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**Exam** : **AZ-204-KR**

**Title** : **Developing Solutions for  
Microsoft Azure (AZ-204  
Korean Version)**

**Vendor** : **Microsoft**

**Version** : **DEMO**

**QUESTION NO: 1**

Shipping Logic App을 보호해야 합니다.

무엇을 사용해야 합니까?

- A. 애저 앱 서비스 환경(ASE)
- B. Azure AD B2B 통합
- C. 통합 서비스 환경(ISE)
- D. VNet 서비스 끝점

**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>

Topic 1, Windows Server 2016 virtual machine

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

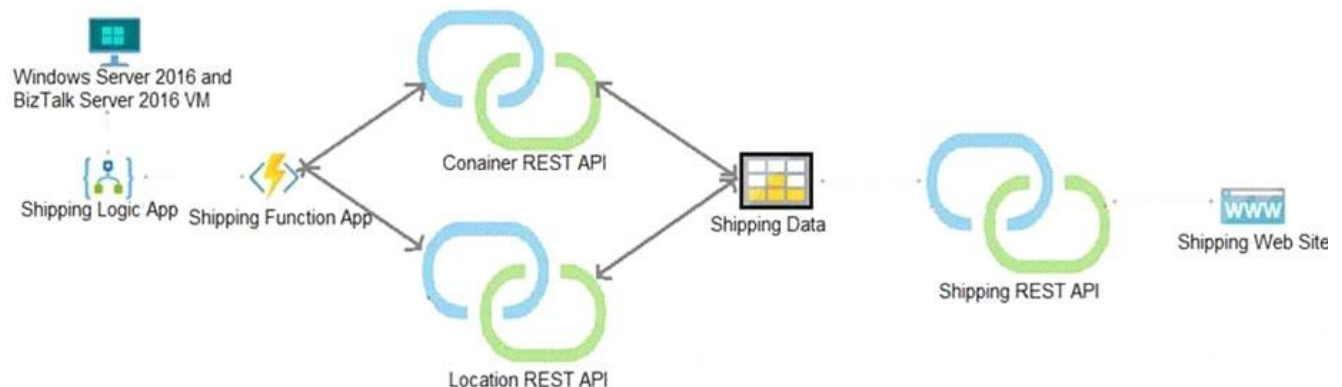
The

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 NO: 2

Shipping 웹 사이트에 대해 Azure CDN을 구성해야 합니다.

어떤 구성 옵션을 사용해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Option	Value
Tier	<div data-bbox="590 436 1300 526" style="border: 1px solid black; background-color: #e0e0e0; padding: 2px;"></div> <div data-bbox="1300 436 1412 526" style="border: 1px solid black; background-color: #e0e0e0; text-align: center; padding: 2px;">▼</div> <div data-bbox="590 526 1412 593" style="border: 1px solid black; padding: 2px;">Standard</div> <div data-bbox="590 593 1412 672" style="border: 1px solid black; padding: 2px;">Premium</div>
Profile	<div data-bbox="590 739 1300 828" style="border: 1px solid black; background-color: #e0e0e0; padding: 2px;"></div> <div data-bbox="1300 739 1412 828" style="border: 1px solid black; background-color: #e0e0e0; text-align: center; padding: 2px;">▼</div> <div data-bbox="590 828 1412 907" style="border: 1px solid black; padding: 2px;">Akamai</div> <div data-bbox="590 907 1412 974" style="border: 1px solid black; padding: 2px;">Microsoft</div>
Optimization	<div data-bbox="590 1075 1340 1164" style="border: 1px solid black; background-color: #e0e0e0; padding: 2px;"></div> <div data-bbox="1340 1075 1452 1164" style="border: 1px solid black; background-color: #e0e0e0; text-align: center; padding: 2px;">▼</div> <div data-bbox="590 1164 1452 1232" style="border: 1px solid black; padding: 2px;">general web delivery</div> <div data-bbox="590 1232 1452 1299" style="border: 1px solid black; padding: 2px;">large file download</div> <div data-bbox="590 1299 1452 1366" style="border: 1px solid black; padding: 2px;">dynamic site acceleration</div> <div data-bbox="590 1366 1452 1433" style="border: 1px solid black; padding: 2px;">video-on-demand media streaming</div>

**Answer:**

Option	Value
Tier	<div data-bbox="590 436 1300 526" style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 2px;">▼</div> <div data-bbox="590 526 1412 672" style="border: 1px solid #ccc; padding: 2px;"><div data-bbox="590 526 1412 593" style="border-bottom: 1px solid #ccc; padding: 2px;">Standard</div><div data-bbox="590 593 1412 672" style="padding: 2px;">Premium</div></div>
Profile	<div data-bbox="590 739 1300 828" style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 2px;">▼</div> <div data-bbox="590 828 1412 974" style="border: 1px solid #ccc; padding: 2px;"><div data-bbox="590 828 1412 896" style="border-bottom: 1px solid #ccc; padding: 2px;">Akamai</div><div data-bbox="590 896 1412 974" style="padding: 2px;">Microsoft</div></div>
Optimization	<div data-bbox="590 1075 1340 1164" style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 2px;">▼</div> <div data-bbox="590 1164 1453 1433" style="border: 1px solid #ccc; padding: 2px;"><div data-bbox="590 1164 1453 1232" style="border-bottom: 1px solid #ccc; padding: 2px;">general web delivery</div><div data-bbox="590 1232 1453 1299" style="border-bottom: 1px solid #ccc; padding: 2px;">large file download</div><div data-bbox="590 1299 1453 1366" style="border-bottom: 1px solid #ccc; padding: 2px;">dynamic site acceleration</div><div data-bbox="590 1366 1453 1433" style="padding: 2px;">video-on-demand media streaming</div></div>

Explanation:

Option	Value
Tier	<div style="border: 1px solid black; padding: 5px;"><div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="padding: 2px;"><p>Standard</p><p>Premium</p></div></div>
Profile	<div style="border: 1px solid black; padding: 5px;"><div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="padding: 2px;"><p>Akamai</p><p>Microsoft</p></div></div>
Optimization	<div style="border: 1px solid black; padding: 5px;"><div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="padding: 2px;"><p>general web delivery</p><p>large file download</p><p>dynamic site acceleration</p><p>video-on-demand media streaming</p></div></div>

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 NO: 3**

VM 문제를 수정해야 합니다.

어떤 도구를 사용해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Issue	Tool
Backup and Restore	<div data-bbox="719 562 1305 645" style="border: 1px solid black; background-color: #f0f0f0; padding: 2px;"></div> <div data-bbox="1310 562 1406 645" style="border: 1px solid black; background-color: #f0f0f0; text-align: center; padding: 2px;">▼</div> <div data-bbox="719 645 1406 712" style="border: 1px solid black; padding: 2px;">Azure Site Recovery</div> <div data-bbox="719 712 1406 779" style="border: 1px solid black; padding: 2px;">Azure Backup</div> <div data-bbox="719 779 1406 846" style="border: 1px solid black; padding: 2px;">Azure Data Box</div> <div data-bbox="719 846 1406 902" style="border: 1px solid black; padding: 2px;">Azure Migrate</div>
Performance	<div data-bbox="719 936 1305 1019" style="border: 1px solid black; background-color: #f0f0f0; padding: 2px;"></div> <div data-bbox="1310 936 1406 1019" style="border: 1px solid black; background-color: #f0f0f0; text-align: center; padding: 2px;">▼</div> <div data-bbox="719 1019 1406 1086" style="border: 1px solid black; padding: 2px;">Azure Network Watcher</div> <div data-bbox="719 1086 1406 1153" style="border: 1px solid black; padding: 2px;">Azure Traffic Manager</div> <div data-bbox="719 1153 1406 1220" style="border: 1px solid black; padding: 2px;">ExpressRoute</div> <div data-bbox="719 1220 1406 1281" style="border: 1px solid black; padding: 2px;">Accelerated Networking</div>

**Answer:**

## Issue

## Tool

Backup and Restore

	▼
Azure Site Recovery	
Azure Backup	
Azure Data Box	
Azure Migrate	

Performance

	▼
Azure Network Watcher	
Azure Traffic Manager	
ExpressRoute	
Accelerated Networking	

Explanation:

Issue	Tool
Backup and Restore	<div style="border: 1px solid black; padding: 5px;"><div style="text-align: right; border-bottom: 1px solid black;">▼</div><div style="padding: 5px;">Azure Site Recovery</div><div style="padding: 5px; background-color: #f0f0f0;">Azure Backup</div><div style="padding: 5px;">Azure Data Box</div><div style="padding: 5px;">Azure Migrate</div></div>
Performance	<div style="border: 1px solid black; padding: 5px;"><div style="text-align: right; border-bottom: 1px solid black;">▼</div><div style="padding: 5px;">Azure Network Watcher</div><div style="padding: 5px;">Azure Traffic Manager</div><div style="padding: 5px;">ExpressRoute</div><div style="padding: 5px; background-color: #f0f0f0;">Accelerated Networking</div></div>

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/>

#### QUESTION NO: 4

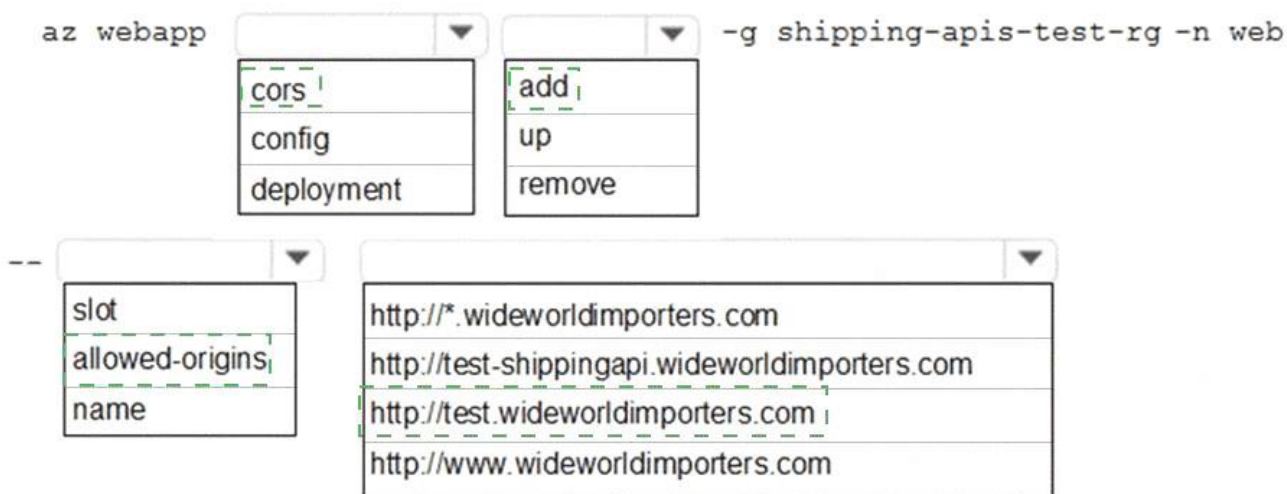
테스트 오류를 해결하려면 API를 업데이트해야 합니다.

Azure CLI 명령을 어떻게 완료해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.



**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>

**QUESTION NO: 5**

REST API 요구 사항을 지원하도록 Azure App Service를 구성해야 합니다.

어떤 값을 사용해야 할까요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Setting	Value
Plan	<input type="text"/> Basic Standard Premium Isolated
Instance Count	<input type="text"/> 1 10 20 100

**Answer:**

Setting	Value
Plan	<input type="text" value=""/> Basic Standard Premium Isolated
Instance Count	<input type="text" value=""/> 1 10 20 100

Explanation:

Setting	Value
Plan	<input type="text" value="Basic"/> ▼ Basic Standard Premium Isolated
Instance Count	<input type="text" value="10"/> ▼ 1 10 20 100

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:  
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.

References:

<https://azure.microsoft.com/en-us/pricing/details/app-service/plans/>

### QUESTION NO: 6

Shipping Function 앱을 보호해야 합니다.

앱을 어떻게 구성해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Setting	Value
Authorization level	<div style="border: 1px solid black; padding: 2px;"><div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="border: 1px solid black; padding: 2px;"><ul style="list-style-type: none"><li>Function</li><li>Anonymous</li><li>Admin</li></ul></div></div>
User claims	<div style="border: 1px solid black; padding: 2px;"><div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="border: 1px solid black; padding: 2px;"><ul style="list-style-type: none"><li>JSON Web Token (JWT)</li><li>Shared Access Signature (SAS) token</li><li>API Key</li></ul></div></div>
Trigger type	<div style="border: 1px solid black; padding: 2px;"><div style="border: 1px solid black; padding: 2px; display: flex; justify-content: space-between;"><span></span><span>▼</span></div><div style="border: 1px solid black; padding: 2px;"><ul style="list-style-type: none"><li>blob</li><li>HTTP</li><li>queue</li><li>timer</li></ul></div></div>

**Answer:**

Setting	Value
Authorization level	<div style="border: 1px solid #ccc; padding: 5px;"><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">Function</div><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">Anonymous</div><div style="padding: 2px 5px;">Admin</div></div>
User claims	<div style="border: 1px solid #ccc; padding: 5px;"><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">JSON Web Token (JWT)</div><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">Shared Access Signature (SAS) token</div><div style="padding: 2px 5px;">API Key</div></div>
Trigger type	<div style="border: 1px solid #ccc; padding: 5px;"><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">blob</div><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">HTTP</div><div style="border-bottom: 1px solid #ccc; padding: 2px 5px;">queue</div><div style="padding: 2px 5px;">timer</div></div>

Explanation:

Setting	Value
Authorization level	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">▼</div> <div style="padding: 2px 5px;">Function</div> <div style="padding: 2px 5px;">Anonymous</div> <div style="padding: 2px 5px;">Admin</div> </div>
User claims	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">▼</div> <div style="padding: 2px 5px;">JSON Web Token (JWT)</div> <div style="padding: 2px 5px;">Shared Access Signature (SAS) token</div> <div style="padding: 2px 5px;">API Key</div> </div>
Trigger type	<div style="border: 1px solid black; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid black; margin-bottom: 5px;">▼</div> <div style="padding: 2px 5px;">blob</div> <div style="padding: 2px 5px;">HTTP</div> <div style="padding: 2px 5px;">queue</div> <div style="padding: 2px 5px;">timer</div> </div>

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>

### QUESTION NO: 7

온-프레미스 배송 데이터를 Azure로 마이그레이션해야 합니다.

무엇을 사용해야 합니까?

- A. Azure Migrate
- B. Azure Cosmos DB 데이터 마이그레이션 도구(dt.exe)
- C. 아즈카피
- D. Azure 데이터베이스 마이그레이션 서비스

**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/>

**QUESTION NO: 8**

배송 웹 사이트 오류를 해결해야 합니다.

Azure Table Storage 서비스를 어떻게 구성해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

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

**Answer:**

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

**Explanation:**

```
<?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
    </
    AllowedMethods>
    GET,PUT
    GET
    POST
    GET,HEAD
  </AllowedMethods>
  ...
  </CorsRule>
</Cors>
</StorageServiceProperties>
```

**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: &lt; origin &gt;

Access-Control-Allow-Origin: null

&lt; origin &gt; 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.

" &lt; Corsrule &gt; " " 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>**QUESTION NO: 9**

해양 운송 워크플로우에 대한 메시지 처리를 지원해야 합니다.



어떤 네 가지 작업을 순서대로 수행해야 하나? 응답하려면 작업 목록에서 해당 작업을 응답 영역으로 이동하고 올바른 순서로 정렬하십시오.

**Actions**

**Answer Area**

Create an integration account in the Azure portal.

Link the custom connector to the Logic App.

Update the Logic App to use the partners, schemas, certificates, maps, and agreements.  

Create a custom connector for the Logic App.

Add partners, schemas, certificates, maps, and agreements.

Link the Logic App to the integration account.





**Answer:**

**Actions**

**Answer Area**

Create an integration account in the Azure portal.

Link the custom connector to the Logic App.



Update the Logic App to use the partners, schemas, certificates, maps, and agreements.  

Create a custom connector for the Logic App.

Add partners, schemas, certificates, maps, and agreements.

Link the Logic App to the integration account.

Answer Area content with red dashed border and navigation icons:

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

**Explanation:**

Create an integration account in the Azure portal.

Link the Logic App to the integration account.

Add partners, schemas, certificates, maps, and agreements.

Create a custom connector for the Logic App.

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>

### QUESTION NO: 10

Shipping Logic App에 대한 요구 사항을 지원해야 합니다.

무엇을 사용해야 합니까?

- A. Azure Active Directory 애플리케이션 프록시
- B. 지점 간(P2S) VPN 연결
- C. 사이트 간(S2S) VPN 연결
- D. 온프레미스 데이터 게이트웨이

**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:

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>

Topic 2, Contoso, Ltd

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

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     cpu: 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 NO: 11

네트워크 보안 정책이 충족되는지 확인해야 합니다.

네트워크 보안을 어떻게 구성해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

**Technology**

**Value**

SSL certificate

	▼
Valid root certificate	
Self-signed certificate	

Proxy type

	▼
nginx	
Azure Application Gateway	

**Answer:**

**Technology**

**Value**

SSL certificate

	▼
Valid root certificate	
Self-signed certificate	

Proxy type

	▼
nginx	
Azure Application Gateway	

Explanation:

Technology	Value
SSL certificate	<div style="border: 1px solid black; padding: 5px;"><div style="text-align: right;">▼</div><div style="background-color: #f0f0f0; padding: 2px;">Valid root certificate</div><div style="padding: 2px;">Self-signed certificate</div></div>
Proxy type	<div style="border: 1px solid black; padding: 5px;"><div style="text-align: right;">▼</div><div style="padding: 2px;">nginx</div><div style="background-color: #f0f0f0; padding: 2px;">Azure Application Gateway</div></div>

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 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>

### QUESTION NO: 12

사용자가 ContentAnalysisService를 사용하여 콘텐츠를 검토할 수 있도록 AM09 행에 코드를

추가해야 합니다.

코드를 어떻게 완성해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

	▼
"allowPublicClient":true	
"oauth2Permissions":["login"]	
"oauth2AllowUrlPathMatching":true	
"oauth2AllowIdTokenImplicitFlow":true	

	▼
"oauth2AllowImplicitFlow": true	
"oauth2RequiredPostResponse":true	
"preAuthorizedApplications":["SPA"]	
"knownClientApplications":["ContentAnalysisService"]	

**Answer:**

```

"allowPublicClient":true
"oauth2Permissions":["login"]
"oauth2AllowUrlPathMatching":true
"oauth2AllowIdTokenImplicitFlow":true

```

```

"oauth2AllowImplicitFlow": true
"oauth2RequiredPostResponse":true
"preAuthorizedApplications":["SPA"]
"knownClientApplications":["ContentAnalysisService"]

```

Explanation:

```

"allowPublicClient":true
"oauth2Permissions":["login"]
"oauth2AllowUrlPathMatching":true
"oauth2AllowIdTokenImplicitFlow":true

```

```

"oauth2AllowImplicitFlow": true
"oauth2RequiredPostResponse":true
"preAuthorizedApplications":["SPA"]
"knownClientApplications":["ContentAnalysisService"]

```

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 NO: 13

요구 사항에 따라 ContentUploadService를 모니터링해야 합니다.

어떤 명령을 사용해야 합니까?

- 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>

### QUESTION NO: 14

CheckUserContent Azure 함수를 배포해야 합니다. 솔루션은 보안 및 비용 요구 사항을 충족해야 합니다.

어떤 호스팅 모델을 사용해야 합니까?

- A. 소비 계획
- B. 프리미엄 플랜
- C. App Service 계획

**Answer:** C

### QUESTION NO: 15

요구 사항에 따라 유효성 검사 테스트가 트리거되는지 확인해야 합니다.

코드 세그먼트를 어떻게 완성해야 합니까? 응답하려면 응답 영역에서 적절한 값을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

```
var event = getEvent();
if (event.eventType === 
    && event.data.target === 
    && event..contains('contosoimages'))
{
    startValidationTesting();
}
```

**Answer:**

```
var event = getEvent();
if (event.eventType === '
    ImagePushed
    RepositoryItem
    ImageDeployed
    RepositoryUpdated'
    && event.data.target === 'contentanalysiservice'
    && event.
        topic
        service
        repository
        imageCollection
        .contains('contosoimages'))
{
    startValidationTesting();
}
```

Explanation:

```

var event = getEvent();
if (event.eventType === '
    ImagePushed
    RepositoryItem
    ImageDeployed
    RepositoryUpdated

&& event.data.target.
    aci
    image
    service
    repository

&& event.
    topic
    service
    repository
    imageCollection

    .contains('contosoimages'))
{
    startValidationTesting();
}

```

Box 1: RepositoryUpdated

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.

Box 2: service

Box 3: imageCollection

Reference:

<https://docs.microsoft.com/en-us/azure/devops/notifications/oob-supported-event-types>

### QUESTION NO: 16

ContentReview 역할을 구현하려면 AM04 행에 마크업을 추가해야 합니다.

마크업을 어떻게 완성해야 합니까? 대답하려면 적절한 json 세그먼트를 올바른 위치로 드래그하십시오.

각 json 세그먼트는 한 번, 두 번 이상 또는 전혀 사용되지 않을 수 있습니다. 콘텐츠를 보려면 창 사이의 분할 막대를 끌거나 스크롤해야 할 수 있습니다.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

**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:

```

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

```

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 NO: 17

CheckUserContent 함수에 대한 바인딩을 구현해야 합니다.  
코드 세그먼트를 어떻게 완성해야 하나? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

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

**Answer:**

```

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)
    {
        ...
    }
}

```

Explanation:

```

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)
    {
        ...
    }
}

```

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 NO: 18

ContentUploadService가 Azure Storage 액세스 키에 액세스할 수 있도록 CS17 줄에 YAML

태그를 추가해야 합니다.

YAML 마크업을 어떻게 완료해야 합니까? 응답하려면 적절한 YAML 세그먼트를 올바른 위치로 드래그하십시오. 각 YAML 세그먼트는 한 번, 두 번 이상 사용하거나 전혀 사용하지 않을 수 있습니다. 콘텐츠를 보려면 창 사이의 분할 막대를 끌거나 스크롤해야 할 수 있습니다. 참고: 각 올바른 선택은 1점의 가치가 있습니다.

**YAML segments**

- secret
- envVar
- secretValues
- volumes
- volumeMounts
- environmentVariables

**Answer Area**

```

YAML segment :
- mountPath: /mnt/secrets
  name: accesskey
YAML segment :
- name: accesskey
YAML segment :
  key: TXkgZmlyc3Qgc2VjcmV0IEZPTwo=
    
```

**Answer:**

**YAML segments**

- secret
- envVar
- secretValues
- volumes
- volumeMounts
- environmentVariables

**Answer Area**

```

volumeMounts :
- mountPath: /mnt/secrets
  name: accesskey
volumes :
- name: accesskey
secret :
  key: TXkgZmlyc3Qgc2VjcmV0IEZPTwo=
    
```

Explanation:

```
volumeMounts :  
  - mountPath: /mnt/secrets  
    name: accesskey  
volumes :  
  - name: accesskey  
secret :  
  key: TXkgZmlyc3Qgc2VjcmV0IEZPTwo=
```

Box 1: volumeMounts

Example:

volumeMounts:

- mountPath: /mnt/secrets

name: secretvolume1

volumes:

- name: secretvolume1

secret:

mysecret1: TXkgZmlyc3Qgc2VjcmV0IEZPTwo=

Box 2: volumes

Box 3: secret

Reference:

<https://docs.microsoft.com/en-us/azure/container-instances/container-instances-volume-secret>

### QUESTION NO: 19

컨텐츠를 수동으로 검토하기 위한 요구 사항을 충족할 수 있도록 애플리케이션 매니페스트의 AM10 줄에 코드를 추가해야 합니다.

코드를 어떻게 완성해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

```
"optionalClaims": [  
  "",  
  "",  
  "",  
  "",  
  
  "",  
  "",  
  "",  
  "",  
],
```

**Answer:**

```
"optionalClaims": [  
  "",  
    {  
      "acct": "",  
      "platf": "",  
      "sid": "",  
      "tenant_ctype": "",  
    },  
  "",  
    {  
      "sid": "",  
      "upn": "",  
      "email": "",  
      "enfpolid": "",  
    },  
],
```

Explanation:

```
"optionalClaims": [  
  "",  
    {  
      "acct": "",  
      "platf": "",  
      "sid": "",  
      "tenant_ctype": "",  
    },  
  "",  
    {  
      "sid": "",  
      "upn": "",  
      "email": "",  
      "enfpolid": "",  
    },  
],
```

Box 1: sid

Sid: Session ID, used for per-session user sign-out. Personal and Azure AD accounts.

Scenario: 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.

Box 2: email

Scenario: All completed reviews must include the reviewer's email address for auditing purposes.

### QUESTION NO: 20

사용자 계약을 저장해야 합니다.

계약이 완료된 후 계약을 어디에 저장해야 합니까?

- A. Azure 저장소 큐
- B. Azure 이벤트 허브
- C. Azure 서비스 버스 항목
- D. Azure Event Grid 항목

**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:

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 NO: 21

ContentUploadService 문제를 해결하려면 http 서버 로그 출력을 조사해야 합니다.

어떤 명령을 먼저 사용해야 합니까?

- A. az 웹앱 로그
- B. az ams 라이브 출력
- C. az 모니터 활동 로그
- D. az 컨테이너 연결

**Answer:** C

Explanation:

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

" 502 bad gateway " and " 503 service unavailable " are common errors in your app hosted in Azure App Service.

Microsoft Azure publicizes each time there is a service interruption or performance

degradation.

The az monitor activity-log command manages activity logs.

Note: Troubleshooting can be divided into three distinct tasks, in sequential order:

Observe and monitor application behavior

Collect data

Mitigate the issue

Reference:

<https://docs.microsoft.com/en-us/cli/azure/monitor/activity-log>

### QUESTION NO: 22

ContentUploadService 배포를 구성해야 합니다.

어떤 두 가지 작업을 수행해야 합니까? 각 정답은 솔루션의 일부를 나타냅니다.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

**A.** CS23 행에 다음 마크업을 추가합니다.

유형: 비공개

**B.** CS24 줄에 다음 마크업을 추가합니다.

os유형: Windows

**C.** CS24 줄에 다음 마크업을 추가합니다.

os유형: 리눅스

**D.** 다음 마크업을 CS23 행에 추가합니다.

유형: 공개

**Answer:** A C

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/>

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

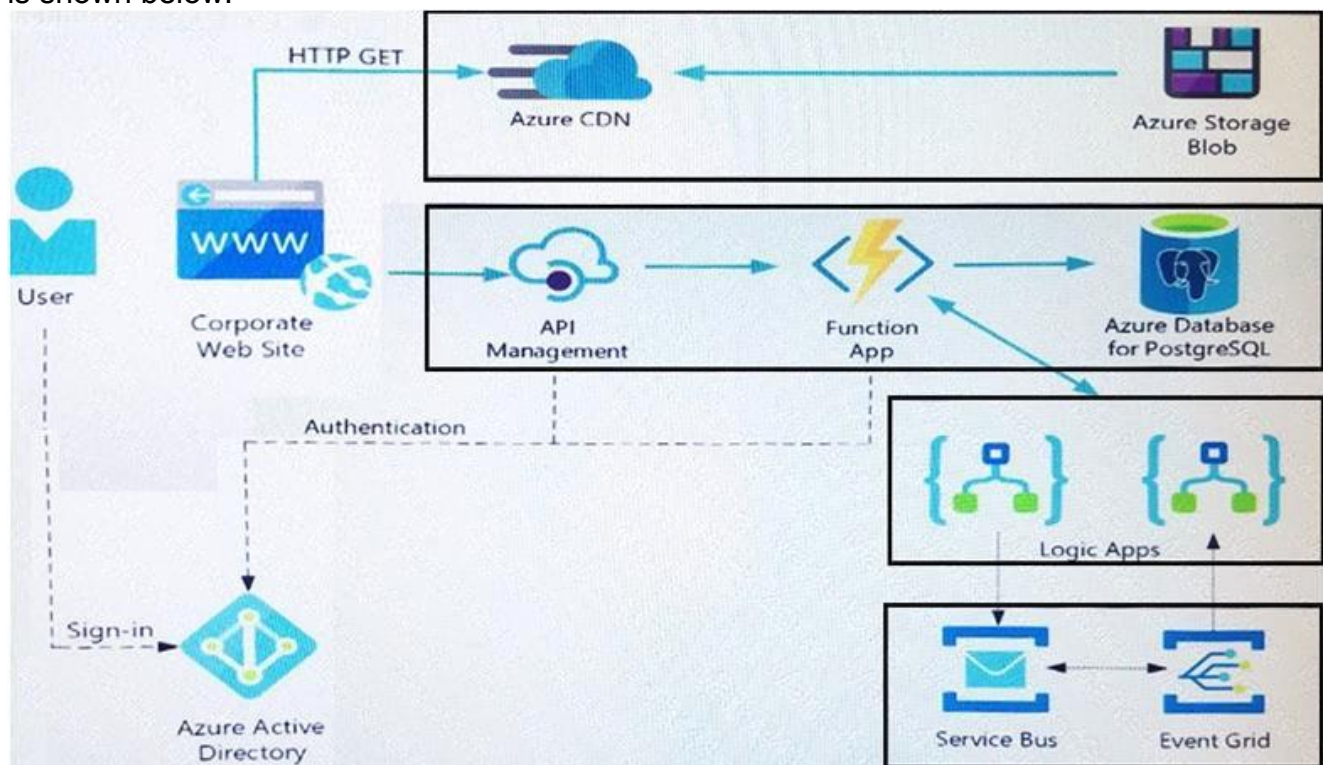
Architecture overview

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,
RA06 ILogger log)
RA07 {
RA08     log.LogInformation("RequestUserApproval function processed a request.");
RA09     ...
RA10     return ProcessRequest(req)
RA11         ? (ActionResult)new OkObjectResult($"User approval processed")
RA12         : new BadRequestObjectResult("Failed to process user approval");
RA13 }
RA14 private static bool ProcessRequest(HttpRequest req)
RA15 {
RA16     ...
RA17 }
```

### QUESTION NO: 23

인증을 위해 API Management를 구성해야 합니다.

어떤 정책 값을 사용해야 할까요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

**Setting**

**Value**

Policy

	▼
Check HTTP header	
Restrict caller IPs	
Limit call rate by key	
Validate JWT	

Policy section

	▼
Inbound	
Outbound	

**Answer:**

**Setting**

**Value**

Policy

	▼
Check HTTP header	
Restrict caller IPs	
Limit call rate by key	
Validate JWT	

Policy section

	▼
Inbound	
Outbound	

Explanation:

Setting	Value
Policy	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> <span></span> <span>▼</span> </div> <div style="padding: 2px;"> <p>Check HTTP header</p> <p>Restrict caller IPs</p> <p>Limit call rate by key</p> <p style="background-color: #d0d0d0;">Validate JWT</p> </div> </div>
Policy section	<div style="border: 1px solid black; padding: 2px;"> <div style="background-color: #f0f0f0; padding: 2px; display: flex; justify-content: space-between; align-items: center;"> <span></span> <span>▼</span> </div> <div style="padding: 2px;"> <p>Inbound</p> <p style="background-color: #d0d0d0;">Outbound</p> </div> </div>

**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:

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.

**Box 2: Outbound**

Reference:

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

**QUESTION NO: 24**

RequestUserApproval 함수 앱 오류를 수정해야 합니다.

어떻게 해야 하나요?

- A. async 키워드를 사용하고 HttpRequest 객체 값을 반환하도록 RA13 줄을 업데이트합니다.
- B. App Service 호스팅 플랜을 사용하도록 함수 앱을 구성하세요. 호스팅 플랜의 Always On 설정을 활성화하세요.
- C. 요청 페이로드를 처리하기 위해 내구성 있는 함수를 사용하여 상태가 유지되도록 함수를 업데이트합니다.
- D. host.json 프로젝트 파일의 functionTimeout 속성을 15분으로 업데이트합니다.

**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>

### QUESTION NO: 25

Event Grid 통합에 Azure Service Bus를 구성해야 합니다.

어떤 Azure Service Bus 설정을 사용해야 하나요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Setting	Value
Tier	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; margin-bottom: 5px;">▼</div> <div style="padding: 2px 5px;">Basic</div> <div style="padding: 2px 5px;">Standard</div> <div style="padding: 2px 5px;">Premium</div> </div>
RBAC role	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; margin-bottom: 5px;">▼</div> <div style="padding: 2px 5px;">Owner</div> <div style="padding: 2px 5px;">Contributor</div> <div style="padding: 2px 5px;">Azure Service Bus Data Owner</div> <div style="padding: 2px 5px;">Azure Service Bus Data Receiver</div> </div>

**Answer:**

Setting	Value
Tier	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="text-align: right; font-size: 0.8em;">▼</div> <div style="padding: 2px;">Basic</div> <div style="padding: 2px; border: 2px dashed green;">Standard</div> <div style="padding: 2px; border: 2px dashed green;">Premium</div> </div>
RBAC role	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="text-align: right; font-size: 0.8em;">▼</div> <div style="padding: 2px;">Owner</div> <div style="padding: 2px; border: 2px dashed green;">Contributor</div> <div style="padding: 2px;">Azure Service Bus Data Owner</div> <div style="padding: 2px;">Azure Service Bus Data Receiver</div> </div>

Explanation:

Setting	Value
Tier	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="text-align: right; font-size: 0.8em;">▼</div> <div style="padding: 2px;">Basic</div> <div style="padding: 2px;">Standard</div> <div style="padding: 2px; background-color: #f0f0f0;">Premium</div> </div>
RBAC role	<div style="border: 1px solid #ccc; padding: 2px;"> <div style="text-align: right; font-size: 0.8em;">▼</div> <div style="padding: 2px;">Owner</div> <div style="padding: 2px; background-color: #f0f0f0;">Contributor</div> <div style="padding: 2px;">Azure Service Bus Data Owner</div> <div style="padding: 2px;">Azure Service Bus Data Receiver</div> </div>

Box 1: Premium

Service Bus can now emit events to Event Grid when there are messages in a queue or a subscription when no receivers are present. You can create Event Grid subscriptions to your Service Bus namespaces, listen to these events, and then react to the events by starting a receiver. With this feature, you can use Service Bus in reactive programming models.

To enable the feature, you need the following items:

A Service Bus Premium namespace with at least one Service Bus queue or a Service Bus topic with at least one subscription.

Contributor access to the Service Bus namespace.

Box 2: Contributor

Reference:

<https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-to-event-grid-integration-concept>

**QUESTION NO: 26**

데이터베이스 연결 문자열을 검색해야 합니다.

어떤 값을 사용해야 합니까? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

REST API Endpoint:

https://  .vault.azure.net/secrets/  /

cpandlkeyvault	PostgreSQLConn	80df3e46ffcd4f1cb187f79905e9a1e8
----------------	----------------	----------------------------------

Variable type to access Azure Key Vault secret values:

<input type="text"/>
Environment
Session
ViewState
Querystring

**Answer:**

REST API Endpoint:

https://  .vault.azure.net/secrets/  /

cpandlkeyvault	PostgreSQLConn	80df3e46ffcd4f1cb187f79905e9a1e8
----------------	----------------	----------------------------------

Variable type to access Azure Key Vault secret values:

<input type="text"/>
Environment
Session
ViewState
Querystring

**Explanation:**

REST API Endpoint:

https://  .vault.azure.net/secrets/  /

cpandlkeyvault	PostgreSQLConn	80df3e46ffcd4f1cb187f79905e9a1e8
----------------	----------------	----------------------------------

Variable type to access Azure Key Vault secret values:

<input type="text"/>
Environment
Session
ViewState
Querystring

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>

### QUESTION NO: 27

아키텍처 다이어그램에 표시된 대로 회사 웹 사이트에 대해 사용자를 인증해야 합니다.

어떤 두 값을 사용해야 합니까? 각 정답은 솔루션의 일부를 나타냅니다.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

- A. ID 토큰 서명
- B. ID 토큰 클레임
- C. HTTP 응답 코드
- D. Azure AD 끝점 URI
- E. Azure AD 테넌트 ID

**Answer:** A D

Explanation:

Claims in access tokens

JWTs (JSON Web Tokens) are split into three pieces:

Header - Provides information about how to validate the token including information about the type of token and how it was signed.

Payload - Contains all of the important data about the user or app that is attempting to call your service.

Signature - Is the raw material used to validate the token.

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:

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.

Reference:

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

### QUESTION NO: 28

회사 웹 사이트의 Azure 저장소 계정에 대한 계정 종류, 복제 및 저장소 계층 옵션을 구성해야 합니다.

구성을 어떻게 완료해야 합니까? 응답하려면 응답 영역의 대화 상자에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

## 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
	<a href="#">Create new</a>

### 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 ⓘ	<input checked="" type="radio"/> Standard <input type="radio"/> 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) ⓘ	<input type="radio"/> Cool <input type="radio"/> Hot

**Answer:**

## 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

\* Resource group

[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

\* Location

Performance  Standard  Premium

Account kind

Replication

Access tier (default)  Cool  Hot

Explanation:

### 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 ⓘ	<input type="text" value="corporatewebsitecontent"/>
* Location	<input type="text" value="(US) East US"/>
Performance ⓘ	<input checked="" type="radio"/> Standard <input type="radio"/> Premium
Account kind ⓘ	<input type="text" value="StorageV2 (general purpose v2)"/> <ul style="list-style-type: none"> <li>StorageV2 (general purpose v2)</li> <li>Storage (general purpose v1)</li> <li>BlobStorage</li> </ul>
Replication ⓘ	<input type="text" value="Locally-redundant storage (LRS)"/> <ul style="list-style-type: none"> <li>Locally-redundant storage (LRS)</li> <li>Zone-redundant storage (ZRS)</li> <li>Geo-redundant storage (GRS)</li> <li>Read-access geo-redundant storage (RA-GRS)</li> <li>Geo-zone-redundant storage (GZRS)</li> <li>Read-access geo-zone-redundant storage (RA-GZRS)</li> </ul>
Access tier (default) ⓘ	<input checked="" type="radio"/> Cool <input type="radio"/> Hot

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>

### QUESTION NO: 29

기업 홈페이지 오류 수정이 필요합니다.

어떤 4가지 작업을 순서대로 수행하도록 권장해야 합니까? 응답하려면 작업 목록에서 해당 작업을 응답 영역으로 이동하고 올바른 순서로 정렬하십시오.

### Actions

Upload the certificate to Azure Key Vault.

Update line SC05 of Security.cs to include error handling and then redeploy the code.

Update line SC03 of Security.cs to include a using statement and then re-deploy the code.

Add the certificate thumbprint to the WEBSITE\_LOAD\_CERTIFICATES app setting.

Upload the certificate to source control.

Import the certificate to Azure App Service.

Generate a certificate.

### Answer Area



### Answer:

#### Actions

Upload the certificate to Azure Key Vault.

Update line SC05 of Security.cs to include error handling and then redeploy the code.

Update line SC03 of Security.cs to include a using statement and then re-deploy the code.

Add the certificate thumbprint to the WEBSITE\_LOAD\_CERTIFICATES app setting.

Upload the certificate to source control.

Import the certificate to Azure App Service.

Generate a certificate.

#### Answer Area

Generate a certificate.

Upload the certificate to Azure Key Vault.

Import the certificate to Azure App Service.

Update line SC05 of Security.cs to include error handling and then redeploy the code.



Explanation:

Generate a certificate.

Upload the certificate to Azure Key Vault.

Import the certificate to Azure App Service.

Update line SC05 of Security.cs to include error handling and then redeploy the code.

Scenario: Corporate website

While testing the site, the following error message displays:

CryptographicException: 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 SC05 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>

### QUESTION NO: 30

개발 환경에서 Azure 함수 앱 오류 메시지를 조사해야 합니다.

어떻게 해야 하나요?

**A.** Application Insights의 Live Metrics Stream을 Azure 함수 앱에 연결하고 메트릭을 필터링합니다.

**B.** 새 Azure Log Analytics 작업 영역을 만들고 Application Insights로 Azure 함수 앱을 계측합니다.

**C.** Microsoft.Extensions.Logging의 확장 메서드로 Azure 함수 앱을 업데이트하여 로그 인스턴스를 사용하여 이벤트를 기록합니다.

**D.** Azure 함수 앱에 새 진단 설정을 추가하여 Log Analytics에 로그를 보냅니다.

**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>

**QUESTION NO: 31**

Azure Service Bus 및 Azure Event Grid에 대한 통합을 구성해야 합니다.

CLI 문을 어떻게 완료해야 하나요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

az   create --source-resource-id \$topicid --name \$name --

eventgrid	event-subscription
servicebus	topic
	queue

endpoint-type  --endpoint \$endpoint

webhook
eventhub
servicebusqueue

**Answer:**

az   create --source-resource-id \$topicid --name \$name --

eventgrid	event-subscription
servicebus	topic
	queue

endpoint-type  --endpoint \$endpoint

webhook
eventhub
servicebusqueue

**Explanation:**

az   create --source-resource-id \$topicid --name \$name --

eventgrid	event-subscription
servicebus	topic
	queue

endpoint-type  --endpoint \$endpoint

webhook
eventhub
servicebusqueue

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

latest#az\_eventgrid\_event\_subscription\_create

**QUESTION NO: 32**

회사 웹 사이트 파일에 대한 보안 및 규정 준수를 구성해야 합니다.

어떤 Azure Blob 스토리지 설정을 사용해야 하나요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Action	Setting
Restrict file access	<ul style="list-style-type: none"> <li>role-based access control (RBAC)</li> <li>managed identity</li> <li>shared access signature (SAS) token</li> <li>connection string</li> </ul>
Enable file auditing	<ul style="list-style-type: none"> <li>access tier</li> <li>change feed</li> <li>blob indexer</li> <li>storage account type</li> </ul>

**Answer:**

Action	Setting
Restrict file access	<ul style="list-style-type: none"> <li>role-based access control (RBAC)</li> <li>managed identity</li> <li>shared access signature (SAS) token</li> <li>connection string</li> </ul>
Enable file auditing	<ul style="list-style-type: none"> <li>access tier</li> <li>change feed</li> <li>blob indexer</li> <li>storage account type</li> </ul>

Explanation:

Box 1: role-based access control (RBAC)

Azure Storage supports authentication and authorization with Azure AD for the Blob and Queue services via Azure role-based access control (Azure RBAC).

Scenario: File access must restrict access by IP, protocol, and Azure AD rights.

Box 2: change feed

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 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.

Reference:

<https://docs.microsoft.com/en-us/azure/cdn/cdn-sas-storage-support>

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

**QUESTION NO: 33**

Azure Logic 앱 오류 메시지를 수정해야 합니다.

어떤 구성 값을 사용해야 하나요? 대답하려면 대답 영역에서 적절한 옵션을 선택하십시오.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

Setting	Value
authentication level	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid #ccc;">▼</div> <div style="padding: 2px 5px;">anonymous</div> <div style="padding: 2px 5px;">function</div> <div style="padding: 2px 5px;">admin</div> </div>
managed identity	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid #ccc;">▼</div> <div style="padding: 2px 5px;">system-assigned</div> <div style="padding: 2px 5px;">user-assigned</div> </div>

**Answer:**

Setting	Value
authentication level	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid #ccc;">▼</div> <div style="padding: 2px 5px;">anonymous</div> <div style="padding: 2px 5px;">function</div> <div style="padding: 2px 5px;">admin</div> </div>
managed identity	<div style="border: 1px solid #ccc; padding: 5px;"> <div style="text-align: right; border-bottom: 1px solid #ccc;">▼</div> <div style="padding: 2px 5px;">system-assigned</div> <div style="padding: 2px 5px;">user-assigned</div> </div>

Explanation:

Setting	Value
authentication level	<input type="text" value=""/> anonymous function admin
managed identity	<input type="text" value=""/> system-assigned user-assigned

Scenario: 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.

Note: If the inbound call ' s request body doesn ' t match your schema, the trigger returns an HTTP 400 Bad Request error.

Box 1: function

If you have an Azure function where you want to use the system-assigned identity, first enable authentication for Azure functions.

Box 2: system-assigned

Your logic app or individual connections can use either the system-assigned identity or a single user-assigned identity, which you can share across a group of logic apps, but not both.

Reference:

<https://docs.microsoft.com/en-us/azure/logic-apps/create-managed-service-identity>

### QUESTION NO: 34

Azure Event Grid의 모든 메시지가 처리되는지 확인해야 합니다.

무엇을 사용해야 합니까?

- A. Azure Event Grid 항목
- B. Azure Service Bus 항목
- C. Azure Service Bus 큐
- D. Azure 스토리지 큐
- E. Azure Logic App 사용자 지정 커넥터

**Answer:** D

Explanation:

As a solution architect/developer, you should consider using Service Bus queues when:

Your solution needs to receive messages without having to poll the queue. With Service Bus, you can achieve it by using a long-polling receive operation using the TCP-based protocols

that Service Bus supports.

Reference:

<https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-azure-and-service-bus-queues-compared-contrasted>

Topic 4, Proseware, Inc

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

You are a developer for Proseware, Inc. You are developing an application that applies a set of governance policies for Proseware's internal services, external services, and applications. The application will also provide a shared library for common functionality.

Requirements

Policy service

You develop and deploy a stateful ASP.NET Core 2.1 web application named Policy service to an Azure App Service Web App. The application reacts to events from Azure Event Grid and performs policy actions based on those events.

The application must include the Event Grid Event ID field in all Application Insights telemetry.

Policy service must use Application Insights to automatically scale with the number of policy actions that it is performing.

Policies

Log policy

All Azure App Service Web Apps must write logs to Azure Blob storage. All log files should be saved to a container named logdrop. Logs must remain in the container for 15 days.

Authentication events

Authentication events are used to monitor users signing in and signing out. All authentication events must be processed by Policy service. Sign outs must be processed as quickly as possible.

PolicyLib

You have a shared library named PolicyLib that contains functionality common to all ASP.NET Core web services and applications. The PolicyLib library must:

Exclude non-user actions from Application Insights telemetry.

Provide methods that allow a web service to scale itself.

Ensure that scaling actions do not disrupt application usage.

Other

Anomaly detection service

You have an anomaly detection service that analyzes log information for anomalies. It is implemented as an Azure Machine Learning model. The model is deployed as a web service. If an anomaly is detected, an Azure Function that emails administrators is called by using an HTTP WebHook.

Health monitoring

All web applications and services have health monitoring at the /health service endpoint.

Issues

Policy loss

When you deploy Policy service, policies may not be applied if they were in the process of being applied during the deployment.

Performance issue

When under heavy load, the anomaly detection service undergoes slowdowns and rejects connections.

Notification latency

Users report that anomaly detection emails can sometimes arrive several minutes after an anomaly is detected.

App code

EventGridController.cs

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

```
EventGridController.cs
EG01 public class EventGridController : Controller
EG02 {
EG03     public static AsyncLocal<string> EventId = new AsyncLocal<string>();
EG04     public IActionResult Process([FromBody] string eventsJson)
EG05     {
EG06         var events = JObject.Parse(eventsJson);
EG07
EG08         foreach (var @event in events)
EG09         {
EG10             EventId.Value = @event["id"].ToString();
EG11             if (@event["topic"].ToString().Contains("providers/Microsoft.Storage"))
EG12             {
EG13                 SendToAnomalyDetectionService(@event["data"]["url"].ToString());
EG14             }
EG15
EG16             {
EG17                 EnsureLogging(@event["subject"].ToString());
EG18             }
EG19         }
EG20     }
EG21     return null;
EG22     private void EnsureLogging(string resource)
EG23     {
EG24         . . .
EG25     }
EG26     private async Task SendToAnomalyDetectionService(string uri)
EG27     {
EG28         var content = GetLogData(uri);
EG29         var scoreRequest = new
EG30         {
EG31             Inputs = new Dictionary<string, List<Dictionary<string, string>>>()
EG32             {
EG33                 {
EG34                     "input1",
EG35                     new List<Dictionary<string, string>>()
EG36                     {
EG37                         new Dictionary<string, string>()
EG38                         {
EG39                             {
EG40                                 "logcontent", content
EG41                             }
EG42                         }
EG43                     }
EG44                 },
EG45             },
EG46             GlobalParameters = new Dictionary<string, string>() { }
EG47         };
EG48         var result = await (new HttpClient()).PostAsJsonAsync("...", scoreRequest);
EG49         var rawModelResult = await result.Content.ReadAsStringAsync();
EG50         var modelResult = JObject.Parse(rawModelResult);
EG51         if (modelResult["notify"].HasValues)
EG52         {
EG53             . . .
EG54         }
EG55     }
EG56     private (string name, string resourceGroup) ParseResourceId(string resourceId)
EG57     {
EG58         . . .
EG59     }
EG60     private string GetLogData(string uri)
EG61     {
EG62         . . .
EG63     }
EG64     static string BlobStoreAccountSAS(string containerName)
EG65     {
EG66         . . .
EG67     }
EG68 }
```

## LoginEvent.cs

Relevant portions of the app files are shown below. Line numbers are included for reference

only and include a two-character prefix that denotes the specific file to which they belong.

LoginEvent.cs

```
LE01 public class LoginEvent
LE02 {
LE03
LE04     public string subject { get; set; }
LE05     public DateTime eventTime { get; set; }
LE06     public Dictionary<string, string> data { get; set; }
LE07     public string Serialize()
LE08     {
LE09         return JsonConvert.SerializeObject(this);
LE10     }
LE11 }
```

### QUESTION NO: 35

PolicyLib 요구 사항이 충족되었는지 확인해야 합니다.

코드 세그먼트를 어떻게 완성해야 하나? 응답하려면 적절한 코드 세그먼트를 올바른 위치로 드래그하십시오. 각 코드 세그먼트는 한 번, 두 번 이상 또는 전혀 사용되지 않을 수 있습니다. 콘텐츠를 보려면 창 사이의 분할 막대를 끌거나 스크롤해야 할 수 있습니다.

참고: 각 올바른 선택은 1점의 가치가 있습니다.

#### Code segments

Process  
Initialize  
telemetry.Sequence  
ITelemetryProcessor  
ITelemetryInitializer  
telemetry.Context  
EventGridController.EventId.Value  
((EventTelemetry)telemetry).Properties["EventId"]

#### Answer Area

```
public class IncludeEventId : code segment
{
    public void code segment (ITelemetry telemetry)
    {
        code segment.Properties["EventId"] =
            code segment;
    }
}
```

### Answer:

#### Code segments

Process  
Initialize  
telemetry.Sequence  
ITelemetryProcessor  
ITelemetryInitializer  
telemetry.Context  
EventGridController.EventId.Value  
((EventTelemetry)telemetry).Properties["EventId"]

#### Answer Area

```
public class IncludeEventId : ITelemetryInitializer
{
    public void Initialize (ITelemetry telemetry)
    {
        telemetry.Context.Properties["EventId"] =
            ((EventTelemetry)telemetry).Properties["EventId"];
    }
}
```

Explanation:

```
public class IncludeEventId : ITelemetryInitializer
{
    public void Initialize (ITelemetry telemetry)
    {
        telemetry.Context.Properties["EventId"] =
            ((EventTelemetry)telemetry).Properties["EventId"];
    }
}
```

Scenario: You have a shared library named PolicyLib that contains functionality common to all ASP.NET Core web services and applications. The PolicyLib library must:

Exclude non-user actions from Application Insights telemetry.

Provide methods that allow a web service to scale itself.

Ensure that scaling actions do not disrupt application usage.

Box 1: ITelemetryInitializer

Use telemetry initializers to define global properties that are sent with all telemetry; and to override selected behavior of the standard telemetry modules.

Box 2: Initialize

Box 3: Telemetry.Context

Box 4: ((EventTelemetry)telemetry).Properties["EventID"]

Reference:

<https://docs.microsoft.com/en-us/azure/azure-monitor/app/api-filtering-sampling>