

Develop Azure compute solutions

Testlet 1

Case study

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Current environment

Windows Server 2016 virtual machine

This virtual machine (VM) runs BizTalk Server 2016. The VM runs the following workflows:

- Ocean Transport – This workflow gathers and validates container information including container contents and arrival notices at various shipping ports.
- Inland Transport – This workflow gathers and validates trucking information including fuel usage, number of stops, and routes.

The VM supports the following REST API calls:

- Container API – This API provides container information including weight, contents, and other attributes.
- Location API – This API provides location information regarding shipping ports of call and trucking stops.
- Shipping REST API – This API provides shipping information for use and display on the shipping website.

Shipping Data

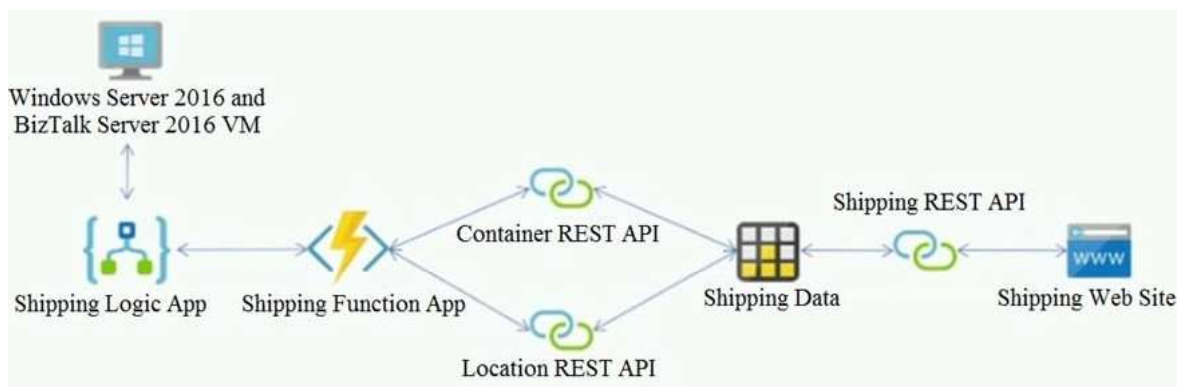
The application uses MongoDB JSON document storage database for all container and transport information.

Shipping Web Site

The site displays shipping container tracking information and container contents. The site is located at <http://shipping.wideworldimporters.com/>

Proposed solution

The on-premises shipping application must be moved to Azure. The VM has been migrated to a new Standard_D16s_v3 Azure VM by using Azure Site Recovery and must remain running in Azure to complete the BizTalk component migrations. You create a Standard_D16s_v3 Azure VM to host BizTalk Server. The Azure architecture diagram for the proposed solution is shown below:



Requirements

Shipping Logic app

The Shipping Logic app must meet the following requirements:

- Support the ocean transport and inland transport workflows by using a Logic App.
- Support industry-standard protocol X12 message format for various messages including vessel content details and arrival notices.
- Secure resources to the corporate VNet and use dedicated storage resources with a fixed costing model.
- Maintain on-premises connectivity to support legacy applications and final BizTalk migrations.

Shipping Function app

Implement secure function endpoints by using app-level security and include Azure Active Directory (Azure AD).

REST APIs

The REST API's that support the solution must meet the following requirements:

- Secure resources to the corporate VNet.
- Allow deployment to a testing location within Azure while not incurring additional costs.
- Automatically scale to double capacity during peak shipping times while not causing application downtime.
- Minimize costs when selecting an Azure payment model.

Shipping data

Data migration from on-premises to Azure must minimize costs and downtime.

Shipping website

Use Azure Content Delivery Network (CDN) and ensure maximum performance for dynamic content while minimizing latency and costs.

Issues

Windows Server 2016 VM

The VM shows high network latency, jitter, and high CPU utilization. The VM is critical and has not been backed up in the past. The VM must enable a quick restore from a 7-day snapshot to include in-place restore of disks in case of failure.

Shipping website and REST APIs

The following error message displays while you are testing the website:

```
Failed to load http://test-shippingapi.wideworldimporters.com/: No 'Access-Control-Allow-Origin' header is present on the requested resource. Origin 'http://test.wideworldimporters.com/' is therefore not allowed access.
```

QUESTION 1
HOTSPOT

You need to configure Azure CDN for the Shipping web site.

Which configuration options should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Option	Value				
Tier	<div data-bbox="647 1037 1209 1104" style="border: 1px solid gray; background-color: #e0e0e0; padding: 2px;">▼</div> <table border="1" data-bbox="647 1104 1294 1220"><tr><td data-bbox="659 1115 831 1160">Standard</td></tr><tr><td data-bbox="659 1167 831 1211">Premium</td></tr></table>	Standard	Premium		
Standard					
Premium					
Profile	<div data-bbox="647 1276 1209 1344" style="border: 1px solid gray; background-color: #e0e0e0; padding: 2px;">▼</div> <table border="1" data-bbox="647 1344 1294 1460"><tr><td data-bbox="659 1355 802 1400">Akamai</td></tr><tr><td data-bbox="659 1406 831 1451">Microsoft</td></tr></table>	Akamai	Microsoft		
Akamai					
Microsoft					
Optimization	<div data-bbox="647 1541 1238 1608" style="border: 1px solid gray; background-color: #e0e0e0; padding: 2px;">▼</div> <table border="1" data-bbox="647 1608 1323 1816"><tr><td data-bbox="659 1619 1034 1664">general web delivery</td></tr><tr><td data-bbox="659 1671 1002 1715">large file download</td></tr><tr><td data-bbox="659 1722 1126 1767">dynamic site acceleration</td></tr><tr><td data-bbox="659 1774 1302 1818">video-on-demand media streaming</td></tr></table>	general web delivery	large file download	dynamic site acceleration	video-on-demand media streaming
general web delivery					
large file download					
dynamic site acceleration					
video-on-demand media streaming					

Correct Answer:

Answer Area

Option	Value
Tier	<div style="border: 1px solid black; padding: 2px;"><div style="background-color: #cccccc; padding: 2px; display: flex; justify-content: space-between;">▼</div><div style="padding: 2px;"><div style="background-color: #c8e6c9; padding: 2px;">Standard</div><div style="padding: 2px;">Premium</div></div></div>
Profile	<div style="border: 1px solid black; padding: 2px;"><div style="background-color: #cccccc; padding: 2px; display: flex; justify-content: space-between;">▼</div><div style="padding: 2px;"><div style="background-color: #c8e6c9; padding: 2px;">Akamai</div><div style="padding: 2px;">Microsoft</div></div></div>
Optimization	<div style="border: 1px solid black; padding: 2px;"><div style="background-color: #cccccc; padding: 2px; display: flex; justify-content: space-between;">▼</div><div style="padding: 2px;"><div style="padding: 2px;">general web delivery</div><div style="padding: 2px;">large file download</div><div style="background-color: #c8e6c9; padding: 2px;">dynamic site acceleration</div><div style="padding: 2px;">video-on-demand media streaming</div></div></div>

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Scenario: Shipping website

Use Azure Content Delivery Network (CDN) and ensure maximum performance for dynamic content while minimizing latency and costs.

Tier: Standard

Profile: Akamai

Optimization: Dynamic site acceleration

Dynamic site acceleration (DSA) is available for Azure CDN Standard from Akamai, Azure CDN Standard from Verizon, and Azure CDN Premium from Verizon profiles.

DSA includes various techniques that benefit the latency and performance of dynamic content. Techniques include route and network optimization, TCP optimization, and more.

You can use this optimization to accelerate a web app that includes numerous responses that aren't cacheable. Examples are search results, checkout transactions, or real-time data. You can continue to use core Azure CDN caching capabilities for static data.

Reference:

<https://docs.microsoft.com/en-us/azure/cdn/cdn-optimization-overview>

QUESTION 2
HOTSPOT

You need to correct the VM issues.

Which tools should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Issue	Tool				
Backup and Restore	<div data-bbox="676 1016 1291 1081" style="border: 1px solid gray; background-color: #e0e0e0; padding: 2px;">▼</div> <table border="1" data-bbox="676 1081 1291 1270"><tr><td data-bbox="692 1093 1034 1128">Azure Site Recovery</td></tr><tr><td data-bbox="692 1133 927 1169">Azure Backup</td></tr><tr><td data-bbox="692 1173 959 1209">Azure Data Box</td></tr><tr><td data-bbox="692 1214 927 1249">Azure Migrate</td></tr></table>	Azure Site Recovery	Azure Backup	Azure Data Box	Azure Migrate
Azure Site Recovery					
Azure Backup					
Azure Data Box					
Azure Migrate					
Performance	<div data-bbox="676 1301 1291 1366" style="border: 1px solid gray; background-color: #e0e0e0; padding: 2px;">▼</div> <table border="1" data-bbox="676 1366 1291 1547"><tr><td data-bbox="692 1377 1091 1413">Azure Network Watcher</td></tr><tr><td data-bbox="692 1417 1066 1453">Azure Traffic Manager</td></tr><tr><td data-bbox="692 1458 932 1494">ExpressRoute</td></tr><tr><td data-bbox="692 1498 1098 1534">Accelerated Networking</td></tr></table>	Azure Network Watcher	Azure Traffic Manager	ExpressRoute	Accelerated Networking
Azure Network Watcher					
Azure Traffic Manager					
ExpressRoute					
Accelerated Networking					

Correct Answer:

Answer Area

Issue	Tool
Backup and Restore	<div style="border: 1px solid gray; padding: 5px;"><div style="background-color: #e0e0e0; padding: 2px; display: flex; justify-content: space-between; align-items: center;">▼</div><ul style="list-style-type: none">Azure Site Recovery<li style="background-color: #d9ead3;">Azure BackupAzure Data BoxAzure Migrate</div>
Performance	<div style="border: 1px solid gray; padding: 5px;"><div style="background-color: #e0e0e0; padding: 2px; display: flex; justify-content: space-between; align-items: center;">▼</div><ul style="list-style-type: none">Azure Network WatcherAzure Traffic ManagerExpressRoute<li style="background-color: #d9ead3;">Accelerated Networking</div>

Section: (none)
Explanation

Explanation/Reference:
Explanation:

Box 1: Azure Backup

The VM is critical and has not been backed up in the past. The VM must enable a quick restore from a 7-day snapshot to include in-place restore of disks in case of failure.

In-Place restore of disks in IaaS VMs is a feature of Azure Backup.

Performance: Accelerated Networking

Scenario: The VM shows high network latency, jitter, and high CPU utilization.

Box 2: Accelerated networking

The VM shows high network latency, jitter, and high CPU utilization.

Accelerated networking enables single root I/O virtualization (SR-IOV) to a VM, greatly improving its networking performance. This high-performance path bypasses the host from the datapath, reducing latency, jitter, and CPU utilization, for use with the most demanding network workloads on supported VM types.

Reference:

<https://azure.microsoft.com/en-us/blog/an-easy-way-to-bring-back-your-azure-vm-with-in-place-restore/>

Develop Azure compute solutions

Testlet 2

Case study

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Background

City Power & Light company provides electrical infrastructure monitoring solutions for homes and businesses. The company is migrating solutions to Azure.

Current environment

Architecture overview

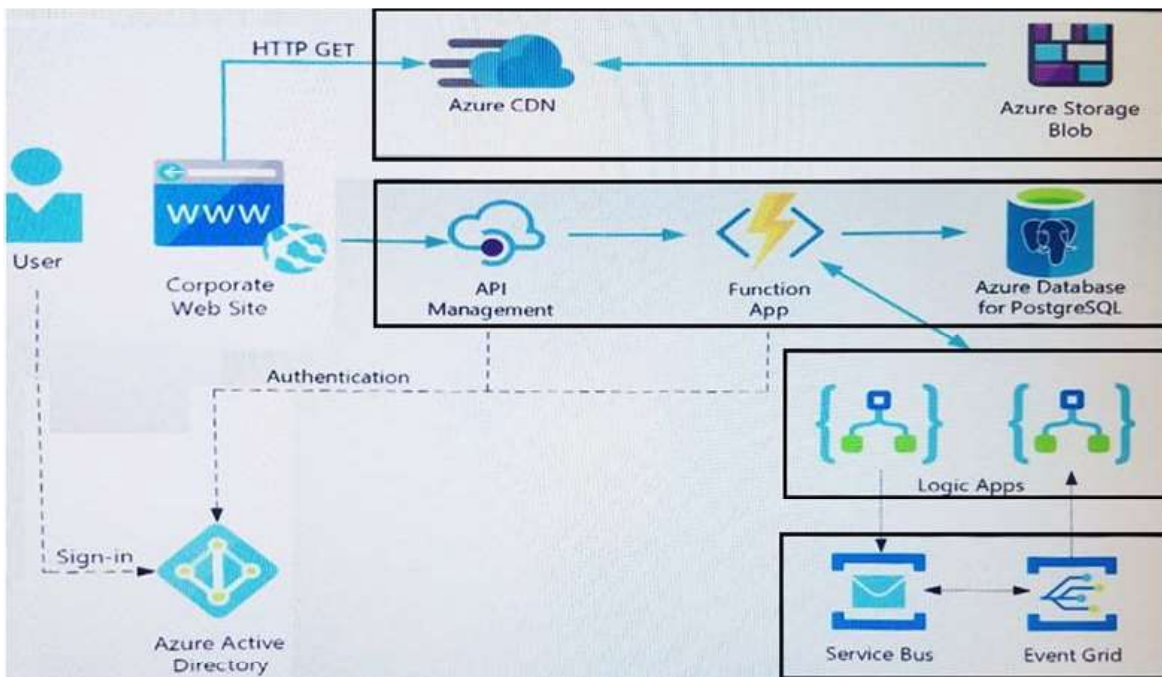
The company has a public website located at <http://www.cpandl.com/>. The site is a single-page web application that runs in Azure App Service on Linux. The website uses files stored in Azure Storage and cached in Azure Content Delivery Network (CDN) to serve static content.

API Management and Azure Function App functions are used to process and store data in Azure Database for PostgreSQL. API Management is used to broker communications to the Azure Function app functions for Logic app integration. Logic apps are used to orchestrate the data processing while Service Bus and Event Grid handle messaging and events.

The solution uses Application Insights, Azure Monitor, and Azure Key Vault.

Architecture diagram

The company has several applications and services that support their business. The company plans to implement serverless computing where possible. The overall architecture is shown below.



User authentication

The following steps detail the user authentication process:

1. The user selects **Sign in** in the website.
2. The browser redirects the user to the Azure Active Directory (Azure AD) sign in page.
3. The user signs in.
4. Azure AD redirects the user's session back to the web application. The URL includes an access token.
5. The web application calls an API and includes the access token in the authentication header. The application ID is sent as the audience ('aud') claim in the access token.
6. The back-end API validates the access token.

Requirements

Corporate website

- Communications and content must be secured by using SSL.
- Communications must use HTTPS.
- Data must be replicated to a secondary region and three availability zones.
- Data storage costs must be minimized.

Azure Database for PostgreSQL

The database connection string is stored in Azure Key Vault with the following attributes:

- Azure Key Vault name: cpandlkeyvault
- Secret name: PostgreSQLConn
- Id: 80df3e46ffcd4f1cb187f79905e9a1e8

The connection information is updated frequently. The application must always use the latest information to connect to the database.

Azure Service Bus and Azure Event Grid

- Azure Event Grid must use Azure Service Bus for queue-based load leveling.

- Events in Azure Event Grid must be routed directly to Service Bus queues for use in buffering.
- Events from Azure Service Bus and other Azure services must continue to be routed to Azure Event Grid for processing.

Security

- All SSL certificates and credentials must be stored in Azure Key Vault.
- File access must restrict access by IP, protocol, and Azure AD rights.
- All user accounts and processes must receive only those privileges which are essential to perform their intended function.

Compliance

Auditing of the file updates and transfers must be enabled to comply with General Data Protection Regulation (GDPR). The file updates must be read-only, stored in the order in which they occurred, include only create, update, delete, and copy operations, and be retained for compliance reasons.

Issues

Corporate website

While testing the site, the following error message displays:

```
CryptographicException: The system cannot find the file specified.
```

Function app

You perform local testing for the RequestUserApproval function. The following error message displays:
'Timeout value of 00:10:00 exceeded by function: RequestUserApproval'

The same error message displays when you test the function in an Azure development environment when you run the following Kusto query:

```
FunctionAppLogs  
| where FunctionName == "RequestUserApproval"
```

Logic app

You test the Logic app in a development environment. The following error message displays:

```
'400 Bad Request'
```

Troubleshooting of the error shows an HttpTrigger action to call the RequestUserApproval function.

Code

Corporate website

Security.cs:

```
SC01 public class Security  
SC02 {  
SC03 var bytes = System.IO.File.ReadAllBytes("~/var/ssl/private");  
SC04 var cert = new System.Security.Cryptography.X509Certificate2(bytes);  
SC05 var certName = cert.FriendlyName;  
SC06 }
```

Function app

RequestUserApproval.cs:

```

RA01 public static class RequestUserApproval
RA02 {
RA03 [FunctionName("RequestUserApproval")]
RA04 public static async Task<IActionResult> Run(
RA05 [HttpTrigger(AuthorizationLevel.Function, "get", "post", Route = null)] HttpRequest req,
RA06 ILogger log)
RA07 {
RA08     log.LogInformation("RequestUserApproval function processed a request.");
RA09     ...
RA10     return ProcessRequest(req)
RA11     ? (ActionResult)new OkObjectResult($"User approval processed")
RA12     : new BadRequestObjectResult("Failed to process user approval");
RA13 }
RA14 private static bool ProcessRequest(HttpRequest req)
RA15 {
RA16     ...
RA17 }

```

QUESTION 1

You need to correct the RequestUserApproval Function app error.

What should you do?

- A. Update line RA13 to use the `async` keyword and return an `HttpRequest` object value.
- B. Configure the Function app to use an App Service hosting plan. Enable the **Always On** setting of the hosting plan.
- C. Update the function to be stateful by using Durable Functions to process the request payload.
- D. Update the `functionTimeout` property of the `host.json` project file to 15 minutes.

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Async operation tracking

The HTTP response mentioned previously is designed to help implement long-running HTTP async APIs with Durable Functions. This pattern is sometimes referred to as the polling consumer pattern.

Both the client and server implementations of this pattern are built into the Durable Functions HTTP APIs.

Function app

You perform local testing for the RequestUserApproval function. The following error message displays: 'Timeout value of 00:10:00 exceeded by function: RequestUserApproval'

The same error message displays when you test the function in an Azure development environment when you run the following Kusto query:

```
FunctionAppLogs
```

```
| where FunctionName == "RequestUserApproval"
```

References:

<https://docs.microsoft.com/en-us/azure/azure-functions/durable/durable-functions-http-features>

Develop Azure compute solutions

Question Set 3

QUESTION 1

You are developing an application that uses Azure Blob storage.

The application must read the transaction logs of all the changes that occur to the blobs and the blob metadata in the storage account for auditing purposes. The changes must be in the order in which they occurred, include only create, update, delete, and copy operations and be retained for compliance reasons.

You need to process the transaction logs asynchronously.

What should you do?

- A. Process all Azure Blob storage events by using Azure Event Grid with a subscriber Azure Function app.
- B. Enable the change feed on the storage account and process all changes for available events.
- C. Process all Azure Storage Analytics logs for successful blob events.
- D. Use the Azure Monitor HTTP Data Collector API and scan the request body for successful blob events.

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Change feed support in Azure Blob Storage

The purpose of the change feed is to provide transaction logs of all the changes that occur to the blobs and the blob metadata in your storage account. The change feed provides ordered, guaranteed, durable, immutable, read-only log of these changes. Client applications can read these logs at any time, either in streaming or in batch mode. The change feed enables you to build efficient and scalable solutions that process change events that occur in your Blob Storage account at a low cost.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-change-feed>

QUESTION 2

DRAG DROP

You are developing an application to use Azure Blob storage. You have configured Azure Blob storage to include change feeds.

A copy of your storage account must be created in another region. Data must be copied from the current storage account to the new storage account directly between the storage servers.

You need to create a copy of the storage account in another region and copy the data.

In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions

Answer Area

Use AZCopy to copy the data to the new storage account.

Deploy the template to create a new storage account in the target region.

Export a Resource Manager template.

Create a new template deployment.

Modify the template by changing the storage account name and region.



Correct Answer:

Actions

Answer Area

Use AZCopy to copy the data to the new storage account.

Deploy the template to create a new storage account in the target region.

Export a Resource Manager template.

Create a new template deployment.

Modify the template by changing the storage account name and region.

Create a new template deployment.

Export a Resource Manager template.

Modify the template by changing the storage account name and region.

Deploy the template to create a new storage account in the target region.

Use AZCopy to copy the data to the new storage account.



Section: (none)
Explanation

Explanation/Reference:
Explanation:

To move a storage account, create a copy of your storage account in another region. Then, move your data to that account by using AzCopy, or another tool of your choice.

The steps are:

- Export a template.
- Modify the template by adding the target region and storage account name.
- Deploy the template to create the new storage account.
- Configure the new storage account.
- Move data to the new storage account.
- Delete the resources in the source region.

Note: You must enable the change feed on your storage account to begin capturing and recording changes.

You can enable and disable changes by using Azure Resource Manager templates on Portal or Powershell.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/common/storage-account-move>

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-change-feed>

QUESTION 3

HOTSPOT

You are developing an ASP.NET Core web application. You plan to deploy the application to Azure Web App for Containers.

The application needs to store runtime diagnostic data that must be persisted across application restarts. You have the following code:

```
public void SaveDiagData(string data)
{
    var path = Environment.GetEnvironmentVariable("DIAGDATA");
    File.WriteAllText(Path.Combine(path, "data"), data);
}
```

You need to configure the application settings so that diagnostic data is stored as required.

How should you configure the web app's settings? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

App setting	Value
<input type="text" value="DIAGDATA"/>	<input type="text" value="true"/>
<input type="text" value="LOCALAPPDATA"/>	<input type="text" value="/home"/>
<input type="text" value="WEBSITE_LOCALCACHE_ENABLED"/>	<input type="text" value="/local"/>
<input type="text" value="DOTNET_HOSTING_OPTIMIZATION_CACHE"/>	<input type="text" value="D:\home"/>
<input type="text" value="WEBSITES_ENABLE_APP_SERVICE_STORAGE"/>	<input type="text" value="D:\local"/>

Correct Answer:

Answer Area

App setting	Value
<input type="text" value="LOCALAPPDATA"/>	true
<input type="text" value="WEBSITE_LOCALCACHE_ENABLED"/>	
<input type="text" value="DOTNET_HOSTING_OPTIMIZATION_CACHE"/>	
<input type="text" value="WEBSITES_ENABLE_APP_SERVICE_STORAGE"/>	<input type="text" value="/home"/>
<input type="text" value="DIAGDATA"/>	<input type="text" value="/local"/>
	<input type="text" value="D:\home"/>
	<input type="text" value="D:\local"/>

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: If WEBSITES_ENABLE_APP_SERVICE_STORAGE

If WEBSITES_ENABLE_APP_SERVICE_STORAGE setting is unspecified or set to true, the /home/ directory will be shared across scale instances, and files written will persist across restarts

Box 2: /home

Reference:

<https://docs.microsoft.com/en-us/azure/app-service/containers/app-service-linux-faq>

QUESTION 4

You are developing a web app that is protected by Azure Web Application Firewall (WAF). All traffic to the web app is routed through an Azure Application Gateway instance that is used by multiple web apps. The web app address is contoso.azurewebsites.net.

All traffic must be secured with SSL. The Azure Application Gateway instance is used by multiple web apps.

You need to configure the Azure Application Gateway for the web app.

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

NOTE: Each correct selection is worth one point.

- A. In the Azure Application Gateway's HTTP setting, enable the **Use for App service** setting.
- B. Convert the web app to run in an Azure App service environment (ASE).
- C. Add an authentication certificate for contoso.azurewebsites.net to the Azure Application Gateway.
- D. In the Azure Application Gateway's HTTP setting, set the value of the Override backend path option to **contoso22.azurewebsites.net**.

Correct Answer: AD

Section: (none)

Explanation

Explanation/Reference:

Explanation:

D: The ability to specify a host override is defined in the HTTP settings and can be applied to any back-end pool during rule creation.

The ability to derive the host name from the IP or FQDN of the back-end pool members. HTTP settings also provide an option to dynamically pick the host name from a back-end pool member's FQDN if configured with the option to derive host name from an individual back-end pool member.

A (not C): SSL termination and end to end SSL with multi-tenant services.

In case of end to end SSL, trusted Azure services such as Azure App service web apps do not require whitelisting the backends in the application gateway. Therefore, there is no need to add any authentication certificates.

Add HTTP setting

saiappgw-appgw

* Protocol

HTTP HTTPS

Authentication certificates are not required for trusted Azure certificates for end to end ssl to work

* Port ⓘ

443 ✓

* Request timeout (seconds)

20

Override backend path ⓘ

Use for App service

Use custom probe ⓘ

OK

Reference:

<https://docs.microsoft.com/en-us/azure/application-gateway/application-gateway-web-app-overview>

QUESTION 5

HOTSPOT

You are implementing a software as a service (SaaS) ASP.NET Core web service that will run as an Azure Web App. The web service will use an on-premises SQL Server database for storage. The web service also includes a WebJob that processes data updates. Four customers will use the web service.

- Each instance of the WebJob processes data for a single customer and must run as a singleton instance.
- Each deployment must be tested by using deployment slots prior to serving production data.
- Azure costs must be minimized.
- Azure resources must be located in an isolated network.

You need to configure the App Service plan for the Web App.

How should you configure the App Service plan? To answer, select the appropriate settings in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

App service plan setting

Value

Number of VM instances

	▼
2	
4	
8	
16	

Pricing tier

	▼
Isolated	
Standard	
Premium	
Consumption	

Correct Answer:

Answer Area

App service plan setting

Value

Number of VM instances

	▼
2	
4	
8	
16	

Pricing tier

	▼
Isolated	
Standard	
Premium	
Consumption	

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Number of VM instances: 4

You are not charged extra for deployment slots.

Pricing tier: Isolated

The App Service Environment (ASE) is a powerful feature offering of the Azure App Service that gives network isolation and improved scale capabilities. It is essentially a deployment of the Azure App Service into a subnet of a customer's Azure Virtual Network (VNet).

Reference:

<https://azure.microsoft.com/sv-se/blog/announcing-app-service-isolated-more-power-scale-and-ease-of-use/>

QUESTION 6

DRAG DROP

You are a developer for a software as a service (SaaS) company that uses an Azure Function to process orders. The Azure Function currently runs on an Azure Function app that is triggered by an Azure Storage queue.

You are preparing to migrate the Azure Function to Kubernetes using Kubernetes-based Event Driven Autoscaling (KEDA).

You need to configure Kubernetes Custom Resource Definitions (CRD) for the Azure Function.

Which CRDs should you configure? To answer, drag the appropriate CRD types to the correct locations. Each

CRD type 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.

Select and Place:

Answer Area

CRD types	Setting	CRD type
Secret	Azure Function code	
Deployment	Polling interval	
ScaledObject	Azure Storage connection string	
TriggerAuthentication		

Correct Answer:

Answer Area

CRD types	Setting	CRD type
Secret	Azure Function code	Deployment
Deployment	Polling interval	ScaledObject
ScaledObject	Azure Storage connection string	Secret
TriggerAuthentication		

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: Deployment

To deploy Azure Functions to Kubernetes use the func kubernetes deploy command has several attributes that directly control how our app scales, once it is deployed to Kubernetes.

Box 2: ScaledObject

With --polling-interval, we can control the interval used by KEDA to check Azure Service Bus Queue for messages.

Example of ScaledObject with polling interval

```
apiVersion: keda.k8s.io/v1alpha1
```

```
kind: ScaledObject
```

```
metadata:
```

```

name: transformer-fn
namespace: tt
labels:
  deploymentName: transformer-fn
spec:
  scaleTargetRef:
    deploymentName: transformer-fn
  pollingInterval: 5
  minReplicaCount: 0
  maxReplicaCount: 100

```

Box 3: Secret
Store connection strings in Kubernetes Secrets.

Example: to create the Secret in our demo Namespace:

```

# create the k8s demo namespace
kubectl create namespace tt

# grab connection string from Azure Service Bus
KEDA_SCALER_CONNECTION_STRING=$(az servicebus queue authorization-rule keys list \
-g $RG_NAME \
--namespace-name $SBN_NAME \
--queue-name inbound \
-n keda-scaler \
--query "primaryConnectionString" \
-o tsv)

# create the kubernetes secret
kubectl create secret generic tt-keda-auth \
--from-literal KedaScaler=$KEDA_SCALER_CONNECTION_STRING \
--namespace tt

```

Reference:
<https://www.thinktecture.com/en/kubernetes/serverless-workloads-with-keda/>

QUESTION 7

HOTSPOT

You are creating a CLI script that creates an Azure web app and related services in Azure App Service. The web app uses the following variables:

Variable name	Value
\$gitrepo	https://github.com/Contos/webapp
\$webappname	webapp1103

You need to automatically deploy code from GitHub to the newly created web app.

How should you complete the script? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
az group create --location westeurope --name myResourceGroup
```

```
az webapp --name $webappname --resource-group myResourceGroup --sku FREE
```

az webapp
az appservice plan create
az webapp deployment
az group delete

```
az webapp create --name $webappname --resource-group myResourceGroup
```

az webapp create
az appservice plan create
az webapp deployment
az group delete

```
--repo-url $gitrepo --branch master --manual-integration
```

git clone \$gitrepo
--plan \$webappname

```
source config --name $webappname
```

az webapp
az appservice plan create
az webapp deployment
az group delete

```
--resource-group myResourceGroup
```

--repo-url \$gitrepo --branch master --manual-integration
git clone \$gitrepo
--plan \$webappname

Correct Answer:

Answer Area

```
az group create --location westeurope --name myResourceGroup
```

```
az webapp --name $webappname --resource-group myResourceGroup --sku FREE
```

```
az webapp create --name $webappname --resource-group myResourceGroup
```

```
--repo-url $gitrepo --branch master --manual-integration  
git clone $gitrepo  
--plan $webappname
```

```
source config --name $webappname
```

```
--resource-group myResourceGroup  
--repo-url $gitrepo --branch master --manual-integration  
git clone $gitrepo  
--plan $webappname
```

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Box 1: az appservice plan create

The azure group creates command successfully returns JSON result. Now we can use resource group to create a azure app service plan

Box 2: az webapp create

Create a new web app..

Box 3: --plan \$webappname

..with the serviceplan we created in step 1.

Box 4: az webapp deployment

Continuous Delivery with GitHub. Example:

```
az webapp deployment source config --name firstsamplewebsite1 --resource-group websites--repo-url $gitrepo  
--branch master --git-token $token
```

Box 5: --repo-url \$gitrepo --branch master --manual-integration

Reference:

<https://medium.com/@satish1v/devops-your-way-to-azure-web-apps-with-azure-cli-206ed4b3e9b1>

QUESTION 8

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 develop a software as a service (SaaS) offering to manage photographs. Users upload photos to a web service which then stores the photos in Azure Storage Blob storage. The storage account type is General-purpose V2.

When photos are uploaded, they must be processed to produce and save a mobile-friendly version of the image. The process to produce a mobile-friendly version of the image must start in less than one minute.

You need to design the process that starts the photo processing.

Solution: Trigger the photo processing from Blob storage events.

Does the solution meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

You need to catch the triggered event, so move the photo processing to an Azure Function triggered from the blob upload

Note: Azure Storage events allow applications to react to events. Common Blob storage event scenarios include image or video processing, search indexing, or any file-oriented workflow.

Events are pushed using Azure Event Grid to subscribers such as Azure Functions, Azure Logic Apps, or even to your own http listener.

Note: Only storage accounts of kind StorageV2 (general purpose v2) and BlobStorage support event integration. Storage (general purpose v1) does not support integration with Event Grid.

Reference:

<https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-event-overview>

QUESTION 9

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 develop and deploy an Azure App Service API app to a Windows-hosted deployment slot named Development. You create additional deployment slots named **Testing** and **Production**. You enable auto swap on the Production deployment slot.

You need to ensure that scripts run and resources are available before a swap operation occurs.

Solution: Update the web.config file to include the applicationInitialization configuration element. Specify custom initialization actions to run the scripts.

Does the solution meet the goal?

- A. No
- B. Yes

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

Explanation:

Specify custom warm-up.

Some apps might require custom warm-up actions before the swap. The applicationInitialization configuration element in web.config lets you specify custom initialization actions. The swap operation waits for this custom warm-up to finish before swapping with the target slot. Here's a sample web.config fragment.

```
<system.webServer>  
  <applicationInitialization>  
    <add initializationPage="/" hostname="[app hostname]" />  
    <add initializationPage="/Home/About" hostname="[app hostname]" />  
  </applicationInitialization>  
</system.webServer>
```

Reference:

<https://docs.microsoft.com/en-us/azure/app-service/deploy-staging-slots#troubleshoot-swaps>

QUESTION 10

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 develop and deploy an Azure App Service API app to a Windows-hosted deployment slot named Development. You create additional deployment slots named **Testing** and **Production**. You enable auto swap on the Production deployment slot.

You need to ensure that scripts run and resources are available before a swap operation occurs.

Solution: Enable auto swap for the Testing slot. Deploy the app to the Testing slot.

Does the solution meet the goal?

- A. No
- B. Yes

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

Explanation:

Instead update the web.config file to include the applicationInitialization configuration element. Specify custom initialization actions to run the scripts.

Note: Some apps might require custom warm-up actions before the swap. The applicationInitialization

configuration element in web.config lets you specify custom initialization actions. The swap operation waits for this custom warm-up to finish before swapping with the target slot. Here's a sample web.config fragment.

```
<system.webServer>
  <applicationInitialization>
    <add initializationPage="/" hostName="[app hostname]" />
    <add initializationPage="/Home/About" hostName="[app hostname]" />
  </applicationInitialization>
</system.webServer>
```

Reference:

<https://docs.microsoft.com/en-us/azure/app-service/deploy-staging-slots#troubleshoot-swaps>

QUESTION 11

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 develop and deploy an Azure App Service API app to a Windows-hosted deployment slot named Development. You create additional deployment slots named **Testing** and **Production**. You enable auto swap on the Production deployment slot.

You need to ensure that scripts run and resources are available before a swap operation occurs.

Solution: Disable auto swap. Update the app with a method named statuscheck to run the scripts. Re-enable auto swap and deploy the app to the Production slot.

Does the solution meet the goal?

- A. No
- B. Yes

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Instead update the web.config file to include the applicationInitialization configuration element. Specify custom initialization actions to run the scripts.

Note: Some apps might require custom warm-up actions before the swap. The applicationInitialization configuration element in web.config lets you specify custom initialization actions. The swap operation waits for this custom warm-up to finish before swapping with the target slot. Here's a sample web.config fragment.

```
<system.webServer>
  <applicationInitialization>
    <add initializationPage="/" hostName="[app hostname]" />
    <add initializationPage="/Home/About" hostName="[app hostname]" />
  </applicationInitialization>
</system.webServer>
```

Reference:

<https://docs.microsoft.com/en-us/azure/app-service/deploy-staging-slots#troubleshoot-swaps>