



## **Microsoft**

### **Exam Questions AZ-304**

Microsoft Azure Architect Design (beta)

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### NEW QUESTION 1

- (Exam Topic 1)

You need to recommend a strategy for migrating the database content of WebApp1 to Azure. What should you include in the recommendation?

- A. Use Azure Site Recovery to replicate the SQL servers to Azure.
- B. Use SQL Server transactional replication.
- C. Copy the BACPAC file that contains the Azure SQL database file to Azure Blob storage.
- D. Copy the VHD that contains the Azure SQL database files to Azure Blob storage

**Answer:** D

#### **Explanation:**

Before you upload a Windows virtual machine (VM) from on-premises to Azure, you must prepare the virtual hard disk (VHD or VHDX).

Scenario: WebApp1 has a web tier that uses Microsoft Internet Information Services (IIS) and a database tier that runs Microsoft SQL Server 2016. The web tier and the database tier are deployed to virtual machines that run on Hyper-V. Reference:

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/prepare-for-upload-vhd-image>

### NEW QUESTION 2

- (Exam Topic 1)

You are evaluating the components of the migration to Azure that require you to provision an Azure Storage account.

For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

#### **Explanation:**

### NEW QUESTION 3

- (Exam Topic 2)

You need to recommend a solution for protecting the content of the back-end tier of the payment processing system.

What should you include in the recommendations?

- A. Always Encrypted with deterministic encryption
- B. Transparent Date Encryption (TDE)
- C. Azure Storage Service Encryption
- D. Always Encrypted with randomized encryption

**Answer:** A

#### NEW QUESTION 4

- (Exam Topic 2)

You need to recommend a backup solution for the data store of the payment processing. What should you include in the recommendation?

- A. Microsoft System Center Data Protection Manager (DPM)
- B. long-term retention
- C. a Recovery Services vault
- D. Azure Backup Server

**Answer: B**

#### Explanation:

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-long-term-backup-retention-configure>

#### NEW QUESTION 5

- (Exam Topic 2)

You need to recommend a backup solution for the data store of the payment processing system.

What should you include in the recommendation?

- A. Microsoft System Center Data Protection Manager (DPM)
- B. Azure Backup Server
- C. Azure SQL long-term backup retention
- D. Azure Managed Disks

**Answer: C**

#### Explanation:

Reference:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-long-term-backup-retention-configure>

#### NEW QUESTION 6

- (Exam Topic 3)

You have an Azure Active Directory (Azure AD) tenant.

You plan to deploy Azure Cosmos DB databases that will use the SQL API.

You need to recommend a solution to provide specific Azure AD user accounts with read access to the Cosmos DB databases.

What should you include in the recommendation?

- A. a resource token and an Access control (IAM) role assignment
- B. shared access signatures (SAS) and conditional access policies
- C. master keys and Azure Information Protection policies
- D. certificates and Azure Key Vault

**Answer: A**

#### Explanation:

The Access control (IAM) pane in the Azure portal is used to configure role-based access control on Azure Cosmos resources. The roles are applied to users, groups, service principals, and managed identities in Active Directory. You can use built-in roles or custom roles for individuals and groups. The following screenshot shows Active Directory integration (RBAC) using access control (IAM) in the Azure portal:

Reference:

<https://docs.microsoft.com/en-us/azure/cosmos-db/role-based-access-control>

#### NEW QUESTION 7

- (Exam Topic 3)

You have an Azure App Service Web App that includes Azure Blob storage and an Azure SQL Database instance. The application is instrumented by using the Application Insights SDK.

You need to design a monitoring solution for the web app.

Which Azure monitoring services should you use? To answer, select the appropriate Azure monitoring services in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

\* 1. Azure Monitor Log

\* 2. Azure Application Insights (application map in App insights)

\* 3. Azure Application Insights

\* 4. Azure Application insights

<https://docs.microsoft.com/en-us/azure/azure-monitor/app/app-map?tabs=net> <https://docs.microsoft.com/en-us/azure/azure-monitor/insights/service-map>

**NEW QUESTION 8**

- (Exam Topic 3)

You are developing a sales application that will contain several Azure cloud services and will handle different components of a transaction. Different cloud services will process customer orders, billing, payment, inventory, and shipping.

You need to recommend a solution to enable the cloud services to asynchronously communicate transaction information by using REST messages.

What should you include in the recommendation?

- A. Azure Service Bus
- B. Azure Blob storage
- C. Azure Notification Hubs
- D. Azure Application Gateway

**Answer:** A

**Explanation:**

Service Bus is a transactional message broker and ensures transactional integrity for all internal operations against its message stores. All transfers of messages inside of Service Bus, such as moving messages to a dead-letter queue or automatic forwarding of messages between entities, are transactional.

Reference:

<https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-transactions>

**NEW QUESTION 9**

- (Exam Topic 3)

You architect a solution that calculates 3D geometry from height-map data. You have the following requirements:

Perform calculations in Azure.

Each node must communicate data to every other node.

Maximize the number of nodes to calculate multiple scenes as fast as possible. Require the least amount of effort to implement.

You need to recommend a solution.

Which two actions should you recommend? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

- A. Create a render farm that uses Azure Batch.
- B. Enable parallel file systems on Azure.
- C. Enable parallel task execution on compute nodes.
- D. Create a render farm that uses virtual machine (VM) scale sets.
- E. Create a render farm that uses virtual machines (VMs).

**Answer:** AC

**NEW QUESTION 10**

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an on-premises Hyper-V cluster that hosts 20 virtual machines. Some virtual machines run Windows Server 2016 and some run Linux.

You plan to migrate the virtual machines to an Azure subscription.

You need to recommend a solution to replicate the disks of the virtual machines to Azure. The solution must ensure that the virtual machines remain available during the migration of the disks.

Solution: You recommend implementing an Azure Storage account and then running AzCopy. Does this meet the goal?

- A. Yes
- B. NO

**Answer:** B

**Explanation:**

AzCopy only copy files, not the disks. Instead use Azure Site Recovery. References:

<https://docs.microsoft.com/en-us/azure/site-recovery/site-recovery-overview>

**NEW QUESTION 10**

- (Exam Topic 3)

You are designing an Azure resource deployment that will use Azure Resource Manager templates. The deployment will use Azure Key Vault to store secrets.

You need to recommend a solution to meet the following requirements:

Prevent the IT staff that will perform the deployment from retrieving the secrets directly from Key Vault. Use the principle of least privilege.

Which two actions should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. Create a Key Vault access policy that allows all get key permissions, get secret permissions, and get certificate permissions.
- B. From Access policies in Key Vault, enable access to the Azure Resource Manager for template deployment.

- C. Create a Key Vault access policy that allows all list key permissions, list secret permissions, and list certificate permissions.
- D. Assign the IT staff a custom role that includes the Microsoft.KeyVault/Vaults/Deploy/Action permission.
- E. Assign the Key Vault Contributor role to the IT staff.

**Answer:** BD

**Explanation:**

B: To access a key vault during template deployment, set `enabledForTemplateDeployment` on the key vault to true.

D: The user who deploys the template must have the `Microsoft.KeyVault/vaults/deploy/action` permission for the scope of the resource group and key vault.

Reference:

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/key-vault-parameter> <https://docs.microsoft.com/en-us/azure/key-vault/general/overview-security>

**NEW QUESTION 13**

- (Exam Topic 3)

You have an existing implementation of Microsoft SQL Server Integration Services (SSIS) packages stored in an SSISDB catalog on your on-premises network.

The on-premises network does not have hybrid connectivity to Azure by using Site-to-Site VPN or ExpressRoute.

You want to migrate the packages to Azure Data Factory.

You need to recommend a solution that facilitates the migration while minimizing changes to the existing packages. The solution must minimize costs.

What should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

Box 1: Azure SQL database

You can't create the SSISDB Catalog database on Azure SQL Database at this time independently of creating the Azure-SSIS Integration Runtime in Azure Data Factory. The Azure-SSIS IR is the runtime environment that runs SSIS packages on Azure.

Box 2: Azure-SQL Server Integration Service Integration Runtime and self-hosted integration runtime The Integration Runtime (IR) is the compute infrastructure used by Azure Data Factory to provide data

integration capabilities across different network environments. Azure-SSIS Integration Runtime (IR) in Azure Data Factory (ADF) supports running SSIS packages.

Self-hosted integration runtime can be used for data movement in this scenario. Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/create-azure-integration-runtime> <https://docs.microsoft.com/en-us/sql/integration-services/lift-shift/ssis-azure-connect-to-catalog-database>

**NEW QUESTION 17**

- (Exam Topic 3)

You have an Azure subscription that contains resources in three Azure regions. You need to implement Azure Key Vault to meet the following requirements:

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In the event of a regional outage, all keys must be readable.

All the resources in the subscription must be able to access Key Vault.

The number of Key Vault resources to be deployed and managed must be minimized. How many instances of Key Vault should you implement?

- A. 1
- B. 2
- C. 3
- D. 6

**Answer:** A

**Explanation:**

The contents of your key vault are replicated within the region and to a secondary region at least 150 miles away but within the same geography. This maintains high durability of your keys and secrets. See the Azure paired regions document for details on specific region pairs.

Example: Secrets that must be shared by your application in both Europe West and Europe North. Minimize these as much as you can. Put these in a key vault in either of the two regions. Use the same URI from both regions. Microsoft will fail over the Key Vault service internally.

Reference:

<https://docs.microsoft.com/en-us/azure/key-vault/general/disaster-recovery-guidance>

**NEW QUESTION 18**

- (Exam Topic 3)

You are developing a web application that provides streaming video to users. You configure the application to use continuous integration and deployment.

The app must be highly available and provide a continuous streaming experience for users.

You need to recommend a solution that allows the application to store data in a geographical location that is closest to the user.

What should you recommend?

- A. Azure App Service Web Apps
- B. Azure App Service Isolated
- C. Azure Redis Cache
- D. Azure Content Delivery Network (CDN)

**Answer:** D

**Explanation:**

Azure Content Delivery Network (CDN) is a global CDN solution for delivering high-bandwidth content. It can be hosted in Azure or any other location. With Azure CDN, you can cache static objects loaded from Azure Blob storage, a web application, or any publicly accessible web server, by using the closest point of presence (POP) server. Azure CDN can also accelerate dynamic content, which cannot be cached, by leveraging various network and routing optimizations.

References:

<https://docs.microsoft.com/en-in/azure/cdn/>

**NEW QUESTION 23**

- (Exam Topic 3)

You need to deploy resources to host a stateless web app in an Azure subscription. The solution must meet the following requirements:

- Provide access to the full .NET framework.
- Provide redundancy if an Azure region fails.
- Grant administrators access to the operating system to install custom application dependencies. Solution: You deploy a web app in an Isolated App Service plan.

Does this meet the goal?

- A. Yes
- B. No

**Answer:** B

**Explanation:**

Instead, you should deploy an Azure virtual machine to two Azure regions, and you create a Traffic Manager profile.

**NEW QUESTION 26**

- (Exam Topic 3)

You are designing an order processing system in Azure that will contain the Azure resources shown in the following table.

The order processing system will have the following transaction flow:

A customer will place an order by using App1.

When the order is received, App1 will generate a message to check for product availability at vendor 1 and vendor 2.

An integration component will process the message, and then trigger either Function1 or Function2 depending on the type of order.

Once a vendor confirms the product availability, a status message for App1 will be generated by Function1 or Function2.

All the steps of the transaction will be logged to storage1.

Which type of resource should you recommend for the integration component? D18912E1457D5D1DDCBD40AB3BF70D5D

Which type of resource should you recommend for the integration component?

- A. an Azure Data Factory pipeline
- B. an Azure Service Bus queue
- C. an Azure Event Grid domain
- D. an Azure Event Hubs capture

**Answer:** A

**Explanation:**

A data factory can have one or more pipelines. A pipeline is a logical grouping of activities that together perform a task.

The activities in a pipeline define actions to perform on your data.

Data Factory has three groupings of activities: data movement activities, data transformation activities, and control activities.

Azure Functions is now integrated with Azure Data Factory, allowing you to run an Azure function as a step in your data factory pipelines.

Reference:

<https://docs.microsoft.com/en-us/azure/data-factory/concepts-pipelines-activities>

### NEW QUESTION 30

- (Exam Topic 3)

Your company is designing a multi-tenant application that will use elastic pools and Azure SQL databases. The application will be used by 30 customers. You need to design a storage solution for the application. The solution must meet the following requirements:

Operational costs must be minimized.

All customers must have their own database.

The customer databases will be in one of the following three Azure regions: East US, North Europe, or South Africa North.

What is the minimum number of elastic pools and Azure SQL Database servers required? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

#### **Explanation:**

Box 1: 3

The server, its pools & databases must be in the same Azure region under the same subscription. Box 2: 3

A server can have up to 5000 databases associated to it.

Reference:

<https://vincentlauzon.com/2016/12/18/azure-sql-elastic-pool-overview/>

### NEW QUESTION 33

- (Exam Topic 3)

You configure the Diagnostics settings for an Azure SQL database as shown in the following exhibit.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

- A. Mastered
- B. Not Mastered

**Answer:** A

#### **Explanation:**

### NEW QUESTION 37

- (Exam Topic 3)

The developers at your company are building a containerized Python Django app.

You need to recommend platform to host the app. The solution must meet the following requirements:

Support autoscaling.

Support continuous deployment from an Azure Container Registry.

Provide built-in functionality to authenticate app users by using Azure Active Directory (Azure AD). Which platform should you include in the recommendation?

- A. Azure Container instances
- B. an Azure App Service instance that uses containers
- C. Azure Kubernetes Service (AKS)

**Answer: C**

#### Explanation:

To keep up with application demands in Azure Kubernetes Service (AKS), you may need to adjust the number of nodes that run your workloads. The cluster autoscaler component can watch for pods in your cluster that can't be scheduled because of resource constraints. When issues are detected, the number of nodes in a node pool is increased to meet the application demand.

Azure Container Registry is a private registry for hosting container images. It integrates well with orchestrators like Azure Container Service, including Docker Swarm, DC/OS, and the new Azure Kubernetes service.

Moreover, ACR provides capabilities such as Azure Active Directory-based authentication, webhook support, and delete operations.

Reference:

<https://docs.microsoft.com/en-us/azure/aks/cluster-autoscaler>

<https://medium.com/velotio-perspectives/continuous-deployment-with-azure-kubernetes-service-azurecontainer-registry-jenkins-ca337940151b>

### NEW QUESTION 42

- (Exam Topic 3)

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Storage v2 account named storage1. You plan to archive data to storage1.

You need to ensure that the archived data cannot be deleted for five years. The solution must prevent administrators from deleting the data.

Solution: You create an Azure Blob storage container, and you configure a legal hold access policy. Does this meet the goal?

- A. Yes
- B. No

**Answer: B**

#### Explanation:

Use an Azure Blob storage container, but use a time-based retention policy instead of a legal hold. Note:

Immutable storage for Azure Blob storage enables users to store business-critical data objects in a WORM (Write Once, Read Many) state. This state makes the data non-erasable and non-modifiable for a user-specified interval. For the duration of the retention interval, blobs can be created and read, but cannot be modified or deleted. Immutable storage is available for general-purpose v2 and Blob storage accounts in all Azure regions.

Note: Set retention policies and legal holds

\* 1. Create a new container or select an existing container to store the blobs that need to be kept in the immutable state. The container must be in a general-purpose v2 or Blob storage account.

\* 2. Select Access policy in the container settings. Then select Add policy under Immutable blob storage. Either

\* 3a. To enable legal holds, select Add Policy. Select Legal hold from the drop-down menu. Or

\* 3b. To enable time-based retention, select Time-based retention from the drop-down menu.

\* 4. Enter the retention interval in days (acceptable values are 1 to 146000 days). Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-immutable-storage> <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-immutability-policies-manage>

### NEW QUESTION 44

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