

- **Vendor: Microsoft**
- **Exam Code: 70-534**
- **Exam Name: Architecting Microsoft Azure Solutions**
- **Question 1 -- Question 20**

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Case Study 1 - VanArsdel, Ltd (Question 1 - Question 8)

Overview

VanArsdel, Ltd. builds skyscrapers, subways, and bridges.

VanArsdel is a leader in using technology to do construction better.

Overview

VanArsdel employees are able to use their own mobile devices for work activities because the company recognizes that this usage enables employee productivity.

Employees also access Software as a Service (SaaS) applications, including DocuSign, Dropbox, and Citrix.

The company continues to evaluate and adopt more SaaS applications for its business. VanArsdel uses Azure Active Directory (AD) to authenticate its employees, as well as Multi-Factor Authentication (MFA). Management enjoys the ease with which MFA can be enabled and disabled for employees who use cloud-based services.

VanArsdel's on-premises directory contains a single forest.

Helpdesk:

VanArsdel creates a helpdesk group to assist its employees. The company sends email messages to all its employees about the helpdesk group and how to contact it. Configuring employee access for SaaS applications is often a time-consuming task.

It is not always obvious to the helpdesk group which users should be given access to which SaaS applications. The helpdesk group must respond to many phone calls and email messages to solve this problem, which takes up valuable time.

The helpdesk group is unable to meet the needs of VanArsdel's employees.

However, many employees do not work with the helpdesk group to solve their access problems. Instead, these employees contact their co-workers or managers to find someone who can help them. Also, new employees are not always told to contact the helpdesk group for access problems. Some employees report that they cannot see all the applications in the Access Panel that they have access to. Some employees report that they must re-enter their passwords when they access cloud applications, even though they have already authenticated.

Bring your own device (BYOD):

VanArsdel wants to continue to support users and their mobile and personal devices, but the company is concerned about how to protect corporate assets that are stored on these devices. The company does not have a strategy to ensure that its data is removed from the devices when employees leave the company.

Customer Support

VanArsdel wants a mobile app for customer profile registration and feedback.

The company would like to keep track of all its previous, current, and future customers worldwide.

A profile system using third-party authentication is required as well as feedback and support sections for the mobile app.

Migration:

VanArsdel plans to migrate several virtual machine (VM) workloads into Azure.

They also plan to extend their on-premises Active Directory into Azure for mobile app authentication.

Business Requirements

Hybrid Solution:

A single account and credentials for both on-premises and cloud applications. Certain applications that are hosted both in Azure and on-site must be accessible to both VanArsdel employees and partners.

The service level agreement (SLA) for the solution requires an uptime of 99.9%.

The partners all use Hotmail.com email addresses.

Mobile App:

VanArsdel requires a mobile app for project managers on construction job sites.

The mobile app has the following requirements:

The app must display partner information.

The app must alert project managers when changes to the partner information occur.

The app must display project information including an image gallery to view pictures of construction projects.

Project managers must be able to access the information remotely and securely.

Security:

VanArsdel must control access to its resources to ensure sensitive services and information are accessible only by authorized users and/or managed devices.

Employees must be able to securely share data, based on corporate policies, with other VanArsdel employees and with partners who are located on construction job sites.

VanArsdel management does NOT want to create and manage user accounts for partners.

Technical Requirements

Architecture:

VanArsdel requires a non-centralized stateless architecture for data and services where application, data, and computing power are at the logical extremes of the network.

VanArsdel requires separation of CPU storage and SQL services.

Data Storage:

VanArsdel needs a solution to reduce the number of operations on the contractor information table. Currently, data transfer rates are excessive, and queue length for read/write operations affects performance.

A mobile service that is used to access contractor information must have automatically scalable, structured storage.

Images must be stored in an automatically scalable, unstructured form.

Mobile Apps:

VanArsdel mobile app must authenticate employees to the company's Active Directory.

Event-triggered alerts must be pushed to mobile apps by using a custom Node.js script.

The customer support app should use an identity provider that is configured by using the Access Control Service for current profile registration and authentication.

The customer support team will adopt future identity providers that are configured through Access Control Service.

Security:

Active Directory Federated Server (AD FS) will be used to extend AD into Azure.

Helpdesk administrators must have access to only the groups of Azure resources they are responsible for.

Azure administration will be performed by a separate group.

IT administrative overhead must be minimized.

Permissions must be assigned by using Role Based Access Control (RBAC).

Line of business applications must be accessed securely.

QUESTION 1

You need to assign permissions for the Virtual Machine workloads that you migrate to Azure. The solution must use the principal of least privileges. What should you do?

- A. Create all VMs in the cloud service named Group1 and then connect to the Azure subscription. Run the following Windows PowerShell command:
`New-AzureRoleAssignment-Mail user1@vanarsdelltd.com-RoleDefinitionName Contributor-ResoureeGroupName group1`
- B. In the Azure portal, select an individual virtual machine and add an owner.
- C. In the Azure portal, assign read permission to the user at the subscription level.
- D. Create each VM in a separate cloud service and then connect to the Azure subscription. Run the following Windows PowerShell command:
`Get-AzureVM | New-AzureRoleAssignment-Mail user1@vanarsdelltd.com-RoleDefinitionName Contributor`

Answer: A

QUESTION 2

You need to design the system that alerts project managers to data changes in the contractor information app. Which service should you use?

- A. Azure Mobile Service
- B. Azure Service Bus Message Queueing
- C. Azure Queue Messaging
- D. Azure Notification Hub

Answer: B

Explanation:

<https://msdn.microsoft.com/en-us/library/azure/hh767287.aspx>

QUESTION 3

You need to recommend a solution that allows partners to authenticate. Which solution should you recommend?

- A. Configure the federation provider to trust social identity providers.
- B. Configure the federation provider to use the Azure Access Control service.
- C. Create a new directory in Azure Active Directory and create a user account for the partner.
- D. Create an account on the VanArsdel domain for the partner and send an email message that contains the password to the partner.

Answer: B

Explanation:

<http://azure.microsoft.com/en-gb/documentation/articles/active-directory-dotnet-how-to-use-access-control/>

<https://msdn.microsoft.com/en-us/library/azure/gg185971.aspx>

QUESTION 4

You are designing a plan to deploy a new application to Azure. The solution must provide a single sign-on experience for users. You need to recommend an authentication type. Which authentication type should you recommend?

- A. SAML credential tokens
- B. Azure managed access keys
- C. Windows Authentication
- D. MS-CHAP

Answer: A

Explanation:

<https://msdn.microsoft.com/en-us/library/azure/dn641269.aspx?f=255&MSPPErr=-2147217396>

QUESTION 5

You need to prepare the implementation of data storage for the contractor information app. What should you?

- A. Create a storage account and implement multiple data partitions.
- B. Create a Cloud Service and a Mobile Service. Implement Entity Group transactions.
- C. Create a Cloud Service and a Deployment group. Implement Entity Group transactions.
- D. Create a Deployment group and a Mobile Service. Implement multiple data partitions.

Answer: B

Explanation:

VanArsdel needs a solution to reduce the number of operations on the contractor information table. Currently, data transfer rates are excessive, and queue length for read/write operations affects performance.

<https://msdn.microsoft.com/en-us/library/azure/dd894038.aspx>

QUESTION 6

You need to ensure that users do not need to re-enter their passwords after they authenticate to cloud applications for the first time.

What should you do?

- A. Enable Microsoft Account authentication.
- B. Set up a virtual private network (VPN) connection between the VanArsdel premises and Azure datacenter.
Set up a Windows Active Directory domain controller in Azure VM.
Implement Integrated Windows authentication.
- C. Deploy ExpressRoute.
- D. Configure Azure Active Directory Sync to use single sign-on (SSO).

Answer: D

QUESTION 7

Drag and Drop Question

You need to recommend data storage mechanisms for the solution.

What should you recommend? To answer, drag the appropriate data storage mechanism to the correct information type. Each data storage mechanism 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.

Data Storage Mechanisms

Table storage

Blob storage

Queue storage

MySQL

Answer Area

| Information Type | Data Storage Mechanism |
|------------------------|------------------------|
| Contractor information | Data Storage Mechanism |
| Project images | Data Storage Mechanism |

Answer:

Data Storage Mechanisms

Table storage

Blob storage

Queue storage

MySQL

Answer Area

| Information Type | Data Storage Mechanism |
|------------------------|------------------------|
| Contractor information | Data : Table storage |
| Project images | Data : Blob storage |

Explanation:

<http://www.thewindowsclub.com/understanding-blobqueueetable-storage-windows-azure>

QUESTION 8

Hotspot Question

You need to design the contractor information app.

What should you recommend? To answer, select the appropriate options in the answer area.

Answer Area

You must authenticate employees to the contractor information app.

Azure Password Sync

Azure Mobile Services

Azure Active Directory

Azure Active Directory Sync

You must synchronize data with the contractor information app.

Azure Password Sync

Azure Mobile Services

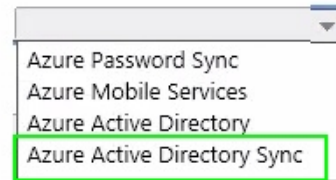
Azure Active Directory

Azure Active Directory Sync

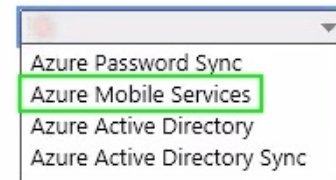
Answer:

Answer Area

You must authenticate employees to the contractor information app.



You must synchronize data with the contractor information app.



Explanation:

- They also plan to extend their on-premises Active Directory into Azure for mobile app authentication
 - VanArsdel mobile app must authenticate employees to the company's Active Directory.
- <http://azure.microsoft.com/en-gb/documentation/articles/mobile-services-ios-get-started-offlinedata/>

QUESTION 9

You are designing an Azure web application.
The solution will be used by multiple customers.
Each customer has different business logic and user interface requirements.
Not all customers use the same version of the .NET runtime.
You need to recommend a deployment strategy.
What should you recommend?

- A. Deploy with multiple web role instances.
- B. Deploy each application in a separate tenant.
- C. Deploy all applications in one tenant.
- D. Deploy with multiple worker role instances.

Answer: B

Explanation:

<http://sanganakauthority.blogspot.in/2011/12/multi-tenancy-and-windows-azure.html>

QUESTION 10

You design an Azure application that processes images.
The maximum size of an image is 10 MB.
The application includes a web role that allows users to upload images and a worker role with multiple instances that processes the images.
The web role communicates with the worker role by using an Azure Queue service.
You need to recommend an approach for storing images that minimizes storage transactions.
What should you recommend?

- A. Store images in Azure Blob service.
Store references to the images in the queue.
- B. Store images in the queue.
- C. Store images in OneDrive attached to the worker role instances.
Store references to the images in the queue.

- D. Store images in local storage on the web role instance.
Store references to the images in the queue.

Answer: A

Explanation:

<https://msdn.microsoft.com/en-gb/library/ff803365.aspx>

<https://msdn.microsoft.com/en-us/library/azure/hh767287.aspx>

QUESTION 11

You are designing an Azure application.

The application includes two web roles and three instances of a worker role.

The web roles send requests to the worker role by using one or more Azure Queues.

You need to recommend a queue design for sending requests to the worker role.

What should you recommend?

- A. Create a queue for each combination of web roles and worker role instances.
Send requests to all worker role instances based on the sending web role.
- B. Create a single queue.
Send all requests on the single queue.
- C. Create a queue for each worker role instance.
Send requests on each worker queue by using a round robin rotation.
- D. Create a queue for each web role.
Send requests on all queues at the same time.

Answer: B

Explanation:

to communicate with the worker role, a web role instance places messages on to a queue.

A worker role instance polls the queue for new messages, retrieves them, and processes them.

There are a couple of important things to know about the way the queue service works in Azure.

First, you reference a queue by name, and multiple role instances can share a single queue.

Second, there is no concept of a typed message; you construct a message from either a string or a byte array. An individual message can be no more than 64 kilobytes (KB) in size.

<https://msdn.microsoft.com/en-gb/library/ff803365.aspx>

<http://azure.microsoft.com/en-gb/documentation/articles/cloud-services-dotnet-multi-tier-app-using-service-bus-queues/>

QUESTION 12

You are designing an Azure application that will use a worker role.

The worker role will create temporary files.

You need to minimize storage transaction charges.

Where should you create the files?

- A. In Azure local storage
- B. In Azure Storage page blobs
- C. On an Azure Drive
- D. In Azure Storage block blobs

Answer: A

Explanation:

<http://blog.codingoutloud.com/2011/06/12/azure-faq-can-i-write-to-the-file-system-on-windows-azure/>

<http://www.intertech.com/Blog/windows-azure-local-file-storage-how-to-guide-and-warnings/>

QUESTION 13

You are designing an Azure web application.

The application uses one worker role.

It does not use SQL Database.

You have the following requirements:

- Maximize throughput and system resource availability
- Minimize downtime during scaling

You need to recommend an approach for scaling the application.

Which approach should you recommend?

- A. Increase the role instance size.
- B. Set up horizontal partitioning.
- C. Increase the number of role instances.
- D. Set up vertical partitioning.

Answer: C

Explanation:

<http://azure.microsoft.com/en-gb/documentation/articles/cloud-services-how-to-scale/>

QUESTION 14

You are evaluating an Azure application.

The application includes the following elements:

- A web role that provides the ASP.NET user interface and business logic
- A single SQL database that contains all application data

Each webpage must receive data from the business logic layer before returning results to the client.

Traffic has increased significantly.

The business logic is causing high CPU usage.

You need to recommend an approach for scaling the application.

What should you recommend?

- A. Store the business logic results in Azure Table storage.
- B. Vertically partition the SQL database.
- C. Move the business logic to a worker role.
- D. Store the business logic results in Azure local storage.

Answer: C

QUESTION 15

You are planning an upgrade strategy for an existing Azure application.

Multiple instances of the application run in Azure.

The management team is concerned about application downtime, due to a business service level agreement (SLA).

You are evaluating which change in your environment will require downtime.

You need to identify the changes to the environment that will force downtime.

Which change always requires downtime?

- A. Adding an HTTPS endpoint to a web role
- B. Upgrading the hosted service by deploying a new package
- C. Changing the value of a configuration setting
- D. Changing the virtual machine size

Answer: A

Explanation:

<http://blog.toddysm.com/2010/06/re-deploying-your-windows-azure-service-without-incurring-downtime.html>

QUESTION 16

You are designing an Azure application that processes graphical image files. The graphical Images are processed in batches by remote applications that run on multiple servers. You have the following requirements:

- The application must remain operational during batch-processing operations.
- Users must be able to roll back each image to a previous version.

You need to ensure that each remote application has exclusive access to an image while the application processes the image.

Which type of storage should you use to store the images?

- A. Table service
- B. Queue service
- C. Blob service
- D. A single Azure VHD that is attached to the web role

Answer: C

Explanation:

<http://justazure.com/azure-blob-storage-part-8-blob-leases/>

<http://justazure.com/azure-blob-storage-part-7-snapshots/>

QUESTION 17

You are designing an Azure application that stores data.

You have the following requirements:

- The data storage system must support storing more than 500 GB of data.
- Data retrieval must be possible from a large number of parallel threads.
- Threads must not block each other.

You need to recommend an approach for storing data.

What should you recommend?

- A. Azure Notification Hubs
- B. A single SQL database in Azure
- C. Azure Queue storage
- D. Azure Table storage

Answer: D

Explanation:

<https://msdn.microsoft.com/en-us/library/azure/jj553018.aspx>

QUESTION 18

You are designing a Windows Azure application.

The application includes processes that communicate by using Windows Communications Foundation (WCF) services.

The WCF services must support streaming.

You need to recommend a host for the processes and a WCF binding.

Which two actions should you recommend?

(Each correct answer presents part of the solution. Choose two.)

- A. Host the processes in web roles.
- B. Host the processes in worker roles.

- C. Use NetTcpBinding for the WCF services.
- D. Use WSHttpBinding for the WCF services.

Answer: BC

QUESTION 19

You are designing a Windows Azure application. Messages will be placed into a Windows Azure Queue and then processed by a worker role. There is no requirement for adherence to the Windows Azure Service Level Agreement (SLA). You need to recommend an approach for concurrently processing messages while minimizing compute cost. What should you recommend?

- A. A single role instance that processes messages individually
- B. A single role instance with multithreaded request processing
- C. Multiple role instances that process messages individually
- D. Multiple role instances, each with multithreaded request processing

Answer: B

QUESTION 20

You are designing a Windows Azure application that will use a worker role. The worker role will create temporary files. You need to recommend an approach for creating the temporary files that minimizes storage transactions. What should you recommend?

- A. Create the files on a Windows Azure Drive.
- B. Create the files in Windows Azure local storage.
- C. Create the files in Windows Azure Storage page blobs.
- D. Create the files in Windows Azure Storage block blobs.

Answer: B

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