Windows or multiple distributions of Linux. Which three recommendations should the architect include in the design to ensure that the service maintain timekeeping within an accuracy of one second? (Choose three.)

- A. Use Microsoft Windows Server as the guest operating system.
- B. Configure the chrony time-sync agent on each virtual machine guest operating system.
- C. Set the virtual hardware device to use Host System Time (NTP) for each virtual machine running the application.
- D. Add a precision clock virtual device to each virtual machine running the application.
- E. Use a Linux distribution as the guest operating system.
- F. Add a virtual watchdog timer (VWDT) device to each virtual machine running the application.

**Answer:** ABC

#### NEW QUESTION 34

An architect is tasked with expanding an existing VMware software-defined data center (SDDC) solution so that it can be used to deliver a virtual desktop infrastructure (VDI) service off-shore development activities.

The production environment is currently delivered across two geographically dispersed data centers. The two data centers are currently connected to each other through multiple diversely routed, high bandwidth and low latency links. The current operations management components are deployed to a dedicated management cluster that is configured with N+1 redundancy. The current VMware software-defined data center (SDDC) has a monthly availability target of 99.5%, which includes all management components.

The customer requires that the new solution scale to support the concurrent running of 500 persistent virtual desktops. The virtual desktops must not share the same virtual infrastructure as existing virtual machines, but can be managed using the same VMware operations management components. Any new VDI service management components must be installed into the management cluster. There is no requirement to back up the virtual desktops because all relevant user data is stored centrally. The VDI service is providing business critical services and must have an availability target of 99.9%.

Given the information from the customer, which two assumptions would the architect include in the design? (Choose two.)

- A. The existing virtual infrastructure has sufficient capacity to host the new VDI workloads
- B. The existing operations monitoring tools have sufficient capacity to monitor the new VDI services
- C. The existing management cluster has enough available capacity to host any VDI service management component
- D. The management cluster has N+1 redundancy
- E. The VDI service has a higher service-level agreement (SLA) than the operations management SLA

**Answer:** BD

#### NEW QUESTION 35

Which of the listed requirements would be classified as a recoverability non-functional requirement?

- A. The platform must be integrated with existing change control policies.
- B. The platform must be able to support a maximum tolerable downtime (MTD) of 30 minutes.
- C. Maintenance windows must be scheduled to take place monthly during an established overnight period.
- D. The platform must be available 24 hours a day, 7 days a week with the exception of scheduled downtime.

**Answer:** A

#### NEW QUESTION 39

A customer requires the use of data encryption to ensure data is not accessible when a drive is removed from the primary storage platform. However, there is also a requirement to use deduplication and compression against all workloads in order to conserve space.

Which solution meets the customer requirements?

- A. Data-in-transit encryption
- B. OS-level encryption
- C. Encrypted backups
- D. Array-based encryption

**Answer:** D

#### NEW QUESTION 41

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 46

An architect is finalizing the design for a new vCenter Server High Availability deployment. What is one thing the architect must document in the design?

- A. The load balancing algorithm used by the Management Distributed Virtual Switches (DVS)
- B. The SSH configuration settings for the vCenter Server's active node

- C. The vCenter Management Network IPv4 addresses for the witness node vCenter Server
- D. The details of each of the vCenter Server licenses for active, passive and witness nodes

**Answer:** C

**Explanation:**

<https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.avail.doc/GUID-9B176C8A-4EEE-4A>

**NEW QUESTION 47**

An architect is tasked with designing a new VMware software-defined data center (SDDC) using VMware vSAN. The architect uses a storage assessment tool to determine the storage requirements for the new vSAN cluster. The new SDDC is going to be deployed into the existing data center and must be connected to a shared core network switch.

The architect decides to use vSAN ReadyNodes with the following configuration:

- Two disk groups with:
- Write Intensive NVMe 800 GB drive for cache
- Four 3.84 TB Mixed Use NVMe for capacity
- Four 10 GbE ports

Which element represents a risk that should be included in this design?

- A. The number of 10 GbE capable ports in the vSAN ReadyNode
- B. The use of vSAN ReadyNodes
- C. The existing network is 10 GbE capable
- D. The use of NVMe drives for cache and capacity

**Answer:** C

**NEW QUESTION 51**

Which two statements are true about gathering functional business and application requirements? (Choose two.)

- A. It focuses on functional requirements with C-level stakeholders
- B. It leverages a single set of QUESTION NO:s for all stakeholders
- C. It might require multiple rounds of stakeholder interviews
- D. It builds stakeholder consensus
- E. It is a non-iterative process

**Answer:** AC

**NEW QUESTION 54**

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