Microsoft Azure Certification Exam

AZ-204 Questions V11.02

Developing Solutions for Microsoft Azure

1. Topic 1, Windows Server 2016 virtual machine

Case study
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Current environment
Windows Server 2016 virtual machine
This virtual machine (VM) runs BizTalk Server 2016. The VM runs the following workflows:
- Ocean Transport – This workflow gathers and validates container information including container contents and arrival notices at various shipping ports.
- Inland Transport – This workflow gathers and validates trucking information including fuel usage, number of stops, and routes.

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

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

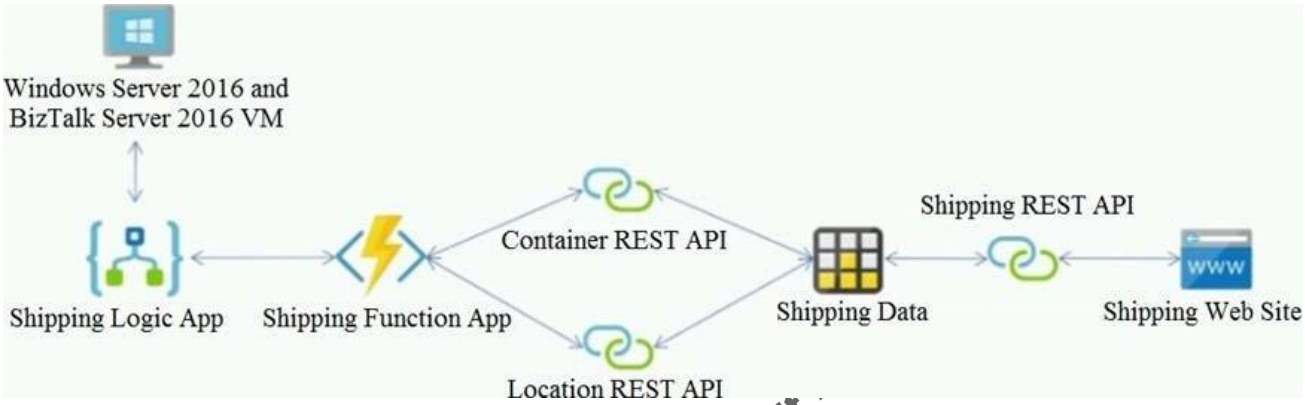
Shipping Web Site

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

Proposed solution

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

The Azure architecture diagram for the proposed solution is shown below:



Requirements

Shipping Logic app

The Shipping Logic app must meet the following requirements:

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

Shipping Function app

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

REST APIs

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

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

Shipping data

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

Shipping website

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

Issues

Windows Server 2016 VM

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

Shipping website and REST APIs

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

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

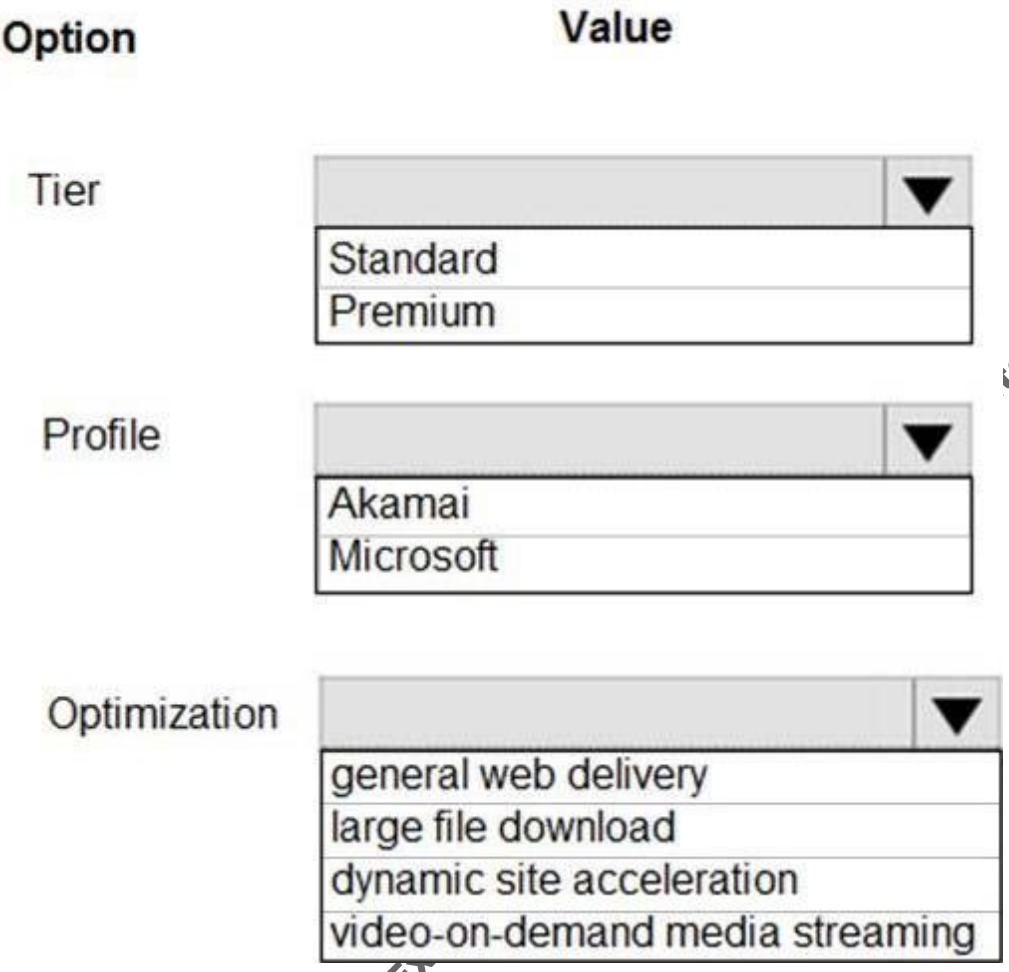
HOTSPOT

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.

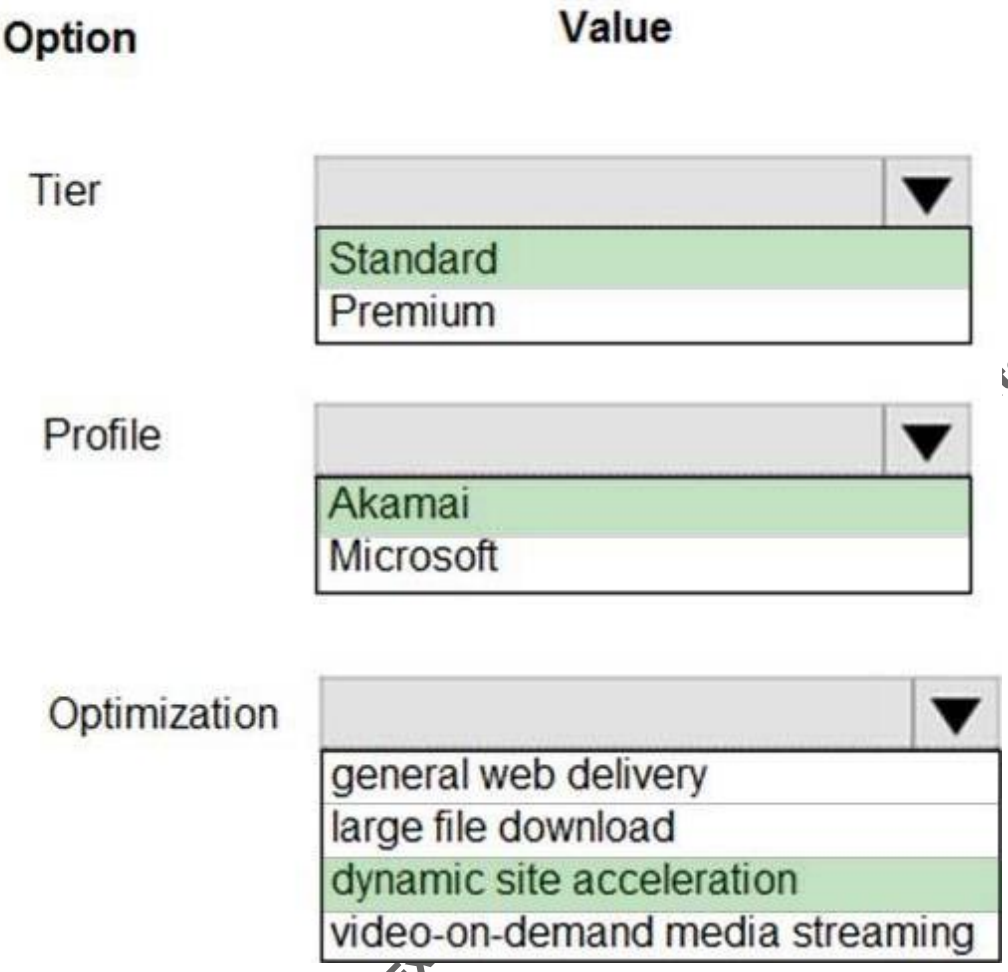
NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



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

2.HOTSPOT

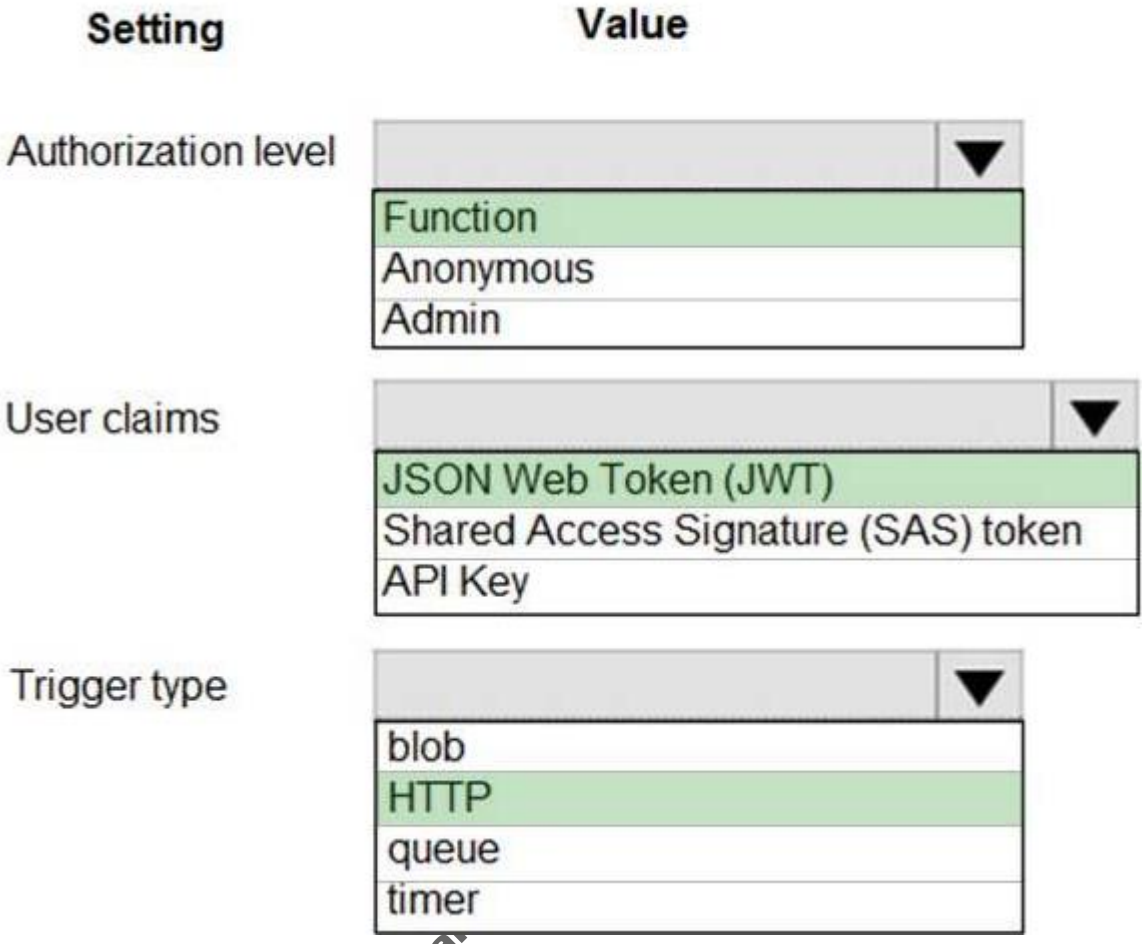
You need to secure the Shipping Function app.
How should you configure the app? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

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

Answer:

Answer Area



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.

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

3.You need to secure the Shipping Logic App.

What should you use?

A. Azure App Service Environment (ASE)

B. Azure AD B2B integration

C. Integration Service Environment (ISE)

D. VNet service endpoint

Answer: C

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.

References:

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

4.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.

Actions	Answer Area
Link the Logic App to the integration account.	
Add partners, schemas, certificates, maps, and agreements.	
Update the Logic App to use the partners, schemas, certificates, maps, and agreements.	
Create a custom connector for the Logic App.	
Link the custom connector to the Logic App.	
Create an integration account in the Azure portal.	

Answer:

Actions	Answer Area
Link the Logic App to the integration account.	Create an integration account in the Azure portal.
Add partners, schemas, certificates, maps, and agreements.	Link the custom connector to the Logic App.
Update the Logic App to use the partners, schemas, certificates, maps, and agreements.	Add partners, schemas, certificates, maps, and agreements.
Create a custom connector for the Logic App.	Create a custom connector for the Logic App.
Link the custom connector to the Logic App.	
Create an integration account in the Azure portal.	

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.

References:

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

5.You need to support the requirements for the Shipping Logic App.

What should you use?

A. Azure Active Directory Application Proxy

B. Point-to-Site (P2S) VPN connection

C. Site-to-Site (S2S) VPN connection

D. On-premises Data Gateway

Answer: D

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,

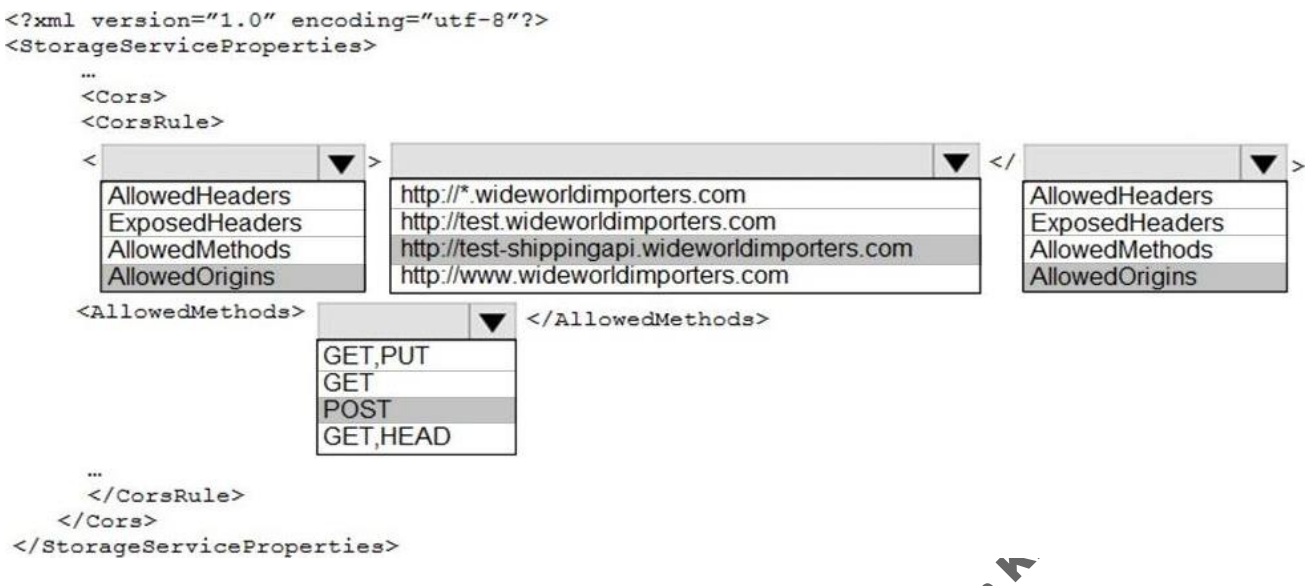
EDI standards support
Scenario: The Shipping Logic app must meet the following requirements:
Reference: https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-gateway-install

6.You need to migrate on-premises shipping data to Azure.
What should you use?
A. Azure Migrate
B. Azure Cosmos DB Data Migration tool (dt.exe)
C. AzCopy
D. Azure Database Migration service
Answer: D
Explanation:
Migrate from on-premises or cloud implementations of MongoDB to Azure Cosmos DB with minimal downtime by using Azure Database Migration Service. Perform resilient migrations of MongoDB data at scale and with high reliability.
Scenario: Data migration from on-premises to Azure must minimize costs and downtime.
The application uses MongoDB JSON document storage database for all container and transport information.
References:
https://azure.microsoft.com/en-us/updates/mongodb-to-azure-cosmos-db-online-and-offline-migrations-are-now-available/

7.HOTSPOT
You need to resolve the Shipping web site error.
How should you configre the Azure Table Storage service? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

```
<?xml version="1.0" encoding="utf-8"?>
<StorageServiceProperties>
      …
      <Cors>
      <CorsRule>
      <[AllowedHeaders / ExposedHeaders / AllowedMethods / AllowedOrigins]>[http://*.wideworldimporters.com / http://test.wideworldimporters.com / http://test-shippingapi.wideworldimporters.com / http://www.wideworldimporters.com]</[AllowedHeaders / ExposedHeaders / AllowedMethods / AllowedOrigins]>
      <AllowedMethods>[GET,PUT / GET / POST / GET,HEAD]</AllowedMethods>
      …
      </CorsRule>
    </Cors>
</StorageServiceProperties>
```

Answer:



Explanation:

Box 1: AllowedOrigins

A CORS request will fail if Access-Control-Allow-Origin is missing.

Scenario:

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://testwideworldimporters.com/' is
therefore not allowed access.
```

Box 2: http://test-shippingapi.wideworldimporters.com

Syntax: Access-Control-Allow-Origin: *

Access-Control-Allow-Origin: <origin>

Access-Control-Allow-Origin: null

<origin> Specifies an origin. Only a single origin can be specified.

Box 3: AllowedOrigins

Box 4: POST

The only allowed methods are GET, HEAD, and POST. In this case POST is used.

"<Corsrule>" "allowedmethods" Failed to load no "Access-control-Origin" header is present

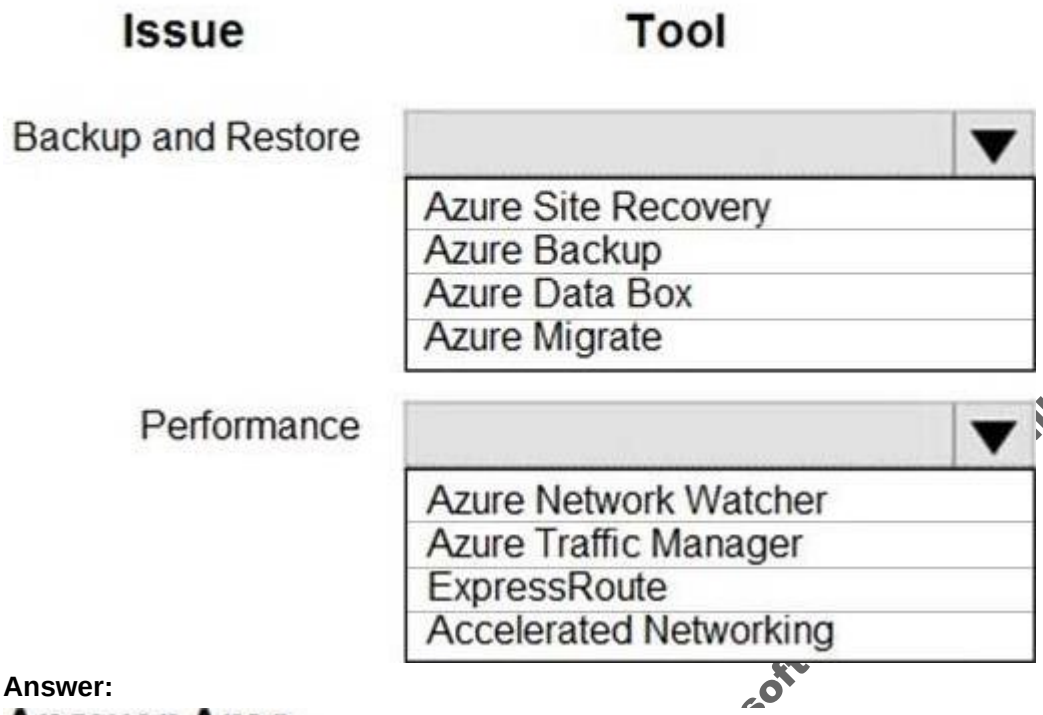
References: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/Access-Control-Allow-Origin

8.HOTSPOT

You need to correct the VM issues.

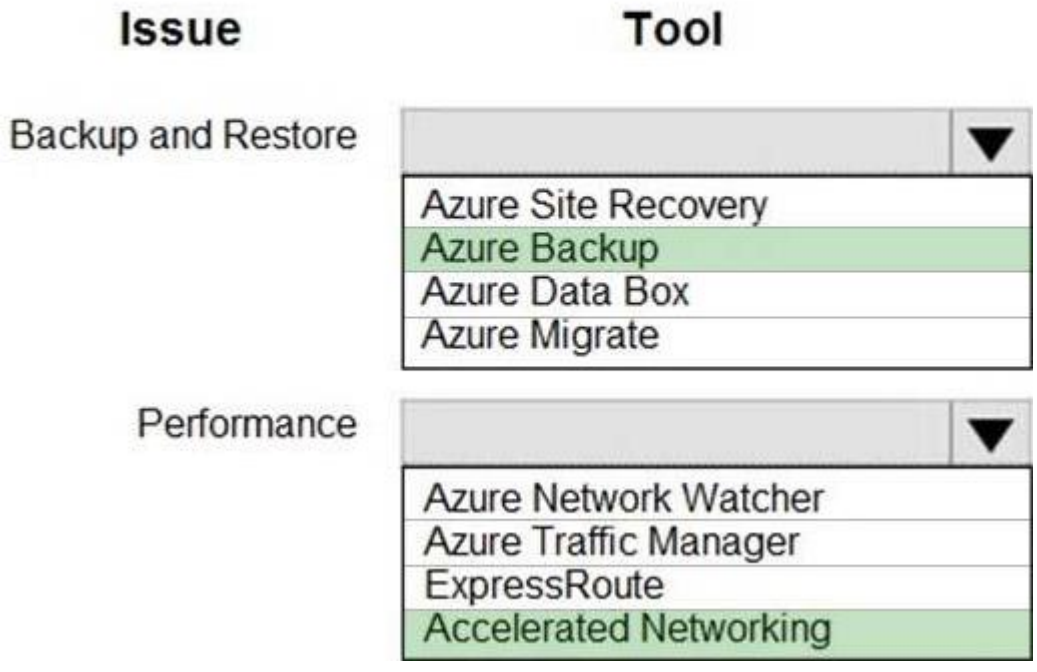
Which tools should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



Explanation:

Backup and Restore: Azure Backup

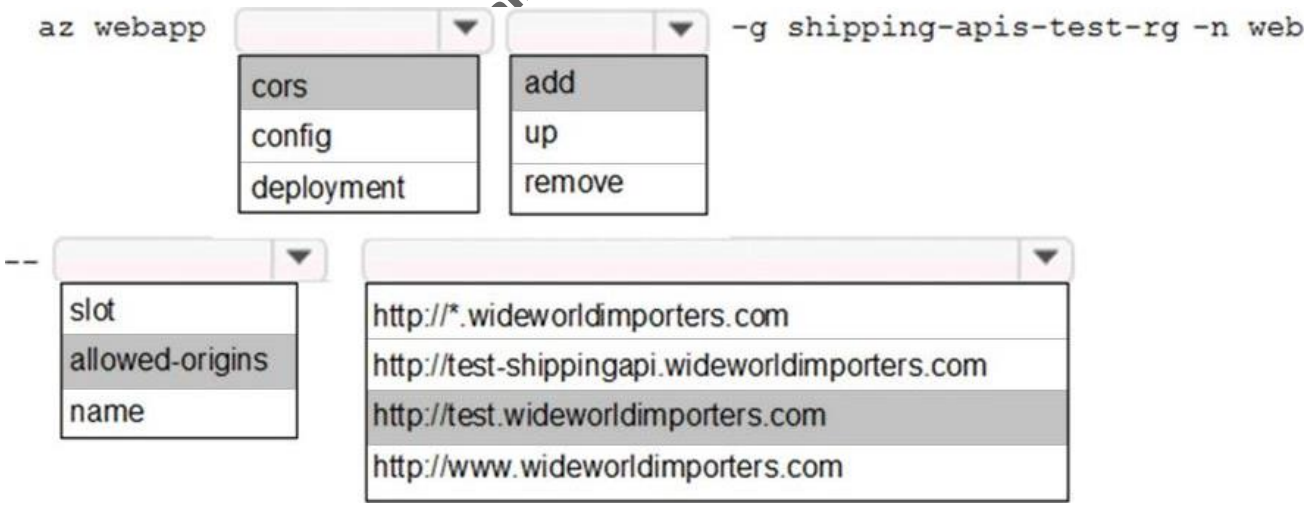
Scenario: The VM is critical and has not been backed up in the past. The VM must enable a quick restore from a 7-day snapshot to include in-place restore of disks in case of failure.

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

Performance: Accelerated Networking
Scenario: The VM shows high network latency, jitter, and high CPU utilization.
Accelerated networking enables single root I/O virtualization (SR-IOV) to a VM, greatly improving its networking performance. This high-performance path bypasses the host from the datapath, reducing latency, jitter, and CPU utilization, for use with the most demanding network workloads on supported VM types.
References:
https://azure.microsoft.com/en-us/blog/an-easy-way-to-bring-back-your-azure-vm-with-in-place-restore/

9.HOTSPOT
You need to update the APIs to resolve the testing error.
How should you complete the Azure CLI command? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

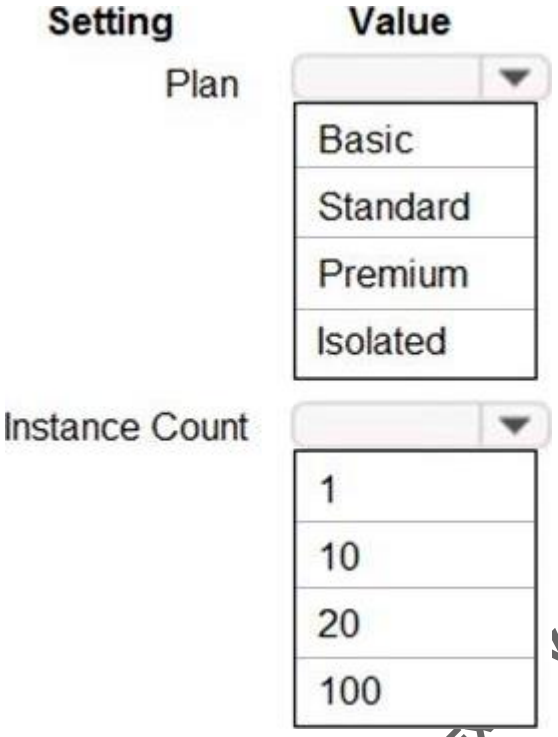
Answer:



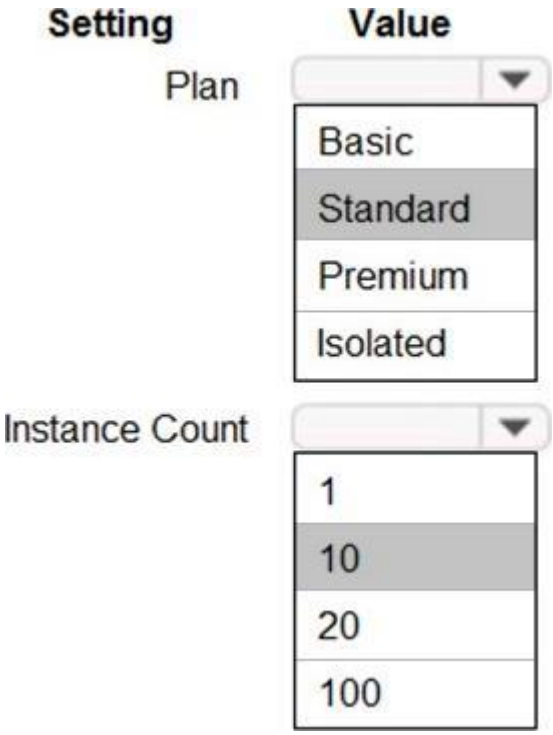
Explanation:
Enable Cross-Origin Resource Sharing (CORS) on your Azure App Service Web App.
Enter the full URL of the site you want to allow to access your WEB API or * to allow all domains.
Box 1: cors
Box 2: add
Box 3: allowed-origins

Box 4: http://testwideworldimporters.com/
References:
http://donovanbrown.com/post/How-to-clear-No-Access-Control-Allow-Origin-header-error-with-Azure-App-Service

10.HOTSPOT
You need to configure Azure App Service to support the REST API requirements.
Which values should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.



Answer:



Explanation:
Plan: Standard
Standard support auto-scaling
Instance Count: 10
Max instances for standard is 10.
Scenario:
The REST API's that support the solution must meet the following requirements:
References: https://azure.microsoft.com/en-us/pricing/details/app-service/plans/

11. Topic 2, Contoso, Ltd

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Background
Overview
You are a developer for Contoso, Ltd. The company has a social networking website that is developed as a Single Page Application (SPA). The main web application for the social networking website loads user uploaded content from blob storage.
You are developing a solution to monitor uploaded data for inappropriate content.

The following process occurs when users upload content by using the SPA:
• Messages are sent to ContentUploadService.
• Content is processed by ContentAnalysisService.
• After processing is complete, the content is posted to the social network or a rejection message is posted in its place.

The ContentAnalysisService is deployed with Azure Container Instances from a private Azure Container Registry named contosoimages.
The solution will use eight CPU cores.

Azure Active Directory
Contoso, Ltd. uses Azure Active Directory (Azure AD) for both internal and guest accounts.

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 }
```

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
Answer: A
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/

12.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
Answer: B
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:
Reference: https://docs.microsoft.com/en-us/azure/event-grid/compare-messaging-services

13.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.

Answer Area

```
public static class CheckUserContent
{
      [FunctionName ("CheckUserContent")]
      public static void Run(
            [QueueTrigger("userContent")]
            [BlobTrigger("userContent/{name}")]
            [CosmosDBTrigger("content", "userContent")]
            [Table("content", "userContent", "{name}")]
            string content,
            [Queue("userContent")]
            [CosmosDB("content", "userContent")]
            [Table("content", "userContent", "{name}")]
            [Blob("userContent/{name}", FileAccess.Write)]
            Stream output)
      {
            ...
        }
    }
```

Answer:

Answer Area

```
public static class CheckUserContent
{
      [FunctionName ("CheckUserContent")]
      public static void Run(
```

[▼] string content,

- [QueueTrigger("userContent")]
- [BlobTrigger("userContent/{name}")]
- [CosmosDBTrigger("content", "userContent")]
- [Table("content", "userContent", "{name}")]

[▼] Stream output)

- [Queue("userContent")]
- [CosmosDB("content", "userContent")]
- [Table("content", "userContent", "{name}")]
- [Blob("userContent/{name}", FileAccess.Write)]

```
      {
            ...
        }
    }
```

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

14.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.

Json segments

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

Answer Area

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

Answer:

Json segments

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

Answer Area

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

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.

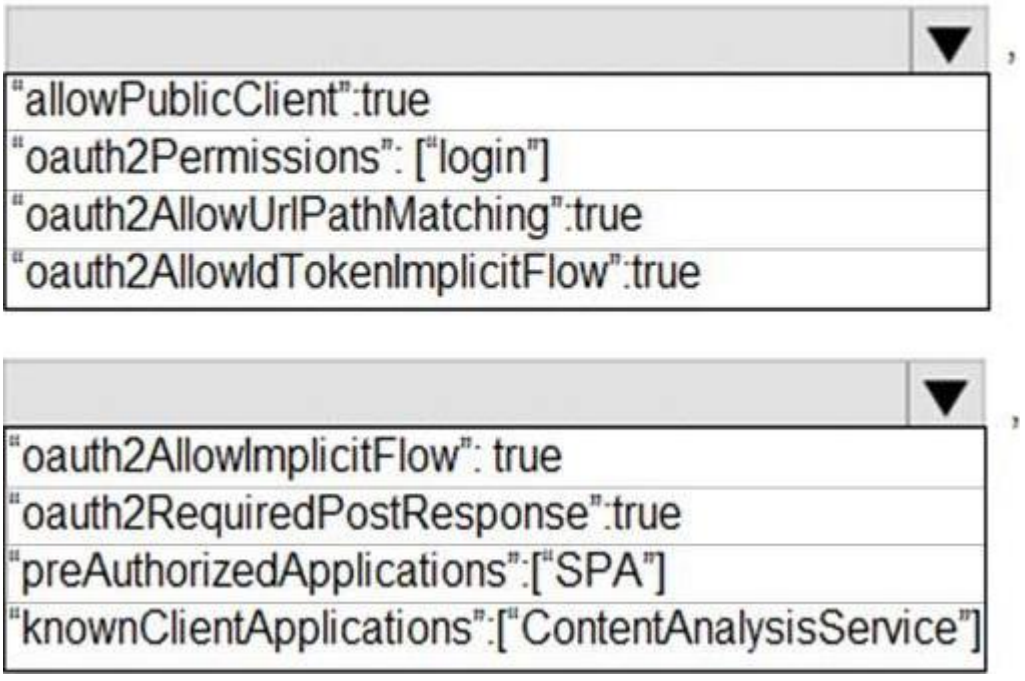
Reference: https://docs.microsoft.com/en-us/graph/api/resources/approle

15.HOTSPOT

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

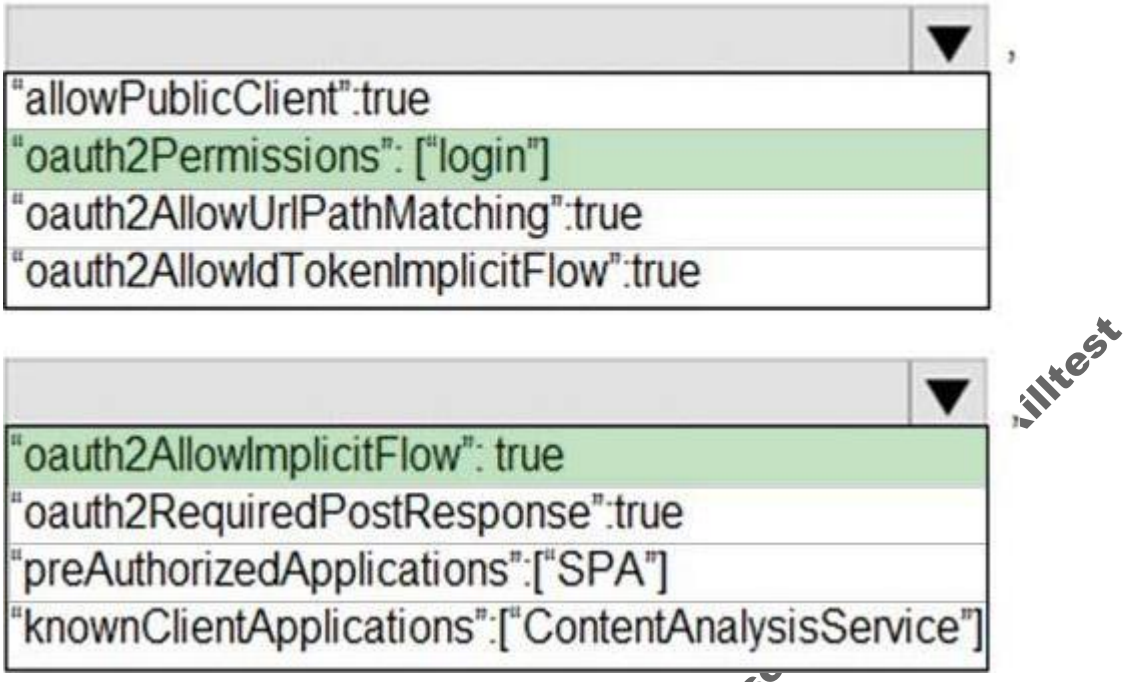
How should you complete the code? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



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

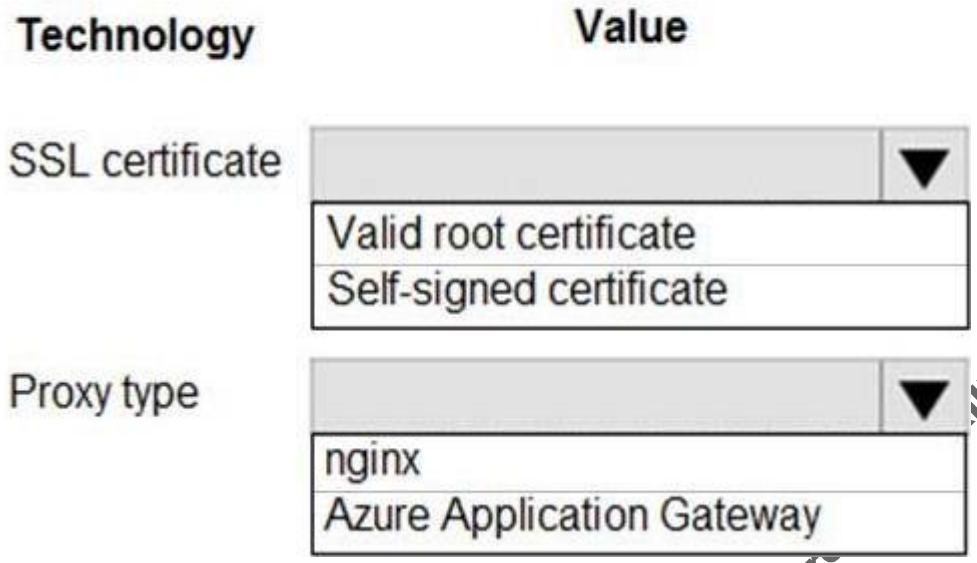
16.HOTSPOT

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.

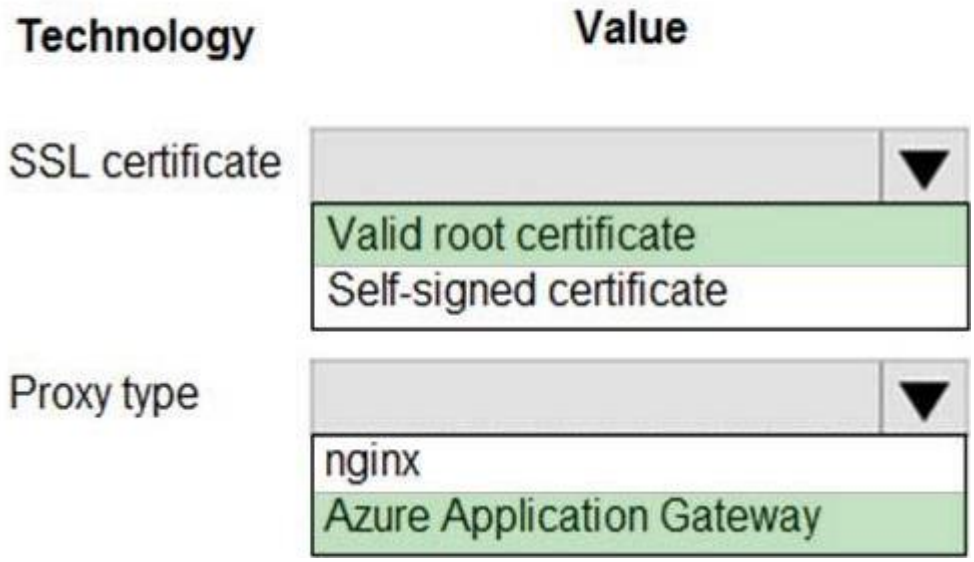
NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



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:

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 loadbalancing 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

17.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"
Answer: B
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

18. Topic 3, City Power & Light

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. When you

are ready to answer a question, click the Question button to return to the question.

Background

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

Current environment

Architecture overview

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

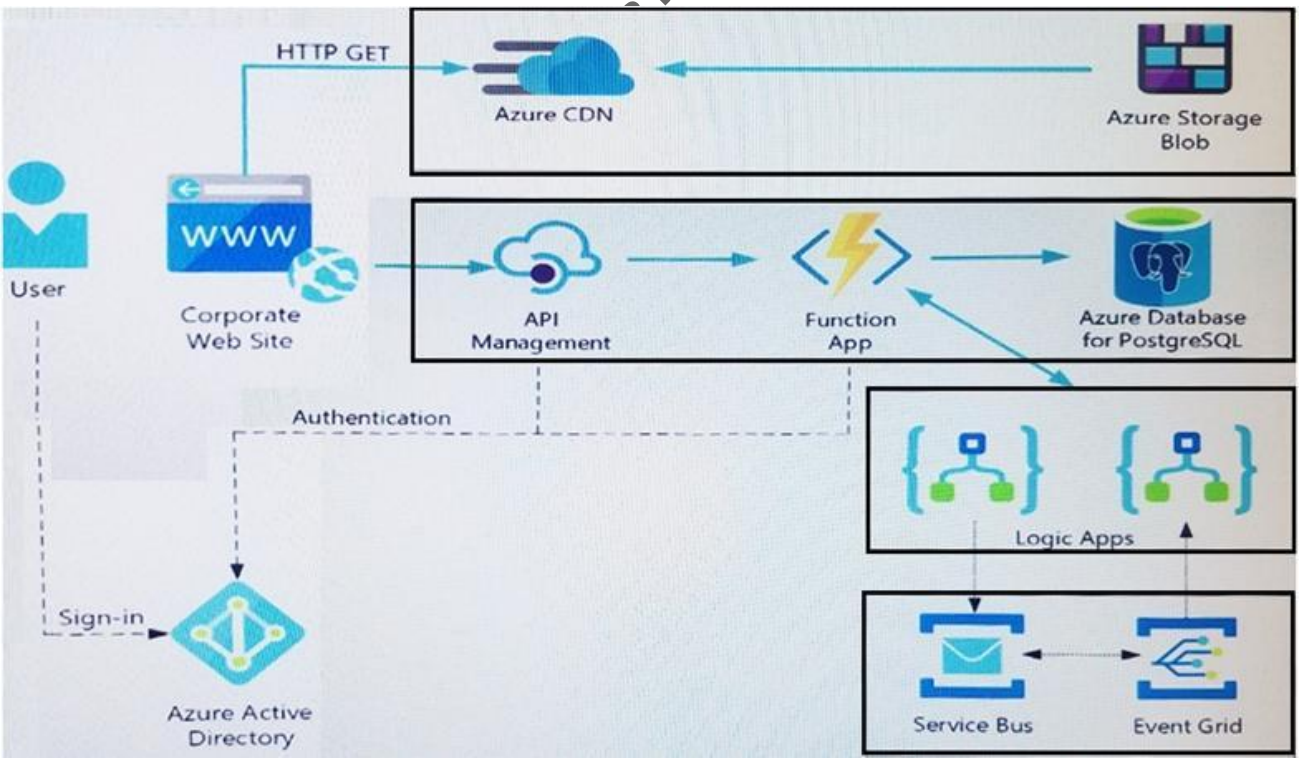
API Management and Azure Function App functions are used to process and store data in Azure Database for PostgreSQL. API Management is used to broker communications to the Azure Function app functions for Logic app integration. Logic apps are used to orchestrate the data processing while Service Bus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

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

Architecture diagram

The company has several applications and services that support their business. The company plans to implement serverless computing where possible.

The overall architecture is shown below.



User authentication

The following steps detail the user authentication process:

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

Requirements

Corporate website

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

Azure Database for PostgreSQL

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

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

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

Azure Service Bus and Azure Event Grid

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

Security

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

Compliance

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

Issues

Corporate website

While testing the site, the following error message displays:

CryptographicException: The system cannot find the file specified.

Function app

You perform local testing for the RequestUserApproval function. The following error message displays:
'Timeout value of 00:10:00 exceeded by function: RequestUserApproval'
The same error message displays when you test the function in an Azure development environment when you run the following Kusto query:

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

Logic app

You test the Logic app in a development environment. The following error message displays:
'400 Bad Request'
Troubleshooting of the error shows an HttpTrigger action to call the RequestUserApproval function.

Code

Corporate website

Security.cs:

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

Function app

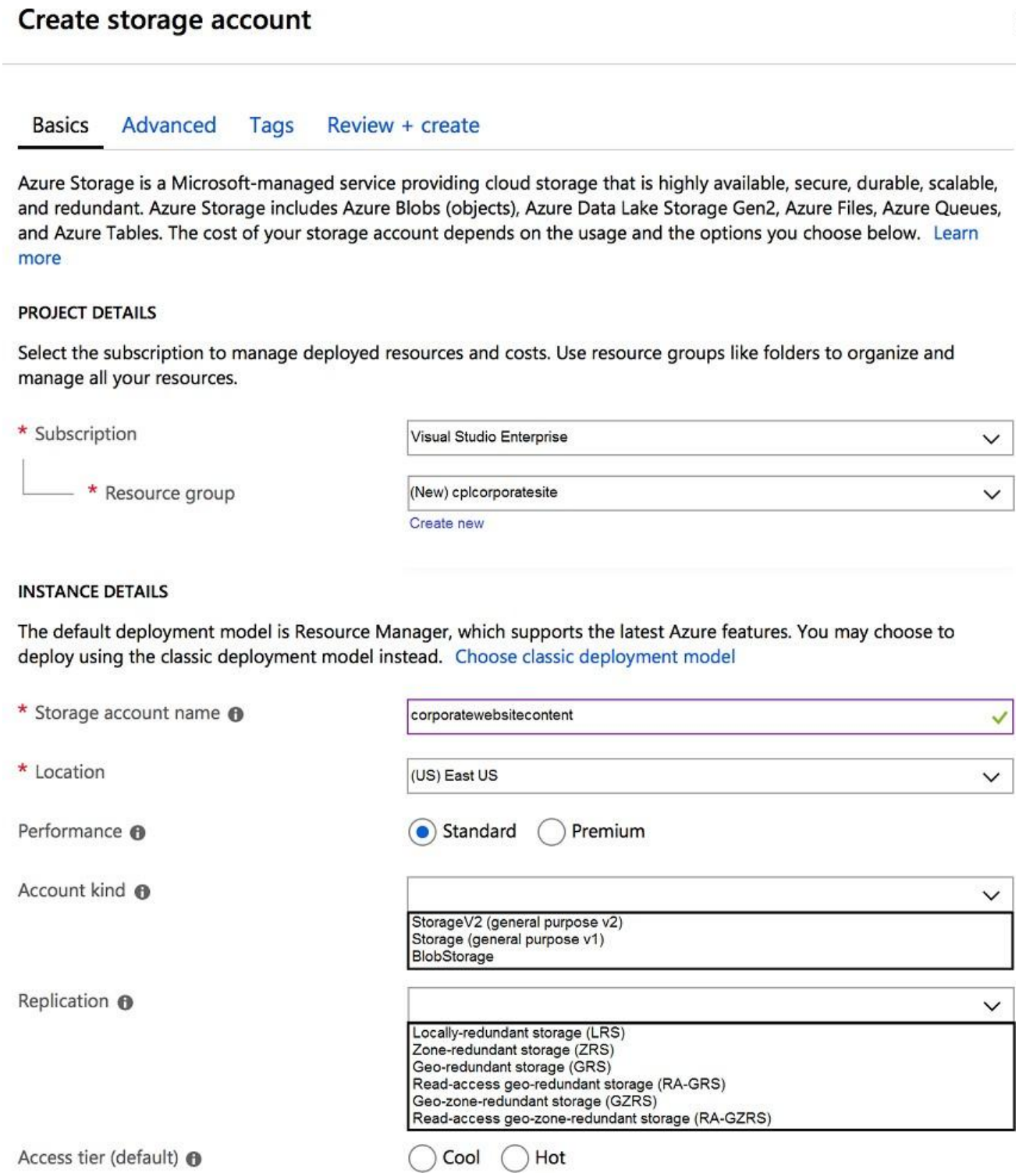
RequestUserApproval.cs:

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

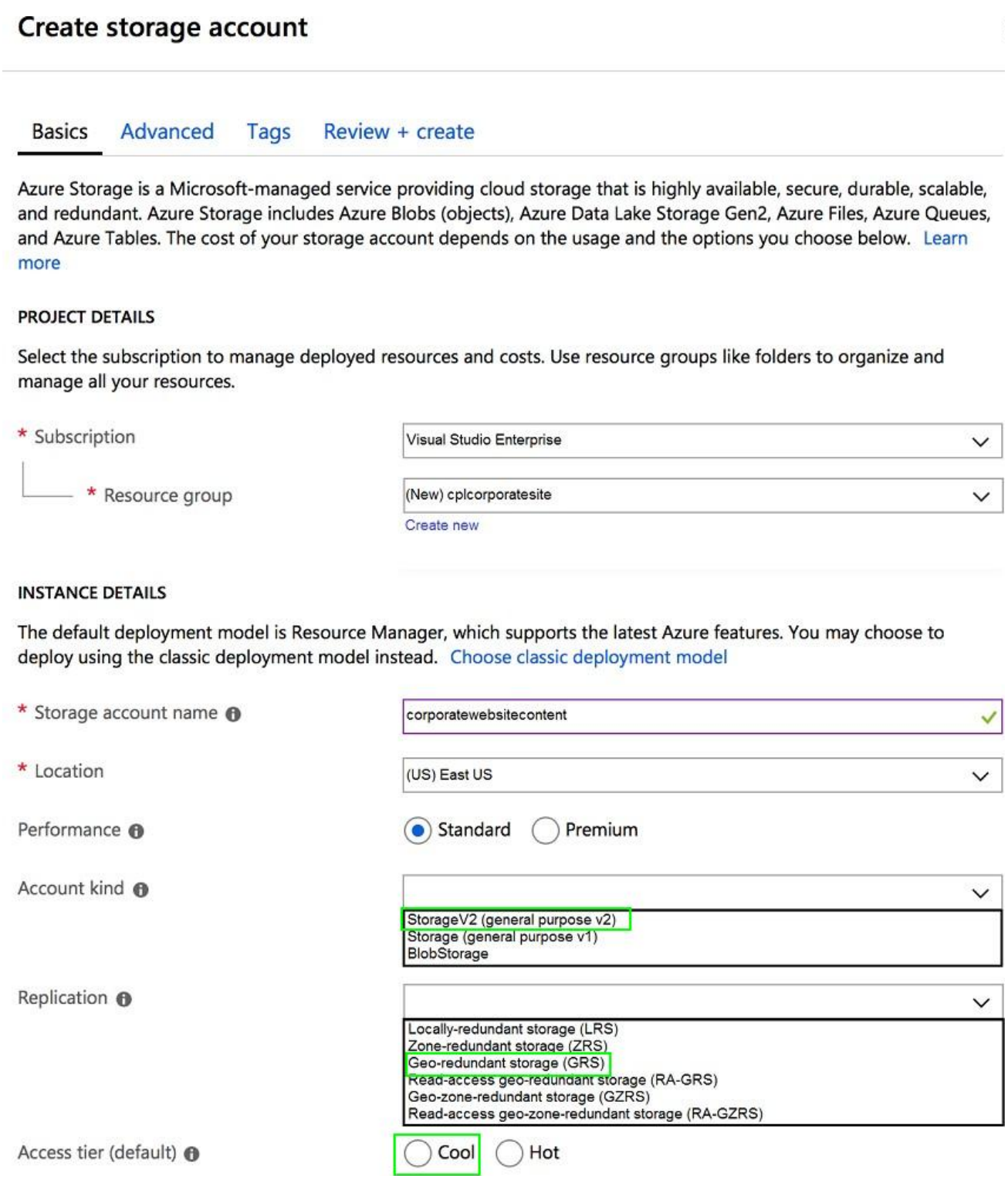

You need to correct the RequestUserApproval Function app error.
What should you do?
A. Update line RA13 to use the async keyword and return an HttpRequest object value.
B. Configure the Function app to use an App Service hosting plan. Enable the Always On setting of the

hosting plan.
C. Update the function to be stateful by using Durable Functions to process the request payload.
D. Update the functionTimeout property of the host.json project file to 15 minutes.
Answer: C
Explanation:
Async operation tracking
The HTTP response mentioned previously is designed to help implement long-running HTTP async APIs with Durable Functions. This pattern is sometimes referred to as the polling consumer pattern.
Both the client and server implementations of this pattern are built into the Durable Functions HTTP APIs.
Function app
You perform local testing for the RequestUserApproval function. The following error message displays: 'Timeout value of 00:10:00 exceeded by function: RequestUserApproval'
The same error message displays when you test the function in an Azure development environment when you run the following Kusto query: FunctionAppLogs
| where FunctionName = = "RequestUserApproval"
References:
https://docs.microsoft.com/en-us/azure/azure-functions/durable/durable-functions-http-features

19.HOTSPOT
You need to configure the Account Kind, Replication, and Storage tier options for the corporate website's Azure Storage account.
How should you complete the configuration? To answer, select the appropriate options in the dialog box in the answer area. NOTE: Each correct selection is worth one point.


Create storage account
Basics
Advanced
Tags
Review + create
Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. Learn more
PROJECT DETAILS
Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.
* Subscription
Visual Studio Enterprise
* Resource group
(New) cplcorporatesite
Create new
INSTANCE DETAILS
The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. Choose classic deployment model
* Storage account name
corporatewebsitecontent
* Location
(US) East US
Performance
Standard
Premium
Account kind
StorageV2 (general purpose v2)
Storage (general purpose v1)
BlobStorage
Replication
Locally-redundant storage (LRS)
Zone-redundant storage (ZRS)
Geo-redundant storage (GRS)
Read-access geo-redundant storage (RA-GRS)
Geo-zone-redundant storage (GZRS)
Read-access geo-zone-redundant storage (RA-GZRS)
Access tier (default)
Cool
Hot

Answer:



Explanation:

Account Kind: StorageV2 (general-purpose v2)

Scenario: Azure Storage blob will be used (refer to the exhibit). Data storage costs must be minimized.

General-purpose v2 accounts: Basic storage account type for blobs, files, queues, and tables. Recommended for most scenarios using Azure Storage.

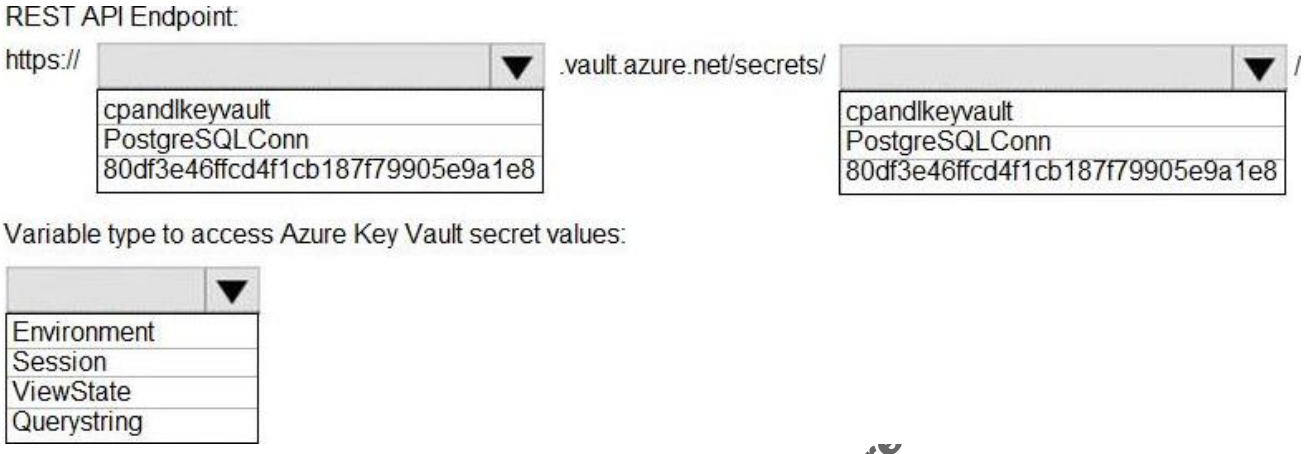
Reference: https://docs.microsoft.com/en-us/azure/storage/common/storage-account-overview https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy

https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers?tabs=azure-portal

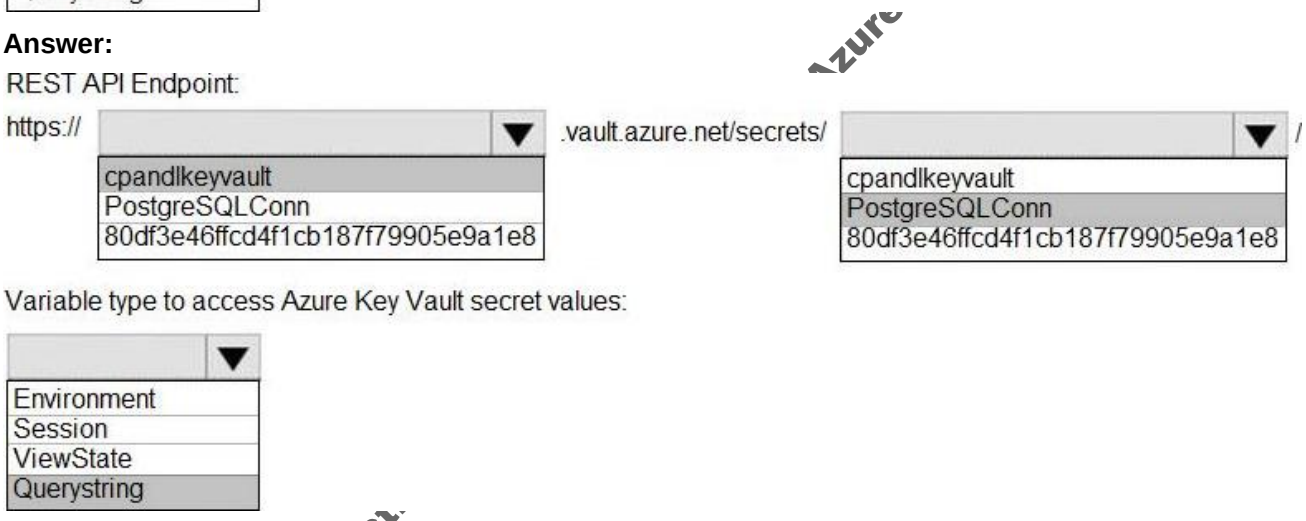
20.HOTSPOT

You need to retrieve the database connection string.

Which values should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.



Answer:



Explanation:

Azure database connection string retrieve REST API vault.azure.net/secrets/

Box 1: cpandlkeyvault

We specify the key vault, cpandlkeyvault.

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

Azure Key Vault name: cpandlkeyvault

Secret name: PostgreSQLConn

Id: 80df3e46ffcd4f1cb187f79905e9a1e8

Box 2: PostgreSQLConn

We specify the secret, PostgreSQLConn

Example, sample request:

https://myvault.vault.azure.net//secrets/mysecretname/4387e9f3d6e14c459867679a90fd0f79?api-version=7.1

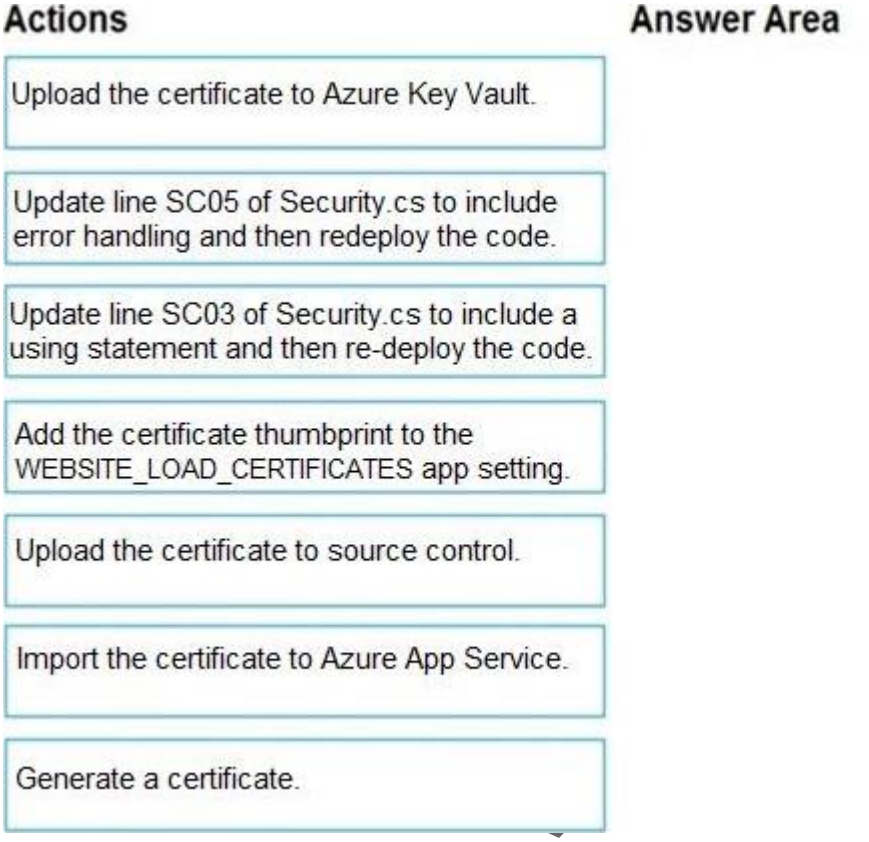
Box 3: Querystring

Reference: https://docs.microsoft.com/en-us/rest/api/keyvault/getsecret/getsecret

21.DRAG DROP

You need to correct the corporate website error.

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



Answer:

Actions	Answer Area
Upload the certificate to Azure Key Vault.	Generate a certificate.
Update line SC05 of Security.cs to include error handling and then redeploy the code.	Upload the certificate to Azure Key Vault.
Update line SC03 of Security.cs to include a using statement and then re-deploy the code.	Import the certificate to Azure App Service.
Add the certificate thumbprint to the WEBSITE_LOAD_CERTIFICATES app setting.	Update line SC05 of Security.cs to include error handling and then redeploy the code.
Upload the certificate to source control.	
Import the certificate to Azure App Service.	
Generate a certificate.	

Explanation:

Scenario: Corporate website

While testing the site, the following error message displays:

Cryptographic Exception: The system cannot find the file specified.

Step 1: Generate a certificate

Step 2: Upload the certificate to Azure Key Vault

Scenario: All SSL certificates and credentials must be stored in Azure Key Vault.

Step 3: Import the certificate to Azure App Service

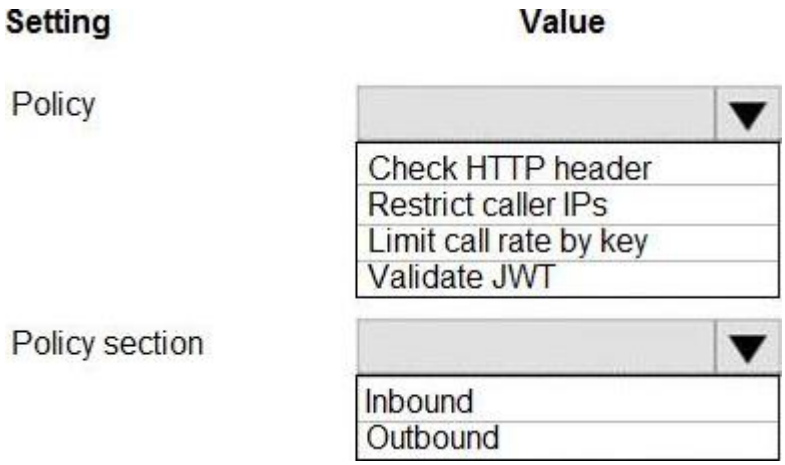
Step 4: Update line SCO5 of Security.cs to include error handling and then redeploy the code

Reference: https://docs.microsoft.com/en-us/azure/app-service/configure-ssl-certificate

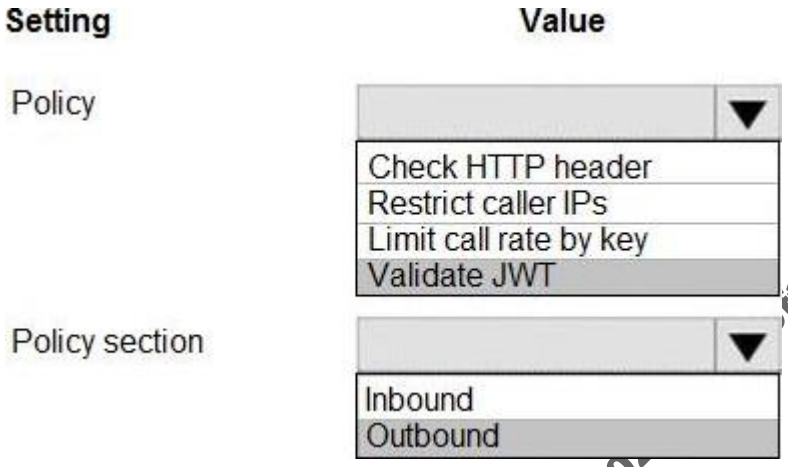
22.HOTSPOT

You need to configure API Management for authentication.

Which policy values should you use? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.



Answer:



Explanation:

Box 1: Validate JWT

The validate-jwt policy enforces existence and validity of a JWT extracted from either a specified HTTP Header or a specified query parameter.

Scenario: User authentication (see step 5 below)

The following steps detail the user authentication process:

Box 2: Outbound

Reference:

https://docs.microsoft.com/en-us/azure/api-management/api-management-access-restriction-policies

23.You need to authenticate the user to the corporate website as indicated by the architectural diagram. Which two values should you use? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

A. ID token signature

B. ID token claims

C. HTTP response code

D. Azure AD endpoint URI

E. Azure AD tenant ID

Answer: A,D

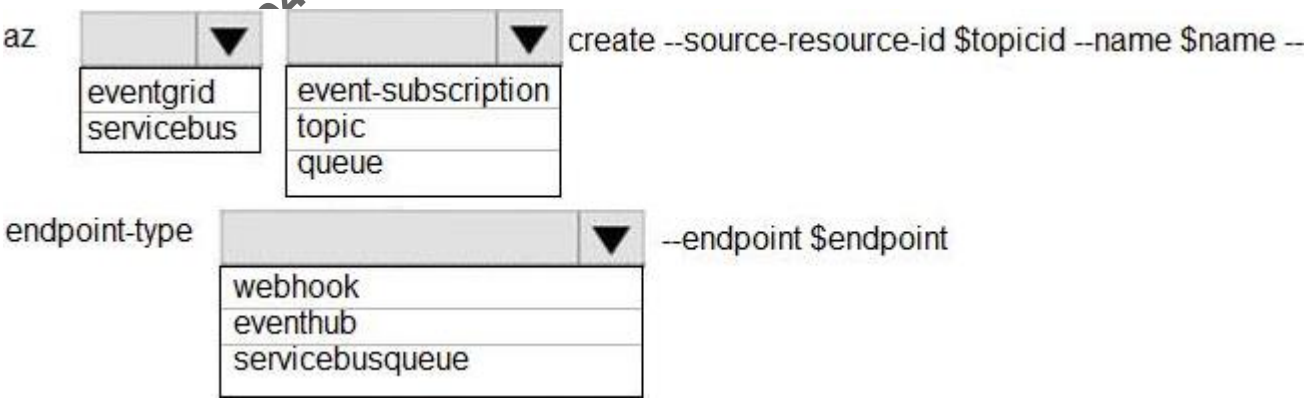
Explanation:

Claims in access tokens

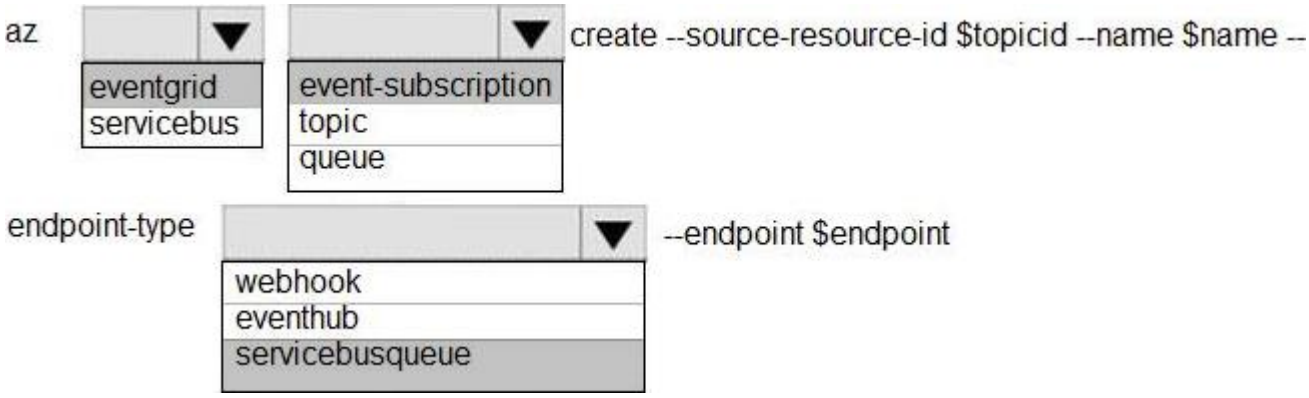
JWTs (JSON Web Tokens) are split into three pieces:
Your client can get an access token from either the v1.0 endpoint or the v2.0 endpoint using a variety of protocols.
Scenario: User authentication (see step 5 below)
The following steps detail the user authentication process:
Reference:
https://docs.microsoft.com/en-us/azure/api-management/api-management-access-restriction-policies

24.You need to investigate the Azure Function app error message in the development environment.
What should you do?
A. Connect Live Metrics Stream from Application Insights to the Azure Function app and filter the metrics.
B. Create a new Azure Log Analytics workspace and instrument the Azure Function app with Application Insights.
C. Update the Azure Function app with extension methods from Microsoft.Extensions.Logging to log events by using the log instance.
D. Add a new diagnostic setting to the Azure Function app to send logs to Log Analytics.
Answer: A
Explanation:
Azure Functions offers built-in integration with Azure Application Insights to monitor functions.
The following areas of Application Insights can be helpful when evaluating the behavior, performance, and errors in your functions:
Live Metrics: View metrics data as it's created in near real-time.
Failures
Performance
Metrics
Reference: https://docs.microsoft.com/en-us/azure/azure-functions/functions-monitoring

25.HOTSPOT
You need to configure the integration for Azure Service Bus and Azure Event Grid.
How should you complete the CLI statement? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.



Answer:



Explanation:

Box 1: eventgrid

To create event subscription use: az eventgrid event-subscription create

Box 2: event-subscription

Box 3: servicebusqueue

Scenario: Azure Service Bus and Azure Event Grid

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

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

Reference:

https://docs.microsoft.com/en-us/cli/azure/eventgrid/event-subscription?view=azure-cli-latest#az_eventgrid_event_subscription_create

26.Topic 4, Misc. Questions

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

Answer: B

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

27.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
Answer: A
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

28.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.

Answer: B

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

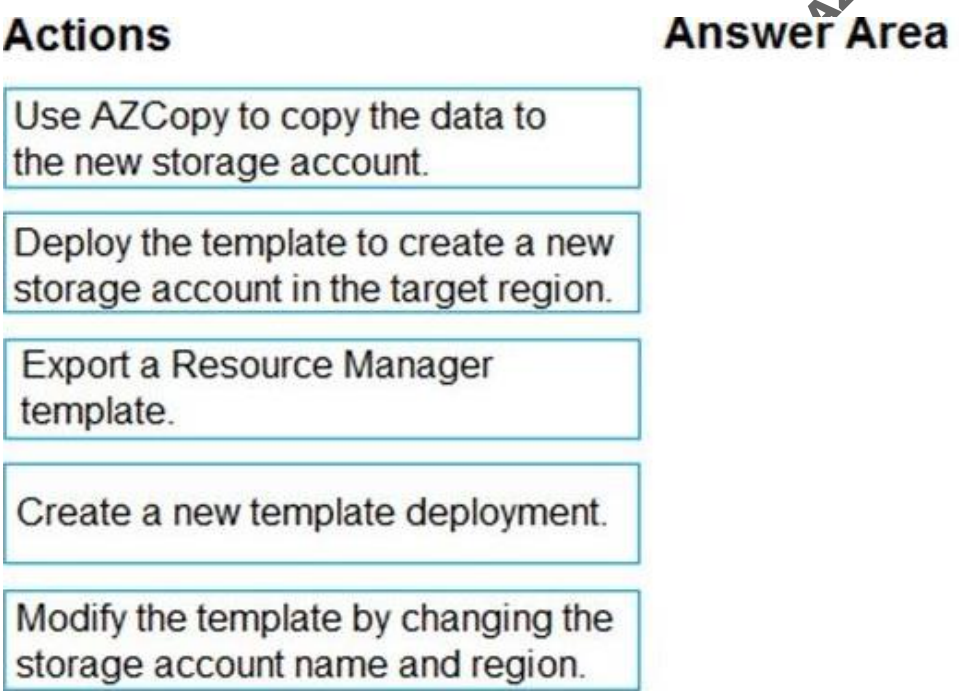
29.DRAG DROP

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.



Answer:

Actions	Answer Area
Use AZCopy to copy the data to the new storage account.	Create a new template deployment.
Deploy the template to create a new storage account in the target region.	Export a Resource Manager template.
Export a Resource Manager template.	Modify the template by changing the storage account name and region.
Create a new template deployment.	Deploy the template to create a new storage account in the target region.
Modify the template by changing the storage account name and region.	Use AZCopy to copy the data to the new storage account.

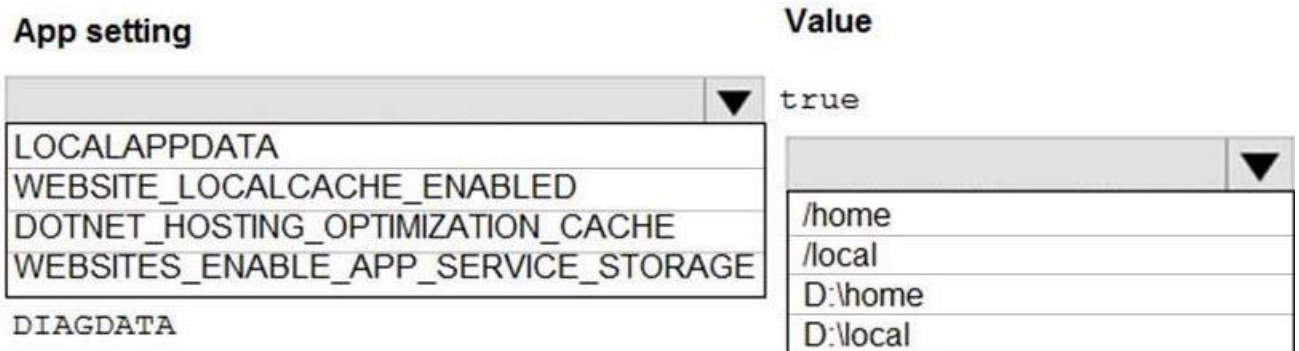
Explanation:
To move a storage account, create a copy of your storage account in another region. Then, move your data to that account by using AzCopy, or another tool of your choice.
The steps are:
Note: You must enable the change feed on your storage account to begin capturing and recording changes. 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

30.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);
}
```

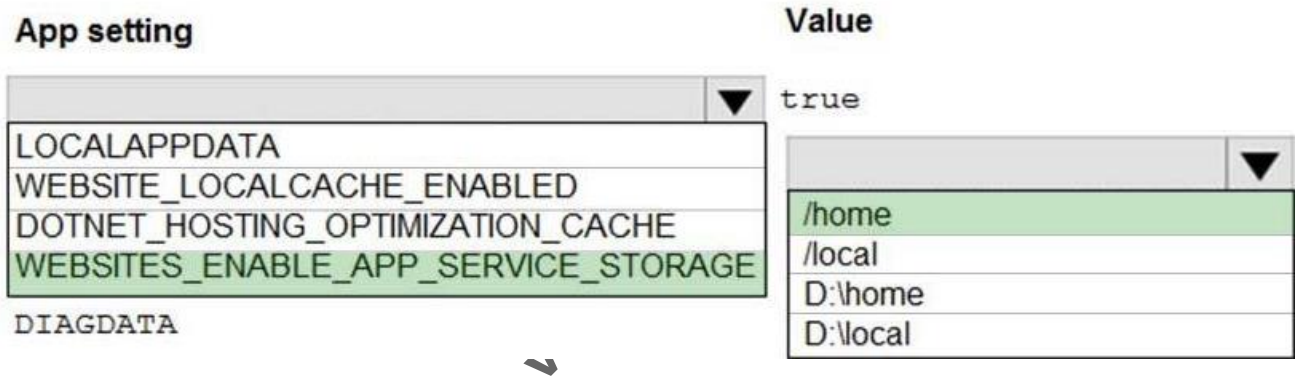
You need to configure the application settings so that diagnostic data is stored as required.
How should you configure the web app's settings? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



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

31.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.

Answer: A,D

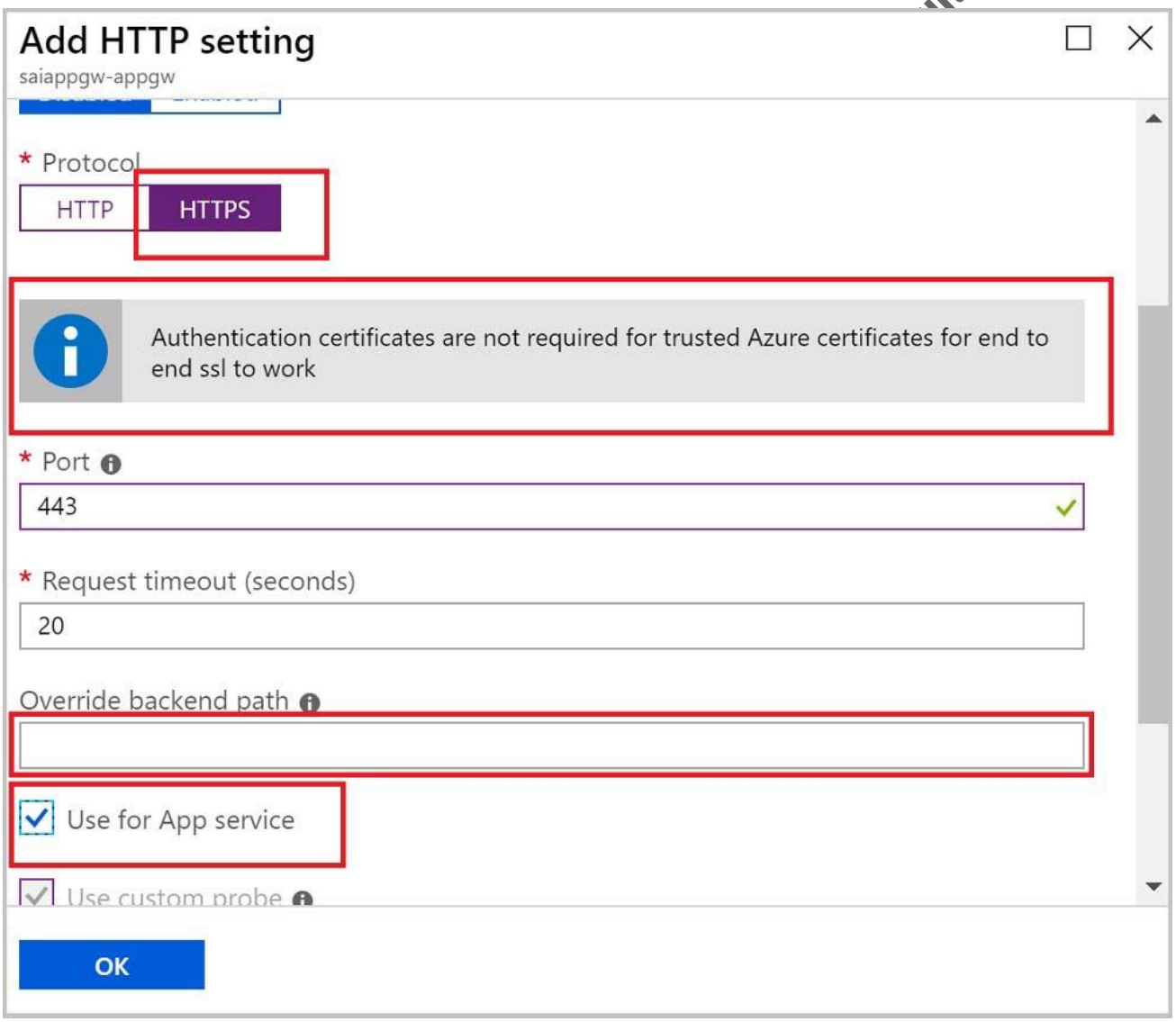
Explanation:

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

32.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.

Answer Area

App service plan setting	Value
Number of VM instances	2 / 4 / 8 / 16
Pricing tier	Isolated / Standard / Premium / Consumption

Answer:

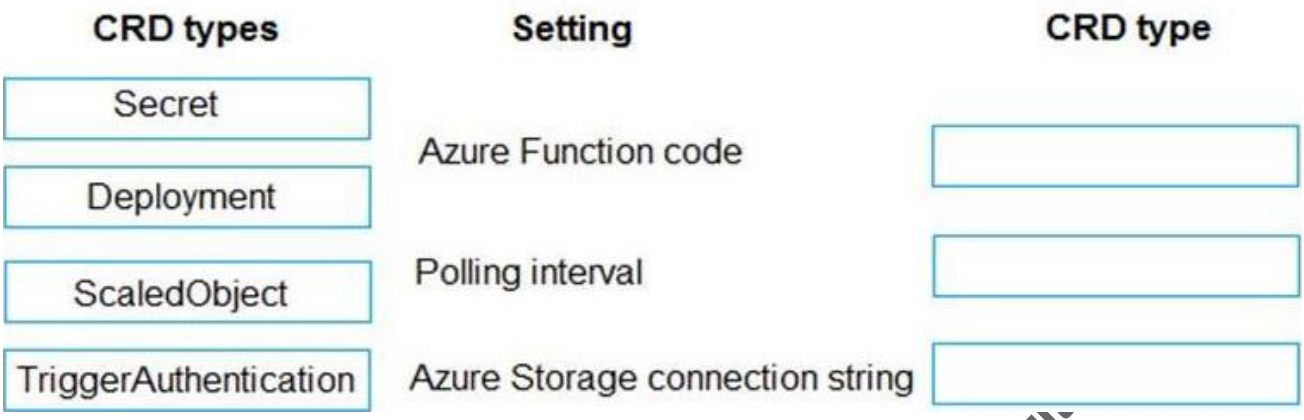
Answer Area

App service plan setting	Value
Number of VM instances	2 / **4** / 8 / 16
Pricing tier	**Isolated** / Standard / Premium / Consumption

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

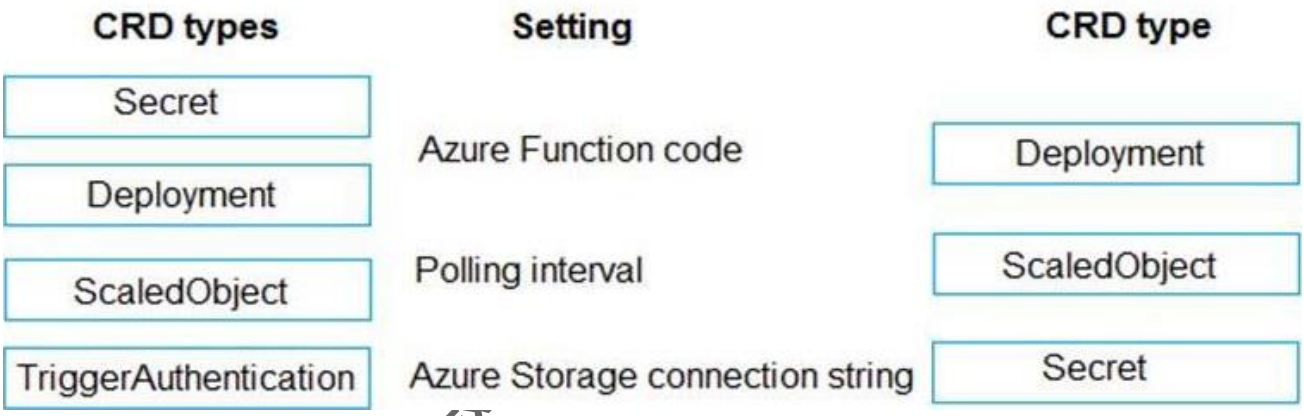
33.DRAG DROP
You are a developer for a software as a service (SaaS) company that uses an Azure Function to process orders. The Azure Function currently runs on an Azure Function app that is triggered by an Azure Storage queue.
You are preparing to migrate the Azure Function to Kubernetes using Kubernetes-based 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.

Answer Area



Answer:

Answer Area



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/

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

Variable name	Value
$gitrepo	https://github.com/Contos/webapp
$webappname	Webapp1103

You need to automatically deploy code from GitHub to the newly created web app.
How should you complete the script? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

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`

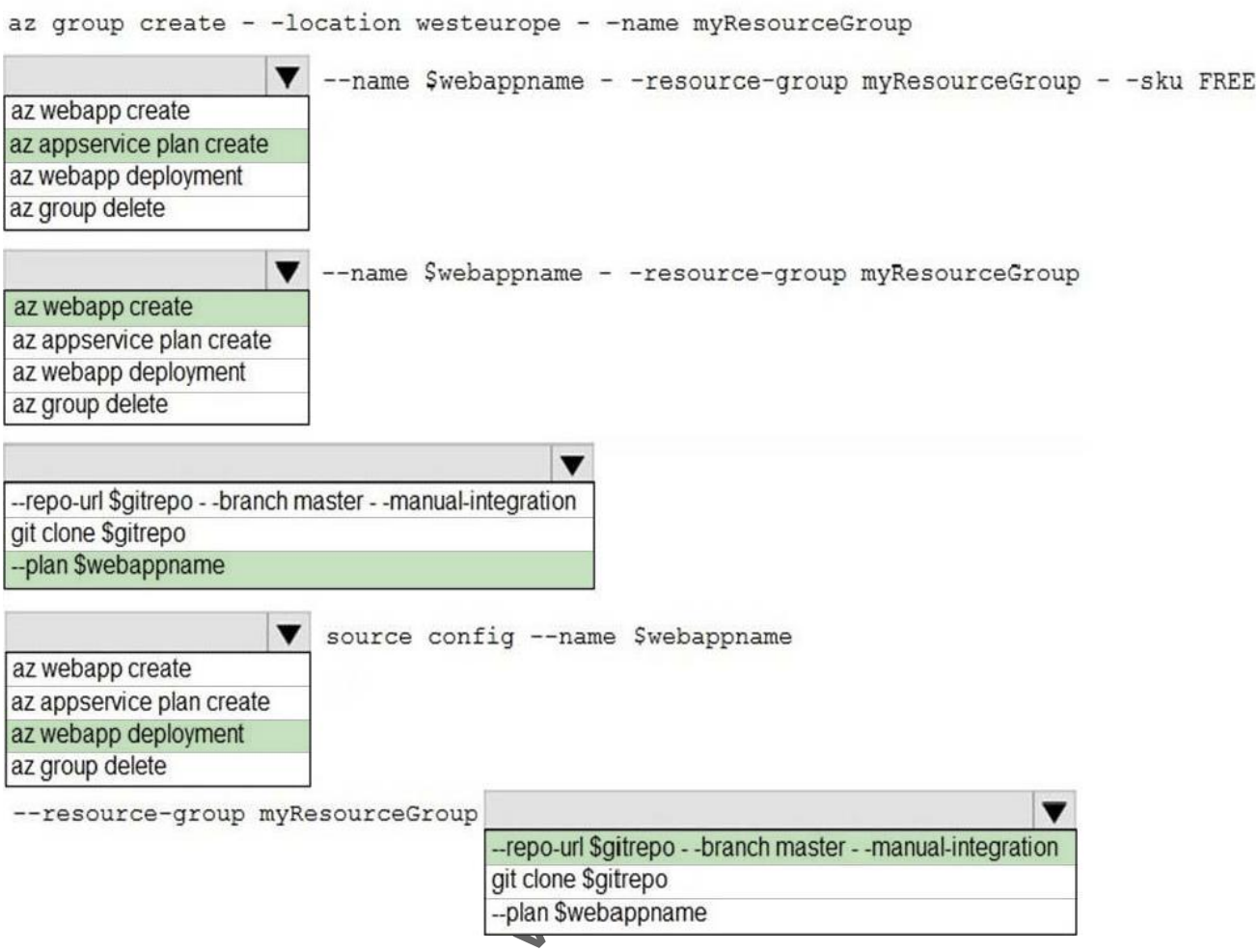
- az webapp create
- az appservice plan create
- az webapp deployment
- az group delete

`--resource-group myResourceGroup` [▼]

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

Answer:

Answer Area



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

35.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
Answer: B
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

36.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.

Answer Area

```
resourceGroupName- +airlineResourceGroup'
name- +docdb-airline-reservations'
databaseName- 'docdb-tickets-database'
collectionName- 'docdb-tickets-collection'
consistencyLevel-
```

- Strong
- Eventual
- ConsistentPrefix
- BoundedStaleness

```
az cosmosdb create \
--name $name \
```

- --enable-virtual-network true\
- --enable-automatic-failover true\
- --kind 'GlobalDocumentDB' \
- --kind 'MongoDB'\

```
--resource group $resourceGroupName \
--max interval 5 \
```

- --locations 'southcentralus'
- --locations 'eastus'
- --locations'southcentralus=0 eastus=1 westus=2'
- --locations 'southcentralus=0'

```
--default-consistency-level - $consistencylevel
```

Answer:

Answer Area

```
resourceGroupName- +airlineResourceGroup'
name- +docdb-airline-reservations'
databaseName- 'docdb-tickets-database'
collectionName- 'docdb-tickets-collection'
consistencyLevel-
```

- Strong
- Eventual
- ConsistentPrefix
- BoundedStaleness

```
az cosmosdb create \
--name $name \
```

- --enable-virtual-network true\
- --enable-automatic-failover true\
- --kind 'GlobalDocumentDB' \
- --kind 'MongoDB'\

```
--resource group $resourceGroupName \
--max interval 5 \
```

- --locations 'southcentralus'
- --locations 'eastus'
- --locations'southcentralus=0 eastus=1 westus=2'
- --locations 'southcentralus=0'

```
--default-consistency-level - $consistencylevel
```


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

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

37.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);
Answer: C
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

38.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.

JSON segments

- orderBy
- sortOrder
- ascending
- descending
- compositeIndexes

Answer Area

```
{
  "automatic": true,
  "ngMode": "Consistent",
  "includedPaths": [
    {
       "path": "/*"
    }
  ], "excludedPaths": [],
  "                    ": [
    [
     {                                                  }
      "path": "/name", "order": "descending"

     },
     {
      "path":"/city","order":"                    "

       }
      ]
]
```

Answer:

JSON segments

orderBy

sortOrder

ascending

descending

compositeIndexes

Answer Area

```
{
  "automatic": true,
  "ngMode": "Consistent",
  "includedPaths": [
    {
       "path": "/*"
    }
  ], "excludedPaths": [],
  " compositeIndexes ": [
    [
     {                                                    }
      "path": "/name", "order": "descending"

     },
     {
      "path":"/city","order":" descending "

        }
       ]
]
```

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",
                }
            ]
        ]
}
```

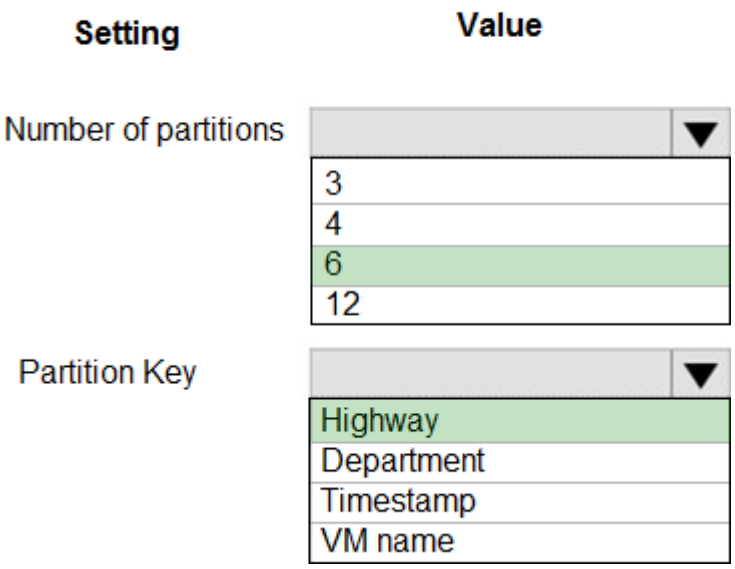
39.HOTSPOT
You are building a traffic monitoring system that monitors traffic along six highways. The system produces time series analysis-based reports for each highway. Data from traffic sensors are stored in Azure Event Hub.
Traffic data is consumed by four departments. Each department has an Azure 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 throughout 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.

Answer Area

Setting	Value
Number of partitions	3 / 4 / 6 / 12
Partition Key	Highway / Department / Timestamp / VM name

Answer:

Answer Area



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

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