

## **Case Study : 1**

### **General Overview :-**

ABC, Inc. is a medium-sized finance company.

### **Physical Locations : -**

ABC company has a main office in East US Region and one in the West Europe region.

### **Existing Environment : -**

The network contains an Active Directory forest named ABC.com that is linked to an Azure Active Directory (Azure AD) tenant named ABC.com. All users have Azure Active Directory Premium P2 licenses.

Company is planning to move its 2 apps App 1 and App 2 running on premise to Azure. You need to suggest best options for migration based on requirements for each App.

### **Planned Changes and Requirements:- Application Development Requirements:-**

- Application developers will constantly develop new versions of App1 and App2. The development process must meet the following requirements:
- A staging instance of a new application version must be deployed to the application host before the new version is used in production.
- After testing the new version, the staging version of the application will replace the production version.
- The switch to the new application version from staging to production must occur without any downtime of the application.

### **App1 has the following data requirements:-**

- Each instance will write data to a data store in the same availability zone as the instance.
- Data written by any App1 instance must be visible to all App1 instances.
- Every hour, you will run a maintenance task by invoking a PowerShell script that copies files from all the App1 instances. The PowerShell script will run from a central location.
- App1 will have six instances: three in the East US Azure region and three in the West Europe Azure region.

### **App 2 - Monitoring Requirements :-**

- You need to monitor App2 to analyze how long it takes to perform different transactions within the application. The solution must not require changes to the application code.
- Minimize costs.

### **App2 has the following file storage requirements:**

- Save files to an Azure Storage account.
- Replicate files to an on-premises location.
- Ensure that on-premises clients can read the files over the LAN by using the SMB protocol.

### **Security Requirement :-**

ABC.com identifies the following Security requirements:

- All secrets used by Azure services must be stored in Azure Key Vault.
- Services that require credentials must have the credentials tied to the service instance. The credentials must NOT be shared between services.

### **Connection Requirement :-**

- App1 will only be accessible from the internet.
- Connections to App1 must be active-active load balanced between instances.
- All connections to App1 from North America must be directed to the East US region. All other connections must be directed to the West Europe region.
- App1 will have six instances: three in the East US Azure region and three in the West Europe Azure region.

**Question 1.** You need to recommend a solution for the App1 maintenance task. The solution must minimize costs.

What should you include in the recommendation?

- A. an Azure logic app
- B. an Azure function
- C. an Azure virtual machine
- D. an App Service Web Job

**Question 1.** You need to recommend a solution for the App1 maintenance task. The solution must minimize costs.

What should you include in the recommendation?

- A. an Azure logic app 
- B. an Azure function
- C. an Azure virtual machine
- D. an App Service Web Job

Correct answer is option A. An Azure logic app.

**Requirement** - Every hour, you will run a maintenance task by invoking a PowerShell script that copies files from all the App1 instances. The PowerShell script will run from a central location.

App1 will have six instances: three in the East US Azure region and three in the West Europe Azure region.


**Explanation** - You can create and manage workflows with Azure PowerShell in Azure Logic Apps. You can create a Consumption logic app in multi-tenant Azure Logic Apps by using the JSON file for a logic app workflow definition. You can then manage your logic app by running the cmdlets in the Azure Logic App PowerShell module.

**Question 2.** You need to recommend a solution that meets the application development requirements. What should you include in the recommendation?

- A. the Azure App Configuration service
- B. an Azure Container Registry instance
- C. deployment slots
- D. Continuous Integration/Continuous Deployment (CI/CD) sources



**Question 2.** You need to recommend a solution that meets the application development requirements. What should you include in the recommendation?

- A. the Azure App Configuration service
- B. an Azure Container Registry instance
- C. deployment slots 
- D. Continuous Integration/Continuous Deployment (CI/CD) sources

Correct answer is option C. Deployment Slots.

**Requirement** - Application developers will constantly develop new versions of App1 and App2. A staging instance of a new application version must be deployed to the application host before the new version is used in production. After testing the new version, the staging version of the application will replace the production version. The switch to the new application version from staging to production must occur without any downtime of the application.


**Explanation** - When you deploy your web app, web app on Linux, mobile back end, or API app to Azure App Service, you can use a separate deployment slot instead of the default production slot when you're running in the Standard, Premium, or Isolated App Service plan tier. Deployment slots are live apps with their own host names.

App content and configurations elements can be swapped between two deployment slots, including the production slot.

**Question 3.** You need to recommend an App Service architecture that meets the requirements for App1. The solution must minimize costs. What should you recommend?

- A. one App Service Environment (ASE) per availability zone
- B. one App Service Environment (ASE) per region
- C. one App Service plan per region
- D. one App Service plan per availability zone

**Question 3.** You need to recommend an App Service architecture that meets the requirements for App1. The solution must minimize costs. What should you recommend?

- A. one App Service Environment (ASE) per availability zone
- B. one App Service Environment (ASE) per region
- C. one App Service plan per region 
- D. one App Service plan per availability zone

**Correct answer** is option C. One App Service plan per region.

**Requirement** - App1 has the following data requirements:

Each instance will write data to a data store in the same availability zone as the instance.

Data written by any App1 instance must be visible to all App1 instances.

**Explanation** - No need for dedicated environment so Azure Service Plan per region is enough.

**Question 4.** You need to recommend a solution to ensure that App1 can access the third-party credentials and access strings. The solution must meet the security requirements. 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.

Hot Area:

Authenticate App1 by using :

1. A certificate

2. A system assigned managed identity
3. A user assigned managed identity

Authorize App1 to retrieve key

- vault secrets by using :
1. An access policy
  2. A connected service
  3. A private link
  4. A role assignment


**Question 4.** You need to recommend a solution to ensure that App1 can access the third-party credentials and access strings. The solution must meet the security requirements. What should you include in the recommendation? To answer, select the appropriate options in the answer area.

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Authorize App1 to retrieve key

vault secrets by using :

1. An access policy

2. A connected service

3. A private link

4. A role assignment 

Correct answers : for first question , it is Option 2. A system assigned managed identity and for second question , it is Option 4. A role assignment.

#### **Requirement - Security Requirement –**

All secrets used by Azure services must be stored in Azure Key Vault.

Services that require credentials must have the credentials tied to the service instance. The credentials must NOT be shared between services.

#### **Explanation –**


1. No one knows the credentials of managed identities and it satisfies the security requirements, so it is the correct choice for first question.

2. RBAC can assign permission to a specific secret, but the access policy assigns permissions for all secrets or keys, so access policy is not as granular as RBAC.

**Question 5.** What should you recommend to meet the monitoring requirements for App2?

- A. VM insights
- B. Azure Application Insights
- C. Microsoft Sentinel
- D. Container insights

**Question 5.** What should you recommend to meet the monitoring requirements for App2?

- A. VM insights
- B. Azure Application Insights 
- C. Microsoft Sentinel
- D. Container insights

**Correct answer** is option B. Azure Application Insights.

**Requirement** - You need to monitor App2 to analyze how long it takes to perform different transactions within the application. The solution must not require changes to the application code.

**Explanation** - Azure Application Insights is an extensible Application Performance Management (APM) service for web developers. It provides real-time, detailed insights into application performance and failures, making it a suitable choice for analyzing the performance of different transactions within App2, as required. Plus, it doesn't require changes to the application code.

**Question 6.** You need to recommend a solution that meets the file storage requirements for App2.

What should you deploy to the Azure subscription and the on-premises network?

To answer, drag the appropriate services to the correct locations.

Each service 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 one point.

Services	Answer Area
<div>Azure Blob Storage</div>	Azure subscription: <div>Service</div>
<div>Azure Data Box</div>	On-premises network: <div>Service</div>
<div>Azure Data Box Gateway</div>	
<div>Azure Data Lake Storage</div>	
<div>Azure File Sync</div>	
<div>Azure Files</div>	



**Question 6.** You need to recommend a solution that meets the file storage requirements for App2. What should you deploy to the Azure subscription and the on-premises network? To answer, drag the appropriate services to the correct locations. Each service 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 one point.

Services	Answer Area
Azure Blob Storage	Azure subscription: Azure Files ←
Azure Data Box	On-premises network: Azure File Sync ←
Azure Data Box Gateway	
Azure Data Lake Storage	

Correct answers - for Azure subscription - Azure files and for On Premises Network - Azure File Sync is required.

**Requirement** - Requirement - App2 has the following file storage requirements:

- Save files to an Azure Storage account.
- Replicate files to an on-premises location.
- Ensure that on-premises clients can read the files over the LAN by using the SMB protocol.

**Explanation:**

1. Azure Files would be suitable for saving files to an Azure Storage account as mentioned in the requirements for App2.


2. Azure File Sync will sync the Azure Files to the on-premises location, ensuring that on-premises clients can read the files over the LAN using the SMB protocol, which is also a requirement for App2. It extends on-premises systems into Azure storage while maintaining a local cache of the data on-premises.

**Question 7.** You need to recommend a solution that meets the data requirements for App1. What should you recommend deploying to each availability zone that contains an instance of App1?

- A. an Azure Cosmos DB that uses multi-region writes
- B. an Azure Data Lake store that uses geo-zone-redundant storage (GZRS)
- C. an Azure Storage account that uses geo-zone-redundant storage (GZRS)



**Question 7.** You need to recommend a solution that meets the data requirements for App1.  
What should you recommend deploying to each availability zone that contains an instance of App1?

- A. an Azure Cosmos DB that uses multi-region writes 
- B. an Azure Data Lake store that uses geo-zone-redundant storage (GZRS)
- C. an Azure Storage account that uses geo-zone-redundant storage (GZRS)

Correct answer is option A. an Azure Cosmos DB that uses multi-region writes.

**Requirement**

- App1 has the following data requirements:
- Each instance will write data to a data store in the same availability zone as the instance.
- Data written by any App1 instance must be visible to all App1 instances.

**Explanation** - With Azure Cosmos DB, Each partition across all the regions is replicated. Each region contains all the data partitions of an Azure Cosmos container and can serve reads as well as serve writes when multi-region writes is enabled.

**Question 8.** HOTSPOT -

You are evaluating whether to use Azure Traffic Manager and Azure Application Gateway to meet the connection requirements for App1.

What is the minimum numbers of instances required for each service? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

**Answer Area**

Azure Traffic Manager:

1
2
3
6

Azure Application Gateway:

1
2
3
6

**Question 8. HOTSPOT -**

You are evaluating whether to use Azure Traffic Manager and Azure Application Gateway to meet the connection requirements for App1.

What is the minimum numbers of instances required for each service? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

**Answer Area**

Azure Traffic Manager:

▼
1
2
3
6



Azure Application Gateway:

▼
1
2
3
6



**Correct Answer** for Azure Traffic Manager is 1 and for Azure Application Gateway is 2.

**Requirement –**

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**Explanation –**

Azure Traffic Manager is a DNS-based traffic load balancer. This service allows you to distribute traffic to your public facing applications across the global Azure regions.

- Use one Application Gateway in East US Region, and one in the West Europe region.
- Traffic manager is global and application gateway is regional so for two regions (East US and West Europe) we need 1 traffic manager and 2 application gateways.