

➤ **Vendor: Microsoft**

➤ **Exam Code: AZ-301**

➤ **Exam Name: Microsoft Azure Architect Design**

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QUESTION 119

Your company plans to migrate its on-premises data to Azure.

You need to recommend which Azure services can be used to store the data. The solution must meet the following requirements:

- Encrypt all data while at rest.
- Encrypt data only by using a key generated by the company.

Which two possible services can you recommend? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Azure Table storage
- B. Azure Backup
- C. Azure Blob storage
- D. Azure Queue storage
- E. Azure Files

Answer: CE

Explanation:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-service-encryption-customer-managed-keys>

QUESTION 120

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

QUESTION 121

Case Study 2 - Contoso,Ltd

Overview

Contoso,Ltd is a US-base finance service company that has a main office New York and an office in San Francisco.

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<https://www.braindump2go.com/az-301.html>

Payment Processing Query System

Contoso hosts a business critical payment processing system in its New York data center. The system has three tiers a front-end web app a middle -tier API and a back end data store implemented as a Microsoft SQL Server 2014 database All servers run Windows Server 2012 R2.

The front -end and middle net components are hosted by using Microsoft Internet Inform-non Services (IK) The application rode is written in C# and middle- tier API uses the Entity framework to communicate the SQL Server database. Maintenance of the database e performed by using SQL Server Ago-

The database is currently J IB and is not expected to grow beyond 3 TB.

The payment processing system has the following compliance related requirement

- Encrypt data in transit and at rest. Only the front-end and middle-tier components must be able to access the encryption keys that protect the data store.
- Keep backups of the two separate physical locations that are at least 200 miles apart and can be restored for up to seven years.
- Support blocking inbound and outbound traffic based on the source IP address, the destination IP address, and the port number
- Collect Windows security logs from all the middle-tier servers and retain the log for a period of seven years,
- Inspect inbound and outbound traffic from the front-end tier by using highly available network appliances.
- Only allow all access to all the tiers from the internal network of Contoso.

Tape backups are configured by using an on-premises deployment or Microsoft System Center Data protection Manager (DPMX) and then shipped offsite for long term storage

Historical Transaction Query System

Contoso recently migrate a business-critical workload to Azure. The workload contains a .NET web server for querying the historical transaction data residing in Azure Table Storage. The .NET service is accessible from a client app that was developed in-house and on the client computer in the New York office. The data in the storage is 50 GB and is not expected to increase.

Information Security Requirement

The IT security team wants to ensure that identity management is performed by using Active Directory. Password hashes must be stored on premises only.

Access to all business-critical systems must rely on Active Directory credentials. Any suspicious authentication attempts must trigger multi-factor authentication prompt automatically Legitimate users must be able to authenticate successfully by using multi-factor authentication.

Planned Changes

Contoso plans to implement the following changes:

- Migrate the payment processing system to Azure.
- Migrate the historical transaction data to Azure Cosmos DB to address the performance issues.

Migration Requirements

Contoso identifies the following general migration requirements:

Infrastructure services must remain available if a region or a data center fails. Failover must occur without any administrative intervention

- Whenever possible, Azure managed services must be used to management overhead
- Whenever possible, costs must be minimized.

Contoso identifies the following requirements for the payment processing system:

- If a data center fails, ensure that the payment processing system remains available without any administrative intervention. The middle-tier and the web front end must continue to operate without any additional configurations-
- If that the number of compute nodes of the front -end and the middle tiers of the payment processing system can increase or decrease automatically based on CPU utilization.
- Ensure that each tier of the payment processing system is subject to a Service level Agreement (SLA) of 99.99 percent availability
- Minimize the effort required to modify the middle tier API and the back-end tier of the payment processing system.
- Generate alerts when unauthorized login attempts occur on the middle-tier virtual machines.
- Ensure that the payment processing system preserves its current compliance status.
- Host the middle tier of the payment processing system on a virtual machine.

Contoso identifies the following requirements for the historical transaction query system:

- Minimize the use of on-premises infrastructure service.
- Minimize the effort required to modify the .NET web service querying Azure Cosmos DB.

- If a region fails, ensure that the historical transaction query system remains available without any administrative intervention.

Current Issue

The Contoso IT team discovers poor performance of the historical transaction query as the queries frequently cause table scans.

Information Security Requirements

The IT security team wants to ensure that identity management is performed by using Active Directory. Password hashes must be stored on-premises only.

Access to all business-critical systems must rely on Active Directory credentials. Any suspicious authentication attempts must trigger a multi-factor authentication prompt automatically. legitimate users must be able to authenticate successfully by using multi-factor authentication.

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 SQL long-term backup retention
- C. Azure Backup Server
- D. a Recovery Services vault
- E. Azure Managed Disks

Answer: B

Explanation:

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

QUESTION 122

Hotspot Question

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.

Answer Area

Scenario	Azure monitoring service				
Correlate Azure resource usage and performance data with application configuration and performance data.	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; text-align: right;">▼</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Azure Application Insights</td></tr> <tr><td>Azure Service Map</td></tr> <tr><td>Azure Log Analytics</td></tr> <tr><td>Azure Activity Log</td></tr> </table> </div>	Azure Application Insights	Azure Service Map	Azure Log Analytics	Azure Activity Log
Azure Application Insights					
Azure Service Map					
Azure Log Analytics					
Azure Activity Log					
Visualize the relationships between application components.	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; text-align: right;">▼</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Azure Application Insights</td></tr> <tr><td>Azure Service Map</td></tr> <tr><td>Azure Log Analytics</td></tr> <tr><td>Azure Activity Log</td></tr> </table> </div>	Azure Application Insights	Azure Service Map	Azure Log Analytics	Azure Activity Log
Azure Application Insights					
Azure Service Map					
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Track requests and exceptions to a specific line of code within the application.	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; text-align: right;">▼</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Azure Application Insights</td></tr> <tr><td>Azure Service Map</td></tr> <tr><td>Azure Log Analytics</td></tr> <tr><td>Azure Activity Log</td></tr> </table> </div>	Azure Application Insights	Azure Service Map	Azure Log Analytics	Azure Activity Log
Azure Application Insights					
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Analyze how many users return to the application and how often they select a particular dropdown value.	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; text-align: right;">▼</div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Azure Application Insights</td></tr> <tr><td>Azure Service Map</td></tr> <tr><td>Azure Log Analytics</td></tr> <tr><td>Azure Activity Log</td></tr> </table> </div>	Azure Application Insights	Azure Service Map	Azure Log Analytics	Azure Activity Log
Azure Application Insights					
Azure Service Map					
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Azure Activity Log					

Answer:

Answer Area

Scenario	Azure monitoring service
Correlate Azure resource usage and performance data with application configuration and performance data.	<div style="border: 1px solid gray; padding: 2px;"> <div style="text-align: right; border-bottom: 1px solid gray;">▼</div> <div style="padding: 2px;"> Azure Application Insights Azure Service Map Azure Log Analytics Azure Activity Log </div> </div>
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QUESTION 123

Hotspot Question

Your organization has developed and deployed several Azure App Service Web and API applications. The applications use Azure Key Vault to store several authentication, storage account, and data encryption keys. Several departments have the following requests to support the applications:

Department	Request
Security	<ul style="list-style-type: none"> Review membership of administrative roles and require to provide a justification for continued membership Get alerts about changes in administrator assignments. See a history of administrator activation, including which changes administrators made to Azure resources.
Development	<ul style="list-style-type: none"> Enable the applications to access Azure Key Vault and retrieve keys for use in code.
Quality Assurance	<ul style="list-style-type: none"> Receive temporary administrator access to create and configure additional Web and API applications in the test environment.

You need to recommend the appropriate Azure service for each department request.

What should you recommend? To answer, configure the appropriate options in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Department

Azure Service

Security

	▼
Azure AD Privileged Identity Management	
Azure AD Managed Service Identity	
Azure AD Connect	
Azure AD Identity Protection	

Development

	▼
Azure AD Privileged Identity Management	
Azure AD Managed Service Identity	
Azure AD Connect	
Azure AD Identity Protection	

Quality Assurance

	▼
Azure AD Privileged Identity Management	
Azure AD Managed Service Identity	
Azure AD Connect	
Azure AD Identity Protection	

Answer:

Answer Area

Department

Azure Service

Security

▼
Azure AD Privileged Identity Management
Azure AD Managed Service Identity
Azure AD Connect
Azure AD Identity Protection

Development

▼
Azure AD Privileged Identity Management
Azure AD Managed Service Identity
Azure AD Connect
Azure AD Identity Protection

Quality Assurance

▼
Azure AD Privileged Identity Management
Azure AD Managed Service Identity
Azure AD Connect
Azure AD Identity Protection

QUESTION 124

Drag and Drop Question

An organization has an on-premises server that runs Windows Server 2003. The server hosts an IIS- based stateless web application that uses forms authentication. The application consists of classic Active Server Pages (ASP) pages and third-party components (DLLs) that are registered in the Windows registry.

The deployment process for the web application is manual and is prone to errors. The deployment process makes it difficult to roll out updates, scale out, and recover after failures.

You need to design a modernization approach for the web application that meets the following requirements:

- Improve the deployment process.
- Ensure that the application can run in the cloud.
- Minimize changes to application code.
- Minimize administrative effort required to implement the modernization solution.

What should you recommend? To answer, drag the appropriate actions to the correct approaches. Each action may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth point.

Actions		Answer Area	
		Approach	Action
Package the existing application in a container.		Modernization	<input type="text"/>
Configure the application to run in a web role.		Deployment	<input type="text"/>
Implement Azure functions.	•		
Use Azure Container services.	•		
Use a Web application.	•		

Answer:



QUESTION 125

Case Study 2 - Contoso,Ltd

Overview

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Payment Processing Query System

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The payment processing system has the following compliance related requirement

- Encrypt data in transit and at test. Only the front-end and middle-tier components must be able to access the encryption keys that protect the date store.
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Contoso recently migrate a business-Critical workload to Azure. The workload contains a NET web server for querying the historical transaction data residing in azure Table Storage. The NET service is accessible from a client app that was developed in-house and on the client computer in the New Your office. The data in the storage is 50 GB and is not except to increase.

Information Security Requirement

The IT security team wants to ensure that identity management n performed by using Active Directory. Password hashes must be stored on premises only.

Access to all business-critical systems must rely on Active Directory credentials. Any suspicious authentication attempts must trigger multi-factor authentication prompt automatically Legitimate users must be able to authenticate successfully by using multi-factor authentication.

Planned Changes

Contoso plans to implement the following changes:

- Migrate the payment processing system to Azure.
- Migrate the historical transaction data to Azure Cosmos DB to address the performance issues.

Migration Requirements

Contoso identifies the following general migration requirements:

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- If a data center fails, ensure that the payment processing system remains available without any administrative intervention. The middle-tier and the web front end must continue to operate without any additional configurations-
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Contoso identifies the following requirements for the historical transaction query system:

- Minimize the use of on-premises infrastructure service.
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- If a region fails, ensure that the historical transaction query system remains available without any administrative intervention.

Current Issue

The Contoso IT team discovers poor performance of the historical transaction query as the queries frequently cause table scans.

Information Security Requirements

The IT security team wants to ensure that identity management is performed by using Active Directory. Password hashes must be stored on-premises only.

Access to all business-critical systems must rely on Active Directory credentials. Any suspicious authentication attempts must trigger a multi-factor authentication prompt automatically. Legitimate users must be able to authenticate successfully by using multi-factor authentication.

Hotspot Question

You need to recommend a solution for the data store of the historical transaction query system.

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

NOTE: Each correct selection is worth one point.

Answer Area

Sizing requirements:

	▼
A table that has unlimited capacity	
A table that has a fixed capacity	
Multiple tables that have unlimited capacity	
Multiple tables that have fixed capacity	

Resiliency:

	▼
An additional read region	
An availability set	
An availability zone	

Answer:

Answer Area

Sizing requirements:

	▼
A table that has unlimited capacity	
A table that has a fixed capacity	
Multiple tables that have unlimited capacity	
Multiple tables that have fixed capacity	

Resiliency:

	▼
An additional read region	
An availability set	
An availability zone	

QUESTION 126

Note: This question is part of 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 subscription named Project1. Only a group named Project1admins is assigned roles in the Project1 subscription. The Project1 subscription contains all the resources for an application named Application1.

Your company is developing a new application named Application2. The members of the Application2 development team belong to an Azure Active Directory (Azure AD) group named App2Dev.

You identify the following requirements for Application2:

- The members of App2Dev must be prevented from changing the role assignments in Azure.
- The members of App2Dev must be able to create new Azure resources required by Application2.
- All the required role assignments for Application2 will be performed by the members of Project1admins.

You need to recommend a solution for the role assignments of Application2.

Solution: In Project1, create a network security group (NSG) named NSG1. Assign Project1admins the Owner role for NSG1. Assign the App2Dev the Contributor role for NSG1.

Does this meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

You should use a separate subscription for Project2.

QUESTION 127

Note: This question is part of 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 subscription that contains a resource group named RG1.

You create an Azure Active Directory (Azure AD) group named ResearchUsers that contains the user accounts of all researchers.

You need to recommend a solution that meets the following requirements:

- The researchers must be allowed to create Azure virtual machines.
- The researchers must only be able to create Azure virtual machines by using specific Azure Resource Manager templates.

Solution: On RG1, assign a custom role-based access control (RBAC) role to the ResearchUsers group.

Does this meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead: On RG1, assign the Contributor role to the ResearchUsers group. Create a custom Azure Policy definition and assign the policy to RG1.

QUESTION 128

A company deploys Azure Active Directory (Azure AD) Connect to synchronize identity information from their on-premises Active Directory Domain Services (AD DS) directory to their Azure AD tenant. The identity information that is synchronized includes user accounts, credential hashes for authentication (password sync), and group membership. The company plans to deploy several Windows and Linux virtual machines (VMs) to support their applications.

The VMs have the following requirements:

- Support domain join, LDAP read, LDAP bind, NTLM and Kerberos authentication, and Group Policy.
- Allow users to sign in to the domain using their corporate credentials and connect remotely to the VM by using Remote Desktop.

You need to support the VM deployment.

Which service should you use?

- A. Azure AD Domain Services
- B. Azure AD Privileged Identity Management
- C. Azure AD Managed Service Identity
- D. Active Directory Federation Services (AD FS)

Answer: A

Explanation:

Azure AD Domain Services provides managed domain services such as domain join, group policy, LDAP, Kerberos/NTLM authentication that are fully compatible with Windows Server Active Directory.

References:

<https://docs.microsoft.com/en-us/azure/active-directory-domain-services/active-directory-ds-overview>

QUESTION 129

Note: This question is part of 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 are designing an Azure solution for a company that wants to move a .NET Core web application from an on-premises data center to Azure. The web application relies on a Microsoft SQL Server 2016 database on Windows Server 2016. The database server will not move to Azure.

A separate networking team is responsible for configuring network permissions.

The company uses Azure ExpressRoute and has an ExpressRoute gateway connected to an Azure virtual network named VNET1.

You need to recommend a solution for deploying the web application.

Solution:

Deploy the web application to a web app hosted in a Standard App Service plan. Create and configure an Azure App Service Hybrid Connections endpoint. On the on-premises network, deploy the Hybrid Connection Manager. Configure the Hybrid Connection Manager to access both the Hybrid Connection endpoint and the SQL Server instance.

Does this meet the goal?

- A. Yes
- B. No

Answer: B

Explanation:

Instead, use VNet Integration.

Note: VNet Integration gives your web app access to resources in your virtual network. VNet Integration is often used to enable access from apps to a databases and web services running in your VNet.

References:

<https://docs.microsoft.com/en-us/azure/app-service/web-sites-integrate-with-vnet>