AZ-204.VCEplus.premium.exam.49q

Number: AZ-204
Passing Score: 800
Time Limit: 120 min
File Version: 1.0

AZ-204

Developing Solutions for Microsoft Azure (beta)

Version 1.0

Testlet 1

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Current environment

Windows Server 2016 virtual machine

The 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 tracking stops.
▪ Shipping REST API – This API provides shipping information for use and display on the shipping website.

Shipping Data

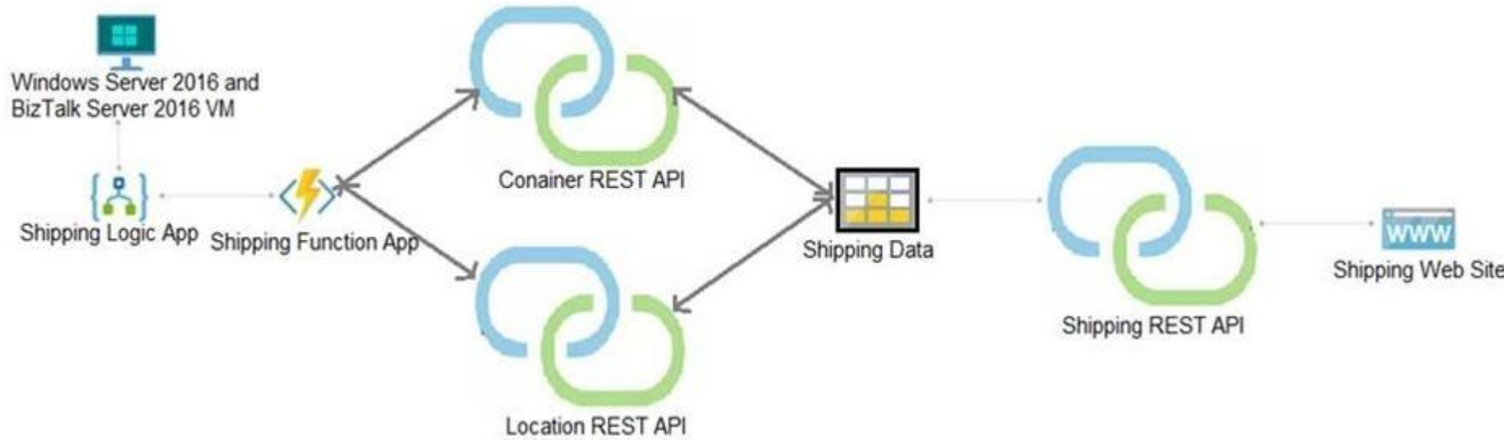
The application uses MongoDB JSON document storage database for all container and transport information.

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:

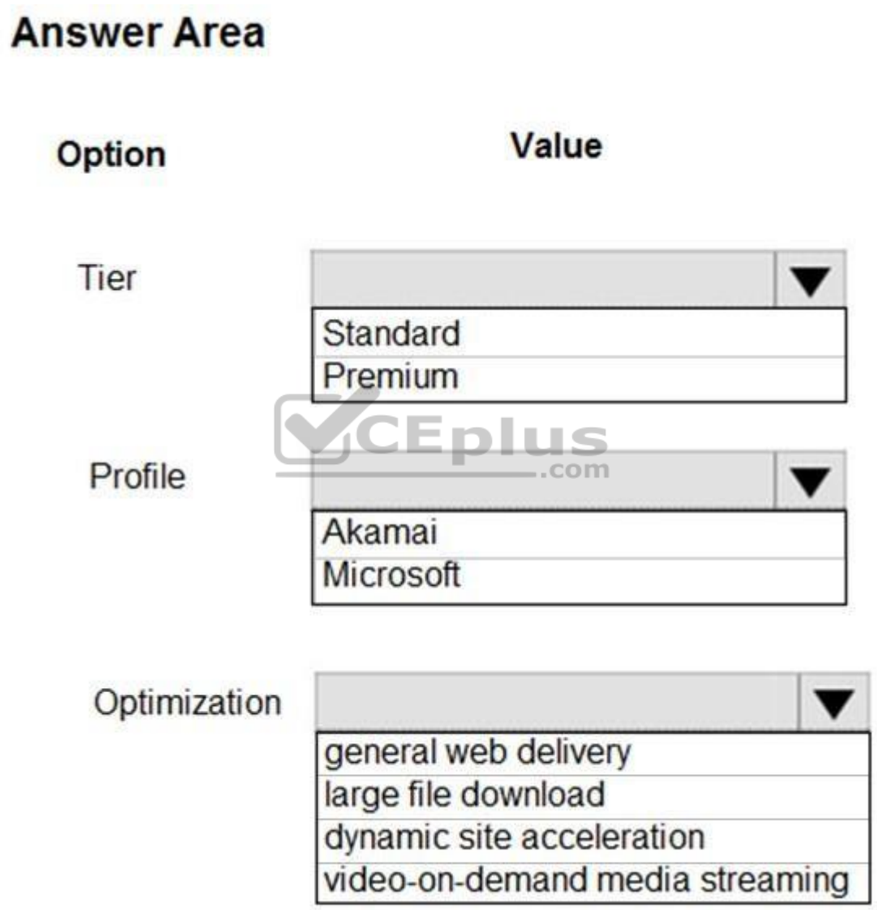
QUESTION 1
HOTSPOT

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:



Correct Answer:

Answer Area

Option	Value
Tier	Standard / Premium
Profile	Akamai / Microsoft
Optimization	general web delivery / large file download / dynamic site acceleration / video-on-demand media streaming

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 Set 2

QUESTION 1
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: Convert the Azure Storage account to a BlockBlobStorage storage account.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Not necessary to convert the account, instead move photo processing to an Azure Function triggered from the blob upload..

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.

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 2
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: Move photo processing to an Azure Function triggered from the blob upload.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:

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 3 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 4
DRAG DROP

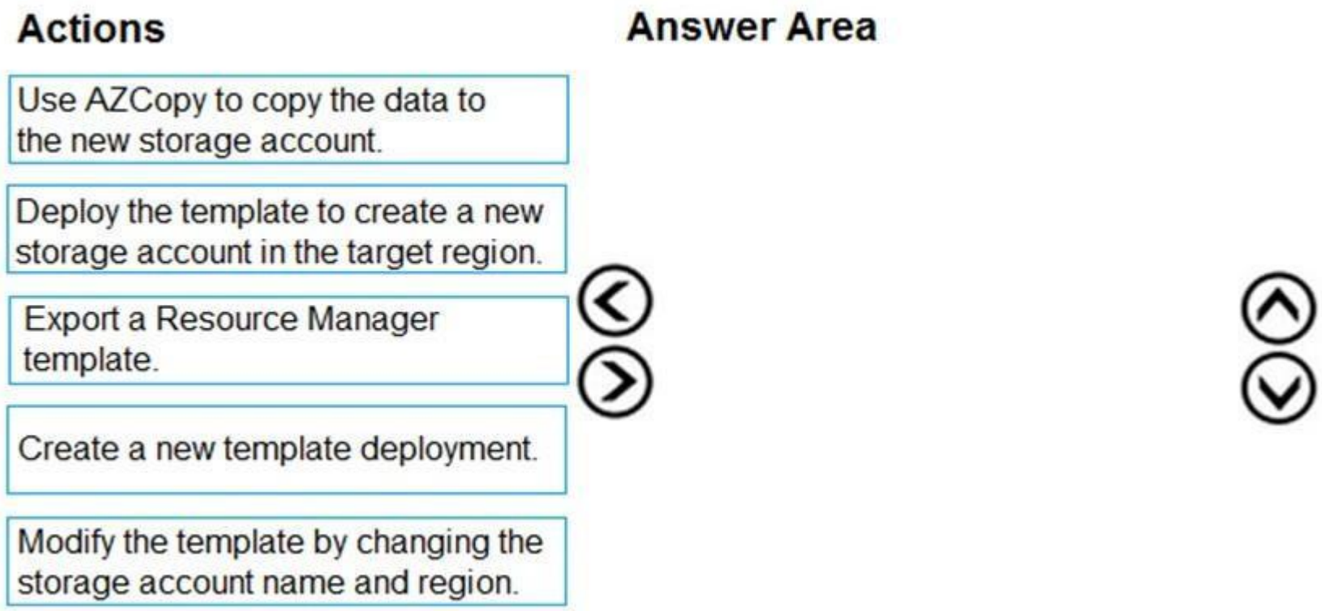
You are developing an application to use Azure Blob storage. You have configured Azure Blob storage to include change feeds.

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.

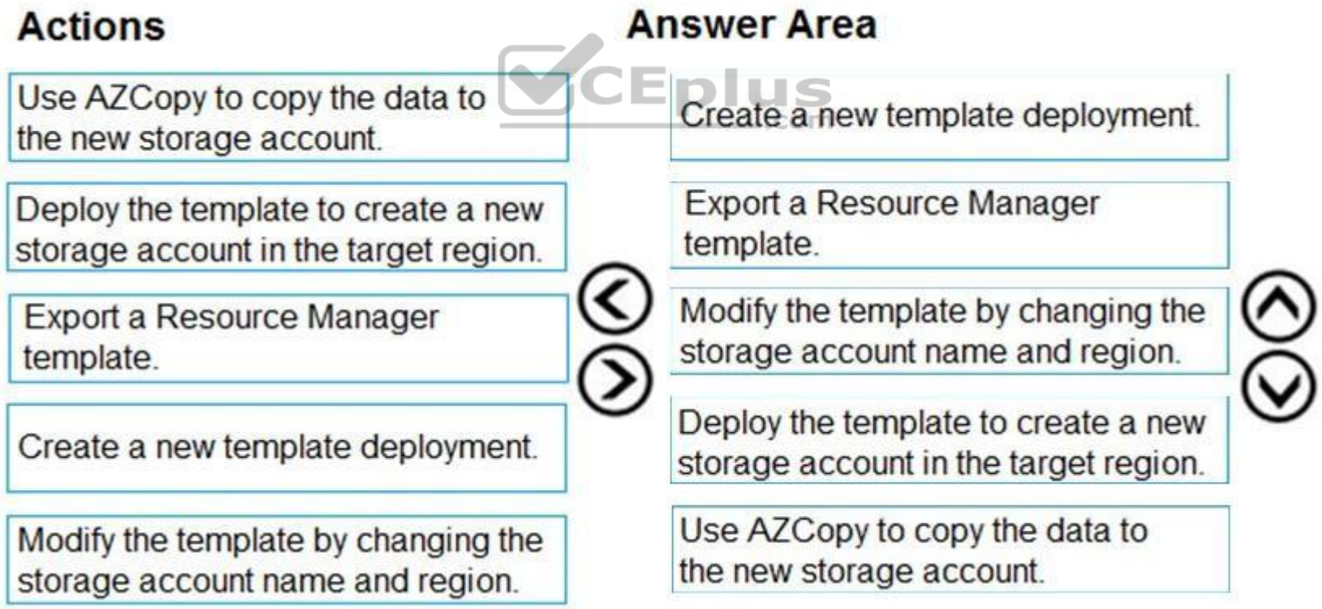
You need to create a copy of the storage account in another region and copy the data.

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:



Correct Answer:



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 5
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:

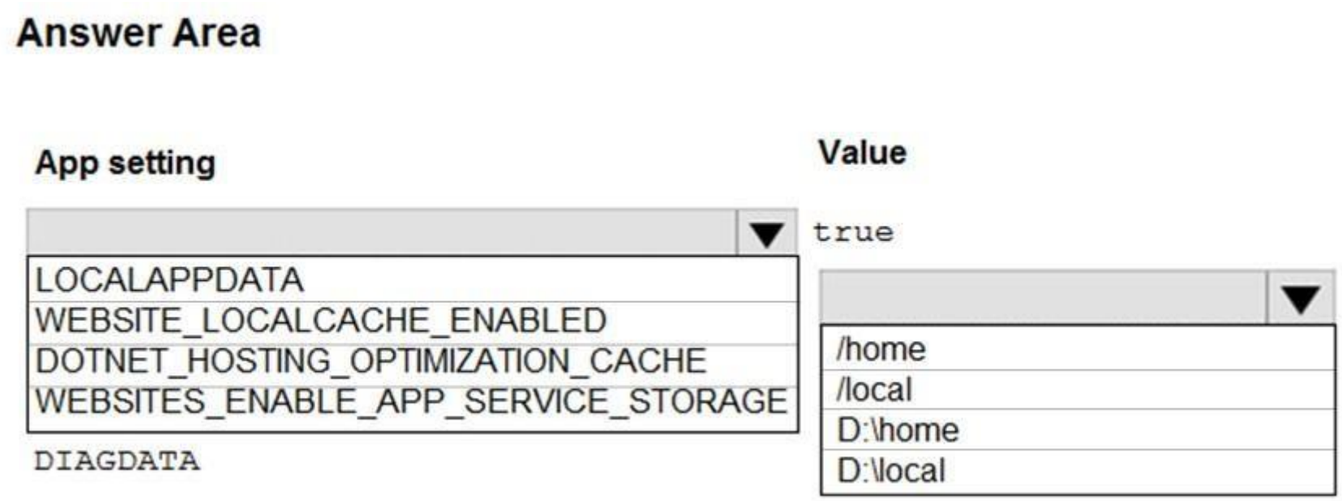
```
public void SaveDiagData(string data)
{
     var path = Environment.GetEnvironmentVariable("DIAGDATA")
     File.WriteAllText(Path.Combine(path, "data"), data);
}
```

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.

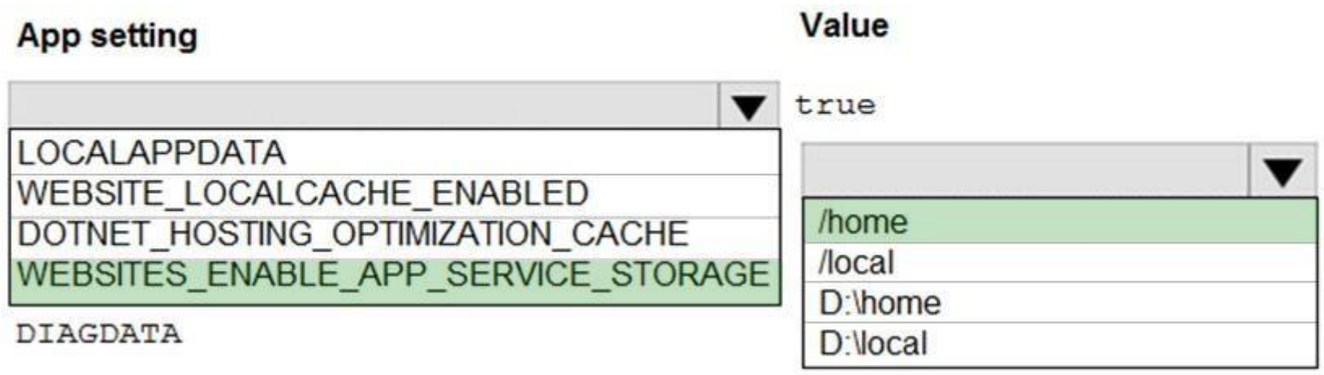
NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:

Answer Area



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 6
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 app.

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

NOTE: Each correct selection is worth one point.

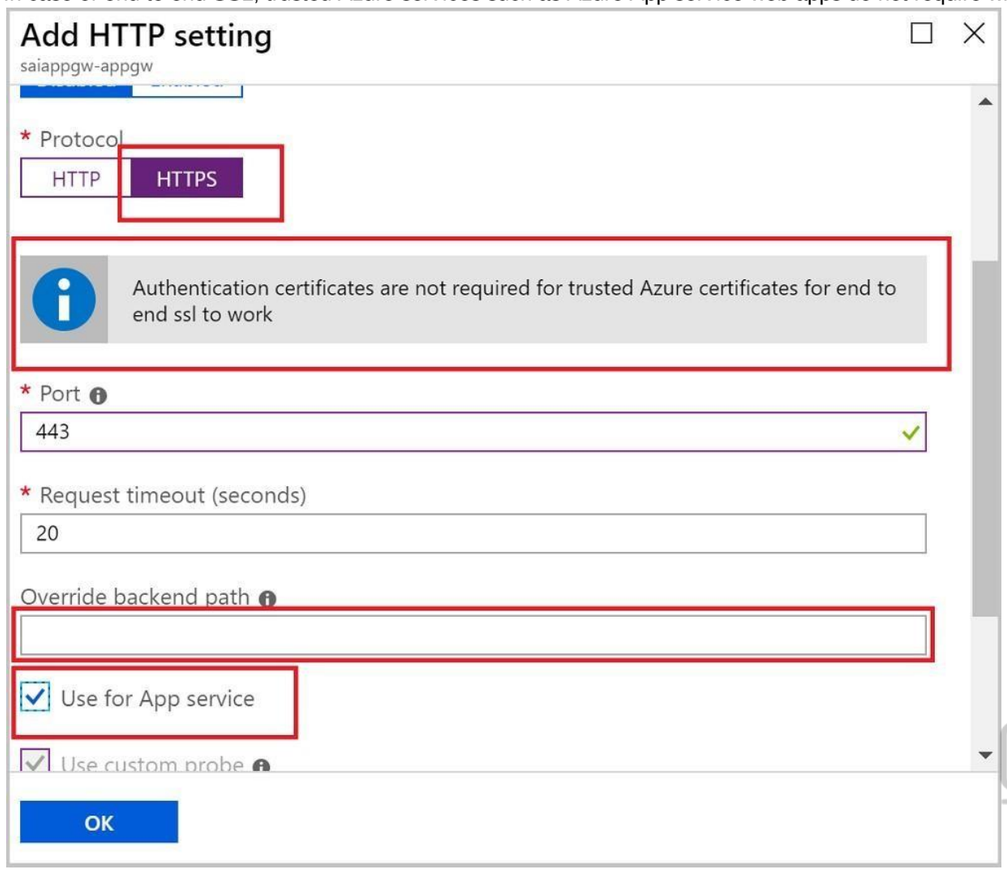
A. In the Azure Application Gateway's HTTP setting, enable the **Use for App service** setting.
B. Convert the web app to run in an Azure App service environment (ASE).
C. Add an authentication certificate for contoso.azurewebsites.net to the Azure Application gateway.
D. In the Azure Application Gateway's 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.



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

QUESTION 7
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 8
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.

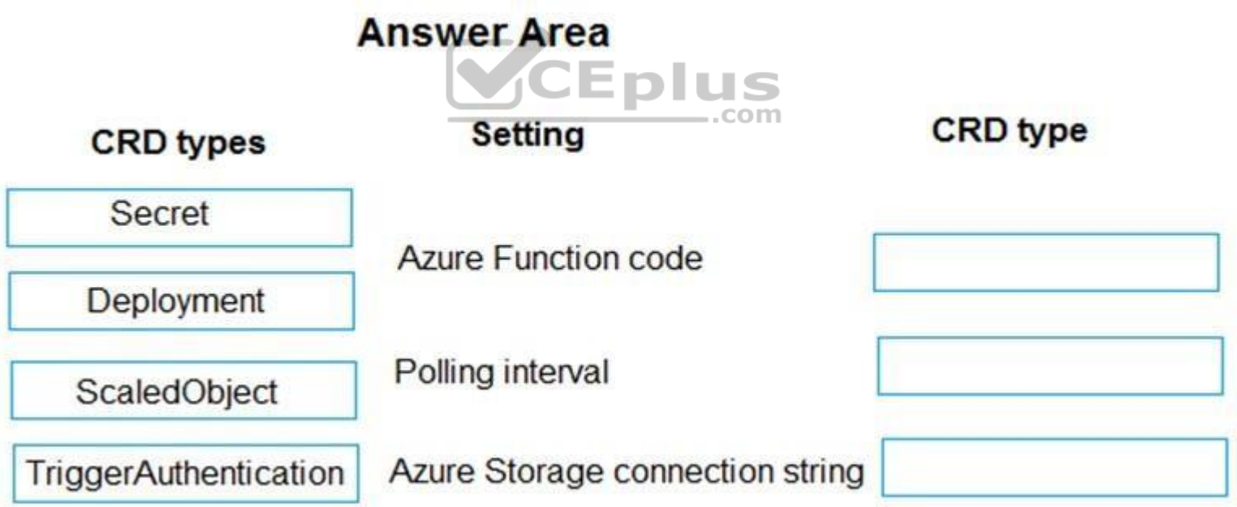
You are preparing to migrate the Azure Function to Kubernetes using Kubernetes-based Event Driven Autoscaling (KEDA).

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:



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 9
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 Git-Hub 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
```

[▼] `--name $webappname - -resource-group myResourceGroup - -sku FREE`

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

[▼] `--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 create
- 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
```

[▼] `--name $webappname - -resource-group myResourceGroup - -sku FREE`

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

[▼] `--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 create
- 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

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 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 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

Testlet 1

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Requirements

ContentAnalysisService

The company's data science group built ContentAnalysisService which accepts user generated content as a string and returns a probable value for inappropriate content. Any values over a specific threshold must be reviewed by an employee of Contoso, Ltd.

You must create an Azure Function named CheckUserContent to perform the content checks.

Costs

You must minimize costs for all Azure services.

Manual review

To review content, the user must authenticate to the website portion of the ContentAnalysisService using their Azure AD credentials. The website is built using React and all pages and API endpoints require authentication. In order to review content a user must be part of a ContentReviewer role. All completed reviews must include the reviewer's email address for auditing purposes.

High availability

All services must run in multiple regions. The failure of any service in a region must not impact overall application availability.

Monitoring

An alert must be raised if the ContentUploadService uses more than 80 percent of available CPU-cores.

Security

You have the following security requirements:
- Any web service accessible over the Internet must be protected from cross site scripting attacks.
- All websites and services must use SSL from a valid root certificate authority.
- Azure Storage access keys must only be stored in memory and must be available only to the service.
- All Internal services must only be accessible from Internal Virtual Networks (VNets) ▪ All parts of the system must support inbound and outbound traffic restrictions. ▪ All service calls must be authenticated by using Azure AD.

User agreements

When a user submits content, they must agree to a user agreement. The agreement allows employees of Contoso.Ltd to review content, store cookies on user devices and track user's IP addresses.

Information regarding agreements is used by multiple divisions within Contoso, Ltd.

User responses must not be lost and must be available to all parties regardless of individual service uptime. The volume of agreements is expected to be in the millions per hour.

Validation testing

When a new version of the ContentAnalysisService is available the previous seven days of content must be processed with the new version to verify that the new version does not significantly deviate from the old version. **Issues**

Users of the ContentUploadService report that they occasionally see HTTP 502 responses on specific pages.

Code

ContentUploadService

```
CS01 apiVersion: '2018-10-01'
CS02 type: Microsoft.ContainerInstance/containerGroups
CS03 location : westus
CS04 name : contentUploadService
CS05 properties :
CS06      containers:
CS07      - name: service
CS08          properties:
CS09          image: contoso/contentUploadService:latest
CS10          ports:
CS11          -  port: 80
CS12             protocol: TCP
CS13          resources:
CS14            requests:
CS15               cpw: 1.0
CS16               memoryInGB: 1.5
CS17
CS18 ipaddress:
CS19      ip: 10.23.121.112
CS20      ports:
CS21        - port: 80
CS22          protocol : TCP
CS23
CS24
CS25 networkProfile
CS26 id :
/subscriptions/98..19/resourceGroups/container/providers/Microsoft.Network/networkProfiles/subnet
```

```
AM01 {
AM02      "id" : "2b079f03-9b06-2d44-98bb-e9182901fcb6",
AM03      "appId" : "7118a7f0-b5c2-4c9d-833c-3d711396fe65",
AM04
AM05      "createdDateTime" : "2019-12-24T06:01:44Z",
AM06      "logoUrl" : null,
AM07      "logoutUrl" : null,
AM08      "name" : "ContentAnalysisService",
AM09
AM10
AM11      "orgRestrictions" : [],
AM12      "parentalControlSettings" : {
AM13       "countriesBlockedForMinors" : [],
AM14         "legalAgeGroupRule" : "Allow"
AM15      },
AM16      "passwordCredentials" : []
AM17 }
```

QUESTION 1 You need to configure the ContentUploadService deployment.

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

NOTE: Each correct selection is worth one point.

A. Add the following markup to line CS23:`types: Private`
B. Add the following markup to line CS24:`osType: Windows`
C. Add the following markup to line CS24:`osType: Linux`
D. Add the following markup to line CS23:`types: Public`

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: All Internal services must only be accessible from Internal Virtual Networks (VNets)

There are three Network Location types – Private, Public and Domain

Reference: https://devblogs.microsoft.com/powershell/setting-network-location-to-private/

QUESTION 2 You need to store the user agreements.

Where should you store the agreement after it is completed?

A. Azure Storage queue
B. Azure Event Hub
C. Azure Service Bus topic
D. Azure Event Grid topic

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Azure Event Hub is used for telemetry and distributed data streaming.

This service provides a single solution that enables rapid data retrieval for real-time processing as well as repeated replay of stored raw data. It can capture the streaming data into a file for processing and analysis.

It has the following characteristics:
low latency
capable of receiving and processing millions of events per second at
least once delivery

Reference: https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services

QUESTION 3
HOTSPOT

You need to implement the bindings for the CheckUserContent function.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: [BlobTrigger(..)]

Box 2: [Blob(..)]
Azure Blob storage output binding for Azure Functions. The output binding allows you to modify and delete blob storage data in an Azure Function.

The attribute's constructor takes the path to the blob and a FileAccess parameter indicating read or write, as shown in the following example:

```
[FunctionName("ResizeImage")]
public static void Run(
    [BlobTrigger("sample-images/{name}")] Stream image,
    [Blob("sample-images-md/{name}", FileAccess.Write)] Stream imageSmall)
{
    ...
}
```

Scenario: You must create an Azure Function named CheckUserContent to perform the content checks.
The company's data science group built ContentAnalysisService which accepts user generated content as a string and returns a probable value for inappropriate content. Any values over a specific threshold must be reviewed by an employee of Contoso, Ltd.

Reference:

https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-storage-blob-output

Question Set 2

QUESTION 1
HOTSPOT

You are developing a ticket reservation system for an airline.

The storage solution for the application must meet the following requirements:

- Ensure at least 99.99% availability and provide low latency.
- Accept reservations event when localized network outages or other unforeseen failures occur.
- Process reservations in the exact sequence as reservations are submitted to minimize overbooking or selling the same seat to multiple travelers.

Allow simultaneous and out-of-order reservations with a maximum five-second tolerance window.

You provision a resource group named airlineResourceGroup in the Azure South-Central US region.

You need to provision a SQL SPI Cosmos DB account to support the app.

How should you complete the Azure CLI commands? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: BoundedStaleness
Bounded staleness: The reads are guaranteed to honor the consistent-prefix guarantee. The reads might lag behind writes by at most "K" versions (that is, "updates") of an item or by "T" time interval. In other words, when you choose bounded staleness, the "staleness" can be configured in two ways:

The number of versions (K) of the item
The time interval (T) by which the reads might lag behind the writes

Incorrect Answers:
Strong
Strong consistency offers a linearizability guarantee. Linearizability refers to serving requests concurrently. The reads are guaranteed to return the most recent committed version of an item. A client never sees an uncommitted or partial write. Users are always guaranteed to read the latest committed write.

Box 2: --enable-automatic-failover true\
For multi-region Cosmos accounts that are configured with a single-write region, enable automatic-failover by using Azure CLI or Azure portal. After you enable automatic failover, whenever there is a regional disaster, Cosmos DB will automatically failover your account.

Question: Accept reservations event when localized network outages or other unforeseen failures occur.

Box 3: --locations'southcentralus=0 eastus=1 westus=2
Need multi-region.

Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels

https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/cosmos-db/manage-with-cli.md

QUESTION 2 You develop
Azure solutions.

You must connect to a No-SQL globally-distributed database by using the .NET API.

You need to create an object to configure and execute requests in the database.

Which code segment should you use?

A. `new Container(EndpointUri, PrimaryKey);`
B. `new Database(Endpoint, PrimaryKey);`
C. `new CosmosClient(EndpointUri, PrimaryKey);`

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Example:
// Create a new instance of the Cosmos Client
this.cosmosClient = new CosmosClient(EndpointUri, PrimaryKey)

//ADD THIS PART TO YOUR CODE
await this.CreateDatabaseAsync();

Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/sql-api-get-started

QUESTION 3
DRAG DROP

You are developing a new page for a website that uses Azure Cosmos DB for data storage. The feature uses documents that have the following format:

```
{
    "name": "John",
    "city" : "Seattle"
}
```

You must display data for the new page in a specific order. You create the following query for the page:

```
SELECT*
FROM People p
ORDER BY p.name, p.city DESC
```

You need to configure a Cosmos DB policy to the support the query.

How should you configure the policy? To answer, drag the appropriate JSON segments to the correct locations. Each JSON segment 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:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: compositeIndexes
You can order by multiple properties. A query that orders by multiple properties requires a composite index.

Box 2: descending

Example: Composite index defined for (name ASC, age ASC):
It is optional to specify the order. If not specified, the order is ascending. {

```
"automatic":true,
"indexingMode":"Consistent",
"includedPaths":[
   {
      "path":"/*"
   }
],
"excludedPaths":[],
"compositeIndexes":[
   [
      {
         "path":"/name",
      },
      {
         "path":"/age",
      }
   ]
]
```

}

QUESTION 4
HOTSPOT

You are building a traffic monitoring system that monitors traffic along six highways. The system produces time series analysis-based reports for each highway. Data from traffic sensors are stored in Azure Event Hub.

Traffic data is consumed by four departments. Each department has an Azure Web App that displays the time series-based reports and contains a WebJob that processes the incoming data from Event Hub. All Web Apps run on App Service Plans with three instances.

Data throughput must be maximized. Latency must be minimized.

You need to implement the Azure Event Hub.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: 6
The number of partitions is specified at creation and must be between 2 and 32.
There are 6 highways.

Box 2: Highway

Reference: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-features

QUESTION 5
DRAG DROP

You are developing a microservices solution. You plan to deploy the solution to a multinode Azure Kubernetes Service (AKS) cluster.

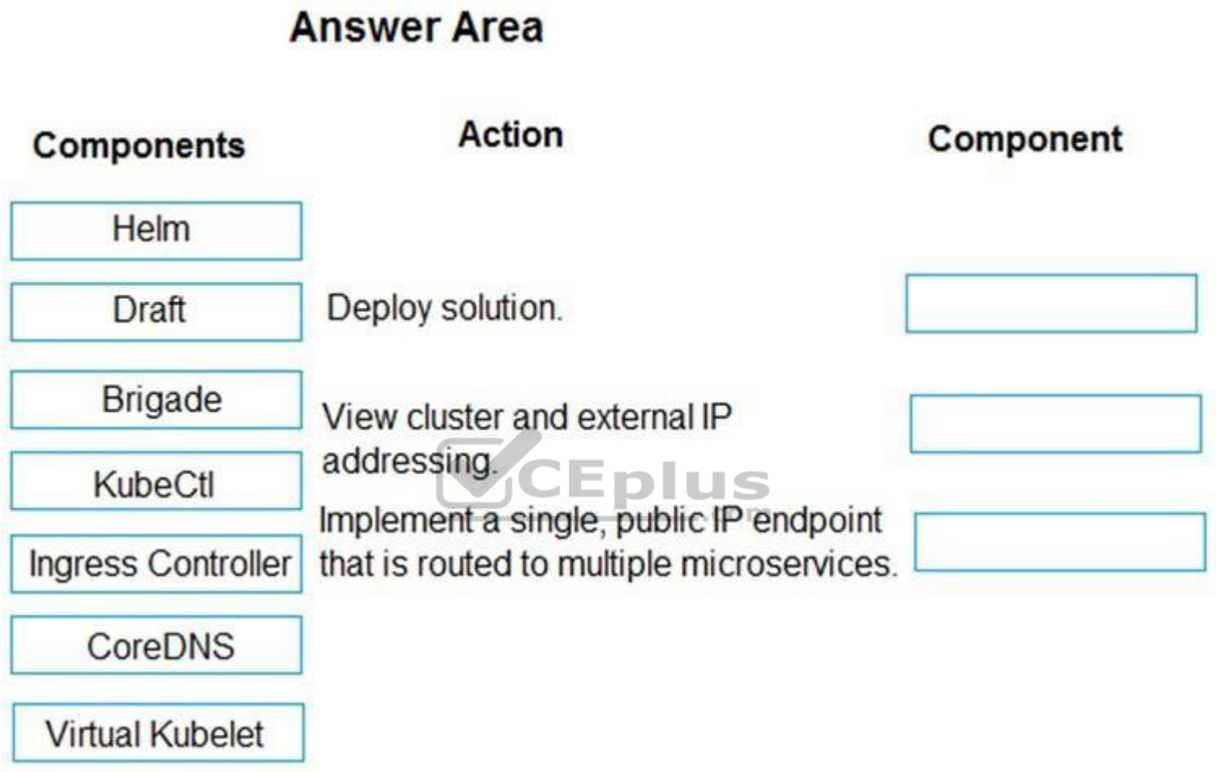
You need to deploy a solution that includes the following features:

▪ reverse proxy capabilities ▪
configurable traffic routing
▪ TLS termination with a custom certificate

Which component should you use? To answer, drag the appropriate components to the correct requirements. Each component 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:



Correct Answer:

Answer Area

Components	Action	Component
Helm		
Draft	Deploy solution.	Helm
Brigade	View cluster and external IP addressing.	KubeCtl
KubeCtl		
Ingress Controller	Implement a single, public IP endpoint that is routed to multiple microservices.	Ingress Controller
CoreDNS		
Virtual Kubelet		

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Helm
To create the ingress controller, use Helm to install nginx-ingress.

Box 2: kubectl
To find the cluster IP address of a Kubernetes pod, use the kubectl get pod command on your local machine, with the option -o wide .

Box 3: Ingress Controller
An ingress controller is a piece of software that provides reverse proxy, configurable traffic routing, and TLS termination for Kubernetes services. Kubernetes ingress resources are used to configure the ingress rules and routes for individual Kubernetes services.

Incorrect Answers:
Virtual Kubelet: Virtual Kubelet is an open-source Kubernetes kubelet implementation that masquerades as a kubelet. This allows Kubernetes nodes to be backed by Virtual Kubelet providers such as serverless cloud container platforms.

CoreDNS: CoreDNS is a flexible, extensible DNS server that can serve as the Kubernetes cluster DNS. Like Kubernetes, the CoreDNS project is hosted by the CNCF.

Reference: https://docs.microsoft.com/bs-cyrl-ba/azure/aks/ingress-basic

https://www.digitalocean.com/community/tutorials/how-to-inspect-kubernetes-networking

Testlet 1

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Requirements

ContentAnalysisService

The company's data science group built ContentAnalysisService which accepts user generated content as a string and returns a probable value for inappropriate content. Any values over a specific threshold must be reviewed by an employee of Contoso, Ltd.

You must create an Azure Function named CheckUserContent to perform the content checks.

Costs

You must minimize costs for all Azure services.

Manual review

To review content, the user must authenticate to the website portion of the ContentAnalysisService using their Azure AD credentials. The website is built using React and all pages and API endpoints require authentication. In order to review content a user must be part of a ContentReviewer role. All completed reviews must include the reviewer's email address for auditing purposes.

High availability

All services must run in multiple regions. The failure of any service in a region must not impact overall application availability.

Monitoring

An alert must be raised if the ContentUploadService uses more than 80 percent of available CPU-cores.

Security

You have the following security requirements:
▪ Any web service accessible over the Internet must be protected from cross site scripting attacks.
▪ All websites and services must use SSL from a valid root certificate authority.
▪ Azure Storage access keys must only be stored in memory and must be available only to the service.
▪ All Internal services must only be accessible from Internal Virtual Networks (VNets) ▪ All parts of the system must support inbound and outbound traffic restrictions. ▪ All service calls must be authenticated by using Azure AD.

User agreements

When a user submits content, they must agree to a user agreement. The agreement allows employees of Contoso.Ltd to review content, store cookies on user devices and track user's IP addresses.

Information regarding agreements is used by multiple divisions within Contoso, Ltd.

User responses must not be lost and must be available to all parties regardless of individual service uptime. The volume of agreements is expected to be in the millions per hour.

Validation testing

When a new version of the ContentAnalysisService is available the previous seven days of content must be processed with the new version to verify that the new version does not significantly deviate from the old version. **Issues**

Users of the ContentUploadService report that they occasionally see HTTP 502 responses on specific pages.

Code

ContentUploadService

```
CS01 apiVersion: '2018-10-01'
CS02 type: Microsoft.ContainerInstance/containerGroups
CS03 location : westus
CS04 name : contentUploadService
CS05 properties :
CS06      containers:
CS07      - name: service
CS08          properties:
CS09          image: contoso/contentUploadService:latest
CS10          ports:
CS11          -  port: 80
CS12             protocol: TCP
CS13          resources:
CS14            requests:
CS15               cpw: 1.0
CS16               memoryInGB: 1.5
CS17
CS18 ipaddress:
CS19      ip: 10.23.121.112
CS20      ports:
CS21        - port: 80
CS22          protocol : TCP
CS23
CS24
CS25 networkProfile
CS26 id :
/subscriptions/98..19/resourceGroups/container/providers/Microsoft.Network/networkProfiles/subnet
```

```
AM01 {
AM02      "id" : "2b079f03-9b06-2d44-98bb-e9182901fcb6",
AM03      "appId" : "7118a7f0-b5c2-4c9d-833c-3d711396fe65",
AM04
AM05      "createdDateTime" : "2019-12-24T06:01:44Z",
AM06      "logoUrl" : null,
AM07      "logoutUrl" : null,
AM08      "name" : "ContentAnalysisService",
AM09
AM10
AM11      "orgRestrictions" : [],
AM12      "parentalControlSettings" : {
AM13       "countriesBlockedForMinors" : [],
AM14        "legalAgeGroupRule" : "Allow"
AM15      },
AM16      "passwordCredentials" : []
AM17 }
```

QUESTION 1
DRAG DROP

You need to add markup at line AM04 to implement the ContentReview role.

How should you complete the markup? To answer, drag the appropriate json segments to the correct locations. Each json segment 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:

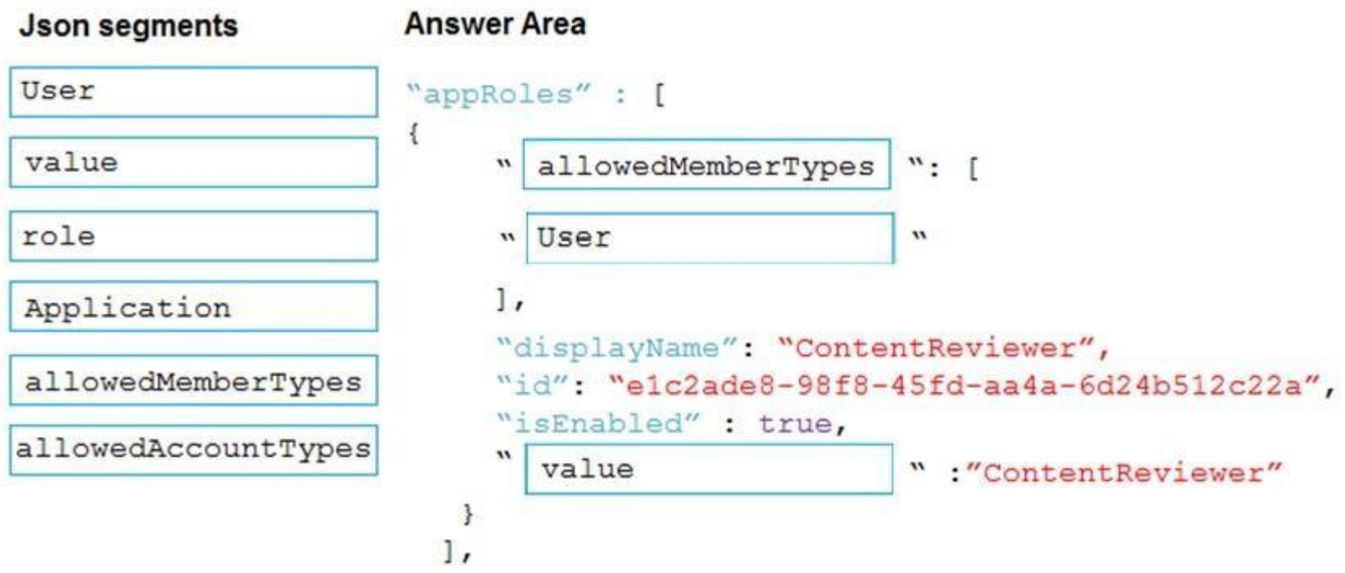
Json segments

- User
- value
- role
- Application
- allowedMemberTypes
- allowedAccountTypes

Answer Area

```
"appRoles" : [
{
     "  [          ]  ": [
     "  [          ]  "
     ],
     "displayName": "ContentReviewer",
     "id": "e1c2ade8-98f8-45fd-aa4a-6d24b512c22a",
     "isEnabled" : true,
     "  [          ]  " :"ContentReviewer"
  }
],
```

Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: allowedMemberTypes
allowedMemberTypes specifies whether this app role definition can be assigned to users and groups by setting to "User", or to other applications (that are accessing this application in daemon service scenarios) by setting to "Application", or to both.

Note: The following example shows the appRoles that you can assign to users.

```
"appId": "8763f1c4-f988-489c-a51e-158e9ef97d6a",
"appRoles": [
  {
    "allowedMemberTypes": [
      "User"
    ],
    "displayName": "Writer",
    "id": "d1c2ade8-98f8-45fd-aa4a-6d06b947c66f",
    "isEnabled": true,
    "description": "Writers Have the ability to create tasks.",
    "value": "Writer"
  }
 ],
"availableToOtherTenants": false,
```

Box 2: User
Scenario: In order to review content a user must be part of a ContentReviewer role.

Box 3: value value specifies the value which will be included in the roles claim in authentication and access tokens.

Reference: https://docs.microsoft.com/en-us/graph/api/resources/approle

QUESTION 2

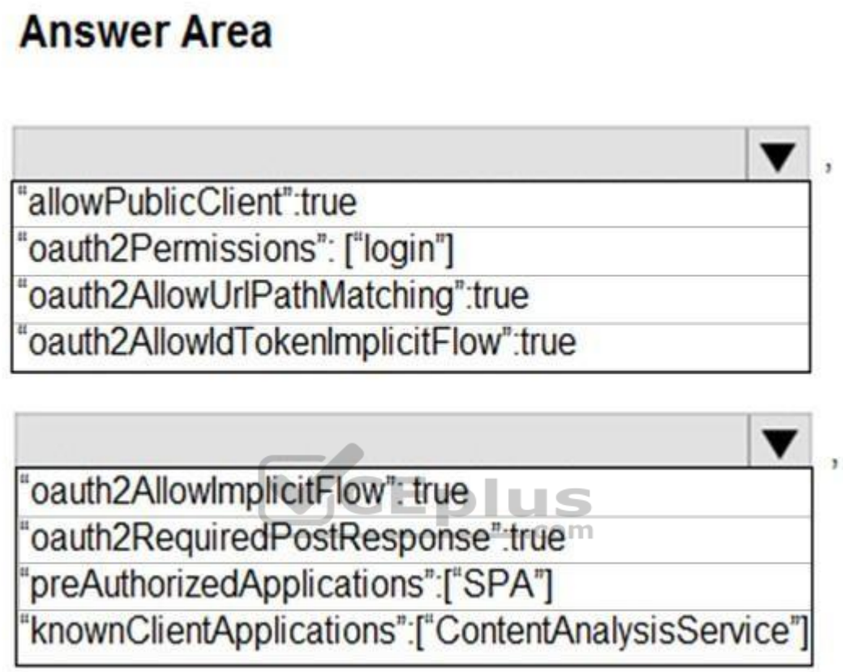
HOTSPOT

You need to add code at line AM09 to ensure that users can review content using ContentAnalysisService.

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

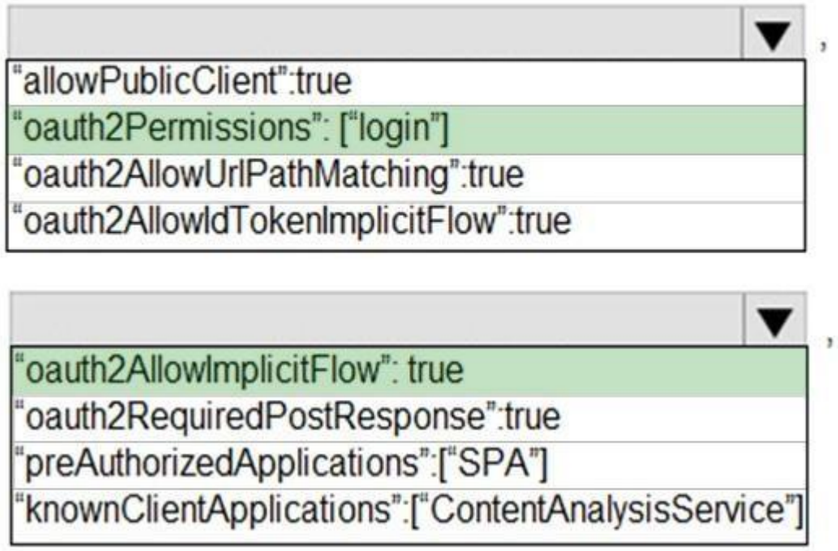
NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:

Answer Area



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: "oauth2Permissions": ["login"] oauth2Permissions specifies the collection of OAuth 2.0 permission scopes that the web API (resource) app exposes to client apps. These permission scopes may be granted to client apps during consent.

Box 2: "oauth2AllowImplicitFlow":true
For applications (Angular, Ember.js, React.js, and so on), Microsoft identity platform supports the OAuth 2.0 Implicit Grant flow.

Reference: https://docs.microsoft.com/en-us/azure/active-directory/develop/reference-app-manifest

QUESTION 3
HOTSPOT

You need to ensure that network security policies are met.

How should you configure network security? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Technology	Value
SSL certificate	Valid root certificate / Self-signed certificate
Proxy type	nginx / Azure Application Gateway

Correct Answer:

Answer Area

Technology	Value
SSL certificate	Valid root certificate / Self-signed certificate
Proxy type	nginx / Azure Application Gateway

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Valid root certificate
Scenario: All websites and services must use SSL from a valid root certificate authority.

Box 2: Azure Application Gateway

Scenario:
▪ Any web service accessible over the Internet must be protected from cross site scripting attacks. ▪ All Internal services must only be accessible from Internal Virtual Networks (VNets) ▪ All parts of the system must support inbound and outbound traffic restrictions.

Azure Web Application Firewall (WAF) on Azure Application Gateway provides centralized protection of your web applications from common exploits and vulnerabilities. Web applications are increasingly targeted by malicious attacks that exploit commonly known vulnerabilities. SQL injection and cross-site scripting are among the most common attacks.

Application Gateway supports autoscaling, SSL offloading, and end-to-end SSL, a web application firewall (WAF), cookie-based session affinity, URL path-based routing, multisite hosting, redirection, rewrite HTTP headers and other features.

Note: Both Nginx and Azure Application Gateway act as a reverse proxy with Layer 7 load-balancing features plus a WAF to ensure strong protection against common web vulnerabilities and exploits.

You can modify Nginx web server configuration/SSL for X-XSS protection. This helps to prevent cross-site scripting exploits by forcing the injection of HTTP headers with X-XSS protection.

Reference:
https://docs.microsoft.com/en-us/azure/web-application-firewall/ag/ag-overview

https://www.upguard.com/articles/10-tips-for-securing-your-nginx-deployment

Testlet 2

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Current environment

Windows Server 2016 virtual machine

The 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 tracking stops.
▪ Shipping REST API – This API provides shipping information for use and display on the shipping website.

Shipping Data

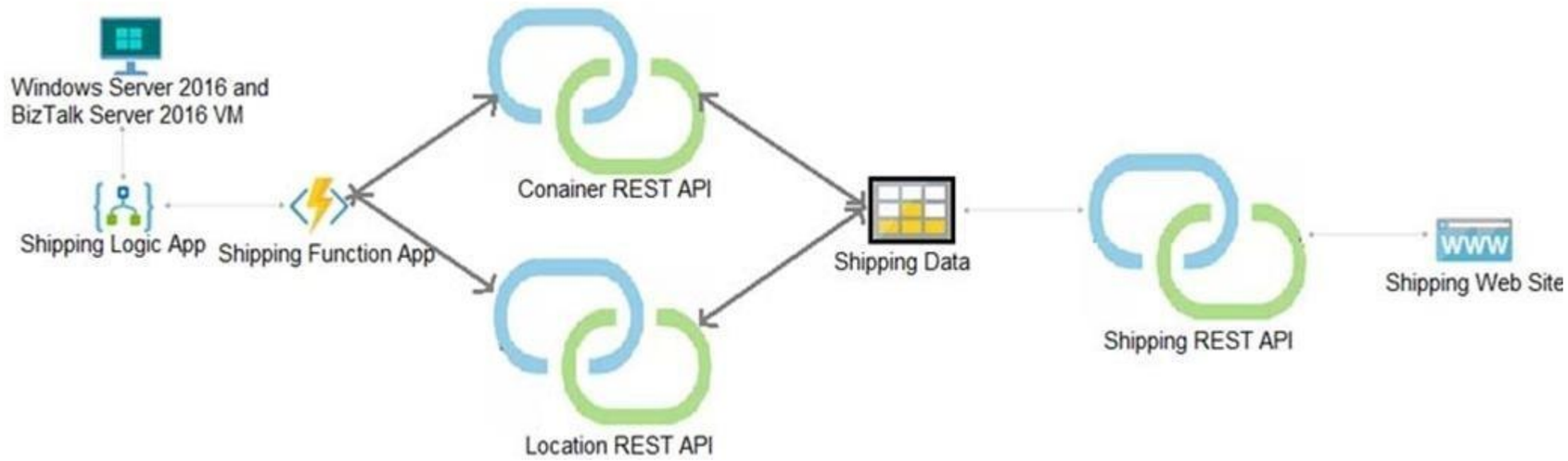
The application uses MongoDB JSON document storage database for all container and transport information.

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.
```

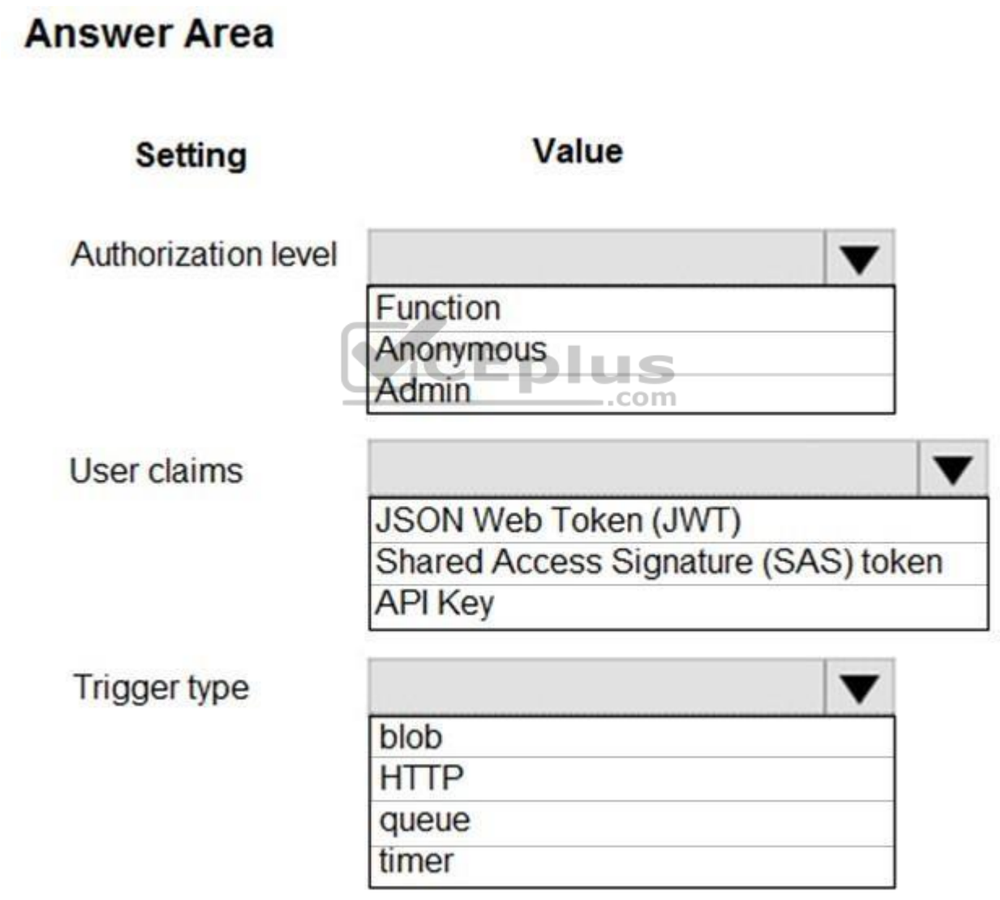
QUESTION 1
HOTSPOT

You need to secure the Shipping Function app.

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

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:

Answer Area

Setting	Value
Authorization level	Function / Anonymous / Admin
User claims	JSON Web Token (JWT) / Shared Access Signature (SAS) token / API Key
Trigger type	blob / HTTP / queue / timer

Section: [none]
Explanation

Explanation/Reference:
Explanation:

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

Box 1: Function

Box 2: JSON based Token (JWT)
Azure AD uses JSON based tokens (JWTs) that contain claims

Box 3: HTTP
How a web app delegates sign-in to Azure AD and obtains a token
User authentication happens via the browser. The OpenID protocol uses standard HTTP protocol messages.

Reference: https://docs.microsoft.com/en-us/azure/active-directory/develop/authentication-scenarios

QUESTION 2 You need to secure the
Shipping Logic App.

What should you use?

A. Azure App Service Environment (ASE)

B. Integration Service Environment (ISE)
C. VNet service endpoint
D. Azure AD B2B integration

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: The Shipping Logic App requires secure resources to the corporate VNet and use dedicated storage resources with a fixed costing model.

You can access to Azure Virtual Network resources from Azure Logic Apps by using integration service environments (ISEs).

Sometimes, your logic apps and integration accounts need access to secured resources, such as virtual machines (VMs) and other systems or services, that are inside an Azure virtual network. To set up this access, you can create an integration service environment (ISE) where you can run your logic apps and create your integration accounts.

Reference: https://docs.microsoft.com/en-us/azure/logic-apps/connect-virtual-network-vnet-isolated-environment-overview

Question Set 3

QUESTION 1 Your company is developing an Azure API.

You need to implement authentication for the Azure API. You have the following requirements:

- All API calls must be secure.
- Callers to the API must not send credentials to the API.

Which authentication mechanism should you use?

A. Basic
B. Anonymous
C. Managed identity
D. Client certificate

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use the authentication-managed-identity policy to authenticate with a backend service using the managed identity of the API Management service. This policy essentially uses the managed identity to obtain an access token from Azure Active Directory for accessing the specified resource. After successfully obtaining the token, the policy will set the value of the token in the Authorization header using the Bearer scheme.

Reference: https://docs.microsoft.com/bs-cyrl-ba/azure/api-management/api-management-authentication-policies

QUESTION 2 You are a developer for a SaaS company that offers many web services.

All web services for the company must meet the following requirements:

- Use API Management to access the services
- Use OpenID Connect for authentication
- Prevent anonymous usage

A recent security audit found that several web services can be called without any authentication.

Which API Management policy should you implement?

A. jsonp
B. authentication-certificate
C. check-header
D. validate-jwt

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Add the validate-jwt policy to validate the OAuth token for every incoming request.

Incorrect Answers:
A: The jsonp policy adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients. JSONP is a method used in JavaScript programs to request data from a server in a different domain. JSONP bypasses the limitation enforced by most web browsers where access to web pages must be in the same domain.

JSONP - Adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients.

Reference: https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-protect-backend-with-aad

QUESTION 3
DRAG DROP

Contoso, Ltd. provides an API to customers by using Azure API Management (APIM). The API authorizes users with a JWT token.

You must implement response caching for the APIM gateway. The caching mechanism must detect the user ID of the client that accesses data for a given location and cache the response for that user ID.

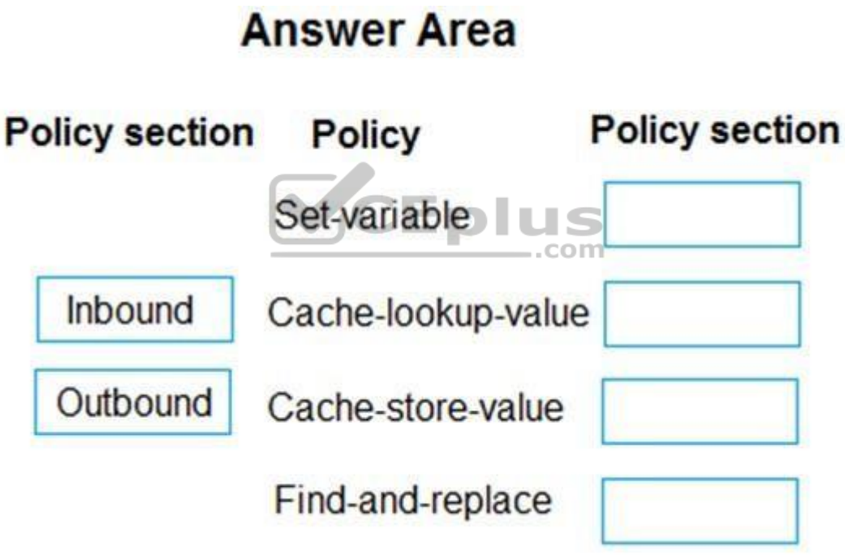
You need to add the following policies to the policies file:

- a set-variable policy to store the detected user identity
- a cache-lookup-value policy
- a cache-store-value policy
- a find-and-replace policy to update the response body with the user profile information

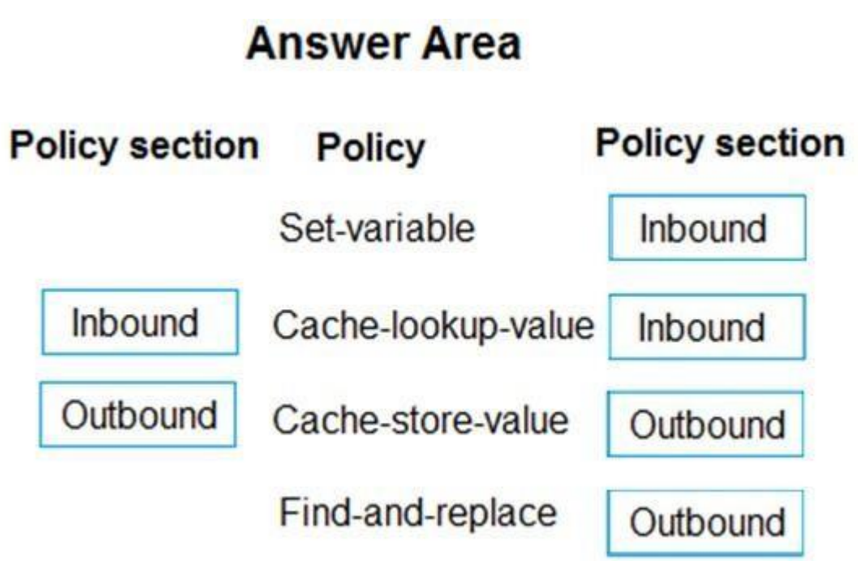
To which policy section should you add the policies? To answer, drag the appropriate sections to the correct policies. Each section may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Inbound.
A set-variable policy to store the detected user identity. Example:

```
<policies>
   <inbound>
      <!-- How you determine user identity is application dependent -->
      <set-variable
name="enduserid"
       value="@(context.Request.Headers.GetValueOrDefault("Authorization","").Split(' ')[1].AsJwt()?.Subject)" />
```

Box 2: Inbound
A cache-lookup-value policy
Example:

```
   <inbound>
      <base />
      <cache-lookup vary-by-developer="true | false" vary-by-developer-groups="true | false" downstream-caching-type="none | private | public" must-revalidate="true | false">
         <vary-by-query-parameter>parameter name</vary-by-query-parameter> <!-- optional, can repeated several times -->
      </cache-lookup>
</inbound>
```

Box 3: Outbound A cache-
store-value policy.
Example:

```
  <outbound>
<base />
      <cache-store duration="3600" />
   </outbound>
```

Box 4: Outbound
A find-and-replace policy to update the response body with the user profile information. Example:

```
<outbound>
      <!-- Update response body with user profile-->
```

```
    <find-and-replace
from="'$userprofile$'"
        to="@((string)context.Variables["userprofile"])" />
    <base />
</outbound>
```

Reference: https://docs.microsoft.com/en-us/azure/api-management/api-management-caching-policies
https://docs.microsoft.com/en-us/azure/api-management/api-management-sample-cache-by-key

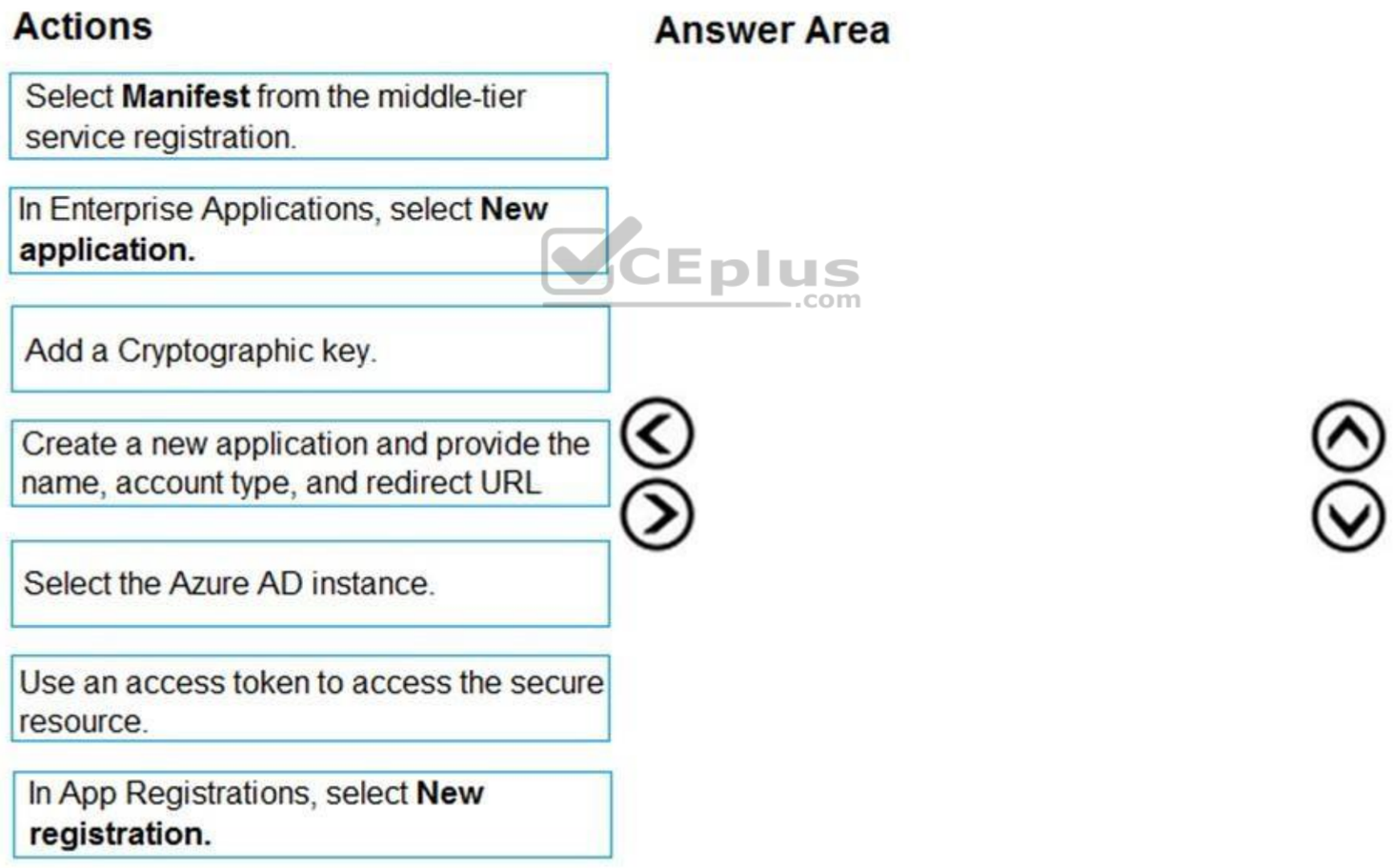
QUESTION 4
DRAG DROP

You develop a web application.

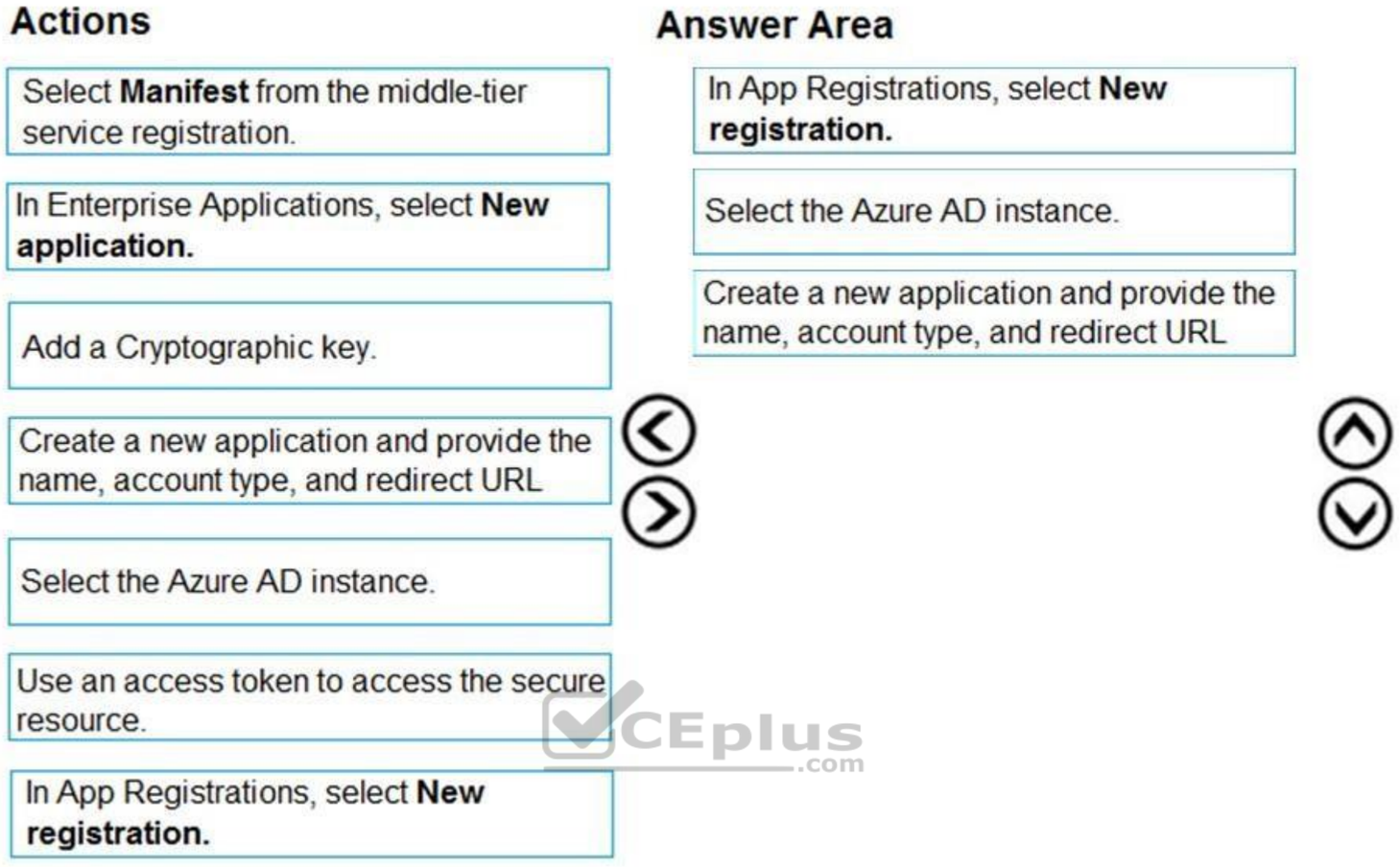
You need to register the application with an active Azure Active Directory (Azure AD) tenant.

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

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Register a new application using the Azure portal
1. Sign in to the Azure portal using either a work or school account or a personal Microsoft account.
2. If your account gives you access to more than one tenant, select your account in the upper right corner. Set your portal session to the Azure AD tenant that you want.
3. Search for and select Azure Active Directory. Under Manage, select App registrations.
4. Select New registration. (Step 1)
5. In Register an application, enter a meaningful application name to display to users.
6. Specify who can use the application. Select the Azure AD instance. (Step 2)
7. Under Redirect URI (optional), select the type of app you're building: Web or Public client (mobile & desktop). Then enter the redirect URI, or reply URL, for your application. (Step 3)
8. When finished, select Register.

QUESTION 5
You have a new Azure subscription. You are developing an internal website for employees to view sensitive data. The website uses Azure Active Directory (Azure AD) for authentication.

You need to implement multifactor authentication for the website.

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

NOTE: Each correct selection is worth one point.

A. Configure the website to use Azure AD B2C.
B. In Azure AD, create a new conditional access policy.
C. Upgrade to Azure AD Premium.
D. In Azure AD, enable application proxy.
E. In Azure AD conditional access, enable the baseline policy.

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:
Explanation:
B: MFA Enabled by conditional access policy. It is the most flexible means to enable two-step verification for your users. Enabling using conditional access policy only works for Azure MFA in the cloud and is a premium feature of Azure AD.

C: Multi-Factor Authentication comes as part of the following offerings:
▪ Azure Active Directory Premium licenses - Full featured use of Azure Multi-Factor Authentication Service (Cloud) or Azure Multi-Factor Authentication Server (On-premises). ▪ Multi-Factor Authentication for Office 365
▪ Azure Active Directory Global Administrators

Reference: https://docs.microsoft.com/en-us/azure/active-directory/authentication/howto-mfa-getstarted

QUESTION 6
DRAG DROP

You are developing an application. You have an Azure user account that has access to two subscriptions.

You need to retrieve a storage account key secret from Azure Key Vault.

In which order should you arrange the PowerShell commands to develop the solution? To answer, move all commands from the list of commands to the answer area and arrange them in the correct order.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Get-AzSubscription
If you have multiple subscriptions, you might have to specify the one that was used to create your key vault. Enter the following to see the subscriptions for your account:
Get-AzSubscription

Step 2: Set-AzContext -SubscriptionId
To specify the subscription that's associated with the key vault you'll be logging, enter: Set-AzContext -SubscriptionId <subscriptionID>

Step 3: Get-AzStorageAccountKey You must get that storage account key.

Step 4: $secretvalue = ConvertTo-SecureString <storageAccountKey> -AsPlainText -Force
Set-AzKeyVaultSecret -VaultName <vaultName> -Name <secretName> -SecretValue $secretvalue

After retrieving your secret (in this case, your storage account key), you must convert that key to a secure string, and then create a secret with that value in your key vault.

Step 5: Get-AzKeyVaultSecret
Next, get the URI for the secret you created. You'll need this URI in a later step to call the key vault and retrieve your secret. Run the following PowerShell command and make note of the ID value, which is the secret's URI:

Get-AzKeyVaultSecret –VaultName <vaultName>

Reference:
https://docs.microsoft.com/bs-latn-ba/Azure/key-vault/key-vault-key-rotation-log-monitoring

Testlet 1

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Requirements

ContentAnalysisService

The company's data science group built ContentAnalysisService which accepts user generated content as a string and returns a probable value for inappropriate content. Any values over a specific threshold must be reviewed by an employee of Contoso, Ltd.

You must create an Azure Function named CheckUserContent to perform the content checks.

Costs

You must minimize costs for all Azure services.

Manual review

To review content, the user must authenticate to the website portion of the ContentAnalysisService using their Azure AD credentials. The website is built using React and all pages and API endpoints require authentication. In order to review content a user must be part of a ContentReviewer role. All completed reviews must include the reviewer's email address for auditing purposes.

High availability

All services must run in multiple regions. The failure of any service in a region must not impact overall application availability.

Monitoring

An alert must be raised if the ContentUploadService uses more than 80 percent of available CPU-cores.

Security

You have the following security requirements:
▪ Any web service accessible over the Internet must be protected from cross site scripting attacks.
▪ All websites and services must use SSL from a valid root certificate authority.
▪ Azure Storage access keys must only be stored in memory and must be available only to the service.
▪ All Internal services must only be accessible from Internal Virtual Networks (VNets) ▪ All parts of the system must support inbound and outbound traffic restrictions. ▪ All service calls must be authenticated by using Azure AD.

User agreements

When a user submits content, they must agree to a user agreement. The agreement allows employees of Contoso.Ltd to review content, store cookies on user devices and track user's IP addresses.

Information regarding agreements is used by multiple divisions within Contoso, Ltd.

User responses must not be lost and must be available to all parties regardless of individual service uptime. The volume of agreements is expected to be in the millions per hour.

Validation testing

When a new version of the ContentAnalysisService is available the previous seven days of content must be processed with the new version to verify that the new version does not significantly deviate from the old version. **Issues**

Users of the ContentUploadService report that they occasionally see HTTP 502 responses on specific pages.

Code

ContentUploadService

```
CS01 apiVersion: '2018-10-01'
CS02 type: Microsoft.ContainerInstance/containerGroups
CS03 location : westus
CS04 name : contentUploadService
CS05 properties :
CS06      containers:
CS07      - name: service
CS08          properties:
CS09          image: contoso/contentUploadService:latest
CS10          ports:
CS11          -  port: 80
CS12             protocol: TCP
CS13          resources:
CS14            requests:
CS15               cpw: 1.0
CS16               memoryInGB: 1.5
CS17
CS18 ipaddress:
CS19      ip: 10.23.121.112
CS20      ports:
CS21        - port: 80
CS22          protocol : TCP
CS23
CS24
CS25 networkProfile
CS26 id :
/subscriptions/98..19/resourceGroups/container/providers/Microsoft.Network/networkProfiles/subnet
```

```
AM01 {
AM02      "id" : "2b079f03-9b06-2d44-98bb-e9182901fcb6",
AM03      "appId" : "7118a7f0-b5c2-4c9d-833c-3d711396fe65",
AM04
AM05      "createdDateTime" : "2019-12-24T06:01:44Z",
AM06      "logoUrl" : null,
AM07      "logoutUrl" : null,
AM08      "name" : "ContentAnalysisService",
AM09
AM10
AM11      "orgRestrictions" : [],
AM12      "parentalControlSettings" : {
AM13       "countriesBlockedForMinors" : [],
AM14        "legalAgeGroupRule" : "Allow"
AM15      },
AM16      "passwordCredentials" : []
AM17 }
```

QUESTION 1 You need to monitor ContentUploadService accourding to the requirements.

Which command should you use?

A. `az monitor metrics alert create -n alert -g … - -scopes … - -condition "avg Percentage CPU > 8"`
B. `az monitor metrics alert create -n alert -g … - -scopes … - -condition "avg Percentage CPU > 800"`
C. `az monitor metrics alert create -n alert -g … - -scopes … - -condition "CPU Usage > 800"`
D. `az monitor metrics alert create -n alert -g … - -scopes … - -condition "CPU Usage > 8"`

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: An alert must be raised if the ContentUploadService uses more than 80 percent of available CPU-cores

Reference:
https://docs.microsoft.com/sv-se/cli/azure/monitor/metrics/alert

Question Set 2

QUESTION 1
You are developing an ASP.NET Core Web API web service. The web service uses Azure Application Insights for all telemetry and dependency tracking. The web service reads and writes data to a database other than Microsoft SQL Server.

You need to ensure that dependency tracking works for calls to the third-party database.

Which two dependency telemetry properties should you use? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Telemetry.Context.Cloud.RoleInstance
B. Telemetry.Id
C. Telemetry.Name
D. Telemetry.Context.Operation.Id
E. Telemetry.Context.Session.Id

Correct Answer: BD
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Example:

```
public async Task Enqueue(string payload)
{
    // StartOperation is a helper method that initializes the telemetry item     // and allows correlation of
this operation with its parent and children.     var operation =
telemetryClient.StartOperation<DependencyTelemetry>("enqueue " + queueName);

    operation.Telemetry.Type = "Azure Service Bus";
operation.Telemetry.Data = "Enqueue " + queueName;

    var message = new BrokeredMessage(payload);
    // Service Bus queue allows the property bag to pass along with the message.
    // We will use them to pass our correlation identifiers (and other context)
// to the consumer.
    message.Properties.Add("ParentId", operation.Telemetry.Id);
message.Properties.Add("RootId", operation.Telemetry.Context.Operation.Id);
```

Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/app/custom-operations-tracking

QUESTION 2
HOTSPOT

You are using Azure Front Door Service.

You are expecting inbound files to be compressed by using Brotli compression. You discover that inbound XML files are not compressed. The files are 9 megabytes (MB) in size.

You need to determine the root cause for the issue.

To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statement	Yes	No
The file MIME type is supported by the service.	○	○
Edge nodes must be purged of all cache assets.	○	○
The compression type is supported.	○	○

Correct Answer:

Answer Area

Statement	Yes	No
The file MIME type is supported by the service.	○	○
Edge nodes must be purged of all cache assets.	○	○
The compression type is supported.	○	○

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: No
Front Door can dynamically compress content on the edge, resulting in a smaller and faster response to your clients. All files are eligible for compression. However, a file must be of a MIME type that is eligible for compression list.

Box 2: No
Sometimes you may wish to purge cached content from all edge nodes and force them all to retrieve new updated assets. This might be due to updates to your web application, or to quickly update assets that contain incorrect information.

Box 3: Yes
These profiles support the following compression encodings: Gzip (GNU zip), Brotli

Reference:

https://docs.microsoft.com/en-us/azure/frontdoor/front-door-caching

QUESTION 3
HOTSPOT

You are developing an Azure App Service hosted ASP.NET Core web app to deliver video on-demand streaming media. You enable an Azure Content Delivery Network (CDN) Standard for the web endpoint. Customer videos are downloaded from the web app by using the following example URL.: http://www.contoso.com/content.mp4?quality=1

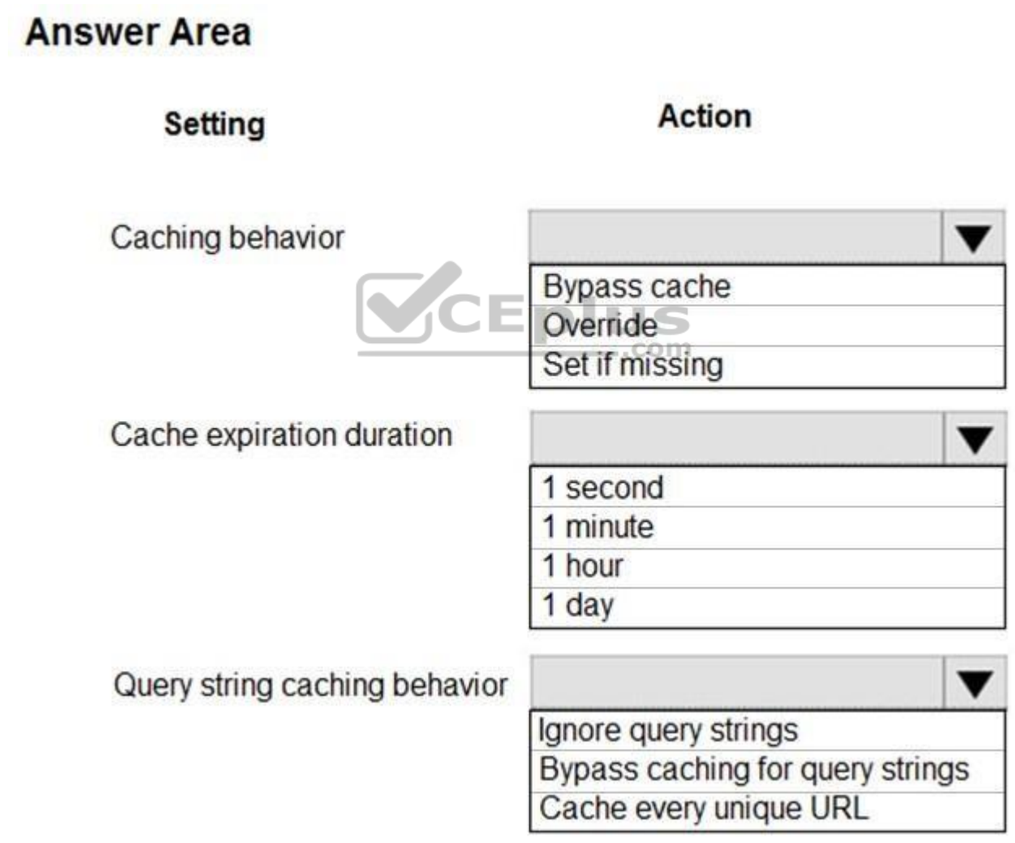
All media content must expire from the cache after one hour. Customer videos with varying quality must be delivered to the closest regional point of presence (POP) node.

You need to configure Azure CDN caching rules.

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

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:

Answer Area

Setting	Action
Caching behavior	Bypass cache **Override** Set if missing
Cache expiration duration	1 second 1 minute **1 hour** 1 day
Query string caching behavior	Ignore query strings Bypass caching for query strings **Cache every unique URL**

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Override
Override: Ignore origin-provided cache duration; use the provided cache duration instead. This will not override cache-control: no-cache. Set if missing: Honor origin-provided cache-directive headers, if they exist; otherwise, use the provided cache duration.

Incorrect:
Bypass cache: Do not cache and ignore origin-provided cache-directive headers.

Box 2: 1 hour
All media content must expire from the cache after one hour.

Box 3: Cache every unique URL
Cache every unique URL: In this mode, each request with a unique URL, including the query string, is treated as a unique asset with its own cache. For example, the response from the origin server for a request for example.ashx?q=test1 is cached at the POP node and returned for subsequent caches with the same query string. A request for example.ashx?q=test2 is cached as a separate asset with its own time-to-live setting.

Incorrect Answers:
Bypass caching for query strings: In this mode, requests with query strings are not cached at the CDN POP node. The POP node retrieves the asset directly from the origin server and passes it to the requestor with each request.

Ignore query strings: Default mode. In this mode, the CDN point-of-presence (POP) node passes the query strings from the requestor to the origin server on the first request and caches the asset. All subsequent requests for the asset that are served from the POP ignore the query strings until the cached asset expires.

Reference:

https://docs.microsoft.com/en-us/azure/cdn/cdn-query-string

QUESTION 4
DRAG DROP

You develop a web app that uses tier D1 app service plan by using the Web Apps feature of Microsoft Azure App Service.

Spikes in traffic have caused increases in page load times.

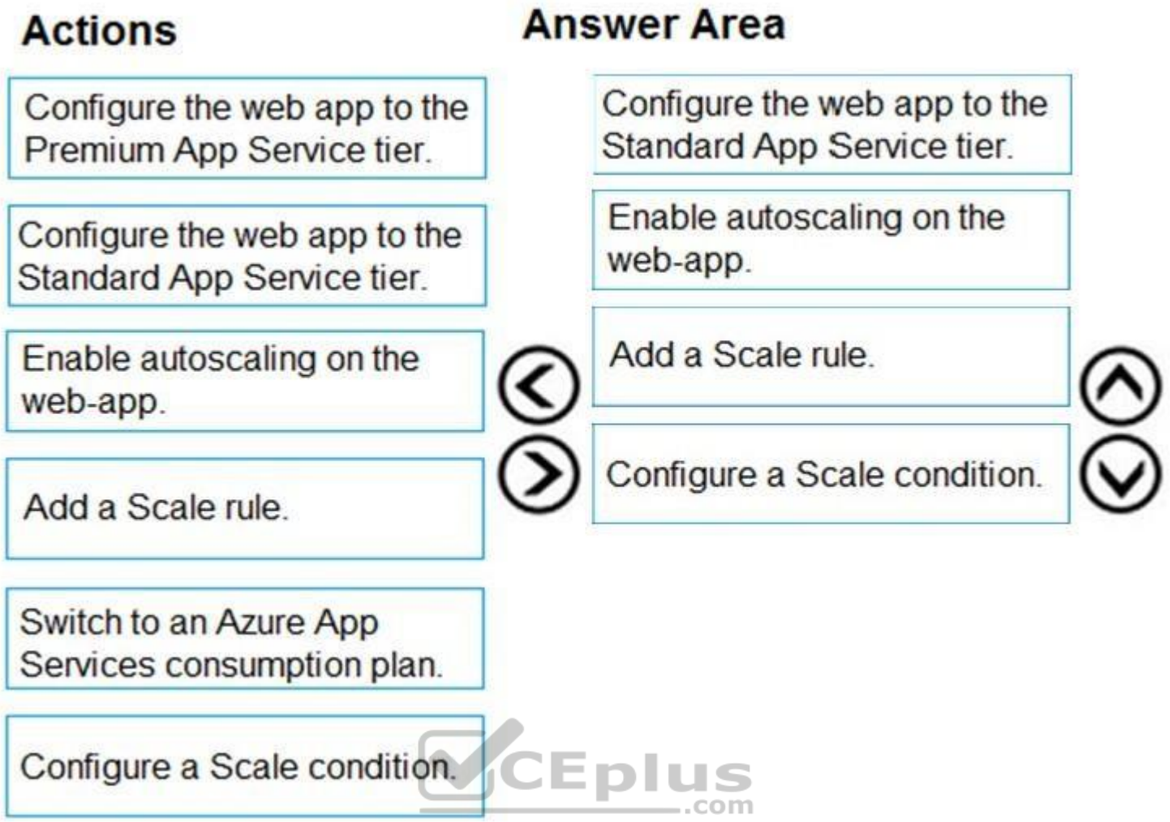
You need to ensure that the web app automatically scales when CPU load is about 85 percent and minimize costs.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Select and Place:

Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Configure the web app to the Standard App Service Tier The
Standard tier supports auto-scaling, and we should minimize the cost.

Step 2: Enable autoscaling on the web app
First enable autoscale

Step 3: Add a scale rule Step

4: Add a Scale condition

Reference:
https://docs.microsoft.com/en-us/azure/monitoring-and-diagnostics/monitoring-autoscale-get-started **Testlet 1**

Case study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question in this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information** tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Current environment

Windows Server 2016 virtual machine

The 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 tracking stops.
▪ Shipping REST API – This API provides shipping information for use and display on the shipping website.

Shipping Data

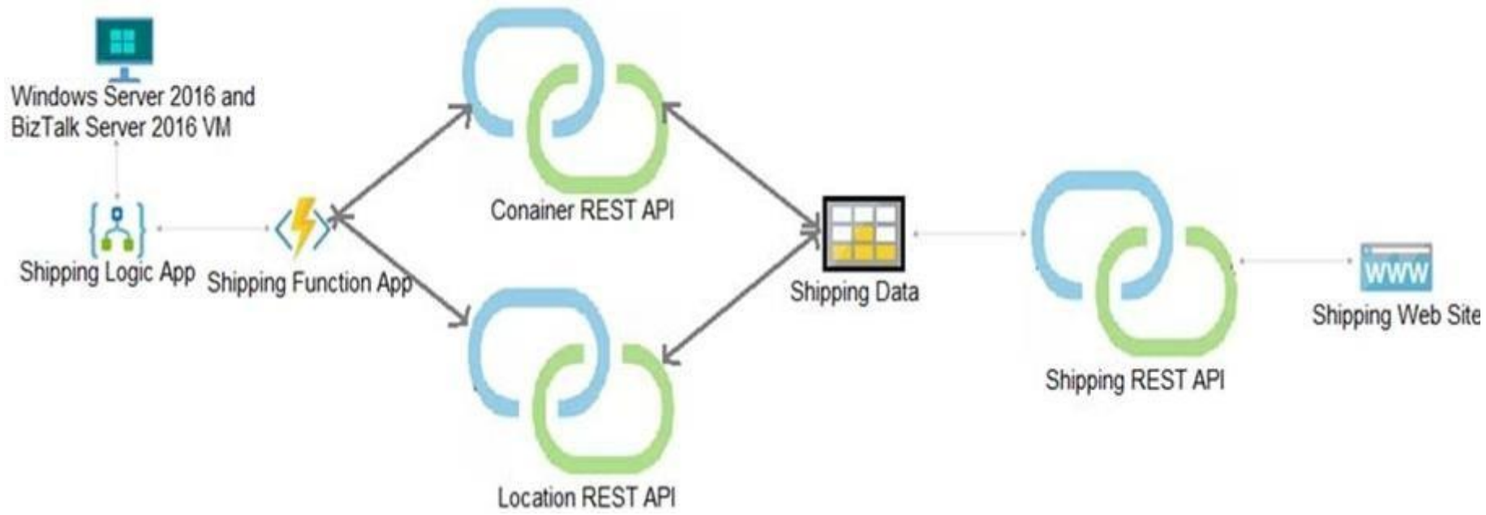
The application uses MongoDB JSON document storage database for all container and transport information.

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
DRAG DROP

You need to support the message processing for the ocean transport workflow.

Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Create an integration account in the Azure portal

You can define custom metadata for artifacts in integration accounts and get that metadata during runtime for your logic app to use. For example, you can provide metadata for artifacts, such as partners, agreements, schemas, and maps all store metadata using key-value pairs.

Step 2: Link the Logic App to the integration account
A logic app that's linked to the integration account and artifact metadata you want to use.

Step 3: Add partners, schemas, certificates, maps, and agreements

Step 4: Create a custom connector for the Logic App.

Reference: https://docs.microsoft.com/bs-latn-ba/azure/logic-apps/logic-apps-enterprise-integration-metadata

QUESTION 2 You need to support the requirements for the
Shipping Logic App.

What should you use?

A. Azure Active Directory Application Proxy
B. Site-to-Site (S2S) VPN connection
C. On-premises Data Gateway
D. Point-to-Site (P2S) VPN connection

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Before you can connect to on-premises data sources from Azure Logic Apps, download and install the on-premises data gateway on a local computer. The gateway works as a bridge that provides quick data transfer and encryption between data sources on premises (not in the cloud) and your logic apps.

The gateway supports BizTalk Server 2016.

Note: Microsoft have now fully incorporated the Azure BizTalk Services capabilities into Logic Apps and Azure App Service Hybrid Connections.

Logic Apps Enterprise Integration pack bring some of the enterprise B2B capabilities like AS2 and X12, EDI standards support

Scenario: 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.

Reference:
https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-gateway-install

Question Set 2

QUESTION 1
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 are developing an Azure Service application that processes queue data when it receives a message from a mobile application. Messages may not be sent to the service consistently.

You have the following requirements:

▪ Queue size must not grow larger than 80 gigabytes (GB).
▪ Use first-in-first-out (FIFO) ordering of messages. ▪
Minimize Azure costs.

You need to implement the messaging solution.

Solution: Use the .Net API to add a message to an Azure Service Bus Queue from the mobile application. Create an Azure Function App that uses an Azure Service Bus Queue trigger.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You can create a function that is triggered when messages are submitted to an Azure Storage queue.

Reference: https://docs.microsoft.com/en-us/azure/azure-functions/functions-create-storage-queue-triggered-function

QUESTION 2
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 are developing an Azure solution to collect point-of-sale (POS) device data from 2,000 stores located throughout the world. A single device can produce 2 megabytes (MB) of data every 24 hours. Each store location has one to five devices that send data.

You must store the device data in Azure Blob storage. Device data must be correlated based on a device identifier. Additional stores are expected to open in the future.

You need to implement a solution to receive the device data.

Solution: Provision an Azure Notification Hub. Register all devices with the hub.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:

Explanation:
Instead use an Azure Service Bus, which is used order processing and financial transactions.

Reference: https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services

QUESTION 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 are developing an Azure solution to collect point-of-sale (POS) device data from 2,000 stores located throughout the world. A single device can produce 2 megabytes (MB) of data every 24 hours. Each store location has one to five devices that send data.

You must store the device data in Azure Blob storage. Device data must be correlated based on a device identifier. Additional stores are expected to open in the future.

You need to implement a solution to receive the device data.

Solution: Provision an Azure Service Bus. Configure a topic to receive the device data by using a correlation filter.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
A message is raw data produced by a service to be consumed or stored elsewhere. The Service Bus is for high-value enterprise messaging, and is used for order processing and financial transactions.

Reference: https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services

QUESTION 4
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 are developing an Azure solution to collect point-of-sale (POS) device data from 2,000 stores located throughout the world. A single device can produce 2 megabytes (MB) of data every 24 hours. Each store location has one to five devices that send data.

You must store the device data in Azure Blob storage. Device data must be correlated based on a device identifier. Additional stores are expected to open in the future.

You need to implement a solution to receive the device data.

Solution: Provision an Azure Event Grid. Configure event filtering to evaluate the device identifier.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:

Instead use an Azure Service Bus, which is used order processing and financial transactions.

Note: An event is a lightweight notification of a condition or a state change. Event hubs is usually used reacting to status changes.

Reference: https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services

QUESTION 5
DRAG DROP

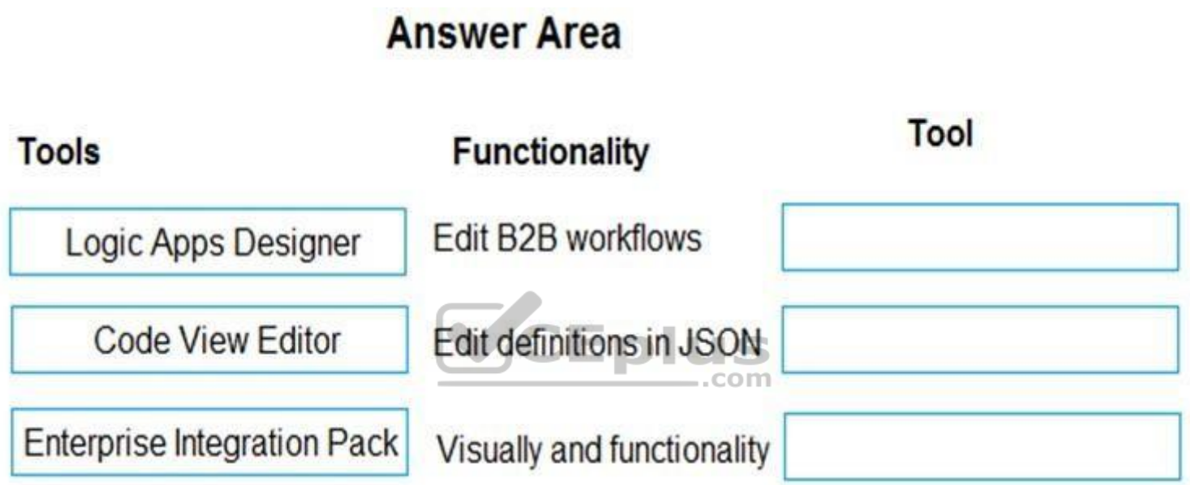
You manage several existing Logic Apps.

You need to change definitions, add new logic, and optimize these apps on a regular basis.

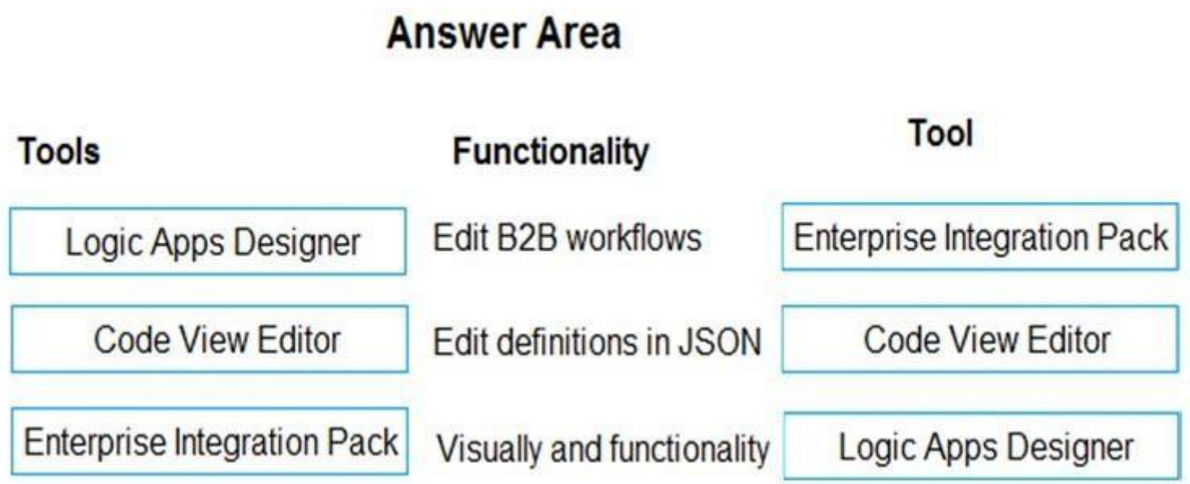
What should you use? To answer, drag the appropriate tools to the correct functionalities. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Enterprise Integration Pack
For business-to-business (B2B) solutions and seamless communication between organizations, you can build automated scalable enterprise integration workflows by using the Enterprise Integration Pack (EIP) with Azure Logic Apps.

Box 2: Code View Editor
Edit JSON - Azure portal
1. Sign in to the Azure portal.
2. From the left menu, choose All services. In the search box, find "logic apps", and then from the results, select your logic app.
3. On your logic app's menu, under Development Tools, select Logic App Code View.
4. The Code View editor opens and shows your logic app definition in JSON format.Box 3: Logic Apps Designer

Reference:
https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-enterprise-integration-overview

https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-author-definitions

QUESTION 6
A company is developing a solution that allows smart refrigerators to send temperature information to a central location. You have an existing Service Bus.

The solution must receive and store message until they can be processed. You create an Azure Service Bus Instance by providing a name, pricing tier, subscription, resource group, and location.

You need to complete the configuration.

Which Azure CLI or PowerShell command should you run?

A.
```
az servicebus queue create
--resource-group fridge-rg
--namespace-name fridge-ns
--name fridge-q
```

B.
```
New-AzureRmResourceGroup
-Name fridge-rg
-Location fridge-loc
New-AzureRmServiceBusNamespace
-ResourceGroupName fridge-rg
-NamespaceName fridge-loc
-Location fridge-loc
```

C.
```
connectionString-$)az serviceBus namespace authorization-rule keys list
--resource-group fridge-rg
--fridge-ns fridge-ns
--query primaryConnectionString -output tsv)
```

D.

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
A service bus instance has already been created (Step 2 below). Next is step 3, Create a Service Bus queue.

Note:
Steps:
Step 1: # Create a resource group

resourceGroupName="myResourceGroup" az group create --

name $resourceGroupName --location eastus

Step 2: # Create a Service Bus messaging namespace with a unique name namespaceName=myNameSpace$RANDOM
az servicebus namespace create --resource-group $resourceGroupName --name $namespaceName --location eastus

Step 3: # Create a Service Bus queue
az servicebus queue create --resource-group $resourceGroupName --namespace-name $namespaceName --name BasicQueue

Step 4: # Get the connection string for the namespace connectionString=$(az servicebus namespace authorization-rule keys list --resource-group $resourceGroupName --namespace-name $namespaceName --name RootManageSharedAccessKey --query primaryConnectionString --output tsv)

Reference: https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-quickstart-cli

QUESTION 7
HOTSPOT

You are developing an application that uses Azure Storage Queues.

You have the following code:

```
CloudStorageAccount storageAccount = CloudStorageAccount.Parse
(CloudConfigurationManager.GetSetting("StorageConnectionString"));
CloudQueueClient queueClient = storageAccount.CreateCloudQueueClient()

CloudQueue queue = queueClient.GetQueueReference("appqueue") ;
await queu.CreateIfNotExistsAsync() ;

CloudQueueMessage peekedMessage = await queue.PeekMessageAsync() ;
if (peekedMessage != null)
{
     Console.WriteLine("The peeked message is: {0}", peekedMessage.AsString);
}
CloudQueueMessage message = await queue.GetMessageAsync() ;
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statement	Yes	No
The code configures the lock duration for the queue.	○	○
The last message read remains in the queue after the code runs.	○	○
The storage queue remains in the storage account after the code runs.	○	○

Correct Answer:

Answer Area

Statement	Yes	No
The code configures the lock duration for the queue.	○	○
The last message read remains in the queue after the code runs.	○	○
The storage queue remains in the storage account after the code runs.	○	○

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: No
The QueueDescription.LockDuration property gets or sets the duration of a peek lock; that is, the amount of time that the message is locked for other receivers. The maximum value for LockDuration is 5 minutes; the default value is 1 minute.

Box 2: Yes
You can peek at the message in the front of a queue without removing it from the queue by calling the PeekMessage method.

Box 3: Yes

Reference: https://docs.microsoft.com/en-us/azure/storage/queues/storage-dotnet-how-to-use-queues
https://docs.microsoft.com/en-us/dotnet/api/microsoft.servicebus.messaging.queuedescription.lockduration

QUESTION 8
HOTSPOT

You are working for Contoso, Ltd.

You define an API Policy object by using the following XML markup:

```
<set-variable name= "bodySize" value="@(context.Request.Headers["Content-Length"] [0])"/>
<choose>
 <when condition= "@(int.Parse(context.Variables.GetValueOrDefault<string> ("bodySize"))<512000)">
</when>
<otherwise>
     <rewrite-uri template= "/put"/>
     <set-backend-service base-url= "http://contoso.com/api/9.1/"/>
</otherwise>
</choose>
```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statement	Yes	No
The XML segment belongs in the <inbound> section of the policy.	○	○
If the body size is >256k, an error will occur.	○	○
If the request is http://contoso.com/api/9.2/, the policy will retain the higher version.	○	○

Correct Answer:

Answer Area

Statement	Yes	No
The XML segment belongs in the <inbound> section of the policy.	○	○
If the body size is >256k, an error will occur.	○	○
If the request is http://contoso.com/api/9.2/, the policy will retain the higher version.	○	○

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Yes
Use the set-backend-service policy to redirect an incoming request to a different backend than the one specified in the API settings for that operation. Syntax: <set-backend-service base-url="base URL of the backend service" />

Box 2: No
The condition is on 512k, not on 256k.

Box 3: No
The set-backend-service policy changes the backend service base URL of the incoming request to the one specified in the policy.

Reference: https://docs.microsoft.com/en-us/azure/api-management/api-management-transformation-policies

QUESTION 9 You are developing a solution that will use Azure messaging services.

You need to ensure that the solution uses a publish-subscribe model and eliminates the need for constant polling.

What are two possible ways to achieve the goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A. Service Bus
B. Event Hub
C. Event Grid
D. Queue

Correct Answer: AC
Section: [none]
Explanation

Explanation/Reference:
Explanation:
It is strongly recommended to use available messaging products and services that support a publish-subscribe model, rather than building your own. In Azure, consider using Service Bus or Event Grid. Other technologies that can be used for pub/sub messaging include Redis, RabbitMQ, and Apache Kafka.

Reference:
https://docs.microsoft.com/en-us/azure/architecture/patterns/publisher-subscriber

QUESTION 10
A company is implementing a publish-subscribe (Pub/Sub) messaging component by using Azure Service Bus. You are developing the first subscription application.

In the Azure portal you see that messages are being sent to the subscription for each topic. You create and initialize a subscription client object by supplying the correct details, but the subscription application is still not consuming the messages.

You need to ensure that the subscription client processes all messages.

Which code segment should you use?

A. `await subscriptionClient.AddRuleAsync(new RuleDescription(RuleDescription.DefaultRuleName, new TrueFilter()));`
B. `subscriptionClient = new SubscriptionClient(ServiceBusConnectionString, TopicName, SubscriptionName);` C. `await subscriptionClient.CloseAsync();`
D. `subscriptionClient.RegisterMessageHandler(ProcessMessageAsync, messageHandlerOptions);`

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Using topic client, call RegisterMessageHandler which is used to receive messages continuously from the entity. It registers a message handler and begins a new thread to receive messages. This handler is waited on every time a new message is received by the receiver.

subscriptionClient.RegisterMessageHandler(ReceiveMessagesAsync, messageHandlerOptions);

Reference:
https://www.c-sharpcorner.com/article/azure-service-bus-topic-and-subscription-pub-sub/

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 are developing an Azure Service application that processes queue data when it receives a message from a mobile application. Messages may not be sent to the service consistently.

You have the following requirements:

- Queue size must not grow larger than 80 gigabytes (GB).
- Use first-in-first-out (FIFO) ordering of messages.
- Minimize Azure costs.

You need to implement the messaging solution.

Solution: Use the .Net API to add a message to an Azure Storage Queue from the mobile application. Create an Azure VM that is triggered from Azure Storage Queue events.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:

Don't use a VM, instead create an Azure Function App that uses an Azure Service Bus Queue trigger.

Reference:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-create-storage-queue-triggered-function

QUESTION 12
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 are developing an Azure Service application that processes queue data when it receives a message from a mobile application. Messages may not be sent to the service consistently.

You have the following requirements:

- Queue size must not grow larger than 80 gigabytes (GB).
- Use first-in-first-out (FIFO) ordering of messages. ▪
Minimize Azure costs.

You need to implement the messaging solution.

Solution: Use the .Net API to add a message to an Azure Service Bus Queue from the mobile application. Create an Azure Windows VM that is triggered from Azure Service Bus Queue.

Does the solution meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Don't use a VM, instead create an Azure Function App that uses an Azure Service Bus Queue trigger.

Reference:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-create-storage-queue-triggered-function