

# Microsoft

## AZ-303

Microsoft Azure Architect Technologies



## QUESTION & ANSWERS

## QUESTION 1

Exam Case Study	Number of Questions	Total Question
<a href="#">Case Study: 1</a>	8	1 - 8
<a href="#">Case Study: 2</a>	172	9 - 180
	Total	180

### Case Study: 1

Contoso, Ltd

#### Overview

#### Requirements

#### Overview

Contoso, Ltd. is a manufacturing company that has offices worldwide. Contoso works with partner organizations to bring products to market.

Contoso products are manufactured by using blueprint files that the company authors and maintains.

#### Existing Environment

Currently, Contoso uses multiple types of servers for business operations, including the following:

File servers

Domain controllers

Microsoft SQL Server servers

Your network contains an Active Directory forest named contoso.com. All servers and client computers are joined to Active Directory.

You have a public-facing application named App1. App1 is comprised of the following three tiers:

A SQL database

A web front end

A processing middle tier

Each tier is comprised of five virtual machines. Users access the web front end by using HTTPS only.

## Requirements

### Planned Changes

Contoso plans to implement the following changes to the infrastructure:

Move all the tiers of App1 to Azure.

Move the existing product blueprint files to Azure Blob storage.

Create a hybrid directory to support an upcoming Microsoft Office 365 migration project.

### Technical Requirements

Contoso must meet the following technical requirements:

Move all the virtual machines for App1 to Azure.

Minimize the number of open ports between the App1 tiers.

Ensure that all the virtual machines for App1 are protected by backups.

Copy the blueprint files to Azure over the Internet.

Ensure that the blueprint files are stored in the archive storage tier.

Ensure that partner access to the blueprint files is secured and temporary.

Prevent user passwords or hashes of passwords from being stored in Azure.

Use unmanaged standard storage for the hard disks of the virtual machines.

Ensure that when users join devices to Azure Active Directory (Azure AD), the users use a mobile phone to verify their identity.

Minimize administrative effort whenever possible.

### User Requirements

Contoso identifies the following requirements for users:

Ensure that only users who are part of a group named Pilot can join devices to Azure AD.

Designate a new user named Admin1 as the service administrator of the Azure subscription.

Ensure that a new user named User3 can create network objects for the Azure subscription.

## Question:

You need to meet the user requirement for Admin1.  
What should you do?

- A. From the Subscriptions blade, select the subscription, and then modify the Properties
- B. From the Subscriptions blade, select the subscription, and then modify the Access control (IAM) settings.
- C. From the Azure Active Directory blade, modify the Properties.
- D. From the Azure Active Directory blade, modify the Groups.

**Correct Answer: A**

### Explanation/Reference:

Change the Service administrator for an Azure subscription

Sign in to Account Center as the Account administrator.

Select a subscription.

On the right side, select Edit subscription details.

Scenario: Designate a new user named Admin1 as the service administrator of the Azure subscription.

References: <https://docs.microsoft.com/en-us/azure/billing/billing-add-change-azure-subscription-administrator>

### QUESTION 2

You are designing an Azure solution.

The solution must meet the following requirements:

- \* Distribute traffic to different pools of dedicated virtual machines (VMs) based on rules
- \* Provide SSL offloading capabilities

You need to recommend a solution to distribute network traffic.

Which technology should you recommend?

- A. server-level firewall rules
  - B. Azure Application Gateway
  - C. Azure Traffic Manager
  - D. Azure Load Balancer
- If you require 'SSL offloading', application layer treatment, or wish to delegate certificate management to Azure, you should use Azure's layer 7 load balancer Application Gateway instead of the Load Balancer. References: <https://docs.microsoft.com/en-us/azure/application-gateway/overview>

**Correct Answer: B**

### QUESTION 3

You have the virtual machines shown in the following table.

Name	Operating system	Connected to
VM1	Red Hat Enterprise Linux 7.7	VNET1
VM2	Windows Server 2019	VNET2
VM3	Windows Server 2019	VNET3

You deploy an Azure bastion named Bastion1 to VNET1.

To which virtual machines can you connect by using Bastion1?

- A. VM1 only
- B. VM1 and VM2 only
- C. VM2 and VM3 only
- D. VM1, VM2, and VM3

**Correct Answer: A**

**Explanation/Reference:**

Connect to a VM through Azure Bastion.

When you click on Connect in an Azure VM, you have an additional option called Bastion. In order to get this option, the Azure VM must belong to the same virtual network as the Azure Bastion.

<https://www.starwindsoftware.com/blog/overview-of-microsoft-azure-bastion>

**QUESTION 4**

You have virtual machines (VMs) that run a mission-critical application.

You need to ensure that the VMs never experience down time.

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

NOTE: Each correct selection is worth one point.

<p><b>Solutions</b></p> <div style="border: 1px solid gray; padding: 2px; margin-bottom: 5px;">Fault Domain</div> <div style="border: 1px solid gray; padding: 2px; margin-bottom: 5px;">Availability Zone</div> <div style="border: 1px solid gray; padding: 2px; margin-bottom: 5px;">Availability Set</div> <div style="border: 1px solid gray; padding: 2px;">Scale Sets</div>	<p><b>Answer area</b></p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">●</div> <div style="margin-right: 10px;">●</div> <div style="margin-right: 10px;">●</div> <div style="margin-right: 10px;">●</div> <div style="margin-right: 10px;">●</div> </div>	<p><b>Scenario</b></p> <p>Maintain application performance across identical VMs.</p> <p>Maintain application availability when an Azure datacenter fails.</p> <p>Maintain application performance across different VMs.</p>	<p><b>Solution</b></p> <div style="border: 1px solid gray; padding: 2px; margin-bottom: 5px;">Solution</div> <div style="border: 1px solid gray; padding: 2px; margin-bottom: 5px;">Solution</div> <div style="border: 1px solid gray; padding: 2px;">Solution</div>
--	--	---	--

**Correct Answer:**

Solutions	Answer area	Scenario	Solution
Fault Domain		Maintain application performance across identical VMs.	Scale Sets
Availability Zone		Maintain application availability when an Azure datacenter fails.	Availability Set
Availability Set		Maintain application performance across different VMs.	Fault Domain
Scale Sets			

## Explanation/Reference:

### Box 1: Scale set

A virtual machine scale set allows you to deploy and manage a set of identical, auto scaling virtual machines.

### Box 2: Availability Set

An Availability Set is a logical grouping capability for isolating VM resources from each other when they're deployed. Azure makes sure that the VMs you place within an Availability Set run across multiple physical servers, compute racks, storage units, and network switches. If a hardware or software failure happens, only a subset of your VMs are impacted and your overall solution stays operational. Availability Sets are essential for building reliable cloud solutions.

### Box 3: Fault domain

A fault domain is a logical group of underlying hardware that share a common power source and network switch, similar to a rack within an on-premises datacenter. As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these fault domains. This approach limits the impact of potential physical hardware failures, network outages, or power interruptions.

### References:

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/tutorial-create-vmss>

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/tutorial-availability-sets>

## QUESTION 5

You have an Azure Container Registry and an Azure container instance.

You pull an image from the registry, and then update the local copy of the image.

You need to ensure that the updated image can be deployed to the container instance. The solution must ensure that you can deploy the updated image or the previous version of the image.

What should you do?

- Run the docker image push command and specify the tag parameter.
- Run the az image copy command and specify the tag parameter. Run the az aks update command and specify the attach-acr parameter.
- Run the kubectl apply command and specify the dry-run parameter.

## Correct Answer: B

## QUESTION 6

You have an Azure subscription.

You have 100 Azure virtual machines.

You need to quickly identify underutilized virtual machines that can have their changed to a less expensive offering.

Which Azure should you use?

- A. Metrics
- B. Monitor
- C. Customer insights
- D. Advisor

**Correct Answer: D**

## QUESTION 7

You have an Azure subscription that contains an Azure key vault named KeyVault1 and the virtual machines shown in the following table.

Name	Connected to
VM1	VNET1/Subnet1
VM2	VNET1/Subnet2

KeyVault1 has an access policy that provides several users with Create Key permissions.

You need to ensure that the users can only register secrets in KeyVault1 from VM1.

What should you do?

- A. Create a network security group (NSG) that is linked to Subnet1.
- B. Configure the Firewall and virtual networks settings for KeyVault1.
- C. Modify the access policy for KeyVault1.
- D. Configure KeyVault1 to use a hardware security module (HSM).

**Correct Answer: C**

### Explanation/Reference:

You grant data plane access by setting Key Vault access policies for a key vault.

Note 1: Grant our VM's system-assigned managed identity access to the Key Vault.

Select Access policies and click Add new.

In Configure from template, select Secret Management.

Choose Select Principal, and in the search field enter the name of the VM you created earlier. Select the VM in the result list and click Select.

Click OK to finishing adding the new access policy, and OK to finish access policy selection.

Note 2: Access to a key vault is controlled through two interfaces: the management plane and the data plane. The management plane is where you manage Key Vault itself. Operations in this plane include creating and deleting key vaults, retrieving Key Vault properties, and updating access policies. The data plane is where you work with the data stored in a key vault. You can add, delete, and modify keys, secrets, and certificates.

<https://docs.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/tutorial-windows-vm-access-nonaad>

<https://docs.microsoft.com/en-us/azure/key-vault/general/secure-your-key-vault2>

## QUESTION 8

You have an Azure subscription that contains the Azure SQL servers shown in the following table.

Name	Region	In resource group
Sql1	West US	RG1
Sql2	West US	RG1

The subscription contains the elastic pool shown in the following table.

Name	On Azure SQL server
Pool1	Sql1
Pool2	Sql1
Pool3	Sql2

The subscription contains the Azure SQL databases shown in the following table.

Name	On Azure SQL server	Pool
DB1	Sql1	Pool1
DB2	Sql1	Pool2
DB3	Sql1	None

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

NOTE: Each correct selection is worth one point.

• • • • •

### Answer Area

Statements	Yes	No
DB1 can be removed from Pool1 and added to Pool2.	<input type="radio"/>	<input type="radio"/>
DB2 can be removed from Pool2 and added to Pool3.	<input type="radio"/>	<input type="radio"/>
DB3 can be added to Pool1.	<input type="radio"/>	<input type="radio"/>



## Correct Answer:

### Answer Area

Statements	Yes	No
DB1 can be removed from Pool1 and added to Pool2.	<input type="radio"/>	<input type="radio"/>
DB2 can be removed from Pool2 and added to Pool3.	<input type="radio"/>	<input type="radio"/>
DB3 can be added to Pool1.	<input type="radio"/>	<input type="radio"/>

## Explanation/Reference:

Note: You cannot add databases from different servers into the same pool

Box 1: Yes

Pool2 contains DB2 but DB1 and DB2 are on Sql1. DB1 can thus be added to Pool2.

Box 2: Yes

Pool3 is empty.

Box 3: Yes

Pool1 contains DB1 but DB3 and DB1 are on Sql1. DB3 can thus be added to Pool1.

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-elastic-pool>

## QUESTION 9

You have Azure virtual machines that have Update Management enabled. The virtual machines are configured as shown in the following table.

Name	Operating system	Resource group	Location
VM1	Windows Server 2012 R2	RG1	East US
VM2	Windows Server 2016	RG1	West US
VM3	Windows Server 2019	RG2	West US
VM4	Red Hat Enterprise Linux 7.7	RG2	West US
VM5	Ubuntu Server 18.04 LTS	RG1	East US
VM6	CentOS-based 7.7	RG1	East US

You need to ensure that all critical and security updates are applied to each virtual machine every month. What is the minimum number of update deployments you should create?

- A. 4
- B. 6
- C. 1
- D. 2

**Correct Answer: A**

### **Explanation/Reference:**

One for the Windows VMs, and for each type of Linux VM.

<https://docs.microsoft.com/en-us/azure/automation/update-management/overview>

### **QUESTION 10**

You have an Azure virtual machine named VM1 and an Azure Active Directory (Azure AD) tenant named adatum.com.

D18912E1457D5D1DDCBD40AB3BF70D5D

VM1 has the following settings:

IP address: 10.10.0.10

System-assigned managed identity: On

You need to create a script that will run from within VM1 to retrieve the authentication token of VM1.

Which address should you use in the script?

- A. vm1.adatum.com.onmicrosoft.com
- B. 169.254.169.254
- C. 10.10.0.10
- D. vm1.adatum.com

**Correct Answer: B**

### **Explanation/Reference:**

Your code that's running on the VM can request a token from the Azure Instance Metadata Service identity endpoint, accessible only from within the VM:

<http://169.254.169.254/metadata/identity/oauth2/token>

<https://docs.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/overview>