



## VMware

### Exam Questions 3V0-21.21

Advanced Design VMware vSphere 7.x

#### 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 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 3

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 4

An architect is designing a new vSphere platform to meet a list of requirements from the security team. Which two requirements would be classified as non-functional requirements? (Choose two.)

- A. Migration of virtual machines between hosts must be encrypted
- B. Log information must be verbose to support incident resolution
- C. Critical events generated within the platform must be logged to an external Syslog service
- D. Data integrity must be ensured
- E. A common content library must be maintained across all data centers

**Answer:** CD

#### NEW QUESTION 5

Following a company merger, there are two data centers running vSphere environments. Both data centers are leveraging separate Layer 3 vMotion networks.

Which requirement must be met in order to enable vMotion migration between these locations?

- A. The vMotion service must be configured on the Management VMkernel adapter
- B. A dedicated TCP/IP stack for vMotion with a dedicated gateway must be configured
- C. A stretched vMotion network must be configured between data centers
- D. Virtual machines must be powered off in order to migrate them between data centers

**Answer:** B

#### NEW QUESTION 6

Refer to the exhibit.

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

The customer states that there is no application level availability for legacy applications.

Which recommendation could the architect make to meet the customer's high availability requirements for the legacy applications virtual machines?

- A. Enable vSphere HA and add a VM Override with VM Restart Priority set to Disabled
- B. Enable Fault Tolerance
- C. Achieve application availability with snapshots
- D. Enable vSphere HA and add a VM Override with VM Restart Priority set to Lowest

**Answer:** D

#### NEW QUESTION 7

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 8

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 initially support the concurrent running of 300 production and 600 development virtual machines.

The production environment should be delivered across two geographically dispersed data centers. The development environment must be vSphere-based but does not have to be deployed on-premises.

The two data centers are connected to each other through multiple diversely routed, high bandwidth and low latency links.

The customer's server hardware standard document states that all virtual infrastructure hosts must be based on blade architecture only.

The service owner has said that is important to ensure that neither the availability target of 99.5% nor the resource capacity is affected when the operations team completes maintenance activities, such as the monthly software patching and ad-hoc hardware break/fix.

All virtual machine backups must be completed using the existing backup service. The recovery time objective (RTO) for the service is four hours.

The recovery point objective (RPO) of the service is 24 hours.

Given the information from the customer, which two would be classified as assumptions within the design? (Choose two.)

- A. The backup service will store data in a secure facility
- B. The backup service has sufficient capacity for the new requirements
- C. The customer will update their hardware standard to support rack mount servers
- D. All virtual machines will be deployed with the same resource profile for production and development
- E. The clusters will have a minimum redundancy of N+1

**Answer:** BE

#### NEW QUESTION 9

Asynchronous replication is required between two sites.

The impact on the storage layer should not impact the performance of the compute layer.

Each application tier will require different replication attributes.  
Virtual machine live migration across compute and storage must be supported.  
Virtual machine aware back up will be leveraged.  
Operational management overhead should be minimized.  
Operational automation should be supported.  
Which storage design recommendations would meet the requirements?

- A. Two new Fibre Channel storage arrays will be deployed, one at either site.Each application tier will be initially provisioned a new LU
- B. Data replication will be offloaded to the new arrays.
- C. Two new vSphere clusters enabled with vSAN will be deployed, one at either sit
- D. vSAN will be used to provide policy-based management for each application tier.vSphere Replication will be used to replicate the virtual machine data in an asynchronous configuration.
- E. Two new ISCSI storage arrays will be deployed, one at either site.Each application tier will be initially provisioned a new LU
- F. Data replication will be offloaded to the new arrays.
- G. Two new storage arrays will be deployed, one at either site.vSphere Volumes (vVOLS) will be used to provide policy-based management for each application tie
- H. Data replication will be offloaded to the new arrays.

**Answer: B**

#### NEW QUESTION 10

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:

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: BD**

#### NEW QUESTION 10

An architect is finalizing the design for a new vSphere platform based on the following information:

All Windows virtual machines will be hosted on a dedicated cluster for licensing purposes.  
All Linux virtual machines will be hosted on a dedicated cluster for licensing purposes. All management virtual machines will be hosted on a dedicated cluster.  
A total of ten physical sites will be used to host virtual machines.  
In the event of one physical datacenter becoming unavailable, the manageability of the virtual infrastructure in the remaining data centers should not be impacted.  
Access to configure the management virtual machines via vCenter Server must be controlled through the management Active Directory domain.  
Access to configure the Windows and Linux virtual machines must be controlled through the resource Active Directory domain.  
The management and resource Active Directory domains are part of separate Active Directory forests and do not have any trusts between them.  
The design will use Active Directory with Integrated Windows Authentication.  
How should the architect document the vCenter Server configuration for this design?

- A. Deploy a vCenter server for the management cluster.Deploy a vCenter Server for all remaining cluster
- B. Create a shared SSO domain for each physical site.
- C. Deploy a vCenter Server for the management cluster.Deploy a vCenter Server for all remaining cluster
- D. Create a shared SSO domain across all physical sites.
- E. Deploy a vCenter Server for the management cluster with a dedicated SSO domain.Deploy a vCenter Server for all remaining clusters and use a dedicated SSO domain for each physical site.
- F. Deploy a vCenter Server for the management cluster with a dedicated SSO domain.Deploy a vCenter Server for all remaining clusters and use a dedicated SSO domain into a single physical site.

**Answer: B**

#### NEW QUESTION 15

An architect is designing a VMware solution for a customer to meet the following requirements:

The solution must use investments in existing storage array that supports both block and file storage.  
The solution must support the ability to migrate workloads between hosts within a cluster.  
The solution must support resource management priorities.  
The solution must support the ability to connect virtual machines directly to LUNs.

The solution should use existing 32G fabric infrastructure.  
There is no budget for additional physical hardware.  
Which design decision should the architect make to meet these requirements?

- A. The ESXi hosts will leverage Fibre Channel (FC).
- B. The ESXi hosts will leverage iSCSI.
- C. The ESXi hosts will leverage Fibre Channel over Ethernet (FCoE).
- D. The ESXi hosts will leverage NFS.

**Answer:** A

#### NEW QUESTION 19

A customer provides the following list of requirements for their vSphere platform:  
REQ01 The solution should utilize dual network connections to eliminate single points of failure.  
REQ02 The solution should allow logs to be retained for a period of 30 days.  
REQ03 All user access to the platform should be recorded for audit purposes.  
REQ04 The solution should allow the management of multiple ESXi hosts.  
REQ05 The solution should allow users to view the remote console of virtual machines.  
Which two of the listed requirements would be classified as non-functional requirements? (Choose two.)

- A. The solution should utilize dual network connections to eliminate single points of failure
- B. The solution should allow the management of multiple ESXi hosts
- C. The solution should allow users to view the remote console of virtual machines
- D. All user access to the platform should be recorded for audit purposes
- E. The solution should allow logs to be retained for a period of 30 days

**Answer:** AE

#### NEW QUESTION 20

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 25

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 26

An architect is designing a solution based on the following information:

Each ESXi host has a single physical NIC with two 10 Gbps ports.

There is a performance-based service-level agreement (SLA) that guarantees 15 Gbps bandwidth for production virtual machines at all times.

There is no budget to purchase additional hardware.

The hardware replacement SLA is based on a delivery agreement of two business days.

Which recommendation for the configuration of vSphere High Availability (HA) should the architect include in the design?

- A. Configure vSphere HAConfigure % based admission control Configure two isolation addresses Consider an OEM with NIC failure conditions in their Proactive HA plugin
- B. Configure vSphere HASet das.IgnoreRedundantNetWarning to trueConsider an OEM with NIC failure conditions in their Proactive HA plugin
- C. Configure vSphere HAConfigure two existing data stores for heartbeatConsider an OEM with NIC failure conditions in their Proactive HA plugin
- D. Configure Proactive HA Automation Level: Automated Remediation: Maintenance mode for all failuresConsider an OEM with NIC failure conditions in their Proactive HA plugin

**Answer:** A

#### NEW QUESTION 27

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 29

An architect is preparing a design for a customer. Based on requirements, the architect recommends an HCI- based infrastructure with all-flash architecture.

During the assessment, it is confirmed that the network throughput generated by virtual machines does not exceed 150 Mb/s.

What is the minimum number and type of network adapters in each server that the architect can recommend to ensure requirements are met and there is no single point of failure?

- A. Two 1 GbE network adapters per server
- B. Four 1 GbE network adapters per server
- C. Four 10 GbE network adapters per server
- D. Two 10 GbE network adapters per server

**Answer:** C

#### NEW QUESTION 30

During a requirements gathering workshop to design a physical to virtual migration, the customer provides the following information:

There is no physical firewall in the data center with no anticipated plans for a future network refresh.

Leveraging the virtual infrastructure to mitigate the lack of network security must be addressed in the design.

All physical servers to be migrated exist on the same VLAN.

Which recommendation should the architect make to address the customer requirement with regard to virtual networking?

- A. Split the virtual machines into several VLANs Use tag actions
- B. Create port groups with different names and same VLAN IDs Enable traffic shaping for ingress and egress traffic
- C. Enable traffic filtering and marking Use allow or drop actions
- D. Disable traffic filtering and marking Use tag actions

**Answer:** A

#### NEW QUESTION 34

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 39

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 40

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 environment.
- G. Configure the content library to download content automatically.

**Answer:** B

#### NEW QUESTION 41

Refer to the exhibit.

During a requirements gathering workshop, the customer shares the following about their existing ESXi host virtual networking infrastructure:

The customer confirms that:

Each ESXi host has approximately 200 virtual machines.

They want to maximize the number of concurrent virtual machine migrations.

When placing a host in maintenance mode, it takes a long time to evacuate the virtual machines. Which two recommendations should the architect make in order to help the customer overcome their challenge? (Choose two.)

- A. Configure the network to use MTU for the VMotion VMKernel to 1,600 bytes
- B. Configure the network to use MTU for the VMotion VMKernel to 9,000 bytes
- C. Create an additional standard switch with pNIC3 to use for vMotion
- D. Use the 3 pNICs and bundle them in a link aggregation group (LAG) configuration
- E. Use 10 GbE NICs instead of 1 GbE

**Answer:** CE

#### NEW QUESTION 46

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 50

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 52

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