vce trainer

Reference Solution for az-303.vce

AZ-303

ExamCollection

Score:	800/1000
Version:	n/A
Time Limit:	0 Minutes

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Implement and Monitor an Azure Infrastructure (70 questions)

Case Study (3 questions)

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.

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 severs for business operations, including the following:

- File servers
- Domain controllers
- Microsoft SQL Server servers

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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 admin for the Azure subscription.
- Admin1 must receive email alerts regarding service outages.

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

Question 71

HOTSPOT

You need to identify the storage requirements for Contoso.

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
Contoso requires a storage account that supports Blob storage.	○	○
Contoso requires a storage account that supports Azure Table storage.	○	○
Contoso requires a storage account that supports Azure File Storage.	○	○

Solution:

Answer Area

Statements	Yes	No
Contoso requires a storage account that supports Blob storage.	○	○
Contoso requires a storage account that supports Azure Table storage.	○	○
Contoso requires a storage account that supports Azure File Storage.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
Scenario: Move the existing product blueprint files to Azure Blob storage.

Scenario: Use unmanaged standard storage for the hard disks of the virtual machines.
Page blobs are optimized for writes at random locations within a blob. They also support Unmanaged Disks.

Scenario:
SQL Server Data Files in Microsoft Azure enables native support for SQL Server database files stored as blobs. It allows you to create a database in SQL Server running in on-premises or in a virtual machine in Microsoft Azure with a dedicated storage location for your data in Microsoft Azure Blob storage.

Box 2: No

Box 3: No

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Reference:
https://docs.microsoft.com/en-us/sql/relational-databases/databases/sql-server-data-files-in-microsoft-azure

Question 72

You need to move the blueprint files to Azure.

What should you do?

- ☐ Use the Azure Import/Export service.
- ☐ Generate a shared access signature (SAS). Map a drive, and then copy the files by using File Explorer.
- ☐ Use Azure Storage Explorer to copy the files.
- ☒ Generate an access key. Map a drive, and then copy the files by using File Explorer.

Explanation/Reference

Explanation:
Scenario: Copy the blueprint files to Azure over the Internet.
To mount an Azure file share, you will need the primary (or secondary) storage key. SAS keys are not currently supported for mounting.

Incorrect Answers:
A: Azure Import/Export service is used to securely import large amounts of data to Azure Blob storage and Azure Files by shipping disk drives to an Azure datacenter.

Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows

Question 73

You need to implement a backup solution for App1 after the application is moved.

What should you create first?

- ☐ an Azure Backup Server
- ☒ a Recovery Services vault
- ☐ a recovery plan
- ☐ a backup policy

Explanation/Reference

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

You can back up Azure VMs using a couple of methods:

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- Single Azure VM: You can back up an Azure VM directly from the VM settings.
- Multiple Azure VMs: You can set up a Recovery Services vault and configure backup for multiple Azure VMs.

Reference:
https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look-arm

Question 1

You have an Azure subscription that contains 10 virtual machines on a virtual network.

You need to create a graph visualization to display the traffic flow between the virtual machines.

What should you do from Azure Monitor?

- ☐ From Activity log, use quick insights.
- ☐ From Metrics, create a chart.
- ☒ From Logs, create a new query.
- ☐ From Workbooks, create a workbook.

Explanation/Reference

Explanation:
Navigate to Azure Monitor and select Logs to begin querying the data

Reference:
https://azure.microsoft.com/en-us/blog/analysis-of-network-connection-data-with-azure-monitor-for-virtual-machines/

Question 2

HOTSPOT

You plan to create an Azure Storage account in the Azure region of East US 2.

You need to create a storage account that meets the following requirements:

- Replicates synchronously
- Remains available if a single data center in the region fails

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

NOTE: Each correct selection is worth one point.

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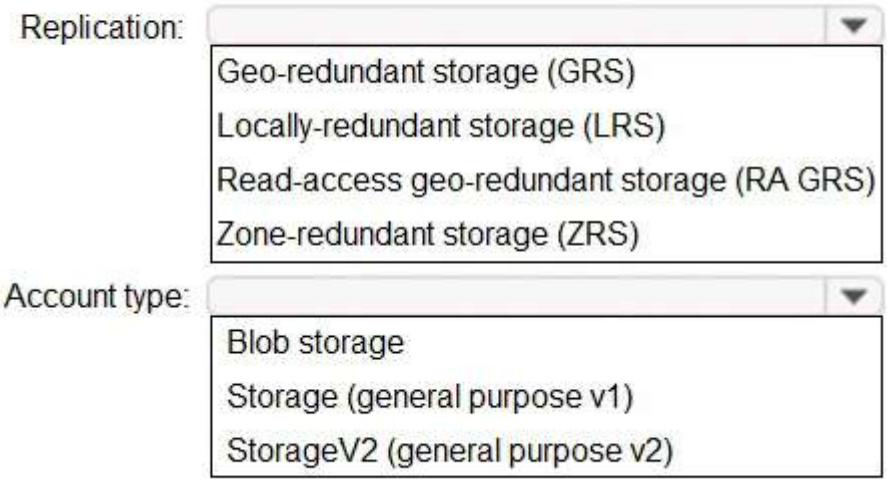
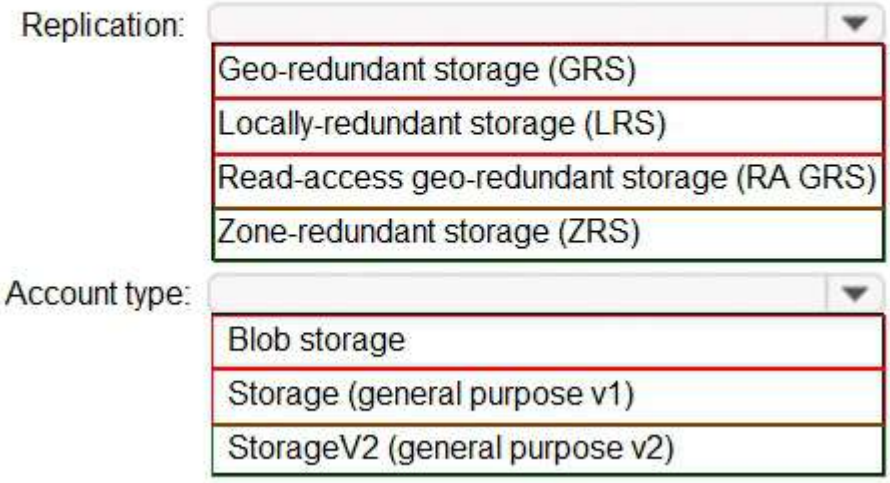
Answer Area



Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: Zone-redundant storage (ZRS)
Zone-redundant storage (ZRS) replicates your data synchronously across three storage clusters in a single region.

LRS would not remain available if a data center in the region fails
GRS and RA GRS use asynchronous replication.

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Box 2: StorageV2 (general purpose V2)
ZRS only support GPv2.

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

https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy-zrs

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Question 3

HOTSPOT

You plan to deploy an Azure virtual machine named VM1 by using an Azure Resource Manager template.

You need to complete the template.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
{
    "type": "Microsoft.Compute/vitualMachines",
    "apiVersion": "2018-10-01",
    "name": "VM1",
    "location": "[parameters('location')]",
    "dependsOn": [
        "[resourceId('Microsoft.Storage/storageAccounts/',   variables('Name3'))]",
        "[resourceId(                                        variables('Name4'))]"
],

{
    "type": "Microsoft.Network/networkInterfaces",
    "apiVersion": "2018-11-01",
    "name": "NIC1",
    "location": "[parameters('location')]",
    "dependsOn": [
        "[resourceId('Microsoft.Network/publicIPAddresses/', variables('Name1'))]",
        "[resourceId(                                        variables('Name2'))]"
],
```

- 'Microsoft.Network/publicIPAddresses/'
- 'Microsoft.Network/virtualNetworks/'
- 'Microsoft.Network/networkInterfaces/'
- 'Microsoft.Network/virtualNetworks/subnets'
- 'Microsoft.Storage/storageAccounts/'

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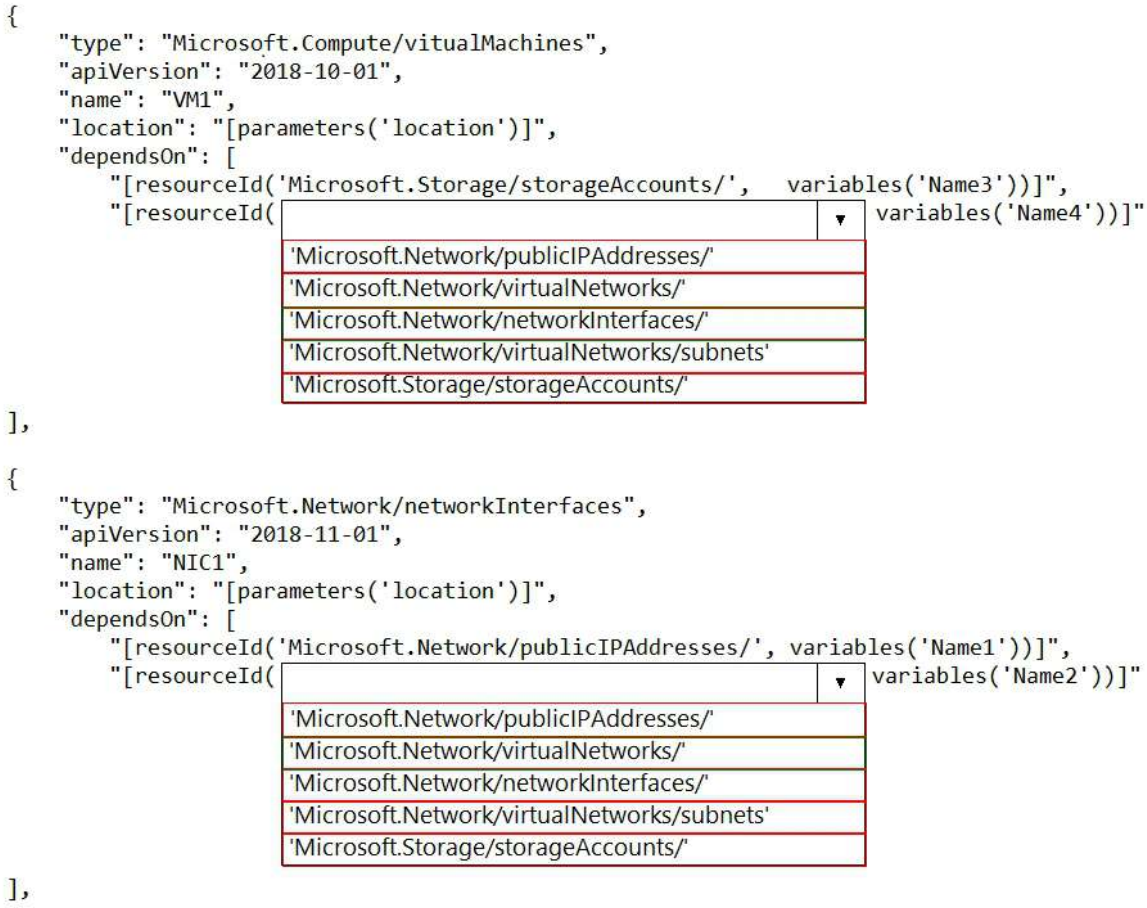
Solution:

Answer Area



Explanation/Reference

Explanation:

Within your template, the dependsOn element enables you to define one resource as a dependent on one or more resources. Its value can be a comma-separated list of resource names.

Box 1: 'Microsoft.Network/networkInterfaces'
This resource is a virtual machine. It depends on two other resources:

Microsoft.Storage/storageAccounts
Microsoft.Network/networkInterfaces

Box 2: 'Microsoft.Network/virtualNetworks/'
The dependsOn element enables you to define one resource as a dependent on one or more resources. The resource depends on two other resources:

Microsoft.Network/publicIPAddresses
Microsoft.Network/virtualNetworks

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Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-tutorial-create-templates-with-dependent-resources

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Question 4

HOTSPOT

Your network contains an Active Directory domain named adatum.com and an Azure Active Directory (Azure AD) tenant named adatum.onmicrosoft.com.

Adatum.com contains the user accounts in the following table.

Name	Member of
User1	Domain Admins
User2	Schema Admins
User3	Incoming Forest Trust Builders
User4	Replicator
User5	Enterprise Admins

Adatum.onmicrosoft.com contains the user accounts in the following table.

Name	Role
UserA	Global administrator
UserB	User administrator
UserC	Security administrator
UserD	Service administrator

You need to implement Azure AD Connect. The solution must follow the principle of least privilege.

Which user accounts should you use in Adatum.com and Adatum.onmicrosoft.com to implement Azure AD Connect? To answer select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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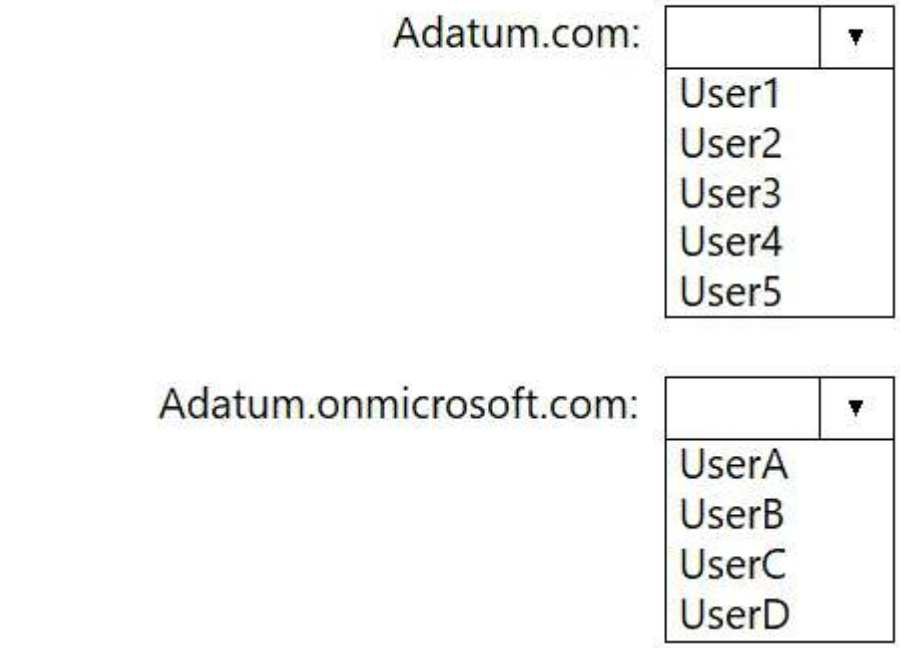
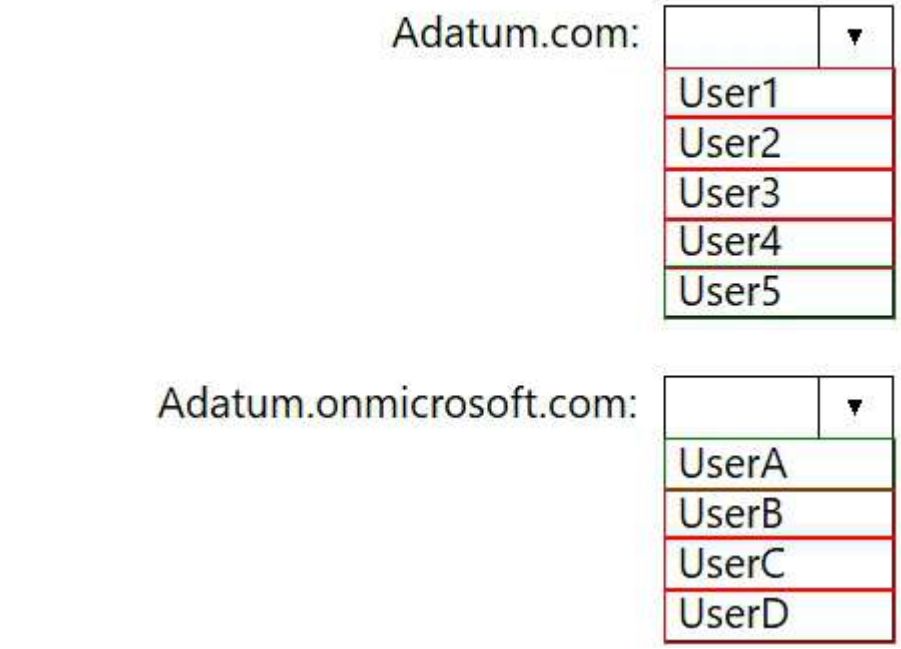
Answer Area



Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: User5
In Express settings, the installation wizard asks for the following:

AD DS Enterprise Administrator credentials
Azure AD Global Administrator credentials

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The AD DS Enterprise Admin account is used to configure your on-premises Active Directory. These credentials are only used during the installation and are not used after the installation has completed. The Enterprise Admin, not the Domain Admin should make sure the permissions in Active Directory can be set in all domains.

Box 2: UserA
Azure AD Global Admin credentials are only used during the installation and are not used after the installation has completed. It is used to create the Azure AD Connector account used for synchronizing changes to Azure AD. The account also enables sync as a feature in Azure AD.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/connect/active-directory-aadconnect-accounts-permissions

Question 5

You have an Azure subscription that contains 100 virtual machines.

You have a set of Pester tests in PowerShell that validate the virtual machine environment.

You need to run the tests whenever there is an operating system update on the virtual machines. The solution must minimize implementation time and recurring costs.

Which three resources should you use to implement the tests? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ Azure Automation runbook
- ☒ an alert rule
- ☐ an Azure Monitor query
- ☐ a virtual machine that has network access to the 100 virtual machines
- ☒ an alert action group

Explanation/Reference

Explanation:
AE: You can call Azure Automation runbooks by using action groups or by using classic alerts to automate tasks based on alerts.

B: Alerts are one of the key features of Azure Monitor. They allow us to alert on actions within an Azure subscription

Reference:
https://docs.microsoft.com/en-us/azure/automation/automation-create-alert-triggered-runbook

https://techsnips.io/snips/how-to-create-and-test-azure-monitor-alerts/?page=13

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Question 6

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HOTSPOT

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Location
RG1	West US
RG2	East US

You create an Azure Resource Manager template named Template1 as shown in the following exhibit.

```
{
    "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
    "contentVersion": "1.0.0.0",
    "parameters": {
        "name": {
            "type": "String"
        },
        "location": {
           "defaultValue": "westus",
            "type": "String"
        }
    },
    "variables": {
             "location": "[resourceGroup().location]"
       },
    "resources": [
        {
            "type": "Microsoft.Network/publicIPAddresses",
            "apiVersion": "2019-11-01",
            "name": "[parameters('name')]",
            "location": "[variables('location')]",
            "sku": {
                "name": "Basic"
            },
            "properties": {
                "publicIPAddressVersion": "IPv4",
                "publicIPAllocationMethod": "Dynamic",
                "idleTimeoutInMinutes": 4,
                "ipTags": []
             }
         }
    ]
}
```

From the Azure portal, you deploy Template1 four times by using the settings shown in the following table.

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Resource group	Name	Location
RG1	IP1	westus
RG1	IP2	westus
RG2	IP1	westus
RG2	IP3	westus

What is the result of the deployment? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Number of public IP addresses in West US: [▼]
1
2
3
4

Total number of public IP addresses created: [▼]
1
2
3
4

Solution:

Answer Area

Number of public IP addresses in West US: [▼]
1
2
3
4

Total number of public IP addresses created: [▼]
1
2
3
4

Explanation/Reference

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Question 7

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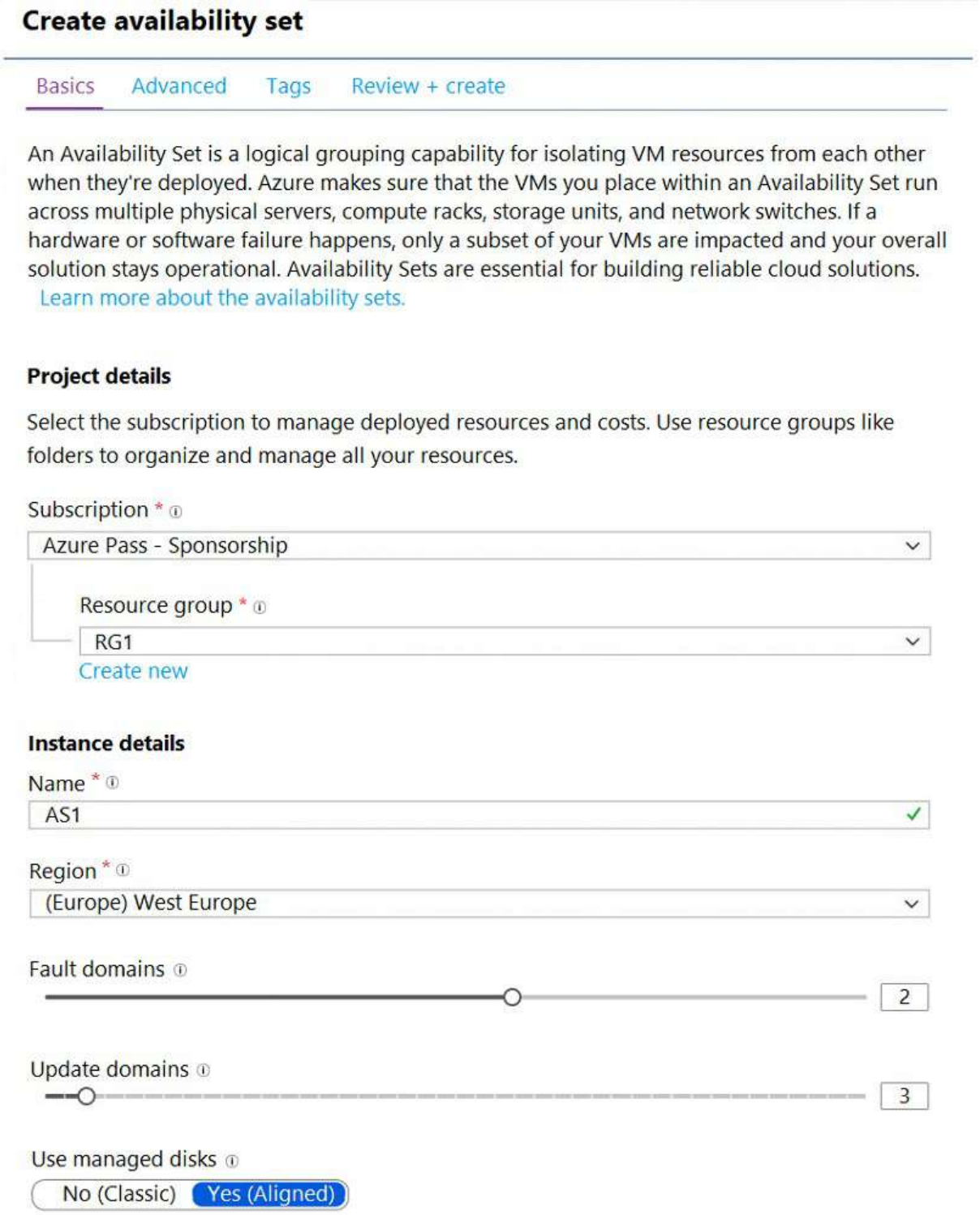
HOTSPOT

You have an Azure subscription that contains multiple resource groups.

You create an availability set as shown in the following exhibit.



You deploy 10 virtual machines to AS1.

Use the drop-down menus to select the answer choice that completes each statement based on the

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information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

During planned maintenance, at least **[answer choice]** virtual machines will be available.

- 4
- 5
- 6
- 8

To add another virtual machine to AS1, the virtual machine must be added to **[answer choice]**.

- any region and the RG1 resource group
- the West Europe region and any resource group
- the West Europe region and the RG1 resource group

Solution:

Answer Area

During planned maintenance, at least **[answer choice]** virtual machines will be available.

- 4
- 5
- 6
- 8

To add another virtual machine to AS1, the virtual machine must be added to **[answer choice]**.

- any region and the RG1 resource group
- the West Europe region and any resource group
- the West Europe region and the RG1 resource group

Explanation/Reference

Explanation:

Box 1: 6
Two out of three update domains would be available, each with at least 3 VMs.
An update domain is a group of VMs and underlying physical hardware that can be rebooted at the same time.

As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these update domains. This approach ensures that at least one instance of your application always remains running as the Azure platform undergoes periodic maintenance.

Box 2: the West Europe region and the RG1 resource group

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/regions

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Question 8

You have an Azure subscription that contains an Azure Log Analytics workspace.

You have a resource group that contains 100 virtual machines. The virtual machines run Linux.

You need to collect events from the virtual machines to the Log Analytics workspace.

Which type of data source should you configure in the workspace?

- ☒ Syslog
- ☐ Linux performance counters
- ☐ custom fields

Explanation/Reference

Explanation:
Syslog is an event logging protocol that is common to Linux. Applications will send messages that may be stored on the local machine or delivered to a Syslog collector. When the Log Analytics agent for Linux is installed, it configures the local Syslog daemon to forward messages to the agent. The agent then sends the message to Azure Monitor where a corresponding record is created.

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/data-sources-custom-logs

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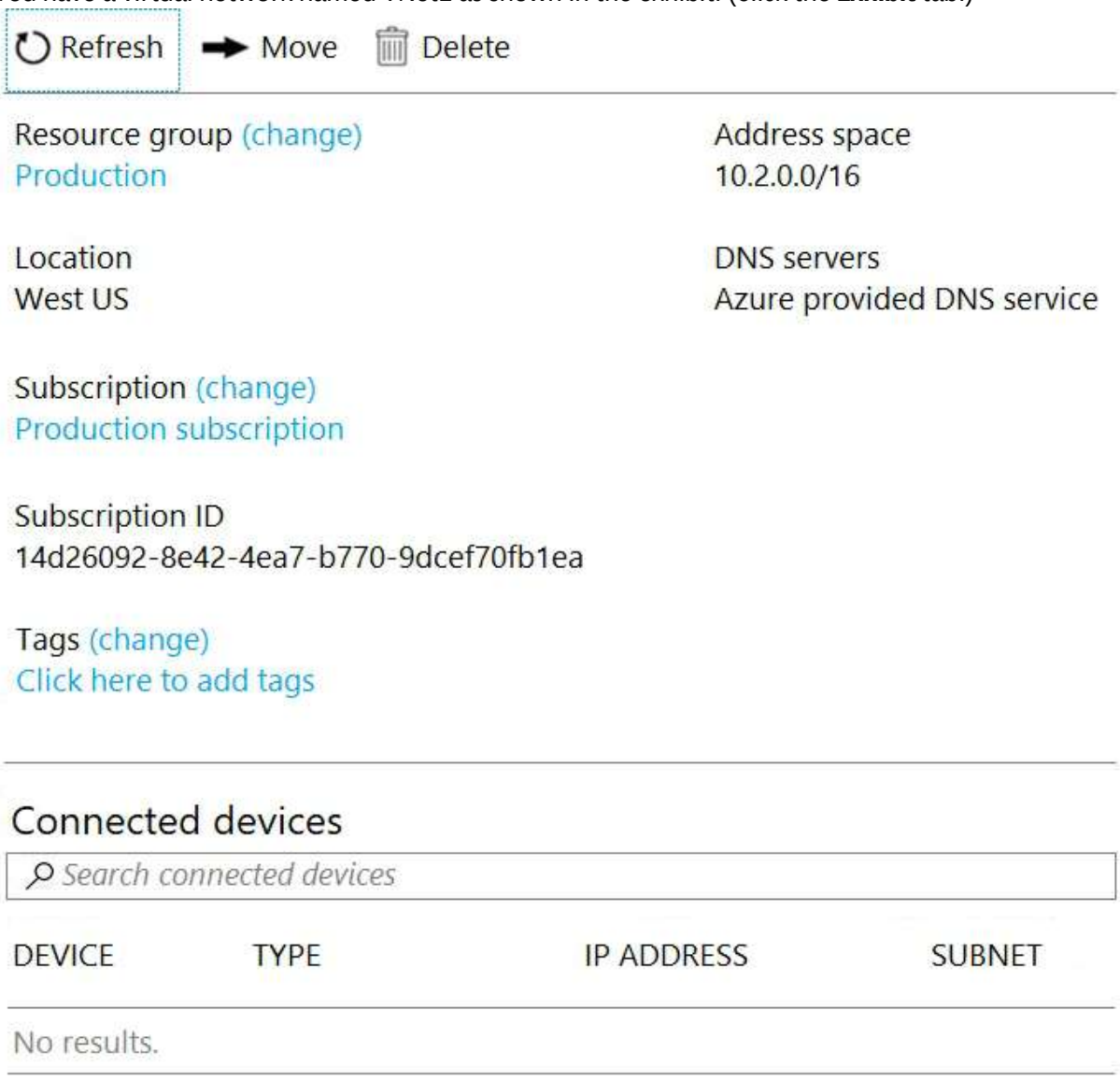
Question 9

You have a virtual network named VNet1 as shown in the exhibit. (Click the **Exhibit** tab.)



No devices are connected to VNet1.

You plan to peer VNet1 to another virtual network named VNet2. VNet2 has an address space of 10.2.0.0/16.

You need to create the peering.

What should you do first?

- ☐ Configure a service endpoint on VNet2.
- ☐ Add a gateway subnet to VNet1.
- ☐ Create a subnet on VNEt1 and VNet2.
- ☒ Modify the address space of VNet1.

Explanation/Reference

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Explanation:
The virtual networks you peer must have non-overlapping IP address spaces. The exhibit indicates that VNet1 has an address space of 10.2.0.0/16, which is the same as VNet2, and thus overlaps. We need to change the address space for VNet1.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering#requirements-and-constraints

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Question 10

HOTSPOT

You have an Azure Resource Manager template for a virtual machine named Template1. Template1 has the following parameters section.

```
"parameters": {
    "adminUsername": {
        "type": "string"
    },
    "adminPassword": {
        "type": "securestring"
    },
    "dnsLabelPrefix": {
        "type": "string"
    },
    "windowsOSVersion": {
        "type": "string",
        "defaultValues": "2016-Datacenter",
        "allowedValues": [
            "2016-Datacenter",
            "2019-Datacenter",
        ]
    },
    "location": {
        "type": "String",
        "allowedValues": [
            "eastus",
            "centralus",
            "westus" ]
     }
},
```

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
When you deploy Template1, you are prompted for a resource group.	○	○
When you deploy Template1, you are prompted for the Windows operating system version.	○	○
When you deploy Template1, you are prompted for a location.	○	○

Solution:

Answer Area

Statements	Yes	No
When you deploy Template1, you are prompted for a resource group.	○	○
When you deploy Template1, you are prompted for the Windows operating system version.	○	○
When you deploy Template1, you are prompted for a location.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
The Resource group is not specified.

Box 2: No
The default value for the operating system is Windows 2016 Datacenter.

Box 3: Yes
Location is no default value.

Reference:
https://docs.microsoft.com/bs-latn-ba/azure/virtual-machines/windows/ps-template

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Question 11

You have an Azure subscription.

You have 100 Azure virtual machines.

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

Which blade should you use?

- ☐ Metrics
- ☐ Customer insights
- ☐ Monitor
- ☒ Advisor

Explanation/Reference

Explanation:
Advisor helps you optimize and reduce your overall Azure spend by identifying idle and underutilized resources. You can get cost recommendations from the Cost tab on the Advisor dashboard.

Reference:
https://docs.microsoft.com/en-us/azure/advisor/advisor-cost-recommendations

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Question 12

HOTSPOT

You have an Azure Active Directory (Azure AD) tenant named contoso.com. The tenant contains the users shown in the following table.

Name	Member of
User1	Group1
User2	Group2

The tenant contains computers that run Windows 10. The computers are configured as shown in the following table.

Name	Member of
Computer1	GroupA
Computer2	GroupA
Computer3	GroupB

You enable Enterprise State Roaming in contoso.com for Group1 and GroupA.

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
If User1 modifies the desktop background of Computer1, User1 will see the changed background when signing in to Computer3.	○	○
If User2 modifies the desktop background of Computer1, User2 will see the changed background when signing in to Computer2.	○	○
If User1 modifies the desktop background of Computer3, User1 will see the changed background when signing in to Computer2.	○	○

Solution:

Answer Area

Statements	Yes	No
If User1 modifies the desktop background of Computer1, User1 will see the changed background when signing in to Computer3.	○	○
If User2 modifies the desktop background of Computer1, User2 will see the changed background when signing in to Computer2.	○	○
If User1 modifies the desktop background of Computer3, User1 will see the changed background when signing in to Computer2.	○	○

Explanation/Reference

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Explanation:

Enterprise State Roaming provides users with a unified experience across their Windows devices and reduces the time needed for configuring a new device.

Box 1: Yes

Box 2: No

Box 3: Yes

Reference:
https://docs.microsoft.com/en-us/azure/////active-directory/devices/enterprise-state-roaming-overview

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Question 13

HOTSPOT

You have an Azure Resource Manager template named Template1 in the library as shown in the following exhibit.

ARM Template

template1

```
{
    "$schema": "https:/schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
    "contentVersion": "1.0.0.0",
    "parameters": {},
    "resources": [
      {
        "apiVersion": "2016-01-01",
        "type": "Microsoft.Storage/storageAccounts",
        "name": "[concat(copyIndex(),'storage', uniqueString(resourceGroup().id))]",
        "location": "[resourceGroup().location]",
        "sku": {
          "name": "Premium_LRS"
        },
        "kind": "Storage",
        "properties": {},
        "copy": {
          "name": "storagecopy",
          "count": 3,
          "mode": "Serial",
          "batchSize": 1
        }
      }

    ]
  }

```

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

During the deployment of Template1, you can specify **[answer choice]**.

- the number of resources to deploy
- the name of the resources to deploy
- the resource group to which to deploy the resources
- the permissions for the resources that will be deployed

Template1 deploys **[answer choice]**.

- a single storage account in one resource group
- three storage accounts in one resource group
- three resource groups that each has one storage account
- three resource groups that each has three storage accounts

Solution:

Answer Area

During the deployment of Template1, you can specify **[answer choice]**.

- the number of resources to deploy
- the name of the resources to deploy
- the resource group to which to deploy the resources
- the permissions for the resources that will be deployed

Template1 deploys **[answer choice]**.

- a single storage account in one resource group
- three storage accounts in one resource group
- three resource groups that each has one storage account
- three resource groups that each has three storage accounts

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-syntax

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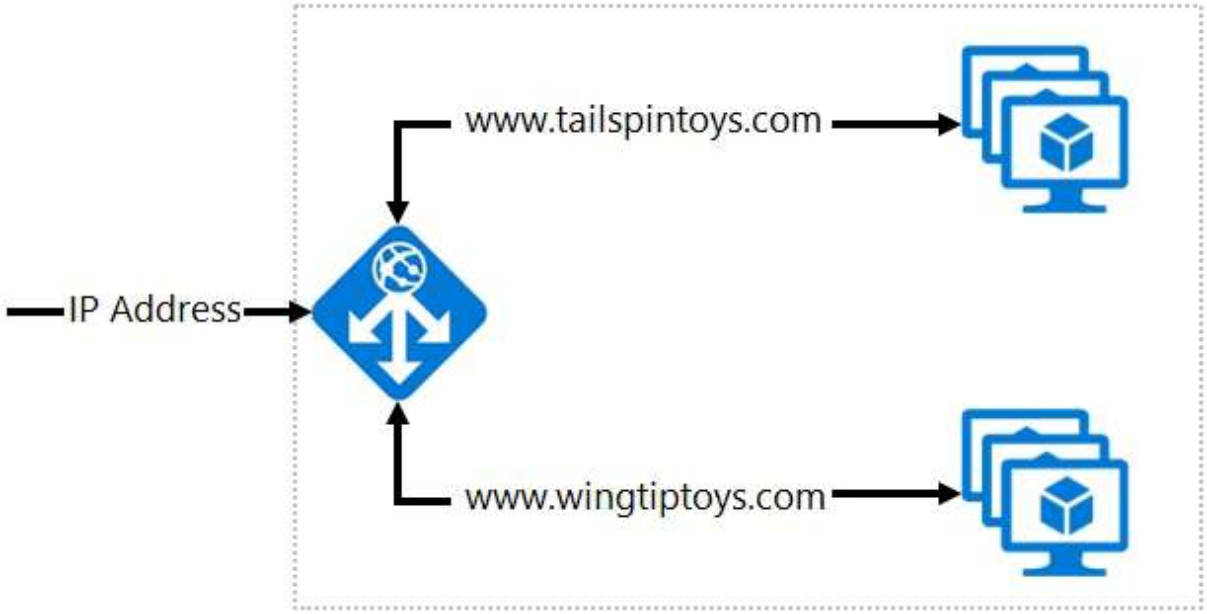
Question 14

HOTSPOT

Your company hosts multiple websites by using Azure virtual machine scale sets (VMSS) that run Internet Information Server (IIS).

All network communications must be secured by using end to end Secure Socket Layer (SSL) encryption. User sessions must be routed to the same server by using cookie-based session affinity.

The image shown depicts the network traffic flow for the websites to the VMSS.



Use the drop-down menus to select the answer choice that answers each question.

NOTE: Each correct selection is worth one point.

Answer Area

Which Azure solution should you create to route the web application traffic to the VMSS?

- Azure VPN Gateway
- Azure Application Gateway
- Azure ExpressRoute
- Azure Network Watcher

What should you configure to make sure web traffic arrives at the appropriate server in the VMSS?

- Routing rules and backend listeners
- CNAME and A records
- Routing method and DNS time to live (TTL)
- Path-based redirection and WebSockets

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Solution:

Answer Area

Which Azure solution should you create to route the web application traffic to the VMSS?	Azure VPN Gateway Azure Application Gateway Azure ExpressRoute Azure Network Watcher
What should you configure to make sure web traffic arrives at the appropriate server in the VMSS?	Routing rules and backend listeners CNAME and A records Routing method and DNS time to live (TTL) Path-based redirection and WebSockets

Explanation/Reference

Explanation:

Box 1: Azure Application Gateway
You can create an application gateway with URL path-based redirection using Azure PowerShell.

Box 2: Path-based redirection and Websockets

Reference:
https://docs.microsoft.com/bs-latn-ba/azure//application-gateway/tutorial-url-redirect-powershell

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Question 15

DRAG DROP

You have an Azure subscription that contains two virtual networks named VNet1 and VNet2. Virtual machines connect to the virtual networks.

The virtual networks have the address spaces and the subnets configured as shown in the following table.

Virtual network	Address space	Subnet	Peering
VNet1	10.1.0.0/16	10.1.0.0/24 10.1.1.0/26	VNet2
VNet2	10.2.0.0/26	10.2.0.0/24	VNet1

You need to add the address space of 10.33.0.0/16 to VNet1. The solution must ensure that the hosts on VNet1 and VNet2 can communicate.

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

Actions

- On the peering connection in VNet2, allow gateway transit.
- Recreate peering between VNet1 and VNet2.
- Remove VNet1.
- Create a new virtual network named VNet1.
- On the peering connection in VNet1, allow gateway transit.
- Add the 10.33.0.0/16 address space to VNet1.
- Remove peering between VNet1 and VNet2.

Answer Area

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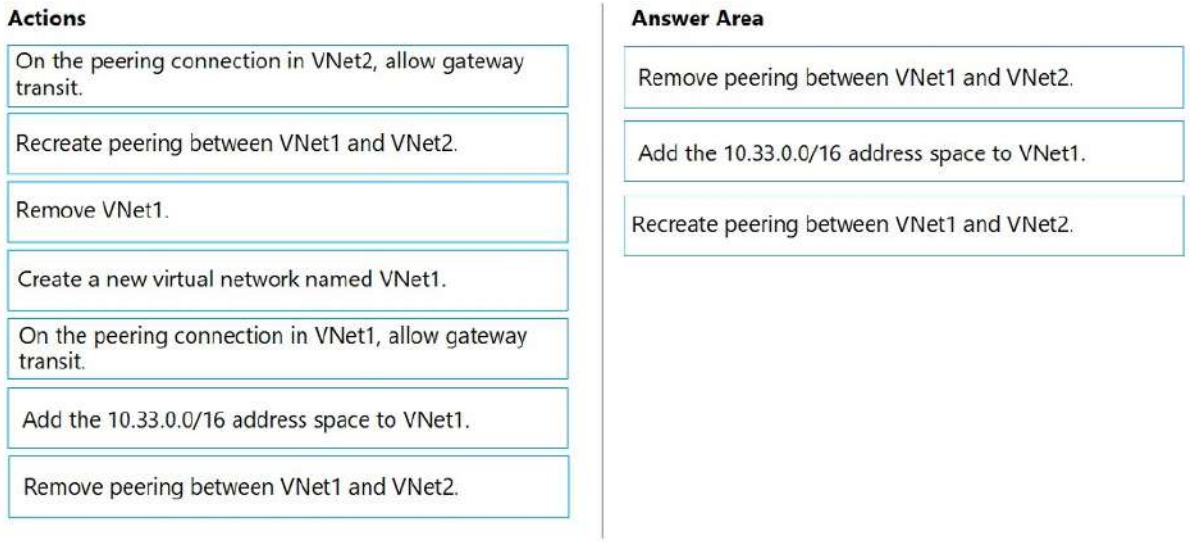
Solution:



Explanation/Reference

Explanation:

Step 1: Remove peering between Vnet1 and VNet2.
You can't add address ranges to, or delete address ranges from a virtual network's address space once a virtual network is peered with another virtual network. To add or remove address ranges, delete the peering, add or remove the address ranges, then re-create the peering.

Step 2: Add the 10.44.0.0/16 address space to VNet1.

Step 3: Recreate peering between VNet1 and VNet2

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering

Question 16

You have an Azure App Service app.

You need to implement tracing for the app. The tracing information must include the following:

- Usage trends
- AJAX call responses
- Page load speed by browser
- Server and browser exceptions

What should you do?

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- ☐ Configure IIS logging in Azure Log Analytics.
- ☐ Configure a connection monitor in Azure Network Watcher.
- ☐ Configure custom logs in Azure Log Analytics.
- ☒ Enable the Azure Application Insights site extension.

Explanation/Reference

Explanation:
For web pages, Application Insights JavaScript SDK automatically collects AJAX calls as dependencies.

Note: Some of the things you can track or collect are:

What are the most popular webpages in your application, at what time of day and where is that traffic coming from?
Dependency rates or response times and failure rates to find out if there's an external service that's causing performance issues on your app, maybe a user is using a portal to get through to your application and there are response time issues going through there for instance.
Exceptions for both server and browser information, as well as page views and load performance from the end users' side.

Reference:
https://azure.microsoft.com/en-us/blog/ajax-collection-in-application-insights/

https://blog.pragmaticworks.com/what-is-application-insights

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Question 17

HOTSPOT

You have an Azure subscription named Subscription1. Supscription1 contains the resources in the following table.

Name	Type
RG1	Resource group
RG2	Resource group
VNet1	Virtual network
VNet2	Virtual network

VNet1 is in RG1. VNet2 is in RG2. There is no connectivity between VNet1 and VNet2.

An administrator named Admin1 creates an Azure virtual machine named VM1 in RG1. VM1 uses a disk named Disk1 and connects to VNet1. Admin1 then installs a custom application in VM1.

You need to move the custom application to VNet2. The solution must minimize administrative effort.

Which two actions should you perform? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

First action:

- Create a network interface in RG2.
- Detach a network interface.
- Delete VM1.
- Move a network interface to RG2.

Second action:

- Attach a network interface.
- Create a network interface in RG2.
- Create a new virtual machine.
- Move VM1 to RG2.

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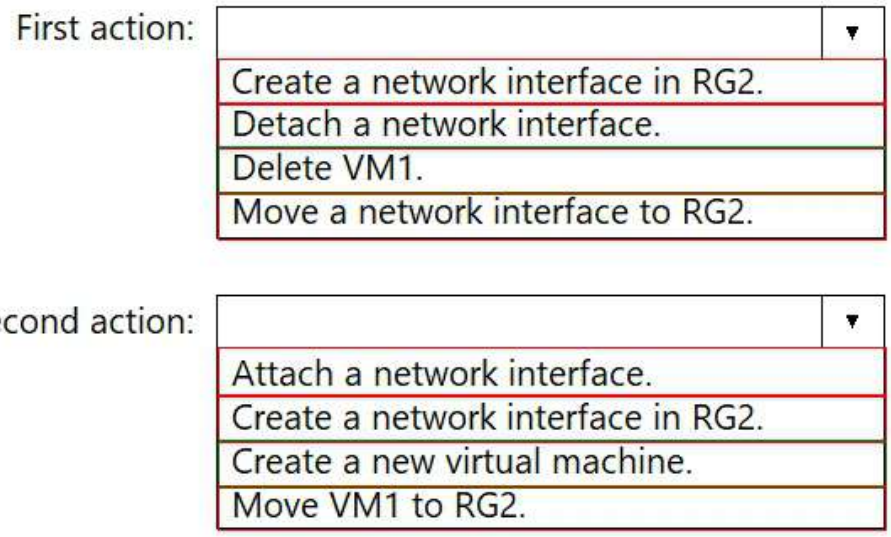
Solution:

Answer Area



Explanation/Reference

Explanation:

We cannot just move a virtual machine between networks. What we need to do is identify the disk used by the VM, delete the VM itself while retaining the disk, and recreate the VM in the target virtual network and then attach the original disk to it.

Reference:
https://blogs.technet.microsoft.com/canitpro/2014/06/16/step-by-step-move-a-vm-to-a-different-vnet-on-azure/

https://4sysops.com/archives/move-an-azure-vm-to-another-virtual-network-vnet/#migrate-an-azure-vm-between-vnets

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Question 18

You have an Azure subscription that contains the storage accounts shown in the following table.

Name	Contains
storagecontoso1	A blob service and a table service
storagecontoso2	A blob service and a file service
storagecontoso3	A queue service
storagecontoso4	A file service and a queue service
storagecontoso5	A table service

You enable Storage Advanced Threat Protection (ATP) for all the storage accounts.

You need to identify which storage accounts will generate Storage ATP alerts.

Which two storage accounts should you identify? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ storagecontoso1
- ☒ storagecontoso2
- ☐ storagecontoso3
- ☐ storagecontoso4
- ☐ storagecontoso5

Explanation/Reference

Explanation:
Storage Threat Detection is available for the Blob Service.

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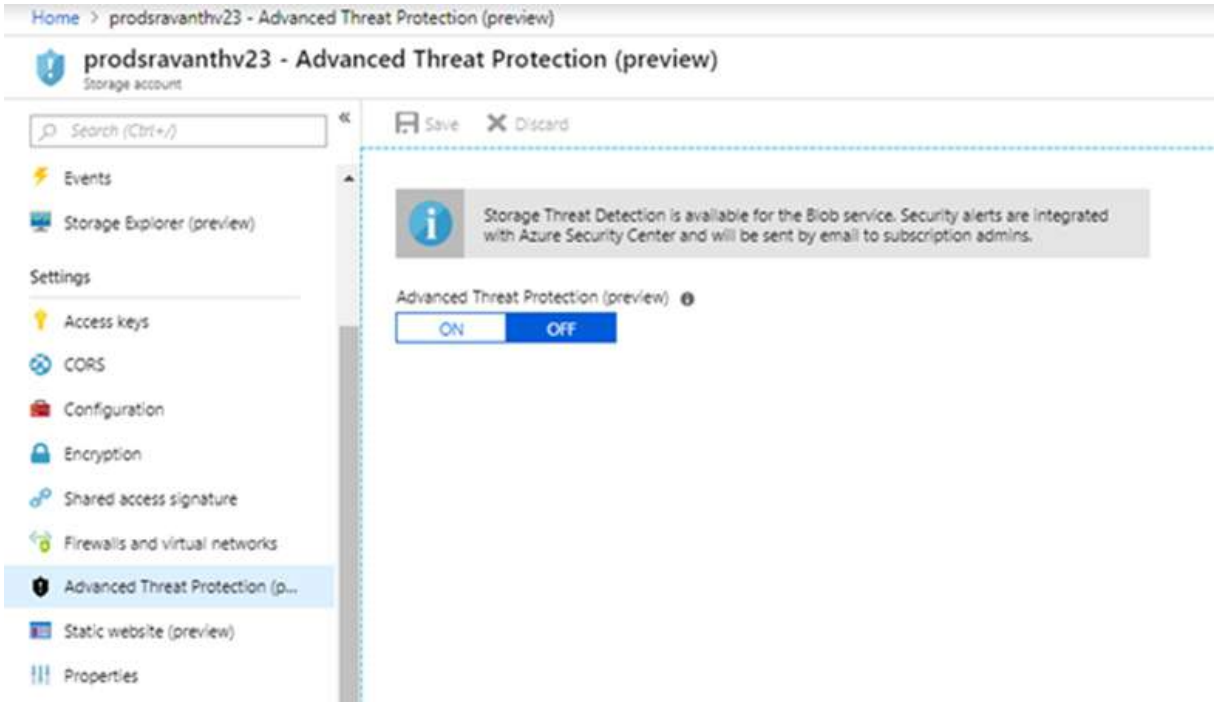

Reference:
https://azure.microsoft.com/en-us/blog/advanced-threat-protection-for-azure-storage-now-in-public-preview/

Question 19

HOTSPOT

You company has an Azure Container Registry named Registry1.

You have an Azure virtual machine named Server1 that runs Windows Server 2019.

From Server1, you create a container image named image1.

You need to add image1 to Registry1.

Which command should you run on Server1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

▼	push	▼	/image1
docker AzCopy Robocopy esentutl		registry1.azurecr.io registry1.onmicrosoft.com https://registry1.onmicrosoft.com \\registry1.blob.core.windows.net	

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Solution:

Answer Area

Explanation/Reference

Explanation:

An Azure container registry stores and manages private Docker container images, similar to the way Docker Hub stores public Docker images. You can use the Docker command-line interface (Docker CLI) for login, push, pull, and other operations on your container registry.

Reference:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-get-started-docker-cli

https://docs.docker.com/engine/reference/commandline/push/

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Question 20

HOTSPOT

You are developing an Azure Web App. You configure TLS mutual authentication for the web app.

You need to validate the client certificate in the web app. To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Property	Value
Client certificate location	HTTP request header Client cookie HTTP message body URL query string
Encoding type	HTML URL Unicode Base64

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Solution:

Answer Area

Property	Value
Client certificate location	HTTP request header Client cookie HTTP message body URL query string
Encoding type	HTML URL Unicode Base64

Explanation/Reference

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Question 21

DRAG DROP

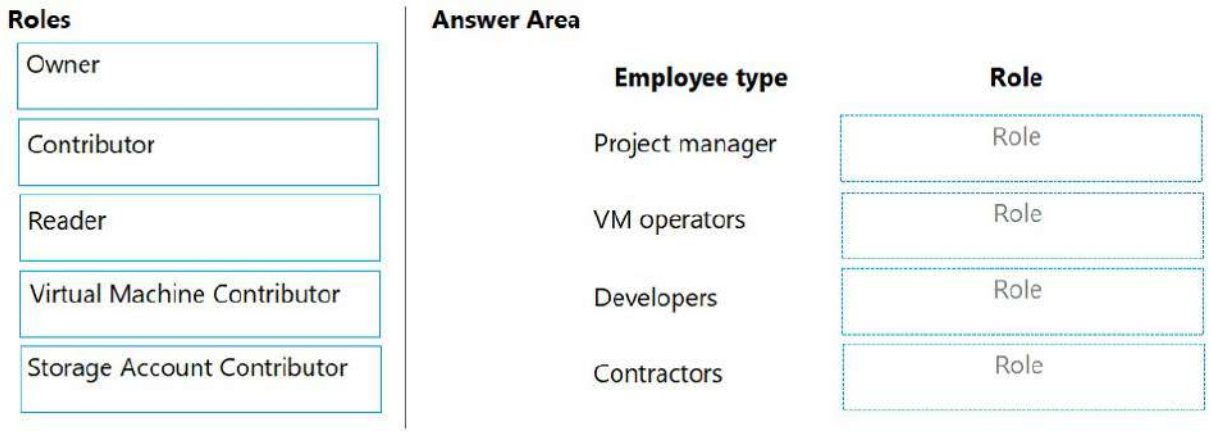
You are designing a solution to secure a company's Azure resources. The environment hosts 10 teams. Each team manages a project and has a project manager, a virtual machine (VM) operator, developers, and contractors.

Project managers must be able to manage everything except access and authentication for users. VM operators must be able to manage VMs, but not the virtual network or storage account to which they are connected. Developers and contractors must be able to manage storage accounts.

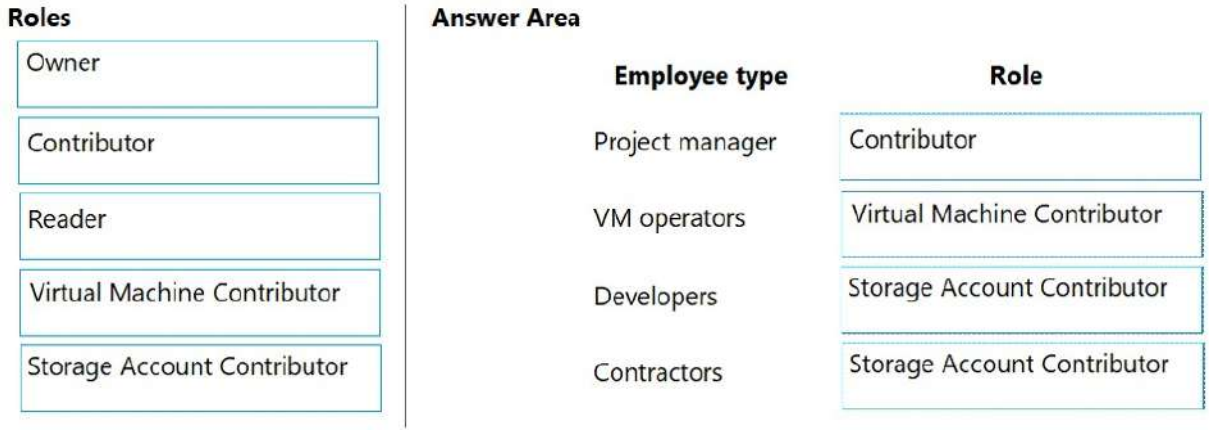
You need to recommend roles for each member.

What should you recommend? To answer, drag the appropriate roles to the correct employee types. Each role 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.



Solution:



Explanation/Reference

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Question 22

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

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?

- ☐ vm1.adatum.com.onmicrosoft.com
- ☒ 169.254.169.254
- ☐ 10.10.0.10
- ☐ vm1.adatum.com

Explanation/Reference

Explanation:
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

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

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Question 23

HOTSPOT

Your company has a virtualization environment that contains the virtualization hosts shown in the following table.

Name	Hypervisor	Guest
Server1	VMware	VM1, VM2, VM3
Server2	Hyper-V	VMA, VMB, VMC

The virtual machines are configured as shown in the following table.

Name	Generation	Memory	Operating system (OS)	OS disk	Data disk
VM1	*Not applicable*	4 GB	Windows Server 2016	200 GB	800 GB
VM2	*Not applicable*	12 GB	Red Hat Enterprise Linux 7.2	3 TB	200 GB
VM3	*Not applicable*	32 GB	Windows Server 2012 R2	200 GB	1 TB
VMA	1	8 GB	Windows Server 2012	100 GB	2 TB
VMB	1	16 GB	Red Hat Enterprise Linux 7.2	150 GB	3 TB
VMC	2	24 GB	Windows Server 2016	500 GB	6 TB

All the virtual machines use basic disks. VM1 is protected by using BitLocker Drive Encryption (BitLocker).

You plan to migrate the virtual machines to Azure by using Azure Site Recovery.

You need to identify which virtual machines can be migrated.

Which virtual machines should you identify for each server? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

The virtual machines that can be migrated from Server1:

- VM1 only
- VM2 only
- VM3 only
- VM1 and VM2 only
- VM1 and VM3 only
- VM1, VM2, and VM3

The virtual machines that can be migrated from Server2:

- VMA only
- VMB only
- VMC only
- VMA and VMB only
- VMA and VMC only
- VMA, VMB, and VMC

Solution:

Answer Area

The virtual machines that can be migrated from Server1:

- VM1 only
- VM2 only
- VM3 only
- VM1 and VM2 only
- VM1 and VM3 only
- VM1, VM2, and VM3

The virtual machines that can be migrated from Server2:

- VMA only
- VMB only
- VMC only
- VMA and VMB only
- VMA and VMC only
- VMA, VMB, and VMC

Explanation/Reference

Explanation:

Incorrect Answers:
VM1 cannot be migrates as it has BitLocker enabled.
VM2 cannot be migrates as the OS disk on VM2 is larger than 2TB.
VMC cannot be migrates as the Data disk on VMC is larger than 4TB.

Reference:
https://docs.microsoft.com/en-us/azure/site-recovery/hyper-v-azure-support-matrix#azure-vm-requirements

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Question 24

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?

- ☒ Azure Application Gateway
- ☐ Azure Load Balancer
- ☐ Azure Traffic Manager
- ☐ server-level firewall rules

Explanation/Reference

Explanation:
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 Balanacer.

Incorrect Answers:
D: Because Load Balancer is agnostic to the TCP payload and TLS offload ("SSL") is not provided.

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

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Question 25

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You manage an Active Directory domain named contoso.local.

You install Azure AD Connect and connect to an Azure Active Directory (Azure AD) tenant named contoso.com without syncing any accounts.

You need to ensure that only users who have a UPN suffix of contoso.com in the contoso.local domain sync to Azure AD.

Solution: You use Azure AD Connect to customize the synchronization options.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Synchronization Rules Editor to create a synchronization rule.

Note: Filtering what objects are synced to Azure AD is a common request and there are many instances where filtering by OU just doesn't cut it. One option is to filter users by their UPN suffix so that only users with the public FQDN as their UPN suffix are synced to Azure AD (e.g., john.doe@acme.com would be synced while jane.doe@internal.acme.com would not).

Filtering can be configured using either the GUI (Synchronization Rules Editor) or PowerShell.

Reference:
https://www.sidekicktech.com/blog/field-notes/2019/upn-suffix-filtering-ad-connect/

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Question 26

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You need to ensure that only users who have a UPN suffix of contoso.com in the contoso.local domain sync to Azure AD.

Solution: You use Synchronization Rules Editor to create a synchronization rule.

Does this meet the goal?

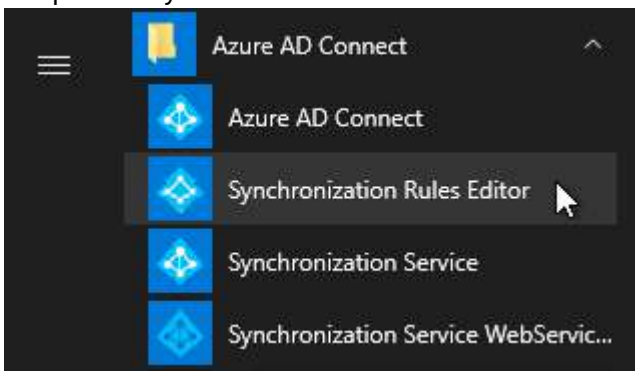
- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Filtering what objects are synced to Azure AD is a common request and there are many instances where filtering by OU just doesn't cut it. One option is to filter users by their UPN suffix so that only users with the public FQDN as their UPN suffix are synced to Azure AD (e.g., john.doe@acme.com would be synced while jane.doe@internal.acme.com would not).

Filtering can be configured using either the GUI or PowerShell.
Through GUI:
Using The Synchronization Rules Editor

1. Open the Synchronization Rules Editor on the server where Azure AD Connect is installed.



2. Click the Add new rule button on the View and manage your synchronization rules window.
3. Fill out the appropriate fields on the Description tab and click Next >.

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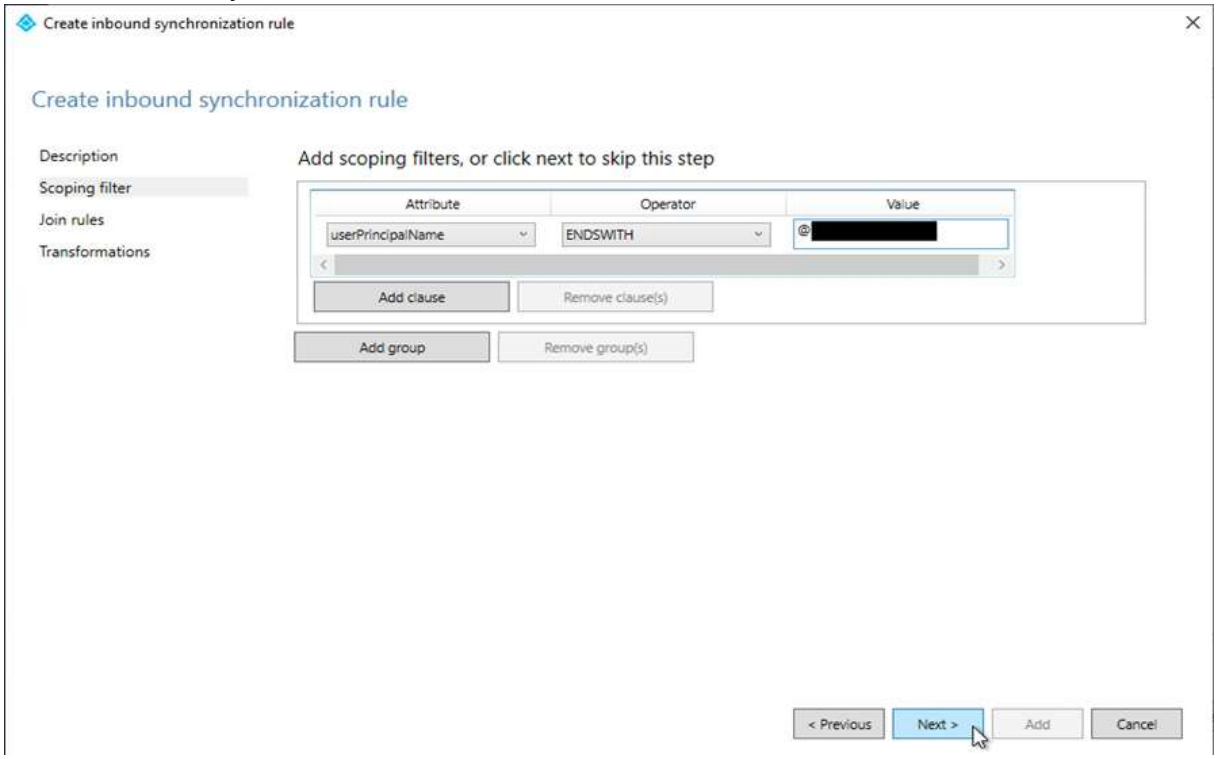
4. On the Scoping filter tab, click Add group, then Add clause, add a userPrincipalName attribute filter, and click Next >.

Attribute: userPrincipalName
Operator: ENDSWITH
Value: Your internal UPN suffix prefixed with @ (e.g., @internal.acme.com). Users with this UPN suffix will NOT be synced with Office 365.



Reference:
https://www.sidekicktech.com/blog/field-notes/2019/upn-suffix-filtering-ad-connect/

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Question 27

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You install Azure AD Connect and connect to an Azure Active Directory (Azure AD) tenant named contoso.com without syncing any accounts.

You need to ensure that only users who have a UPN suffix of contoso.com in the contoso.local domain sync to Azure AD.

Solution: You use the Synchronization Service Manager to modify the Active Directory Domain Services (AD DS) Connector.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Synchronization Rules Editor to create a synchronization rule.

Note: Filtering what objects are synced to Azure AD is a common request and there are many instances where filtering by OU just doesn't cut it. One option is to filter users by their UPN suffix so that only users with the public FQDN as their UPN suffix are synced to Azure AD (e.g., john.doe@acme.com would be synced while jane.doe@internal.acme.com would not).

Filtering can be configured using either the GUI (Synchronization Rules Editor) or PowerShell.

Reference:
https://www.sidekicktech.com/blog/field-notes/2019/upn-suffix-filtering-ad-connect/

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Question 28

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an app named App1 that uses data from two on-premises Microsoft SQL Server databases named DB1 and DB2.

You plan to move DB1 and DB2 to Azure.

You need to implement Azure services to host DB1 and DB2. The solution must support server-side transactions across DB1 and DB2.

Solution: You deploy DB1 and DB2 to SQL Server on an Azure virtual machine.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Understanding distributed transactions.
When both the database management system and client are under the same ownership (e.g. when SQL Server is deployed to a virtual machine), transactions are available and the lock duration can be controlled.

Reference:
https://docs.particular.net/nservicebus/azure/understanding-transactionality-in-azure

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Question 29

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value": "10" }
Item2	{ "id": "2", "day": "Mon", "value": "15" }
Item3	{ "id": "3", "day": "Tue", "value": "10" }
Item4	{ "id": "4", "day": "Wed", "value": "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT id FROM c
WHERE c.day = "Mon" OR c.day = "Tue"
```

You set the `EnableCrossPartitionQuery` property to `False`.

Does this meet the goal?

- ☐ Yes
- ☒ No

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Explanation/Reference

Explanation:
Returns Item1 only as EnableCrossPartitionQuery property to False. If EnableCrossPartitionQuery property is set to true, it will return Item1, Item2, and Item3.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

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Question 30

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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Item4	{ "id": "4", "day": "Wed", "value": "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT day FROM c
WHERE c.value = "10" OR c.value = "15"
```

You set the `EnableCrossPartitionQuery` property to `True`.

Does this meet the goal?

- ☐ Yes
- ☒ No

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Explanation/Reference

Explanation:
Returns Item1, Item2, Item3, and Item4.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

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Question 31

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value": "10" }
Item2	{ "id": "2", "day": "Mon", "value": "15" }
Item3	{ "id": "3", "day": "Tue", "value": "10" }
Item4	{ "id": "4", "day": "Wed", "value": "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT id FROM c
  WHERE c.day = "Mon"
```

You set the `EnableCrossPartitionQuery` property to `True`.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

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Explanation:
Returns Item1 and Item2 only.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

Question 32

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You manage an Active Directory domain named contoso.local.

You install Azure AD Connect and connect to an Azure Active Directory (Azure AD) tenant named contoso.com without syncing any accounts.

You need to ensure that only users who have a UPN suffix of contoso.com in the contoso.local domain sync to Azure AD.

Solution: You use the Synchronization Service Manager to modify the Metaverse Designer tab.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Synchronization Rules Editor to create a synchronization rule.

Note: Filtering what objects are synced to Azure AD is a common request and there are many instances where filtering by OU just doesn't cut it. One option is to filter users by their UPN suffix so that only users with the public FQDN as their UPN suffix are synced to Azure AD (e.g., john.doe@acme.com would be synced while jane.doe@internal.acme.com would not).

Filtering can be configured using either the GUI (Synchronization Rules Editor) or PowerShell.

Reference:
https://www.sidekicktech.com/blog/field-notes/2019/upn-suffix-filtering-ad-connect/

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Question 33

HOTSPOT

You have an Azure subscription that contains a resource group named RG1.

You have a group named Group1 that is assigned the Contributor role for RG1.

You need to enhance security for the virtual machines in RG1 to meet the following requirements:

- Prevent Group1 from assigning external IP addresses to the virtual machines.
- Ensure that Group1 can establish an RDP connection to the virtual machines through a shared external IP address.

What should you use to meet each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Prevent Group1 from assigning external IP addresses to the virtual machines:

- Azure Policy
- Azure Bastion
- Virtual network service endpoints
- Azure Firewall
- Azure Web Application Firewall (WAF)

Ensure that Group1 can establish an RDP connection to the virtual machines through a shared external IP address:

- Azure Policy
- Azure Bastion
- Virtual network service endpoints
- Azure Firewall
- Azure Web Application Firewall (WAF)

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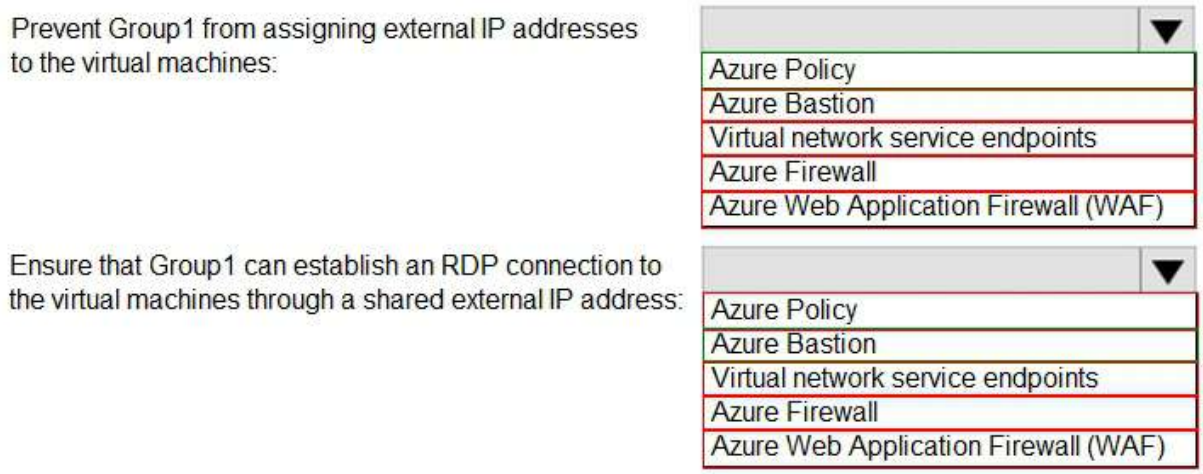
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: Azure Policy
There is a built-in policy in the Azure Policy service that allows you to block public IPs on all NICs of a VM.

Note: Azure Policy is a powerful tool in your Azure toolbox. It allows you to enforce specific governance principals you want to see implemented in your environment. Some key examples of what Azure Policy allows you to do is:

Automatically tag resources
Block VMs from having a public IP
Enforce specific regions
Enforce VM size

Box 2: Azure Bastion
Azure Bastion is a fully managed PaaS service that provides secure and seamless RDP and SSH access to your virtual machines directly through the Azure Portal.
Azure Bastion is provisioned directly in your Virtual Network (VNet) and supports all VMs in your Virtual Network (VNet) using SSL without any exposure through public IP addresses.

Incorrect Answers:
Virtual Network (VNet) service endpoint provides secure and direct connectivity to Azure services over an optimized route over the Azure backbone network. Endpoints allow you to secure your critical Azure service resources to only your virtual networks. Service Endpoints enables private IP addresses in the VNet to reach the endpoint of an Azure service without needing a public IP address on the VNet.

Reference:
https://blog.nillsf.com/index.php/2019/11/02/using-azure-policy-to-deny-public-ips-on-specific-

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vnets/

https://azure.microsoft.com/en-us/services/azure-bastion/

Question 34

You create a container image named Image1 on a developer workstation.

You plan to create an Azure Web App for Containers named WebAppContainer that will use Image1.

You need to upload Image1 to Azure. The solution must ensure that WebAppContainer can use Image1.

To which storage type should you upload Image1?

- ☐ an Azure Storage account that contains a blob container
- ☐ Azure Container Instances
- ☒ Azure Container Registry
- ☐ an Azure Storage account that contains a file share

Explanation/Reference

Explanation:
Configure registry credentials in web app.
App Service needs information about your registry and image to pull the private image. In the Azure portal, go to Container settings from the web app and update the Image source, Registry and save.

Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/targets/webapp-on-container-linux

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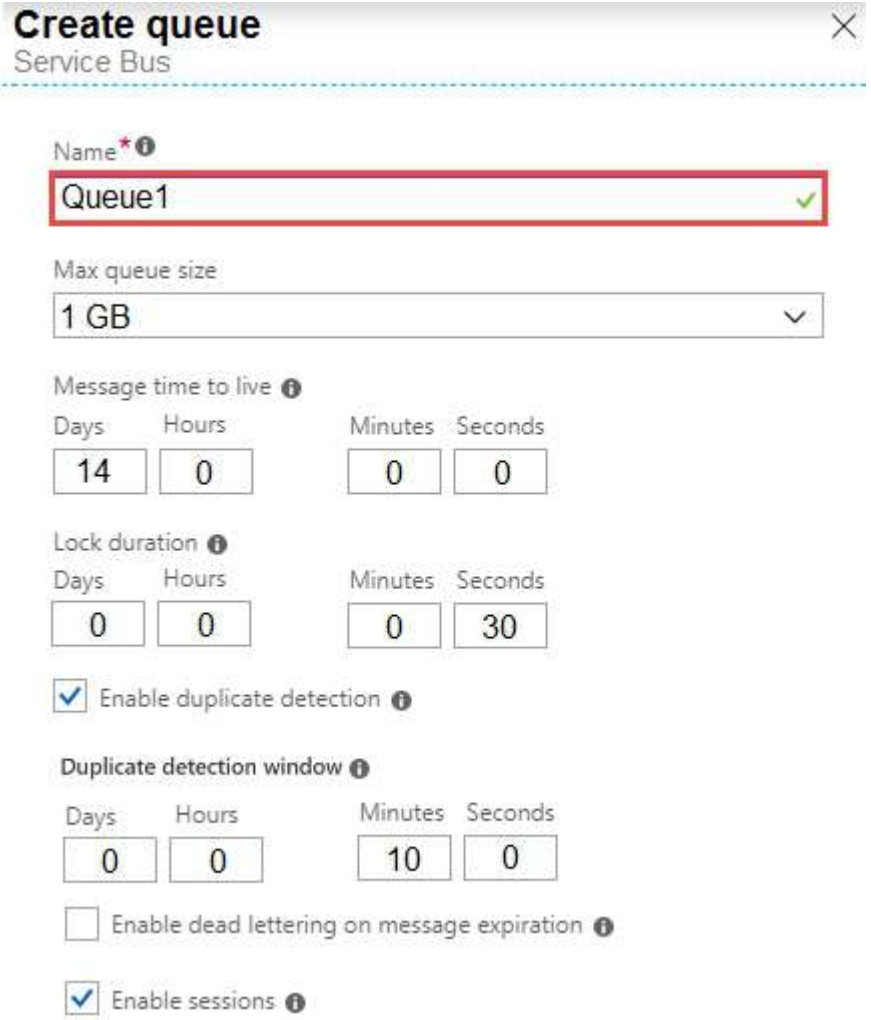
Question 35

You have an Azure Service Bus and two clients named Client1 and Client2.

You create a Service Bus queue named Queue1 as shown in the exhibit. (Click the **Exhibit** tab.)



Client1 send messages to Queue1 as shown in the following table.

Time hh:mm:ss	Message
12:01:01	M3
12:01:02	M2
12:01:03	M1
12:01:04	M3

Client2 reads the messages from Queue1 at 12:01:05.

How will the messages be presented to Client2?

- ☐ Client2 will read three messages in the following order: M1, M2, and then M3.
- ☐ Client2 will read three messages in the following order: M3, M1, and then M2.
- ☐ Client2 will read four messages in the following order: M3, M1, M2 and then M3.

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☒ Client2 will read four messages in the following order: M3, M2, M1 and then M3.

Explanation/Reference

Explanation:
It should be M3, M2, M1 as duplicate detection is enabled, and the duplication detection window is set to 10 minutes. The second M3 message in the queue would be discarded.

Note 1: Duplicate detection enables the sender resend the same message, and the queue or topic discards any duplicate copies.

Note 2: Queues offer First In, First Out (FIFO) message delivery to one or more competing consumers. That is, receivers typically receive and process messages in the order in which they were added to the queue, and only one message consumer receives and processes each message.

Reference:
https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-queues-topics-subscriptions

https://docs.microsoft.com/en-us/azure/service-bus-messaging/duplicate-detection

Question 36

You have an Azure Cosmos DB account named Account1. Account1 includes a database named DB1 that contains a container named Container1. The partition key for Container1 is set to `/city`.

You plan to change the partition key for Container1.

What should you do first?

☐ Delete Container1.
☒ Create a new container in DB1.
☐ Implement the Azure Cosmos DB.NET.SDK.
☐ Regenerate the keys for Account1.

Explanation/Reference

Explanation:
The Change Feed Processor and Bulk Executor Library, in Azure Cosmos DB can be leveraged to achieve a live migration of your data from one container to another. This allows you to re-distribute your data to match the desired new partition key scheme, and make the relevant application changes afterwards, thus achieving the effect of “updating your partition key”.

Incorrect Answers:
A: It is not possible to “update” your partition key in an existing container.

Reference:
https://devblogs.microsoft.com/cosmosdb/how-to-change-your-partition-key/

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Question 37

HOTSPOT

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 pools 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.	○	○
DB2 can be removed from Pool2 and added to Pool3.	○	○
DB3 can be added to Pool1.	○	○

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Solution:

Answer Area

Statements	Yes	No
DB1 can be removed from Pool1 and added to Pool2.	○	○
DB2 can be removed from Pool2 and added to Pool3.	○	○
DB3 can be added to Pool1.	○	○

Explanation/Reference

Explanation:

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.

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

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Question 38

HOTSPOT

You have an Azure subscription that contains the storage accounts shown in the following table.

Name	Kind	Performance tier	Replication	Location
storage1	StorageV2	Premium	Locally-redundant storage (LRS)	East US
storage2	Storage	Standard	Geo-redundant storage (GRS)	UK West
storage3	BlobStorage	Standard	Locally-redundant storage (LRS)	North Europe

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
storage1 can host Azure file shares.	○	○
There are six copies of the data in storage2.	○	○
storage3 can be converted to a GRS account.	○	○

Solution:

Answer Area

Statements	Yes	No
storage1 can host Azure file shares.	○	○
There are six copies of the data in storage2.	○	○
storage3 can be converted to a GRS account.	○	○

Explanation/Reference

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Explanation:

Box 1: Yes
General purpose version 2 (GPv2) storage accounts: GPv2 storage accounts allow you to deploy Azure file shares on standard/hard disk-based (HDD-based) hardware.

Box 2: No
Four not six copies.
Geo-redundant storage (GRS) copies your data synchronously three times within a single physical location in the primary region using LRS. It then copies your data asynchronously to a single physical location in the secondary region.

Box 3: Yes
You can switch a storage account from one type of replication to any other type.
To switch from LRS to GRS use Azure portal, PowerShell, or CLI to change the replication setting.

Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-create-file-share

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

https://docs.microsoft.com/en-us/azure/storage/common/redundancy-migration

Question 39

You have an Azure subscription named Subscription1 that is used by several departments at your company. Subscription1 contains the resources in the following table.

Name	Type
storage1	Storage account
RG1	Resource group
container1	Blob container
share1	File share

Another administrator deploys a virtual machine named VM1 and an Azure Storage account named storage2 by using a single Azure Resource Manager template.

You need to view the template used for the deployment.

From the Azure Portal, for which blade can you view the template that was used for the deployment?

- ☐ container1
- ☐ VM1
- ☒ RG1
- ☐ storage2

Explanation/Reference

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Explanation:
You can verify the deployment by exploring the resource group from the Azure portal

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/deployment-manager-tutorial

https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-tutorial-create-first-template?tabs=azure-powershell

Question 40

You have an Azure subscription that contains a resource group named RG1. RG1 contains multiple resources.

You need to trigger an alert when the resources in RG1 consume $1,000 USD.

What should you do?

- ☐ From Cost Management + Billing, add a cloud connector.
- ☐ From the subscription, create an event subscription.
- ☒ From Cost Management + Billing, create a budget.
- ☐ From RG1, create an event subscription.

Explanation/Reference

Explanation:
Create budgets to manage costs and create alerts that automatically notify you are your stakeholders of spending anomalies and overspending.

To set it up, go to the Azure Portal, select 'Cost Management + Billing' -> 'Cost Management' -> 'Go to Cost Management'.

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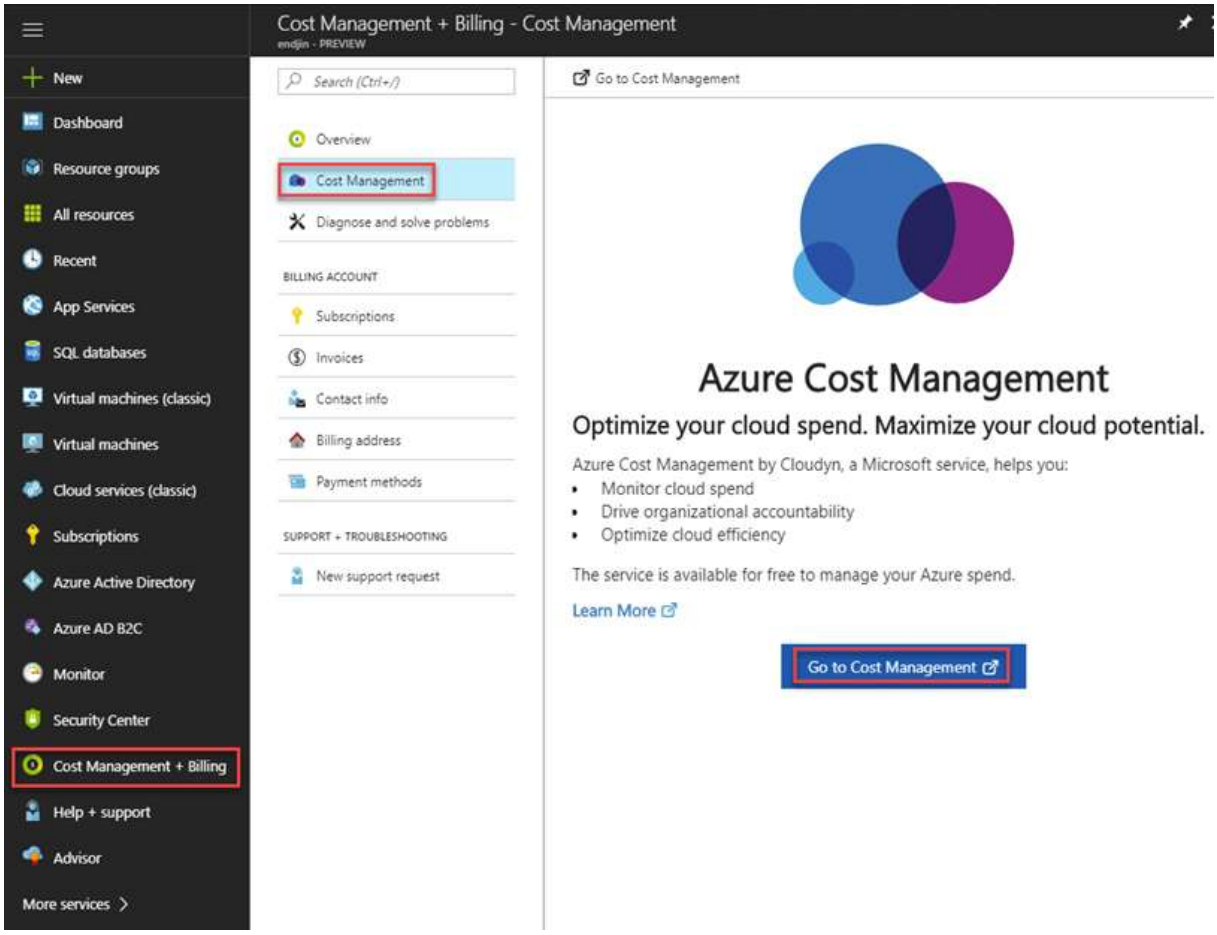

Note: Cost alerts are automatically generated based when Azure resources are consumed. Alerts show all active cost management and billing alerts together in one place. When your consumption reaches a given threshold, alerts are generated by Cost Management. There are three types of cost alerts: budget alerts, credit alerts, and department spending quota alerts.

Reference:
https://docs.microsoft.com/en-us/azure/cost-management-billing/manage/getting-started

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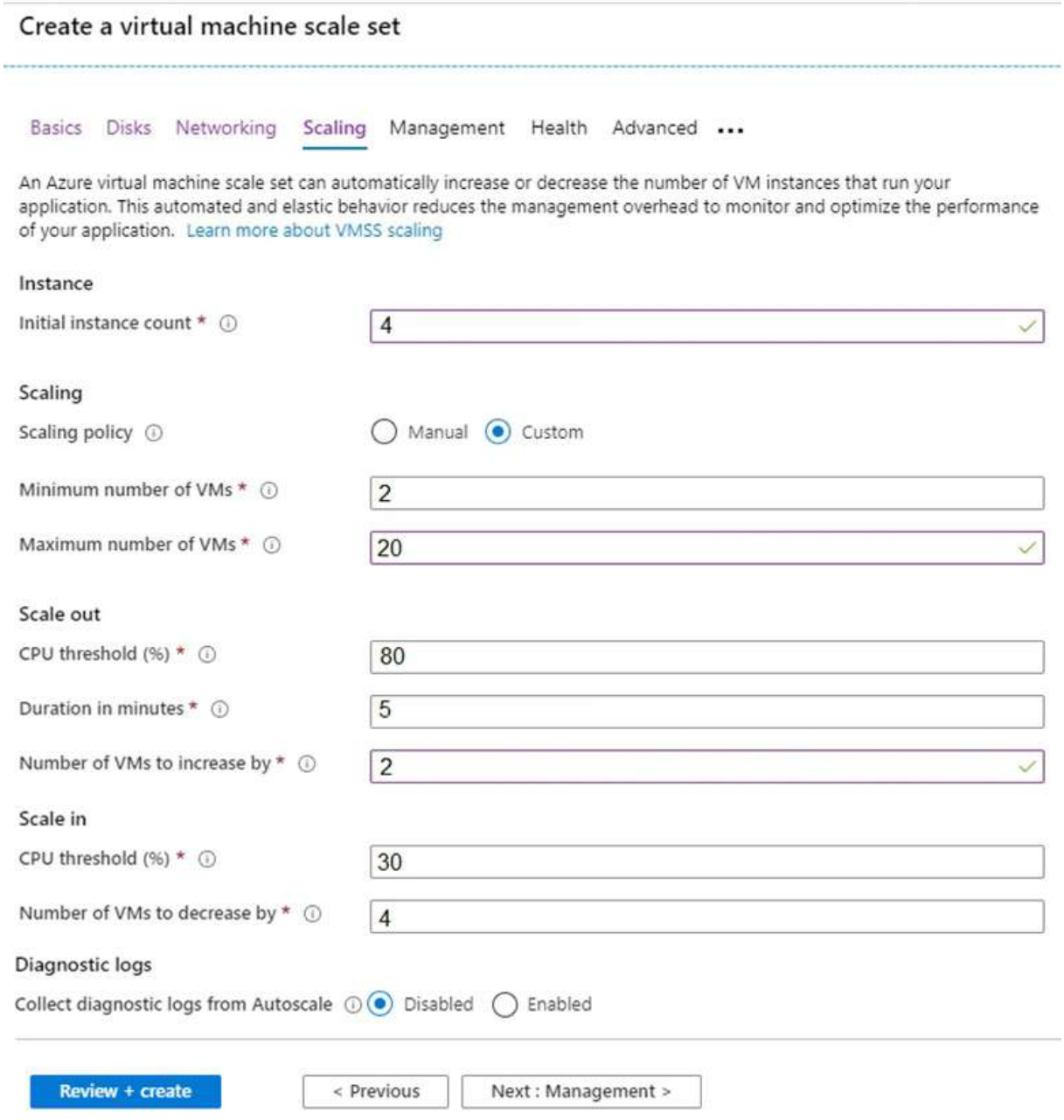
Question 41

HOTSPOT

You create a virtual machine scale set named Scale1. Scale1 is configured as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

If Scale1 is utilized at 85 percent for six minutes after it is deployed, Scale1 will be running

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 10 virtual machines
- 20 virtual machines

If Scale is first utilized at 25 percent for six minutes after it is deployed, and then utilized at 50 percent for six minutes, Scale1 will be running

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 10 virtual machines
- 20 virtual machines

Solution:

Answer Area

If Scale1 is utilized at 85 percent for six minutes after it is deployed, Scale1 will be running

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 10 virtual machines
- 20 virtual machines

If Scale is first utilized at 25 percent for six minutes after it is deployed, and then utilized at 50 percent for six minutes, Scale1 will be running

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 10 virtual machines
- 20 virtual machines

Explanation/Reference

Explanation:

Box 1:
The Autoscale scale out rule increases the number of VMs by 2 if the CPU threshold is 80% or higher. The initial instance count is 4 and rises to 6 when the 2 extra instances of VMs are added.

Box 2:
The Autoscale scale in rule decreases the number of VMs by 4 if the CPU threshold is 30% or lower. The initial instance count is 4 and thus cannot be reduced to 0 as the minimum instances is set to 2. Instances are only added when the CPU threshold reaches 80%.

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-overview

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https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-best-practices

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-scale-patterns

Question 42

You plan to automate the deployment of a virtual machine scale set that uses the Windows Server 2016 Datacenter image.

You need to ensure that when the scale set virtual machines are provisioned, they have web server components installed.

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

NOTE: Each correct selection is worth one point.

- ☐ Upload a configuration script.
- ☐ Create an Azure policy.
- ☒ Modify the `extensionProfile` section of the Azure Resource Manager template.
- ☒ Create a new virtual machine scale set in the Azure portal.
- ☐ Create an automation account.

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/tutorial-install-apps-template

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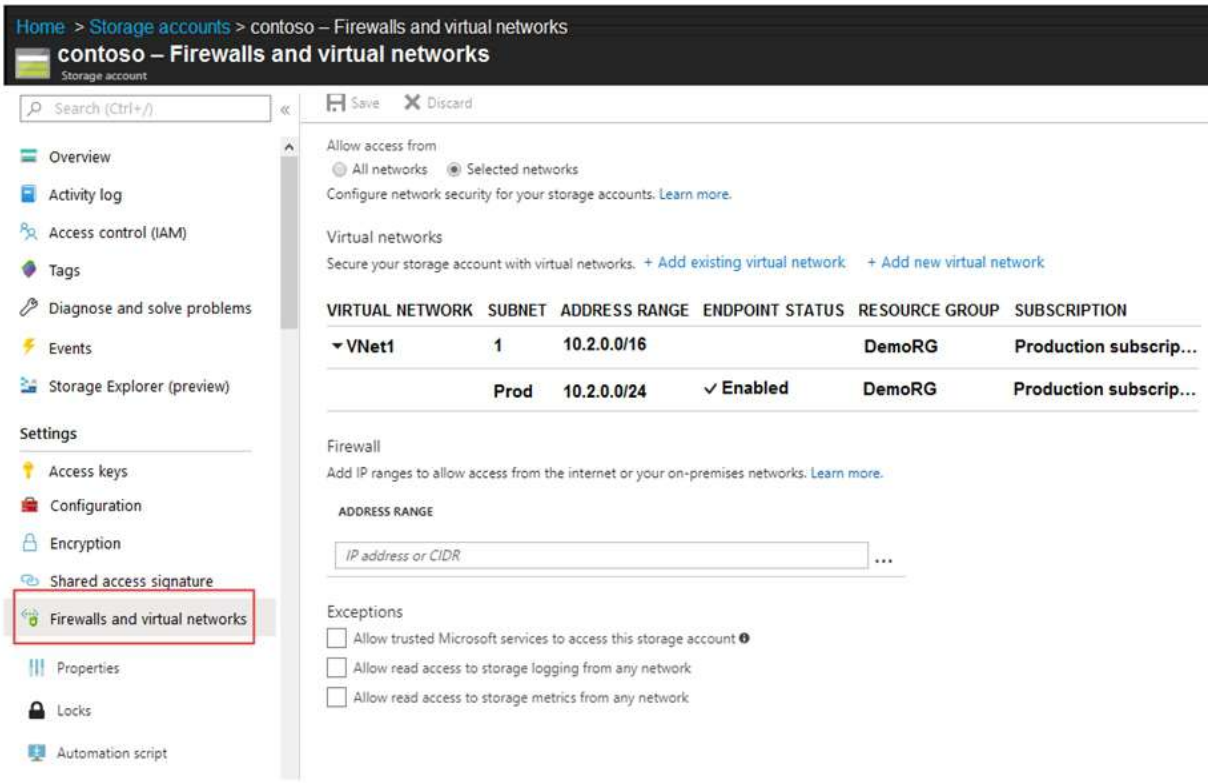
Question 43

HOTSPOT

You have several Azure virtual machines on a virtual network named VNet1. Vnet1 has two subnets that have 10.2.0.0/24 and 10.2.9.0/24 address spaces.

You configure an Azure Storage account as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

The virtual machines on the 10.2.9.0/24 subnet will have network connectivity to the file shares in the storage account

- always
- during a backup
- never

Azure Backup will be able to back up the unmanaged hard disks of the virtual machines in the storage account

- always
- during a backup
- never

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Solution:

Answer Area

The virtual machines on the 10.2.9.0/24 subnet will have network connectivity to the file shares in the storage account

- always
- during a backup
- never

Azure Backup will be able to back up the unmanaged hard disks of the virtual machines in the storage account

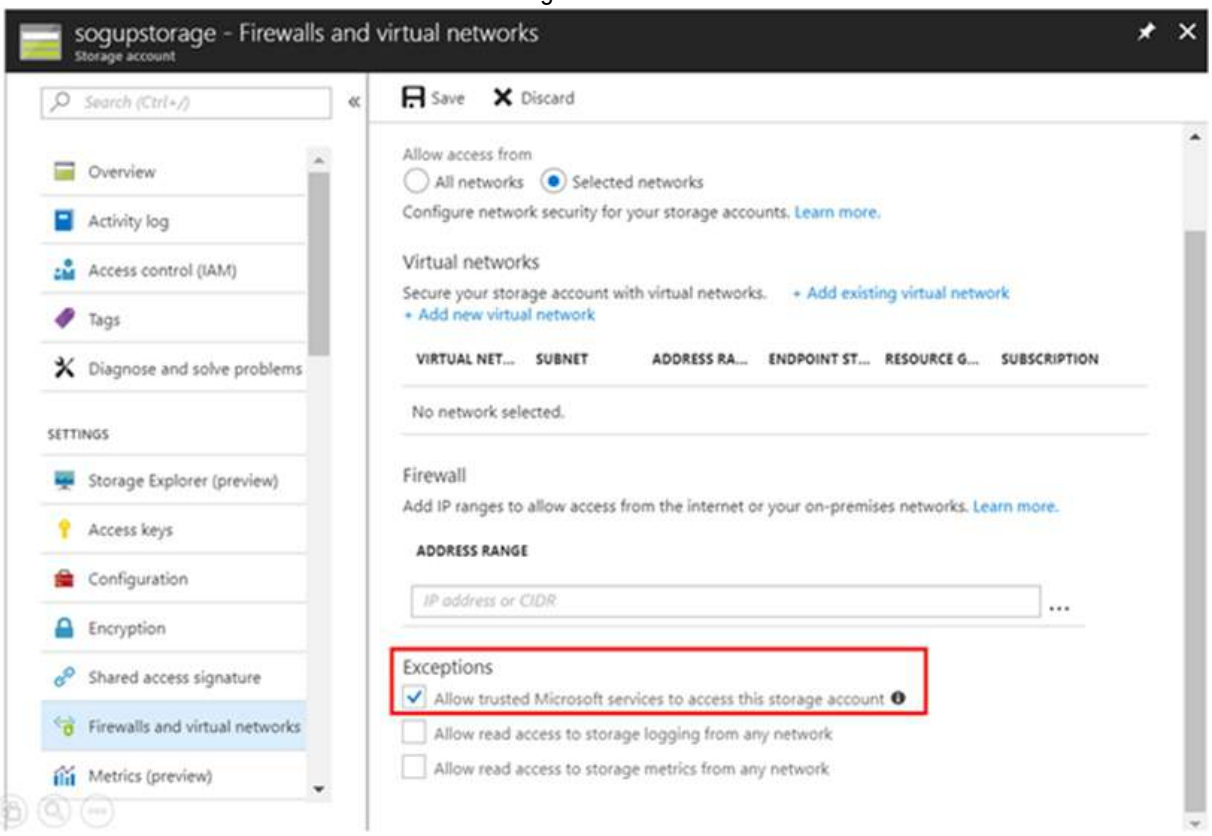
- always
- during a backup
- never

Explanation/Reference

Explanation:

Box 1: always
Endpoint status is enabled.

Box 2: Never
After you configure firewall and virtual network settings for your storage account, select Allow trusted Microsoft services to access this storage account as an exception to enable Azure Backup service to access the network restricted storage account.



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Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows

https://azure.microsoft.com/en-us/blog/azure-backup-now-supports-storage-accounts-secured-with-azure-storage-firewalls-and-virtual-networks/

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Question 44

HOTSPOT

You create and save an Azure Resource Manager template named Template1 that includes the following four sections.

Section1.

```
{
    "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
    "contentVersion": "1.0.0.0",
    "parameters": {
        "windowsOSVersion": {
            "defaultValue": "2019-Datacenter",
            "allowedValues": [
                "2012-Datacenter",
                "2012-R2-Datacenter",
                "2016-Datacenter",
                "2019-Datacenter"
            ],
            }
        },
```

Section2.

```
"variables": {
    "windowsOSVersion": "2012-Datacenter",

},
```

Section3.

```
"resources": [
  {
   "type": "Microsoft.Compute/virtualMachines",
```

Section4.

```
"storageProfile": {
    "imageReference":{
        "publisher": "MicrosoftWindowsServer",
        "offer": "WindowsServer",
        "sku": "2012-R2-Datacenter",
        "version": "latest"
        },
```

You deploy Template1.

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
Windows Server 2012 R2 Datacenter will be deployed to the Azure virtual machine.	○	○
A custom image of Windows Server will be deployed.	○	○
During the deployment of Template1, an administrator will be prompted to select a version of Windows Server.	○	○

Solution:

Answer Area

Statements	Yes	No
Windows Server 2012 R2 Datacenter will be deployed to the Azure virtual machine.	○	○
A custom image of Windows Server will be deployed.	○	○
During the deployment of Template1, an administrator will be prompted to select a version of Windows Server.	○	○

Explanation/Reference

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Question 45

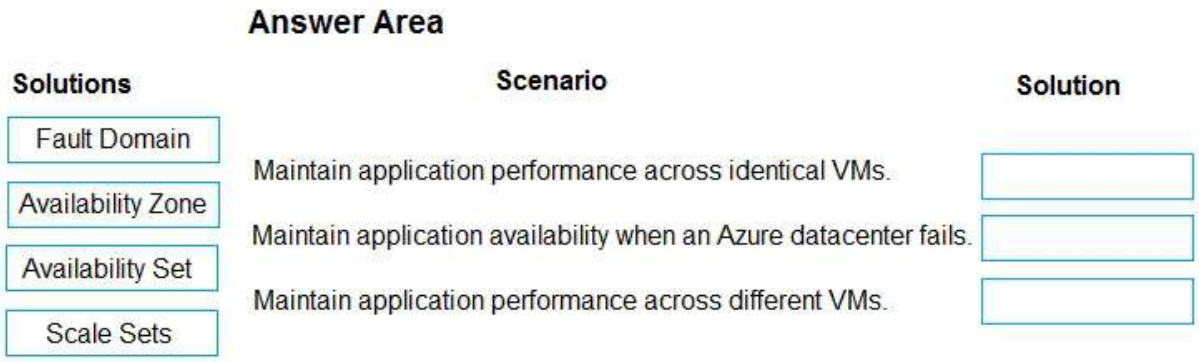
DRAG DROP

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

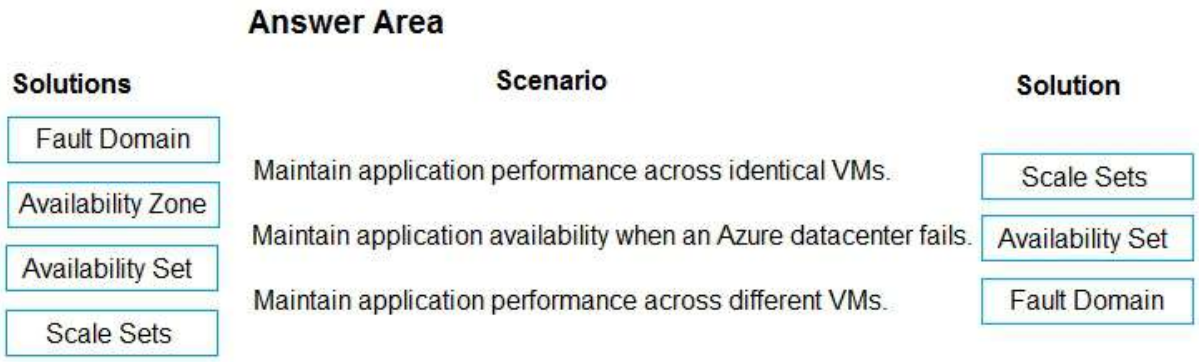
You need to ensure that the VMs never experience down time.

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



Solution:



Explanation/Reference

Explanation:

Box 1: Scale set
A virtual machine scale set allows you to deploy and manage a set of identical, autoscaling 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

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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.

Incorrect Answers:
An update domain is a group of VMs and underlying physical hardware that can be rebooted at the same time.

Reference:
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

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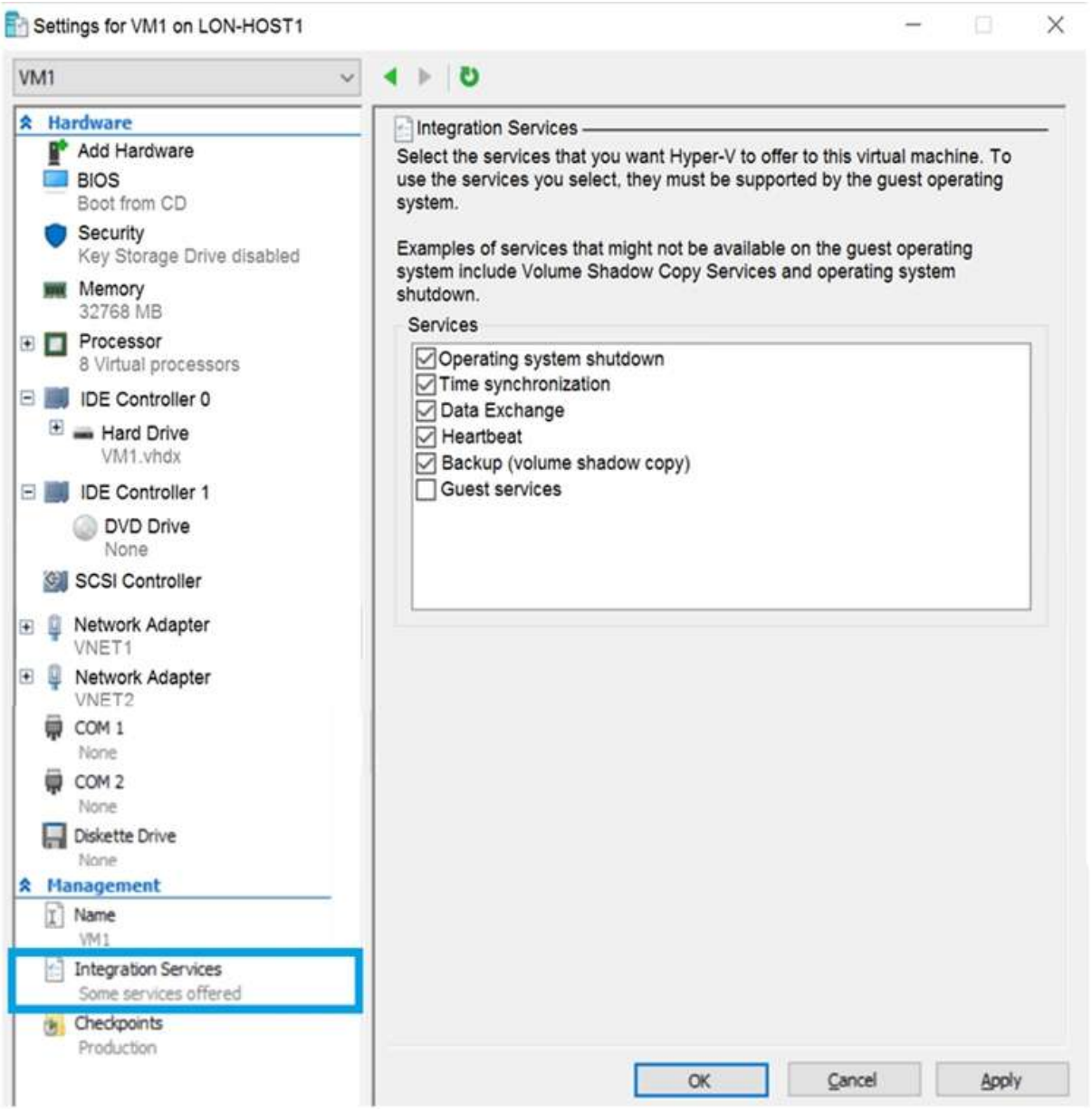
Question 46

You have an Azure subscription.

You have an on-premises virtual machine named VM1. The settings for VM1 are shown in the exhibit. (Click the **Exhibit** tab.)



You need to ensure that you can use the disks attached to VM1 as a template for Azure virtual machines.

What should you modify on VM1?

- ☐ the memory
- ☐ Integration Services
- ☒ the hard drive
- ☐ the network adapters

Explanation/Reference

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Explanation:
From the exhibit we see that the disk is in the VHDX format.

Before you upload a Windows virtual machines (VM) from on-premises to Microsoft Azure, you must prepare the virtual hard disk (VHD or VHDX). Azure supports only generation 1 VMs that are in the VHD file format and have a fixed sized disk. The maximum size allowed for the VHD is 1,023 GB. You can convert a generation 1 VM from the VHDX file system to VHD and from a dynamically expanding disk to fixed-sized.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/prepare-for-upload-vhd-image?toc=azure virtual-machines windows toc.json

Question 47

Your company has an office in Seattle.

You have an Azure subscription that contains a virtual network named VNET1.

You create a site-to-site VPN between the Seattle office and VNET1.

VNET1 contains the subnets shown in the following table.

Name	IP address space
Subnet1	10.1.1.0/24
GatewaySubnet	10.1.200.0/28

You need to route all Internet-bound traffic from Subnet1 to the Seattle office.

What should you create?

- ☐ a route for GatewaySubnet that uses the virtual network gateway as the next hop
- ☐ a route for Subnet1 that uses the local network gateway as the next hop
- ☒ a route for Subnet1 that uses the virtual network gateway as the next hop
- ☐ a route for GatewaySubnet that uses the local network gateway as the next hop

Explanation/Reference

Explanation:
A route with the 0.0.0.0/0 address prefix instructs Azure how to route traffic destined for an IP address that is not within the address prefix of any other route in a subnet's route table. When a subnet is created, Azure creates a default route to the 0.0.0.0/0 address prefix, with the Internet next hop type. We need to create a custom route in Azure to use a virtual network gateway in the Seattle office as the next hop.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-udr-overview

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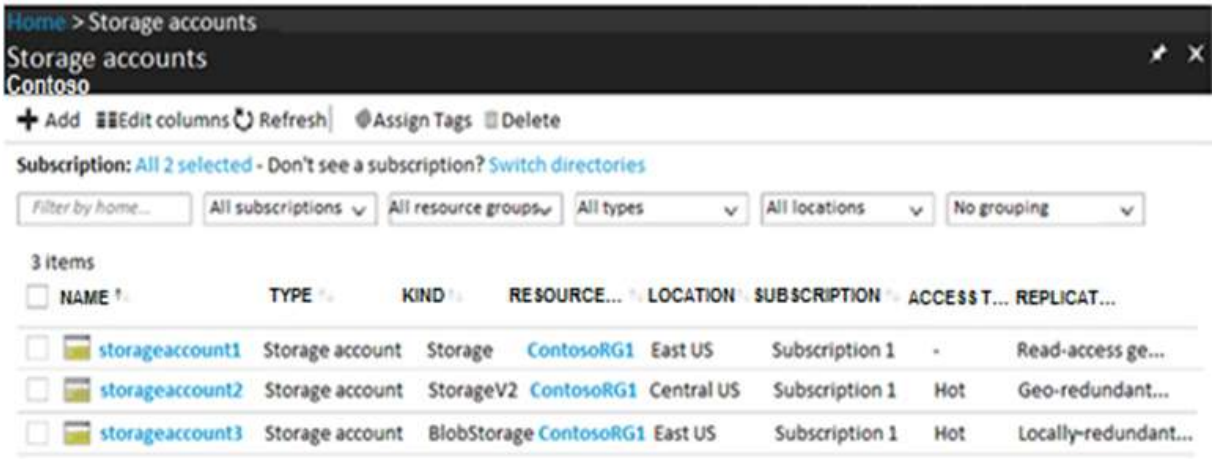
Question 48

HOTSPOT

You have Azure Storage accounts as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

You can use **[answer choice]** for Azure Table Storage.

- storageaccount1 only
- storageaccount2 only
- storageaccount3 only
- storageaccount1 and storageaccount2 only
- storageaccount2 and storageaccount3 only

You can use **[answer choice]** for Azure Blob storage.

- storageaccount3 only
- storageaccount2 and storageaccount3 only
- storageaccount1 and storageaccount3 only
- all the storage accounts

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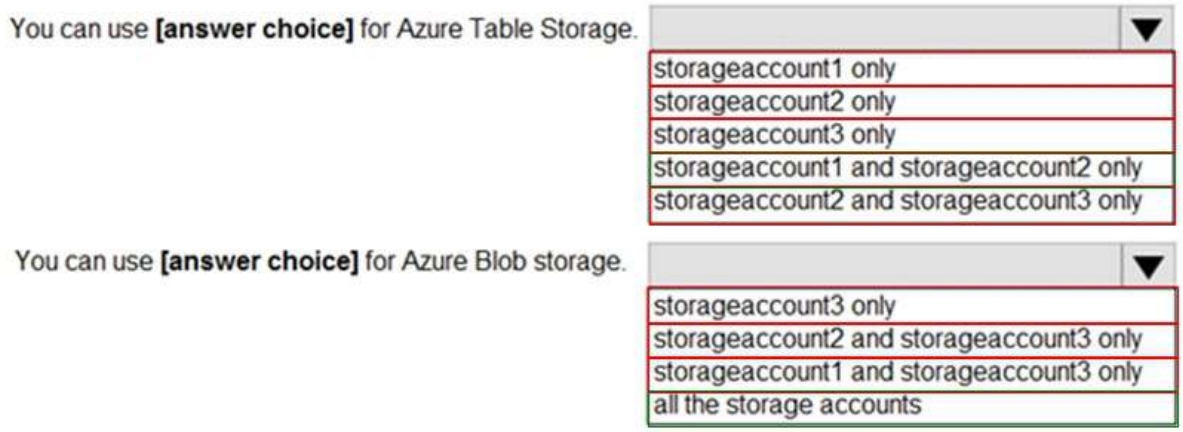
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: storageaccount1 and storageaccount2 only

Box 2: All the storage accounts

Note: The three different storage account options are: General-purpose v2 (GPv2) accounts, General-purpose v1 (GPv1) accounts, and Blob storage accounts.

- General-purpose v2 (GPv2) accounts are storage accounts that support all of the latest features for blobs, files, queues, and tables.
- Blob storage accounts support all the same block blob features as GPv2, but are limited to supporting only block blobs.
- General-purpose v1 (GPv1) accounts provide access to all Azure Storage services, but may not have the latest features or the lowest per gigabyte pricing.

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

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Question 49

You create an Azure virtual machine named VM1 in a resource group named RG1.

You discover that VM1 performs slower than expected.

You need to capture a network trace on VM1.

What should you do?

- ☐ From the VM1 blade, configure Connection troubleshoot.
- ☐ From Diagnostic settings for VM1, configure the performance counters to include network counters.
- ☒ From the VM1 blade, install performance diagnostics and run advanced performance analysis.
- ☐ From Diagnostic settings for VM1, configure the log level of the diagnostic agent.

Explanation/Reference

Explanation:
The performance diagnostics tool helps you troubleshoot performance issues that can affect a Windows or Linux virtual machine (VM). Supported troubleshooting scenarios include quick checks on known issues and best practices, and complex problems that involve slow VM performance or high usage of CPU, disk space, or memory.

Advanced performance analysis, included in the performance diagnostics tool, includes all checks in the performance analysis, and collects one or more of the traces, as listed in the following sections. Use this scenario to troubleshoot complex issues that require additional traces. Running this scenario for longer periods will increase the overall size of diagnostics output, depending on the size of the VM and the trace options that are selected.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/troubleshooting/performance-diagnostics

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Question 50

You have an Azure subscription named Subscription1 that contains an Azure virtual network named VNet1. VNet1 connects to your on-premises network by using Azure ExpressRoute.

You need to connect VNet1 to the on-premises network by using a site-to-site VPN. The solution must minimize cost.

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

NOTE: Each correct selection is worth one point.

- ☐ Create a gateway subnet.
- ☐ Create a VPN gateway that uses the VpnGw1 SKU.
- ☒ Create a connection.
- ☒ Create a local site VPN gateway.
- ☒ Create a VPN gateway that uses the Basic SKU.

Explanation/Reference

Reference:
https://docs.microsoft.com/en-za/archive/blogs/canitpro/step-by-step-configuring-a-site-to-site-vpn-gateway-between-azure-and-on-premise

Question 51

Your network contains an on-premises Active Directory domain named contoso.com. The domain contains the users shown in the following table.

Name	Member of
User1	Domain Admins
User2	Domain Users
User3	ADSyncAdmins
User4	Account Operators

You plan to install Azure AD Connect and enable SSO.

You need to specify which user to use to enable SSO. The solution must use the principle of least privilege.

Which user should you specify?

- ☐ User3
- ☐ User2
- ☒ User1
- ☐ User4

Explanation/Reference

Explanation:
You need to have domain administrator credentials for each Active Directory forest that:

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- You synchronize to Azure AD through Azure AD Connect.
- Contains users you want to enable for Seamless SSO.

Note: The domain administrator credentials are not stored in Azure AD Connect or in Azure AD. They're used only to enable Seamless SSO through Azure AD Connect.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sso-quick-start

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Question 52

HOTSPOT

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Region
RG1	East US
RG2	West US

RG1 contains the virtual machines shown in the following table.

Name	Region
VM1	West US
VM2	West US
VM3	West US
VM4	West US

RG2 contains the virtual machines shown in the following table.

Name	Region
VM5	East US 2
VM6	East US 2
VM7	West US
VM8	West US 2

All the virtual machines are configured to use premium disks and are accessible from the Internet.

VM1 and VM2 are in an availability set named AVSET1. VM3 and VM4 are in the same availability zone. VM5 and VM6 are in different availability zones.

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
VM1 is eligible for a Service Level Agreement (SLA) of 99.95 percent.	○	○
VM3 is eligible for a Service Level Agreement (SLA) of 99.99 percent.	○	○
VM5 is eligible for a Service Level Agreement (SLA) of 99.99 percent.	○	○

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Solution:

Answer Area

Statements	Yes	No
VM1 is eligible for a Service Level Agreement (SLA) of 99.95 percent.	○	○
VM3 is eligible for a Service Level Agreement (SLA) of 99.99 percent.	○	○
VM5 is eligible for a Service Level Agreement (SLA) of 99.99 percent.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
VM1 and VM2 are in an available set named AVSET1.
For all Virtual Machines that have two or more instances deployed in the same Availability Set, we [Microsoft] guarantee you will have Virtual Machine Connectivity to at least one instance at least 99.95% of the time.

Box 2: No
VM3 and VM4 are in the same availability zone and are in an availability set named AVSET2.

Box 3: Yes
VM5 and VM6 are in different availability zones.

For all Virtual Machines that have two or more instances deployed across two or more Availability Zones in the same Azure region, we [Microsoft] guarantee you will have Virtual Machine Connectivity to at least one instance at least 99.99% of the time.

Reference:
https://azure.microsoft.com/en-us/support/legal/sla/virtual-machines/v1_8/

Question 53

A company plans to use third-party application software to perform complex data analysis processes. The software will use up to 500 identical virtual machines (VMs) based on an Azure Marketplace VM image.

You need to design the infrastructure for the third-party application server. The solution must meet the following requirements:

- The number of VMs that are running at any given point in time must change when the user workload changes.

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- When a new version of the application is available in Azure Marketplace it must be deployed without causing application downtime.
- Use VM scale sets.
- Minimize the need for ongoing maintenance.

Which two technologies should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ single placement group
- ☐ single storage account
- ☒ managed disks
- ☒ autoscale

Question 54

You have a resource group named RG1 that contains the following:

- A virtual network that contains two subnets named Subnet1 and AzureFirewallSubnet
- An Azure Storage account named contososa1
- An Azure firewall deployed to AzureFirewallSubnet

You need to ensure that contososa1 is accessible from Subnet1 over the Azure backbone network.

What should you do?

- ☐ Modify the Firewalls and virtual networks settings for contososa1.
- ☐ Create a stored access policy for contososa1.
- ☒ Implement a virtual network service endpoint.
- ☐ Remove the Azure firewall.

Explanation/Reference

Explanation:
Storage firewall rules apply to the public endpoint of a storage account. You don't need any firewall access rules to allow traffic for private endpoints of a storage account. The process of approving the creation of a private endpoint grants implicit access to traffic from the subnet that hosts the private endpoint.

Note: Storage accounts have a public endpoint that is accessible through the internet. ou can also create Private Endpoints for your storage account, which assigns a private IP address from your VNet to the storage account, and secures all traffic between your VNet and the storage account over a private link. The Azure storage firewall provides access control access for the public endpoint of your storage account. You can also use the firewall to block all access through the public endpoint when using private endpoints. Your storage firewall configuration also enables select trusted Azure platform services to access the storage account securely.

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Reference:
https://docs.microsoft.com/en-us/azure/storage/common/storage-network-security

Question 55

You have an Azure subscription that contains 100 virtual machines.

You have a set of PowerShell scripts that validate the virtual machine environment.

You need to run the scripts whenever there is an operating system update on the virtual machines. The solution must minimize implementation time and recurring costs.

Which three resources should you use to implement the scripts? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ an alert action group
- ☐ an Azure Monitor query
- ☒ an Azure Automation runbook
- ☐ a virtual machine that has network access to the 100 virtual machines
- ☒ an alert rule

Explanation/Reference

E: Step 1: Create alert
In your Automation account, select Alerts under Monitoring, and then select New alert rule.

A: Step 2: Configure action groups for your alerts
Once you have your alerts configured, you can set up an action group, which is a group of actions to use across multiple alerts. The actions can include email notifications, runbooks, webhooks, and much more.

C: Use a Azure Automation runbook to run the powershell scipts.

Note: The Azure Automation Process Automation feature supports several types of runbooks, such as the PowerShell runbook, which is a text runbook based on Windows PowerShell.scripting.

Reference:
https://docs.microsoft.com/en-us/azure/automation/update-management/configure-alerts

https://docs.microsoft.com/en-us/azure/automation/automation-runbook-types

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Question 56

You have an Active Directory forest named contoso.com.

You install and configure Azure AD Connect to use password hash synchronization as the single sign-on (SSO) method. Staging mode is enabled.

You review the synchronization results and discover that the Synchronization Service Manager does not display any sync jobs.

You need to ensure that the synchronization completes successfully.

What should you do?

- ☒ Run Azure AD Connect and disable staging mode.
- ☐ From Synchronization Service Manager, run a full import.
- ☐ Run Azure AD Connect and set the SSO method to Pass-through Authentication.
- ☐ From Azure PowerShell, run `Start-AdSyncSyncCycle –PolicyType Initial`.

Explanation/Reference

Explanation:
In staging mode, the server is active for import and synchronization, but it does not run any exports. A server in staging mode is not running password sync or password writeback, even if you selected these features during installation. When you disable staging mode, the server starts exporting, enables password sync, and enables password writeback.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sync-staging-server

https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sync-operations

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Question 57

Your on-premises network contains 100 virtual machines that run Windows Server 2019.

You have an Azure subscription that contains an Azure Log Analytics workspace named Workspace1.

You need to collect errors from the Windows event logs on the virtual machines.

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

NOTE: Each correct selection is worth one point.

- ☐ Create an Azure Event Grid domain.
- ☒ Deploy the Microsoft Monitoring Agent.
- ☐ Configure Windows Event Forwarding on the virtual machines.
- ☐ Create an Azure Sentinel workspace.
- ☒ Configure the Data Collection settings for Workspace1.

Explanation/Reference

Explanation:
The Azure Log Analytics agent collects telemetry from Windows and Linux virtual machines in any cloud, on-premises machines, and those monitored by System Center Operations Manager and sends it collected data to your Log Analytics workspace in Azure Monitor.

Note: You may also see the Log Analytics agent referred to as the Microsoft Monitoring Agent (MMA) or OMS Linux agent.

Data is collected using the Log Analytics agent, which reads various security-related configurations and event logs from the machine and copies the data to your workspace for analysis.

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/log-analytics-agent

https://docs.microsoft.com/en-us/azure/security-center/security-center-enable-data-collection

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Question 58

You have an Azure subscription named Subscription1.

You deploy a Linux virtual machine named VM1 to Subscription1.

You need to monitor the metrics and the logs of VM1.

What should you use?

- ☐ Azure HDInsight
- ☐ Azure Analysis Services
- ☐ Linux Diagnostic Extension (LAD) 3.0
- ☒ the AzurePerformanceDiagnostics extension

Explanation/Reference

Explanation:
You can use extensions to configure diagnostics on your VMs to collect additional metric data.
The basic host metrics are available, but to see more granular and VM-specific metrics, you need to install the Azure diagnostics extension on the VM. The Azure diagnostics extension allows additional monitoring and diagnostics data to be retrieved from the VM.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/tutorial-monitoring

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Question 59

HOTSPOT

You plan to deploy five virtual machines to a virtual network subnet.

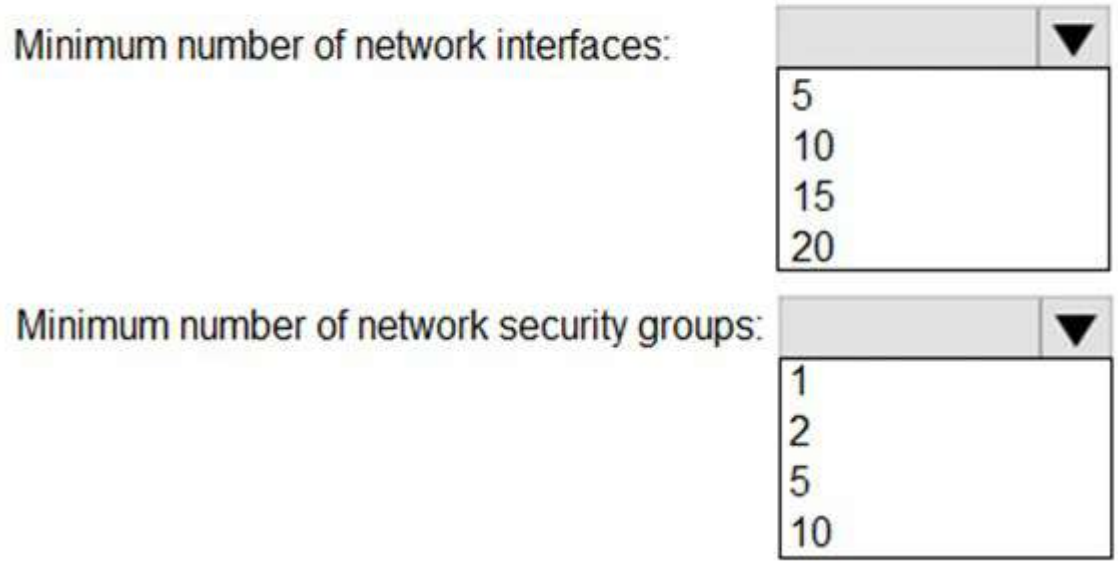
Each virtual machine will have a public IP address and a private IP address.

Each virtual machine requires the same inbound and outbound security rules.

What is the minimum number of network interfaces and network security groups that you require? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



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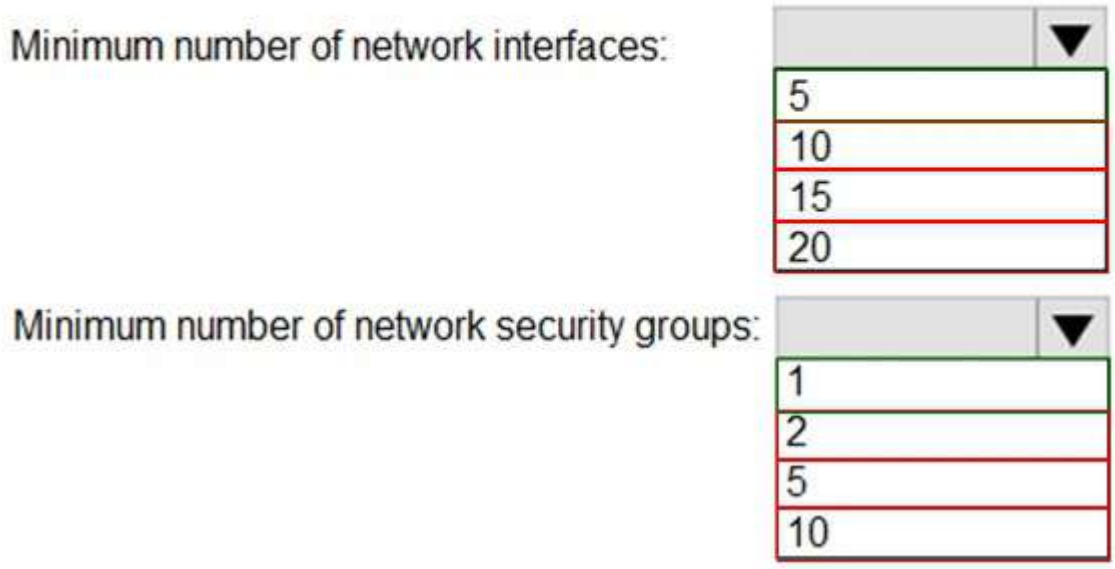
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: 5
We have five virtual machines. Each virtual machine will have a public IP address and a private IP address. Each will require a network interface.

Box 2: 1
Each virtual machine requires the same inbound and outbound security rules. We can add tem to one group.

Reference:
https://blogs.msdn.microsoft.com/igorpag/2016/05/14/azure-network-security-groups-nsg-best-practices-and-lessons-learned/

https://docs.microsoft.com/en-us/azure/virtual-network/security-overview

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Question 60

You have an Azure subscription named Subscription1 that includes an Azure File share named share1.

You create several Azure virtual machines in Subscription1. All of the virtual machines belong to the same virtual network.

You have an on-premises Hyper-V server named Server1. Server1 hosts a virtual machine named VM1.

You plan to replicate VM1 to Azure.

You need to create additional objects in Subscription1 to support the planned deployment.

Which three objects should you create? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ Hyper-V site
- ☒ Azure Recovery Services Vault
- ☐ storage account
- ☒ replication policy
- ☐ Azure Traffic Manager instance
- ☐ endpoint

Question 61

You manage an Active Directory domain named contoso.local.

You install Azure AD Connect and connect to an Azure Active Directory (Azure AD) tenant named contoso.com without syncing any accounts.

You need to ensure that only users who have a UPN suffix of contoso.com in the contoso.local domain sync to Azure AD.

What should you do?

- ☐ Use the Synchronization Service Manager to modify the Metaverse Designer tab.
- ☐ Use Azure AD Connect to customize the synchronization options.
- ☒ Use the Synchronization Rules Editor to create a synchronization rule.
- ☐ Use Synchronization Service Manager to modify the Active Directory Domain Services (AD DS) Connector.

Explanation/Reference

Explanation:
Filtering what objects are synced to Azure AD is a common request and there are many instances where filtering by OU just doesn't cut it. One option is to filter users by their UPN suffix so that only users with the public FQDN as their UPN suffix are synced to Azure AD (e.g., john.doe@acme.com would be synced while jane.doe@internal.acme.com would not).

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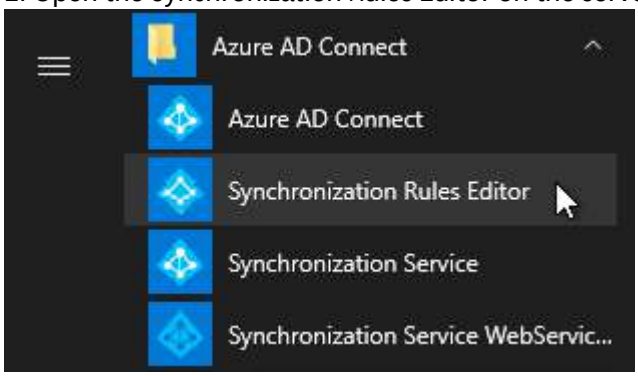
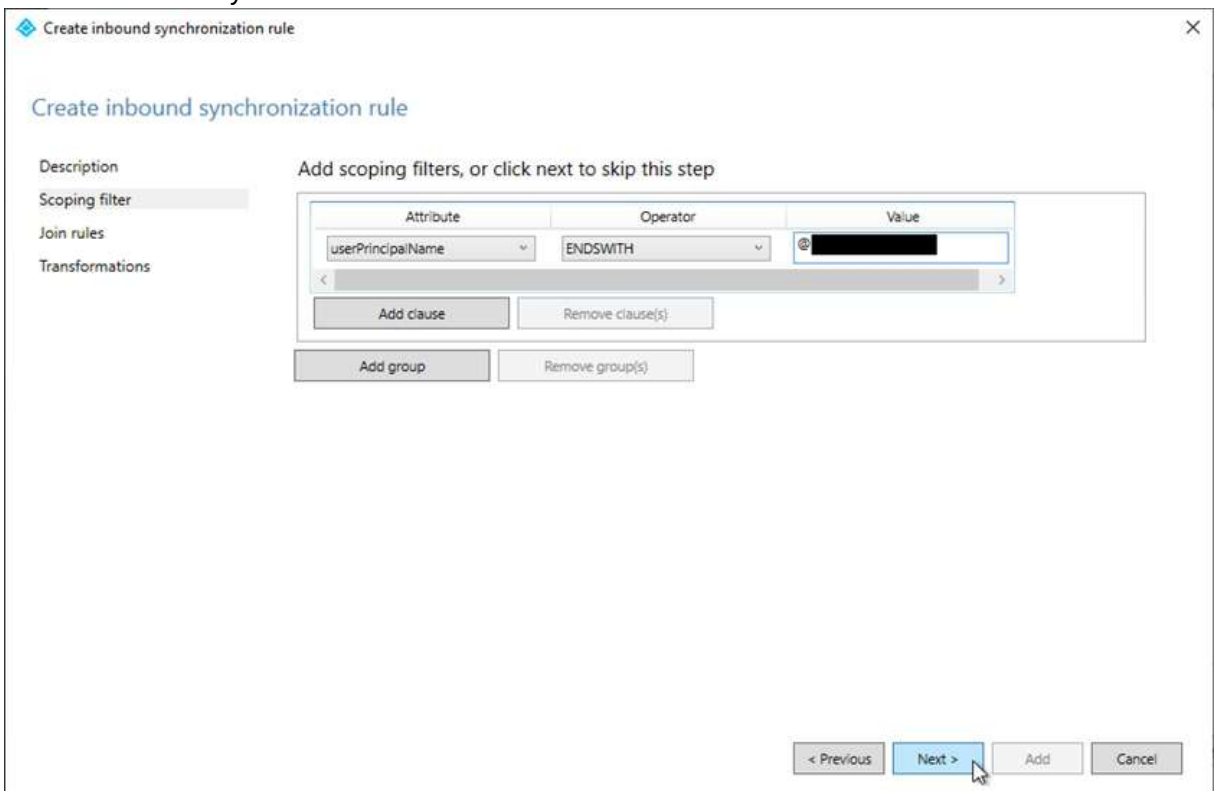
Filtering can be configured using either the GUI or PowerShell.
Through GUI:
Using The Synchronization Rules Editor

1. Open the Synchronization Rules Editor on the server where Azure AD Connect is installed.



2. Click the Add new rule button on the View and manage your synchronization rules window.
3. Fill out the appropriate fields on the Description tab and click Next >.
4. On the Scoping filter tab, click Add group, then Add clause, add a userPrincipalName attribute filter, and click Next >.

Attribute: userPrincipalName
Operator: ENDSWITH
Value: Your internal UPN suffix prefixed with @ (e.g., @internal.acme.com). Users with this UPN suffix will NOT be synced with Office 365.



Reference:

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https://www.sidekicktech.com/blog/field-notes/2019/upn-suffix-filtering-ad-connect/

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Question 62

You have an Azure SQL database named DB1.

You plan to create the following four tables in DB1 by using the following code.

```
CREATE TABLE Table1
(
     StudentId INT IDENTITY PRIMARY KEY,
     PersonId INT REFERENCES Table4 (PersonId),
     Email NVARCHAR(256)
}
```

Table1.

```
CREATE TABLE Table2
(
     StudentId INT REFERENCES Table1 (StudentId),
     CourseId INT REFERENCES Table3 (CourseId),
     Grade DECIMAL(5,2) CHECK (Grade <= 100.00),
     Attempt TINYINT
}
```

Table2.

```
CREATE TABLE Table3
(
     CourseId INT IDENTITY PRIMARY KEY,
     Name NVARCHAR(56) NOT NULL,
     Teacher NVARCHAR(256) NOT NULL
)
```

Table3.

```
CREATE TABLE Table4
(
     PersonId INT IDENTITY PRIMARY KEY,
     FirstName NVARCHAR(128) NOT NULL,
     MiddleInitial NVARCHAR(10),
     LastName NVARCHAR(128) NOT NULL,
     DateOfBirth DATE NOT NULL
)
```

Table4.

You need to identify which table must be created last.

What should you identify?

- ☐ Table1
- ☒ Table2
- ☐ Table3
- ☐ Table4

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Explanation/Reference

Explanation:
Table1 references Table4. Therefore Table4 must be created before Table1.

Table2 references Table1 and Table3. Therefore Table1 and Table3 must be created before Table2.

Note: FOREIGN KEY REFERENCES is a constraint that provides referential integrity for the data in the column or columns. FOREIGN KEY constraints require that each value in the column exists in the corresponding referenced column or columns in the referenced table. FOREIGN KEY constraints can reference only columns that are PRIMARY KEY or UNIQUE constraints in the referenced table or columns referenced in a UNIQUE INDEX on the referenced table.

Incorrect Answers:
A: Table1 is referenced by Table2 and should be crated before Table2.
C: Table3 is referenced by Table2 and should be crated before Table2.
D: Table4 is referenced by Table1 and should be crated before Table1.

Reference:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-transact-sql?view=sql-server-ver15

Question 63

You have an Azure Cosmos DB account named Account1. Account1 includes a database named DB1 that contains a container named Container1. The partition key for Container1 is set to /city.

You plan to change the partition key for Container1.

What should you do first?

- ☐ Delete Container1.
- ☒ Create a new Azure Cosmos DB account.
- ☐ Implement the Azure Cosmos DB.NET.SDK.
- ☐ Regenerate the keys for Account1.

Explanation/Reference

Explanation:
The Change Feed Processor and Bulk Executor Library, in Azure Cosmos DB can be leveraged to achieve a live migration of your data from one container to another. This allows you to re-distribute your data to match the desired new partition key scheme, and make the relevant application changes afterwards, thus achieving the effect of “updating your partition key”.

Incorrect Answers:
A: It is not possible to “update” your partition key in an existing container.

Reference:
https://devblogs.microsoft.com/cosmosdb/how-to-change-your-partition-key/

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Question 64

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Region
RG1	West US
RG2	West US
RG3	East US

You have the Azure SQL servers shown in the following table.

Name	Region	In resource group
Sql1	West US	RG1
Sql2	East US	RG2
Sql3	West US	RG3
Sql4	West US	RG1

You create an Azure SQL database named DB1 on Sql1 in an elastic pool named Pool1.

You need to create an Azure SQL database named DB2 in Pool1.

Where should you deploy DB2?

- ☒ Sql1
- ☐ Sql2
- ☐ Sql3
- ☐ Sql4

Explanation/Reference

Explanation:
The databases in an elastic pool are on a single Azure SQL Database server and share a set number of resources at a set price.

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

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Question 65

HOTSPOT

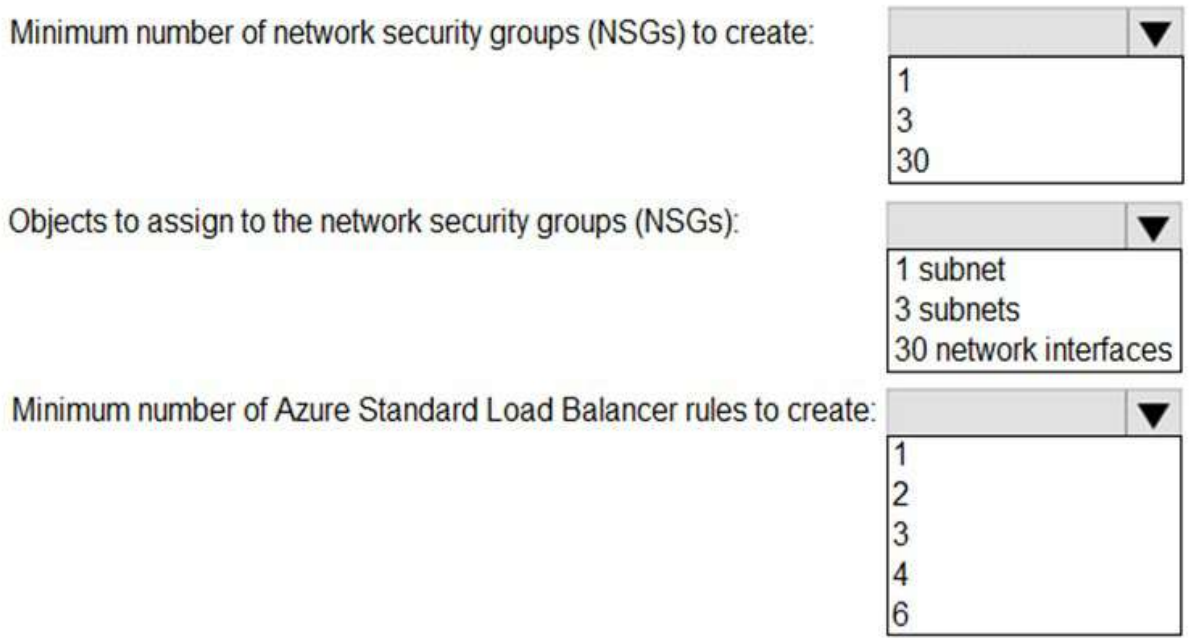
You deploy an Azure virtual machine scale set named VSS1 that contains 30 virtual machine instances across three zones in the same Azure region. The instances host an application named App1 that must be accessible by using HTTP and HTTPS traffic. Currently, VSS1 is inaccessible from the internet.

You need to use Azure Load Balancer to provide access to App1 across all the instances from the internet by using a single IP address.

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

NOTE: Each correct selection is worth one point.

Answer Area



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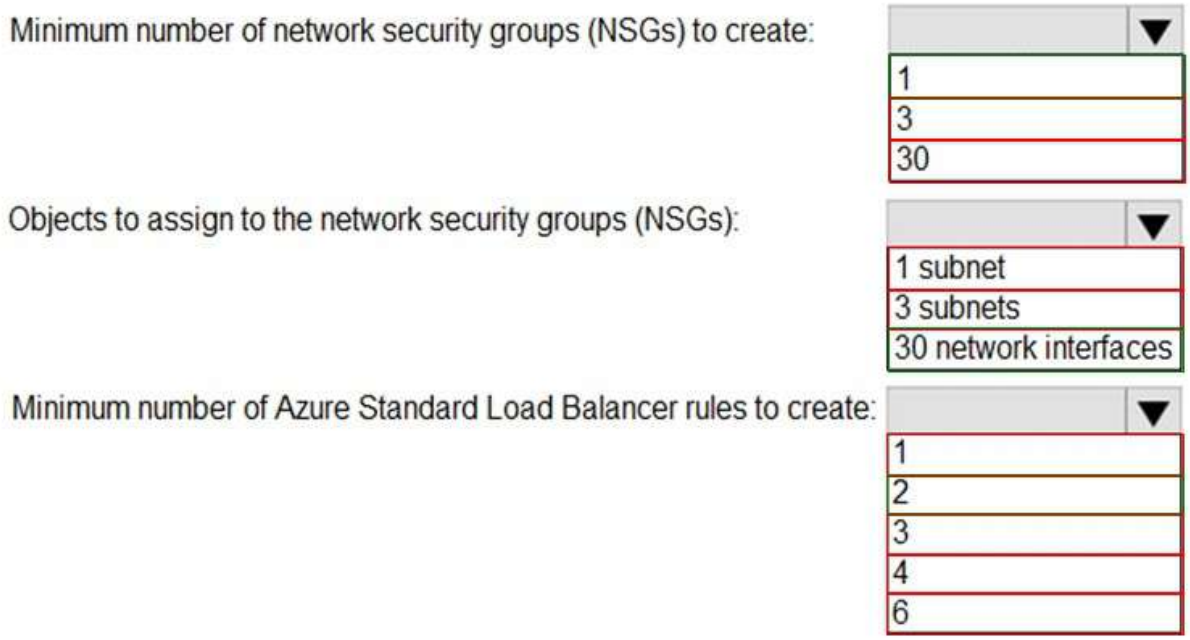
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: 1

Box 2: 30 network interfaces
For a standard load balancer, the VMs in the backend address for are required to have network interfaces that belong to a network security group.

Box 3: 2
On for the HTTP traffic, and one for the HTTPs traffic.

Reference:
https://docs.microsoft.com/en-us/azure/load-balancer/quickstart-load-balancer-standard-public-cli

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Question 66

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an app named App1 that uses data from two on-premises Microsoft SQL Server databases named DB1 and DB2.

You plan to move DB1 and DB2 to Azure.

You need to implement Azure services to host DB1 and DB2. The solution must support server-side transactions across DB1 and DB2.

Solution: You deploy DB1 and DB2 as Azure SQL databases each on a different Azure SQL Database server.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead deploy DB1 and DB2 to SQL Server on an Azure virtual machine.

Note: Understanding distributed transactions.
When both the database management system and client are under the same ownership (e.g. when SQL Server is deployed to a virtual machine), transactions are available and the lock duration can be controlled.

Reference:
https://docs.particular.net/nservicebus/azure/understanding-transactionality-in-azure

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Question 67

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an app named App1 that uses data from two on-premises Microsoft SQL Server databases named DB1 and DB2.

You plan to move DB1 and DB2 to Azure.

You need to implement Azure services to host DB1 and DB2. The solution must support server-side transactions across DB1 and DB2.

Solution: You deploy DB1 and DB2 as Azure SQL databases on the same Azure SQL Database server.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead deploy DB1 and DB2 to SQL Server on an Azure virtual machine.

Note: Understanding distributed transactions.
When both the database management system and client are under the same ownership (e.g. when SQL Server is deployed to a virtual machine), transactions are available and the lock duration can be controlled.

Reference:
https://docs.particular.net/nservicebus/azure/understanding-transactionality-in-azure

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Question 68

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value": "10" }
Item2	{ "id": "2", "day": "Mon", "value": "15" }
Item3	{ "id": "3", "day": "Tue", "value": "10" }
Item4	{ "id": "4", "day": "Wed", "value": "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT day
WHERE value = "10"
```

You set the `EnableCrossPartitionQuery` property to `False`.

Does this meet the goal?

- ☐ Yes
- ☒ No

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Explanation/Reference

Explanation:
Returns Item1 only as EnableCrossPartitionQuery property to False. If EnableCrossPartitionQuery property is set to true, it will return Item1 and Item3.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

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Question 69

HOTSPOT

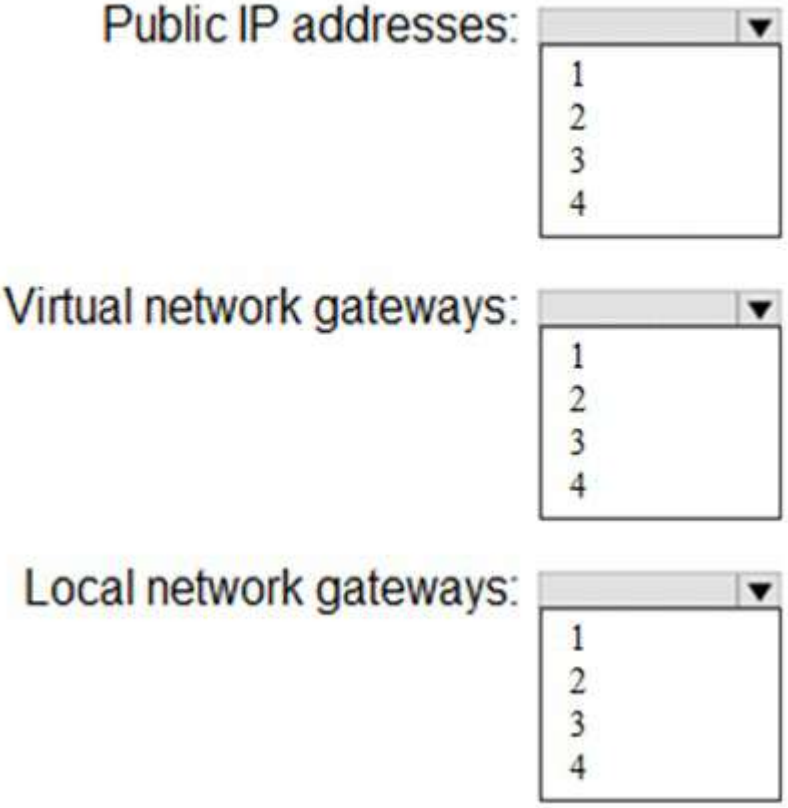
You have an on-premises data center and an Azure subscription. The data center contains two VPN devices. The subscription contains an Azure virtual network named VNet1. VNet1 contains a gateway subnet.

You need to create a site-to-site VPN. The solution must ensure that if a single instance of an Azure VPN gateway fails, or a single on-premises VPN device fails, the failure will not cause an interruption that is longer than two minutes.

What is the minimum number of public IP addresses, virtual network gateways, and local network gateways required in Azure? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area:



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Answer Area:

Public IP addresses: 1 2 3 4

Virtual network gateways: 1 2 3 4

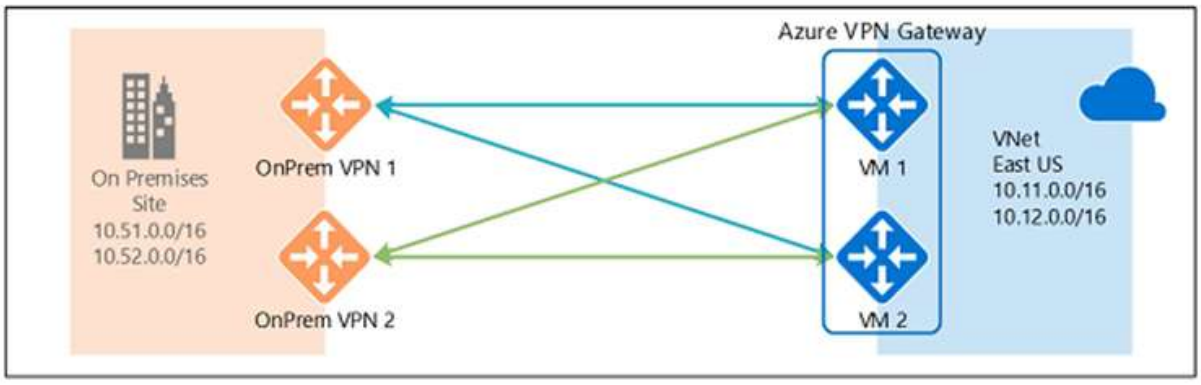
Local network gateways: 1 2 3 4

Solution:

Explanation/Reference

Explanation:

Box 1: 4
Two public IP addresses in the on-premises data center, and two public IP addresses in the VNET.
The most reliable option is to combine the active-active gateways on both your network and Azure, as shown in the diagram below.



Box 2: 2
Every Azure VPN gateway consists of two instances in an active-standby configuration. For any

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planned maintenance or unplanned disruption that happens to the active instance, the standby instance would take over (failover) automatically, and resume the S2S VPN or VNet-to-VNet connections.

Box 3: 2
Dual-redundancy: active-active VPN gateways for both Azure and on-premises networks

Reference:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-highlyavailable

Question 70

You have an Azure subscription that contains an Azure Sentinel workspace. Sentinel is configured to monitor several Azure resources.

You need to send notification emails to resource owners when alerts or recommendations are generated for a resource.

What should you use?

- ☒ Logic Apps Designer
- ☐ Azure Security Center
- ☐ Azure Pipelines
- ☐ Azure Machine Learning Studio

Explanation/Reference

Explanation:
Currently there is no built-in functionality that notifies you via email if there is an incident that is generated in Azure Sentinel. However, you can set up an Azure Logic App playbook to send incident information to your email.

Reference:
https://azsec.azurewebsites.net/2020/01/19/notify-azure-sentinel-alert-to-your-email-automatically/

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Implement Management and Security Solutions (36 questions)

Case Study (1 questions)

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.

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 severs for business operations, including the following:

- File servers
- Domain controllers
- Microsoft SQL Server servers

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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 admin for the Azure subscription.
- Admin1 must receive email alerts regarding service outages.

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

Question 110

You need to recommend an identity solution that meets the technical requirements.

What should you recommend?

- ☐ password hash synchronization and single sign-on (SSO)
- ☐ federated single sign-on (SSO) and Active Directory Federation Services (AD FS)
- ☒ Pass-thorough Authentication and single sign-on (SSO)
- ☐ cloud-only user accounts

Explanation/Reference

Explanation:
With Pass-through Authentication the on-premises passwords are never stored in the cloud in any form.

Scenario:

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

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-pta

Question 74

You have an application named App1 that does not support Azure Active Directory (Azure AD) authentication.

You need to ensure that App1 can send messages to an Azure Service Bus queue. The solution must prevent App1 from listening to the queue.

What should you do?

- ☐ Configure Access control (IAM) for the Service Bus.
- ☒ Add a shared access policy to the queue.
- ☐ Modify the locks of the queue.
- ☐ Configure Access control (IAM) for the queue.

Explanation/Reference

Explanation:
There are two ways to authenticate and authorize access to Azure Service Bus resources: Azure Activity Directory (Azure AD) and Shared Access Signatures (SAS).
Each Service Bus namespace and each Service Bus entity has a Shared Access Authorization policy

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made up of rules.

Reference:
https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-authentication-and-authorization

https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-sas

Question 75

An administrator plans to create a function app in Azure that will have the following settings:

- Runtime stack: .NET Core
- Operating System: Linux
- Plan type: Consumption
- Enable Application Insights: Yes

You need to ensure that you can back up the function app.

Which settings should you recommend changing before creating the function app?

- ☐ Runtime stack
- ☐ Enable Application Insights
- ☐ Operating System
- ☒ Plan type

Explanation/Reference

Explanation:
The Backup and Restore feature requires the App Service plan to be in the Standard, Premium or Isolated tier.

Reference:
https://docs.microsoft.com/en-us/azure/app-service/manage-backup#requirements-and-restrictions

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Question 76

HOTSPOT

You have an Azure subscription.

You plan to deploy an app that has a web front end and an application tier.

You need to recommend a load balancing solution that meets the following requirements:

- Internet to web tier:

- Provides URL-based routing
- Supports connection draining
- Prevents SQL injection attacks

- Web tier to application tier:

- Provides port forwarding
- Supports HTTPS health probes
- Supports an availability set as a backend pool

Which load balancing solution should you recommend for each tier? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Internet to web tier:
- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Basic Load Balancer

Web tier to application tier:
- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Standard Load Balancer

Solution:

Answer Area

Internet to web tier:
- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Basic Load Balancer

Web tier to application tier:
- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Standard Load Balancer

Explanation/Reference

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Explanation:

Box 1: An Azure Application Gateway that has a web application firewall (WAF)
Azure Application Gateway offers a web application firewall (WAF) that 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 operates as an application delivery controller (ADC). It offers Secure Sockets Layer (SSL) termination, cookie-based session affinity, round-robin load distribution, content-based routing, ability to host multiple websites, and security enhancements.

Box 2: An internal Azure Standard Load Balancer
The internet to web tier is the public interface, while the web tier to application tier should be internal.

Note: When using load-balancing rules with Azure Load Balancer, you need to specify a health probes to allow Load Balancer to detect the backend endpoint status.
Health probes support the TCP, HTTP, HTTPS protocols.

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

https://docs.microsoft.com/en-us/azure/load-balancer/load-balancer-custom-probe-overview

Question 77

You have 10 Azure virtual machines on a subnet named Subnet1. Subnet1 is on a virtual network named VNet1.

You plan to deploy a public Azure Standard Load Balancer named LB1 to the same Azure region as the 10 virtual machines.

You need to ensure that traffic from all the virtual machines to the internet flows through LB1. The solution must prevent the virtual machines from being accessible on the internet.

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

NOTE: Each correct selection is worth one point.

- ☒ Add health probes to LB1.
- ☒ Add the network interfaces of the virtual machines to the backend pool of LB1.
- ☐ Add an inbound rule to LB1.
- ☒ Add an outbound rule to LB1.
- ☐ Associate a network security group (NSG) to Subnet1.
- ☐ Associate a user-defined route to Subnet1.

Explanation/Reference

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Explanation:
A: To allow the Load Balancer to monitor the status of your app, you use a health probe. The health probe dynamically adds or removes VMs from the Load Balancer rotation based on their response to health checks.

B: To distribute traffic to the VMs, a backend address pool contains the IP addresses of the virtual (NICs) connected to the Load Balancer.

D: A Load Balancer rule is used to define how traffic is distributed to the VMs. Only outbound traffic is allowed.

Reference: https://docs.microsoft.com/en-us/azure/load-balancer/tutorial-load-balancer-standard-manage-portal

Question 78

You have SQL Server on an Azure virtual machine named SQL1.

You need to automate the backup of the databases on SQL1 by using Automated Backup v2 for the virtual machines. The backups must meet the following requirements:

- Meet a recovery point objective (RPO) of 15 minutes.
- Retain the backups for 30 days.
- Encrypt the backups at rest.

What should you provision as part of the backup solution?

- ☐ Elastic Database jobs
- ☐ Azure Key Vault
- ☒ an Azure Storage account
- ☐ a Recovery Services vault

Explanation/Reference

Explanation:
An Azure storage account is used for storing Automated Backup files in blob storage. A container is created at this location to store all backup files. The backup file naming convention includes the date, time, and database GUID.

Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/virtual-machines/windows/automated-backup

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Question 79

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?

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

Explanation/Reference

Explanation:
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.

1. Select Access policies and click Add new.
2. In Configure from template, select Secret Management.
3. 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.
4. 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.

Reference:
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

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Question 80

HOTSPOT

You have an Azure subscription named Subscription1 that contains a virtual network named VNet1.

You add the users in the following table.

User	Role
User1	Owner
User2	Security Admin
User3	Network Contributor

Which user can perform each configuration? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Add a subnet to VNet1: ▾
- User1 only
- User3 only
- User1 and User3 only
- User2 and User3 only
- User1, User2, and User3

Assign a user the Reader role to VNet1: ▾
- User1 only
- User2 only
- User3 only
- User1 and User2 only
- User2 and User3 only
- User1, User2, and User3

Solution:

Answer Area

Add a subnet to VNet1: ▾
- User1 only
- User3 only
- User1 and User3 only
- User2 and User3 only
- User1, User2, and User3

Assign a user the Reader role to VNet1: ▾
- User1 only
- User2 only
- User3 only
- User1 and User2 only
- User2 and User3 only
- User1, User2, and User3

Explanation/Reference

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Explanation:

Box 1: User1 only.
User1: The Owner Role lets you manage everything, including access to resources.
Not User3: The Network Contributor role lets you manage networks, but not access to them.

Box 2: User1 and User2 only
The Security Admin role: In Security Center only: Can view security policies, view security states, edit security policies, view alerts and recommendations, dismiss alerts and recommendations.

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles

Question 81

You have resources in three Azure regions. Each region contains two virtual machines. Each virtual machine has a public IP address assigned to its network interface and a locally installed application named App1.

You plan to implement Azure Front Door-based load balancing across all the virtual machines.

You need to ensure that App1 on the virtual machines will only accept traffic routed from Azure Front Door.

What should you implement?

- ☐ Azure Private Link
- ☐ service endpoints
- ☒ network security groups (NSGs) with service tags
- ☐ network security groups (NSGs) with application security groups

Explanation/Reference

Explanation:
Configure IP ACLing for your backends to accept traffic from Azure Front Door's backend IP address space and Azure's infrastructure services only. Refer the IP details below for ACLing your backend:

- Refer AzureFrontDoor.Backend section in Azure IP Ranges and Service Tags for Front Door's IPv4 backend IP address range or you can also use the service tag AzureFrontDoor.Backend in your network security groups.

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

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Question 82

You have an Azure key vault named KV1.

You need to ensure that applications can use KV1 to provision certificates automatically from an external certification authority (CA).

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

NOTE: Each correct selection is worth one point.

- ☐ From KV1, create a certificate issuer resource.
- ☐ Obtain the CA account credentials.
- ☒ Obtain the root CA certificate.
- ☒ From KV1, create a certificate signing request (CSR).
- ☐ From KV1, create a private key,

Explanation/Reference

Explanation:
C: Obtain the root CA certificate (step 4 in the picture below)

D: From KV1, create a certificate signing request (CSR) (step 2 in the picture below)

Note:
Creating a certificate with a CA not partnered with Key Vault
This method allows working with other CAs than Key Vault's partnered providers, meaning your organization can work with a CA of its choice.

The following step descriptions correspond to the green lettered steps in the preceding diagram.

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1. In the diagram above, your application is creating a certificate, which internally begins by creating a key in your key vault.
2. Key Vault returns to your application a Certificate Signing Request (CSR).
3. Your application passes the CSR to your chosen CA.
4. Your chosen CA responds with an X509 Certificate.
5. Your application completes the new certificate creation with a merger of the X509 Certificate from your CA.

Reference:
https://docs.microsoft.com/en-us/azure/key-vault/certificates/certificate-scenarios

Question 83

You create the following Azure role definition.

```
{
    "Name":  "Role1",
    "Id":  "80808080-8080-8080-8080-808080808080",
    "IsCustom":  false,
    "Description":  "",
    "Actions":  [
                    "Microsoft.Storage/*/read",
                    "Microsoft.Network/*/read",
                    "Microsoft.Compute/virtualMachines/start/action",
                    "Microsoft.Compute/virtualMachines/restart/action",
                    "Microsoft.Authorization/*/read"],
    "NotActions":  [  ],
    "DataActions":  [ ],
    "NotDataActions":  [    ],
    "AssignableScopes":  [  ]
}
```

You need to create Role1 by using the role definition.

Which two values should you modify before you create Role1? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ AssignableScopes
- ☐ Description
- ☐ DataActions
- ☒ IsCustom
- ☐ Id

Explanation/Reference

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Explanation:
Part of example:
"IsCustom": true,

"AssignableScopes": [
"/subscriptions/{subscriptionId1}",
"/subscriptions/{subscriptionId2}",
"/subscriptions/{subscriptionId3}"

The following shows what a custom role looks like as displayed in JSON format. This custom role can be used for monitoring and restarting virtual machines.

{
"Name": "Virtual Machine Operator",
"Id": "88888888-8888-8888-8888-888888888888",
"IsCustom": true,
"Description": "Can monitor and restart virtual machines.",
"Actions": [
"Microsoft.Storage/*/read",
"Microsoft.Network/*/read",
"Microsoft.Compute/*/read",
"Microsoft.Compute/virtualMachines/start/action",
"Microsoft.Compute/virtualMachines/restart/action",
"Microsoft.Authorization/*/read",
"Microsoft.ResourceHealth/availabilityStatuses/read",
"Microsoft.Resources/subscriptions/resourceGroups/read",
"Microsoft.Insights/alertRules/*",
"Microsoft.Insights/diagnosticSettings/*",
"Microsoft.Support/*"
],
"NotActions": [],
"DataActions": [],
"NotDataActions": [],
"AssignableScopes": [
"/subscriptions/{subscriptionId1}",
"/subscriptions/{subscriptionId2}",
"/subscriptions/{subscriptionId3}"
]
}

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/custom-roles

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Question 84

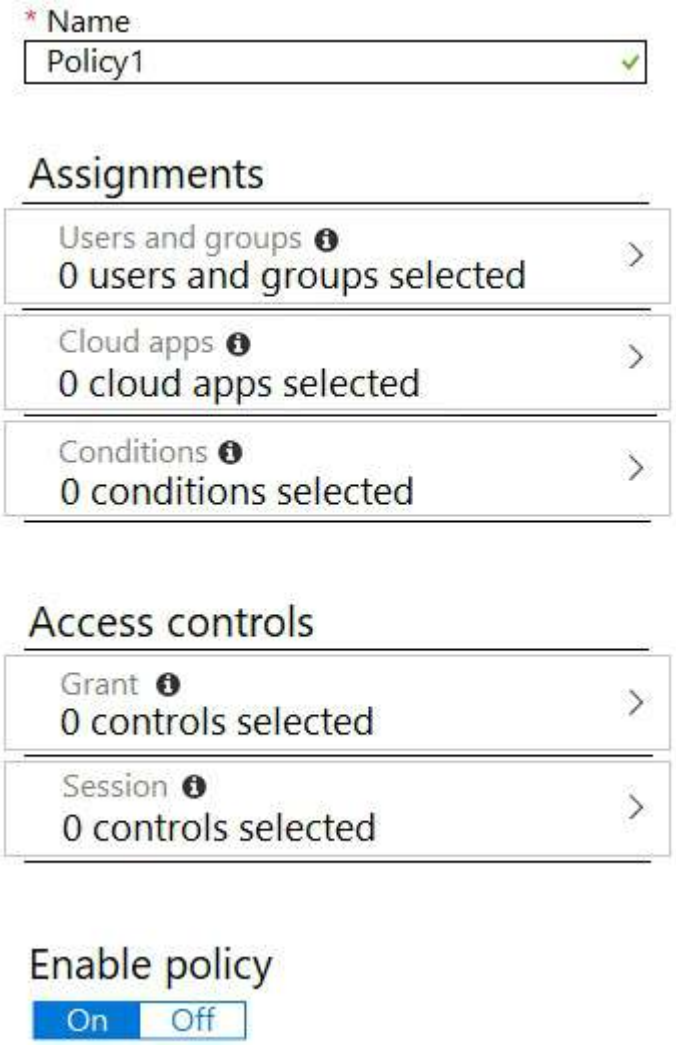
HOTSPOT

You have an Azure Active Directory (Azure AD) tenant.

You need to create a conditional access policy that requires all users to use multi-factor authentication when they access the Azure portal.

Which three settings should you configure? To answer, select the appropriate settings in the answer area.

NOTE: Each correct selection is worth one point.



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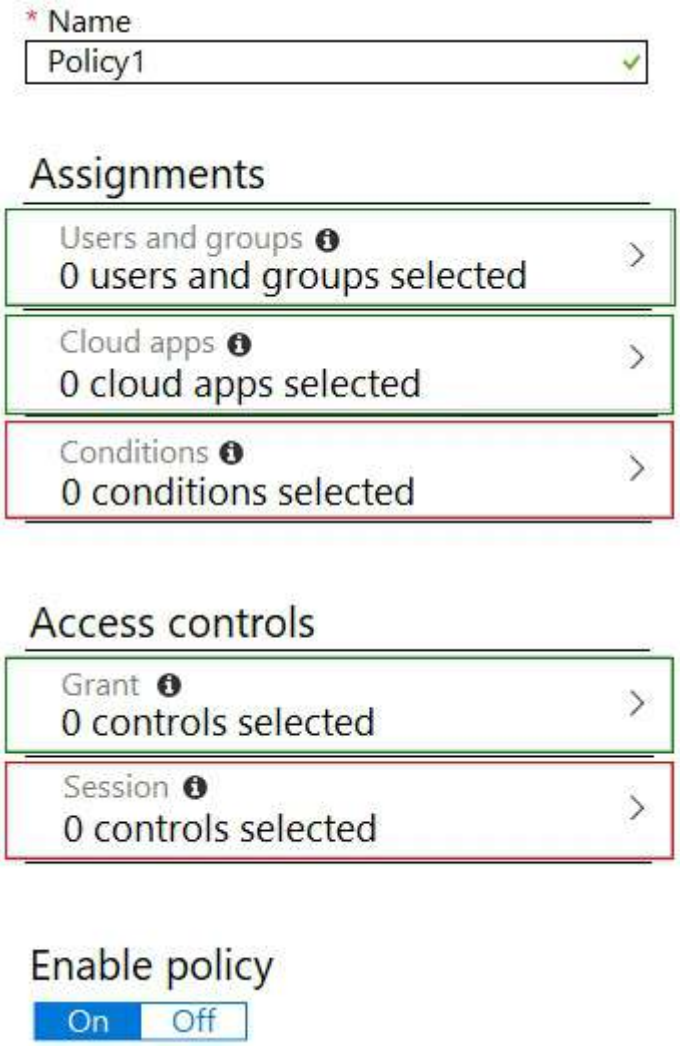

Solution:

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/conditional-access/app-based-mfa

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Question 85

You are implementing authentication for applications in your company. You plan to implement self-service password reset (SSPR) and multifactor authentication (MFA) in Azure Active Directory (Azure AD).

You need to select authentication mechanisms that can be used for both MFA and SSPR.

Which two authentication methods should you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☒ Authenticator app
- ☐ Email addresses
- ☐ App passwords
- ☒ Short Message Service (SMS) messages
- ☐ Security questions

Explanation/Reference

Explanation:
The following authentication mechanisms can be used for both MFA and SSPR:

- Short Message Service (SMS) messages
- Azure AD passwords
- Microsoft Authenticator app
- Voice call

Incorrect Answers:
B, E: The following authentication mechanisms are used for SSPR only:

- Email addresses
- Security questions

E: App passwords authentication mechanisms can be used for MFA only, but only in certain cases.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-authentication-methods

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Question 86

Your company has the groups shown in the following table.

Group	Number of members
Managers	10
Sales	100
Development	15

The company has an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

An administrator named Admin1 attempts to enable Enterprise State Roaming for all the users in the Managers groups.

Admin1 reports that the options for Enterprise State Roaming are unavailable from Azure AD.

You verify that Admin1 is assigned the Global administrator role.

You need to ensure that Admin1 can enable Enterprise State Roaming.

What should you do?

- ☐ Assign an Azure AD Privileged Identity Management (PIM) role to Admin1.
- ☐ Purchase an Azure Rights Management (Azure RMS) license for each user in the Managers group.
- ☐ Enforce Azure Multi-Factor Authentication (MFA) for Admin1.
- ☒ Purchase an Azure AD Premium P1 license for each user in the Managers group.

Explanation/Reference

Explanation:
Enterprise State Roaming is available to any organization with an Azure AD Premium or Enterprise Mobility + Security (EMS) license.

Reference:
https://docs.microsoft.com/bs-latn-ba/azure/active-directory/devices/enterprise-state-roaming-enable

Question 87

HOTSPOT

You plan to implement an access review to meet the following requirements:

- The access review must be enforced until otherwise configured.

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- Each user or group that has access to the Azure environment must be in the scope of the access review.
- The access review must be completed within two weeks.
- A lack of response must not cause changes in the operational environment.

An administrator creates the access review shown in the answer area.

Which two sections of the access review should you modify to meet the requirements? To answer, select the appropriate sections in the answer area.

NOTE: Each correct selection is worth one point.

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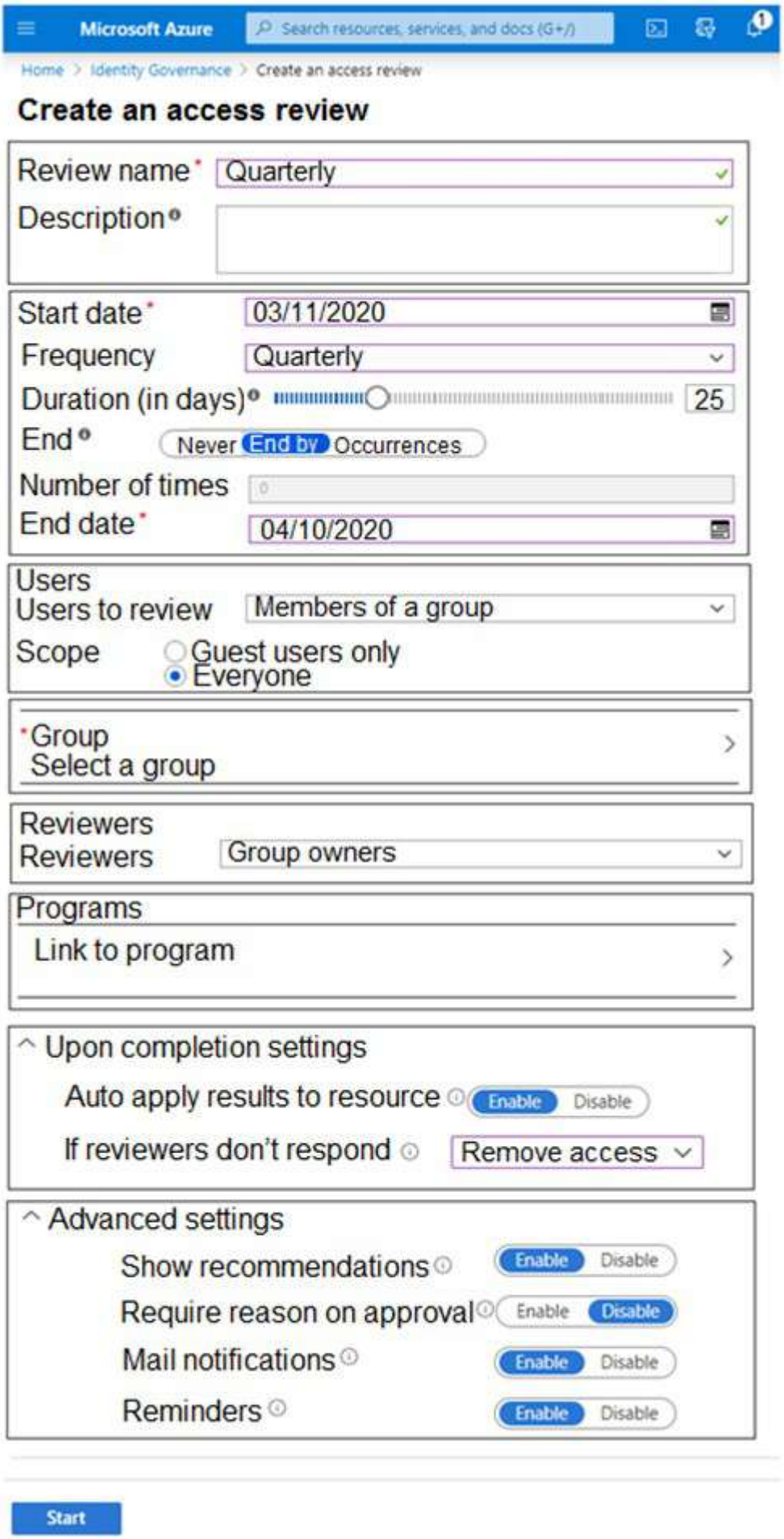
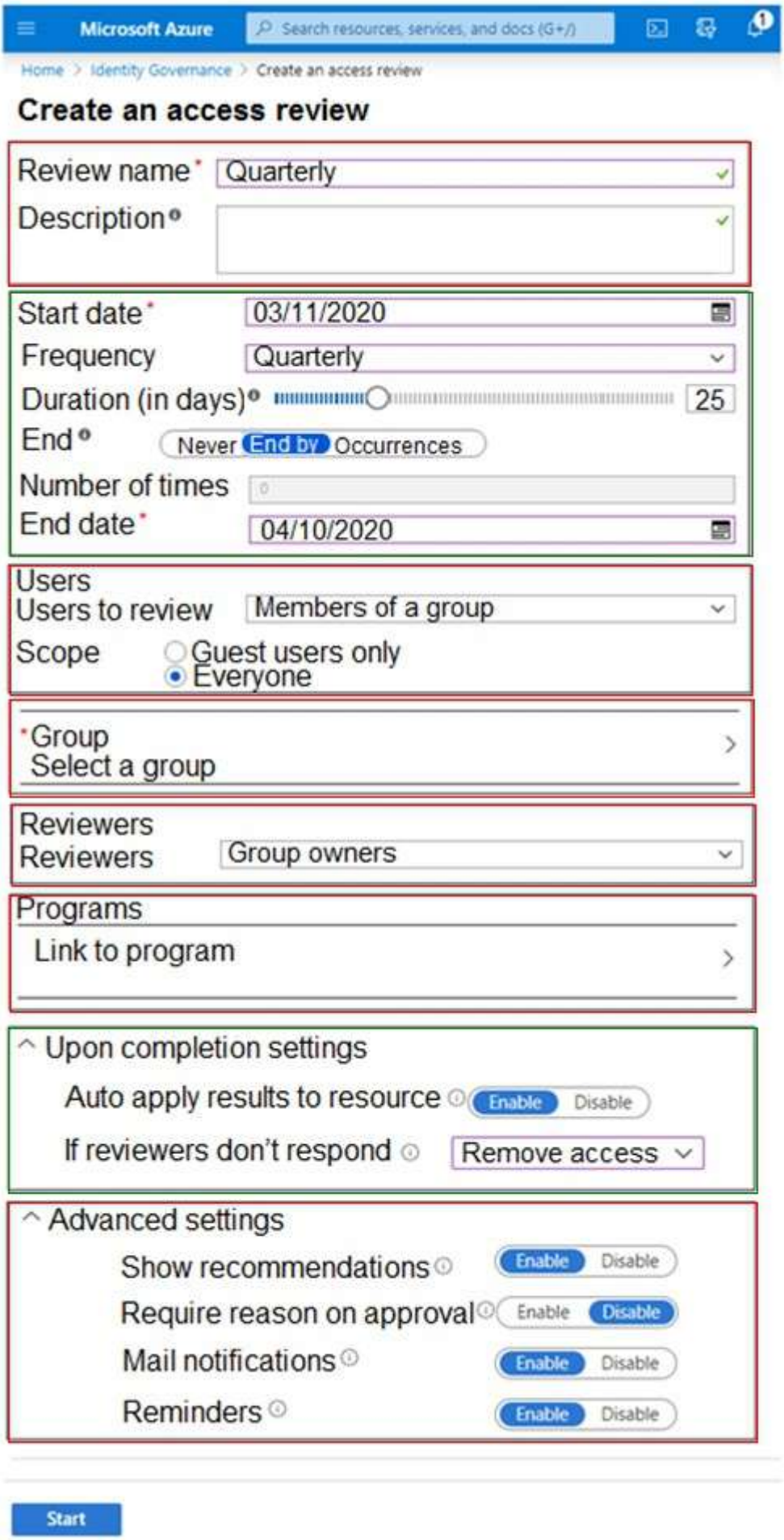

Microsoft Azure
Search resources, services, and docs (G+/)
Home > Identity Governance > Create an access review
Create an access review
Review name * Quarterly
Description
Start date * 03/11/2020
Frequency Quarterly
Duration (in days) 25
End Never End by Occurrences
Number of times 0
End date * 04/10/2020
Users
Users to review Members of a group
Scope Guest users only Everyone
* Group
Select a group
Reviewers
Reviewers Group owners
Programs
Link to program
Upon completion settings
Auto apply results to resource Enable Disable
If reviewers don't respond Remove access
Advanced settings
Show recommendations Enable Disable
Require reason on approval Enable Disable
Mail notifications Enable Disable
Reminders Enable Disable
Start



Solution:

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Explanation/Reference

Explanation:

Area 1: Start date..End Date
The access review must be enforced until otherwise configured. We set End: Never

The access review must be completed within two weeks. We set Duration (in days) to 14

Area 2: Upon completion settings
A lack of response must not cause changes in the operational environment. We set 'If reviewers don't respond: No change (which leave user's access unchanged)

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/governance/create-access-review

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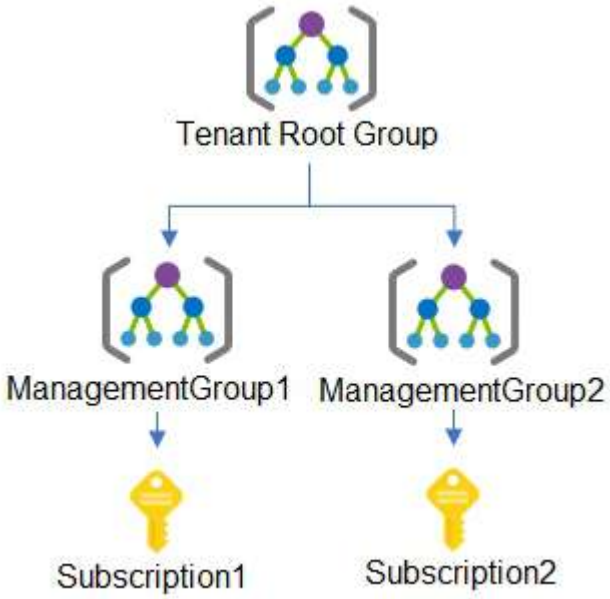
Question 88

HOTSPOT

You have a hierarchy of management groups and Azure subscriptions as shown in the following table.



You create the Azure resources shown in the following table.

Name	Type	Created in
RG1	Resource group	Subscription1
RG2	Resource group	Subscription2
VM2	Virtual machine	RG2

You assign roles to users as shown in the following table.

User name	Role	On resource
User1	Contributor	ManagementGroup1
User2	Contributor	ManagementGroup2
User3	Reader	Tenant Root Group

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
You can remove User1 from the Contributor role for RG1.	○	○
User2 can delete VM2.	○	○
You can add User3 as a Contributor for RG1.	○	○

Solution:

Answer Area

Statements	Yes	No
You can remove User1 from the Contributor role for RG1.	○	○
User2 can delete VM2.	○	○
You can add User3 as a Contributor for RG1.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
You have assigned the role, so you can remove it.

Box 2: Yes
Contributor role: Grants full access to manage all resources, but does not allow you to assign roles in Azure RBAC.

Box 3: No

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles#contributor

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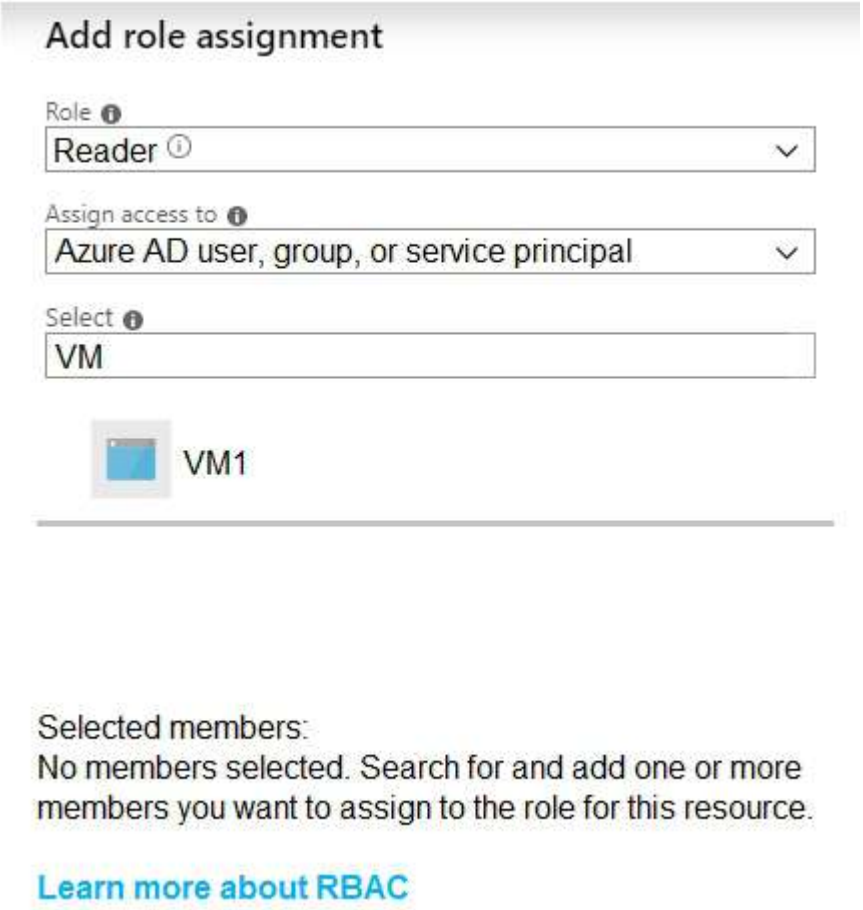
Question 89

You create the Azure resources shown in the following table.

Name	Resource type
VM1	Virtual machine
VM2	Virtual machine
Managed1	Managed identity
Managed2	Managed identity

You attempt to add a role assignment to a resource group as shown in the following exhibit.



What should you do to ensure that you can assign VM2 the Reader role for the resource group?

- ☐ Configure just in time (JIT) VM access on VM2.
- ☒ Configure Access control (IAM) on VM2.
- ☐ Assign a managed identity to VM2.
- ☐ Modify the Reader role at the subscription level.

Explanation/Reference

Explanation:
After you've configured an Azure resource with a managed identity, you can give the managed identity access to another resource, just like any security principal.

Use Azure RBAC to assign a managed identity access to another resource

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After you've enabled managed identity on an Azure resource, such as an Azure VM or Azure virtual machine scale set:

1. Sign in to the Azure portal using an account associated with the Azure subscription under which you have configured the managed identity.
2. Navigate to the desired resource on which you want to modify access control. In this example, we are giving an Azure virtual machine access to a storage account, so we navigate to the storage account.
3. Select the Access control (IAM) page of the resource, and select + Add role assignment. Then specify the Role, Assign access to, and specify the corresponding Subscription. Under the search criteria area, you should see the resource. Select the resource, and select Save.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/managed-identities-azure-resources/howto-assign-access-portal

Question 90

You have an Azure Active Directory (Azure AD) tenant linked to an Azure subscription. The tenant contains a group named Admins.

You need to prevent users, except for the members of Admins, from using the Azure portal and Azure PowerShell to access the subscription.

What should you do?

- ☐ From Azure AD, configure the User settings.
- ☒ From Azure AD, create a conditional access policy.
- ☐ From the Azure subscription, assign an Azure policy.
- ☐ From the Azure subscription, configure Access control (IAM).

Explanation/Reference

Explanation:
Typically, you use Conditional Access to control access to your cloud apps. You can also set up policies to control access to Azure management.

The policy you create applies to all Azure management endpoints, including the following:

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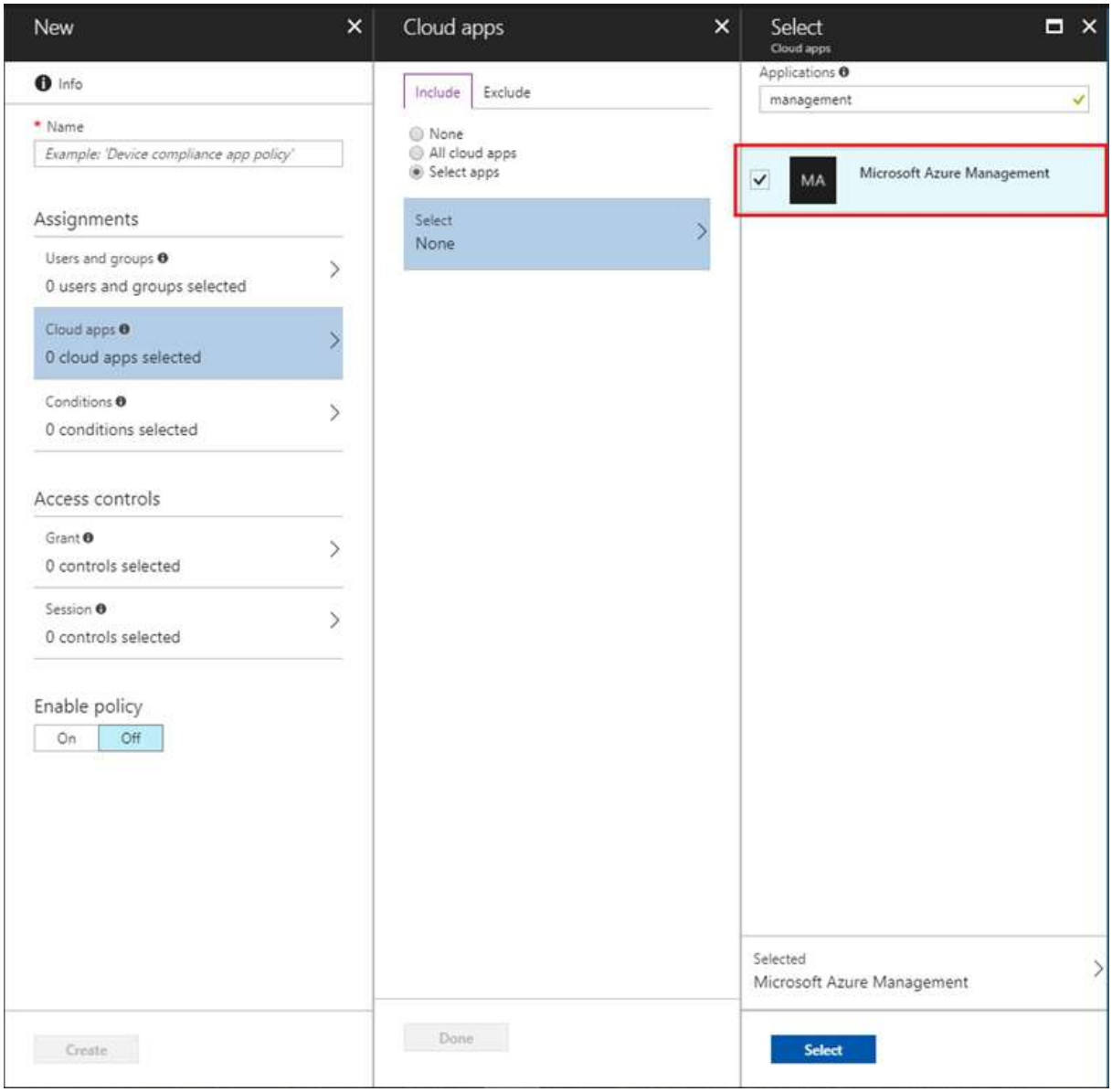

Incorrect Answers:
A: From User Settings you can only restrict access to Azure Portal, not access to Azure Powershell.

Note: Microsoft allows restricting standard user access to Azure Active Directory administration portal.

1. Log in to Azure portal as Global Administrator
2. Go to Azure Active Directory | User Settings
3. Then click on Yes under Restrict access to Azure AD administration portal

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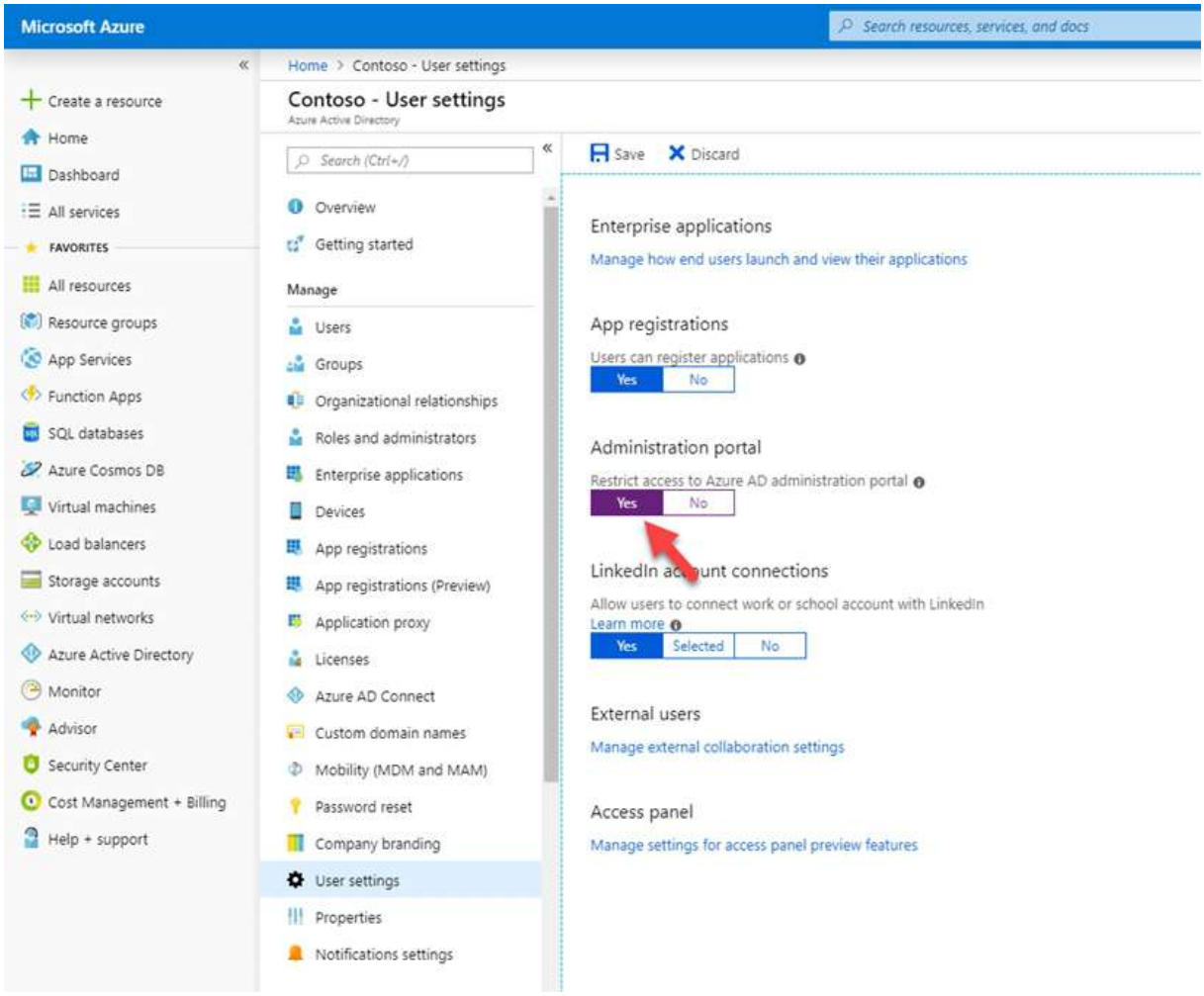

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/conditional-access-azure-management

https://www.rebeladmin.com/2019/04/step-step-guide-restrict-azure-ad-administration-portal/

- Azure portal
- Azure Resource Manager provider
- Classic Service Management APIs
- Azure PowerShell
- Visual Studio subscriptions administrator portal
- Azure DevOps
- Azure Data Factory portal

To create a policy for Azure management, you select Microsoft Azure Management under Cloud apps when choosing the app to which to apply the policy.

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Question 91

You have Azure virtual machines deployed to three Azure regions. Each region contains a single virtual network that has four virtual machines on the same subnet. Each virtual machine runs an application named App1. App1 is accessible by using HTTPS. Currently, the virtual machines are inaccessible from the internet.

You need to use Azure Front Door to load balance requests for App1 across all the virtual machines.

Which additional Azure service should you provision?

- ☐ Azure Traffic Manager
- ☒ an internal Azure Load Balancer
- ☐ a public Azure Load Balancer
- ☐ Azure Private Link

Explanation/Reference

Explanation:
Can we deploy Azure Load Balancer behind Front Door?
Azure Front Door needs a public VIP or a publicly available DNS name to route the traffic to.
Deploying an Azure Load Balancer behind Front Door is a common use case.

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

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Question 92

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?

- ☒ 4
- ☐ 6
- ☐ 2
- ☐ 1

Explanation/Reference

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

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

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Question 93

You have an Azure subscription.

You create a custom role in Azure by using the following Azure Resource Manager template.

```
{
"Name": "Role1",
"Id": "88888888-8888-8888-8888-888888888888",
"IsCustom": true,
"Description": "Role1 Description",
"Actions": [
     "Microsoft.Storage/*/read",
     "Microsoft.Network/*/read",
     "Microsoft.Compute/*/read",
     "Microsoft.Compute/virtualMachines/start/action",
     "Microsoft.Compute/virtualMachines/restart/action",
     "Microsoft.Authorization/*/read",
     "Microsoft.ResourceHealth/availabilityStatuses/read",
     "Microsoft.Resources/subscriptions/resourceGroups/read",
     "Microsoft.Insights/alertRules/*",
     "Microsoft.Insights/diagnosticSettings/*",
     "Microsoft.Support/*"
 ],
 "NotActions": [],
 "DataActions": [],
 "NotDataActions": [],
 "AssignableScopes": [
   "/subscription s/981dd4bc-8cf4-46fc-9513-0c599648b44b
 ]
}
```

You assign the role to a user named User1.

Which action can User1 perform?

- ☐ Create virtual machines.
- ☐ Create resource groups.
- ☐ Delete virtual machines.
- ☒ Create support requests.

Explanation/Reference

Explanation:
The "Microsoft.Support/*" operation will allow the user to create support tickets.

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/tutorial-custom-role-powershell

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Question 94

You have an Azure SQL database named Db1 that runs on an Azure SQL server named SQLserver1.

You need to ensure that you can use the query editor on the Azure portal to query Db1.

What should you do?

- ☐ Copy the ADO.NET connection string of Db1 and paste the string tot the query editor.
- ☐ Approve private endpoint connections for SQLserver1.
- ☐ Modify the Advanced Data Security settings of Db1.
- ☒ Configure the Firewalls and virtual networks settings for SQLserver1.

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/sql-database/sql-database-connect-query-portal

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Question 95

DRAG DROP

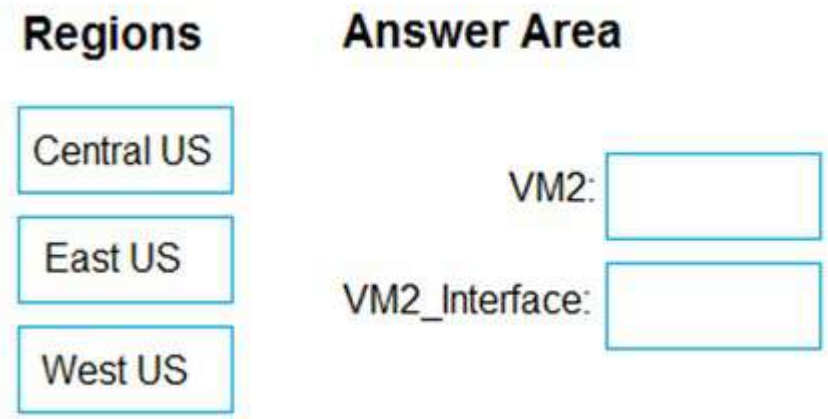
You have an Azure subscription that contains the resources shown in the following table.

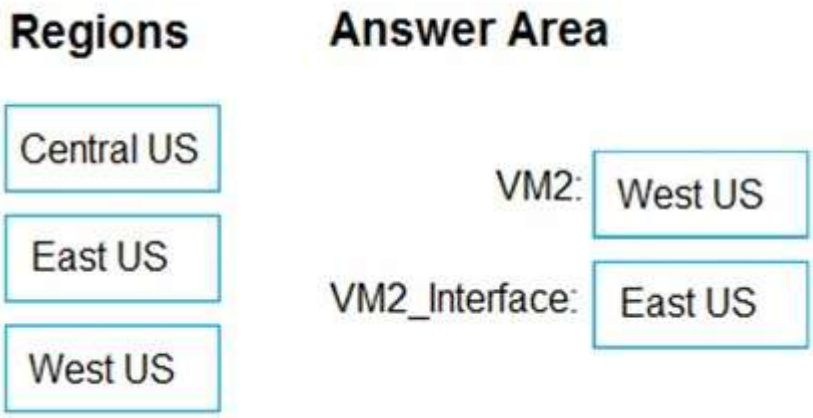
Name	Type	Region	Resource group
RG1	Resource group	Central US	*Not applicable*
RG2	Resource group	West US	*Not applicable*
VM1	Virtual machine	East US	RG2
VNET1	Virtual network	East US	RG1

In RG2, you need to create a new virtual machine named VM2 that will connect to VNET1, VM2 will use a network interface named VM2_interface.

In which region should you create VM2 and VM2_interface? To answer, drag the appropriate regions to the correct targets. Each region may be used once, more than once, or not at all. You may need to grad the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.





Solution:

Explanation/Reference

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Explanation:

VM2: West US
In RG2, which is in West US, you need to create a new virtual machine named VM2.

VM2_interface: East US
VM2 will use a network interface named VM2_Interface to connect to VNET1, which is in East US.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/associate-public-ip-address-vm

Question 96

A company hosts virtual machines (VMs) in an on-premises datacenter and in Azure. The on-premises and Azure-based VMs communicate using ExpressRoute.

The company wants to be able to continue regular operations if the ExpressRoute connection fails. Failover connections must use the Internet and must not require Multiprotocol Label Switching (MPLS) support.

You need to recommend a solution that provides continued operations.

What should you recommend?

- ☐ Increase the bandwidth of the existing ExpressRoute connection.
- ☐ Increase the bandwidth for the on-premises internet connection.
- ☒ Set up a VPN connection.
- ☐ Set up a second ExpressRoute connection.

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/expressroute-vpn-failover

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Question 97

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

Name	Type	Address space
VNET1	Virtual network	10.1.1.0/24
Subnet1	Subnet	10.1.1.0/24
VM1	Virtual machine	*Not applicable*

Subnet1 is on VNET1. VM1 connects to Subnet1.

You plan to create a virtual network gateway on VNET1.

You need to prepare the environment for the planned virtual network gateway.

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

NOTE: Each correct selection is worth one point.

- ☐ Create a local network gateway.
- ☐ Modify the address space used by Subnet1.
- ☐ Create a subnet named GatewaySubnet on VNET1.
- ☒ Modify the address space used by VNET1.
- ☒ Delete Subnet1.

Question 98

Your network contains an on-premises Active Directory and an Azure Active Directory (Azure AD) tenant.

You deploy Azure AD Connect and configure pass-through authentication.

Your Azure subscription contains several web apps that are accessed from the Internet.

You plan to use Azure Multi-Factor Authentication (MFA) with the Azure Active Directory tenant.

You need to recommend a solution to prevent users from being prompted for Azure MFA when they access the web apps from the on-premises network.

What should you include in the recommendation?

- ☐ an Azure policy
- ☒ trusted IPs
- ☐ a site-to-site VPN between the on-premises network and Azure
- ☐ an Azure ExpressRoute circuit

Explanation/Reference

Explanation:
The Trusted IPs feature of Azure Multi-Factor Authentication is used by administrators of a managed

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or federated tenant. The feature bypasses two-step verification for users who sign in from the company intranet. The feature is available with the full version of Azure Multi-Factor Authentication, and not the free version for administrators.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/howto-mfa-mfasettings#trusted-ips

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Question 99

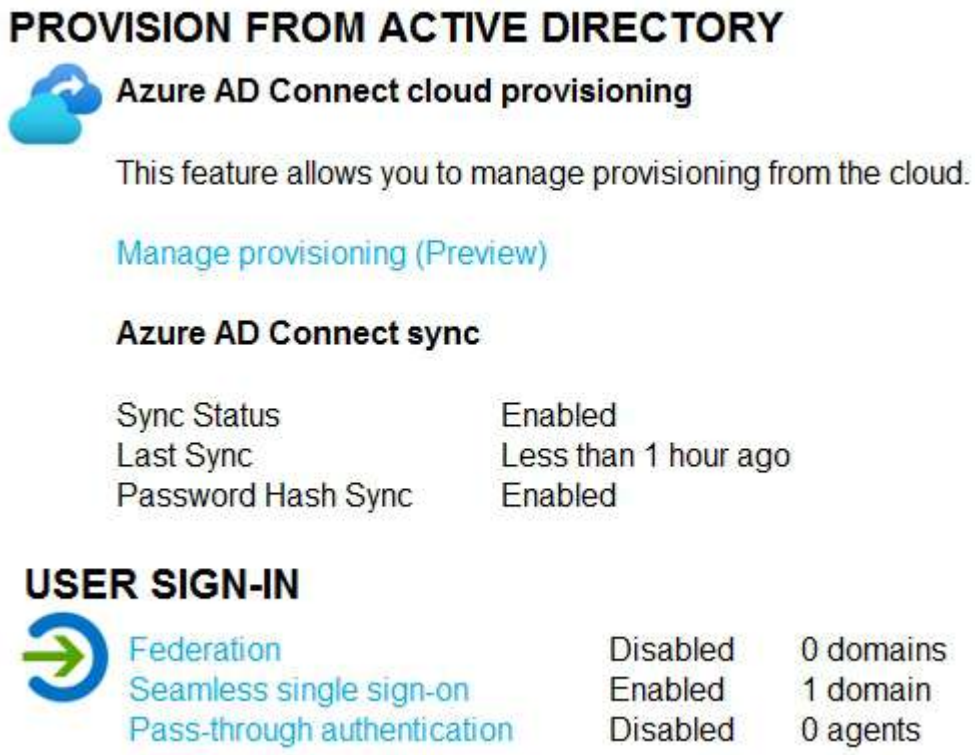
HOTSPOT

Your network contains an on-premises Active Directory domain named contoso.com that contains a user named User1. The domain syncs to Azure Active Directory (Azure AD).

You have the Windows 10 devices shown in the following table.

Name	Joined to
Device1	On-premises Active Directory
Device2	Azure AD
Device3	Workgroup

The User Sign-In settings are configured as shown in the following exhibit.



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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
When accessing the Azure portal from Device1, User1 will sign in automatically by using SSO.	○	○
When accessing the Azure portal from Device2, User1 will sign in automatically by using SSO.	○	○
When accessing the Azure portal from Device3, User1 will sign in automatically by using SSO.	○	○

Solution:

Answer Area

Statements	Yes	No
When accessing the Azure portal from Device1, User1 will sign in automatically by using SSO.	○	○
When accessing the Azure portal from Device2, User1 will sign in automatically by using SSO.	○	○
When accessing the Azure portal from Device3, User1 will sign in automatically by using SSO.	○	○

Explanation/Reference

Explanation:

Box 1: Yes

Seamless SSO needs the user's device to be domain-joined only, but it is not used on Azure AD Joined or Hybrid Azure AD joined devices. SSO on Azure AD joined, Hybrid Azure AD joined, and Azure AD registered devices works based on the primary refresh token.

Box 2: No

Box 3: No

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sso

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Question 100

You create a new Azure subscription. You create a resource group named RG1. In RG1, you create the resources shown in the following table.

Name	Type
VNET1	Virtual network
VM1	Virtual machine
GWSN1	Gateway subnet
VPNGW1	Virtual network gateway

You need to configure an encrypted tunnel between your on-premises network and VNET1.

Which two additional resources should you create in Azure? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ a VPN gateway
- ☐ a site-to-site connection
- ☐ a point-to-site configuration
- ☐ a VNet-to-VNet connection
- ☒ a local network gateway

Explanation/Reference

Explanation:
A Site-to-Site VPN gateway connection is used to connect your on-premises network to an Azure virtual network over an IPsec/IKE (IKEv1 or IKEv2) VPN tunnel. This type of connection requires a VPN device, a local network gateway, located on-premises that has an externally facing public IP address assigned to it.

Finally, create a Site-to-Site VPN connection between your virtual network gateway and your on-premises VPN device.

Reference:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-site-to-site-resource-manager-portal

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Question 101

You plan to create an Azure Storage account named storage1 that will store blobs and be accessed by Azure Databricks.

You need to ensure that you can set permissions for individual blobs by using Azure Active Directory (Azure AD) authentication.

Which Advanced setting should you enable for storage1?

- ☐ Large file shares
- ☒ Hierarchical namespace
- ☐ NFS v3
- ☐ Blob soft delete

Explanation/Reference

Explanation:
Question: Do I have to enable support for ACLs?
No. Access control via ACLs is enabled for a storage account as long as the Hierarchical Namespace (HNS) feature is turned ON.

Note 1: We [Microsoft] are pleased to share the general availability of Azure Active Directory (AD) based access control for Azure Storage Blobs and Queues. Enterprises can now grant specific data access permissions to users and service identities from their Azure AD tenant using Azure's Role-based access control (RBAC).

Note 2: Azure Data Lake Storage Gen2 implements an access control model that supports both Azure role-based access control (Azure RBAC) and POSIX-like access control lists (ACLs).

You can associate a security principal with an access level for files and directories. These associations are captured in an access control list (ACL). Each file and directory in your storage account has an access control list. When a security principal attempts an operation on a file or directory, An ACL check determines whether that security principal (user, group, service principal, or managed identity) has the correct permission level to perform the operation.

Incorrect Answers:
D: Blob soft delete protects your data from being accidentally or erroneously modified or deleted. When blob soft delete is enabled for a storage account, blobs, blob versions, and snapshots in that storage account may be recovered after they are deleted, within a retention period that you specify.

Reference:
https://docs.microsoft.com/en-us/azure/storage/blobs/data-lake-storage-access-control#access-control-lists-on-files-and-directories

https://azure.microsoft.com/en-us/blog/azure-storage-support-for-azure-ad-based-access-control-now-generally-available/

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Question 102

HOTSPOT

You have an Azure subscription that includes an Azure key vault named Vault1.

You create the Azure virtual machines shown in the following table.

Name	Operating system disk type	Use managed disks
VM1	Premium SSD	No
VM2	Standard HDD	Yes
VM3	Standard SSD	Yes

You enable Azure Disk Encryption for all the virtual machines and use the `–VolumeType All` parameter.

You add data disks to the virtual machines as shown in the following table.

Name	Virtual machine	Storage account type
VM1-Disk1	VM1	Premium SSD
VM2-Disk1	VM2	Standard SSD
VM3-Disk1	VM3	Standard HDD

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
VM1-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM2-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM3-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○

Solution:

Answer Area

Statements	Yes	No
VM1-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM2-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM3-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○

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Explanation/Reference

Explanation:

Premium and standard, but not basic, account types support disk encryption.
Disk encryption requires managed disks.

Reference:
https://docs.microsoft.com/en-us/azure/security/azure-security-disk-encryption-overview

Question 103

You have the following Azure Active Directory (Azure AD) tenants:

- Contoso.onmicrosoft.com: Linked to a Microsoft Office 365 tenant and syncs to an Active Directory forest named contoso.com by using password hash synchronization
- Contosoazure.onmicrosoft.com: Linked to an Azure subscription named Subscription1

You need to ensure that you can assign the users in contoso.com access to the resources in Subscription1.

What should you do?

☐ Configure contoso.onmicrosoft.com to use pass-through authentication.
☐ Associate Subscription1 to contoso.onmicrosoft.com. Reassign all the roles in Subscription1.
☒ Deploy a second Azure AD Connect server and sync contoso.com to contosoazure.onmicrosoft.com.
☐ Configure the existing Azure AD Connect server to sync contoso.com to contosoazure.onmicrosoft.com.

Explanation/Reference

Explanation:
Azure AD Connect allows you to quickly onboard to Azure AD and Office 365.

Note: The most common topology is a single on-premises forest, with one or multiple domains, and a single Azure AD tenant. For Azure AD authentication, password hash synchronization is used. The express installation of Azure AD Connect supports only this topology.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/plan-connect-topologies

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Question 104

You have several Azure web apps that use access keys to access databases.

You plan to migrate the access keys to Azure Key Vault. Each app must authenticate by using Azure Active Directory (Azure AD) to gain access to the access keys.

What should you create in Azure to ensure that the apps can access the access keys?

- ☒ managed identities
- ☐ managed applications
- ☐ Azure policies
- ☐ an App Service plan

Explanation/Reference

Explanation:
Azure Key Vault provides a way to securely store credentials and other secrets, but your code needs to authenticate to Key Vault to retrieve them. Managed identities for Azure resources overview helps to solve this problem by giving Azure services an automatically managed identity in Azure AD. You can use this identity to authenticate to any service that supports Azure AD authentication, including Key Vault, without having to display credentials in your code.

Reference:
https://docs.microsoft.com/en-us/azure/key-vault/general/tutorial-net-create-vault-azure-web-app

Question 105

You have an Azure key vault named KV1.

You need to implement a process that will digitally sign the blobs stored in Azure Storage.

What is required in KV1 to sign the blobs?

- ☐ a key
- ☒ a secret
- ☐ a certificate

Explanation/Reference

Explanation:
Use an Azure key vault secret to key of your blob storage account container.

Reference:
https://docs.microsoft.com/en-us/azure/key-vault/general/integrate-databricks-blob-storage

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Question 106

You set the multi-factor authentication status for a user named admin1@contoso.com to **Enabled**.

Admin1 accesses the Azure portal by using a web browser.

Which additional security verifications can Admin1 use when accessing the Azure portal?

- ☐ a phone call, an email message that contains a verification code, and a text message that contains an app password.
- ☐ an app password, a text message that contains a verification code, and a verification code sent from the Microsoft Authenticator app.
- ☐ an app password, a text message that contains a verification code, and a notification sent from the Microsoft Authenticator app.
- ☒ a phone call, a text message that contains a verification code, and a notification or a verification code sent from the Microsoft Authenticator app.

Explanation/Reference

Explanation:
The Microsoft Authenticator app can help prevent unauthorized access to accounts and stop fraudulent transactions by pushing a notification to your smartphone or tablet. Users view the notification, and if it's legitimate, select Verify. Otherwise, they can select Deny.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-authentication-methods

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Question 107

HOTSPOT

You have an Azure Active Directory (Azure AD) tenant that contains the user groups shown in the following table.

Name	Role	Member of
User1	Global administrator	*None*
User2	User administrator	Group1
User3	Password administrator	Group1
User4	*None*	Group1

You enable self-service password reset (SSPR) for Group1.

You configure the Notifications settings as shown in the following exhibit.

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
User1 gets a notification when User3 resets her password by using SSPR.	○	○
User3 gets a notification when User3 resets her password by using SSPR.	○	○
User1 gets a notification when User2 resets the password of User4.	○	○

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Solution:

Answer Area

Statements	Yes	No
User1 gets a notification when User3 resets her password by using SSPR.	○	○
User3 gets a notification when User3 resets her password by using SSPR.	○	○
User1 gets a notification when User2 resets the password of User4.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
Notify all admins when other admins reset their passwords: Yes.

Box 2: No
Notify users on password resets: No.

Box 3: No

- Notify users on password resets

If this option is set to Yes, then users resetting their password receive an email notifying them that their password has been changed. The email is sent via the SSPR portal to their primary and alternate email addresses that are on file in Azure AD. No one else is notified of the reset event.

- Notify all admins when other admins reset their passwords

If this option is set to Yes, then all administrators receive an email to their primary email address on file in Azure AD. The email notifies them that another administrator has changed their password by using SSPR.

Example: There are four administrators in an environment. Administrator A resets their password by using SSPR. Administrators B, C, and D receive an email alerting them of the password reset.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-sspr-howitworks

https://docs.microsoft.com/en-us/azure/active-directory/authentication/tutorial-enable-sspr

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Question 108

Your company has an Azure subscription.

You enable multi-factor authentication (MFA) for all users.

The company's help desk reports an increase in calls from users who receive MFA requests while they work from the company's main office.

You need to prevent the users from receiving MFA requests when they sign in from the main office.

What should you do?

- ☐ From Conditional access in Azure Active Directory (Azure AD), create a named location.
- ☒ From the MFA service settings, create a trusted IP range.
- ☐ From Conditional access in Azure Active Directory (Azure AD), create a custom control.
- ☐ From Azure Active Directory (Azure AD), configure organizational relationships.

Explanation/Reference

Explanation:
The first thing you may want to do, before enabling Multi-Factor Authentication for any users, is to consider configuring some of the available settings. One of the most important features is a trusted IPs list. This will allow you to whitelist a range of IPs for your network. This way, when users are in the office, they will not get prompted with MFA, and when they take their devices elsewhere, they will. Here's how to do it:

Log in to your Azure Portal.
Navigate to Azure AD > Conditional Access > Named locations.
From the top toolbar select Configure MFA trusted IPs.

Reference:
https://www.kraftkennedy.com/implementing-azure-multi-factor-authentication/

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Question 109

HOTSPOT

You have an Azure logic app named App1 and an Azure Service Bus queue named Queue1.

You need to ensure that App1 can read messages from Queue1. App1 must authenticate by using Azure Active Directory (Azure AD).

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

NOTE: Each correct selection is worth one point.

Answer Area

On App1:

- Add a logic app step
- Configure Access control (IAM)
- Regenerate the access key
- Turn on the managed identity

On Queue1:

- Add a read-only lock
- Add a shared access policy
- Configure Access control (IAM)
- Modify the properties

Solution:

Answer Area

On App1:

- Add a logic app step
- Configure Access control (IAM)
- Regenerate the access key
- Turn on the managed identity

On Queue1:

- Add a read-only lock
- Add a shared access policy
- Configure Access control (IAM)
- Modify the properties

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Explanation/Reference

Explanation:

On App1: Turn on the managed identity
To use Service Bus with managed identities, you need to assign the identity the role and the appropriate scope. The procedure in this section uses a simple application that runs under a managed identity and accesses Service Bus resources.

Once the application is created, follow these steps:

1. Go to Settings and select Identity.
2. Select the Status to be On.
3. Select Save to save the setting.

On Queue1: Configure Access Control (IAM)
Azure Active Directory (Azure AD) authorizes access rights to secured resources through role-based access control (RBAC). Azure Service Bus defines a set of built-in RBAC roles that encompass common sets of permissions used to access Service Bus entities and you can also define custom roles for accessing the data.

Assign RBAC roles using the Azure portal
In the Azure portal, navigate to your Service Bus namespace. Select Access Control (IAM) on the left menu to display access control settings for the namespace. If you need to create a Service Bus namespace.
Select the Role assignments tab to see the list of role assignments. Select the Add button on the toolbar and then select Add role assignment.

Reference:
https://docs.microsoft.com/en-us/azure/service-bus-messaging/authenticate-application

https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-managed-service-identity

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Implement Solutions for Apps (17 questions)

Case Study (1 questions)

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.

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 severs 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.

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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 admin for the Azure subscription.
- Admin1 must receive email alerts regarding service outages.
- Ensure that a new user named User3 can create network objects for the Azure subscription.

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Question 128

HOTSPOT

You need to recommend a solution for App1. The solution must meet the technical requirements.

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

NOTE: Each correct selection is worth one point.

Answer Area

Number of virtual networks: [▼]
1
2
3

Number of subnets per virtual network: [▼]
1
2
3

Solution:

Answer Area

Number of virtual networks: [▼]
1
2
3

Number of subnets per virtual network: [▼]
1
2
3

Explanation/Reference

Explanation:

Box 1: 3
One virtual network for every tier

Box 2: 1

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Only one subnet for each tier, to minimize the number of open ports.

Scenario: 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.

Technical requirements:

- Move all the virtual machines for App1 to Azure.
- Minimize the number of open ports between the App1 tiers.

Question 111

Your network contains an on-premises Active Directory domain named contoso.com that contains a member server named Server1.

You have the accounts shown in the following table.

Name	Member of
CONTOSO\User1	Domain Admins
CONTOSO\User2	Domain Users
CONTOSO\User3	Enterprise Admin
SERVER1\User4	Users

You are installing Azure AD Connect on Server1.

You need to specify the account for Azure AD Connect synchronization. The solution must use the principle of least privilege.

Which account should you specify?

- ☒ CONTOSO\User2
- ☐ SERVER1\User4
- ☐ CONTOSO\User1
- ☐ CONTOSO\User3

Explanation/Reference

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Explanation:
The default Domain User permissions are sufficient

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/reference-connect-accounts-permissions

Question 112

HOTSPOT

A company runs multiple Windows virtual machines (VMs) in Azure.

The IT operations department wants to apply the same policies as they have for on-premises VMs to the VMs running in Azure, including domain administrator permissions and schema extensions.

You need to recommend a solution for the hybrid scenario that minimizes the amount of maintenance required.

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

NOTE: Each correct selection is worth one point.

Answer Area

Component	Action
Domain	Join the VMs to the existing on-premises domain. Join the VMs to a new domain controller VM in Azure. Join the VMs to Azure Active Directory Domain Services (AD DS).
Connectivity	Set up VPN connectivity. Set up HTTPS connectivity. Set up Azure Relay Service.

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Solution:

Answer Area

Component	Action
Domain	Join the VMs to the existing on-premises domain. Join the VMs to a new domain controller VM in Azure. Join the VMs to Azure Active Directory Domain Services (AD DS).
Connectivity	Set up VPN connectivity. Set up HTTPS connectivity. Set up Azure Relay Service.

Explanation/Reference

Explanation:

Box 1: Join the VMs to a new domain controller VM in Azure
Azure provides two solutions for implementing directory and identity services in Azure:

- (Used in this scenario) Extend your existing on-premises Active Directory infrastructure to Azure, by deploying a VM in Azure that runs AD DS as a Domain Controller. This architecture is more common when the on-premises network and the Azure virtual network (VNet) are connected by a VPN or ExpressRoute connection.
- Use Azure AD to create an Active Directory domain in the cloud and connect it to your on-premises Active Directory domain. Azure AD Connect integrates your on-premises directories with Azure AD.

Box 2: Set up VPN connectivity.
This architecture is more common when the on-premises network and the Azure virtual network (VNet) are connected by a VPN or ExpressRoute connection.

Reference:
https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/identity/

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Question 113

You have an Azure subscription that contains the web apps shown in the following table.

Name	Runtime stack
WebApp1	Java SE
WebApp2	Ruby 2.6
WebApp3	Python 3.7
WebApp4	ASP.NET V4.7

For which web app can you configure a WebJob?

- ☐ WebApp1
- ☒ WebApp4
- ☐ WebApp2
- ☐ WebApp3

Explanation/Reference

Explanation:
Publishing a .NET Core WebJob to App Service from Visual Studio uses the same tooling as publishing an ASP.NET Core app.

Reference:
https://docs.microsoft.com/en-us/azure/app-service/webjobs-dotnet-deploy-vs

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Question 114

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
COPY File1.txt /Folder1/
```

You then build the container image.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image.

Reference:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 115

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
XCOPY File1.txt C:\Folder1\
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image. Furthermore, the root directory is specified as '/' and not as 'C:/'.

Reference:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 116

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
ADD File1.txt C:/Folder1/
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image. The ADD command can also be used. However, the root directory is specified as '/' and not as 'C:/'.

Reference:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 117

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
Copy-Item File1.txt C:\Folder1\File1.txt
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image.

Reference:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 118

HOTSPOT

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

Name	Type	Size
ILB1	Internal load balancer	Basic
ELB1	External load balancer	Standard
AGW1	Azure Application Gateway that has web application firewall (WAF) enabled	Standard
AGW2	Azure Application Gateway	Standard_v2

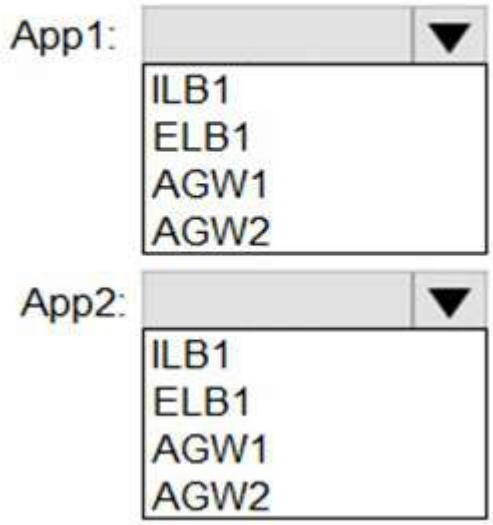
You need to deploy a load-balancing solution for two Azure web apps named App1 and App2 to meet the following requirements:

- App1 must support command injection protection.
- App2 must be able to use a static IP address.
- App1 must have a Service Level Agreement (SLA) of 99.99 percent.

Which resource should you use as the load-balancing solution for each app? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



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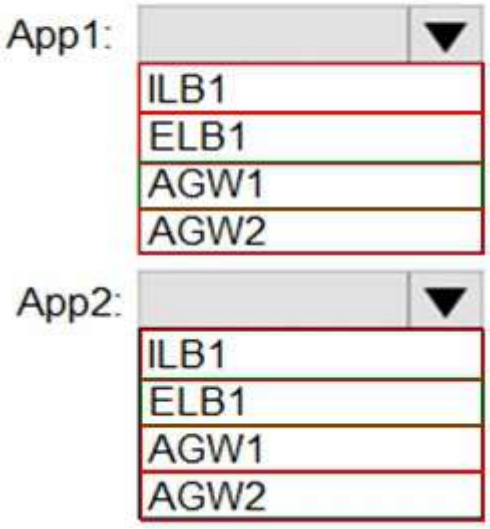
Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: AGW1
Azure Application Gateway offers a web application firewall (WAF) that 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.

Box 2: ELB1
Public IP addresses allow Internet resources to communicate inbound to Azure resources. Public IP addresses also enable Azure resources to communicate outbound to Internet and public-facing Azure services with an IP address assigned to the resource.

Note: In Azure Resource Manager, a public IP address is a resource that has its own properties. Some of the resources you can associate a public IP address resource with are:

- Virtual machine network interfaces
- Internet-facing load balancers
- VPN gateways
- Application gateways

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

https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-ip-addresses-overview-arm

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Question 119

You have the Azure virtual networks shown in the following table.

Name	Location
VNET1	East US
VNET2	East US
VNET3	Central US

All the virtual networks are peered.

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	VENT3

You deploy an Azure bastion named Bastion1 to VNET1.

To which virtual machines can you connect by using Bastion1?

- ☒ VM1 only
- ☐ VM1 and VM2 only
- ☐ VM2 and VM3 only
- ☐ VM1, VM2, and VM3

Explanation/Reference

Explanation:
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.

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

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Question 120

You have an Azure Kubernetes Service (AKS) cluster named Clus1 in a resource group named RG1.

An administrator plans to manage Clus1 from an Azure AD-joined device.

You need to ensure that the administrator can deploy the YAML application manifest file for a container application.

You install the Azure CLI on the device.

Which command should you run next?

- ☐ `kubectl get nodes`
- ☐ `az aks get-credentials --resource-group RG1 --name Clus1`
- ☐ `az aks install-cli`
- ☒ `kubectl apply –f app1.yaml`

Explanation/Reference

Explanation:
kubectl apply –f appl.yaml applies a configuration change to a resource from a file or stdin.

Incorrect Answers:
A: kubectl get nodes gets a list of all nodes.
B: az aks get-credentials gets access credentials for a managed Kubernetes cluster.
C: az aks install-cli download and install the Kubernetes command-line tool.

Reference:
https://kubernetes.io/docs/reference/kubectl/overview/

https://docs.microsoft.com/en-us/cli/azure/aks

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Question 121

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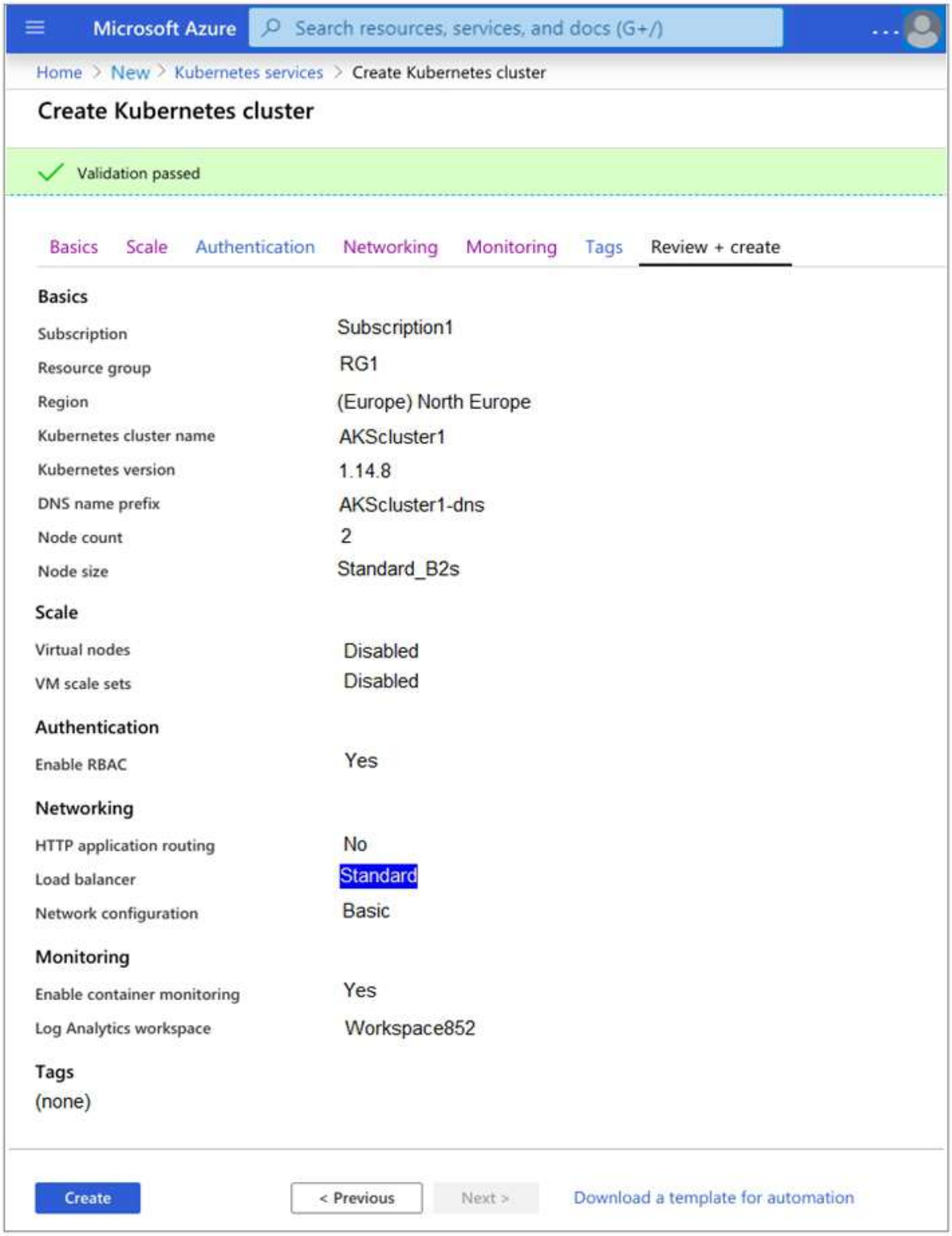
You create an Azure Kubernetes Service (AKS) cluster configured as shown in the exhibit. (Click the **Exhibit** tab.)



You deploy a containerized application named App1 to the agentPool node pool.

You need to create a containerized application named App2 that runs on four nodes of size DS3 v2.

What should you do first?

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- ☐ Upgrade the AKS cluster.
- ☒ Create a new node pool.
- ☐ Modify the autoscaling settings for the agentPool node.
- ☐ Enable virtual nodes for the AKS cluster.

Explanation/Reference

Explanation:
Changing the agent size is not allowed. In the future Microsft plans to support multiple node pools wherein you can create different pools with different VM sizes.

Reference:
https://github.com/Azure/AKS/issues/132

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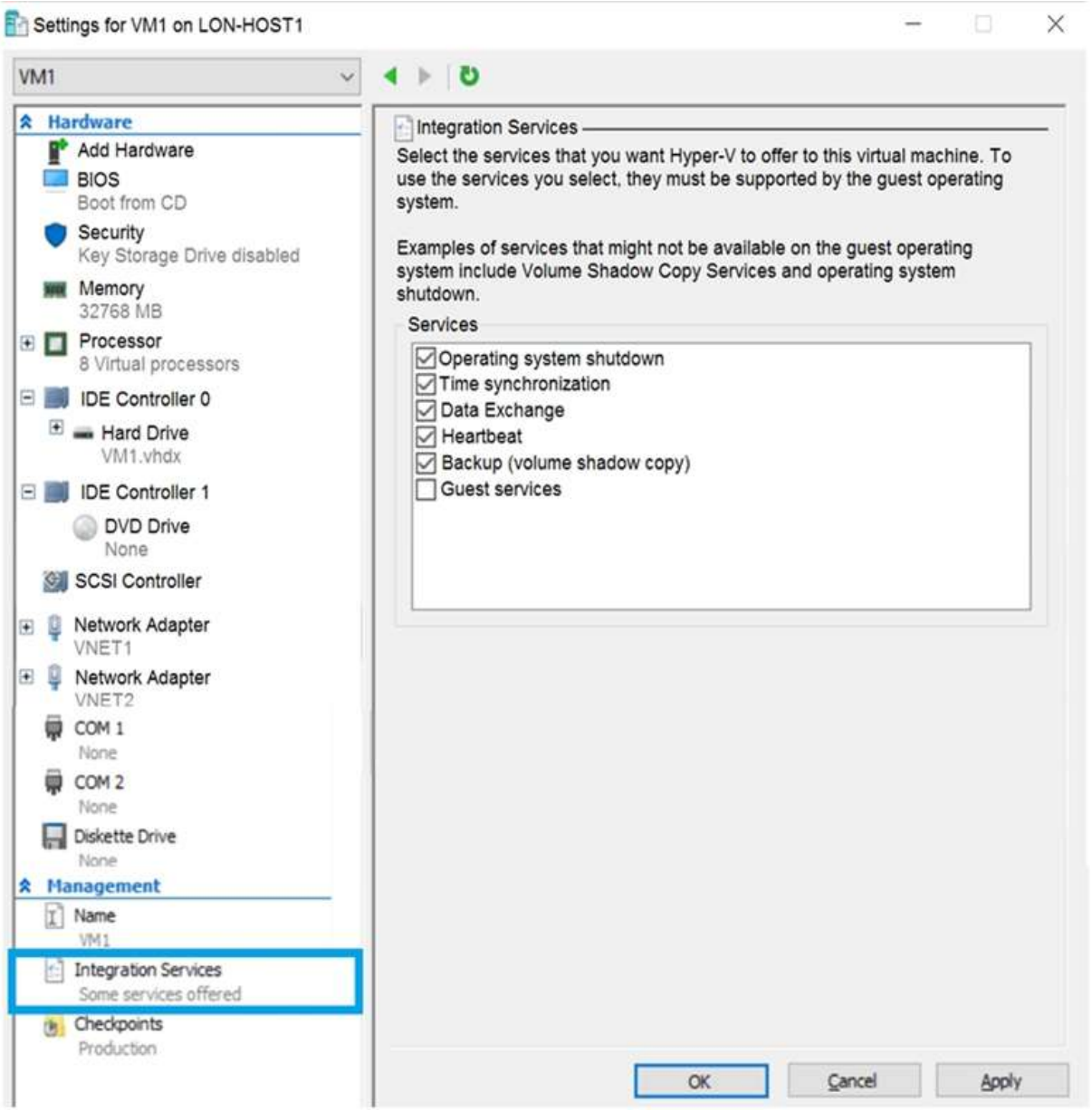
Question 122

You have an on-premises virtual machine named VM1 configured as shown in the following exhibit.



VM1 is started.

You need to create a new virtual machine image in Azure from VM1.

Which three actions should you perform before you create the new image? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ Run `Add-AzVhd` and specify a file share as the destination.
- ☒ Convert the disk type to **VHD**.
- ☐ Remove the Backup (volume shadow copy) integration service.
- ☒ Generalize VM1.

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- ☐ Reduce the amount of memory to 16 GB.
- ☒ Run `Add-AzVhd` and specify a blob service container as the destination.

Explanation/Reference

Explanation:
D: Sysprep removes all your personal account and security information, and then prepares the machine to be used as an image.

B, F: The Add-AzureVhd cmdlet uploads on-premises virtual hard disks, in .vhd file format, to a blob storage account as fixed virtual hard disks.

Reference:
https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/add-azurermvhd?view=azurermps-6.13.0

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/capture-image-resource

Question 123

You create an Azure Kubernetes Service (AKS) cluster and an Azure Container Registry.

You need to perform continuous deployments of a containerized application to the AKS cluster as soon as the image updates in the registry.

What should you use to perform the deployments?

- ☐ an Azure Automation runbook
- ☐ a kubectl script from a CRON job
- ☐ an Azure Resource Manager template
- ☒ an Azure Pipelines release pipeline

Explanation/Reference

Explanation:
You can implement a Continuous Deployment pipeline.

Example:

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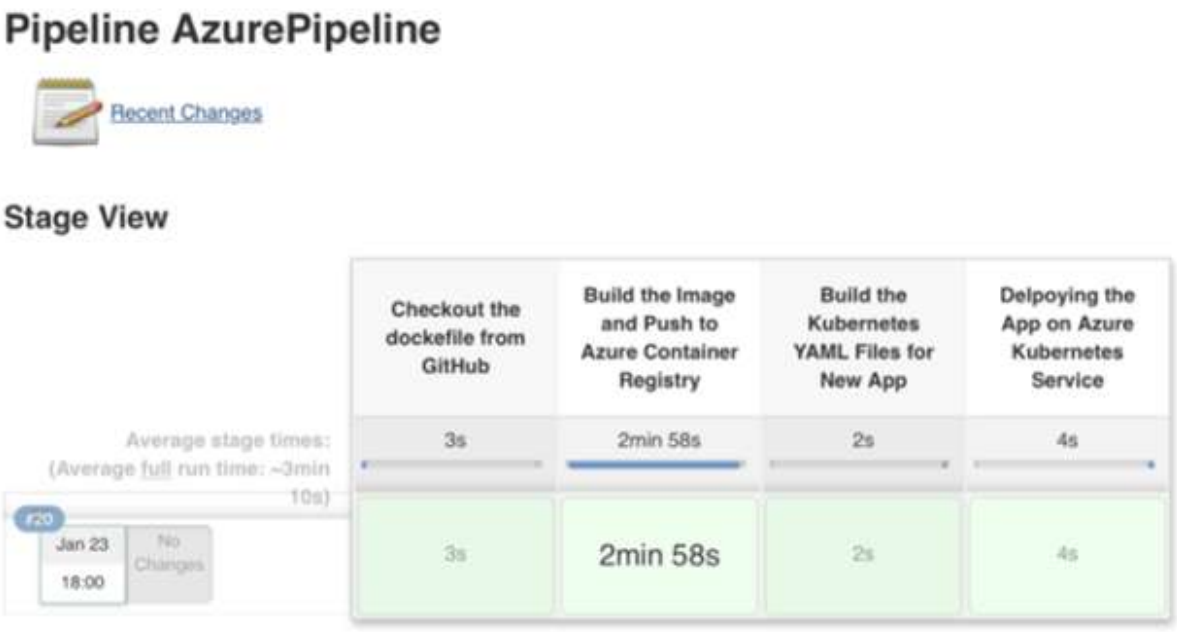

What the pipeline accomplishes :
Stage 1: The code gets pushed in the Github. The Jenkins job gets triggered automatically. The Dockerfile is checked out from Github.

Stage 2: Docker builds an image from the Dockerfile and then the image is tagged with the build number. Additionally, the latest tag is also attached to the image for the containers to use.

Stage 3: We have default deployment and service YAML files stored on the Jenkins server. Jenkins makes a copy of the default YAML files, make the necessary changes according to the build and put them in a separate folder.

Stage 4: kubectl was initially configured at the time of setting up AKS on the Jenkins server. The YAML files are fed to the kubectl util which in turn creates pods and services.

Reference:
https://medium.com/velotio-perspectives/continuous-deployment-with-azure-kubernetes-service-azure-container-registry-jenkins-ca337940151b

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Question 124

You have an Azure web app that runs in a Premium App Service plan.

Developers plan to update the app weekly.

You need to ensure that the app can be switched from the current version to the new version. The solution must meet the following requirements:

- Provide the developers with the ability to test the app in Azure prior to switching versions. Testing must use the same app instance.
- Ensure that the app version can be rolled back.
- Minimize downtime.

What should you do?

- ☒ Create a deployment slot.
- ☐ Copy the App Service plan.
- ☐ Add an instance of the app to the scale set.
- ☐ Create an Azure Active Directory (Azure AD) enterprise application.

Explanation/Reference

Explanation:
Azure Functions deployment slots allow your function app to run different instances called "slots". Slots are different environments exposed via a publicly available endpoint. One app instance is always mapped to the production slot, and you can swap instances assigned to a slot on demand.

There are a number of advantages to using deployment slots. The following scenarios describe common uses for slots:

- Different environments for different purposes: Using different slots gives you the opportunity to differentiate app instances before swapping to production or a staging slot.
- Easy fallbacks: After a swap with production, the slot with a previously staged app now has the previous production app. If the changes swapped into the production slot aren't as you expect, you can immediately reverse the swap to get your "last known good instance" back.
- Prewarming

Reference:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-deployment-slots

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Question 125

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that Admin1 can create access reviews in contoso.com.

Solution: You create an access package.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
You do not use access packages for Identity Governance. Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:
Conduct access reviews to ensure users still need roles

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

https://docs.microsoft.com/en-us/azure/active-directory/governance/entitlement-management-overview

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Question 126

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that Admin1 can create access reviews in contoso.com.

Solution: You purchase an Azure Directory Premium P2 license for contoso.com.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

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Question 127

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A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that Admin1 can create access reviews in contoso.com.

Solution: You assign the Global administrator role to Admin1.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

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Implement and Manage Data Platforms (5 questions)

Question 129

HOTSPOT

You have the Azure SQL Database servers shown in the following table.

Name	Elastic pool
sqlserver1	Pool1
sqlserver2	Pool1, Pool2

You have the Azure SQL databases shown in the following table.

Name	Azure SQL Database server	Elastic pool
DB1	sqlserver1	*None*
DB2	sqlserver1	Pool1
DB3	sqlserver2	Pool1
DB4	sqlserver2	Pool2

You create a failover group named failover1 that has the following settings:

- Primary server: sqlserver1
- Secondary server: sqlserver2
- Read/Write failover policy Automatic
- Read/Write grace period (hours): 1 hour

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
You can add DB1 to failover1.	○	○
You can add DB3 to failover1.	○	○
Sqlserver1 and sqlserver2 are in the same Azure region.	○	○

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Solution:

Answer Area

Statements	Yes	No
You can add DB1 to failover1.	○	○
You can add DB3 to failover1.	○	○
Sqlserver1 and sqlserver2 are in the same Azure region.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
DB1 is on the primary server

Box 2: No
DB3 is on the secondary server.

You can put all or several databases within an elastic pool into the same failover group.

Box 3: No
A failover group is a named group of databases managed by a single server or within a managed instance that can fail over as a unit to another region in case all or some primary databases become unavailable due to an outage in the primary region.

The secondary cannot be in the same region as the primary.

Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-overview

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Question 130

Your company plans to develop an application that will use a NoSQL database. The database will be used to store transactions and customer information by using JSON documents.

Which two Azure Cosmos DB APIs can developers use for the application? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☒ Gremlin (graph)
- ☐ MongoDB
- ☐ Cassandra
- ☒ Core (SQL)
- ☐ Azure Table

Explanation/Reference

Explanation:
D: The SQL API supports cross-document transactions expressed as JavaScript-stored procedures and triggers. Transactions are scoped to a single partition within each container and executed with ACID semantics as "all or nothing," isolated from other concurrently executing code and user requests. If exceptions are thrown through the server-side execution of JavaScript application code, the entire transaction is rolled back.

A: Azure Cosmos DB is Microsoft's globally distributed, multi-model database service. Where multi-model means Azure Cosmos DB supports multiple APIs and multiple data models, different APIs use different data formats for storage and wire protocol. For example, SQL uses JSON, MongoDB uses BSON, Table uses EDM, Cassandra uses CQL, Gremlin uses JSON format. As a result, we recommend using the same API for all access to the data in a given account.

Each API operates independently, except the Gremlin and SQL API, which are interoperable.

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

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Question 131

The developers at your company request that you create databases in Azure Cosmos DB as shown in the following table.

Name	Requirement
CosmosDB1	• Provides a throughput of 1,200 RU/s • Has multiple write regions • Uses the Core (SQL) API
CosmosDB2	• Provides a throughput of 800 RU/s • Uses the MongoDB API
CosmosDB3	• Provides a throughput of 1,200 RU/s • Has only one write region • Uses the Core (SQL) API
CosmosDB4	• Provides a throughput of 2,000 RU/s • Uses the MongoDB API

You need to create the Azure Cosmos DB databases to meet the developer request. The solution must minimize costs.

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

NOTE: Each correct selection is worth one point.

☐ Create three Azure Cosmos DB accounts, one for the databases that use the Core (SQL) API, one for CosmosDB2, and one for CosmosDB4.

☒ Create two Azure Cosmos DB accounts, one for CosmosDB2 and CosmosDB4 and one for CosmosDB1 and CosmosDB3.

☐ Create one Azure Cosmos DB account for each database.

☒ Create three Azure Cosmos DB accounts, one for the databases that use the MongoDB API, one for CosmosDB1, and one for CosmosDB3.

Explanation/Reference

Explanation:

Note:
Microsoft recommends using the same API for all access to the data in a given account.

One throughput provisioned container per subscription for SQL, Gremlin API, and Table accounts.
Up to three throughput provisioned collections per subscription for MongoDB accounts.
The throughput provisioned on an Azure Cosmos container is exclusively reserved for that container.
The container receives the provisioned throughput all the time.

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Incorrect Answers:
A: DB2 and DB4 can use the same account.
C: The most costly alternative.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/set-throughput#set-throughput-on-a-container

Question 132

You have three Azure SQL Database servers shown in the following table.

Name	Resource group	Location
sqlserver1	RG1	West US
sqlserver2	RG1	West US
sqlserver3	RG2	West US
sqlserver4	RG1	West Europe
sqlserver5	RG2	West Europe

You plan to specify sqlserver1 as the primary server in a failover group.

Which servers can be used as a secondary server?

- ☐ sqlserver4 and sqlserver5 only
- ☐ sqlserver2 and sqlserver3 only
- ☐ sqlserver2, sqlserver3, sqlserver4, and sqlserver5
- ☒ sqlserver2 and sqlserver4 only

Explanation/Reference

Explanation:
The Resource Group must be the same.
The secondary server can have another location.
The secondary server cannot be the same as the primary server.

Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/database/auto-failover-group-configure

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Question 133

You have two Azure SQL Database managed instances in different Azure regions.

You plan to configure the managed instances in an instance failover group.

What should you configure before you can add the managed instances to the instance failover group?

- ☐ an internal Azure Load Balancer instance that has managed instance endpoints in a backend pool
- ☐ Azure Private Link that has endpoints on two virtual networks
- ☐ an Azure Application Gateway that has managed instance endpoints in a backend pool
- ☒ a Site-to-Site VPN between the virtual networks that contain the instances

Explanation/Reference

Explanation:
For two managed instances to participate in a failover group, there must be either ExpressRoute or a gateway configured between the virtual networks of the two managed instances to allow network communication.
You create the two VPN gateways and connect them.

1. Create the gateway for the virtual network of your primary managed instance using the Azure portal.
2. Create the gateway for the virtual network of your secondary managed instance using the Azure portal.
3. Create a bidirectional connection between the two gateways of the two virtual networks.

Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/managed-instance/failover-group-add-instance-tutorial?tabs=azure-portal#4---create-a-primary-gateway

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Legacy AZ-300: Deploy and Configure Infrastructure (111 questions)

Case Study (4 questions)

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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.

Overview

Humongous Insurance is an insurance company that has three offices in Miami, Tokyo and Bangkok. Each office has 5.000 users.

Existing Environment

Active Directory Environment
Humongous Insurance has a single-domain Active Directory forest named humongousinsurance.com. The functional level of the forest is Windows Server 2012.

You recently provisioned an Azure Active Directory (Azure AD) tenant.

Network Infrastructure
Each office has a local data center that contains all the servers for that office. Each office has a dedicated connection to the Internet.

Each office has several link load balancers that provide access to the servers.

Active Directory Issue
Several users in humongousinsurance.com have UPNs that contain special characters.

You suspect that some of the characters are unsupported in Azure AD.

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Licensing Issue
You attempt to assign a license in Azure to several users and receive the following error message: "Licenses not assigned. License agreement failed for one user."

You verify that the Azure subscription has the available licenses.

Requirements

Planned Changes
Humongous Insurance plans to open a new office in Paris. The Paris office will contain 1,000 users who will be hired during the next 12 months. All the resources used by the Paris office users will be hosted in Azure.

Planned Azure AD Infrastructure
The on-premises Active Directory domain will be synchronized to Azure AD.

All client computers in the Paris office will be joined to an Azure AD domain.

Planned Azure Networking Infrastructure
You plan to create the following networking resources in a resource group named All_Resources:

- Default Azure system routes that will be the only routes used to route traffic
- A virtual network named Paris-VNet that will contain two subnets named Subnet1 and Subnet2
- A virtual network named ClientResources-VNet that will contain one subnet named ClientSubnet
- A virtual network named AllOffices-VNet that will contain two subnets named Subnet3 and Subnet4

You plan to enable peering between Paris-VNet and AllOffices-VNet. You will enable the **Use remote gateways** setting for the Paris-VNet peerings.

You plan to create a private DNS zone named humongousinsurance.local and set the registration network to the ClientResources-VNet virtual network.

Planned Azure Computer Infrastructure
Each subnet will contain several virtual machines that will run either Windows Server 2012 R2, Windows Server 2016, or Red Hat Linux.

Department Requirements
Humongous Insurance identifies the following requirements for the company's departments:

- Web administrators will deploy Azure web apps for the marketing department. Each web app will be added to a separate resource group. The initial configuration of the web apps will be identical. The web administrators have permission to deploy web apps to resource groups.
- During the testing phase, auditors in the finance department must be able to review all Azure costs from the past week.

Authentication Requirements
Users in the Miami office must use Azure Active Directory Seamless Single Sign-on (Azure AD Seamless SSO) when accessing resources in Azure.

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Question 245

HOTSPOT

You are evaluating the connectivity between the virtual machines after the planned implementation of the Azure networking infrastructure.

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

Answer Area

Statements	Yes	No
The virtual machines on Subnet1 will be able to connect to the virtual machines on Subnet3.	○	○
The virtual machines on ClientSubnet will be able to connect to the Internet.	○	○
The virtual machines on Subnet3 and Subnet4 will be able to connect to the Internet.	○	○

Solution:

Answer Area

Statements	Yes	No
The virtual machines on Subnet1 will be able to connect to the virtual machines on Subnet3.	○	○
The virtual machines on ClientSubnet will be able to connect to the Internet.	○	○
The virtual machines on Subnet3 and Subnet4 will be able to connect to the Internet.	○	○

Explanation/Reference

Explanation:

Once the VNets are peered, all resources on one VNet can communicate with resources on the other peered VNets. You plan to enable peering between Paris-VNet and AllOffices-VNet. Therefore VMs on Subnet1, which is on Paris-VNet and VMs on Subnet3, which is on AllOffices-VNet will be able to connect to each other.

All Azure resources connected to a VNet have outbound connectivity to the Internet by default. Therefore VMs on ClientSubnet, which is on ClientResources-VNet will have access to the Internet;

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and VMs on Subnet3 and Subnet4, which are on AllOffices-VNet will have access to the Internet.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-peering-overview

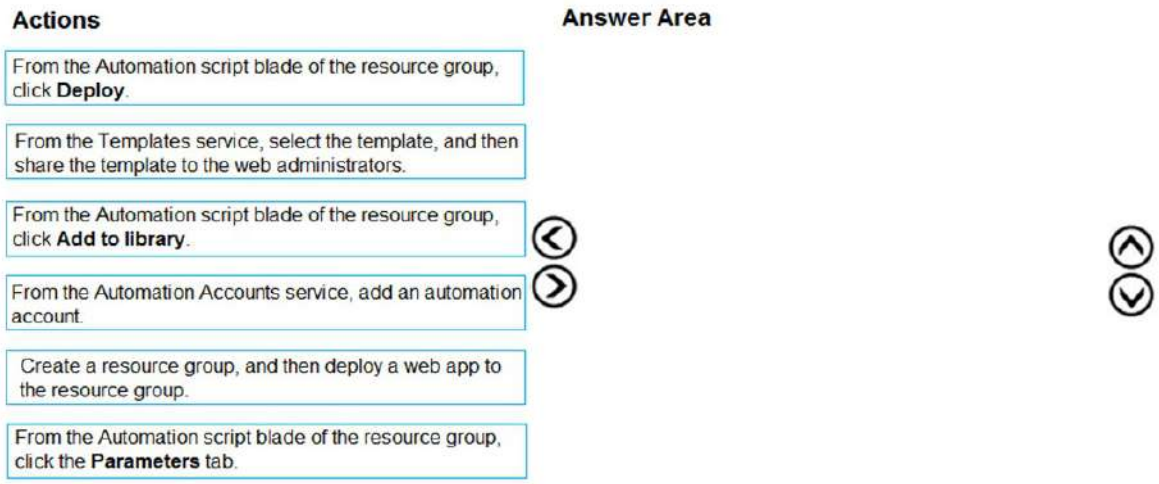
https://docs.microsoft.com/en-us/azure/networking/networking-overview#internet-connectivity

Question 246

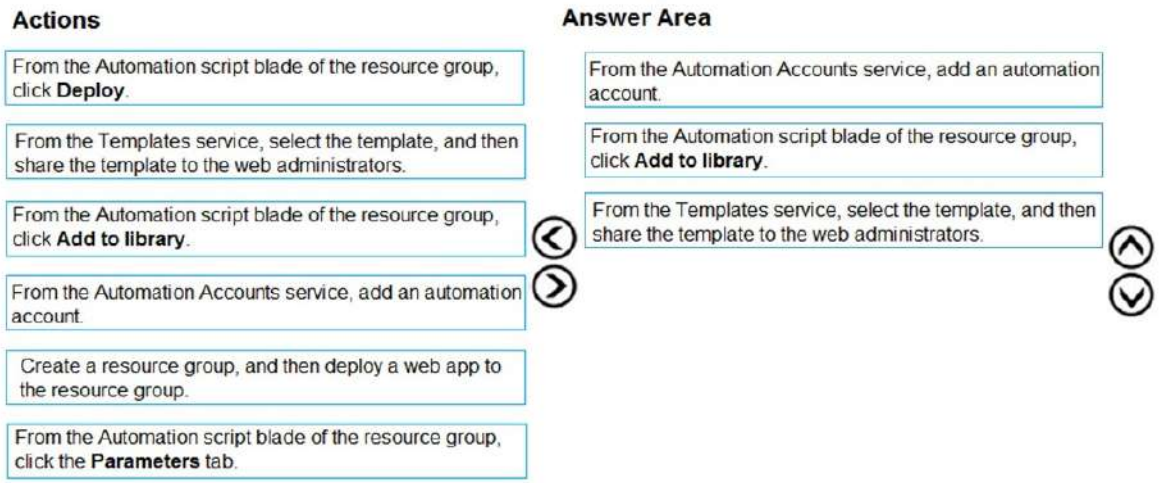
DRAG DROP

You need to prepare the environment to ensure that the web administrators can deploy the web apps as quickly as possible.

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



Solution:



Explanation/Reference

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Explanation:

Step 1:
First you create a storage account using the Azure portal.

Step 2:
Select Automation options at the bottom of the screen. The portal shows the template on the Template tab.

Add the storage account to the library.

Step 3:
Share the template.

Scenario: Web administrators will deploy Azure web apps for the marketing department. Each web app will be added to a separate resource group. The initial configuration of the web apps will be identical. The web administrators have permission to deploy web apps to resource groups.

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-quickstart-create-templates-use-the-portal

Question 247

You need to resolve the licensing issue before you attempt to assign the license again.

What should you do?

- ☐ From the Directory role blade, modify the directory role
- ☐ From the Groups blade, invite the user accounts to a new group
- ☒ From the Profile blade, modify the usage location

Explanation/Reference

Explanation:
License cannot be assigned to a user without a usage location specified.

Scenario: Licensing Issue
You attempt to assign a license in Azure to several users and receive the following error message: "Licenses not assigned. License agreement failed for one user."

You verify that the Azure subscription has the available licenses.

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Question 248

You need to define a custom domain name for Azure AD to support the planned infrastructure.

Which domain name should you use?

- ☐ ad.humongousinsurance.com
- ☐ humongousinsurance.local
- ☒ humongousinsurance.com
- ☐ humongousinsurance.onmicrosoft.com

Explanation/Reference

Explanation:
Every Azure AD directory comes with an initial domain name in the form of domainname.onmicrosoft.com. The initial domain name cannot be changed or deleted, but you can add your corporate domain name to Azure AD as well. For example, your organization probably has other domain names used to do business and users who sign in using your corporate domain name. Adding custom domain names to Azure AD allows you to assign user names in the directory that are familiar to your users, such as ‘alice@contoso.com.’ instead of 'alice@domain name.onmicrosoft.com'.

Scenario:
Network Infrastructure: Each office has a local data center that contains all the servers for that office. Each office has a dedicated connection to the Internet.

Humongous Insurance has a single-domain Active Directory forest named humongousinsurance.com

Planned Azure AD Infrastructure: The on-premises Active Directory domain will be synchronized to Azure AD.

References:
https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/add-custom-domain

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Case Study (1 questions)

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Case study

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Overview

Contoso, Ltd. is a consulting company that has a main office in Montreal and two branch offices in Seattle and New York.

The Montreal office has 2,000 employees. The Seattle office has 1,000 employees. The New York office has 200 employees.

All the resources used by Contoso are hosted on-premises.

Contoso creates a new Azure subscription. The Azure Active Directory (Azure AD) tenant uses a domain named contoso.onmicrosoft.com. The tenant uses the P1 pricing tier.

Existing Environment

The network contains an Active Directory forest named contoso.com. All domain controllers are configured as DNS servers and host the contoso.com DNS zone.

Contoso has finance, human resources, sales, research, and information technology **department**s. Each department has an organizational unit (OU) that contains all the accounts of that respective department. All the user accounts have the department attribute set to their respective department. New users are added frequently.

Contoso.com contains a user named User1.

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All the offices connect by using private links.

Contoso has data centers in the Montreal and Seattle offices. Each data center has a firewall that can be configured as a VPN device.

All infrastructure servers are virtualized. The virtualization environment contains the servers in the following table.

Name	Role	Contains virtual machine
Server1	VMWare vCenter server	VM1
Server2	Hyper-V host	VM2

Contoso uses two web applications named App1 and App2. Each instance on each web application requires 1GB of memory.

The Azure subscription contains the resources in the following table.

Name	Type
VNet1	Virtual network
VM3	Virtual machine
VM4	Virtual machine

The network security team implements several network security groups (NSGs).

Planned Changes

Contoso plans to implement the following changes:

- Deploy Azure ExpressRoute to the Montreal office.
- Migrate the virtual machines hosted on Server1 and Server2 to Azure.
- Synchronize on-premises Active Directory to Azure Active Directory (Azure AD).
- Migrate App1 and App2 to two Azure web apps named WebApp1 and WebApp2.

Technical Requirements

Contoso must meet the following technical requirements:

- Ensure that WebApp1 can adjust the number of instances automatically based on the load and can scale up to five instances.
- Ensure that VM3 can establish outbound connections over TCP port 8080 to the applications servers in the Montreal office.
- Ensure that routing information is exchanged automatically between Azure and the routers in the Montreal office.
- Enable Azure Multi-Factor Authentication (MFA) for the users in the finance department only.
- Ensure that webapp2.azurewebsites.net can be accessed by using the name app2.contoso.com
- Connect the New York office to VNet1 over the Internet by using an encrypted connection.
- Create a workflow to send an email message when the settings of VM4 are modified.

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- Create a custom Azure role named Role1 that is based on the Reader role.
- Minimize costs whenever possible.

Question 249

HOTSPOT

You need to meet the connection requirements for the New York office.

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

NOTE: Each correct selection is worth one point.

Answer Area

From the Azure portal:	Create an ExpressRoute circuit only. Create a virtual network gateway only. Create a virtual network gateway and a local network gateway. Create an ExpressRoute circuit and an on-premises data gateway. Create a virtual network gateway and an on-premises data gateway.
In the New York office:	Deploy ExpressRoute. Deploy a DirectAccess server. Implement a Web Application Proxy. Configure a site-to-site VPN connection.

Solution:

Answer Area

From the Azure portal:	Create an ExpressRoute circuit only. Create a virtual network gateway only. Create a virtual network gateway and a local network gateway. Create an ExpressRoute circuit and an on-premises data gateway. Create a virtual network gateway and an on-premises data gateway.
In the New York office:	Deploy ExpressRoute. Deploy a DirectAccess server. Implement a Web Application Proxy. Configure a site-to-site VPN connection.

Explanation/Reference

Explanation:

Box 1: Create a virtual network gateway and a local network gateway.
Azure VPN gateway. The VPN gateway service enables you to connect the VNet to the on-premises network through a VPN appliance. For more information, see Connect an on-premises network to a

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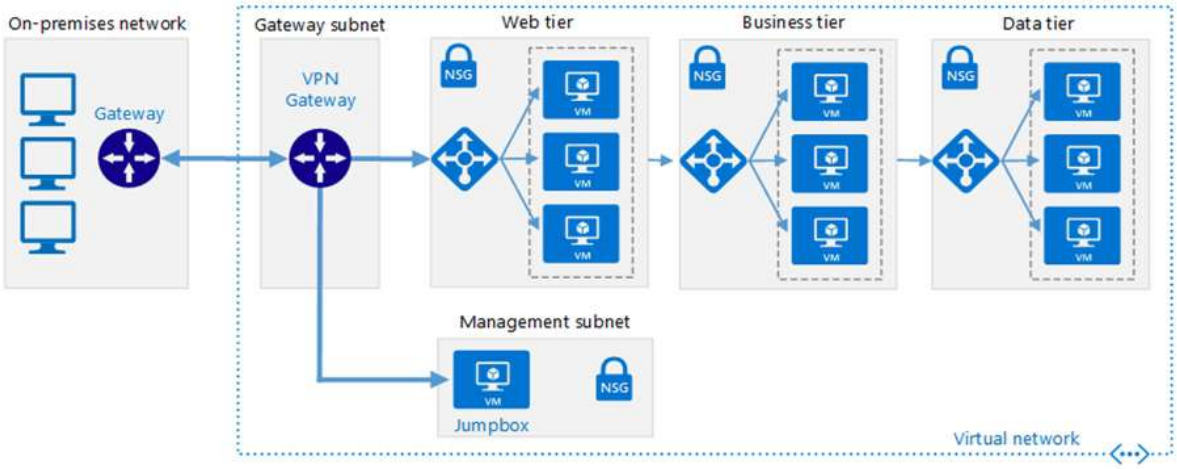
Microsoft Azure virtual network. The VPN gateway includes the following elements:



Scenario: Connect the New York office to VNet1 over the Internet by using an encrypted connection.

Incorrect Answers:
Azure ExpressRoute: Established between your network and Azure, through an ExpressRoute partner. This connection is private. Traffic does not go over the internet.

References:
https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/vpn

- Virtual network gateway. A resource that provides a virtual VPN appliance for the VNet. It is responsible for routing traffic from the on-premises network to the VNet.
- Local network gateway. An abstraction of the on-premises VPN appliance. Network traffic from the cloud application to the on-premises network is routed through this gateway.
- Connection. The connection has properties that specify the connection type (IPSec) and the key shared with the on-premises VPN appliance to encrypt traffic.
- Gateway subnet. The virtual network gateway is held in its own subnet, which is subject to various requirements, described in the Recommendations section below.

Box 2: Configure a site-to-site VPN connection
On premises create a site-to-site connection for the virtual network gateway and the local network gateway.

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Case Study (1 questions)

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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.

Overview

ADatum Corporation is a financial company that has two main offices in New York and Los Angeles. ADatum has a subsidiary named Fabrikam, Inc. that shares the Los Angeles office.

ADatum is conducting an initial deployment of Azure services to host new line-of-business applications and is preparing to migrate its existing on-premises workloads to Azure.

ADatum uses Microsoft Exchange Online for email.

Existing Environment

On-Premises Environment

The on-premises workloads run on virtual machines hosted in a VMware vSphere 6 infrastructure. All the virtual machines are members of an Active Directory forest named adatum.com and run Windows Server 2016.

The New York office uses an IP address space of 10.0.0.0/16. The Los Angeles office uses an IP address space of 10.10.0.0/16.

The offices connect by using a VPN provided by an ISP. Each office has one Azure ExpressRoute circuit that provides access to Azure services and Microsoft Online Services. Routing is implemented by using Microsoft peering.

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The New York office has a virtual machine named VM1 that has the vSphere console installed.

Azure Environment

You provision the Azure infrastructure by using the Azure portal. The infrastructure contains the resources shown in the following table.

Name	Type	Azure region
ASRV1	Azure Site Recovery vault	East US
ASRV2	Azure Site Recovery vault	West US
ASE1	Azure App Service Environment	East US
AG1	Azure Application Gateway (internal)	East US
AG2	Azure Application Gateway (Internet-facing)	West US
ER1	ExpressRoute circuit	East US
ER2	ExpressRoute circuit	West US

AG1 has two backend pools named Pool11 and Pool12. AG2 has two backend pools named Pool21 and Pool22.

Requirements

Planned Changes

ADatum plans to migrate the virtual machines from the New York office to the East US Azure region by using Azure Site Recovery.

Infrastructure Requirements

ADatum identifies the following infrastructure requirements:
- A new web app named App1 that will access third-parties for credit card processing must be deployed.
- A newly developed API must be implemented as an Azure function named App2. App2 will use a blob storage trigger. App2 must process new blobs immediately.
- The Azure infrastructure and the on-premises infrastructure must be prepared for the migration of the VMware virtual machines to Azure.
- The sizes of the Azure virtual machines that will be used to migrate the on-premises workloads must be identified.
- All migrated and newly deployed Azure virtual machines must be joined to the adatum.com domain.
- AG1 must load balance incoming traffic in the following manner:
- http://corporate.adatum.com/video/* will be load balanced across Pool11.
- http://corporate.adatum.com/images/* will be load balanced across Pool12.
- AG2 must load balance incoming traffic in the following manner:
- http://www.adatum.com will be load balanced across Pool21.
- http://fabrikam.com will be load balanced across Pool22.
- ER1 must route traffic between the New York office and platform as a service (PaaS) services in the East US Azure region, as long as ER1 is available.
- ER2 must route traffic between the Los Angeles office and the PaaS services in the West US region,

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as long as ER2 is available.
- ER1 and ER2 must be configured to fail over automatically.

Application Requirements

App2 must be available to connect directly to the private IP addresses of the Azure virtual machines. App2 will be deployed directly to an Azure virtual network.

Inbound and outbound communications to App1 must be controlled by using NSGs.

Pricing Requirements

ADatum identifies the following pricing requirements:

- The cost of App1 and App2 must be minimized
- The transactional charges of Azure Storage accounts must be minimized

Question 250

What should you create to configure AG2?

- ☒ multi-site listeners
- ☐ URL path-based routing rules
- ☐ basic routing rules
- ☐ an additional public IP address
- ☐ basic listeners

Explanation/Reference

Explanation:
- AG2 must load balance incoming traffic in the following manner:
- http://www.adatum.com will be load balanced across Pool21.
- http://fabrikam.com will be load balanced across Pool22.

You need to configure an Azure Application Gateway with multi-site listeners to direct different URLs to different pools.

References:
https://docs.microsoft.com/en-us/azure/application-gateway/multiple-site-overview

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Case Study (4 questions)

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.

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:

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- 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 admin for the Azure subscription.
- Admin1 must receive email alerts regarding service outages.
- Ensure that a new user named User3 can create network objects for the Azure subscription.

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Question 251

You need to implement a backup solution for App1 after the application is moved.

What should you create first?

- ☐ an Azure Backup Server
- ☒ a Recovery Services vault
- ☐ a backup policy
- ☐ a recovery plan

Explanation/Reference

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

You can back up Azure VMs using a couple of methods:

- Single Azure VM: You can back up an Azure VM directly from the VM settings.
- Multiple Azure VMs: You can set up a Recovery Services vault and configure backup for multiple Azure VMs.

References:
https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look-arm

Question 252

HOTSPOT

You need to identify the storage requirements for Contoso.

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
Contoso requires a storage account that supports Blob storage.	○	○
Contoso requires a storage account that supports Azure Table storage.	○	○
Contoso requires a storage account that supports Azure File Storage.	○	○

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Solution:

Answer Area

Statements	Yes	No
Contoso requires a storage account that supports Blob storage.	○	○
Contoso requires a storage account that supports Azure Table storage.	○	○
Contoso requires a storage account that supports Azure File Storage.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
Scenario: Move the existing product blueprint files to Azure Blob storage.

Scenario: Use unmanaged standard storage for the hard disks of the virtual machines.
Page blobs are optimized for writes at random locations within a blob. They also support Unmanaged Disks.

Scenario:
SQL Server Data Files in Microsoft Azure enables native support for SQL Server database files stored as blobs. It allows you to create a database in SQL Server running in on-premises or in a virtual machine in Microsoft Azure with a dedicated storage location for your data in Microsoft Azure Blob storage.

Box 2: No

Box 3: No

References:
https://docs.microsoft.com/en-us/sql/relational-databases/databases/sql-server-data-files-in-microsoft-azure

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Question 253

You need to move the blueprint files to Azure.

What should you do?

- ☐ Use the Azure Import/Export service.
- ☐ Use Azure Storage Explorer to copy the files.
- ☐ Generate a shared access signature (SAS). Map a drive, and then copy the files by using File Explorer.
- ☒ Generate an access key. Map a drive, and then copy the files by using File Explorer.

Explanation/Reference

Explanation:
Scenario: Copy the blueprint files to Azure over the Internet.
To mount an Azure file share, you will need the primary (or secondary) storage key. SAS keys are not currently supported for mounting.

Incorrect Answers:
A: Azure Import/Export service is used to securely import large amounts of data to Azure Blob storage and Azure Files by shipping disk drives to an Azure datacenter.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows

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Question 254

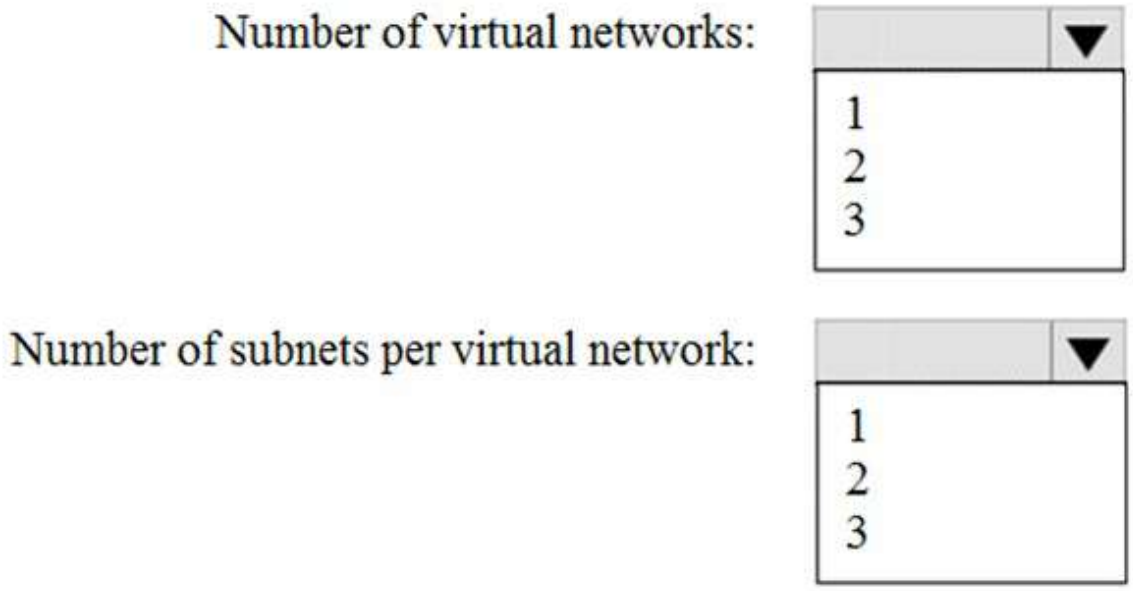
HOTSPOT

You need to recommend a solution for App1. The solution must meet the technical requirements.

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

NOTE: Each correct selection is worth one point.

Answer Area



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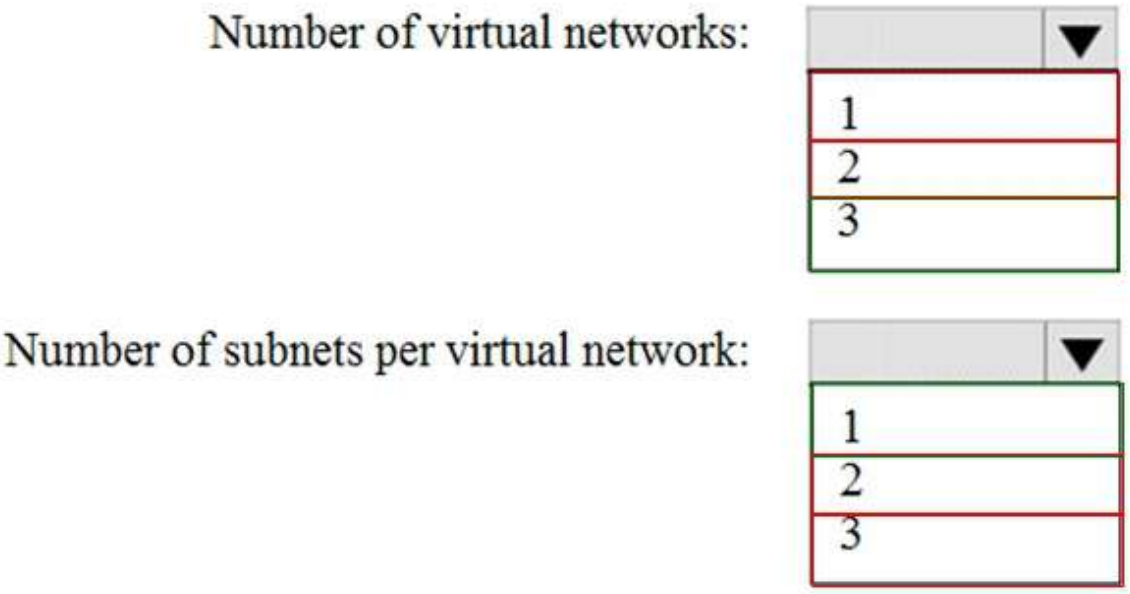
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: 3
One virtual network for every tier

Box 2: 1
Only one subnet for each tier, to minimize the number of open ports.

Scenario: 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.

Technical requirements:

- Move all the virtual machines for App1 to Azure.
- Minimize the number of open ports between the App1 tiers.

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Question 134

HOTSPOT

You have an Azure subscription named Subscription1. Subscription1 contains the resources in the following table:

Name	Type
RG1	Resource group
RG2	Resource group
VNet1	Virtual network
VNet2	Virtual network

VNet1 is in RG1. VNet2 is in RG2. There is no connectivity between VNet1 and VNet2. An administrator named Admin1 creates an Azure virtual machine VM1 in RG1. VM1 uses a disk named Disk1 and connects to VNet1. Admin1 then installs a custom application in VM1.

You need to move the custom application to VNet2. The solution must minimize administrative effort.

Which two actions should you perform? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

First action: [ ]

- Create a network interface in RG2.
- Detach a network interface.
- Delete VM1.
- Move a network interface to RG2.

Second action: [ ]

- Attach a network interface.
- Create a network interface in RG2.
- Create a new virtual machine.
- Move VM1 to RG2.

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Answer Area

First action:

- Create a network interface in RG2.
- Detach a network interface.
- Delete VM1.
- Move a network interface to RG2.

Second action:

- Attach a network interface.
- Create a network interface in RG2.
- Create a new virtual machine.
- Move VM1 to RG2.

Solution:

Explanation/Reference

Explanation:

We cannot just move a virtual machine between networks. What we need to do is identify the disk used by the VM, delete the VM itself while retaining the disk, and recreate the VM in the target virtual network and then attach the original disk to it.

Reference:
https://blogs.technet.microsoft.com/canitpro/2014/06/16/step-by-step-move-a-vm-to-a-different-vnet-on-azure/

https://4sysops.com/archives/move-an-azure-vm-to-another-virtual-network-vnet/#migrate-an-azure-vm-between-vnets

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Question 135

You have an Azure subscription named Subscription1 that is used by several departments at your company. Subscription1 contains the resources in the following table.

Name	Type
Storage1	Storage account
RG1	Resource group
Container1	Blob container
Share1	File share

Another administrator deploys a virtual machine named VM1 and an Azure Storage account named Storage2 by using a single Azure Resource Manager template.

You need to view the template used for the deployment.

From the Azure Portal, for which blade can you view the template that was used for the deployment?

- ☐ Container1
- ☐ VM1
- ☐ Storage2
- ☒ RG1

Explanation/Reference

Explanation:
You can verify the deployment by exploring the resource group from the Azure portal

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/deployment-manager-tutorial

https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-tutorial-create-first-template?tabs=azure-powershell

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Question 136

You have two subscriptions named Subscription1 and Subscription2. Each subscription is associated to a different Azure AD tenant.

Subscription1 contains a virtual network named VNet1. VNet1 contains an Azure virtual machine named VM1 and has an IP address space of 10.0.0.0/16.

Subscription2 contains a virtual network named VNet2. Vnet2 contains an Azure virtual machine named VM2 and has an IP address space of 10.10.0.0/24.

You need to connect VNet1 to VNet2.

What should you do first?

- ☐ Modify the IP address space of VNet2.
- ☐ Move VM1 to Subscription2.
- ☒ Provision virtual network gateways.
- ☐ Move VNet1 to Subscription2.

Explanation/Reference

Explanation:
We require a virtual network gateway for VNet-to-VNet connectivity.

Incorrect Answers:
A: There is no need to modify the address space. If you update the address space for one VNet, the other VNet automatically knows to route to the updated address space.

Reference:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-vnet-vnet-cli

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Question 137

You have an Azure Active Directory (Azure AD) tenant.

You have an existing Azure AD conditional access policy named Policy1. Policy1 enforces the use of Azure AD-joined devices when members of the Global Administrators group authenticate to Azure AD from untrusted locations.

You need to ensure that members of the Global Administrators group will also be forced to use multi-factor authentication when authenticating from untrusted locations.

What should you do?

- ☐ From the Azure portal, modify session control of Policy1.
- ☐ From multi-factor authentication page, modify the user settings.
- ☐ From multi-factor authentication page, modify the service settings.
- ☒ From the Azure portal, modify grant control of Policy1.

Explanation/Reference

Explanation:
We need to modify the grant control of Policy1.

The grant control can trigger enforcement of one or more controls.

- Require multi-factor authentication (Azure Multi-Factor Authentication)
- Require device to be marked as compliant (Intune)
- Require Hybrid Azure AD joined device
- Require approved client app
- Require app protection policy

Note: It is now possible to explicitly apply the Require MFA for admins rule.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/conditional-access/untrusted-networks

https://docs.microsoft.com/en-us/azure/active-directory/conditional-access/concept-baseline-protection

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Question 138

HOTSPOT

You plan to deploy five virtual machines to a virtual network subnet.

Each virtual machine will have a public IP address and a private IP address.

Each virtual machine requires the same inbound and outbound security rules.

What is the minimum number of network interfaces and network security groups that you require? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Minimum number of network interfaces: [ ]
- 5
- 10
- 15
- 20

Minimum number of network security groups: [ ]
- 1
- 2
- 5
- 10

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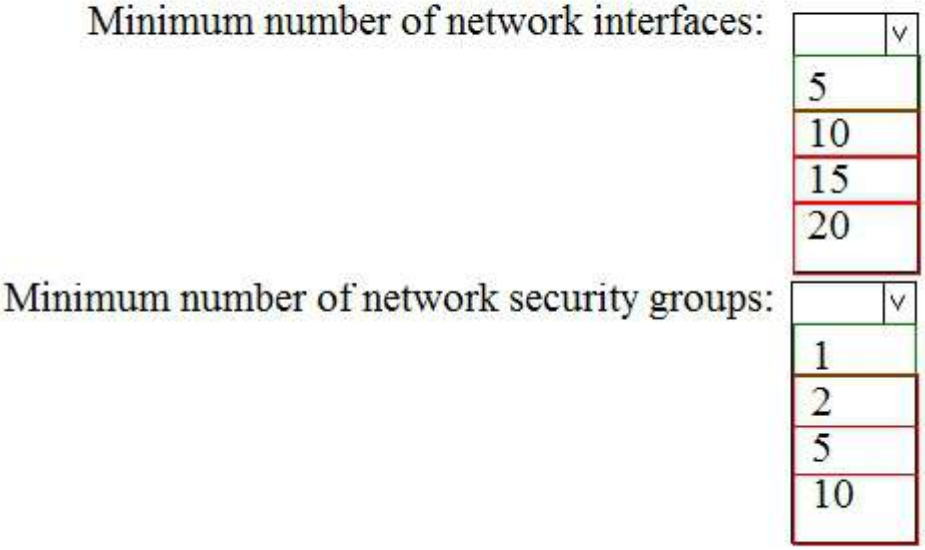
Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: 5
We have five virtual machines. Each virtual machine will have a public IP address and a private IP address. Each will require a network interface.

Box 2: 1
Each virtual machine requires the same inbound and outbound security rules. We can add tem to one group.

Reference:
https://blogs.msdn.microsoft.com/igorpag/2016/05/14/azure-network-security-groups-nsg-best-practices-and-lessons-learned/

https://docs.microsoft.com/en-us/azure/virtual-network/security-overview

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Question 139

You have an Azure subscription named Subscription1 that contains an Azure virtual machine named VM1. VM1 is in a resource group named RG1.

VM1 runs services that will be used to deploy resources to RG1.

You need to ensure that a service running on VM1 can manage the resources in RG1 by using the identity of VM1.

What should you do first?

- ☐ From the Azure portal, modify the Access control (IAM) settings of RG1.
- ☐ From the Azure portal, modify the Policies settings of RG1.
- ☐ From the Azure portal, modify the Access control (IAM) settings of VM1.
- ☒ From the Azure portal, modify the value of the Managed Service Identity option for VM1.

Explanation/Reference

Explanation:
Through a create process, Azure creates an identity in the Azure AD tenant that's trusted by the subscription in use. After the identity is created, the identity can be assigned to one or more Azure service instances.

Reference:
https://docs.microsoft.com/en-us/azure/app-service/overview-managed-identity

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

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Question 140

HOTSPOT

You have an Azure subscription named Subscription1. Subscription1 contains the virtual networks in the following table:

Name	Address space	Subnet name	Subnet address range
VNet1	10.1.0.0/16	Subnet1	10.1.1.0/24
VNet2	10.10.0.0/16	Subnet2	10.10.1.0/24
VNet3	172.16.0.0/16	Subnet3	172.16.1.0/24

Subscription1 contains the virtual machines in the following table:

Name	Network	Subnet	IP address
VM1	VNet1	Subnet1	10.1.1.4
VM2	VNet2	Subnet2	10.10.1.4
VM3	VNet3	Subnet3	172.16.1.4

The firewalls on all the virtual machines are configured to allow all ICMP traffic.

You add the peerings in the following table:

Virtual network	Peering network
VNet1	VNet3
VNet2	VNet3
VNet3	VNet1

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
VM1 can ping VM3.	○	○
VM2 can ping VM3.	○	○
VM2 can ping VM1.	○	○

Answer Area

Statements	Yes	No
VM1 can ping VM3.	○	○
VM2 can ping VM3.	○	○
VM2 can ping VM1.	○	○

Solution:

Explanation/Reference

Explanation:

VM1 on VNet1 can ping VM3 on VNet3 as VNet1 and VNet3 are peered.

VM2 onVNet2 can ping VM3 on VNet3 as VNet2 and VNet3 are peered.

VM2 cannot ping VM1 as there is not peering between VNet2 and VNet1.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-connect-virtual-networks-portal

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Question 141

HOTSPOT

You have an Azure Active Directory (Azure AD) tenant.

You need to create a conditional access policy that requires all users to use multi-factor authentication when they access the Azure portal.

Which three settings should you configure? To answer, select the appropriate settings in the answer area.

NOTE: Each correct selection is worth one point.

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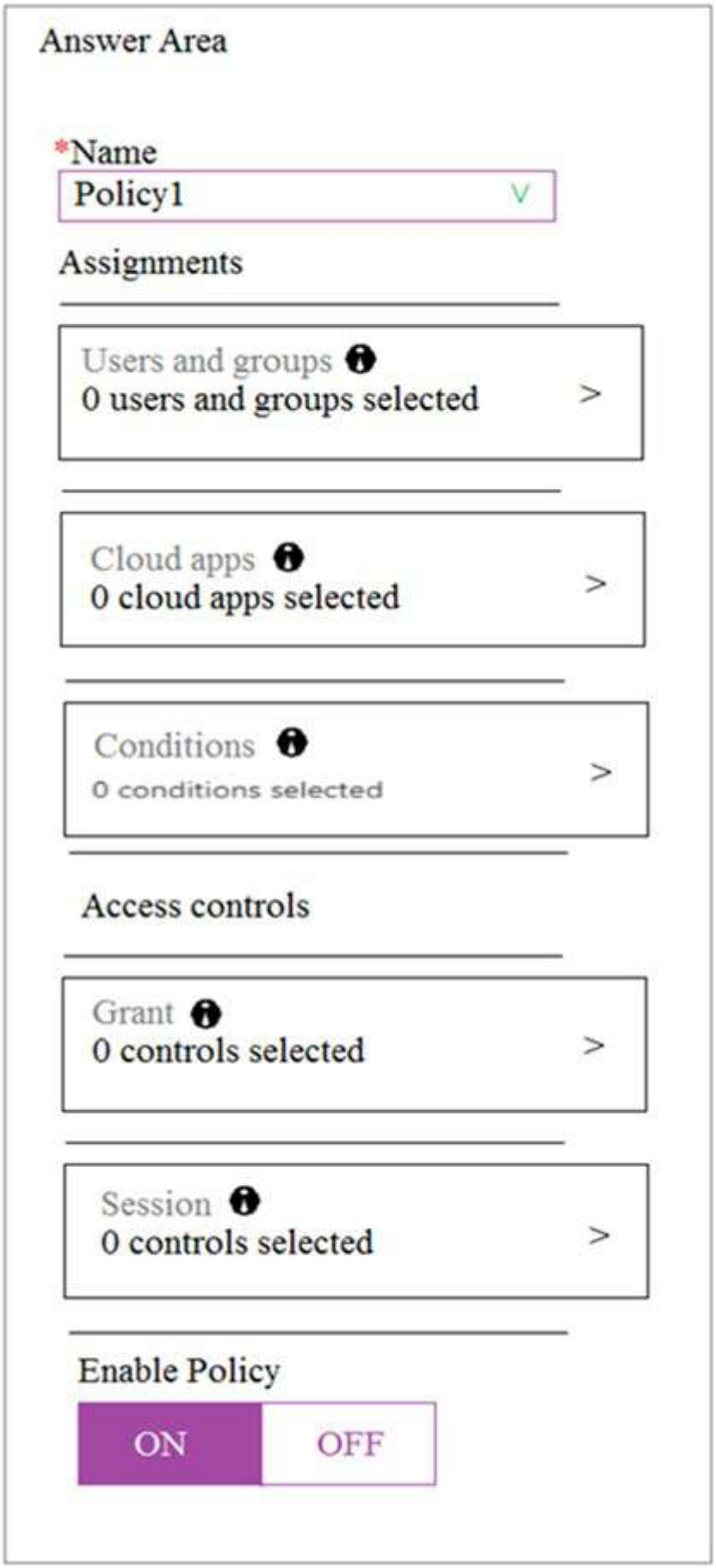

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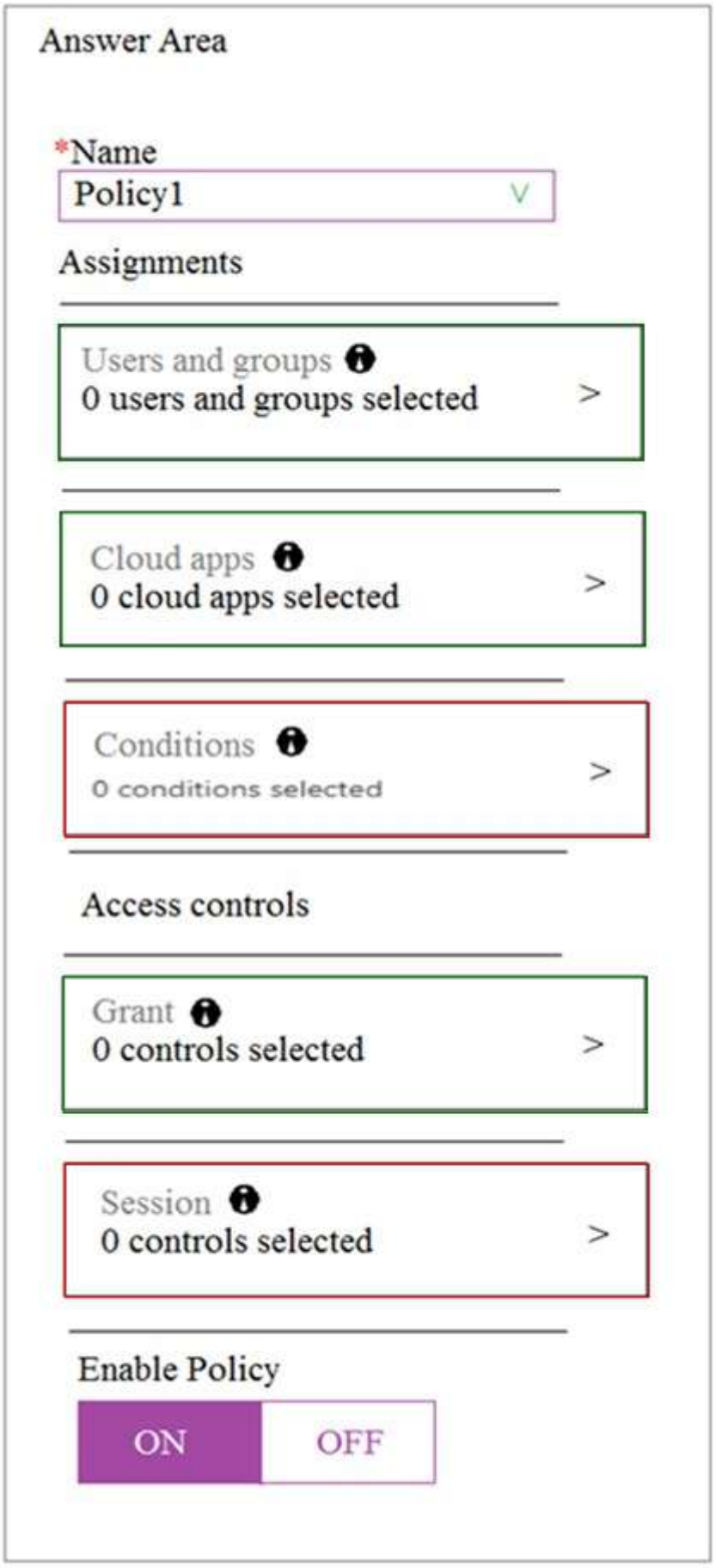

Solution:

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Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/active-directory/conditional-access/app-based-mfa

Question 142

You configure Azure AD Connect for Azure Active Directory Seamless Single Sign-On (Azure AD Seamless SSO) for an on-premises network.

Users report that when they attempt to access myapps.microsoft.com, they are prompted multiple times to sign in and are forced to use an account name that ends with onmicrosoft.com.

You discover that there is a UPN mismatch between Azure AD and the on-premises Active Directory.

You need to ensure that the users can use single-sign on (SSO) to access Azure resources.

What should you do first?

- ☐ From on-premises network, deploy Active Directory Federation Services (AD FS).
- ☒ From Azure AD, add and verify a custom domain name.
- ☐ From on-premises network, request a new certificate that contains the Active Directory domain name.
- ☐ From the server that runs Azure AD Connect, modify the filtering options.

Explanation/Reference

Explanation:
The UPN is used by Azure AD to allow users to sign-in. The UPN that a user can use, depends on whether or not the domain has been verified. If the domain has been verified, then a user with that suffix will be allowed to sign-in to Azure AD.

To do so, you need to add and verify a custom domain in Azure AD before you can start syncing the users.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/plan-connect-design-concepts#azure-ad-sign-in

https://docs.microsoft.com/en-us/azure/active-directory/hybrid/tshoot-connect-objectsync#detect-upn-mismatch-if-object-is-synced-to-azure-active-directory

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Question 143

You have an Active Directory forest named contoso.com.

You install and configure Azure AD Connect to use password hash synchronization as the single sign-on(SSO) method. Staging mode is enabled.

You review the synchronization results and discover that the Synchronization Service Manager does not display any sync jobs.

You need to ensure that the synchronization completes successfully.

What should you do?

- ☐ From Azure PowerShell, run **Start-AdSyncSyncCycle –PolicyType Initial**.
- ☐ Run Azure AD Connect and set the SSO method to Pass-through Authentication.
- ☐ From Synchronization Service Manager, run a full import.
- ☒ Run Azure AD Connect and disable staging mode.

Explanation/Reference

Explanation:
In staging mode, the server is active for import and synchronization, but it does not run any exports. A server in staging mode is not running password sync or password writeback, even if you selected these features during installation. When you disable staging mode, the server starts exporting, enables password sync, and enables password writeback.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sync-staging-server

https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sync-operations

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Question 144

DRAG DROP

You have an Azure Active Directory (Azure AD) tenant that has the initial domain name.

You have a domain name of contoso.com registered at a third-party registrar.

You need to ensure that you can create Azure AD users that have names containing a suffix of @contoso.com.

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

Actions	Answer Area
Add an Azure AD tenant.	
Create an Azure DNS zone.	
Verify the domain.	
Configure company branding.	
Add a record to the public contoso.com DNS zone.	
Add a custom domain name.	

Solution:

Actions	Answer Area
Add an Azure AD tenant.	Add a custom domain name.
Create an Azure DNS zone.	Add a record to the public contoso.com DNS zone.
Verify the domain.	Verify the domain.
Configure company branding.	
Add a record to the public contoso.com DNS zone.	
Add a custom domain name.	

Explanation/Reference

Explanation:

1. Add your custom domain name to Azure AD.

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2. Add your DNS information to the domain registrar.
3. Verify your custom domain name.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/add-custom-domain

Question 145

You have an Azure subscription that contains 100 virtual machines.

You regularly create and delete virtual machines.

You need to identify unattached disks that can be deleted.

What should you do?

- ☐ From Microsoft Azure Storage Explorer, view the Account Management properties.
- ☐ From Azure Cost Management, create a Cost Management report.
- ☐ From the Azure portal, configure the Advisor recommendations.
- ☒ From Azure Cost Management, open the **Optimizer** tab and create a report.

Explanation/Reference

Explanation:
You can find unused disks in the Azure Storage Explorer console. Once you drill down to the Blob containers under a storage account, you can see the lease state of the residing VHD (the lease state determines if the VHD is being used by any resource) and the VM to which it is leased out. If you find that the lease state and the VM fields are blank, it means that the VHD in question is unused.

Note: The ManagedBy property stores the Id of the VM to which Managed Disk is attached to. If the ManagedBy property is $null then it means that the Managed Disk is not attached to a VM

Reference:
https://cloud.netapp.com/blog/reduce-azure-storage-costs

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Question 146

You have an Azure subscription that contains 10 virtual machines.

You need to ensure that you receive an email message when any virtual machines are powered off, restarted, or deallocated.

What is the minimum number of rules and action groups that you require?

- ☐ three rules and three action groups
- ☐ one rule and one action group
- ☒ three rules and one action group
- ☐ one rule and three action groups

Explanation/Reference

Explanation:
We need a separate rule for each condition. We also need a separate action group for each action type that we want to fire when the rule is met.

In this scenario we have three conditions (when any virtual machines are powered off, restarted, or deallocated) and one action type (you are sent an email message).

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-action-rules

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-metric-overview

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/action-groups

Question 147

You plan to automate the deployment of a virtual machine scale set that uses the Windows Server 2016 Datacenter image.

You need to ensure that when the scale set virtual machines are provisioned, they have web server components installed.

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

NOTE: Each correct selection is worth one point.

- ☐ Upload a configuration script.
- ☐ Create an automation account.
- ☒ Create a new virtual machine scale set in the Azure portal.
- ☐ Create an Azure policy.
- ☒ Modify the `extensionProfile` section of the Azure Resource Manager template.

Explanation/Reference

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References:
https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/tutorial-install-apps-template

Question 148

You have an Azure subscription.

You have 100 Azure virtual machines.

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

Which blade should you use?

- ☐ Customer insights
- ☐ Monitor
- ☒ Advisor
- ☐ Metrics

Explanation/Reference

Explanation:
Advisor helps you optimize and reduce your overall Azure spend by identifying idle and underutilized resources. You can get cost recommendations from the Cost tab on the Advisor dashboard.

Reference:
https://docs.microsoft.com/en-us/azure/advisor/advisor-cost-recommendations

Question 149

An app uses a virtual network with two subnets. One subnet is used for the application server. The other subnet is used for a database server. A network virtual appliance (NVA) is used as a firewall.

Traffic destined for one specific address prefix is routed to the NVA and then to an on-premises database server that stores sensitive data. A Border Gateway Protocol (BGP) route is used for the traffic to the on-premises database server.

You need to recommend a method for creating the user-defined route.

Which two options should you recommend? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☒ For the virtual network configuration, use a VPN.
- ☐ For the next hop type, use a virtual network peering.
- ☐ For the virtual network configuration, use Azure ExpressRoute.
- ☒ For the next hop type, use a virtual network gateway.

Explanation/Reference

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Explanation:
You can create custom, or user-defined, routes in Azure to override Azure's default system routes, or to add additional routes to a subnet's route table. You can specify the following next hop types when creating a user-defined route:

- Virtual appliance: A virtual appliance is a virtual machine that typically runs a network application, such as a firewall.
- Virtual network gateway: Specify when you want traffic destined for specific address prefixes routed to a virtual network gateway. The virtual network gateway must be created with type VPN. You cannot specify a virtual network gateway created as type ExpressRoute in a user-defined route because with ExpressRoute, you must use BGP for custom routes.
- None: Specify when you want to drop traffic to an address prefix, rather than forwarding the traffic to a destination.
- Virtual network: Specify when you want to override the default routing within a virtual network.
- Internet: Specify when you want to explicitly route traffic destined to an address prefix to the Internet, or if you want traffic destined for Azure services with public IP addresses kept within the Azure backbone network.

Incorrect Answers:
B: You cannot specify VNet peering or VirtualNetworkServiceEndpoint as the next hop type in user-defined routes. Routes with the VNet peering or VirtualNetworkServiceEndpoint next hop types are only created by Azure, when you configure a virtual network peering, or a service endpoint.

C: You cannot specify a virtual network gateway created as type ExpressRoute in a user-defined route because with ExpressRoute, you must use BGP for custom routes.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-udr-overview

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Question 150

You manage a solution in Azure that consists of a single application which runs on a virtual machine (VM). Traffic to the application has increased dramatically.

The application must not experience any downtime and scaling must be dynamically defined.

You need to define an auto-scale strategy to ensure that the VM can handle the workload.

Which three options should you recommend? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☐ Deploy application automatic vertical scaling.
- ☐ Create a VM availability set.
- ☒ Create a VM scale set.
- ☒ Deploy application automatic horizontal scaling.
- ☒ Deploy a custom auto-scale implementation.

Question 151

DRAG DROP

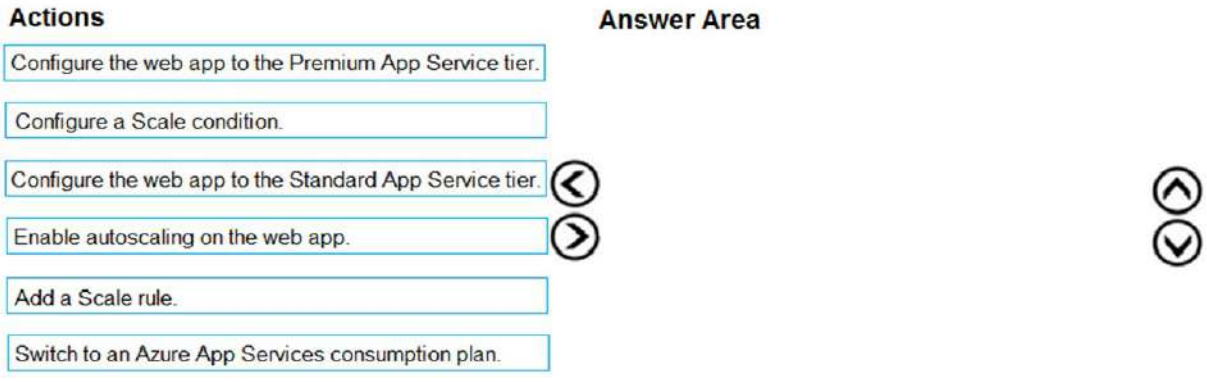
You develop a web app that uses the tier D1 app service plan by using the Web Apps feature of Microsoft Azure App Service.

Spikes in traffic have caused increases in page load times.

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

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

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



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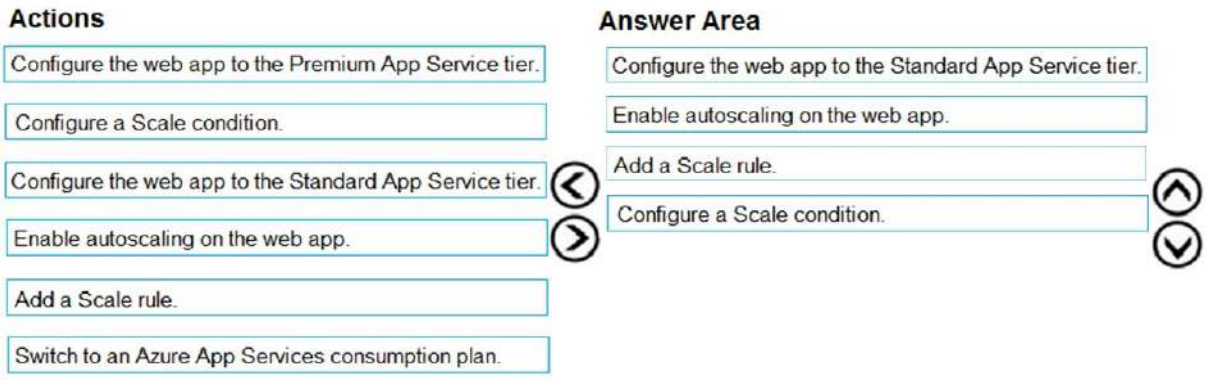
Solution:



Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-get-started

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Question 152

HOTSPOT

You have Azure subscription that contains a virtual network named VNet1. VNet1 uses an IP address space of 10.0.0.0/16 and contains the subnets in the following table.

Name	IP address range
Subnet0	10.0.0.0/24
Subnet1	10.0.1.0/24
Subnet2	10.0.2.0/24
GatewaySubnet	10.0.254.0/24

Subnet1 contains a virtual appliance named VM1 that operates as a router.

You create a routing table named RT1.

You need to route all inbound traffic to VNet1 through VM1.

How should you configure RT1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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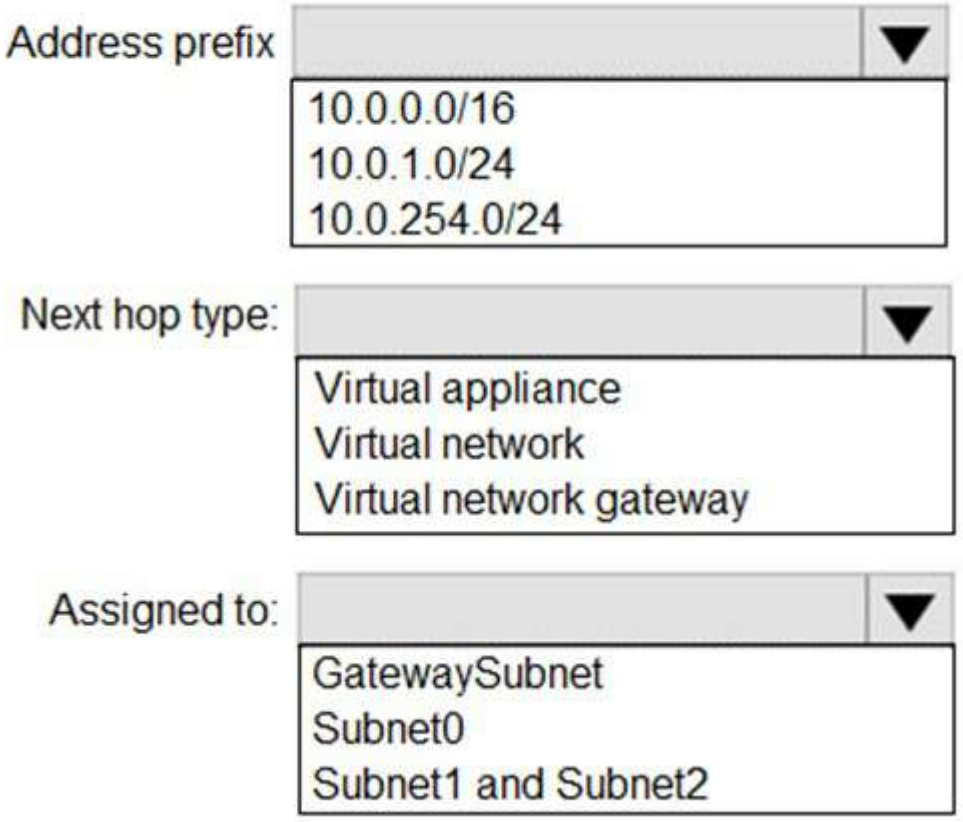
Answer Area



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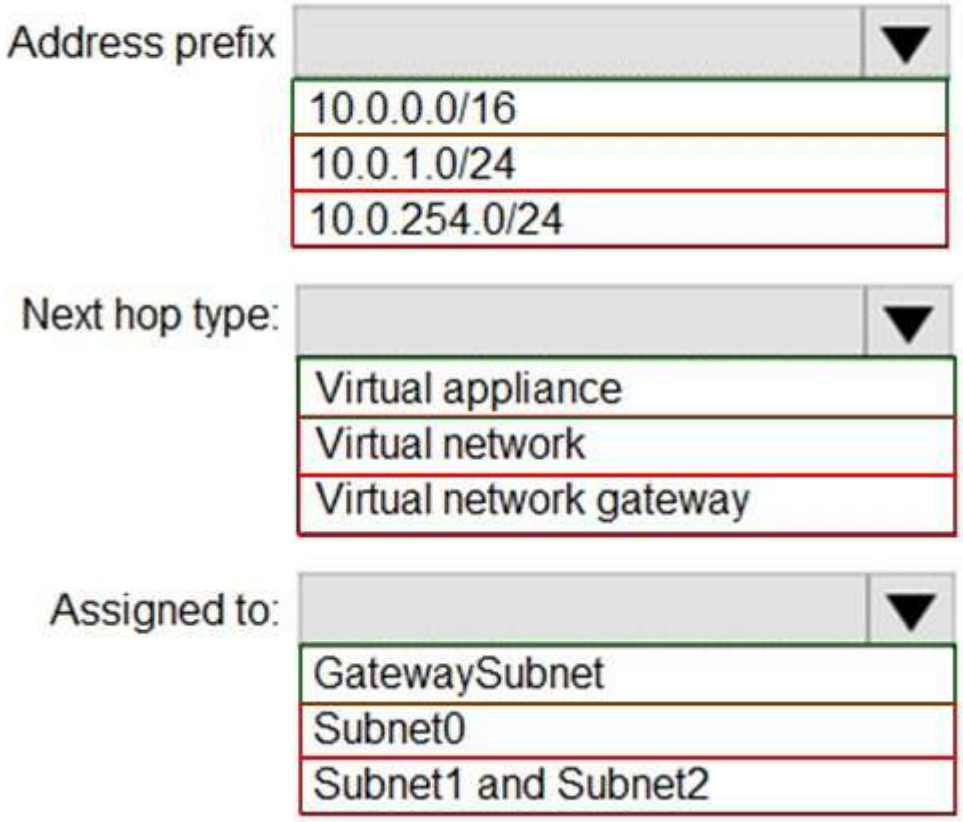
Answer Area



Solution:

Explanation/Reference

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Question 153

You are implementing authentication for applications in your company. You plan to implement self-service password reset (SSPR) and multifactor authentication (MFA) in Azure Active Directory (Azure AD).

You need to select authentication mechanisms that can be used for both MFA and SSPR.

Which two authentication methods should you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☒ Short Message Service (SMS) messages
- ☒ Authentication app
- ☐ Email addresses
- ☐ Security questions
- ☐ App passwords

Explanation/Reference

Explanation:
The following authentication mechanisms can be used for both MFA and SSPR:

- Short Message Service (SMS) messages
- Azure AD passwords
- Microsoft Authenticator app
- Voice call

Incorrect Answers:
C, D:
The following authentication mechanisms are used for SSPR only:

- Email addresses
- Security questions

E: App passwords authentication mechanisms can be used for MFA only, but only in certain cases.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-authentication-methods

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Question 154

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription that contains 10 virtual networks. The virtual networks are hosted in separate resource groups.

Another administrator plans to create several network security groups (NSGs) in the subscription.

You need to ensure that when an NSG is created, it automatically blocks TCP port 8080 between the virtual networks.

Solution: You create a resource lock, and then you assign the lock to the subscription.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
How can I freeze or lock my production/critical Azure resources from accidental deletion? There is way to do this with both ASM and ARM resources using Azure resource lock.

References:
https://blogs.msdn.microsoft.com/azureedu/2016/04/27/using-azure-resource-manager-policy-and-azure-lock-to-control-your-azure-resources/

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Question 155

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription named Subscription1. Subscription1 contains a resource group named RG1. RG1 contains resources that were deployed by using templates.

You need to view the date and time when the resources were created in RG1.

Solution: From the RG1 blade, you click **Automation script**.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
From the RG1 blade, click Deployments

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-tutorial-create-first-template?tabs=azure-powershell

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Question 156

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription named Subscription1. Subscription1 contains a resource group named RG1. RG1 contains resources that were deployed by using templates.

You need to view the date and time when the resources were created in RG1.

Solution: From the Subscription blade, you select the subscription, and then click **Resource providers** .

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
From the RG1 blade, click Deployments

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-tutorial-create-first-template?tabs=azure-powershell

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Question 157

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription named Subscription1. Subscription1 contains a resource group named RG1. RG1 contains resources that were deployed by using templates.

You need to view the date and time when the resources were created in RG1.

Solution: From the RG1 blade, you click **Deployments**.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
From the RG1 blade, click Deployments. You see a history of deployment for the resource group.

Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/template-tutorial-create-first-template?tabs=azure-powershell

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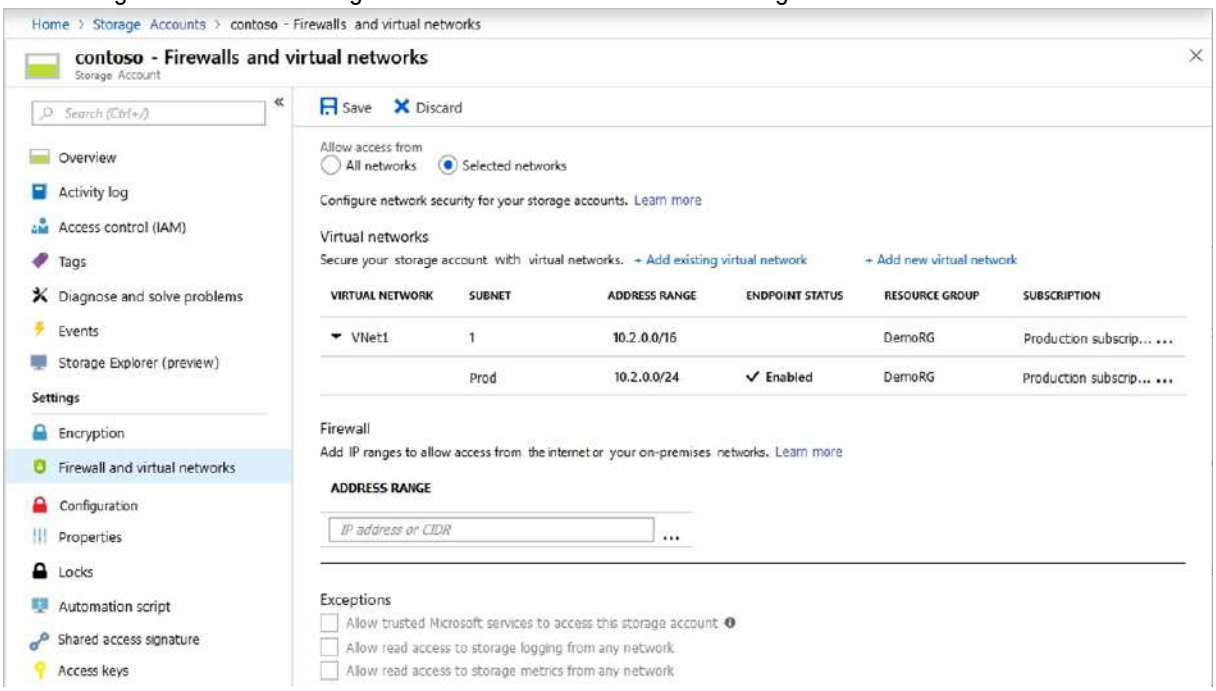
Question 158

HOTSPOT

You have several Azure virtual machines on a virtual network named VNet1. VNet1 has two subnets that have 10.2.0.0/24 and 10.2.9.0/24 address spaces.

You configure an Azure Storage account as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

The virtual machines on the 10.2.9.0/24 subnet will have network connectivity to the file shares in the storage account [**answer choice**].

- always
- during a backup
- never

Azure Backup will be able to back up the unmanaged hard disks of the virtual machines in the storage account [**answer choice**].

- always
- during a backup
- never

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Solution:

Answer Area

The virtual machines on the 10.2.9.0/24 subnet will have network connectivity to the file shares in the storage account [**answer choice**].

- always
- during a backup
- never

Azure Backup will be able to back up the unmanaged hard disks of the virtual machines in the storage account [**answer choice**].

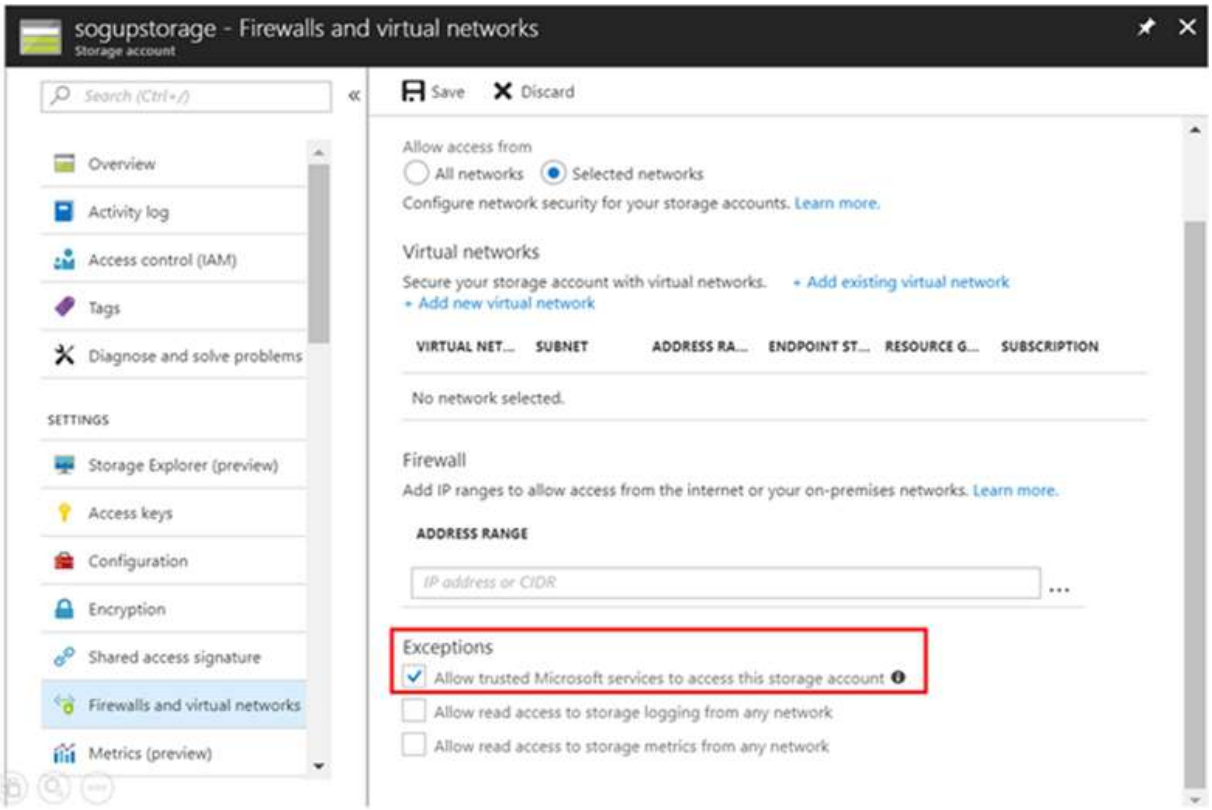
- always
- during a backup
- never

Explanation/Reference

Explanation:

Box 1: always
Endpoint status is enabled.

Box 2: Never
After you configure firewall and virtual network settings for your storage account, select Allow trusted Microsoft services to access this storage account as an exception to enable Azure Backup service to access the network restricted storage account.



Reference:

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https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows

https://azure.microsoft.com/en-us/blog/azure-backup-now-supports-storage-accounts-secured-with-azure-storage-firewalls-and-virtual-networks/

Question 159

HOTSPOT

You plan to create an Azure Storage account in the Azure region of East US 2.

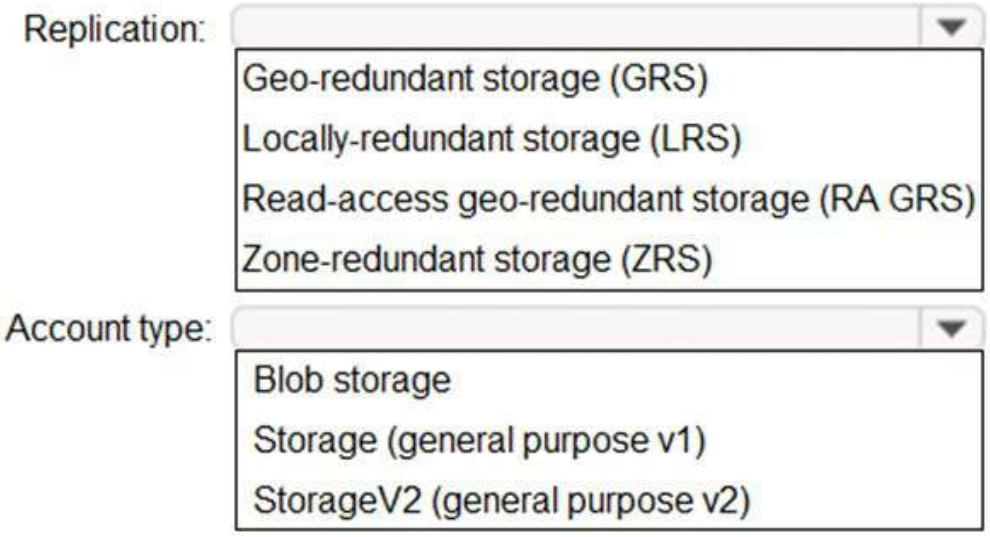
You need to create a storage account that meets the following requirements:

- Replicates synchronously
- Remains available if a single data center in the region fails

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

NOTE: Each correct selection is worth one point.

Answer Area



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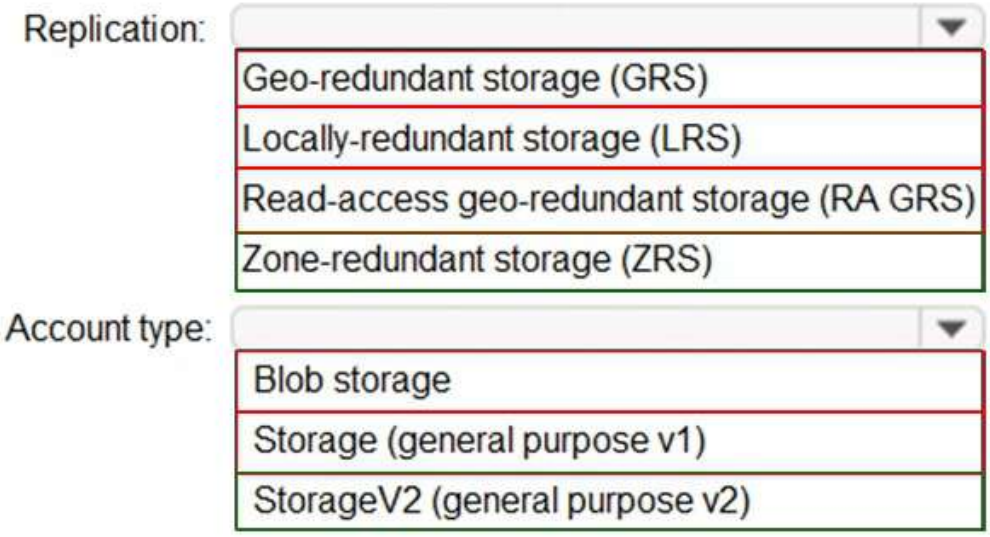
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: Zone-redundant storage (ZRS)
Zone-redundant storage (ZRS) replicates your data synchronously across three storage clusters in a single region.

LRS would not remain available if a data center in the region fails
GRS and RA GRS use asynchronous replication.

Box 2: StorageV2 (general purpose V2)
ZRS only support GPv2.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy

https://docs.microsoft.com/en-us/azure/storage/common/storage-redundancy-zrs

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Question 160

DRAG DROP

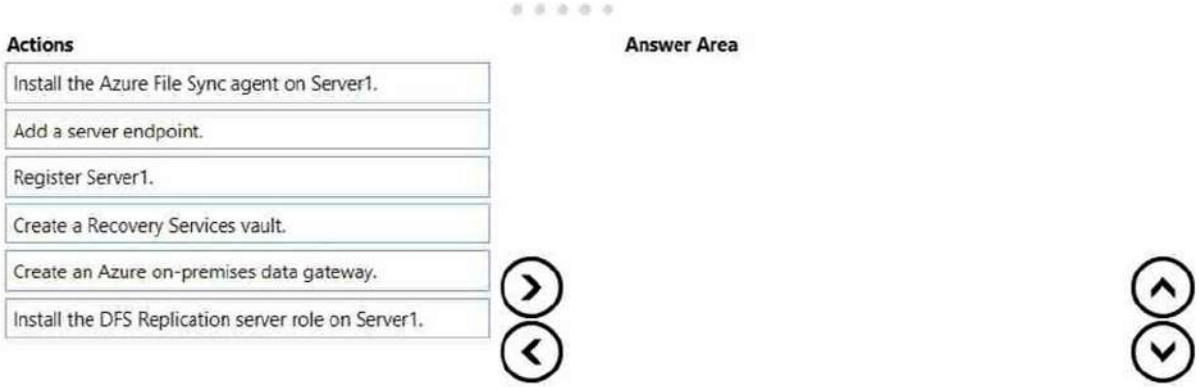
You have an on-premises file server named Server1 that runs Windows Server 2016.

You have an Azure subscription that contains an Azure file share.

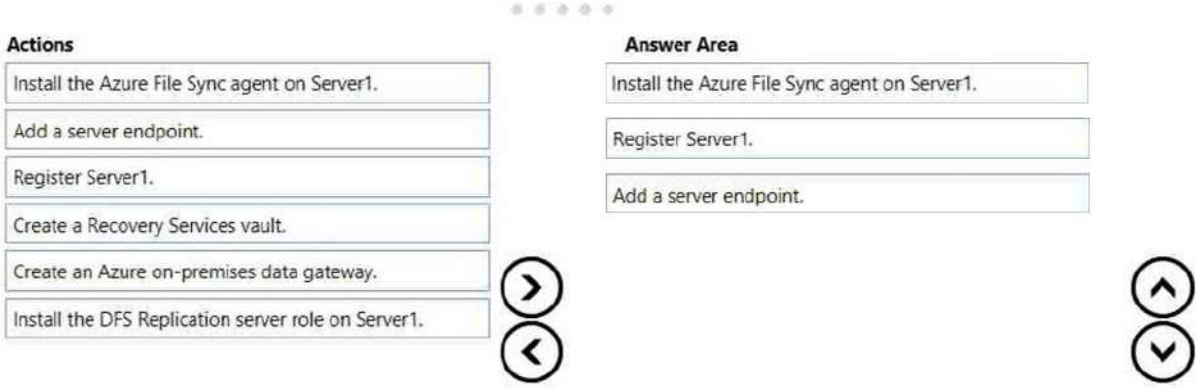
You deploy an Azure File Sync Storage Sync Service, and you create a sync group.

You need to synchronize files from Server1 to Azure.

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



Solution:



Explanation/Reference

Explanation:

Step 1: Install the Azure File Sync agent on Server1
The Azure File Sync agent is a downloadable package that enables Windows Server to be synced with an Azure file share

Step 2: Register Server1.

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Register Windows Server with Storage Sync Service
Registering your Windows Server with a Storage Sync Service establishes a trust relationship between your server (or cluster) and the Storage Sync Service.

Step 3: Add a server endpoint
Create a sync group and a cloud endpoint.
A sync group defines the sync topology for a set of files. Endpoints within a sync group are kept in sync with each other. A sync group must contain one cloud endpoint, which represents an Azure file share and one or more server endpoints. A server endpoint represents a path on registered server.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-sync-files-deployment-guide

Question 161

You plan to use the Azure Import/Export service to copy files to a storage account.

Which two files should you create before you prepare the drives for the import job? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ a dataset CSV file
- ☐ an XML manifest file
- ☒ a driveset CSV file
- ☐ a PowerShell PS1 file
- ☐ a JSON configuration file

Explanation/Reference

Explanation:
A: Modify the dataset.csv file in the root folder where the tool resides. Depending on whether you want to import a file or folder or both, add entries in the dataset.csv file

C: Modify the driveset.csv file in the root folder where the tool resides.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-import-export-data-to-files

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Question 162

You create an Azure Storage account named contosostorage.

You plan to create a file share named data.

Users need to map a drive to the data file share from home computers that run Windows 10.

Which outbound port should you open between the home computers and the data file share?

- ☐ 80
- ☐ 443
- ☒ 445
- ☐ 3389

Explanation/Reference

Explanation:
Ensure port 445 is open: The SMB protocol requires TCP port 445 to be open; connections will fail if port 445 is blocked.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-windows

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Question 163

HOTSPOT

You have an Azure subscription named Subscription1.

Subscription1 contains the virtual machines in the following table:

Name	IP address
VM1	10.0.1.4
VM2	10.0.2.4
VM3	10.0.3.4

Subscription1 contains a virtual network named VNet1 that has the subnets in the following table.

Name	Address space	Connected virtual machine
Subnet1	10.0.1.0/24	VM1
Subnet2	10.0.2.0/24	VM2
Subnet3	10.0.3.0/24	VM3

VM3 has multiple network adapters, including a network adapter named NIC3. IP forwarding is enabled on NIC3. Routing is enabled on VM3.

You create a route table named RT1 that contains the routers in the following table.

Address prefix	Next hop type	Next hop address
10.0.1.0/24	Virtual appliance	10.0.3.4
10.0.2.0/24	Virtual appliance	10.0.3.4

You apply RT1 to Subnet1 and Subnet2.

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
VM3 can establish a network connection to VM1.	○	○
If VM3 is turned off VM2 can establish a network connection to VM1.	○	○
VM1 can establish a network connection to VM2.	○	○

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Solution:

Answer Area

Statements	Yes	No
VM3 can establish a network connection to VM1.	○	○
If VM3 is turned off VM2 can establish a network connection to VM1.	○	○
VM1 can establish a network connection to VM2.	○	○

Explanation/Reference

Explanation:

IP forwarding enables the virtual machine a network interface is attached to:

- Receive network traffic not destined for one of the IP addresses assigned to any of the IP configurations assigned to the network interface.
- Send network traffic with a different source IP address than the one assigned to one of a network interface's IP configurations.

The setting must be enabled for every network interface that is attached to the virtual machine that receives traffic that the virtual machine needs to forward. A virtual machine can forward traffic whether it has multiple network interfaces or a single network interface attached to it.

Box 1: Yes
The routing table allows connections from VM3 to VM1 and VM2. And as IP forwarding is enabled on VM3, VM3 can connect to VM1.

Box 2: No
VM3, which has IP forwarding, must be turned on, in order for VM2 to connect to VM1.

Box 3: Yes
The routing table allows connections from VM1 and VM2 to VM3. IP forwarding on VM3 allows VM1 to connect to VM2 via VM3.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-udr-overview

https://www.quora.com/What-is-IP-forwarding

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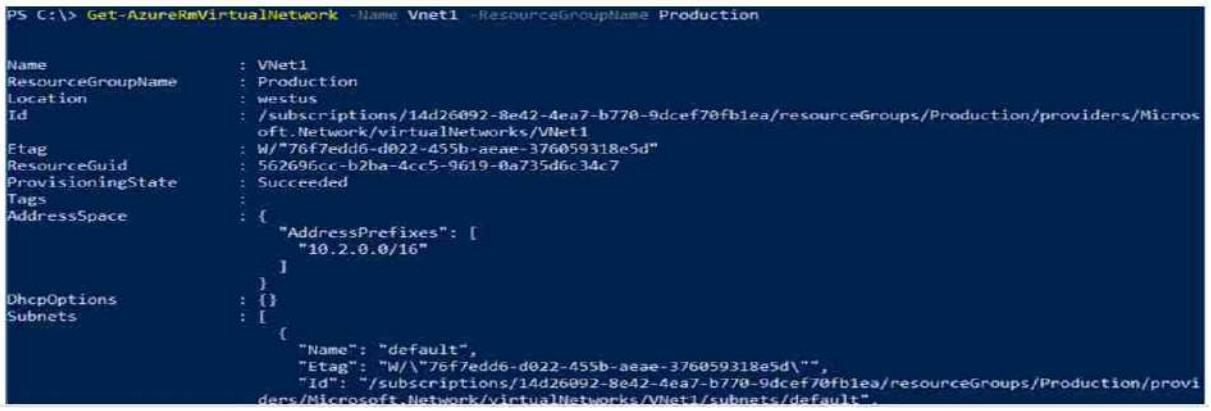
Question 164

HOTSPOT

You have a virtual network named VNet1 that has the configuration shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

Before a virtual machine on VNet1 can receive an IP address from 192.168.1.0/24, you must first **[answer choice]**.

- add a network interface
- add a subnet
- add an address space
- delete a subnet
- delete an address space

Before a virtual machine on VNet1 can receive an IP address from 10.2.1.0/24, you must first **[answer choice]**.

- add a network interface
- add a subnet
- add an address space
- delete a subnet
- delete an address space

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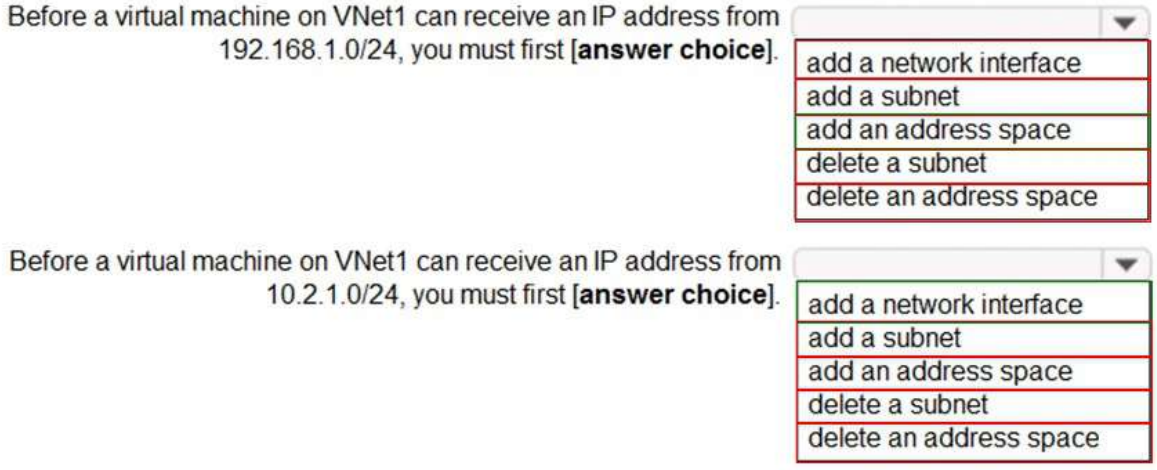
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: add an address space
Your IaaS virtual machines (VMs) and PaaS role instances in a virtual network automatically receive a private IP address from a range that you specify, based on the address space of the subnet they are connected to. We need to add the 192.168.1.0/24 address space.

Box 2: add a network interface
The 10.2.1.0/24 network exists. We need to add a network interface.

References:
https://docs.microsoft.com/en-us/office365/enterprise/designing-networking-for-microsoft-azure-iaas

https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-static-private-ip-arm-pportal

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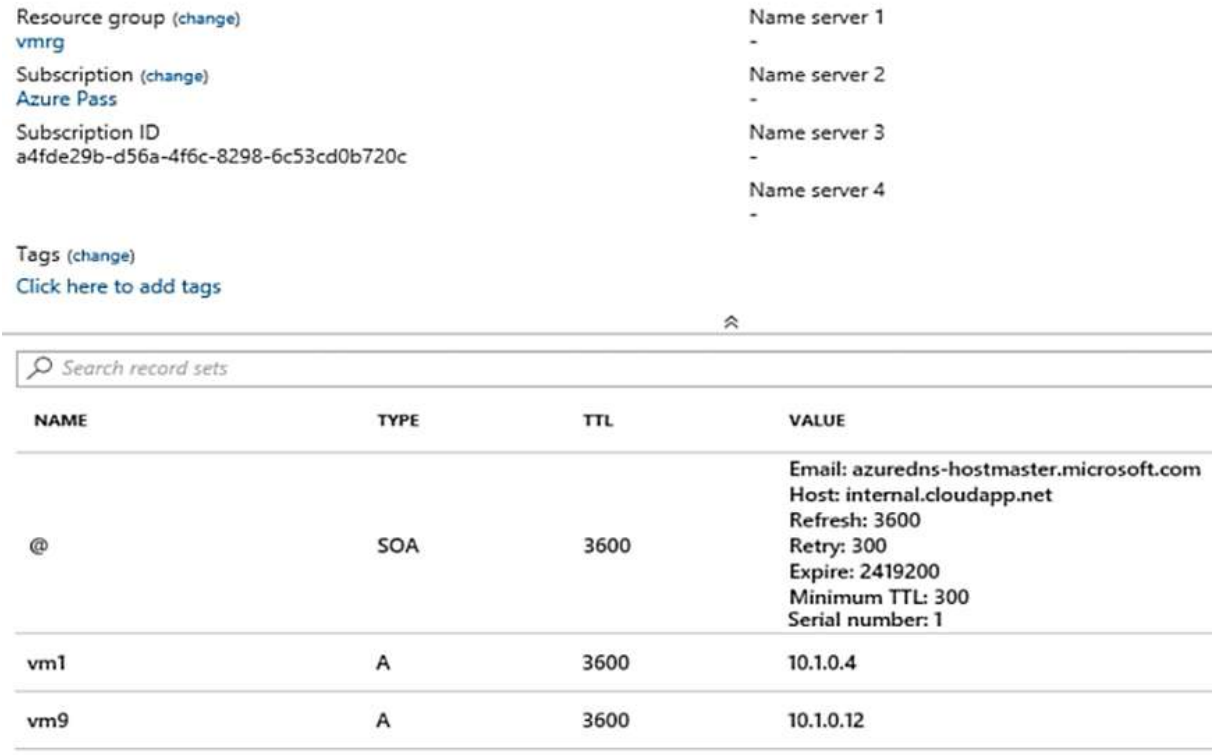
Question 165

HOTSPOT

You have an Azure subscription named Subscription1. Subscription1 contains the resources in the following table.

Name	Type
VMRG	Resource group
VNet1	Virtual network
VNet2	Virtual network
VM5	Virtual machine connected to VNet1
VM6	Virtual machine connected to VNet2

In Azure, you create a private DNS zone named adatum.com. You set the registration virtual network to VNet2. The adatum.com zone is configured is shown in the following exhibit.



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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
The A record for VM5 will be registered automatically in the adatum.com zone.	○	○
VM5 can resolve VM9.adatum.com.	○	○
VM6 can resolve VM9.adatum.com.	○	○

Solution:

Answer Area

Statements	Yes	No
The A record for VM5 will be registered automatically in the adatum.com zone.	○	○
VM5 can resolve VM9.adatum.com.	○	○
VM6 can resolve VM9.adatum.com.	○	○

Explanation/Reference

Explanation:

Box 1: No
Azure DNS provides automatic registration of virtual machines from a single virtual network that's linked to a private zone as a registration virtual network. VM5 does not belong to the registration virtual network though.

Box 2: No
Forward DNS resolution is supported across virtual networks that are linked to the private zone as resolution virtual networks. VM5 does belong to a resolution virtual network.

Box 3: Yes
VM6 belongs to registration virtual network, and an A (Host) record exists for VM9 in the DNS zone.

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By default, registration virtual networks also act as resolution virtual networks, in the sense that DNS resolution against the zone works from any of the virtual machines within the registration virtual network.

References:
https://docs.microsoft.com/en-us/azure/dns/private-dns-overview

Question 166

You have a virtual network named VNet1 as shown in the **exhibit**. (Click the Exhibit tab.)

No devices are connected to VNet1.

You plan to peer VNet1 to another virtual network named VNet2 in the same region. VNet2 has an address space of 10.2.0.0/16.

You need to create the peering.

What should you do first?

- ☐ Add a gateway subnet to VNet1.
- ☐ Create a subnet on VNet1 and VNet2
- ☒ Modify the address space of VNet1
- ☐ Configure a service endpoint on VNet2

Explanation/Reference

Explanation:
The virtual networks you peer must have non-overlapping IP address spaces. The exhibit indicates that VNet1 has an address space of 10.2.0.0/16, which is the same as VNet2, and thus overlaps. We need to change the address space for VNet1.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering#requirements-and-constraints

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Question 167

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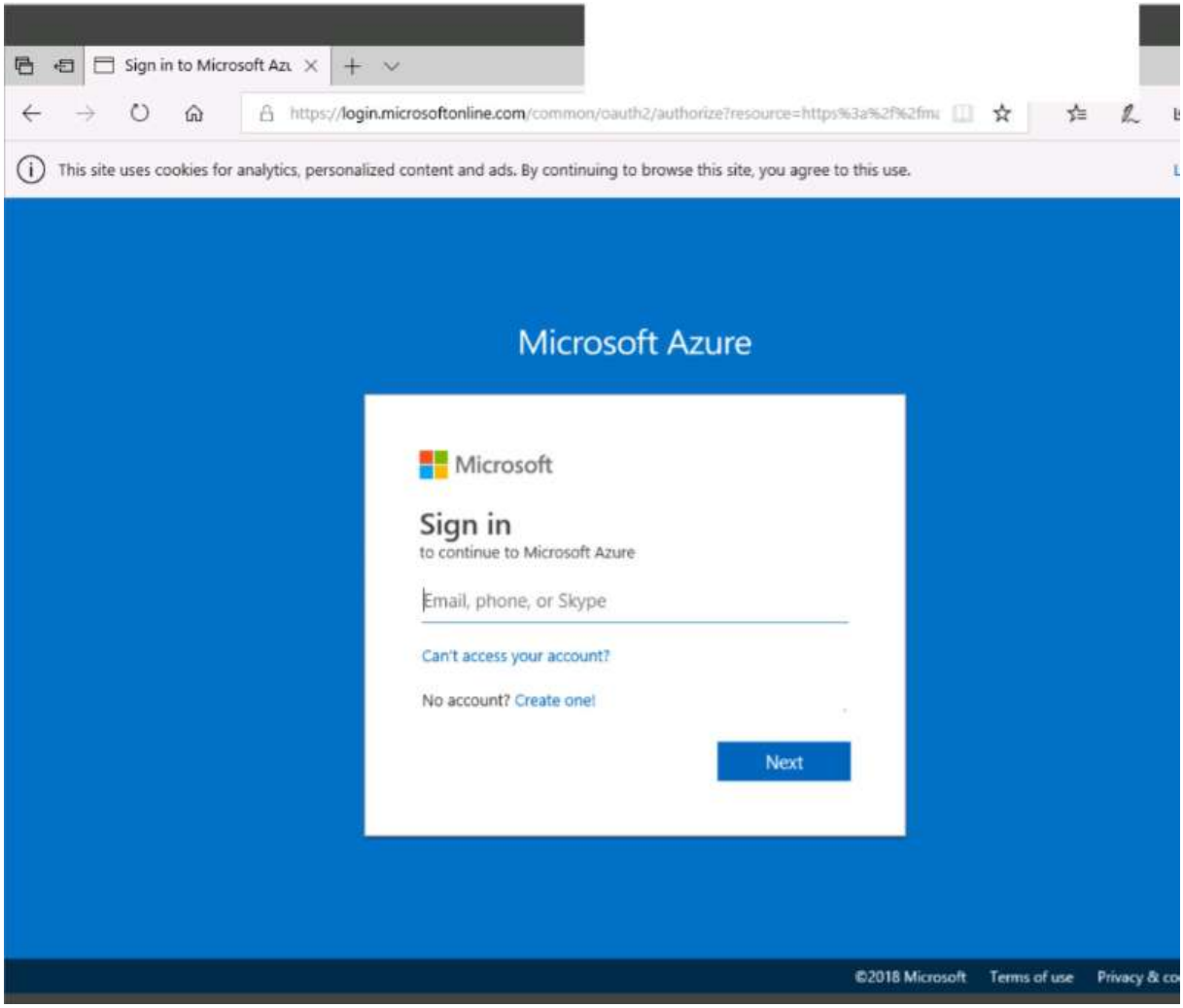
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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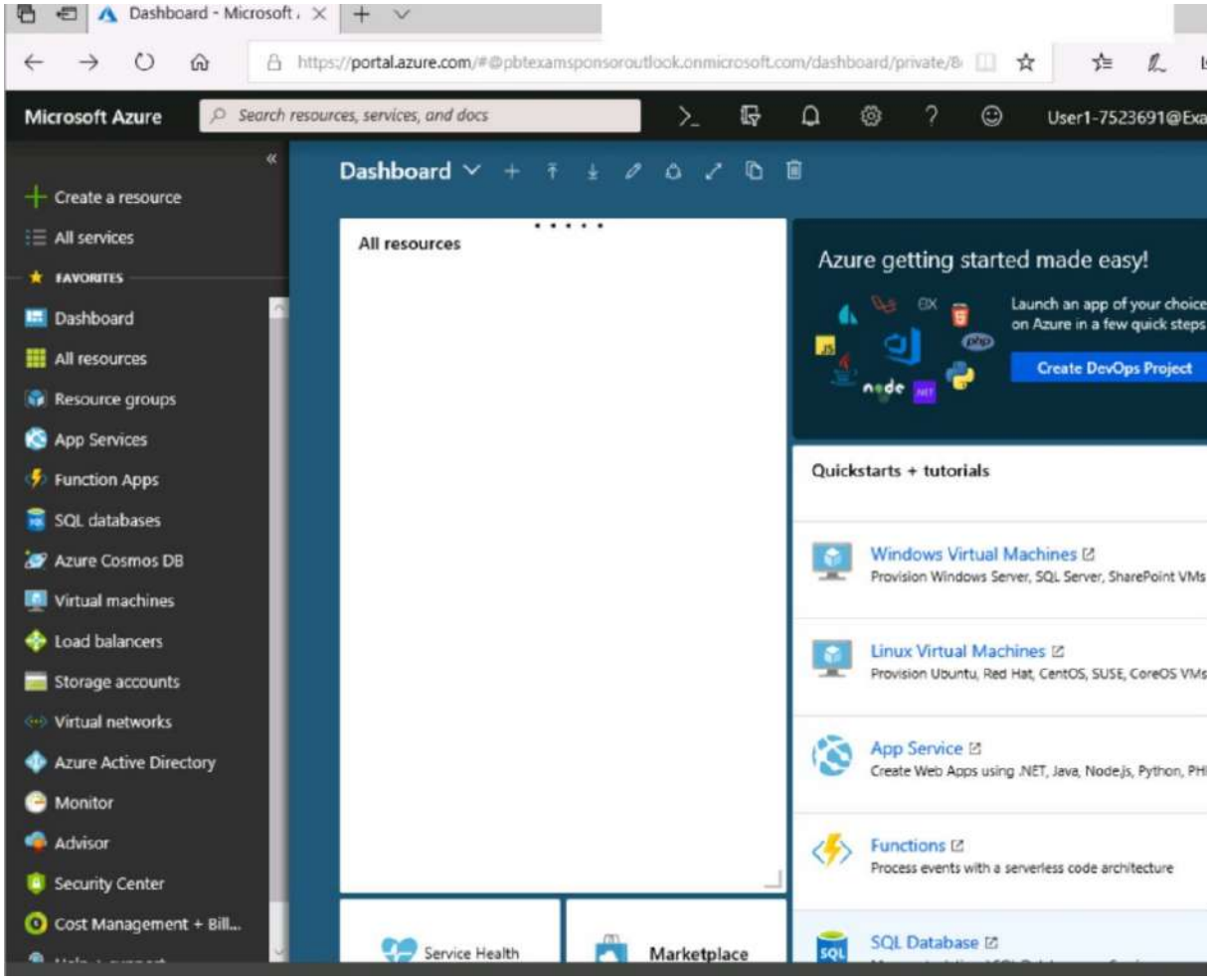

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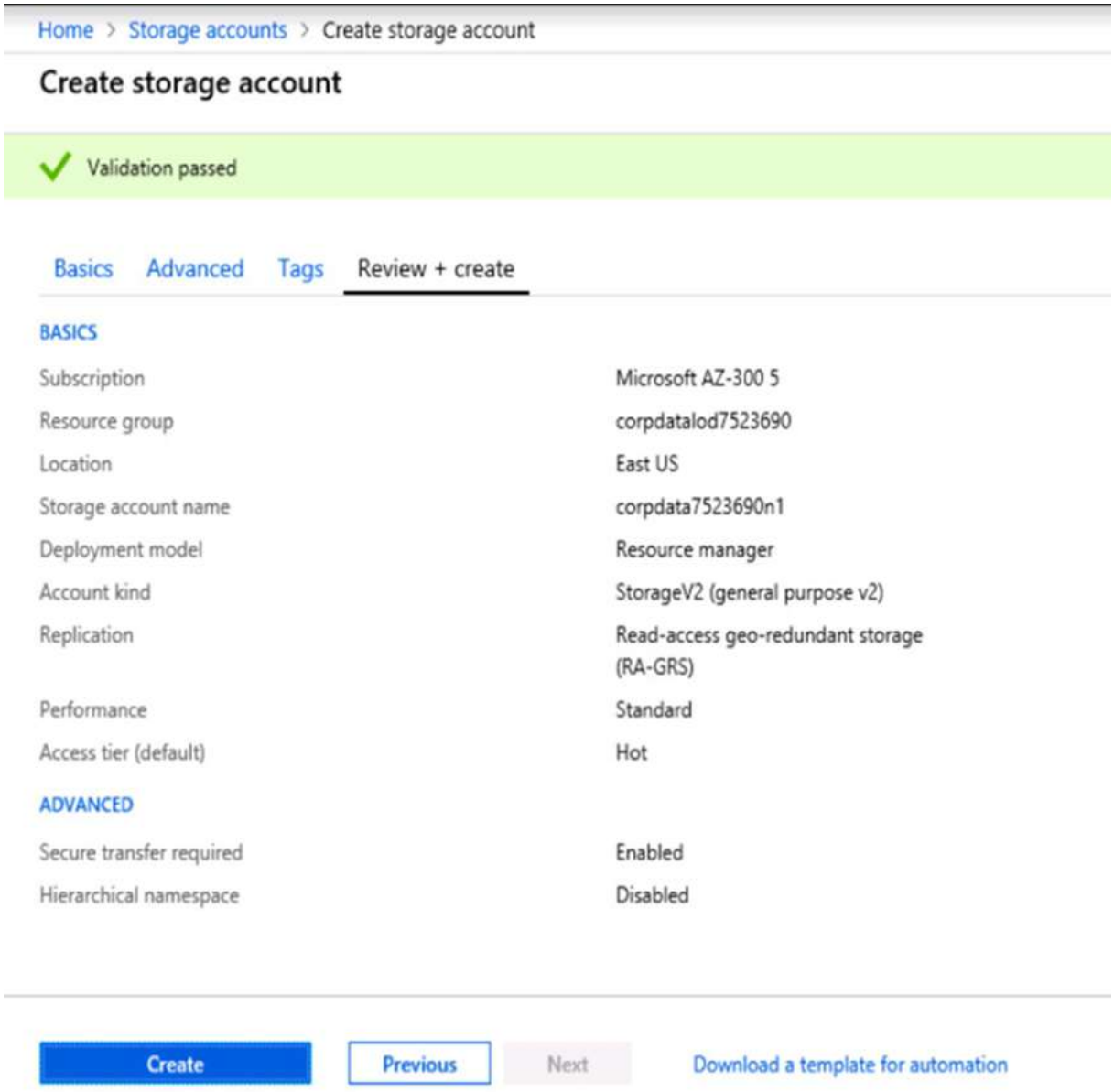

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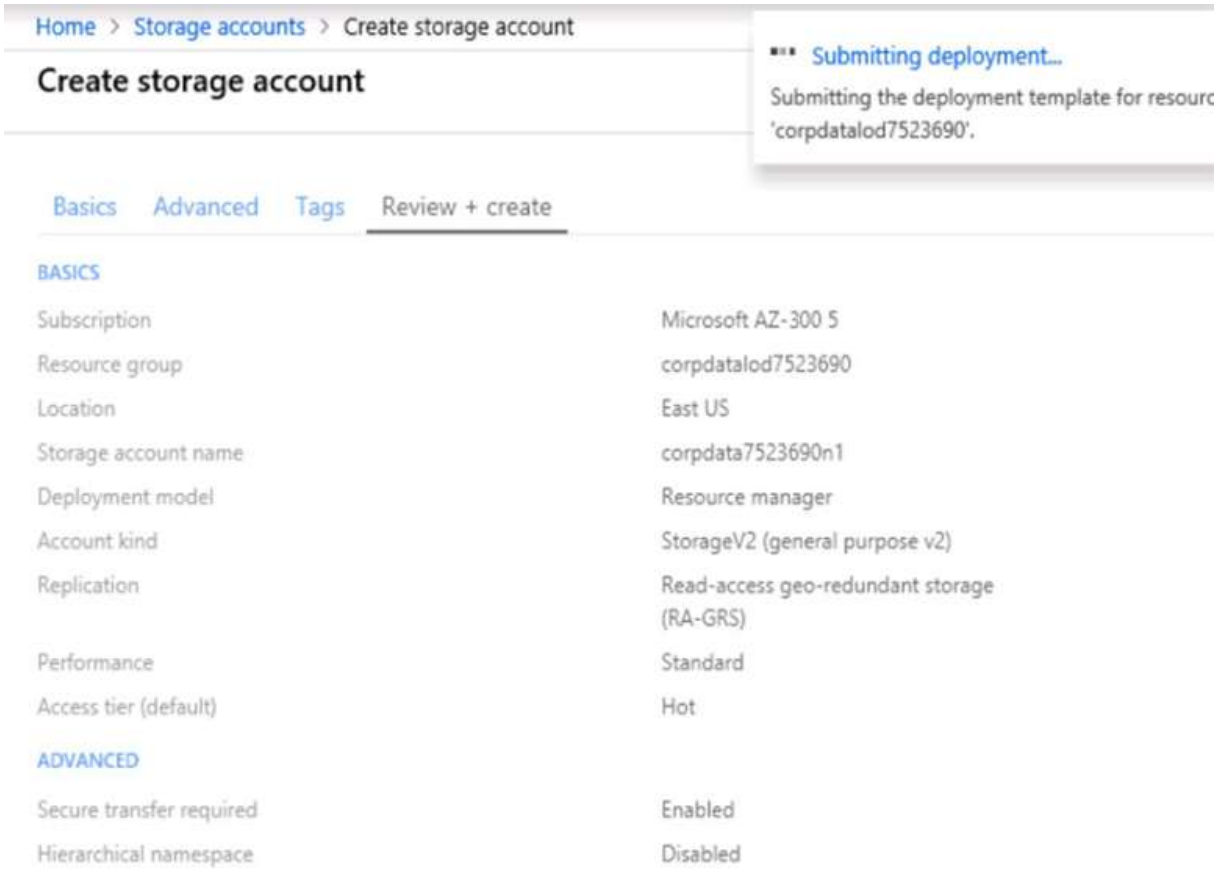

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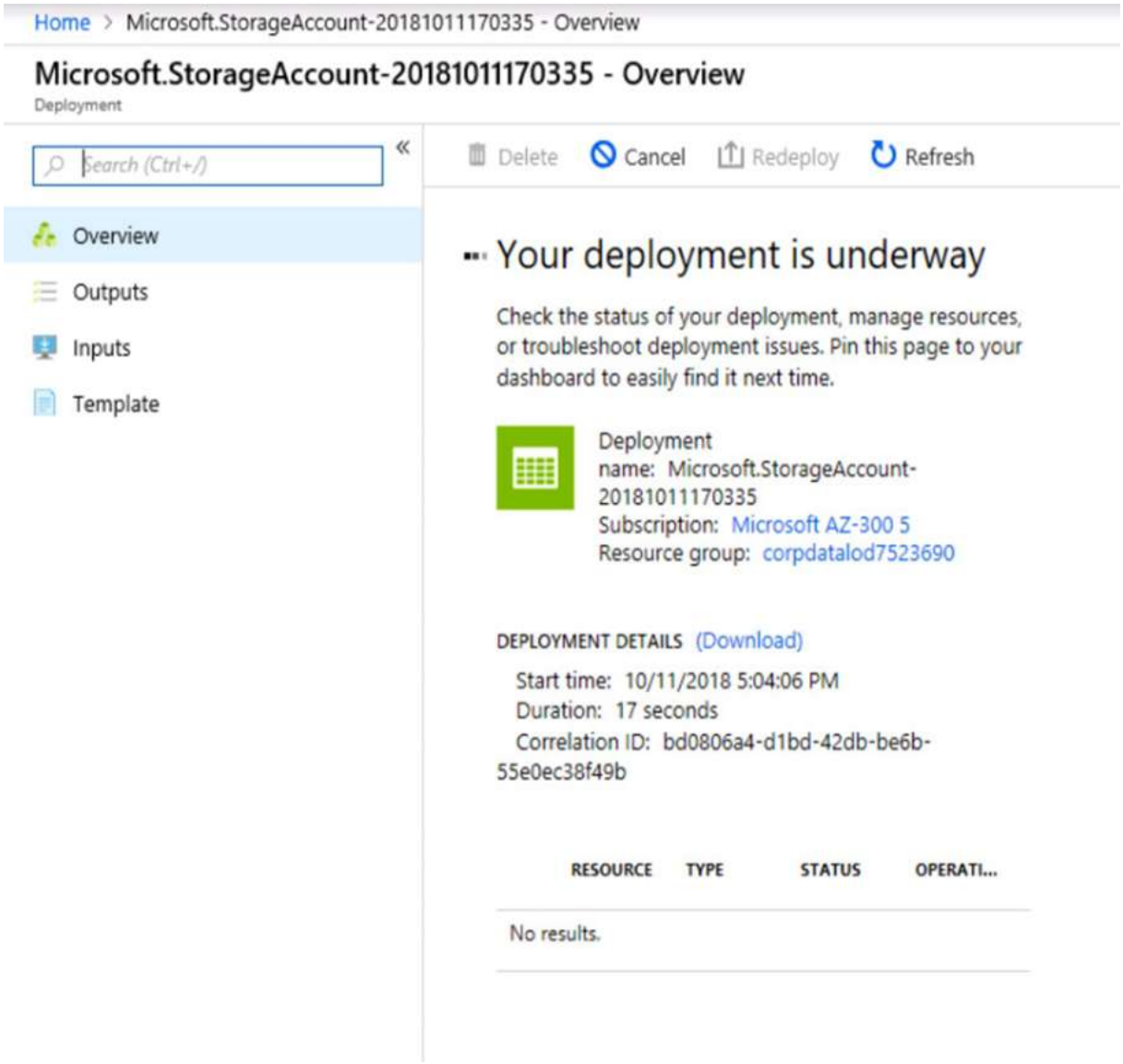

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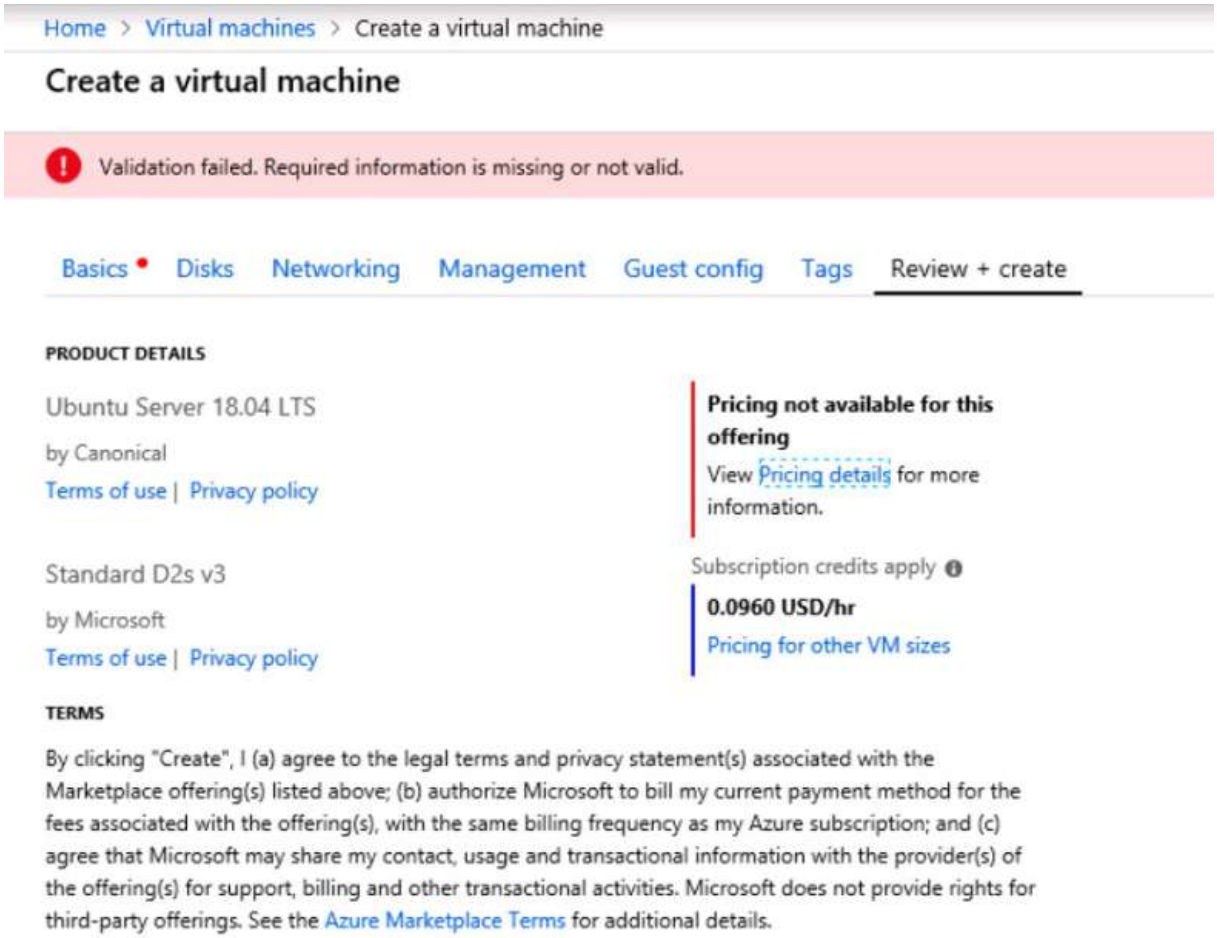

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
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To start the lab
You may start the lab by clicking the Next button.

Your company plans to store several documents on a public website.

You need to create a container named bios that will host the documents in the corpdata7523690n1 storage account. The solution must ensure anonymous access and must ensure that users can browse folders in the container.

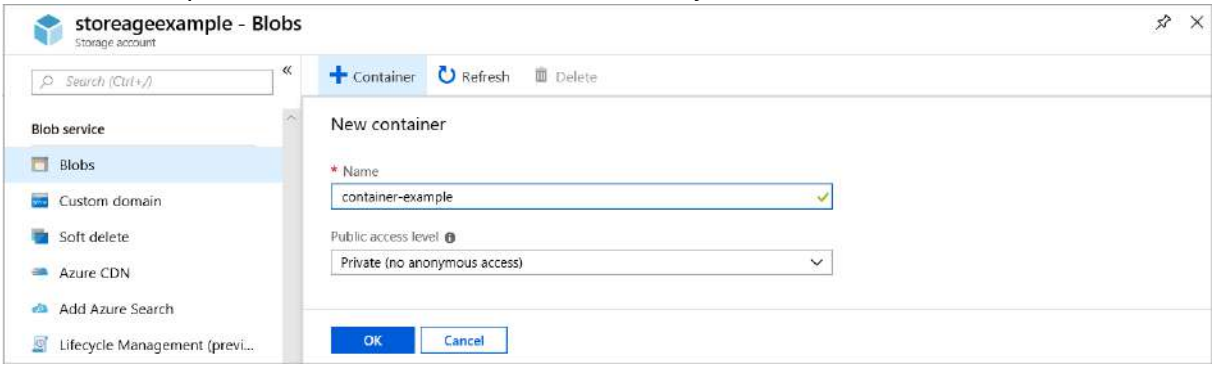
What should you do from the Azure portal?

Explanation/Reference

Explanation:
Azure portal create public container
To create a container in the Azure portal, follow these steps:

Step 1: Navigate to your new storage account in the Azure portal.

Step 2: In the left menu for the storage account, scroll to the lob service section, then select Blobs.
Select the + Container button.
Type a name for your new container: bios
Set the level of public access to the container: Select anonymous access.



Step 3: Select OK to create the container.

References:
https://docs.microsoft.com/en-us/azure/storage/blobs/storage-quickstart-blobs-portal

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Question 168

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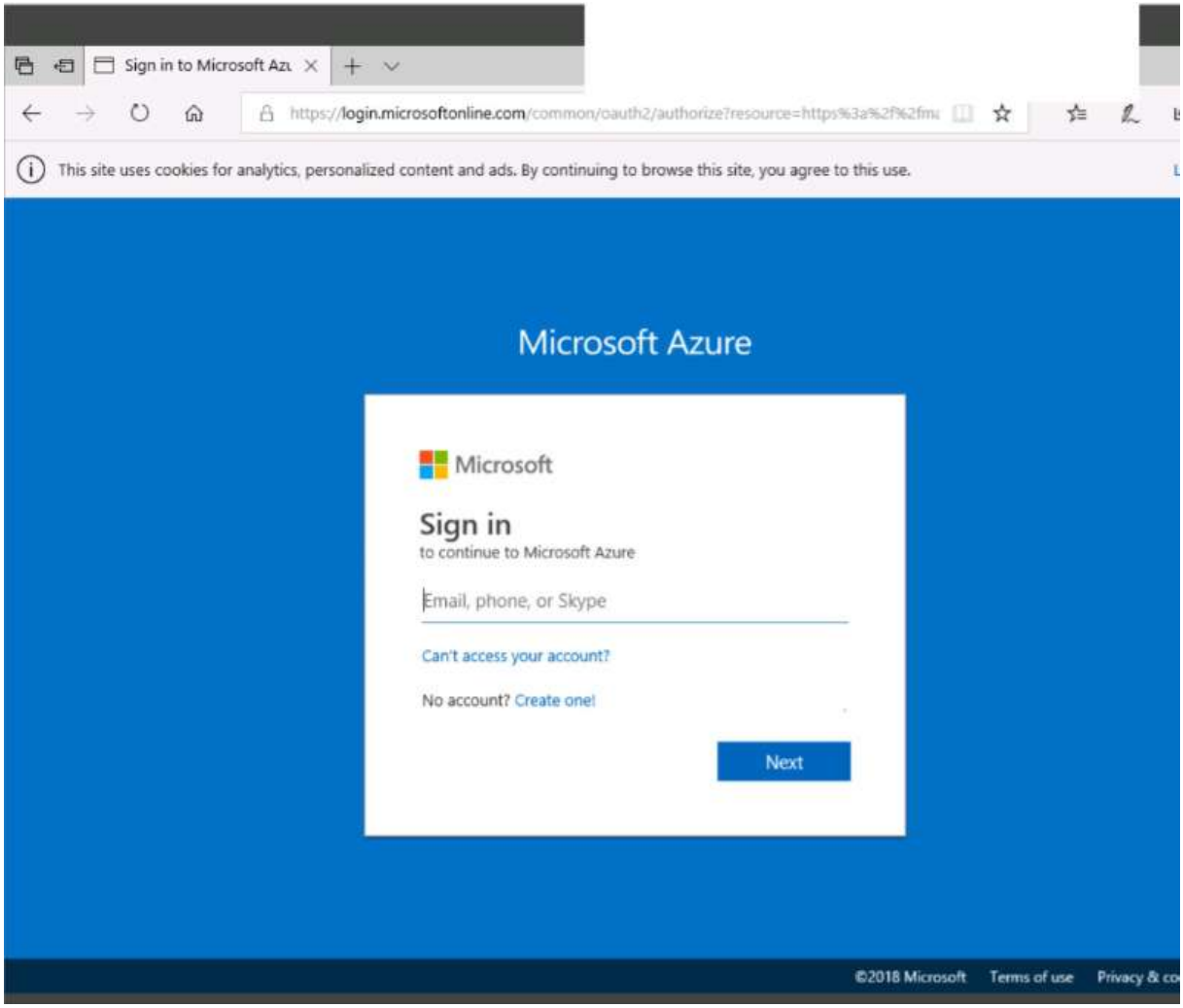
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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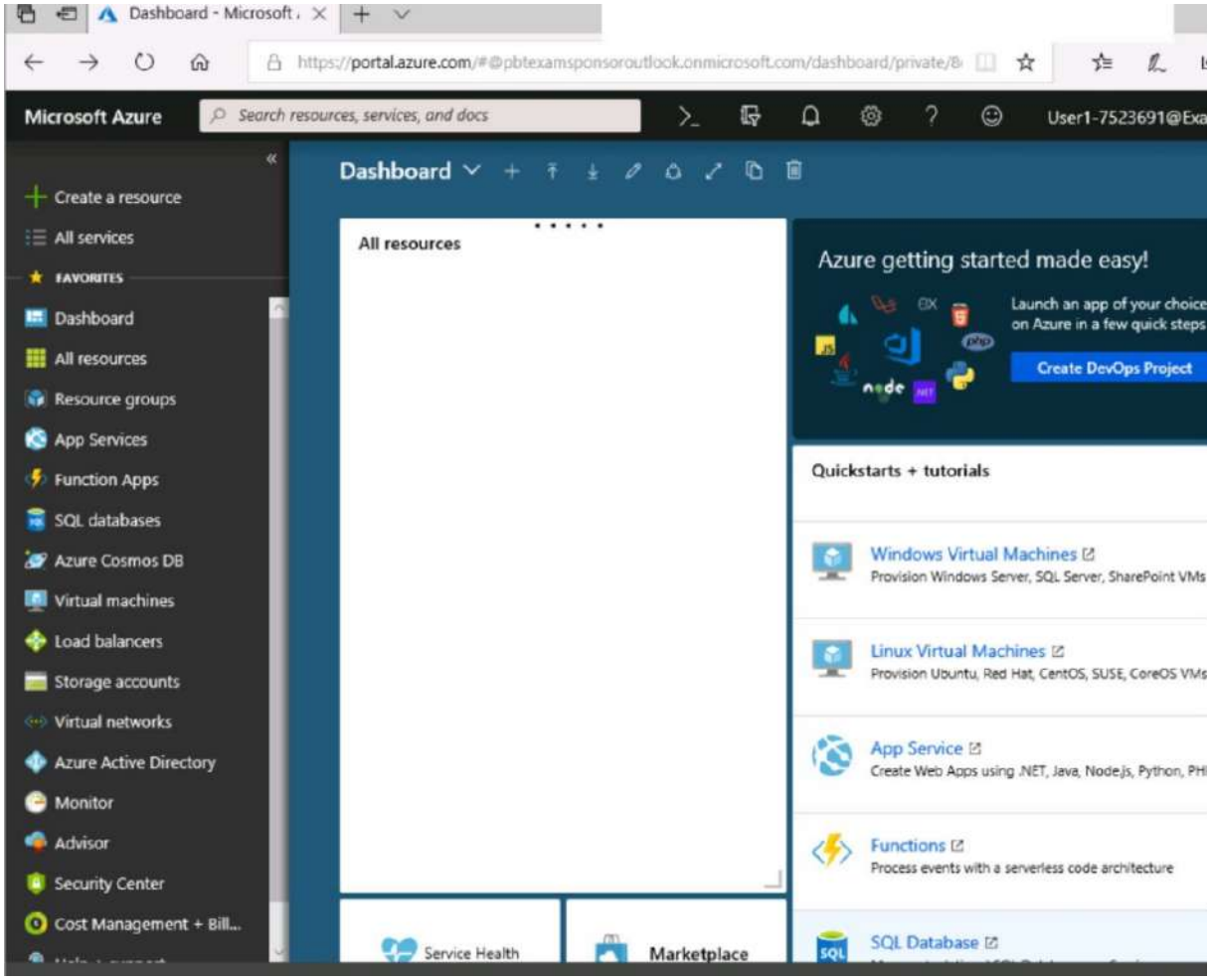

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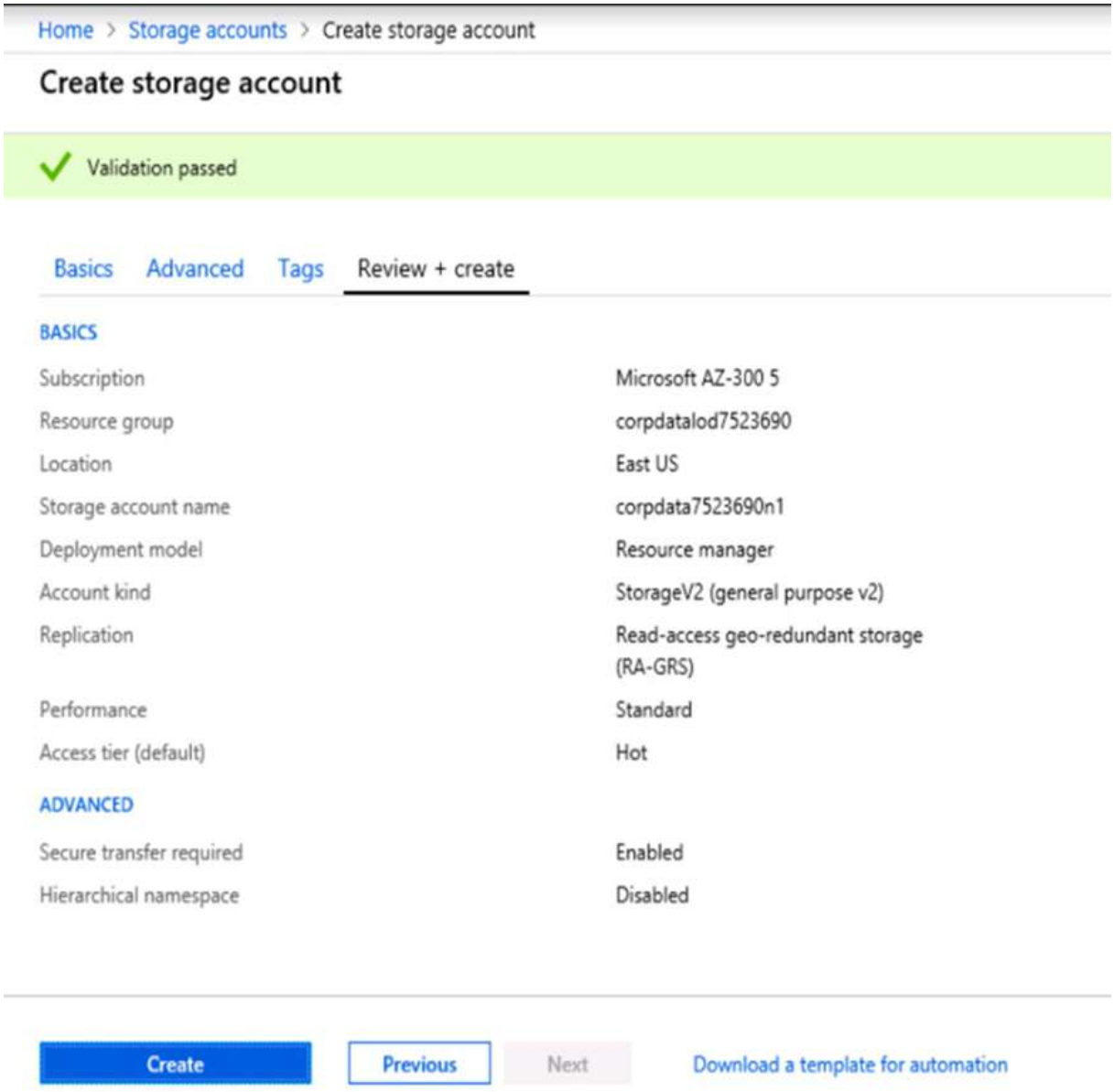

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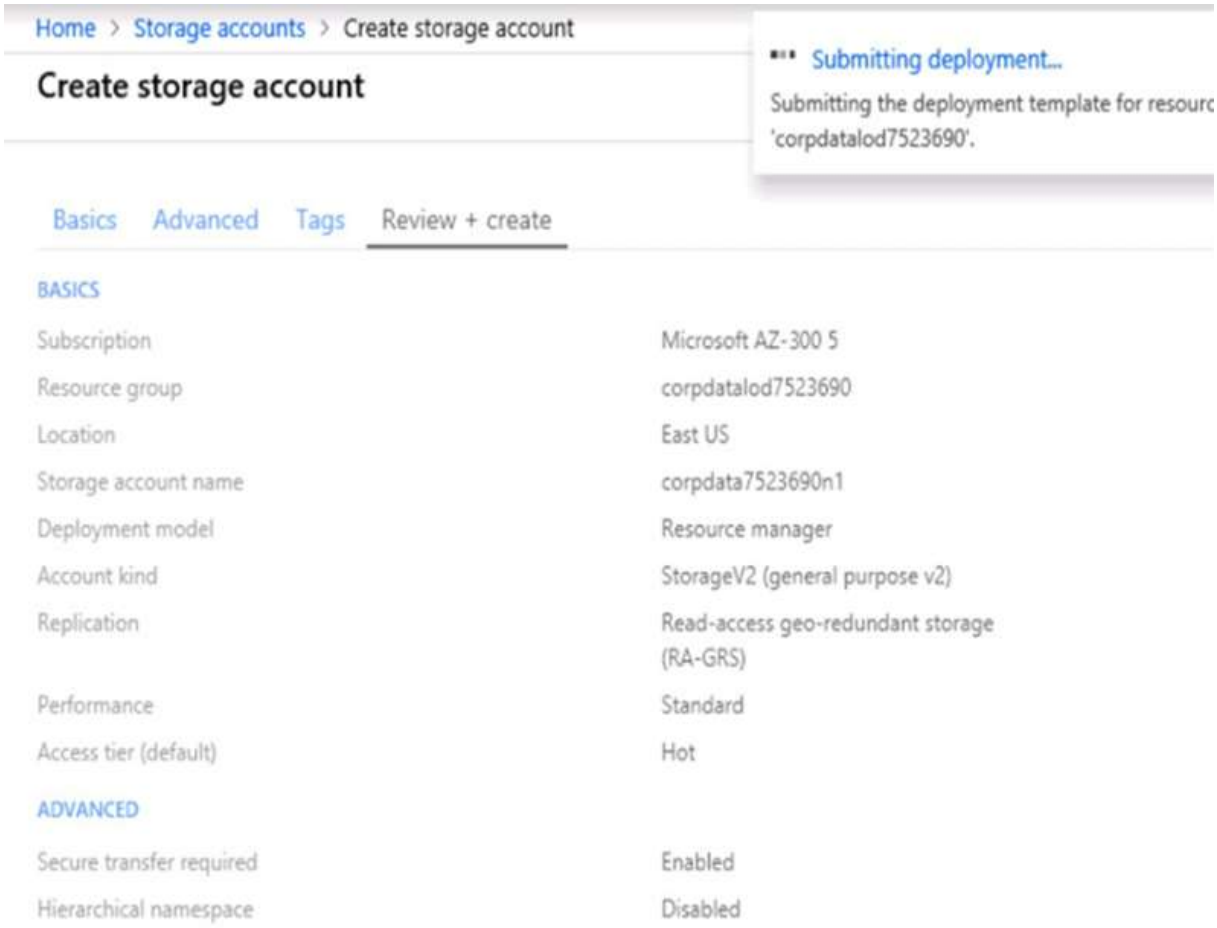

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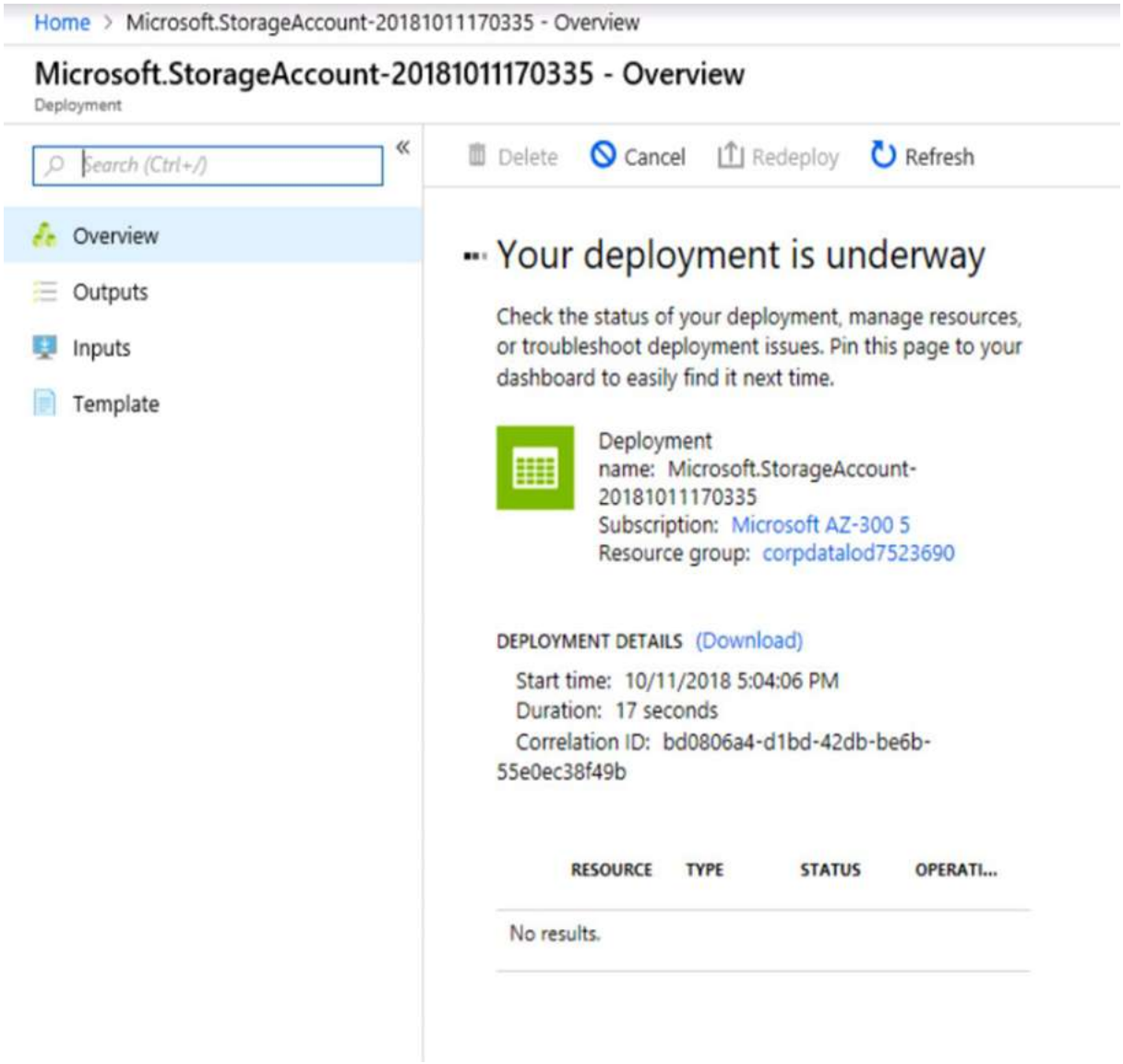

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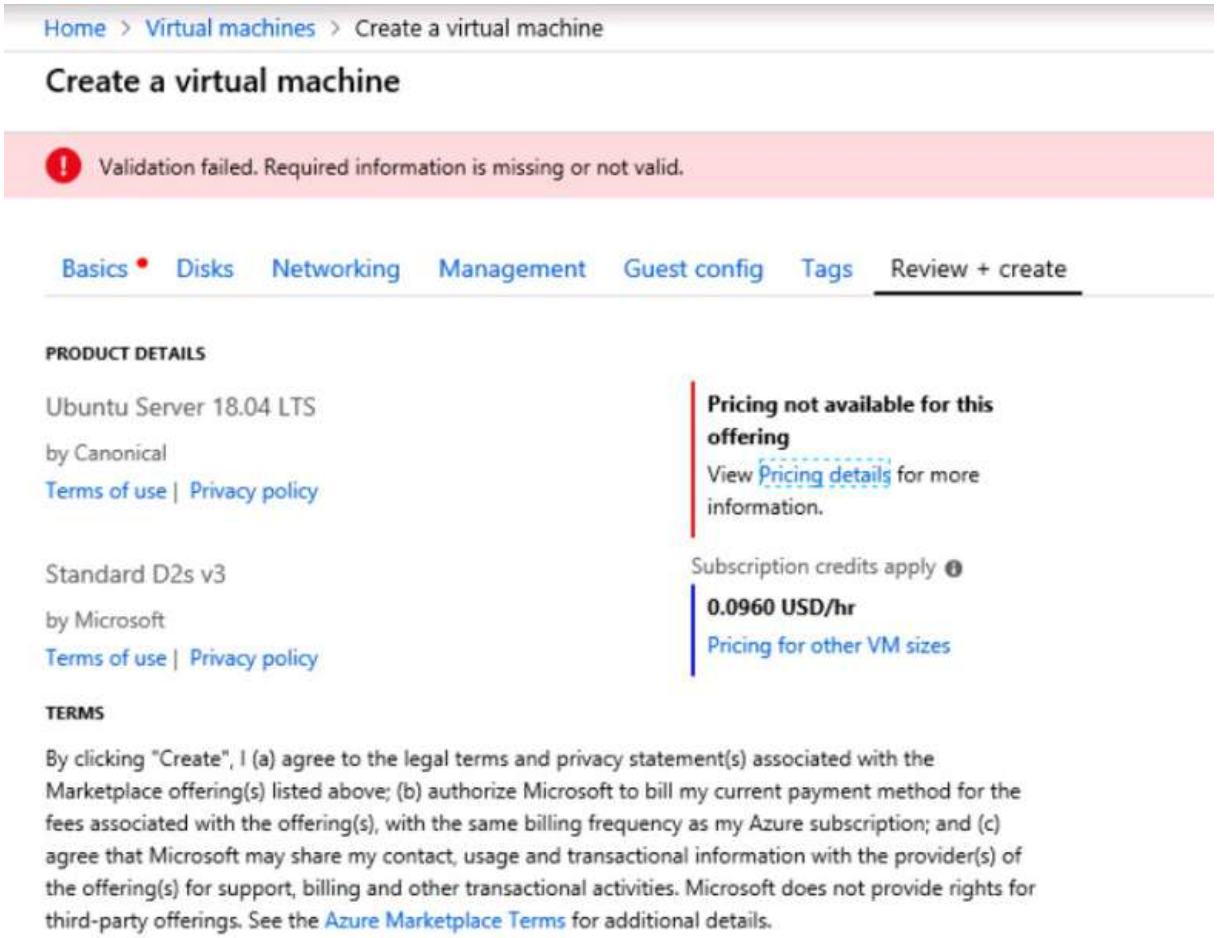

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To start the lab
You may start the lab by clicking the Next button.

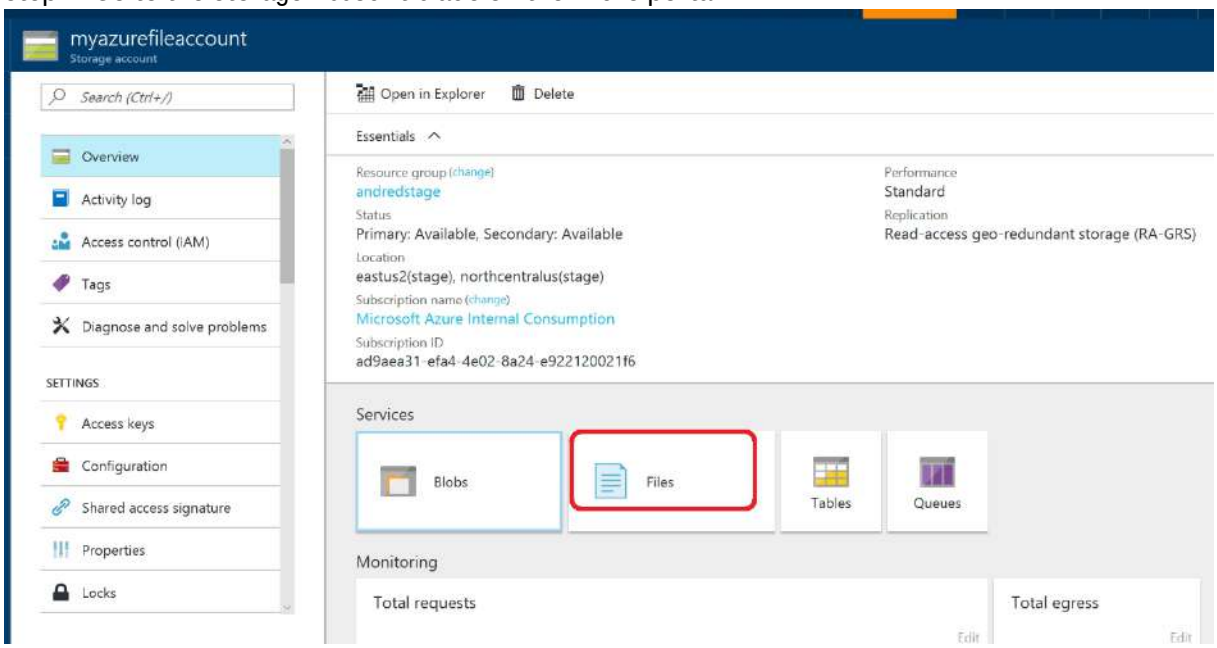
Your company plans to host in Azure the source files of several line-of-business applications.

You need to create an Azure file share named corpsoftware in the corpdata7523690n1 storage account. The solution must ensure that corpsoftware can store only up to 250 GB of data.

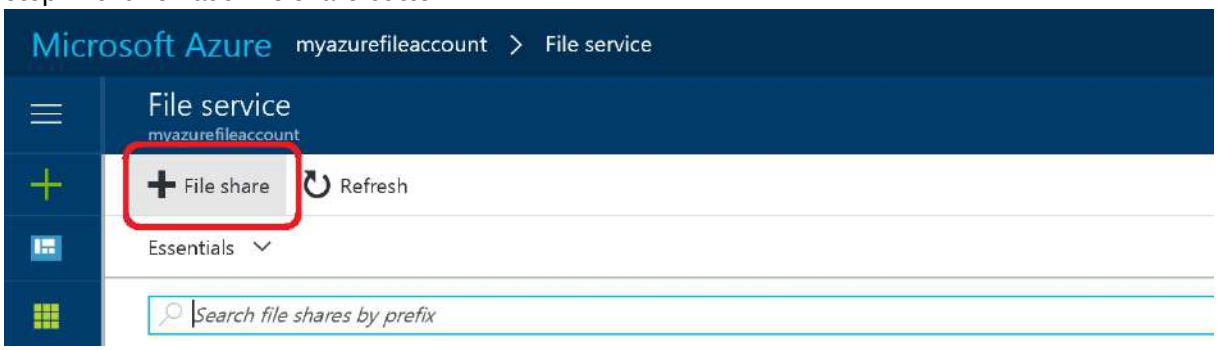
What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Go to the Storage Account blade on the Azure portal:



Step 2: Click on add File Share button:



Step 3: Provide Name (corpdata7523690n1) and Quota (250 GB).

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References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-create-file-share

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Question 169

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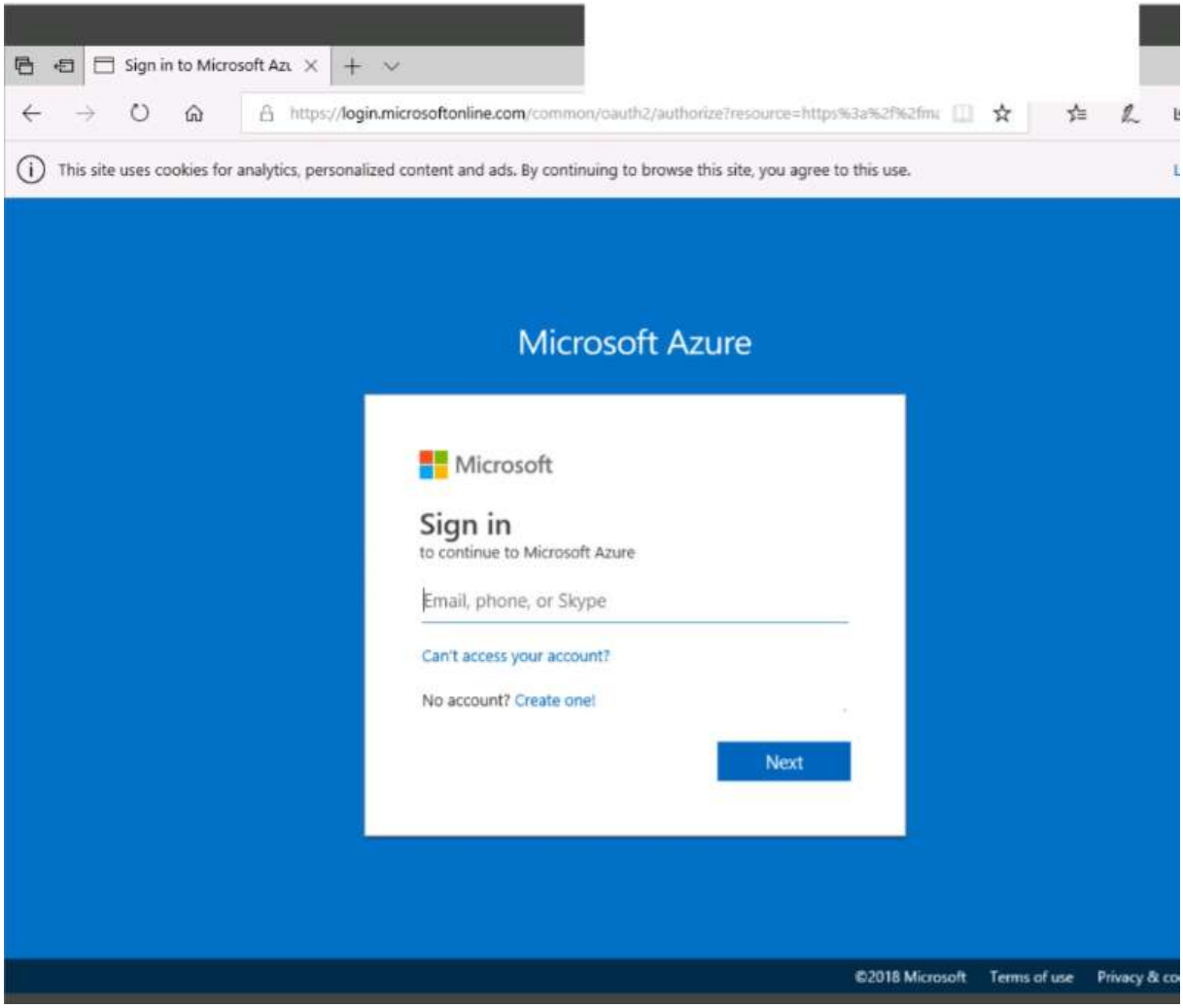
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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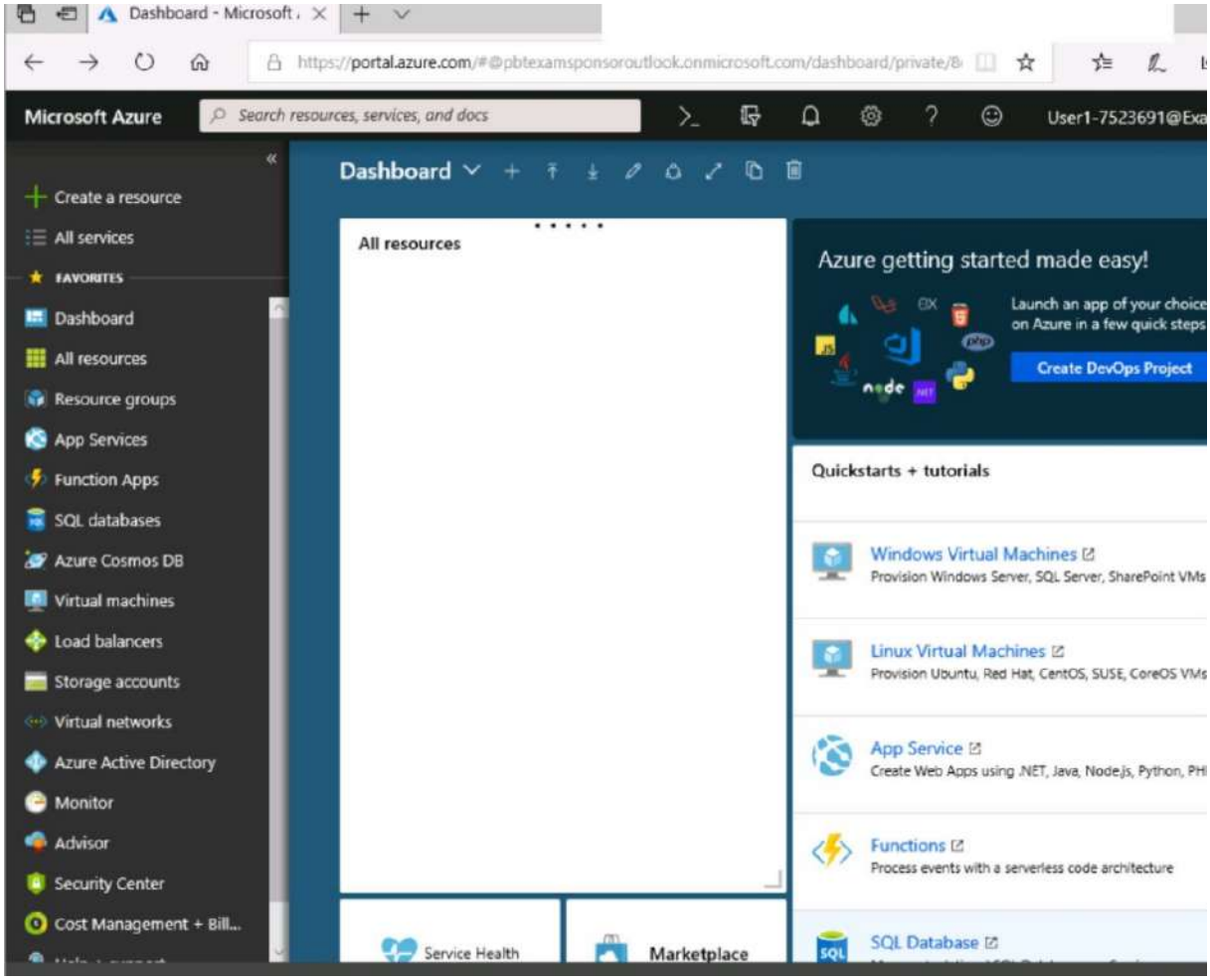

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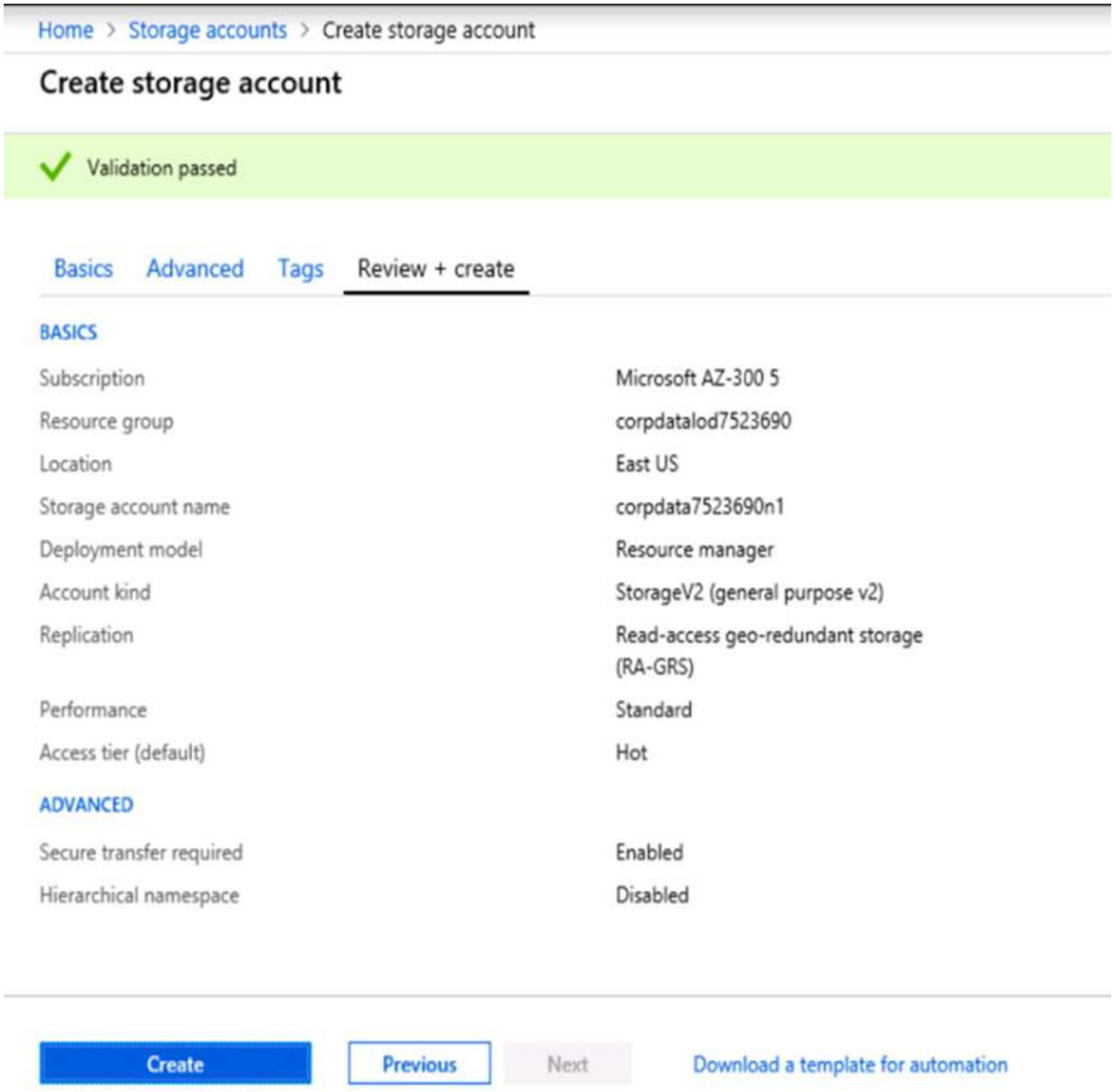

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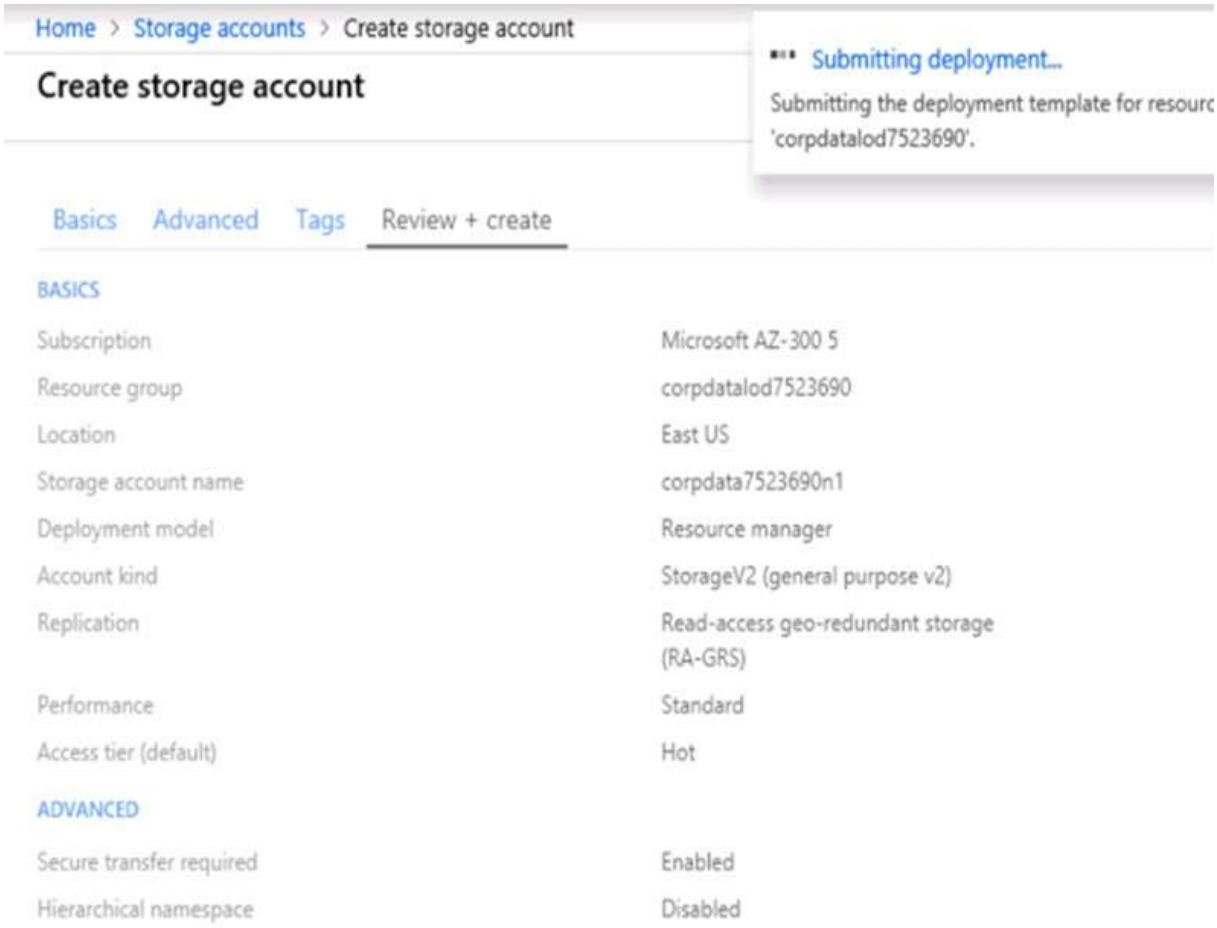

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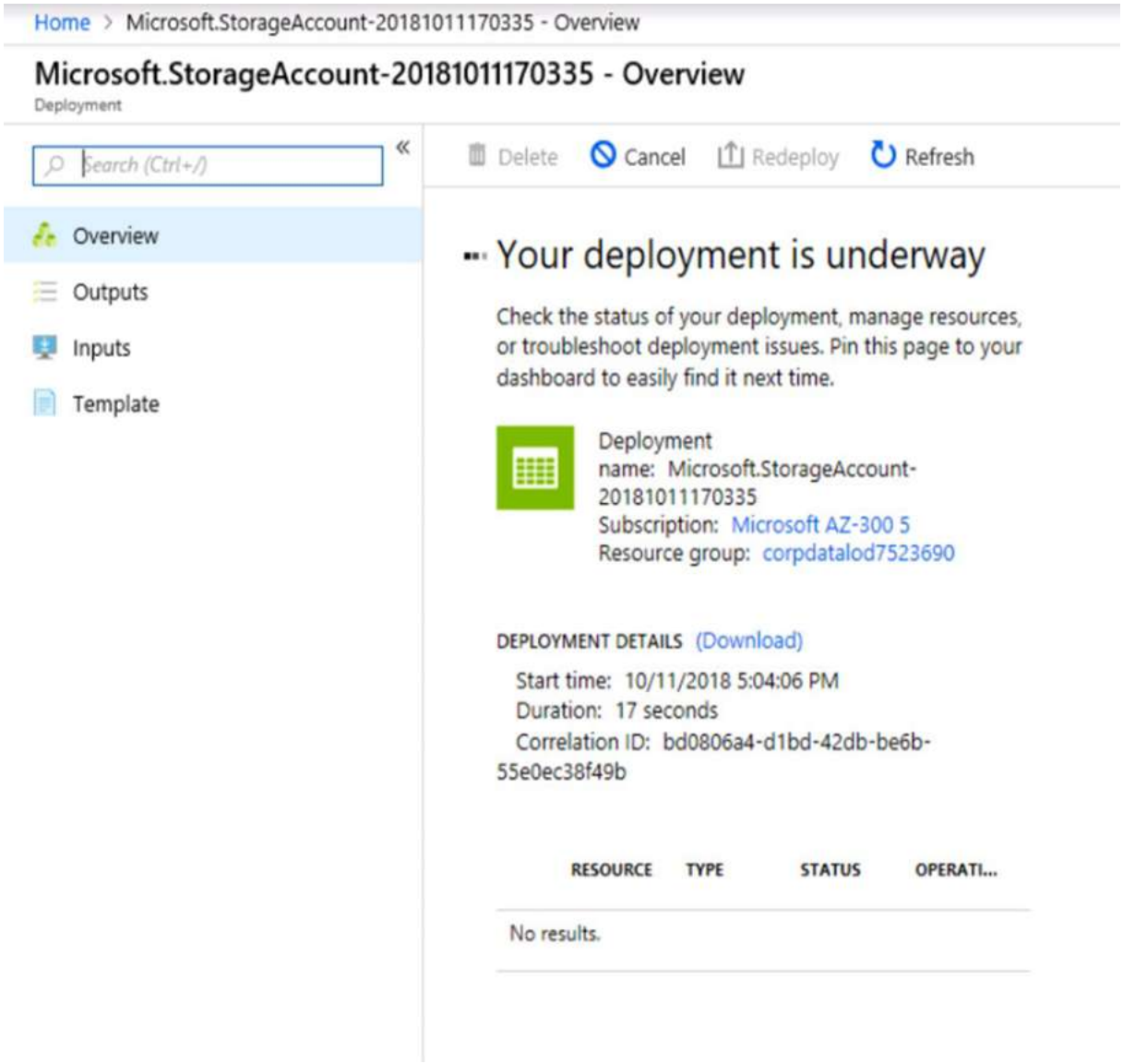

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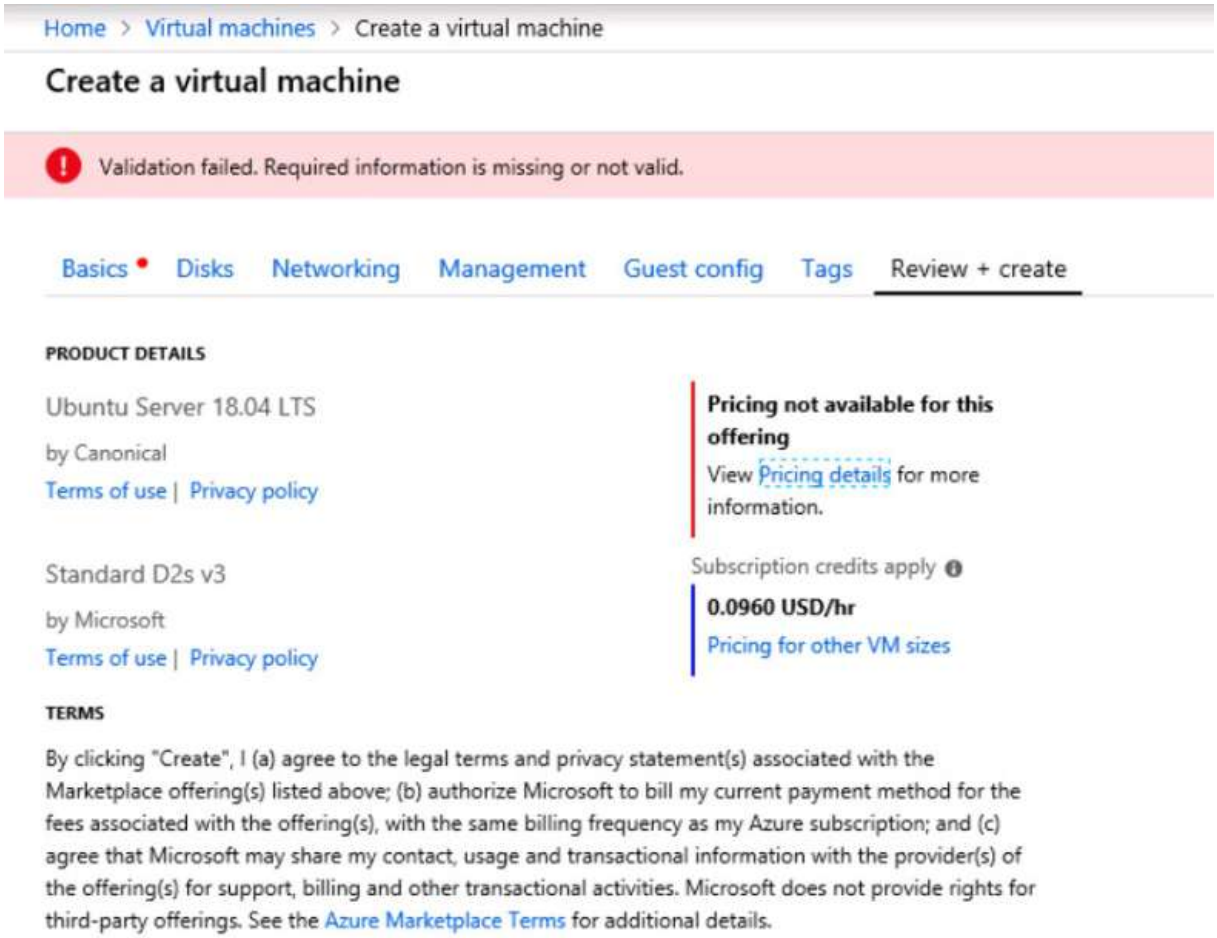

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To start the lab
You may start the lab by clicking the Next button.

You plan to back up all the Azure virtual machines in your Azure subscription at 02:00 Coordinated Universal Time (UTC) daily.

You need to prepare the Azure environment to ensure that any new virtual machines can be configured quickly for backup. The solution must ensure that all the daily backups performed at 02:00 UTC are stored for only 90 days.

What should you do from your Recovery Services vault on the Azure portal?

Explanation/Reference

Explanation:
Task A: Create a Recovery Services vault (if a vault already exists skip this task, go to Task B below)
A1. From Azure Portal, On the Hub menu, click All services and in the list of resources, type Recovery Services and click Recovery Services vaults.

If there are recovery services vaults in the subscription, the vaults are listed.

A2. On the Recovery Services vaults menu, click Add.

A3. The Recovery Services vault blade opens, prompting you to provide a Name, Subscription, Resource group, and Location

Task B.
B1. On the Recovery Services vault blade (for the vault you just created), in the Getting Started section, click Backup, then on the Getting Started with Backup blade, select Backup goal.

The Backup Goal blade opens. If the Recovery Services vault has been previously configured, then the Backup Goal blades opens when you click Backup on the Recovery Services vault blade.

B2. From the Where is your workload running? drop-down menu, select Azure.

B3. From the What do you want to backup? menu, select Virtual Machine, and click OK.

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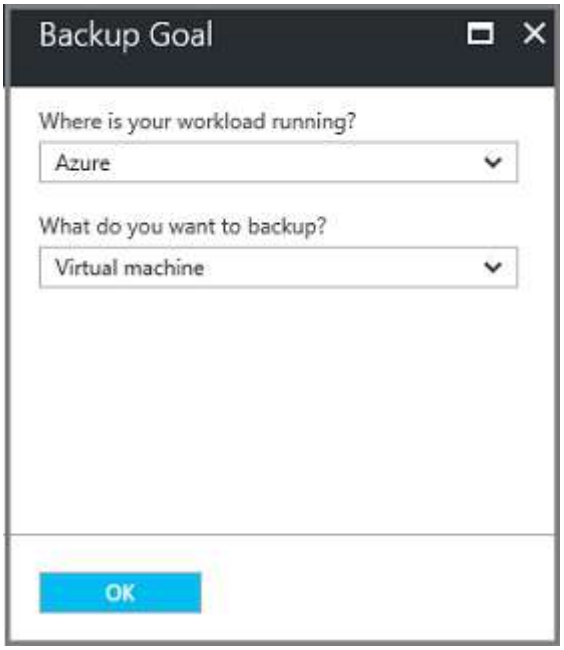
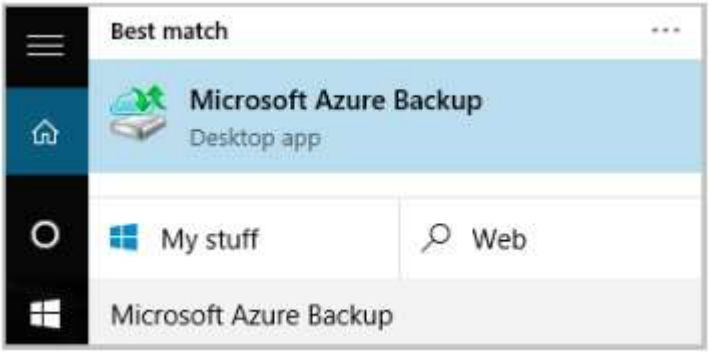


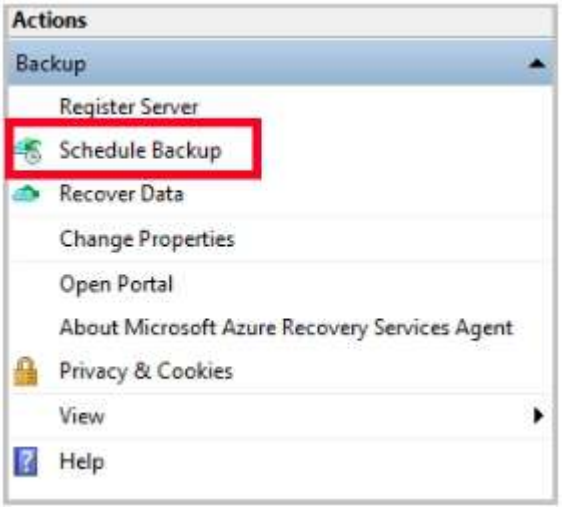
B4. Finish the Wizard.

Task C. create a backup schedule

C1. Open the Microsoft Azure Backup agent. You can find it by searching your machine for Microsoft Azure Backup.



C2. In the Backup agent's Actions pane, click Schedule Backup to launch the Schedule Backup Wizard.



C3. On the Getting started page of the Schedule Backup Wizard, click Next.

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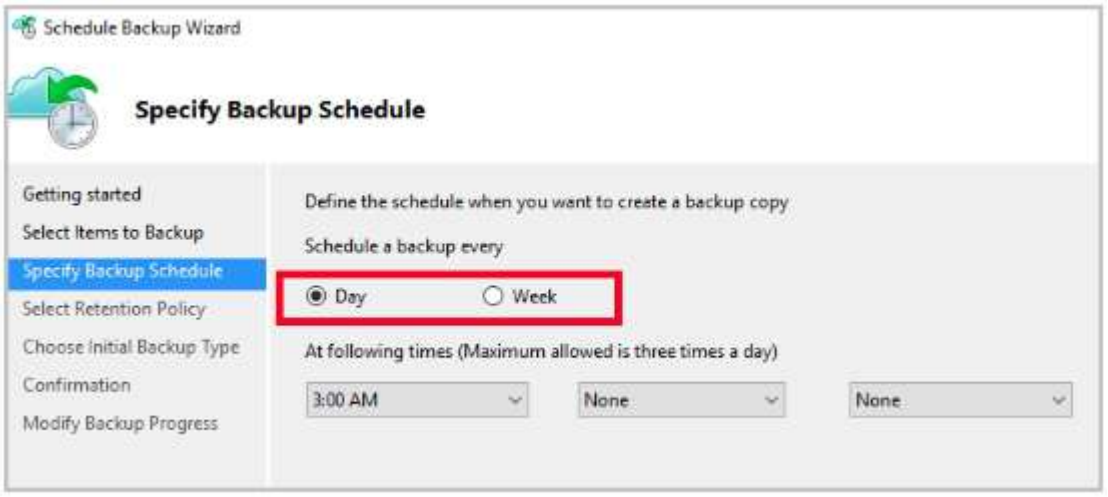
C4. On the Select Items to Backup page, click Add Items.

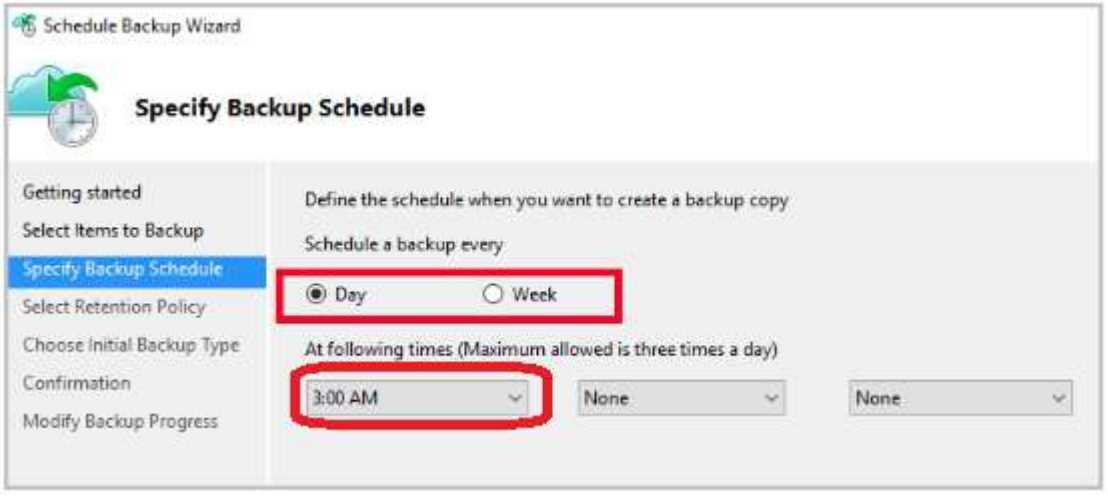
The Select Items dialog opens.

C5. Select Blob Storage you want to protect, and then click OK.

C6.In the Select Items to Backup page, click Next.
On the Specify Backup Schedule page, specify
Schedule a backup every: day
At the following times: 2.00 AM



C7. On the Select Retention Policy page, set it to 90 days, and click Next.



C8. Finish the Wizard.

References:
https://docs.microsoft.com/en-us/azure/backup/backup-configure-vault

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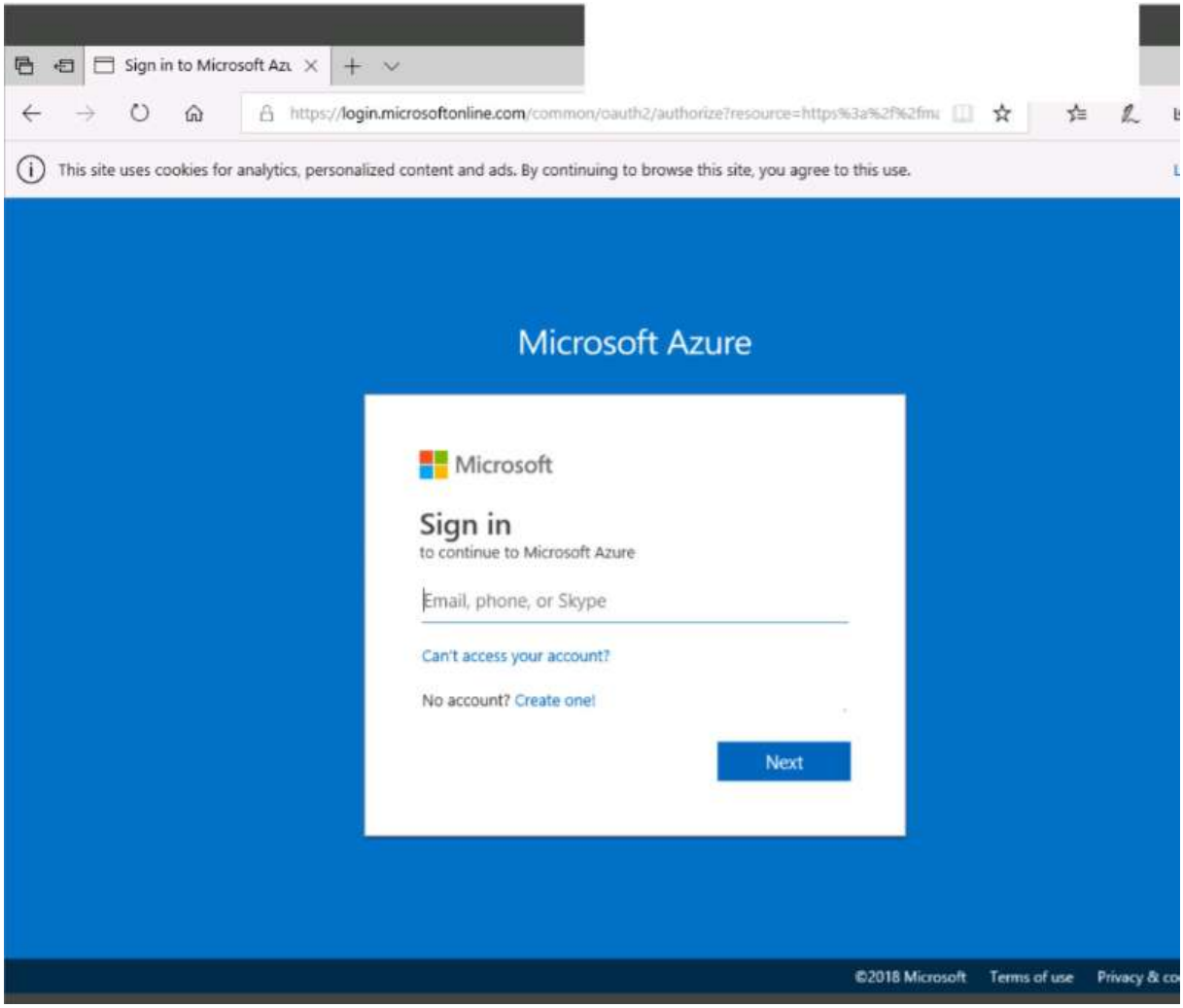
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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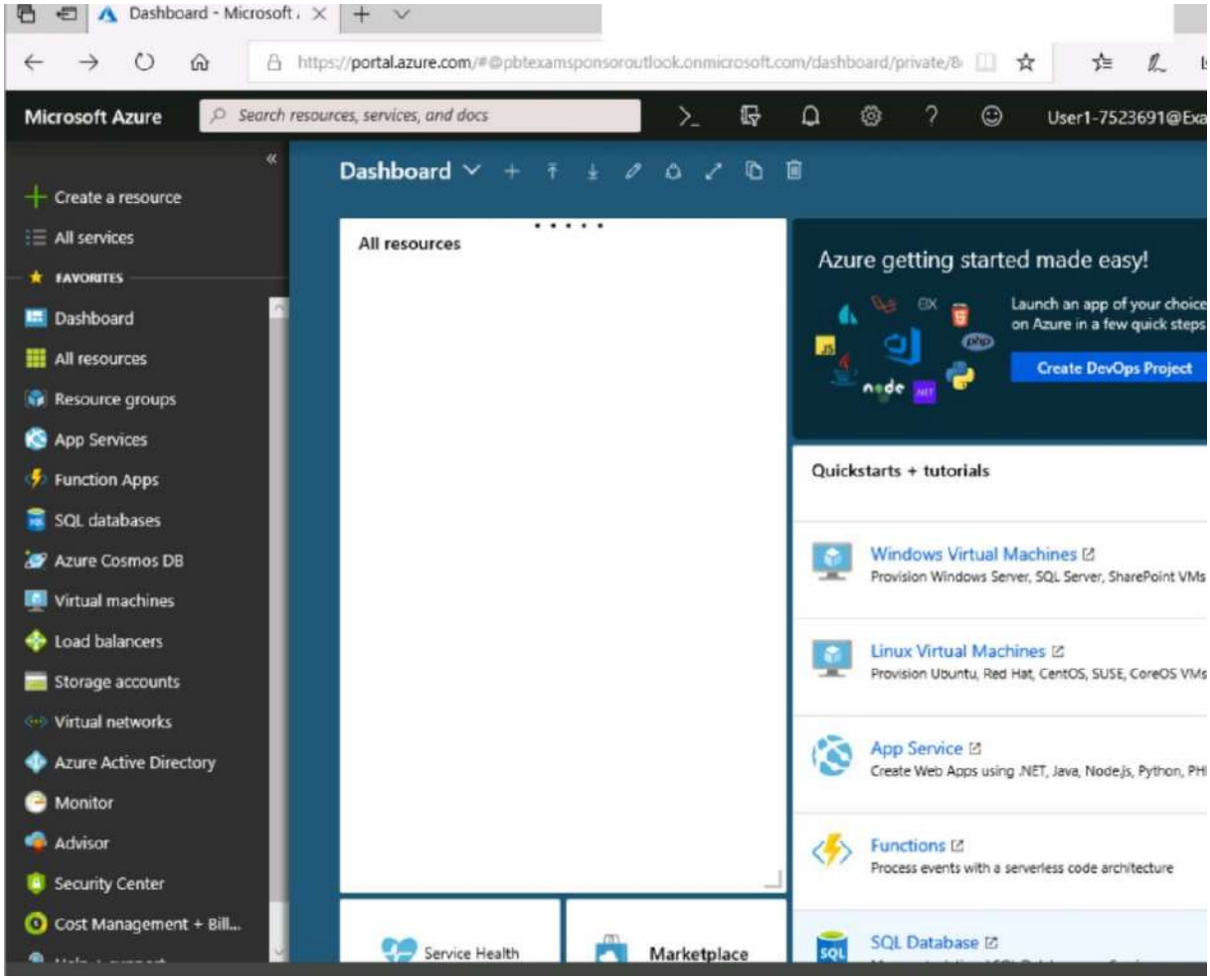

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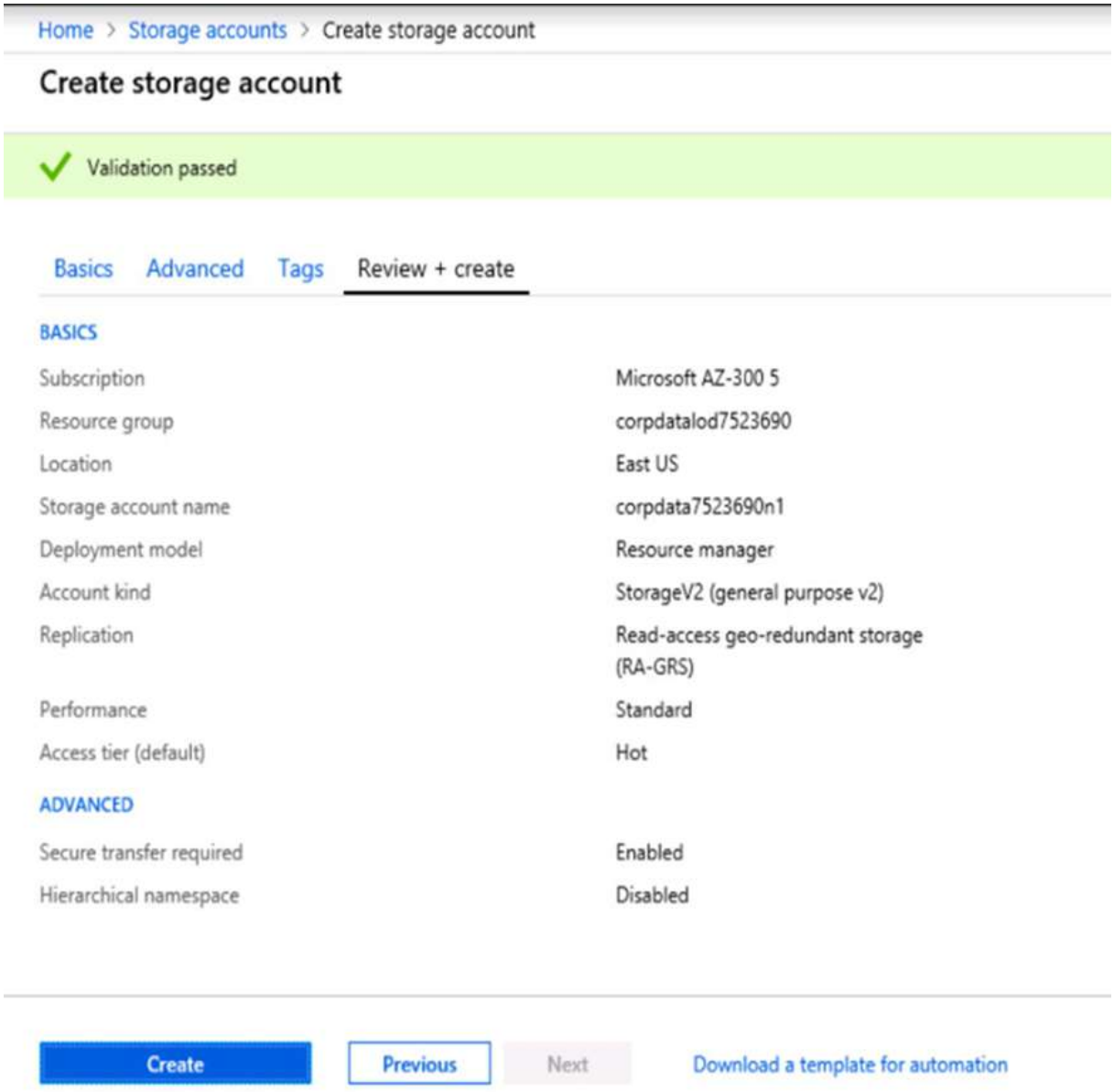

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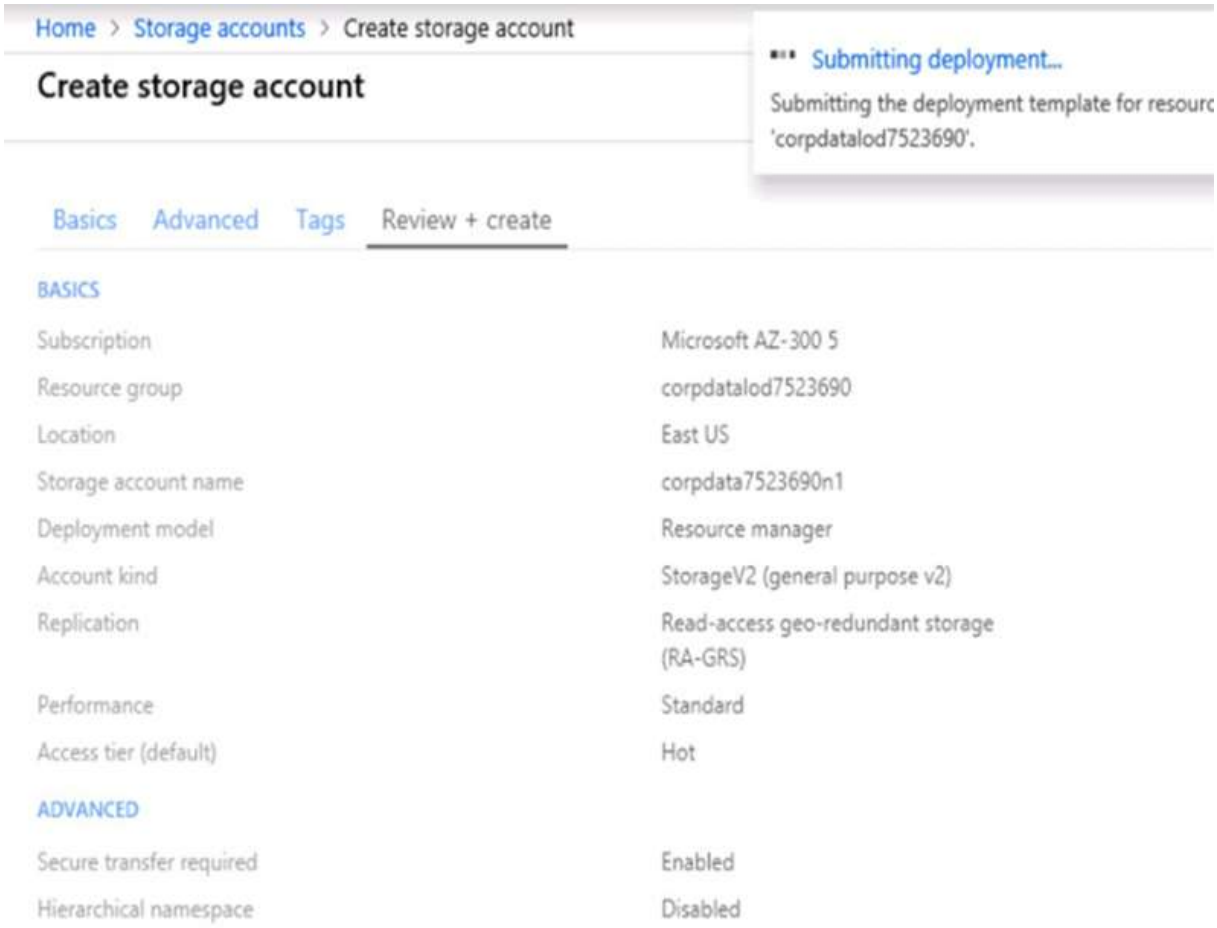

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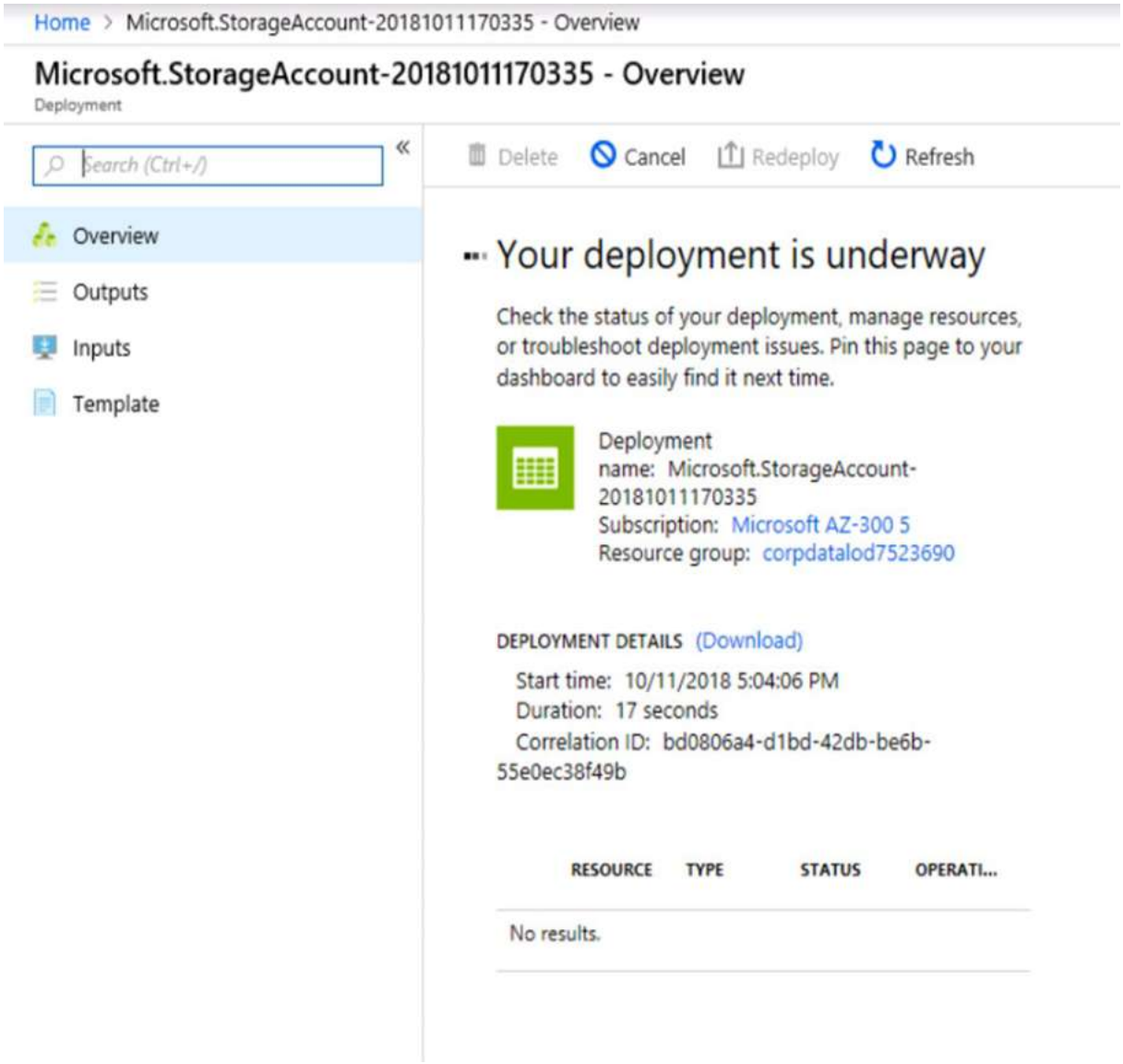

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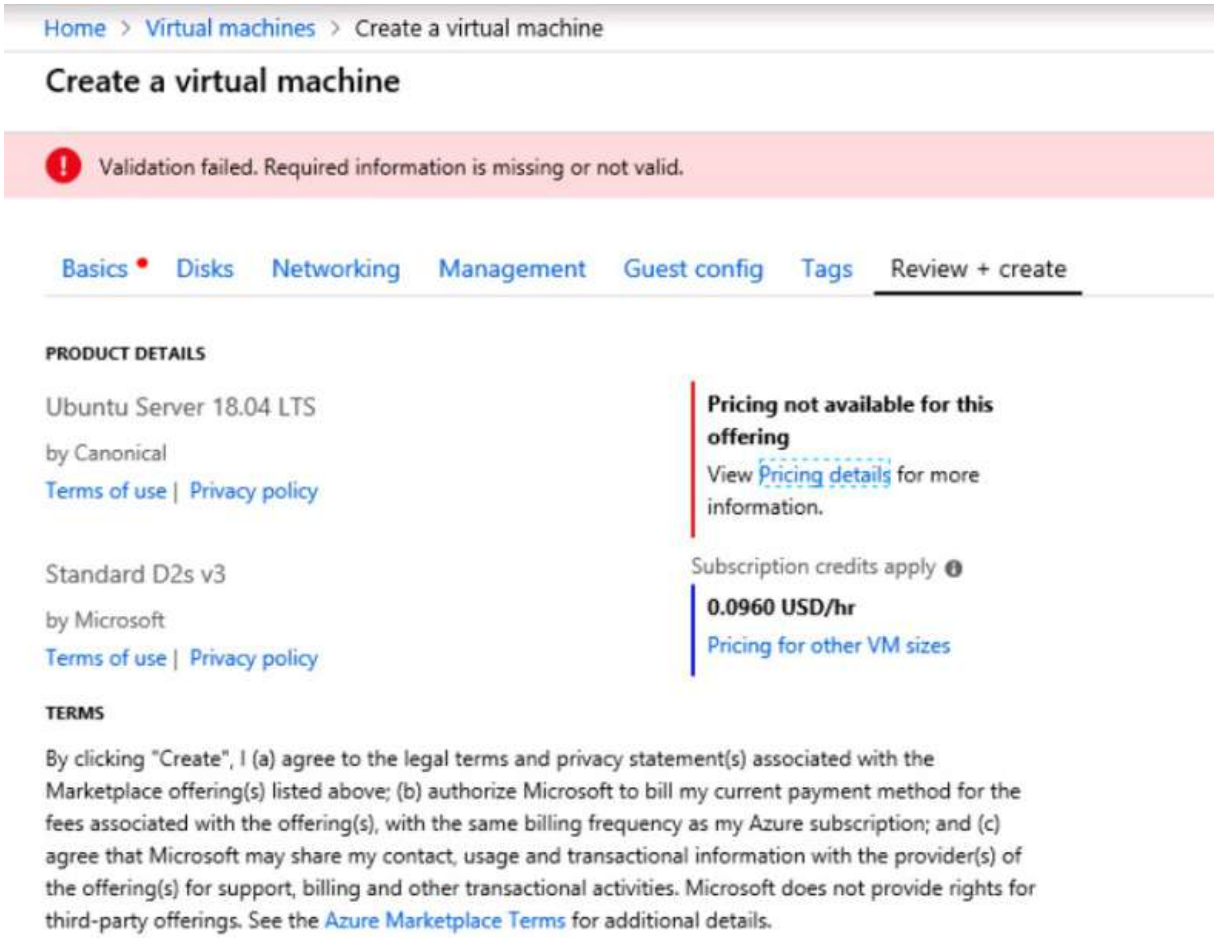

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To start the lab
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You plan to connect several virtual machines to the VNET01-USEA2 virtual network.

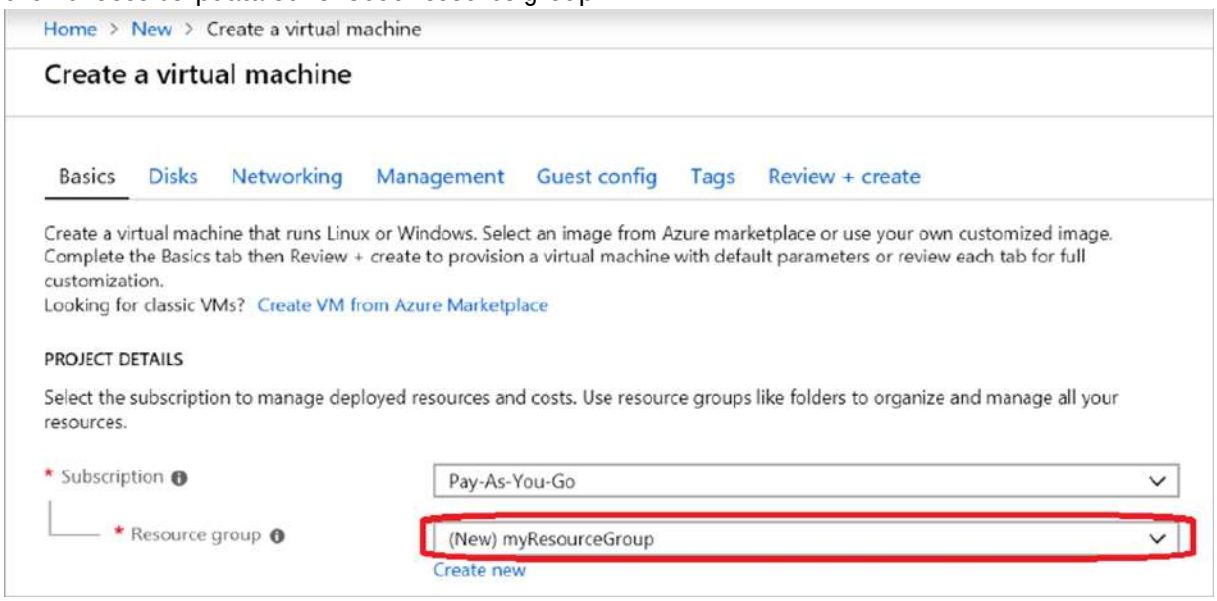
In the corpdatalod7523690 resource group, you need to create a virtual machine that uses the Standard_B2ms size named Web01 that runs Windows Server 2016. Web01 must be added to an availability set.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Choose Create a resource in the upper left-hand corner of the Azure portal.

Step 2: In the Basics tab, under Project details, make sure the correct subscription is selected and then choose corpdatalod7523690 resource group



Step 3: Under Instance details type/select:
Virtual machine name: Web01
Image: Windows Server 2016
Size: Standard_B2ms size

Leave the other defaults.

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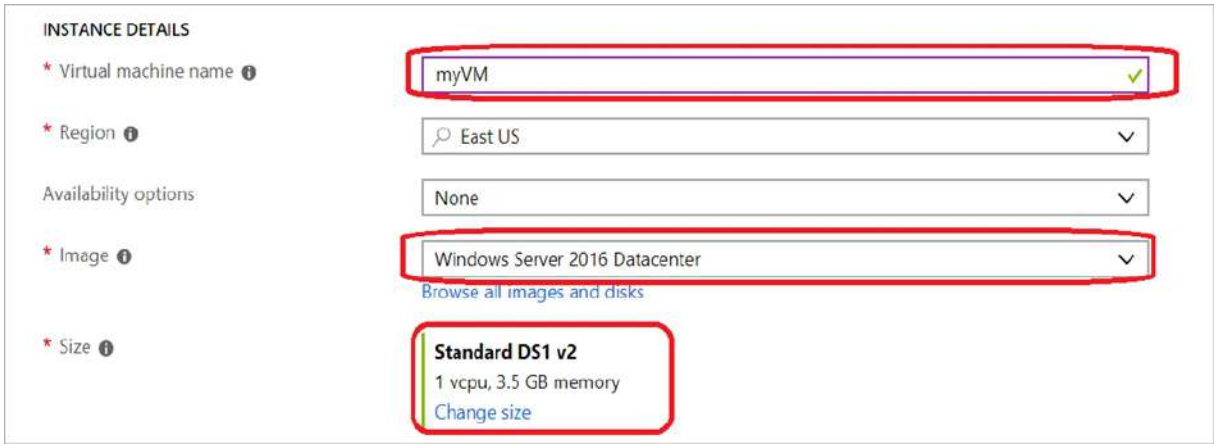

Step 4: Finish the Wizard

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SIMULATION

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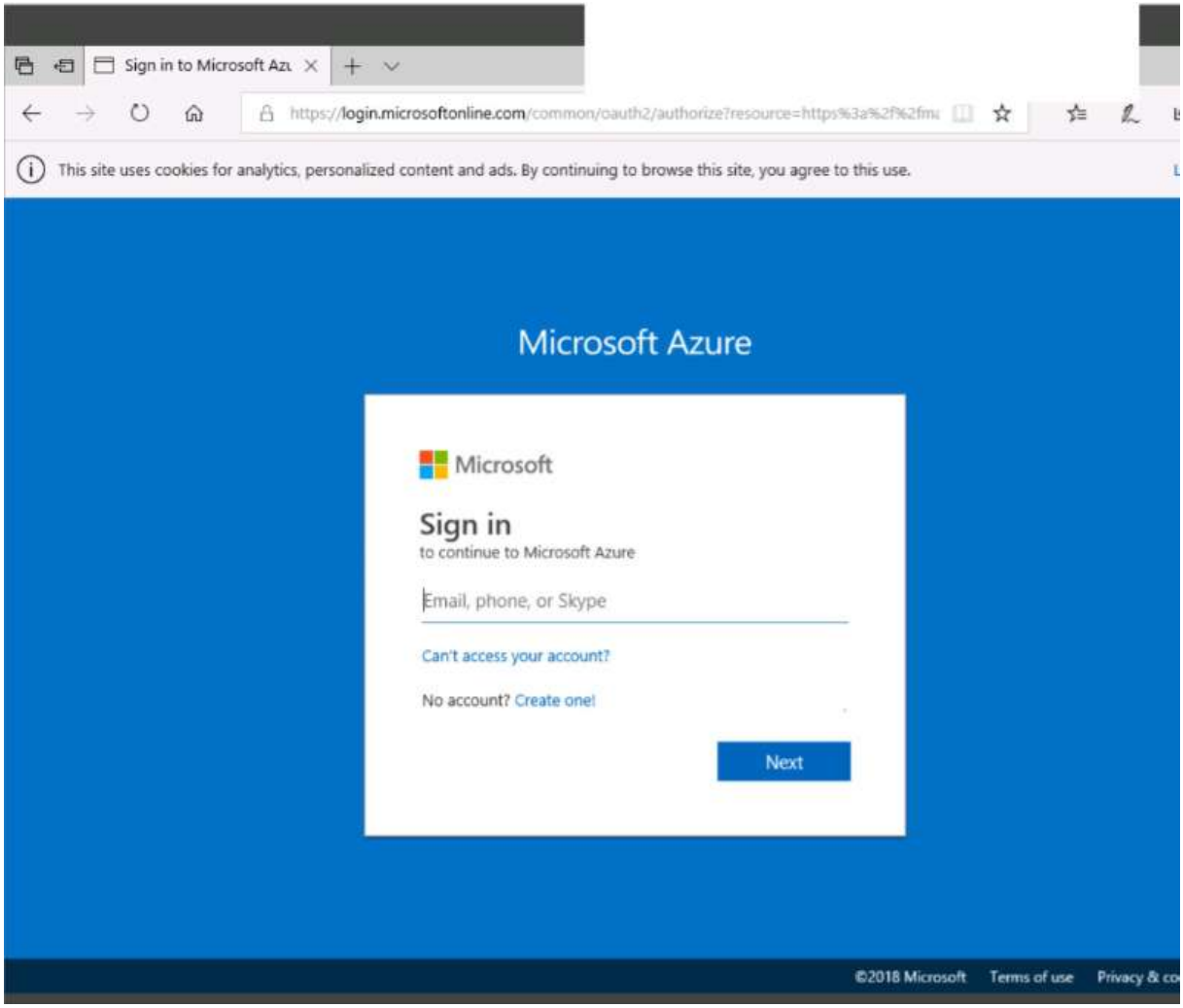

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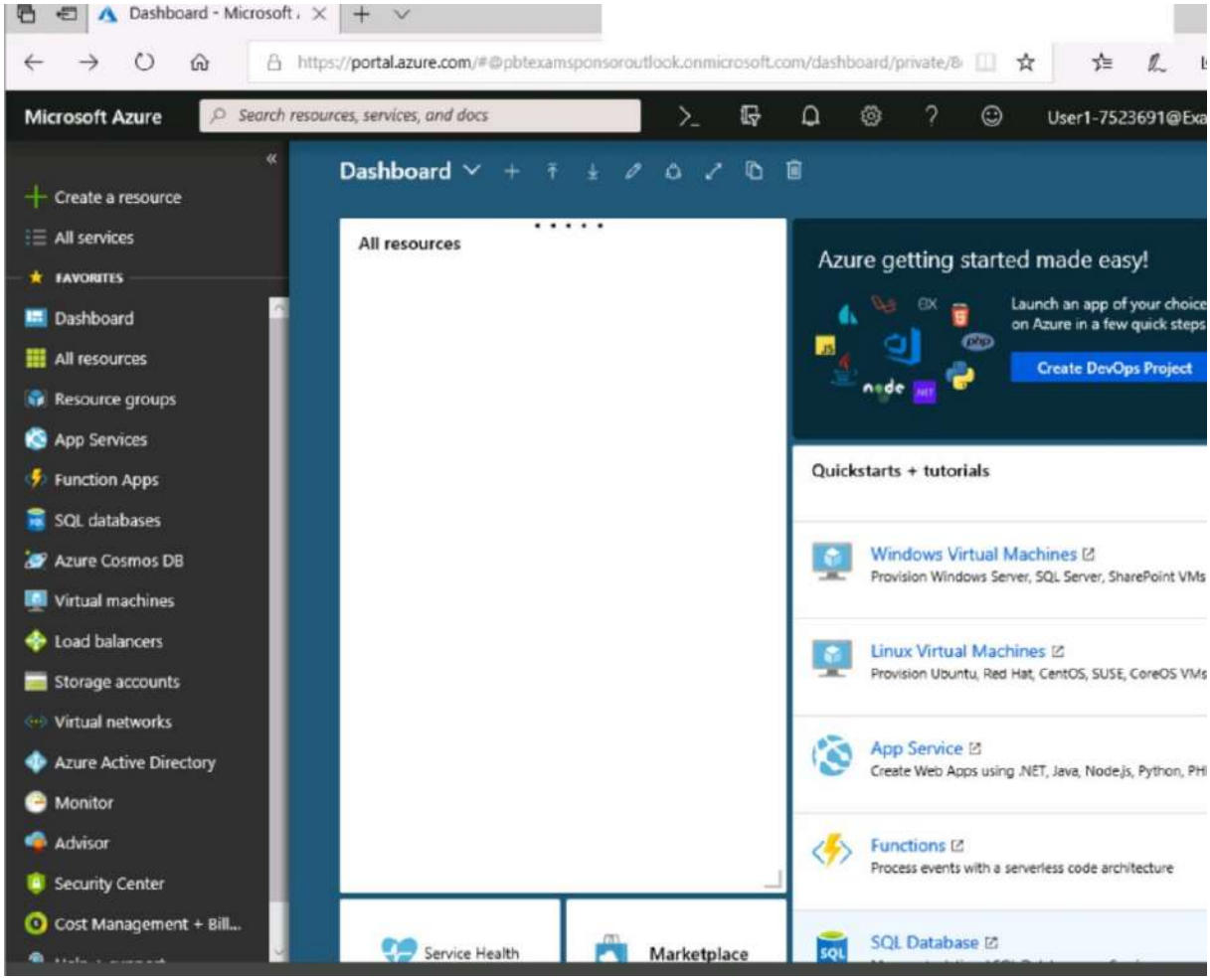

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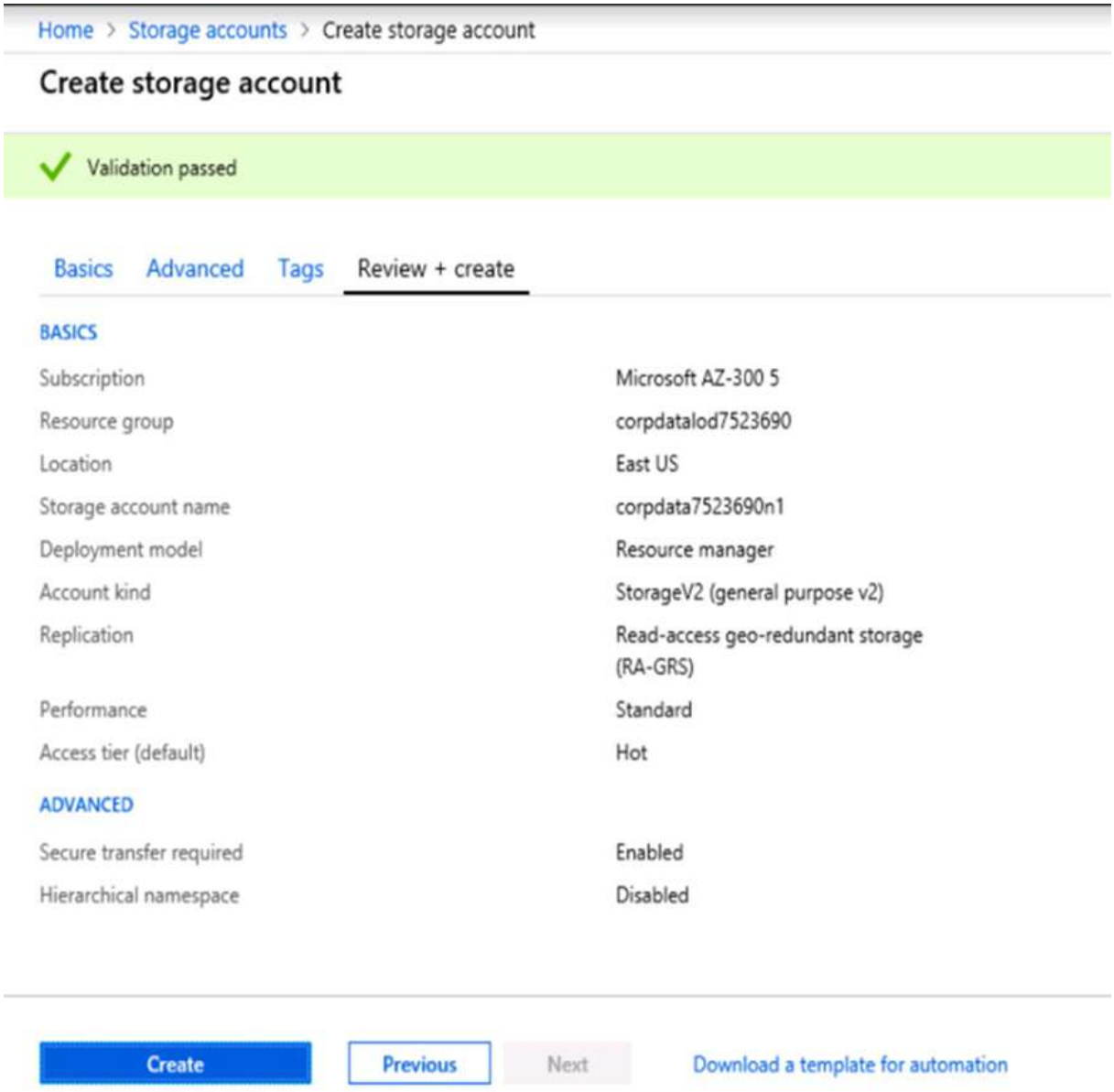

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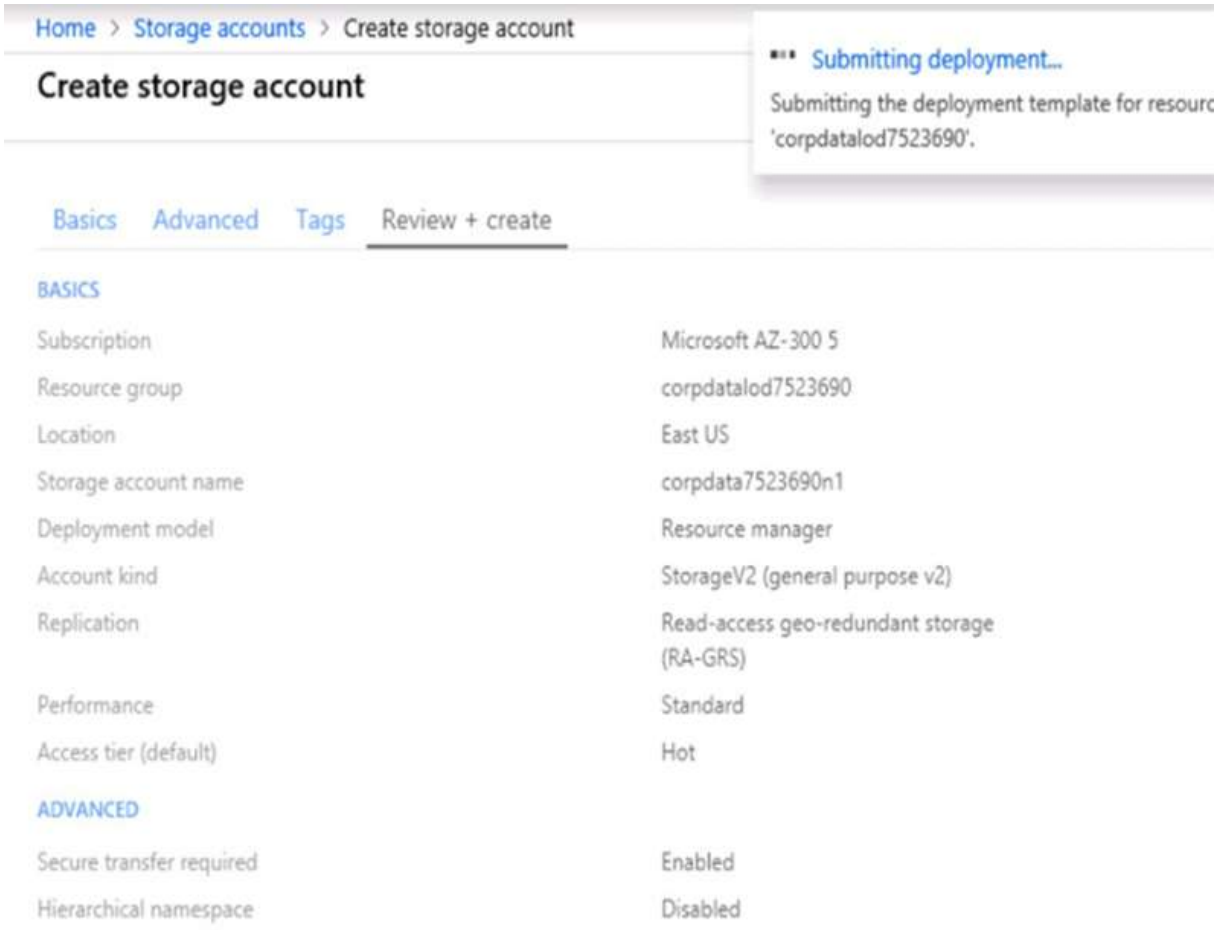

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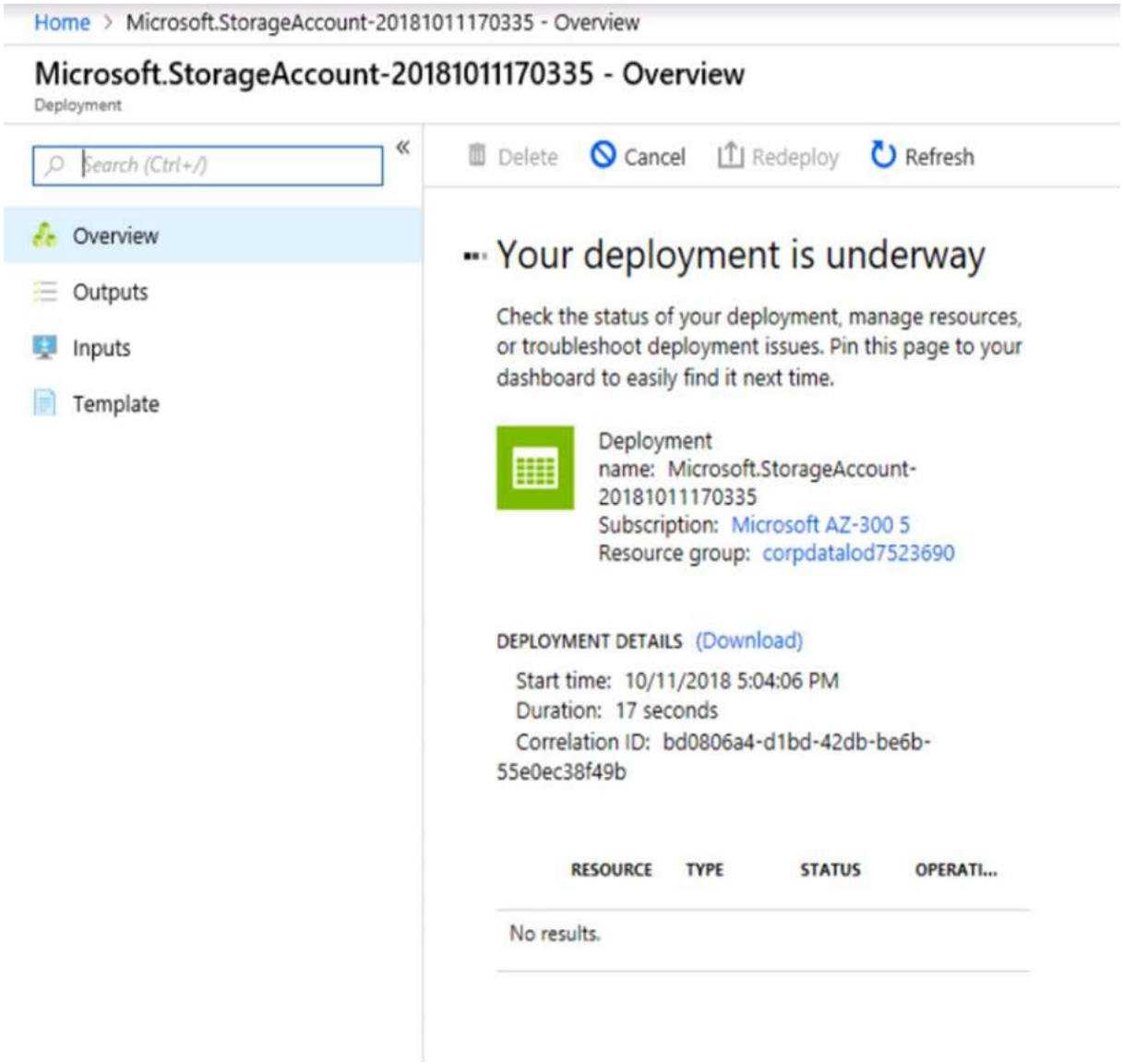

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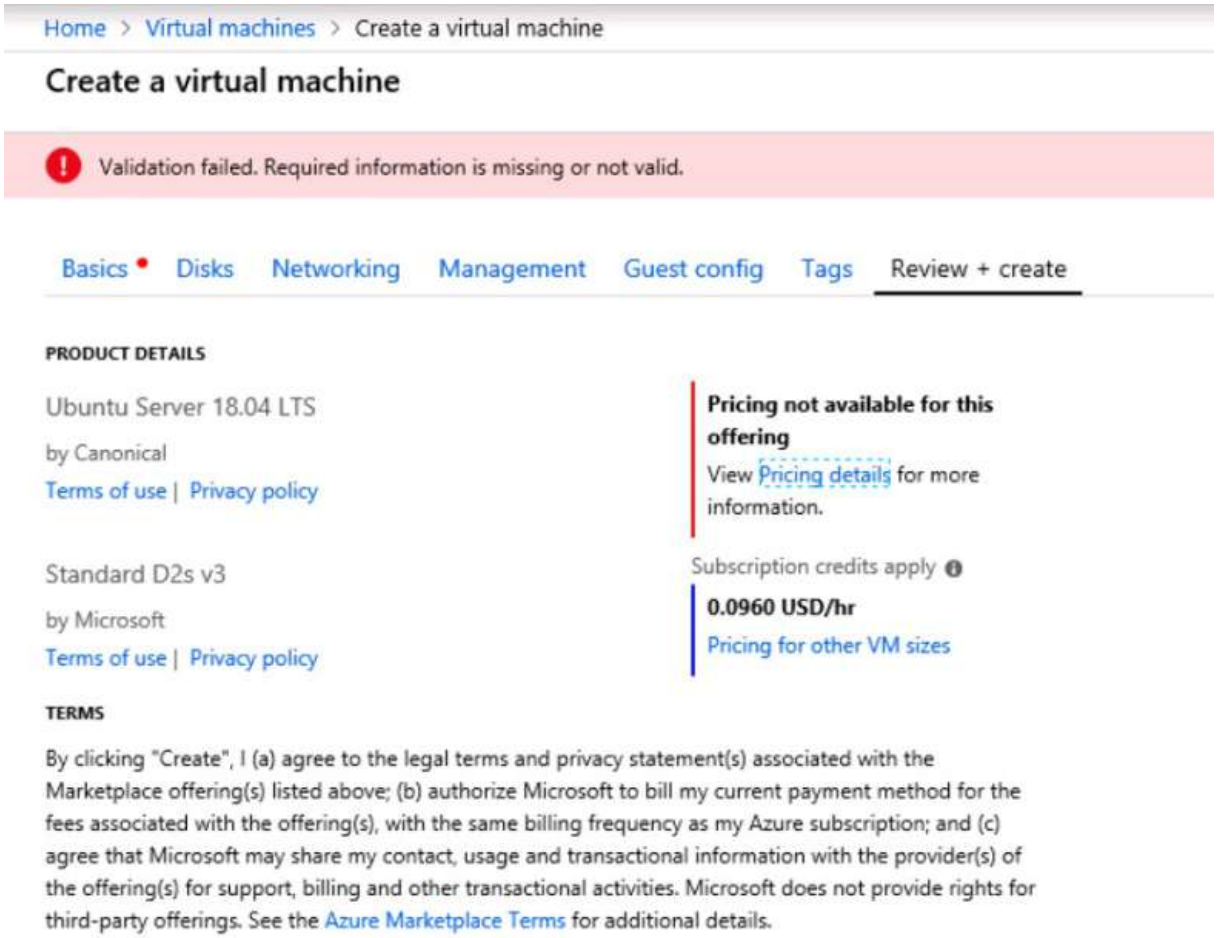

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To start the lab
You may start the lab by clicking the Next button.

You recently created a virtual machine named Web01.

You need to attach a new 80-GB standard data disk named Web01-Disk1 to Web01.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Add a data disk
Step 1: In the Azure portal, from the menu on the left, select **Virtual machines**.

Step 2: Select the Web01 **virtual machine** from the list.

Step 3: On the Virtual machine page, , in Essentials, select **Disks**.

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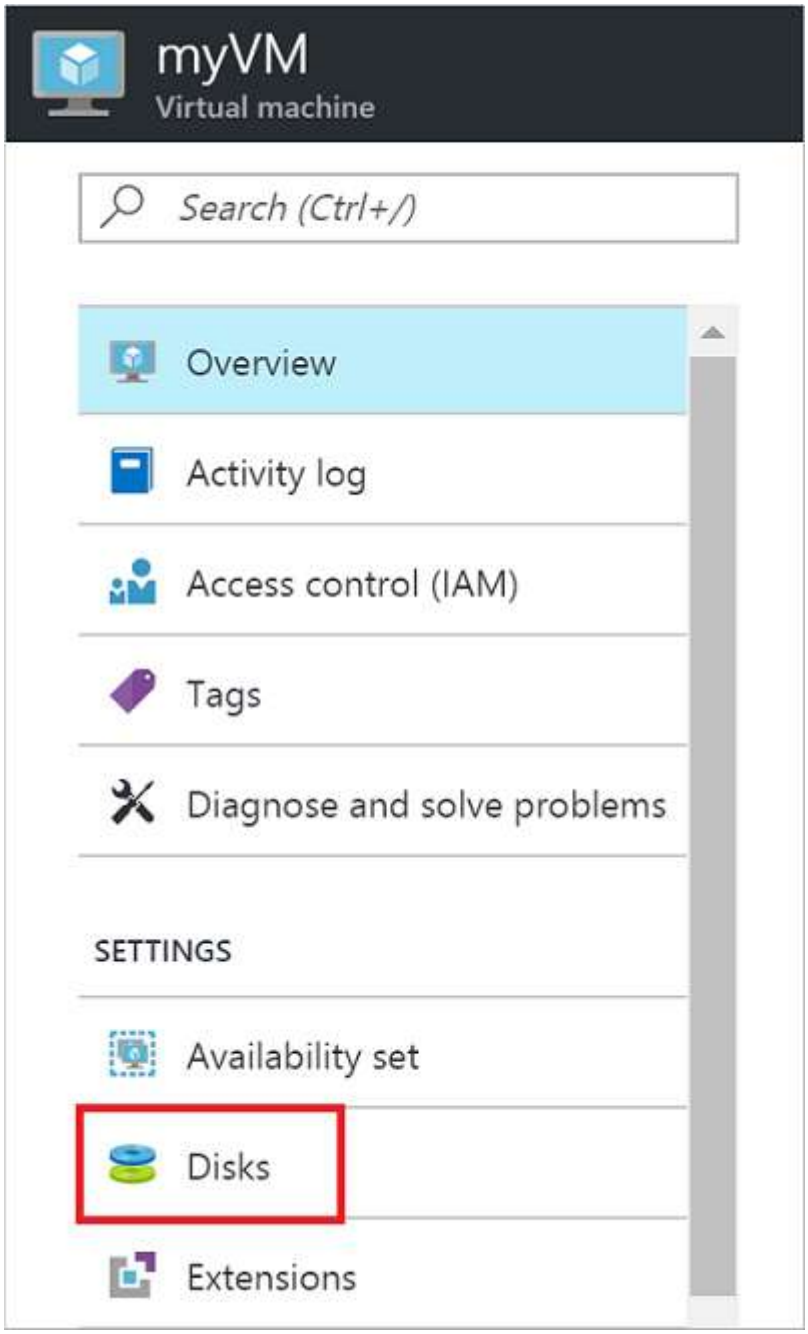

Step 4: On the**Disks**page, select**t**he Web01-Disk1 from the list of existing disks.

Step 5: In the Disks pane, click + Add data disk.

Step 6: Click the drop-down menu for Name to view a list of existing managed disks accessible to your Azure subscription. Select the managed disk Web01-Disk1 to attach:

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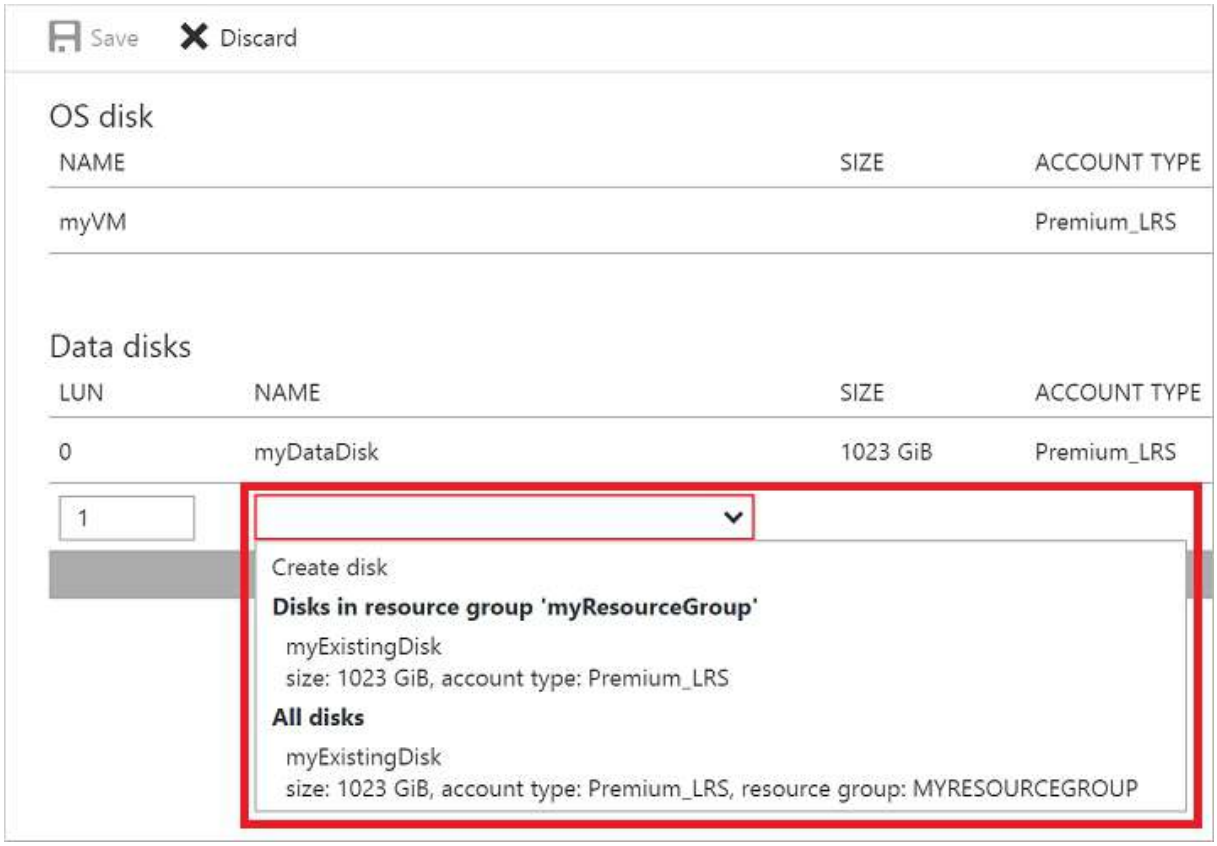

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/attach-disk-portal

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SIMULATION

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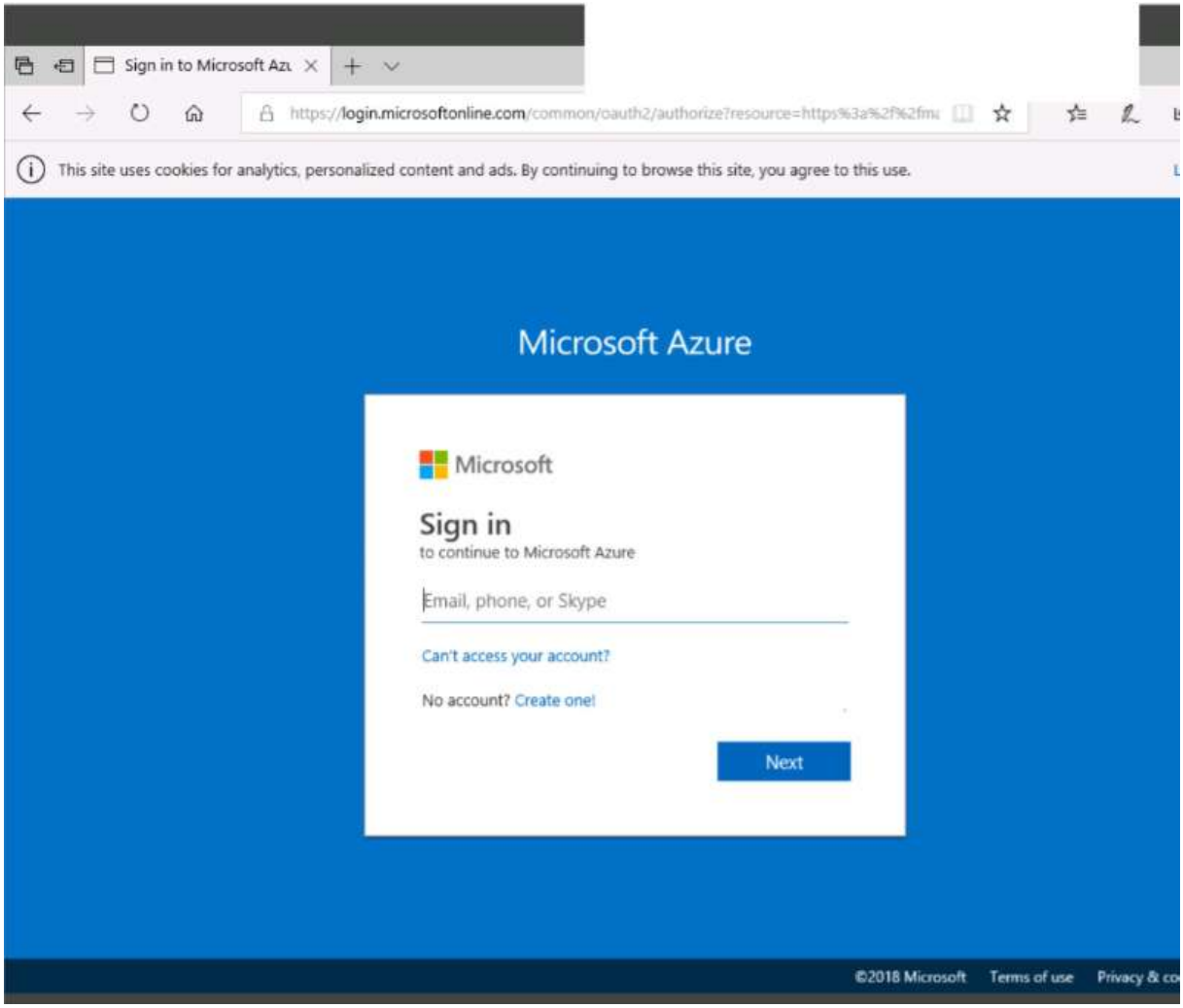

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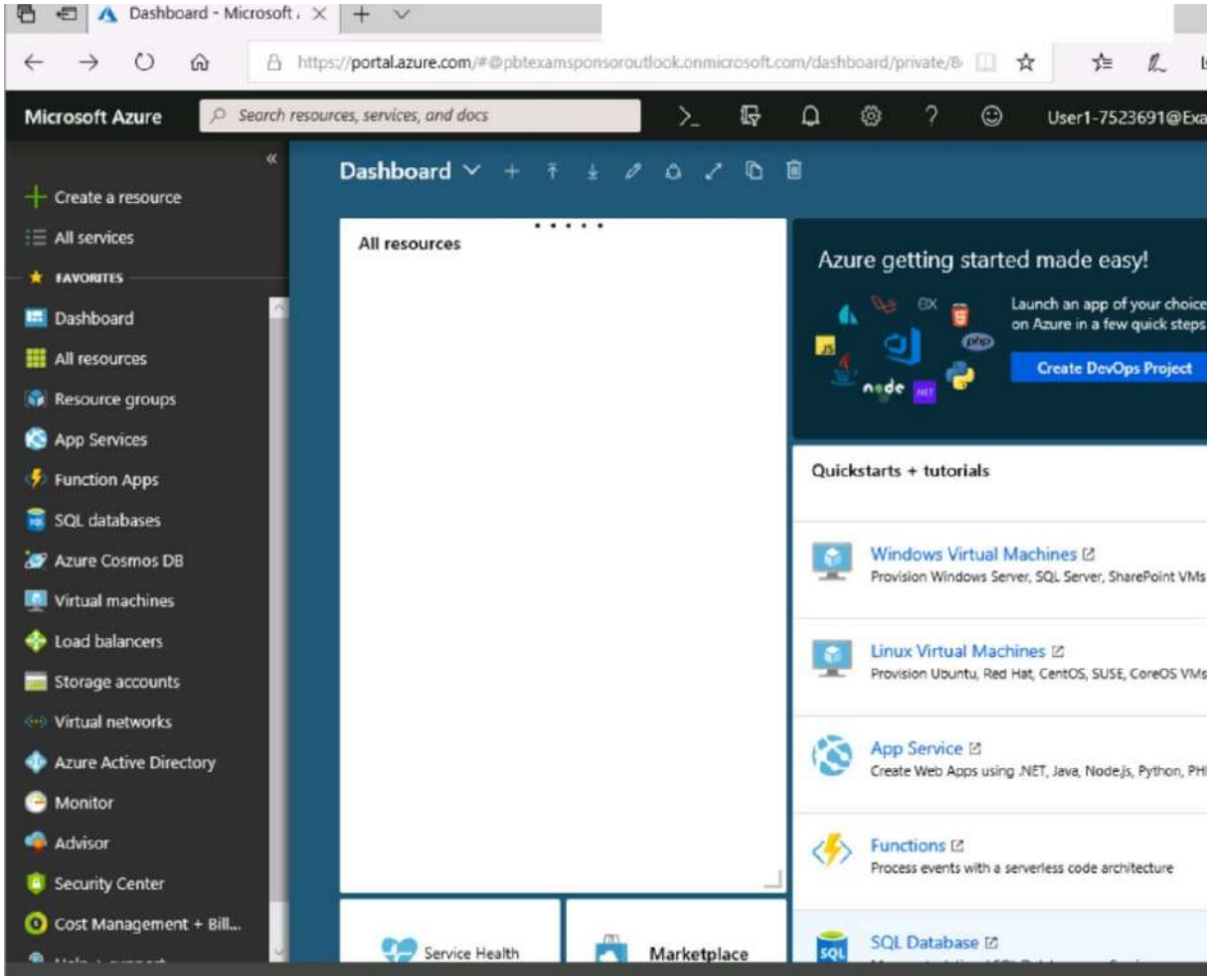

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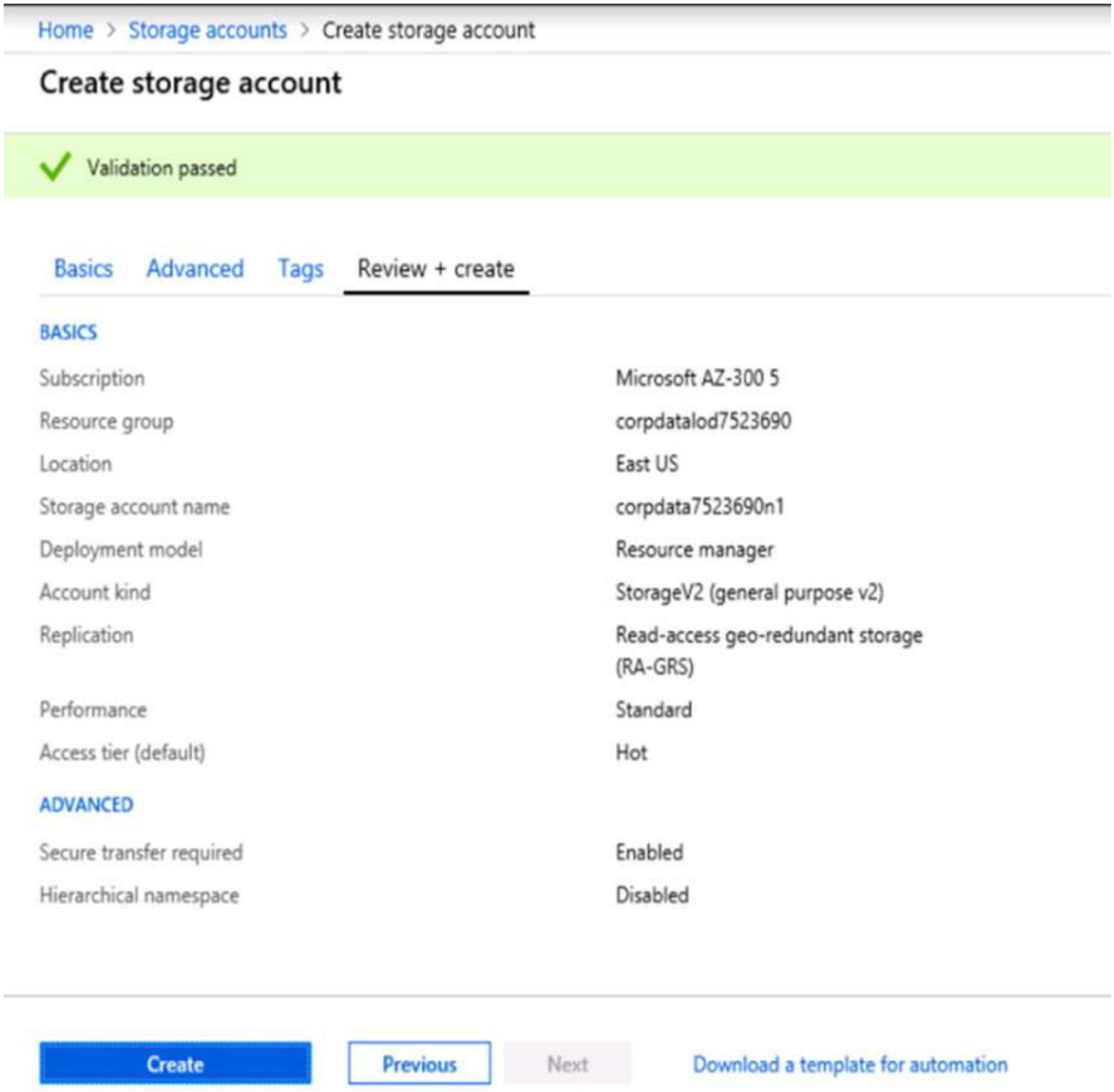

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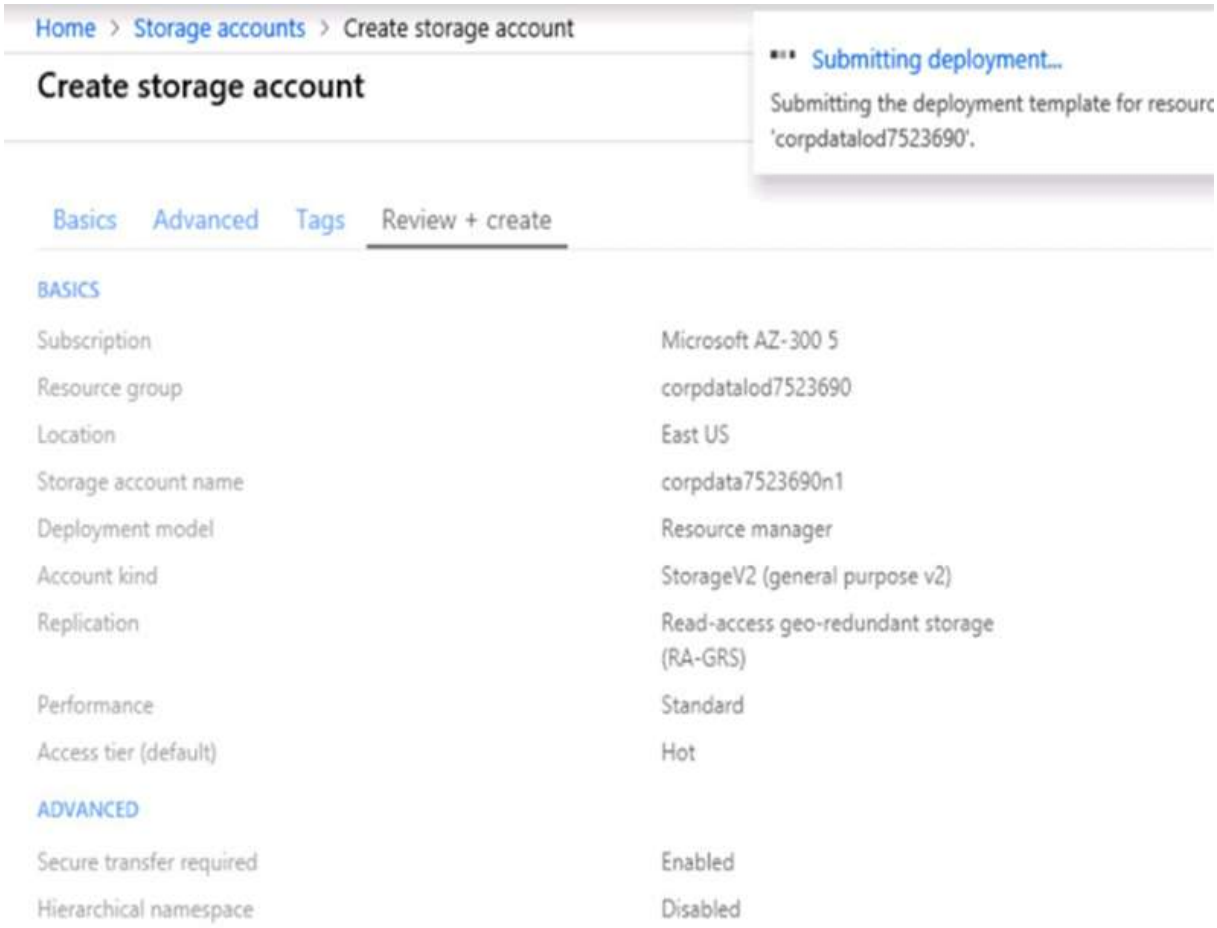

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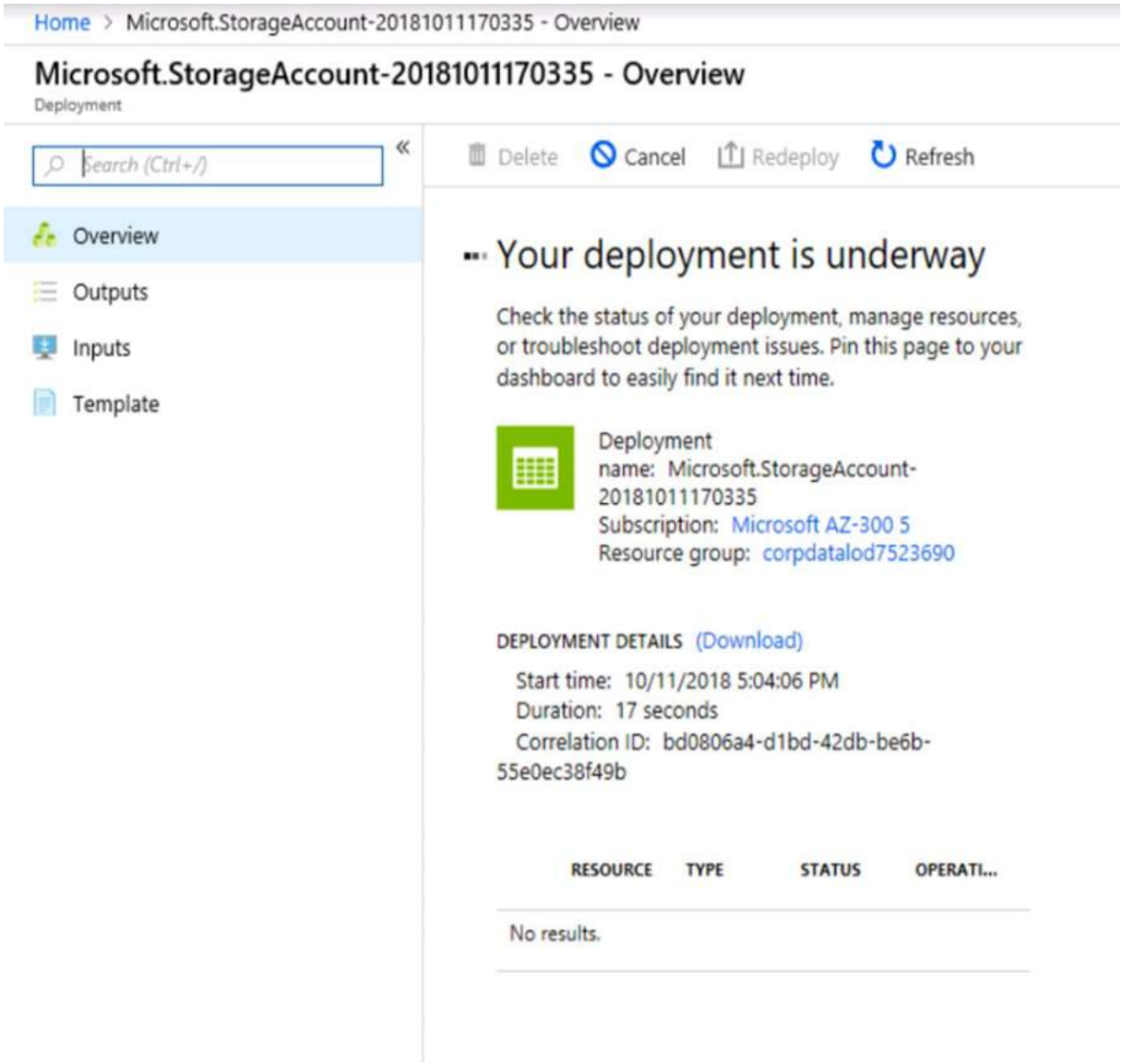

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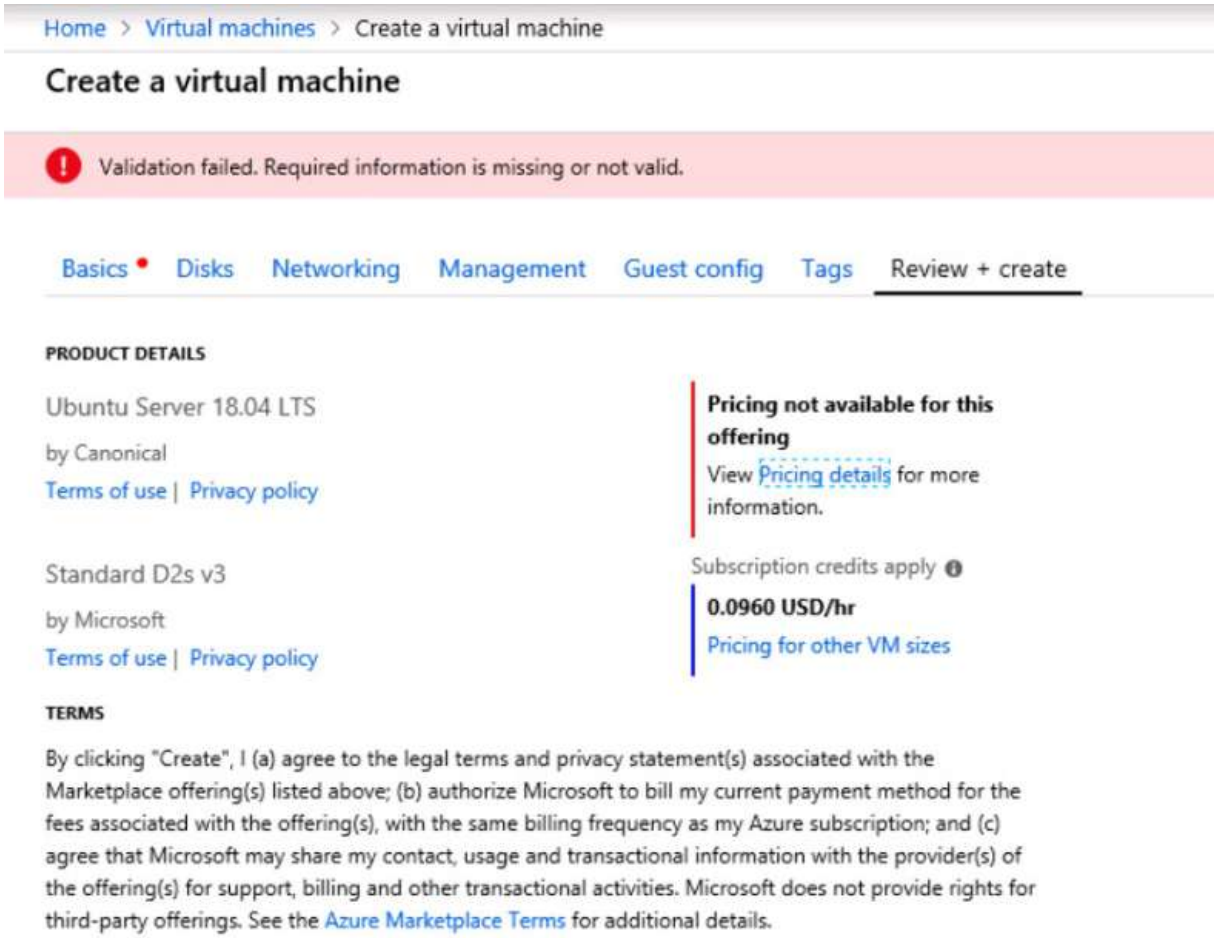

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To start the lab
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You plan to allow connections between the VNET01-USEA2 and VNET01-USWE2 virtual networks.

You need to ensure that virtual machines can communicate across both virtual networks by using their private IP address.

The solution must **NOT** require any virtual network gateways.

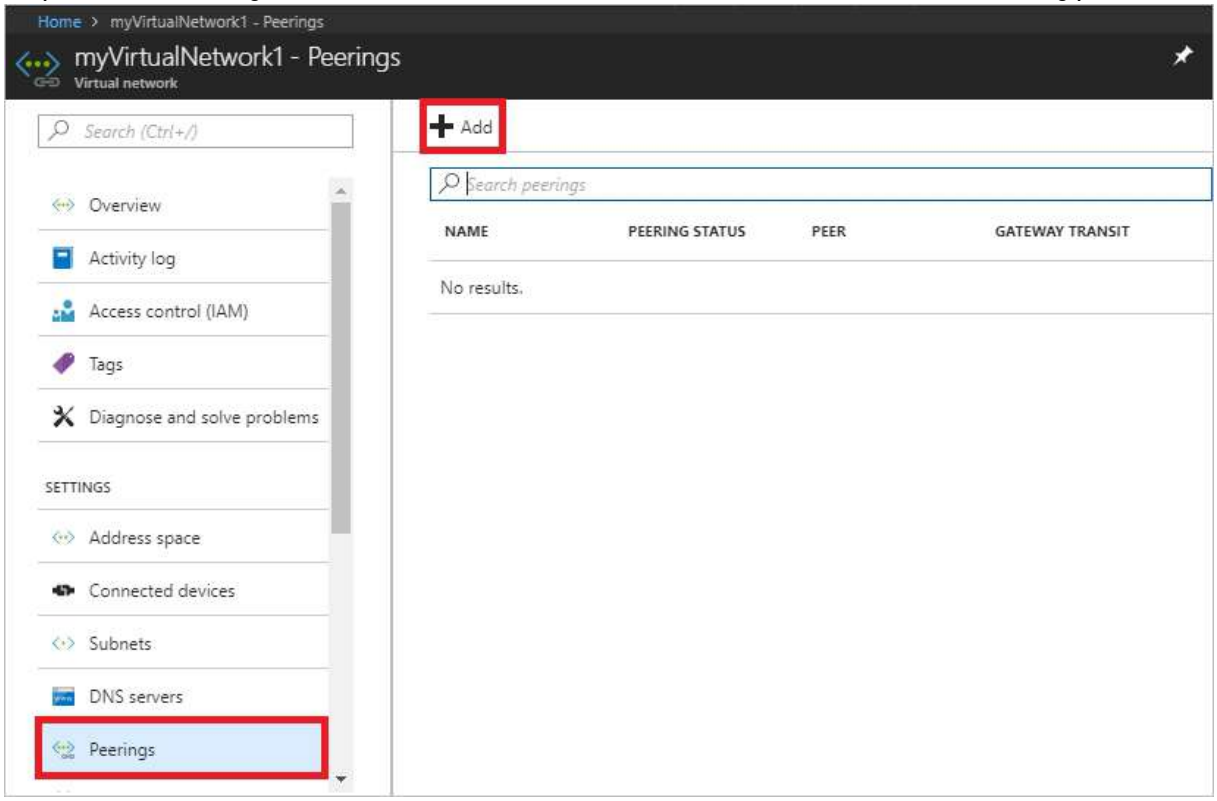
What should you do from the Azure portal?

Explanation/Reference

Explanation:
Virtual network peering enables you to seamlessly connect two Azure virtual networks. Once peered, the virtual networks appear as one, for connectivity purposes.

Peer virtual networks
Step 1. In the Search box at the top of the Azure portal, begin typing VNET01-USEA2. When VNET01-USEA2 appears in the search results, select it.

Step 2. Select Peerings, under SETTINGS, and then select + Add, as shown in the following picture:



Step 3. Enter, or select, the following information, accept the defaults for the remaining settings, and then select OK.
Name: myVirtualNetwork1-myVirtualNetwork2 (for example)
Subscription: elect your subscription.

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Virtual network: VNET01-USWE2 - To select the VNET01-USWE2 virtual network, select Virtual network, then select VNET01-USWE2. You can select a virtual network in the same region or in a different region.

Now we need to repeat steps 1-3 for the other network VNET01-USWE2:

Step 4. In the Search box at the top of the Azure portal, begin typing VNET01- USEA2. When VNET01-USEA2 appears in the search results, select it.

Step 5. Select Peerings, under SETTINGS, and then select + Add.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-connect-virtual-networks-portal

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SIMULATION

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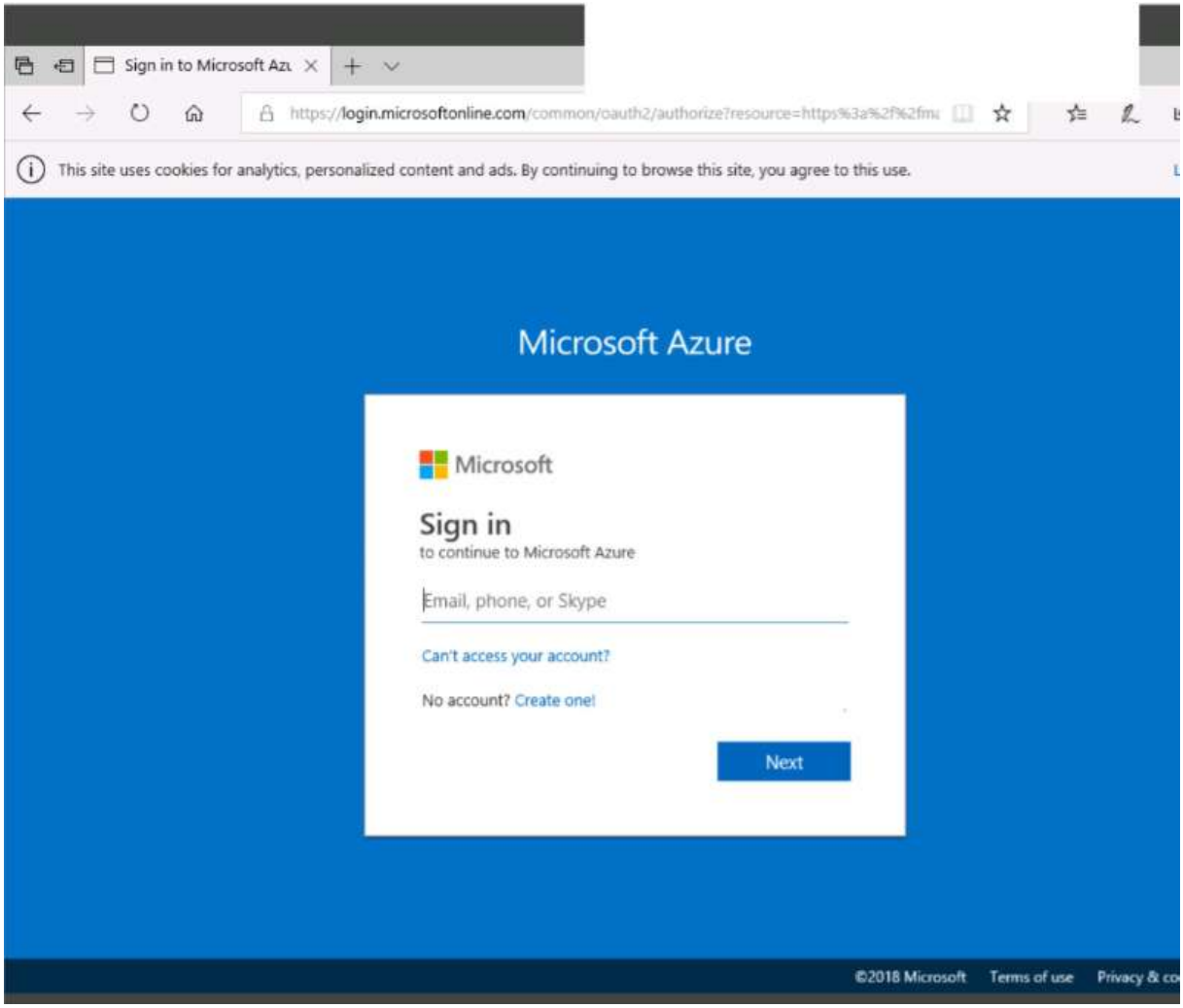

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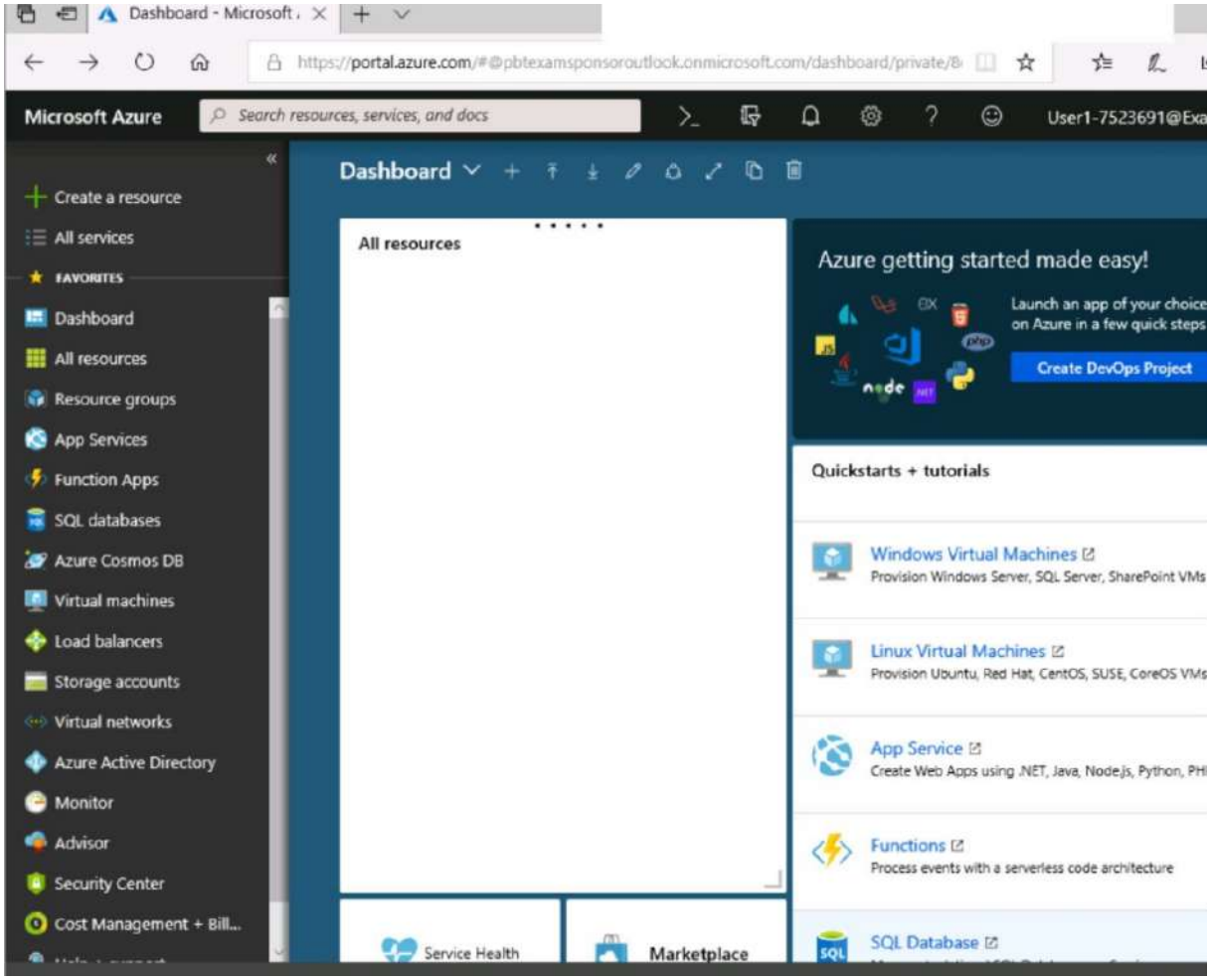

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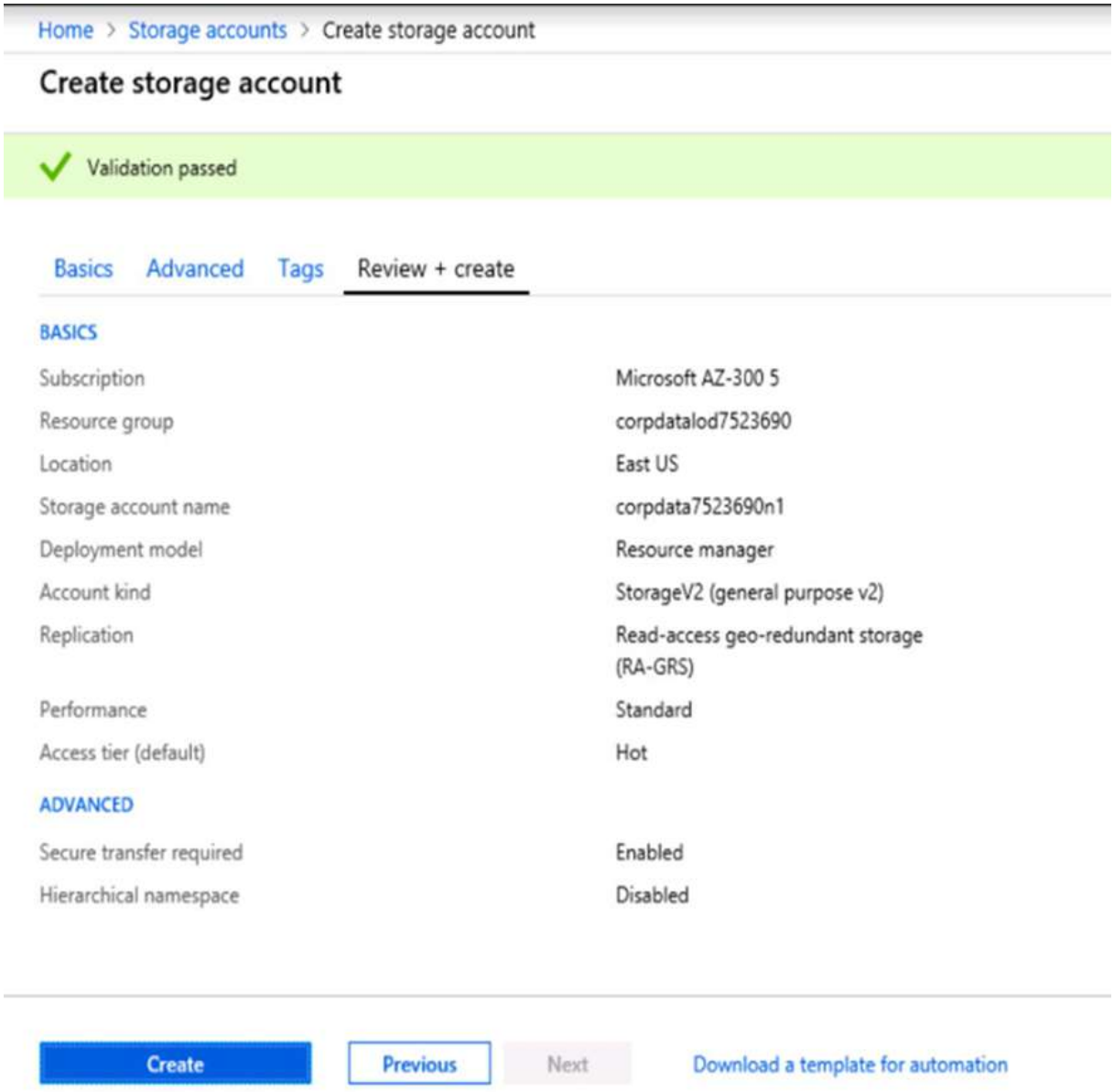

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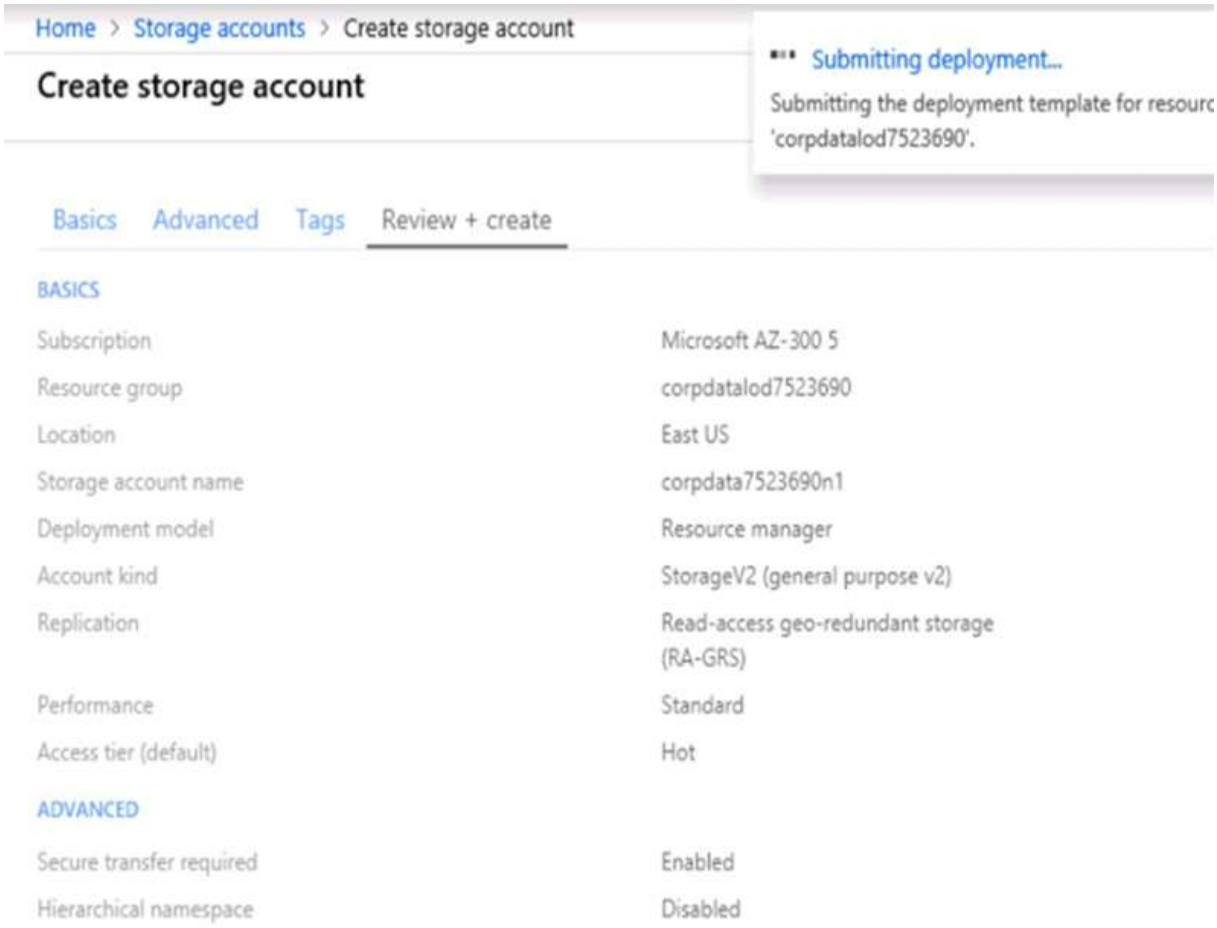

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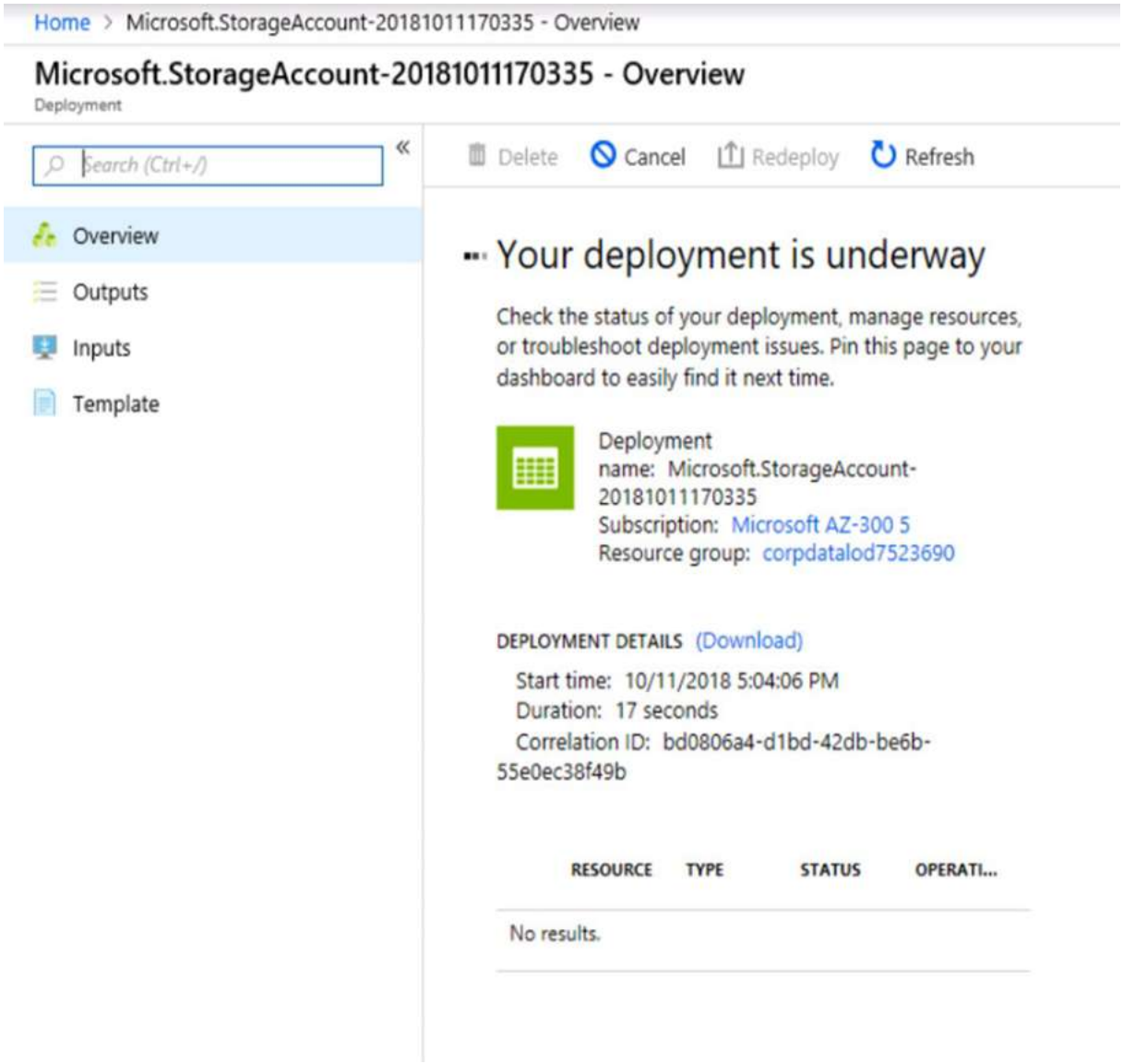

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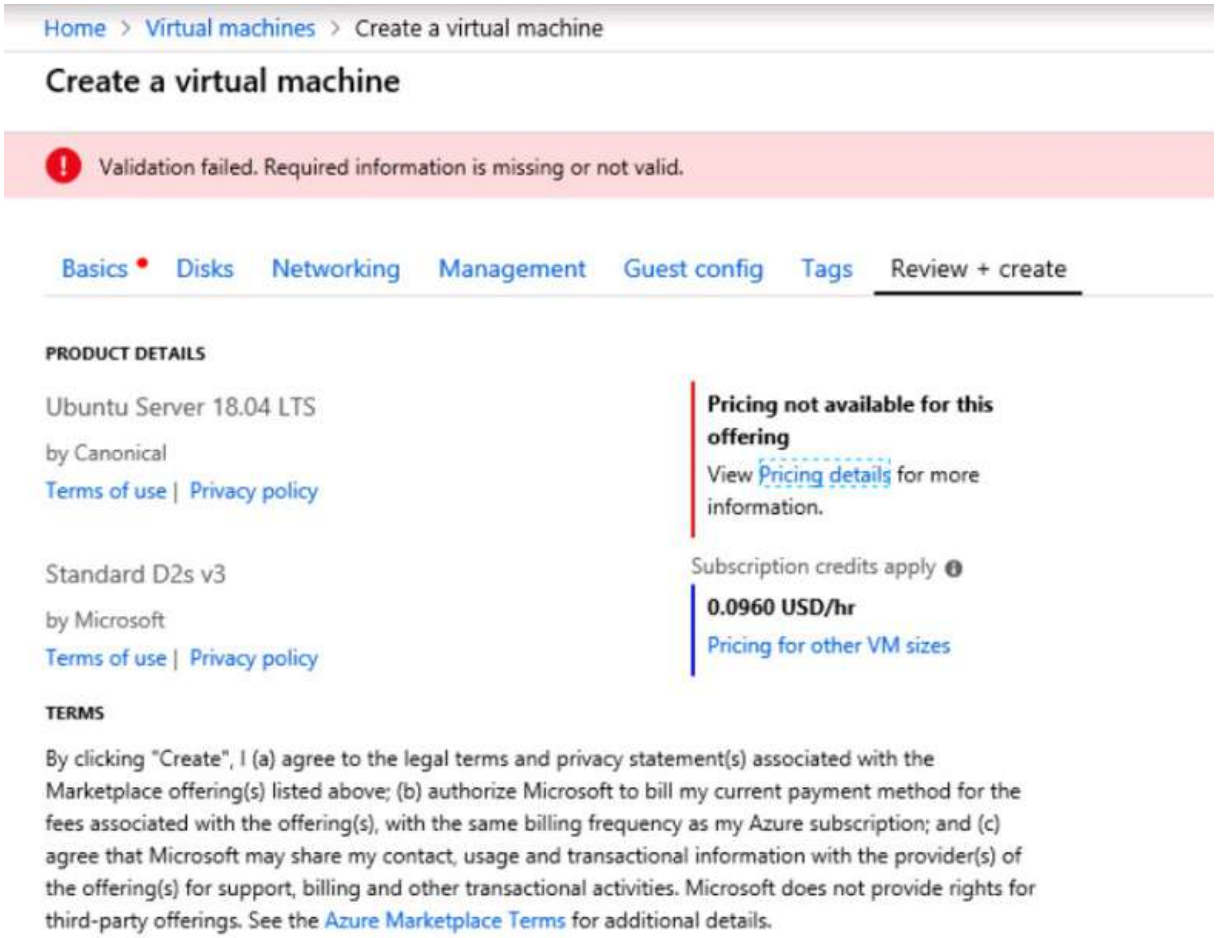

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To start the lab
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You plan to host several secured websites on Web01.

You need to allow HTTPS over TCP port 443 to Web01 and to prevent HTTP over TCP port 80 to Web01.

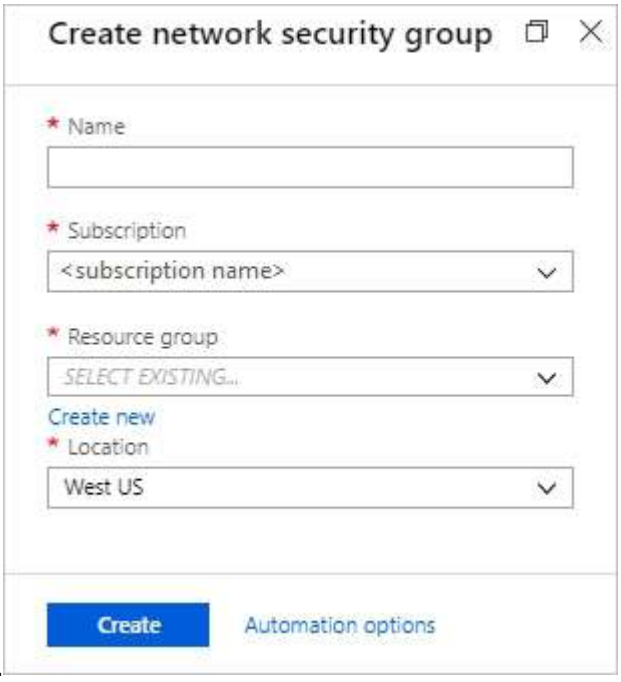
What should you do from the Azure portal?

Explanation/Reference

Explanation:
You can filter network traffic to and from Azure resources in an Azure virtual network with a network security group. A network security group contains security rules that allow or deny inbound network traffic to, or outbound network traffic from, several types of Azure resources.

A network security group contains security rules that allow or deny inbound network traffic to, or outbound network traffic from, several types of Azure resources.

Step A: Create a network security group
A1. Search for and select the resource group for the VM, choose Add, then search for and select Network security group.



A2. Select Create.

The Create network security group window opens.

A3. Create a network security group
Enter a name for your network security group.
Select or create a resource group, then select a location.

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A4. Select Create to create the network security group.

Step B: Create an inbound security rule to allows HTTPS over TCP port 443
B1. Select your new network security group.

B2. Select Inbound security rules, then select Add.

B3. Add inbound rule

B4. Select Advanced.
From the drop-down menu, select HTTPS.
You can also verify by clicking Custom and selecting TCP port, and 443.

B5. Select Add to create the rule.

Repeat step B2-B5 to deny TCP port 80

B6. Select Inbound security rules, then select Add.

B7. Add inbound rule

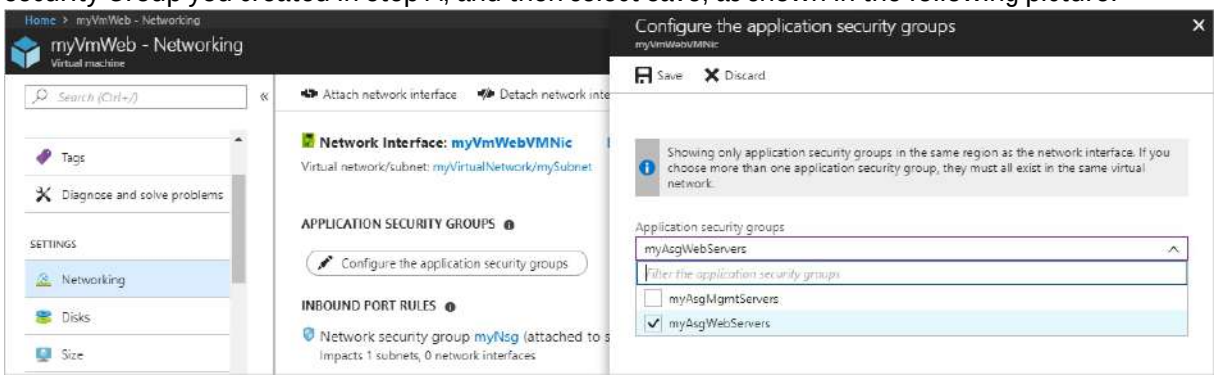
B8. Select Advanced.
Clicking Custom and selecting TCP port, and 80.

B9. Select Deny.

Step C: Associate your network security group with a subnet
Your final step is to associate your network security group with a subnet or a specific network interface.

C1. In the Search resources, services, and docs box at the top of the portal, begin typing Web01.
When the Web01 VM appears in the search results, select it.

C2. Under SETTINGS, select Networking. Select Configure the application security groups, select the Security Group you created in Step A, and then select Save, as shown in the following picture:



References:
https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-filter-network-traffic

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Question 174

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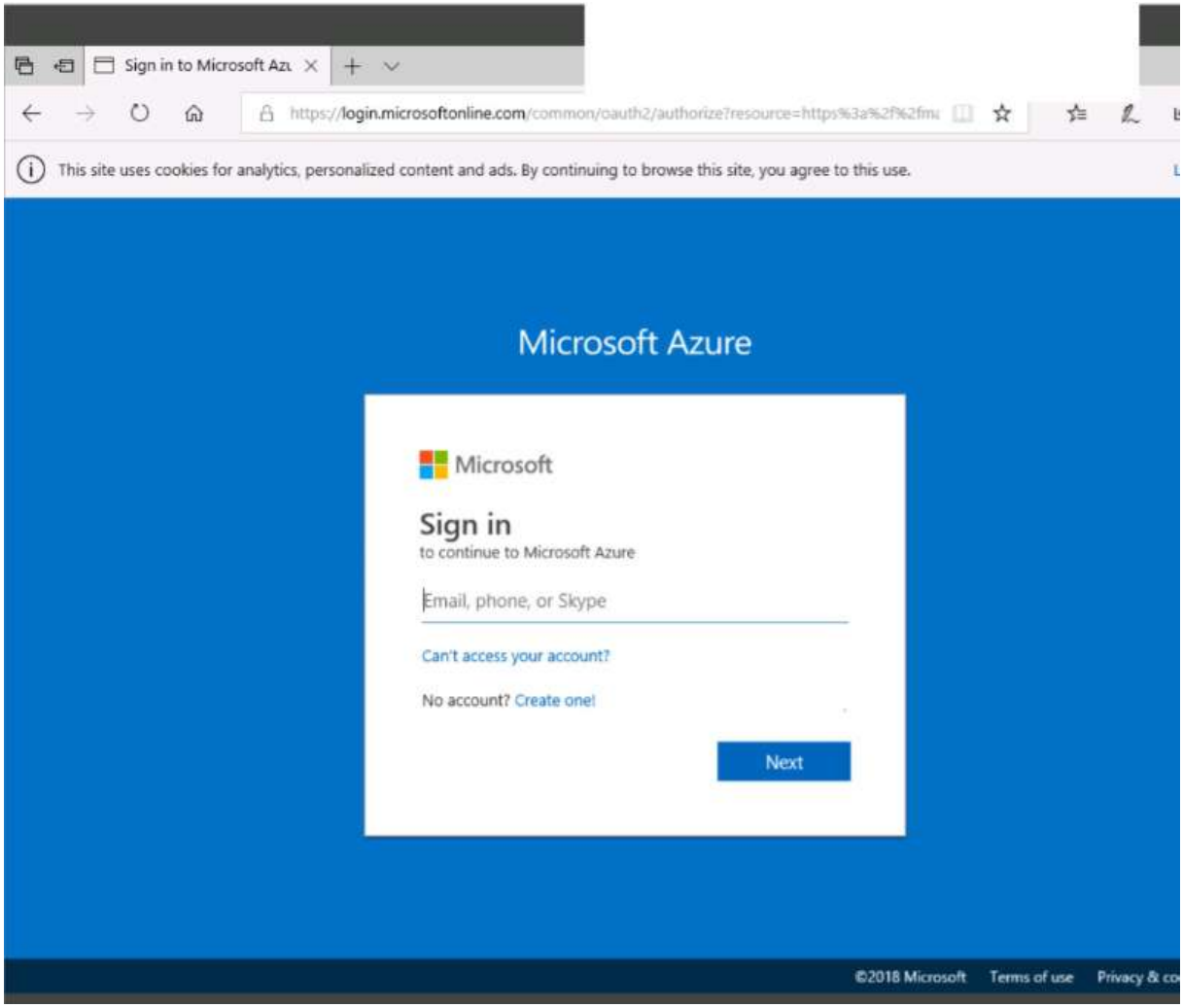
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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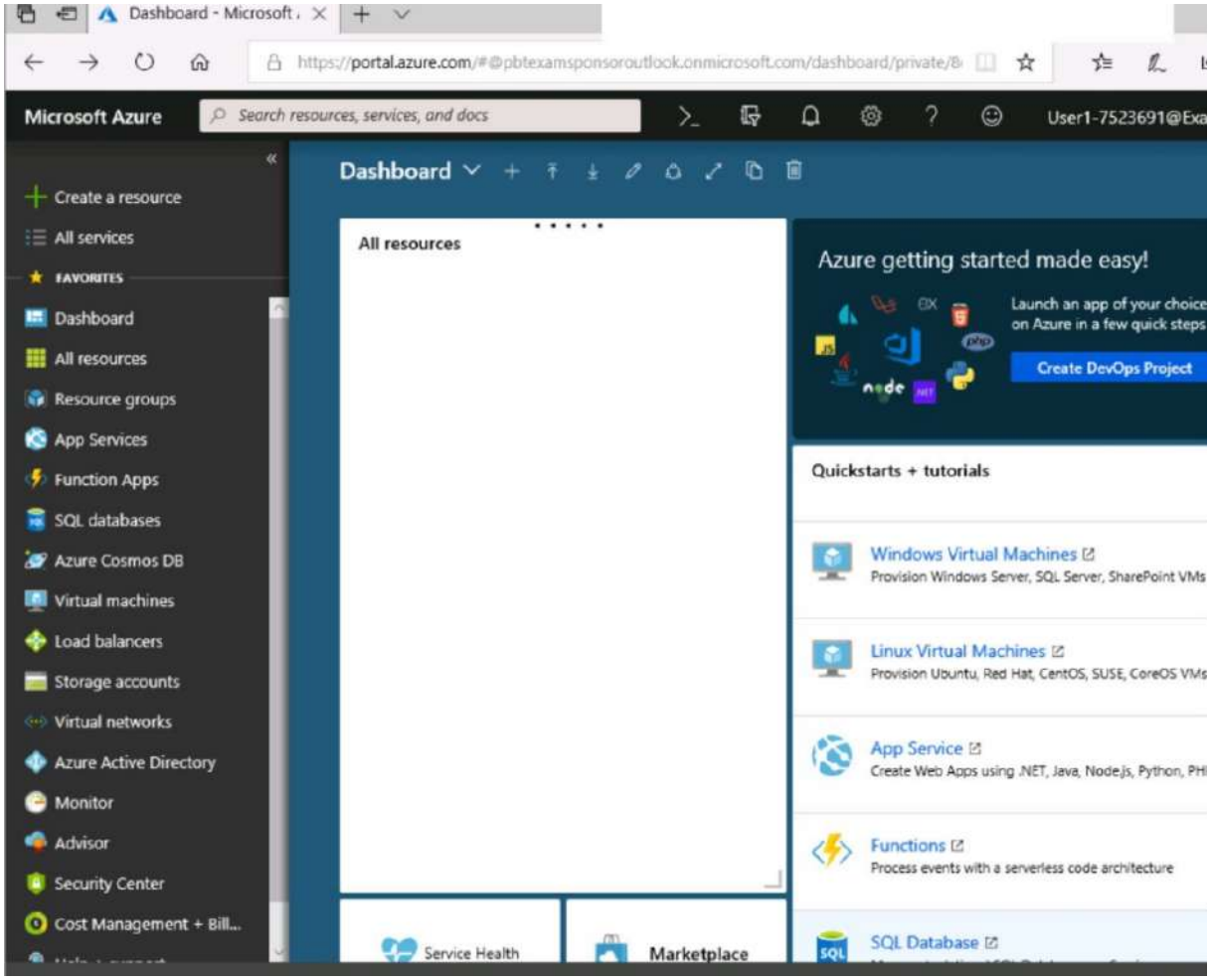

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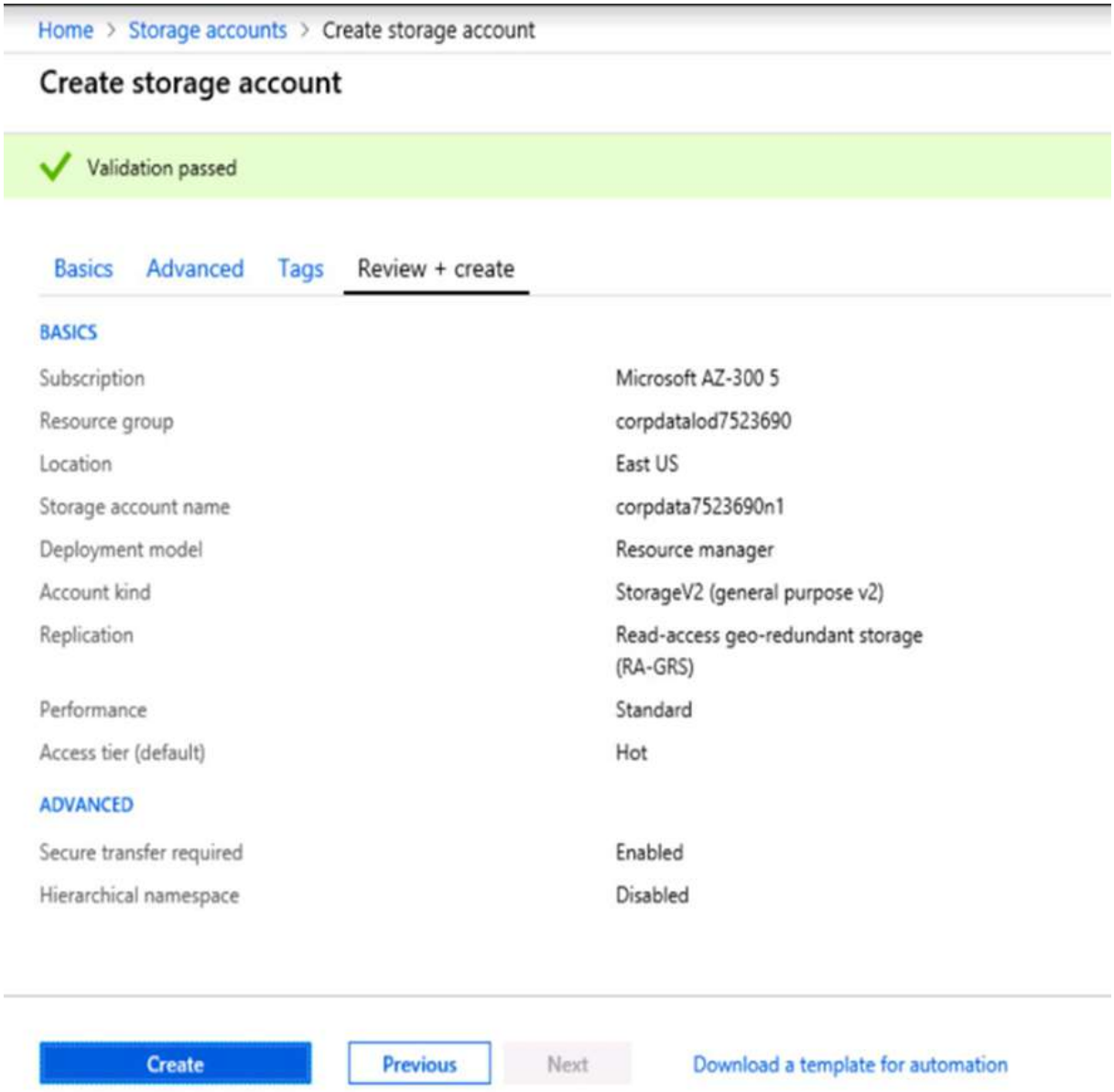

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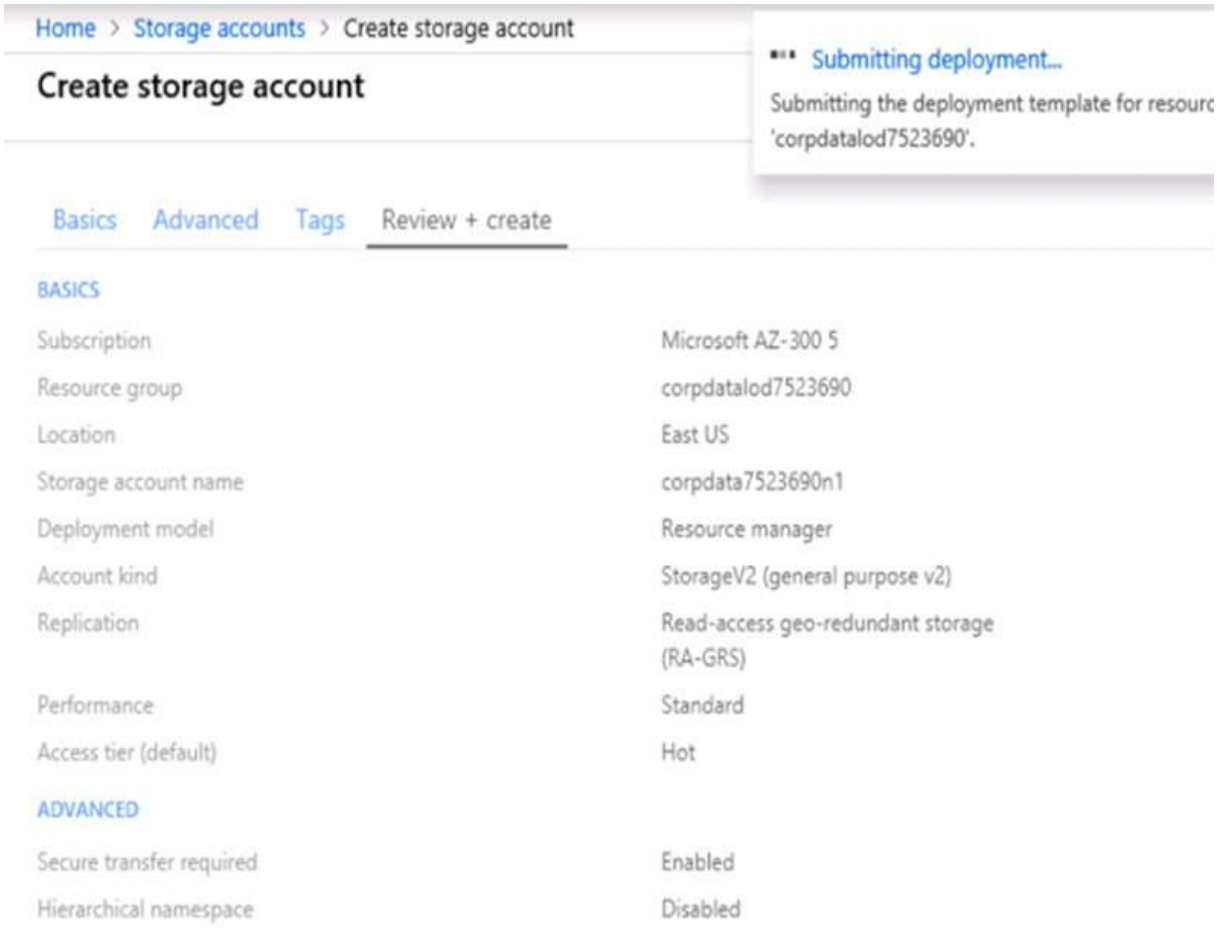

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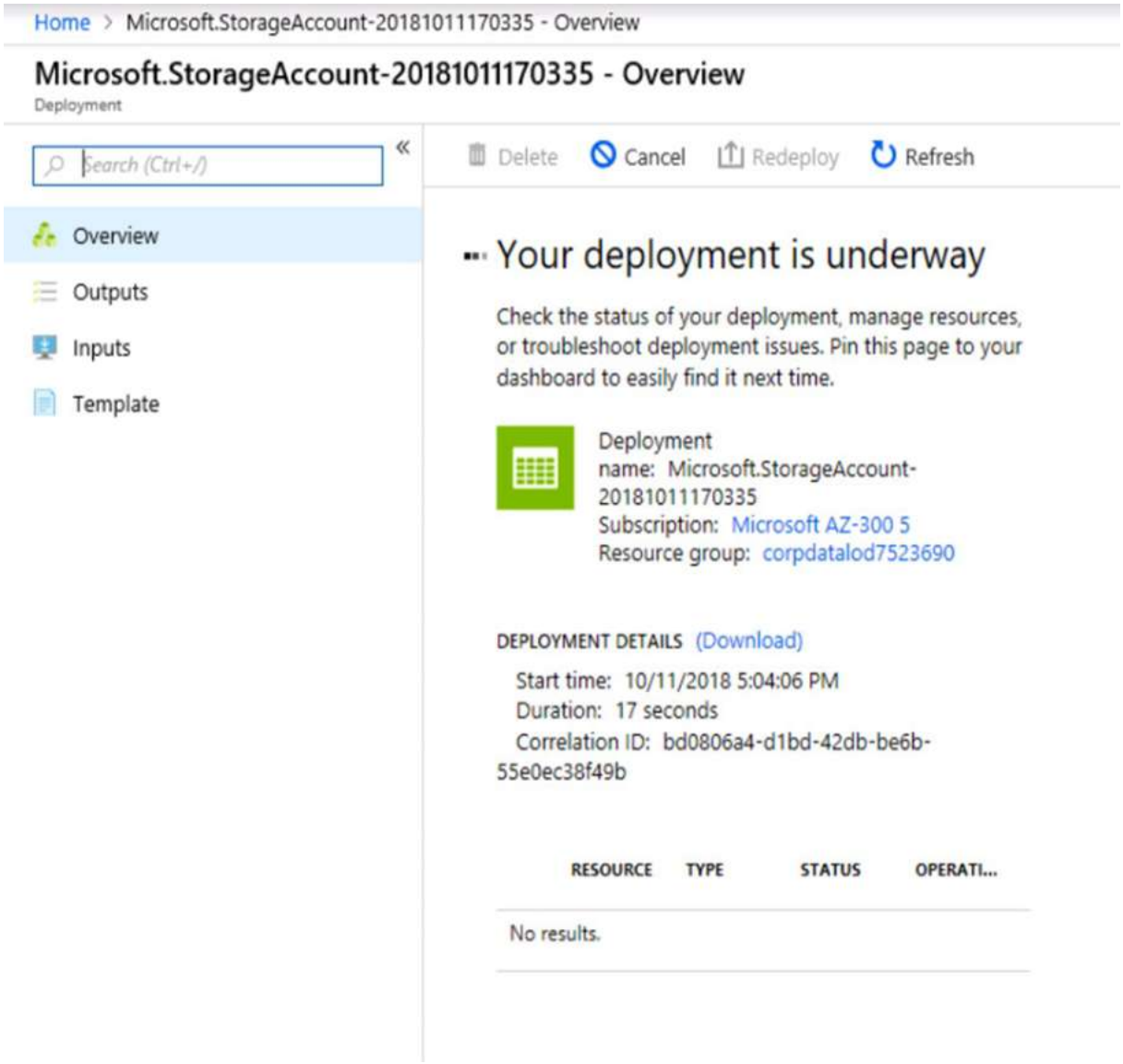

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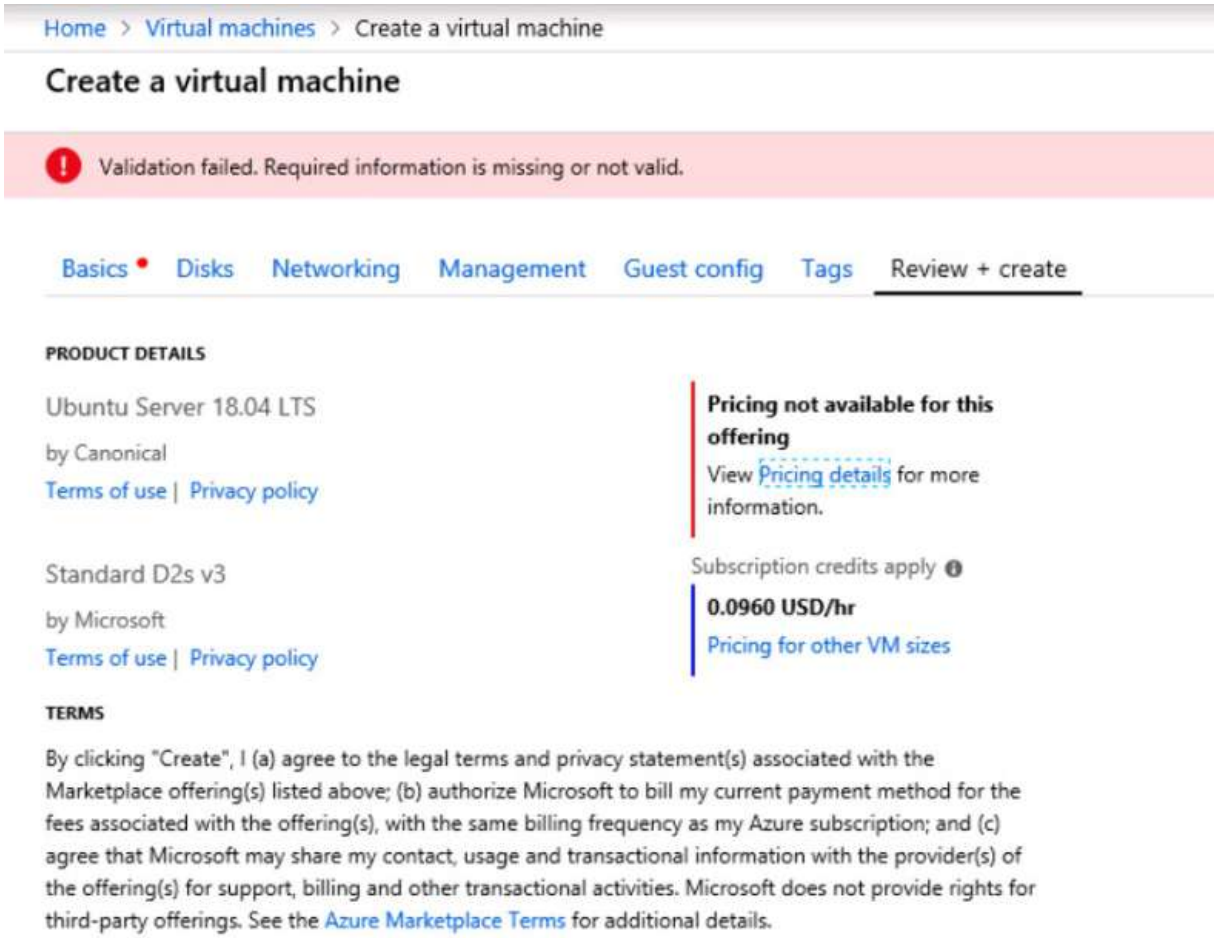

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To start the lab
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Your on-premises network uses an IP address range of 131.107.2.0 to 131.107.2.255.

You need to ensure that only devices from the on-premises network can connect to the rg1lod8322490n1 storage account.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Navigate to the rg1lod8322490n1 storage account.

Step 2: Click on the settings menu called Firewalls and virtual networks.

Step 3: Ensure that you have elected to allow access from 'Selected networks'.

Step 4: To grant access to an internet IP range, enter the address range of 131.107.2.0 to 131.107.2.255 (in CIDR format) under Firewall, Address Ranges.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-network-security

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SIMULATION

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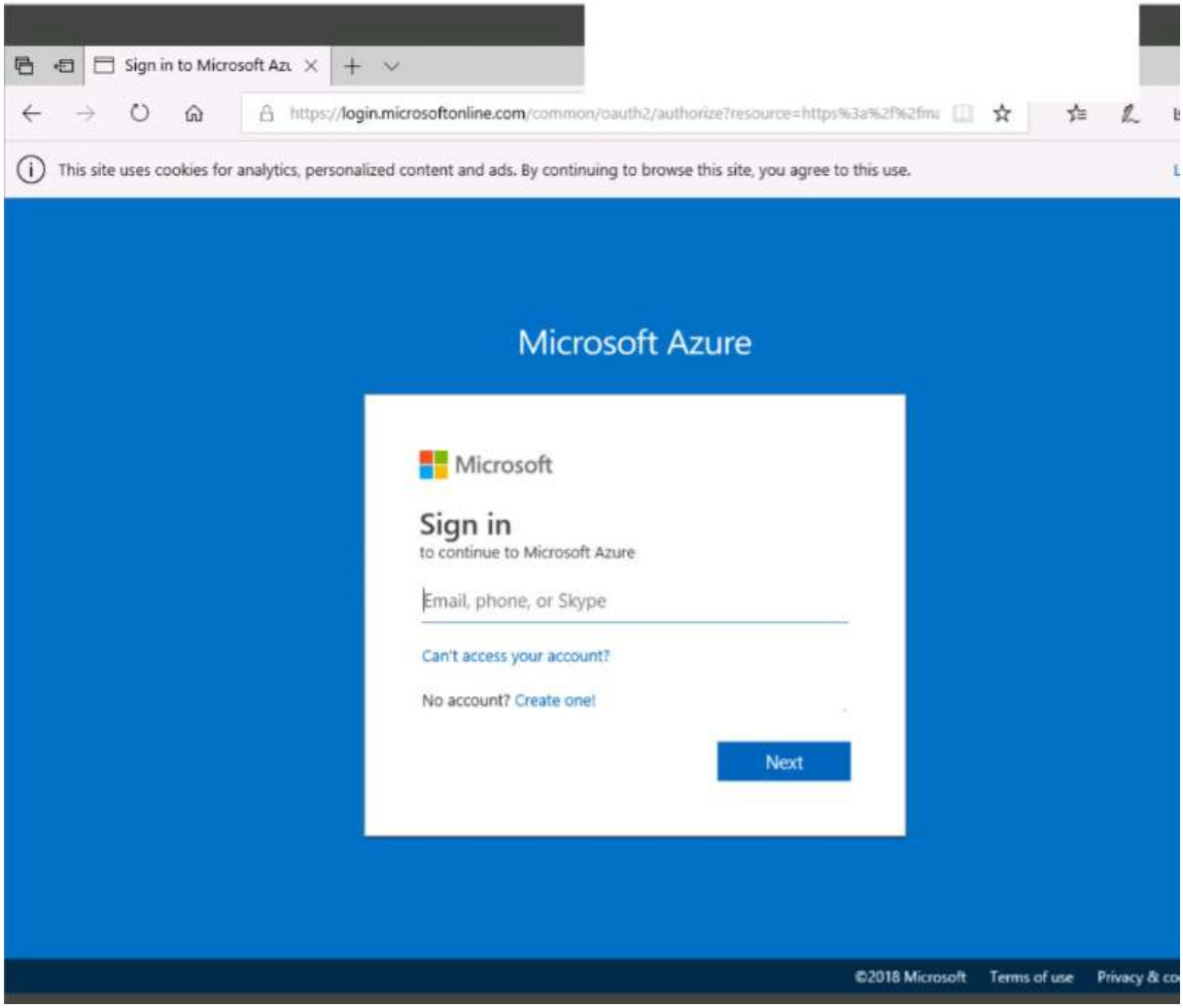

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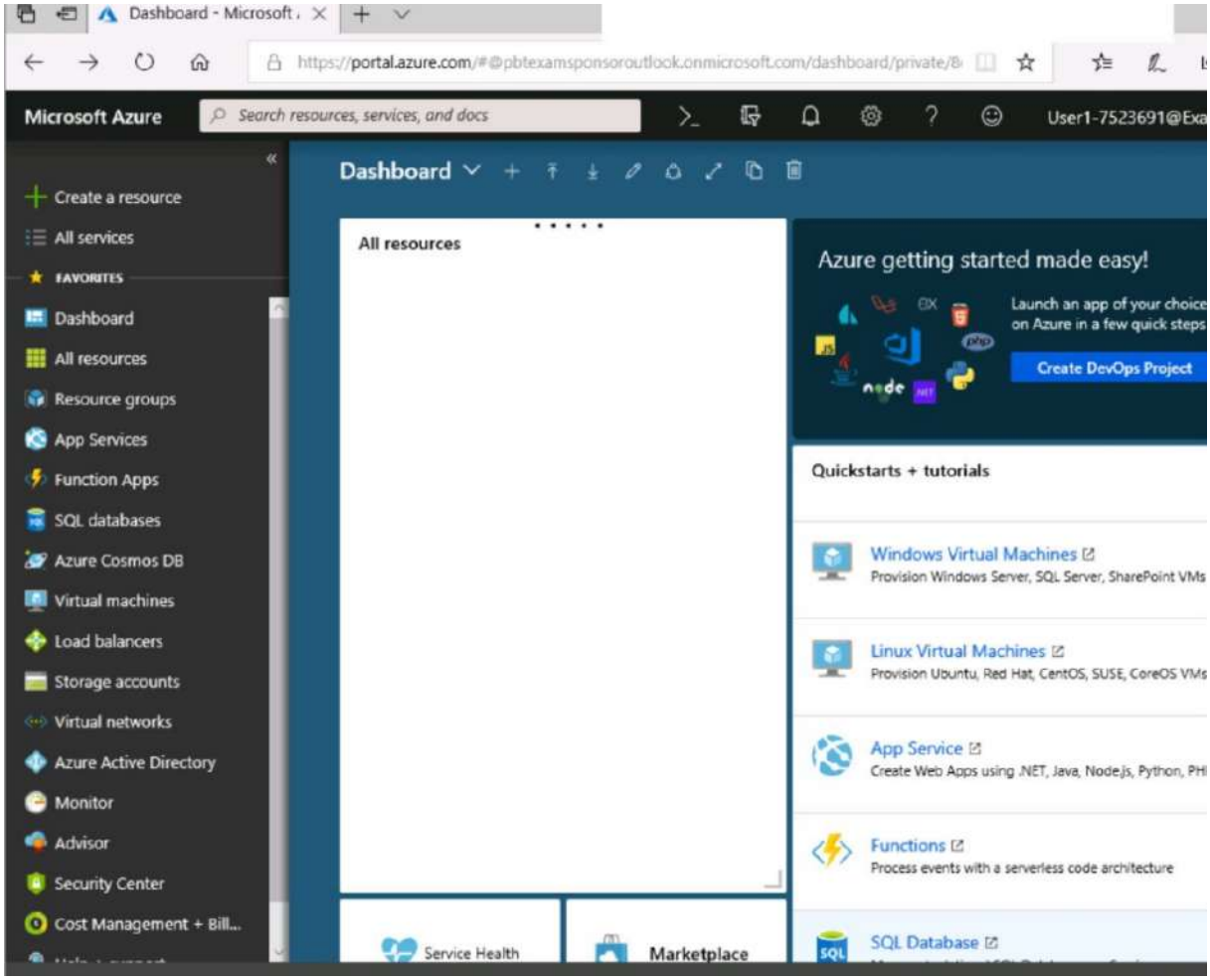

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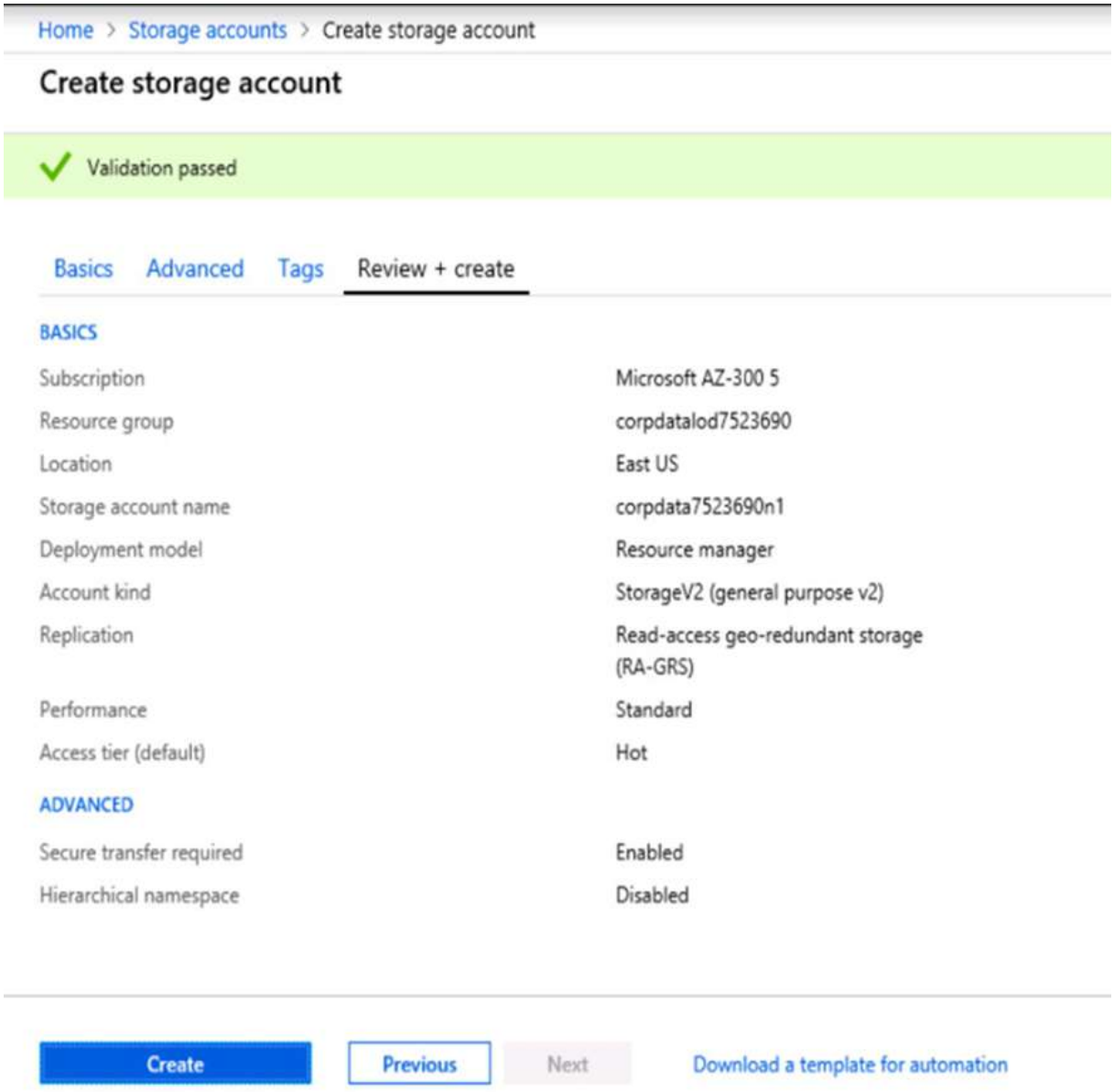

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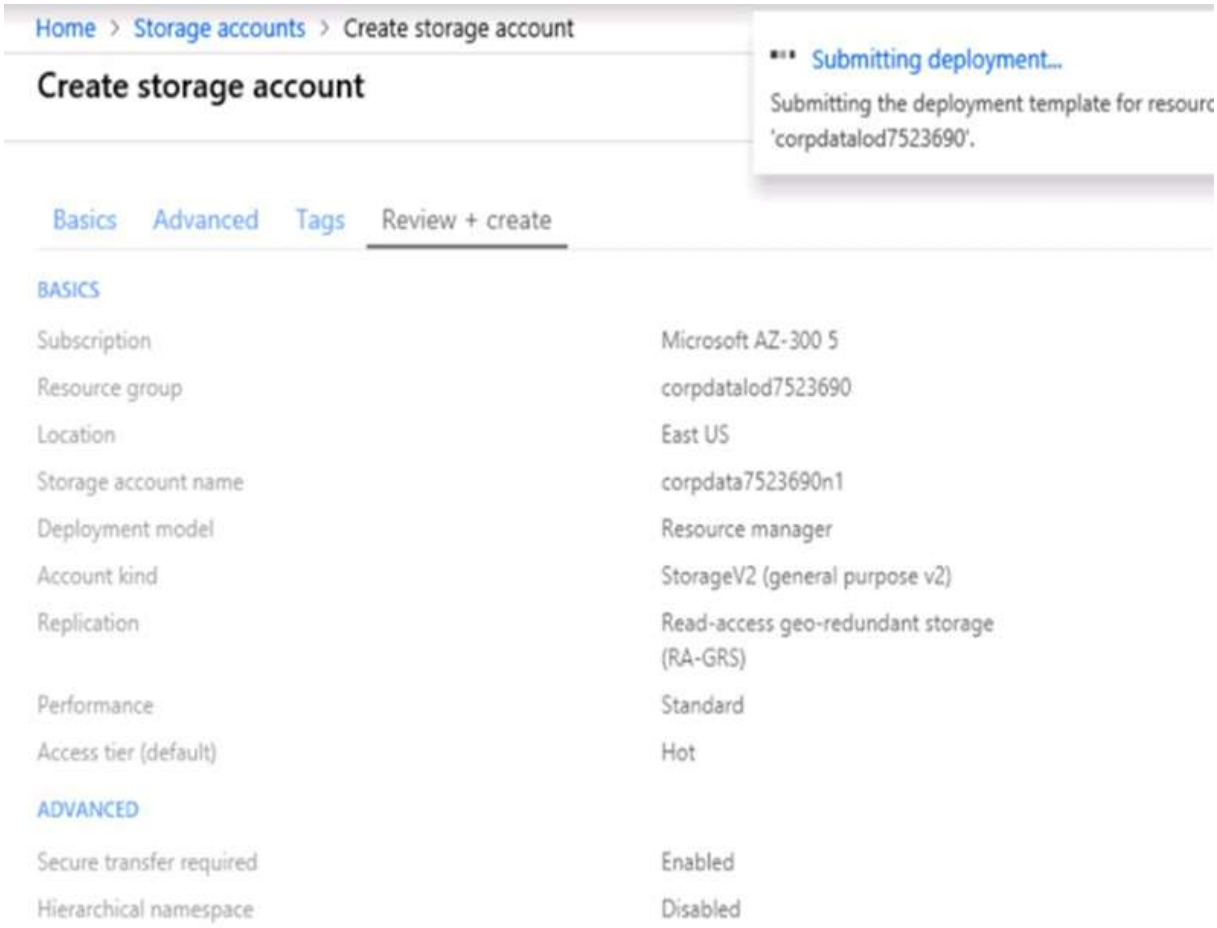

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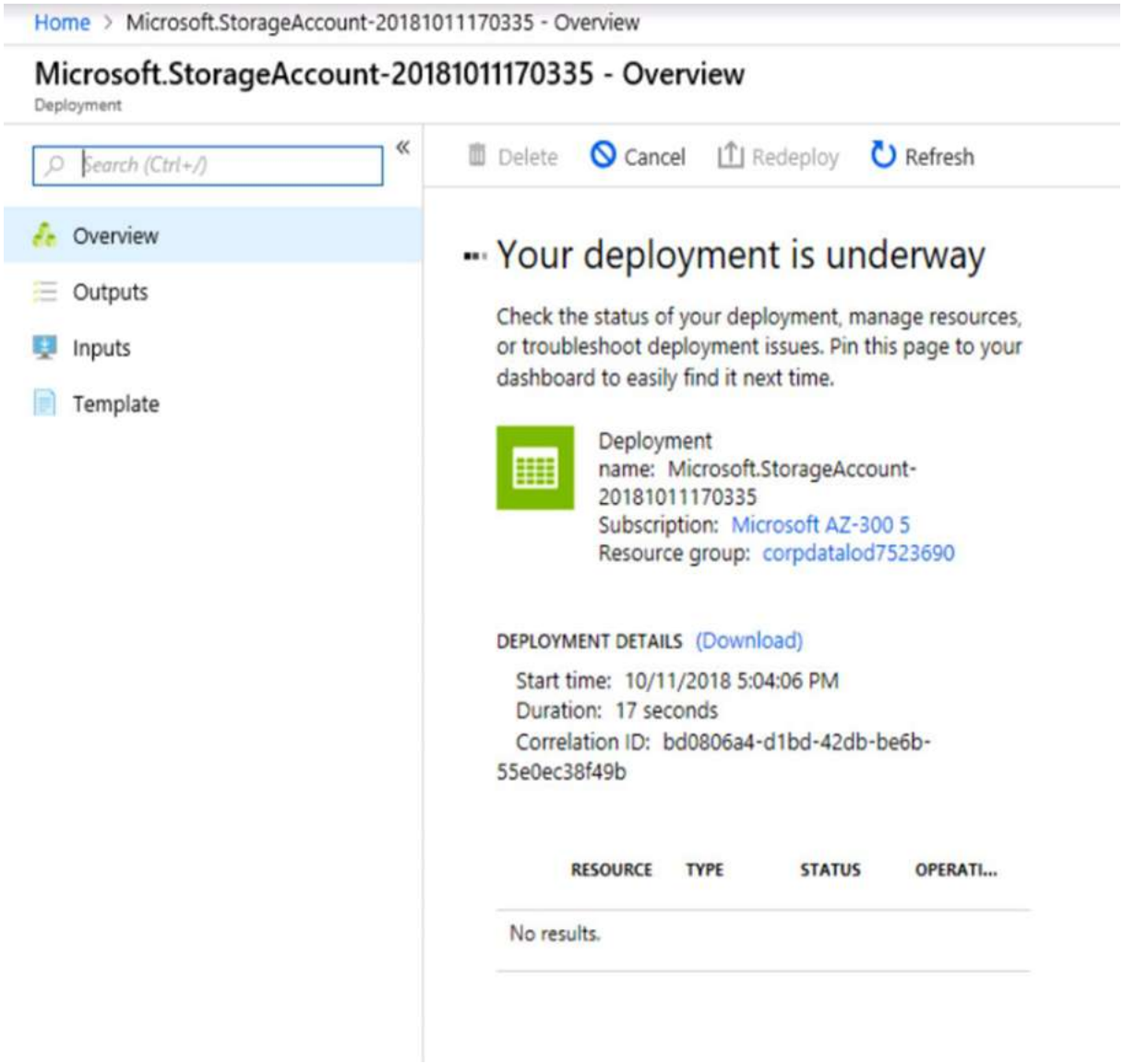

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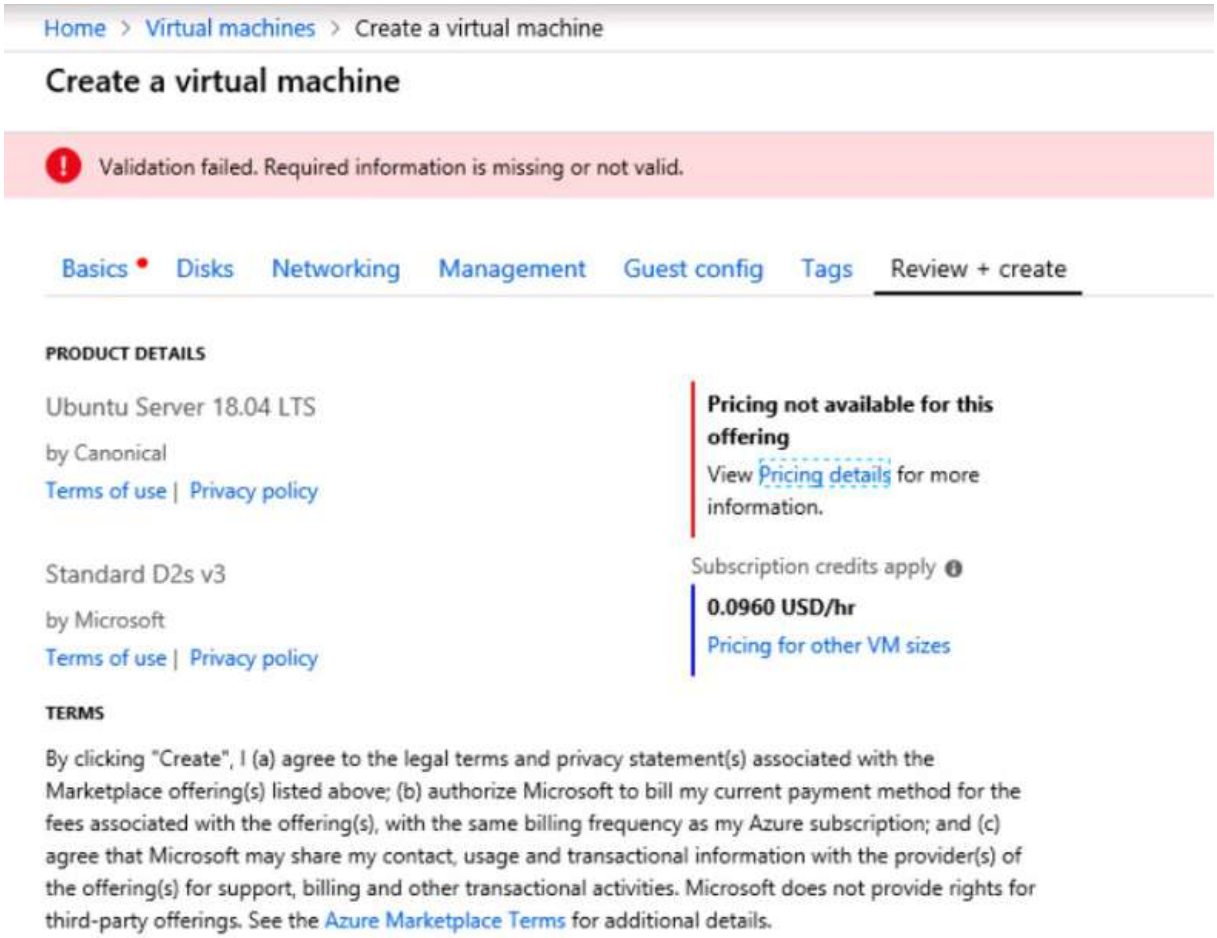

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To start the lab
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You plan to store media files in the corpdata7523690n1 storage account.

You need to configure the storage account to store the media files. The solution must ensure that only users who have access keys can download the media files and that the files are accessible only over HTTPS.

What should you do from the Azure portal?

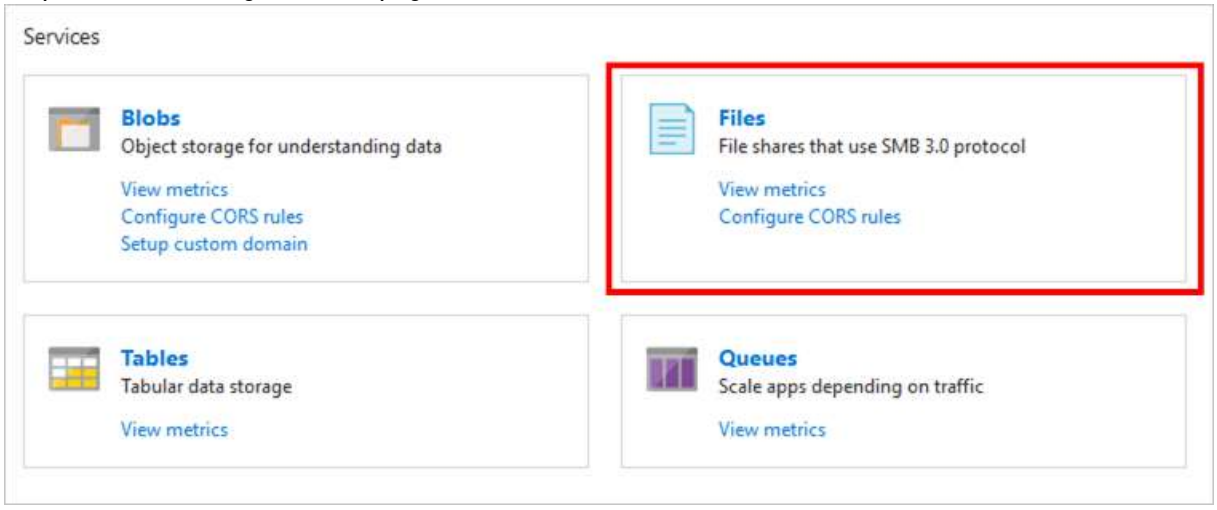
Explanation/Reference

Explanation:
We should create an Azure file share.

Step 1: In the Azure portal, select All services. In the list of resources, type Storage Accounts. As you begin typing, the list filters based on your input. Select Storage Accounts.
On the Storage Accounts window that appears.

Step 2: Locate the corpdata7523690n1 storage account.

Step 3: On the storage account page, in the Services section, select Files.



Step 4: On the menu at the top of the File service page, click + File share. The New file share page drops down.

Step 5: In Name type myshare. Click OK to create the Azure file share.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-how-to-use-files-portal

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Question 176

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SIMULATION

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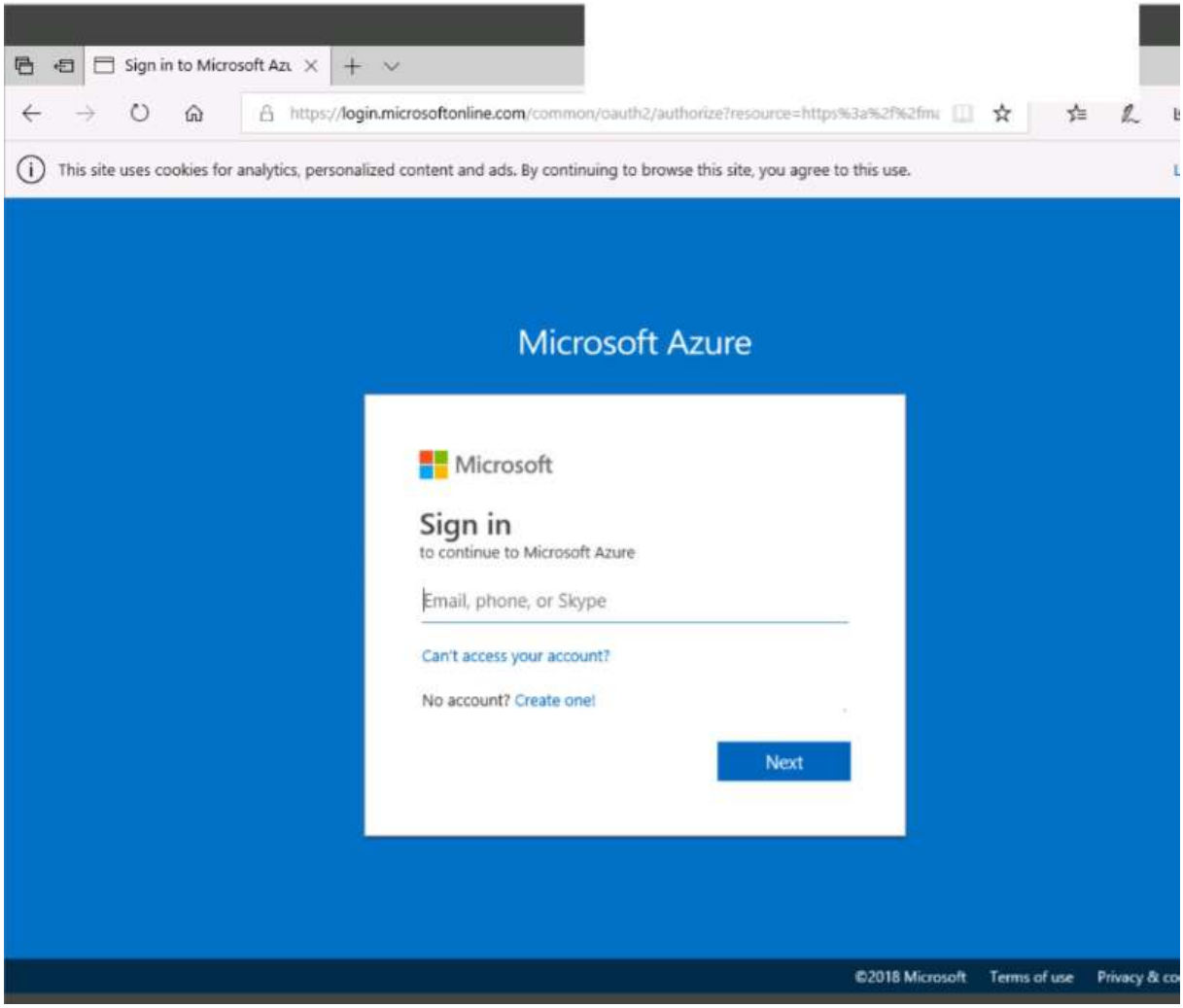

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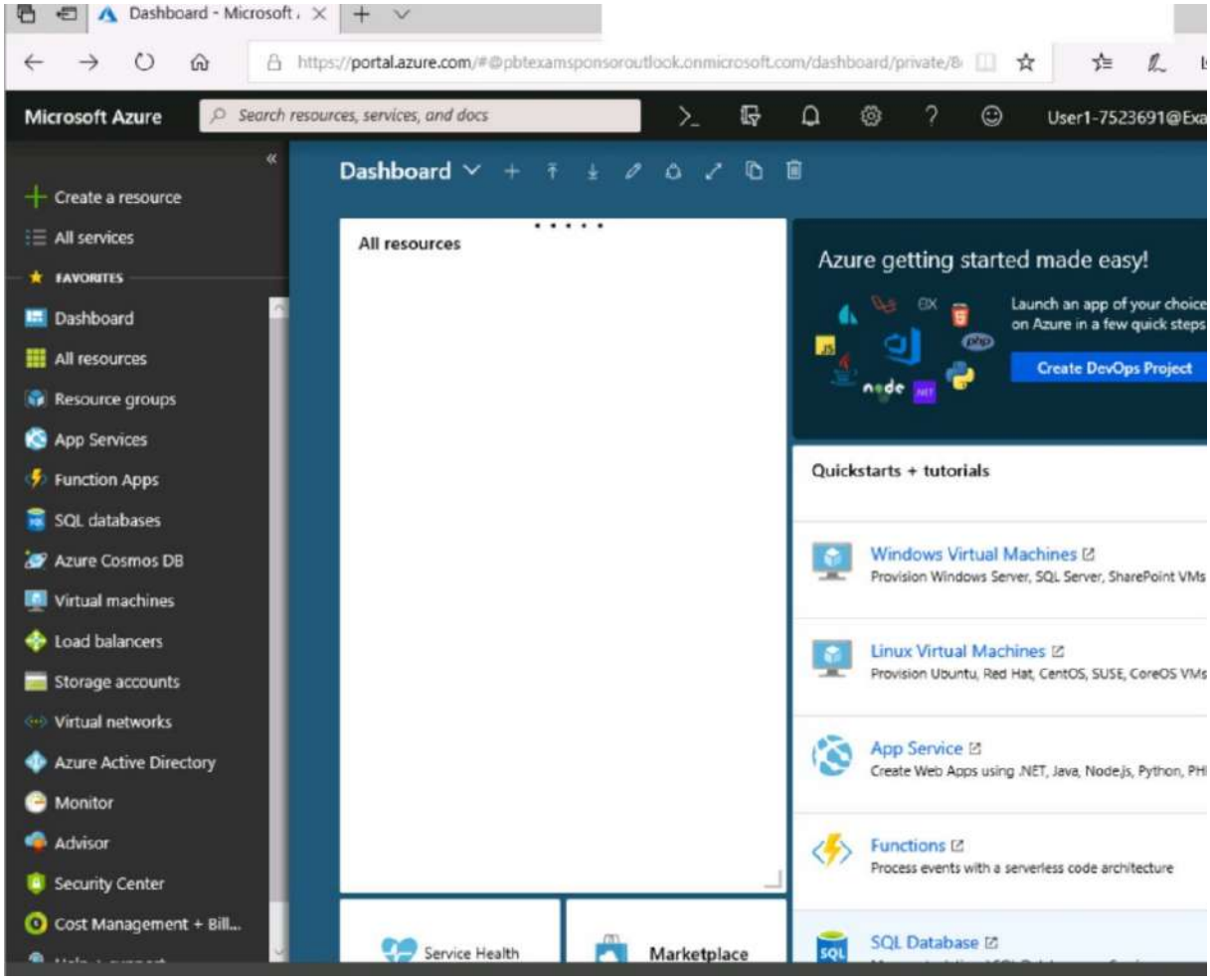

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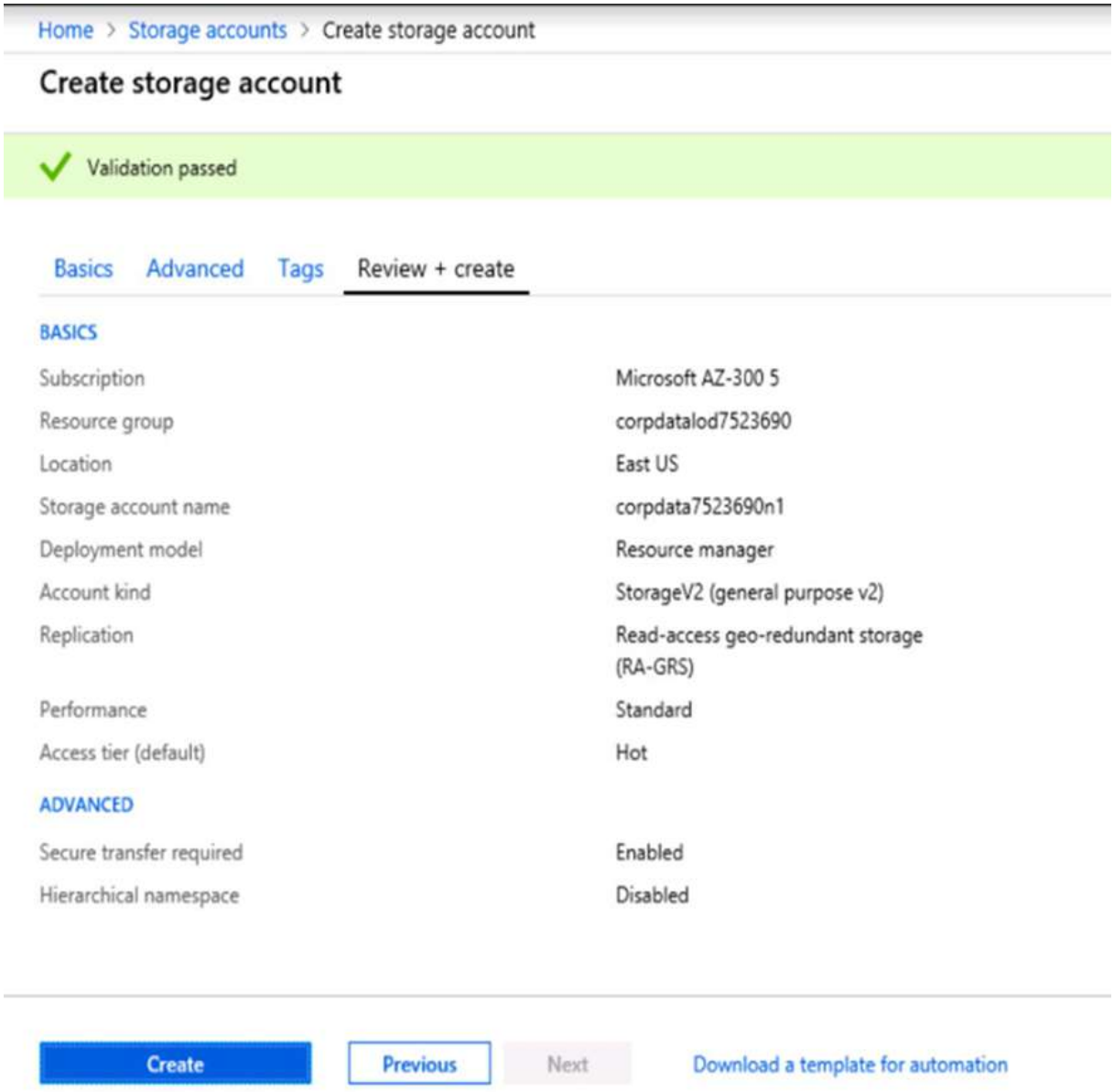

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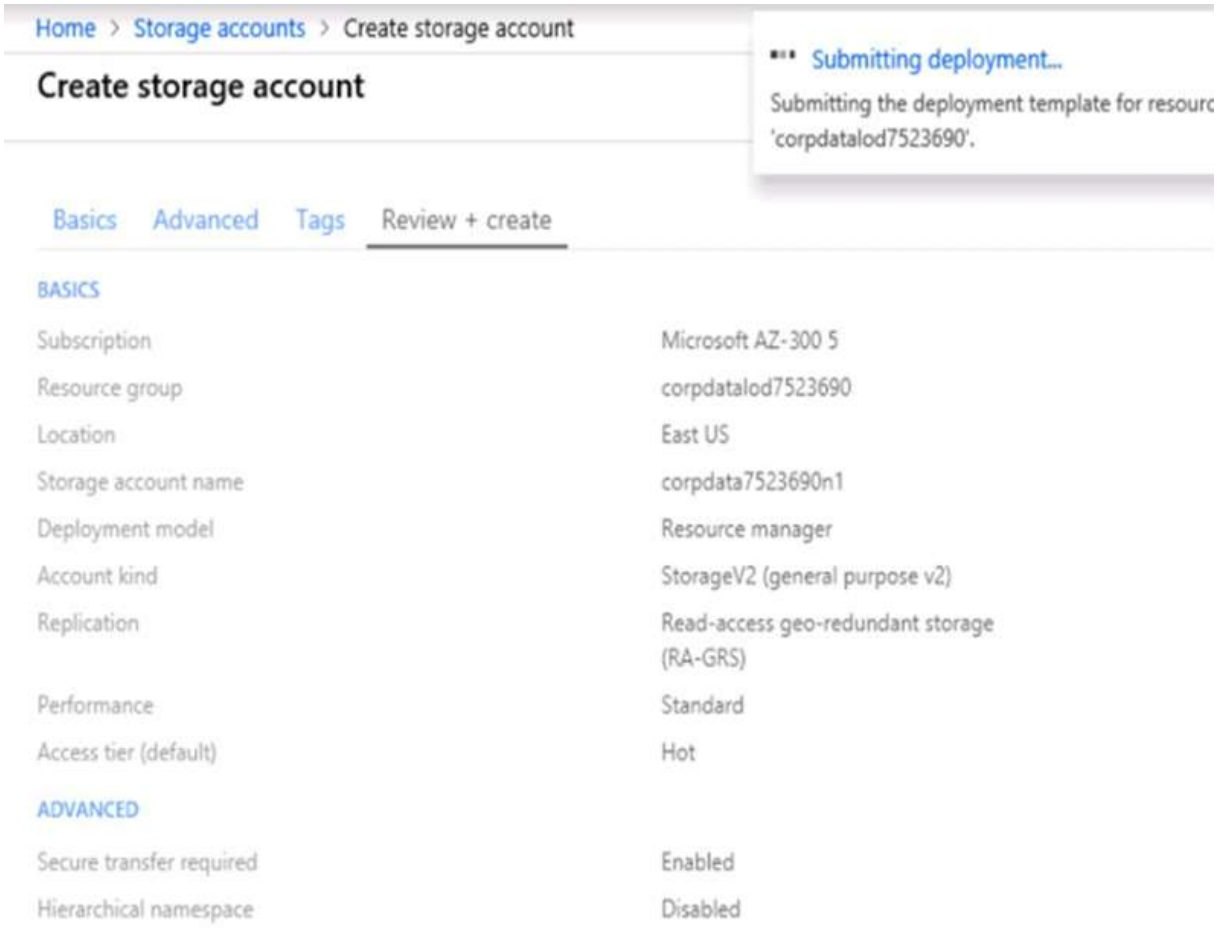

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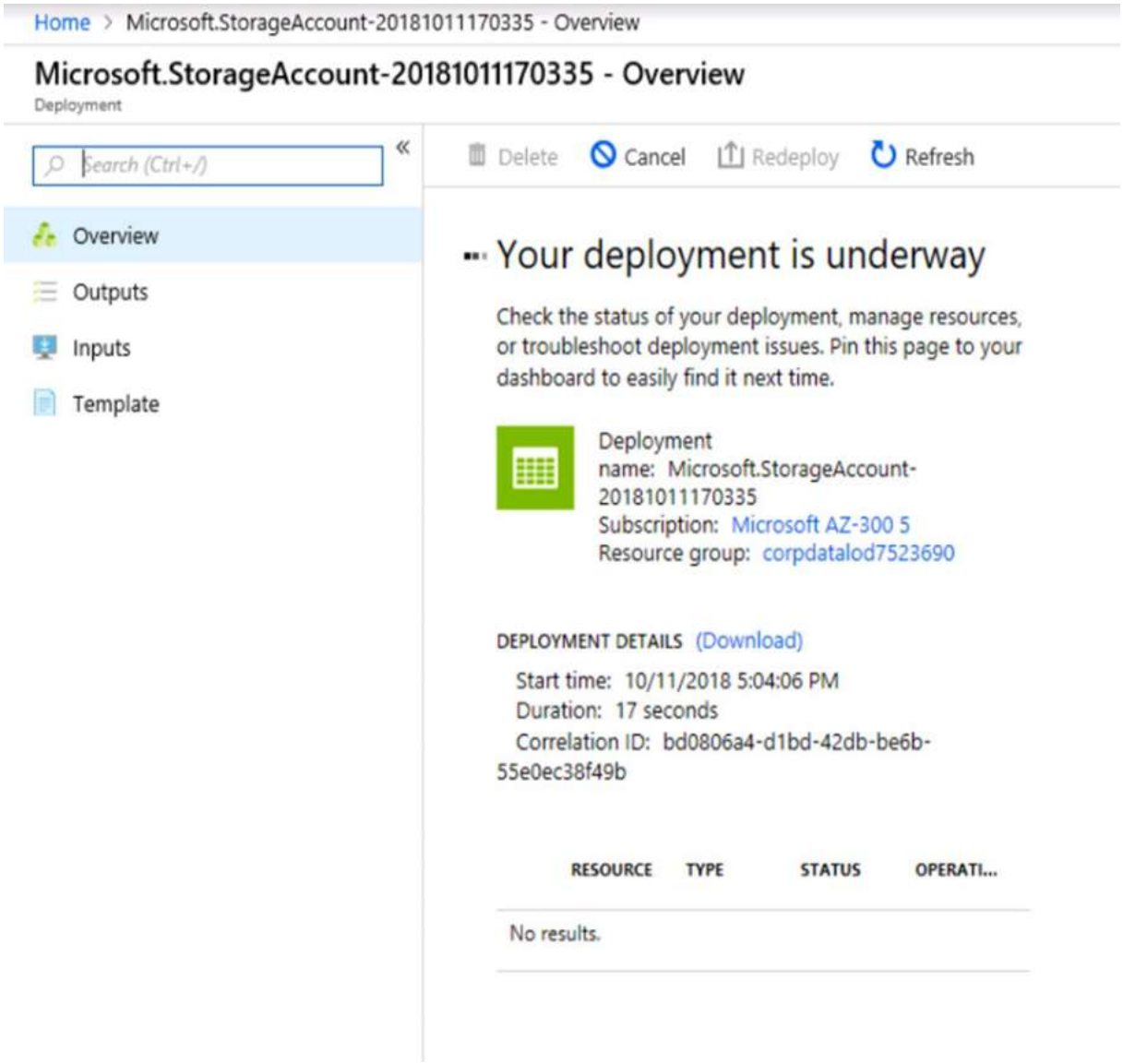

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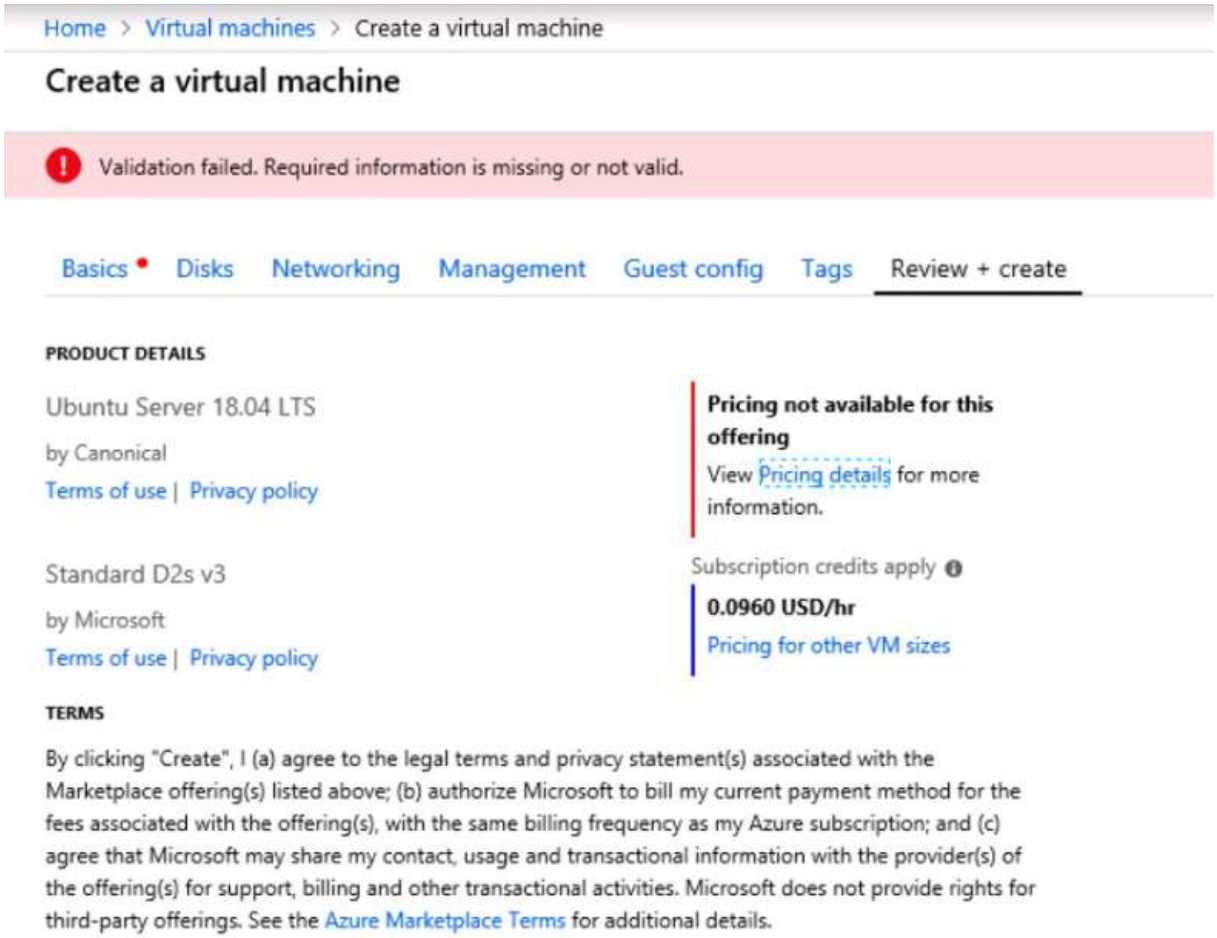

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To start the lab
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Another administrator attempts to establish connectivity between two virtual networks named VNET1 and VNET2. The administrator reports that connections across the virtual networks fail.

You need to ensure that network connections can be established successfully between VNET1 and VNET2 as quickly as possible.

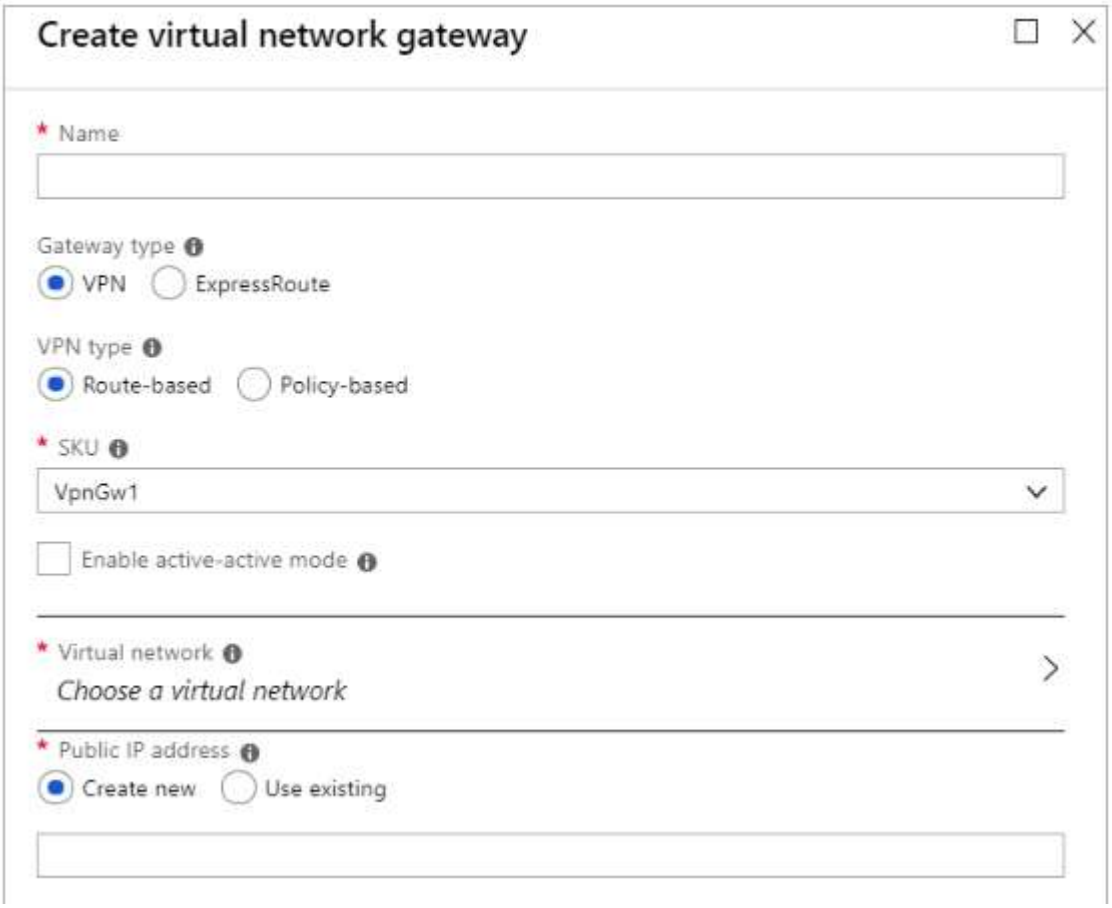
What should you do from the Azure portal?

Explanation/Reference

Explanation:
You can connect one VNet to another VNet using either a Virtual network peering, or an Azure VPN Gateway.
To create a virtual network gateway

Step 1: In the portal, on the left side, click +Create a resource and type 'virtual network gateway' in search. Locate Virtual network gateway in the search return and click the entry. On the Virtual network gateway page, click Create at the bottom of the page to open the Create virtual network gateway page.

Step 2: On the Create virtual network gateway page, fill in the values for your virtual network gateway.



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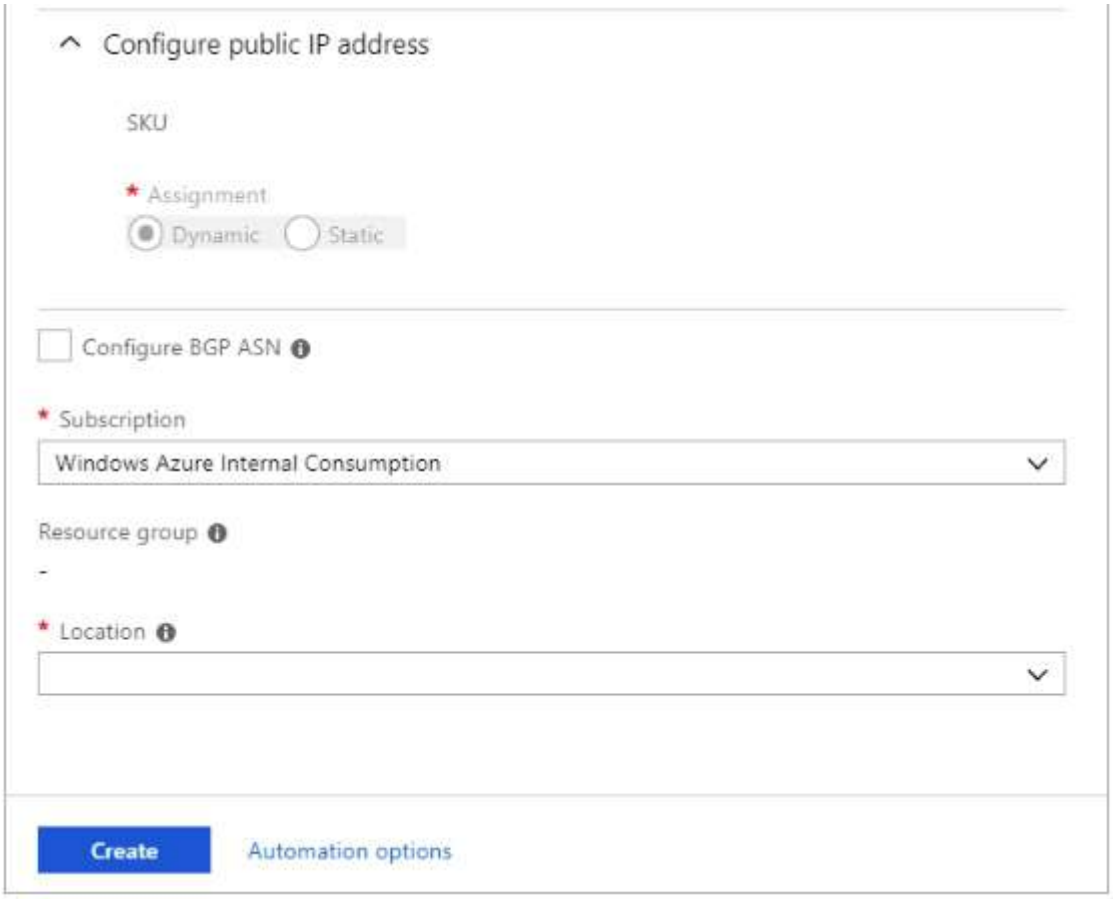

Name: Name your gateway. This is not the same as naming a gateway subnet. It's the name of the gateway object you are creating.

Gateway type: Select VPN. VPN gateways use the virtual network gateway type VPN.

Virtual network: Choose the virtual network to which you want to add this gateway. Click Virtual network to open the 'Choose a virtual network' page. Select the VNet. If you don't see your VNet, make sure the Location field is pointing to the region in which your virtual network is located.

Gateway subnet address range: You will only see this setting if you did not previously create a gateway subnet for your virtual network. If you previously created a valid gateway subnet, this setting will not appear.

Step 4: Select Create New to create a Gateway subnet.

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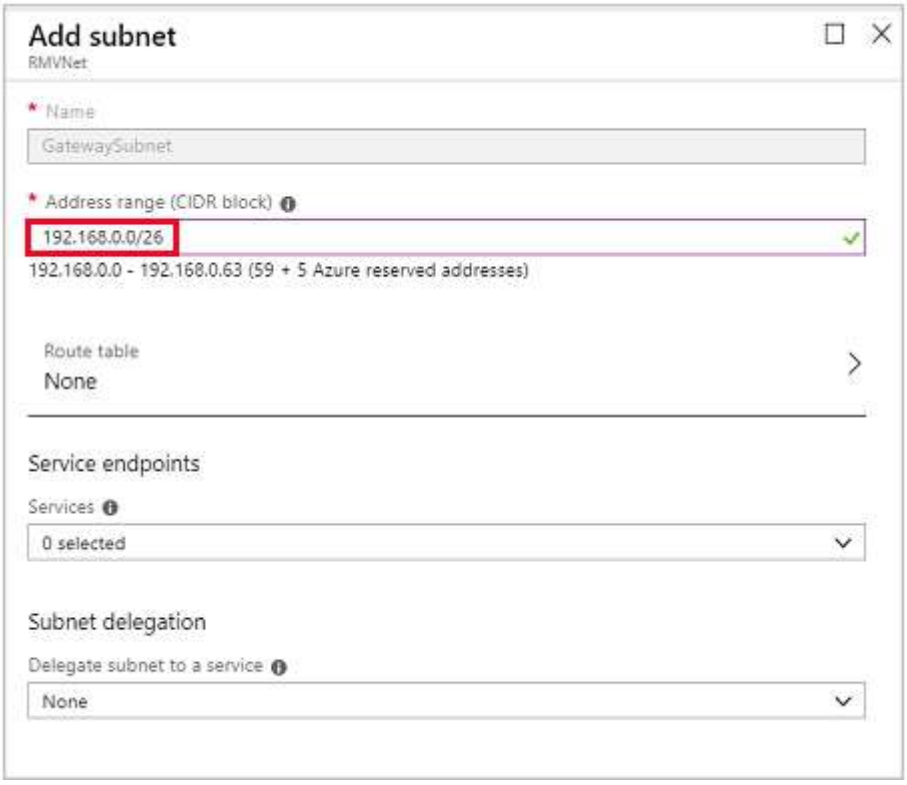

Step 5: Click Create to begin creating the VPN gateway. The settings are validated and you'll see the "Deploying Virtual network gateway" tile on the dashboard. Creating a gateway can take up to 45 minutes. You may need to refresh your portal page to see the completed status.

References:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-vnet-vnet-resource-manager-portal?

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Question 177

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SIMULATION

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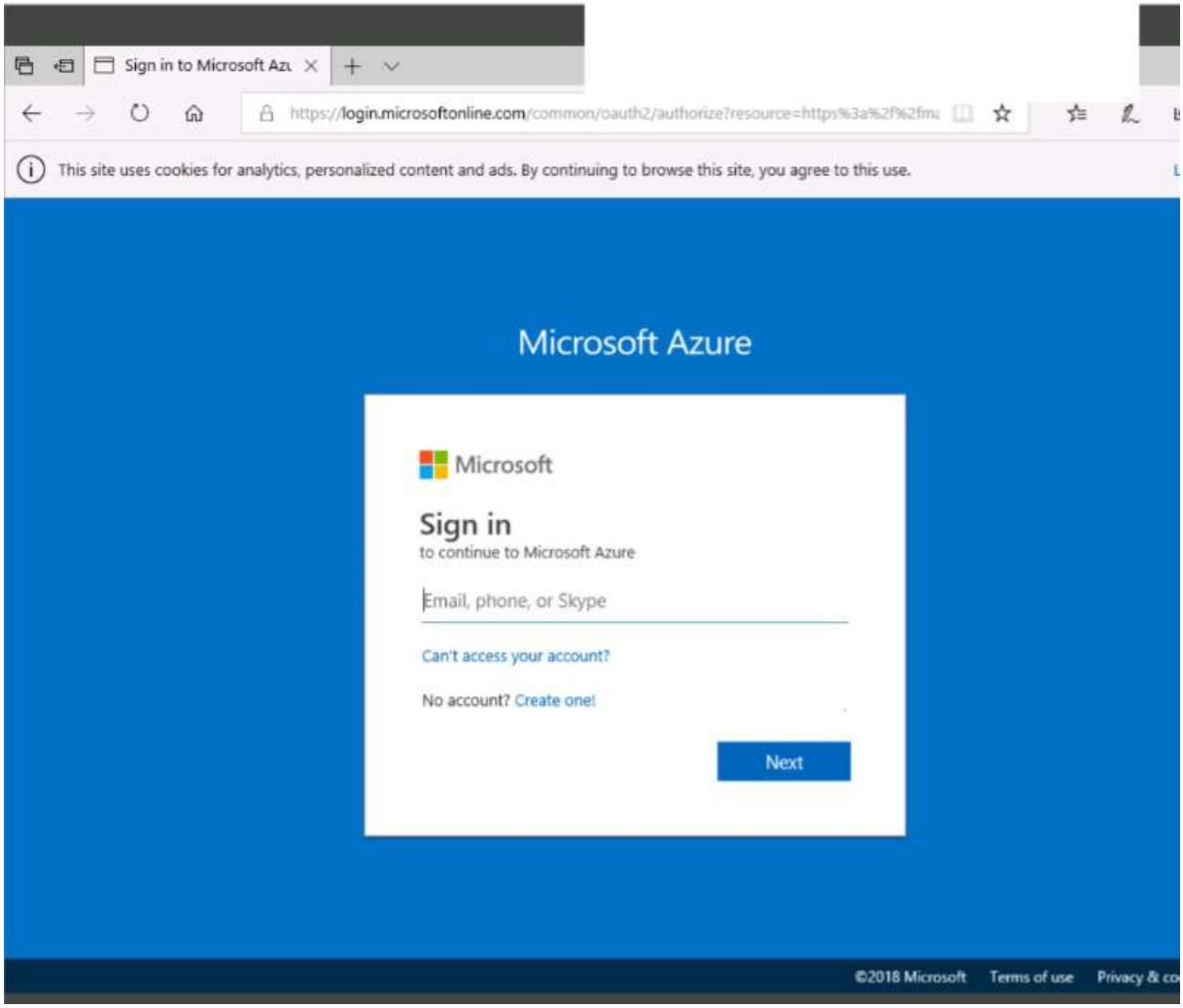

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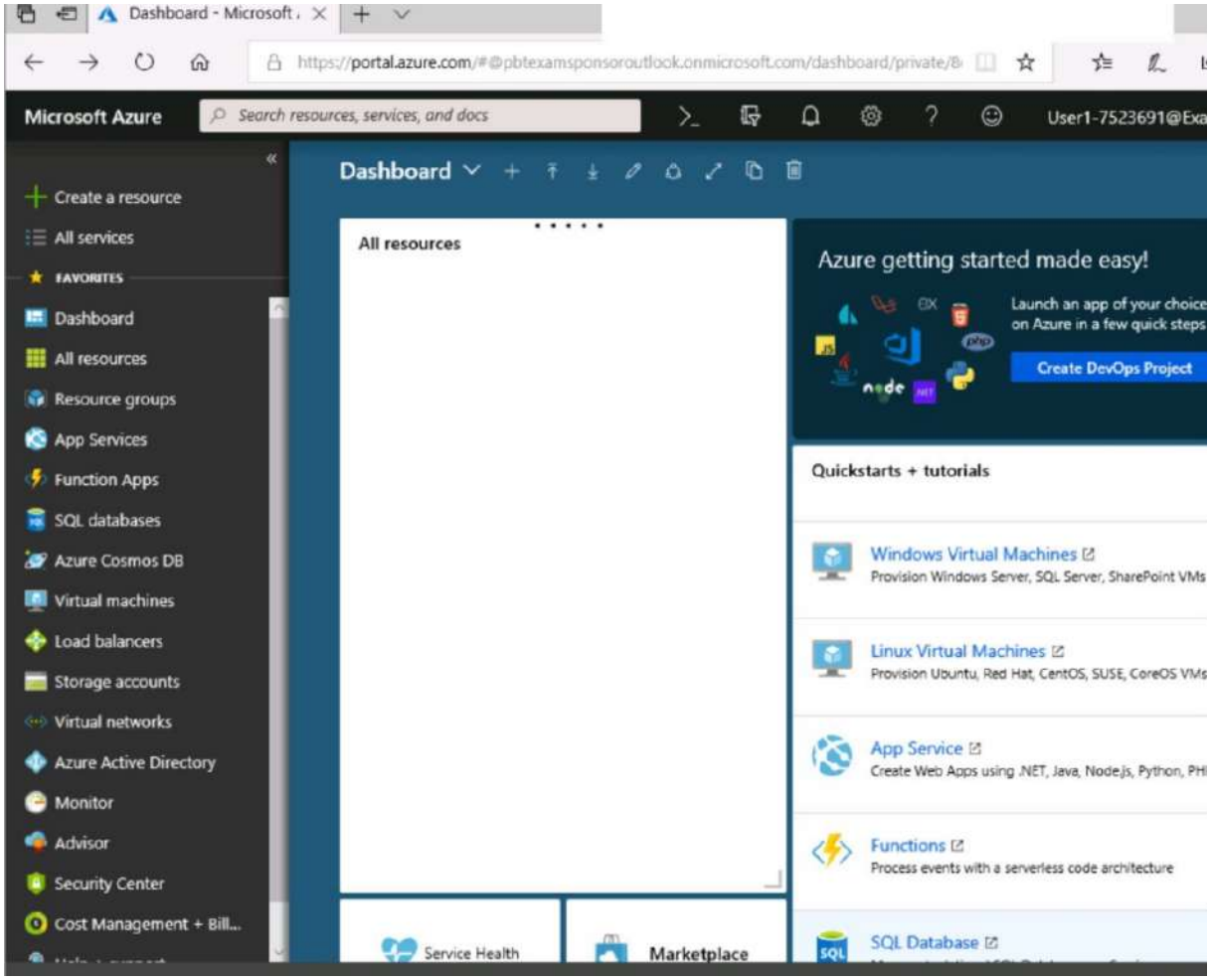

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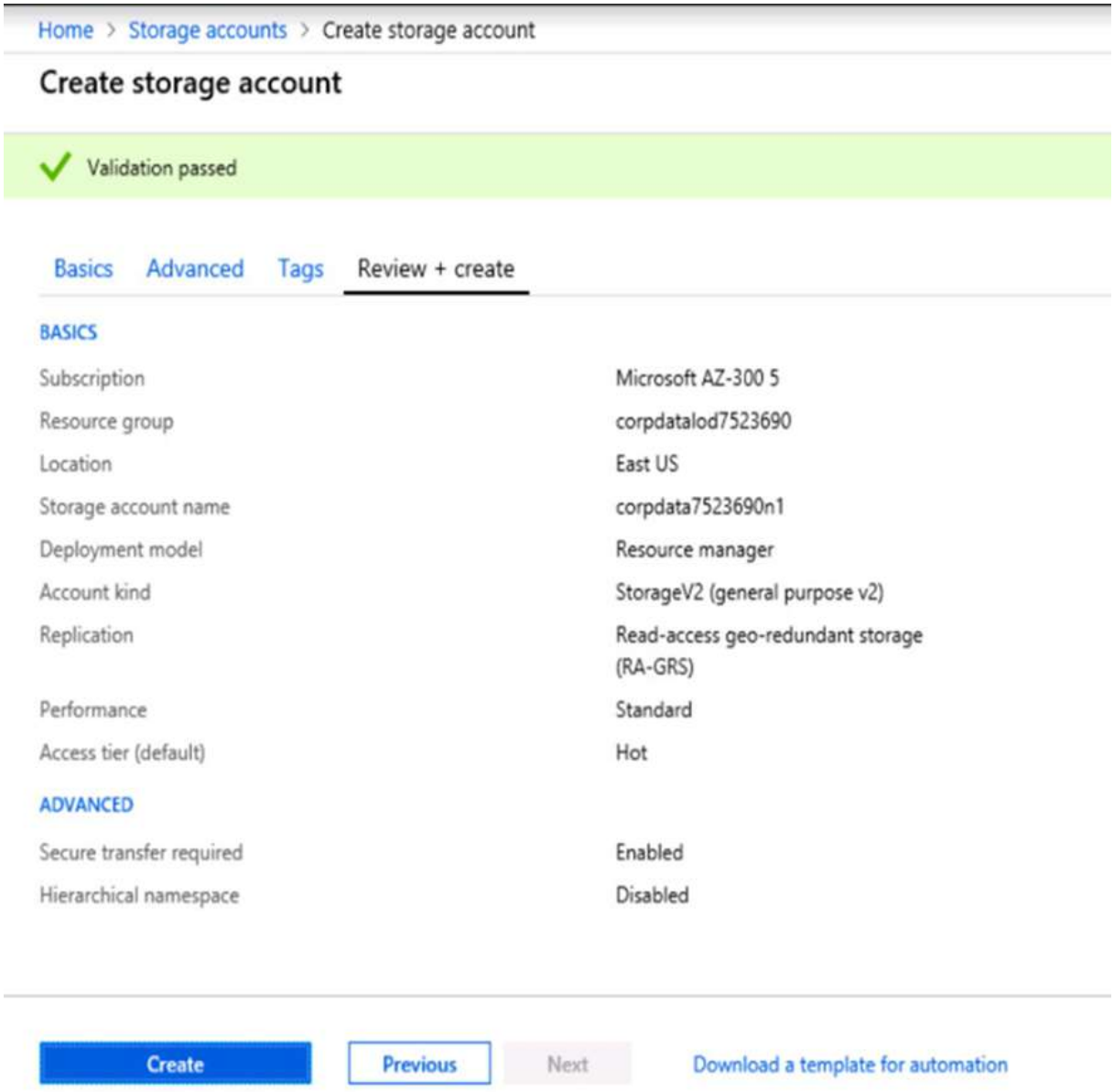

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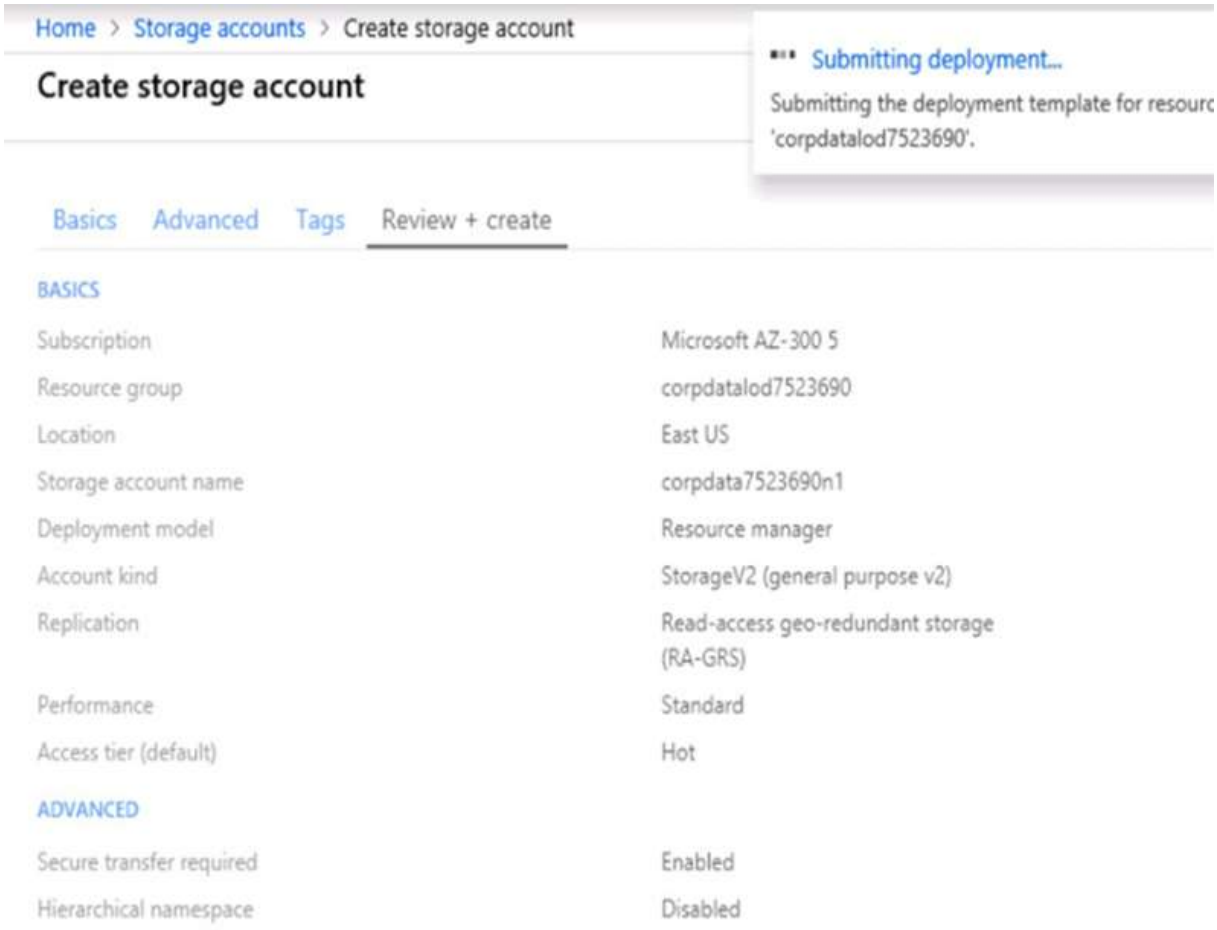

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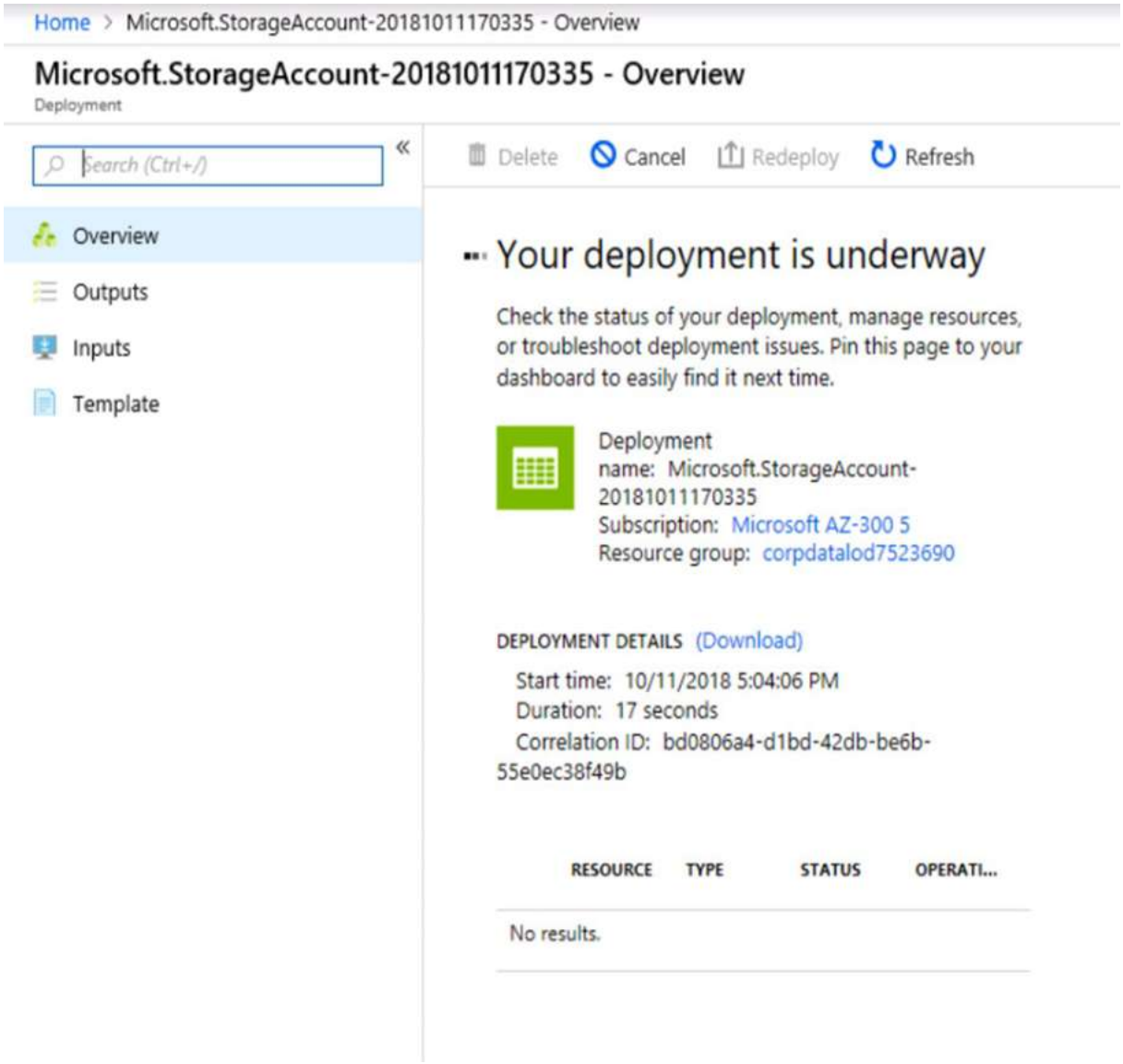

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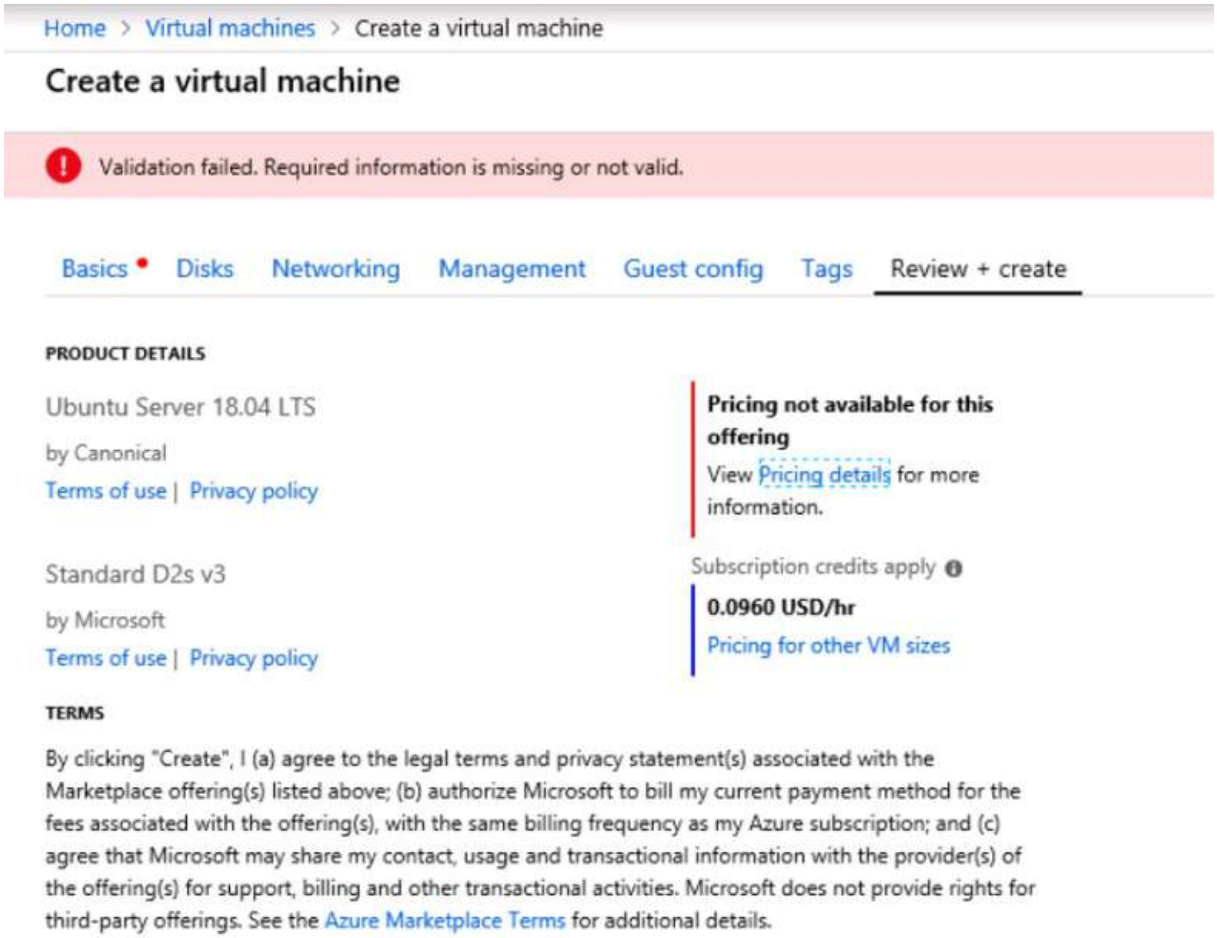

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You plan to configure VM1 to be accessible from the internet.

You need to add a public IP address to the network interface used by VM1.

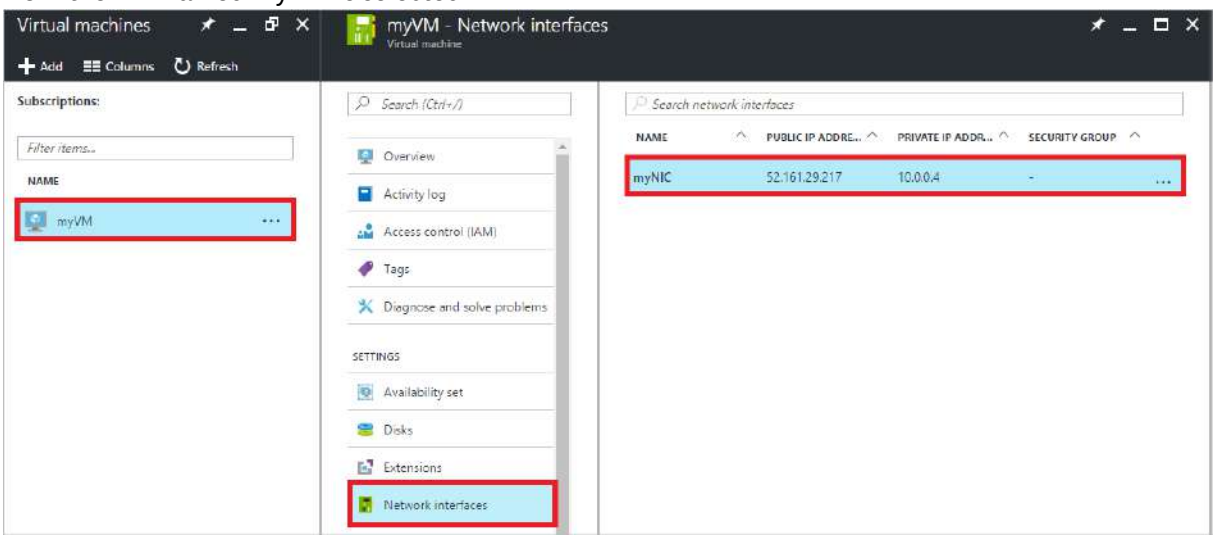
What should you do from the Azure portal?

Explanation/Reference

Explanation:
You can add private and public IP addresses to an Azure network interface by completing the steps that follow.

Step 1: In Azure portal, click More services > type virtual machines in the filter box, and then click Virtual machines.

Step 2: In the Virtual machines pane, click the VM you want to add IP addresses to. Click Network interfaces in the virtual machine pane that appears, and then select the network interface you want to add the IP addresses to. In the example shown in the following picture, the NIC named myNIC from the VM named myVM is selected:



Step 3: In the pane that appears for the NIC you selected, click IP configurations.

Step 4: Click Create public IP address.

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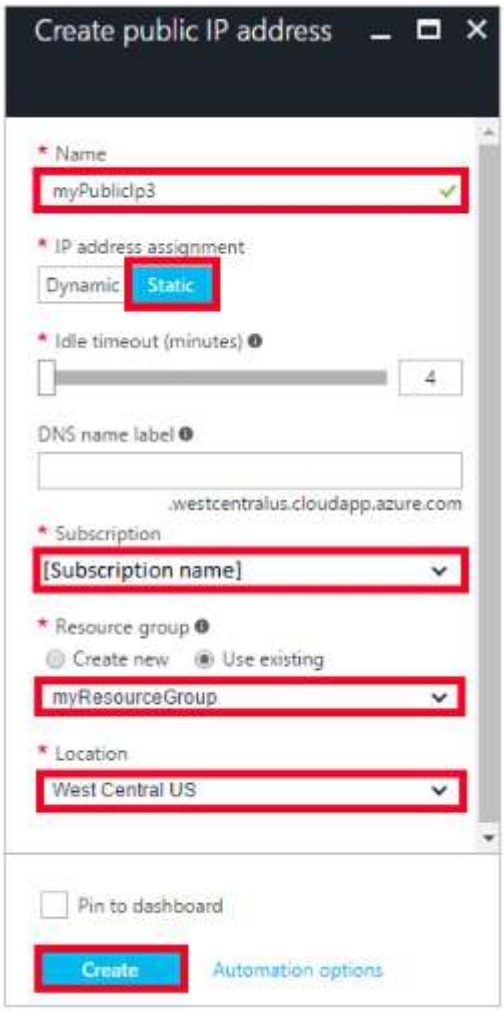

Step 5: In the Create public IP address pane that appears, enter a Name, select an IP address assignment type, a Subscription, a Resource group, and a Location, then click Create, as shown in the following picture:

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-multiple-ip-addresses-portal

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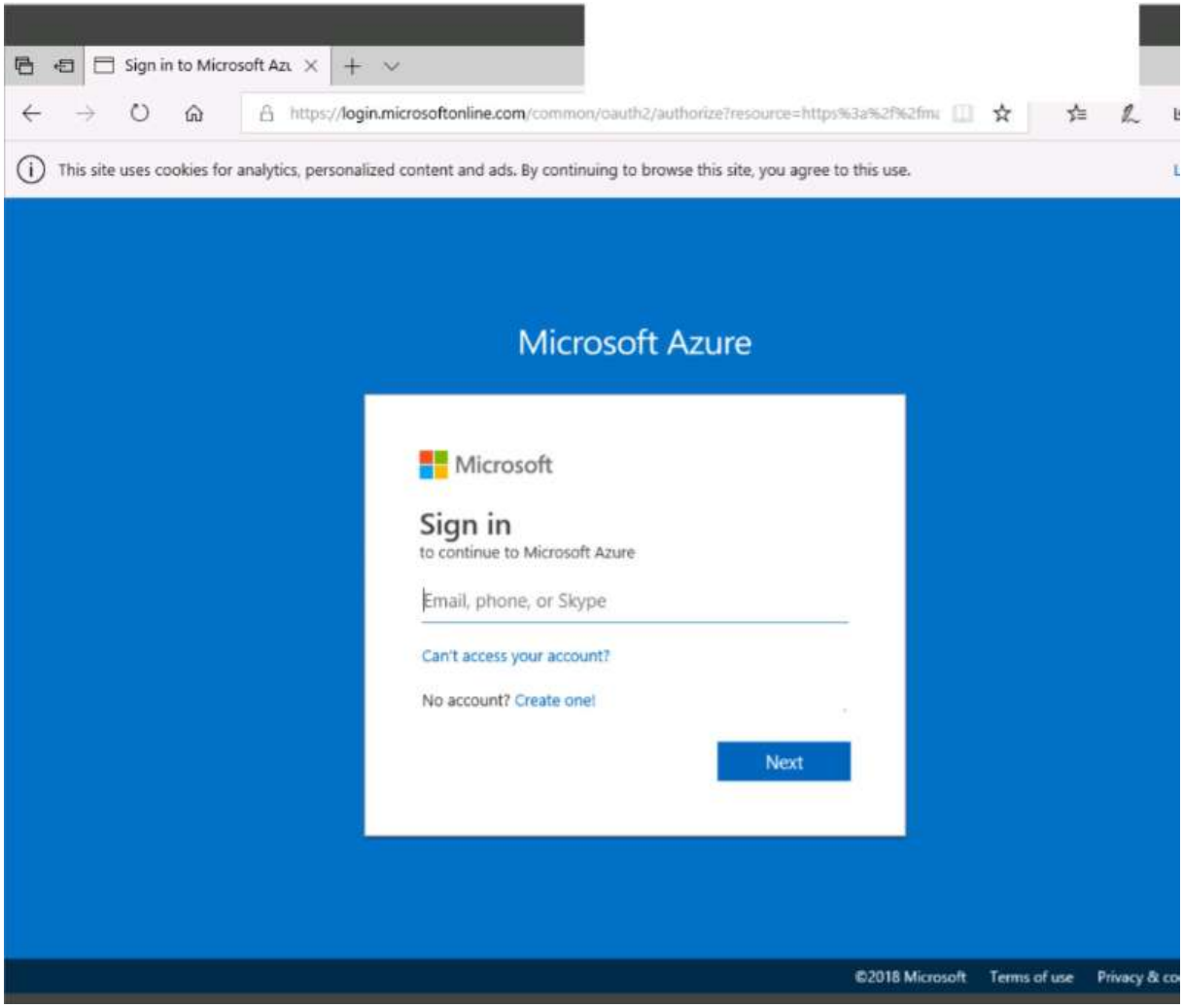

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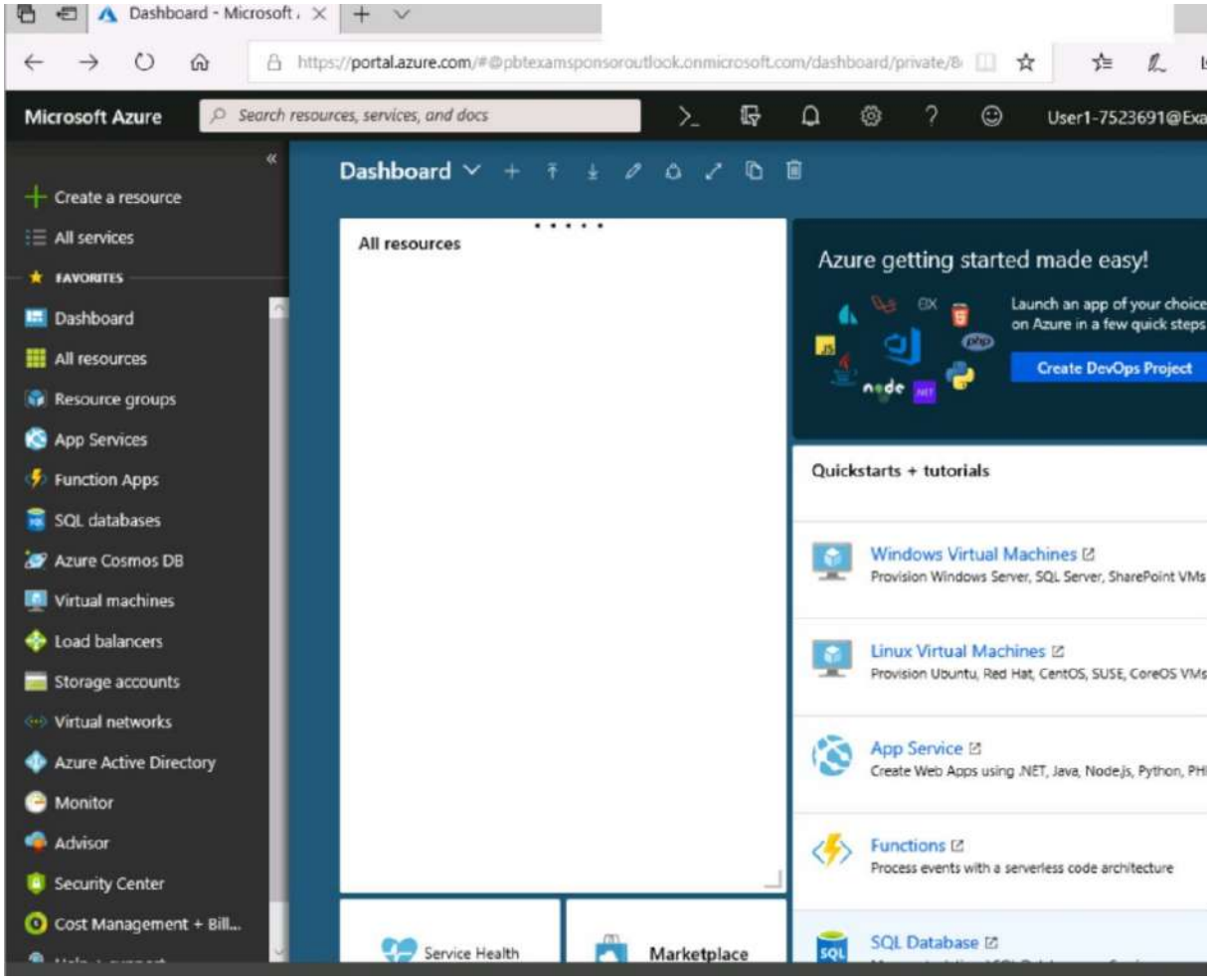

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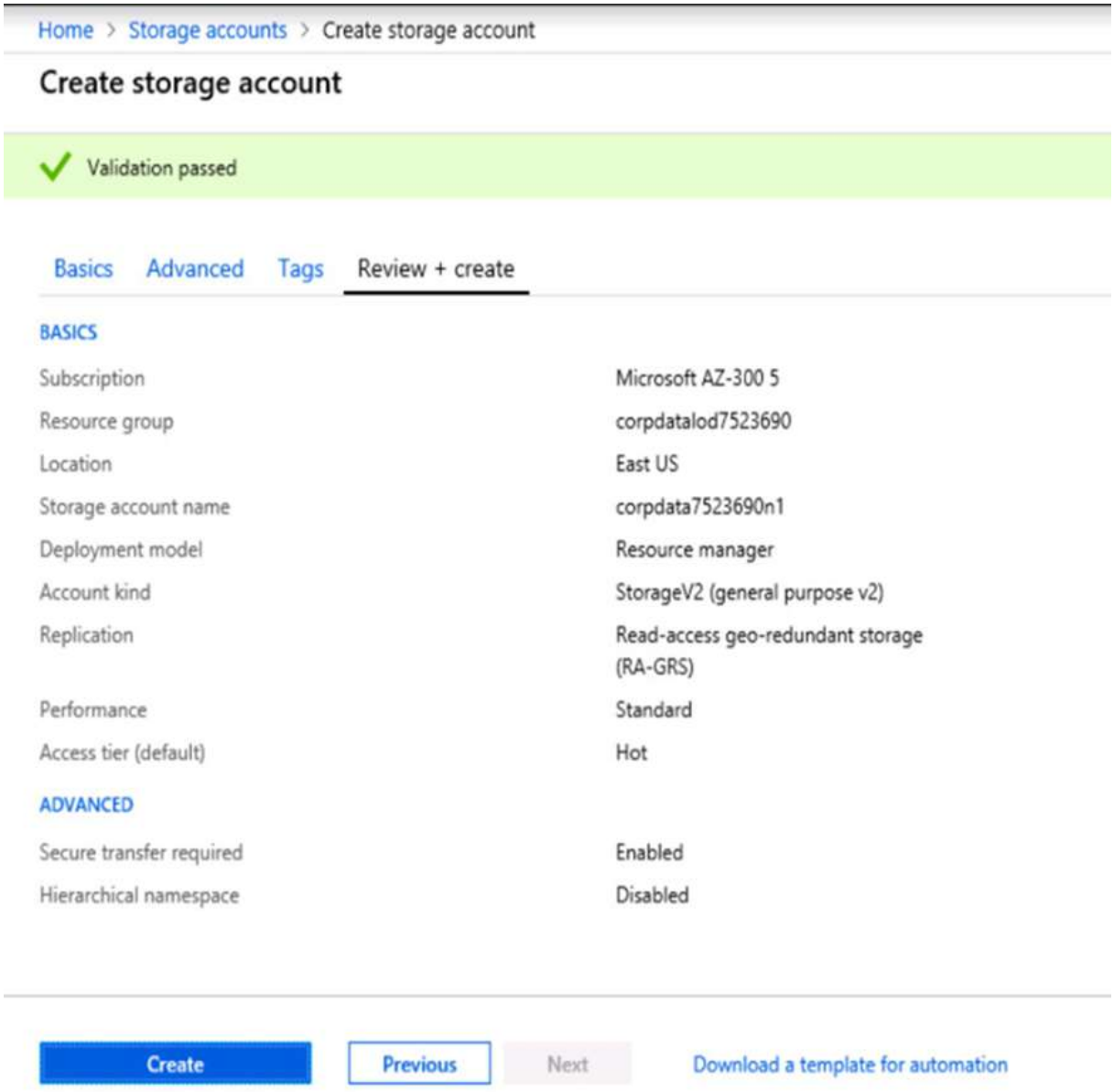

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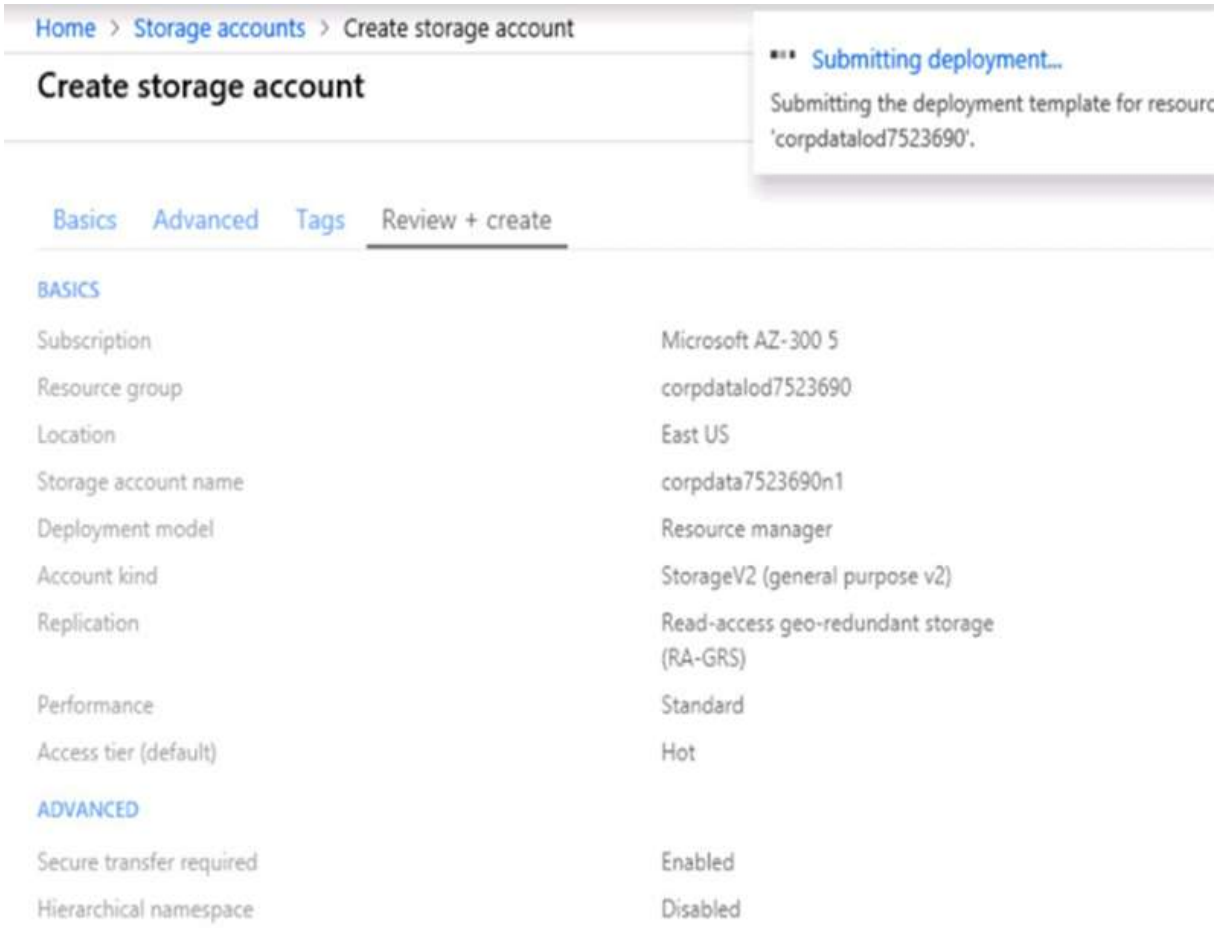

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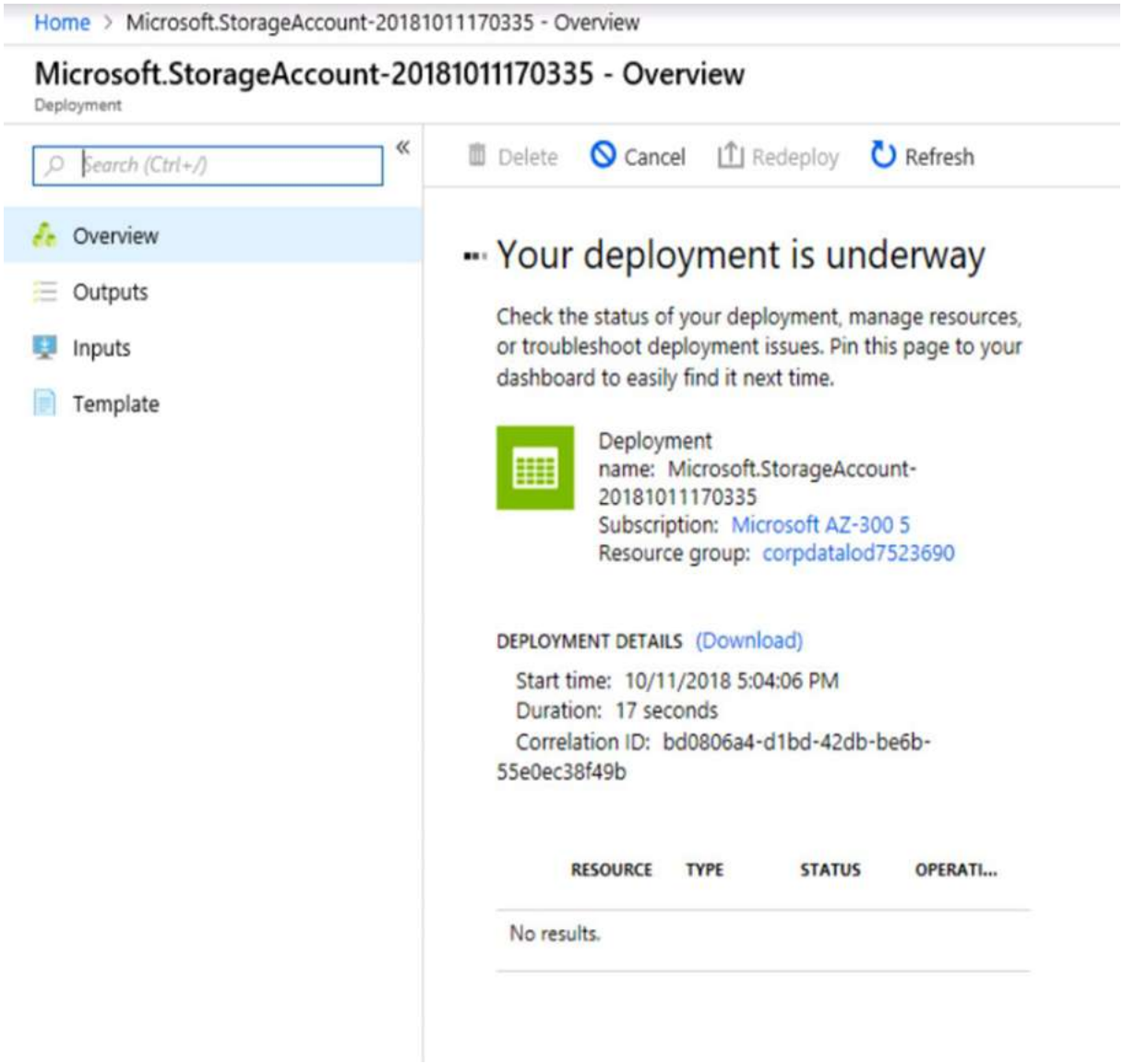

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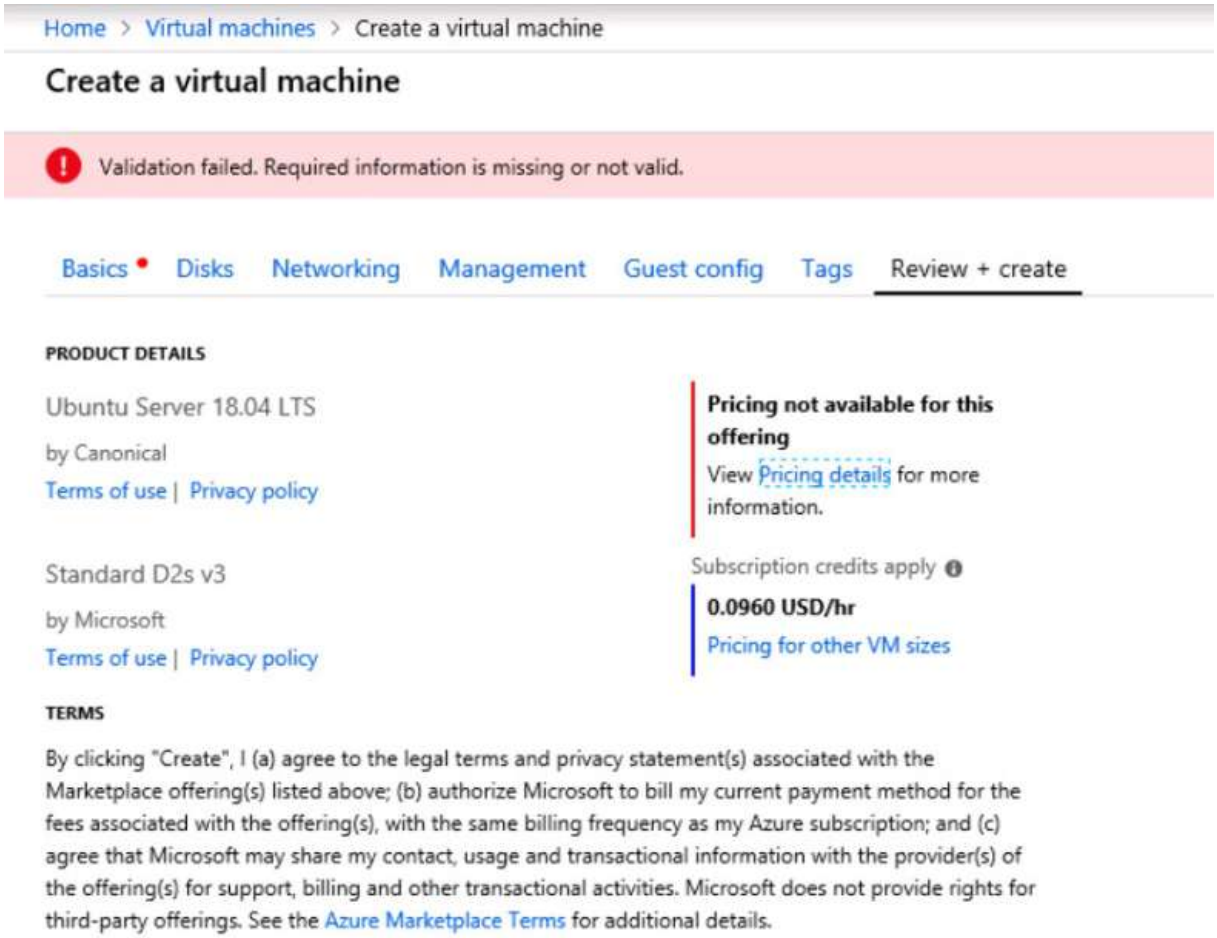

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

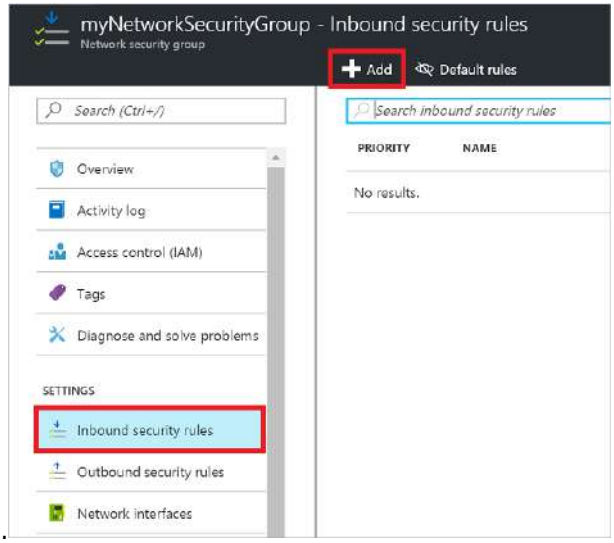
You need to allow RDP connections over TCP port 3389 to VM1 from the Internet. The solutions must prevent connections from the Internet over all other TCP ports.

What should you do from the Azure portal?

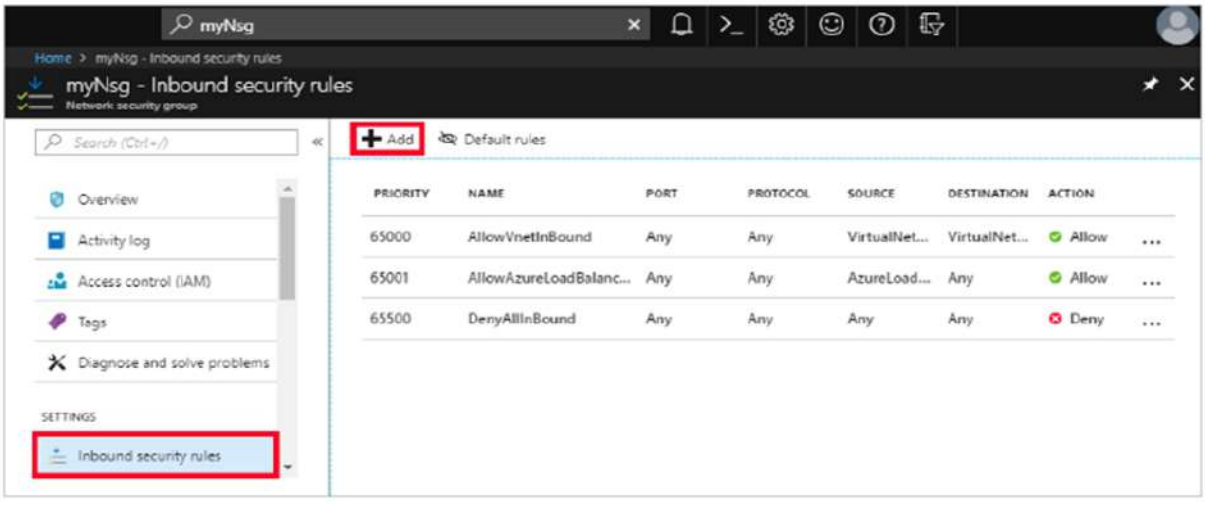
Explanation/Reference

Explanation:
Step 1: Create a new network security group

Step 2: Select your new network security group.



Step 3: Select Inbound security rules. Under **Add inbound security rule**, enter the following
Destination: Select Network security group, and then select the security group you created previously.
Destination port ranges: 3389
Protocol: Select TCP



References:

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https://docs.microsoft.com/en-us/azure/virtual-network/tutorial-filter-network-traffic

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Question 179

HOTSPOT

You plan to deploy 20 Azure virtual machines by using an Azure Resource Manager template. The virtual machines will run the latest version of Windows Server 2016 Datacenter by using an Azure Marketplace image.

You need to complete the `storageProfile` section of the template.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
"storageProfile": {
   "imageReference": {
        "publisher": "MicrosoftWindowsServer",
        "offer":  [ ▼ ]
                  "2016-Datacenter",
                  "WindowsClient",
                  "Windows-Hub",
                  "WindowsServer",
                  "WindowsServerEssentials",
                  "WindowsServerSemiAnnual",
        "sku":  [ ▼ ]
                  "2016-Datacenter",
                  "WindowsClient",
                  "Windows-Hub",
                  "WindowsServer",
                  "WindowsServerEssentials",
                  "WindowsServerSemiAnnual",
          "version": "latest"
    },
  ...
```


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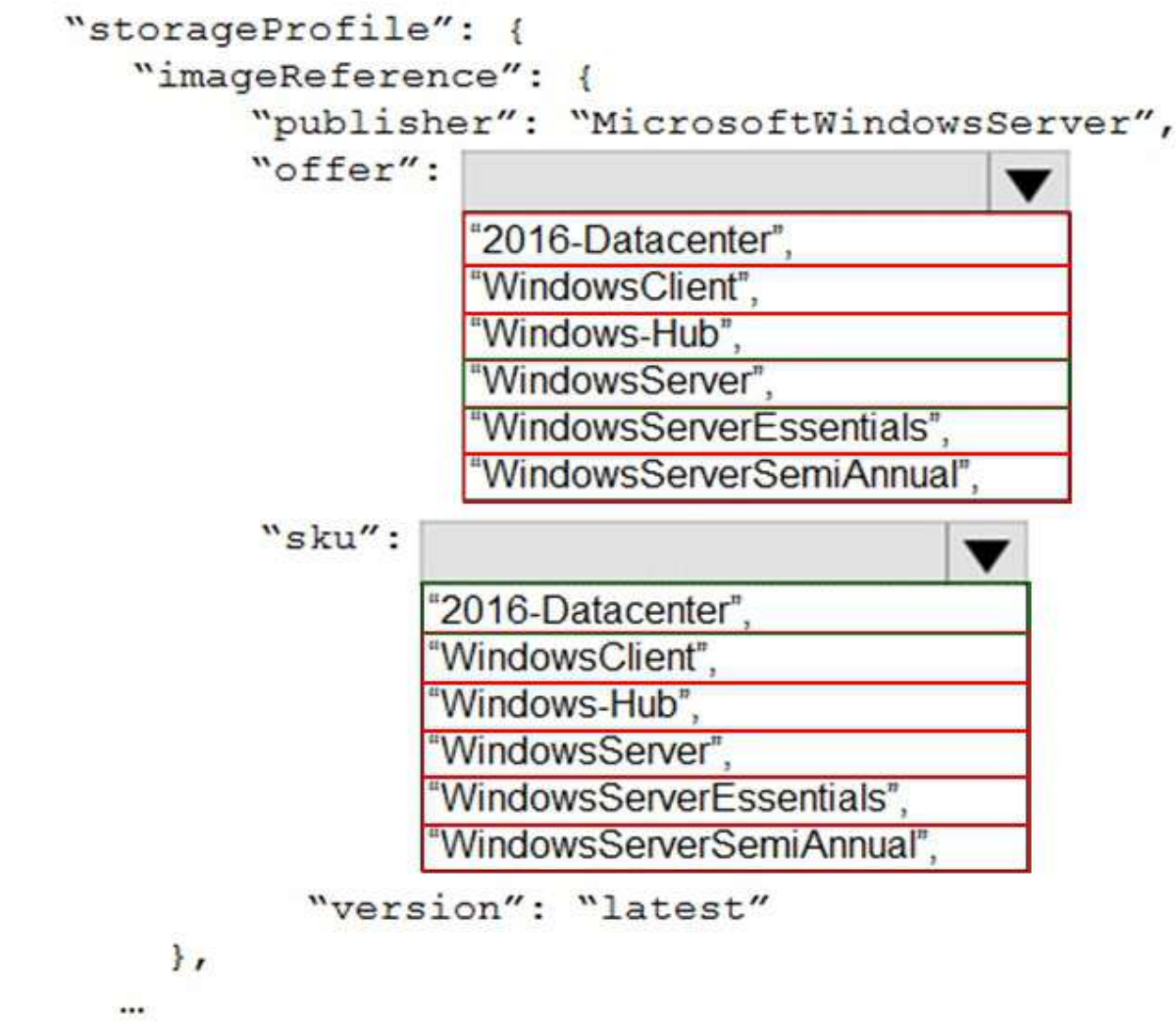
Solution:

Answer Area



Explanation/Reference

Explanation:

...
"storageProfile": {
"imageReference": {
"publisher": "MicrosoftWindowsServer",
"offer": "WindowsServer",
"sku": "2016-Datacenter",
"version": "latest"
},
...

References:
https://docs.microsoft.com/en-us/rest/api/compute/virtualmachines/createorupdate

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Question 180

You have an Azure tenant that contains two subscriptions named Subscription1 and Subscription2.

In Subscription1, you deploy a virtual machine named Server1 that runs Windows Server 2016. Server1 uses managed disks.

You need to move Server1 to Subscription2. The solution must minimize administration effort.

What should you do first?

- ☐ Create a new virtual machine in Subscription2
- ☐ In Subscription2, create a copy of the virtual disk
- ☐ Create a snapshot of the virtual disk
- ☒ From Azure PowerShell, run the Move-AzureRmResource cmdlet

Explanation/Reference

Explanation:
To move existing resources to another resource group or subscription, use the Move-AzureRmResource cmdlet.

References:
https://docs.microsoft.com/en-in/azure/azure-resource-manager/resource-group-move-resources#move-resources

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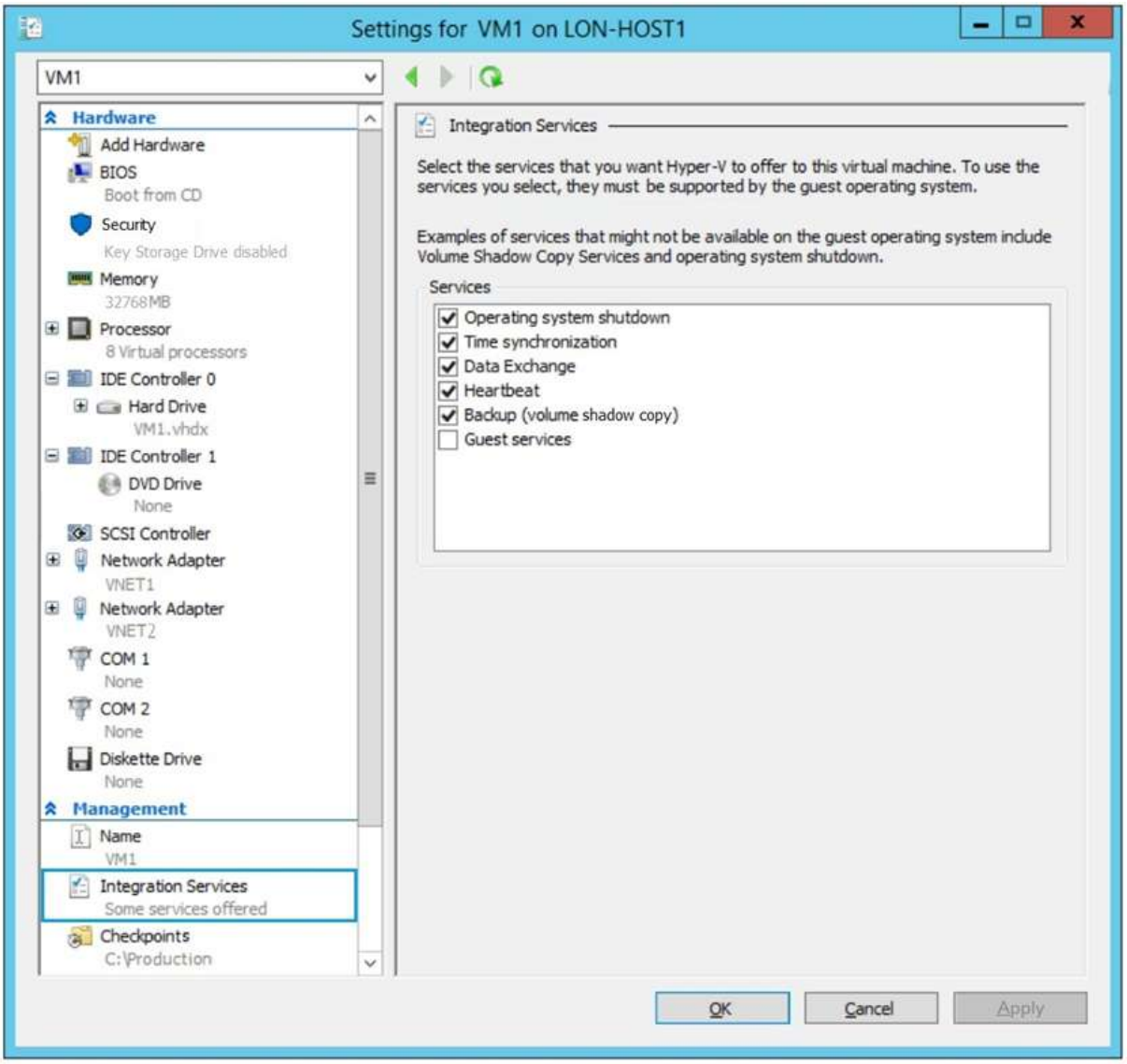
Question 181

You have an Azure subscription.

You have an on-premises virtual machine named VM1. The settings for VM1 are shown in the exhibit. (Click the **Exhibit** tab.)



You need to ensure that you can use the disks attached to VM1 as a template for Azure virtual machines.

What should you modify on VM1?

- ☐ the processor
- ☐ the memory
- ☐ Integration Services
- ☒ the hard drive
- ☐ the network adapters

Explanation/Reference

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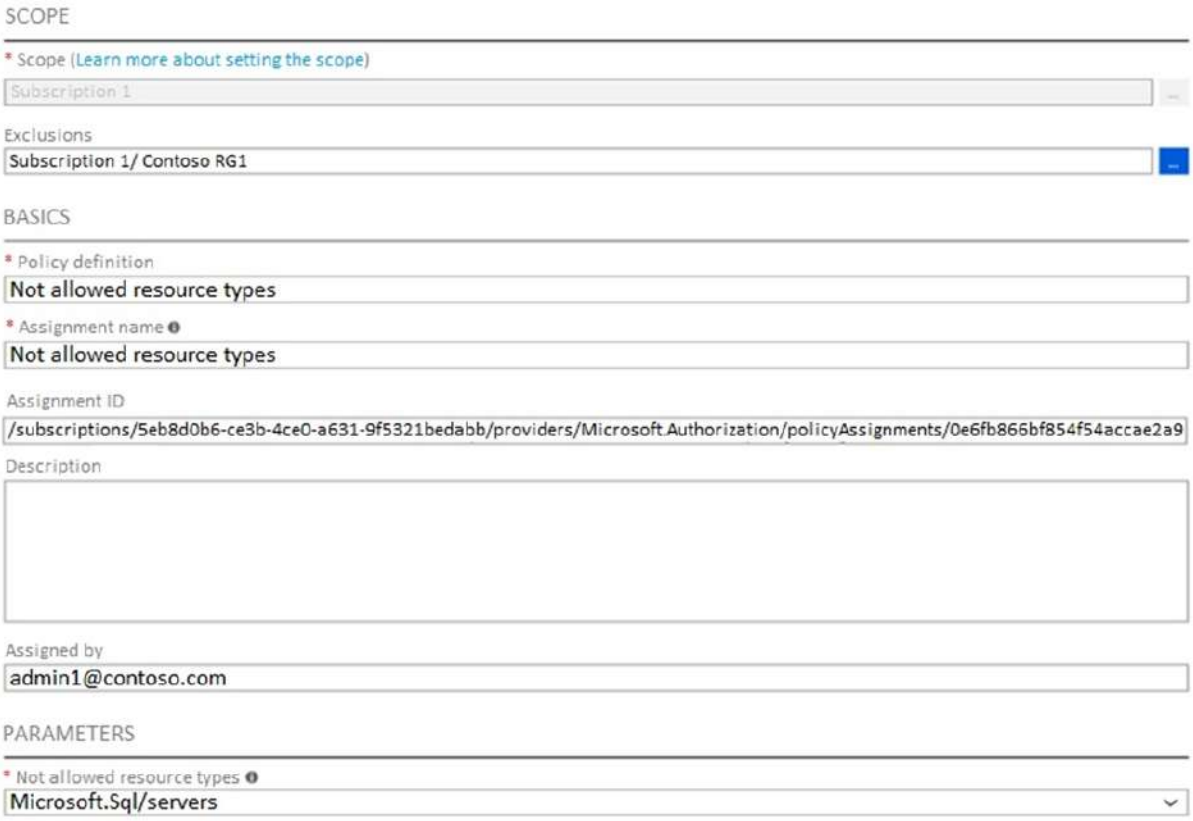
Explanation:
From the exhibit we see that the disk is in the VHDX format.

Before you upload a Windows virtual machines (VM) from on-premises to Microsoft Azure, you must prepare the virtual hard disk (VHD or VHDX). Azure supports only generation 1 VMs that are in the VHD file format and have a fixed sized disk. The maximum size allowed for the VHD is 1,023 GB. You can convert a generation 1 VM from the VHDX file system to VHD and from a dynamically expanding disk to fixed-sized.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/prepare-for-upload-vhd-image?toc=azure virtual-machines windows toc.json

Question 182

You have an Azure policy as shown in the following exhibit.



What is the effect of the policy?

- ☐ You can create Azure SQL servers in any resource group within Subscription 1.
- ☒ You can create Azure SQL servers in ContosoRG1 only.
- ☐ You are prevented from creating Azure SQL Servers in ContosoRG1 only.
- ☐ You are prevented from creating Azure SQL servers anywhere in Subscription 1.

Explanation/Reference

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Explanation:
You are prevented from creating Azure SQL servers anywhere in Subscription 1 with the exception of ContosoRG1

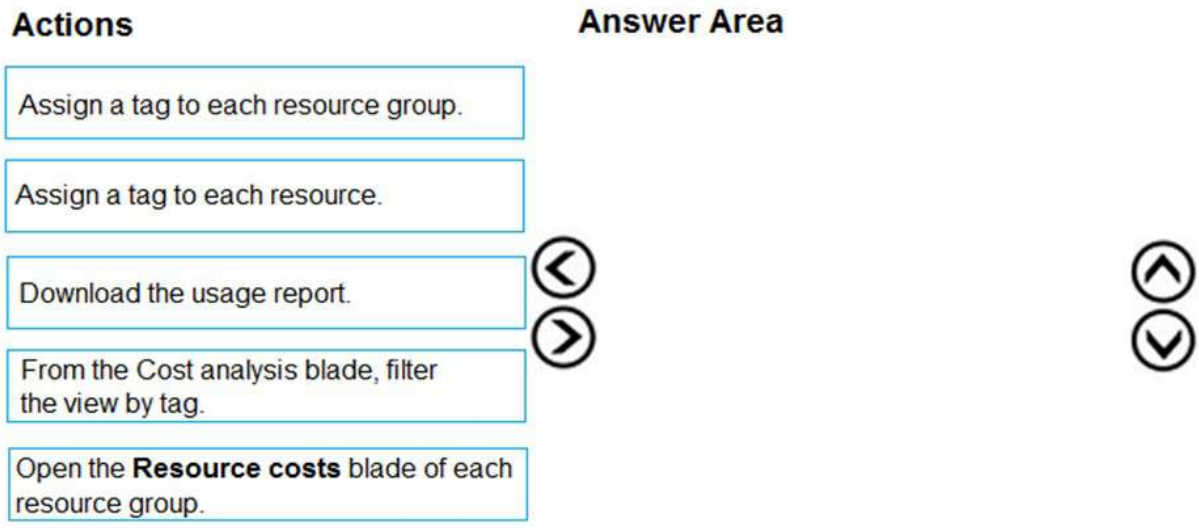
Question 183

DRAG DROP

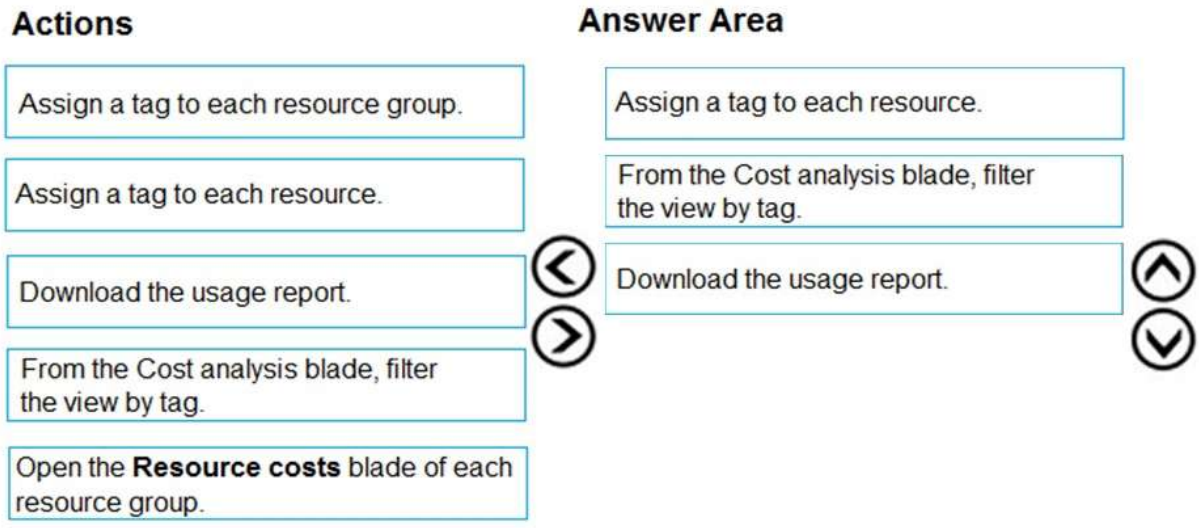
You have an Azure subscription that is used by four departments in your company. The subscription contains 10 resource groups. Each department uses resources in several resource groups.

You need to send a report to the finance department. The report must detail the costs for each department.

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



Solution:



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Explanation/Reference

Explanation:

Box 1: Assign a tag to each resource.
You apply tags to your Azure resources giving metadata to logically organize them into a taxonomy. After you apply tags, you can retrieve all the resources in your subscription with that tag name and value. Each resource or resource group can have a maximum of 15 tag name/value pairs. Tags applied to the resource group are not inherited by the resources in that resource group.

Box 2: From the Cost analysis blade, filter the view by tag
After you get your services running, regularly check how much they're costing you. You can see the current spend and burn rate in Azure portal.
1. Visit the Subscriptions blade in Azure portal and select a subscription.
1. You should see the cost breakdown and burn rate in the popup blade.
2. Click Cost analysis in the list to the left to see the cost breakdown by resource. Wait 24 hours after you add a service for the data to populate.
3. You can filter by different properties like tags, resource group, and timespan. Click Apply to confirm the filters and Download if you want to export the view to a Comma-Separated Values (.csv) file.

Box 3: Download the usage report

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-using-tags

https://docs.microsoft.com/en-us/azure/billing/billing-getting-started

Question 184

You have an Azure subscription that contains a resource group named RG1. RG1 contains 100 virtual machines.

Your company has three cost centers named Manufacturing, Sales, and Finance.

You need to associate each virtual machine to a specific cost center.

What should you do?

- ☐ Add an extension to the virtual machines
- ☐ Modify the inventory settings of the virtual machine
- ☒ Assign tags to the virtual machines
- ☐ Configure locks for the virtual machine

Explanation/Reference

Explanation:
You apply tags to your Azure resources to logically organize them into a taxonomy. Each tag consists of a name and a value pair. After you apply tags, you can retrieve all the resources in your

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subscription with that tag name and value.

Tags enable you to retrieve related resources from different resource groups.

This approach is helpful when you need to organize resources for billing or management.

Reference:
https://docs.microsoft.com/en-us/azure/billing/billing-getting-started

https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-using-tags

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Question 185

HOTSPOT

Your company has a virtualization environment that contains the virtualization hosts shown in the following table.

Name	Hypervisor	Guest
Server1	VMware	VM1, VM2, VM3
Server2	Hyper-V	VMA, VMB, VMC

The virtual machines are configured as shown in the following table.

Name	Generation	Memory	Operating system (OS)	OS disk	Data disk
VM1	*Not applicable*	4 GB	Windows Server 2016	200 GB	800 GB
VM2	*Not applicable*	12 GB	Red Hat Enterprise Linux 7.2	3 TB	200 GB
VM3	*Not applicable*	32 GB	Windows Server 2012 R2	200 GB	1 TB
VMA	1	8 GB	Windows Server 2012	100 GB	2 TB
VMB	1	16 GB	Red Hat Enterprise Linux 7.2	150 GB	3 TB
VMC	2	24 GB	Windows Server 2016	500 GB	6 TB

All the virtual machines use basic disks. VM1 is protected by using BitLocker Drive Encryption (BitLocker).

You plan to migrate the virtual machines to Azure by using Azure Site Recovery.

You need to identify which virtual machines can be migrated.

Which virtual machines should you identify for each server? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

The virtual machines that can be migrated from Server1.	VM1 only VM2 only VM3 only VM1 and VM2 only VM1 and VM3 only VM1, VM2, and VM3
The virtual machines that can be migrated from Server2.	VMA only VMB only VMC only VMA and VMB only VMA and VMC only VMA, VMB, and VMC

Solution:

Answer Area

The virtual machines that can be migrated from Server1.	VM1 only VM2 only **VM3 only** VM1 and VM2 only VM1 and VM3 only VM1, VM2, and VM3
The virtual machines that can be migrated from Server2.	VMA only VMB only VMC only **VMA and VMB only** VMA and VMC only VMA, VMB, and VMC

Explanation/Reference

Explanation:

Incorrect Answers:
VM1 cannot be migrates as it has BitLocker enabled.
VM2 cannot be migrates as the OS disk on VM2 is larger than 2TB.
VMC cannot be migrates as the Data disk on VMC is larger than 4TB.

References:
https://docs.microsoft.com/en-us/azure/site-recovery/hyper-v-azure-support-matrix#azure-vm-requirements

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Question 186

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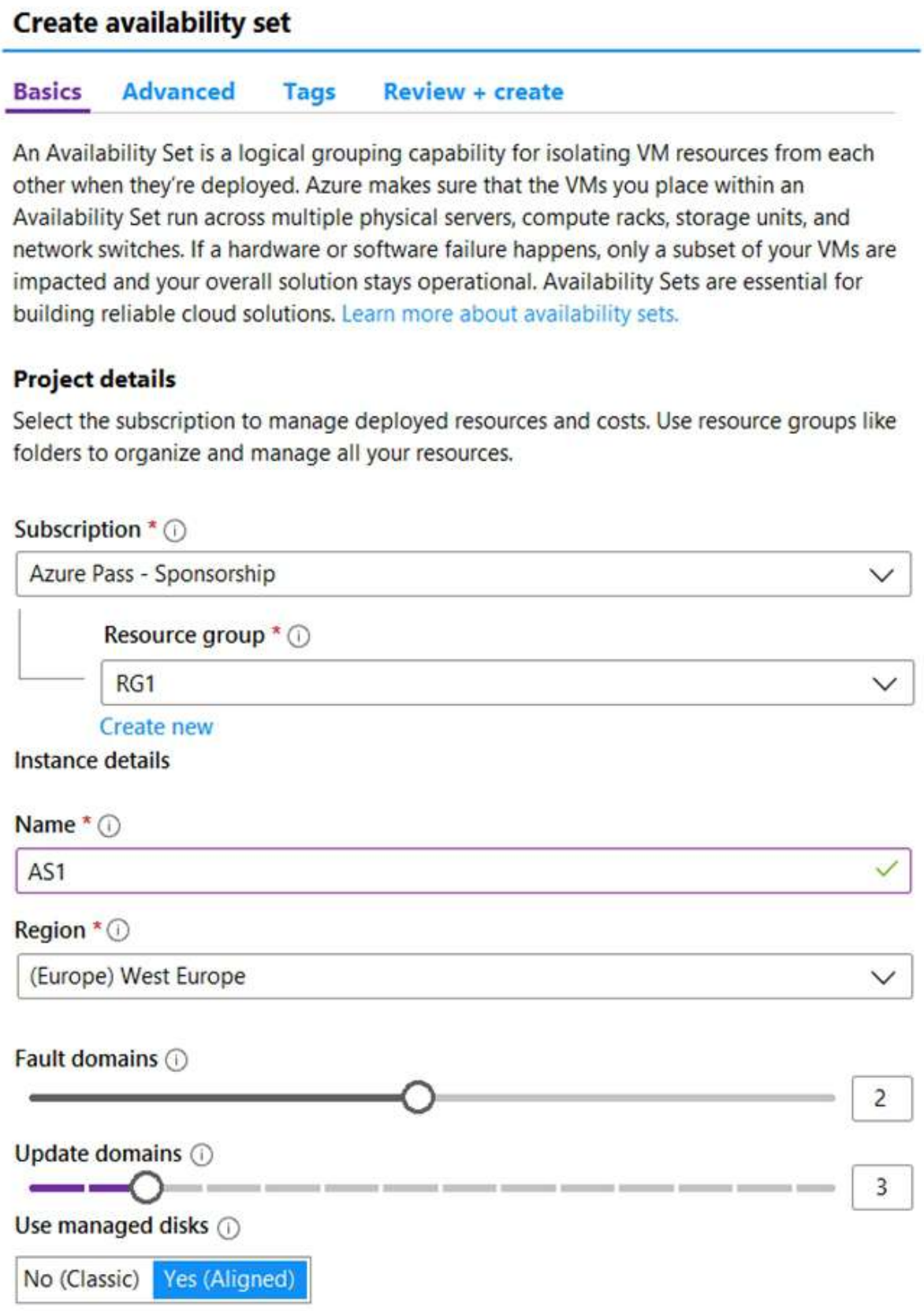
HOTSPOT

You have an Azure subscription that contains multiple resource groups. You create an availability set as shown in the following exhibit.



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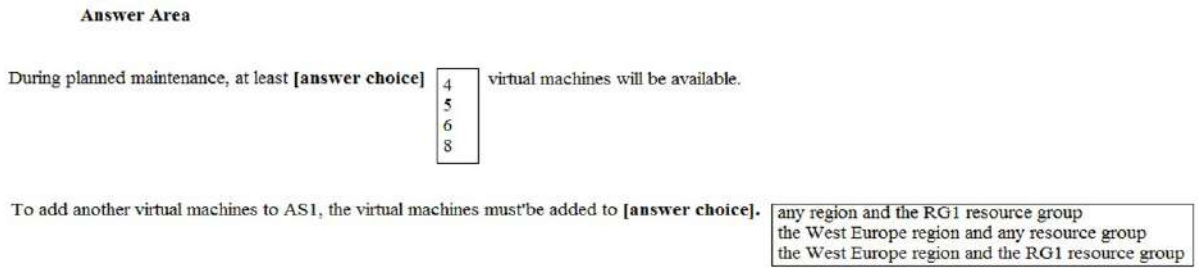
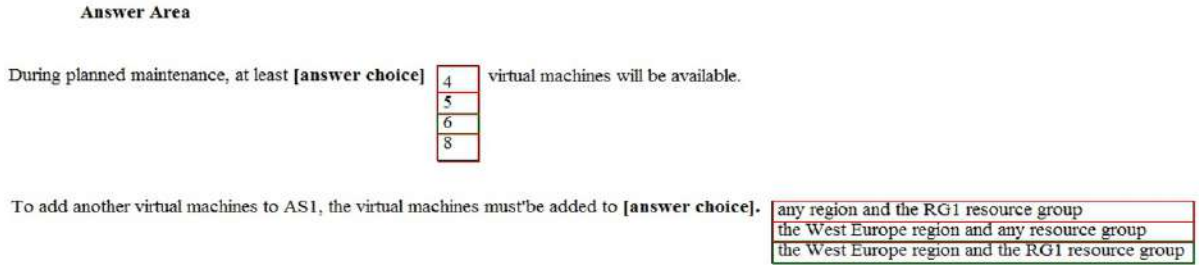
You deploy 10 virtual machines to AS1.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.



Solution:



Explanation/Reference

Explanation:

Box 1: 6
Two out of three update domains would be available, each with at least 3 VMs.
An update domain is a group of VMs and underlying physical hardware that can be rebooted at the same time.

As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these update domains. This approach ensures that at least one instance of your application always remains running as the Azure platform undergoes periodic maintenance.

Box 2: the West Europe region and the RG1 resource group

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/regions

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Question 187

You have an Azure subscription that contains two storage accounts named storagecontoso1 and storagecontoso2. Each storage account contains a queue service, a table service, and a blob service.

You develop two apps named App1 and App2. You need to configure the apps to store different types of data to all the storage services on both the storage accounts.

How many endpoints should you configure for each app?

- ☒ 2
- ☐ 3
- ☐ 6
- ☐ 12

Explanation/Reference

Explanation:
Each app needs a service endpoint in each Storage Account.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-network-security

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Question 188

HOTSPOT

You have an Azure subscription named Subscription1.

You have a virtualization environment that contains the virtualization servers in the following table.

Name	Hypervisor	Run virtual machine
Server1	Hyper-V	VM1, VM2, VM3
Server2	VMware	VMA, VMB, VMC

The virtual machines are configured as shown in the following table.

Name	Generation	Memory	Operating system(OS) disk	Data disk	OS
VM1	1	4 GB	200 GB	800 GB	Windows Server 2012 R2
VM2	1	12 GB	3 TB	200 GB	Red Hat Enterprise Linux 7.2
VM3	2	32 GB	100 GB	1 TB	Windows Server 2016
VMA	*Not applicable*	8 GB	100 GB	2 TB	Windows Server 2012 R2
VMB	*Not applicable*	16 GB	150 GB	1 TB	Red Hat Enterprise Linux 7.2
VMC	*Not applicable*	24 GB	500 GB	6 TB	Windows Server 2016

All the virtual machines use basic disks. VM1 is protected by using BitLocker Drive Encryption (BitLocker).

You plan to use Azure Site Recovery to migrate the virtual machines to Azure.

Which virtual machines can you migrate? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

The virtual machines that can be migrated from Server1.	VM1 only VM2 only VM3 only VM1 and VM2 only VM1 and VM3 only VM1, VM2, and VM3
The virtual machines that can be migrated from Server2.	VMA only VMB only VMC only VMA and VMB only VMA and VMC only VMA, VMB, and VMC

Solution:

Answer Area

The virtual machines that can be migrated from Server1.	VM1 only VM2 only **VM3 only** VM1 and VM2 only VM1 and VM3 only VM1, VM2, and VM3
The virtual machines that can be migrated from Server2.	VMA only VMB only VMC only **VMA and VMB only** VMA and VMC only VMA, VMB, and VMC

Explanation/Reference

Explanation:

Incorrect Answers:
VM1 cannot be migrates as it has BitLocker enabled.
VM2 cannot be migrates as the OS disk on VM2 is larger than 2TB.
VMC cannot be migrates as the Data disk on VMC is larger than 4TB.

References:
https://docs.microsoft.com/en-us/azure/site-recovery/hyper-v-azure-support-matrix#azure-vm-requirements

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Question 189

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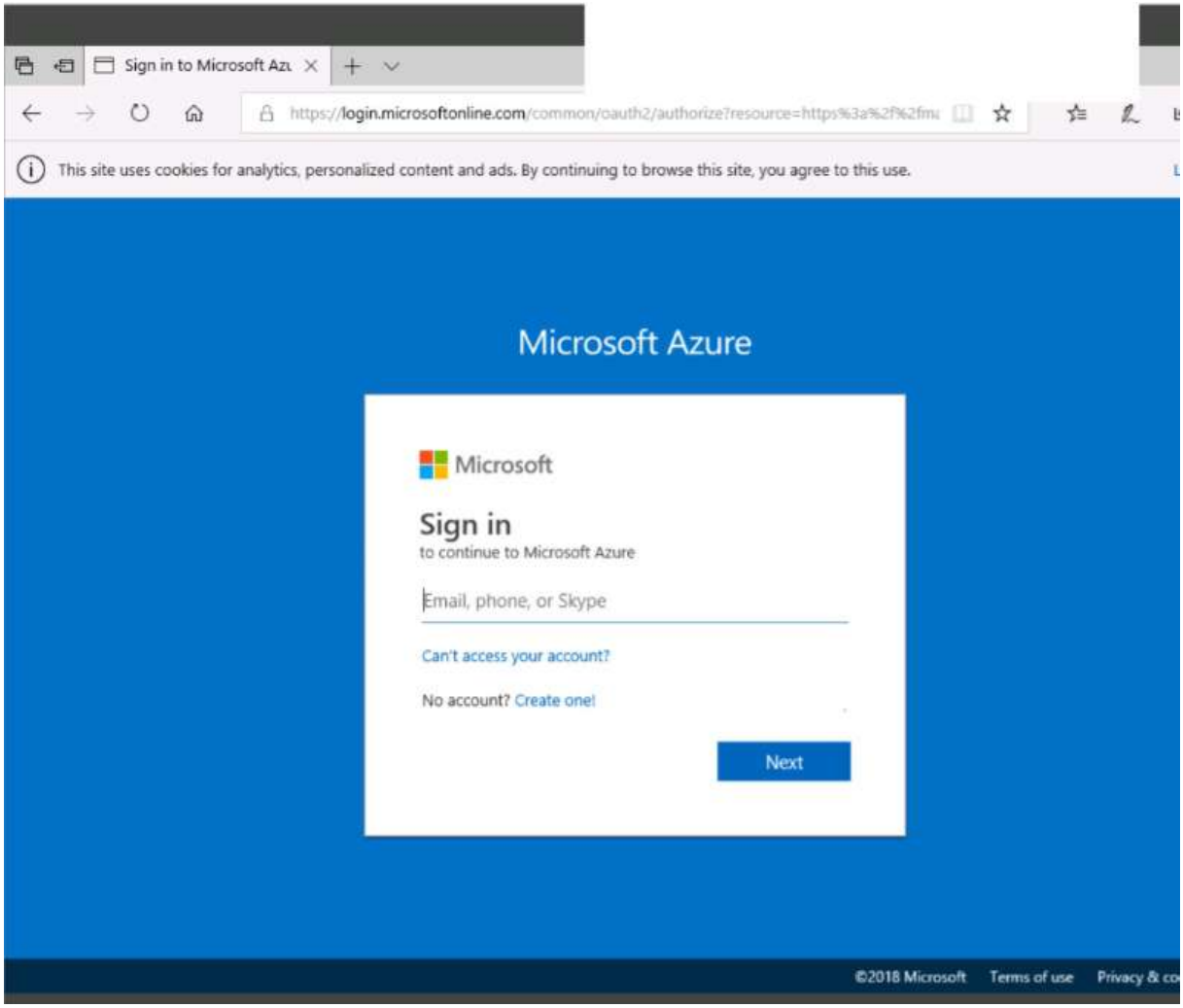
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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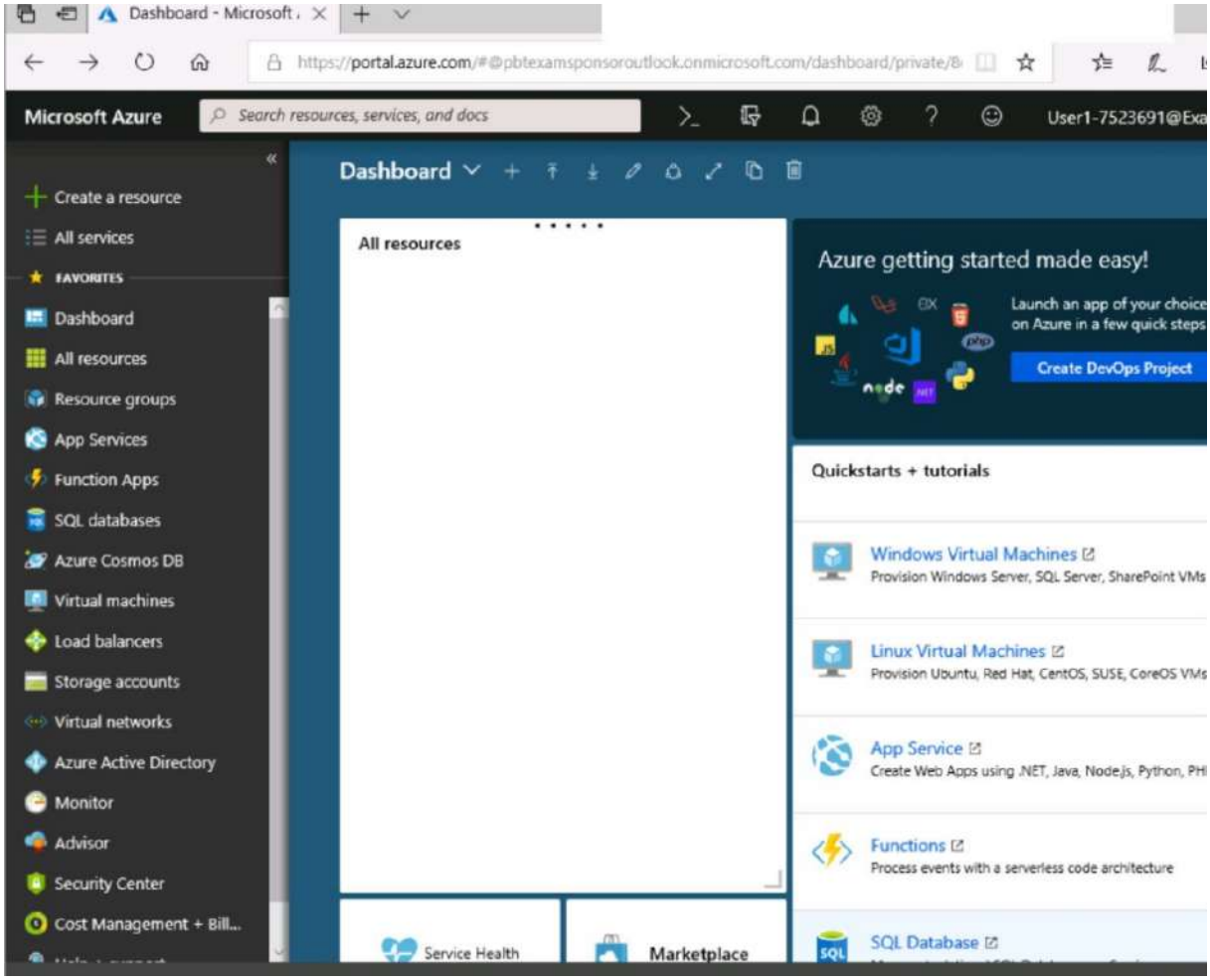

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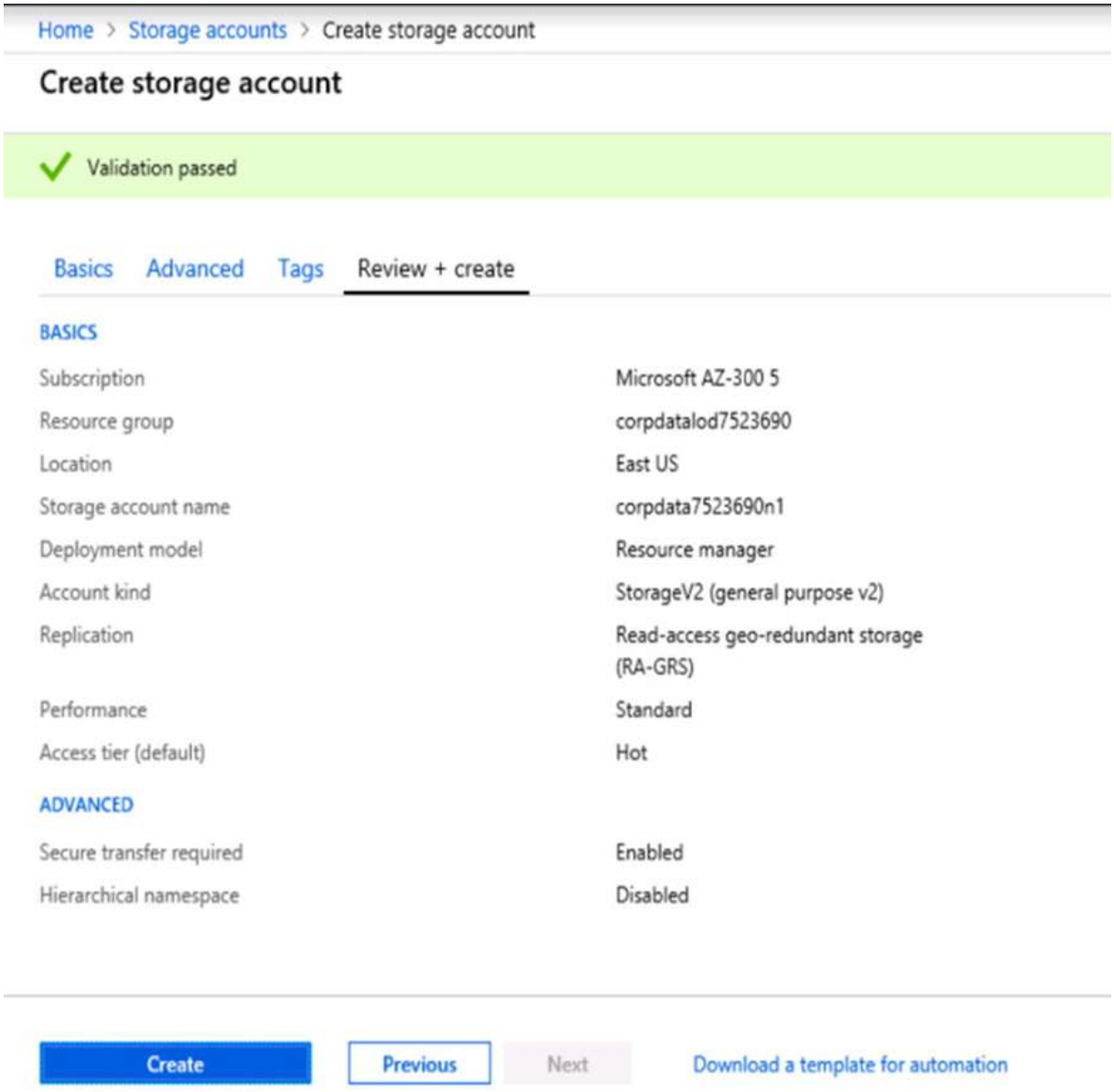

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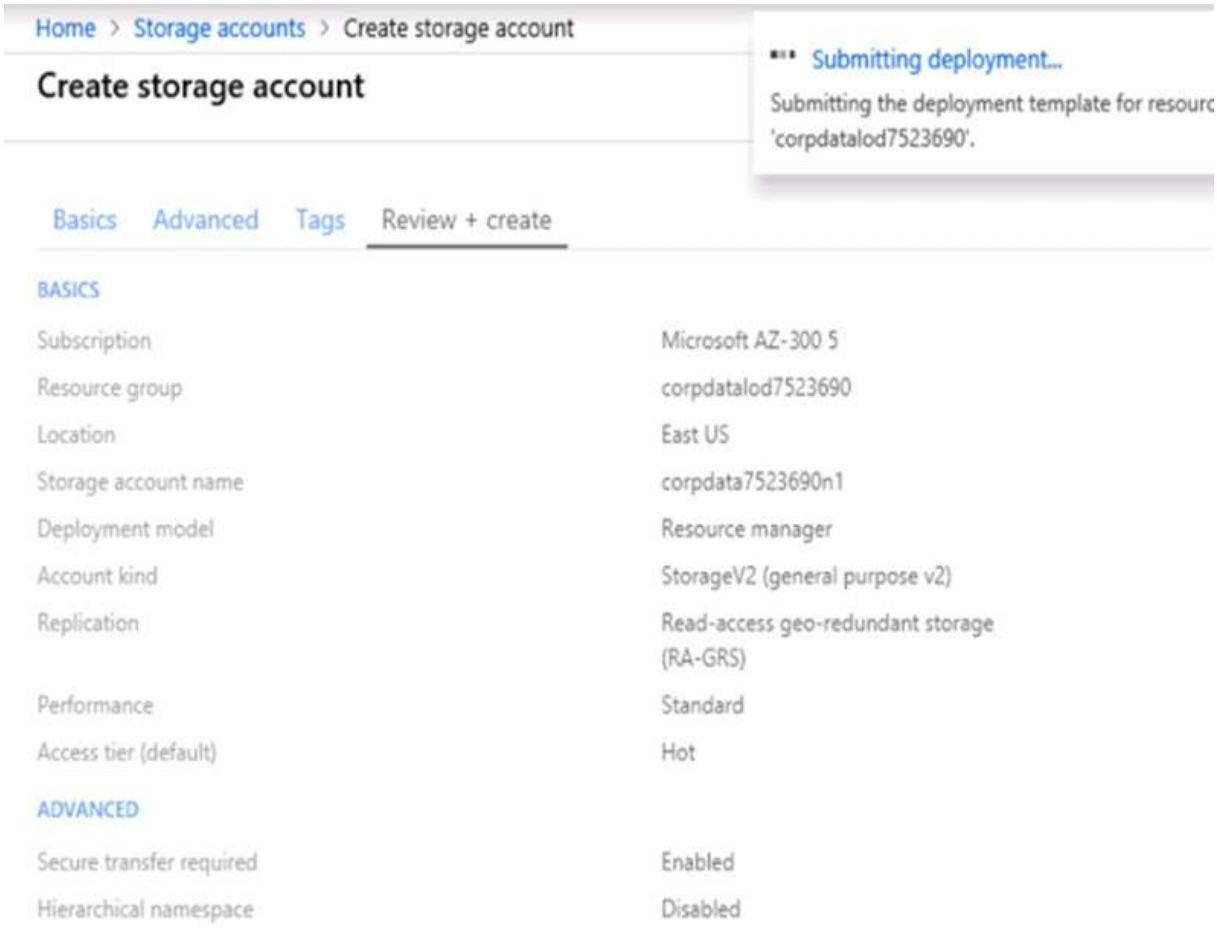

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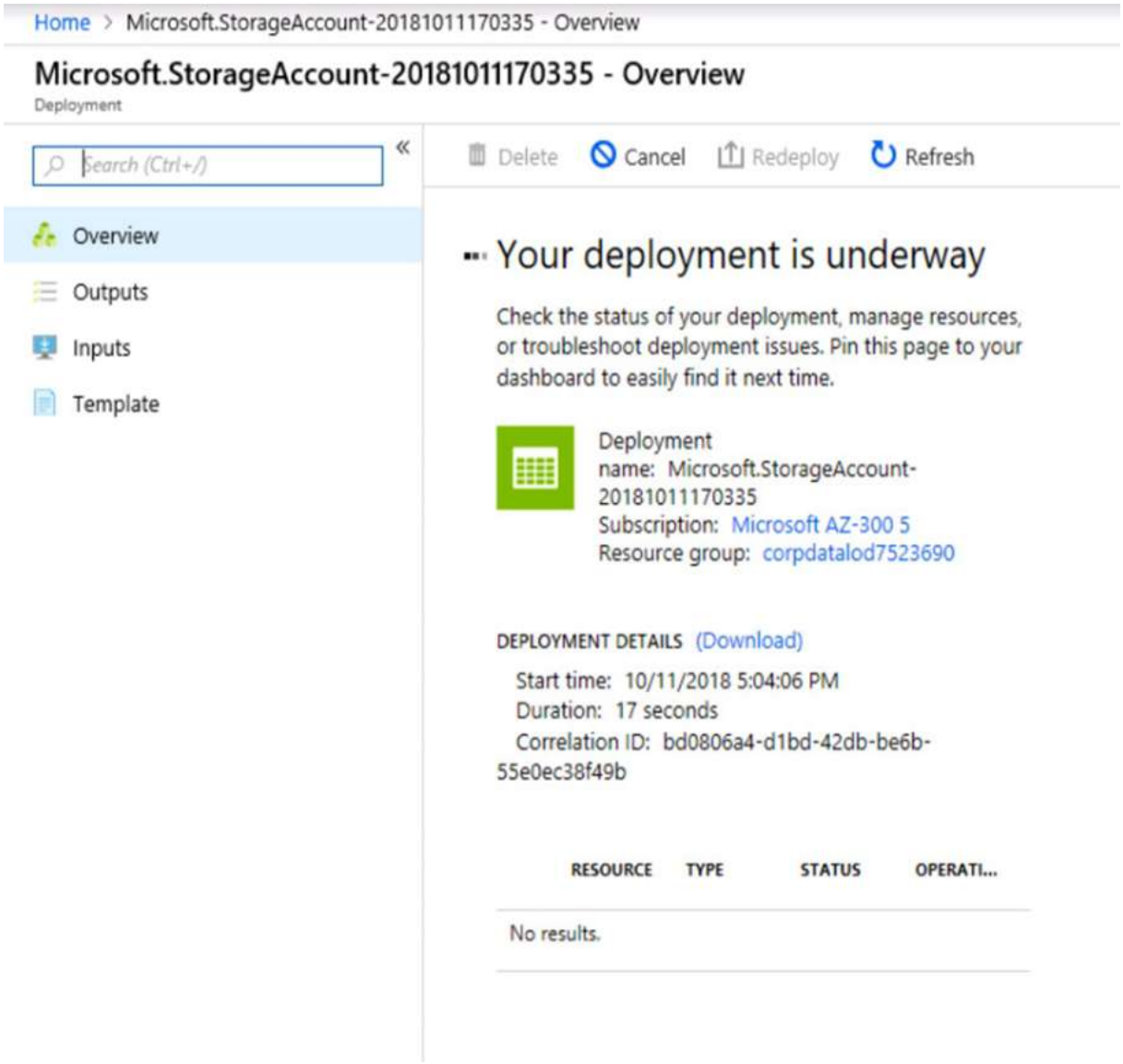

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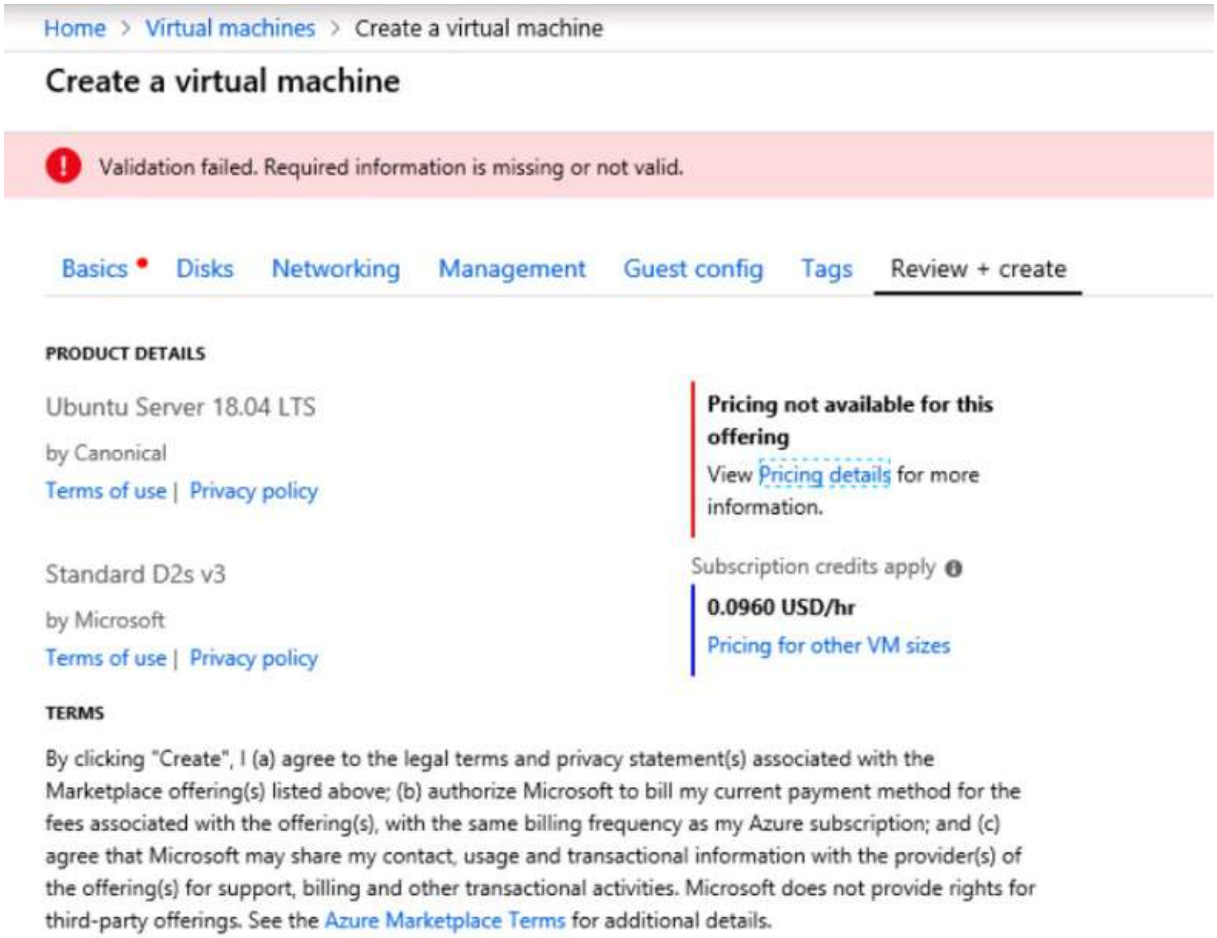

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
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Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You plan to migrate a large amount of corporate data to Azure Storage and to back up files stored on old hardware to Azure Storage.

You need to create a storage account named corpdatalod7523690n2, in the corpdatalod7523690 resource group. The solution must meet the following requirements:

- corpdatalod7523690n2 must be able to host the virtual disk files for Azure virtual machines
- The cost of accessing the files must be minimized
- Replication costs must be minimized

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: In the Azure portal, click All services. In the list of resources, type Storage Accounts. As you begin typing, the list filters based on your input. Select Storage Accounts.

Step 2: On the Storage Accounts window that appears, choose Add.

Step 3: Select the subscription in which to create the storage account.

Step 4: Under the Resource group field, select corpdatalod7523690.

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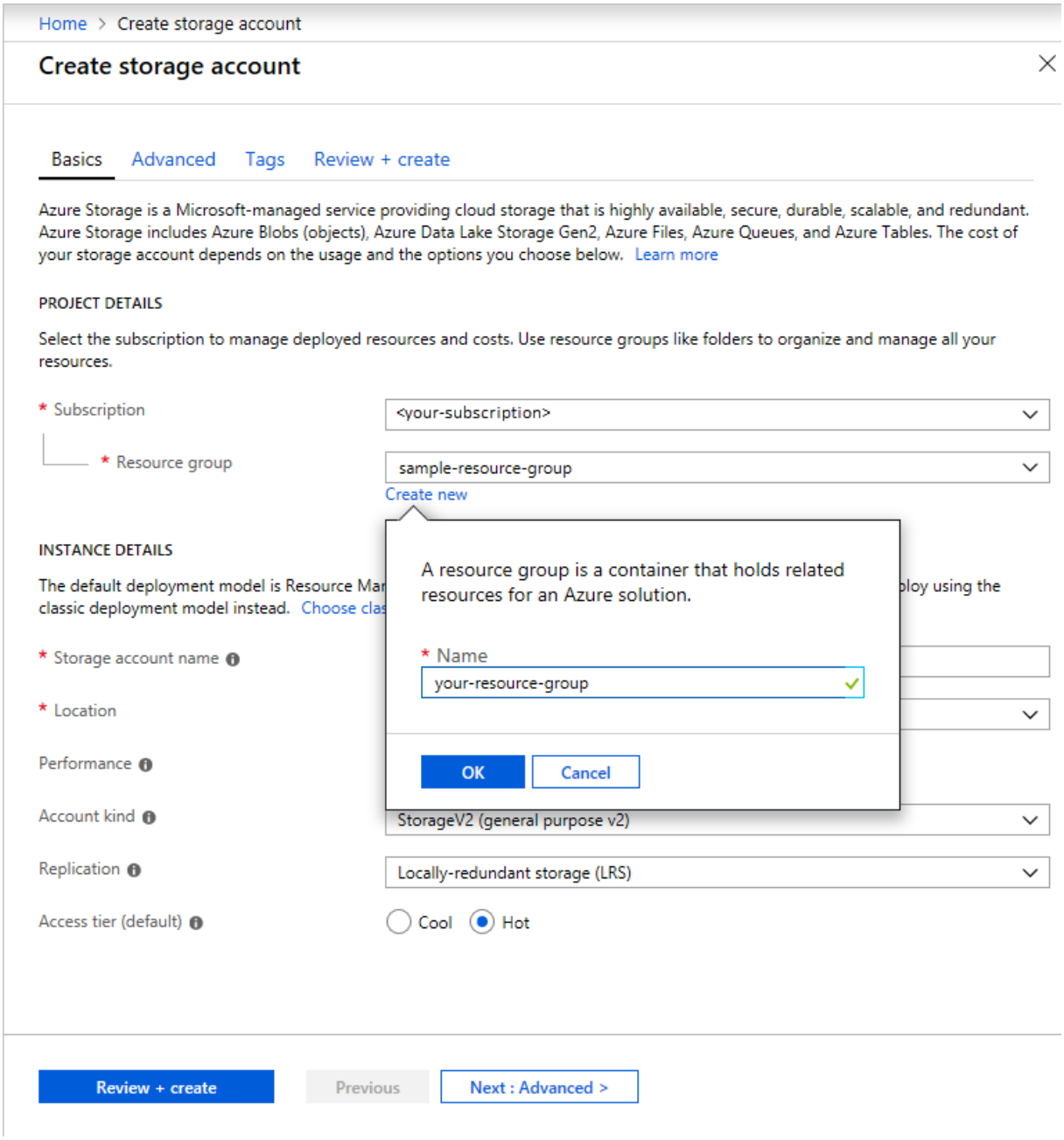

Step 5: Enter a name for your storage account: corpdatalod7523690n2

Step 6: For Account kind select: General-purpose v2 accounts (recommended for most scenarios)
General-purpose v2 accounts is recommended for most scenarios. General-purpose v2 accounts deliver the lowest per-gigabyte capacity prices for Azure Storage, as well as industry-competitive transaction prices.

Step 7: For replication select: Read-access geo-redundant storage (RA-GRS)
Read-access geo-redundant storage (RA-GRS) maximizes availability for your storage account. RA-GRS provides read-only access to the data in the secondary location, in addition to geo-replication across two regions.

References:

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https://docs.microsoft.com/en-us/azure/storage/common/storage-quickstart-create-account

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

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Question 190

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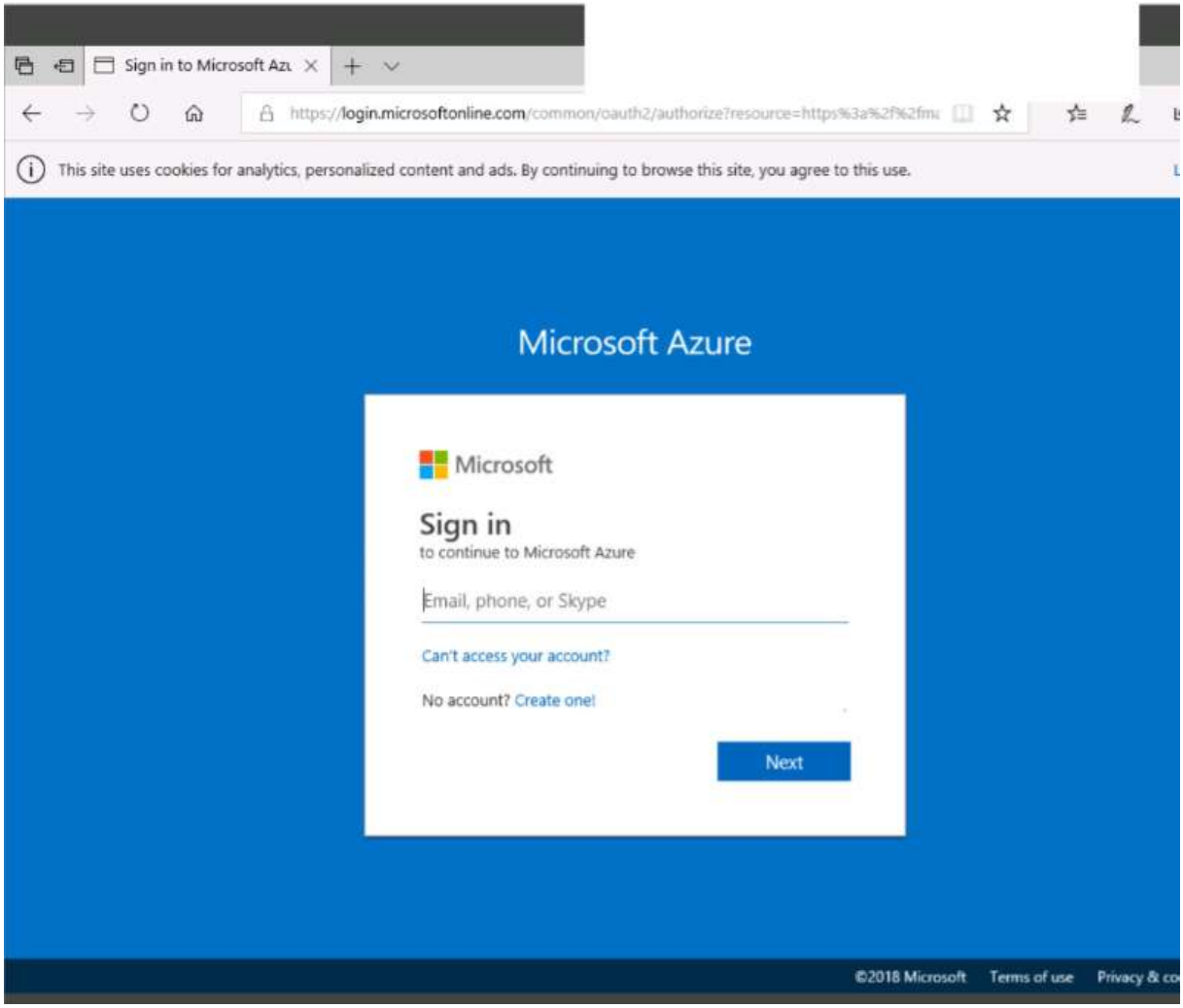
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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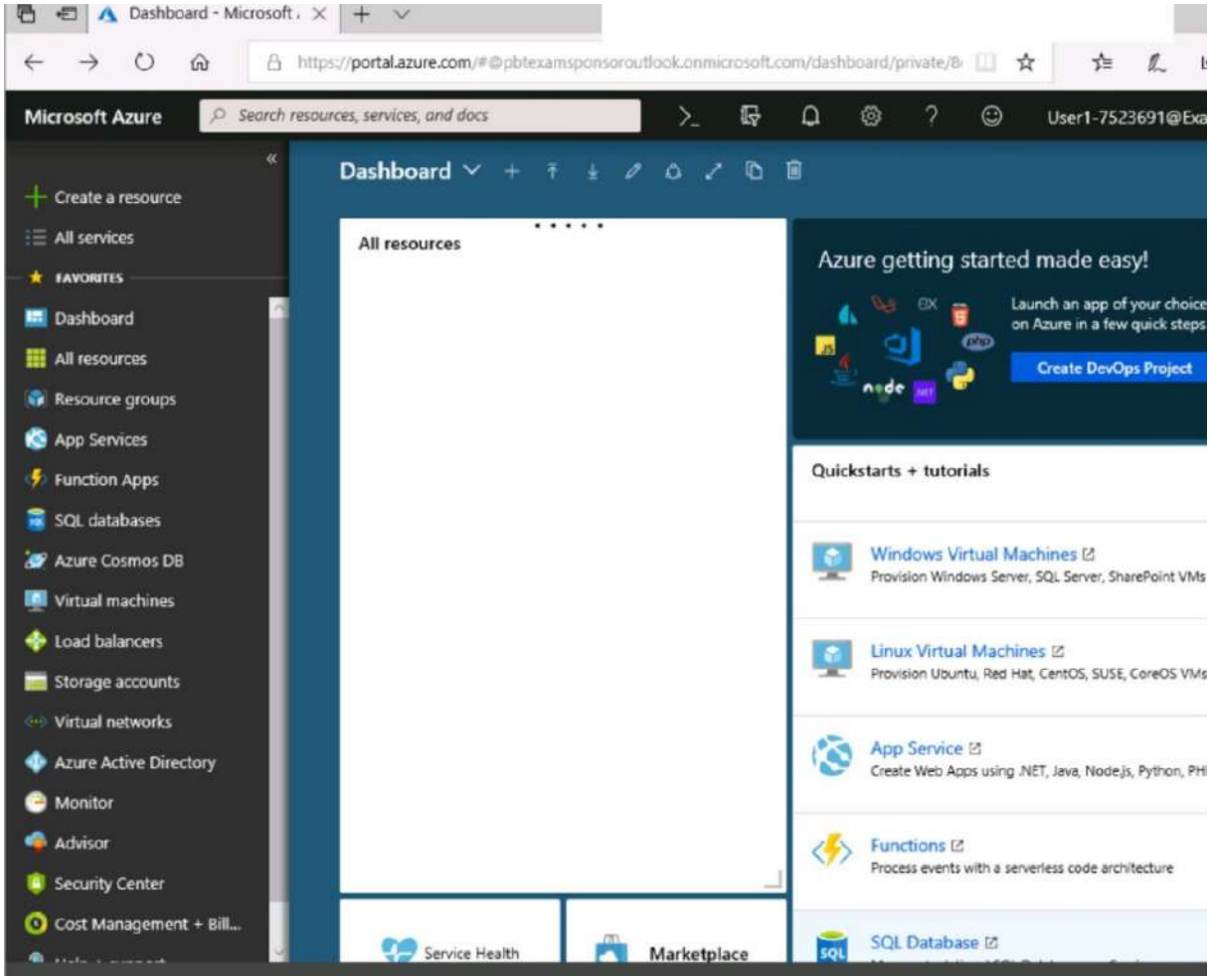

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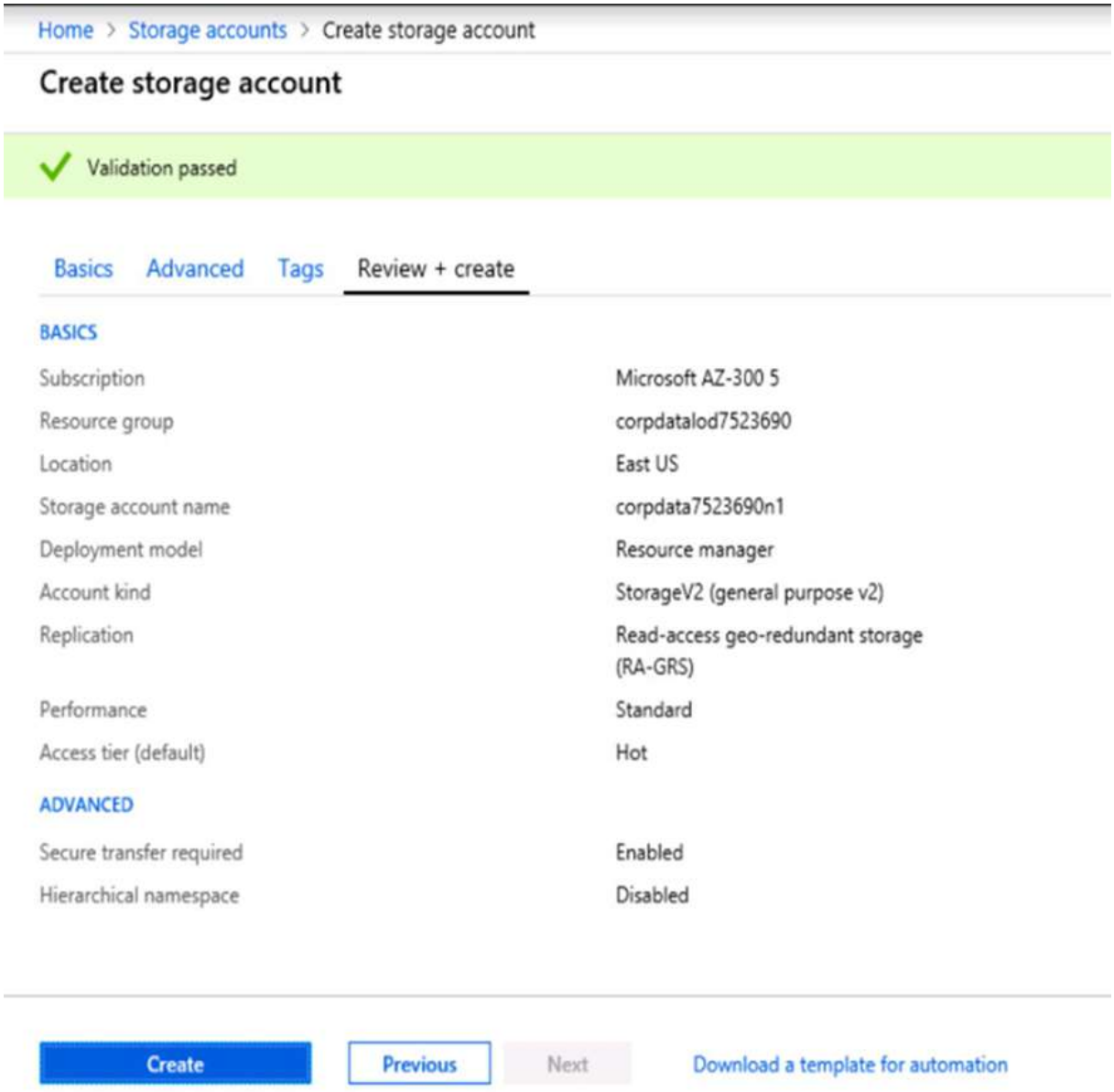

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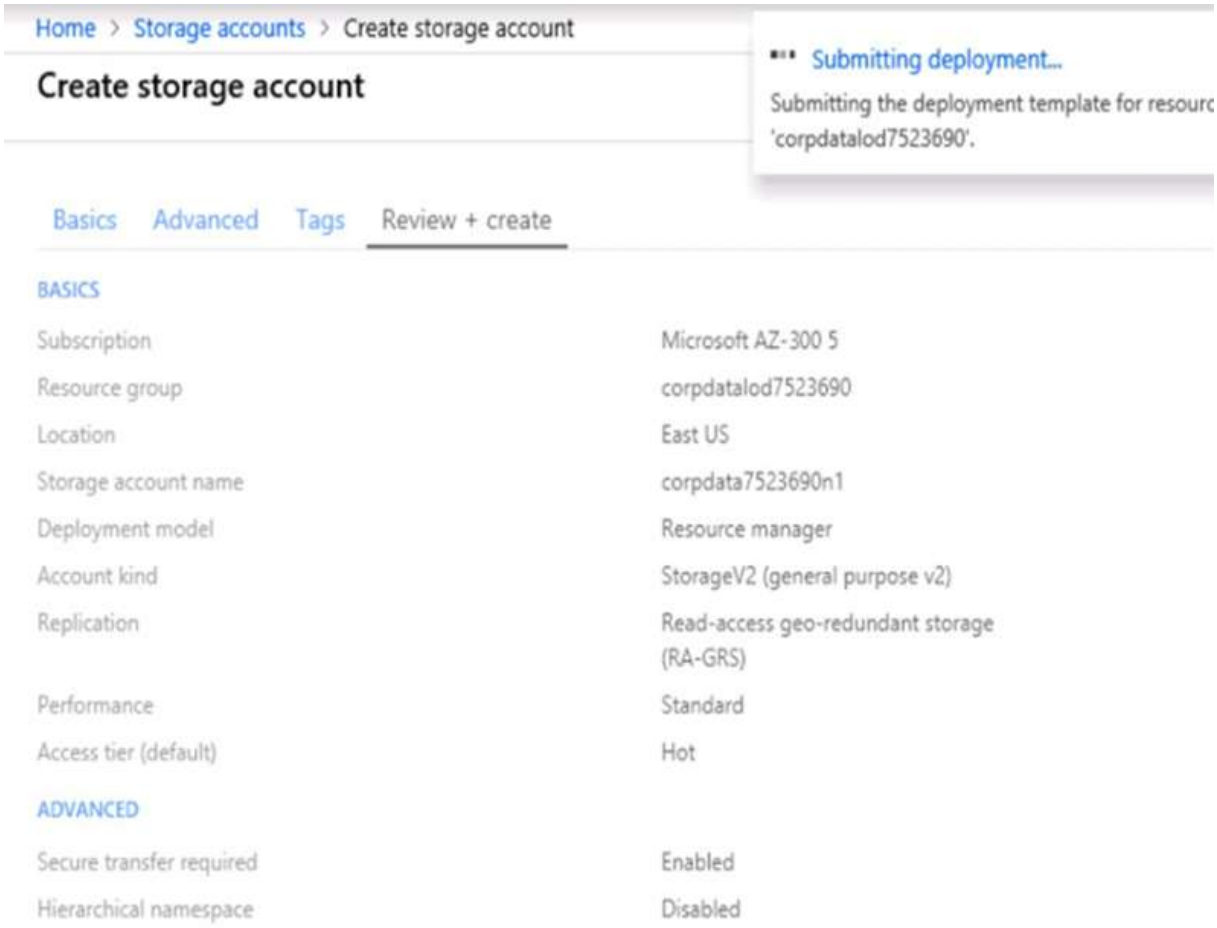

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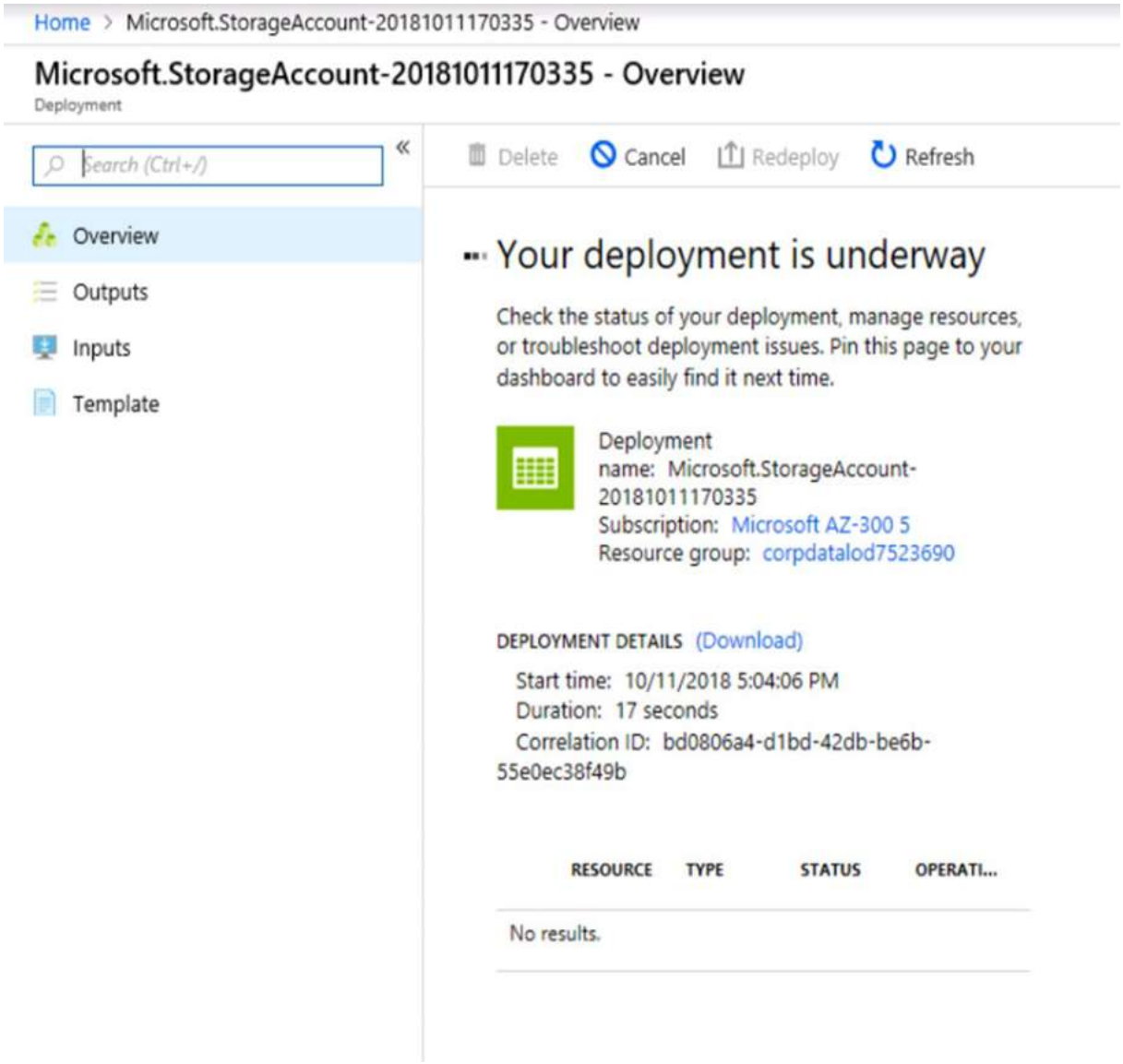

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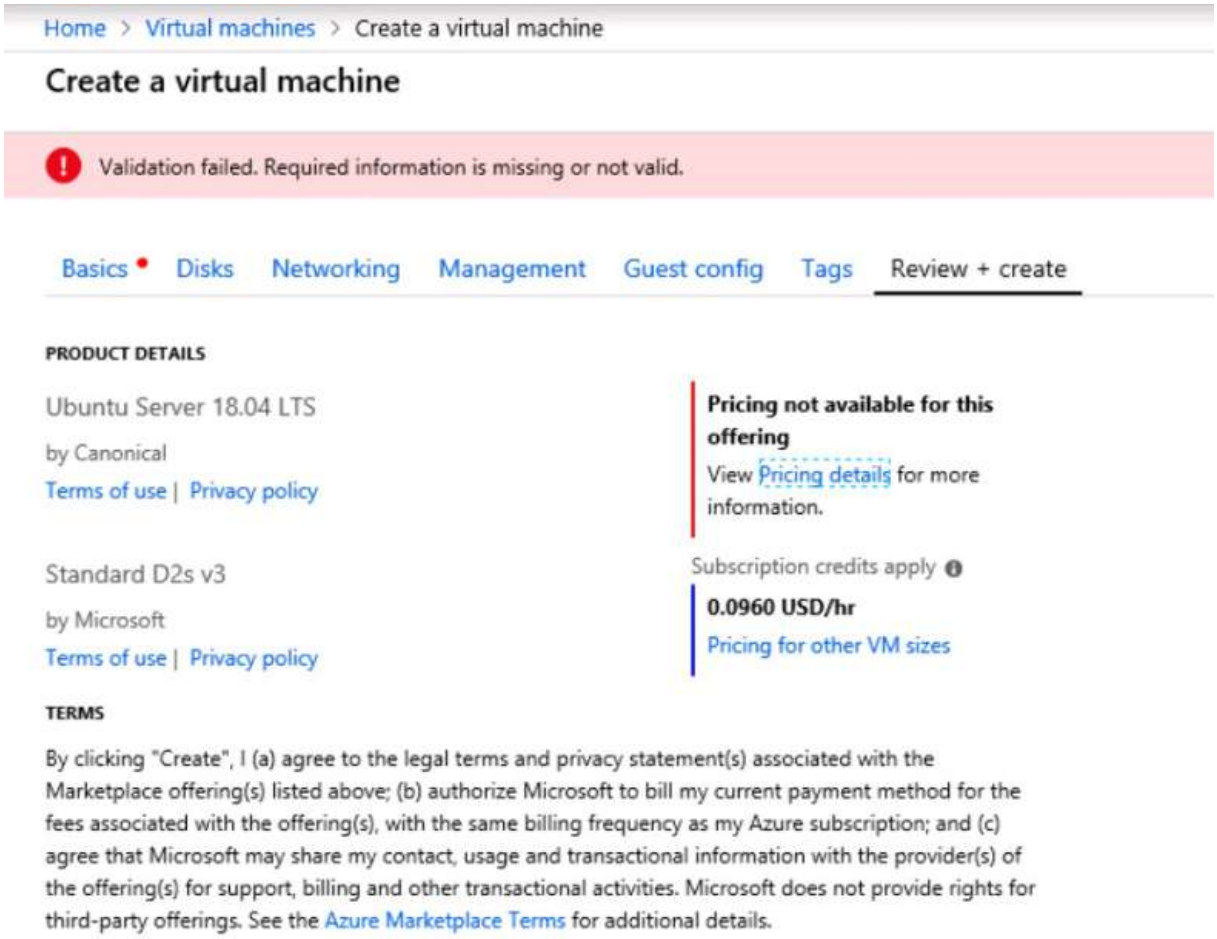

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To start the lab
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You plan to move backup files and documents from an on-premises Windows file server to Azure Storage. The backup files will be stored as blobs.

You need to create a storage account named corpdata7523690n2. The solution must meet the following requirements:

- Ensure that the documents are accessible via drive mappings from Azure virtual machines that run Windows Server 2016
- Provide the highest possible redundancy for the documents
- Minimize storage access costs

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: In the Azure portal, click All services. In the list of resources, type Storage Accounts. As you begin typing, the list filters based on your input. Select Storage Accounts.

Step 2: On the Storage Accounts window that appears, choose Add.

Step 3: Select the subscription in which to create the storage account.

Step 4: Under the Resource group field, select Create New. Create a new Resource

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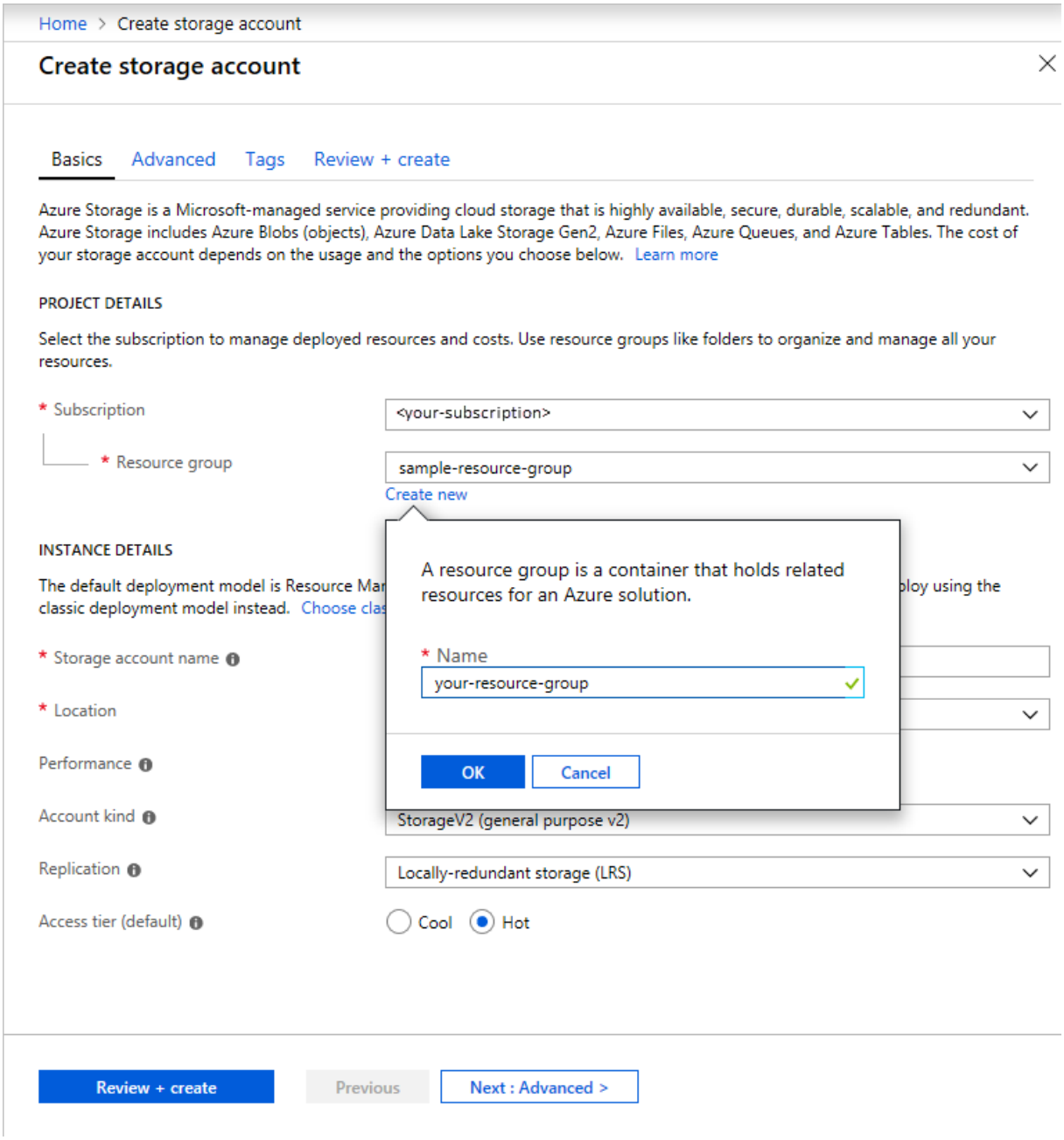

Step 5: Enter a name for your storage account: corpdata7523690n2

Step 6: For Account kind select: General-purpose v2 accounts (recommended for most scenarios)
General-purpose v2 accounts is recommended for most scenarios. General-purpose v2 accounts deliver the lowest per-gigabyte capacity prices for Azure Storage, as well as industry-competitive transaction prices.

Step 7: For replication select: Read-access geo-redundant storage (RA-GRS)
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References:

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https://docs.microsoft.com/en-us/azure/storage/common/storage-quickstart-create-account

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

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SIMULATION

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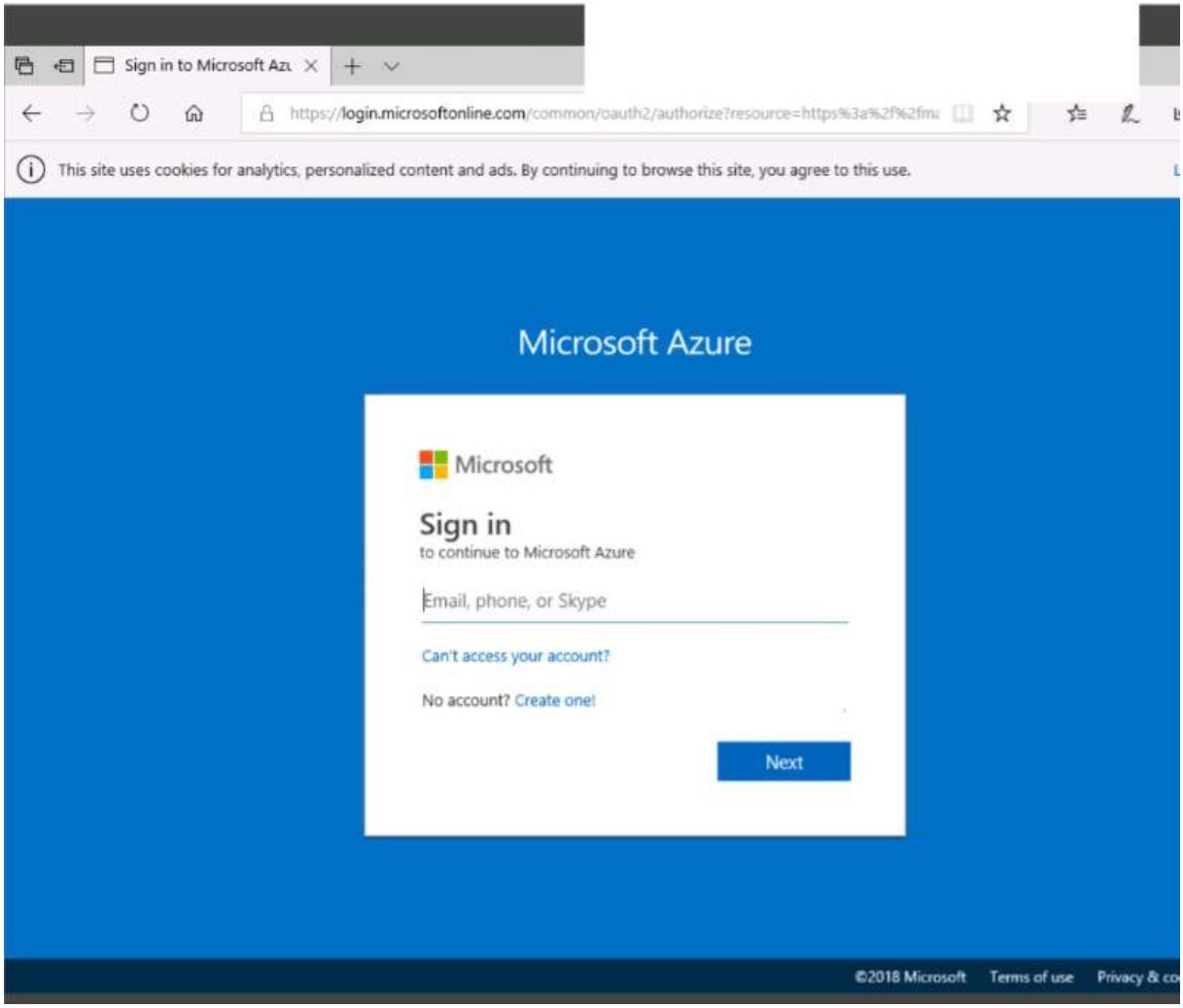

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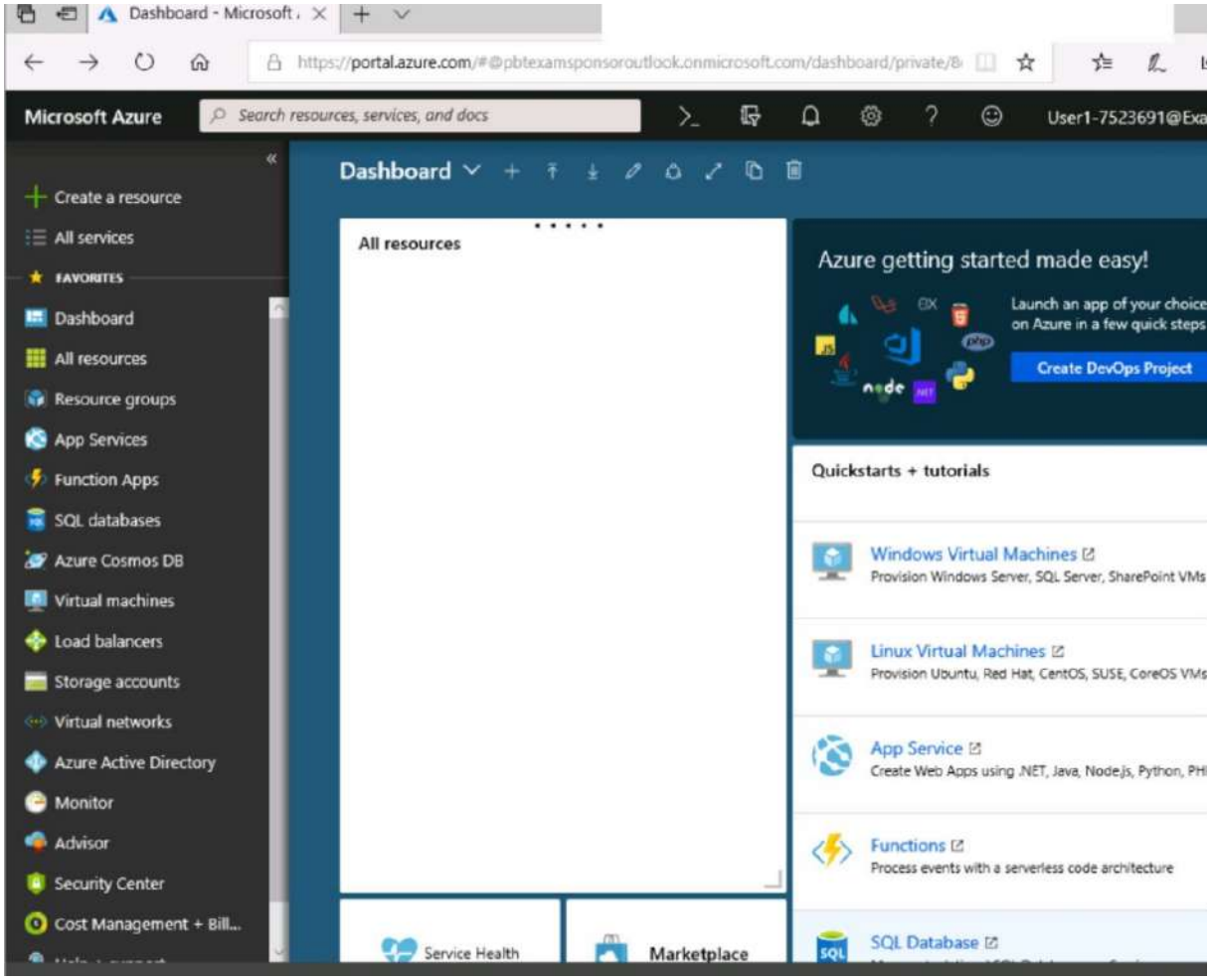

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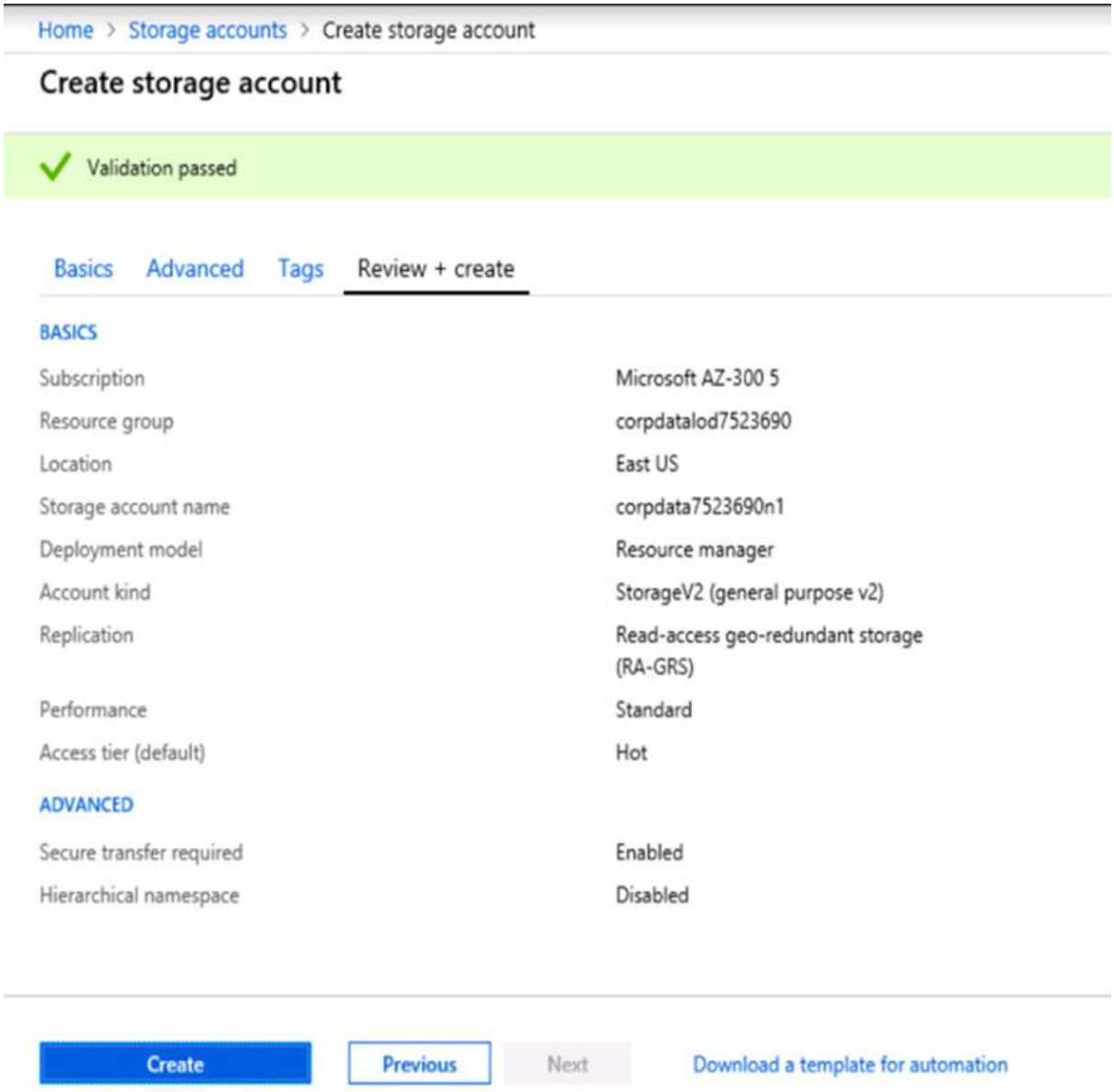

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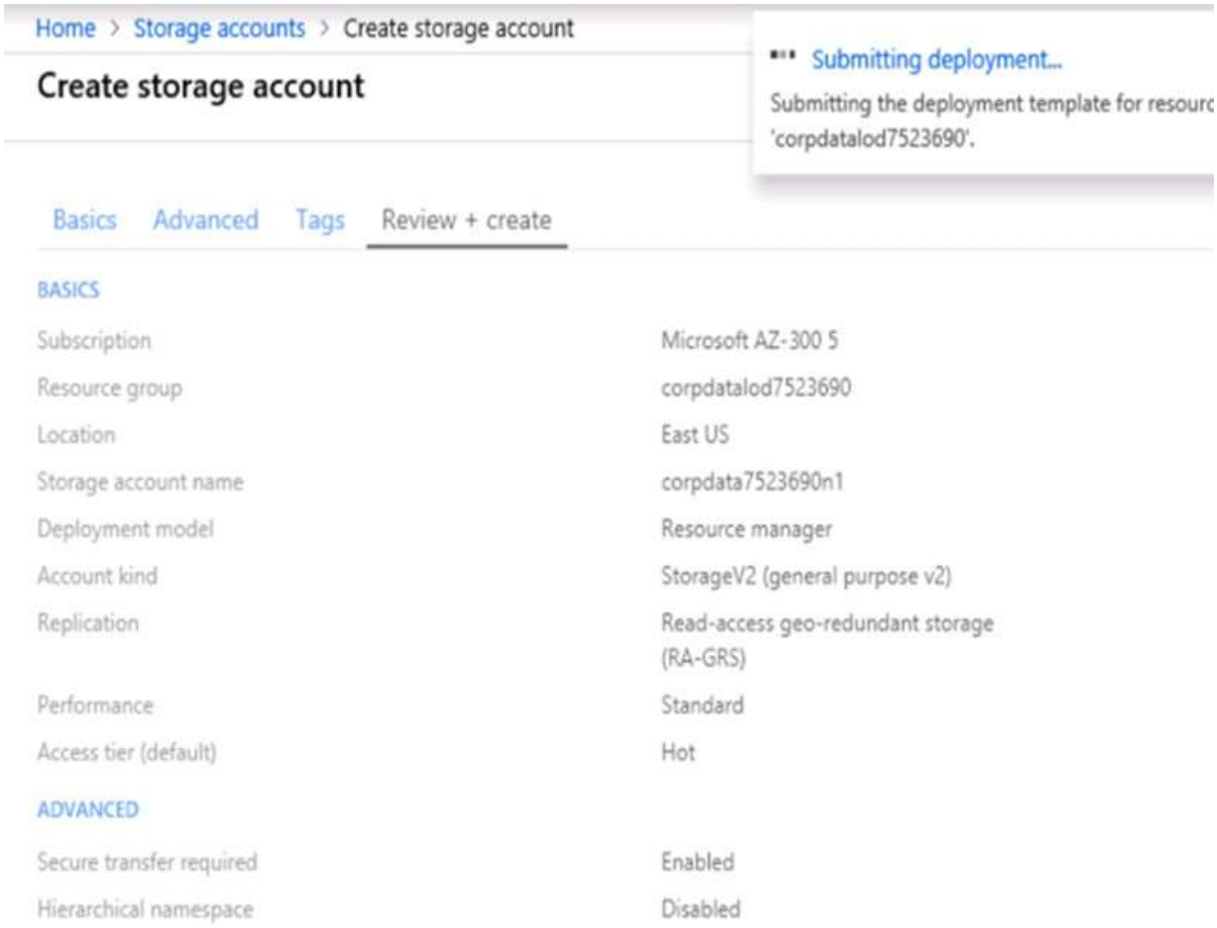

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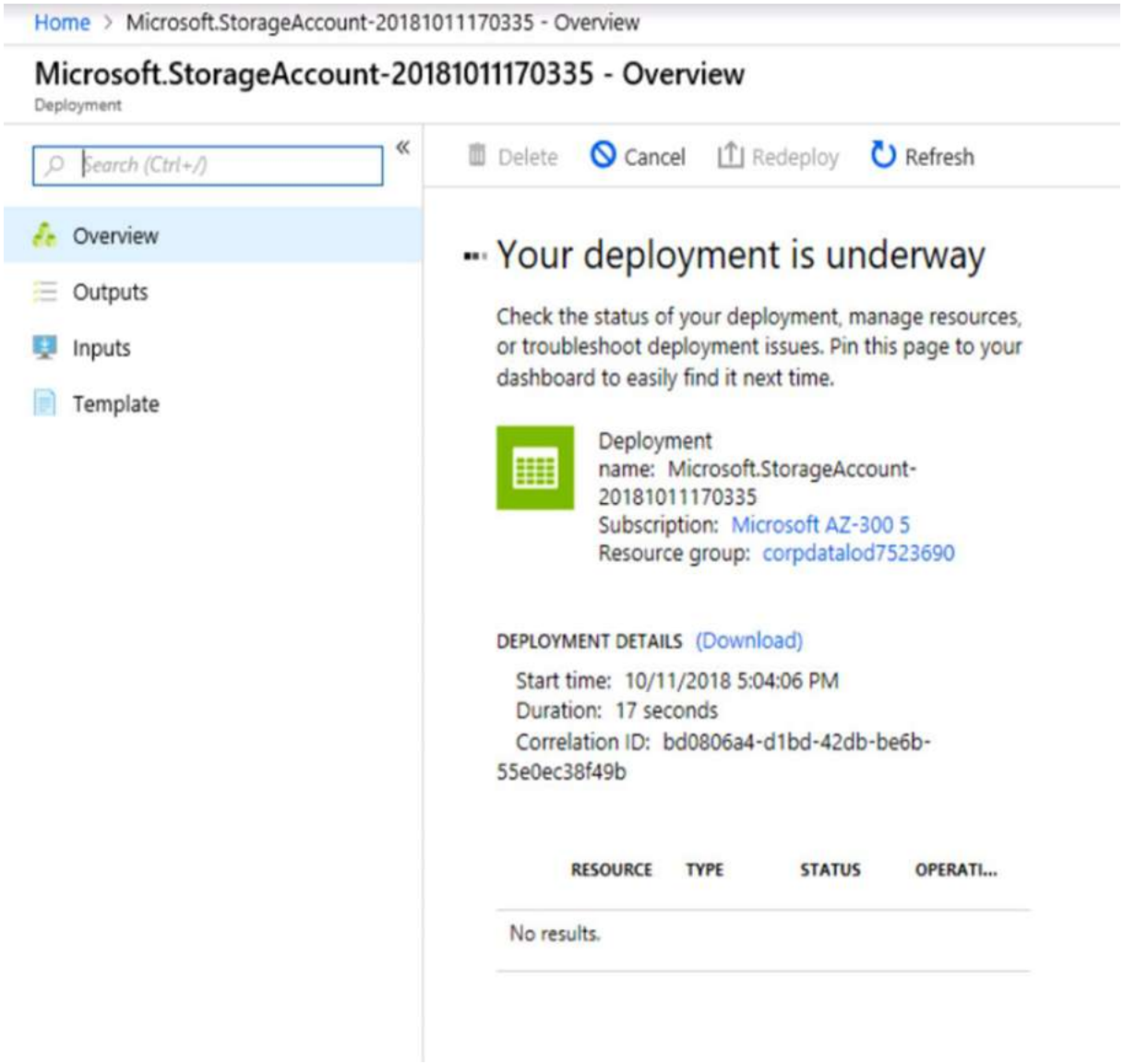

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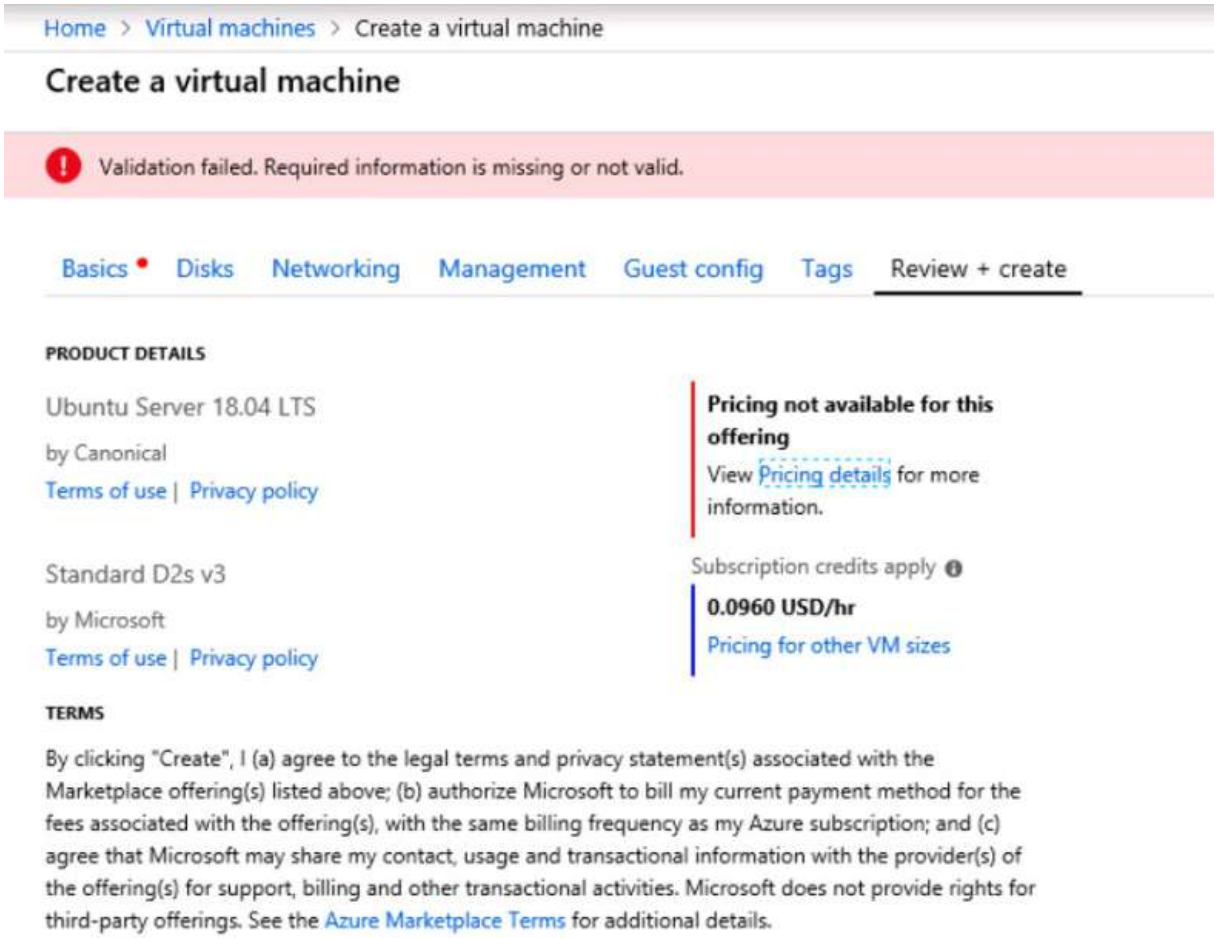

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To start the lab
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You need to deploy two Azure virtual machines named VM1003a and VM1003b based on an Ubuntu Server image. The deployment must meet the following requirements:

- Provide a Service Level Agreement (SLA) of 99.95 percent availability
- Use managed disks

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Open the Azure portal.

Step 2: On the left menu, select All resources. You can sort the resources by Type to easily find your images.

Step 3: Select the image you want to use from the list. The image **Overview** page opens.

Step 4: Select Create VM from the menu.

Step 5: Enter the virtual machine information. Select VM1003a as the name for the first Virtual machine.The user name and password entered here will be used to log in to the virtual machine. When complete, select OK. You can create the new VM in an existing resource group, or choose Create new to create a new resource group to store the VM.

Step 6: Select a size for the VM. To see more sizes, select View all or change the Supported disk type filter.

Step 7: Under Settings, make changes as necessary and select OK.

Step 8: On the summary page, you should see your image name listed as a Private image. Select Ok to start the virtual machine deployment.

Repeat the procedure for the second VM and name it VM1003b.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/create-vm-generalized-managed

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SIMULATION

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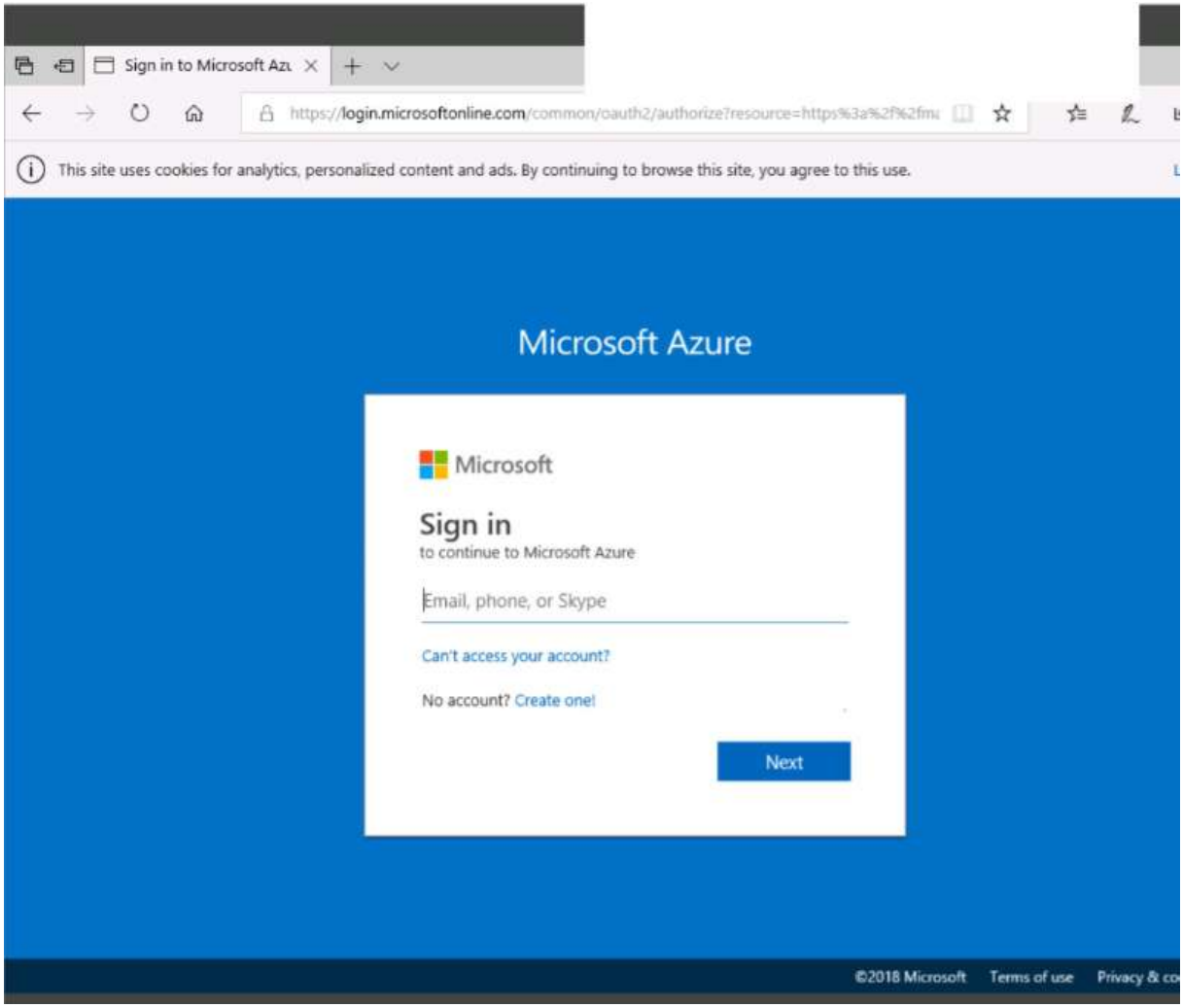

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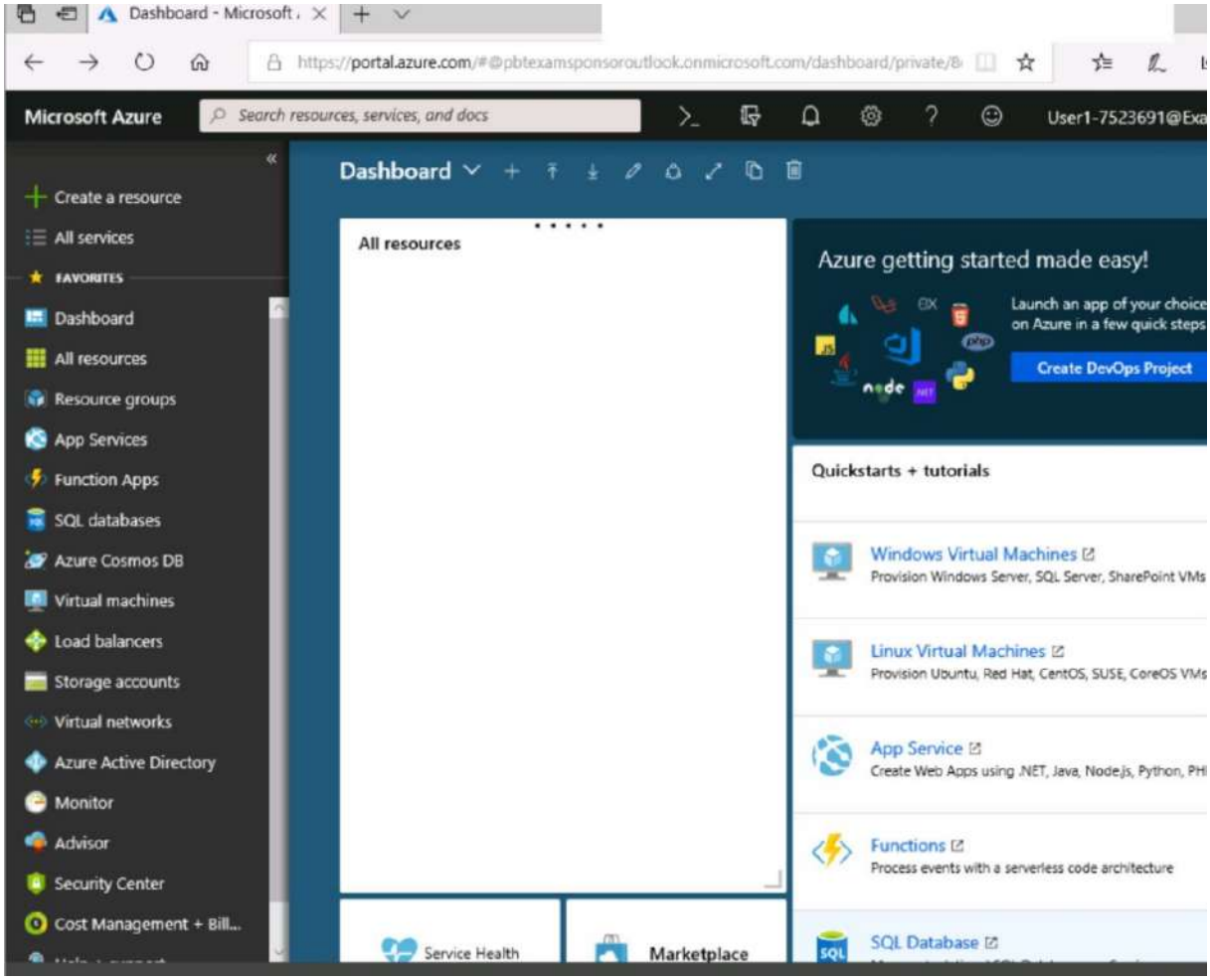

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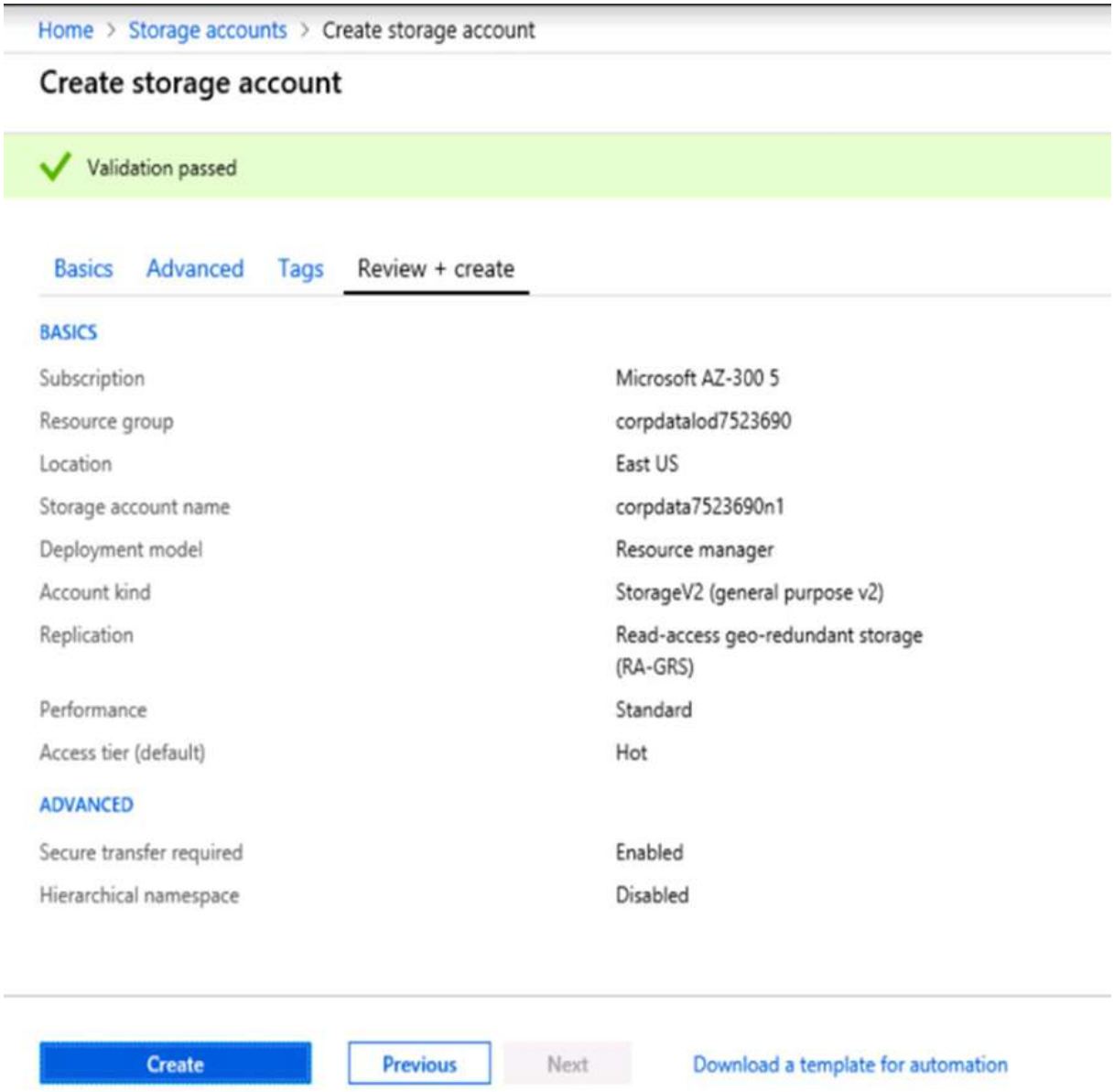

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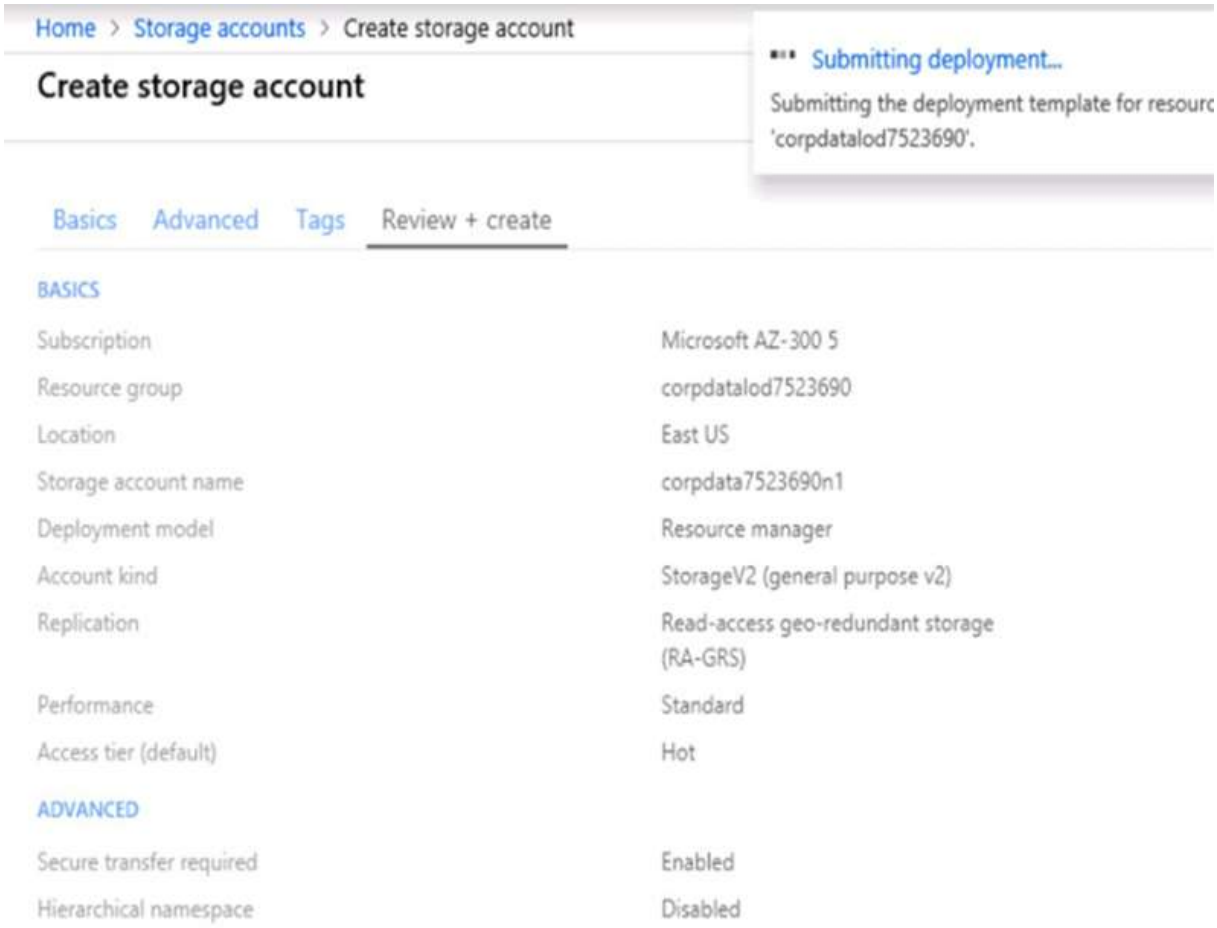

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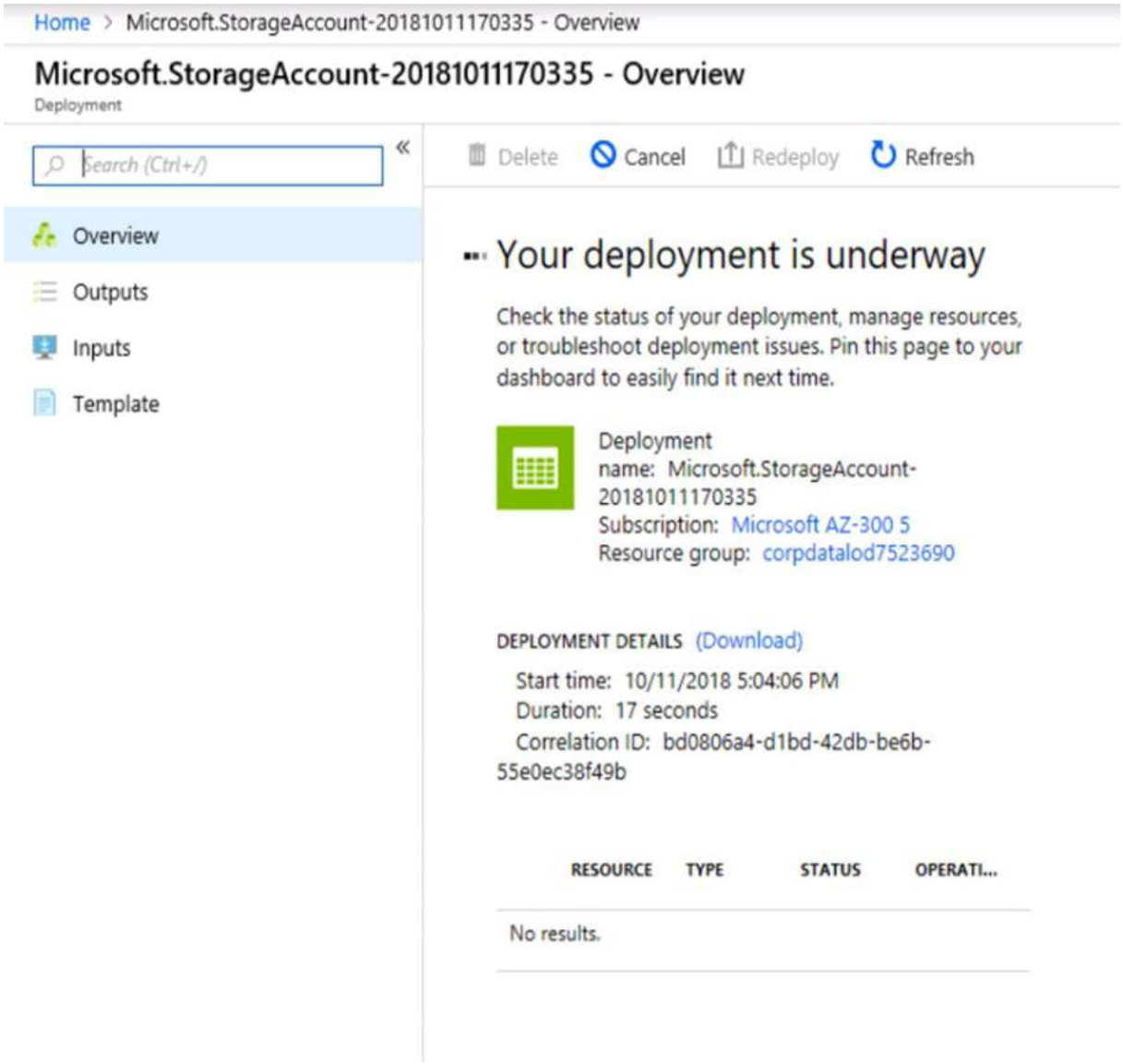

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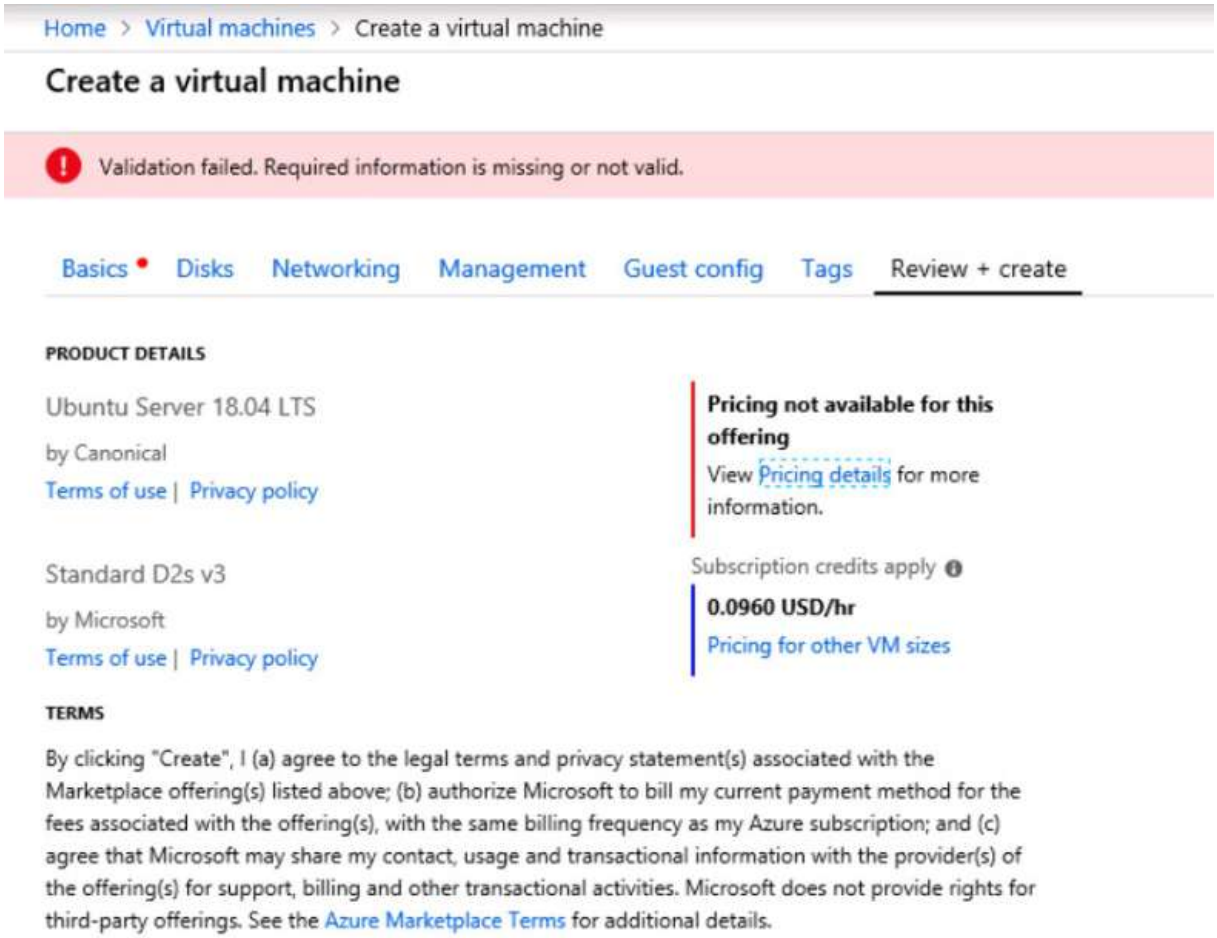

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To start the lab
You may start the lab by clicking the Next button.

You need to deploy an Azure virtual machine named VM1004a based on an Ubuntu Server image, and then to configure VM1004a to meet the following requirements:

- The virtual machines must contain data disks that can store at least 15 TB of data
- The data disk must be able to provide at least 2,000 IOPS
- Storage costs must be minimized

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Open the Azure portal.

Step 2: On the left menu, select All resources. You can sort the resources by Type to easily find your images.

Step 3: Select the image you want to use from the list. The image **Overview** page opens.

Step 4: Select Create VM from the menu.

Step 5: Enter the virtual machine information. Select VM1004a as the name for the first Virtual machine.The user name and password entered here will be used to log in to the virtual machine. When complete, select OK. You can create the new VM in an existing resource group, or choose Create new to create a new resource group to store the VM.

Step 6: Select a size for the VM. To see more sizes, select View all or change the Supported disk type filter.To support 15 TB of data you would need a Premium disk.

Step 7: Under Settings, make changes as necessary and select OK.

Step 8: On the summary page, you should see your image name listed as a Private image. Select Ok to start the virtual machine deployment.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/create-vm-generalized-managed

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Question 193

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SIMULATION

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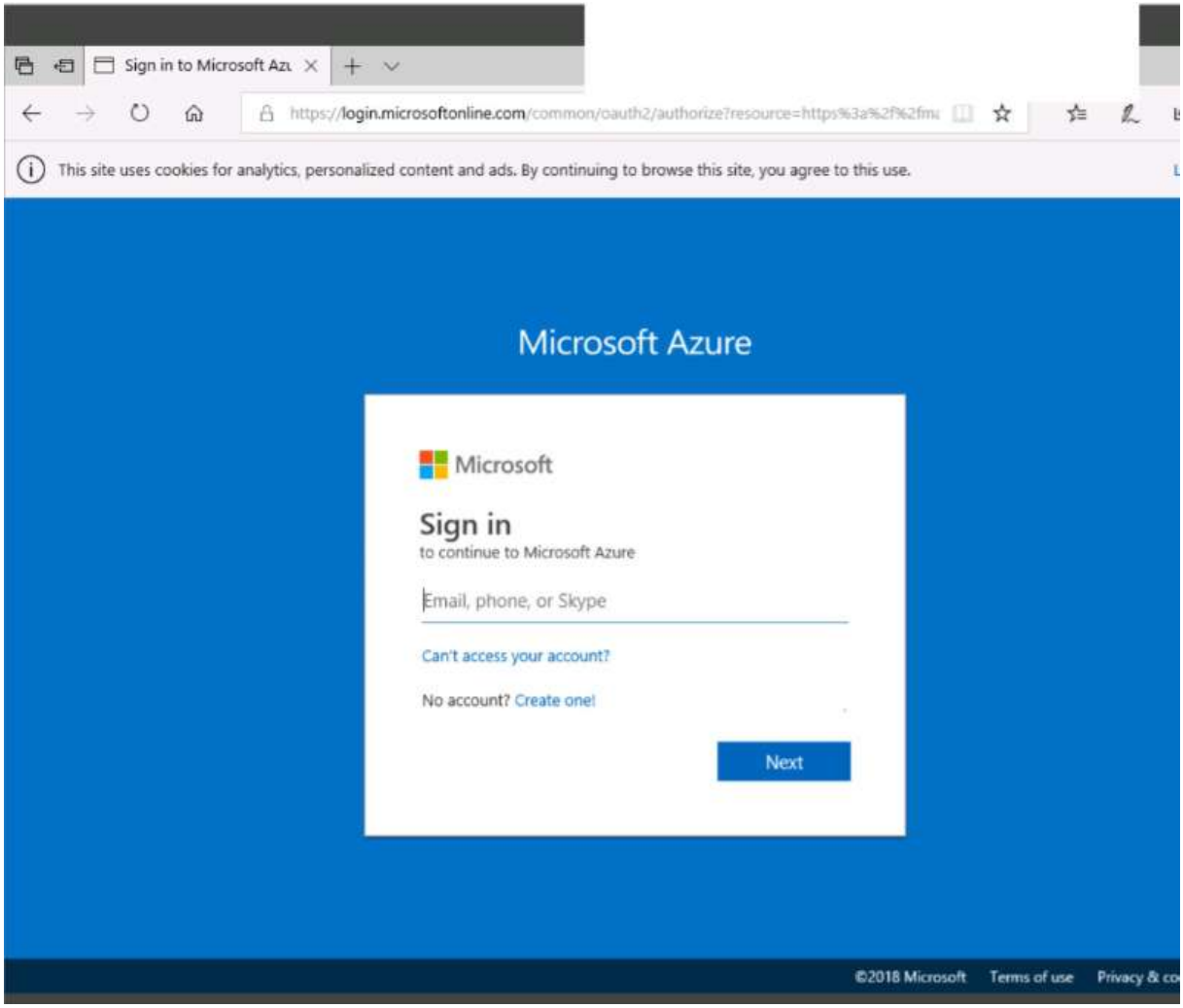

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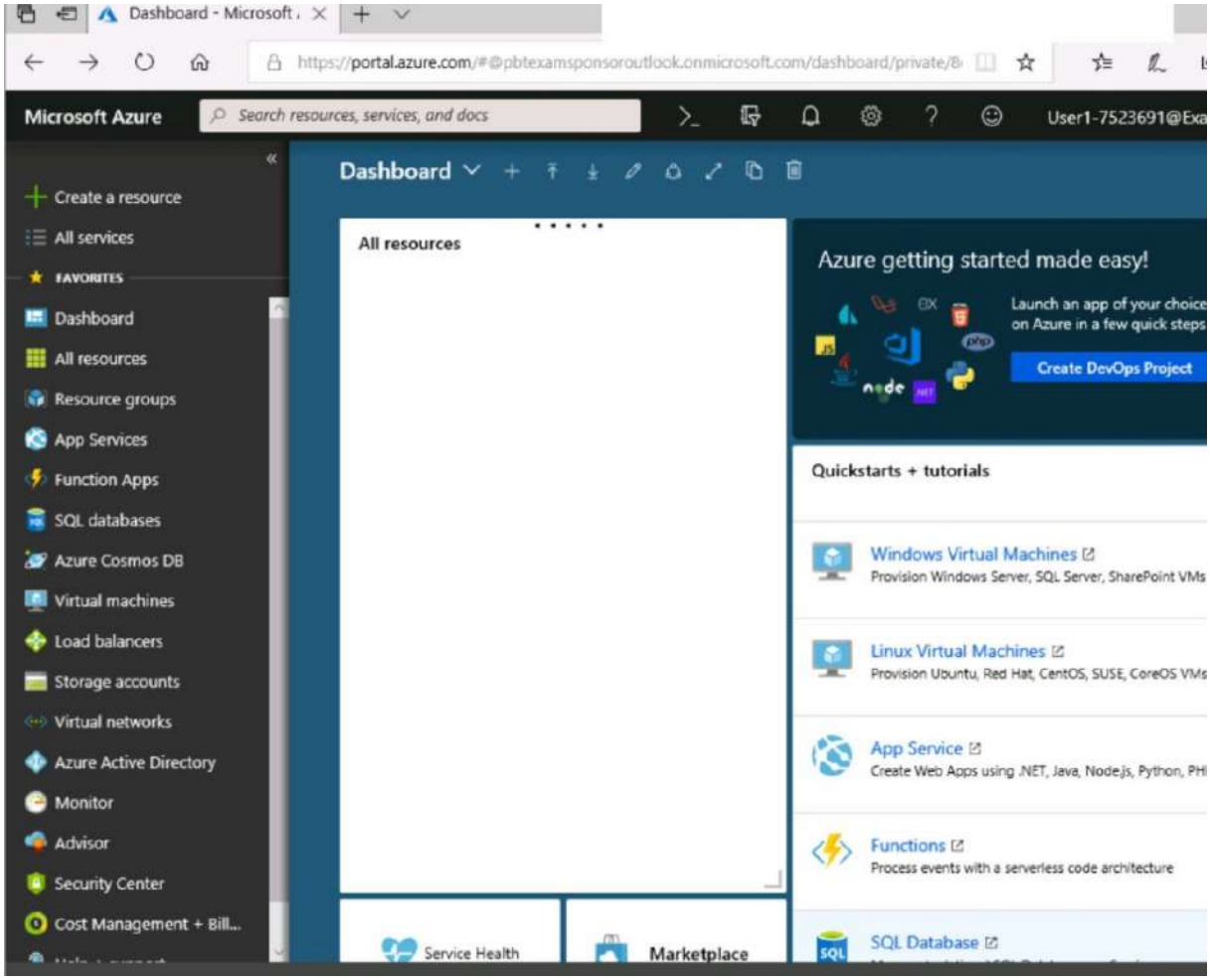

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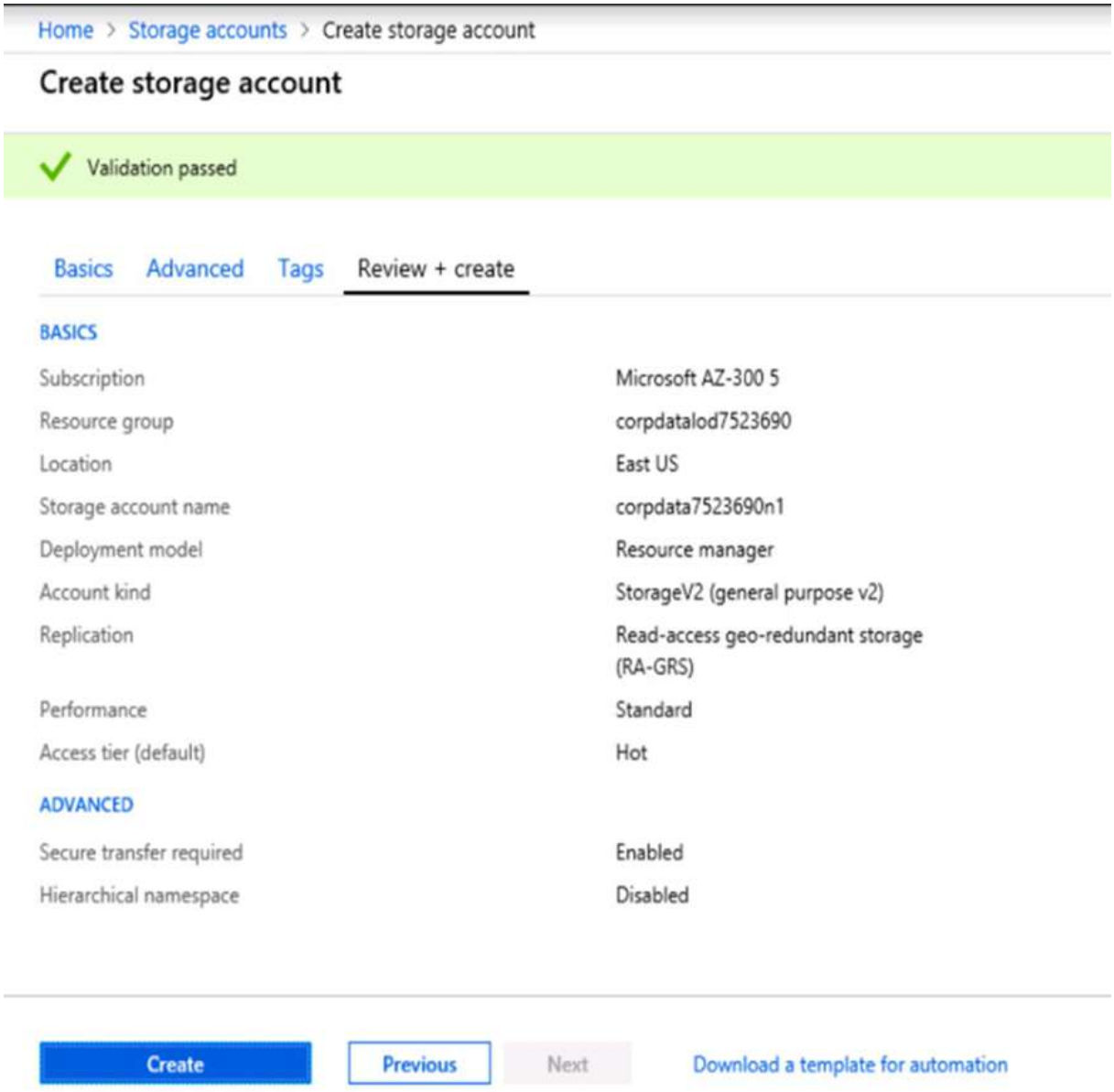

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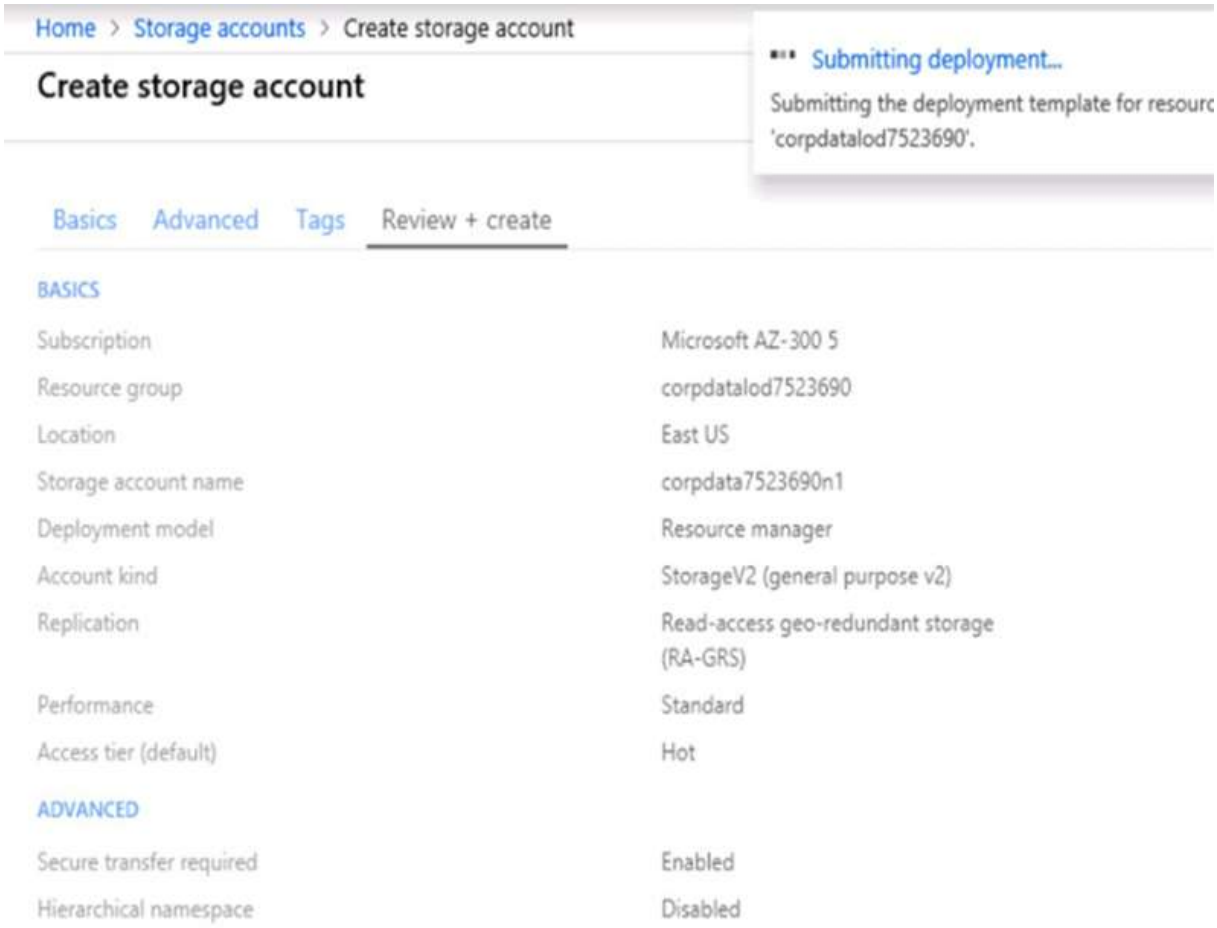

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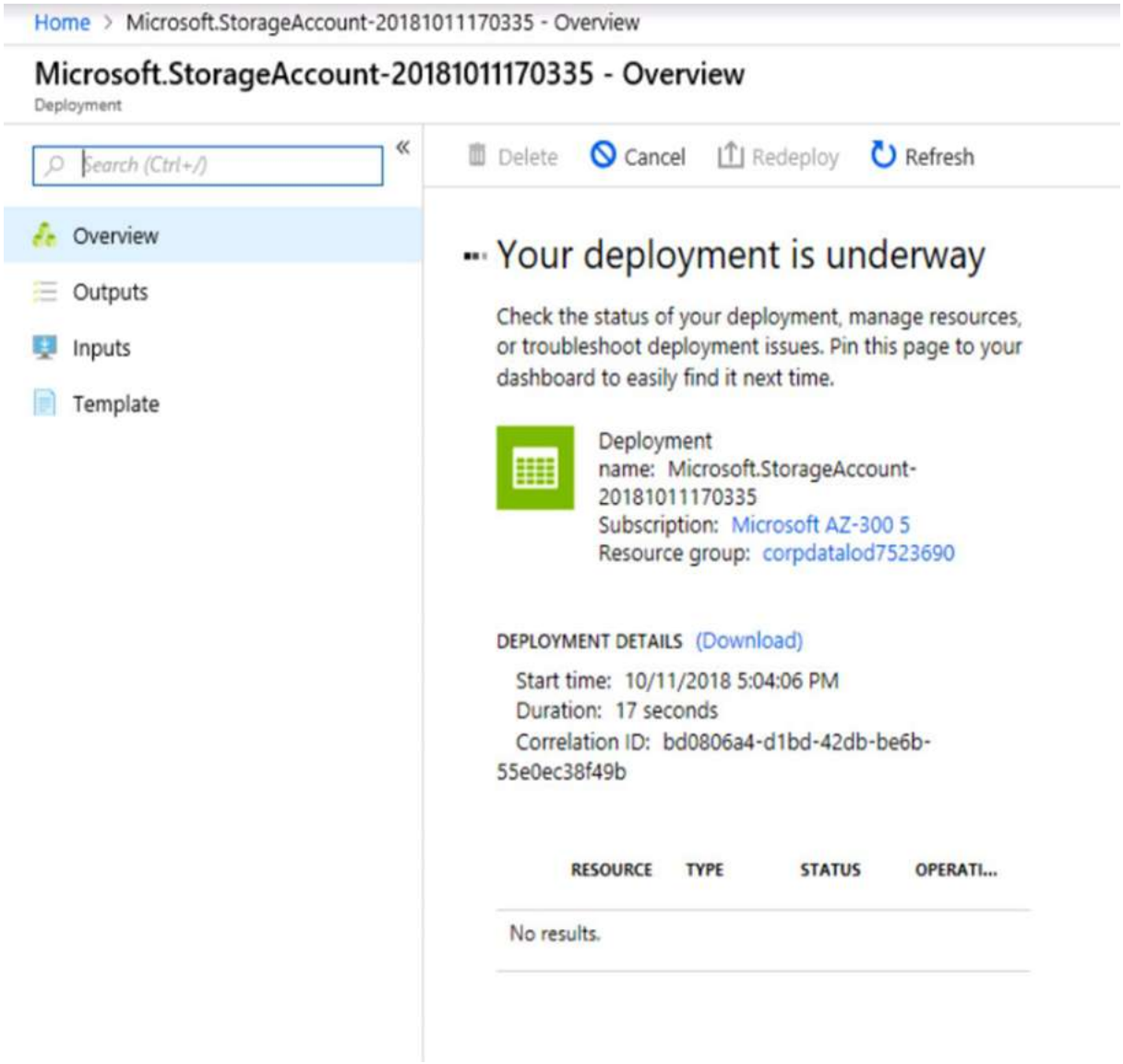

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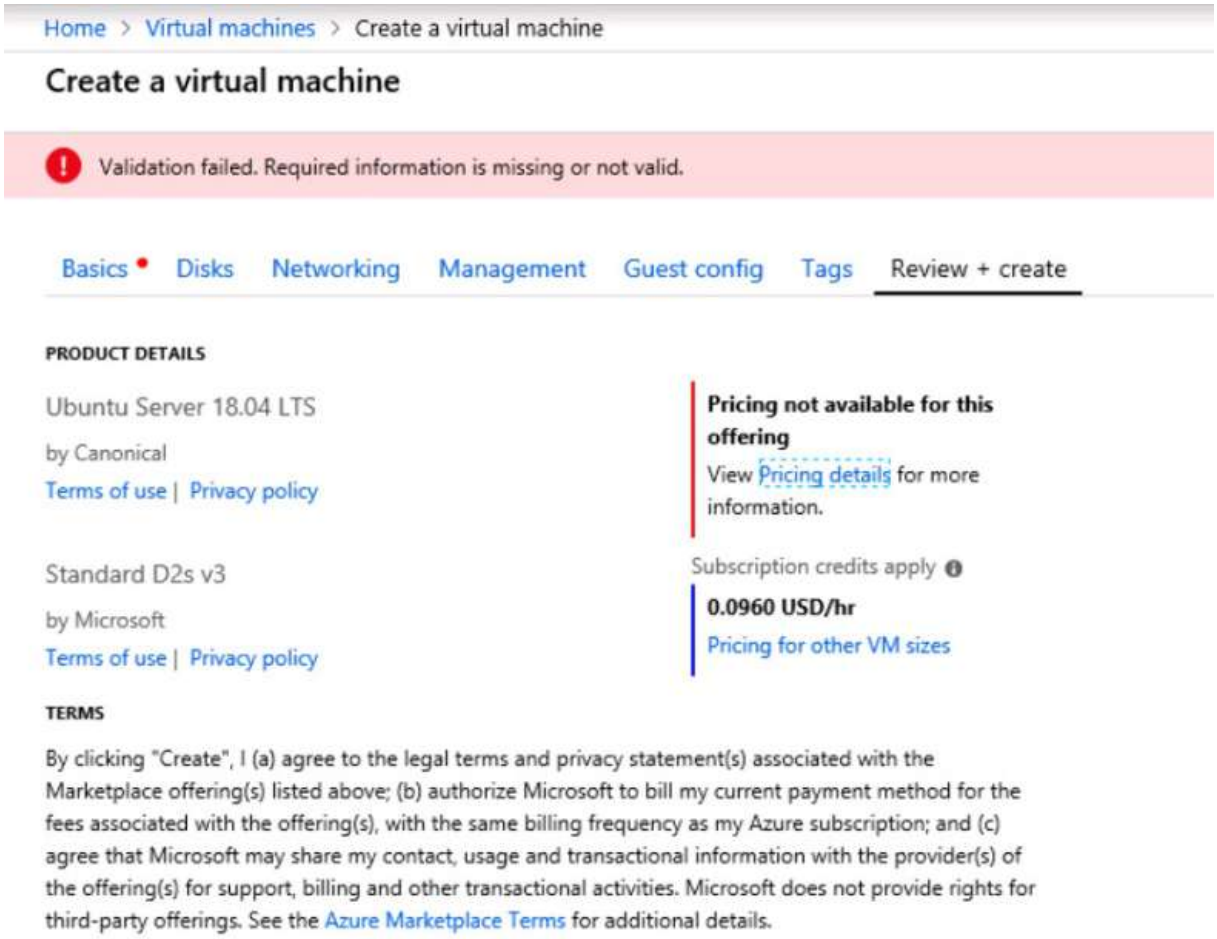

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To start the lab
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You plan to create 100 Azure virtual machines on each of the following three virtual networks:

- VNET1005a
- VNET1005b
- VNET1005c

All the network traffic between the three virtual networks will be routed through VNET1005a.

You need to create the virtual networks, and then to ensure that all the Azure virtual machines can connect to other virtual machines by using their private IP address. The solutions must **NOT** require any virtual gateways and must minimize the number of peerings.

What should you do from the Azure portal before you configure IP routing?

Explanation/Reference

Explanation:
Step 1: Click Create a resource in the portal.

Step 2: Enter Virtual network in the Search the Marketplace box at the top of the New pane that appears. Click Virtual network when it appears in the search results.

Step 3: Select Classic in the Select a deployment model box in the Virtual Network pane that appears, then click Create.

Step 4: Enter the following values on the Create virtual network (classic) pane and then click Create:
Name: VNET1005a

Address space: 10.0.0.0/16
Subnet name: subnet0
Resource group: Create new
Subnet address range: 10.0.0.0/24
Subscription and location: Select your subscription and location.

Step 5: Repeat steps 3-5 for VNET1005b (10.1.0.0/16, 10.1.0.0/24), and for VNET1005c 10.2.0.0/16, 10.2.0.0/24).

References:
https://docs.microsoft.com/en-us/azure/virtual-network/create-virtual-network-classic

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SIMULATION

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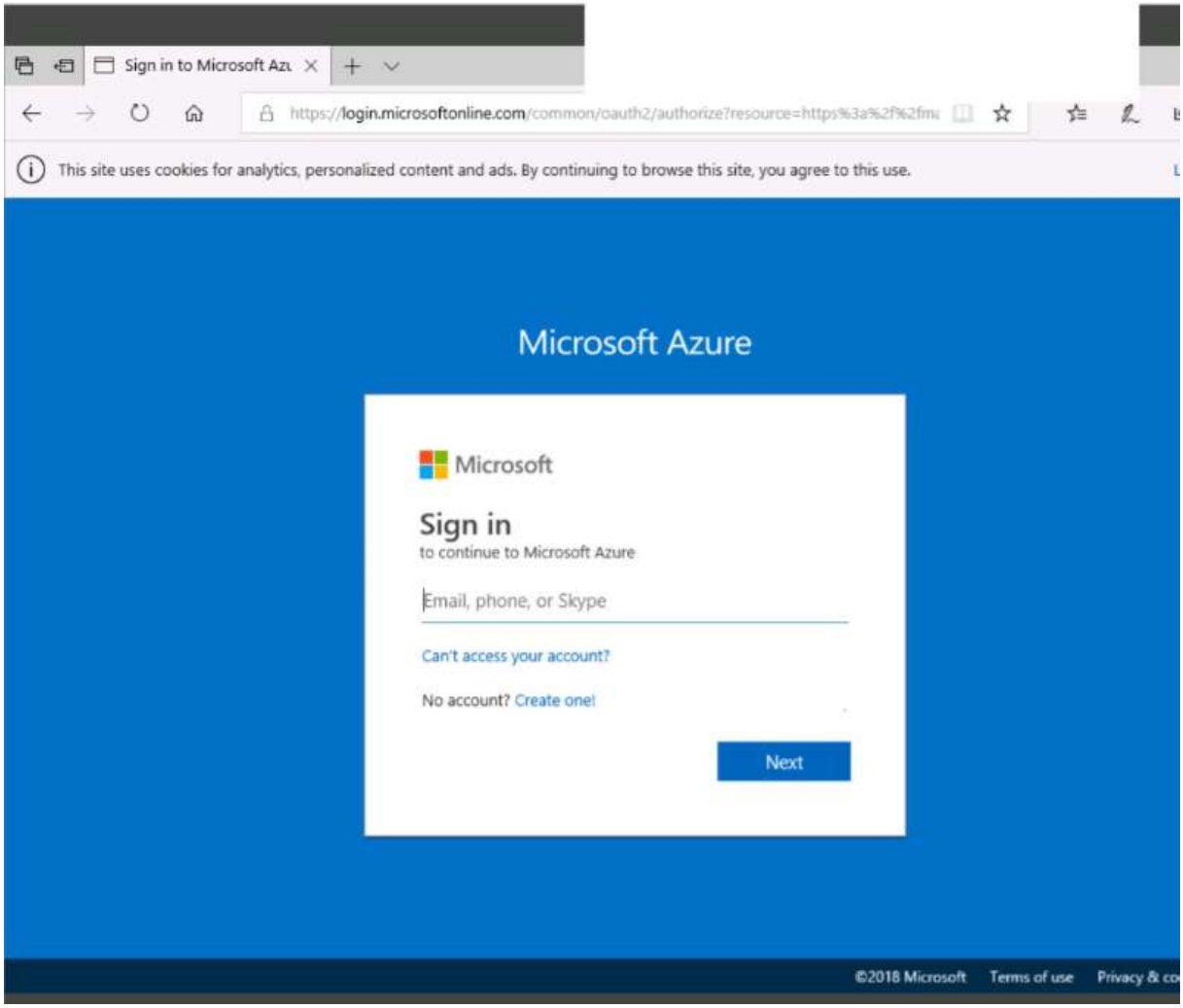

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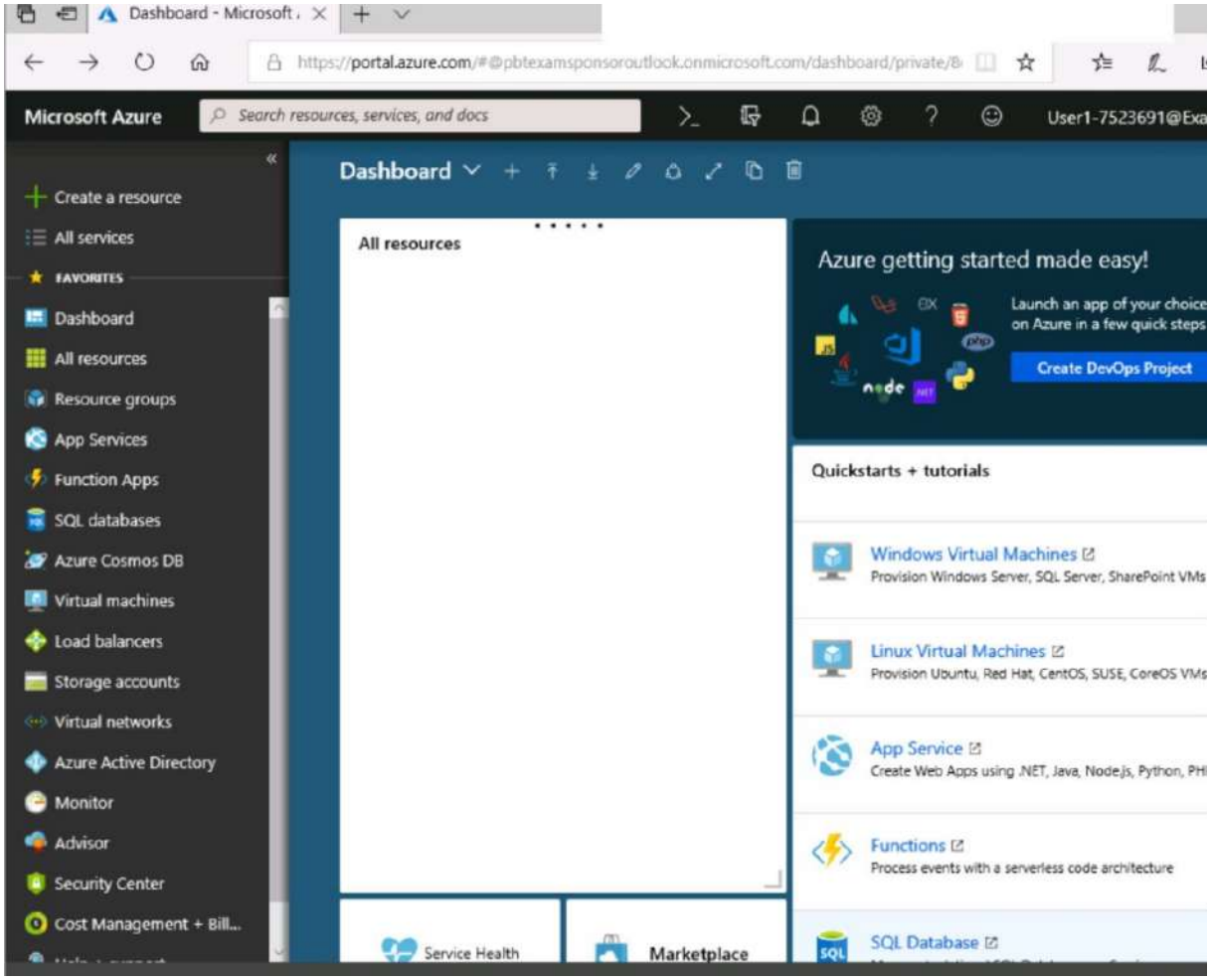

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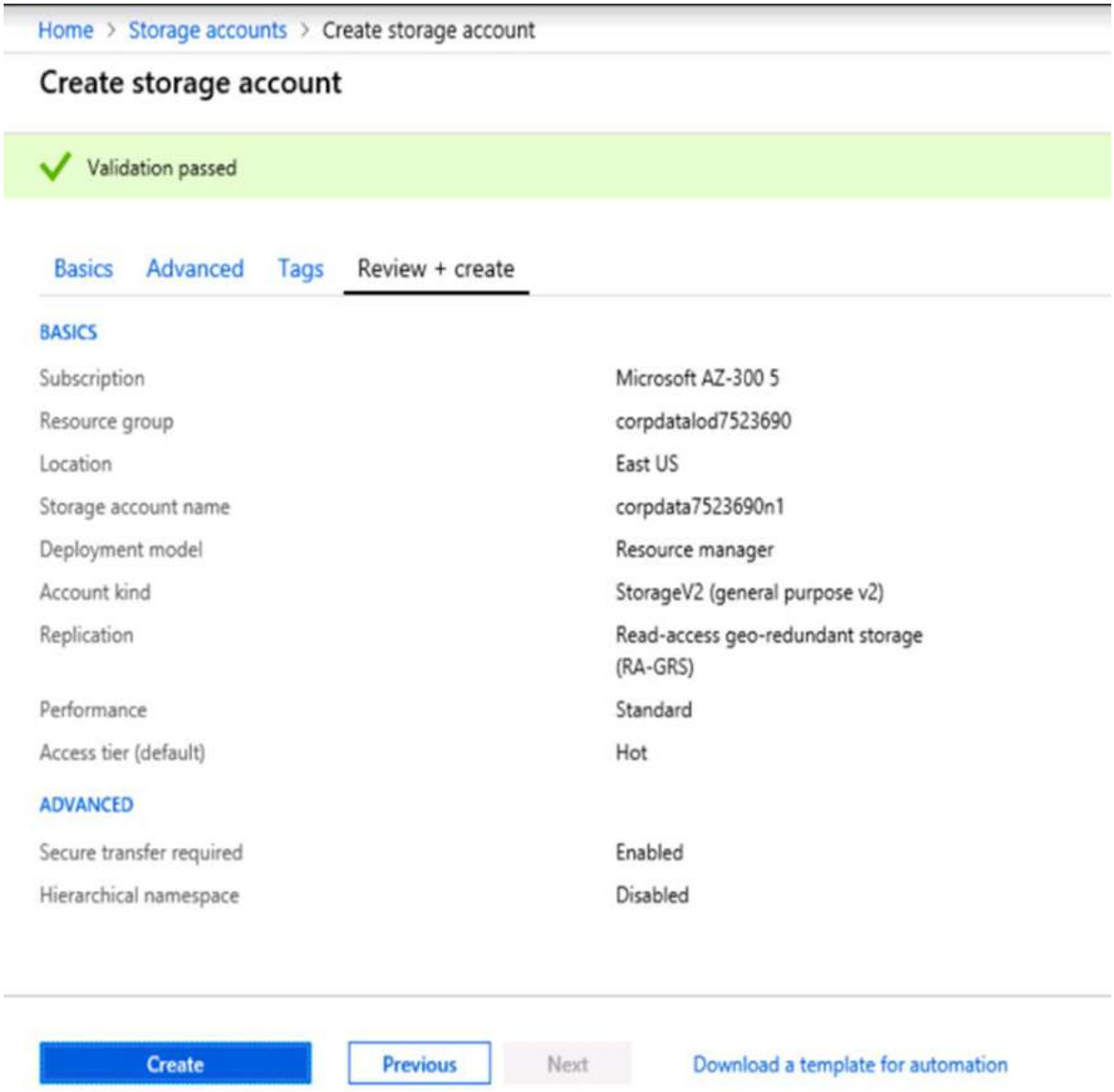

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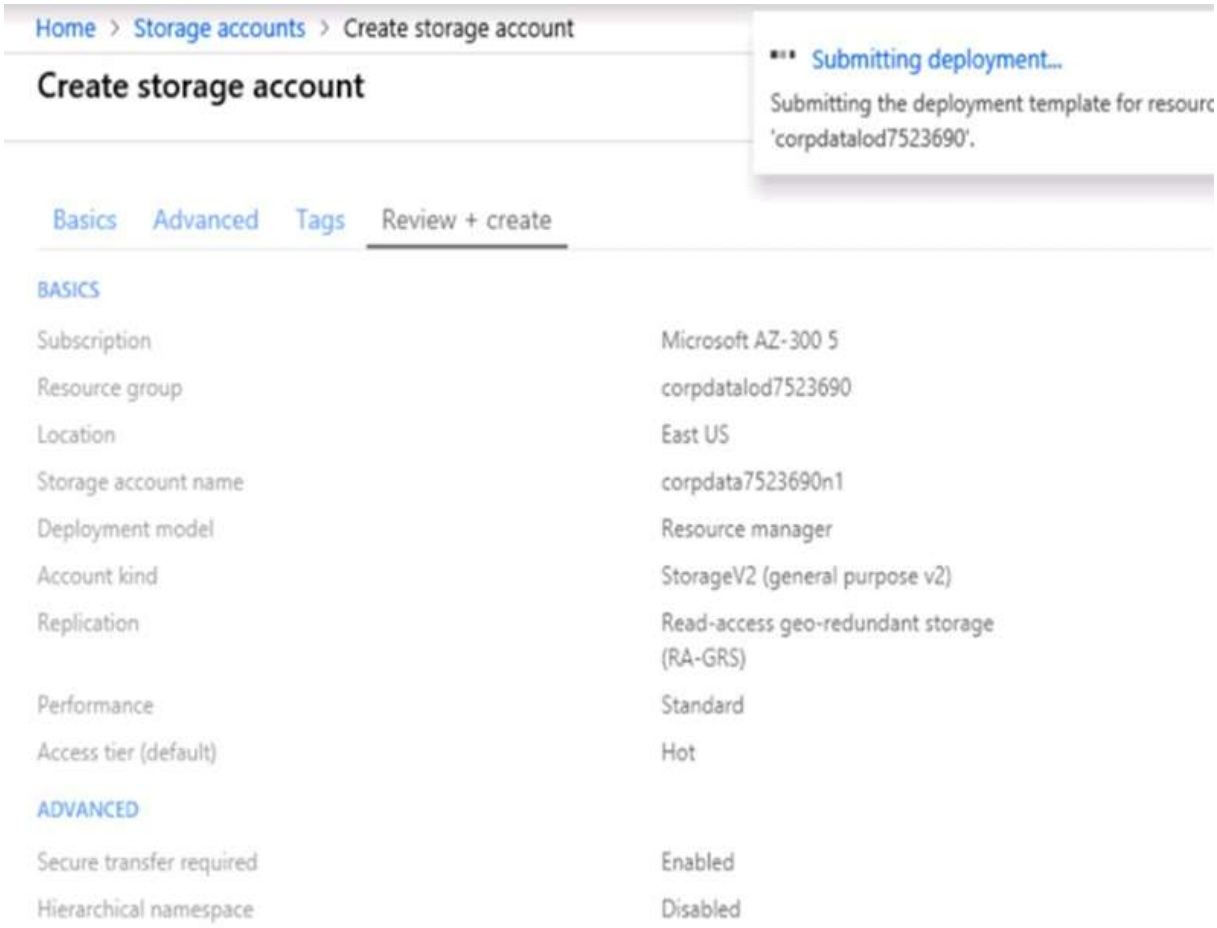

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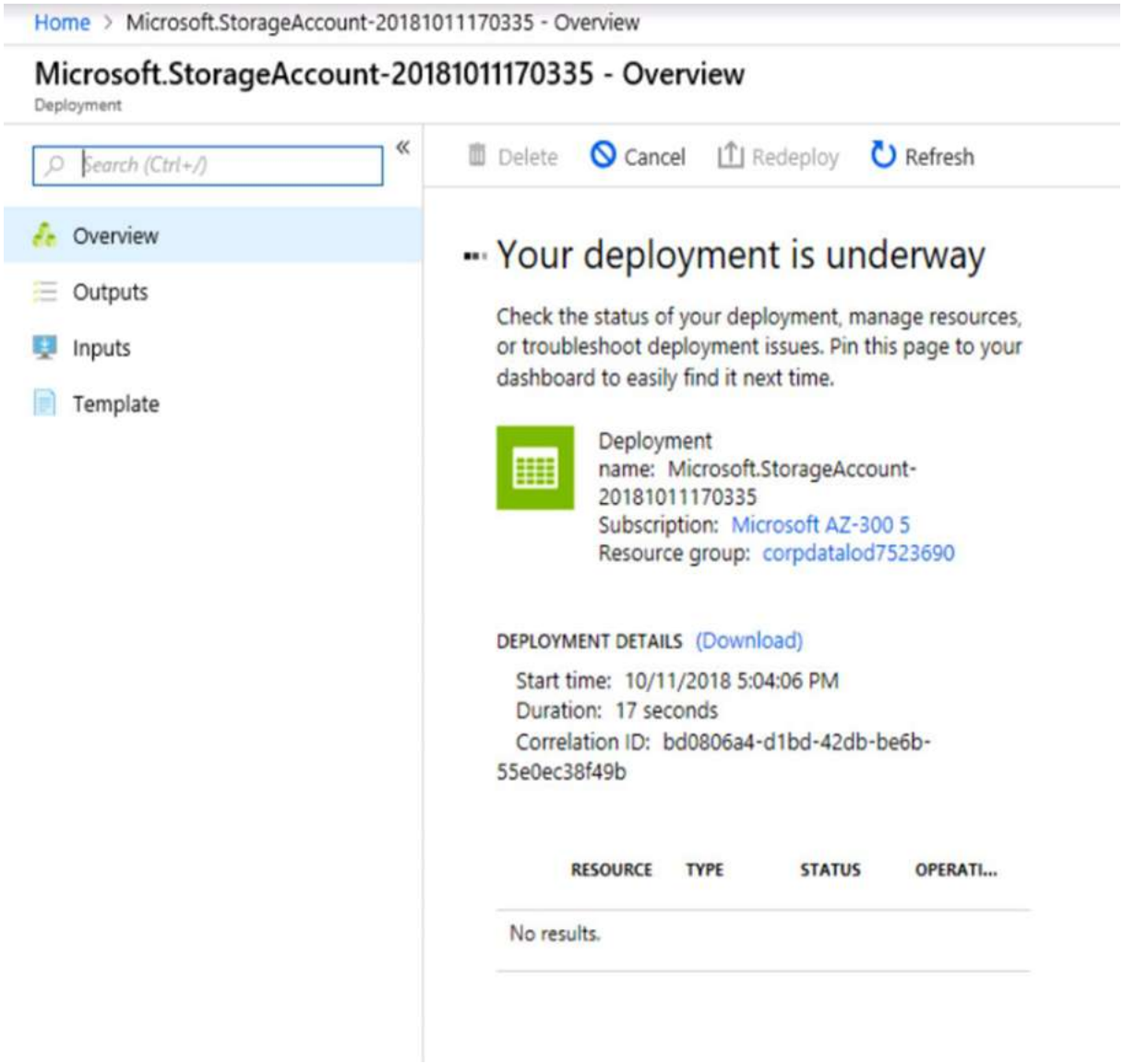

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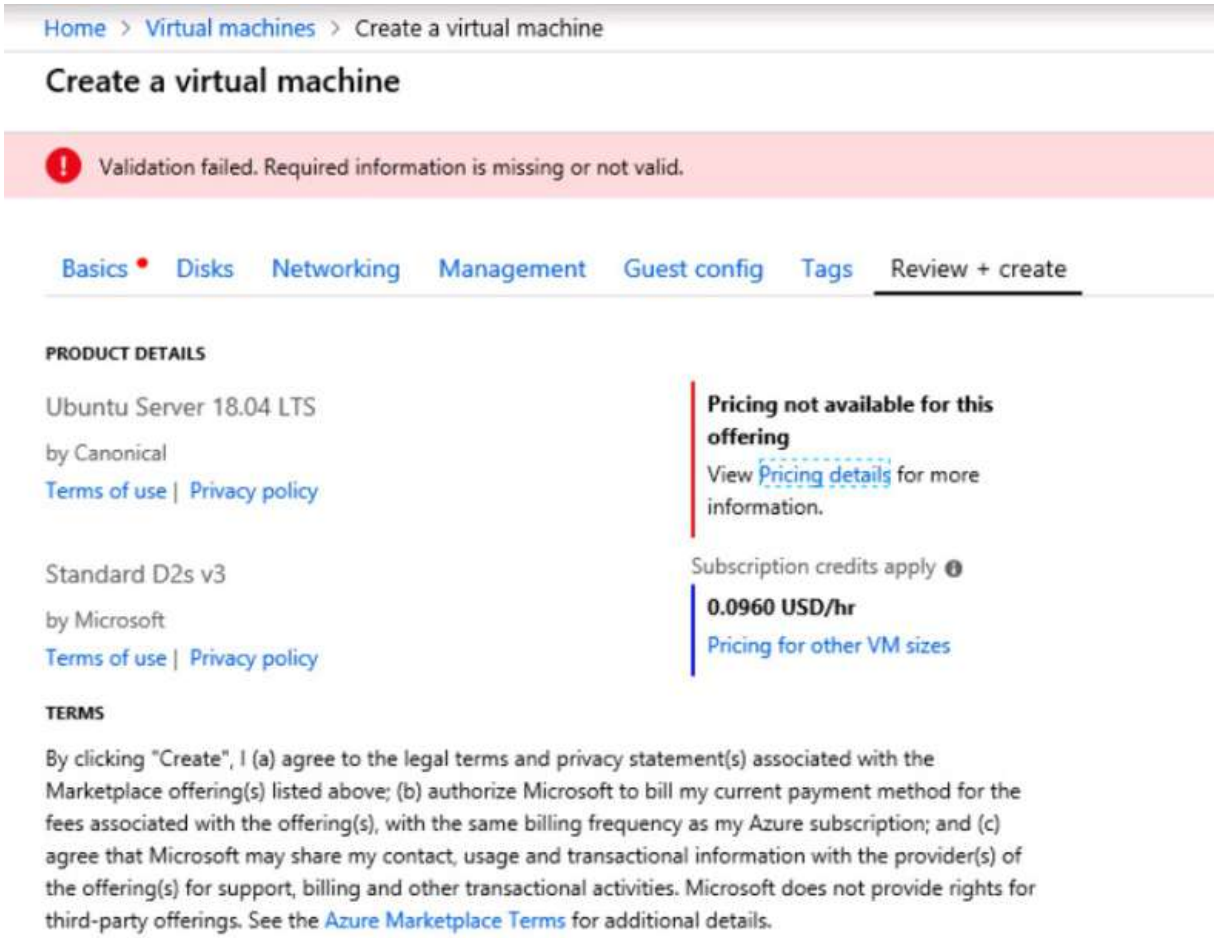

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To start the lab
You may start the lab by clicking the Next button.

You plan to deploy several Azure virtual machines and to connect them to a virtual network named VNET1007.

You need to ensure that future virtual machines on VNET1007 can register their name in an internal DNS zone named corp8548984.com. The zone must NOT be hosted on a virtual machine.

What should you do from Azure Cloud Shell?

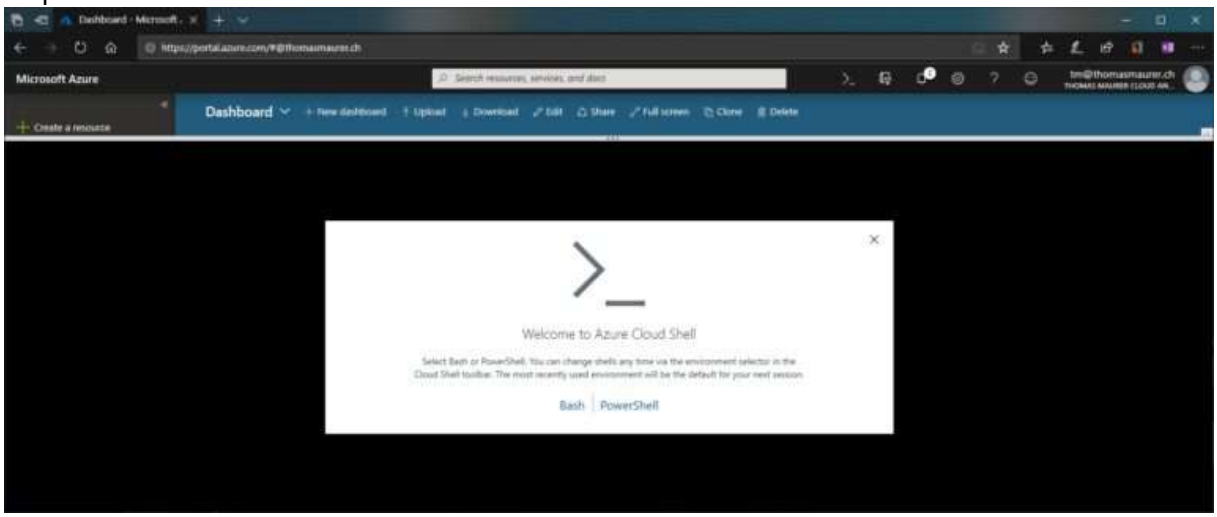
To complete this task, start Azure Cloud Shell and select PowerShell (Linux), Click Show Advanced Settings, and then enter corpdata7523690n1 in the Storage account text box and File1 share text box. Click Create storage, and then complete the task.

Explanation/Reference

Explanation:

Step 1: Launch Cloud Shell from the top navigation of the Azure portal.

Step 2: Select PowerShell



When you start the Azure Cloud Shell for the first time, you will be prompted to create a storage account in order to associate a new Azure File Share to persist files across sessions.

Step 3: Click Show Advanced settings.

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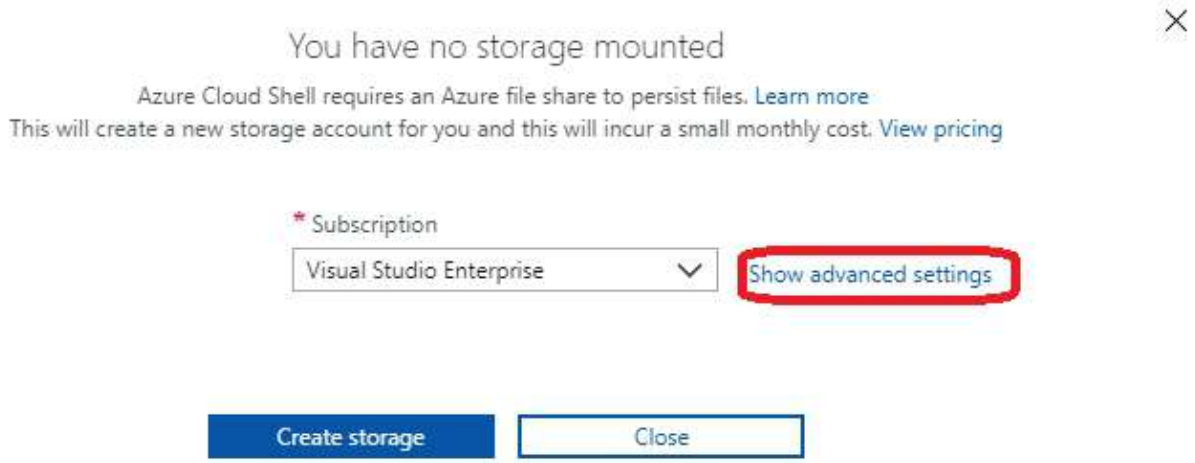
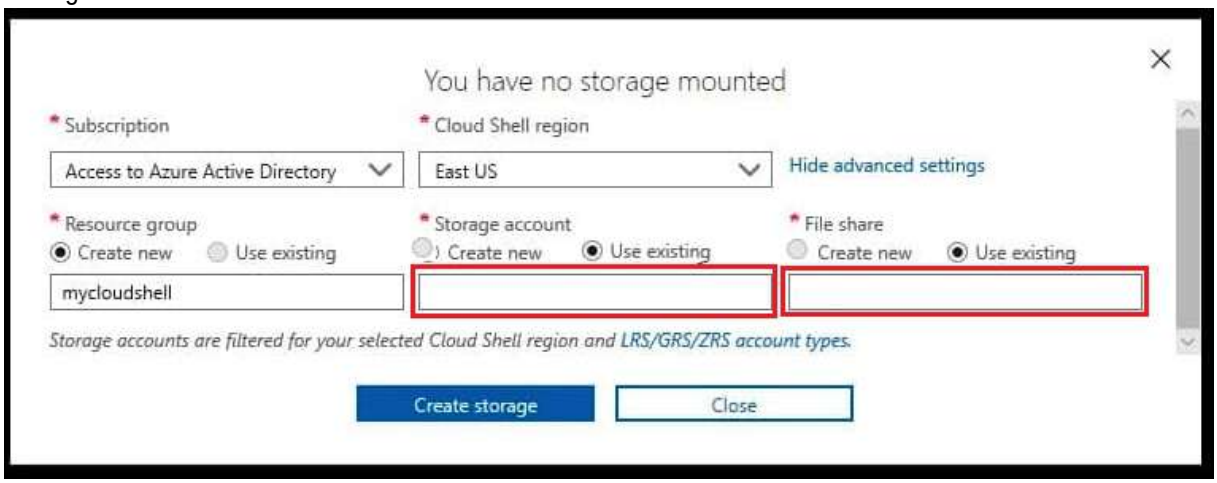


Step 4: Enter corp8548984n1 in the Storage account text box and File1 share text box. Click Create storage.



Step 5: Enter the following command at the powershell command prompt:
New-AzDnsZone -Name "corp8548984.com"
-ResourceGroupName "mycloudshell"
-ZoneType Private
-RegistrationVirtualNetworkId VNET1007

Note: A DNS zone is created by using the New-AzDnsZone cmdlet with a value of Private for the ZoneType parameter.

References:
https://docs.microsoft.com/en-us/azure/dns/private-dns-getstarted-powershell

https://docs.microsoft.com/en-us/azure/cloud-shell/quickstart-powershell

https://docs.microsoft.com/en-us/powershell/module/az.dns/new-azdnszone?view=azps-1.5.0

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Question 195

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SIMULATION

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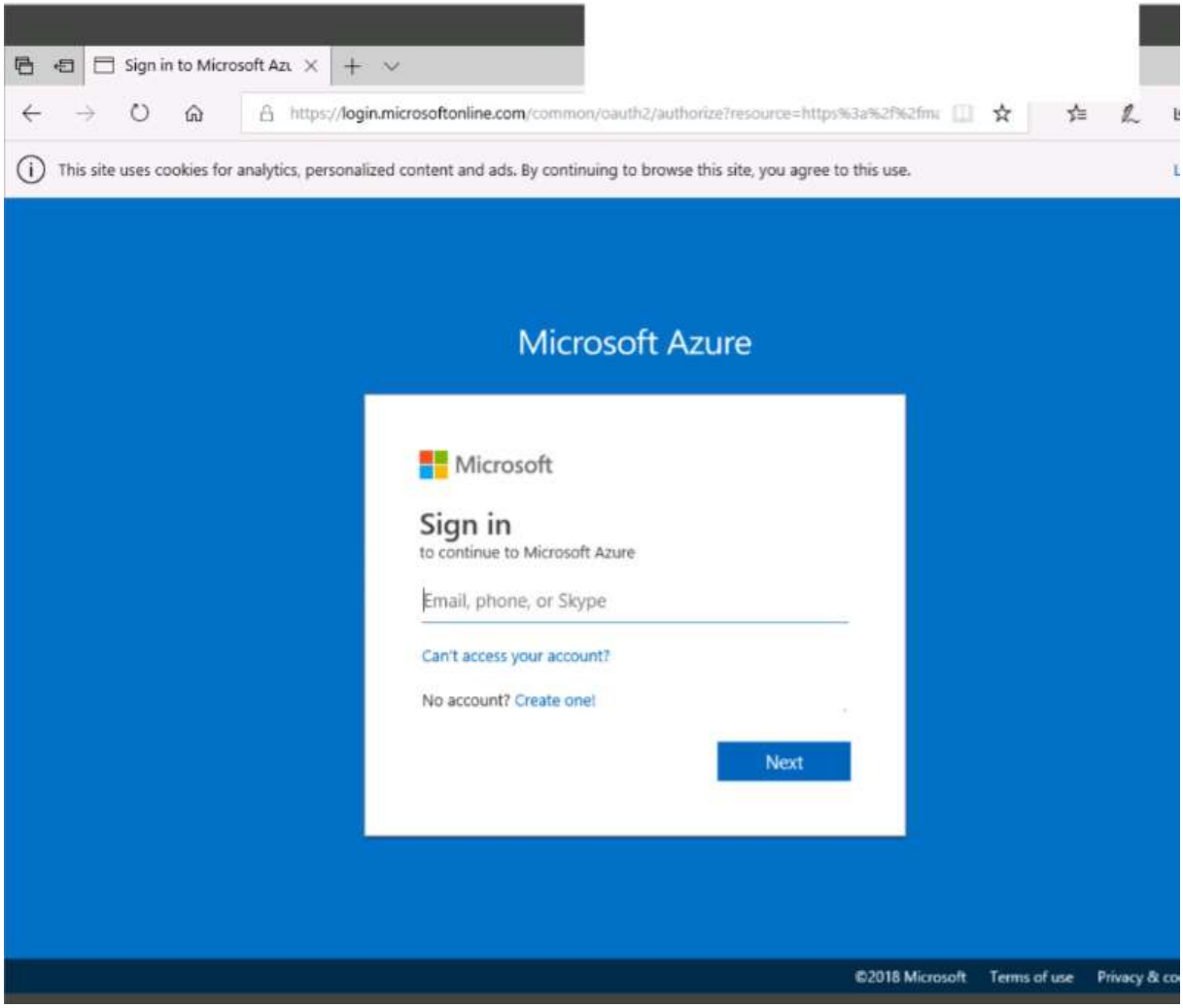

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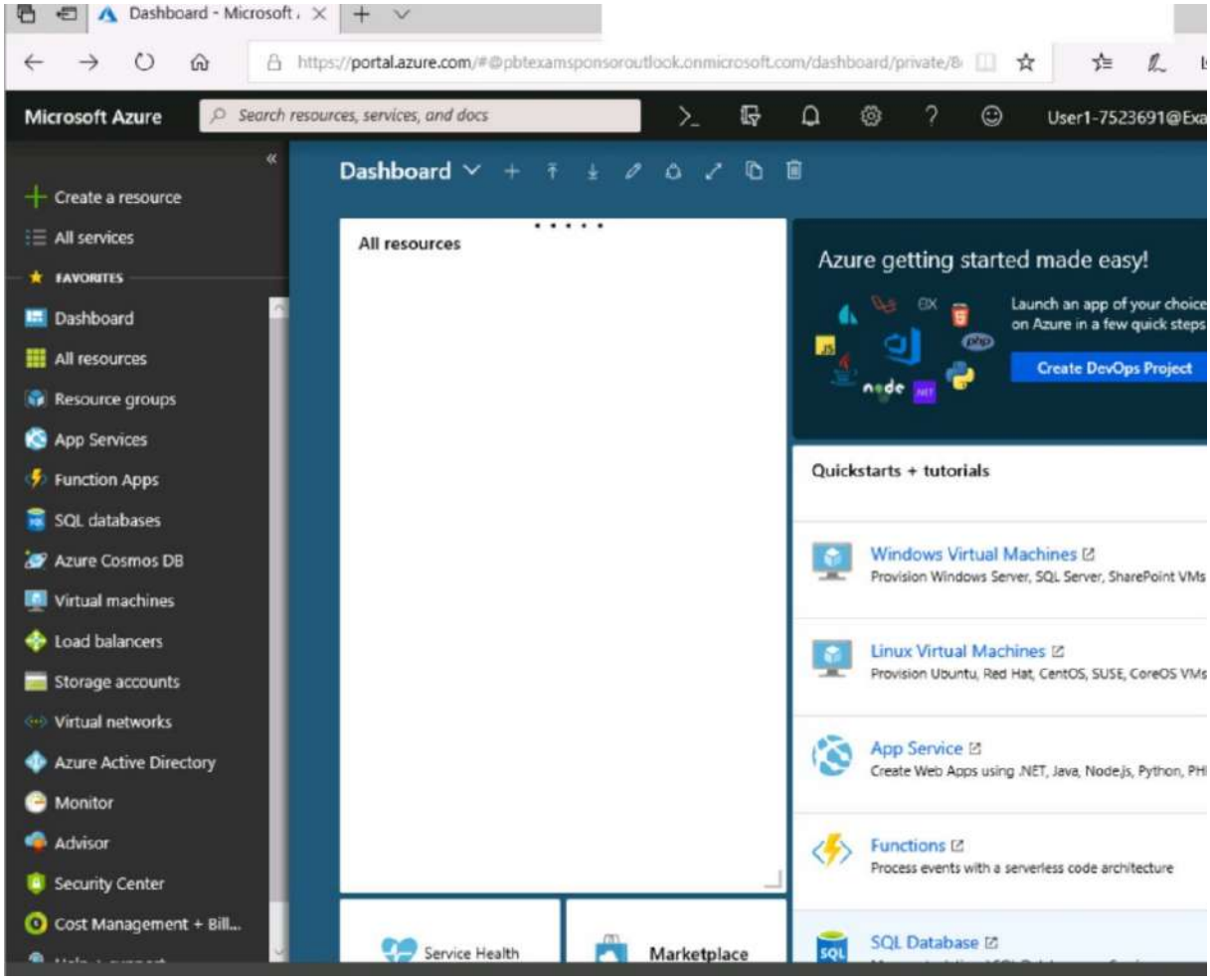

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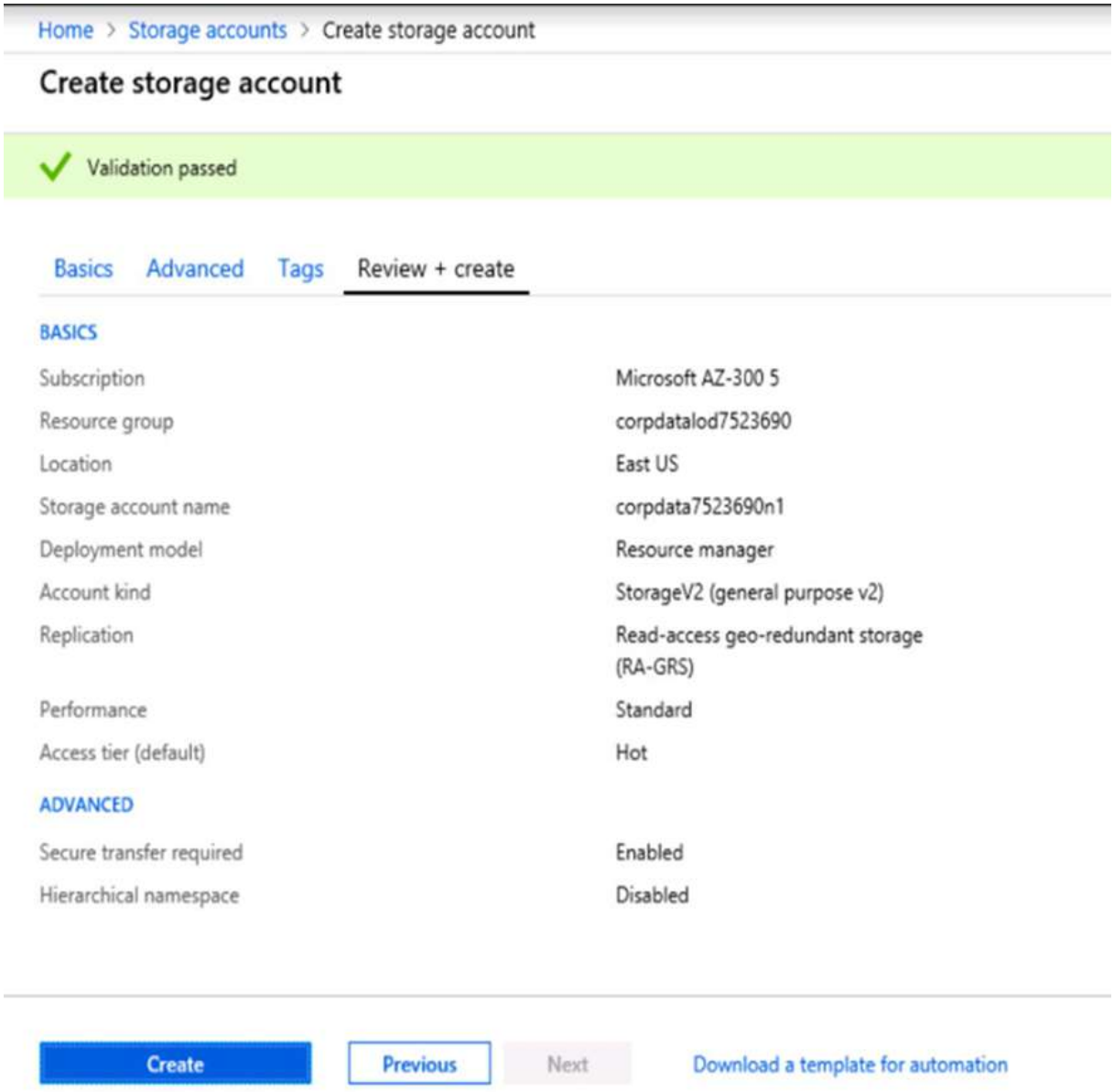

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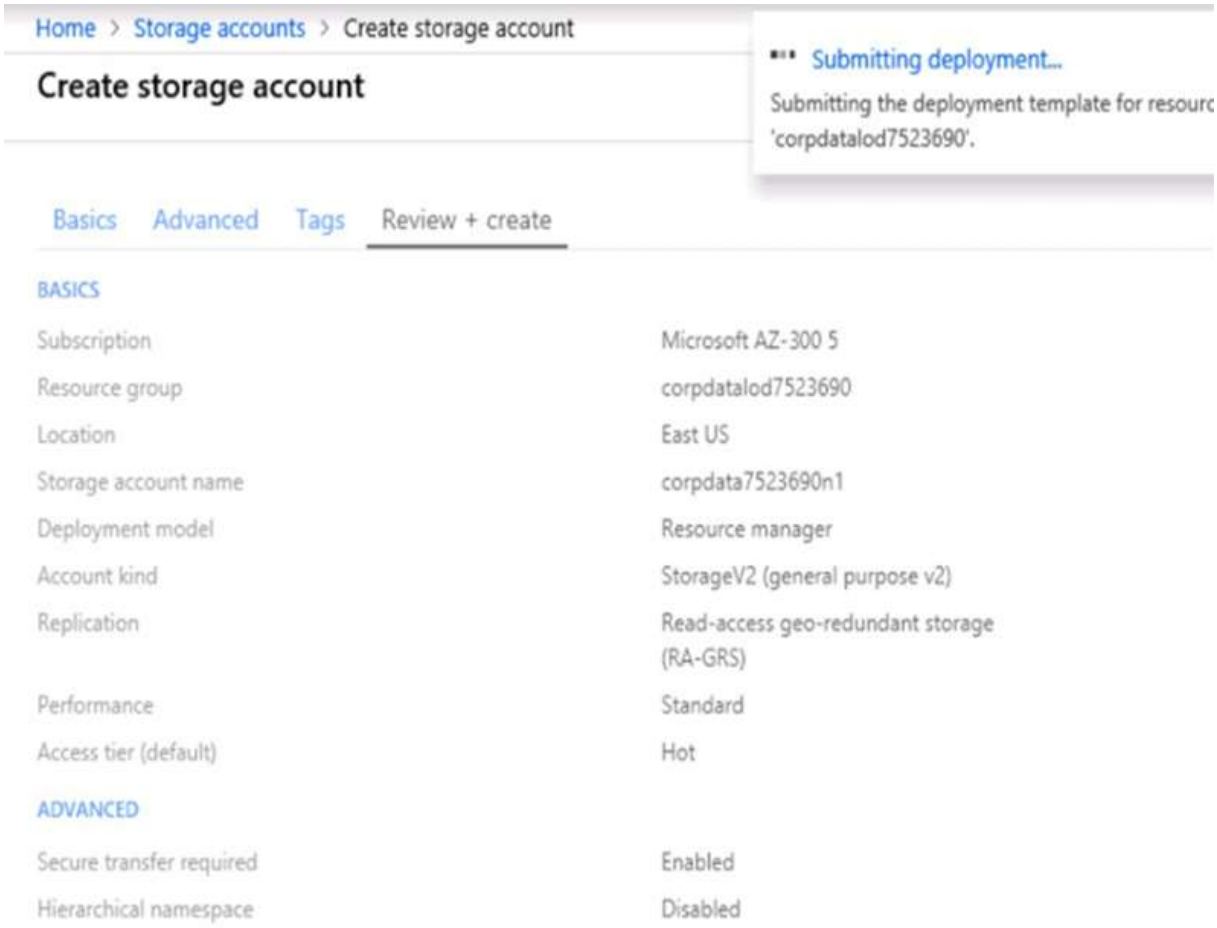

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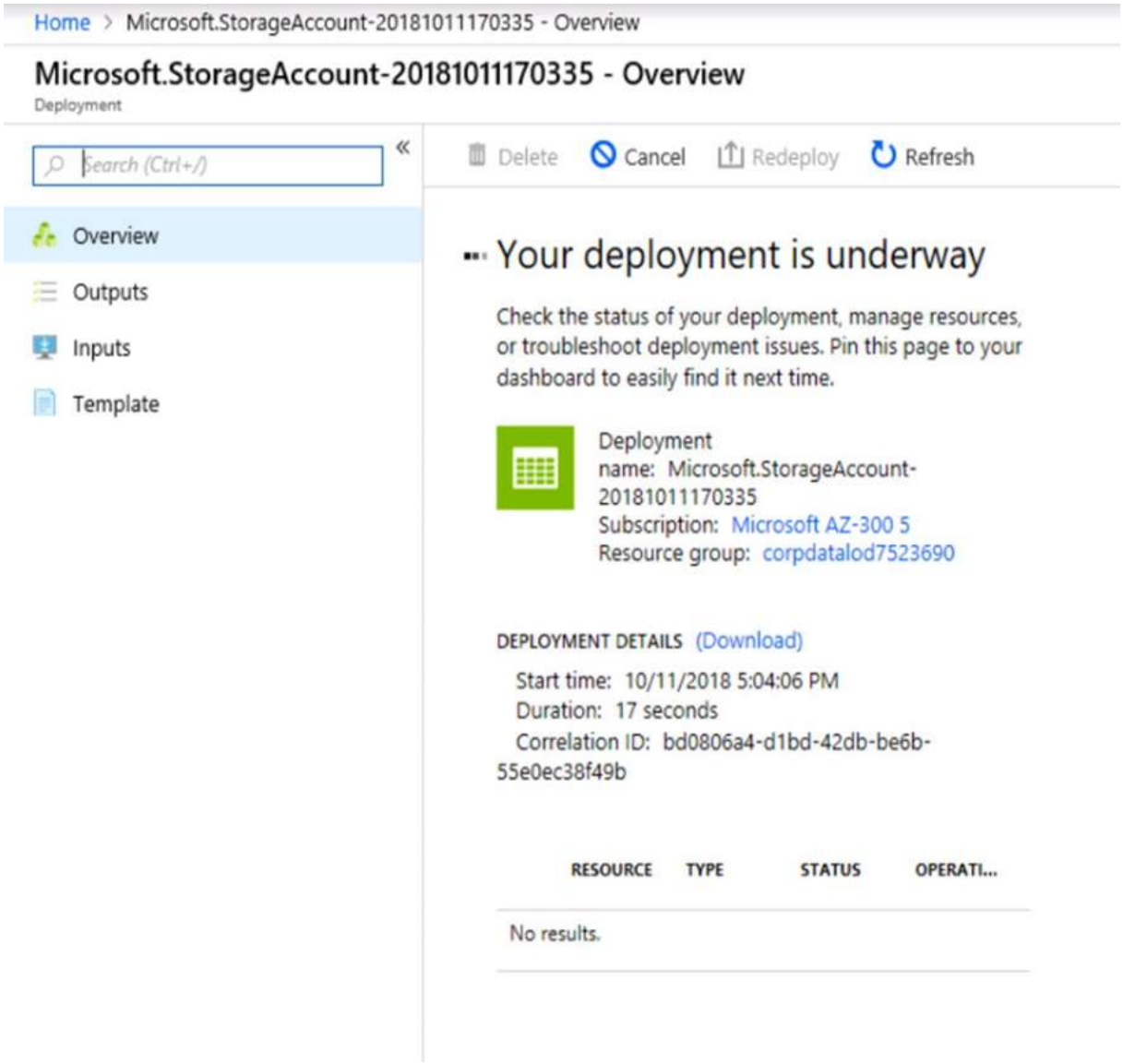

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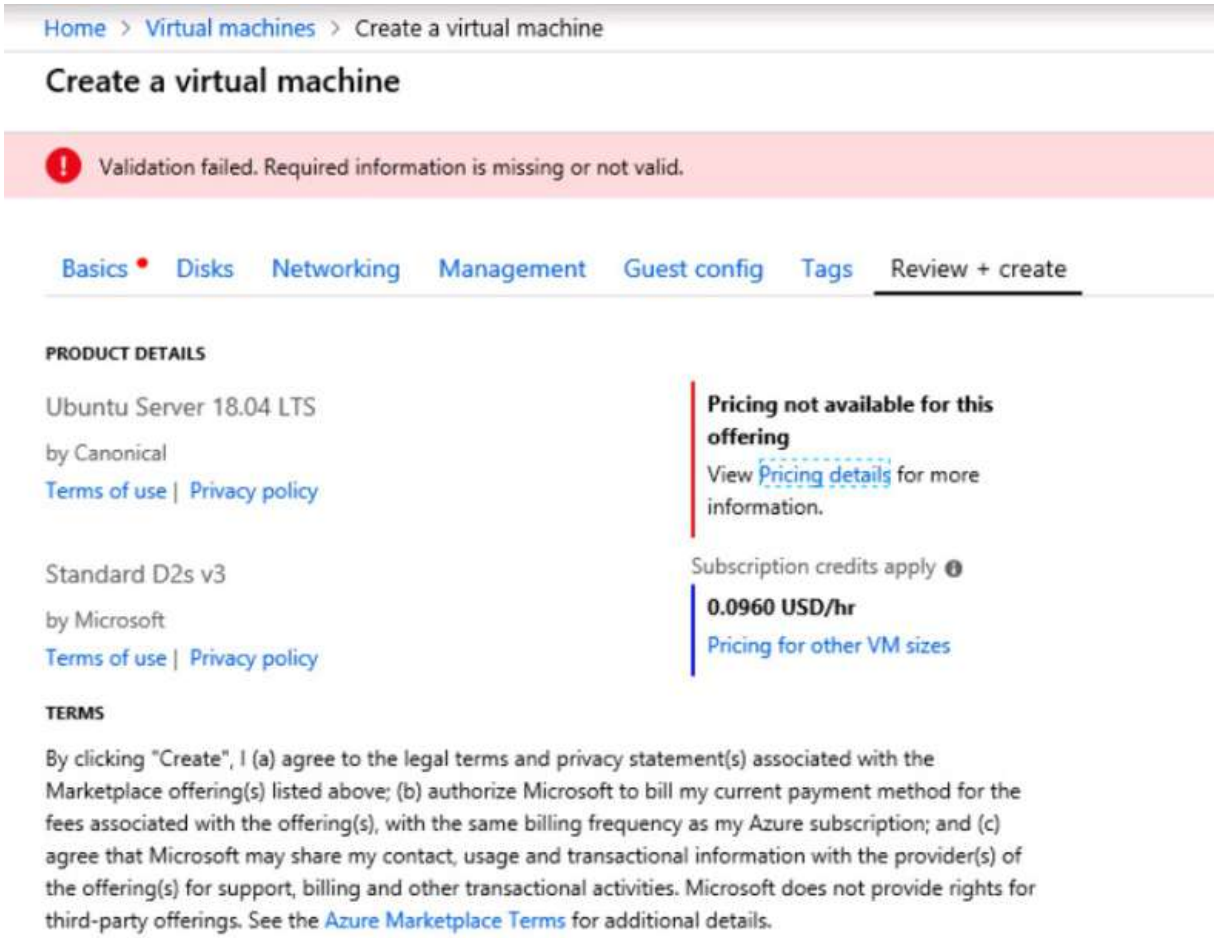

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To start the lab
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Another administrator reports that she is unable to configure a web app named corplod10217507n3 to prevent all connections from an IP address of 11.0.0.11.

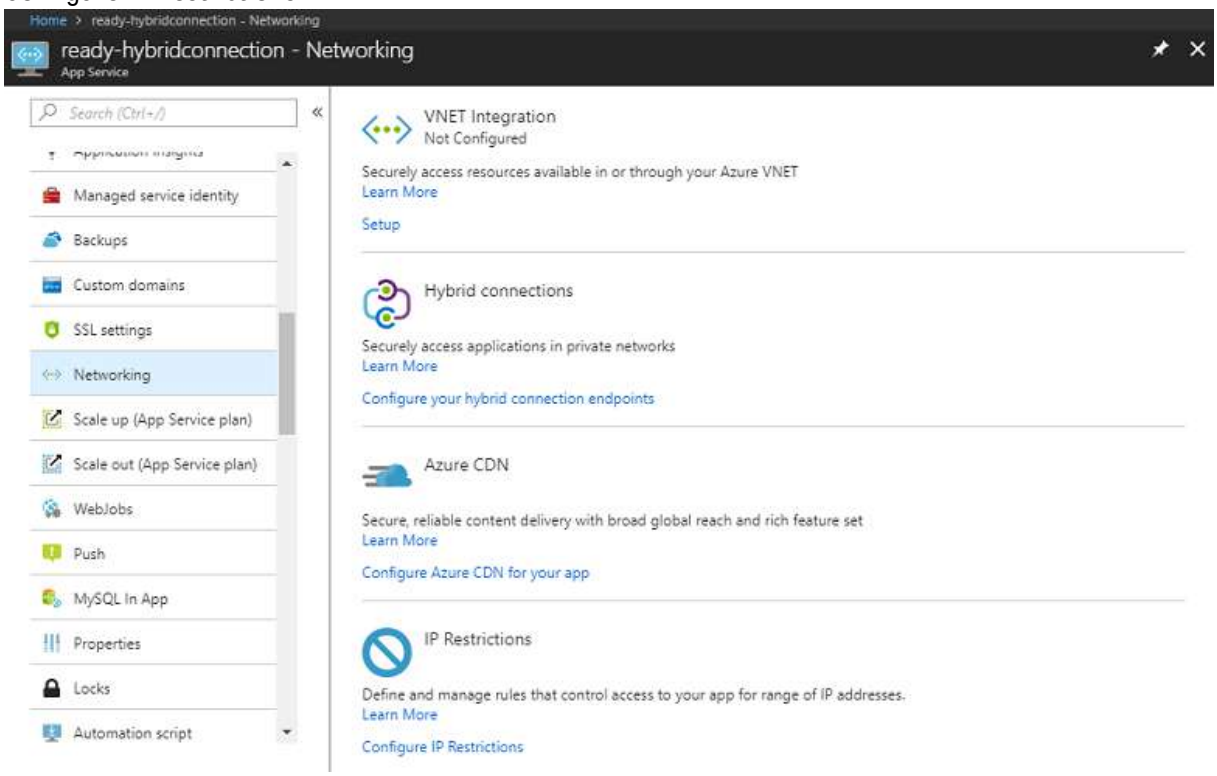
You need to modify corplod10217507n3 to successfully prevent the connections from the IP address. The solution must minimize Azure-related costs.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Find and select application corplod10217507n3:
1. In the Azure portal, on the left navigation panel, click Azure Active Directory.
2. In the Azure Active Directory blade, click Enterprise applications.

Step 2:
To add an IP restriction rule to your app, use the menu to open Network>IP Restrictions and click on Configure IP Restrictions



Step 3:
Click Add rule
You can click on [+] Add to add a new IP restriction rule. Once you add a rule, it will become effective immediately.

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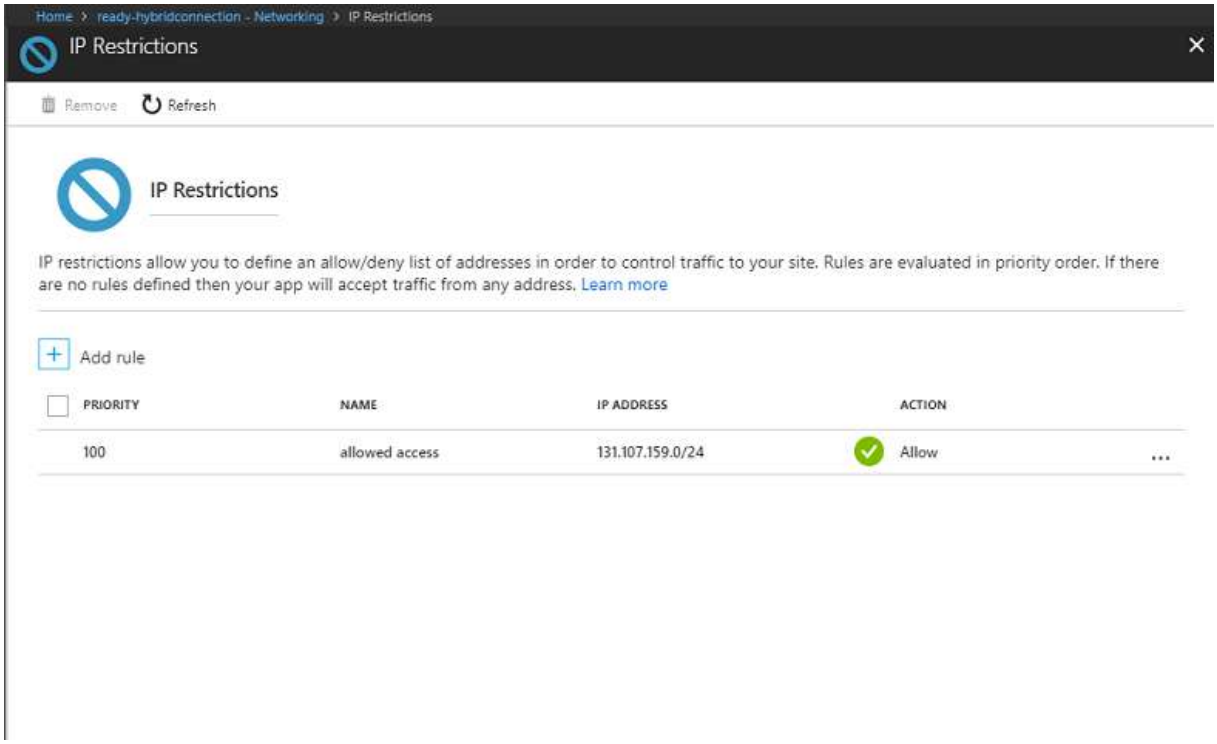

Step 4:
Add name, IP address of 11.0.0.11, select Deny, and click Add Rule

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References:
https://docs.microsoft.com/en-us/azure/app-service/app-service-ip-restrictions

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SIMULATION

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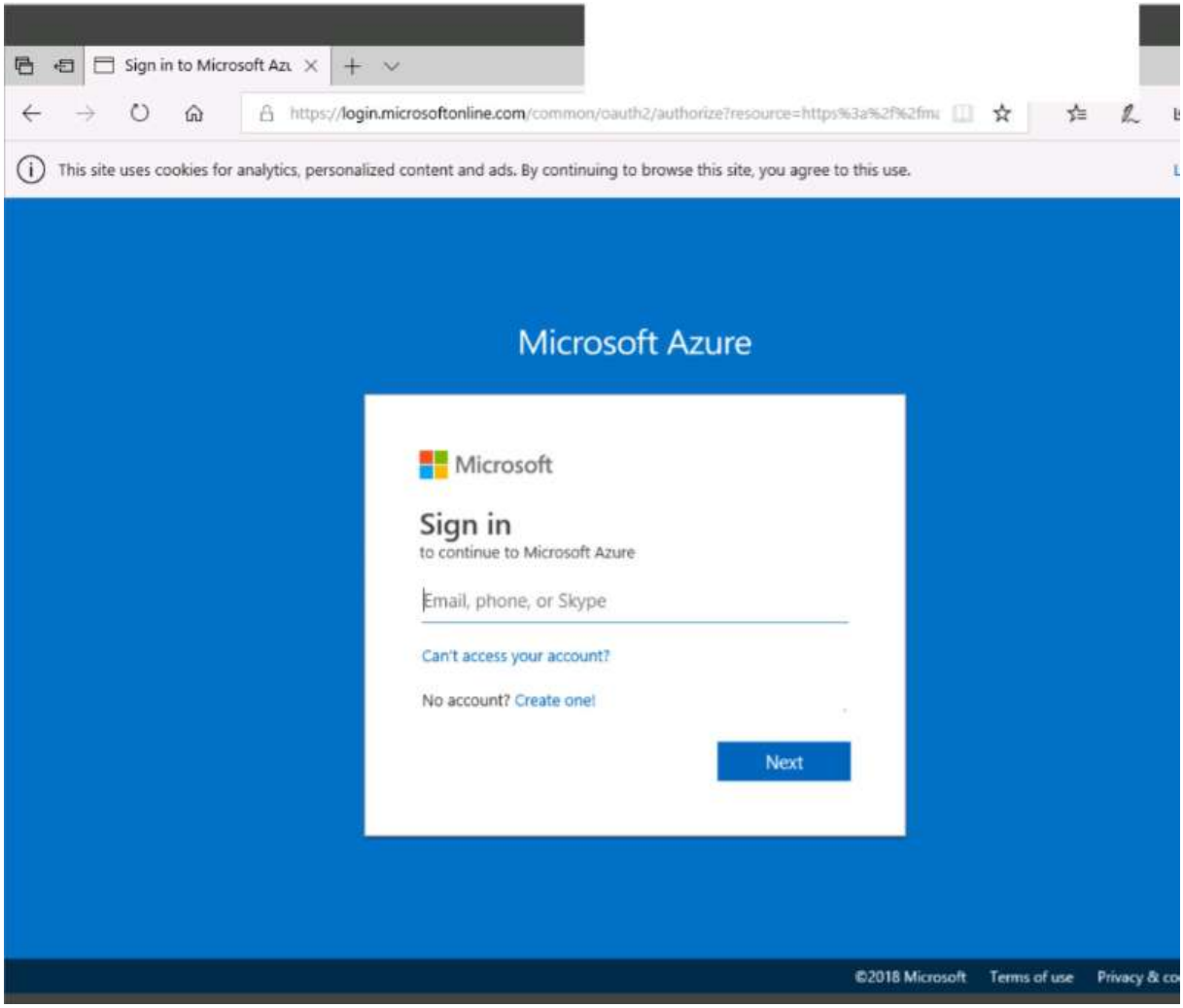

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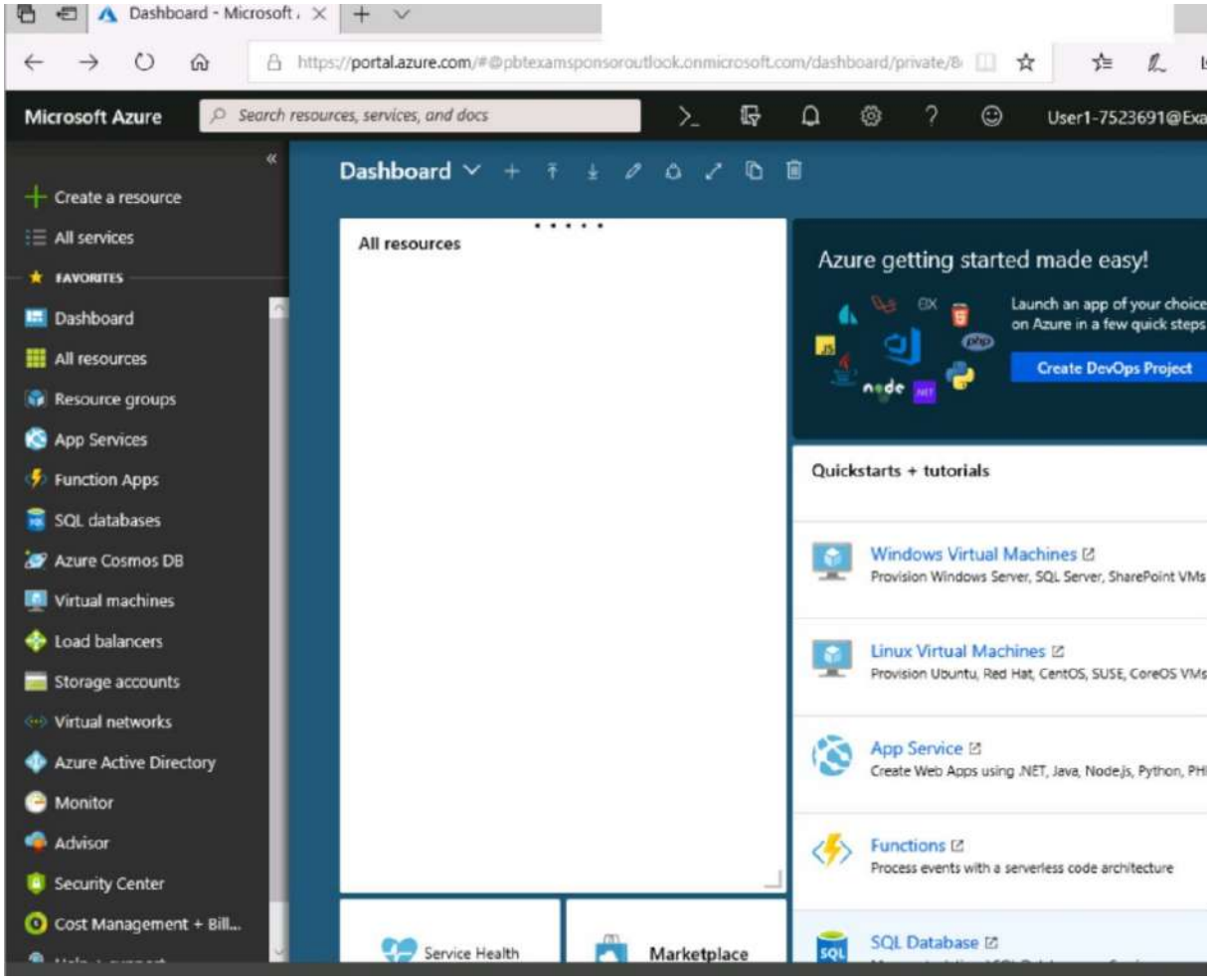

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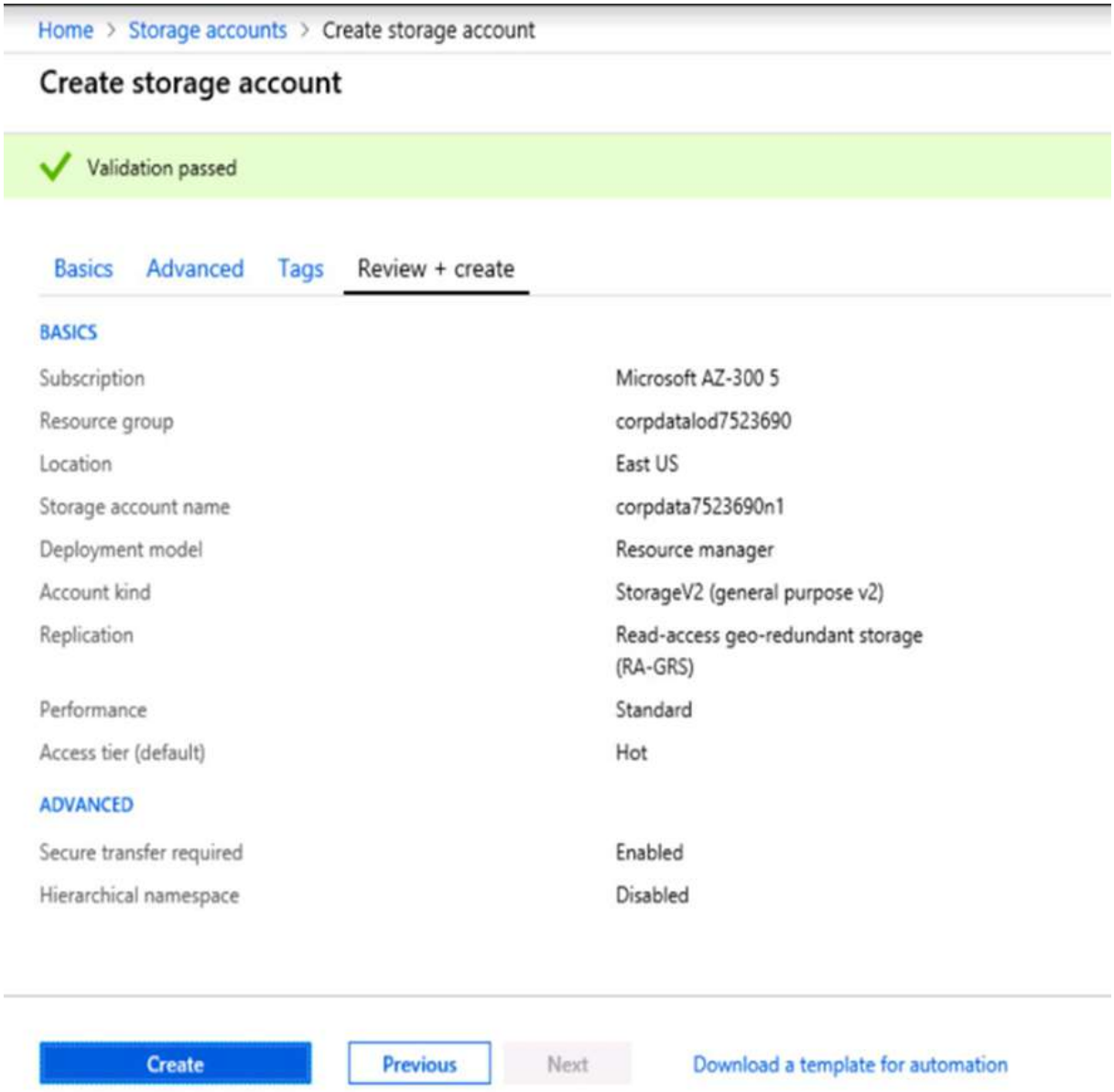

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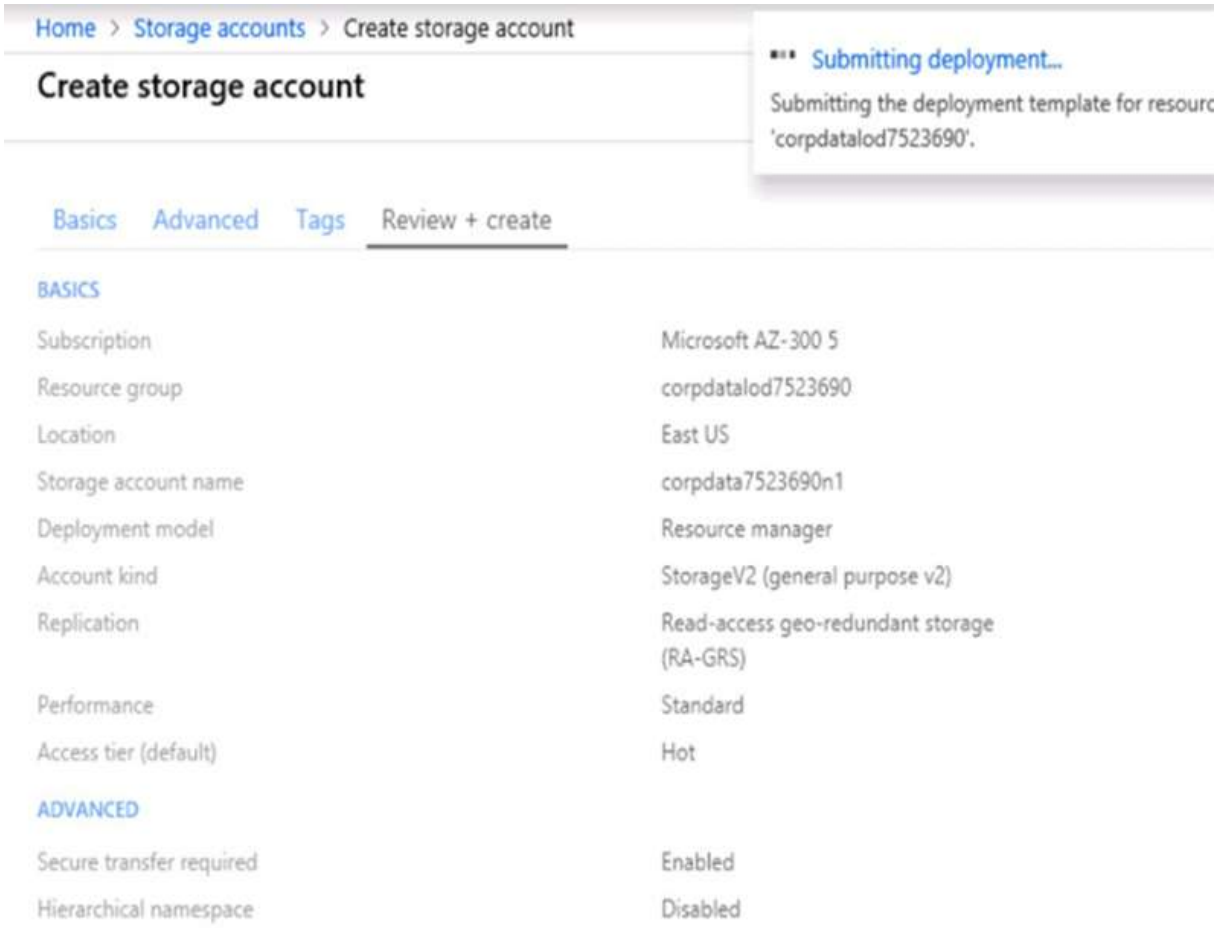

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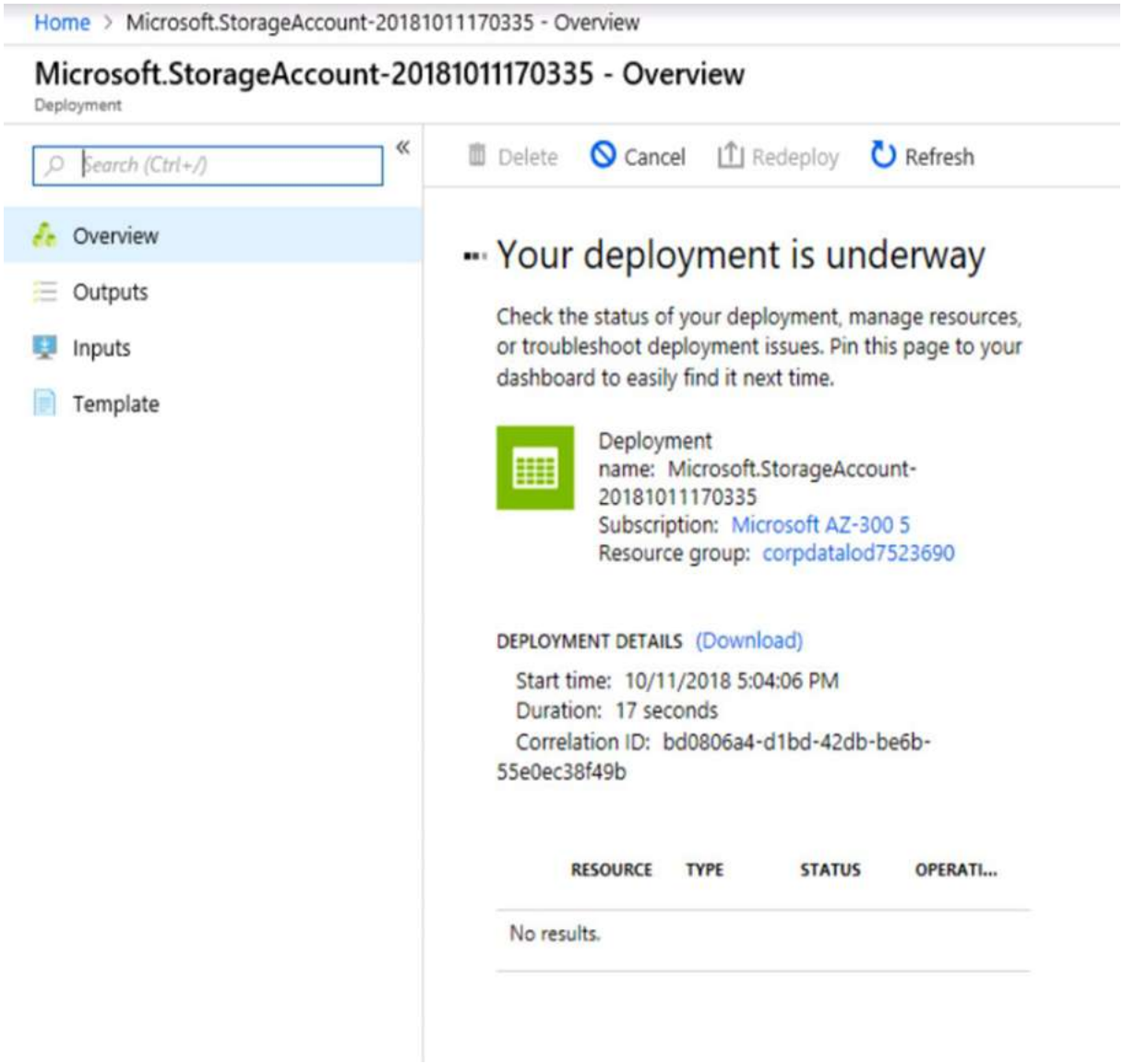

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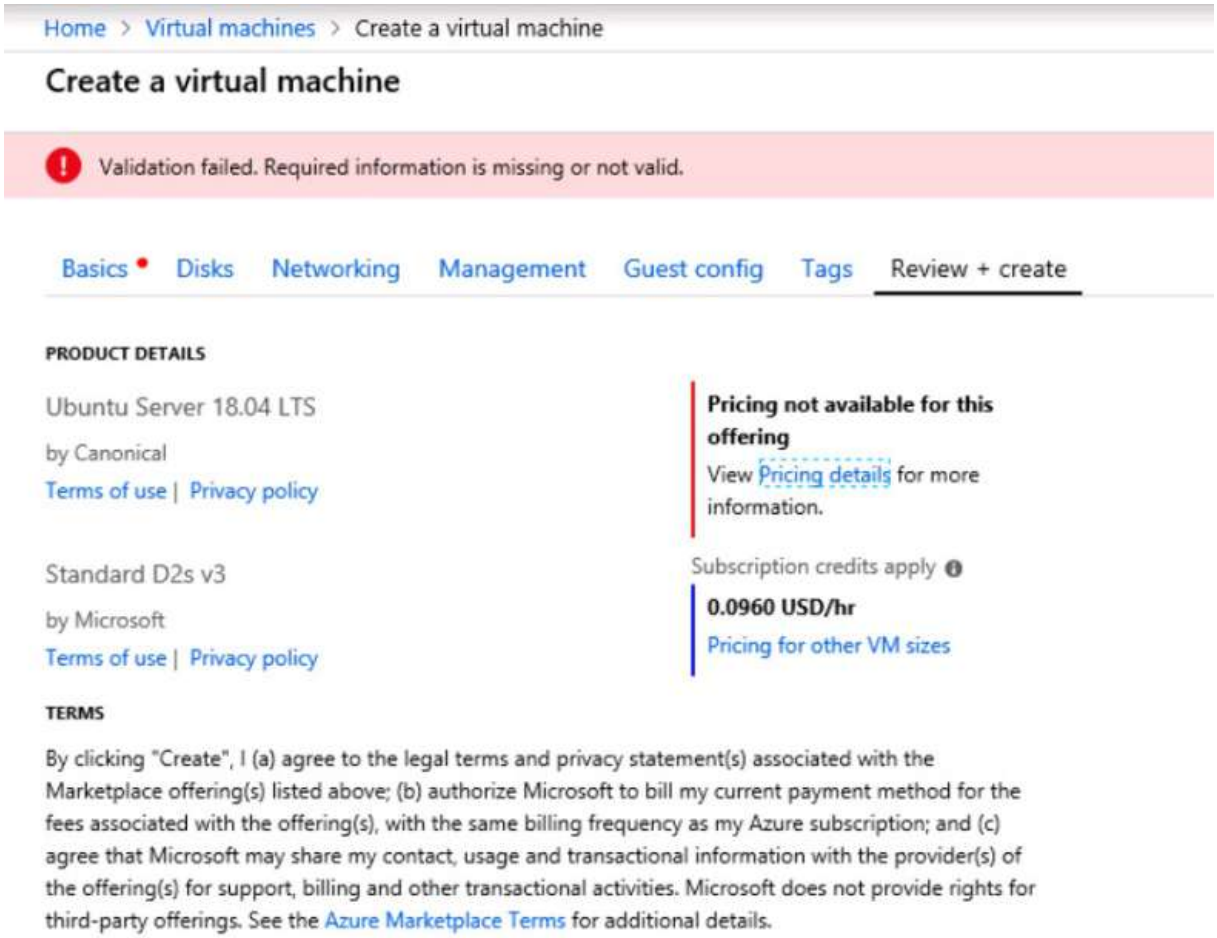

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You need to add a deployment slot named staging to an Azure web app named corplod10217507n4.
The solution must meet the following requirements:

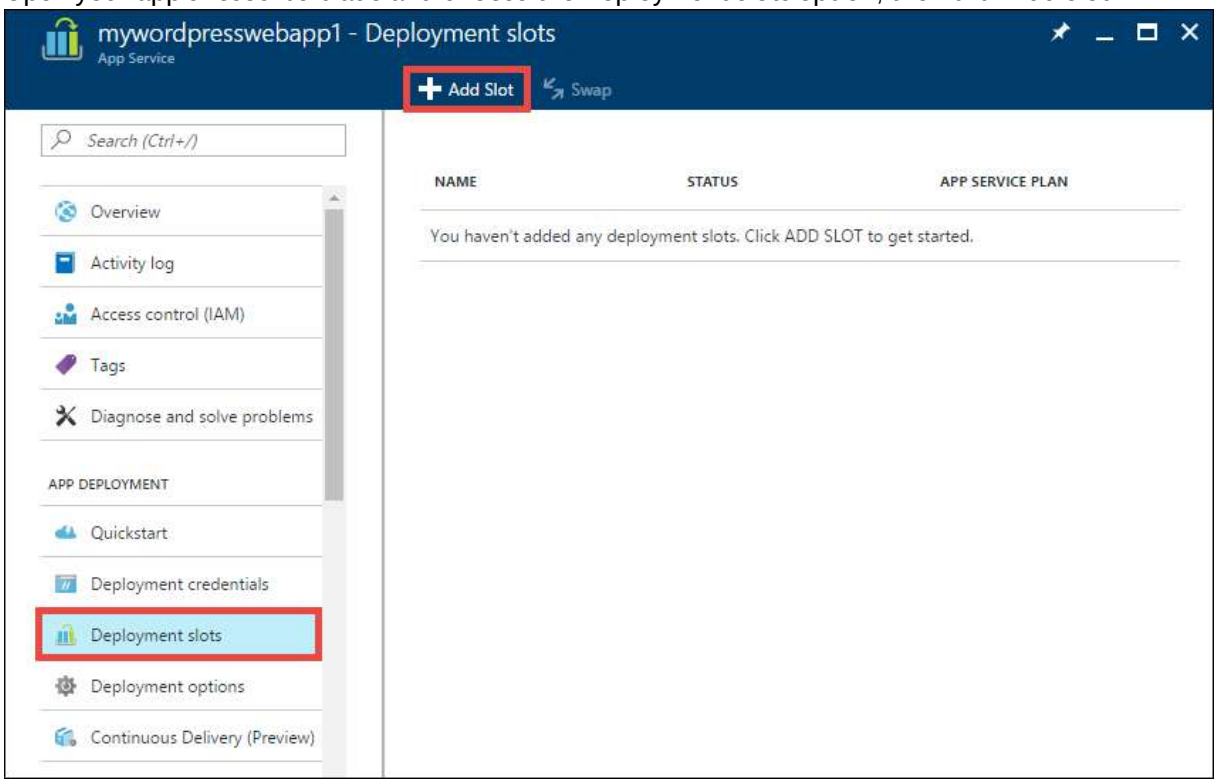
- When new code is deployed to staging, the code must be swapped automatically to the production slot.
- Azure-related costs must be minimized.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Locate and open the corplod10217507n4 web app.
1. In the Azure portal, on the left navigation panel, click Azure Active Directory.
2. In the Azure Active Directory blade, click Enterprise applications.

Step 2:
Open your app's resource blade and Choose the Deployment slots option, then click Add Slot.



Step 3:
In the Add a slot blade, give the slot a name, and select whether to clone app configuration from another existing deployment slot. Click the check mark to continue.
The first time you add a slot, you only have two choices: clone configuration from the default slot in production or not at all.

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References:
https://docs.microsoft.com/en-us/azure/app-service/web-sites-staged-publishing

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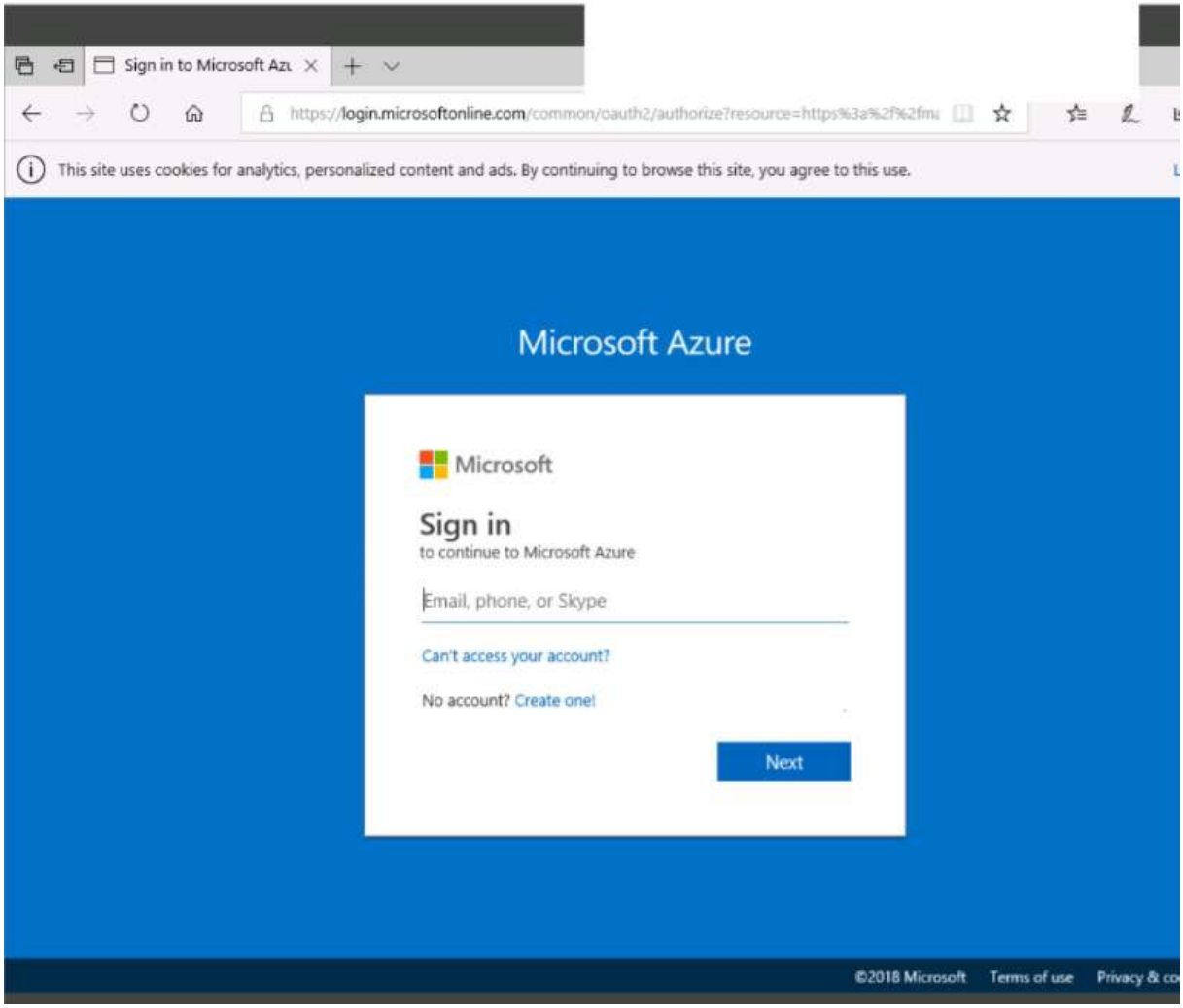

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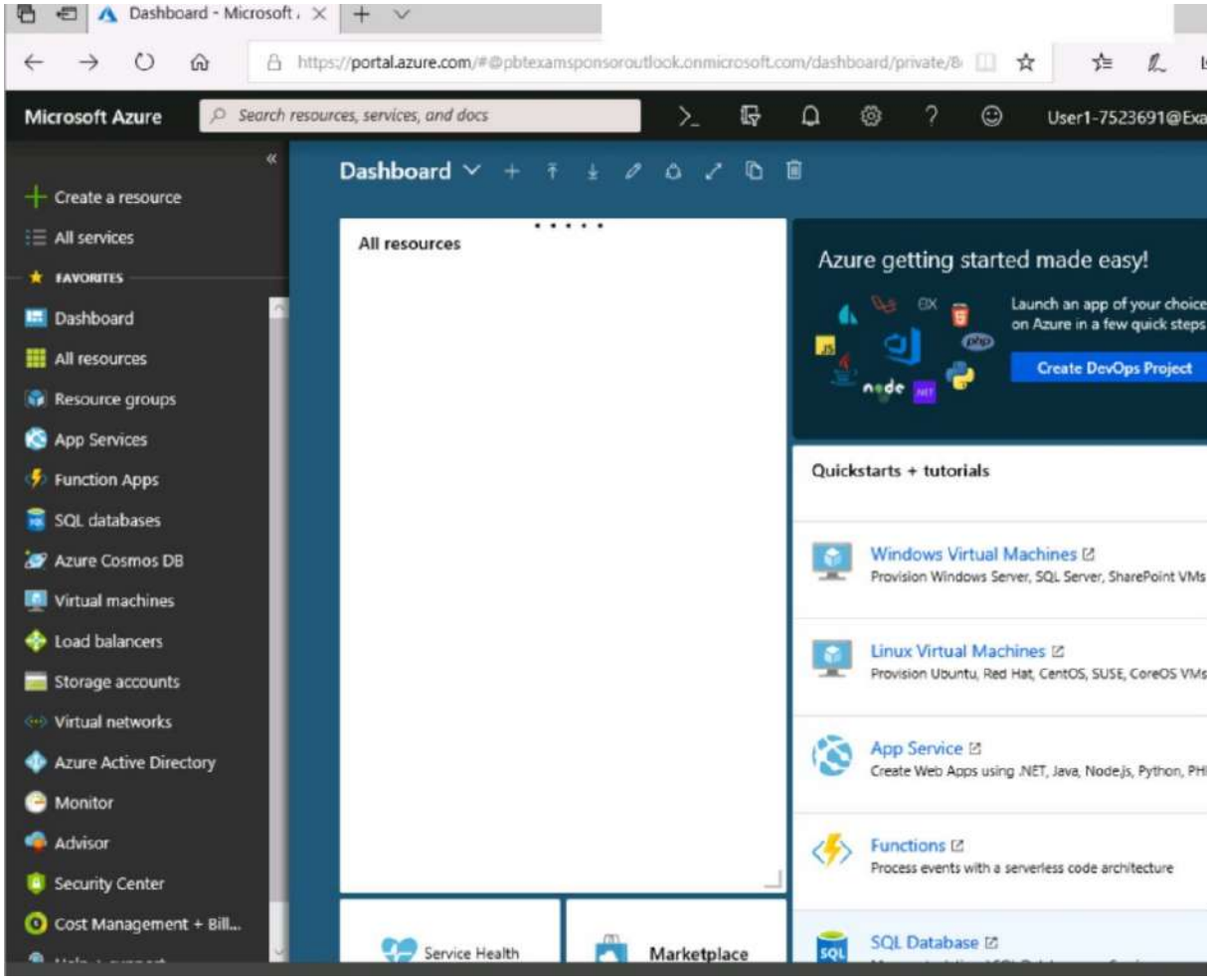

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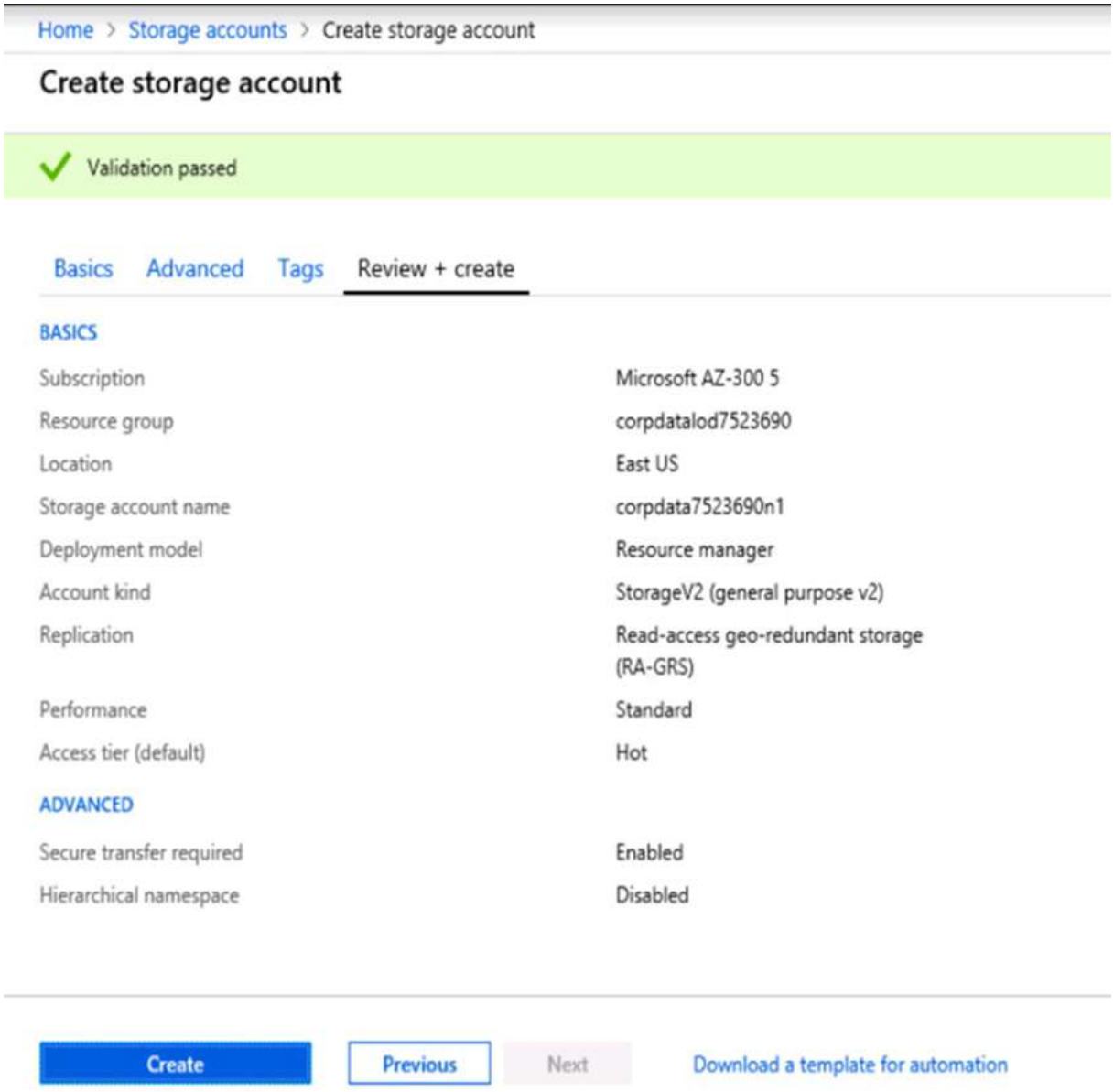

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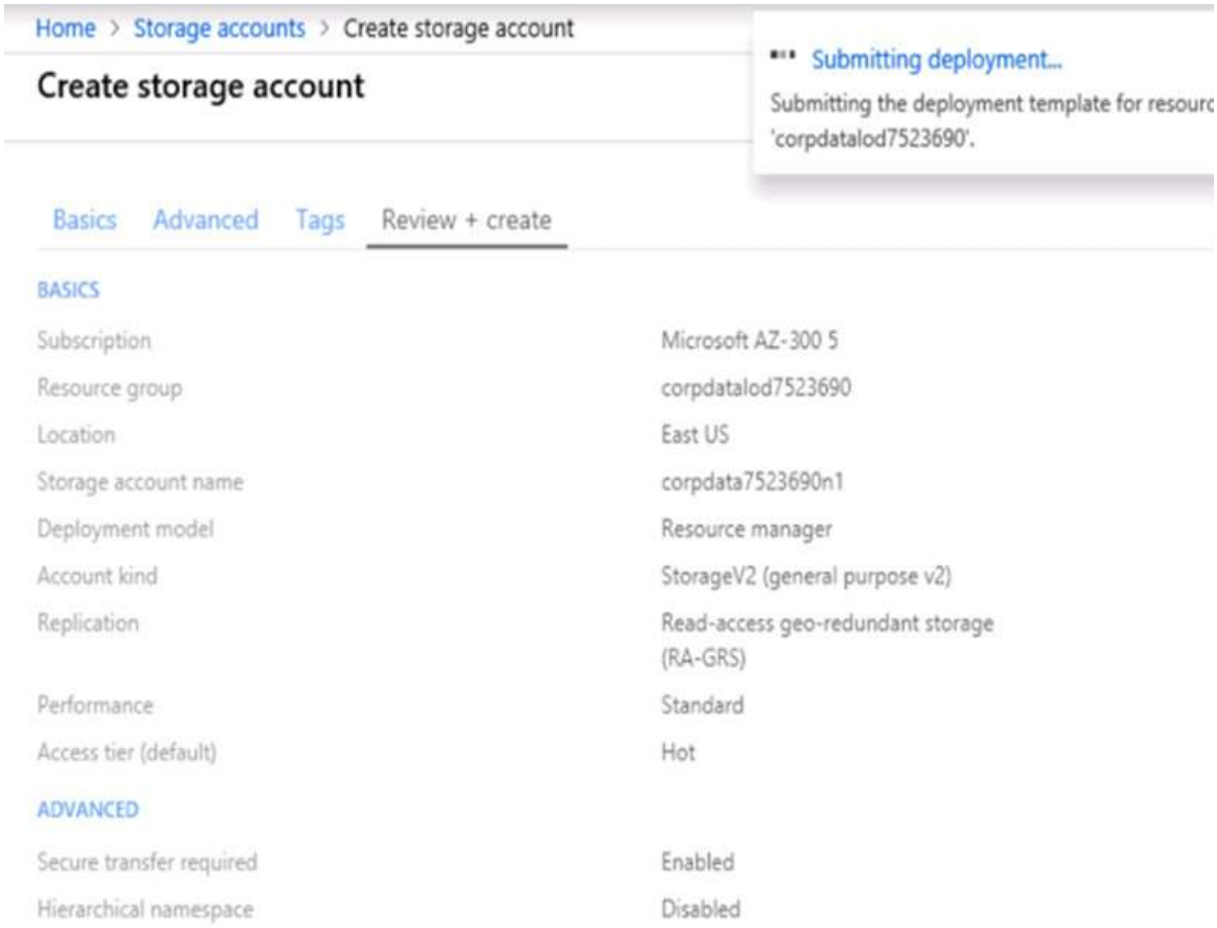

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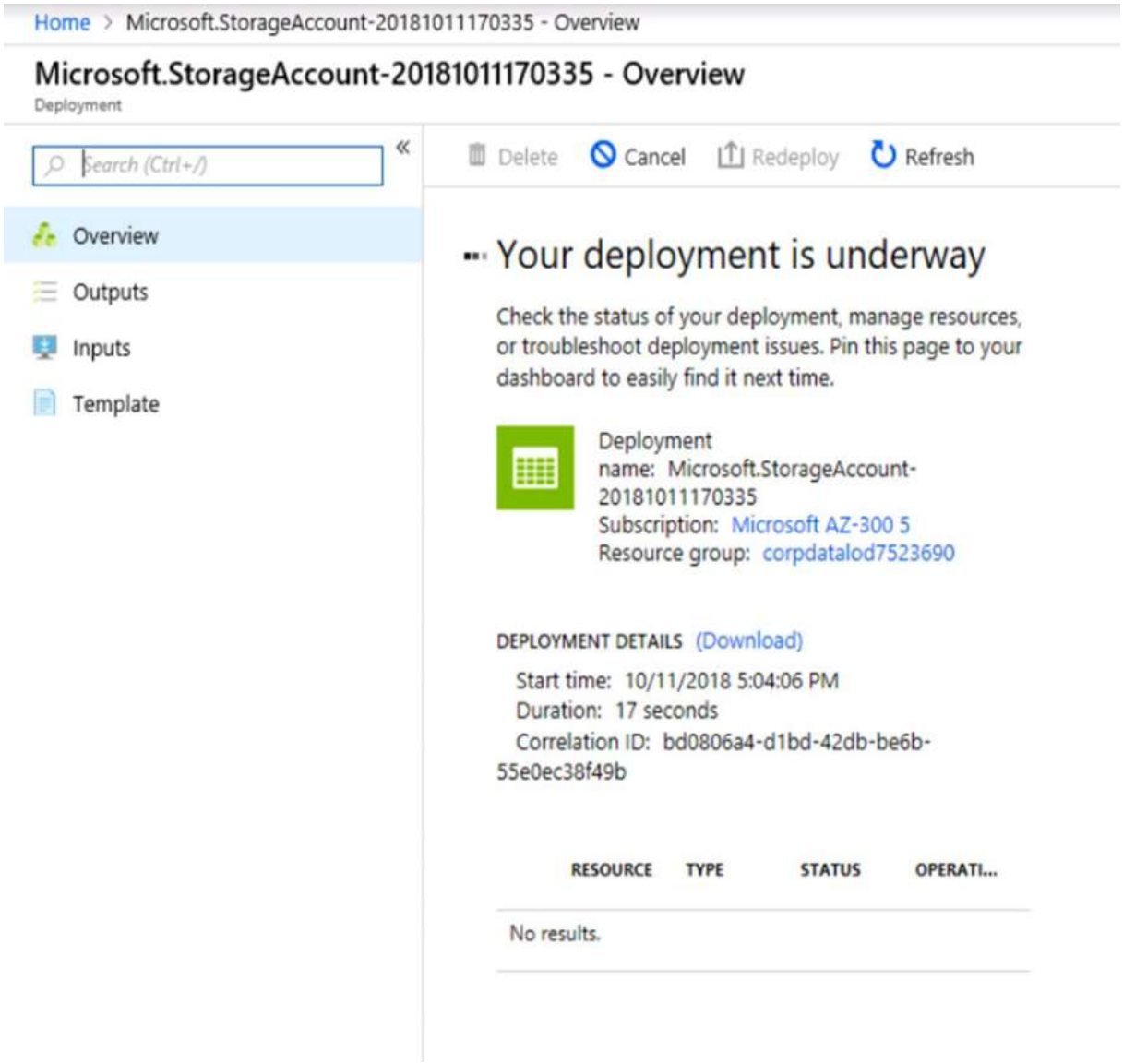

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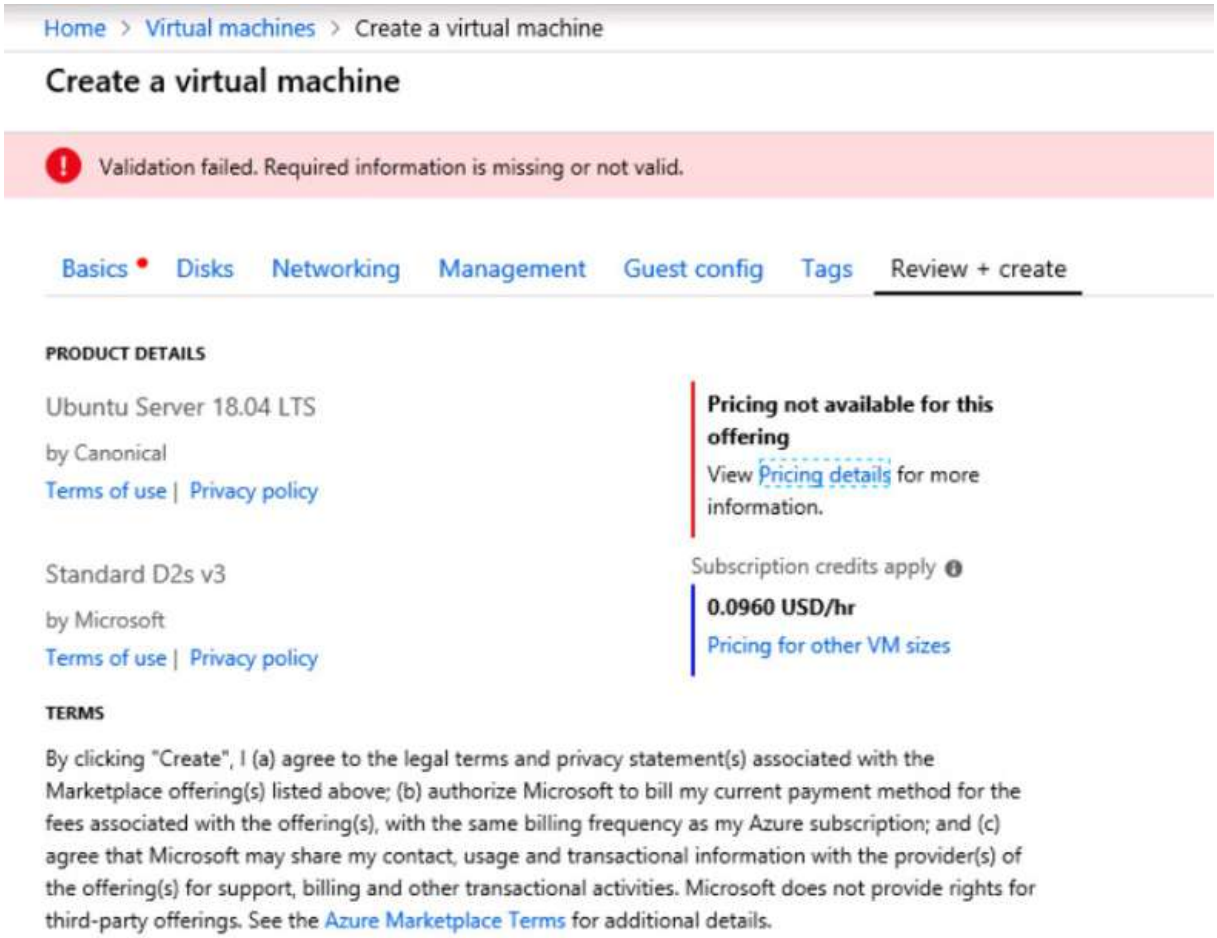

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To start the lab
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You plan to deploy an application gateway named appgw1015 to load balance internal IP traffic to the Azure virtual machines connected to subnet0.

You need to configure a virtual network named VNET1015 to support the planned application gateway.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Click Networking, Virtual Network, and select VNET1015.

Step 2:
Click Subnets, and Click +Add on the VNET1015 - Subnets pane that appears.

Step 3:
On the Subnets page, click +Gateway subnet at the top to open the Add subnet page.

Step 4:
Locate subnet0 and add it.

References:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-site-to-site-resource-manager-portal

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SIMULATION

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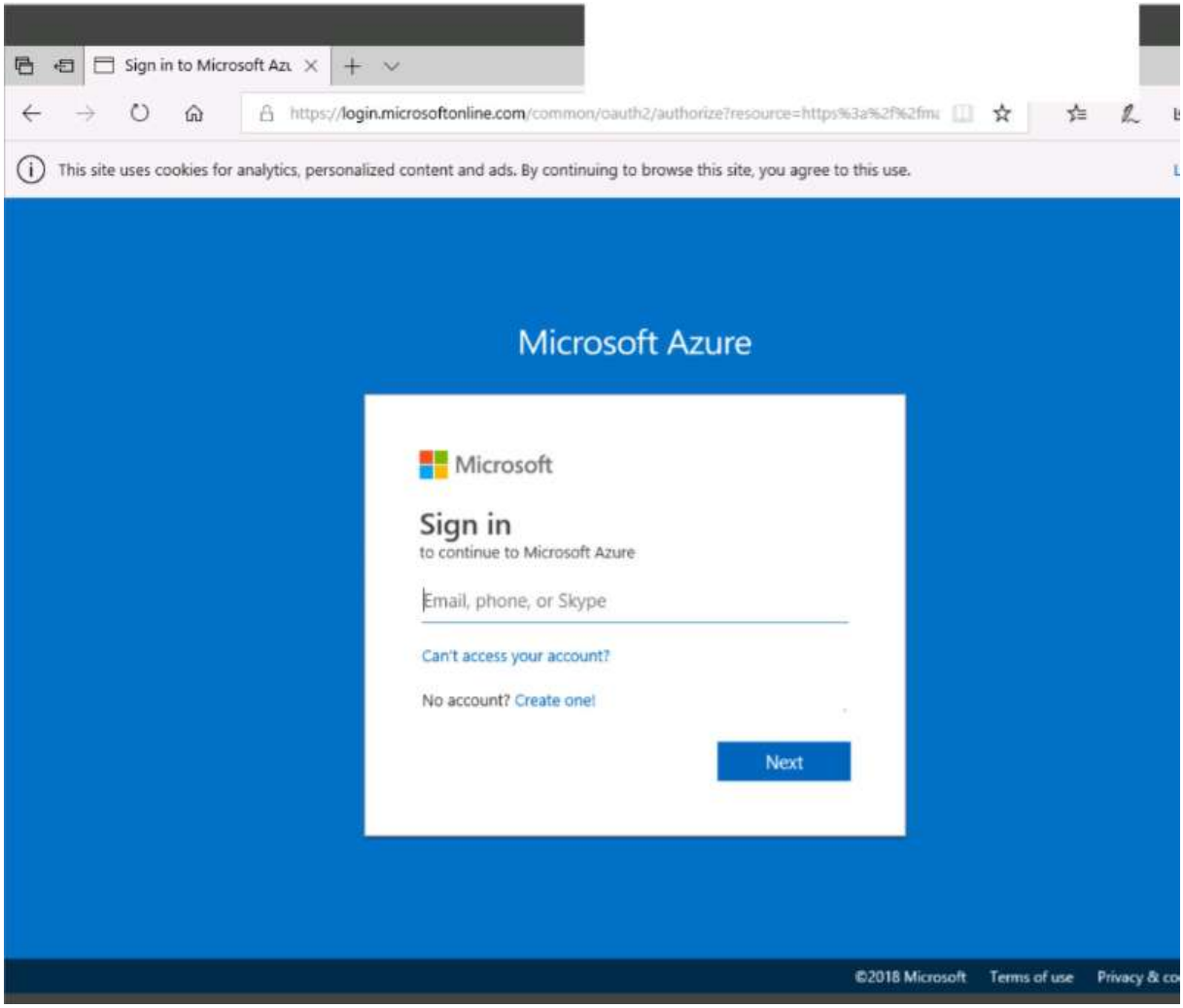

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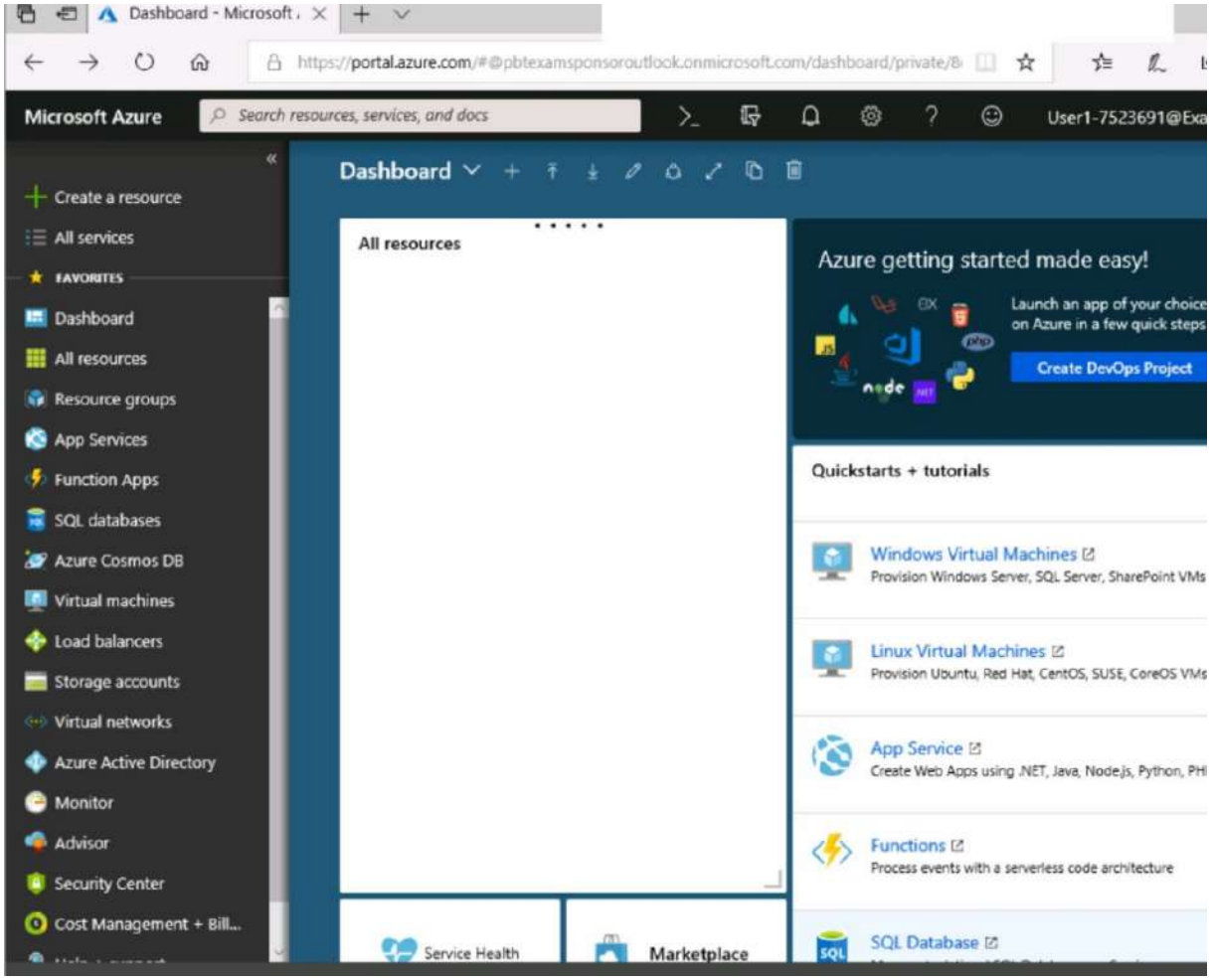

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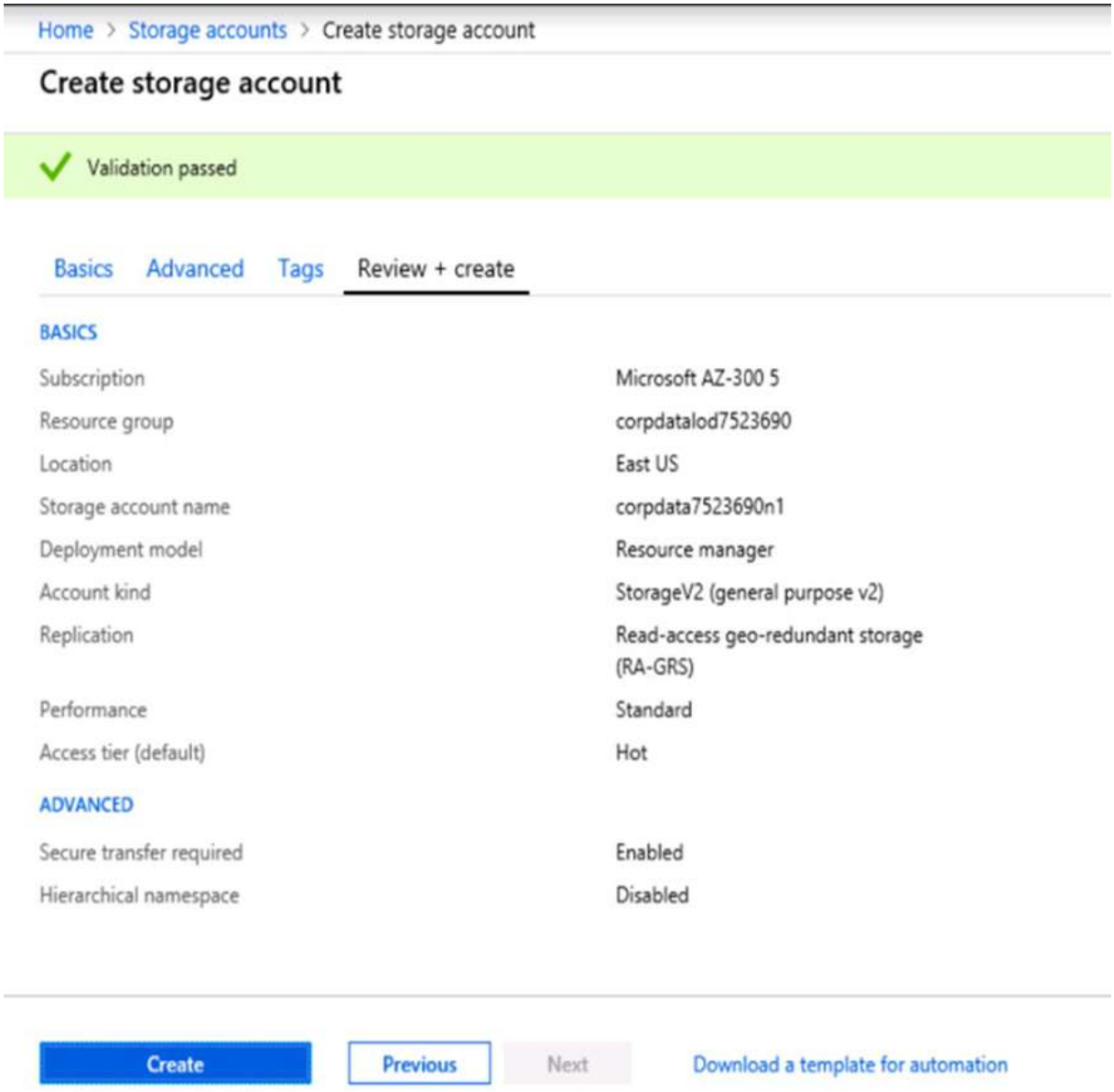

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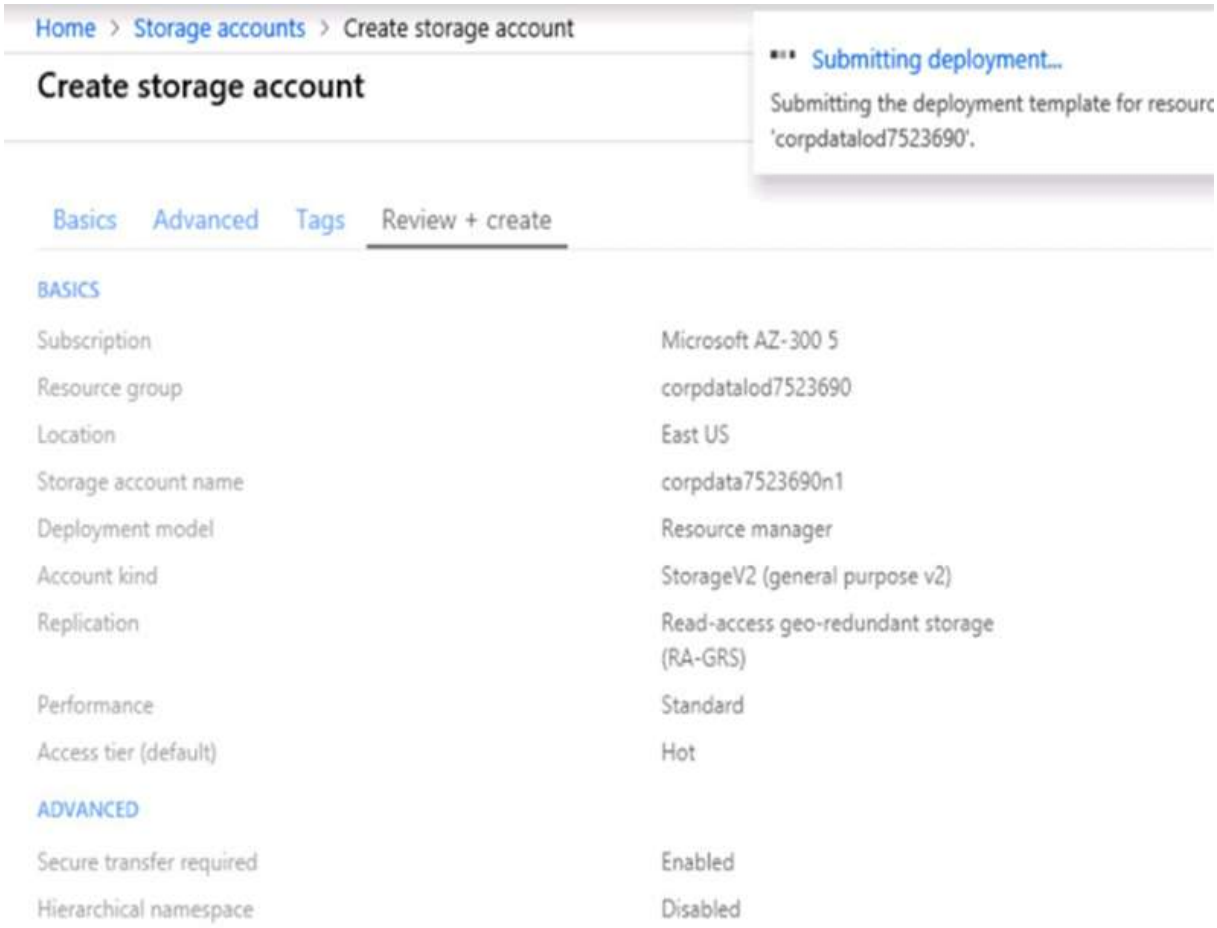

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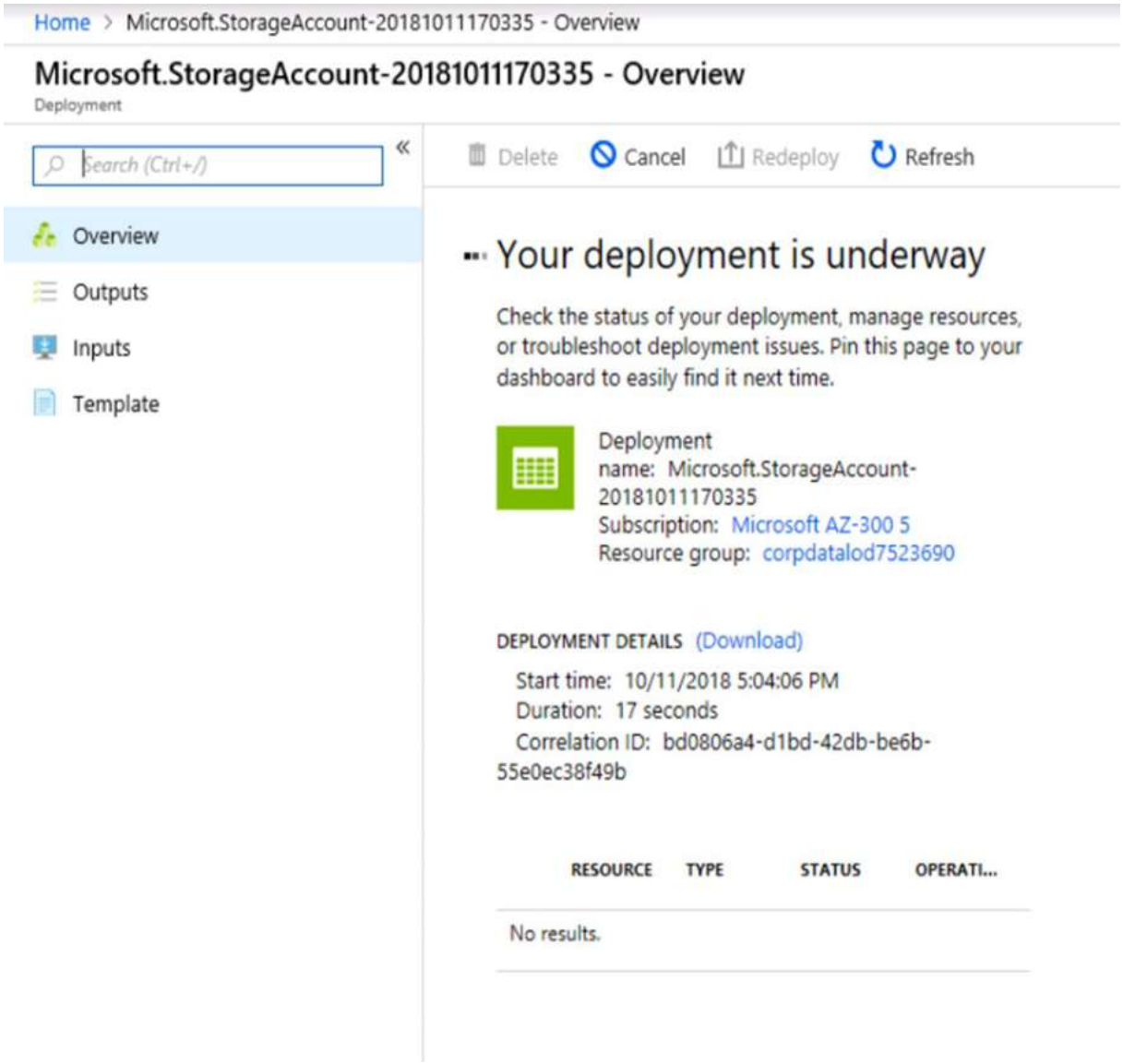

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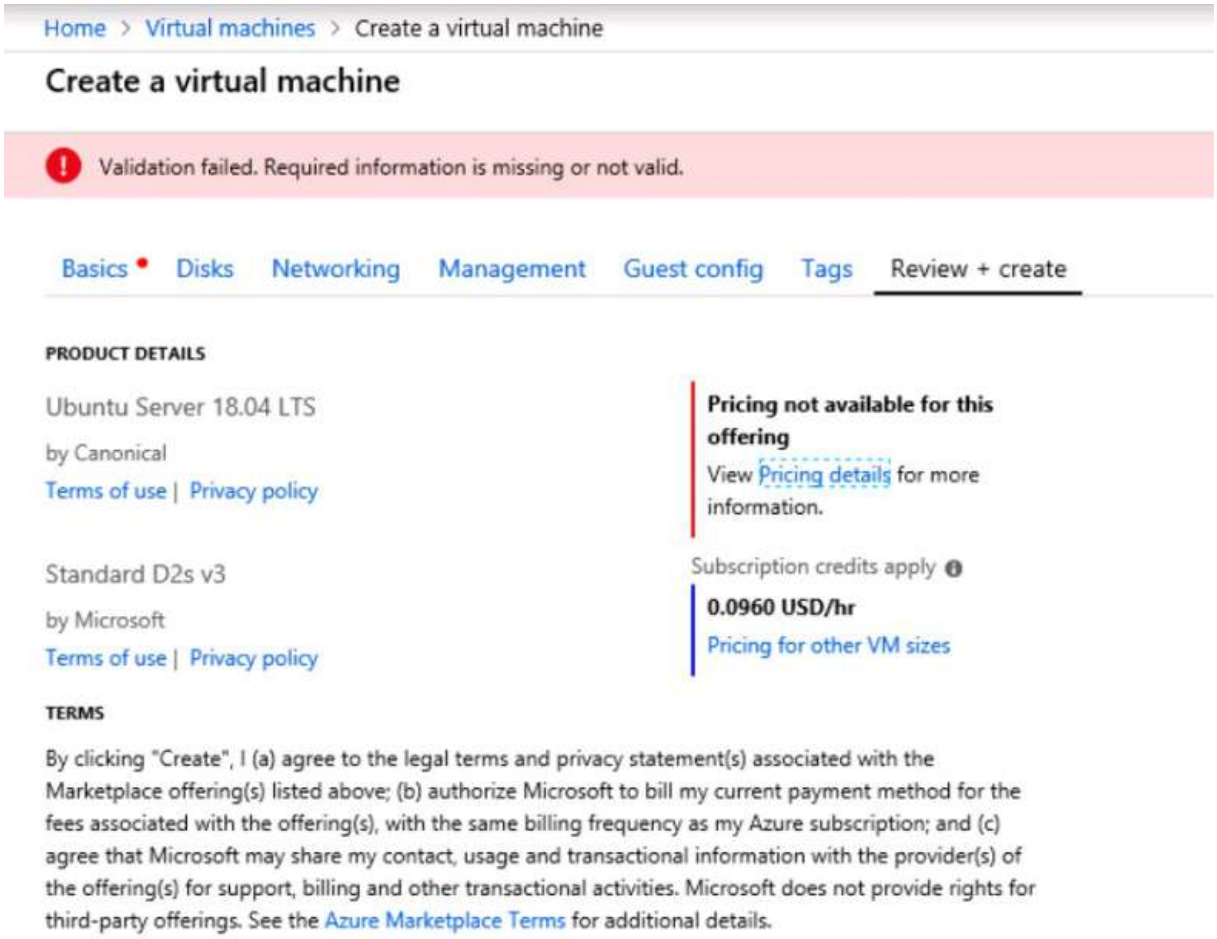

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To start the lab
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You plan to connect a virtual network named VNET1017 to your on-premises network by using both an Azure ExpressRoute and a site-to-site VPN connection.

You need to prepare the Azure environment for the planned deployment. The solution must maximize the IP address space available to Azure virtual machines.

What should you do from the Azure portal before you create the ExpressRoute and the VPN gateway?

Explanation/Reference

Explanation:
We need to create a Gateway subnet

Step 1:
Go to More Services > Virtual Networks

Step 2:
Then click on the VNET1017, and click on subnets. Then click on gateway subnet.

Step 3:
In the next window define the subnet for the gateway and click OK

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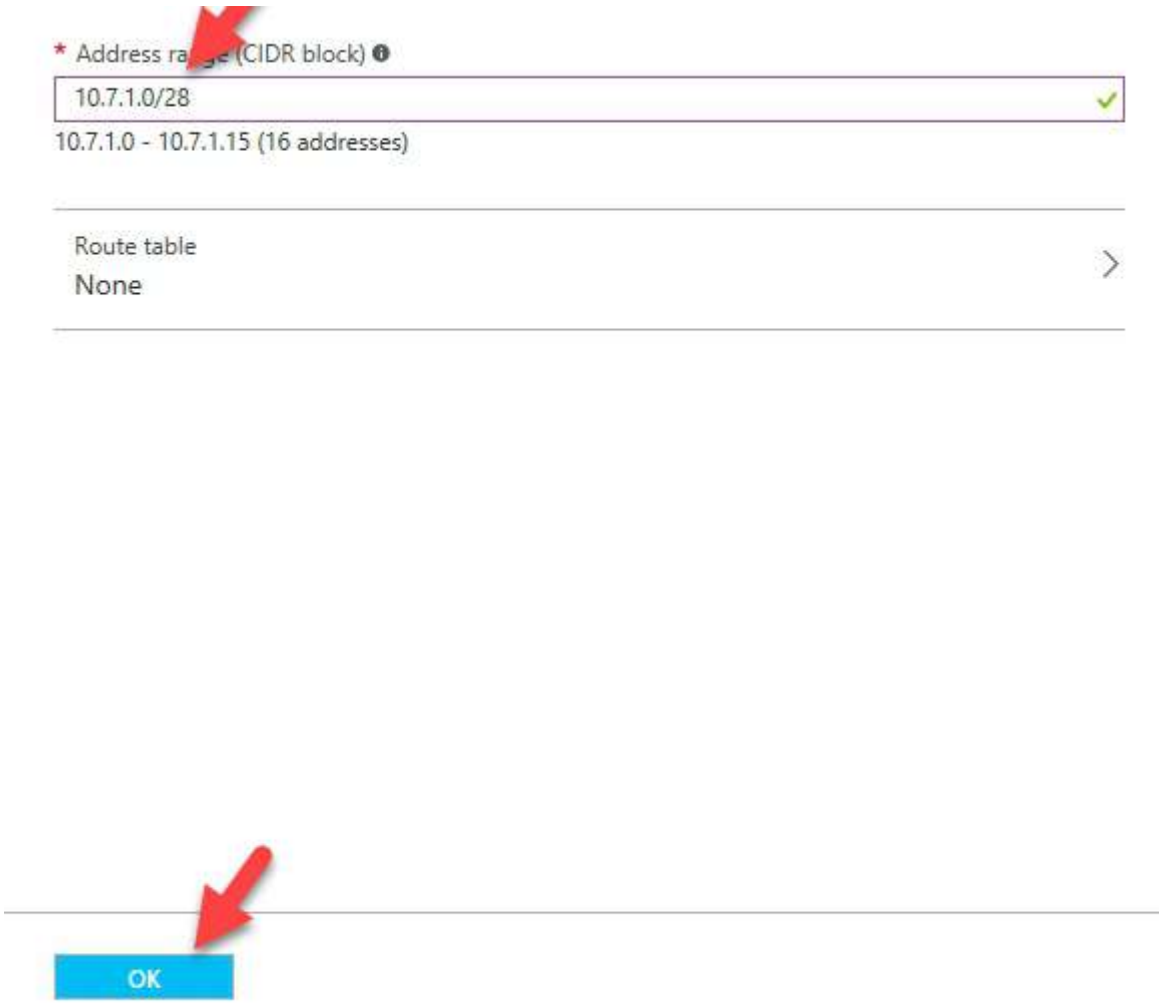

It is recommended to use /28 or /27 for gateway subnet.

As we want to maximize the IP address space we should use /27.

References:
https://blogs.technet.microsoft.com/canitpro/2017/06/28/step-by-step-configuring-a-site-to-site-vpn-gateway-between-azure-and-on-premise/

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Question 199

HOTSPOT

You have an Azure subscription named Subscription1 that contains a virtual network named VNet1.
You add the users in the following table.

User	Role
User1	Owner
User2	Security Admin
User3	Network Contributor

Which user can perform each configuration? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Add a subnet to VNet1:
- User1 only
- User3 only
- User1 and User3 only
- User2 and User3 only
- User1, User2, and User3

Assign a user the Reader role to VNet1:
- User1 only
- User2 only
- User3 only
- User1 and User2 only
- User2 and User3 only
- User1, User2, and User3

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Solution:

Answer Area

Add a subnet to VNet1:	User1 only User3 only User1 and User3 only User2 and User3 only User1, User2, and User3
Assign a user the Reader role to VNet1:	User1 only User2 only User3 only User1 and User2 only User2 and User3 only User1, User2, and User3

Explanation/Reference

Explanation:

Box 1: User1 only.
User1: The Owner Role lets you manage everything, including access to resources.
Not User3: The Network Contributor role lets you manage networks, but not access to them.

Box 2: User1, User2, and Users3
The Owner Role lets you manage everything, including access to resources.

The Security Admin role: In Security Center only: Can view security policies, view security states, edit security policies, view alerts and recommendations, dismiss alerts and recommendations.

Network Contributor role lets you manage networks, but not access to them. This includes Read roles and role assignments

Reference:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles

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Question 200

You have an Azure subscription that contains three virtual networks named VNet1, VNet2, and VNet3. VNet2 contains a virtual appliance named VM2 that operates as a router.

You are configuring the virtual networks in a hub and spoke topology that uses VNet2 as the hub network.

You plan to configure peering between VNet1 and VNet2 and between VNet2 and VNet3.

You need to provide connectivity between VNet1 and VNet3 through VNet2.

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

NOTE: Each correct selection is worth one point.

- ☐ On the peering connections, allow forwarded traffic
- ☐ Create a route filter
- ☒ On the peering connections, allow gateway transit
- ☐ Create route tables and assign the table to subnets
- ☒ On the peering connections, use remote gateways

Explanation/Reference

Explanation:
Allow gateway transit: Check this box if you have a virtual network gateway attached to this virtual network and want to allow traffic from the peered virtual network to flow through the gateway.

The peered virtual network must have the Use remote gateways checkbox checked when setting up the peering from the other virtual network to this virtual network.

Note: VNet2 is the hub network.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering#requirements-and-constraints

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Question 201

DRAG DROP

You have an Azure subscription that contains two virtual networks named VNet1 and VNet2. Virtual machines connect to the virtual networks.

The virtual networks have the address spaces and the subnets configured as shown in the following table.

Virtual network	Address space	Subnet	Peering
VNet1	10.1.0.0/16	10.1.0.0/24 10.1.1.0/26	VNet2
VNet2	10.2.0.0/16	10.2.0.0/24	VNet1

You need to add the address space of 10.33.0.0/16 to VNet1. The solution must ensure that the hosts on VNet1 and VNet2 can communicate.

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

Actions

- Remove peering between VNet1 and VNet2.
- Recreate peering between VNet1 and VNet2.
- On the peering connection in VNet1, allow gateway transit.
- Add the 10.33.0.0/16 address space to VNet1.
- On the peering conenction in VNet2, allow gateway transit.
- Create a new virtual network named VNet1.
- Remove VNet1.

Answer Area

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Solution:

Actions	Answer Area
Remove peering between VNet1 and VNet2.	Remove peering between VNet1 and VNet2.
Recreate peering between VNet1 and VNet2.	Add the 10.33.0.0/16 address space to VNet1.
On the peering connection in VNet1, allow gateway transit.	Recreate peering between VNet1 and VNet2.
Add the 10.33.0.0/16 address space to VNet1.	
On the peering conenction in VNet2, allow gateway transit.	
Create a new virtual network named VNet1.	
Remove VNet1.	

Explanation/Reference

Explanation:

Step 1: Remove peering between Vnet1 and VNet2.
You can't add address ranges to, or delete address ranges from a virtual network's address space once a virtual network is peered with another virtual network. To add or remove address ranges, delete the peering, add or remove the address ranges, then re-create the peering.

Step 2: Add the 10.44.0.0/16 address space to VNet1.

Step 3: Recreate peering between VNet1 and VNet2

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering

Question 202

HOTSPOT

You are designing a virtual network to support a web application. The web application uses Blob storage to store large images. The web application will be deployed to an Azure App Service Web App.

You have the following requirements:

- Secure all communications by using Secured Socket layer (SSL)

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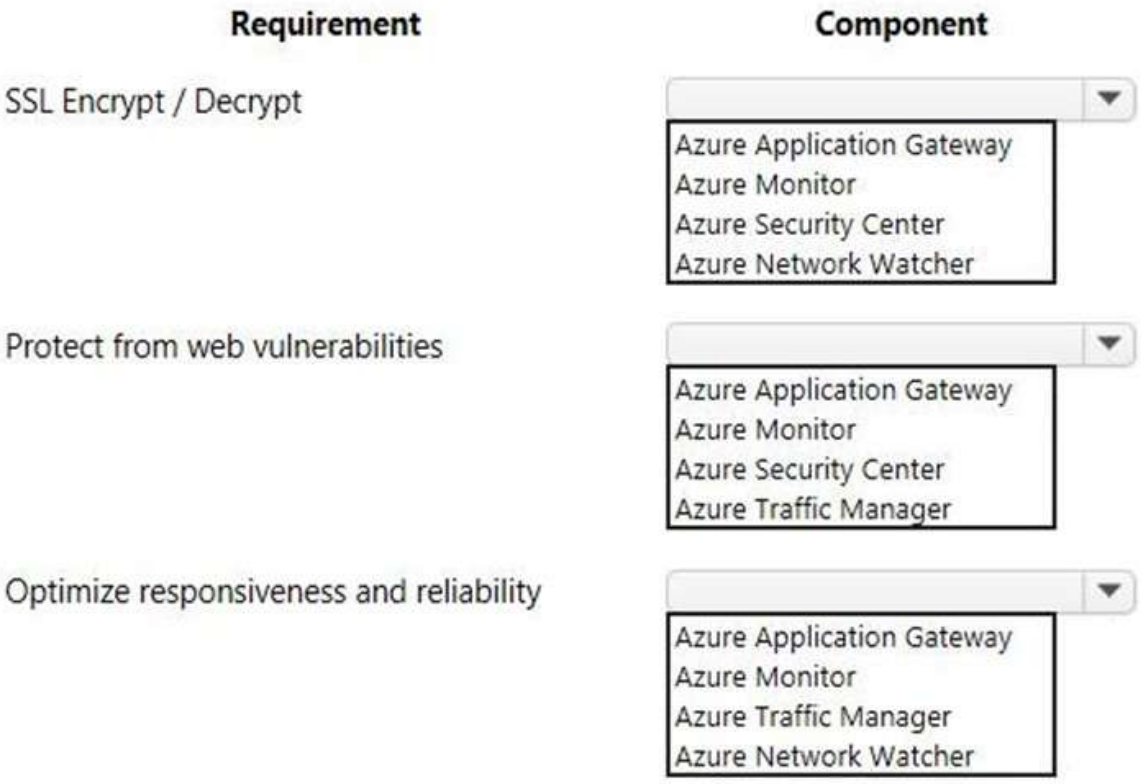
- SSL encryption and decryption must be processed efficiently to support high traffic load on the web application
- Protect the web application from web vulnerabilities and attacks without modification to backend code
- Optimize web application responsiveness and reliability by routing HTTP request and responses to the endpoint with the lowest network latency for the client.

You need to configure the Azure components to meet the requirements.

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

NOTE: Each correct selection is worth one point.

Answer Area



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Solution:

Answer Area

Requirement	Component
SSL Encrypt / Decrypt	Azure Application Gateway Azure Monitor Azure Security Center Azure Network Watcher
Protect from web vulnerabilities	Azure Application Gateway Azure Monitor Azure Security Center Azure Traffic Manager
Optimize responsiveness and reliability	Azure Application Gateway Azure Monitor Azure Traffic Manager Azure Network Watcher

Explanation/Reference

Explanation:

Box 1: Azure application Gateway
Azure Application Gateway supports end-to-end encryption of traffic. Application Gateway terminates the SSL connection at the application gateway. The gateway then applies the routing rules to the traffic, re-encrypts the packet, and forwards the packet to the appropriate back-end server based on the routing rules defined. Any response from the web server goes through the same process back to the end user.

Box 2: Azure Security Center
Azure Security Center is a unified infrastructure security management system that strengthens the security posture of your data centers, and provides advanced threat protection across your hybrid workloads in the cloud - whether they're in Azure or not - as well as on premises.

Box 3: Azure Traffic Manager
Azure Traffic Manager is a DNS-based traffic load balancer that enables you to distribute traffic optimally to services across global Azure regions, while providing high availability and responsiveness.

References:
https://docs.microsoft.com/en-us/azure/application-gateway/application-gateway-end-to-end-ssl-

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powershell

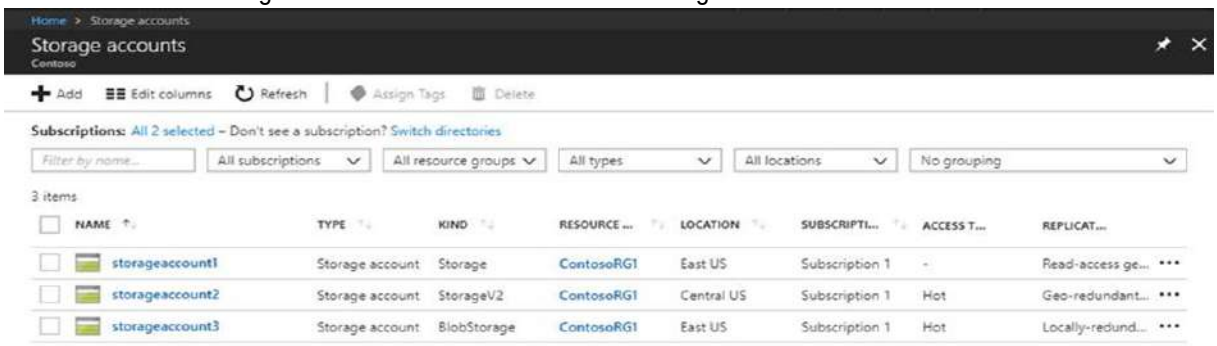
https://docs.microsoft.com/en-us/azure/traffic-manager/traffic-manager-overview

https://docs.microsoft.com/en-us/azure/security-center/security-center-intro

Question 203

HOTSPOT

You have Azure Storage accounts as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

You can use **[answer choice]** for Azure Table Storage.

- storageaccount1 only
- storageaccount2 only
- storageaccount3 only
- storageaccount1 and storageaccount2 only
- storageaccount2 and storageaccount3 only

You can use **[answer choice]** for Azure Blob storage.

- storageaccount3 only
- storageaccount2 and storageaccount3 only
- storageaccount1 and storageaccount3 only
- all the storage accounts

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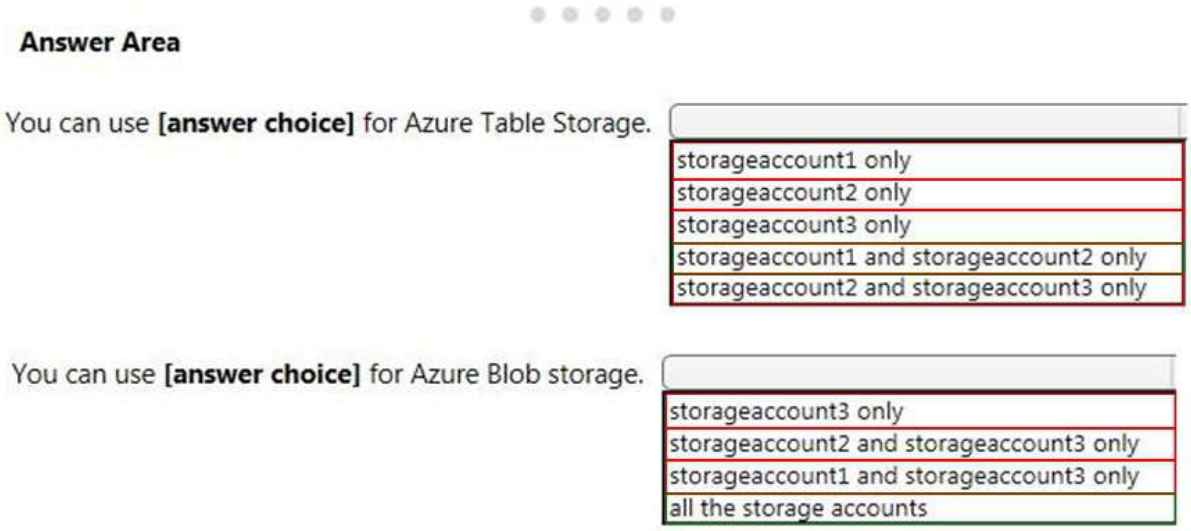
Solution:



Explanation/Reference

Explanation:

Note: The three different storage account options are: General-purpose v2 (GPv2) accounts, General-purpose v1 (GPv1) accounts, and Blob storage accounts.

- General-purpose v2 (GPv2) accounts are storage accounts that support all of the latest features for blobs, files, queues, and tables.
- Blob storage accounts support all the same block blob features as GPv2, but are limited to supporting only block blobs.
- General-purpose v1 (GPv1) accounts provide access to all Azure Storage services, but may not have the latest features or the lowest per gigabyte pricing.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-account-options

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Question 204

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are planning to create a virtual network that has a scale set that contains six virtual machines (VMs).

A monitoring solution on a different network will need access to the VMs inside the scale set.

You need to define public access to the VMs.

Solution: Deploy a standalone VM that has a public IP address to the virtual network.

Does the solution meet the goal?

- ☒ Yes
- ☐ No

Question 205

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are planning to create a virtual network that has a scale set that contains six virtual machines (VMs).

A monitoring solution on a different network will need access to the VMs inside the scale set.

You need to define public access to the VMs.

Solution: Implement an Azure Load Balancer.

Does the solution meet the goal?

- ☐ Yes
- ☒ No

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Question 206

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are planning to create a virtual network that has a scale set that contains six virtual machines (VMs).

A monitoring solution on a different network will need access to the VMs inside the scale set.

You need to define public access to the VMs.

Solution: Design a scale set to automatically assign public IP addresses to all VMs.

Does the solution meet the goal?

- ☐ Yes
- ☒ No

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Question 207

HOTSPOT

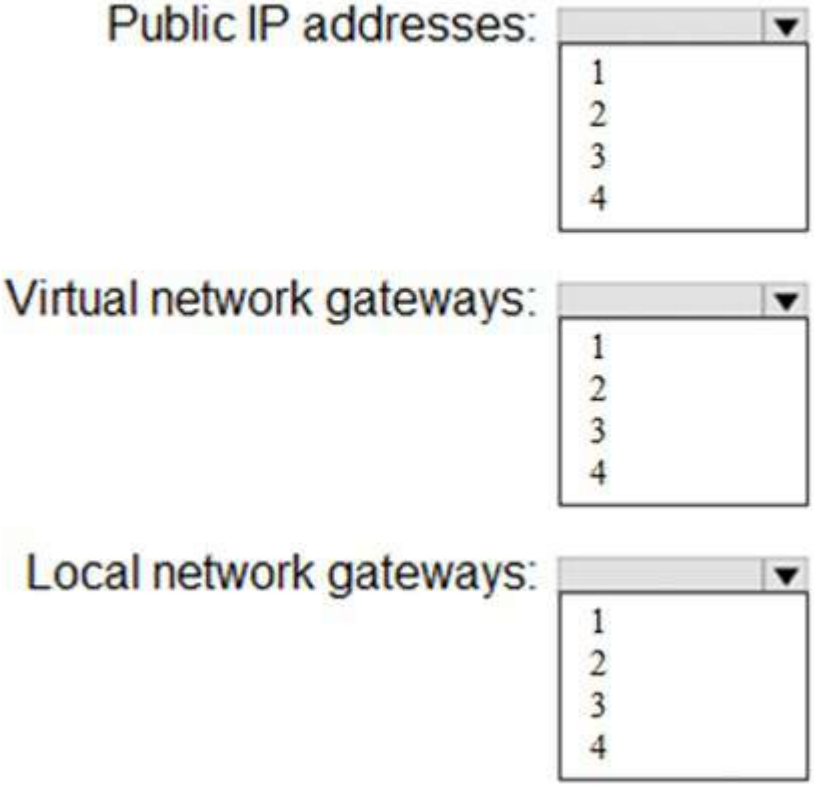
You have an on-premises data center and an Azure subscription. The data center contains two VPN devices. The subscription contains an Azure virtual network named VNet1. VNet1 contains a gateway subnet.

You need to create a site-to-site VPN. The solution must ensure that if a single instance of an Azure VPN gateway fails, or a single on-premises VPN device fails, the failure will not cause an interruption that is longer than two minutes.

What is the minimum number of public IP addresses, virtual network gateways, and local network gateways required in Azure? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area:



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Answer Area:

Public IP addresses: 1 / 2 / 3 / 4

Virtual network gateways: 1 / 2 / 3 / 4

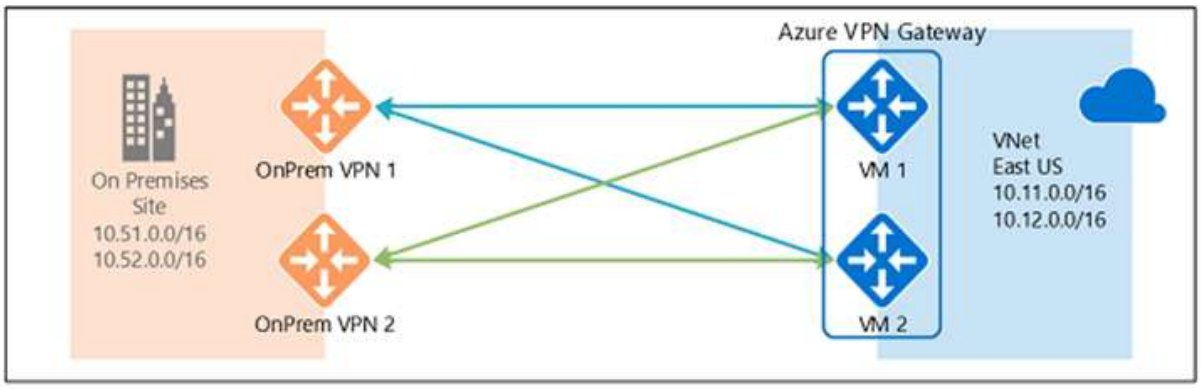
Local network gateways: 1 / 2 / 3 / 4

Solution:

Explanation/Reference

Explanation:

Box 1: 4
Two public IP addresses in the on-premises data center, and two public IP addresses in the VNET.
The most reliable option is to combine the active-active gateways on both your network and Azure, as shown in the diagram below.



Box 2: 2
Every Azure VPN gateway consists of two instances in an active-standby configuration. For any planned maintenance or unplanned disruption that happens to the active instance, the standby

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instance would take over (failover) automatically, and resume the S2S VPN or VNet-to-VNet connections.

Box 3: 2
Dual-redundancy: active-active VPN gateways for both Azure and on-premises networks

References:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-highlyavailable

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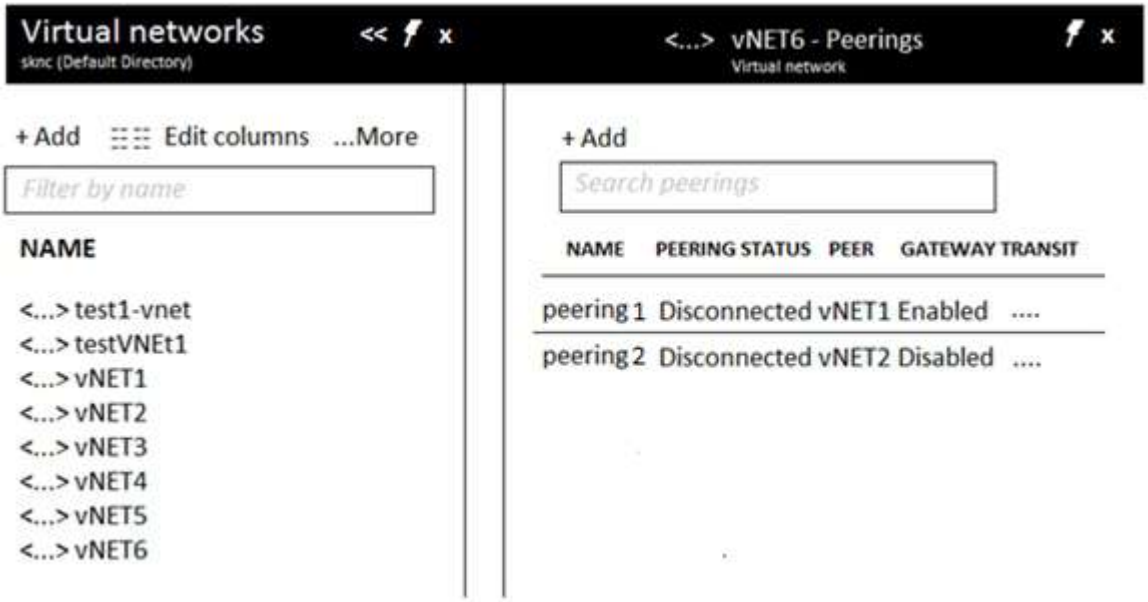
Question 208

HOTSPOT

You have peering configured as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

Hosts on vNET6 can communicate with hosts on **[answer choice].**

- vNET6 only
- vNET6 and vNET 1 only
- vNET6, vNET1, and vNET2 only
- all the virtual networks in the subscription

To change the status of the peering connection to vNET1 to **Connected**, you must first **[answer choice].**

- add a service endpoint
- add a subnet
- delete peering1
- modify the address space

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Solution:

Answer Area

Hosts on vNET6 can communicate with hosts on **[answer choice].**	vNET6 only vNET6 and vNET 1 only vNET6, vNET1, and vNET2 only all the virtual networks in the subscription
To change the status of the peering connection to vNET1 to **Connected**, you must first **[answer choice].**	add a service endpoint add a subnet delete peering1 modify the address space

Explanation/Reference

Explanation:

Box 1: vNET6 only

Box 2: Modify the address space
The virtual networks you peer must have non-overlapping IP address spaces.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-manage-peering#requirements-and-constraints

Question 209

You have an Azure Kubernetes Service (AKS) cluster named Clus1 in a resource group named RG1.

An administrator plans to manage Clus1 from an Azure AD-joined device.

You need to ensure that the administrator can deploy the YAML application manifest file for a container application.

You install the Azure CLI on the device.

Which command should you run next?

- ☐ `kubectl get nodes`
- ☐ `az aks install-cli`
- ☒ `kubectl apply –f appl.yaml`
- ☐ `az aks get-credentials --resource-group RG1 --name Clus1`

Explanation/Reference

Explanation:
kubectl apply –f appl.yaml applies a configuration change to a resource from a file or stdin.

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Incorrect Answers:
A: kubectl get nodes gets a list of all nodes.
B: az aks install-cli download and install the Kubernetes command-line tool.
D: az aks get-credentials gets access credentials for a managed Kubernetes cluster

References:
https://kubernetes.io/docs/reference/kubectl/overview/

https://docs.microsoft.com/en-us/cli/azure/aks

Question 210

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are planning to create a virtual network that has a scale set that contains six virtual machines (VMs).

A monitoring solution on a different network will need access to the VMs inside the scale set.

You need to define public access to the VMs.

Solution: Use Remote Desktop Protocol (RDP) to connect to the VM in the scale set.

Does the solution meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Instead, deploy a standalone VM that has a public IP address to the virtual network.

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Question 211

You have an Azure subscription that contains the virtual networks shown in the following table.

Name	Address space	Location	Number of Azure virtual machines
VNET1	10.1.0.0/16	West US	100
VNET2	172.16.0.0/16	East US	400

You need to recommend a connectivity solution that will enable the virtual machines on VNET1 and VNET2 to communicate through the Microsoft backbone infrastructure.

What should you include in the recommendation?

- ☐ Azure ExpressRoute
- ☒ peering
- ☐ a site-to-site VPN
- ☐ a point-to-site VPN

Explanation/Reference

Explanation:
Virtual network peering enables you to seamlessly connect Azure virtual networks. Once peered, the virtual networks appear as one, for connectivity purposes. The traffic between virtual machines in the peered virtual networks is routed through the Microsoft backbone infrastructure, much like traffic is routed between virtual machines in the same virtual network, through private IP addresses only. Azure supports:

- VNet peering - connecting VNets within the same Azure region
- Global VNet peering - connecting VNets across Azure regions

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-peering-overview

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Question 212

You create an Azure virtual machine named VM1 in a resource group named RG1.

You discover that VM1 performs slower than expected.

You need to capture a network trace on VM1.

What should you do?

- ☐ From Diagnostic settings for VM1, configure the performance counters to include network counters.
- ☐ From the VM1 blade, configure Connection troubleshoot.
- ☒ From the VM1 blade, install performance diagnostics and run advanced performance analysis
- ☐ From Diagnostic settings for VM1, configure the log level of the diagnostic agent.

Explanation/Reference

Explanation:
The performance diagnostics tool helps you troubleshoot performance issues that can affect a Windows or Linux virtual machine (VM). Supported troubleshooting scenarios include quick checks on known issues and best practices, and complex problems that involve slow VM performance or high usage of CPU, disk space, or memory.

Advanced performance analysis, included in the performance diagnostics tool, includes all checks in the performance analysis, and collects one or more of the traces, as listed in the following sections. Use this scenario to troubleshoot complex issues that require additional traces. Running this scenario for longer periods will increase the overall size of diagnostics output, depending on the size of the VM and the trace options that are selected.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/troubleshooting/performance-diagnostics

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Question 213

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Region
RG1	East US
RG2	West US

The subscription contains the storage accounts shown in the following table.

Name	Resource group	Location	Account kind
Storage1	RG1	West US	BlobStorage
Storage2	RG2	West US	Storage (general purpose v1)
Storage3	RG1	East US	Storage V2 (general purpose v2)

You create a Recovery Services vault named Vault1 in RG1 in the West US location.

You need to identify which storage accounts can be used to archive the diagnostics logs of Vault1.

Which storage accounts should you identify?

- ☐ Storage1 only
- ☐ Storage2 only
- ☐ Storage3 only
- ☒ Storage1 or Storage2 only
- ☒ Storage1 or Storage3 only

Explanation/Reference

Explanation:
The same region or the same resource group.

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Question 214

HOTSPOT

You have an Azure subscription.

You plan to deploy two Azure web apps that have the requirements shown in the following table.

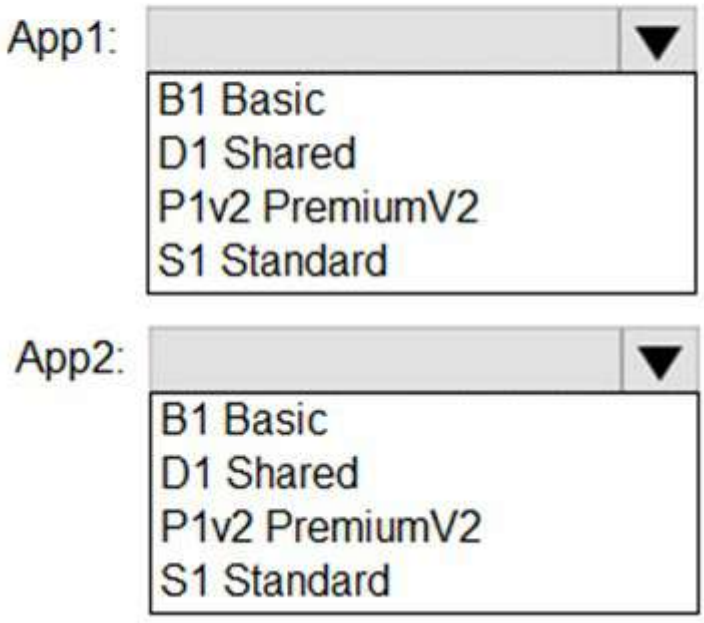
Name	Requirement
App1	• Accessible by using a URL of https://app1.contoso.com • Scalable to two instances during busy periods • Supports two deployment slots
App2	• Accessible by using a URL of https://app2.contoso.com • Scalable to 15 instances during busy periods • Supports three deployment slots

You need to select the App Service plans for the web apps. The solution must minimize costs.

Which App Service plan should you select for each web app? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



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Answer Area

App1:

- B1 Basic
- D1 Shared
- P1v2 PremiumV2
- S1 Standard

App2:

- B1 Basic
- D1 Shared
- P1v2 PremiumV2
- S1 Standard

Solution:

Explanation/Reference

Explanation:

	FREE	SHARED	BASIC	STANDARD	PREMIUM	ISOLATED *	APP SERVICE LINUX	CONSUMPTION PLAN (FUNCTIONS)
– Limits **								
Apps	10	100	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	500
Disk space	1 GB	1 GB	10 GB	50 GB	250 GB	1 TB		
Max instances			Up to 3	Up to 10	Up to 20	Up to 100		
SLA			99.95%	99.95%	99.95%	99.95%		
Functions on App Service Plans *			✓	✓	✓	✓		
– App Deployment								
Continuous Deployment *	✓	✓	✓	✓	✓	✓ 3	✓	✓
Deployment Slots				✓	✓	✓	✓	

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

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Question 215

You have an Azure subscription.

You create a custom role in Azure by using the following Azure Resource Manager template.

```
{
  "Name": "Role1",
  "Id": "88888888-8888-8888-8888-888888888888",
  "IsCustom" : true,
  "Description" : "Role1 Description",
  "Actions" : [
     "Microsoft.Storage/*/read",
     "Microsoft.Network/*/read",
     "Microsoft.Compute/*/read",
     "Microsoft.Compute/virtualMachines/start/action",
     "Microsoft.Compute/virtualMachines/restart/action",
     "Microsoft.Authorization/*/read",
     "Microsoft.ResourceHealth/availabilityStatuses/read",
     "Microsoft.Resources/subscriptions/resourceGroups/read",
     "Microsoft.Insights/alertRules/*",
     "Microsoft.Insights/diagnosticSettings/*",
     "Microsoft.Support/*"
 ],
  "NotActions": [],
  "DataActions": [],
  "NotDataActions" : [],
  "AssignableScopes" : [
     "/subscriptions/981dd4bc-8cf4-46fc-9513-0c599648b44b
 ]
}
```

You assign the role to a user named User1.

Which action can User1 perform?

- ☐ Delete virtual machines.
- ☐ Create resource groups.
- ☐ Create virtual machines.
- ☒ Create support requests.

Explanation/Reference

Explanation:
The "Microsoft.Support/*" operation will allow the user to create support tickets.

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/tutorial-custom-role-powershell

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Question 216

A company plans to use third-party application software to perform complex data analysis processes. The software will use up to 500 identical virtual machines (VMs) based on an Azure Marketplace VM image.

You need to design the infrastructure for the third-party application server. The solution must meet the following requirements:

- The number of VMs that are running at any given point in time must change when the user workload changes.
- When a new version of the application is available in Azure Marketplace it must be deployed without causing application downtime.
- Use VM scale sets.
- Minimize the need for ongoing maintenance.

Which two technologies should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ single storage account
- ☒ autoscale
- ☐ single placement group
- ☒ managed disks

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Question 217

HOTSPOT

You have an Azure subscription that contains the storage account shown in the following table.

Name	Kind	Performance tier	Replication	Location
storage1	StorageV2	Premium	Locally-redundant storage (LRS)	East US
storage2	Storage	Standard	Geo-redundant storage (GRS)	UK West
storage3	BlobStorage	Standard	Locally-redundant storage (LRS)	North Europe

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
storage1 can host Azure file shares.	○	○
There are six copies of the data in storage2.	○	○
storage3 can be converted to a GRS account.	○	○

Solution:

Answer Area

Statements	Yes	No
storage1 can host Azure file shares.	○	○
There are six copies of the data in storage2.	○	○
storage3 can be converted to a GRS account.	○	○

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Explanation/Reference

Explanation:

Box 1: No
Azure Files supports two storage tiers: premium and standard. Standard file shares are created in general purpose (GPv1 or GPv2) storage accounts and premium file shares are created in FileStorage storage accounts.
You cannot create Azure file shares from Blob storage accounts or premium general purpose (GPv1 or GPv2) storage accounts. Standard Azure file shares must created in standard general purpose accounts only and premium Azure file shares must be created in FileStorage storage accounts only. Premium general purpose (GPv1 and GPv2) storage accounts are for premium page blobs only.

Box 2: Yes
Geo-redundant storage (GRS) brings additional redundancy to the data storage over both LRS or ZRS. Along with the three copies of your data stored within a single region, a further three copies are stored in the twinned Azure region. So using GRS means you get all the features of the LRS storage within your primary zone, but you also get a second LRS data storage in a neighbouring Azure region. This data is updated asynchronously, so there is a small lag between the 2 data sets, but for most cases this is acceptable.

Box 3: Yes
Blob Storage Standard can be used both LRS and GRS.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-faq

https://www.skylinesacademy.com/blog/2019/7/31/azure-storage-replication

https://docs.microsoft.com/en-us/azure/storage/common/storage-introduction

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Question 218

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HOTSPOT

You create and save an Azure Resource Manager template named Template1 that includes the following four sections.

Section1.

```
{
"$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
"contentVersion": "1.0.0.0",
"parameters" "{
   "windowsOSVersion": {
     "defaultValue": "2019-Datacenter",
     "allowedValues": [
          "2012-Datacenter",
          "2012-R2-Datacenter",
          "2016-Datacenter",
          "2019-Datacenter"
     ],
     }
},
```

```
      "variables": {
           "windowsOSVersion": "2012-Datacenter",
```

Section2.

```
      },
      "resources": [
         {
         "type": "Microsoft.Compute/virtualMachines",
```

Section3.

Section4.

```
"storageProfile": {
     "imageReference": {
          "publisher": "MicrosoftWindowsServer",
          "offer": "WindowsServer",
          "sku": "2012-R2-Datacenter",
          "version": "latest"
          },
```

You deploy Template1.

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
Windows Server 2012 R2 Datacenter will be deployed to the Azure virtual machine.	O	O
A custom image of Windows Server will be deployed.	O	O
During the deployment of Template1, an administrator will be prompted to select a version of Windows Server.	O	O

Solution:

Answer Area

Statements	Yes	No
Windows Server 2012 R2 Datacenter will be deployed to the Azure virtual machine.	O	O
A custom image of Windows Server will be deployed.	O	O
During the deployment of Template1, an administrator will be prompted to select a version of Windows Server.	O	O

Explanation/Reference

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Question 219

You have an Azure subscription that contains the storage accounts shown in the following table.

Name	Account kind	Size
contosostorage1	General Purpose v1	15 TB
contosostorage2	General Purpose v1	1 TB
contosostorage3	General Purpose v2	15 TB
contosostorage4	General Purpose v2	1 TB
contosostorage5	blobstorage	5 TB

All storage accounts contain blobs only.

You need to implement several lifecycle management rules for all storage accounts.

What should you do first?

- ☒ Upgrade contosostorage1 and contosostorage2 to General Purpose V2 accounts.
- ☐ Move 5 TB of blob data from contosostorage3 to contosostorage4.
- ☐ Move 5 TB of blob data from contosostorage1 to contosostorage2.
- ☐ Recreate contosostorage5 as a General Purpose V2 account.

Explanation/Reference

Explanation:
Microsoft recommends that you use a general-purpose v2 storage account for most scenarios. You can easily upgrade a general-purpose v1 or an Azure Blob storage account to a general-purpose v2 account with no downtime and without the need to copy data.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-scalability-targets

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Question 220

HOTSPOT

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Region
RG1	East US
RG2	West US

RG1 contains the virtual machines shown in the following table.

Name	Region
VM1	West US
VM2	West US
VM3	West US
VM4	West US

RG2 contains the virtual machines shown in the following table.

Name	Region
VM5	East US 2
VM6	East US 2
VM7	West US
VM8	West US 2

All the virtual machines are configured to use premium disks and are accessible from the Internet.

VM1 and VM2 are in an availability set named AVSET1. VM3 and VM4 are in the same availability zone and are in an availability set named AVSET2. VM5 and VM6 are in different availability zones.

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
VM1 is eligible for a Service Level Agreement (SLA) of 99,95 percent.	○	○
VM3 is eligible for a Service Level Agreement (SLA) of 99,99 percent.	○	○
VM5 is eligible for a Service Level Agreement (SLA) of 99,99 percent.	○	○

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Solution:

Answer Area

Statements	Yes	No
VM1 is eligible for a Service Level Agreement (SLA) of 99,95 percent.	○	○
VM3 is eligible for a Service Level Agreement (SLA) of 99,99 percent.	○	○
VM5 is eligible for a Service Level Agreement (SLA) of 99,99 percent.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
VM1 and VM2 are in an available set named AVSET1.
For all Virtual Machines that have two or more instances deployed in the same Availability Set, we [Microsoft] guarantee you will have Virtual Machine Connectivity to at least one instance at least 99.95% of the time.

Box 2: No
VM3 and VM4 are in the same availability zone and are in an availability set named AVSET2.

Box 3: Yes
VM5 and VM6 are in different availability zones.

For all Virtual Machines that have two or more instances deployed across two or more Availability Zones in the same Azure region, we [Microsoft] guarantee you will have Virtual Machine Connectivity to at least one instance at least 99.99% of the time.

References:
https://azure.microsoft.com/en-us/support/legal/sla/virtual-machines/v1_8/

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Question 221

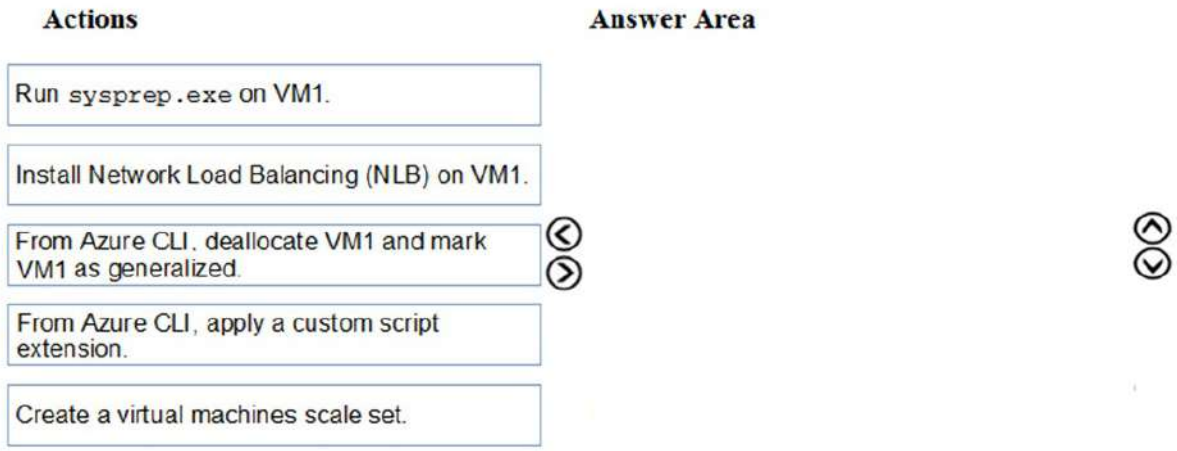
DRAG DROP

You have an Azure virtual machine named VM1 that runs Windows Server 2016.

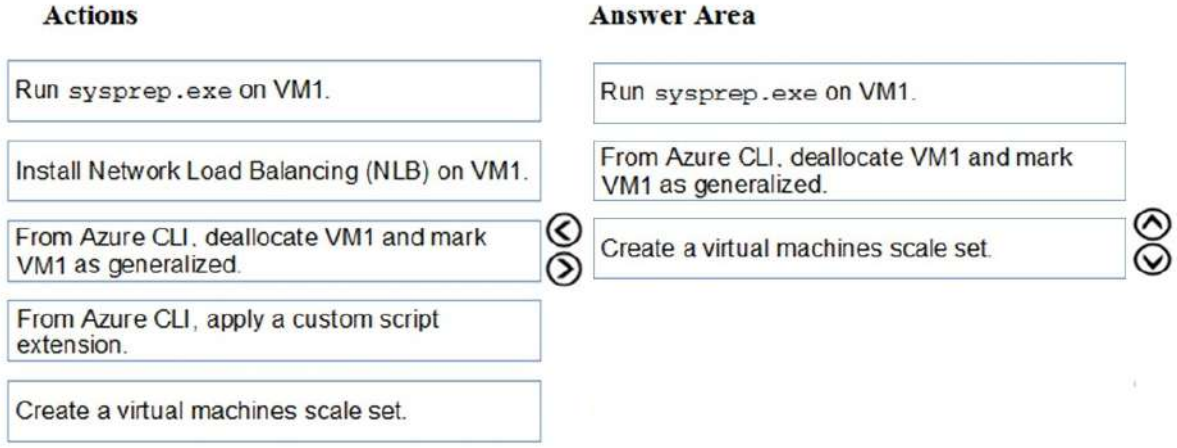
You install a line-to-business application on VM1.

You need to create an Azure virtual machine by using VM1 as a custom image.

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



Solution:



Explanation/Reference

Explanation:

Step 1: Run sysprep.exe on VM1.
If a template, or system image is used, System administrators must run the Sysprep tool to clear the SID information. The Sysprep tool is usually one of the last tasks performed by a system administrator when building a server image/template, that way each clone of the template will generalize a new unique SID for every server image copied from the template and will prepare the

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server for a first time boot.

The end result is a System template that functions as a new unique build every time it is deployed.

Step 2: From Azure CLI, deallocate VM1 and mark VM1 as generalized
To create an image, the VM needs to be deallocated. Deallocate the VM with Stop-AzVm. Then, set the state of the VM as generalized with Set-AzVm so that the Azure platform knows the VM is ready for use a custom image

Step 3: Create a virtual machine scale set
Now create a scale set with New-AzVmss that uses the -ImageName parameter to define the custom VM image created in the previous step.

References:
https://thesolving.com/server-room/when-and-how-to-use-sysprep/

https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/tutorial-use-custom-image-powershell

Question 222

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other Identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that the Admin1 can create access reviews in contoso.com.

Solution: You consent to Azure AD Privileged Identity Management (PIM).

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

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Explanation:
PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

Note: Azure Active Directory (Azure AD) Privileged Identity Management (PIM) is a service that enables you to manage, control, and monitor access to important resources in your organization. This includes access to resources in Azure AD, Azure resources, and other Microsoft Online Services like Office 365 or Microsoft Intune.

References:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

Question 223

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other Identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that the Admin1 can create access reviews in contoso.com.

Solution: You assign the Global administrator role to Admin1.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure AD Privileged Identity Management.

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Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

References:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

Question 224

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other Identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that the Admin1 can create access reviews in contoso.com.

Solution: You purchase an Azure Directory Premium P2 license for contoso.com.

Does this meet the goal?

☐ Yes
☒ No

Explanation/Reference

Explanation:
Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

References:

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https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

Question 225

You have a resource group named RG1 that contains the following:

- A virtual network that contains two subnets named Subnet1 and Subnet2
- An Azure Storage account named contososa1
- An Azure firewall deployed to Subnet2

You need to ensure that contososa1 is accessible from Subnet1 over the Azure backbone network.

What should you do?

- ☐ Deploy an Azure firewall to Subnet1.
- ☐ Remove the Azure firewall.
- ☒ Implement a virtual network service endpoint.
- ☐ Create a stored access policy for contososa1.

Explanation/Reference

Explanation:
Virtual Network (VNet) service endpoint provides secure and direct connectivity to Azure services over an optimized route over the Azure backbone network.

Virtual Network (VNet) service endpoints extend your virtual network private address space and the identity of your VNet to the Azure services, over a direct connection. Endpoints allow you to secure your critical Azure service resources to only your virtual networks. Traffic from your VNet to the Azure service always remains on the Microsoft Azure backbone network.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-service-endpoints-overview

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Question 226

Your company has the groups shown in the following table.

Group	Number of members
Managers	10
Sales	100
Development	15

The company has an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

An administrator named Admin1 attempts to enable Enterprise State Roaming for all the users in the Managers group.

Admin1 reports that the options for Enterprise State Roaming are unavailable from Azure AD.

You verify that Admin1 is assigned the Global administrator role.

You need to ensure that Admin1 can enable Enterprise State Roaming.

What should you do?

- ☐ Enforce Azure Multi-Factor Authentication (MFA) for Admin1.
- ☒ Purchase an Azure AD Premium P1 license for each user in the Managers group.
- ☐ Assign an Azure AD Privileged Identity Management (PIM) role to Admin1.
- ☐ Purchase an Azure Rights Management (Azure RMS) license for each user in the Managers group.

Explanation/Reference

Explanation:
Enterprise State Roaming is available to any organization with an Azure AD Premium or Enterprise Mobility + Security (EMS) license.

References:
https://docs.microsoft.com/bs-latn-ba/azure/active-directory/devices/enterprise-state-roaming-enable

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Question 227

HOTSPOT

You play to deploy an Azure virtual machine named VM1 by using an Azure Resource Manager template.

You need to complete the template.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
{
     "type": "Microsoft.Compute/virtualMachines",
     "apiVersion": "2018-10-01",
     "name": "VM1",
     "location": "[parameters('location')]",
     "dependsOn": [
          "[resourceId('Microsoft.Storage/storageAccounts/', variables ('Name3'))]",
          "[resourceId(                                      variables('Name4'))]"
],
{
     "type": "Microsoft.Network/networkInterfaces",
     "apiVersion": "2018-11-01",
     "name": "NIC1",
     "location": "[parameters('location')]",
     "dependsOn": [
          "[resourceId('Microsoft.Network/publicIPAddresses/', variables ('Name1'))]",
          "[resourceId(                                        variables('Name2'))]"
],
```

'Microsoft.Network/publicIPAddresses/'
'Microsoft.Network/virtualNetworks/'
'Microsoft.Network/networkInterfaces/'
'Microsoft.Network/virtualNetworks/subnets'
'Microsoft.Storage/storageAccounts/'

'Microsoft.Network/publicIPAddresses/'
'Microsoft.Network/virtualNetworks/'
'Microsoft.Network/networkInterfaces/'
'Microsoft.Network/virtualNetworks/subnets'
'Microsoft.Storage/storageAccounts/'

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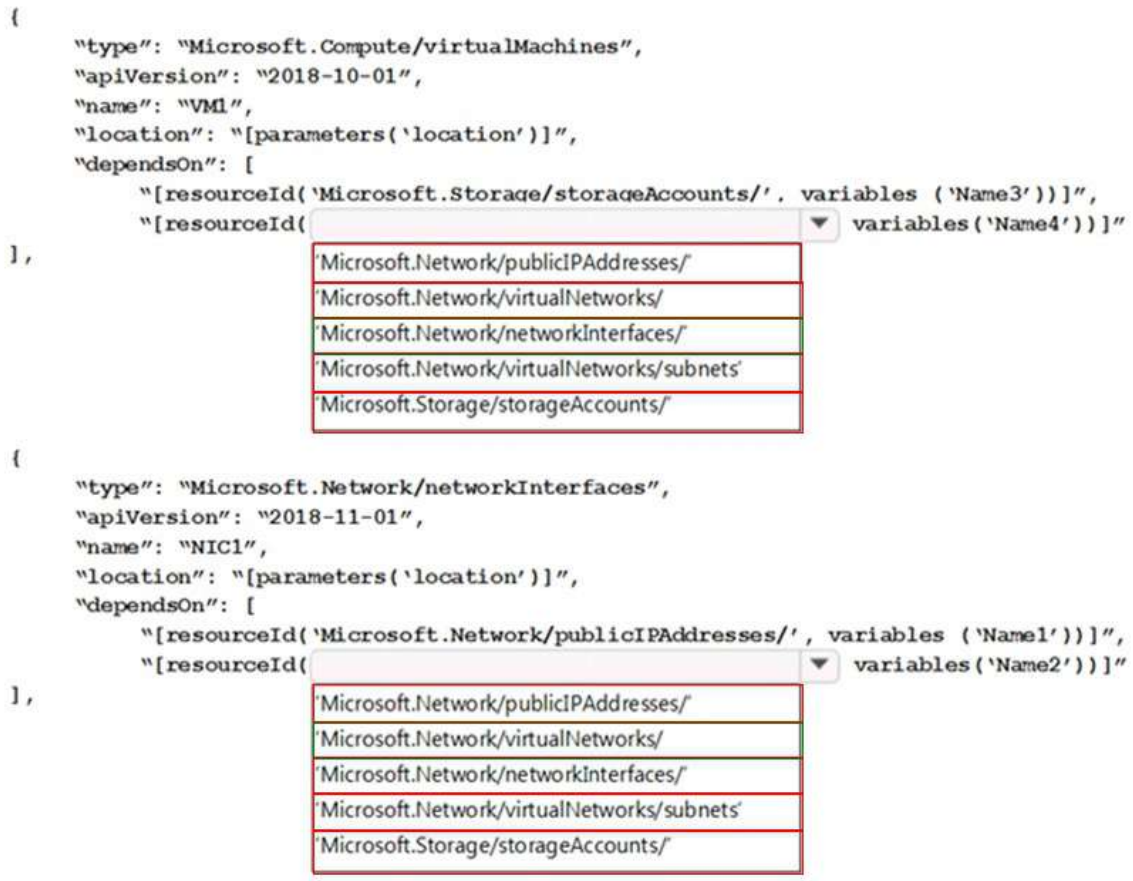
Solution:

Answer Area



Explanation/Reference

Explanation:

Within your template, the dependsOn element enables you to define one resource as a dependent on one or more resources. Its value can be a comma-separated list of resource names.

Box 1: 'Microsoft.Network/networkInterfaces'
This resource is a virtual machine. It depends on two other resources:

Microsoft.Storage/storageAccounts
Microsoft.Network/networkInterfaces

Box 2: 'Microsoft.Network/virtualNetworks/'
The dependsOn element enables you to define one resource as a dependent on one or more resources. The resource depends on two other resources:

Microsoft.Network/publicIPAddresses
Microsoft.Network/virtualNetworks

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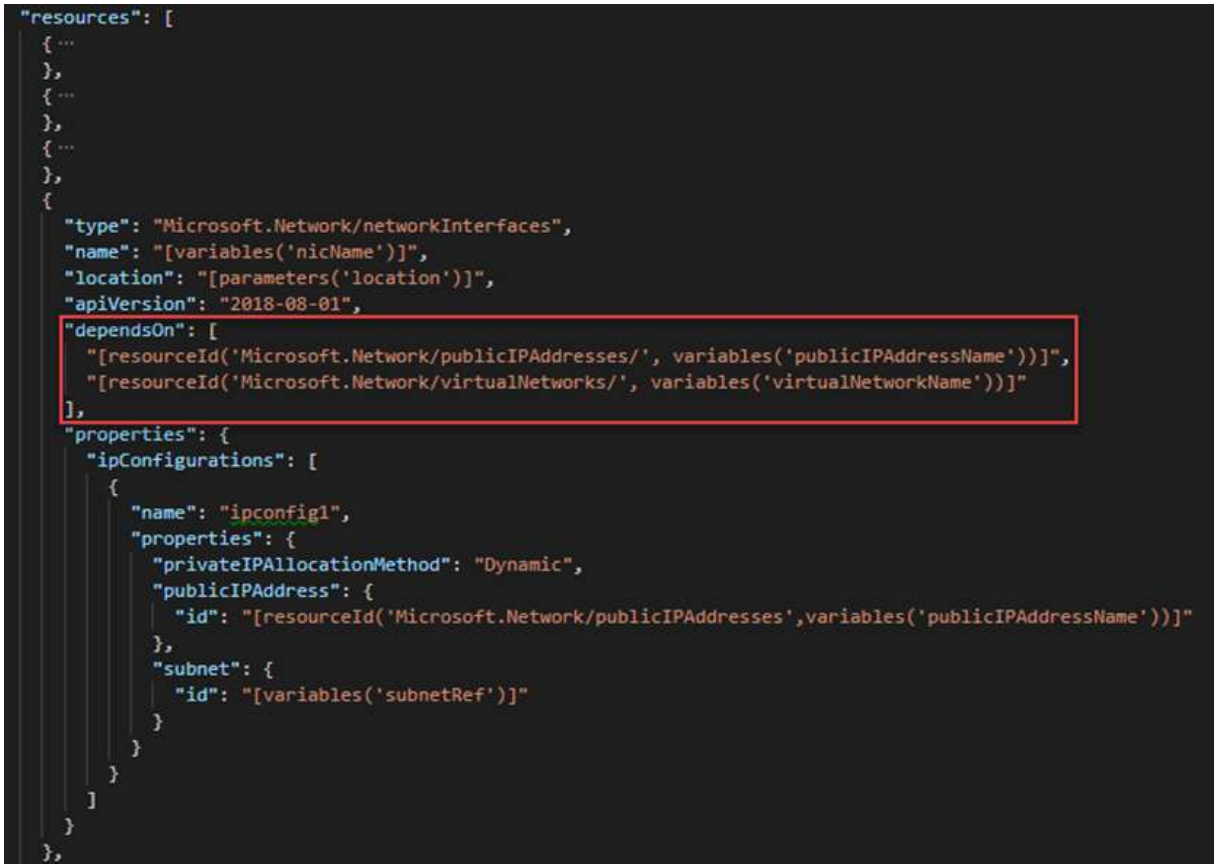

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-tutorial-create-templates-with-dependent-resources

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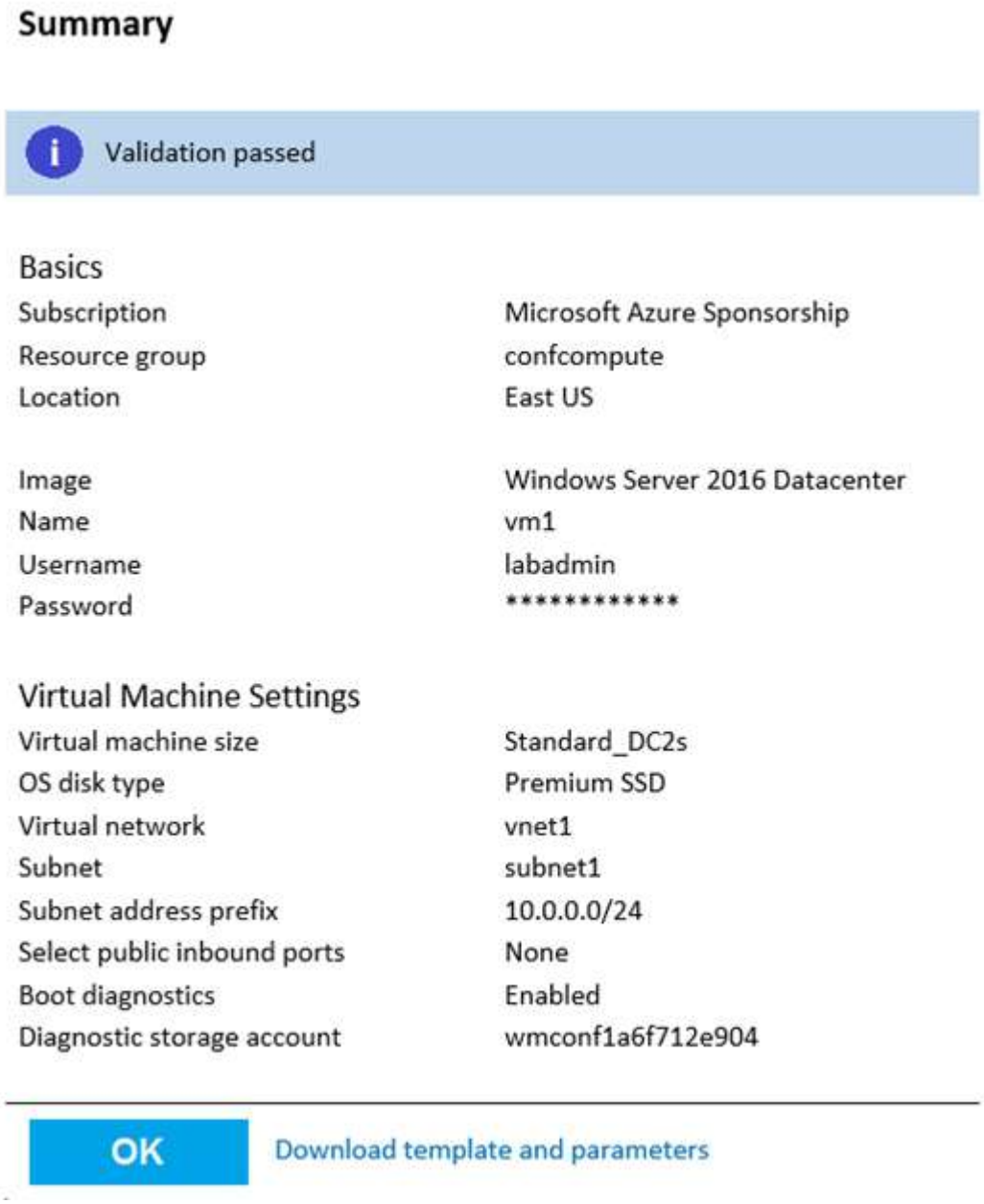
Question 228

HOTSPOT

You plan to create a virtual machine as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

The performance of the operating system disk **[answer choice]**.

- will decrease over time
- will increase over time
- is guaranteed to remain the same

Vm1 will use **[answer choice]** for data protection.

- dm-crypt
- secure enclaves
- secure shell (SSH)

Solution:

Answer Area

The performance of the operating system disk **[answer choice]**.

- will decrease over time
- will increase over time
- is guaranteed to remain the same

Vm1 will use **[answer choice]** for data protection.

- dm-crypt
- secure enclaves
- secure shell (SSH)

Explanation/Reference

Explanation:

Box 1: is guaranteed to remain the same
OS disk type: Premium SSD
Premium SSD Managed Disks are high performance Solid State Drive (SSD) based Storage designed to support I/O intensive workloads with significantly high throughput and low latency. With Premium SSD Managed Disks, you can provision a persistent disk and configure its size and performance characteristics.

Box 2: secure enclaves
Virtual machine size: Standard_DC2s
DC-series virtual machines are a new family of VMs to protect the confidentiality and integrity of your data and code while it's processed in Azure through the use of secure enclaves.

Incorrect:
Not dm-crypt: Azure Disk Encryption helps protect and safeguard your data to meet your

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organizational security and compliance commitments. It uses the BitLocker feature of Windows and the DM-Crypt feature of Linux to provide volume encryption for the OS and data disks of Azure virtual machines (VMs).

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/disks-types

https://azure.microsoft.com/en-us/pricing/details/virtual-machines/series/

Question 229

HOTSPOT

A company runs multiple Windows virtual machines (VMs) in Azure.

The IT operations department wants to apply the same policies as they have for on-premises VMs to the VMs running in Azure, including domain administrator permissions and schema extensions.

You need to recommend a solution for the hybrid scenario that minimizes the amount of maintenance required.

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

NOTE: Each correct selection is worth one point.

Answer Area

Component	Action
Domain	Join the VMs to the existing on-premises domain. Join the VMs to a new domain controller VM in Azure. Join the VMs to Azure Active Directory Domain Services (AD DS).
Connectivity	Set up VPN connectivity. Set up HTTPS connectivity. Set up Azure Relay Service.

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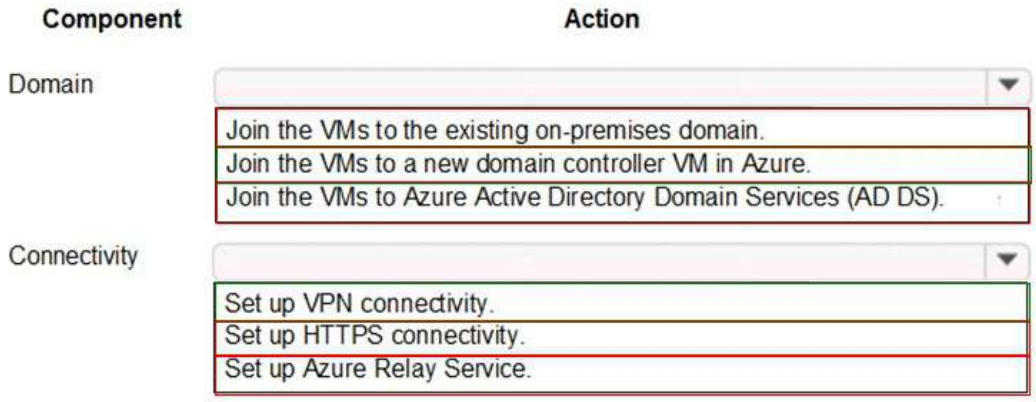
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: Join the VMs to a new domain controller VM in Azure
Azure provides two solutions for implementing directory and identity services in Azure:

- (Used in this scenario) Extend your existing on-premises Active Directory infrastructure to Azure, by deploying a VM in Azure that runs AD DS as a Domain Controller. This architecture is more common when the on-premises network and the Azure virtual network (VNet) are connected by a VPN or ExpressRoute connection.
- Use Azure AD to create an Active Directory domain in the cloud and connect it to your on-premises Active Directory domain. Azure AD Connect integrates your on-premises directories with Azure AD.

Box 2: Set up VPN connectivity.
This architecture is more common when the on-premises network and the Azure virtual network (VNet) are connected by a VPN or ExpressRoute connection.

References:
https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/identity/

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Question 230

HOTSPOT

Your company has an Azure Container Registry named Registry1.

You have an Azure virtual machine named Server1 that runs Windows Server 2019.

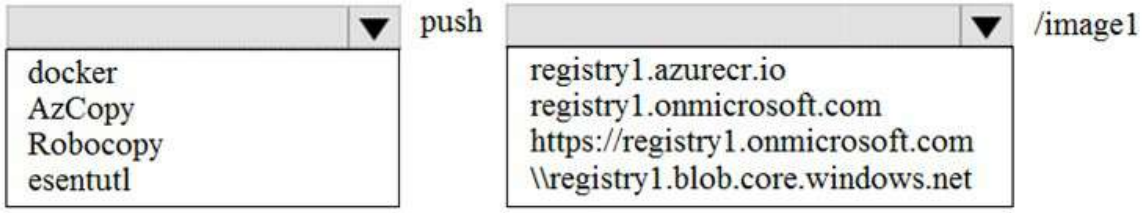
From Server1, you create a container image named image1.

You need to add image1 to Registry1.

Which command should you run on Server1? To answer, select the appropriate options in the answer area.

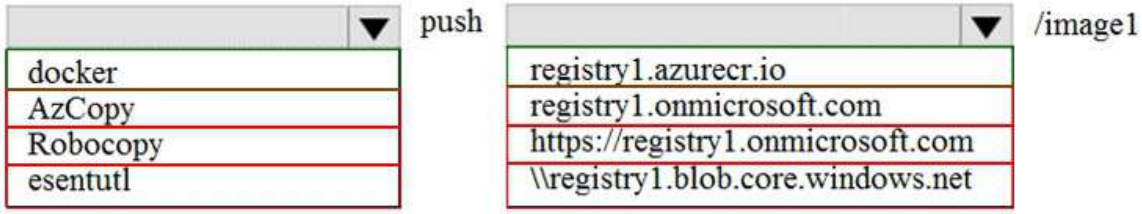
NOTE: Each correct selection is worth one point.

Answer Area



Solution:

Answer Area



Explanation/Reference

Explanation:

An Azure container registry stores and manages private Docker container images, similar to the way Docker Hub stores public Docker images. You can use the Docker command-line interface (Docker CLI) for login, push, pull, and other operations on your container registry.

Reference:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-get-started-docker-cli

https://docs.docker.com/engine/reference/commandline/push/

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Question 231

Your company has an office in Seattle.

You have an Azure subscription that contains a virtual network named VNET1.

You create a site-to-site VPN between the Seattle office and VNET1.

VNET1 contains the subnets shown in the following table.

Name	IP address space
Subnet1	10.1.1.0/24
GatewaySubnet	10.1.200.0/28

You need to route all Internet-bound traffic from Subnet1 to the Seattle office.

What should you create?

- ☐ a route for GatewaySubnet that uses the virtual network gateway as the next hop
- ☐ a route for GatewaySubnet that uses the local network gateway as the next hop
- ☐ a route for Subnet1 that uses the local network gateway as the next hop
- ☒ a route for Subnet1 that uses the virtual network gateway as the next hop

Explanation/Reference

Explanation:
A route with the 0.0.0.0/0 address prefix instructs Azure how to route traffic destined for an IP address that is not within the address prefix of any other route in a subnet's route table. When a subnet is created, Azure creates a default route to the 0.0.0.0/0 address prefix, with the Internet next hop type. We need to create a custom route in Azure to use a virtual network gateway in the Seattle office as the next hop.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-networks-udr-overview

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Question 232

HOTSPOT

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 pools 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	○	○
DB2 can be removed from Pool2 and added to Pool3	○	○
DB3 can be added to Pool1	○	○

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Solution:

Answer Area

Statements	Yes	No
DB1 can be removed from Pool1 and added to Pool2	○	○
DB2 can be removed from Pool2 and added to Pool3	○	○
DB3 can be added to Pool1	○	○

Explanation/Reference

Explanation:

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

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Question 233

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other Identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that Admin1 can create access reviews in contoso.com.

Solution: You create an access package.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
You do not use access packages for Identity Governance. Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:
Conduct access reviews to ensure users still need roles

References:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

https://docs.microsoft.com/en-us/azure/active-directory/governance/entitlement-management-overview

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Question 234

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After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named contoso.com.

A user named Admin1 attempts to create an access review from the Azure Active Directory admin center and discovers that the Access reviews settings are unavailable. Admin1 discovers that all the other Identity Governance settings are available.

Admin1 is assigned the User administrator, Compliance administrator, and Security administrator roles.

You need to ensure that Admin1 can create access reviews in contoso.com.

Solution: You assign the Service administrator role to Admin1.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure AD Privileged Identity Management.

Note: PIM essentially helps you manage the who, what, when, where, and why for resources that you care about. Key features of PIM include:

- Conduct access reviews to ensure users still need roles

References:
https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure

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Question 235

HOTSPOT

You have an Azure Resource Manager template for a virtual machine named Template1. Template1 has the following parameters section.

```
"parameters": {
    "adminUsername": {
        "type": "string"
    },
    "adminPassword": {
        "type": "securestring"
    },
    "dnsLabelPrefix": {
        "type": "string"
    },
    "windowsOSVersion": {
        "type": "string"
        "defaultValue": "2016-Datacenter",
        "allowedValues": [
            "2016-Datacenter",
            "2019-Datacenter"
        ]
    },
    "location": {
        "type": "String",
        "allowedValues": [
            "eastus",
            "centralus",
            "westus" ]
    }
},
```

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

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
When you deploy Template1, you are prompted for a resource group.	○	○
When you deploy Template1, you are prompted for the Windows operating system version.	○	○
When you deploy Template1, you are prompted for a location.	○	○

Solution:

Answer Area

Statements	Yes	No
When you deploy Template1, you are prompted for a resource group.	○	○
When you deploy Template1, you are prompted for the Windows operating system version.	○	○
When you deploy Template1, you are prompted for a location.	○	○

Explanation/Reference

Explanation:

Box 1: Yes
The Resource group is not specified.

Box 2: No
The default value for the operating system is Windows 2016 Datacenter.

Box 3: Yes
Location is no default value.

References:
https://docs.microsoft.com/bs-latn-ba/azure/virtual-machines/windows/ps-template

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Question 236

HOTSPOT

You have an Azure Active Directory (Azure AD) tenant named contoso.com. The tenant contains the users shown in the following table.

Name	Member of
User1	Group1
User2	Group2

The tenant contains computers that run Windows 10. The computers are configured as shown in the following table.

Name	Member of
Computer1	GroupA
Computer2	GroupA
Computer3	GroupB

You enable Enterprise State Roaming in contoso.com for Group1 and GroupA.

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
If User1 modifies the desktop background of Computer1, User1 will see the changed background when signing in to Computer3.	○	○
If User2 modifies the desktop background of Computer1, User2 will see the changed background when signing in to Computer2.	○	○
If User1 modifies the desktop background of Computer3, User1 will see the changed background when signing in to Computer2.	○	○

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Solution:

Answer Area

Statements	Yes	No
If User1 modifies the desktop background of Computer1, User1 will see the changed background when signing in to Computer3.	○	○
If User2 modifies the desktop background of Computer1, User2 will see the changed background when signing in to Computer2.	○	○
If User1 modifies the desktop background of Computer3, User1 will see the changed background when signing in to Computer2.	○	○

Explanation/Reference

Explanation:

Enterprise State Roaming provides users with a unified experience across their Windows devices and reduces the time needed for configuring a new device.

Box 1: Yes

Box 2: No

Box 3: Yes

References:
https://docs.microsoft.com/en-us/azure/////active-directory/devices/enterprise-state-roaming-overview

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Question 237

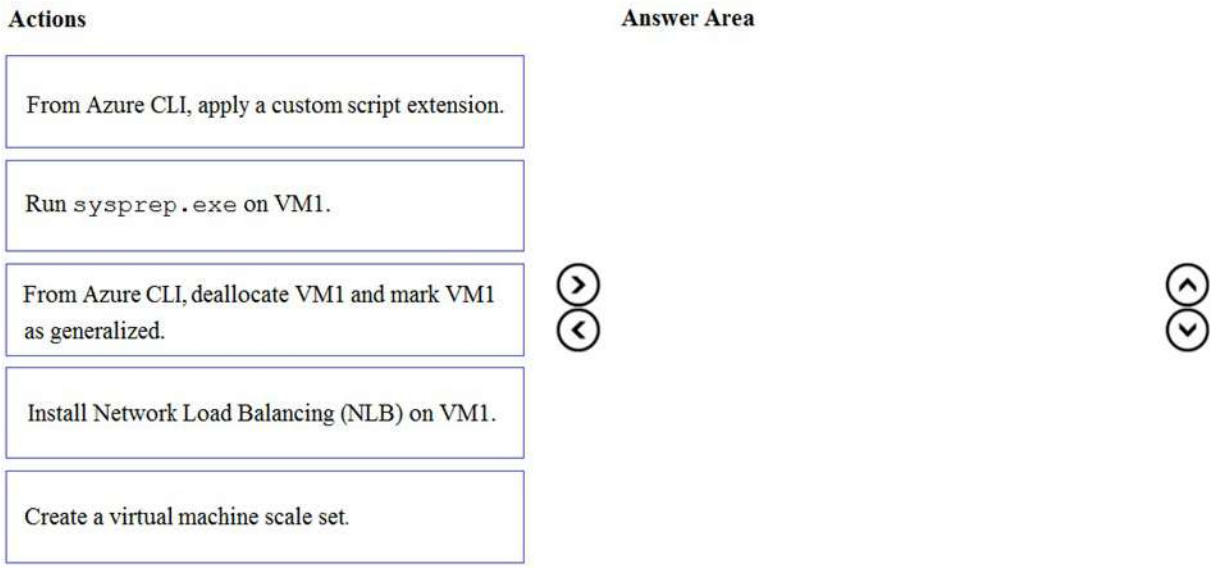
DRAG DROP

You have an Azure virtual machine named VM1 that runs Windows Server 2016.

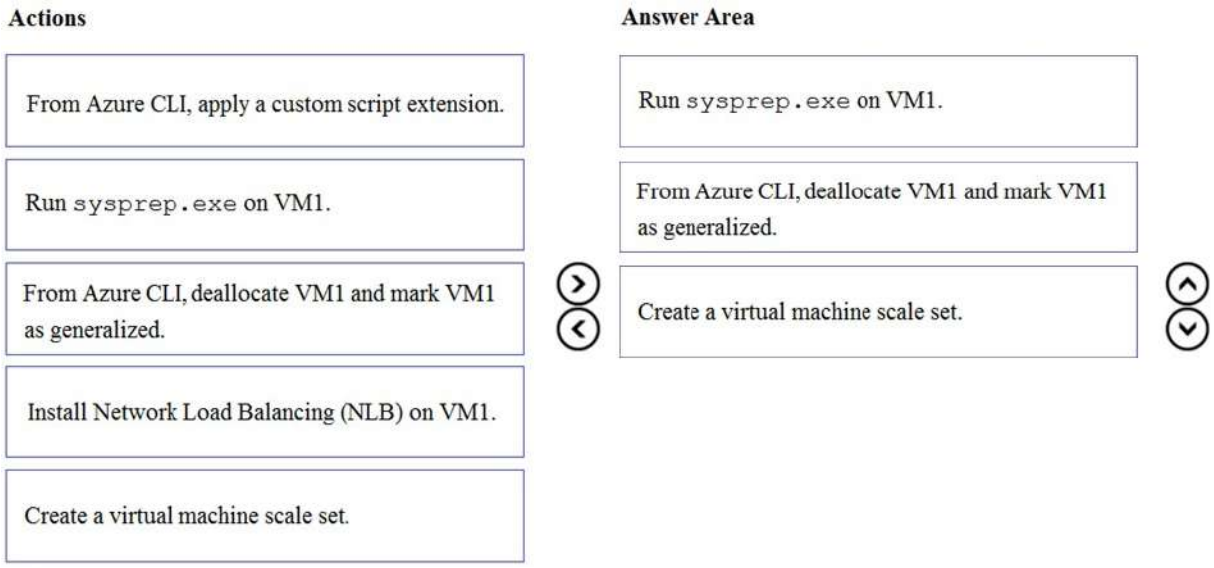
You install a line-of-business application on VM1.

You need to create a scale set by using VM1 as a custom image.

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



Solution:



Explanation/Reference

Explanation:

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Step 1: Run sysprep.exe on VM1.
The final step to prepare your VM for use as a custom image is to generalize the VM. Sysprep removes all your personal account information and configurations, and resets the VM to a clean state for future deployments.

Step 2: From Azure CLI, deallocate VM1 and mark VM1 as generalized,
To create an image, the VM needs to be deallocated. Deallocate the VM with Stop-AzVm. Then, set the state of the VM as generalized with Set-AzVm so that the Azure platform knows the VM is ready for use a custom image. You can only create an image from a generalized VM.
It may take a few minutes to deallocate and generalize the VM.
Then create an image of the VM with New-AzImageConfig and New-AzImage.

Step 3: Create a virtual machine scale set.
Create a scale set with New-AzVmss that uses the -ImageName parameter to define the custom VM image created in the previous step.

References:
https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/tutorial-use-custom-image-powershell

Question 238

HOTSPOT

You have an Azure web app named App1 that has the following configurations:

Day	Hours	CPU	Memory
Monday to Friday	08:00 to 23:59	85%	40%
Monday to Friday	00:00 to 07:59	25%	60%
Saturday to Sunday	00:00 to 23:59	30%	55%

You need to identify the maximum number of instances that will be used by App1 during the expected periods of utilization.

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

NOTE: Each correct selection is worth one point.

- The app runs on three instances.
- The minimum number of instances is one.
- The maximum number of instances is five.

You create the following autoscale rules for App1:

- Decrease the instance count by one when the CPU percentage is less than 30.

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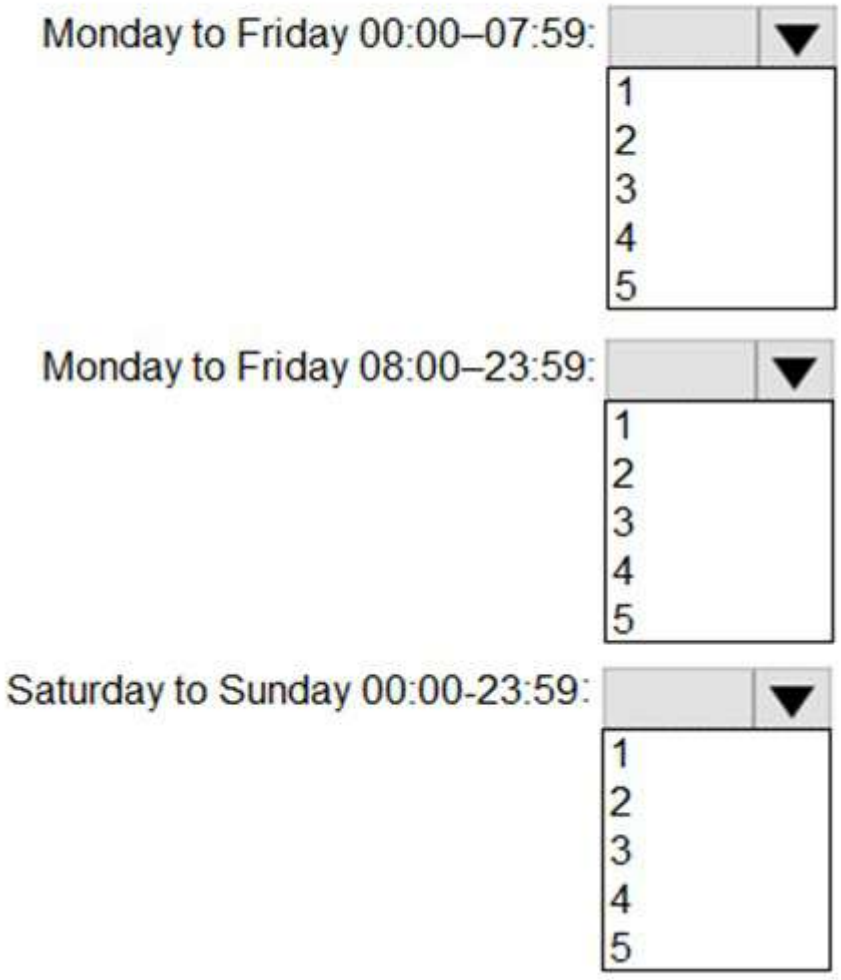
- Decrease the instance count by one when the memory percentage is less than 50.
- Increase the instance count by one when the CPU percentage is greater than 80.
- Increase the instance count by one when the memory percentage is greater than 75.

You expect App1 to be utilized as shown in the following table.

Answer Area



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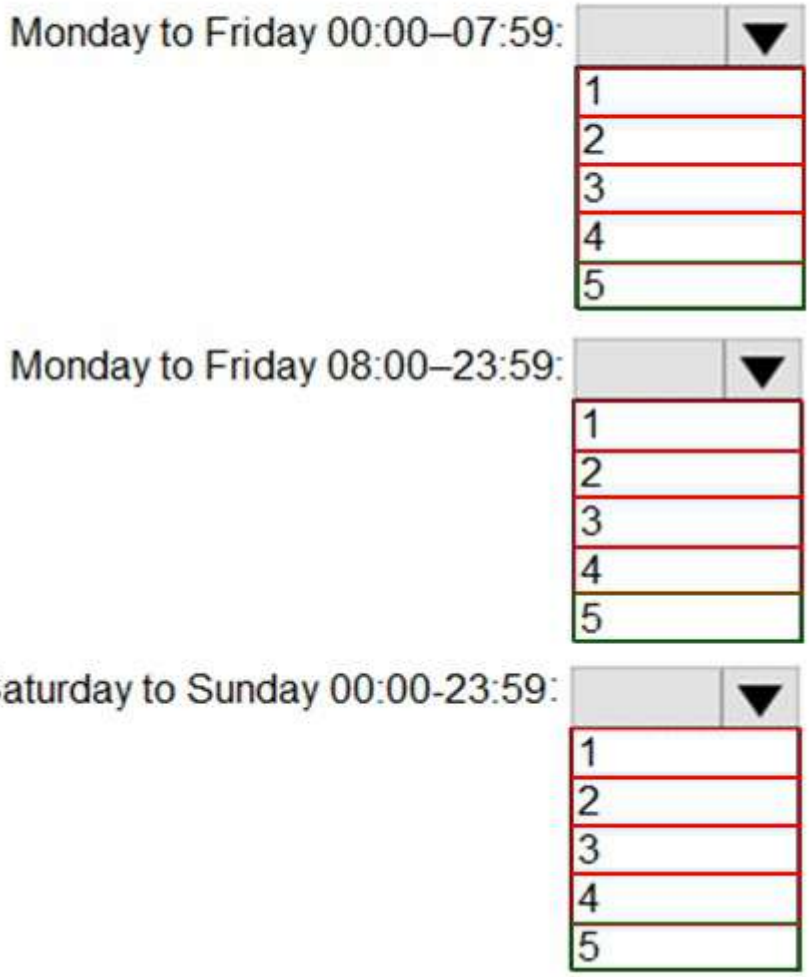
Answer Area



Solution:

Explanation/Reference

Explanation:

On scale out, autoscale runs if any rule is met. On scale-in, autoscale requires all rules to be met. Therefore, the web app will scale out but will never scale back in because there is no time where the CPU is less than 30% AND the memory is less than 50%.

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Question 239

You have an Azure subscription named Subscription1 that contains an Azure virtual network named VNet1. VNet1 connects to your on-premises network by using Azure ExpressRoute.

You plan to prepare the environment for automatic failover in case of ExpressRoute failure.

You need to connect VNet1 to the on-premises network by using a site-to-site VPN. The solution must minimize cost.

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

NOTE: Each correct selection is worth one point.

- ☐ Create a VPN gateway that uses the VpnGw1 SKU.
- ☒ Create a connection.
- ☒ Create a local site VPN gateway.
- ☒ Create a gateway subnet.
- ☐ Create a VPN gateway that uses the Basic SKU.

Explanation/Reference

Reference:
https://docs.microsoft.com/en-za/archive/blogs/canitpro/step-by-step-configuring-a-site-to-site-vpn-gateway-between-azure-and-on-premise

Question 240

You have an Azure web app named App1 that is configured to run between two and five instances. There are currently three instances of App1 running.

App1 has the following autoscale rules:

- Increase the instance count by one when the CPU percentage is greater or equal to 80.
- Decrease the instance count by one when the CPU percentage is less than or equal to 60.

You are evaluating the following CPU percentage of utilization for App1:

- 60%
- 55%
- 50%
- 45%

You need to identify which utilizations will cause App1 to scale in.

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- ☐ 45% only
- ☐ 45% and 50% only
- ☐ 50% and 55% only
- ☒ 45%, 50%, and 55% only

Explanation/Reference

Explanation:
Azure Monitor autoscaling allows you to scale the number of running instances up or down, based on telemetry data (metrics). Scale-in occurs when the instances are decrease. For this rule the instances are decreased when the CPU usage is 60% or lower.

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-custom-metric

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-metrics

Question 241

You monitor Azure virtual machines by using Azure Monitor.

You plan to restart the virtual machines when CPU usage exceeds 95 percent for more than 30 minutes.

You need to create an alert in Azure Monitor to restart the virtual machines. The solution must minimize administrative effort.

Which type of action should you use in the alert?

- ☐ ITSM
- ☐ Webhook
- ☒ Automation Runbook
- ☐ Logic App

Explanation/Reference

Explanation:
Automation runbooks allows you to automatically perform standard remediations in response to VM alerts, like restarting or stopping the VM.

Previously, during VM alert rule creation you were able to specify an Automation webhook to a runbook in order to run the runbook whenever the alert triggered. However, this required you to do the work of creating the runbook, creating the webhook for the runbook, and then copying and pasting the webhook during alert rule creation. With this new release, the process is much easier because you can directly choose a runbook from a list during alert rule creation, and you can choose an Automation account which will run the runbook or easily create an account.

Reference:
https://azure.microsoft.com/en-us/blog/automatically-remediate-azure-vm-alerts-with-automation-runbooks/

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Question 242

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You plan to create a container image.

You create the following instructions in a text editor.

```
FROM mcr.microsoft.com/windows/servercore:lts2019
LABEL maintainer="User1@contoso.com"
RUN dism.exe /online /enable-feature /all /featurename:iis-webserver
/NoRestart
RUN echo "Hello World!" > c:\inetpub\wwwroot\index.html
```

You need to be able to automate the container image creation by using the instructions.

To which file should you save the instructions?

- ☐ dockerconfig.json
- ☒ Dockerfile
- ☐ daemon.json
- ☐ Build.ini

Explanation/Reference

Explanation:
The Dockerfile is a text file that contains the instructions needed to create a new container image.

Reference:
https://docs.microsoft.com/en-us/virtualization/windowscontainers/manage-docker/manage-windows-dockerfile

Question 243

You have an Azure subscription that contains a resource group named RG1. RG1 contains multiple resources.

You need to trigger an alert when the resources in RG1 consume $1,000 USD.

What should you do?

- ☐ From Cost Management + Billing, add a cloud connector.
- ☐ From the subscription, create an event subscription.
- ☒ From Cost Management + Billing create a budget.
- ☐ From RG1, create an event subscription.

Explanation/Reference

Explanation:
Create budgets to manage costs and create alerts that automatically notify you are your stakeholders

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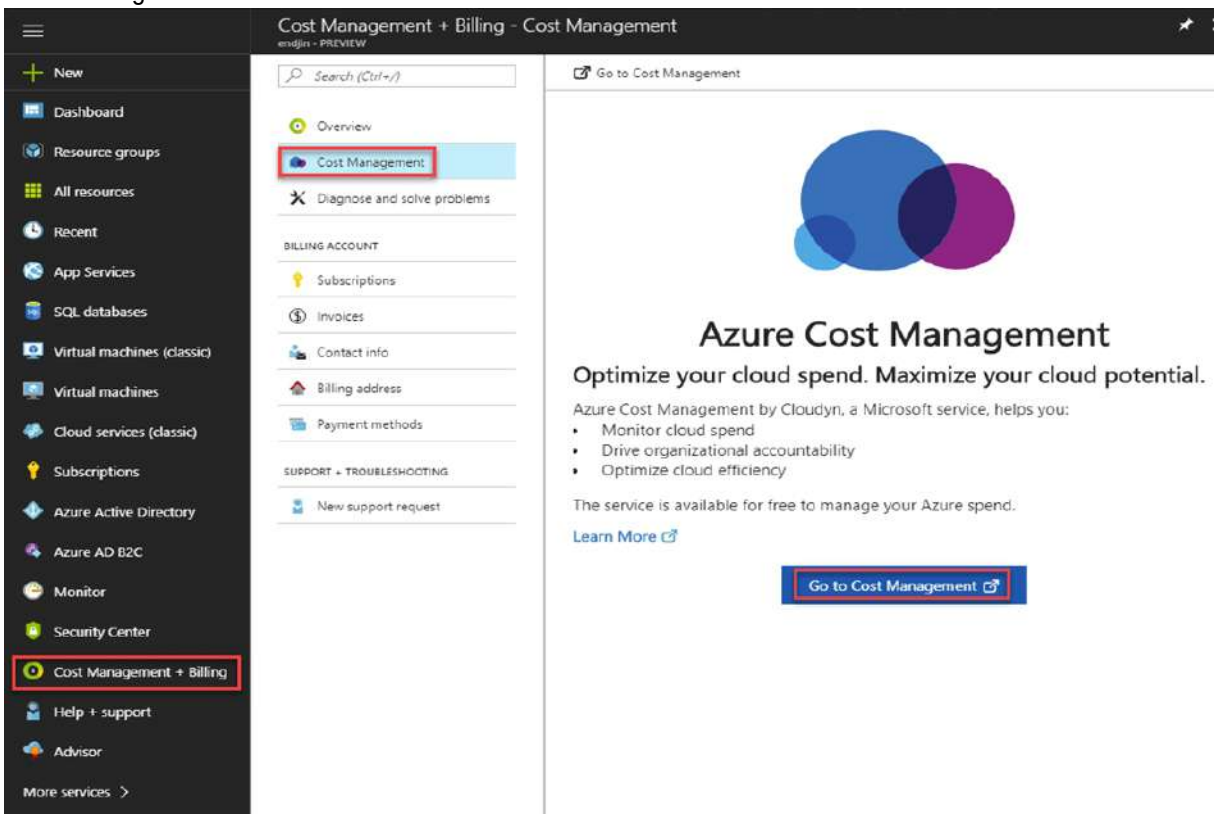
of spending anomalies and overspending.

To set it up, go to the Azure Portal, select 'Cost Management + Billing' -> 'Cost Management' -> 'Go to Cost Management'.



Note: Cost alerts are automatically generated based when Azure resources are consumed. Alerts show all active cost management and billing alerts together in one place. When your consumption reaches a given threshold, alerts are generated by Cost Management. There are three types of cost alerts: budget alerts, credit alerts, and department spending quota alerts.

Reference:
https://docs.microsoft.com/en-us/azure/cost-management-billing/manage/getting-started

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Question 244

HOTSPOT

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

Name	Type	Azure region
Vault1	Recovery Services vault	West US
KeyVault1	Azure key vault	Central US

You plan to deploy an Azure virtual machine that will have the following configurations:

- Name: VM1
- Azure region: Central US
- Image: Ubuntu Server 18.04 LTS
- Operating system disk size: 1 TB
- Virtual machine generation: Gen 2
- Operating system disk type: Standard SSD

You need to protect VM1 by using Azure Disk Encryption and Azure Backup.

On VM1, which configurations should you change? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

For Azure Disk Encryption, change:

- Azure region
- Image
- Operating system disk type
- Operating system disk size
- Virtual machine generation

For Azure Backup, change:

- Azure region
- Image
- Operating system disk type
- Operating system disk size
- Virtual machine generation

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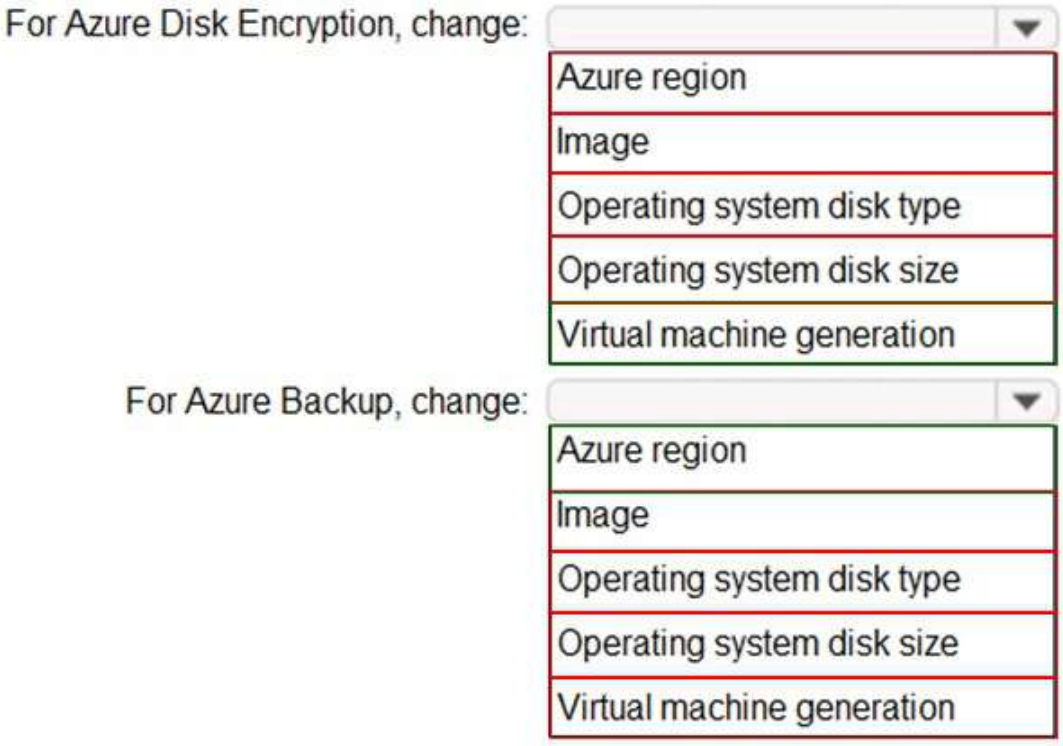
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: Virtual machine generation
Azure Disk Encryption is not available on Generation 2 VMs) and Lsv2-series VMs).

Box 2: Azure Region
Backup is within a region.
You need a Recovery Services vault in every Azure region that contains VMs you want to back up. You can't back up to a different region.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/disk-encryption-overview

https://docs.microsoft.com/en-us/azure/backup/backup-support-matrix

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Legacy AZ-300: Implement Workloads and Security (64 questions)

Case Study (5 questions)

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Case study

Overview

ADatum Corporation is a financial company that has two main offices in New York and Los Angeles. ADatum has a subsidiary named Fabrikam, Inc. that shares the Los Angeles office.

ADatum is conducting an initial deployment of Azure services to host new line-of-business applications and is preparing to migrate its existing on-premises workloads to Azure.

ADatum uses Microsoft Exchange Online for email.

Existing Environment

On-Premises Environment
The on-premises workloads run on virtual machines hosted in a VMware vSphere 6 infrastructure. All the virtual machines are members of an Active Directory forest named adatum.com and run Windows Server 2016.

The New York office uses an IP address space of 10.0.0.0/16. The Los Angeles office uses an IP address space of 10.10.0.0/16.

The offices connect by using a VPN provided by an ISP. Each office has one Azure ExpressRoute circuit that provides access to Azure services and Microsoft Online Services. Routing is implemented by using Microsoft peering.

The New York office has a virtual machine named VM1 that has the vSphere console installed.

Azure Environment
You provision the Azure infrastructure by using the Azure portal. The infrastructure contains the resources shown in the following table.

Name	Type	Azure Region
ASRV1	Azure Site Recovery vault	East US
ASRV2	Azure Site Recovery vault	West US
ASE1	Azure App Service Environment	East US
AG1	Azure Application Gateway (internal)	East US
AG2	Azure Application Gateway (Internet-facing)	West US
ER1	ExpressRoute circuit	East US
ER2	ExpressRoute circuit	West US

AG1 has two backend pools named Pool11 and Pool12. AG2 has two backend pools named Pool21 and Pool22.

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Requirements

Planned Changes
ADatum plans to migrate the virtual machines from the New York office to the East US Azure region by using Azure Site Recovery.

Infrastructure Requirements
ADatum identifies the following infrastructure requirements:

- A new web app named App1 that will access third-parties for credit card processing must be deployed
- A newly developed API must be implemented as an Azure function named App2. App2 will use a blob storage trigger. App2 must process new blobs immediately.
- The Azure infrastructure and the on-premises infrastructure must be prepared for the migration of the VMware virtual machines to Azure.
- The sizes of the Azure virtual machines that will be used to migrate the on-premises workloads must be identified.
- All migrated and newly deployed Azure virtual machines must be joined to the adatum.com domain.
- AG1 must load balance incoming traffic in the following manner:
- http://corporate.adatum.com/video/* will be load balanced across Pool11
- http://corporate.adatum.com/images/* will be load balanced across Pool12
- AG2 must load balance incoming traffic in the following manner:
- http://www.adatum.com will be load balanced across Pool21
- http://www.fabrikam.com will be load balanced across Pool22
- ER1 must route traffic between the New York office and the platform as a service (PaaS) services in the East US Azure region, as long as ER1 is available.
- ER2 must route traffic between the Los Angeles office and the PaaS services in the West US region, as long as ER2 is available.
- ER1 and ER2 must be configured to fail over automatically.

Application Requirements
App2 must be able to connect directly to the private IP addresses of the Azure virtual machines. App2 will be deployed directly to an Azure virtual network.

Inbound and outbound communications to App1 must be controlled by using NSGs.

Pricing Requirements
ADatum identifies the following pricing requirements:

- The cost of App1 and App2 must be minimized.
- The transactional charges of Azure Storage accounts must be minimized.

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Question 319

You need to configure AG1.

What should you create?

- ☐ a multi-site listener
- ☐ a basic routing rule
- ☒ a URL path-based routing rule
- ☐ a basic listener

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/application-gateway/application-gateway-create-url-route-portal

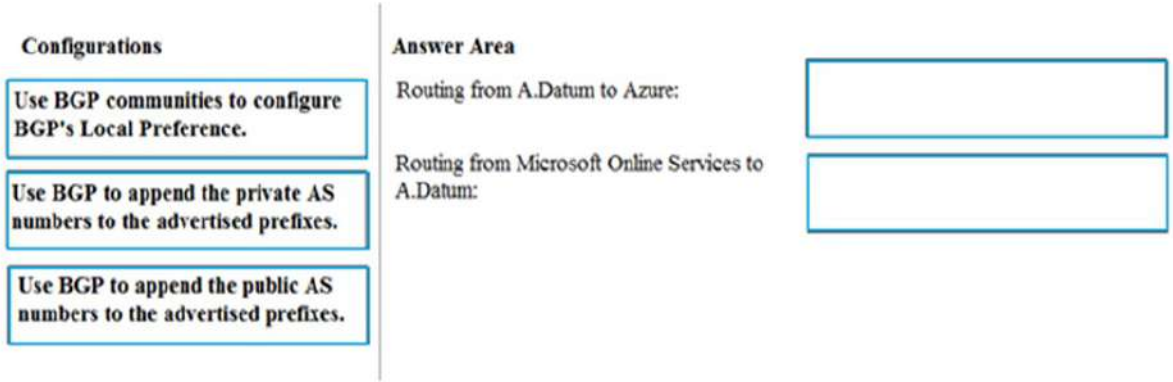
Question 320

DRAG DROP

You need to configure the Azure ExpressRoute circuits.

How should you configure Azure ExpressRoute routing? To answer, drag the appropriate configurations to the correct locations. Each configuration 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.



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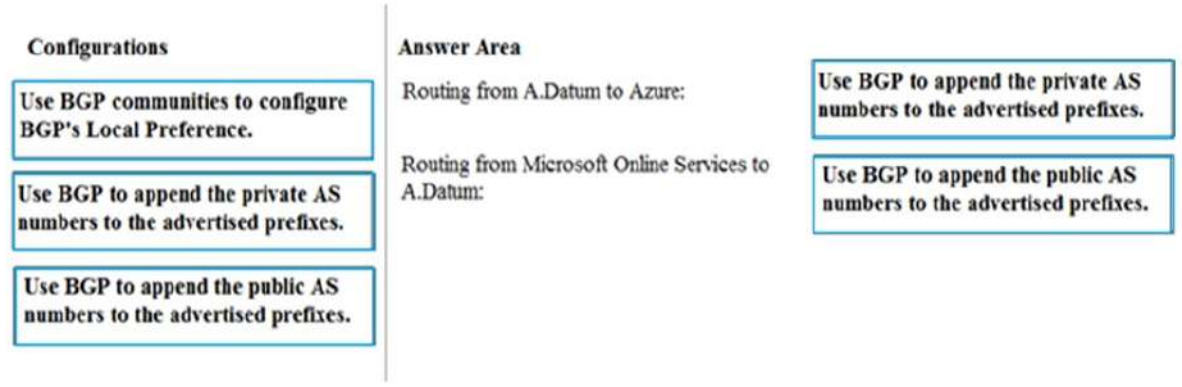
Solution:



Explanation/Reference

Explanation:

Azure compute services, namely virtual machines (IaaS) and cloud services (PaaS), that are deployed within a virtual network can be connected through the private peering domain. The private peering domain is considered to be a trusted extension of your core network into Microsoft Azure.

Services such as Azure Storage, SQL databases, and Websites are offered on public IP addresses. You can privately connect to services hosted on public IP addresses, including VIPs of your cloud services, through the public peering routing domain. You can connect the public peering domain to your DMZ and connect to all Azure services on their public IP addresses from your WAN without having to connect through the internet.

References:
https://docs.microsoft.com/en-us/azure/expressroute/expressroute-circuit-peerings

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Question 321

DRAG DROP

You need to prepare the New York office infrastructure for the migration of the on-premises virtual machines to Azure.

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

Actions	Answer Area
From VM1, deploy a virtual machine.	
From the ASRV1 blade in the Azure portal, select a protection goal.	
From an Azure portal, download the OVF file.	
From VM1, register the configuration server.	
From VM1, connect to the collector virtual machine.	

Solution:

Actions	Answer Area
From VM1, deploy a virtual machine.	From the ASRV1 blade in the Azure portal, select a protection goal.
From the ASRV1 blade in the Azure portal, select a protection goal.	From an Azure portal, download the OVF file.
From an Azure portal, download the OVF file.	From VM1, deploy a virtual machine.
From VM1, register the configuration server.	From VM1, register the configuration server.
From VM1, connect to the collector virtual machine.	

Explanation/Reference

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References:
https://docs.microsoft.com/en-us/azure/site-recovery/vmware-azure-tutorial

Question 322

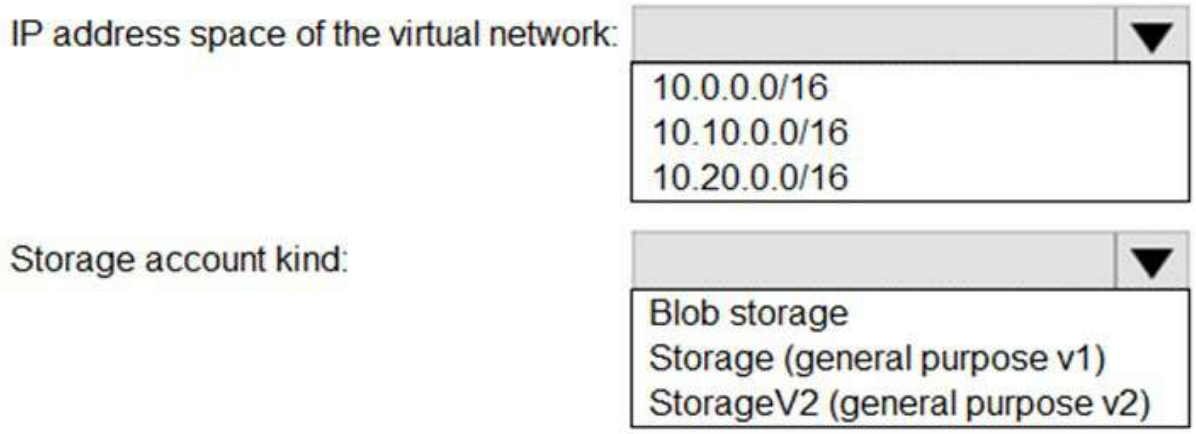
HOTSPOT

You need to provision the resources in Azure to support the virtual machine that will be migrated from the New York office.

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

NOTE: Each correct selection is worth one point.

Answer Area



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Solution:

Answer Area

IP address space of the virtual network:

- 10.0.0.0/16
- 10.10.0.0/16
- 10.20.0.0/16

Storage account kind:

- Blob storage
- Storage (general purpose v1)
- StorageV2 (general purpose v2)

Explanation/Reference

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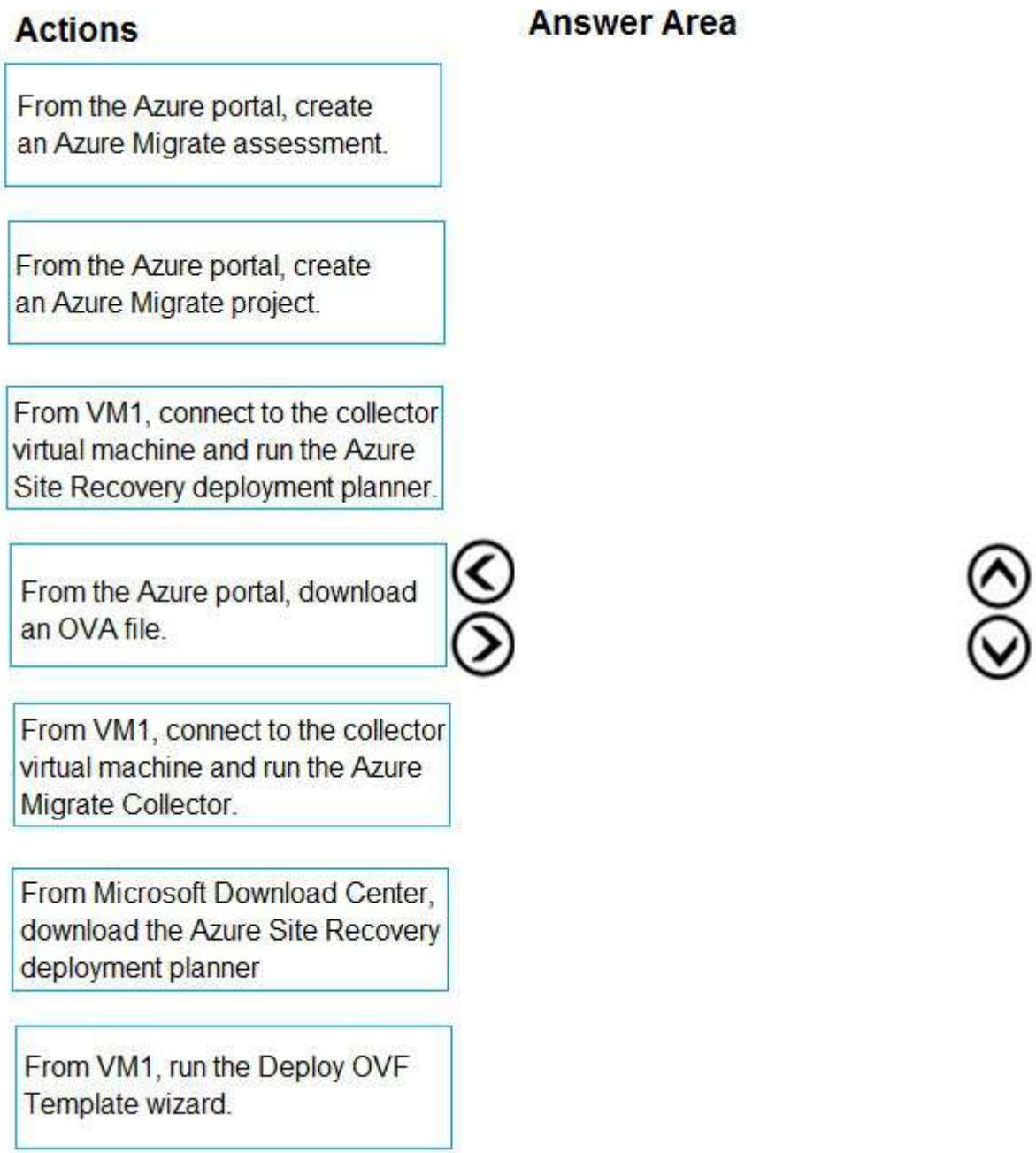
Question 323

DRAG DROP

You need to identify the appropriate sizes for the Azure virtual machines.

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



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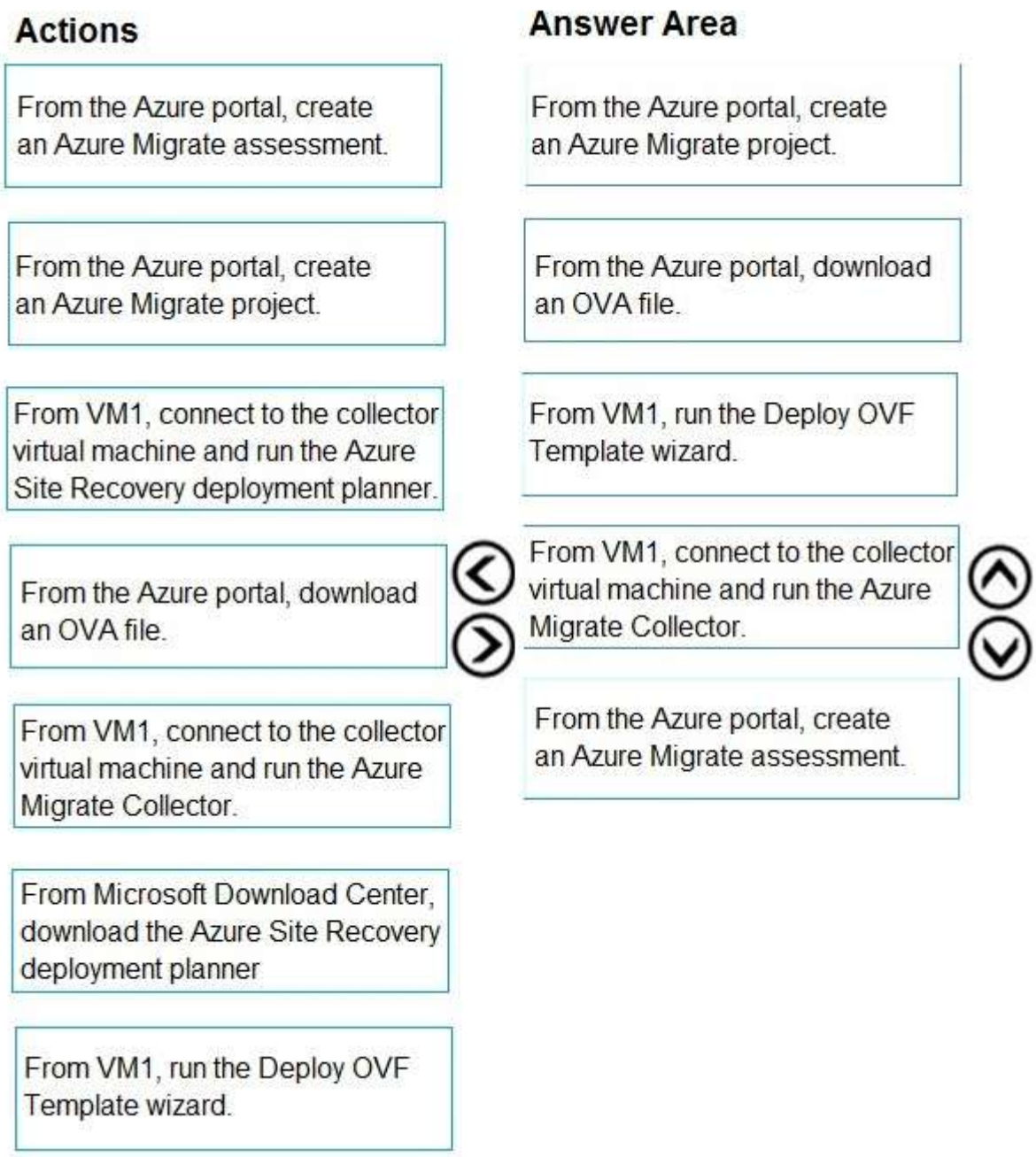
Solution:



Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/migrate/tutorial-assessment-vmware

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Case Study (1 questions)

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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.

Overview

Contoso, Ltd. is a consulting company that has a main office in Montreal and two branch offices in Seattle and New York.

The Montreal office has 2,000 employees. The Seattle office has 1,000 employees. The New York office has 200 employees.

All the resources used by Contoso are hosted on-premises.

Contoso creates a new Azure subscription. The Azure Active Directory (Azure AD) tenant uses a domain named contoso.onmicrosoft.com. The tenant uses the P1 pricing tier.

Existing Environment

The network contains an Active Directory forest named contoso.com. All domain controllers are configured as DNS servers and host the contoso.com DNS zone.

Contoso has finance, human resources, sales, research, and information technology departments. Each department has an organizational unit (OU) that contains all the accounts of that respective department. All the user accounts have the **department** attribute set to their respective department. New users are added frequently.

Contoso.com contains a user named User1.

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All the offices connect by using private links.

Contoso has data centers in the Montreal and Seattle offices. Each data center has a firewall that can be configured as a VPN device.

All infrastructure servers are virtualized. The virtualization environment contains the servers in the following table.

Name	Role	Contains virtual machine
Server1	VMWare vCenter server	VM1
Server2	Hyper-V host	VM2

Contoso uses two web applications named App1 and App2. Each instance on each web application requires 1GB of memory.

The Azure subscription contains the resources in the following table.

Name	Type
VNet1	Virtual network
VM3	Virtual machine
VM4	Virtual machine

The network security team implements several network security groups (NSGs).

Planned Changes

Contoso plans to implement the following changes:

- Deploy Azure ExpressRoute to the Montreal office.
- Migrate the virtual machines hosted on Server1 and Server2 to Azure.
- Synchronize on-premises Active Directory to Azure Active Directory (Azure AD).
- Migrate App1 and App2 to two Azure web apps named WebApp1 and WebApp2.

Technical Requirements

Contoso must meet the following technical requirements:

- Ensure that WebApp1 can adjust the number of instances automatically based on the load and can scale up to five instances.
- Ensure that VM3 can establish outbound connections over TCP port 8080 to the applications servers in the Montreal office.
- Ensure that routing information is exchanged automatically between Azure and the routers in the Montreal office.
- Enable Azure Multi-Factor Authentication (MFA) for the users in the finance department only.

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- Ensure that webapp2.azurewebsites.net can be accessed by using the name app2.contoso.com
- Connect the New York office to VNet1 over the Internet by using an encrypted connection.
- Create a workflow to send an email message when the settings of VM4 are modified.
- Create a custom Azure role named Role1 that is based on the Reader role.
- Minimize costs whenever possible.

Question 324

You need to meet the technical requirement for VM4.

What should you create and configure?

- ☐ an Azure Logic App
- ☐ an Azure Service Bus
- ☐ an Azure Notification Hub
- ☒ an Azure Event Hub

Explanation/Reference

Explanation:
Scenario: Create a workflow to send an email message when the settings of VM4 are modified.

You can start an automated logic app workflow when specific events happen in Azure resources or third-party resources. These resources can publish those events to an Azure event grid. In turn, the event grid pushes those events to subscribers that have queues, webhooks, or event hubs as endpoints. As a subscriber, your logic app can wait for those events from the event grid before running automated workflows to perform tasks - without you writing any code.

References:
https://docs.microsoft.com/en-us/azure/event-grid/monitor-virtual-machine-changes-event-grid-logic-app

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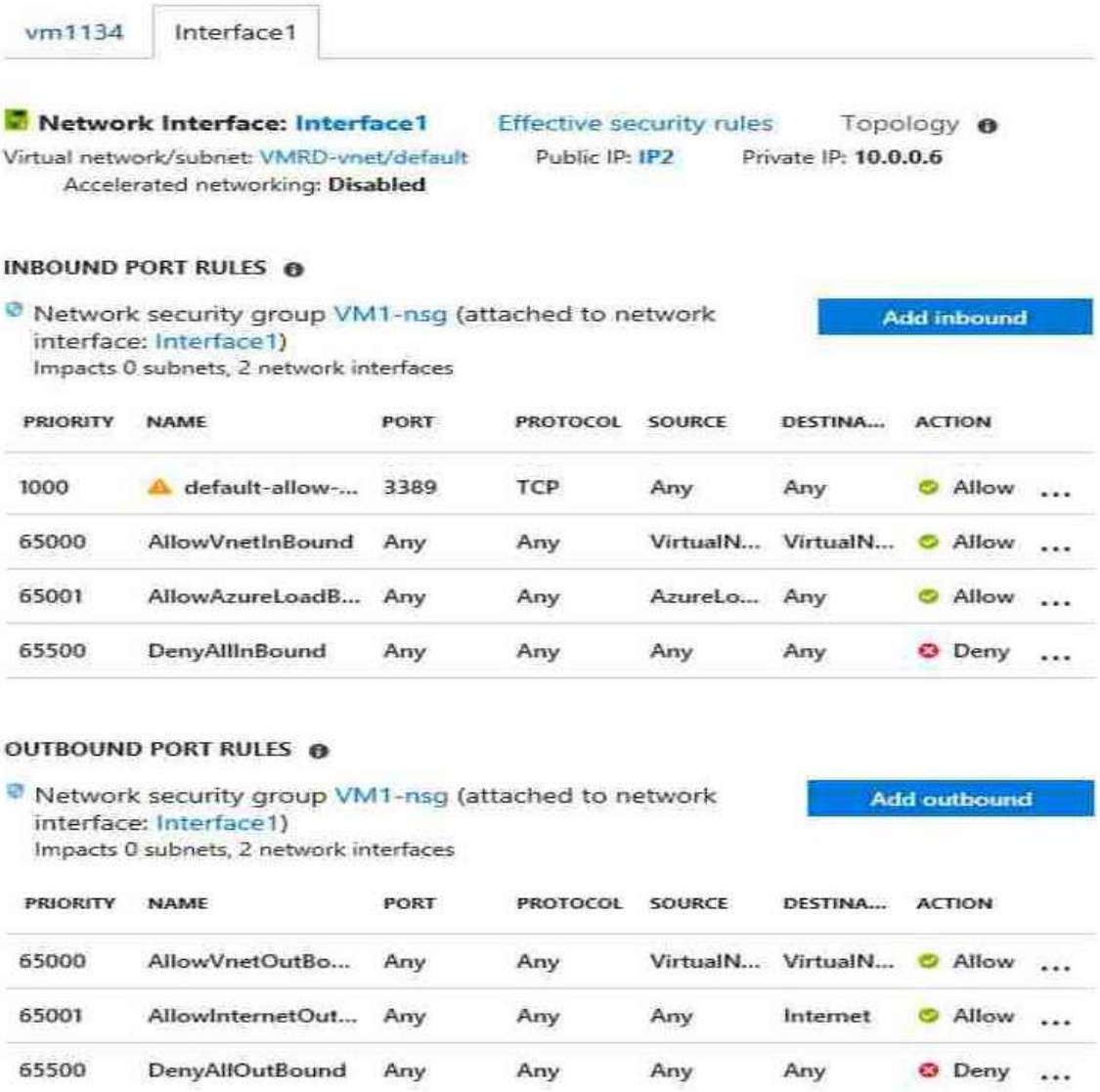
Question 255

You have an Azure subscription named Subscription1. Subscription1 contains a virtual machine named VM1. You have a computer Computer1 that runs Windows 10. Computer1 is connected to the Internet.

You add a network interface named Interface1 to VM1 as shown in the exhibit. (Click the **Exhibit** tab.)



vm1134 | Interface1

Network Interface: Interface1 Effective security rules Topology

Virtual network/subnet: VMRD-vnet/default Public IP: IP2 Private IP: 10.0.0.6

Accelerated networking: **Disabled**

INBOUND PORT RULES

Network security group VM1-nsg (attached to network interface: Interface1)

Impacts 0 subnets, 2 network interfaces

Add inbound

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINA...	ACTION
1000	default-allow-...	3389	TCP	Any	Any	Allow ...
65000	AllowVnetInBound	Any	Any	VirtualN...	VirtualN...	Allow ...
65001	AllowAzureLoadB...	Any	Any	AzureLo...	Any	Allow ...
65500	DenyAllInBound	Any	Any	Any	Any	Deny ...

OUTBOUND PORT RULES

Network security group VM1-nsg (attached to network interface: Interface1)

Impacts 0 subnets, 2 network interfaces

Add outbound

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINA...	ACTION
65000	AllowVnetOutBo...	Any	Any	VirtualN...	VirtualN...	Allow ...
65001	AllowInternetOut...	Any	Any	Any	Internet	Allow ...
65500	DenyAllOutBound	Any	Any	Any	Any	Deny ...

From Computer1, you attempt to connect to VM1 by using Remote Desktop, but the connection fails.

You need to establish a Remote Desktop connection to VM1.

What should you do first?

- ☐ Attach a network interface
- ☒ Start VM1
- ☐ Delete the DenyAllOutBound outbound port rule

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- ☐ Delete the DenyAllInBound inbound port rule

Explanation/Reference

Explanation:
The exclamation icon next to the inbound port rule for port 3389, which is used for Remote Desktop, indicates an underlying problem. Restart the VM to correct any underlying issues the VM itself is having.

Incorrect Answers:
A: The network interface has already been added to VM.
C: The DenyAllOutBound outbound port rule will not affect inbound Remote Desktop connectivity.
D: An inbound rule for port 3389, which is used for Remote Desktop has been added and has a higher priority than the DenyAllInBound inbound port rule.

Note: Rules are processed in priority order, with lower numbers processed before higher numbers, because lower numbers have higher priority. Processing stops once traffic matches a rule. As a result, any rules that exist with lower priorities (higher numbers) that have the same attributes as rules with higher priorities are not processed.

Reference:
https://docs.microsoft.com/en-us/azure/virtual-network/security-overview

Question 256

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?

- ☐ server-level firewall rules
- ☒ Azure Application Gateway
- ☐ Azure Traffic Manager
- ☐ Azure Load Balancer

Explanation/Reference

Explanation:
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 Balanacer.

Incorrect Answers:
D: Because Load Balancer is agnostic to the TCP payload and TLS offload ("SSL") is not provided.

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References: https://docs.microsoft.com/en-us/azure/application-gateway/overview

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Question 257

HOTSPOT

You have an Azure subscription named Subscription1.

In Subscription1, you create an alert rule named Alert1. The Alert1 action group is configured as shown in the following exhibit.

```
PS Azure:\> Get-AzureRmActionGroup

ResourceGroupName      : default-activitylogalerts
GroupShortName         : AG1
Enabled                : True
EmailReceivers         : {Action1_-EmailAction-}
SmsReceivers           : {Action1_-SMSAction-}
WebhookReceivers       : {}
Id: /subscriptions/a4fde29b-d56a-4f6c-8298-6c53cd0b720c/resourceGroups/default-
activitylogalerts/providers/microsoft.insights/actionGroups/ActionGroup1
Name                   : ActionGroup1
Type                   : Microsoft.Insights/ActionGroups
Location               : Global
Tags                   : {}
```

Alert1 alert criteria is triggered every minute.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

The number of email messages that Alert1 will send in an hour is **[answer choice]**. [0 / 4 / 6 / 12 / 60]

The number of SMS messages that Alert1 will send in an hour is **[answer choice]**. [0 / 4 / 6 / 12 / 60]

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Solution:

Answer Area

The number of email messages that Alert1 will send in an hour is **[answer choice]**.	0 4 6 12 60
The number of SMS messages that Alert1 will send in an hour is **[answer choice]**.	0 4 6 12 60

Explanation/Reference

Explanation:

Box 1: 60
One alert per minute will trigger one email per minute.

Box 2: 12
No more than 1 SMS every 5 minutes can be send, which equals 12 per hour.

Note: Rate limiting is a suspension of notifications that occurs when too many are sent to a particular phone number, email address or device. Rate limiting ensures that alerts are manageable and actionable.

The rate limit thresholds are:

- SMS: No more than 1 SMS every 5 minutes.
- Voice: No more than 1 Voice call every 5 minutes.
- Email: No more than 100 emails in an hour.
- Other actions are not rate limited.

References:
https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/azure-monitor/overview.md

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Question 258

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HOTSPOT

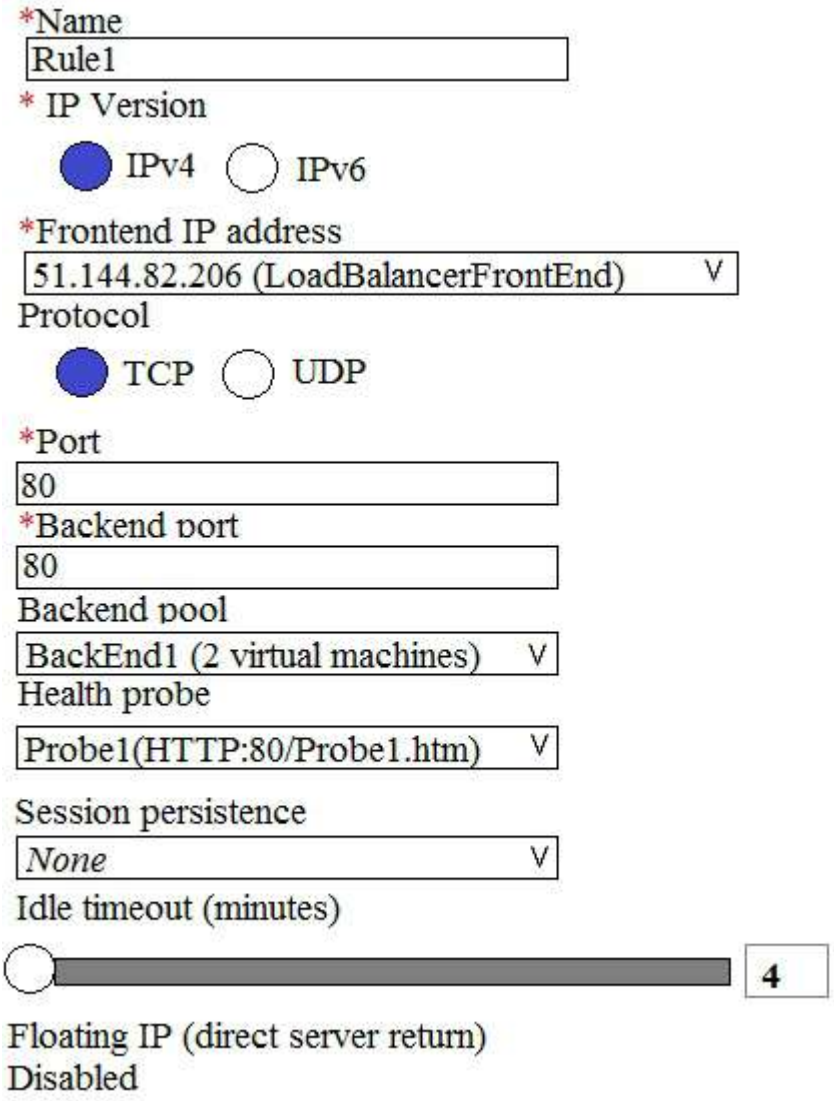
You have an Azure subscription named Subscription1 that contains the resources in the following table.

Name	Type
VM1	Virtual machine
VM2	Virtual machine
LB1	Load balancer

A web server runs on VM1 and VM2.

When you request a webpage named Page1.htm from the Internet, LB1 balances the web requests to VM1 and VM2., and you receive a response.

On LB1, you have a rule named Rule1 as shown in the **Rule1** exhibit. (Click the **Exhibit** tab.)



You have a health probe named Probe1 as shown in the **Probe1** exhibit. (Click the **Exhibit** tab.)

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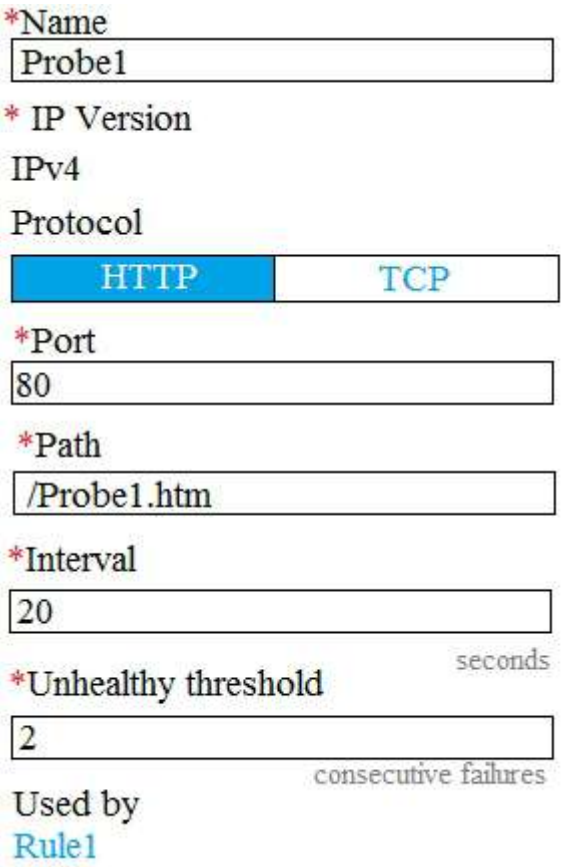

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements

	Yes	No
If a user is served Page1.htm from VM1, and then the user refreshes the web browser, Page1.htm will be refreshed from VM1 always.	◯	◯
If you change the protocol of Rule1, all the web requests will fail.	◯	◯
If you delete Probe1.htm from VM2, LB1 will route all the web requests to VM1.	◯	◯

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Solution:

Answer Area

Statements

	Yes	No
If a user is served Page1.htm from VM1, and then the user refreshes the web browser, Page1.htm will be refreshed from VM1 always.	○	○
If you change the protocol of Rule1, all the web requests will fail.	○	○
If you delete Probe1.htm from VM2, LB1 will route all the web requests to VM1.	○	○

Explanation/Reference

Explanation:

Box 1: No
Session Persistence is None.

Box 2: Yes
Web requests uses the HTTP protocol, not the TCP protocol.

Box 3: No

Note: Azure Load Balancer provides health probes for use with load-balancing rules. Health probe configuration and probe responses determine which backend pool instances will receive new flows. You can use health probes to detect the failure of an application on a backend instance. You can also generate a custom response to a health probe and use the health probe for flow control to manage load or planned downtime. When a health probe fails, Load Balancer stops sending new flows to the respective unhealthy instance.

References:
https://docs.microsoft.com/en-us/azure/load-balancer/load-balancer-custom-probe-overview

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Question 259

You develop an entertainment application where users can buy and trade virtual real estate. The application must scale to support thousands of users.

The current architecture includes five Azure virtual machines (VM) that connect to an Azure SQL Database for account information and Azure Table Storage for backend services. A user interacts with these components in the cloud at any given time.

- Routing Service – Routes a request to the appropriate service and must not persist data across sessions.
- Account Service – Stores and manages all account information and authentication and requires data to persist across sessions
- User Service – Stores and manages all user information and requires data to persist across sessions.
- Housing Network Service – Stores and manages the current real-estate economy and requires data to persist across sessions.
- Trade Service – Stores and manages virtual trade between accounts and requires data to persist across sessions.

Due to volatile user traffic, a microservices solution is selected for scale agility.

You need to migrate to a distributed microservices solution on Azure Service Fabric.

Solution: Deploy a Windows container to Azure Service Fabric for each component.

Does the solution meet the goal?

☐ Yes
☒ No

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Question 260

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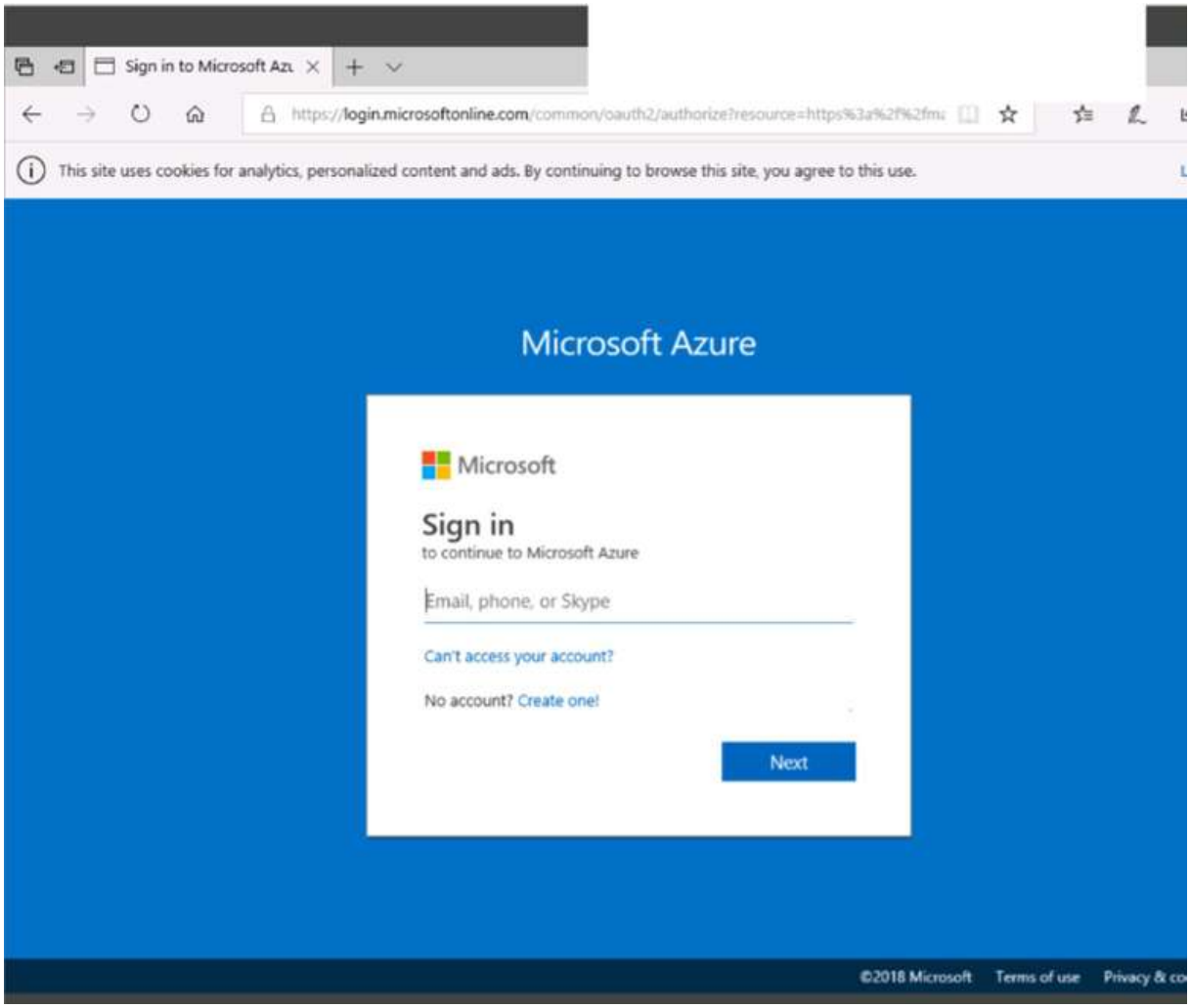
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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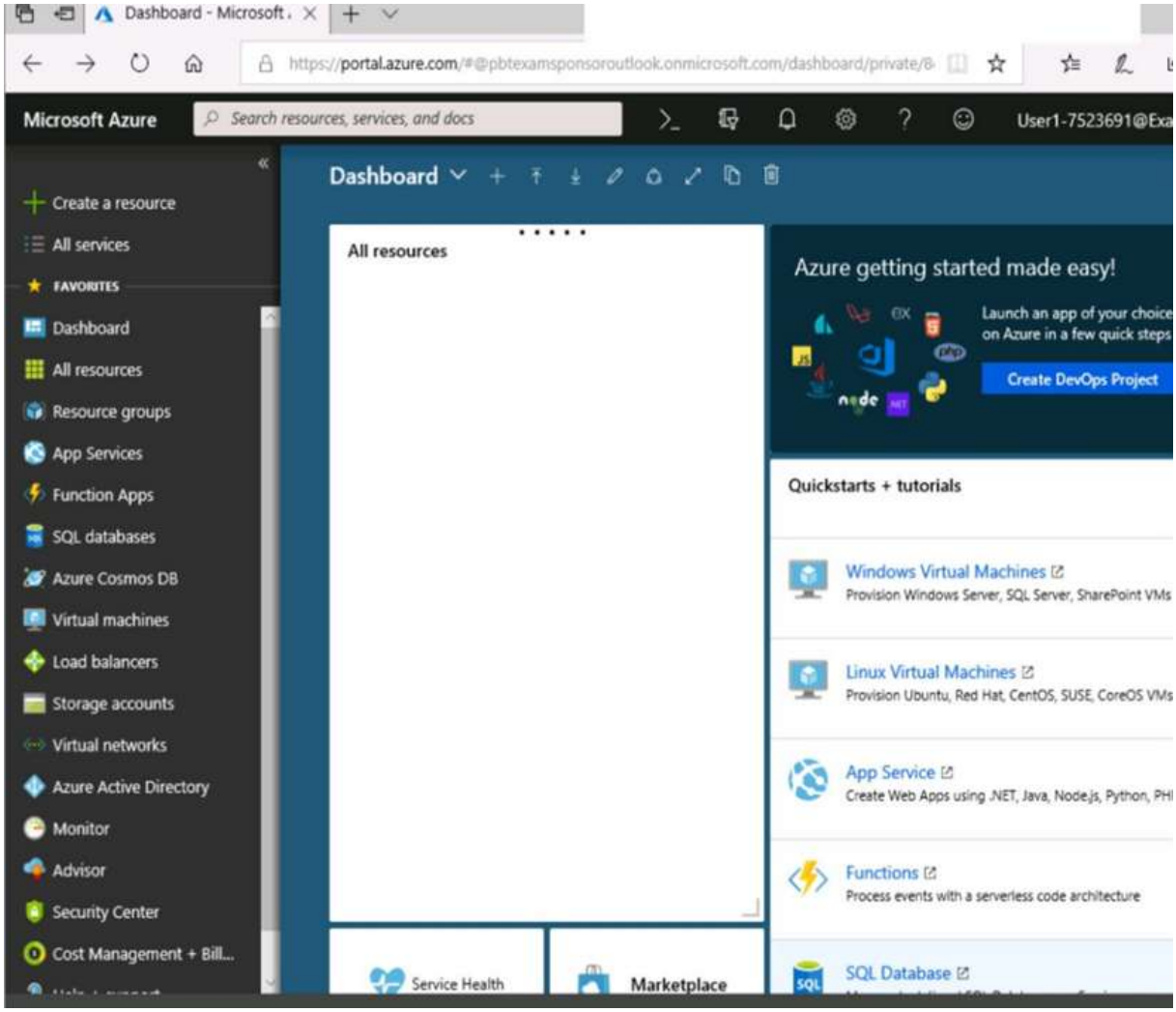

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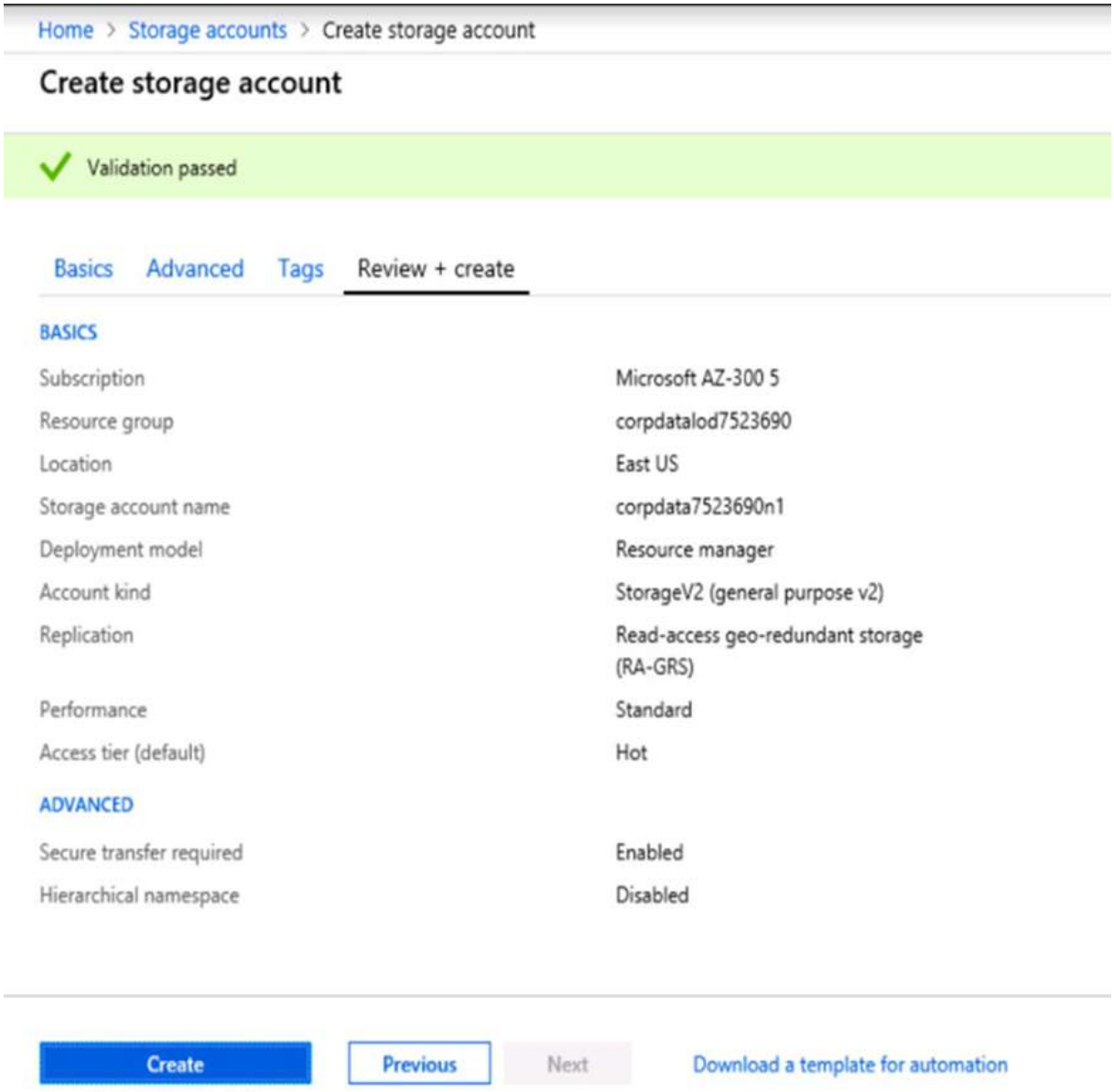

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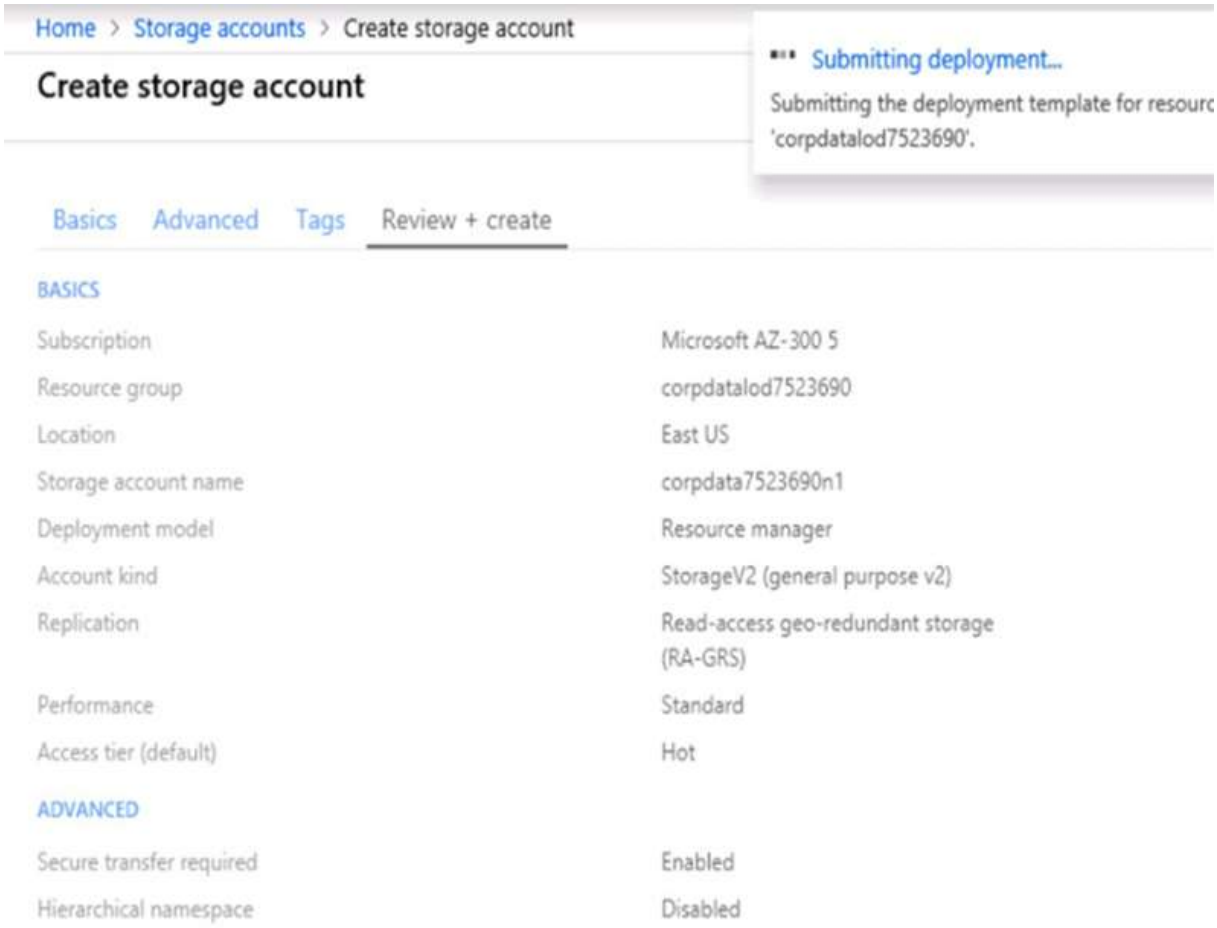

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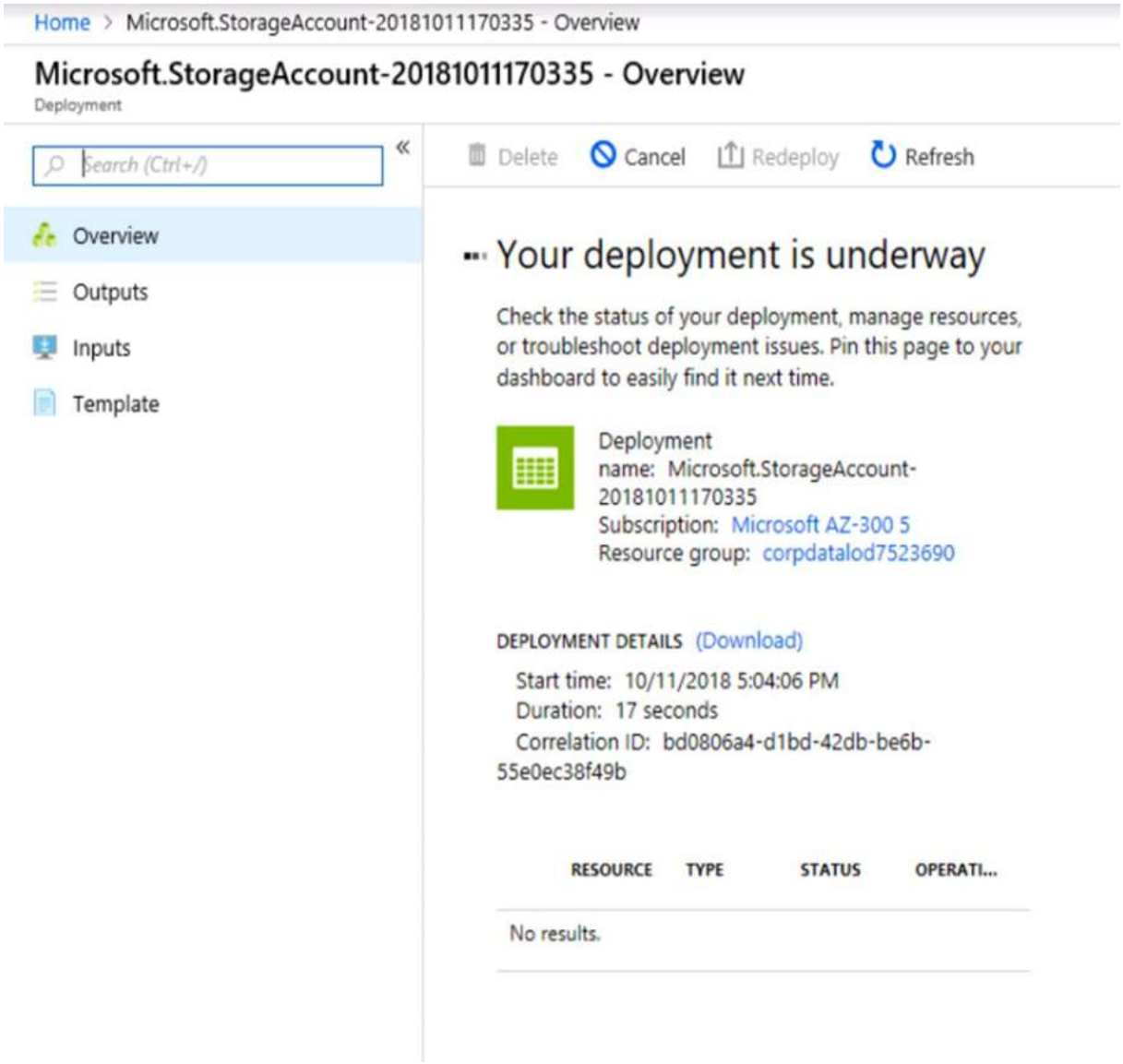

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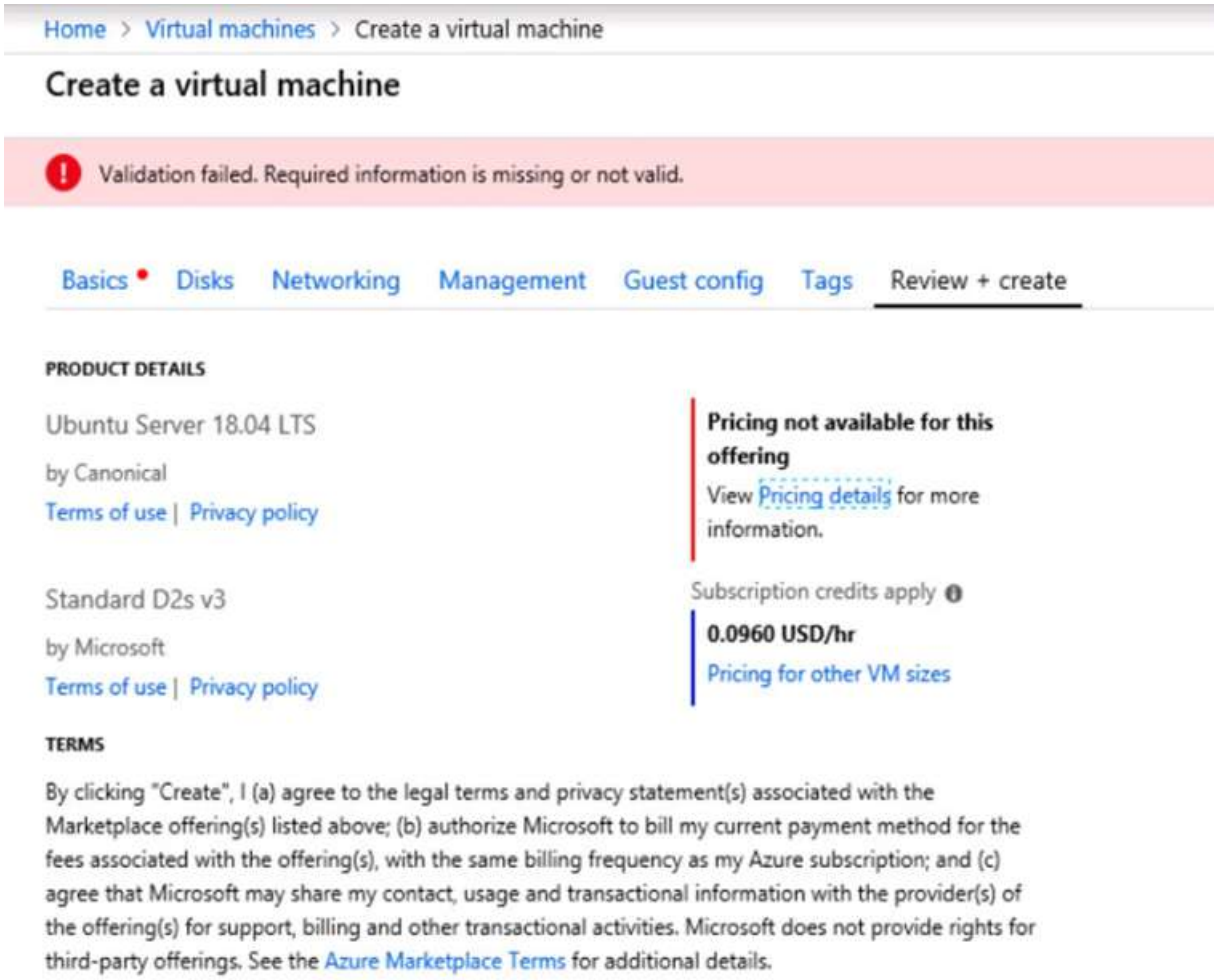

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You plan to create several virtual machines in different availability zones, and then to configure the virtual machines to load balanced connections from the Internet.

You need to create an IP address resource named ip1006 to support the planned load balancing solution.

The solution must minimize costs.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
We should create a public IP address.

Step 1: At the top, left corner of the portal, select + Create a resource.

Step 2: Enter public ip address in the Search the Marketplace box. When Public IP address appears in the search results, select it.

Step 3: Under Public IP address, select Create.

Step 4: Enter, or select values for the following settings, under Create public IP address, then select Create:
Name: ip1006
SKU: Basic SKU
IP Version: IPv6
IP address assignment: Dynamic
Subscription: Select appropriate
Resource group: Select appropriate

References:
https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-public-ip-address

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Question 261

You have an Azure subscription that contains the storage accounts shown in the following table.

Name	Contains
Storagecontoso1	A blob service and a table service
Storagecontoso2	A blob service and a file service
Storagecontoso3	A queue service
Storagecontoso4	A file service and a queue service
Storagecontoso5	A table service

You enable Storage Advanced Threat Protection (ATP) for all the storage accounts.

You need to identify which storage accounts will generate Storage ATP alerts.

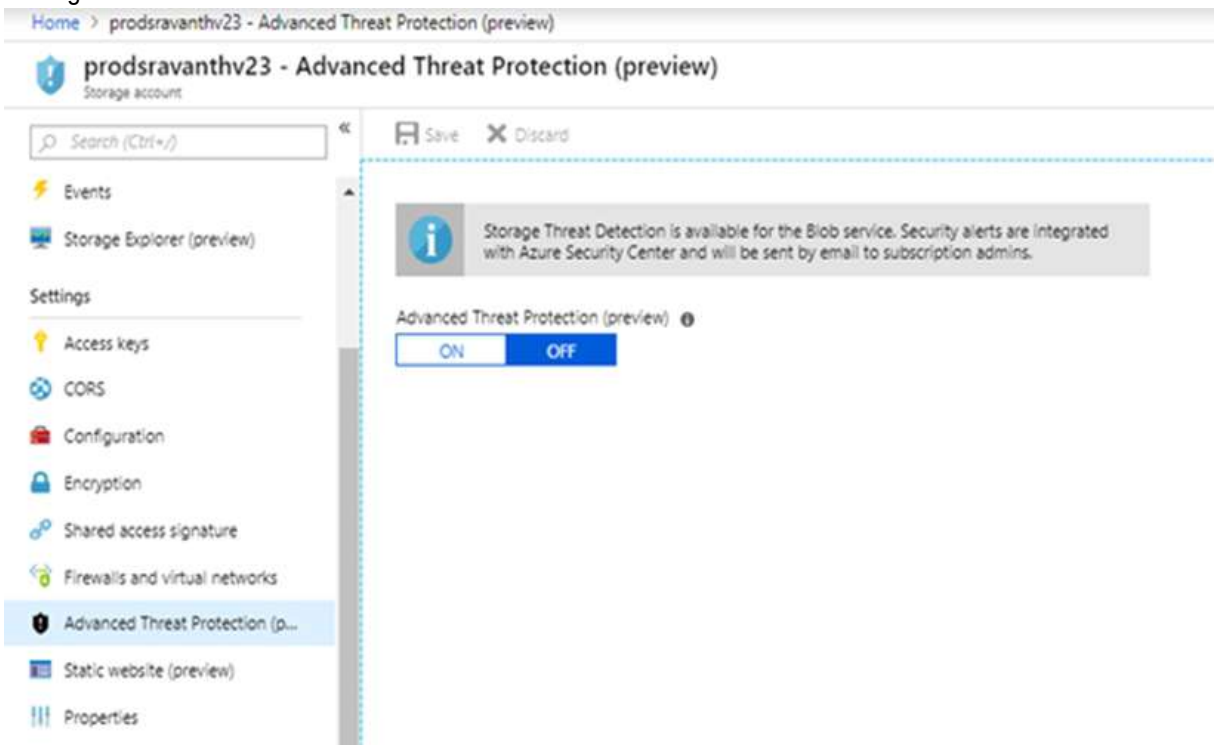
Which two storage accounts should you identify? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ storagecontoso1
- ☒ storagecontoso2
- ☐ storagecontoso3
- ☐ storagecontoso4
- ☐ storagecontoso5

Explanation/Reference

Explanation:
Example:
Storage Threat Detection is available for the Blob Service.



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Reference:
https://azure.microsoft.com/en-us/blog/advanced-threat-protection-for-azure-storage-now-in-public-preview/

Question 262

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named Adatum and an Azure Subscription named Subscription1. Adatum contains a group named Developers. Subscription1 contains a resource group named Dev.

You need to provide the Developers group with the ability to create Azure logic apps in the Dev resource group.

Solution: On Subscription1, you assign the DevTest Labs User role to the Developers group.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
The DevTest Labs User role lets you connect, start, restart, and shutdown your virtual machines in your Azure DevTest Labs.

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles#devtest-labs-user

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Question 263

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named Adatum and an Azure Subscription named Subscription1. Adatum contains a group named Developers. Subscription1 contains a resource group named Dev.

You need to provide the Developers group with the ability to create Azure logic apps in the Dev resource group.

Solution: On Dev, you assign the Logic App Contributor role to the Developers group.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
The Logic App Contributor role lets you read, enable and disable logic app.

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles#logic-app-contributor

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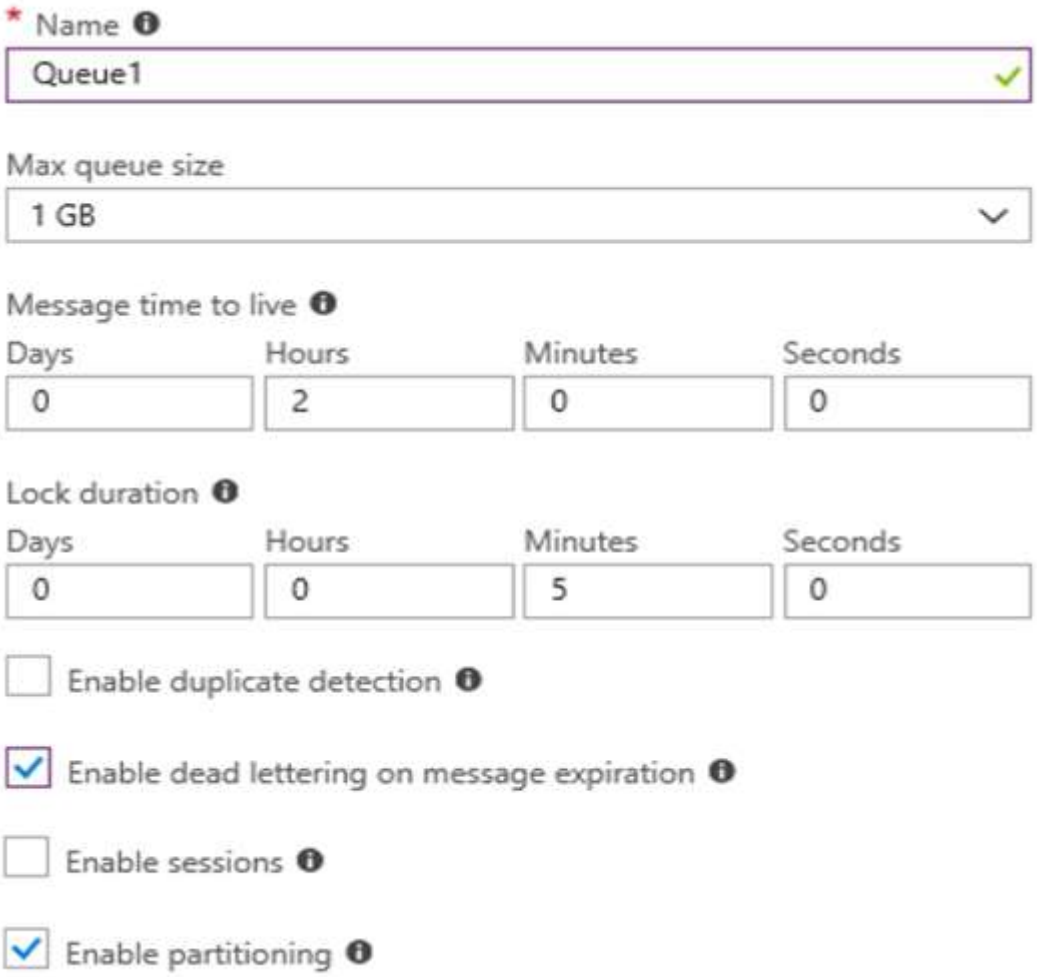
Question 264

HOTSPOT

You have an Azure Service Bus and a queue named Queue1. Queue1 is configured as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

If a message is written to Queue1 and is never read, the message will be

- deleted after 24 hours
- deleted after two hours and five minutes
- deleted after two hours
- retained until it is deleted manually

If a message is written to Queue1, and then read after one hour, the message will be

- deleted immediately
- deleted after five minutes
- deleted after one hour
- retained until it is deleted manually

Solution:

Answer Area

If a message is written to Queue1 and is never read, the message will be

- deleted after 24 hours
- deleted after two hours and five minutes
- deleted after two hours
- retained until it is deleted manually

If a message is written to Queue1, and then read after one hour, the message will be

- deleted immediately
- deleted after five minutes
- deleted after one hour
- retained until it is deleted manually

Explanation/Reference

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Question 265

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant named Adatum and an Azure Subscription named Subscription1. Adatum contains a group named Developers. Subscription1 contains a resource group named Dev.

You need to provide the Developers group with the ability to create Azure logic apps in the Dev resource group.

Solution: On Dev, you assign the Contributor role to the Developers group.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
The Contributor role lets you manage everything except access to resources. It allows you to create and manage resources of all types, including creating Azure logic apps.

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles#contributor

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Question 266

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A company backs up data to on-premises servers at their main facility. The company currently has 30 TB of archived data that infrequently used. The facility has download speeds of 100 Mbps and upload speeds of 20 Mbps.

You need to securely transfer all backups to Azure Blob Storage for long-term archival. All backup data must be sent within seven days.

Solution: Backup data to local disks and use the Azure Import/Export service to send backups to Azure Blob Storage.

Does this meet the goal?

- ☒ Yes
- ☐ No

Question 267

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A company backs up data to on-premises servers at their main facility. The company currently has 30 TB of archived data that infrequently used. The facility has download speeds of 100 Mbps and upload speeds of 20 Mbps.

You need to securely transfer all backups to Azure Blob Storage for long-term archival. All backup data must be sent within seven days.

Solution: Create a file share in Azure Files. Mount the file share to the server and upload the files to the file share. Transfer the files to Azure Blob Storage.

Does this meet the goal?

- ☐ Yes
- ☒ No

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Question 268

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

A company backs up data to on-premises servers at their main facility. The company currently has 30 TB of archived data that infrequently used. The facility has download speeds of 100 Mbps and upload speeds of 20 Mbps.

You need to securely transfer all backups to Azure Blob Storage for long-term archival. All backup data must be sent within seven days.

Solution: Use the **Set-AzureStorageBlobContent** Azure PowerShell command to copy all backups asynchronously to Azure Blob Storage.

Does this meet the goal?

- ☐ Yes
- ☒ No

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Question 269

HOTSPOT

You are developing a back-end Azure App Service that scales based on the number of messages contained in a Service Bus queue.

A rule already exists to scale up the App Service when the average queue length of unprocessed and valid queue messages is greater than 1000.

You need to add a new rule that will continuously scale down the App Service as long as the scale up condition is not met.

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

NOTE: Each correct selection is worth one point.

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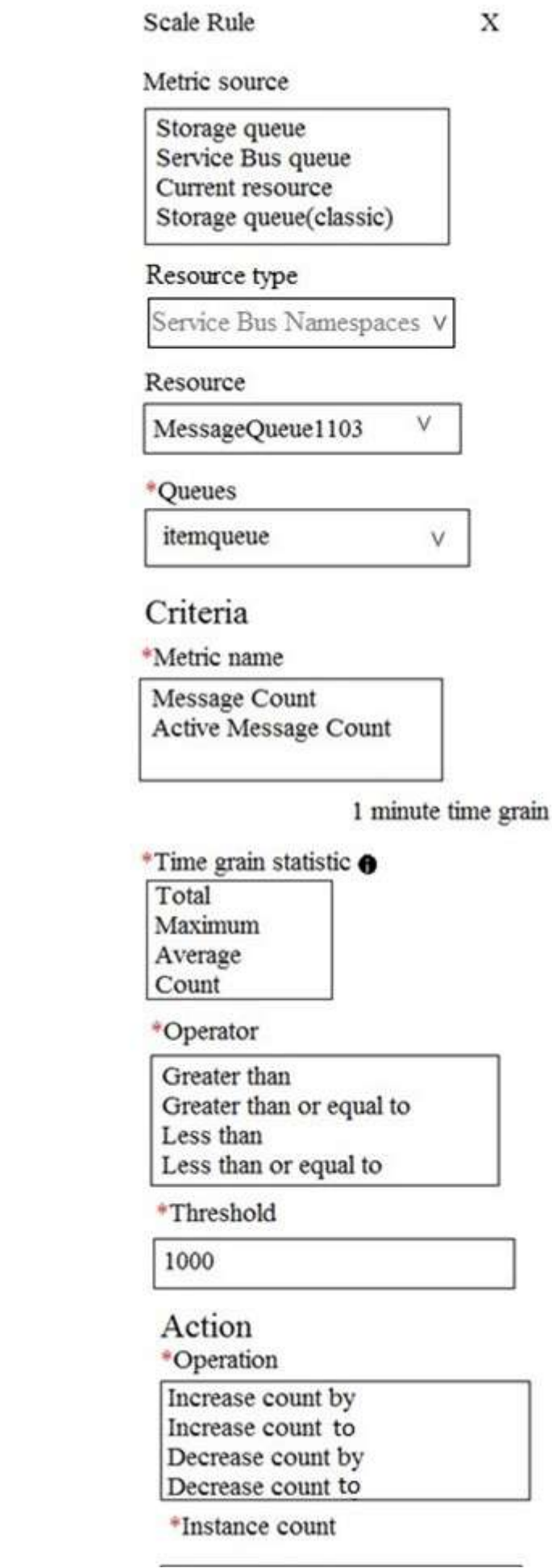
Answer Area



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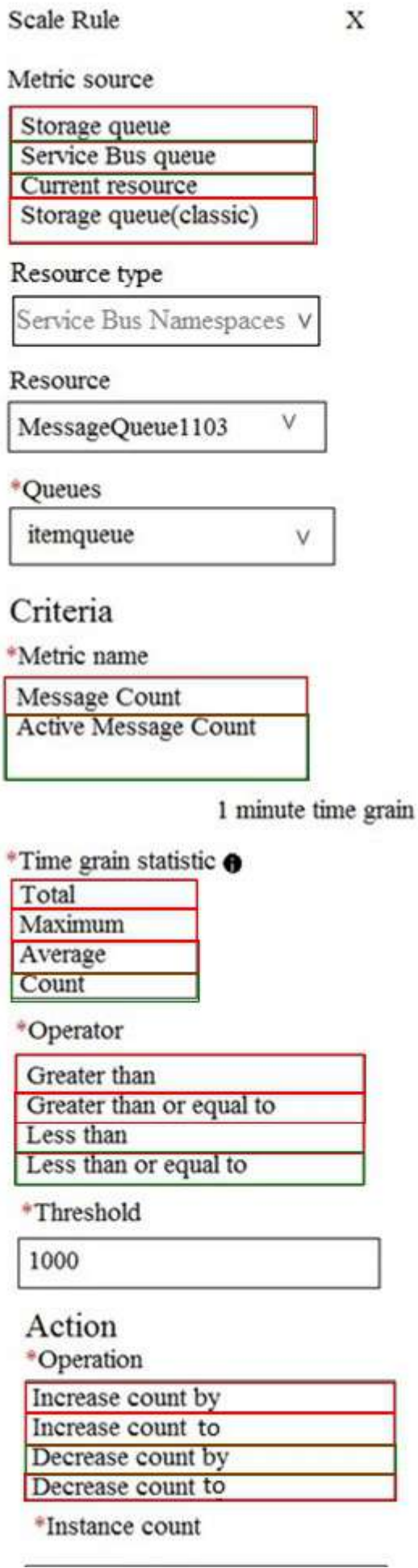
Answer Area



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Explanation/Reference

Explanation:

Box 1: Service bus queue
You are developing a back-end Azure App Service that scales based on the number of messages contained in a Service Bus queue.

Box 2: ActiveMessage Count
ActiveMessageCount: Messages in the queue or subscription that are in the active state and ready for delivery.

Box 3: Count

Box 4: Less than or equal to
You need to add a new rule that will continuously scale down the App Service as long as the scale up condition is not met.

Box 5: Decrease count by

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-metrics#commonly-used-service-bus-metrics

https://docs.microsoft.com/en-us/Azure/azure-monitor/platform/autoscale-best-practices

https://docs.microsoft.com/en-us/azure/service-bus-messaging/message-counters

Question 270

You have an on-premises network that contains a Hyper-V host named Host1. Host1 runs Windows Server 2016 and hosts 10 virtual machines that run Windows Server 2016.

You plan to replicate the virtual machines to Azure by using Azure Site Recovery.

You create a Recovery Services vault named ASR1 and a Hyper-V site named Site1.

You need to add Host1 to ASR1.

What should you do?

- ☐ Download the installation file for the Azure Site Recovery Provider.
- Download the storage account key.
- Install the Azure Site Recovery Provider on each virtual machine and register the virtual machines.

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☒ Download the installation file for the Azure Site Recovery Provider.

- Download the vault registration key.
- Install the Azure Site Recovery Provider on Host1 and register the server.

☐ Download the installation file for the Azure Site Recovery Provider.

- Download the storage account key.
- Install the Azure Site Recovery Provider on Host1 and register the server.

☐ Download the installation file for the Azure Site Recovery Provider.

- Download the vault registration key.
- Install the Azure Site Recovery Provider on each virtual machine and register the virtual machines.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/site-recovery/hyper-v-azure-tutorial

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Question 271

You plan to migrate an on-premises Hyper-V environment to Azure by using Azure Site Recovery. The Hyper-V environment is managed by using Microsoft System Center Virtual Machine Manager (VMM).

The Hyper-V environment contains the virtual machines in the following table:

Name	Operating system (OS)	OS disk size	BitLocker Drive Encryption (BitLocker) enabled on OS disks.	Generation
DC1	Windows Server 2016	500 GB	No	2
FS1	Ubuntu 16.04 LTS	200 GB	No	2
CA1	Windows Server 2012 R2	1 TB	Yes	1
SQL1	Windows Server 2016	200 GB	No	1

Which virtual machine can be migrated by using Azure Site Recovery?

- ☐ FS1
- ☐ CA1
- ☐ DC1
- ☒ SQL1

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/site-recovery/hyper-v-azure-support-matrix#azure-vm-requirements

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Question 272

DRAG DROP

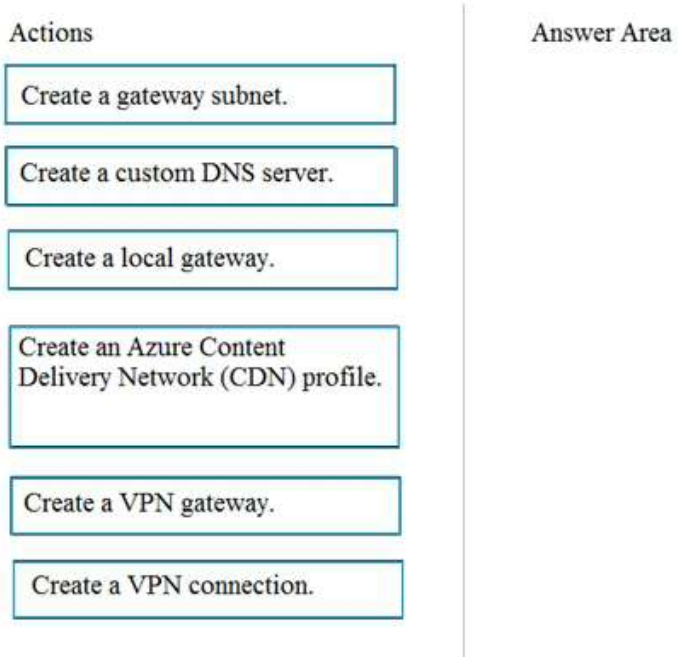
You have an on-premises network that you plan to connect to Azure by using a site-to-site VPN.

In Azure, you have an Azure virtual network named VNet1 that uses an address space of 10.0.0.0/16. VNet1 contains a subnet named Subnet1 that uses an address space of 10.0.0.0/24.

You need to create a site-to-site VPN to Azure.

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

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



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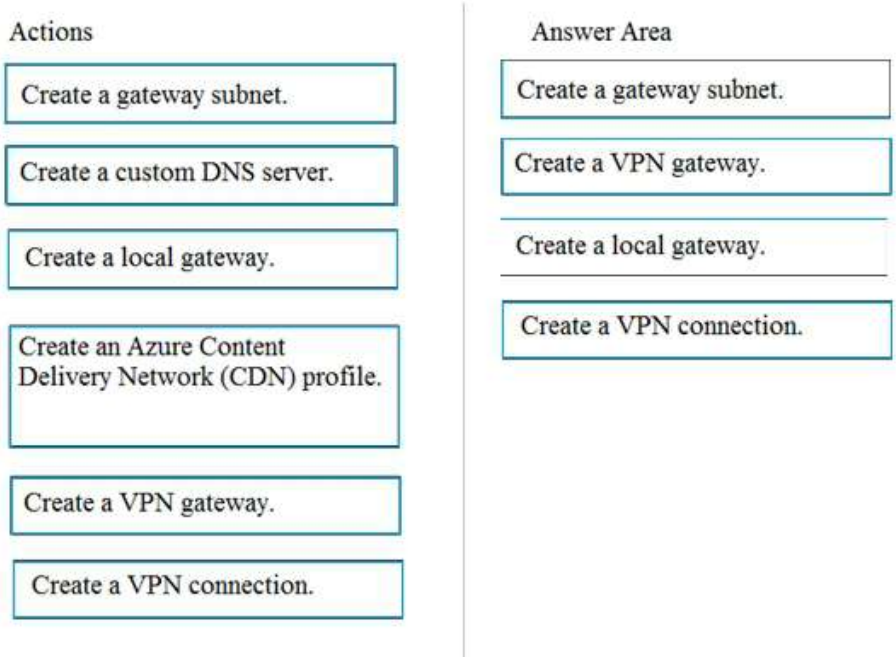
Solution:



Explanation/Reference

Question 273

You have an Azure subscription named Subscription1 that contains two Azure networks named VNet1 and VNet2. VNet1 contains a VPN gateway named VPNGW1 that uses static routing. There is a site-to-site VPN connection between your on-premises network and VNet1.

On a computer named Client1 that runs Windows 10, you configure a point-to-site VPN connection to VNet1.

You configure virtual network peering between VNet1 and VNet2. You verify that you can connect to VNet2 from the on-premises network. Client1 is unable to connect to VNet2.

You need to ensure that you can connect Client1 to VNet2.

What should you do?

- ☐ Select **Allow gateway transit** on VNet1.
- ☒ Download and re-install the VPN client configuration package on Client1.
- ☐ Enable BGP on VPNGW1.
- ☐ Select **Allow gateway transit** on VNet2.

Explanation/Reference

Explanation:
Point-to-Site certificate authentication connections require the following prerequisites:

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- A Dynamic VPN gateway.
- The public key (.cer file) for a root certificate, which is uploaded to Azure. This key is considered a trusted certificate and is used for authentication.
- A client certificate generated from the root certificate, and installed on each client computer that will connect. This certificate is used for client authentication.
- A VPN client configuration package must be generated and installed on every client computer that connects. The client configuration package configures the native VPN client that's already on the operating system with the necessary information to connect to the VNet.

Reference:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-about-point-to-site-routing

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Question 274

HOTSPOT

Your company has offices in New York and Los Angeles.

You have an Azure subscription that contains an Azure virtual network named VNet1. Each office has a site-to-site VPN connection to VNet1.

Each network uses the address spaces shown in the following table:

Location	IP address space
VNet1	192.168.0.0/20
New York	10.0.0.0/16
Los Angeles	10.10.0.0/16

You need to ensure that all Internet-bound traffic from VNet1 is routed through the New York office.

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

NOTE: Each correct selection is worth one point.

Answer Area

In Azure, run: [ ]
- New-AzureRmLocalNetworkGateway
- New-AzureRmVirtualNetworkGatewayConnection
- Set-AzureRmVirtualNetworkGatewayDefaultSite

On a VPN device in the New York office, set the traffic selectors to: [ ]
- 0.0.0.0/0
- 10.0.0.0/16
- 192.168.0.0/20

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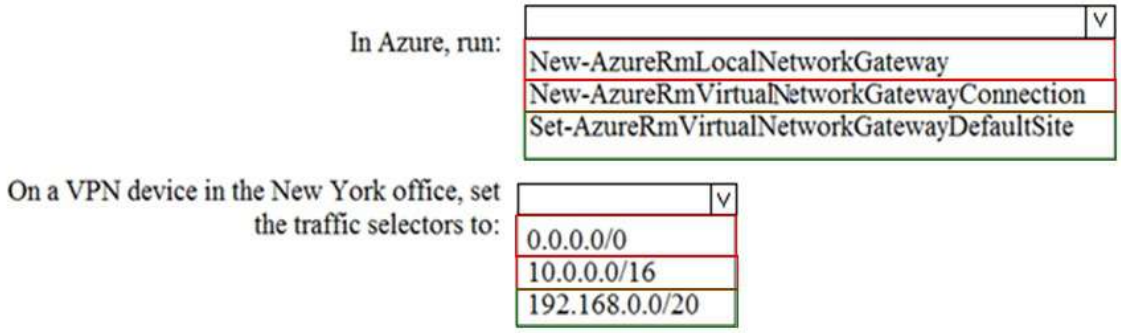
Solution:

Answer Area



Explanation/Reference

Question 275

You have a Microsoft SQL Server Always On availability group on Azure virtual machines.

You need to configure an Azure internal load balancer as a listener for the availability group.

What should you do?

- ☐ Create an HTTP health probe on port 1433.
- ☐ Set Session persistence to **Client IP**.
- ☐ Set Session persistence to **Client IP and protocol**.
- ☒ Enable Floating IP.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/sql/virtual-machines-windows-portal-sql-alwayson-int-listener

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Question 276

You set the multi-factor authentication status for a user named admin1@contoso.com to **Enabled**.

Admin1 accesses the Azure portal by using a web browser.

Which additional security verifications can Admin1 use when accessing the Azure portal?

- ☐ an app password, a text message that contains a verification code, and a verification code sent from the Microsoft Authenticator app
- ☒ a phone call, a text message that contains a verification code, and a notification or a verification code sent from the Microsoft Authenticator app
- ☐ a phone call, an email message that contains a verification code, and a text message that contains an app password
- ☐ an app password, a text message that contains a verification code, and a notification sent from the Microsoft Authenticator app

Explanation/Reference

Explanation:
The Microsoft Authenticator app can help prevent unauthorized access to accounts and stop fraudulent transactions by pushing a notification to your smartphone or tablet. Users view the notification, and if it's legitimate, select Verify. Otherwise, they can select Deny.

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-authentication-methods

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Question 277

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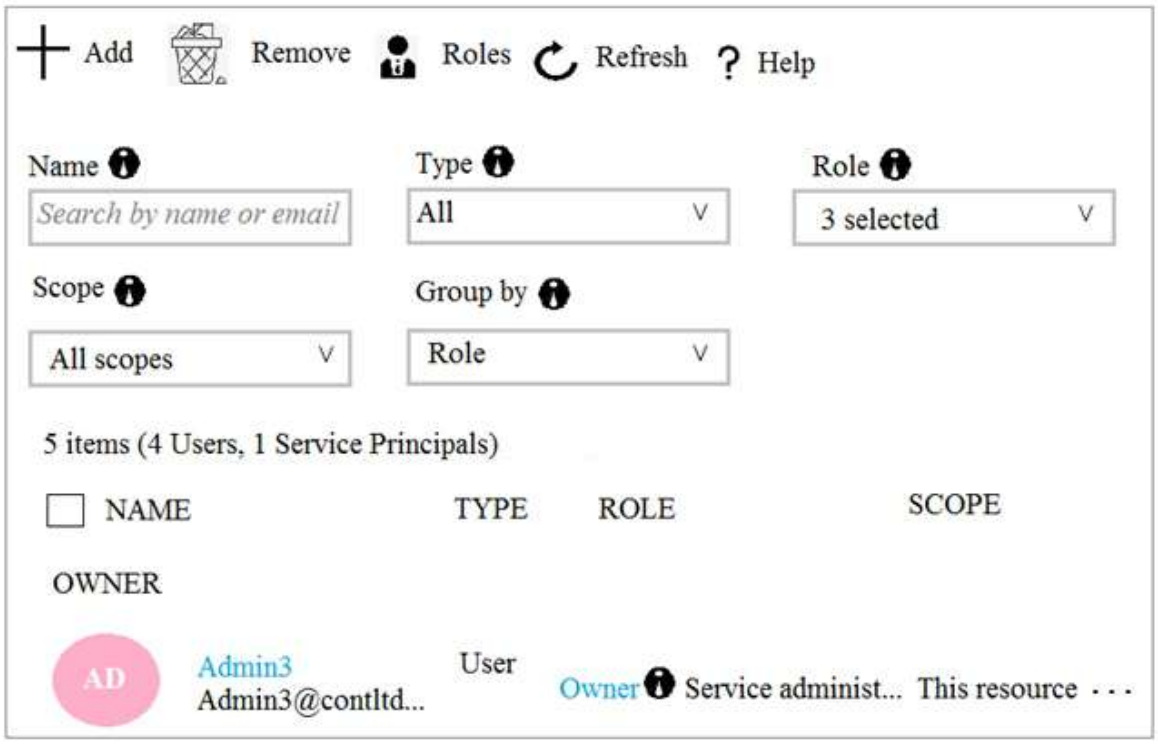
HOTSPOT

You have an Azure Active Directory (Azure AD) tenant that contains three global administrators named Admin1, Admin2, and Admin3.

The tenant is associated to an Azure subscription. Access control for the subscription is configured as shown in the Access control exhibit. (Click the Exhibit tab.)



You sign in to the Azure portal as Admin1 and configure the tenant as shown in the Tenant exhibit. (Click the **Exhibit** tab.)

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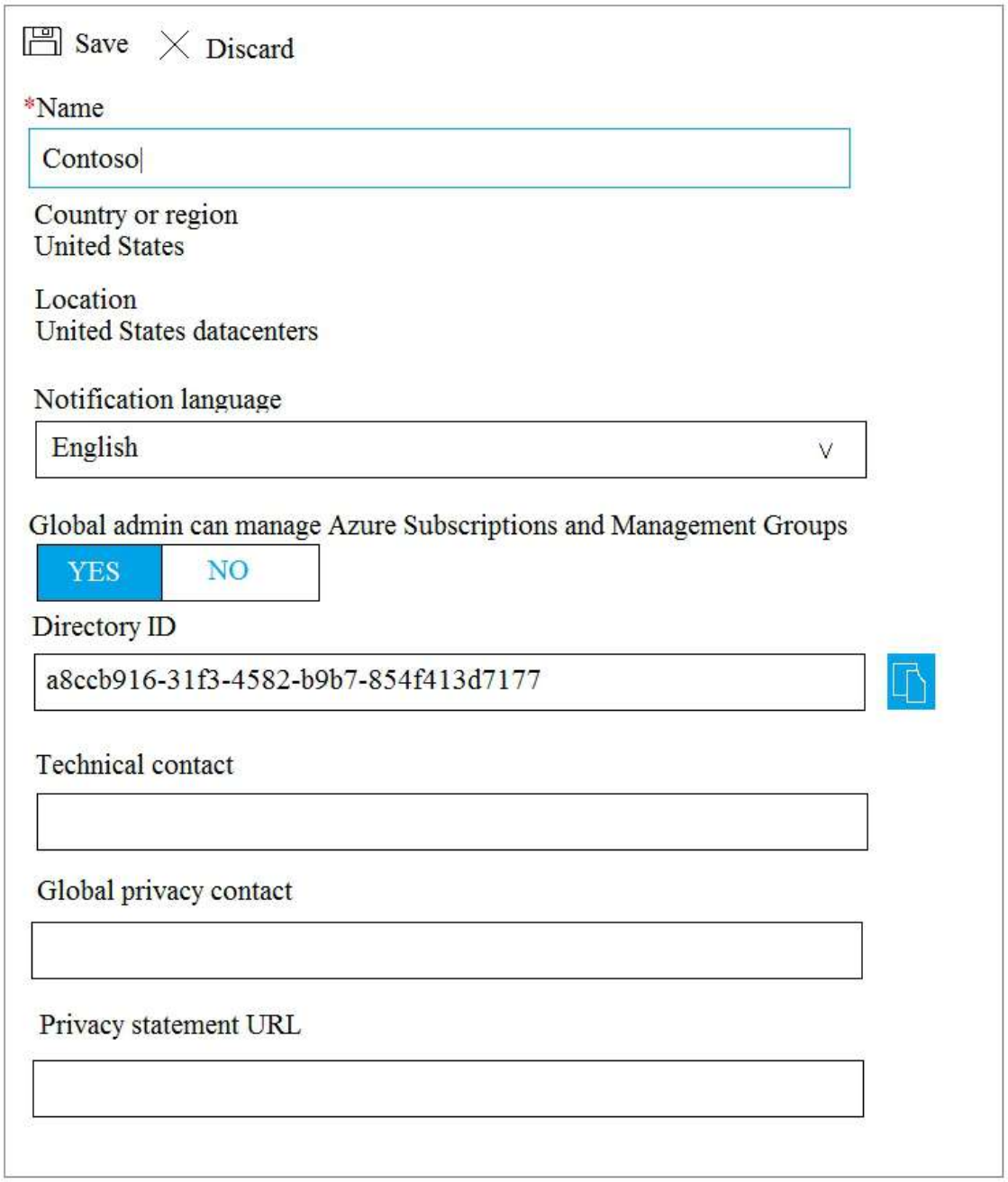

For each of the following statement, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
Admin1 can add Admin2 as an owner of the subscription.	○	○
Admin2 can add Admin1 as an owner of the subscription.	○	○
Admin2 can create a resource group in the subscription.	○	○

Solution:

Answer Area

Statements	Yes	No
Admin1 can add Admin2 as an owner of the subscription.	○	○
Admin2 can add Admin1 as an owner of the subscription.	○	○
Admin2 can create a resource group in the subscription.	○	○

Explanation/Reference

Question 278

You have an Azure Active Directory (Azure AD) tenant.

All administrators must enter a verification code to access the Azure portal.

You need to ensure that the administrators can access the Azure portal only from your on-premises network.

What should you configure?

- ☐ the default for all the roles in Azure AD Privileged Identity Management
- ☐ an Azure AD Identity Protection user risk policy
- ☐ an Azure AD Identity Protection sign-in risk policy
- ☒ the multi-factor authentication service settings

Explanation/Reference

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

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Question 279

You have an Azure subscription named Subscription1 that contains a virtual network named VNet1. VNet1 is in a resource group named RG1.

Subscription1 has a user named User1. User1 has the following roles:

- Reader
- Security Admin
- Security Reader

You need to ensure that User1 can assign the Reader role for VNet1 to other users.

What should you do?

☒ Assign User1 the Owner role for VNet1.
☐ Assign User1 the Network Contributor role for VNet1.
☐ Remove User1 from the Security Reader and Reader roles for Subscription1. Assign User1 the Contributor role for Subscription1.
☐ Remove User1 from the Security Reader and Reader roles for Subscription1.

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Question 280

HOTSPOT

You are creating an app that uses Event Grid to connect with other services. Your app's event data will be sent to a serverless function that checks compliance. This function is maintained by your company.

You write a new event subscription at the scope of your resource. The event must be invalidated after a specific period of time.

You need to configure Event Grid to ensure security.

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

NOTE: Each correct selection is worth one point.

Answer Area

Authentication	**Type**
WebHook event delivery	SAS tokens Key authentication JWT token
Topic publishing	ValidationCode handshake ValidationURL handshake Management Access Control

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Solution:

Answer Area

Authentication	Type
WebHook event delivery	SAS tokens / Key authentication / JWT token
Topic publishing	ValidationCode handshake / ValidationURL handshake / Management Access Control

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/event-grid/security-authentication

Question 281

You are building a custom Azure function app to connect to Azure Event Grid.

You need to ensure that resources are allocated dynamically to the function app. Billing must be based on the executions of the app.

What should you configure when you create the function app?

- ☐ the Windows operating system and the App Service plan hosting plan
- ☐ the Docker container and an App Service plan that uses the B1 pricing tier
- ☒ the Windows operating system and the Consumption plan hosting plan
- ☐ the Docker container and an App Service plan that uses the S1 pricing tier

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-scale

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Question 282

You have an Azure Service Bus.

You need to implement a Service Bus queue that guarantees first-in-first-out (FIFO) delivery of messages.

What should you do?

- ☐ Enable partitioning
- ☐ Enable duplicate detection
- ☐ Set the Lock Duration setting to **10 seconds**
- ☒ Enable sessions
- ☐ Set the Max Size setting of the queue to **5 GB**

Explanation/Reference

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

Question 283

You have an Azure subscription that contains a policy-based virtual network gateway named GW1 and a virtual network named VNet1.

You need to ensure that you can configure a point-to-site connection from an on-premises computer to VNet1.

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

NOTE: Each correct selection is worth one point.

- ☐ Add a service endpoint to VNet1.
- ☐ Add a public IP address space to VNet1.
- ☒ Create a route-based virtual network gateway.
- ☐ Reset GW1.
- ☒ Delete GW1.
- ☐ Add a connection to GW1.

Explanation/Reference

Explanation:
Need a RouteBased VPN gateway.

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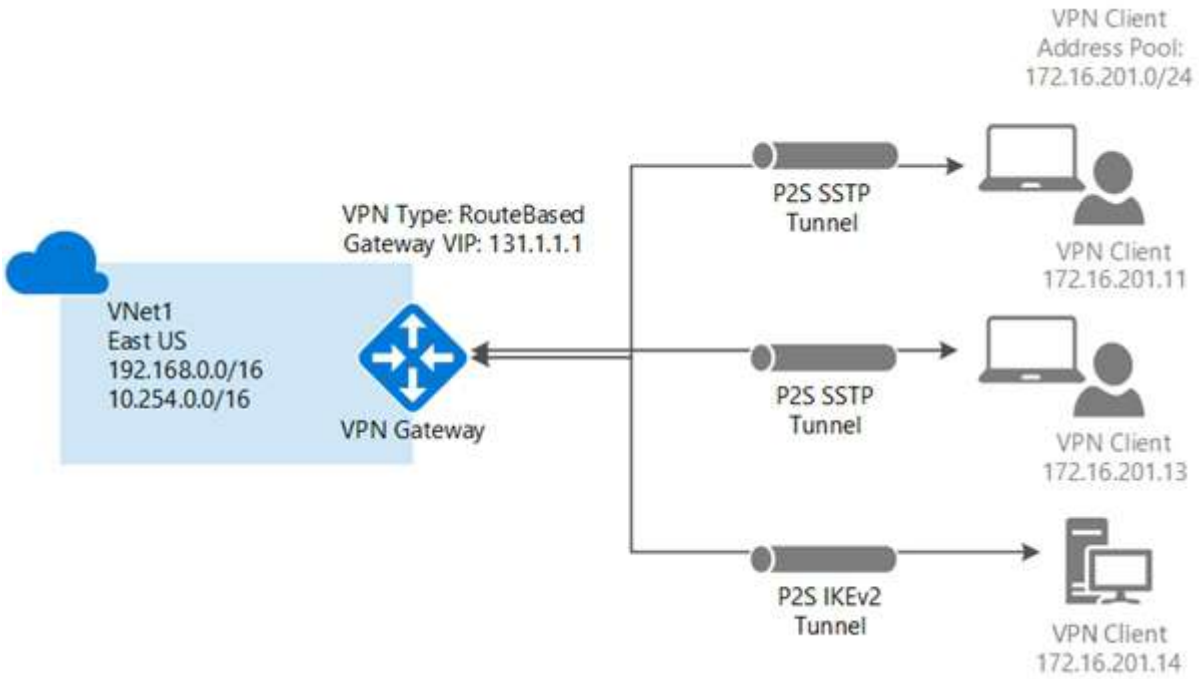

References: https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/vpn-gateway/vpn-gateway-howto-point-to-site-resource-manager-portal.md

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Question 284

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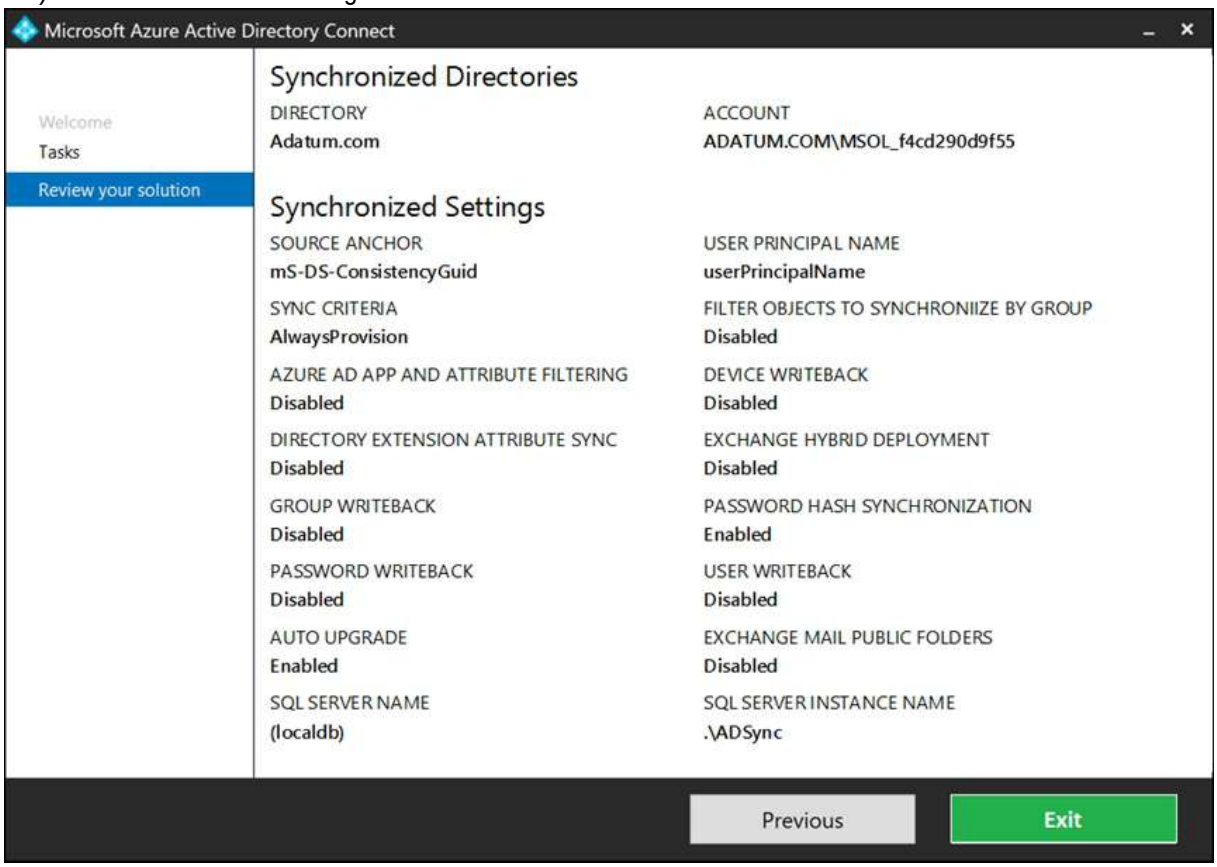
HOTSPOT

Your network contains an Active Directory domain that is synced to Azure Active Directory (Azure AD) as shown in the following exhibit.



You have a user account configured as shown in the following exhibit.

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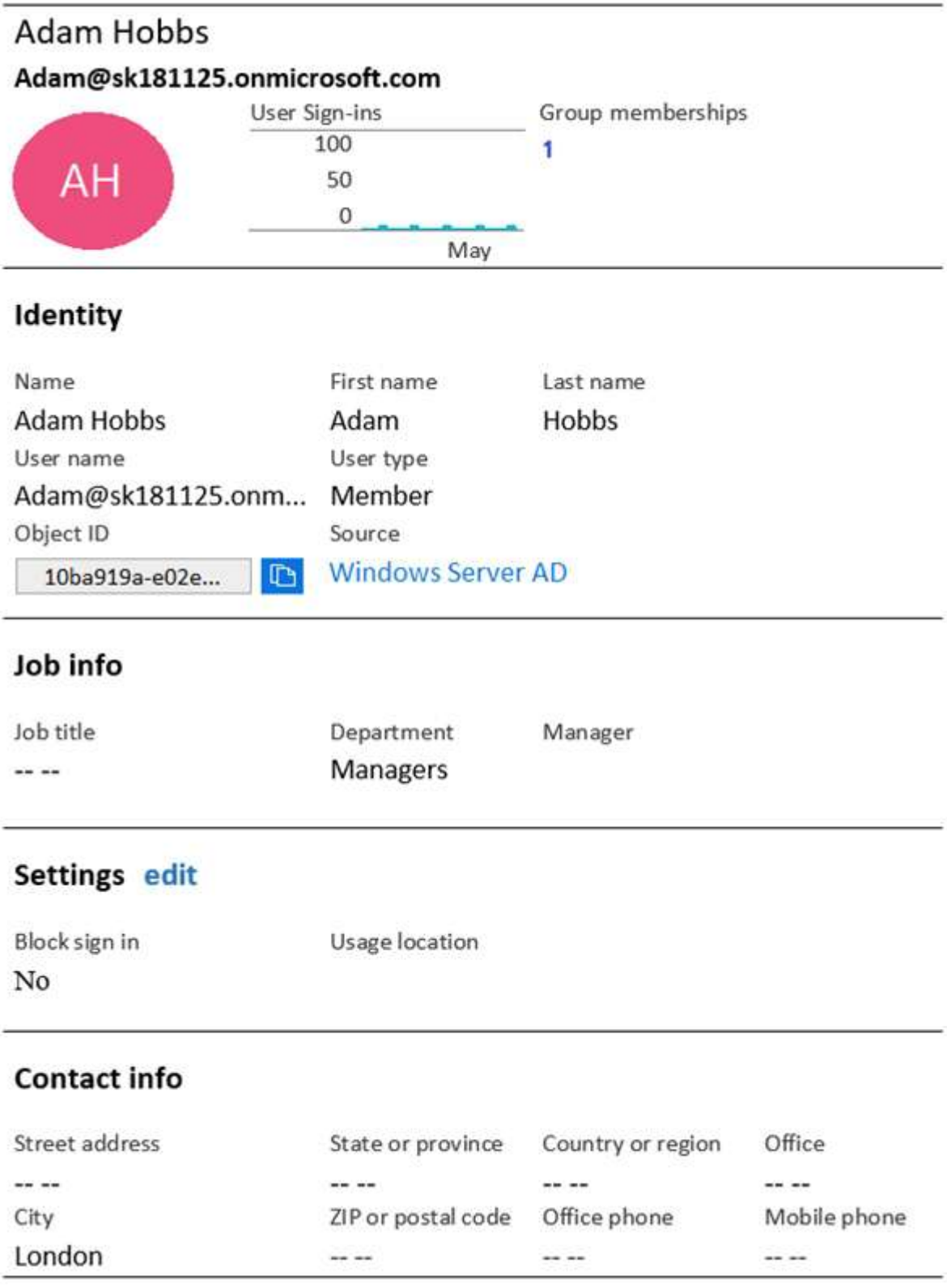

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

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Answer Area

Statements	Yes	No
From the Azure portal, an administrator can reset the password of Adam Hobbs.	○	○
From the Azure portal, an administrator can modify the job title for the user account of Adam Hobbs.	○	○
From the Azure portal, an administrator can modify the usage location for the user account of Adam Hobbs.	○	○

Solution:

Answer Area

Statements	Yes	No
From the Azure portal, an administrator can reset the password of Adam Hobbs.	○	○
From the Azure portal, an administrator can modify the job title for the user account of Adam Hobbs.	○	○
From the Azure portal, an administrator can modify the usage location for the user account of Adam Hobbs.	○	○

Explanation/Reference

Explanation:

Box 1: No
Password writeback is disabled.

Note: Having a cloud-based password reset utility is great but most companies still have an on-premises directory where their users exist. How does Microsoft support keeping traditional on-premises Active Directory (AD) in sync with password changes in the cloud? Password writeback is a feature enabled with Azure AD Connect that allows password changes in the cloud to be written back to an existing on-premises directory in real time.

Box 2: No

Box 3: Yes
Yes, there is an Edit link for Location Info.

References:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/concept-sspr-writeback

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Question 285

You create a new Azure subscription. You create a resource group named RG1. In RG1, you create the resources shown in the following table.

Name	Type
VNET1	Virtual network
VM1	Virtual machine
GWSN1	Gateway subnet
VPNGW1	Virtual network gateway

You need to configure an encrypted tunnel between your on-premises network and VNET1.

Which two additional resources should you create in Azure? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ a site-to-site connection
- ☒ a VPN gateway
- ☐ a VNet-to- VNet connection
- ☒ a local network gateway
- ☐ a point-to-site configuration

Explanation/Reference

Explanation:
A Site-to-Site VPN gateway connection is used to connect your on-premises network to an Azure virtual network over an IPsec/IKE (IKEv1 or IKEv2) VPN tunnel. This type of connection requires a VPN device, a local network gateway, located on-premises that has an externally facing public IP address assigned to it.

Finally, create a Site-to-Site VPN connection between your virtual network gateway and your on-premises VPN device.

References:
https://docs.microsoft.com/en-us/azure/vpn-gateway/vpn-gateway-howto-site-to-site-resource-manager-portal

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Question 286

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription.

You have an on-premises file server named Server1 that runs Windows Server 2019.

You manage Server1 by using Windows Admin Center.

You need to ensure that if Server1 fails, you can recover the data from Azure.

Solution: From the Azure portal, you create a Recovery Services vault. On VM1, you install the Azure Backup agent and you schedule a backup.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure Storage Sync service and configure Azure File.

Use Azure File Sync to centralize your organization's file shares in Azure Files, while keeping the flexibility, performance, and compatibility of an on-premises file server. Azure File Sync transforms Windows Server into a quick cache of your Azure file share.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction

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Question 287

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription.

You have an on-premises file server named Server1 that runs Windows Server 2019.

You manage Server1 by using Windows Admin Center.

You need to ensure that if Server1 fails, you can recover Server1 files from Azure.

Solution: You create a Recovery Services vault and configure a backup by using Windows Server Backup.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure Storage Sync service and configure Azure File.

Use Azure File Sync to centralize your organization's file shares in Azure Files, while keeping the flexibility, performance, and compatibility of an on-premises file server. Azure File Sync transforms Windows Server into a quick cache of your Azure file share.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction

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Question 288

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You have an Azure subscription.

You have an on-premises file server named Server1 that runs Windows Server 2019.

You manage Server1 by using Windows Admin Center.

You need to ensure that if Server1 fails, you can recover Server1 files from Azure.

Solution: You create an Azure Storage account and an Azure Storage Sync service. You configure Azure File Sync for Server1.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Use Azure File Sync to centralize your organization's file shares in Azure Files, while keeping the flexibility, performance, and compatibility of an on-premises file server. Azure File Sync transforms Windows Server into a quick cache of your Azure file share.

Azure Files offers fully managed file shares in the cloud that are accessible via the industry standard Server Message Block (SMB) protocol. Azure file shares can be mounted concurrently by cloud or on-premises deployments of Windows, Linux, and macOS. Additionally, Azure file shares can be cached on Windows Servers with Azure File Sync for fast access near where the data is being used.

Azure file shares can be used to:

Replace or supplement on-premises file servers:
Azure Files can be used to completely replace or supplement traditional on-premises file servers or NAS devices. Popular operating systems such as Windows, macOS, and Linux can directly mount Azure file shares wherever they are in the world. Azure file shares can also be replicated with Azure File Sync to Windows Servers, either on-premises or in the cloud, for performance and distributed caching of the data where it's being used.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction

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https://docs.microsoft.com/en-us/azure/storage/files/storage-sync-files-deployment-guide?tabs=azure-portal

Question 289

HOTSPOT

You have an Azure subscription.

You plan to deploy an app that has a web front end and an application tier.

You need to recommend a load balancing solution that meets the following requirements:

- Internet to web tier:

- Provides URL-based routing
- Supports connection draining
- Prevents SQL injection attacks

- Web tier to application tier:

- Provides port forwarding
- Supports HTTPS health probes
- Supports an availability set as a backend pool

Which load balancing solution should you recommend for each tier? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Internet to web tier:

- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Basic Load Balancer

Web tier to application tier:

- An Azure Application Gateway that has a web application firewall (WAF)
- An internal Azure Standard Load Balancer
- A public Azure Standard Load Balancer

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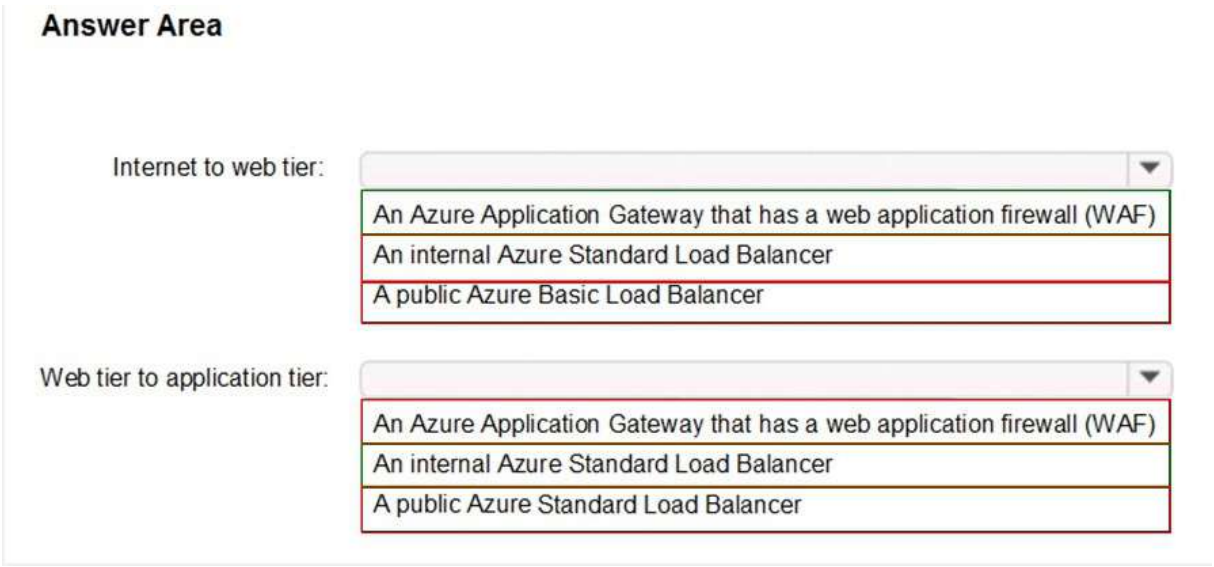
Solution:



Explanation/Reference

Explanation:

Box 1: An Azure Application Gateway that has a web application firewall (WAF)
Azure Application Gateway offers a web application firewall (WAF) that 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 operates as an application delivery controller (ADC). It offers Secure Sockets Layer (SSL) termination, cookie-based session affinity, round-robin load distribution, content-based routing, ability to host multiple websites, and security enhancements.

Box 2: An internal Azure Standard Load Balancer
The internet to web tier is the public interface, while the web tier to application tier should be internal.

Note: When using load-balancing rules with Azure Load Balancer, you need to specify a health probes to allow Load Balancer to detect the backend endpoint status.
Health probes support the TCP, HTTP, HTTPS protocols.

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

https://docs.microsoft.com/en-us/azure/load-balancer/load-balancer-custom-probe-overview

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Question 290

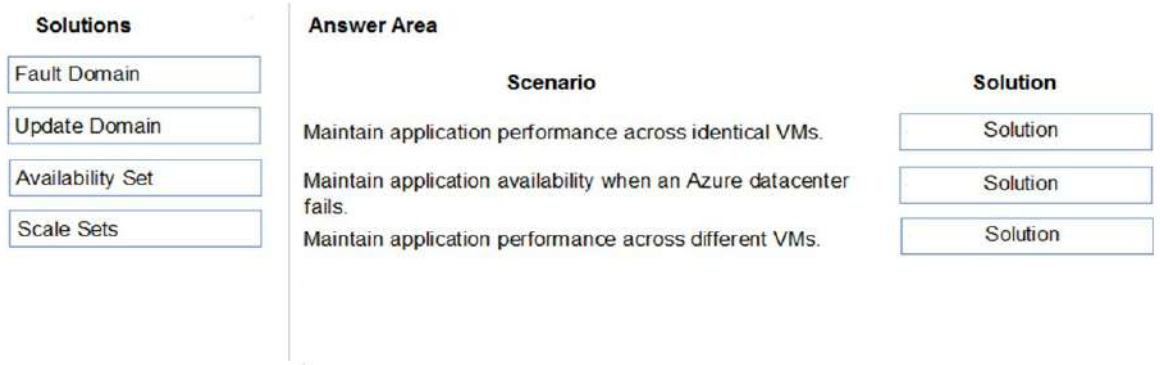
DRAG DROP

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

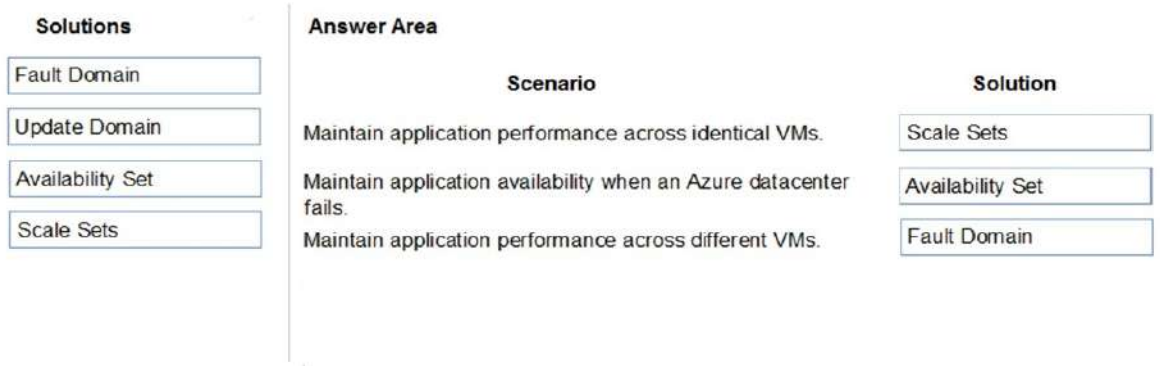
You need to ensure that the VMs never experience down time.

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.



Solution:



Explanation/Reference

Explanation:

Box 1: Scale set
A virtual machine scale set allows you to deploy and manage a set of identical, autoscaling 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

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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.

Incorrect Answers:
An update domain is a group of VMs and underlying physical hardware that can be rebooted at the same time.

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 291

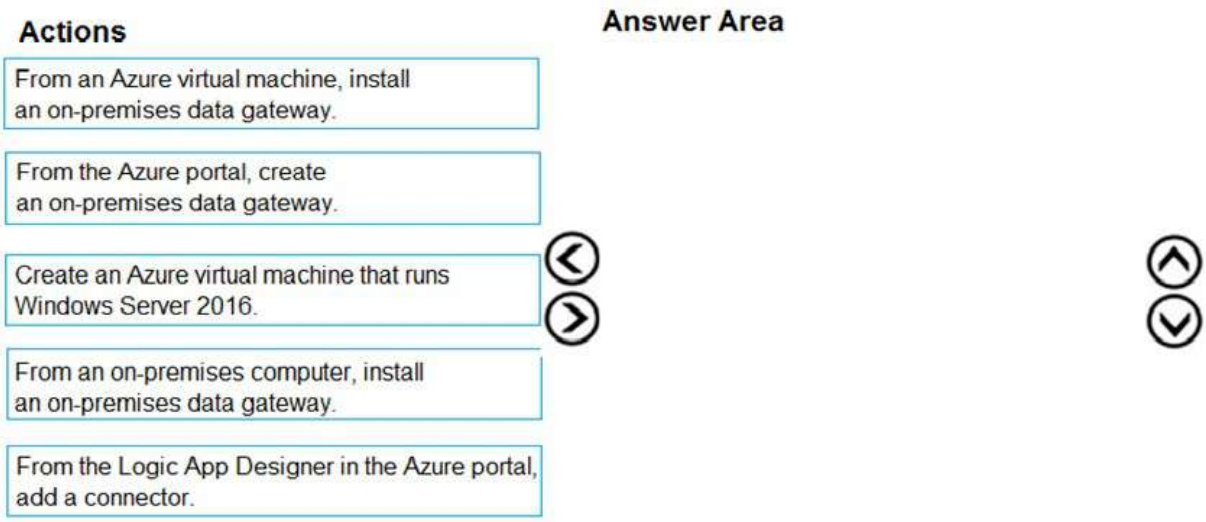
DRAG DROP

You have an on-premises network that includes a Microsoft SQL Server instance named SQL1.

You create an Azure Logic App named App1.

You need to ensure that App1 can query a database on SQL1.

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



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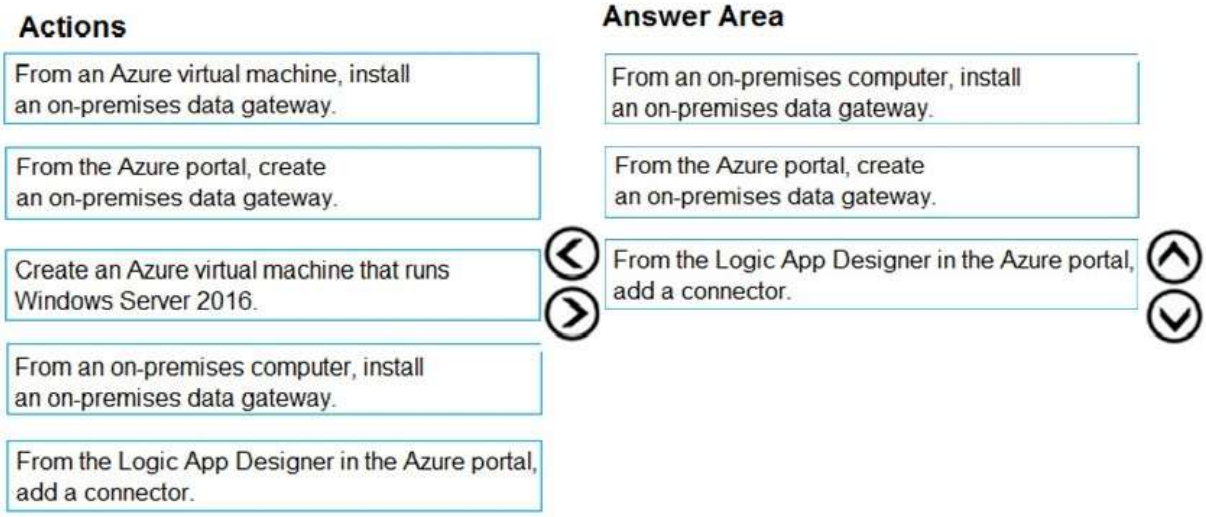
Solution:



Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-gateway-connection

Question 292

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription.

You have an on-premises file server named Server1 that runs Windows Server 2019.

You manage Server1 by using Windows Admin Center.

You need to ensure that if Server1 fails, you can recover Server1 files from Azure.

Solution: You register Windows Admin Center in Azure and configure Azure Backup.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead use Azure Storage Sync service and configure Azure File.

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Use Azure File Sync to centralize your organization's file shares in Azure Files, while keeping the flexibility, performance, and compatibility of an on-premises file server. Azure File Sync transforms Windows Server into a quick cache of your Azure file share.

Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction

Question 293

DRAG DROP

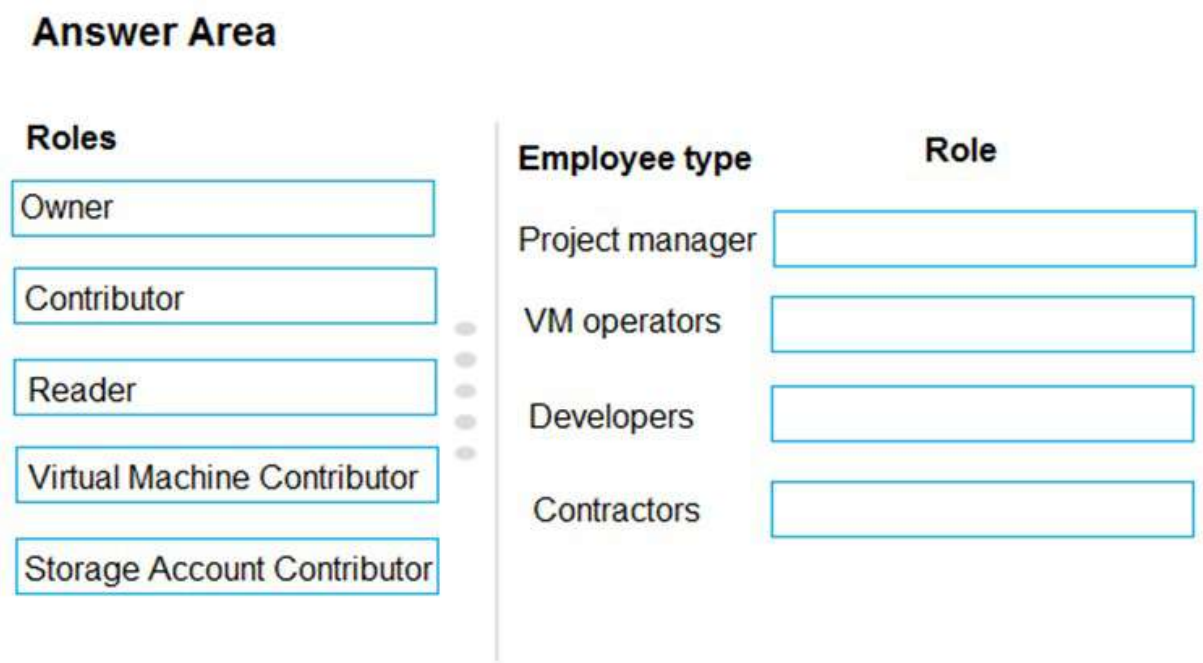
You are designing a solution to secure a company's Azure resources. The environment hosts 10 teams. Each team manages a project and has a project manager, a virtual machine (VM) operator, developers, and contractors.

Project managers must be able to manage everything except access and authentication for users. VM operators must be able to manage VMs, but not the virtual network or storage account to which they are connected. Developers and contractors must be able to manage storage accounts.

You need to recommend roles for each member.

What should you recommend? To answer, drag the appropriate roles to the correct employee types. Each role 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.



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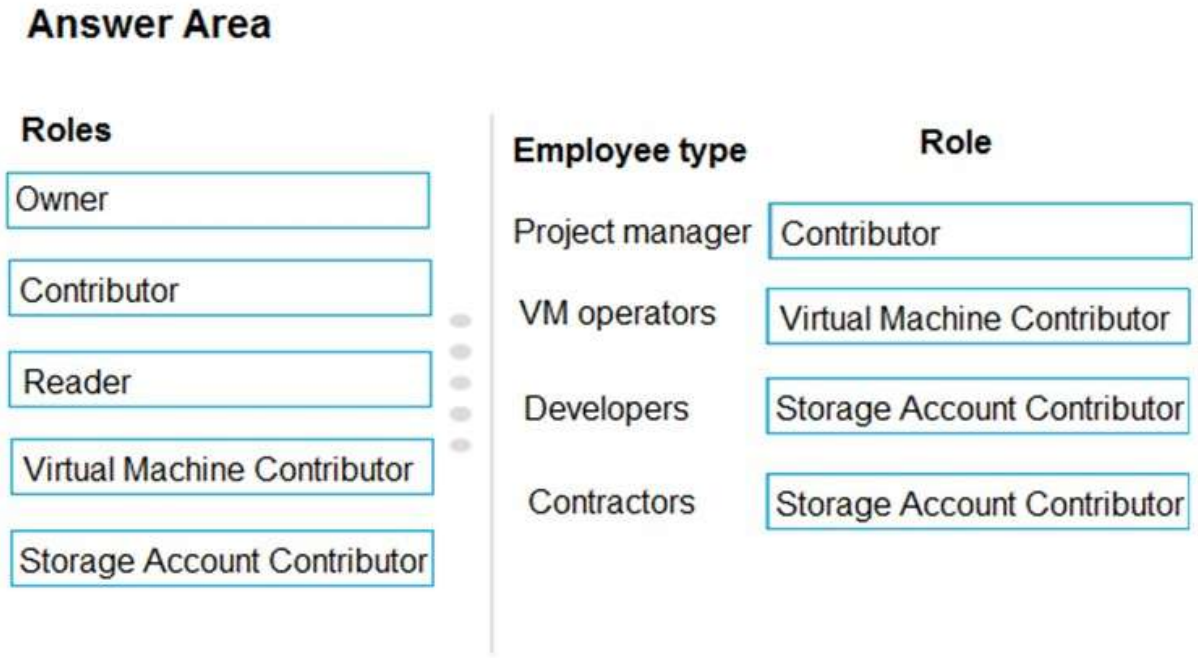
Solution:



Explanation/Reference

Question 294

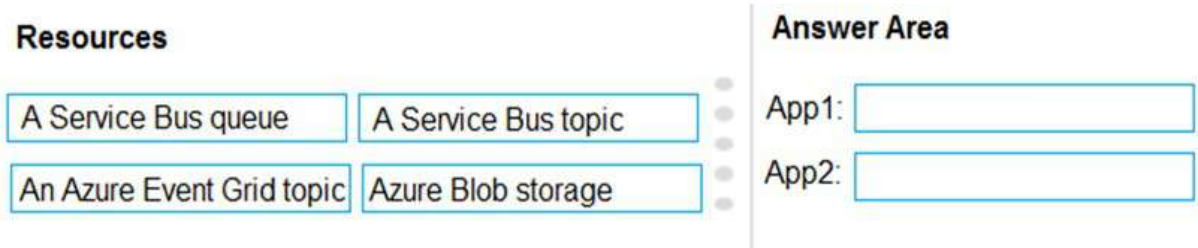
DRAG DROP

You have an Azure subscription that contains an Azure Service Bus named Bus1.

Your company plans to deploy two Azure web apps named App1 and App2. The web app will create messages that have the following requirements:

- Each message created by App1 must be consumed by only a single consumer.
- Each message created by App2 will consumed by multiple consumers.

Which resource should you create for each web app? To answer, drag the appropriate resources to the correct web apps. Each resource 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.



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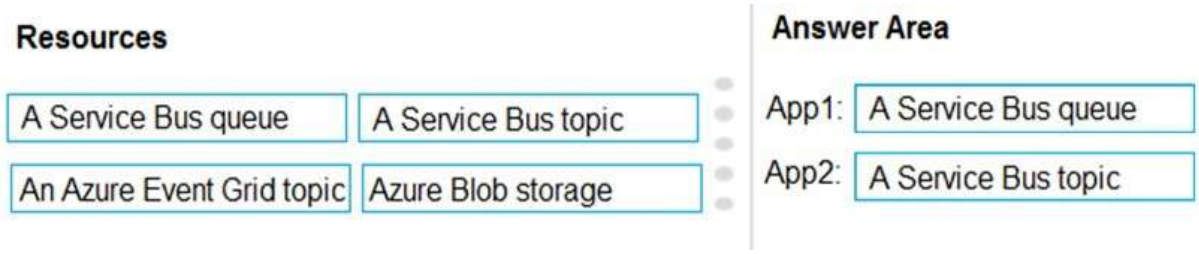
Solution:



Explanation/Reference

Question 295

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

Name	Type	Address space
VNET1	Virtual network	10.1.1.0/24
Subnet1	Subnet	10.1.1.0/24
VM1	Virtual machine	*Not applicable*

Subnet1 is on VNET1. VM1 connects to Subnet1.

You plan to create a virtual network gateway on VNET1.

You need to prepare the environment for the planned virtual network gateway.

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

NOTE: Each correct selection is worth one point.

- ☒ Modify the address space used by VNET1.
- ☐ Modify the address space used by Subnet1.
- ☐ Create a subnet named GatewaySubnet on VNET1.
- ☐ Create a local network gateway.
- ☒ Delete Subnet1.

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Question 296

A company hosts virtual machines (VMs) in an on-premises datacenter and in Azure. The on-premises and Azure-based VMs communicate using ExpressRoute.

The company wants to be able to continue regular operations if the ExpressRoute connection fails. Failover connections must use the Internet and must not require Multiprotocol Label Switching (MPLS) support.

You need to recommend a solution that provides continued operations.

What should you recommend?

- ☐ Set up a second ExpressRoute connection.
- ☐ Increase the bandwidth of the existing ExpressRoute connection.
- ☐ Increase the bandwidth for the on-premises internet connection.
- ☒ Set up a VPN connection.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/architecture/reference-architectures/hybrid-networking/expressroute-vpn-failover

Question 297

You have a web app named WebApp1 that uses an Azure App Service plan named Plan1. Plan1 uses the D1 pricing tier and has an instance count of 1.

You need to ensure that all connections to WebApp1 use HTTPS.

What should you do first?

- ☒ Scale up Plan1.
- ☐ Modify the connection strings for WebApp1.
- ☐ Scale out Plan1.
- ☐ Disable anonymous access to WebApp1.

Explanation/Reference

Explanation:
The D1 (Shared) pricing tier does not support HTTPS.

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Question 298

You have an Azure subscription that contains an Azure Service Fabric cluster and a Service Fabric application named FabricApp.

You develop and package a Service Fabric application named AppPackage. AppPackage is saved in a compressed folder named AppPackage.zip.

You upload AppPackage.zip to an external store.

You need to register AppPackage in the Azure subscription.

What should you do first?

- ☐ Run the `New-ServiceFabricApplication` cmdlet.
- ☒ Repackage the application in a file named App.sfpkg.
- ☐ Create a new Service Fabric cluster.
- ☐ Copy AppPackage.zip to a blob storage account.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-package-apps#create-an-sfpkg

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Question 299

HOTSPOT

Your company runs several Windows and Linux virtual machines (VMs).

You must design a solution that implements data privacy, compliance, and data sovereignty for all storage uses in Azure. You plan to secure all Azure storage accounts by using Role-Based Access Controls (RBAC) and Azure Active Directory (Azure AD).

You need to secure the data used by the VMs.

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

NOTE: Each correct selection is worth one point.

Answer Area

VM data	Solution
Boot and data volume	Azure Storage Service Encryption Azure Disk Encryption Azure Information Protection Azure AD
Data written to Azure Storage	Azure Storage Service Encryption Azure Disk Encryption Shared Access Signature (SAS) Network Security Group (NSG)
Encryption keys and secrets	Azure Storage Service Encryption Azure Disk Encryption Azure Key Vault Azure Security Center

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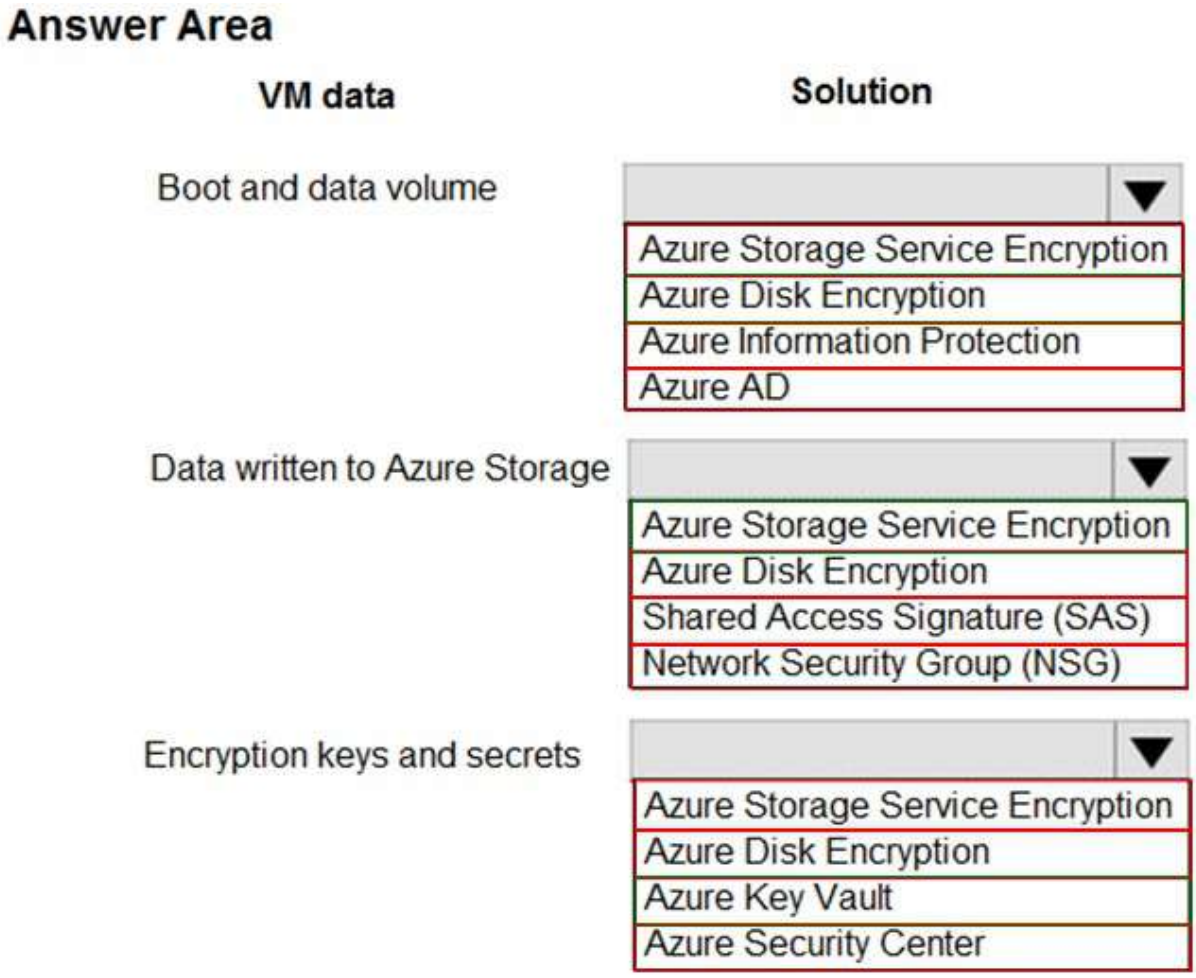
Solution:



Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/security/security-storage-overview

Question 300

You develop an entertainment application where users can buy and trade virtual real estate. The application must scale to support thousands of users.

The current architecture includes five Azure virtual machines (VM) that connect to an Azure SQL Database for account information and Azure Table Storage for backend services. A user interacts with these components in the cloud at any given time.

- Routing Service – Routes a request to the appropriate service and must not persist data across sessions.
- Account Service – Stores and manages all account information and authentication and requires data to persist across sessions

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- User Service – Stores and manages all user information and requires data to persist across sessions.
- Housing Network Service – Stores and manages the current real-estate economy and requires data to persist across sessions.
- Trade Service – Stores and manages virtual trade between accounts and requires data to persist across sessions.

Due to volatile user traffic, a microservices solution is selected for scale agility.

You need to migrate to a distributed microservices solution on Azure Service Fabric.

Solution: Create a Service Fabric Cluster with a stateful Reliable Service for each component.

Does the solution meet the goal?

☐ Yes
☒ No

Question 301

You develop an entertainment application where users can buy and trade virtual real estate. The application must scale to support thousands of users.

The current architecture includes five Azure virtual machines (VM) that connect to an Azure SQL Database for account information and Azure Table Storage for backend services. A user interacts with these components in the cloud at any given time.

- Routing Service – Routes a request to the appropriate service and must not persist data across sessions.
- Account Service – Stores and manages all account information and authentication and requires data to persist across sessions
- User Service – Stores and manages all user information and requires data to persist across sessions.
- Housing Network Service – Stores and manages the current real-estate economy and requires data to persist across sessions.
- Trade Service – Stores and manages virtual trade between accounts and requires data to persist across sessions.

Due to volatile user traffic, a microservices solution is selected for scale agility.

You need to migrate to a distributed microservices solution on Azure Service Fabric.

Solution: Create a Service Fabric Cluster with a stateless Reliable Service for Routing Service. Create stateful Reliable Services for all other components.

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Does the solution meet the goal?

- ☒ Yes
- ☐ No

Question 302

You develop an entertainment application where users can buy and trade virtual real estate. The application must scale to support thousands of users.

The current architecture includes five Azure virtual machines (VM) that connect to an Azure SQL Database for account information and Azure Table Storage for backend services. A user interacts with these components in the cloud at any given time.

- Routing Service – Routes a request to the appropriate service and must not persist data across sessions.
- Account Service – Stores and manages all account information and authentication and requires data to persist across sessions
- User Service – Stores and manages all user information and requires data to persist across sessions.
- Housing Network Service – Stores and manages the current real-estate economy and requires data to persist across sessions.
- Trade Service – Stores and manages virtual trade between accounts and requires data to persist across sessions.

Due to volatile user traffic, a microservices solution is selected for scale agility.

You need to migrate to a distributed microservices solution on Azure Service Fabric.

Solution: Create a Service Fabric Cluster with a stateful Reliable Service for Routing Service. Deploy a Guest Executable to Service Fabric for each component.

Does the solution meet the goal?

- ☐ Yes
- ☒ No

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Question 303

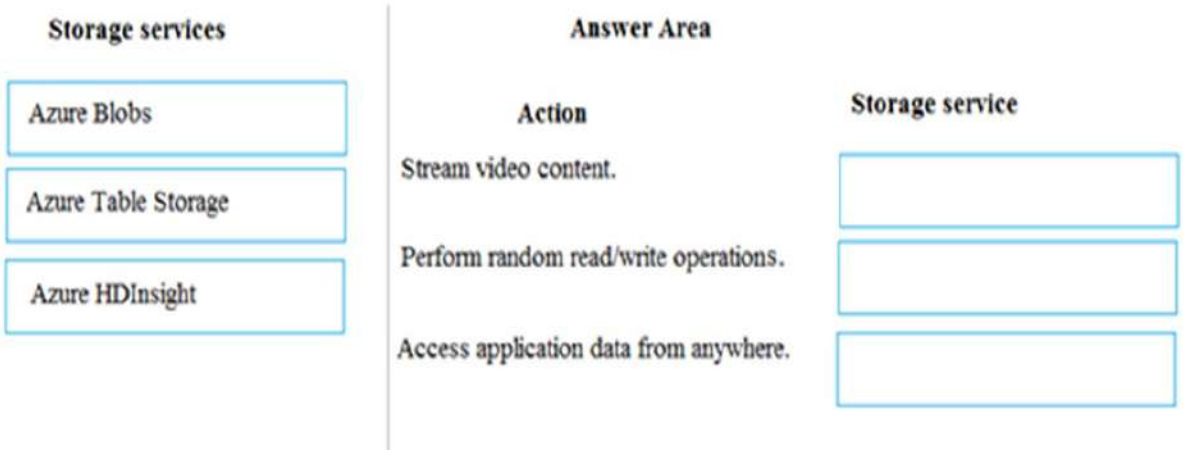
DRAG DROP

You are developing a web app that uses a REST interface to connect to Azure Storage with HTTPS. This app uploads and streams video content that can be accessed from anywhere in the world.

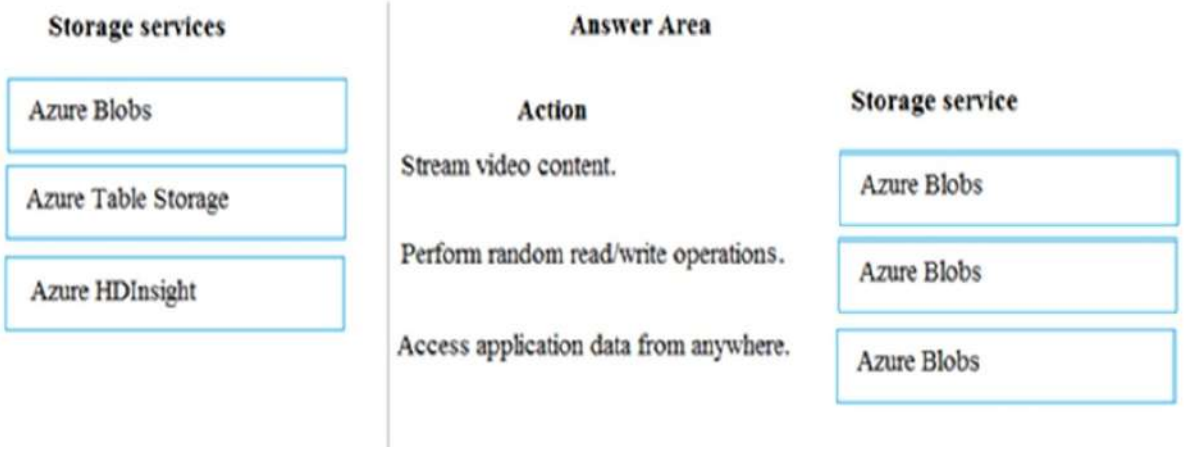
You have different storage requirements for each part of the app. A hierarchical namespace must be created.

Which storage services should you implement? To answer, select the appropriate services to the correct actions. Each service 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.



Solution:



Explanation/Reference

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Question 304

DRAG DROP

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

Name	Type	Region	Resource group
RG1	Resource group	Central US	*Not applicable*
RG2	Resource group	West US	*Not applicable*
VM1	Virtual machine	East US	RG2
VNET1	Virtual network	East US	RG1

In RG2, you need to create a new virtual machine named VM2 that will connect to VNET1. VM2 will use a network interface named VM2_Interface.

In which region should you create VM2 and VM2_Interface? To answer, drag the appropriate regions to the correct targets. Each region 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.

Regions

- Central US
- East US
- West US

Answer Area

VM2: [ ]

VM2_Interface: [ ]

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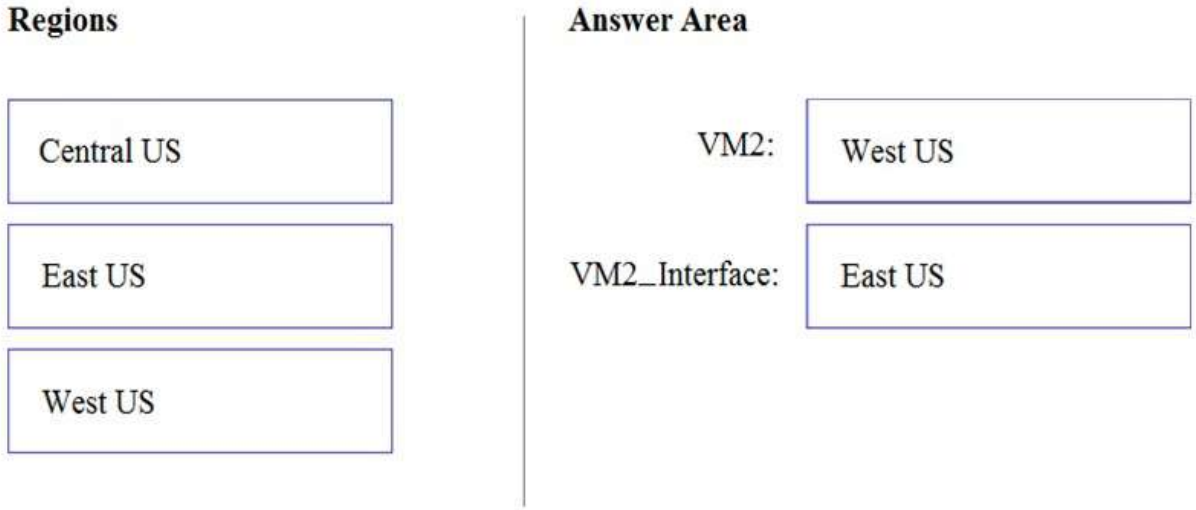
Solution:



Explanation/Reference

Explanation:

VM2: West US
In RG2, which is in West US, you need to create a new virtual machine named VM2.

VM2_interface: East US
VM2 will use a network interface named VM2_Interface to connect to VNET1, which is in East US.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/associate-public-ip-address-vm

Question 305

You create an Azure Time Series Insights event handler. You need to send data over the network as efficiently as possible and optimize query performance.

What should you do?

- ☐ Create a query plan
- ☐ Send all properties
- ☐ Use a Tag ID
- ☒ Use reference data

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/time-series-insights/how-to-shape-query-json

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Question 306

You are creating an IoT solution using Azure Time Series Insights.

You configure the environment to ensure that all data for the current year is available.

What should you do?

- ☐ Add a disaster recovery (DR) strategy.
- ☐ Set a value for the Data retention time setting.
- ☐ Change the pricing tier.
- ☒ Create a reference data set.

Question 307

DRAG DROP

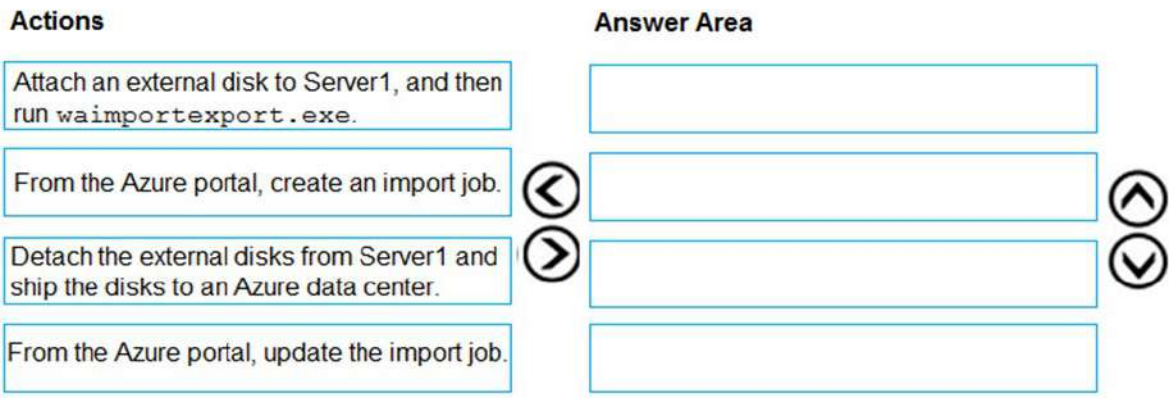
You have an Azure subscription that contains a storage account.

You have an on-premises server named Server1 that runs Windows Server 2016. Server1 has 2 TB of data.

You need to transfer the data to the storage account by using the Azure Import/Export service.

In which order should you perform the actions? To answer, move all actions form the list of actions to the answer area and arrange them in the correct order.

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



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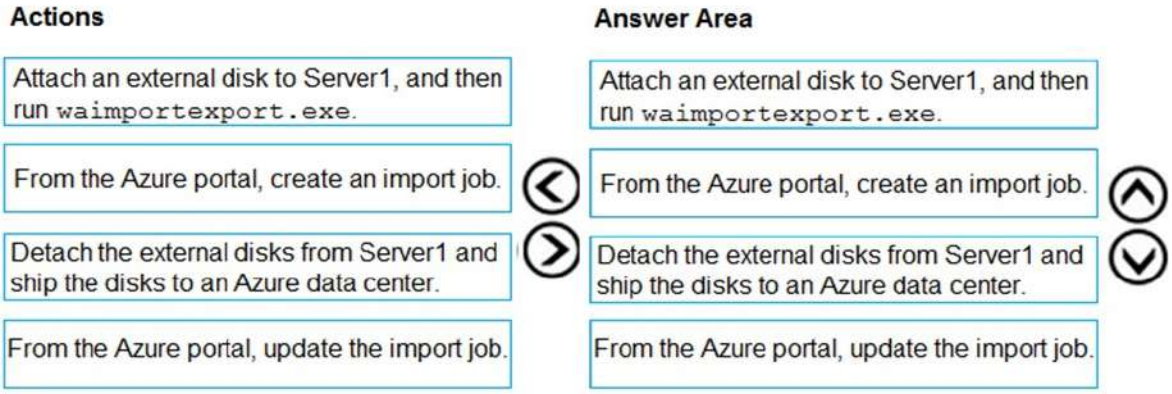
Solution:



Explanation/Reference

Explanation:

At a high level, an import job involves the following steps:

Step 1: Attach an external disk to Server1 and then run waimportexport.exe
Determine data to be imported, number of drives you need, destination blob location for your data in Azure storage.
Use the WAImportExport tool to copy data to disk drives. Encrypt the disk drives with BitLocker.

Step 2: From the Azure portal, create an import job.
Create an import job in your target storage account in Azure portal. Upload the drive journal files.

Step 3: Detach the external disks from Server1 and ship the disks to an Azure data center.
Provide the return address and carrier account number for shipping the drives back to you.
Ship the disk drives to the shipping address provided during job creation.

Step 4: From the Azure portal, update the import job
Update the delivery tracking number in the import job details and submit the import job.
The drives are received and processed at the Azure data center.
The drives are shipped using your carrier account to the return address provided in the import job.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-import-export-service

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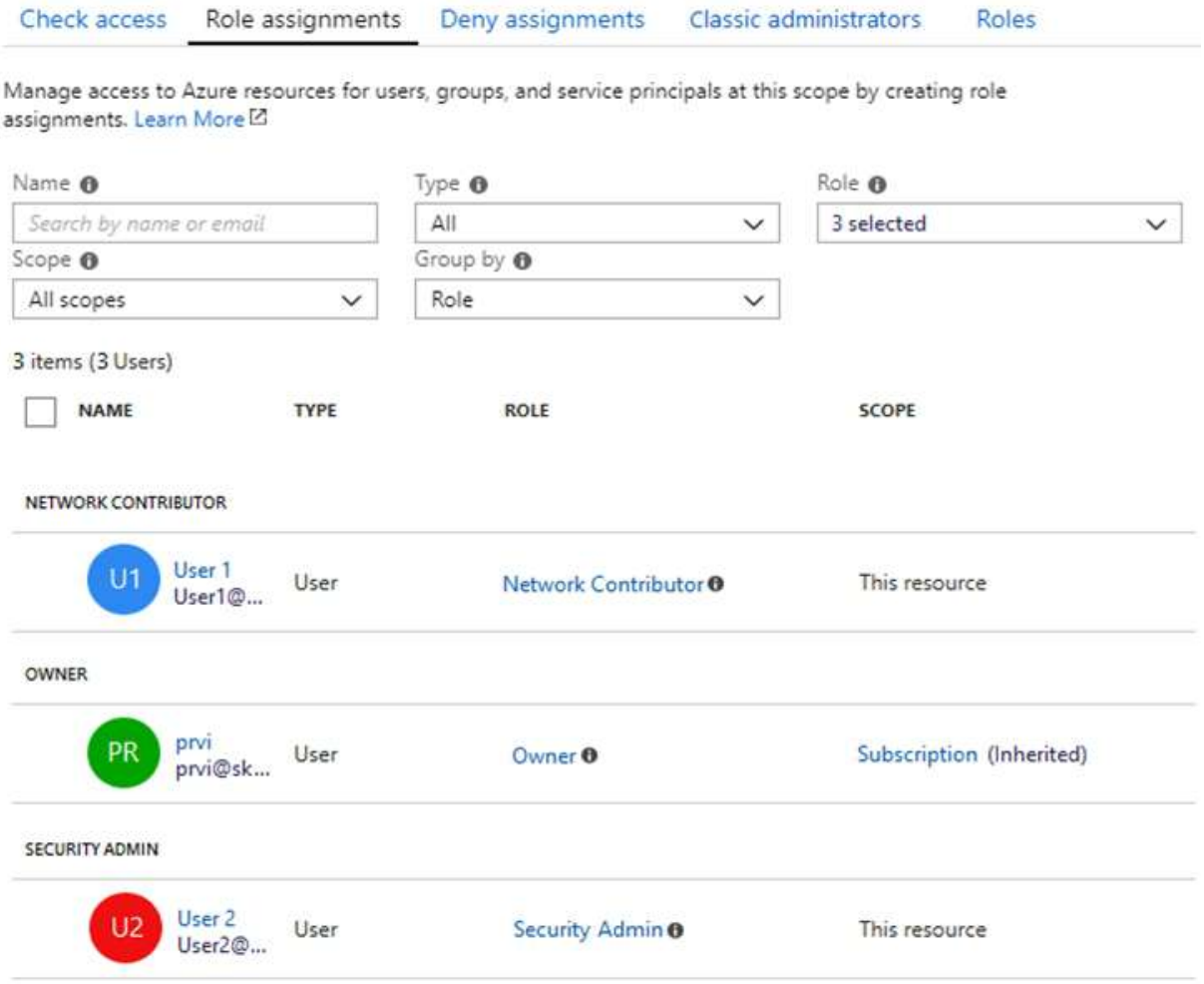
Question 308

You have a resource group named RG5. The access controls for RG5 are configured as shown in the following exhibit.



Which users can deploy virtual networks to RG5?

- ☐ User1, User2, and prvi
- ☐ only User1 and User2
- ☐ only User1
- ☒ only prvi and User1

Explanation/Reference

Explanation:
User1, the Network Contributor, can create and manage networks, but not access to them.
Prvi, the Owner, can create and manage resources of all types.

Incorrect Answers:
A, B: User2, the Security Admin, can view security policies, view security states, edit security policies, view alerts and recommendations, dismiss alerts and recommendations. The Security Admin cannot deploy virtual networks.
C: Prvi, the Owner, can also deploy virtual networks to RG5 as the Owner can create and manage resources of all types.

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References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/built-in-roles

Question 309

You have an Azure subscription named Subscription1.

You have 5 TB of data that you need to transfer to Subscription1.

You plan to use an Azure Import/Export job.

What can you use as the destination of the imported data?

- ☐ an Azure Cosmos DB database
- ☐ Azure SQL Database
- ☒ Azure File Storage
- ☐ Azure Data Lake Store

Explanation/Reference

Explanation:
Azure Import/Export service is used to securely import large amounts of data to Azure Blob storage and Azure Files by shipping disk drives to an Azure datacenter.

References:
https://docs.microsoft.com/en-us/azure/storage/common/storage-import-export-service

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Question 310

You have an Azure subscription that contains the resources in the following table.

Name	Type
RG1	Resource group
Store1	Azure Storage account
Sync1	Azure File Sync

Store1 contains a file share named Data. Data contains 5,000 files.

You need to synchronize the files in Data to an on-premises server named Server1.

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

NOTE: Each correct selection is worth one point.

- ☐ Download an automation script
- ☒ Create a sync group
- ☒ Install the Azure File Sync agent on Server1
- ☐ Create a container instance
- ☒ Register Server1

Explanation/Reference

Explanation:
Step 1 (C): Install the Azure File Sync agent on Server1
The Azure File Sync agent is a downloadable package that enables Windows Server to be synced with an Azure file share

Step 2 (E): Register Server1.
Register Windows Server with Storage Sync Service
Registering your Windows Server with a Storage Sync Service establishes a trust relationship between your server (or cluster) and the Storage Sync Service.

Step 3 (B): Create a sync group and a cloud endpoint.
A sync group defines the sync topology for a set of files. Endpoints within a sync group are kept in sync with each other. A sync group must contain one cloud endpoint, which represents an Azure file share and one or more server endpoints. A server endpoint represents a path on registered server.

References:
https://docs.microsoft.com/en-us/azure/storage/files/storage-sync-files-deployment-guide

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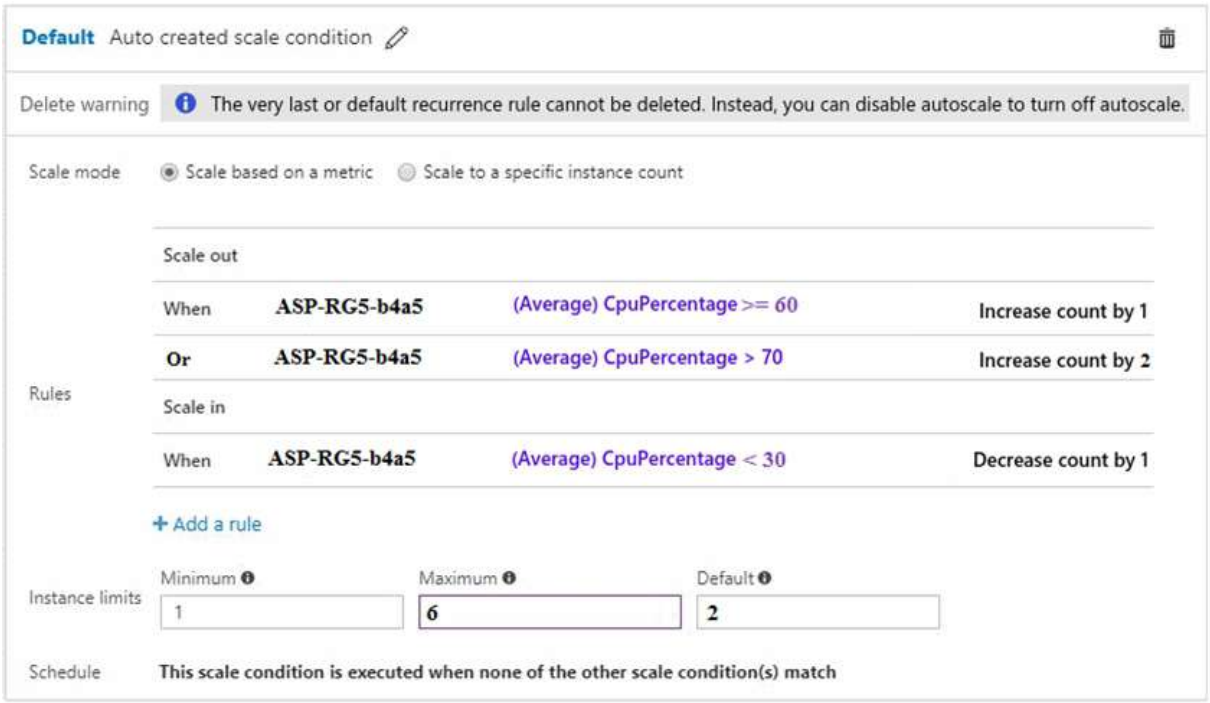
Question 311

You have a web app named WebApp1 that has the autoscale condition shown in the following exhibit.



Every autoscale condition rule is configured to have a duration of 20 minutes and a cool down time of 10 minutes.

At 06:00, 500 users are connected to WebApp1, WebApp1 is running two instances, and the average CPU utilization is consistently 50 percent.

At 07:00, 720 users are connected to WebApp1 and the average CPU utilization increases to 72 percent.

If 720 users remain connected to WebApp1, how many instances of WebApp1 will be running at 07:35?

- ☐ 2
- ☐ 3
- ☒ 4
- ☐ 5

Explanation/Reference

Explanation:
The duration is 20 minutes and the cool-down time is 10 minutes. The autoscale is triggered when the duration has passed. Thus it will trigger at 7:20. It will not trigger again until the cool-down time has lapsed. At 7:30 it will trigger a second time if the CPU usage remains above 60%. However, we have scaled out to double the instances. Thus CPU usage would drop.

Reference:

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https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-autoscale-portal

Question 312

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

Name	Resource group	Location
SQL1	RG1	West US
SQL2	RG2	West US

The SQL Database servers have the elastic pools shown in the following table.

Name	SQL Database server	vCores	Maximum data size
Pool1	SQL1	2	16 GB
Pool2	SQL2	6	48 GB

SQL1 has the SQL databases shown in the following table.

Name	SQL Database server	vCores	Maximum data size	Elastic pool
DB1	SQL1	4	30 GB	*None*
DB2	SQL1	2	10 GB	Pool1

What will occur if you add DB1 to Pool1?

- ☐ The vCores on DB1 will decrease to two.
- ☐ The maximum data size of Pool1 will increase to 22 GB.
- ☐ The maximum data size of DB1 will decrease to 6 GB.
- ☒ The vCores on Pool1 will increase to four.

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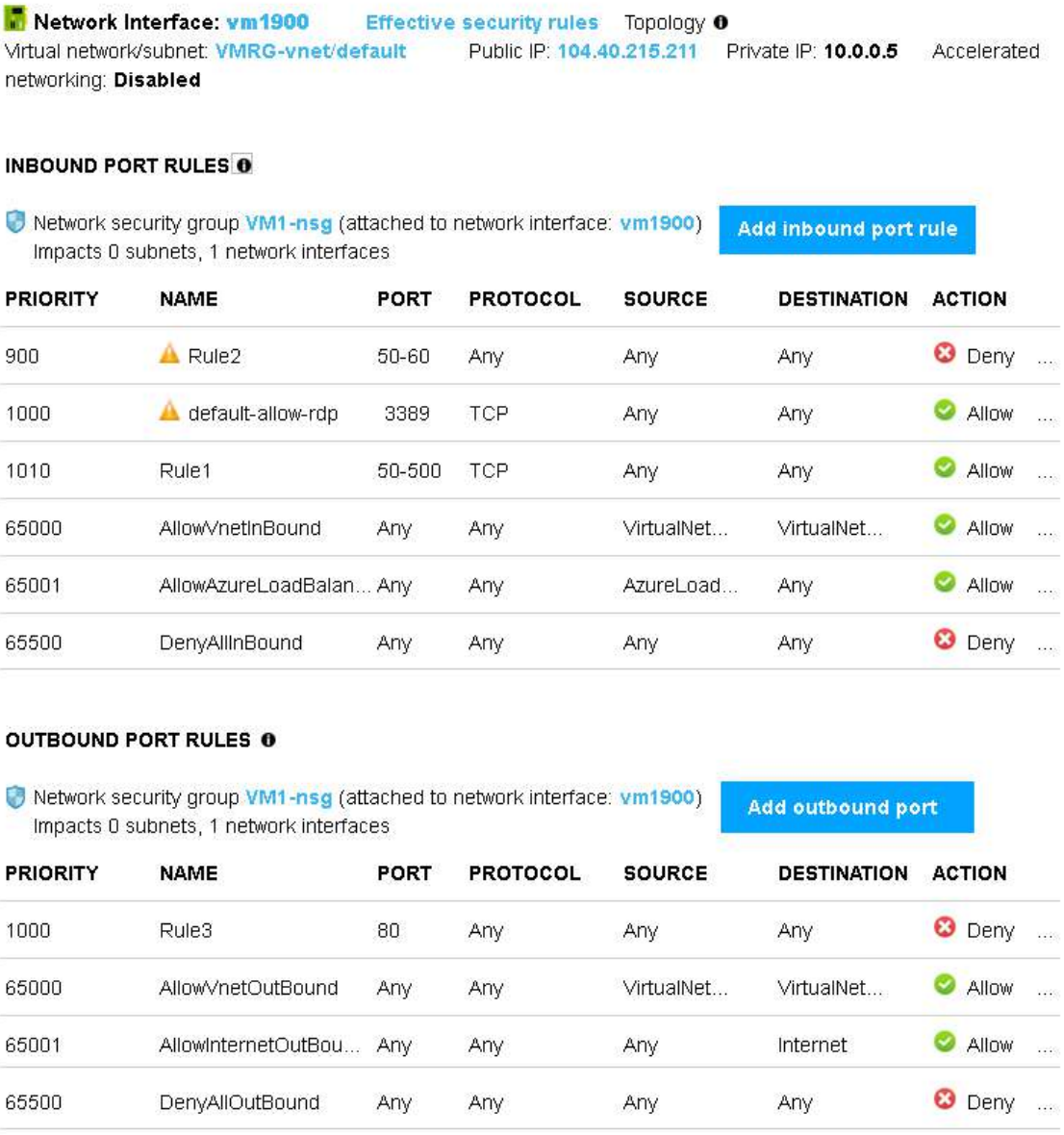
Question 313

HOTSPOT

You have an Azure subscription named Subscription1. Subscription1 contains a virtual machine named VM1.

You install and configure a web server and a DNS server on VM1.

VM1 has the effective network security rules shown in the following exhibit.



Network Interface: vm1900 Effective security rules Topology

Virtual network/subnet: VMRG-vnet/default Public IP: 104.40.215.211 Private IP: **10.0.0.5** Accelerated networking: **Disabled**

INBOUND PORT RULES

Network security group VM1-nsg (attached to network interface: vm1900)
Impacts 0 subnets, 1 network interfaces

Add inbound port rule

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
900	Rule2	50-60	Any	Any	Any	Deny
1000	default-allow-rdp	3389	TCP	Any	Any	Allow
1010	Rule1	50-500	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNet...	VirtualNet...	Allow
65001	AllowAzureLoadBalan...	Any	Any	AzureLoad...	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

OUTBOUND PORT RULES

Network security group VM1-nsg (attached to network interface: vm1900)
Impacts 0 subnets, 1 network interfaces

Add outbound port

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
1000	Rule3	80	Any	Any	Any	Deny
65000	AllowVnetOutBound	Any	Any	VirtualNet...	VirtualNet...	Allow
65001	AllowInternetOutBou...	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

Internet users **[answer choice]**.

- can connect to only the DNS server on VM1
- can connect to only the web server on VM1
- can connect to the web server and the DNS server on VM1
- cannot connect to the web server and the DNS server on VM1

If you delete Rule2, Internet users **[answer choice]**.

- can connect to only the DNS server on VM1
- can connect to only the web server on VM1
- can connect to the web server and the DNS server on VM1
- cannot connect to the web server and the DNS server on VM1

Solution:

Answer Area

Internet users **[answer choice]**.

- can connect to only the DNS server on VM1
- can connect to only the web server on VM1
- can connect to the web server and the DNS server on VM1
- cannot connect to the web server and the DNS server on VM1

If you delete Rule2, Internet users **[answer choice]**.

- can connect to only the DNS server on VM1
- can connect to only the web server on VM1
- can connect to the web server and the DNS server on VM1
- cannot connect to the web server and the DNS server on VM1

Explanation/Reference

Explanation:

Box 1:
Rule2 blocks ports 50-60, which includes port 53, the DNS port. Internet users can reach to the Web server, since it uses port 80.

Box 2:
If Rule2 is removed internet users can reach the DNS server as well.
Note: Rules are processed in priority order, with lower numbers processed before higher numbers, because lower numbers have higher priority. Processing stops once traffic matches a rule, as a result, any rules that exist with lower priorities (higher numbers) that have the same attributes as rules with higher priorities are not processed.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/security-overview

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Question 314

You plan to back up an Azure virtual machine named VM1.

You discover that the Backup Pre-Check status displays a status of Warning.

What is a possible cause of the Warning status?

- ☒ VM1 does not have the latest version of WaAppAgent.exe installed
- ☐ A Recovery Services vault is unavailable
- ☐ VM1 has an unmanaged disk
- ☐ VM1 is stopped

Explanation/Reference

Explanation:
The Warning state indicates one or more issues in VM's configuration that might lead to backup failures and provides recommended steps to ensure successful backups. Not having the latest VM Agent installed, for example, can cause backups to fail intermittently and falls in this class of issues.

References:
https://azure.microsoft.com/en-us/blog/azure-vm-backup-pre-checks/

Question 315

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure subscription.

You have an on-premises file server named Server1 that runs Windows Server 2019.

You manage Server1 by using Windows Admin Center.

You need to ensure that if Server1 fails, you can recover the data from Azure.

Solution: From the Azure portal, you create a Recovery Services vault. On Server1, you install the Azure Backup agent and you schedule a backup.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

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Explanation:
Instead use Azure Storage Sync service and configure Azure File.

Use Azure File Sync to centralize your organization's file shares in Azure Files, while keeping the flexibility, performance, and compatibility of an on-premises file server. Azure File Sync transforms Windows Server into a quick cache of your Azure file share.

Reference:
https://docs.microsoft.com/en-us/azure/storage/files/storage-files-introduction

Question 316

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant that contains a group named Group1.

You need to enable multi-factor authentication (MFA) for the users in Group1 only.

Solution: From the Azure portal, you configure an authentication method policy.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
We should use a Conditional Access policy.

Note: There are two ways to secure user sign-in events by requiring multi-factor authentication in Azure AD. The first, and preferred, option is to set up a Conditional Access policy that requires multi-factor authentication under certain conditions. The second option is to enable each user for Azure Multi-Factor Authentication. When users are enabled individually, they perform multi-factor authentication each time they sign in (with some exceptions, such as when they sign in from trusted IP addresses or when the remembered devices feature is turned on).

Enabling Azure Multi-Factor Authentication using Conditional Access policies is the recommended approach. Changing user states is no longer recommended unless your licenses don't include Conditional Access as it requires users to perform MFA every time they sign in.

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

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Question 317

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Active Directory (Azure AD) tenant that contains a group named Group1.

You need to enable multi-factor authentication (MFA) for the users in Group1 only.

Solution: From Multi-Factor Authentication, you select **Bulk update**, and you provide a CSV file that contains the members of Group1.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
We should use a Conditional Access policy.

Note: There are two ways to secure user sign-in events by requiring multi-factor authentication in Azure AD. The first, and preferred, option is to set up a Conditional Access policy that requires multi-factor authentication under certain conditions. The second option is to enable each user for Azure Multi-Factor Authentication. When users are enabled individually, they perform multi-factor authentication each time they sign in (with some exceptions, such as when they sign in from trusted IP addresses or when the remembered devices feature is turned on).

Enabling Azure Multi-Factor Authentication using Conditional Access policies is the recommended approach. Changing user states is no longer recommended unless your licenses don't include Conditional Access as it requires users to perform MFA every time they sign in.

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

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Question 318

HOTSPOT

You have a web server app named App1 that is hosted in three Azure regions.

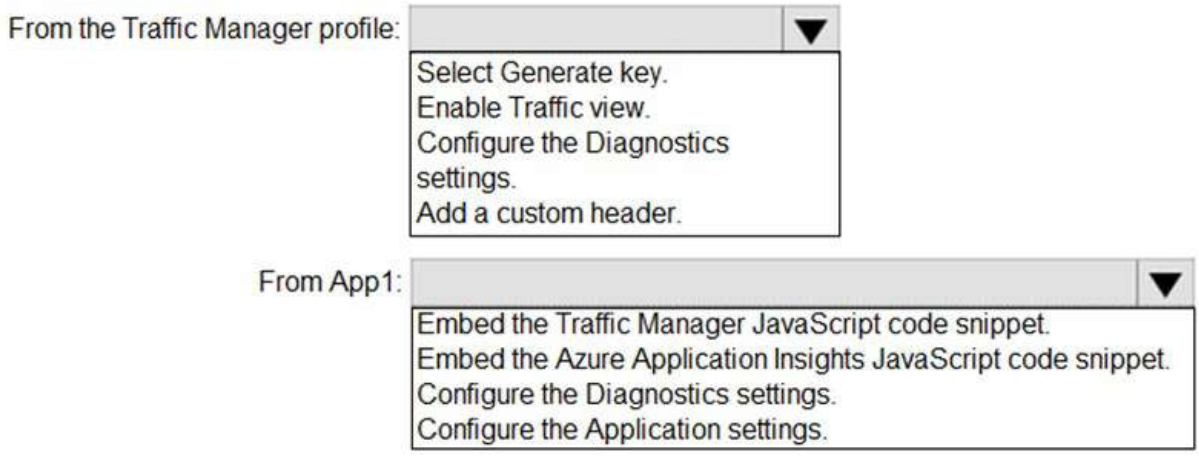
You plan to use Azure Traffic Manager to distribute traffic optimally for App1.

You need to enable Real User Measurements to monitor the network latency data for App1.

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

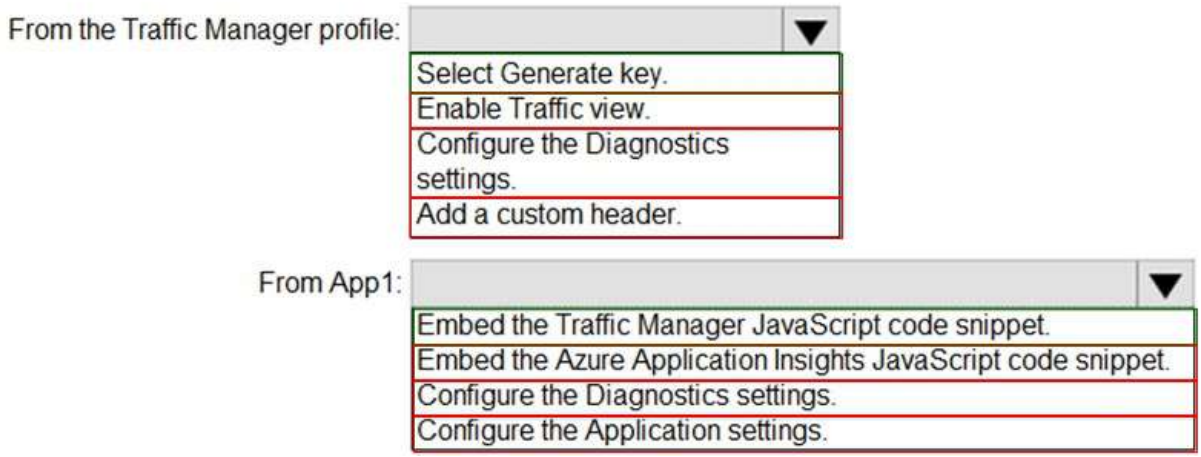
NOTE: Each correct selection is worth one point.

Answer Area



Solution:

Answer Area



Explanation/Reference

Explanation:

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Box 1: Select Generate key

You can configure your web pages to send Real User Measurements to Traffic Manager by obtaining a Real User Measurements (RUM) key and embedding the generated code to web page.

Obtain a Real User Measurements key
The measurements you take and send to Traffic Manager from your client application are identified by the service using a unique string, called the Real User Measurements (RUM) Key. You can get a RUM key using the Azure portal, a REST API, or by using the PowerShell or Azure CLI.

To obtain the RUM Key using Azure portal:

```
1  <HTML>
2  <HEAD>
3  <TITLE>Webpage powered by Azure</TITLE>
4  </HEAD>
5  <BODY BGCOLOR="FFFFFF">
6  <H1>Welcome</H1>
7  <P> <B>Hello!</B>
8  <script src="//www.atmrum.net/rum.js"></script>
9  <script>rum.start("0123456789abcdef0123456789abcdff");</script>
10 </BODY>
11 </HTML>
```

Reference:
https://docs.microsoft.com/en-us/azure/traffic-manager/traffic-manager-create-rum-web-pages

1. From a browser, sign in to the Azure portal. If you don't already have an account, you can sign up for a free one-month trial.
2. In the portal's search bar, search for the Traffic Manager profile name that you want to modify, and then click the Traffic Manager profile in the results that the displayed.
3. In the Traffic Manager profile blade, click Real User Measurements under Settings.
4. Click Generate Key to create a new RUM Key.

Box 2: Embed the Traffic Manager JavaScript code snippet.

Embed the code to an HTML web page
After you have obtained the RUM key, the next step is to embed this copied JavaScript into an HTML page that your end users visit.

This example shows how to update an HTML page to add this script. You can use this guidance to adapt it to your HTML source management workflow.

1. Open the HTML page in a text editor
2. Paste the JavaScript code you had copied in the earlier step to the BODY section of the HTML (the copied code is on line 8 & 9, see figure 3).

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Legacy AZ-300: Create and Deploy Apps (21 questions)

Case Study (1 questions)

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Case study

Overview

ADatum Corporation is a financial company that has two main offices in New York and Los Angeles. ADatum has a subsidiary named Fabrikam, Inc. that shares the Los Angeles office.

ADatum is conducting an initial deployment of Azure services to host new line-of-business applications and is preparing to migrate its existing on-premises workloads to Azure.

ADatum uses Microsoft Exchange Online for email.

Existing Environment

On-Premises Environment
The on-premises workloads run on virtual machines hosted in a VMware vSphere 6 infrastructure. All the virtual machines are members of an Active Directory forest named adatum.com and run Windows Server 2016.

The New York office uses an IP address space of 10.0.0.0/16. The Los Angeles office uses an IP address space of 10.10.0.0/16.

The offices connect by using a VPN provided by an ISP. Each office has one Azure ExpressRoute circuit that provides access to Azure services and Microsoft Online Services. Routing is implemented by using Microsoft peering.

The New York office has a virtual machine named VM1 that has the vSphere console installed.

Azure Environment
You provision the Azure infrastructure by using the Azure portal. The infrastructure contains the resources shown in the following table.

Name	Type	Azure Region
ASRV1	Azure Site Recovery vault	East US
ASRV2	Azure Site Recovery vault	West US
ASE1	Azure App Service Environment	East US
AG1	Azure Application Gateway (internal)	East US
AG2	Azure Application Gateway (Internet-facing)	West US
ER1	ExpressRoute circuit	East US
ER2	ExpressRoute circuit	West US

AG1 has two backend pools named Pool11 and Pool12. AG2 has two backend pools named Pool21 and Pool22.

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Requirements

Planned Changes
ADatum plans to migrate the virtual machines from the New York office to the East US Azure region by using Azure Site Recovery.

Infrastructure Requirements
ADatum identifies the following infrastructure requirements:

- A new web app named App1 that will access third-parties for credit card processing must be deployed
- A newly developed API must be implemented as an Azure function named App2. App2 will use a blob storage trigger. App2 must process new blobs immediately.
- The Azure infrastructure and the on-premises infrastructure must be prepared for the migration of the VMware virtual machines to Azure.
- The sizes of the Azure virtual machines that will be used to migrate the on-premises workloads must be identified.
- All migrated and newly deployed Azure virtual machines must be joined to the adatum.com domain.
- AG1 must load balance incoming traffic in the following manner:
- http://corporate.adatum.com/video/* will be load balanced across Pool11
- http://corporate.adatum.com/images/* will be load balanced across Pool12
- AG2 must load balance incoming traffic in the following manner:
- http://www.adatum.com will be load balanced across Pool21
- http://www.fabrikam.com will be load balanced across Pool22
- ER1 must route traffic between the New York office and the platform as a service (PaaS) services in the East US Azure region, as long as ER1 is available.
- ER2 must route traffic between the Los Angeles office and the PaaS services in the West US region, as long as ER2 is available.
- ER1 and ER2 must be configured to fail over automatically.

Application Requirements
App2 must be able to connect directly to the private IP addresses of the Azure virtual machines.
App2 will be deployed directly to an Azure virtual network.

Inbound and outbound communications to App1 must be controlled by using NSGs.

Pricing Requirements
ADatum identifies the following pricing requirements:

- The cost of App1 and App2 must be minimized.
- The transactional charges of Azure Storage accounts must be minimized.

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Question 346

HOTSPOT

You need to implement App2 to meet the application requirements. What should you include in the implementation? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

App Service plan pricing tier: [ ]
- Isolated
- Shared
- Standard

Enabled feature: [ ]
- Always On
- Auto Swap
- Web Sockets

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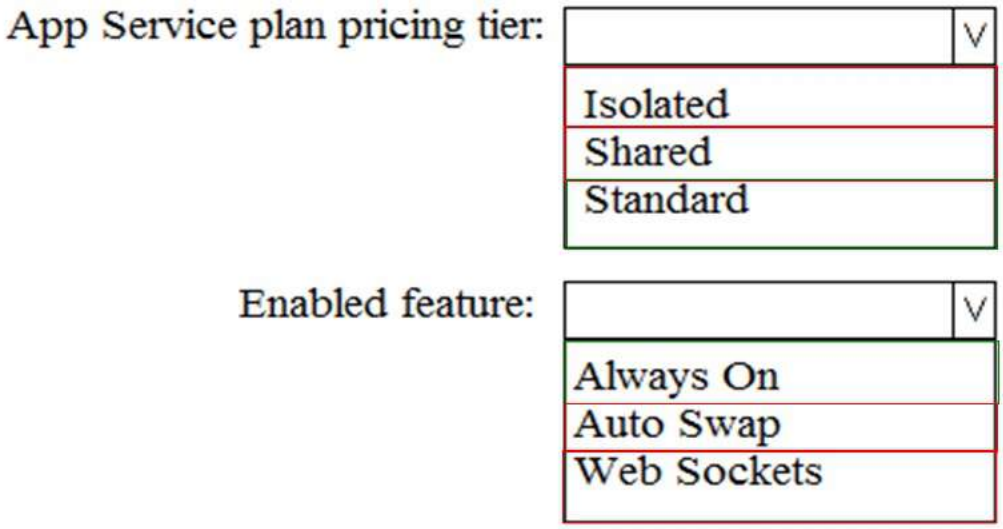
Solution:

Answer Area



Explanation/Reference

References:
https://azure.microsoft.com/en-us/pricing/details/app-service/plans/
https://docs.microsoft.com/en-us/azure/azure-functions/functions-scale

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Case Study (2 questions)

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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.

Overview

Contoso, Ltd. is a consulting company that has a main office in Montreal and two branch offices in Seattle and New York.

The Montreal office has 2,000 employees. The Seattle office has 1,000 employees. The New York office has 200 employees.

All the resources used by Contoso are hosted on-premises.

Contoso created a new Azure subscription. The Azure Active Directory (Azure AD) tenant uses a domain named contoso.onmicrosoft.com. The tenant uses the P1 pricing tier.

Existing Environment

The network contains an Active Directory forest named contoso.com. All domain controllers are configured as DNS servers and host the contoso.com DNS zone.

Contoso has finance, human resources, sales, research, and information technology departments. Each department has an organizational unit (OU) that contains all the accounts of that respective department. All the user accounts have the department attribute set to their respective department. New users are added frequently.

Contoso.com contains a user named User1.

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All the offices connect by using private links.

Contoso has data centers in the Montreal and Seattle offices. Each data center has a firewall that can be configured as a VPN device.

All infrastructure servers are virtualized. The virtualization environment contains the servers in the following table.

Name	Role	Contains virtual machine
Server1	VMWare vCenter server	VM1
Server2	Hyper-V host	VM2

Contoso uses two web applications named App1 and App2. Each instance on each web application requires 1 GB of memory.

The Azure subscription contains the resources in the following table.

Name	Type
VNet1	Virtual network
VM3	Virtual network
VM4	Virtual network

The network security team implements several network security groups (NSGs).

Requirements

Planned Changes

Contoso plans to implement the following changes:

- Deploy Azure ExpressRoute to the Montreal office
- Migrate the virtual machine hosted on Server1 and Server2 to Azure
- Synchronize on-premises Active Directory to Azure Active Directory (Azure AD)
- Migrate App1 and App2 to two Azure web apps named WebApp1 and WebApp2.

Technical Requirements

Contoso must meet the following technical requirements:

- Ensure that WebApp1 can adjust the number of instances automatically based on the load and can scale up to five instances
- Ensure that VM3 can establish outbound connections over TCP port 8080 to the applications servers in the Montreal office
- Ensure that routing information is exchanged automatically between Azure and the routers in the Montreal office

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- Enable Azure Multi-Factor Authentication (MFA) for the users in the finance department only
- Ensure that webapp2.azurewebsites.net can be accessed by using the name app2.contoso.com
- Connect the New York office to VNet1 over the Internet by using an encrypted connection
- Create a workflow to send an email message when the settings of VM4 are modified
- Create a custom Azure role named Role1 that is based on the Reader role
- Minimize costs whenever possible

Question 347

You need to configure a host name for WebApp2.

What should you do first?

- ☐ In Azure AD, add contoso.com as a custom domain name
- ☐ In the public DNS zone of contoso.onmicrosoft.com, add an NS record
- ☒ In Azure AD, add webapp2.azurewebsites.net as a custom domain name
- ☐ In the public DNS zone of contoso.com, add a CNAME record

Explanation/Reference

Explanation:
Scenario: Ensure that webapp2.azurewebsites.net can be accessed by using the name app2.contoso.com

When you create a Cloud Service, Azure assigns it to a subdomain of cloudapp.net. For example, if your Cloud Service is named "contoso", your users will be able to access your application on a URL like http://contoso.cloudapp.net. Azure also assigns a virtual IP address.

However, you can also expose your application on your own domain name, such as contoso.com.

References:
https://docs.microsoft.com/en-us/azure/cloud-services/cloud-services-custom-domain-name-portal

Question 348

Which pricing tier should you recommend for WebApp1?

- ☐ D1
- ☐ P1v2
- ☒ S1
- ☐ B1

Explanation/Reference

Explanation:
Standard supports up to 10 instances, and would be enough as the Standard plan includes auto scale that can automatically adjust the number of virtual machine instances running to match your traffic needs.

Scenario: Ensure that WebApp1 can adjust the number of instances automatically based on the load

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and can scale up to five instances

Incorrect Answers:
D: Basic supports only up to 3 instances.

References:
https://azure.microsoft.com/en-us/pricing/details/app-service/windows/

Question 325

You have an Azure subscription that contains the web apps shown in the following table.

Name	Runtime stack
WebApp1	Java SE
WebApp2	Ruby 2.6
WebApp3	Python 3.7
WebApp4	ASP.NET V4.7

For which web app can you configure a WebJob?

- ☒ WebApp4
- ☐ WebApp3
- ☐ WebApp1
- ☐ WebApp2

Explanation/Reference

Explanation:
Publishing a .NET Core WebJob to App Service from Visual Studio uses the same tooling as publishing an ASP.NET Core app.

References:
https://docs.microsoft.com/en-us/azure/app-service/webjobs-dotnet-deploy-vs

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Question 326

You create a container image named Image1 on a developer workstation.

You plan to create an Azure Web App for Containers named WebAppContainer that will use Image1.

You need to upload Image1 to Azure. The solution must ensure that WebAppContainer can use Image1.

To which storage type should you upload Image1?

- ☒ Azure Container Registry
- ☐ an Azure Storage account that contains a blob container
- ☐ an Azure Storage account that contains a file share
- ☐ Azure Container Instances

Explanation/Reference

Explanation:
Configure registry credentials in web app.
App Service needs information about your registry and image to pull the private image. In the Azure portal, go to Container settings from the web app and update the Image source, Registry and save.

References:
https://docs.microsoft.com/en-us/azure/devops/pipelines/targets/webapp-on-container-linux

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Question 327

You create the following Azure role definition.

```
{
"Name": "Role1",
"Id": "80808080-8080-8080-8080-808080808080",
"IsCustom": false,
"Description": "",
"Actions" : [
           "Microsoft.Storage/*/read",
           "Microsoft.Network/*/read",
           "Microsoft.Compute/*/read",
           "Microsoft.Compute/virtualMachines/start/action",
           "Microsoft.Compute/virtualMachines/restart/action",
           "Microsoft.Authorization/*/read"],
"NotActions": [  ],
"DataActions": [ ],
"NotDataActions": [   ],
"AssignableScopes": [  ]
}
```

You need to create Role1 by using the role definition.

Which two values should you modify before you create Role1? Each correct answer presents part of solution.

NOTE: Each correct selection is worth one point.

- ☒ IsCustom
- ☐ DataActions
- ☐ Id
- ☒ AssignableScopes
- ☐ Description

Explanation/Reference

Explanation:
Part of example:
"IsCustom": true,

"AssignableScopes": [
"/subscriptions/{subscriptionId1}",
"/subscriptions/{subscriptionId2}",
"/subscriptions/{subscriptionId3}"

The following shows what a custom role looks like as displayed in JSON format. This custom role can be used for monitoring and restarting virtual machines.

{
"Name": "Virtual Machine Operator",

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"Id": "88888888-8888-8888-8888-888888888888",
"IsCustom": true,
"Description": "Can monitor and restart virtual machines.",
"Actions": [
"Microsoft.Storage/*/read",
"Microsoft.Network/*/read",
"Microsoft.Compute/*/read",
"Microsoft.Compute/virtualMachines/start/action",
"Microsoft.Compute/virtualMachines/restart/action",
"Microsoft.Authorization/*/read",
"Microsoft.ResourceHealth/availabilityStatuses/read",
"Microsoft.Resources/subscriptions/resourceGroups/read",
"Microsoft.Insights/alertRules/*",
"Microsoft.Insights/diagnosticSettings/*",
"Microsoft.Support/*"
],
"NotActions": [],
"DataActions": [],
"NotDataActions": [],
"AssignableScopes": [
"/subscriptions/{subscriptionId1}",
"/subscriptions/{subscriptionId2}",
"/subscriptions/{subscriptionId3}"
]
}

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/custom-roles

Question 328

You have an Azure App Service named WebApp1.

You plan to add a WebJob named WebJob1 to WebApp1.

You need to ensure that WebJob1 is triggered every 15 minutes.

What should you do?

- ☐ Change the Web.config file to include the `1-31 1-12 1-7 0*/15*` CRON expression
- ☒ From the properties of WebJob1, change the CRON expression to `0*/15****`.
- ☐ Add a file named Settings.job to the ZIP file that contains the WebJob script. Add the `1-31 1-12 1-7 0*/15*` CRON expression to the JOB file
- ☐ Create an Azure Automation account and add a schedule to the account. Set the recurrence for the schedule

Explanation/Reference

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Explanation:
You can enter a CRON expression in the portal [as the Webjob properties] or include a settings.job file at the root of your WebJob .zip file, as in the following example:

```
{
"schedule": "0 */15 * * * *"
}
```

Reference:
https://docs.microsoft.com/en-us/azure/app-service/webjobs-create

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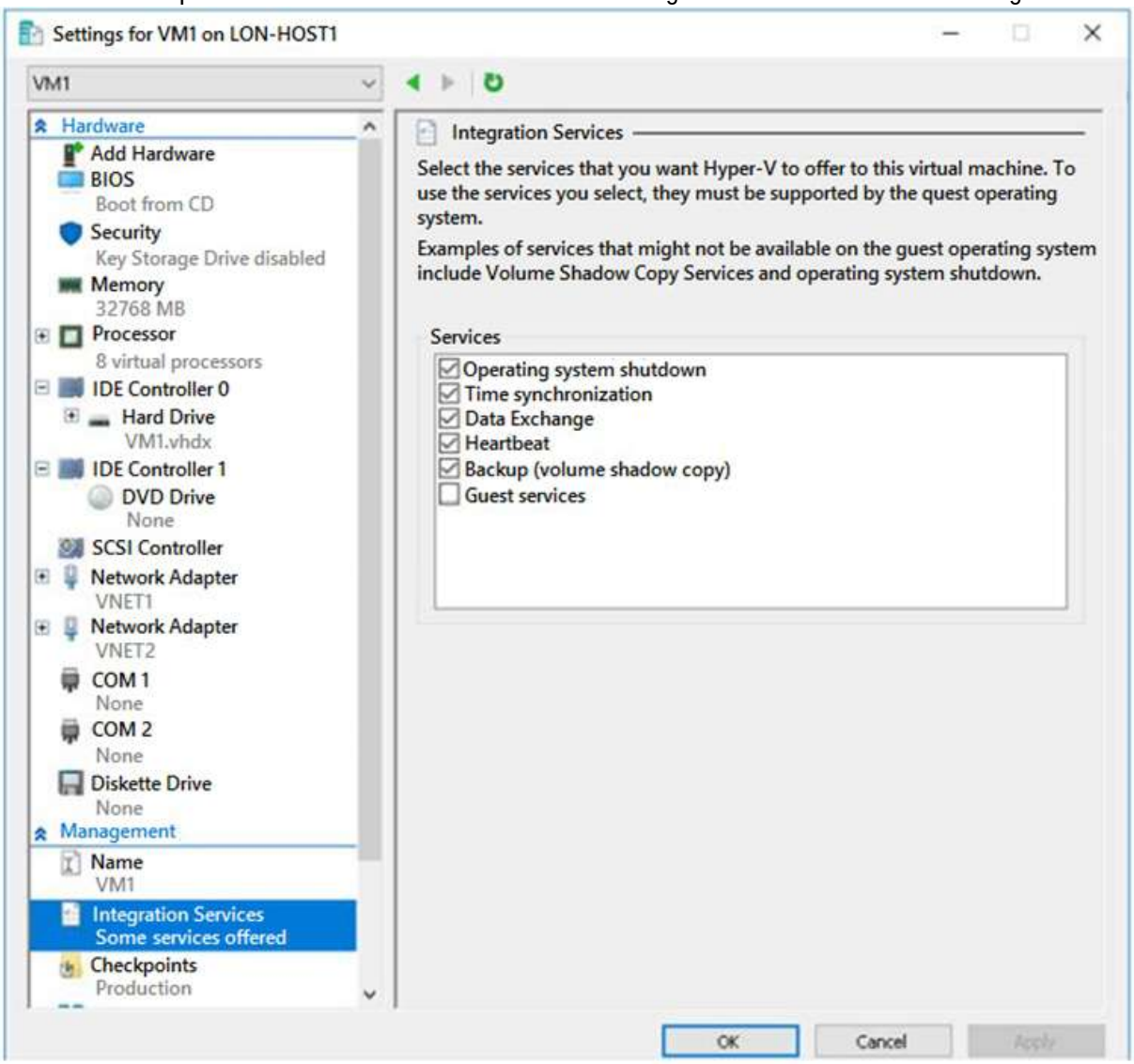
Question 329

You have an on-premises virtual machine named VM1 configured as shown in the following exhibit.



VM is started.

You need to create a new virtual machine image in Azure from VM1.

Which three actions should you perform before you create the new image? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ Remove the Backup (volume shadow copy) integration service
- ☒ Generalize VM1
- ☒ Run `Add-AzureRmVhd` and specify a blob service container as the destination
- ☐ Run `Add-AzureRmVhd` and specify a file share as the destination
- ☐ Reduce the amount of memory to 16 GB
- ☒ Convert the disk type to VHD

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Explanation/Reference

Explanation:
B: Sysprep removes all your personal account and security information, and then prepares the machine to be used as an image.

C, F: The Add-AzureRmVhd cmdlet uploads on-premises virtual hard disks, in .vhd file format, to a blob storage account as fixed virtual hard disks.

References:
https://docs.microsoft.com/en-us/powershell/module/azurerm.compute/add-azurermvhd?view=azurermps-6.13.0

https://docs.microsoft.com/en-us/azure/virtual-machines/windows/capture-image-resource

Question 330

You have an Azure App Service named WebApp1.

You plan to add a WebJob named WebJob1 to WebApp1.

You need to ensure that WebJob1 is triggered every 15 minutes.

What should you do?

- ☐ Change the Web.config file to include the `0*/15****` CRON expression
- ☐ From the application settings of WebApp1, add a default document named Settings.job. Add the `1-31 1-12 1-7 0*/15*` CRON expression to the JOB file
- ☒ Add a file named Settings.job to the ZIP file that contains the WebJob script. Add the `0*/15****` CRON expression to the JOB file
- ☐ Create an Azure Automation account and add a schedule to the account. Set the recurrence for the schedule

Explanation/Reference

Explanation:
You can enter a CRON expression in the portal [as the Webjob properties] or include a settings.job file at the root of your WebJob .zip file, as in the following example:

```
{
"schedule": "0 */15 * * * *"
}
```

Reference:
https://docs.microsoft.com/en-us/azure/app-service/webjobs-create

https://docs.microsoft.com/en-us/azure/app-service/webjobs-create#CreateOnDemand

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Question 331

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
Copy-Item File1.txt C:\Folder1\File1.txt
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy-Item is not supported. Copy is the correct command to copy a file to the container image.

References:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 332

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
COPY File1.txt /Folder1/
```

You then build the container image.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image.

References:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 333

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
COPY File1.txt C:/Folder1/
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image but the root directory is specified as '/' and not as 'C:/'.

References:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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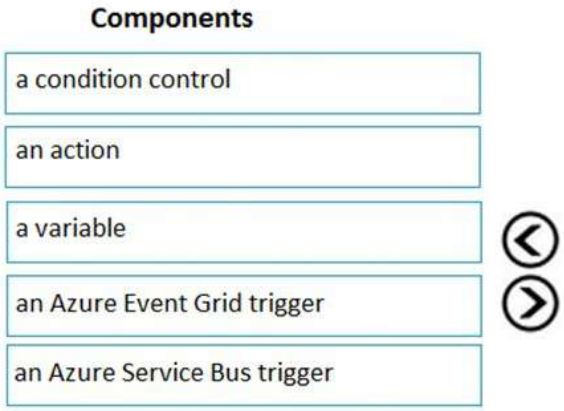
Question 334

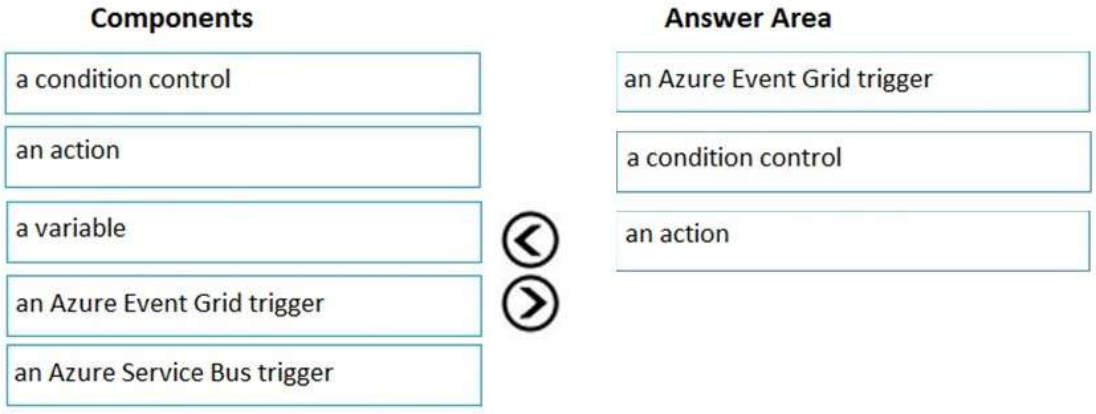
DRAG DROP

You need to use an Azure logic app to receive a notification when an administrator modifies the settings of a virtual machine in a resource group named RG1.

Which three components should you create next in the Logic Apps Designer? To answer, move the appropriate components from the list of components to the answer area and arrange them in the correct order.



Solution:



Explanation/Reference

Explanation:

Step 1: an Azure Event Grid trigger
First add an Event grid trigger that monitors the resource group for your virtual machine.

Step 2: a conditional control
To run your logic app workflow only when a specific event happens, add a condition that checks for virtual machine "write" operations.

Step 3: an action
Now add an action so that you get an email when the specified condition is true.

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References:
https://docs.microsoft.com/en-us/azure/event-grid/monitor-virtual-machine-changes-event-grid-logic-app

Question 335

HOTSPOT

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

Name	Type	Size
ILB1	Internal load balancer	Basic
ELB1	External load balancer	Standard
AGW1	Azure Application Gateway that has web application firewall (WAF) enabled	Standard
AGW2	Azure Application Gateway	Standard_v2

You need to deploy a load-balancing solution for two Azure web apps named App1 and App2 to meet the following requirements:

- App1 must support command injection protection.
- App2 must be able to use a static public IP address.
- App1 must have a Service Level Agreement (SLA) of 99.99 percent.

Which resource should you use as the load-balancing solution for each app? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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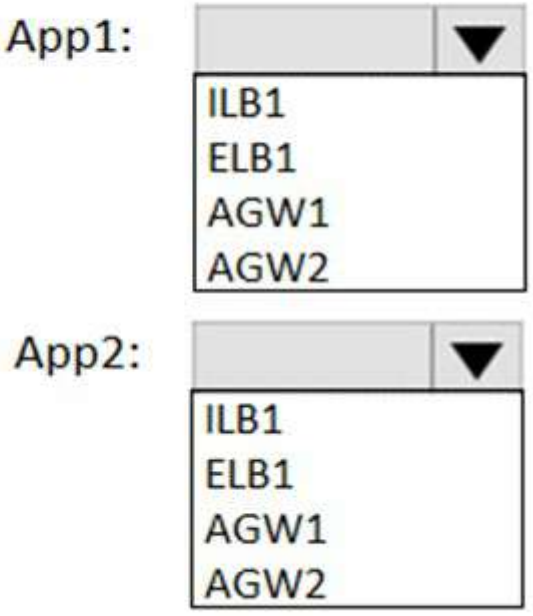
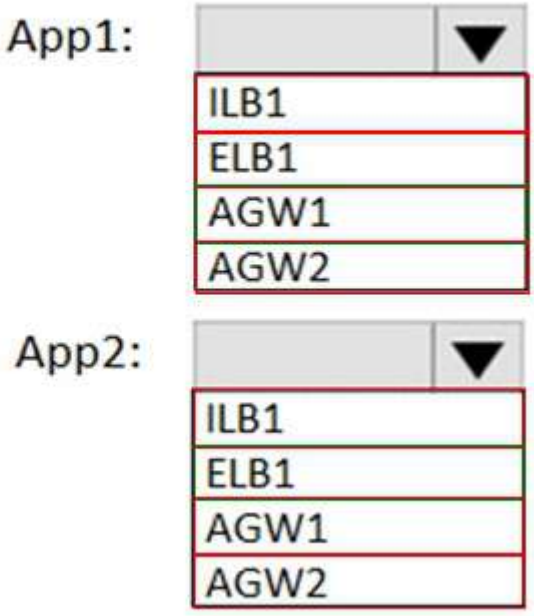
Answer Area



Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: AGW1

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Azure Application Gateway offers a web application firewall (WAF) that 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.

Box 2: ELB1
Public IP addresses allow Internet resources to communicate inbound to Azure resources. Public IP addresses also enable Azure resources to communicate outbound to Internet and public-facing Azure services with an IP address assigned to the resource.

Note: In Azure Resource Manager, a public IP address is a resource that has its own properties. Some of the resources you can associate a public IP address resource with are:

- Virtual machine network interfaces
- Internet-facing load balancers
- VPN gateways
- Application gateways

References:
https://docs.microsoft.com/en-us/azure/application-gateway/waf-overview

https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-ip-addresses-overview-arm

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Question 336

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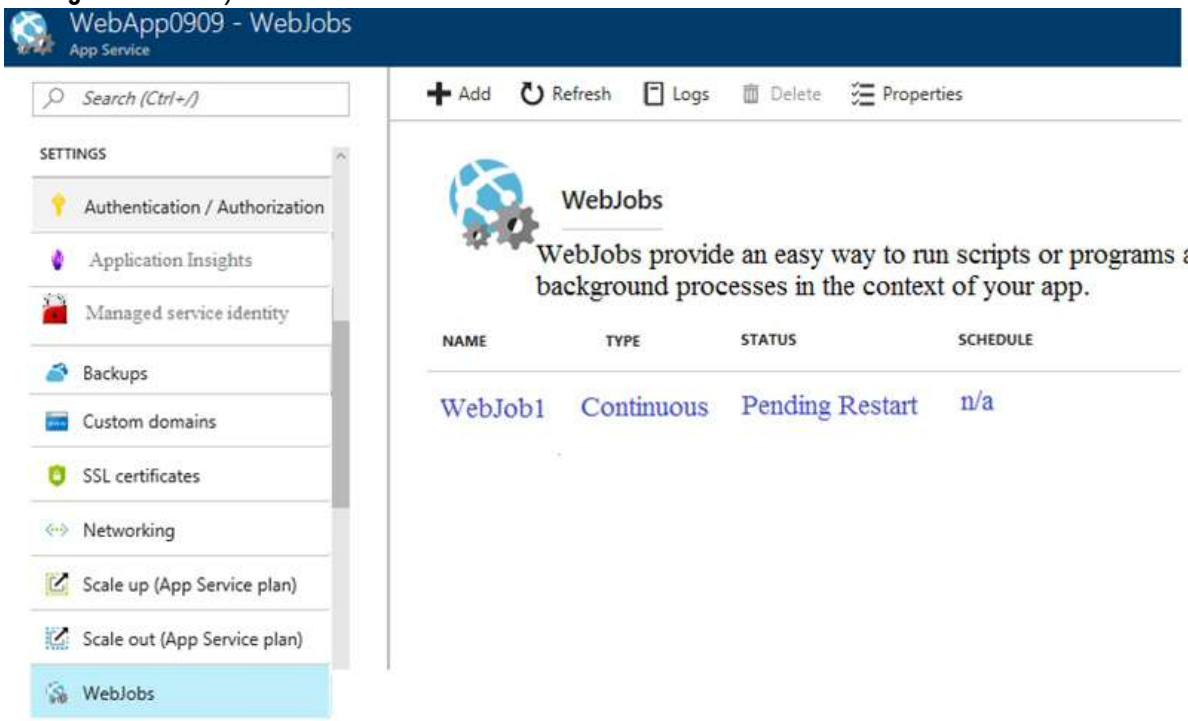
HOTSPOT

You have a task that includes a WebJob that should run continuously. The **WebJob Log** exhibit shows the text that is displayed when the WebJob runs. (Click the **WebJob Log** tab.)

The WebJob is configured as shown in the WebJob Configuration exhibit. (Click the **WebJob Configuration** tab.)



The WebJob is not functioning as expected. The **WebJob Code** exhibit has a comment that shows where code should be added. (Click the **WebJob Code** tab.)

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```
0 references
class Program
{
private static Timer workTimer = new Timer();

0 references
static void Main()
{
    Trace.WriteLine("WebJob Setup Starting");
    var config = new JobHostConfiguration();

    if (config.IsDevelopment)
    {
    config.UseDevelopmentSettings()
    }

    workTimer.Interval = TimeSpan.FromSeconds(10).TotalMilliseconds;
    workTimer.Elapsed += WorkTimer_Elapsed;
    workTimer.AutoReset = true;
    workTimer.Enabled = true;

    Console.WriteLine("WebJob Started");
}

1 reference
private static void WorkTimer_Elapsed(object sender, ElapsedEventArgs e)
{
    Console.WriteLine("Workload Processing ");
    //ToDo-Implement code
    Trace.WriteLine("Workload Complete");
}
}
```

You need to identify any issues with the WebJob. 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

	Yes	No
The WebJob will run continuously as the code is written.	○	○
The text WebJob Setup Srarting will output to the WebJob Logs.	○	○
The timer-elapsed code will be invoked and run at least once.	○	○
The WebJob settings are properly configured in the Azure portal.	○	○

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Solution:

Answer Area

	Yes	No
The WebJob will run continuously as the code is written.	○	○
The text WebJob Setup Srarting will output to the WebJob Logs.	○	○
The timer-elapsed code will be invoked and run at least once.	○	○
The WebJob settings are properly configured in the Azure portal.	○	○

Explanation/Reference

Question 337

You have an Azure App Service API that allows users to upload documents to the cloud with a mobile device. A mobile app connects to the service by using REST API calls.

When a new document is uploaded to the service, the service extracts the document metadata. Usage statistics for the app show significant increases in app usage.

The extraction process is CPU-intensive. You plan to modify the API to use a queue.

You need to ensure that the solution scales, handles request spikes, and reduces costs between request spikes.

What should you do?

- ☐ Configure a CPU Optimized virtual machine (VM) and install the Web App service on the new instance.
- ☐ Configure a series of CPU Optimized virtual machine (VM) instances and install extraction logic to process a queue.
- ☒ Move the extraction logic into an Azure Function. Create a queue triggered function to process the queue.
- ☐ Configure Azure Container Service to retrieve items from a queue and run across a pool of virtual machine (VM) nodes using the extraction logic.

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Question 338

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
ADD File1.txt C:/Folder1/
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image. The ADD command can also be used. However, the root directory is specified as '/' and not as 'C:/'.

Reference:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 339

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a server named Server1 that runs Windows Server 2019. Server1 is a container host.

You are creating a Dockerfile to build a container image.

You need to add a file named File1.txt from Server1 to a folder named C:\Folder1 in the container image.

Solution: You add the following line to the Dockerfile.

```
XCOPY File1.txt C:\Folder1\
```

You then build the container image.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Copy is the correct command to copy a file to the container image. Furthermore, the root directory is specified as '/' and not as 'C:/'.

References:
https://docs.docker.com/develop/develop-images/dockerfile_best-practices/#add-or-copy

https://docs.docker.com/engine/reference/builder/

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Question 340

DRAG DROP

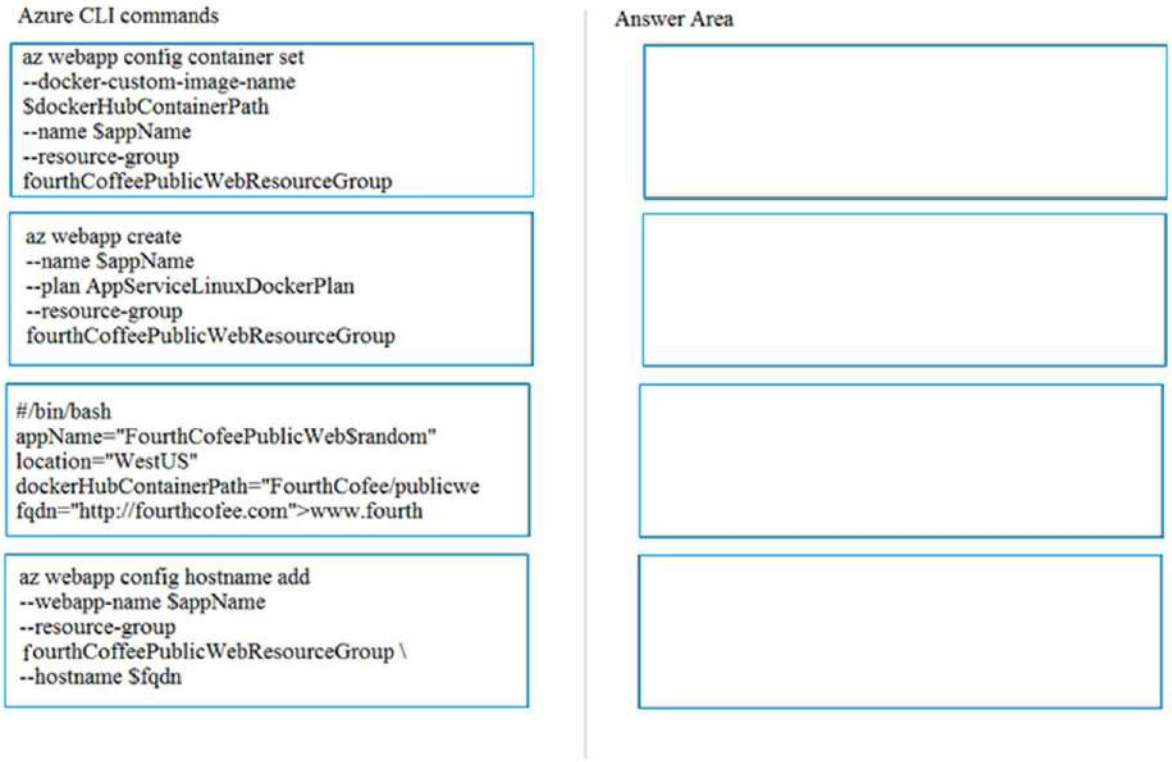
Fourth Coffee has an ASP.Net Core web app that runs in Docker. The app is mapped to the www.fourthcoffee.com domain.

Fourth Coffee is migrating this application to Azure.

You need to provision an App Service Web App to host this docker image and map the custom domain to the App Service web app.

A resource group named FourthCofeePublicWebResourceGroup has been created in the WestUS region that contains an App Service Plan named AppServiceLinuxDockerPlan.

Which order should the CLI commands be used to develop the solution? To answer, move all of the Azure CLI commands from the list of commands to the answer area and arrange them in the correct order.



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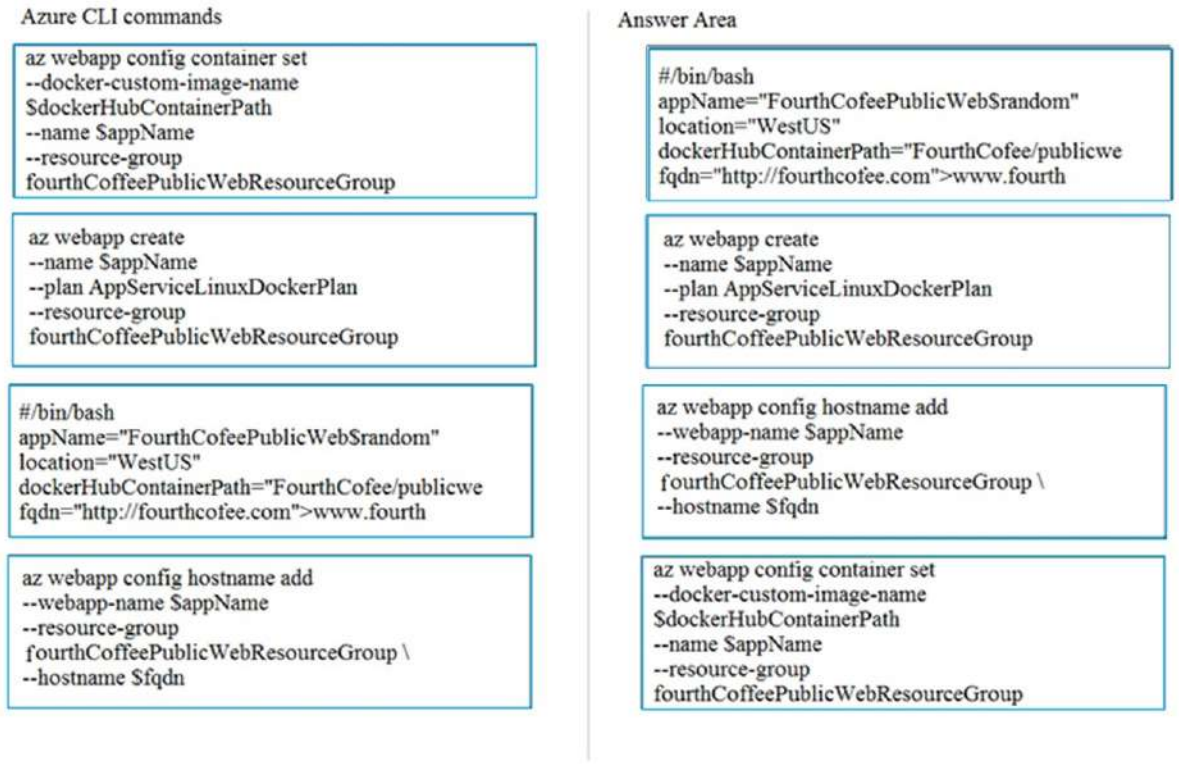
Solution:



Explanation/Reference

Question 341

You create a social media application that users can use to upload images and other content.

Users report that adult content is being posted in an area of the site that is accessible to and intended for young children.

You need to automatically detect and flag potentially offensive content. The solution must not require any custom coding other than code to scan and evaluate images.

What should you implement?

- ☐ Bing Visual Search
- ☐ Bing Image Search
- ☐ Custom Vision Search
- ☒ Computer Vision API

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Question 342

DRAG DROP

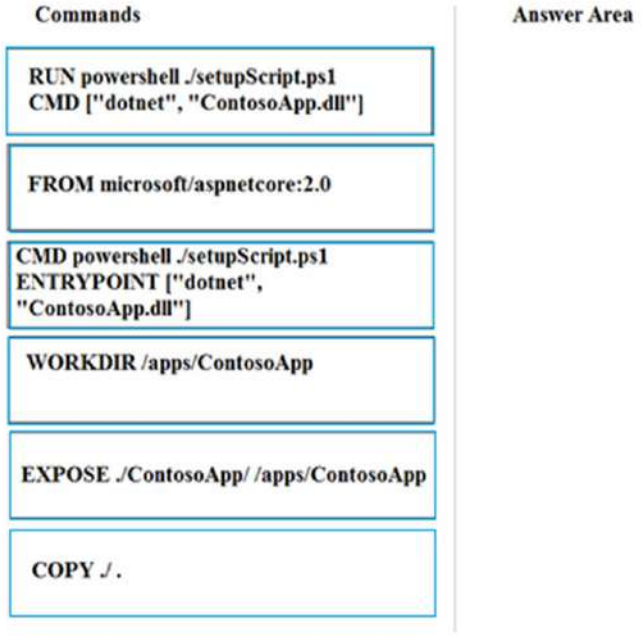
You plan to create a Docker image that runs an ASP.NET Core application named ContosoApp. You have a setup script named setupScript.ps1 and a series of application files including ContosoApp.dll.

You need to create a Dockerfile document that meets the following requirements:

- Call setupScript.ps1 when the container is built.
- Run ContosoApp.dll when the container starts.

The Dockerfile document must be created in the same folder where ContosoApp.dll and setupScript.ps1 are stored.

Which four commands should you use to develop the solution? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order.



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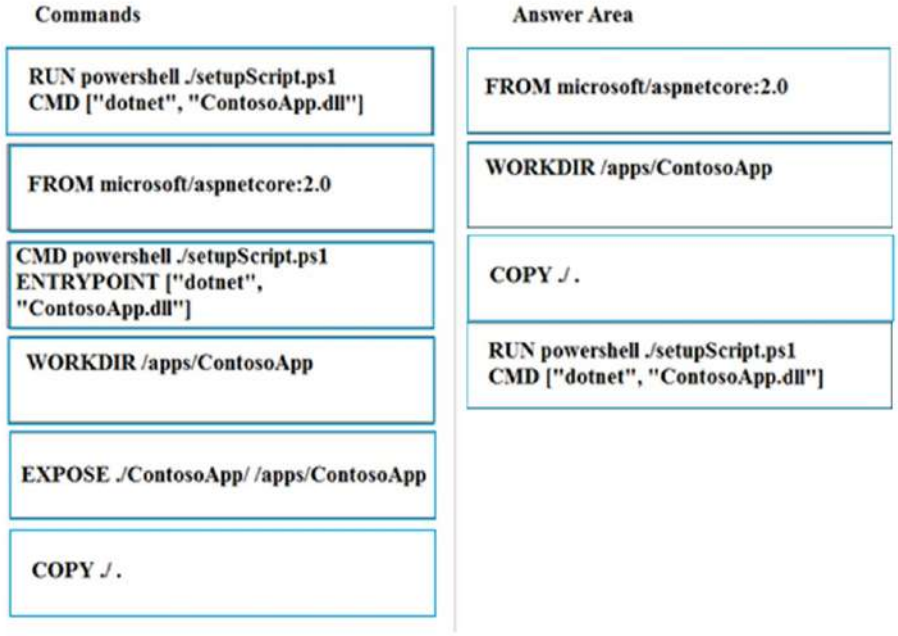
Solution:



Explanation/Reference

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Question 343

DRAG DROP

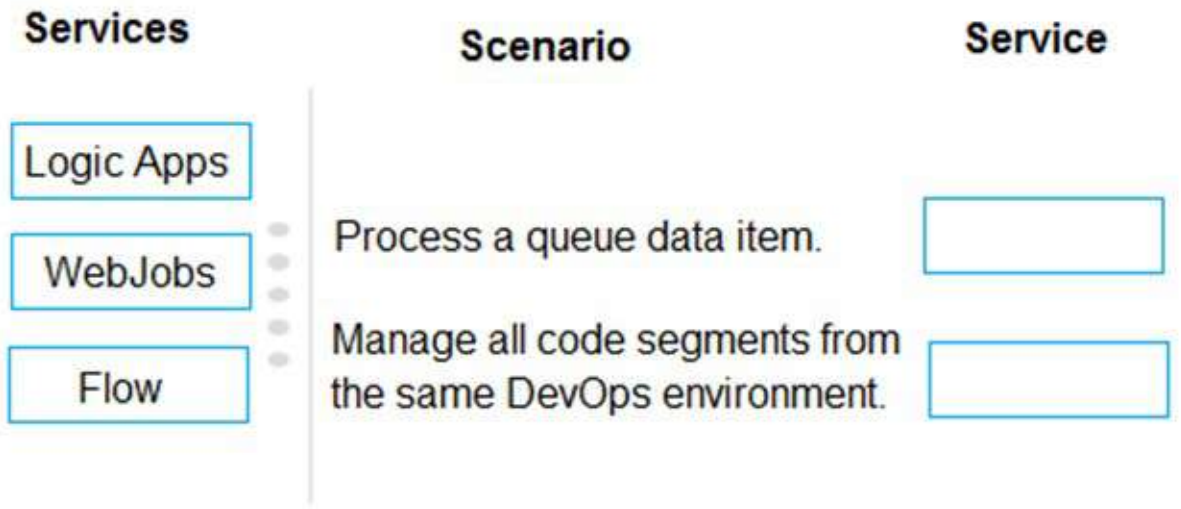
You have a web app named MainApp. You are developing a triggered App Service background task by using the WebJobs SDK.
This task automatically invokes a function in the code whenever any new data is received in a queue.

You need to configure the services.

Which service should you use for each scenario? To answer, drag the appropriate services to the correct scenarios. Each service may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Answer Area



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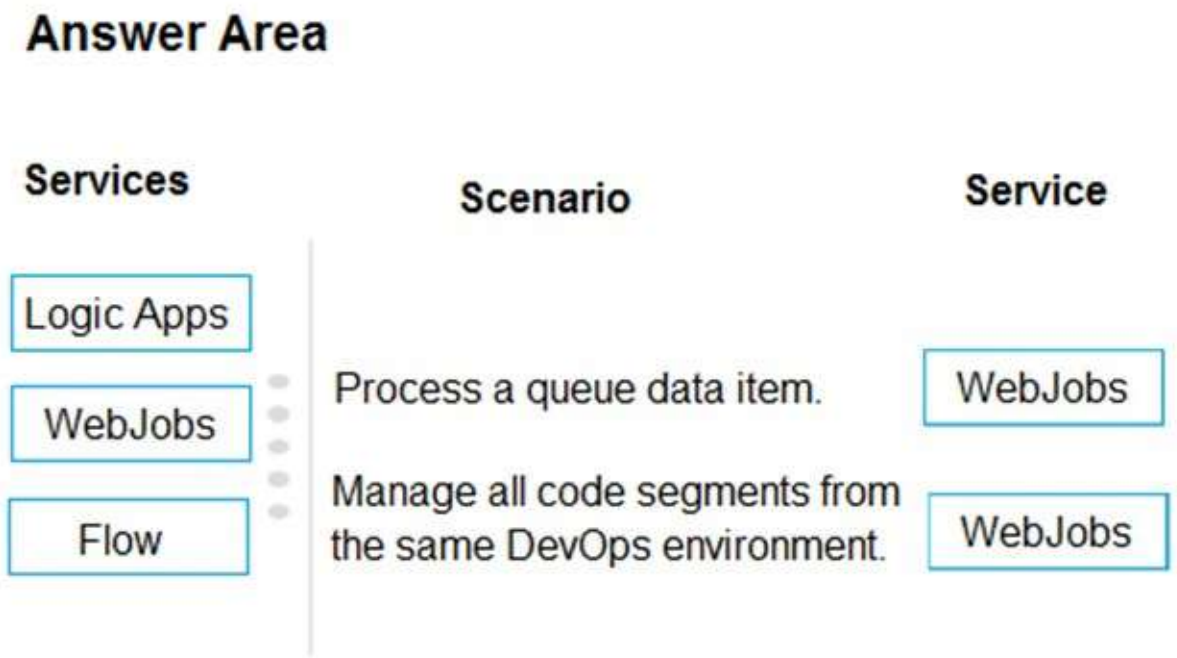
Solution:



Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-compare-logic-apps-ms-flow-webjobs

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Question 344

DRAG DROP

You are developing Azure WebJobs.

You need to recommend a WebJob type for each scenario.

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

NOTE: Each correct selection is worth one point.

Answer Area

WebJob types	Scenario	WebJob type
Triggered Continuous	Run on all instances that the web app runs on. Optionally restrict the WebJob to a single instance.	
	Run on a single instance that Azure selects for load balancing.	
	Supports remote debugging.	

Solution:

Answer Area

WebJob types	Scenario	WebJob type
Triggered Continuous	Run on all instances that the web app runs on. Optionally restrict the WebJob to a single instance.	Continuous
	Run on a single instance that Azure selects for load balancing.	Triggered
	Supports remote debugging.	Continuous

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/app-service/webjobs-create#webjob-types

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Question 345

You have an Azure subscription named Subscription1. Subscription1 contains the resource groups in the following table.

RG1 has a web app named WebApp1. WebApp1 is located in West Europe.

Name	Azure region	Policy
RG1	West Europe	Policy1
RG2	North Europe	Policy2
RG3	France Central	Policy3

You move WebApp1 to RG2.

What is the effect of the move?

- ☐ The App Service plan for WebApp1 moves to North Europe. Policy1 applies to WebApp1.
- ☐ The App Service plan for WebApp1 remains in West Europe. Policy1 applies to WebApp1.
- ☐ The App Service plan for WebApp1 moves to North Europe. Policy2 applies to WebApp1.
- ☒ The App Service plan for WebApp1 remains in West Europe. Policy2 applies to WebApp1.

Explanation/Reference

Explanation:
You can move an app to another App Service plan, as long as the source plan and the target plan are in the same resource group and geographical region.
The region in which your app runs is the region of the App Service plan it's in. However, you cannot change an App Service plan's region.

References:
https://docs.microsoft.com/en-us/azure/app-service/app-service-plan-manage

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Legacy AZ-300: Implement Authentication and Secure Data (30 questions)

Case Study (2 questions)

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Case Study

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Overview

Humongous Insurance is an insurance company that has three offices in Miami, Tokyo and Bangkok. Each office has 5.000 users.

Existing Environment

Active Directory Environment
Humongous Insurance has a single-domain Active Directory forest named humongousinsurance.com. The functional level of the forest is Windows Server 2012.

You recently provisioned an Azure Active Directory (Azure AD) tenant.

Network Infrastructure
Each office has a local data center that contains all the servers for that office. Each office has a dedicated connection to the Internet.

Each office has several link load balancers that provide access to the servers.

Active Directory Issue
Several users in humongousinsurance.com have UPNs that contain special characters.

You suspect that some of the characters are unsupported in Azure AD.

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Licensing Issue
You attempt to assign a license in Azure to several users and receive the following error message: "Licenses not assigned. License agreement failed for one user."

You verify that the Azure subscription has the available licenses.

Requirements

Planned Changes
Humongous Insurance plans to open a new office in Paris. The Paris office will contain 1,000 users who will be hired during the next 12 months. All the resources used by the Paris office users will be hosted in Azure.

Planned Azure AD Infrastructure
The on-premises Active Directory domain will be synchronized to Azure AD.

All client computers in the Paris office will be joined to an Azure AD domain.

Planned Azure Networking Infrastructure
You plan to create the following networking resources in a resource group named All_Resources:

- Default Azure system routes that will be the only routes used to route traffic
- A virtual network named Paris-VNet that will contain two subnets named Subnet1 and Subnet2
- A virtual network named ClientResources-VNet that will contain one subnet named ClientSubnet
- A virtual network named AllOffices-VNet that will contain two subnets named Subnet3 and Subnet4

You plan to enable peering between Paris-VNet and AllOffices-VNet. You will enable the **Use remote gateways** setting for the Paris-VNet peerings.

You plan to create a private DNS zone named humongousinsurance.local and set the registration network to the ClientResources-VNet virtual network.

Planned Azure Computer Infrastructure
Each subnet will contain several virtual machines that will run either Windows Server 2012 R2, Windows Server 2016, or Red Hat Linux.

Department Requirements
Humongous Insurance identifies the following requirements for the company's departments:

- Web administrators will deploy Azure web apps for the marketing department. Each web app will be added to a separate resource group. The initial configuration of the web apps will be identical. The web administrators have permission to deploy web apps to resource groups.

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- During the testing phase, auditors in the finance department must be able to review all Azure costs from the past week.

Authentication Requirements
Users in the Miami office must use Azure Active Directory Seamless Single Sign-on (Azure AD Seamless SSO) when accessing resources in Azure.

Question 379

You need to prepare the environment to meet the authentication requirements.

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

NOTE: Each correct selection is worth one point.

☐ Allow inbound TCP port 8080 to the domain controllers in the Miami office
☒ Install Azure AD Connect on a server in the Miami office and enable Pass-through Authentication
☐ Install the Active Directory Federation Services (AD FS) role on a domain controller in the Miami office
☐ Join the client computers in the Miami office to Azure AD
☒ Add http://autologon.microsoftazuread-sso.com to the intranet zone of each client computer in the Miami office.

Explanation/Reference

Explanation:
B: Seamless SSO works with any method of cloud authentication - Password Hash Synchronization or Pass-through Authentication, and can be enabled via Azure AD Connect.

E: You can gradually roll out Seamless SSO to your users. You start by adding the following Azure AD URL to all or selected users' Intranet zone settings by using Group Policy in Active Directory:
https://autologon.microsoftazuread-sso.com

Incorrect Answers:
A: Azure AD connect does not port 8080. It uses port 443.

C: Seamless SSO is not applicable to Active Directory Federation Services (ADFS).

D: Seamless SSO needs the user's device to be domain-joined, but doesn't need for the device to be Azure AD Joined.

Scenario: Users in the Miami office must use Azure Active Directory Seamless Single Sign-on (Azure AD Seamless SSO) when accessing resources in Azure.
Planned Azure AD Infrastructure include: The on-premises Active Directory domain will be synchronized to Azure AD.

References:

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https://docs.microsoft.com/en-us/azure/active-directory/connect/active-directory-aadconnect-sso-quick-start

Question 380

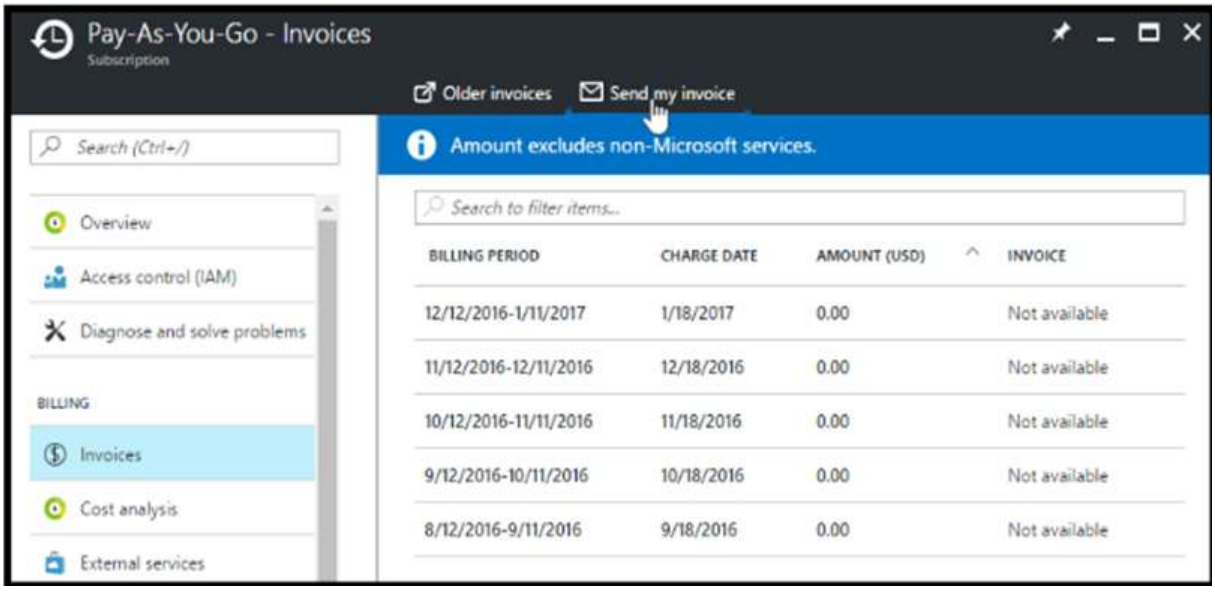
Which blade should you instruct the finance department auditors to use?

- ☐ Partner information
- ☐ Cost analysis
- ☐ Resource providers
- ☒ Invoices

Explanation/Reference

Explanation:
You can opt in and configure additional recipients to receive your Azure invoice in an email. This feature may not be available for certain subscriptions such as support offers, Enterprise Agreements, or Azure in Open.

1. Select your subscription from the Subscriptions page. Opt-in for each subscription you own. Click Invoices then Email my invoice.



2. Click Opt in and accept the terms.

Scenario: During the testing phase, auditors in the finance department must be able to review all Azure costs from the past week.

References:
https://docs.microsoft.com/en-us/azure/billing/billing-download-azure-invoice-daily-usage-date

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Case Study (4 questions)

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Case study

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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

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Overview

Contoso, Ltd. is a consulting company that has a main office in Montreal and two branch offices in Seattle and New York.

The Montreal office has 2,000 employees. The Seattle office has 1,000 employees. The New York office has 200 employees.

All the resources used by Contoso are hosted on-premises.

Contoso creates a new Azure subscription. The Azure Active Directory (Azure AD) tenant uses a domain named contoso.onmicrosoft.com. The tenant uses the P1 pricing tier.

Existing Environment

The network contains an Active Directory forest named contoso.com. All domain controllers are configured as DNS servers and host the contoso.com DNS zone.

Contoso has finance, human resources, sales, research, and information technology departments. Each department has an organizational unit (OU) that contains all the accounts of that respective department. All the user accounts have the **department** attribute set to their respective department. New users are added frequently.

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Contoso.com contains a user named User1.

All the offices connect by using private links.

Contoso has data centers in the Montreal and Seattle offices. Each data center has a firewall that can be configured as a VPN device.

All infrastructure servers are virtualized. The virtualization environment contains the servers in the following table.

Name	Role	Contains virtual machine
Server1	VMWare vCenter server	VM1
Server2	Hyper-V host	VM2

Contoso uses two web applications named App1 and App2. Each instance on each web application requires 1GB of memory.

The Azure subscription contains the resources in the following table.

Name	Type
VNet1	Virtual network
VM3	Virtual machine
VM4	Virtual machine

The network security team implements several network security groups (NSGs).

Planned Changes

Contoso plans to implement the following changes:

- Deploy Azure ExpressRoute to the Montreal office.
- Migrate the virtual machines hosted on Server1 and Server2 to Azure.
- Synchronize on-premises Active Directory to Azure Active Directory (Azure AD).
- Migrate App1 and App2 to two Azure web apps named WebApp1 and WebApp2.

Technical Requirements

Contoso must meet the following technical requirements:

- Ensure that WebApp1 can adjust the number of instances automatically based on the load and can scale up to five instances.
- Ensure that VM3 can establish outbound connections over TCP port 8080 to the applications servers in the Montreal office.
- Ensure that routing information is exchanged automatically between Azure and the routers in the Montreal office.
- Enable Azure Multi-Factor Authentication (MFA) for the users in the finance department only.

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- Ensure that webapp2.azurewebsites.net can be accessed by using the name app2.contoso.com
- Connect the New York office to VNet1 over the Internet by using an encrypted connection.
- Create a workflow to send an email message when the settings of VM4 are modified.
- Create a custom Azure role named Role1 that is based on the Reader role.
- Minimize costs whenever possible.

Question 381

You need to recommend a solution to automate the configuration for the finance department users. The solution must meet the technical requirements.

What should you include in the recommendation?

- ☐ an Azure logic app and the Microsoft Identity Management (MIM) client
- ☐ Azure AD Identity Protection
- ☒ dynamic groups and conditional access policies
- ☐ Azure AD B2C

Explanation/Reference

Explanation:
Scenario: Enable Azure Multi-Factor Authentication (MFA) for the users in the finance department only.

The recommendation is to use conditional access policies that can then be targeted to groups of users, specific applications, or other conditions.

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

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Question 382

HOTSPOT

You need to prepare the environment to implement the planned changes for Server2.

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

NOTE: Each correct selection is worth one point.

Answer Area

From the Azure portal:

- Create an Azure Migrate project
- Create a Recovery Services vault
- Upload a management certificate
- Create an Azure Import/Export job

On Server2:

- Enable Hyper-V Replica
- Install the Azure File Sync agent
- Create a collector virtual machine
- Configure Hyper-V storage migration
- Install the Azure Site Recovery Provider

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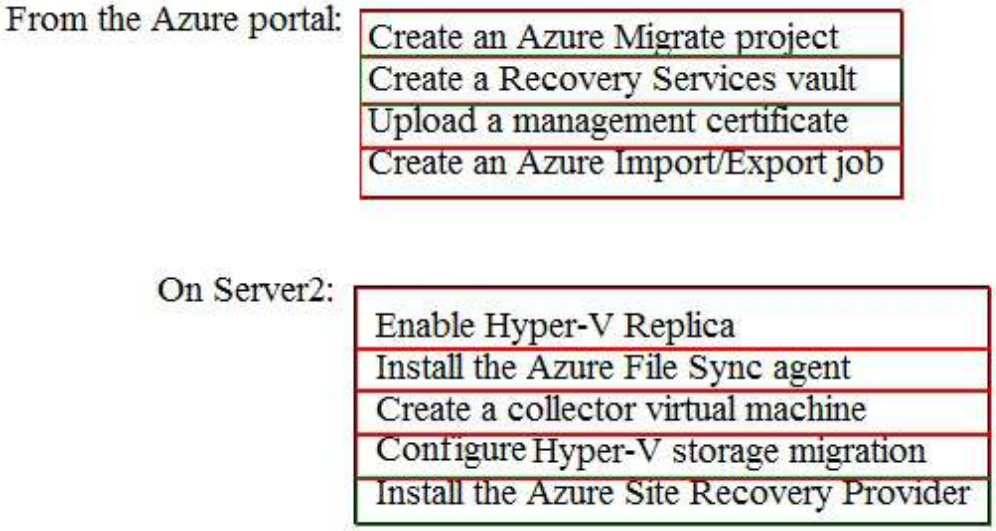
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: Create a Recovery Services vault
Create a Recovery Services vault on the Azure Portal.

Box 2: Install the Azure Site Recovery Provider
Azure Site Recovery can be used to manage migration of on-premises machines to Azure.

Scenario: Migrate the virtual machines hosted on Server1 and Server2 to Azure.
Server2 has the Hyper-V host role.

References:
https://docs.microsoft.com/en-us/azure/site-recovery/migrate-tutorial-on-premises-azure

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Question 383

You discover that VM3 does **NOT** meet the technical requirements.

You need to verify whether the issue relates to the NSGs.

What should you use?

- ☐ Diagram in VNet1
- ☐ Diagnostic settings in Azure Monitor
- ☒ IP flow verify in Azure Network Watcher
- ☐ Diagnose and solve problems in Traffic Manager profiles
- ☐ the security recommendations in Azure Advisor

Explanation/Reference

Explanation:
Scenario: Contoso must meet technical requirements including:
Ensure that VM3 can establish outbound connections over TCP port 8080 to the applications servers in the Montreal office.

IP flow verify checks if a packet is allowed or denied to or from a virtual machine. The information consists of direction, protocol, local IP, remote IP, local port, and remote port. If the packet is denied by a security group, the name of the rule that denied the packet is returned. While any source or destination IP can be chosen, IP flow verify helps administrators quickly diagnose connectivity issues from or to the internet and from or to the on-premises environment.

References:
https://docs.microsoft.com/en-us/azure/network-watcher/network-watcher-ip-flow-verify-overview

Question 384

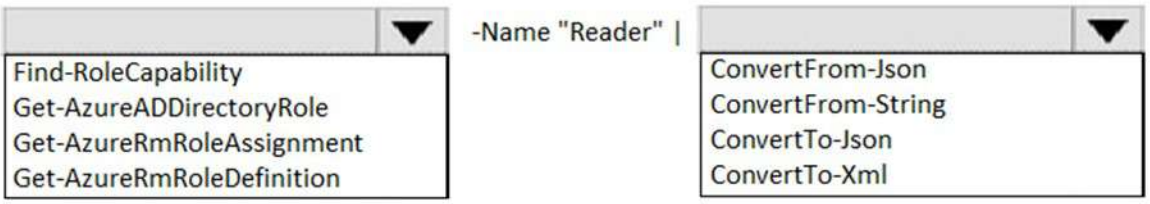
HOTSPOT

You need to implement Role1.

Which command should you run before you create Role1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



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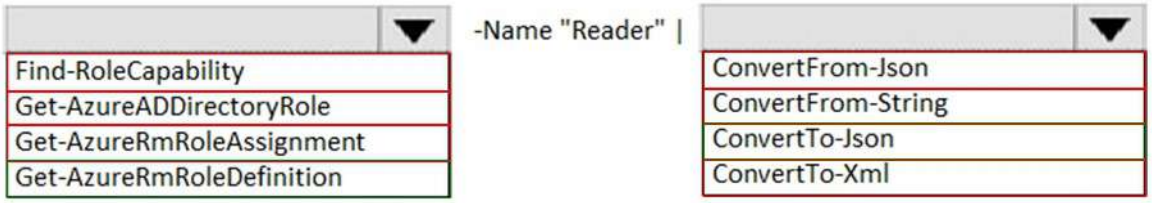
Solution:

Answer Area



Explanation/Reference

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Case Study (1 questions)

Case study

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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:

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- 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 admin for the Azure subscription.
- Admin1 must receive email alerts regarding service outages.
- Ensure that a new user named User3 can create network objects for the Azure subscription.

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Question 385

You need to recommend an identity solution that meets the technical requirements.

What should you recommend?

- ☐ cloud-only user accounts
- ☐ password hash synchronization and single sign-on (SSO)
- ☒ Pass-through Authentication and single sign-on (SSO)
- ☐ federated single sign-on (SSO) and Active Directory Federation Services (AD FS)

Explanation/Reference

Explanation:
With Pass-through Authentication the on-premises passwords are never stored in the cloud in any form.

Scenario:

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

References:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-pta

Question 349

You have an Azure virtual machine named VM1 that you use for testing. VM1 is protected by Azure Backup.

You delete VM1.

You need to remove the backup data stored for VM1.

What should you do first?

- ☐ Delete the storage account
- ☐ Stop the backup
- ☒ Modify the backup policy
- ☐ Delete the Recovery Services vault

Explanation/Reference

Explanation:
Azure Backup provides backup for virtual machines — created through both the classic deployment model and the Azure Resource Manager deployment model — by using custom-defined backup policies in a Recovery Services vault.

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With the release of backup policy management, customers can manage backup policies and model them to meet their changing requirements from a single window. Customers can edit a policy, associate more virtual machines to a policy, and delete unnecessary policies to meet their compliance requirements.

Incorrect Answers:
D: You can't delete a Recovery Services vault if it is registered to a server and holds backup data. If you try to delete a vault, but can't, the vault is still configured to receive backup data.

References:
https://azure.microsoft.com/en-in/updates/azure-vm-backup-policy-management/

Question 350

You have an Azure subscription named Subscription1. You deploy a Linux virtual machine named VM1 to Subscription1.

You need to monitor the metrics and the logs of VM1.

What should you use?

- ☒ the AzurePerformanceDiagnostics extension
- ☐ Linux Diagnostic Extension (LAD) 3.0
- ☐ Azure Analysis Services
- ☐ Azure HDInsight

Explanation/Reference

Explanation:
You can use extensions to configure diagnostics on your VMs to collect additional metric data.
The basic host metrics are available, but to see more granular and VM-specific metrics, you need to install the Azure diagnostics extension on the VM. The Azure diagnostics extension allows additional monitoring and diagnostics data to be retrieved from the VM.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/linux/tutorial-monitoring

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Question 351

You have two Azure virtual machines named VM1 and VM2.

You have two Recovery Services vaults named RSV1 and RSV2. VM2 is protected by RSV1.

You need to use RSV2 to protect VM2.

What should you do first?

- ☐ From the RSV2 blade, click **Backup**. From the Backup blade, select the backup for the virtual machine, and then click **Backup**
- ☐ From the RSV1 blade, click **Backup items** and stop the VM2 backup
- ☒ From the VM2 blade, click **Disaster recovery**, click **Replication settings**, and then select RSV2 as the Recovery Services vault
- ☐ From the RSV1 blade, click **Backup Jobs** and export the VM2 job

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/backup/backup-azure-vms-first-look-arm

Question 352

You have a resource group named RG1. RG1 contains an Azure Storage account named storageaccount1 and a virtual machine named VM1 that runs Windows Server 2016.

Storageaccount1 contains the disk files for VM1.

You apply a ReadOnly lock to RG1.

What can you do from the Azure portal?

- ☐ Start VM1
- ☐ Upload a blob to storageaccount1
- ☒ View the keys of storageaccount1
- ☐ generate an automation script for RG1

Explanation/Reference

Explanation:
ReadOnly allows authorized users to read a resource, but they can't delete or update the resource. Applying this lock is similar to restricting all authorized users to the permissions granted by the Reader role.

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-lock-resources

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Question 353

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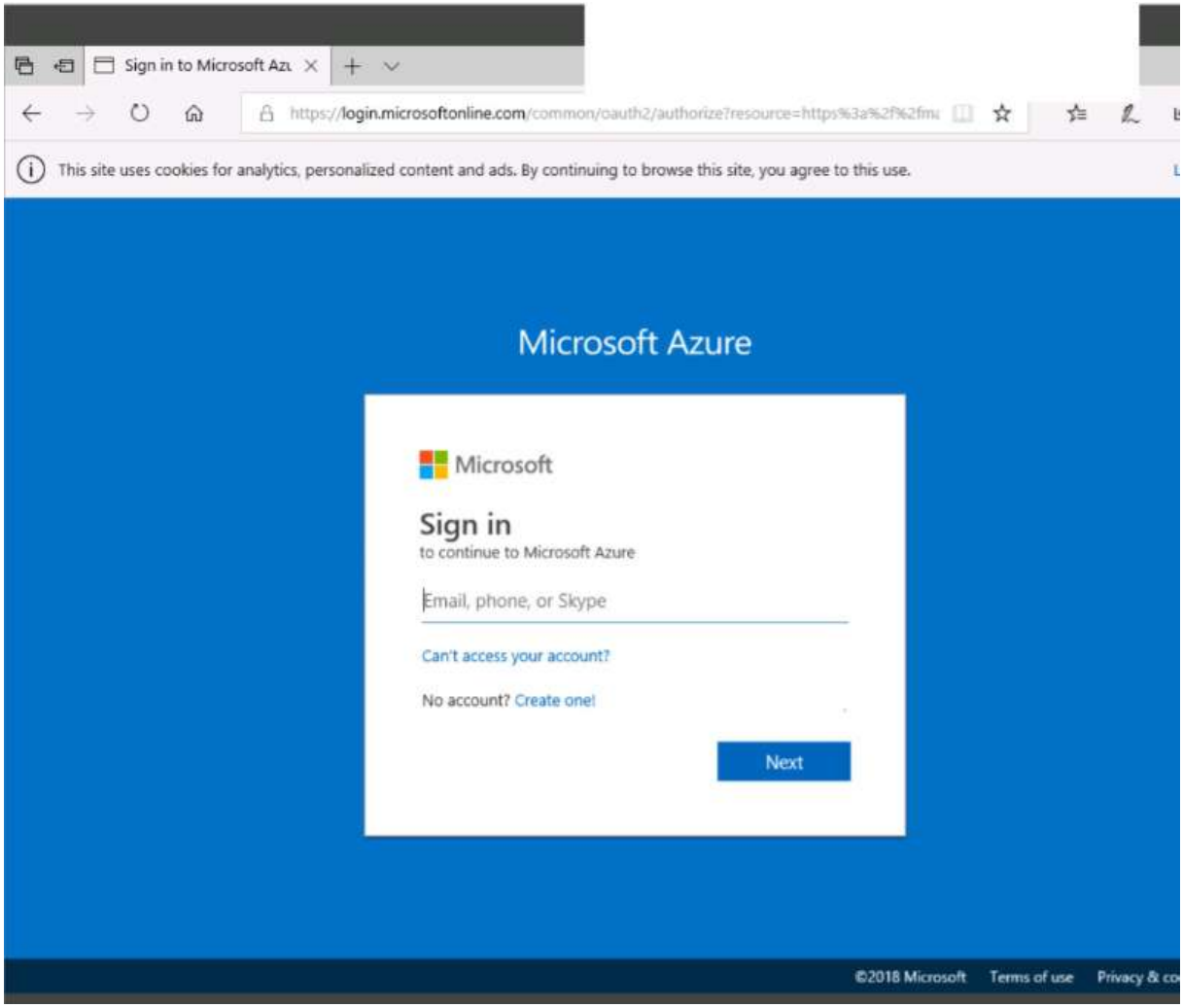
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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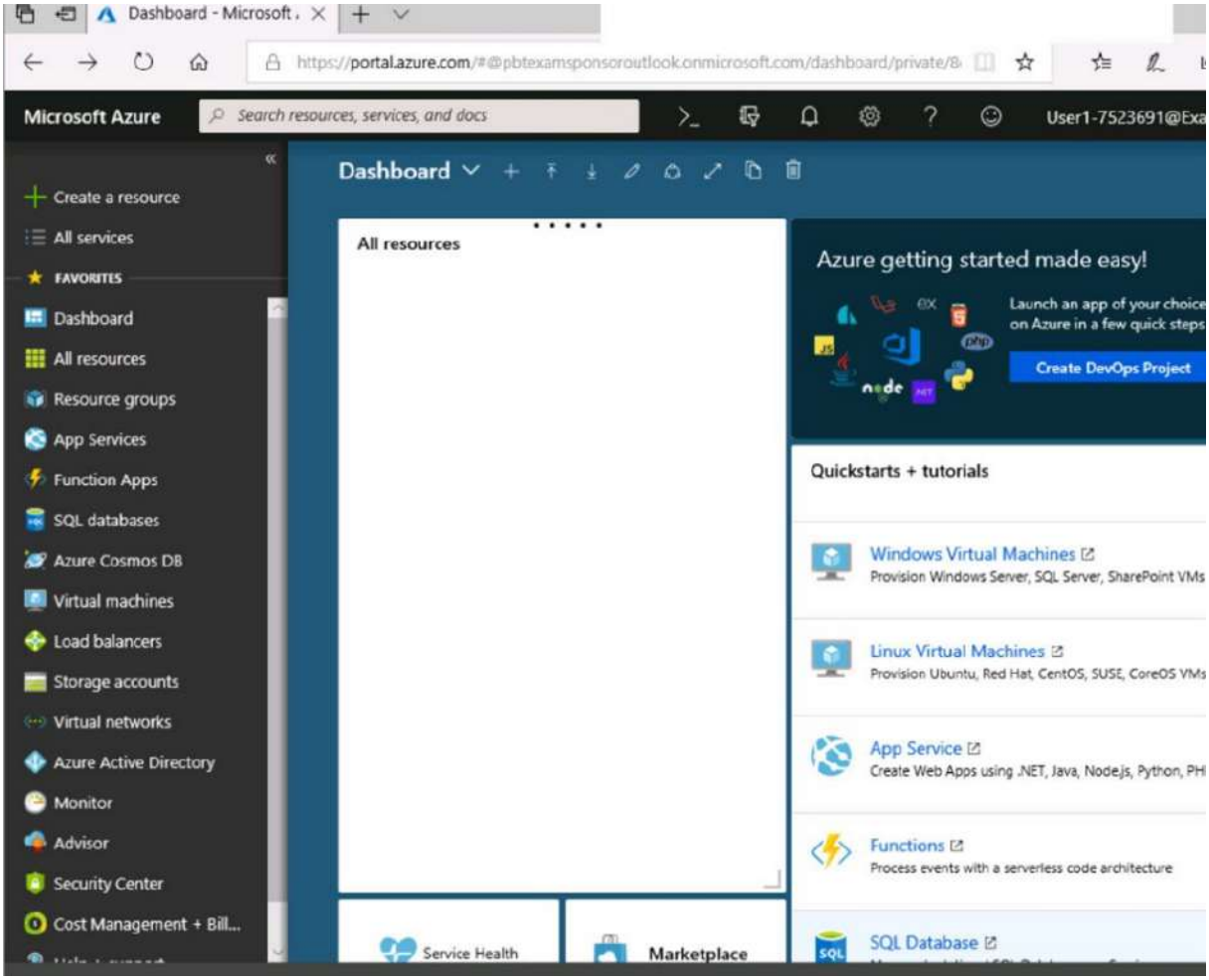

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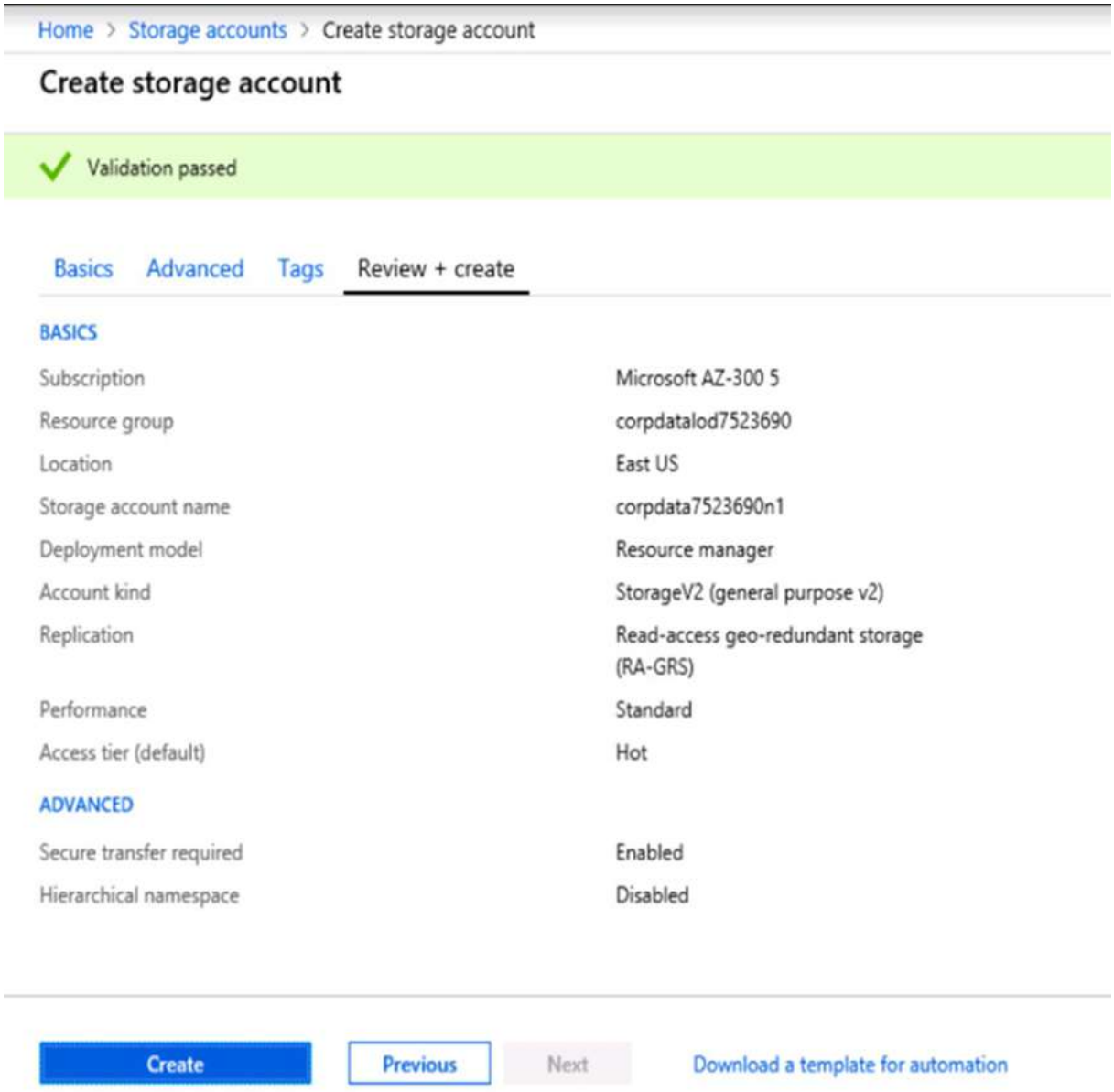

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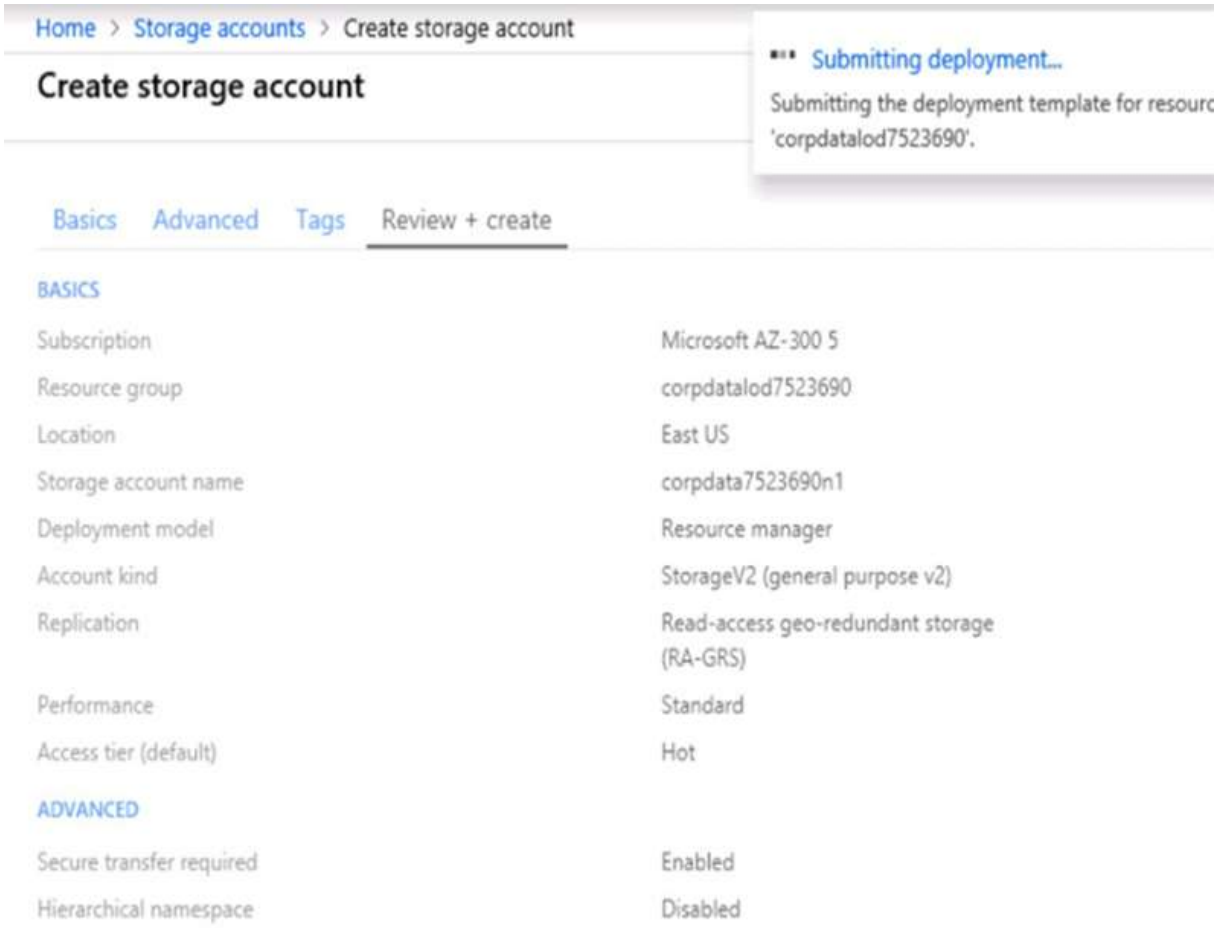

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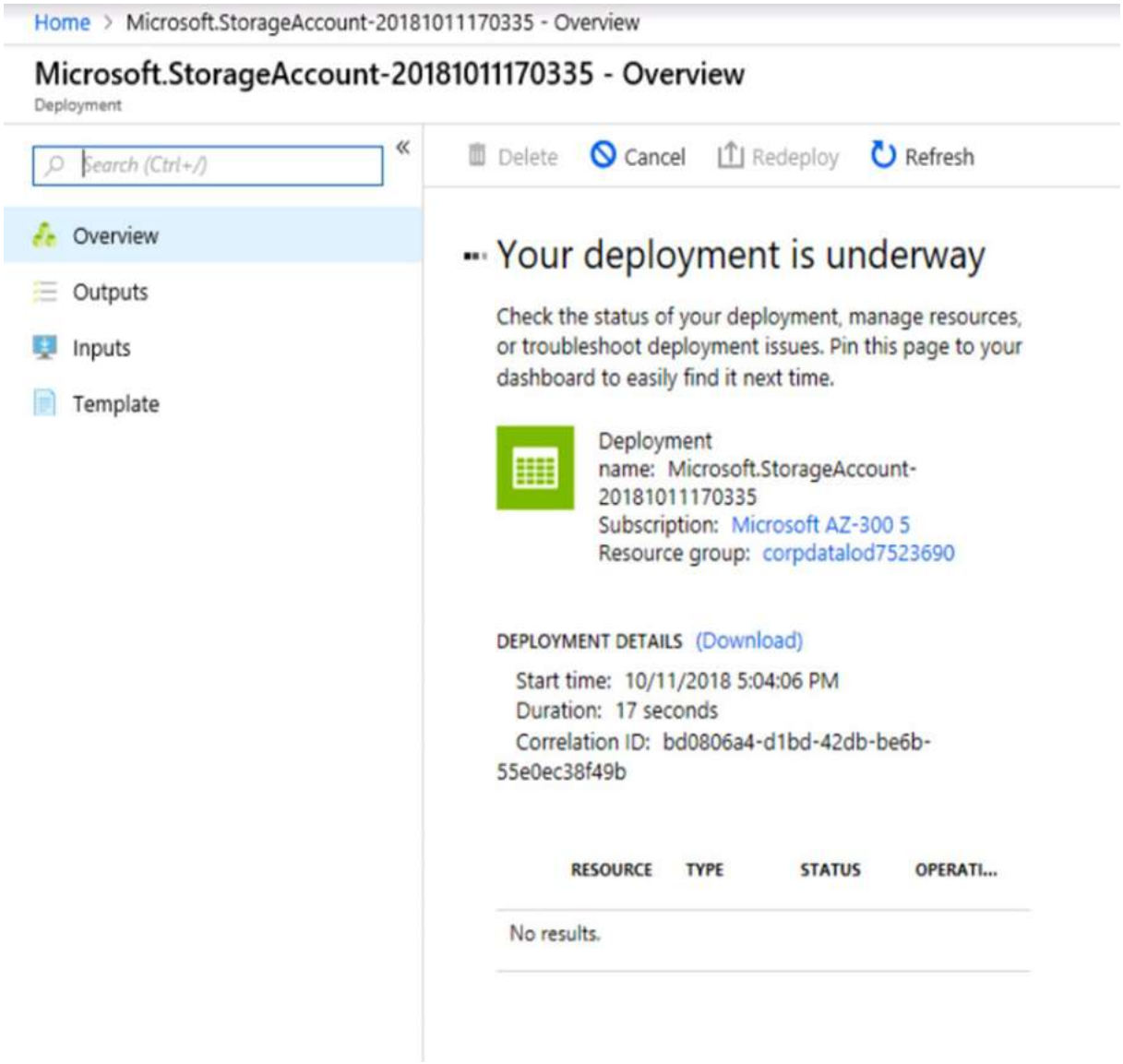

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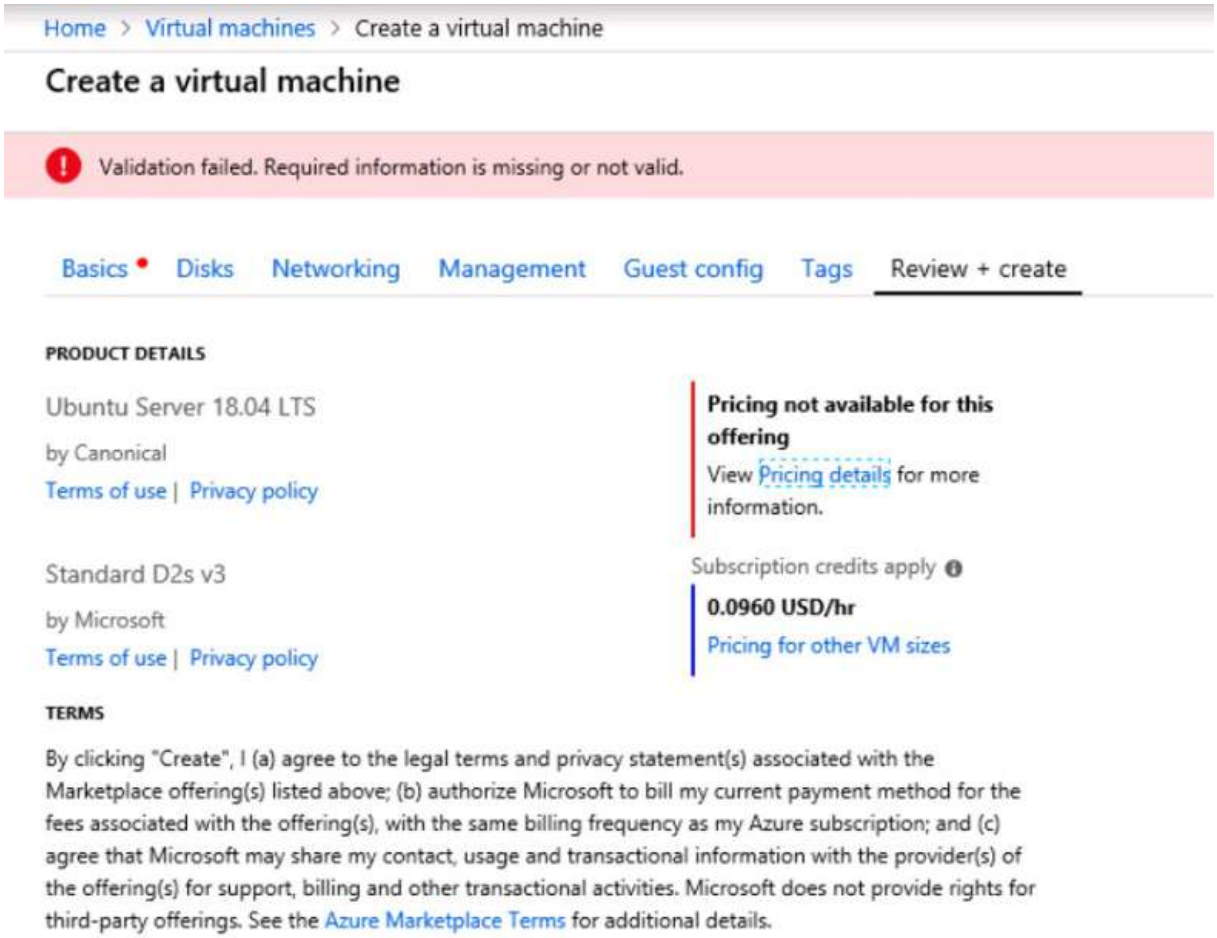

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

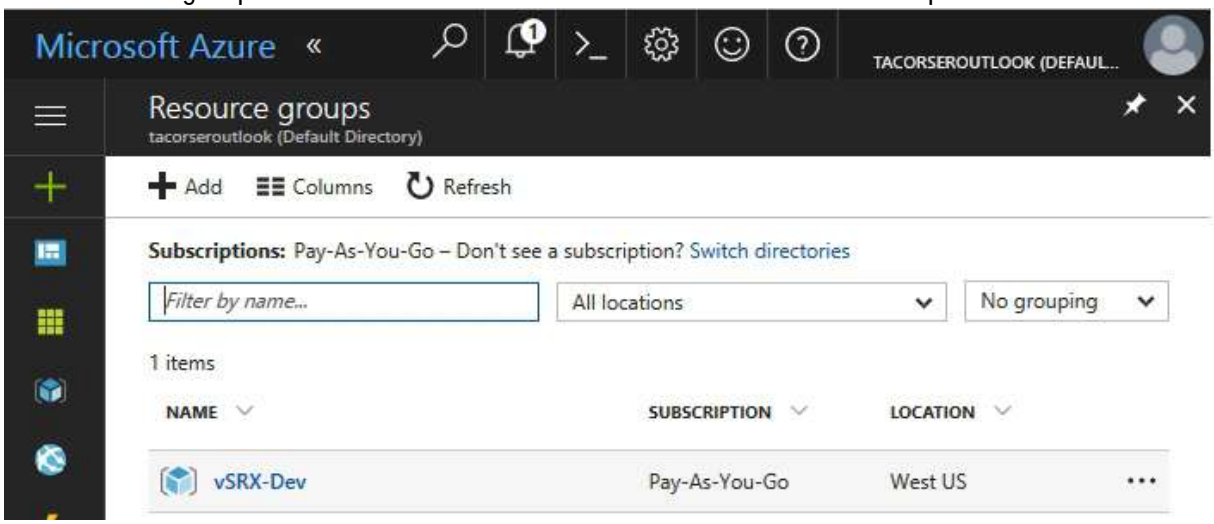
You plan to grant the members of a new Azure AD group named corp10217507 the rights to delegate administrative access to any resource in the resource group named corp10217507.

You need to create the Azure AD group, and then to assign the correct role to the group. The solution must use the principle of least privilege and minimize the number of role assignments.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Click Resource groups from the menu of services to access the Resource Groups blade



Step 2:
Click Add (+) to create a new resource group. The Create Resource Group blade appears. Enter corp10217507 as the Resource group name, and click the Create button.

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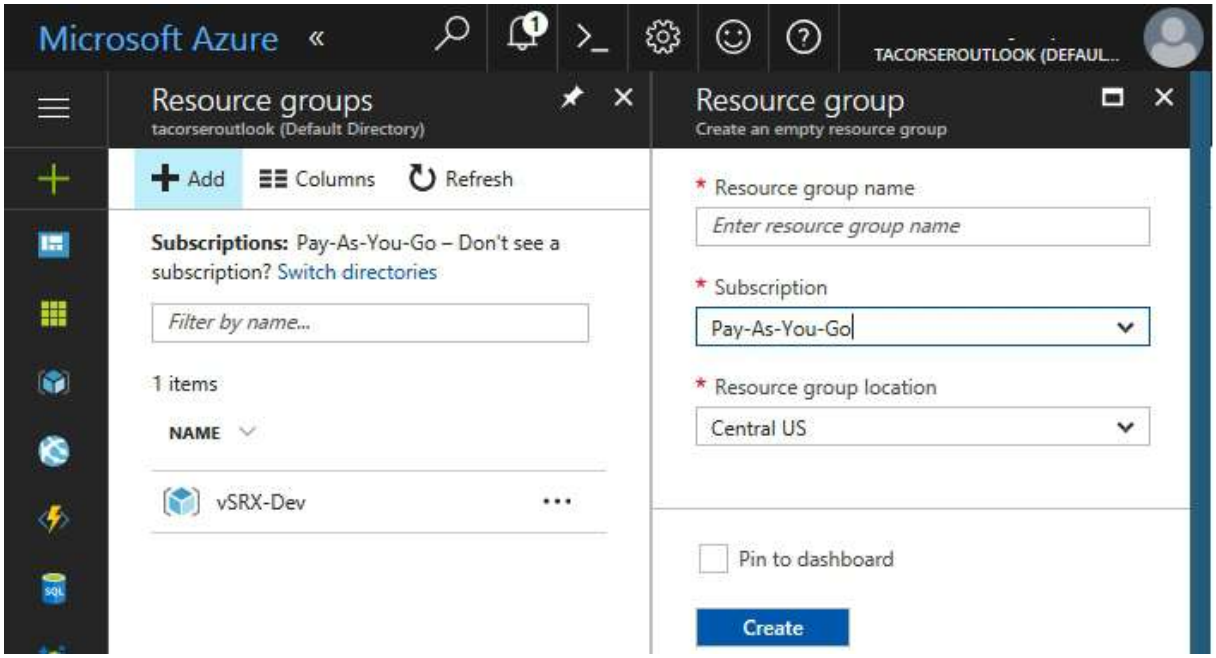
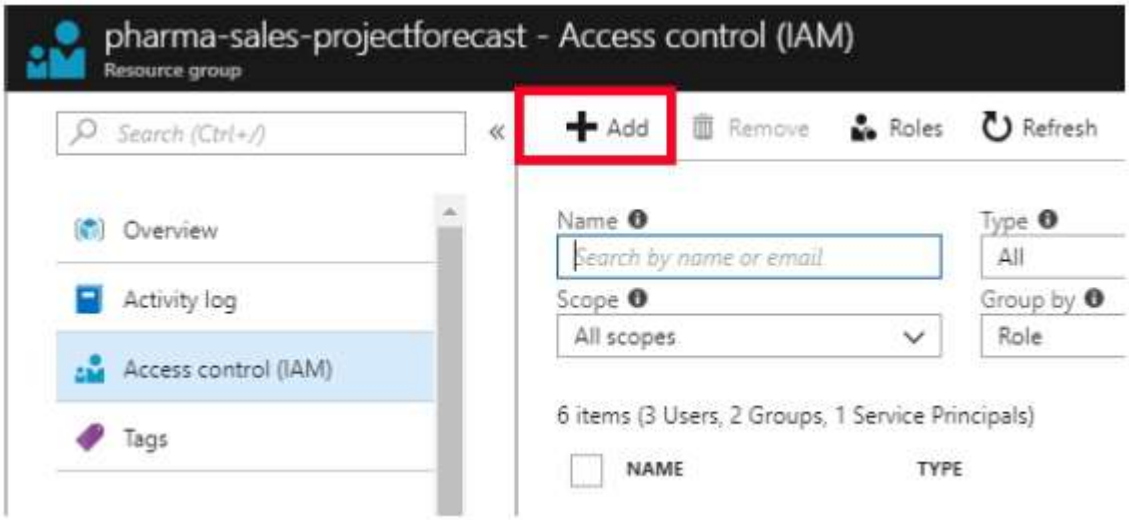


Step 3:
Select Create.
Your group is created and ready for you to add members.
Now we need to assign a role to this resource group scope.

Step 4:
Choose the newly created Resource group, and Access control (IAM) to see the current list of role assignments at the resource group scope. Click +Add to open the Add permissions pane.



Step 5:
In the Role drop-down list, select a role Delegate administration, and select Assign access to: resource group corp10217507.

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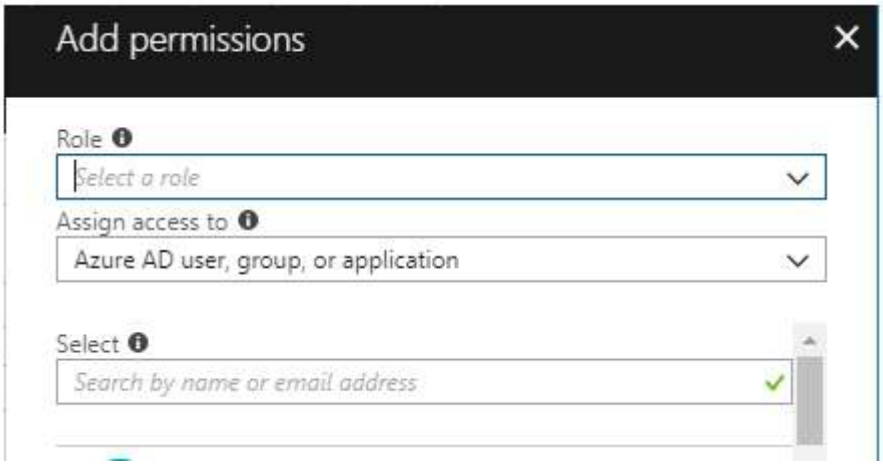

References:
https://docs.microsoft.com/en-us/azure/role-based-access-control/role-assignments-portal

https://www.juniper.net/documentation/en_US/vsrx/topics/task/multi-task/security-vsrx-azure-marketplace-resource-group.html

Question 354

You download an Azure Resource Manager template based on an existing virtual machine. The template will be used to deploy 100 virtual machines.

You need to modify the template to reference an administrative password. You must prevent the password from being stored in plain text.

What should you create to store the password?

- ☒ an Azure Key Vault and an access policy.
- ☐ an Azure Storage account and an access policy.
- ☐ Azure Active Directory (AD) Identity Protection and an Azure policy.
- ☐ a Recovery Services vault and a backup policy.

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Question 355

DRAG DROP

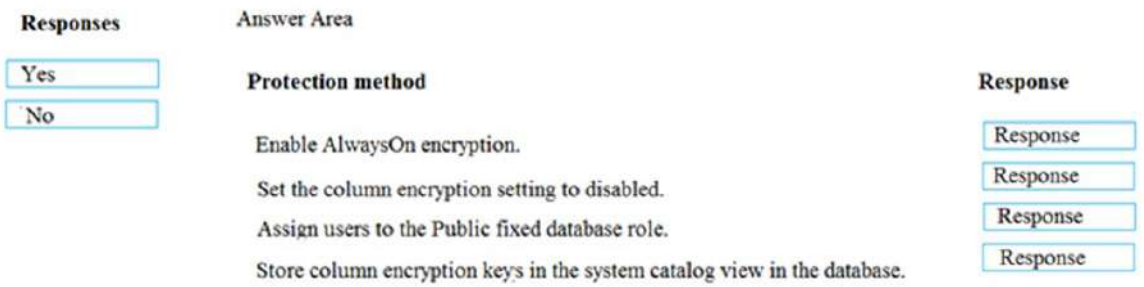
You maintain an existing Azure SQL Database instance. Management of the database is performed by an external party. All cryptographic keys are stored in an Azure Key Vault.

You must ensure that the external party cannot access the data in the SSN column of the Person Table.

Will each protection method meet the requirement? To answer, drag the appropriate responses to the correct protection methods.

Each response 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.



Solution:

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/security/azure-database-security-overview

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Question 356

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your network contains an Active Directory forest named fabrikam.com. The forest contains two child domains named corp.fabrikam.com and research.fabrikam.com.

You have an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

You install Azure AD Connect and sync all the on-premises user accounts to the Azure AD tenant. You implement seamless single sign-on (SSO).

You plan to change the source of authority for all the user accounts in research.fabrikam.com to Azure AD.

You need to prevent research.fabrikam.com from resyncing to Azure AD.

Solution: From the Azure Active Directory admin center, you delete a custom domain.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead you should customize the default synchronization rule.

Note:
To delete a custom domain name, you must first ensure that no resources in your directory rely on the domain name. You can't delete a domain name from your directory if:

- Any user has a user name, email address, or proxy address that includes the domain name.
- Any group has an email address or proxy address that includes the domain name.
- Any application in your Azure AD has an app ID URI that includes the domain name.

References:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-create-custom-sync-rule

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Question 357

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

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You have an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

You install Azure AD Connect and sync all the on-premises user accounts to the Azure AD tenant. You implement seamless single sign-on (SSO).

You plan to change the source of authority for all the user accounts in research.fabrikam.com to Azure AD.

You need to prevent research.fabrikam.com from resyncing to Azure AD.

Solution: You use the Synchronization Service Manager.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead you should customize the default synchronization rule.

Note: The Synchronization Service Manager UI is used to configure more advanced aspects of the sync engine and to see the operational aspects of the service.

References:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-create-custom-sync-rule

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Question 358

You have an Azure solution that uses Multi-Factor Authentication for added security when users are outside of the office. The usage model has been set to Per Authentication.

Your company acquires another company and adds the new staff to Azure Active Directory (Azure AD). New staff members must use Multi-Factor Authentication.

You need to change the usage model to Per Enabled User.

What should you recommend?

- ☐ Create a new Multi-Factor Authentication provider and reconfigure the usage model.
- ☒ Create a new Multi-Factor Authentication provider with a backup from the current Multi-Factor Authentication provider data.
- ☐ Use the Azure portal to change the current usage model.
- ☐ Use Azure CLI to change the current usage model.

Explanation/Reference

Explanation:
Since it is not possible to change the usage model of an existing provider as it is right now, you have to create a new one and reactivate your existing server with activation credentials from the new provider.

References:
https://365lab.net/2015/04/11/switch-usage-model-in-azure-multi-factor-authentication-server/

Question 359

Your network contains an on-premises Active Directory and an Azure Active Directory (Azure AD) tenant.

You deploy Azure AD Connect and configure pass-through authentication?

Your Azure subscription contains several web apps that are accessed from the Internet.

You plan to use Azure Multi-Factor Authentication (MFA) with the Azure Active Directory tenant.

You need to recommend a solution to prevent users from being prompted for Azure MFA when they access the web apps from the on-premises network.

What should you include in the recommendation?

- ☐ a site-to-site VPN between the on-premises network and Azure
- ☐ an Azure policy
- ☐ an Azure ExpressRoute circuit
- ☒ trusted IPs

Explanation/Reference

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Explanation:
The Trusted IPs feature of Azure Multi-Factor Authentication is used by administrators of a managed or federated tenant. The feature bypasses two-step verification for users who sign in from the company intranet. The feature is available with the full version of Azure Multi-Factor Authentication, and not the free version for administrators.

References:
https://docs.microsoft.com/en-us/azure/active-directory/authentication/howto-mfa-mfasettings#trusted-ips

Question 360

You are the global administrator for an Azure Active Directory (Azure AD) tenant named adatum.com.

You need to enable two-step verification for Azure users.

What should you do?

- ☒ Create an Azure AD conditional access policy.
- ☐ Configure a playbook in Azure Security Center.
- ☐ Enable Azure AD Privileged Identity Management.
- ☐ Install an MFA Server.

Explanation/Reference

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

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Question 361

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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Your network contains an Active Directory forest named fabrikam.com. The forest contains two child domains named corp.fabrikam.com and research.fabrikam.com.

You have an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

You install Azure AD Connect and sync all the on-premises user accounts to the Azure AD tenant. You implement seamless single sign-on (SSO).

You plan to change the source of authority for all the user accounts in research.fabrikam.com to Azure AD.

You need to prevent research.fabrikam.com from resyncing to Azure AD.

Solution: You use the Azure AD Connect wizard.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead you should customize the default synchronization rule.

Note: The Synchronization Service Manager UI is used to configure more advanced aspects of the sync engine and to see the operational aspects of the service.

References:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-create-custom-sync-rule

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Question 362

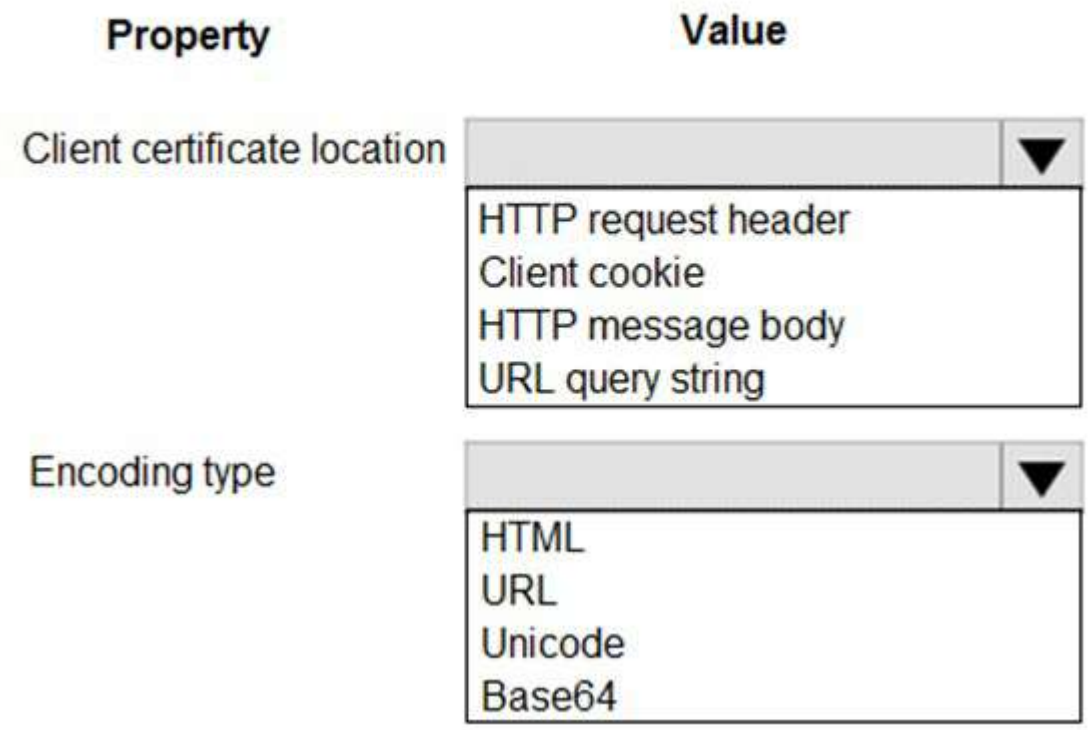
HOTSPOT

You are developing an Azure Web App. You configure TLS mutual authentication for the web app.

You need to validate the client certificate in the web app. To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



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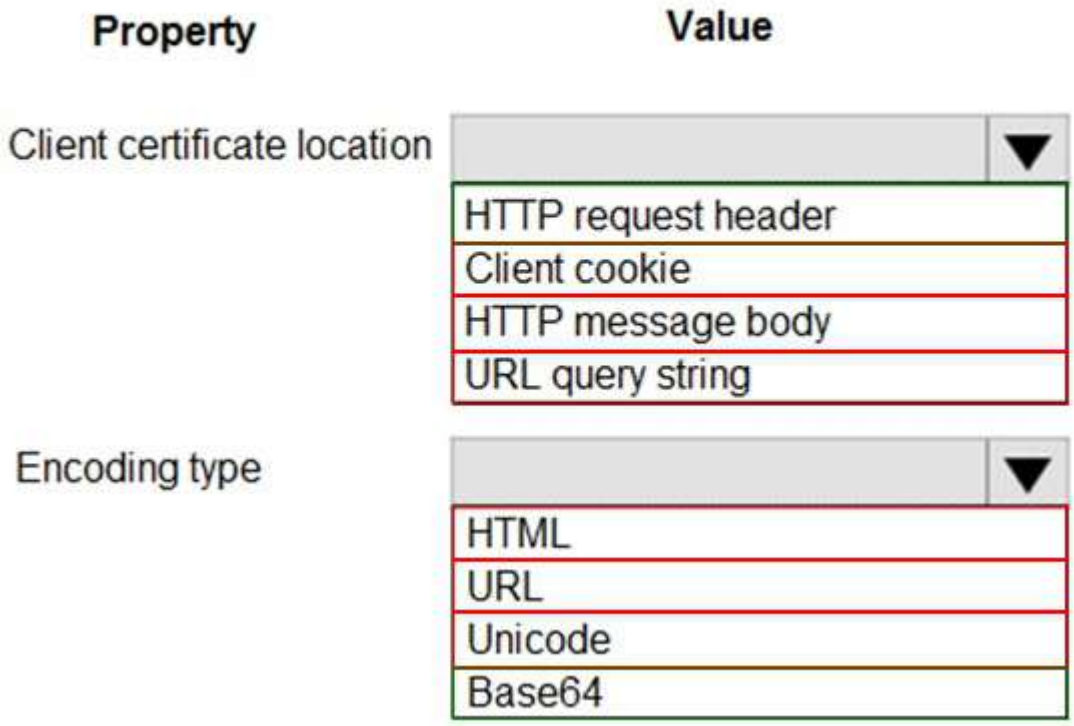
Solution:

Answer Area



Explanation/Reference

Question 363

You have a Recovery Service vault that you use to test backups. The test backups contain two protected virtual machines.

You need to delete the Recovery Services vault.

What should you do first?

- ☐ From the Recovery Service vault, delete the backup data
- ☐ Modify the disaster recovery properties of each virtual machines
- ☐ Modify the locks of each virtual machine
- ☒ From the Recovery Service vault, stop the backup of each backup item

Explanation/Reference

Explanation:
You can't delete a Recovery Services vault if it is registered to a server and holds backup data. If you try to delete a vault, but can't, the vault is still configured to receive backup data.

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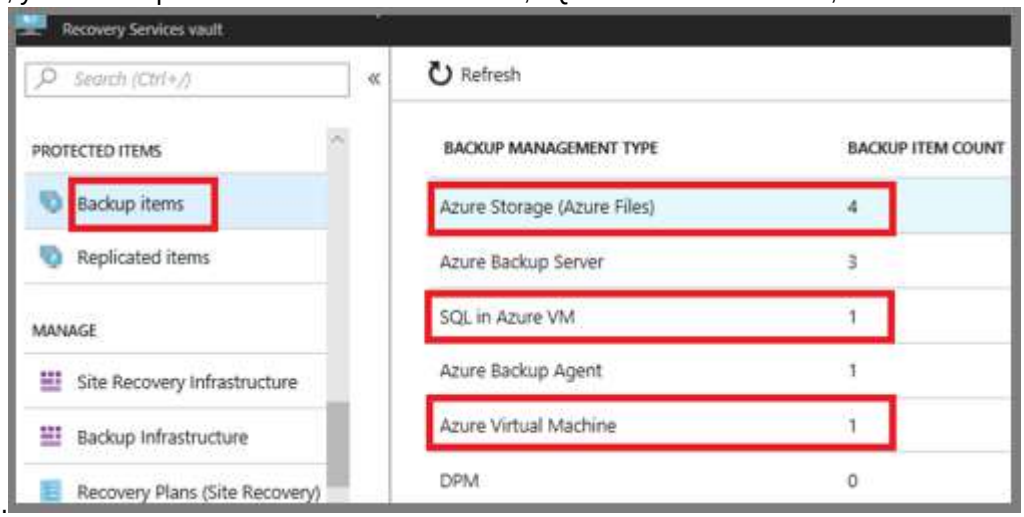
Remove vault dependencies and delete vault
In the vault dashboard menu, scroll down to the Protected Items section, and click Backup Items. In this menu, you can stop and delete Azure File Servers, SQL Servers in Azure VM, and Azure virtual machines.



References:
https://docs.microsoft.com/en-us/azure/backup/backup-azure-delete-vault

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Question 364

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your network contains an Active Directory forest named fabrikam.com. The forest contains two child domains named corp.fabrikam.com and research.fabrikam.com.

You have an Azure subscription that contains an Azure Active Directory (Azure AD) tenant named contoso.com.

You install Azure AD Connect and sync all the on-premises user accounts to the Azure AD tenant. You implement seamless single sign-on (SSO).

You plan to change the source of authority for all the user accounts in research.fabrikam.com to Azure AD.

You need to prevent research.fabrikam.com from resyncing to Azure AD.

Solution: You use Active Directory Domains and Trusts from a computer joined to fabrikam.com.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Instead you should customize the default synchronization rule.

Note:
To delete a custom domain name, you must first ensure that no resources in your directory rely on the domain name. You can't delete a domain name from your directory if:

- Any user has a user name, email address, or proxy address that includes the domain name.
- Any group has an email address or proxy address that includes the domain name.
- Any application in your Azure AD has an app ID URI that includes the domain name.

References:
https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-create-custom-sync-rule

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Question 365

HOTSPOT

Your organization has developed and deployed several Azure App Service Web and API applications. The applications use Azure SQL Database to store and retrieve data. Several departments have the following requests to support the applications:

Department	Request
Database	Store an asymmetric key to allow real-time I/O encryption and decryption of the Azure SQL Database data and log files.
Development	Enable the applications to retrieve x.509 certificates, stored in an Azure AD-protected resource, by using an access token.
Security	Protect Azure SQL Database connection strings and only allow access to the connection strings during the application runtime.

You need to recommend the appropriate Azure service for each department request.

What should you recommend? To answer, configure the appropriate options in the dialog box in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

Department	Azure Service
Database	Azure AD Privileged Identity Management Azure AD Managed Identity Azure Key Vault Azure Security Center
Development	Azure AD Privileged Identity Management Azure AD Managed Identity Azure Key Vault Azure Security Center
Security	Azure AD Privileged Identity Management Azure AD Managed Identity Azure Key Vault Azure Security Center

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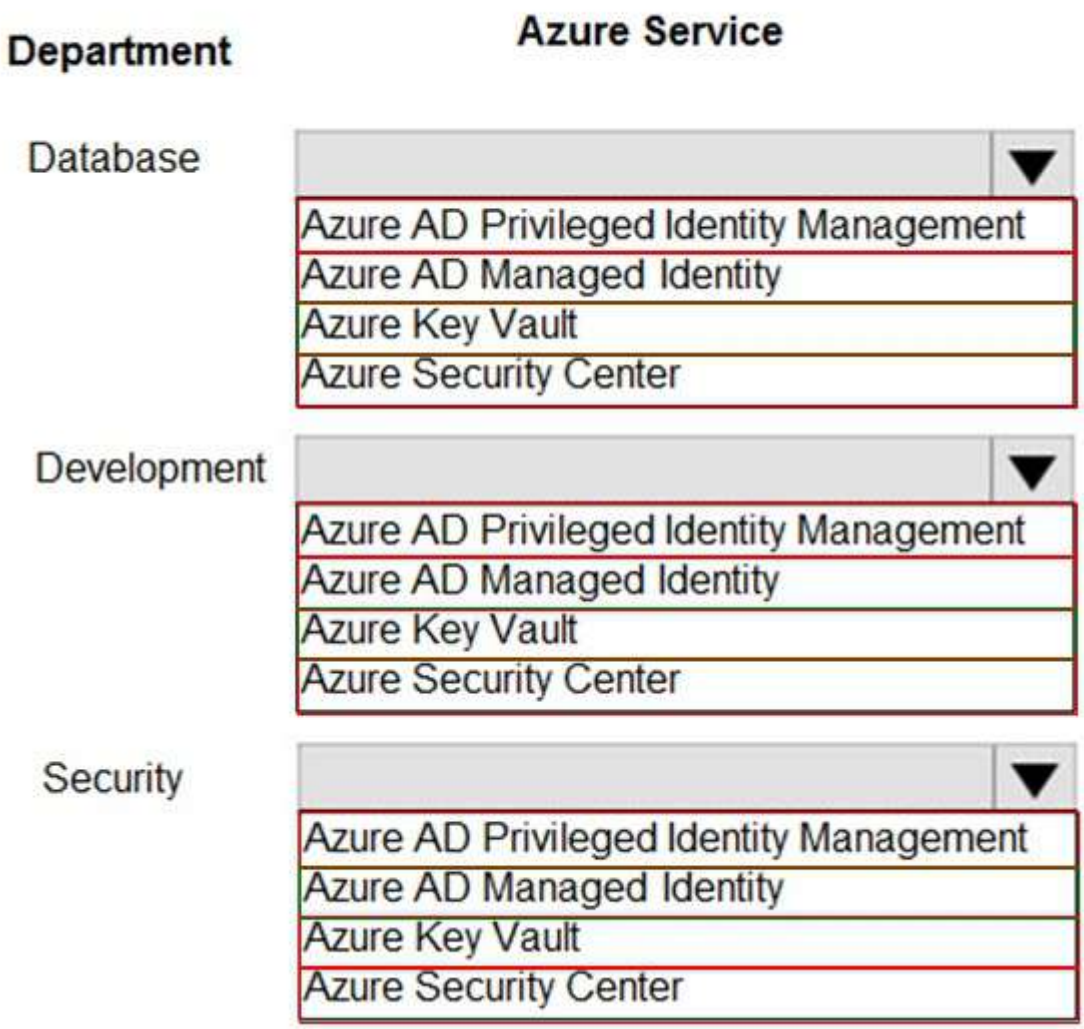
Solution:

Answer Area



Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/sql-database/transparent-data-encryption-azure-sql

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Question 366

You have the Azure virtual machines shown in the following table.

Name	Azure region
VM1	West Europe
VM2	West Europe
VM3	North Europe
VM4	North Europe

You have a Recovery Services vault that protects VM1 and VM2.

You need to protect VM3 and VM4 by using Recovery Services.

What should you do first?

- ☐ Create a new backup policy
- ☒ Create a new Recovery Services vault
- ☐ Configure the extensions for VM3 and VM4
- ☐ Create a storage account

Explanation/Reference

Explanation:
A Recovery Services vault is a storage entity in Azure that houses data. The data is typically copies of data, or configuration information for virtual machines (VMs), workloads, servers, or workstations. You can use Recovery Services vaults to hold backup data for various Azure services

References:
https://docs.microsoft.com/en-us/azure/site-recovery/azure-to-azure-tutorial-enable-replication

Question 367

You have an Azure Active Directory (Azure AD) domain that contains 5,000 user accounts. You create a new user account named AdminUser1.

You need to assign the User administrator administrative role to AdminUser1.

What should you do from the user account properties?

- ☒ From the Directory role blade, modify the directory role
- ☐ From the Licenses blade, assign a new license
- ☐ From the Groups blade, invite the user account to a new group

Explanation/Reference

Explanation:
Assign a role to a user

1. Sign in to the Azure portal with an account that's a global admin or privileged role admin for the directory.

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2. Select Azure Active Directory, select Users, and then select a specific user from the list.
3. For the selected user, select Directory role, select Add role, and then pick the appropriate admin roles from the Directory roles list, such as Conditional access administrator.
4. Press Select to save.

References:
https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-users-assign-role-azure-portal

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Question 368

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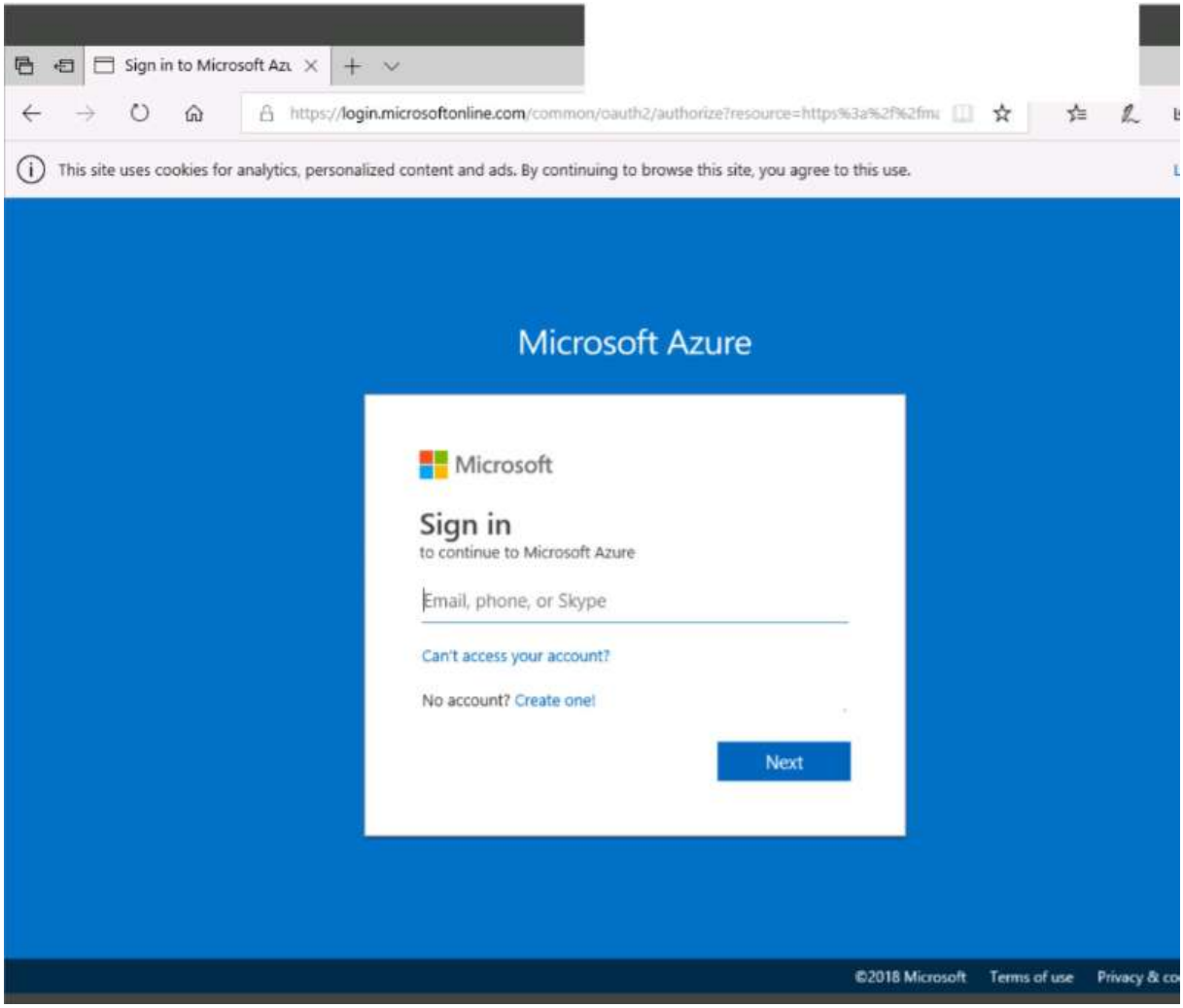
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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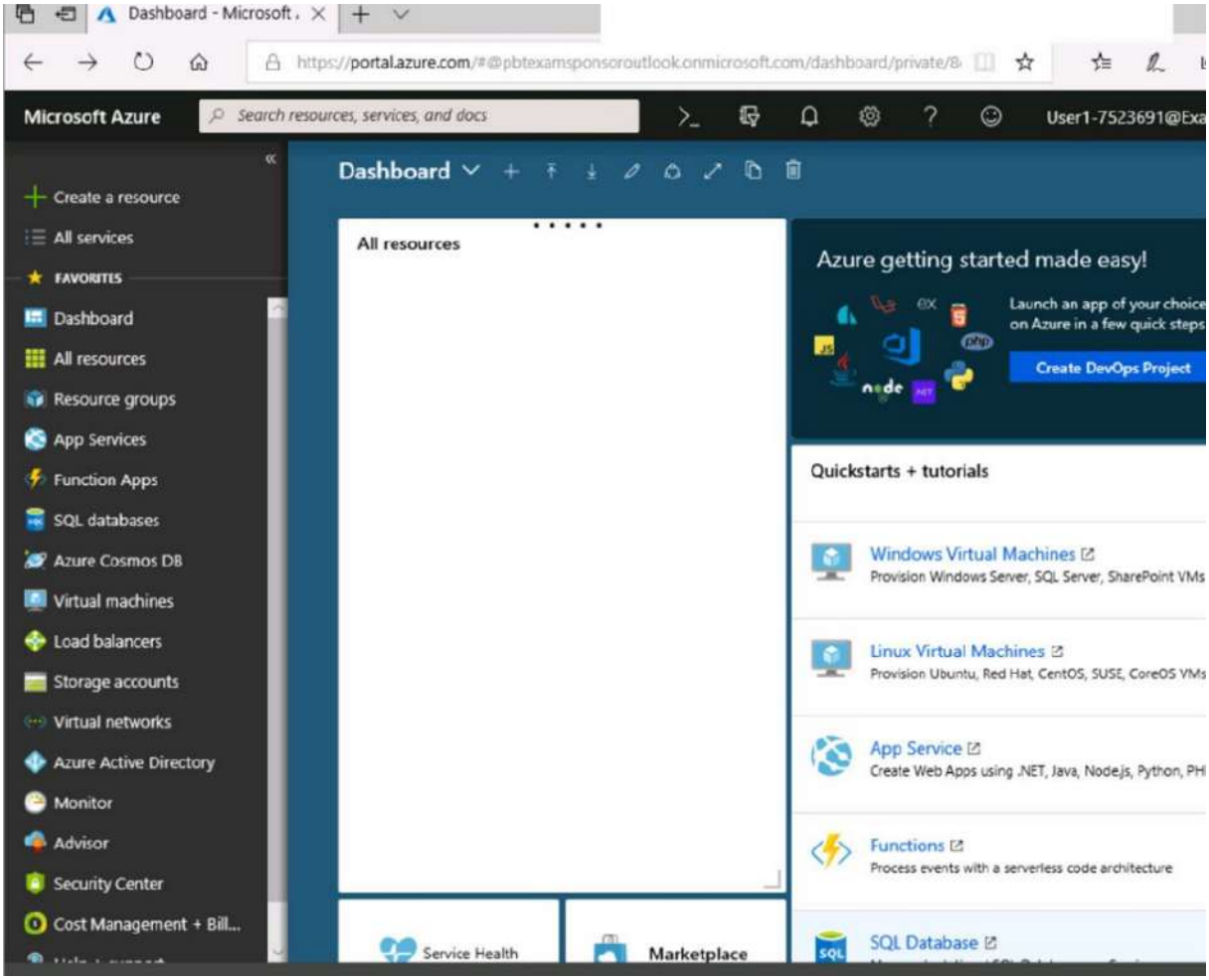

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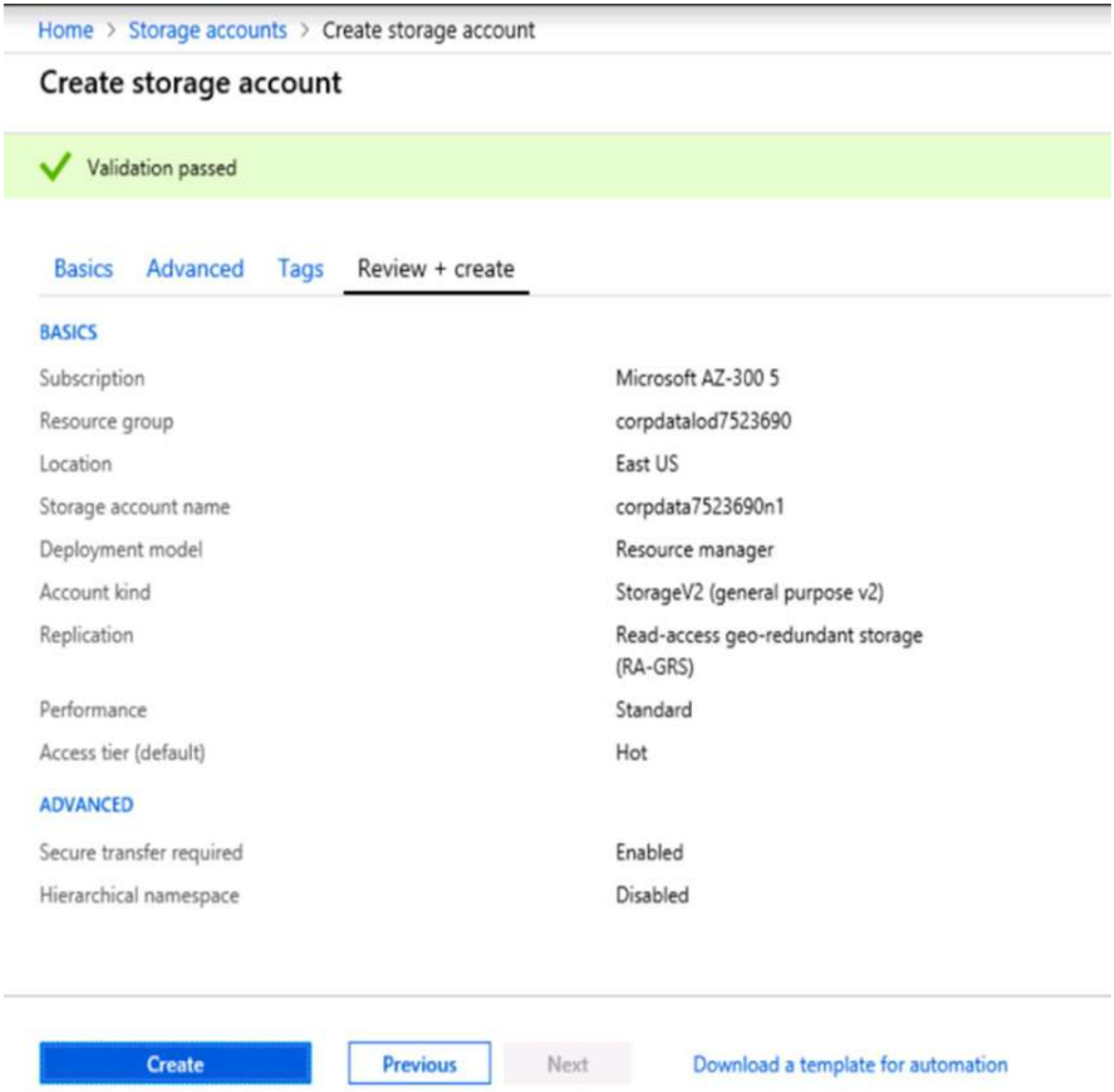

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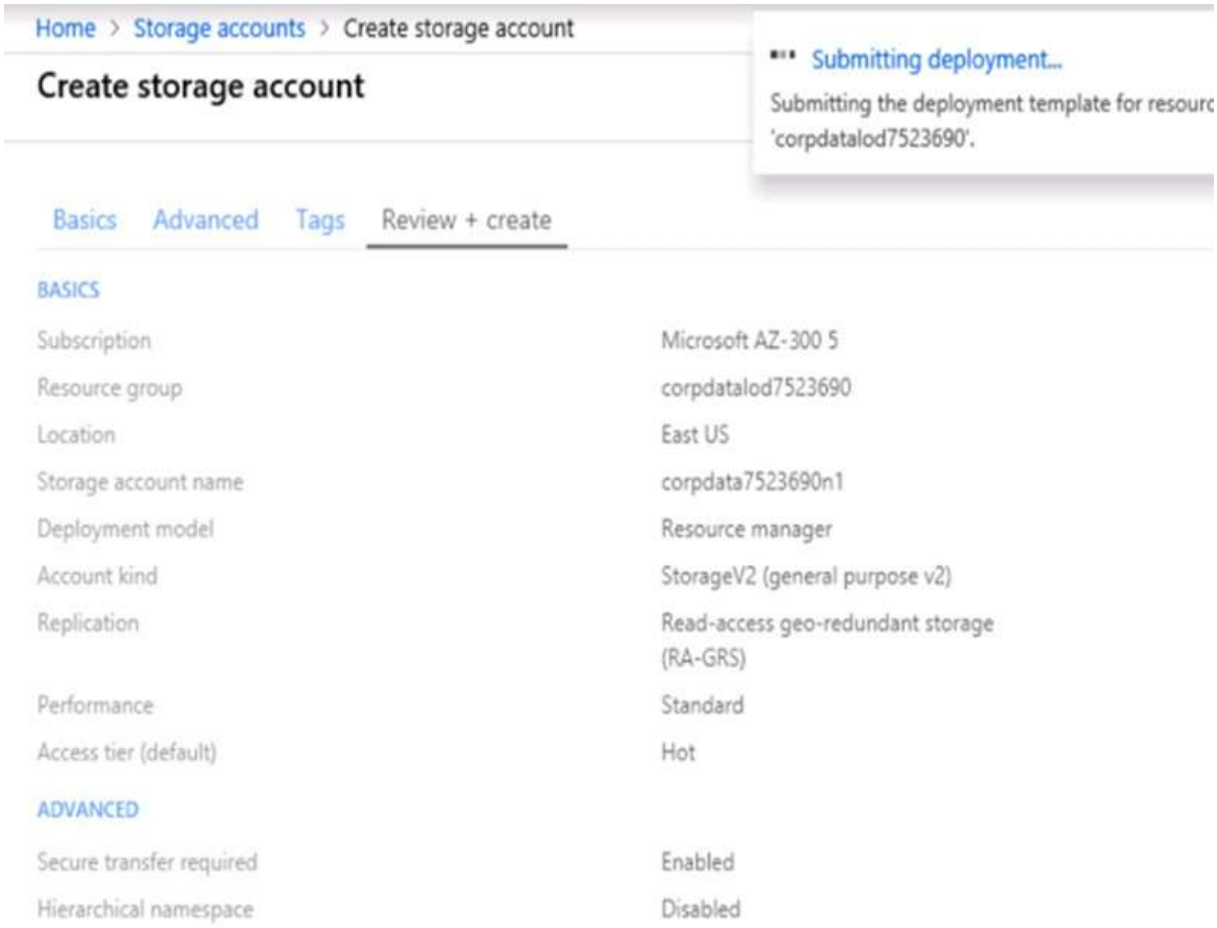

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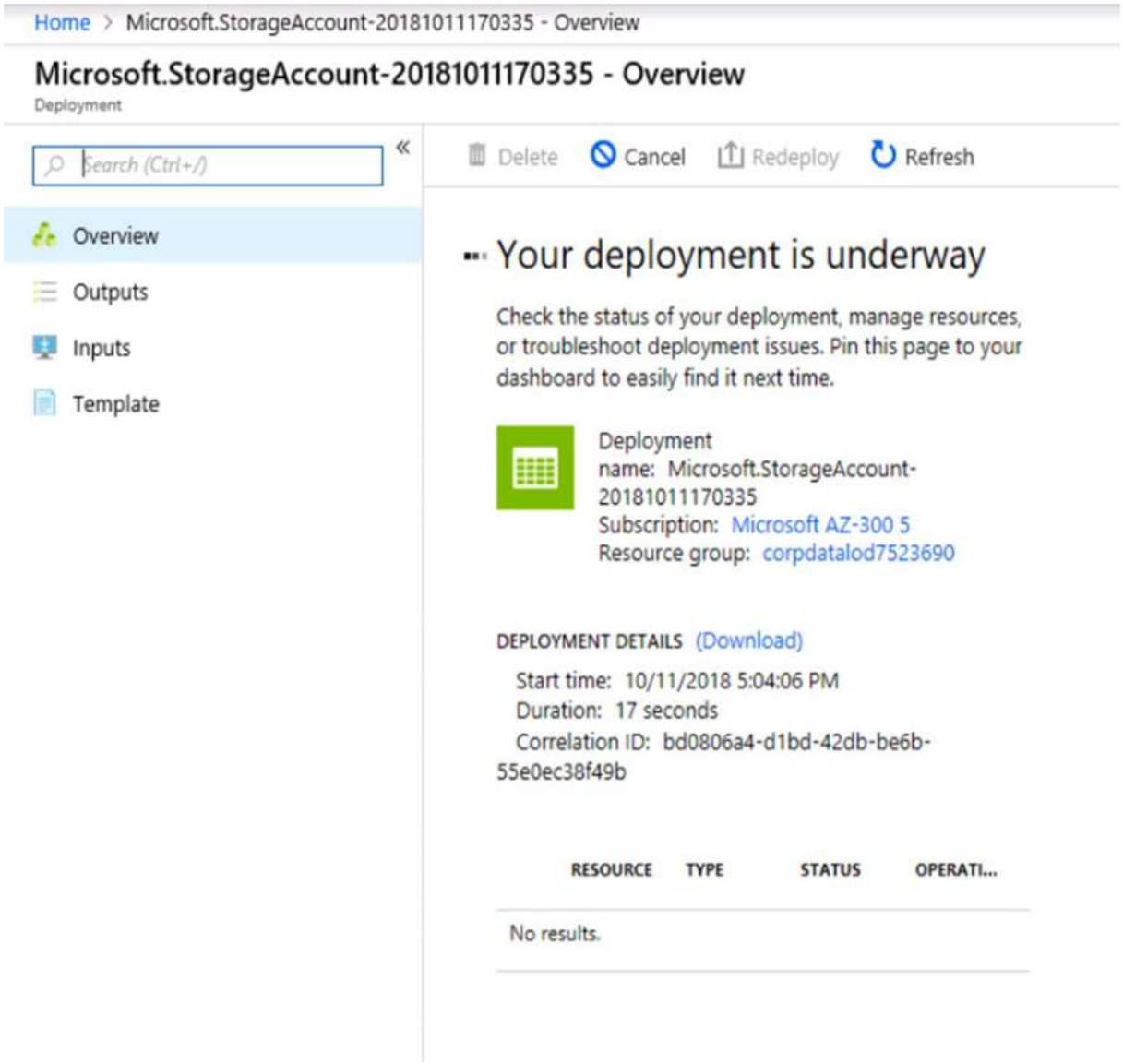

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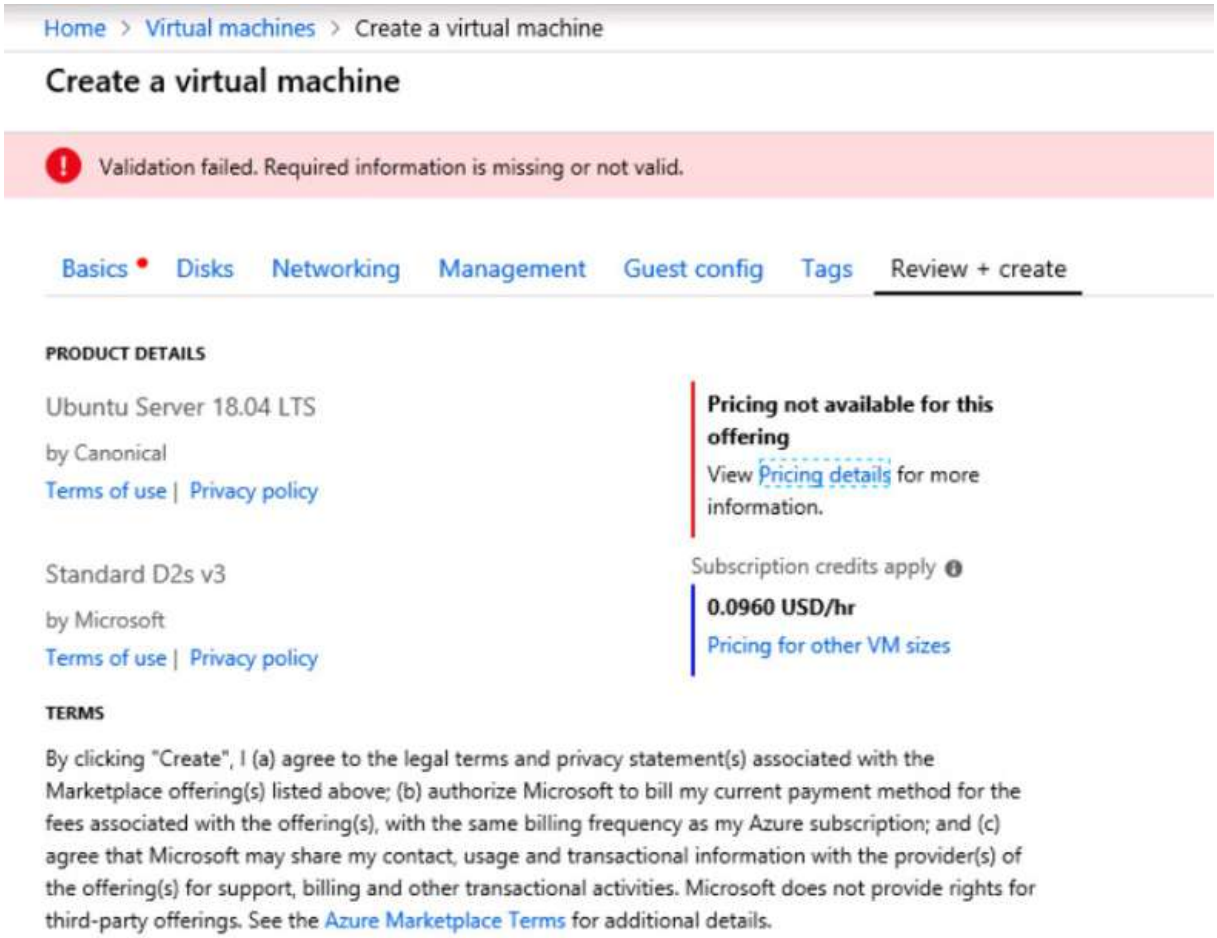

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You plan to prevent users from accidentally deleting blob data from Azure.

You need to ensure that administrators can recover any blob data that is deleted accidentally from the corpdata7523690n1 storage account for 14 days after the deletion occurred.

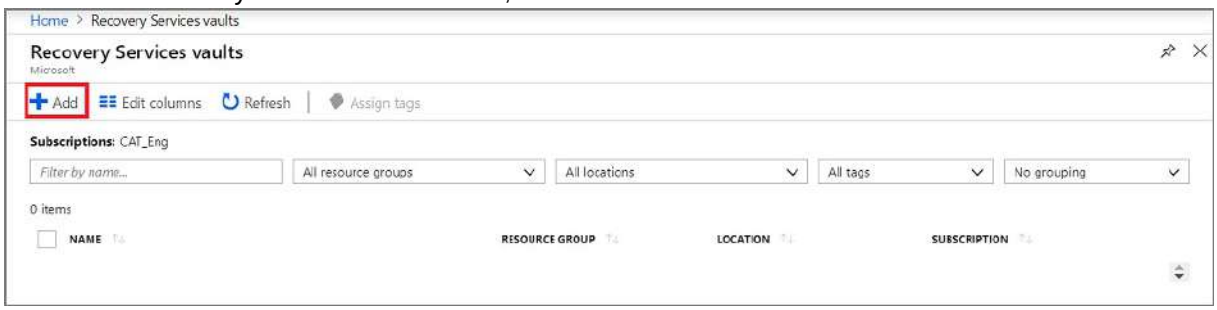
What should you do from the Azure portal?

Explanation/Reference

Explanation:
Task A: Create a Recovery Services vault (if a vault already exists skip this task, go to Task B below)
A1. From Azure Portal, On the Hub menu, click All services and in the list of resources, type Recovery Services and click Recovery Services vaults.

If there are recovery services vaults in the subscription, the vaults are listed.

A2. On the Recovery Services vaults menu, click Add.



A3. The Recovery Services vault blade opens, prompting you to provide a Name, Subscription, Resource group, and Location

Task B. Create a backup goal
B1. On the Recovery Services vault blade (for the vault you just created), in the Getting Started section, click Backup, then on the Getting Started with Backup blade, select Backup goal.

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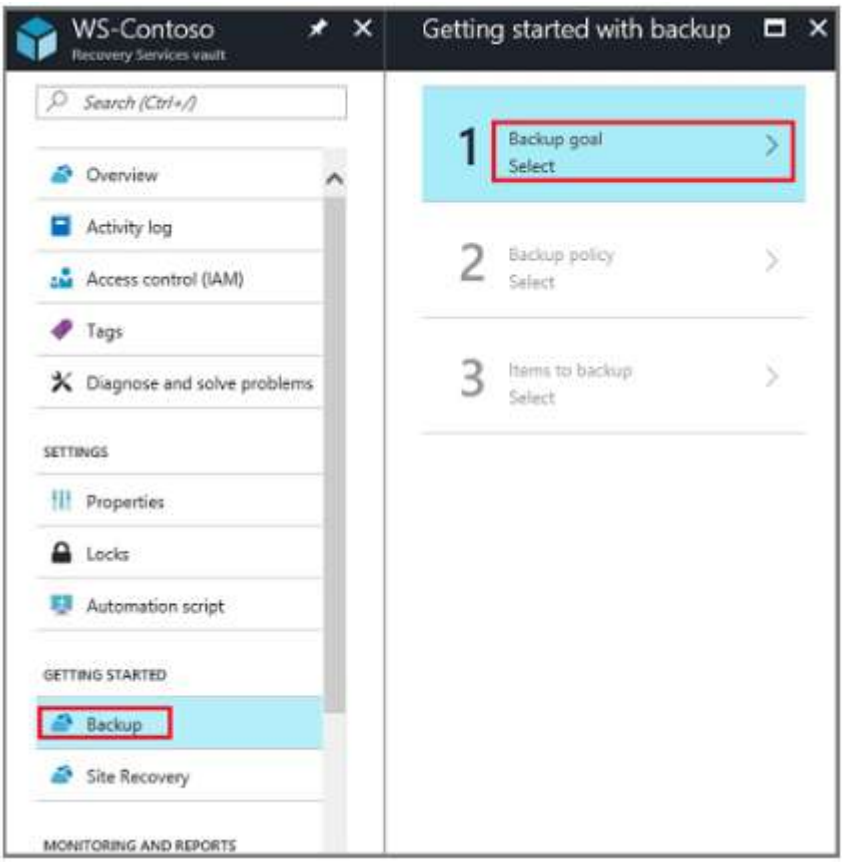
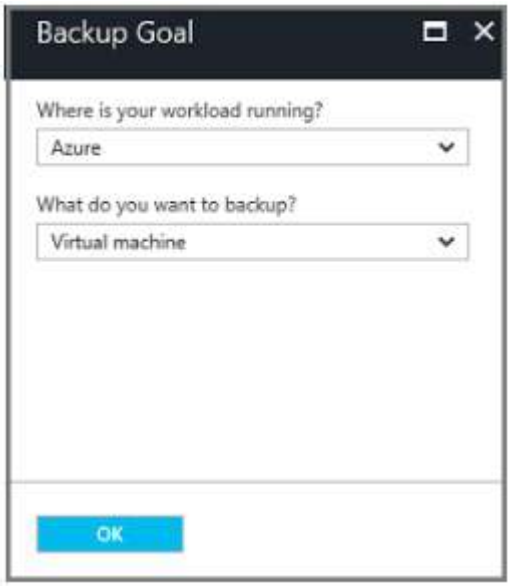


The Backup Goal blade opens. If the Recovery Services vault has been previously configured, then the Backup Goal blades opens when you click Backup on the Recovery Services vault blade.

B2. From the Where is your workload running? drop-down menu, select Azure.



B3. From the What do you want to backup? menu, select Blob Storage, and click OK.

B4. Finish the Wizard.

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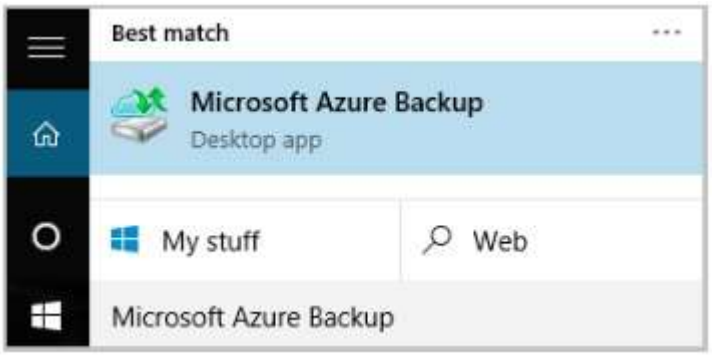
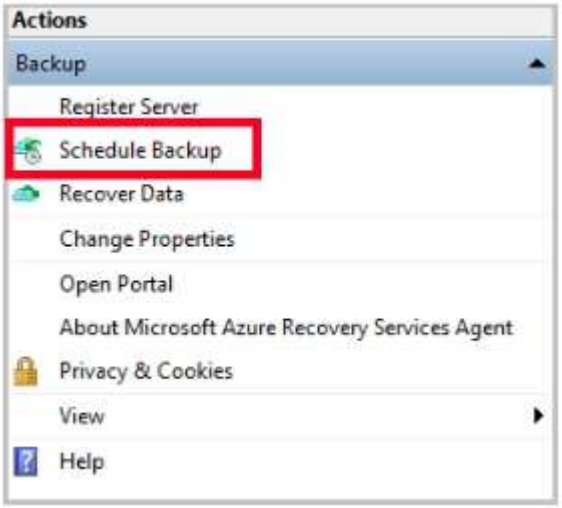
Task C. create a backup schedule

C1. Open the Microsoft Azure Backup agent. You can find it by searching your machine for Microsoft Azure Backup.



C2. In the Backup agent's Actions pane, click Schedule Backup to launch the Schedule Backup Wizard.



C3. On the Getting started page of the Schedule Backup Wizard, click Next.

C4. On the Select Items to Backup page, click Add Items.

The Select Items dialog opens.

C5. Select Blob Storage you want to protect, and then click OK.

C6.In the Select Items to Backup page, click Next.
On the Specify Backup Schedule page, specify Schedule a backup every day, and click Next.

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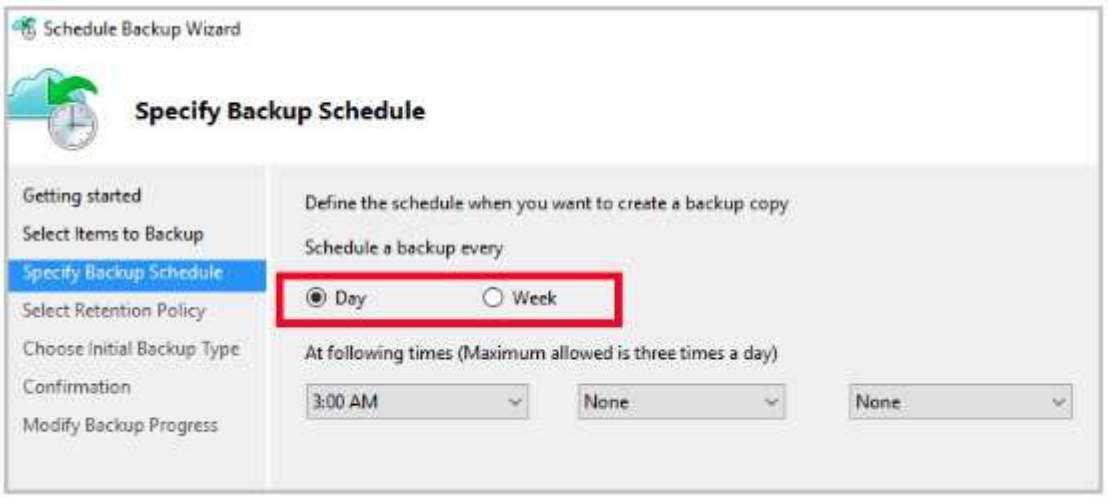
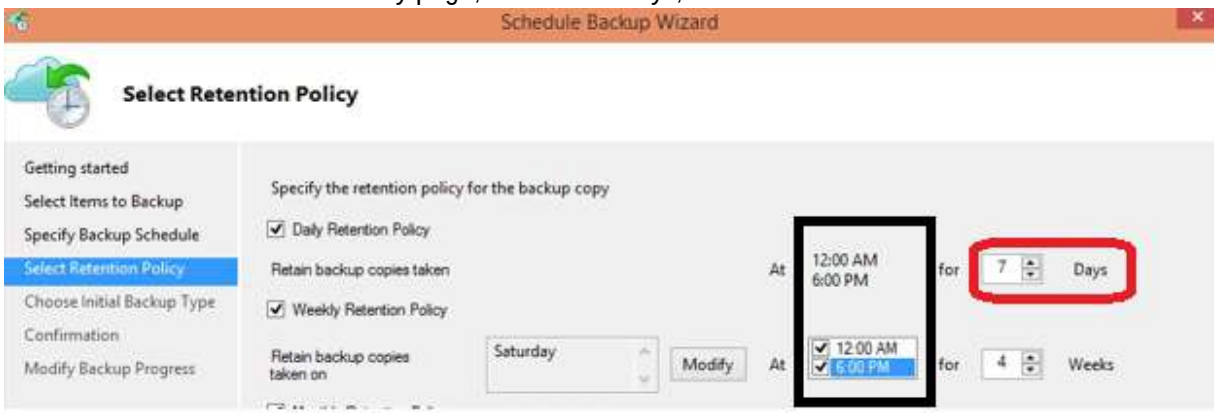


C7. On the Select Retention Policy page, set it to 14 days, and click Next.



C8. Finish the Wizard.

References:
https://docs.microsoft.com/en-us/azure/backup/backup-configure-vault

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Question 369

You have an Azure subscription that contains the Azure virtual machines shown in the following table.

Name	Operating system	Location
VM1	Windows Server 2012 R2	East US
VM2	Windows Server 2016	East US
VM3	Windows Server 2019	West US
VM4	Ubuntu Server 18.04	East US

You create an Azure key vault named Vault1 in the East US location.

You need to identify which virtual machines can enable Azure Disk Encryption by using Vault1.

Which virtual machines should you identify?

- ☐ VM2 and VM3 only
- ☒ VM1, VM2, and VM4 only
- ☐ VM1, VM2, and VM3 only
- ☐ VM3 only

Explanation/Reference

Explanation:
Your key vault and VMs must reside in the same Azure region and subscription.

References:
https://docs.microsoft.com/en-us/azure/virtual-machines/windows/disk-encryption-overview

Question 370

You have two Azure Active Directory (Azure AD) tenants named contoso.com and fabrikam.com.

You have a Microsoft account that you use to sign in to both tenants.

You need to configure the default sign-in tenant for the Azure portal.

What should you do?

- ☐ From the Azure portal, configure the portal settings
- ☒ From the Azure portal, change the directory
- ☐ From Azure Cloud Shell, run `Set-AzureRmContext`
- ☐ From Azure Cloud Shell, run `Set-AzureRmSubscription`

Explanation/Reference

Explanation:
Change the subscription directory in the Azure portal.
The classic portal feature Edit Directory, that allows you to associate an existing subscription to your Azure Active Directory (AAD), is now available in Azure portal. It used to be available only to Service Admins with Microsoft accounts, but now it's available to users with AAD accounts as well.

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To get started:

1. Go to Subscriptions.
2. Select a subscription.
3. Select Change directory.

Incorrect Answers:
C: The Set-AzureRmContext cmdlet sets authentication information for cmdlets that you run in the current session. The context includes tenant, subscription, and environment information.

References:
https://azure.microsoft.com/en-us/updates/edit-directory-now-in-new-portal/

Question 371

You have an Azure SQL database named Db1 that runs on an Azure SQL server named SQLserver1.

You need to ensure that you can use the query editor on the Azure portal to query Db1.

What should you do?

- ☐ Modify the Advanced Data Security settings of Db1
- ☒ Configure the Firewalls and virtual networks settings for SQLserver1
- ☐ Copy the ADO.NET connection string of Db1 and paste the string to the query editor
- ☐ Approve private endpoint connections for SQLserver1

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/sql-database/sql-database-connect-query-portal

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Question 372

HOTSPOT

You network contains an Active Directory domain named adatum.com and an Azure Active Directory (Azure AD) tenant named adatum.onmicrosoft.com.

Adatum.com contains the user accounts in the following table.

Name	Member of
User1	Domain Admins
User2	Schema Admins
User3	Incoming Forest Trust Builders
User4	Replicator
User5	Enterprise Admins

Adatum.onmicrosoft.com contains the user accounts in the following table.

Name	Member of
UserA	Global administrator
UserB	User administrator
UserC	Security administrator
UserD	Service administrator

You need to implement Azure AD Connect. The solution must follow the principle of least privilege.

Which user accounts should you use in Adatum.com and Adatum.onmicrosoft.com to implement Azure AD Connect? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

Adatum.com:

- User1
- User2
- User3
- User4
- User5

Adatum.onmicrosoft.com:

- UserA
- UserB
- UserC
- UserD

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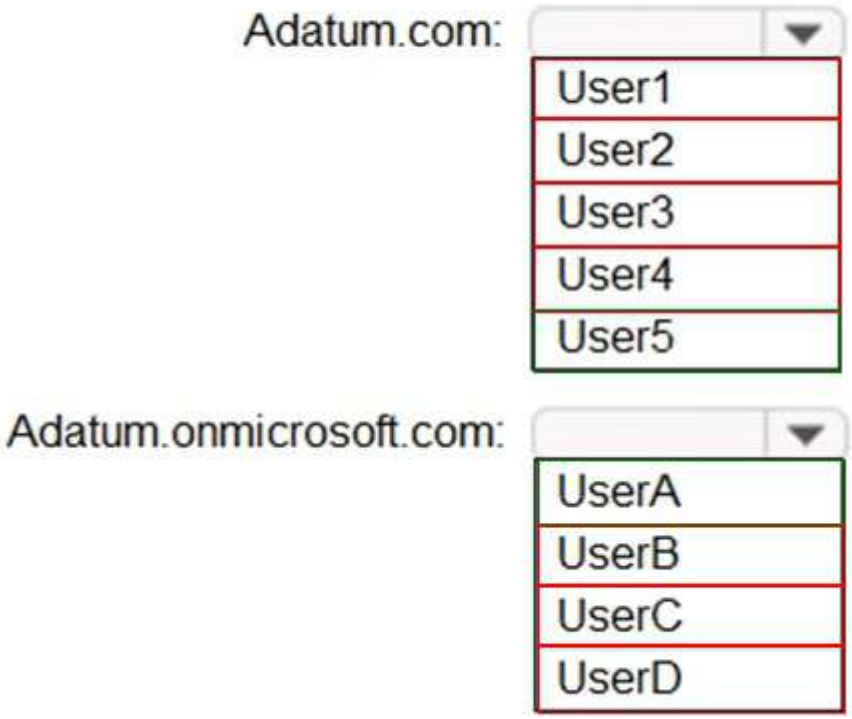
Answer Area



Solution:

Explanation/Reference

Explanation:

Box 1: User5
In Express settings, the installation wizard asks for the following:

AD DS Enterprise Administrator credentials
Azure AD Global Administrator credentials

The AD DS Enterprise Admin account is used to configure your on-premises Active Directory. These credentials are only used during the installation and are not used after the installation has completed. The Enterprise Admin, not the Domain Admin should make sure the permissions in Active Directory can be set in all domains.

Box 2: UserA
Azure AD Global Admin credentials are only used during the installation and are not used after the installation has completed. It is used to create the Azure AD Connector account used for synchronizing changes to Azure AD. The account also enables sync as a feature in Azure AD.

References:

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https://docs.microsoft.com/en-us/azure/active-directory/connect/active-directory-aadconnect-accounts-permissions

Question 373

You sign up for Azure Active Directory (Azure AD) Premium.

You need to add a user named admin1@contoso.com ad an administrator on all the computers that will be joined to the Azure AD domain.

What should you configure in Azure AD?

- ☐ Providers from the MFA Server blade
- ☐ General settings from the Groups blade
- ☐ Device settings from the Devices blade
- ☒ User settings from the Users blade

Explanation/Reference

Explanation:
When you connect a Windows device with Azure AD using an Azure AD join, Azure AD adds the following security principles to the local administrators group on the device:

- The Azure AD global administrator role
- The Azure AD device administrator role
- The user performing the Azure AD join

In the Azure portal, you can manage the device administrator role on the Devices page. To open the Devices page:

1. Sign in to your Azure portal as a global administrator or device administrator.
2. On the left navbar, click Azure Active Directory.
3. In the Manage section, click Devices.
4. On the Devices page, click Device settings.
5. To modify the device administrator role, configure Additional local administrators on Azure AD joined devices.

References:
https://docs.microsoft.com/en-us/azure/active-directory/devices/assign-local-admin

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Question 374

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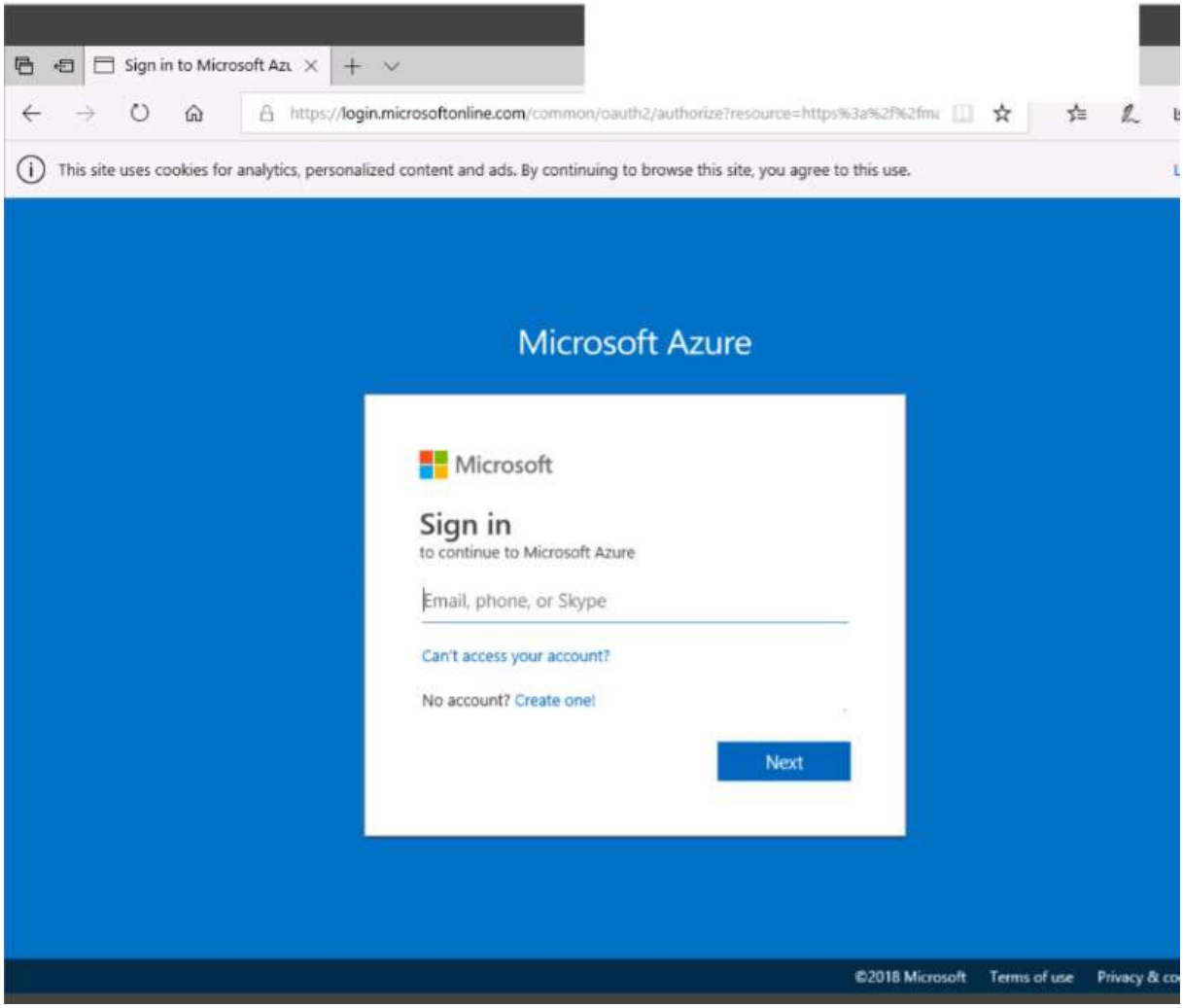
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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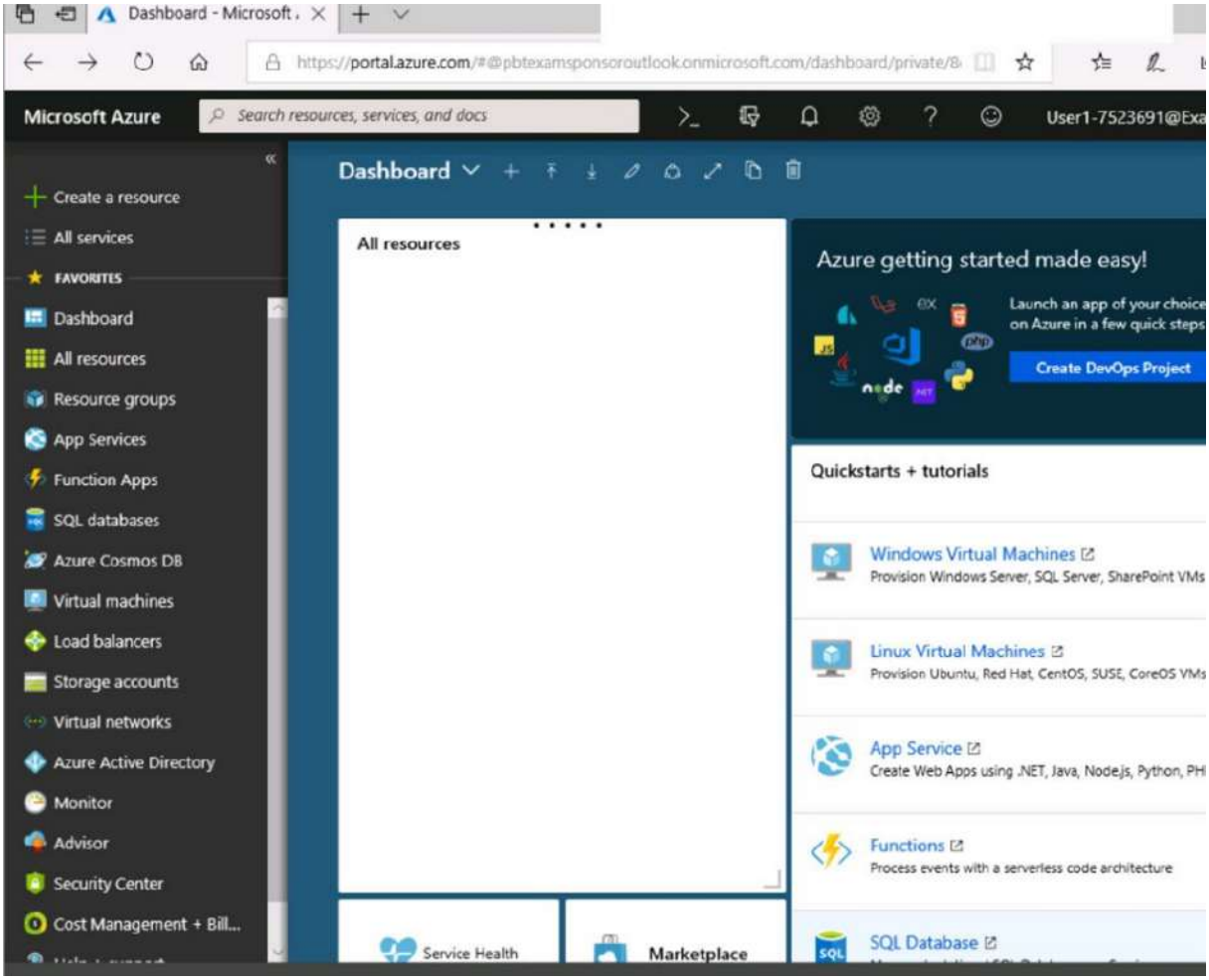

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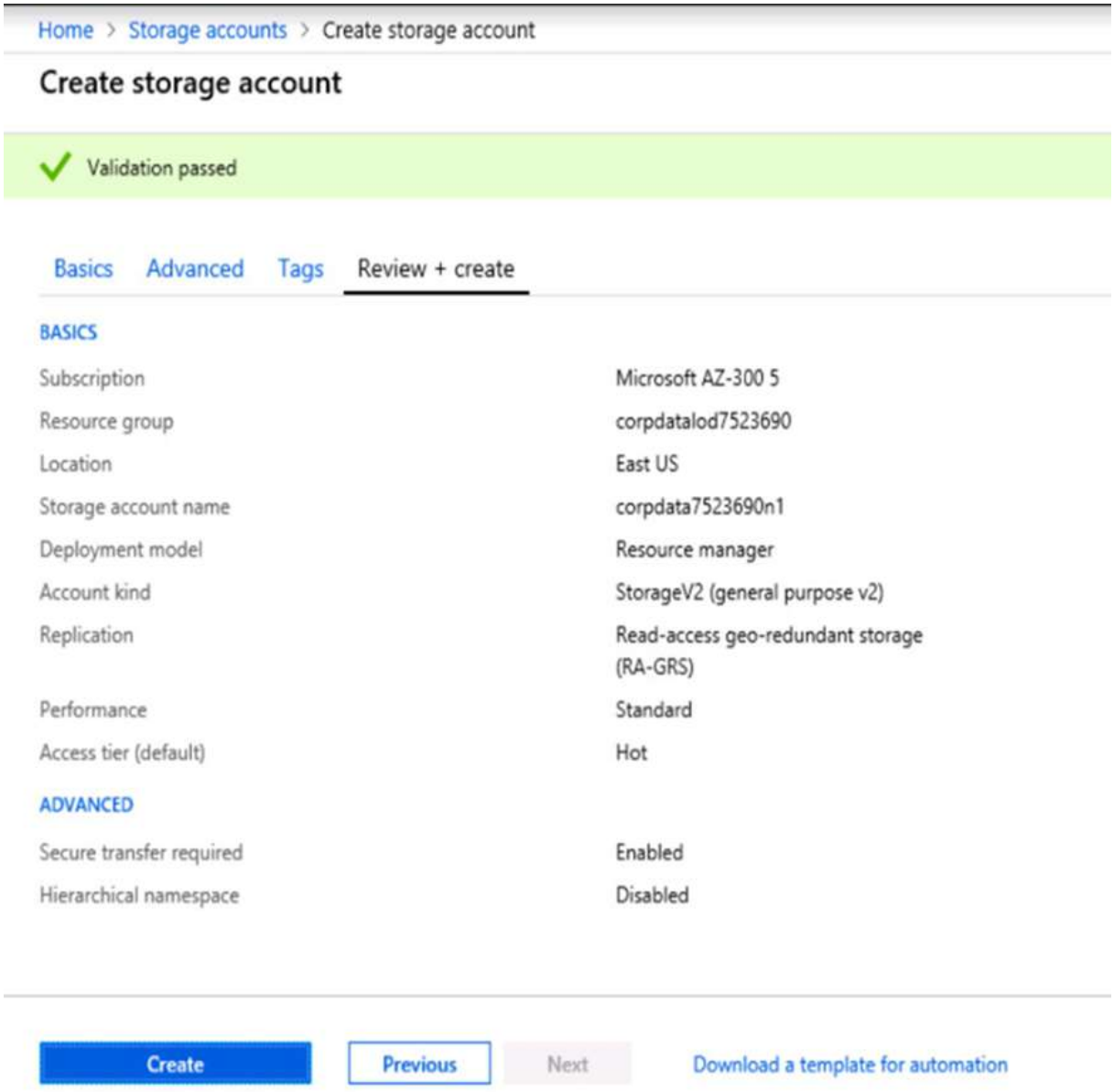

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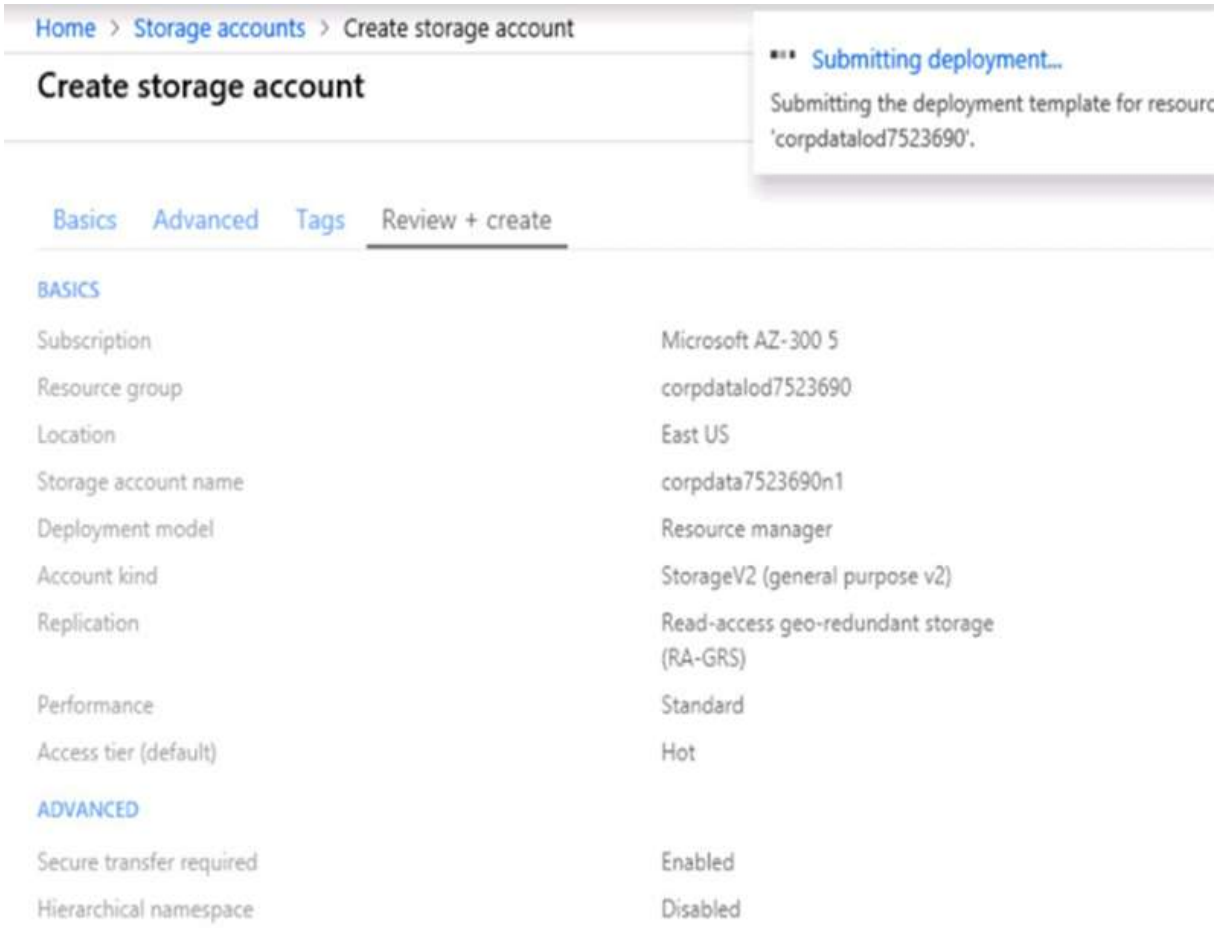

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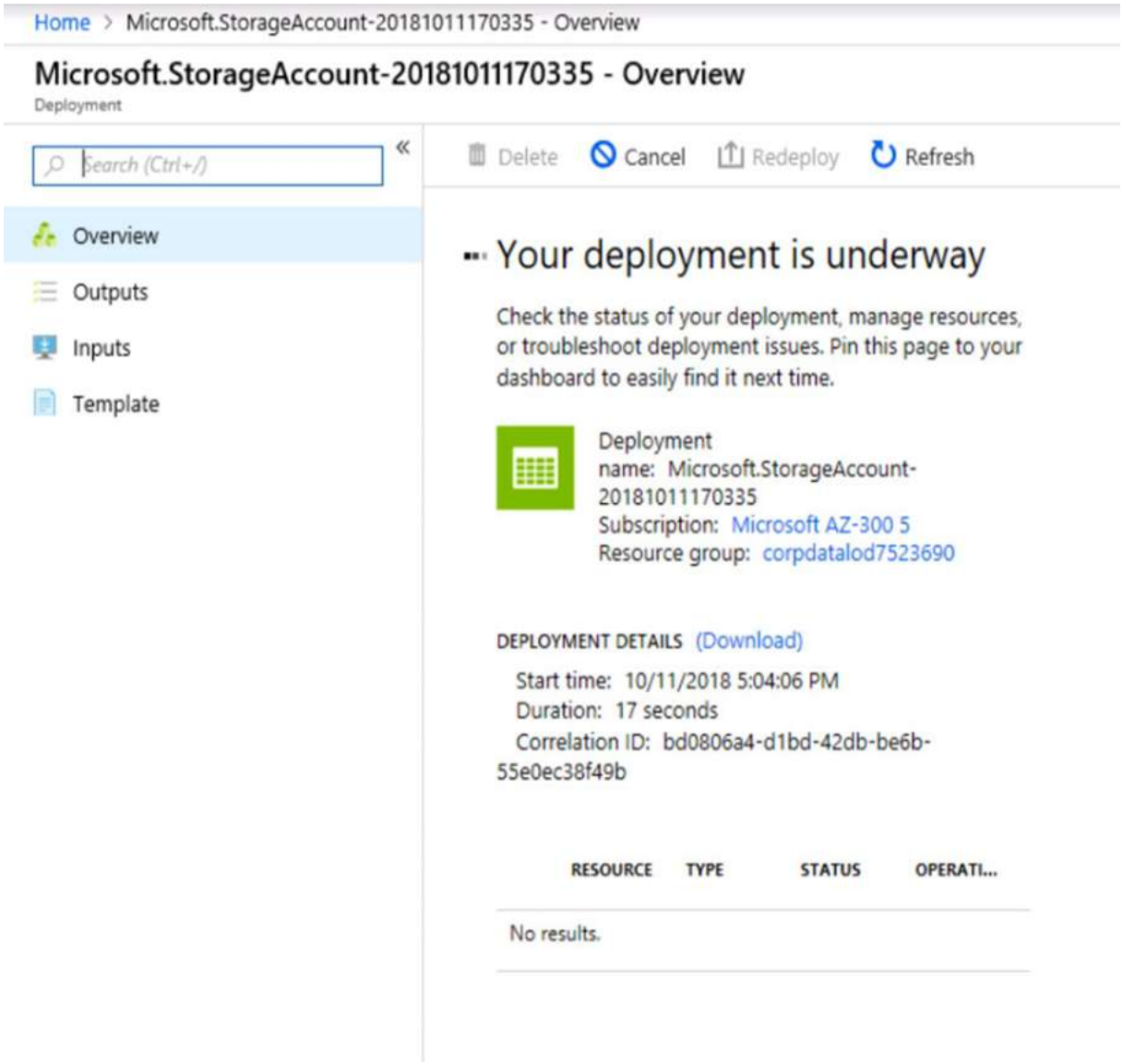

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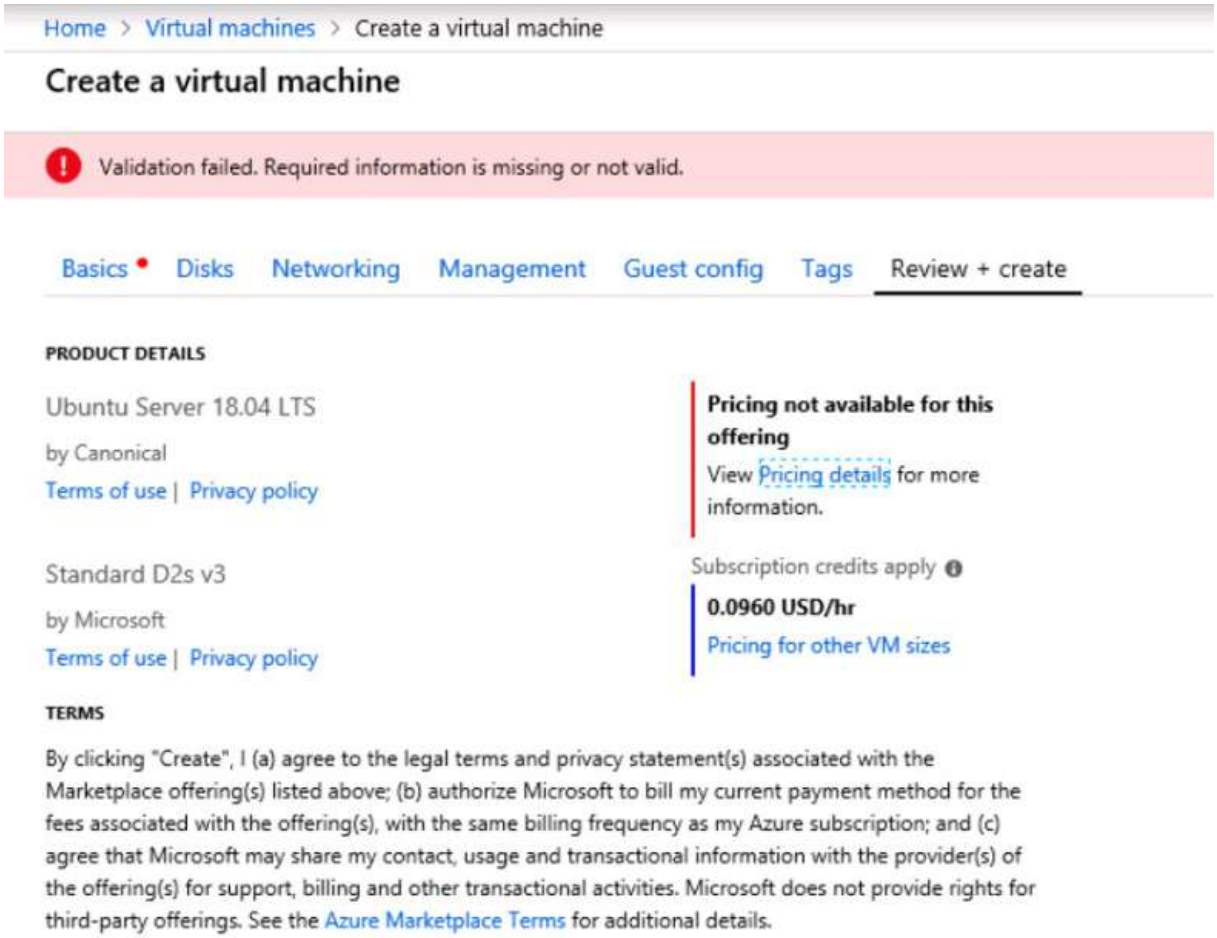

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You plan to protect on-premises virtual machines and Azure virtual machines by using Azure Backup.

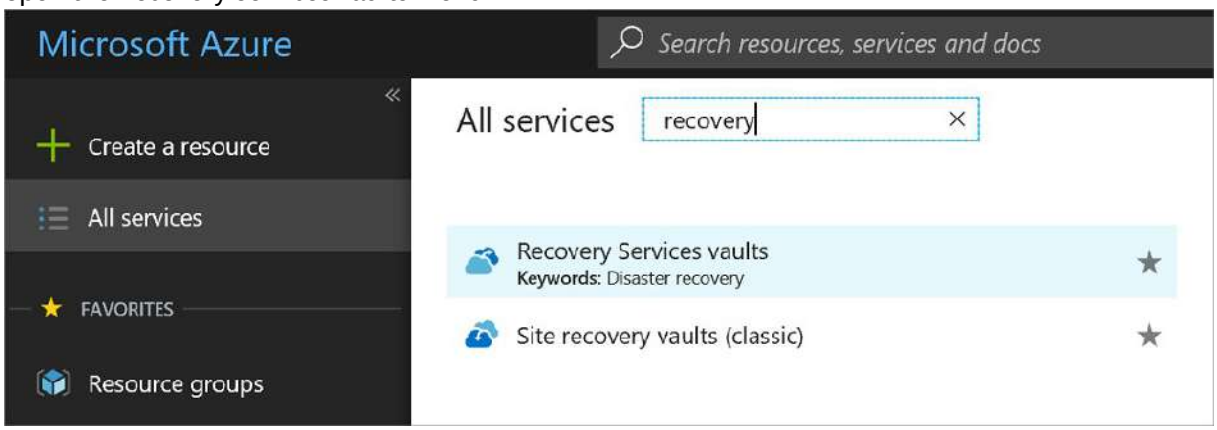
You need to prepare the backup infrastructure in Azure. The solution must minimize the cost of storing the backups in Azure.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
First, create Recovery Services vault.

Step 1: On the left-hand menu, select All services and in the services list, type Recovery Services. As you type, the list of resources filters. When you see Recovery Services vaults in the list, select it to open the Recovery Services vaults menu.



Step 2: In the Recovery Services vaults menu, click Add to open the Recovery Services vault menu.

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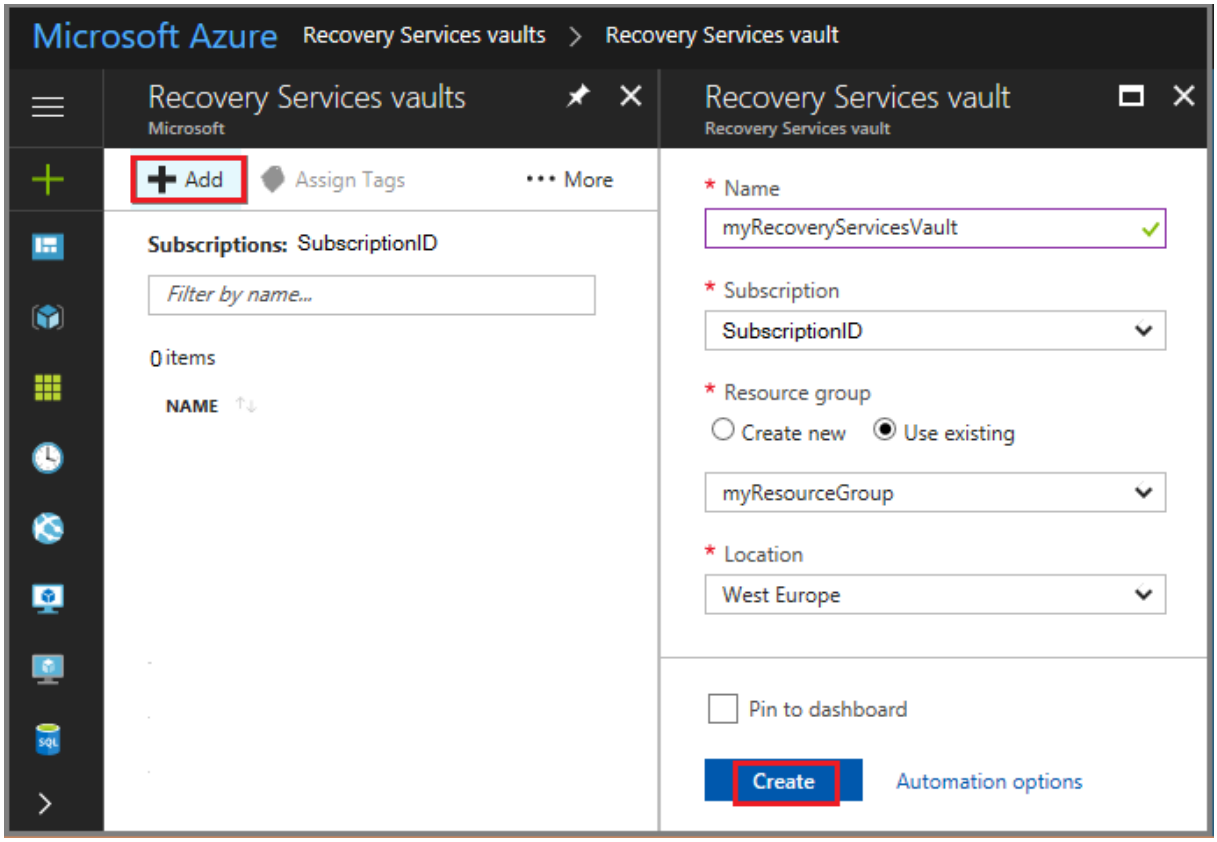

Step 3: In the Recovery Services vault menu, for example,
Type myRecoveryServicesVault in Name.

The current subscription ID appears in Subscription. If you have additional subscriptions, you could choose another subscription for the new vault.

For Resource group select Use existing and choose myResourceGroup. If myResourceGroup doesn't exist, select Create new and type myResourceGroup.

From the Location drop-down menu, choose West Europe.

Click Create to create your Recovery Services vault.

References:
https://docs.microsoft.com/en-us/azure/backup/tutorial-backup-vm-at-scale

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Question 375

HOTSPOT

You have an Azure subscription that includes an Azure key vault named Vault1.

You create the Azure virtual machines shown in the following table.

Name	Operating system disk type	Use managed disks
VM1	Premium SSD	Yes
VM2	Standard HDD	Yes
VM3	Standard SSD	No

You enable Azure Disk Encryption for all the virtual machines and use the `–VolumeType All` parameter.

You add data disks to the virtual machines as shown in the following table.

Name	Virtual machine	Storage account type
VM1-Disk1	VM1	Premium SSD
VM2-Disk1	VM2	Standard SSD
VM3-Disk1	VM3	Standard HDD

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
VM1-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM2-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM3-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○

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Solution:

Answer Area

Statements	Yes	No
VM1-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM2-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○
VM3-Disk1 is encrypted automatically by using Azure Disk Encryption.	○	○

Explanation/Reference

Explanation:

Premium and standard, but not basic, account types support disk encryption.
Disk encryption requires managed disks.

References:
https://docs.microsoft.com/en-us/azure/security/azure-security-disk-encryption-overview

Question 376

Your company has an Azure subscription.

You enable multi-factor authentication (MFA) for all users.

The company's help desk reports an increase in calls from users who receive MFA requests while they work from the company's main office.

You need to prevent the users from receiving MFA requests when they sign in from the main office.

What should you do?

- ☐ From Azure Active Directory (Azure AD), configure organizational relationships.
- ☒ From the MFA service settings, create a trusted IP range.
- ☐ From Conditional access in Azure Active Directory (Azure AD), create a custom control.
- ☐ From Conditional access in Azure Active Directory (Azure AD), create a named location.

Explanation/Reference

Explanation:
The first thing you may want to do, before enabling Multi-Factor Authentication for any users, is to consider configuring some of the available settings. One of the most important features is a trusted IPs list. This will allow you to whitelist a range of IPs for your network. This way, when users are in the office, they will not get prompted with MFA, and when they take their devices elsewhere, they

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will. Here's how to do it:

Log in to your Azure Portal.
Navigate to Azure AD > Conditional Access > Named locations.
From the top toolbar select Configure MFA trusted IPs.

References:
https://www.kraftkennedy.com/implementing-azure-multi-factor-authentication/

Question 377

HOTSPOT

You have an Azure subscription.

You are planning data security for Azure resources.

You need to ensure that the data meets the following requirements:

- Data in Azure SQL databases that is at rest, in transit, and in use must be encrypted.
- The confidentiality of code on virtual machines must be protected while the code is being processed.

Which feature should you use for each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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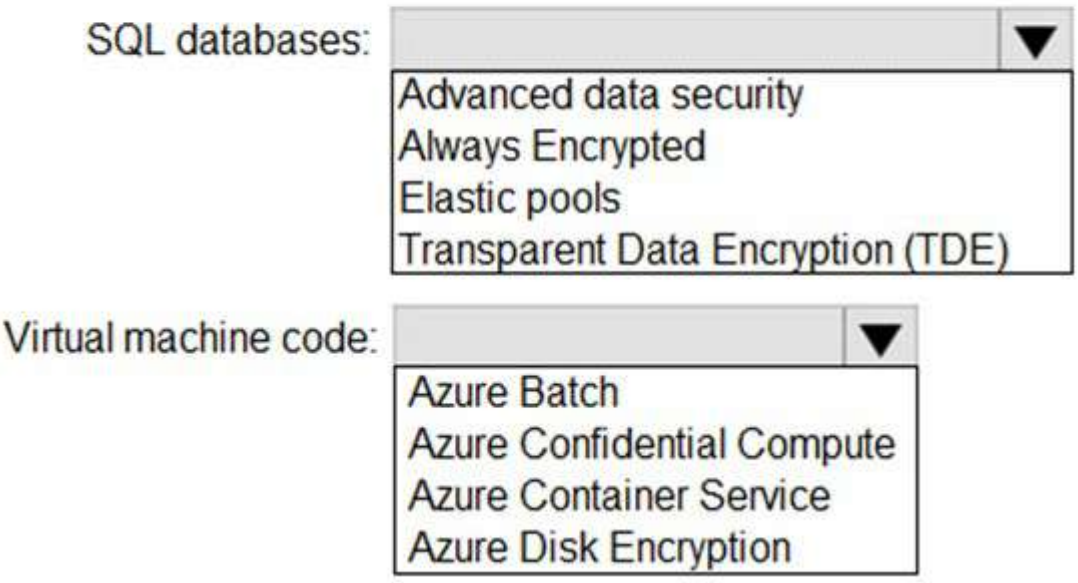
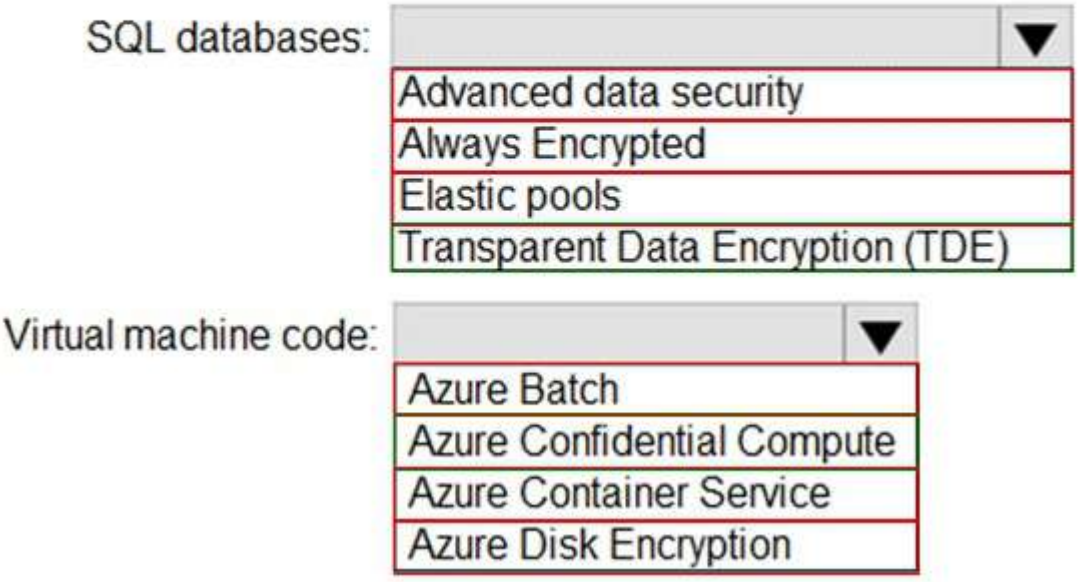
Answer Area



Solution:

Answer Area



Explanation/Reference

Explanation:

SQL Databases: Transparent Data Encryption (TDE)

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Azure SQL Database currently supports encryption at rest for Microsoft-managed service side and client-side encryption scenarios.

Support for server encryption is currently provided through the SQL feature called Transparent Data Encryption. Once an Azure SQL Database customer enables TDE key are automatically created and managed for them. Encryption at rest can be enabled at the database and server levels.

Virtual machine code: Azure confidential compute
Azure confidential computing protects your data while it's in use. It is the final piece to enable data protection through its lifecycle whether at rest, in transit, or in use. It is the cornerstone of Microsoft's 'Confidential Cloud' vision, which aims to make data and code opaque to the cloud provider.

Reference:
https://docs.microsoft.com/en-us/azure/security/fundamentals/encryption-atrest

https://azure.microsoft.com/en-us/blog/protect-data-in-use-with-the-public-preview-of-azure-confidential-computing/

Question 378

You have an on-premises web app named App1 that is behind a firewall. The firewall blocks all incoming network traffic.

You need to expose App1 to the internet via Azure. The solution must meet the following requirements:

- Ensure that access to App1 requires authentication by using Azure.
- Avoid deploying additional services and servers to the on-premises network.

What should you use?

- ☐ Azure Application Gateway
- ☐ Azure Relay
- ☐ Azure Front Door Service
- ☒ Azure Active Directory (Azure AD) Application Proxy

Explanation/Reference

Reference:
https://docs.microsoft.com/en-us/azure/active-directory/manage-apps/what-is-application-proxy

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Legacy AZ-300: Develop for the Cloud (35 questions)

Case Study (7 questions)

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Case Study

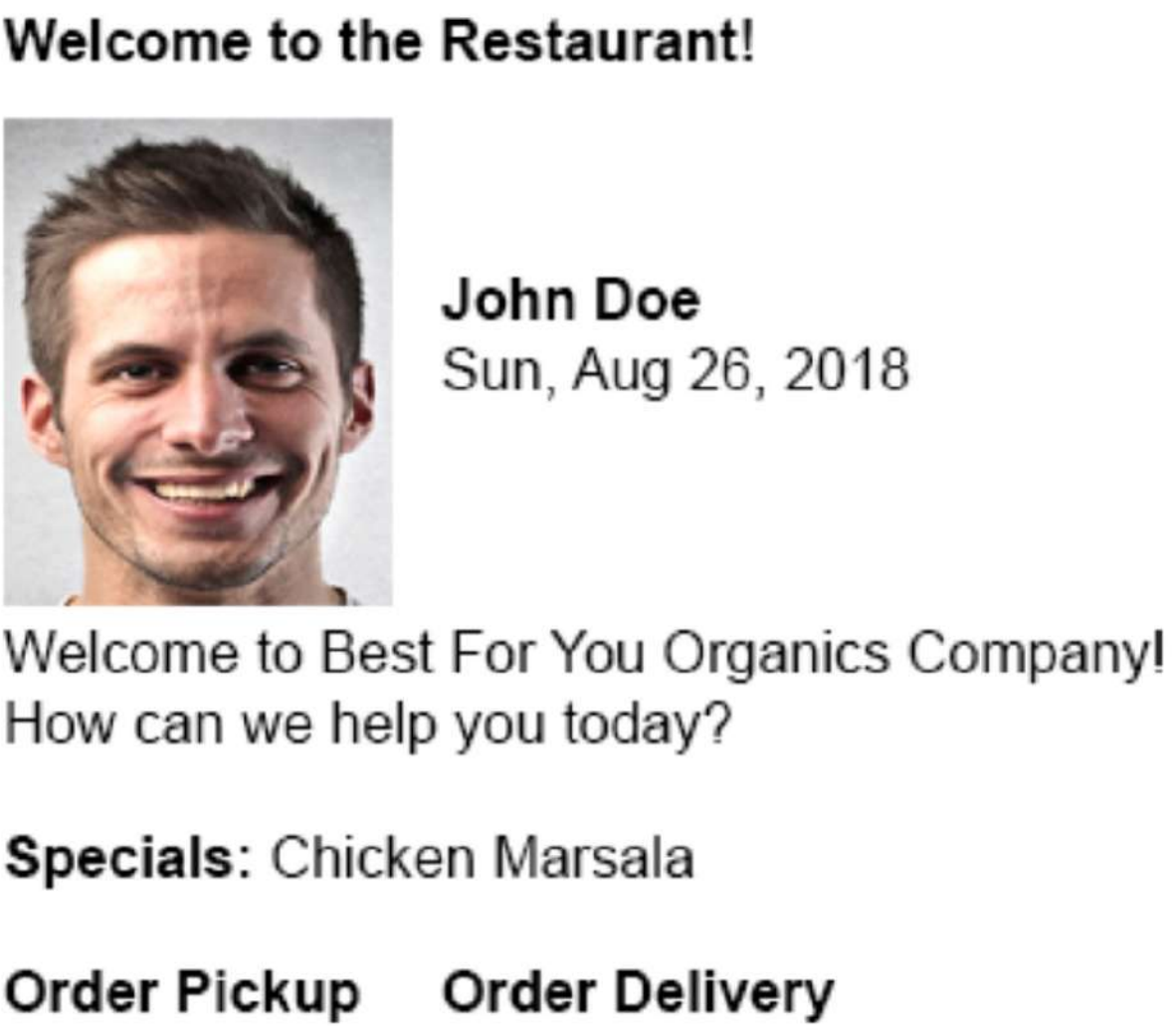
Background
Best For You Organics Company is a global restaurant franchise that has multiple locations. The company wants to enhance user experiences and vendor integrations. The company plans to implement automated mobile ordering and delivery services.

Best For You Organics hosts an Azure web app at the URL https://www.bestforyouorganics.com. Users can use the web app to browse restaurant location, menu items, nutritional information, and company information. The company developed and deployed a cross-platform mobile app.

Requirements

Chatbot
You must develop a chatbot by using the Bot Builder SDK and Language Understanding Intelligence Service (LUIS). The chatbot must allow users to order food for pickup or delivery.

The chatbot must meet the following requirements:



Vendor API

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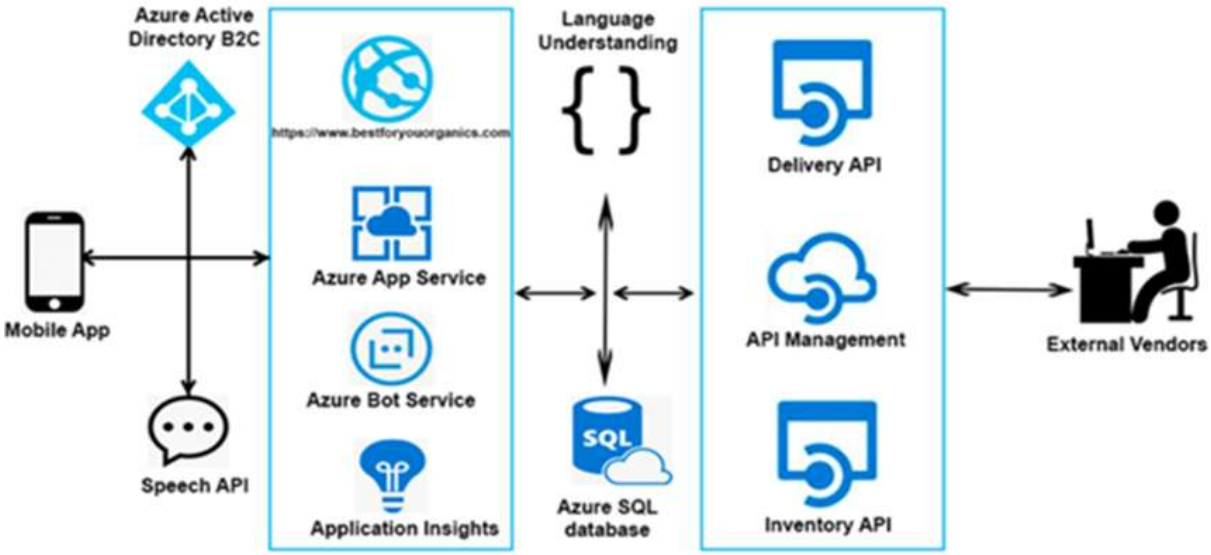
Vendors receive and provide updates for the restaurant inventory and delivery services by using Azure API Management hosted APIs. Each vendor uses their own subscription to access each of the APIs.

APIs must meet the following conditions:



Architecture

Issues

Delivery API
The Delivery API intermittently throws the following exception:

```
"System.Data.Entity.Core.EntityCommandExecutionException: An error occurred
while executing the command definition. See the inner exception for
details. -->System.Data.SqlClient.SqlException: A transport-level error has
occurred when receiving results from the server. (provider: Session
Provider, error: 19 – Physical connection is not usable)"
```

Chatbot greeting
The chatbot's greeting does not show the user's name. You need to debug the chatbot locally.

Language processing
Users report that the bot fails to understand when a customer attempts to order dishes that use Italian names.

App code
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.

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Startup.cs

```
SU01 namespace DeliveryApi
SU02 {
SU03  public class Startup
SU04  {
SU05   public Startup(IConfiguration configuration)
SU06    {
SU07      Configuration = configuration;
SU08    }
SU09    public IConfiguration Configuration { get; }
SU10    public void ConfigureService(IServiceCollection services)
SU11    {
SU12     services.AddDbContext<RestaurantsContext>(opt =>
SU13      opt.UseSqlServer(Configuration.GetSection("ConnectionStrings")
["RestaurantDatabase"],
SU14       sqlServerOptionsAction: sqlOptions =>
SU15       {
SU16        . . .
SU17       }));
SU18     services.AddMvc()
SU19       .SetCompatibilityVersion(CompatibilityVersion.Version_2_1);
SU20   }
SU21   public void Configure(IApplicationBuilder app)
SU22   {
SU23     app.UseMvc();
SU24   }
SU25  }
SU26 }
```

- API usage must not exceed 5,000 calls and 50,000 kilobytes of bandwidth per hour per vendor.
- If a vendor is nearing the number of calls or bandwidth limit, the API must trigger email notifications to the vendor.
- API must prevent API usage spikes on a per-subscription basis by limiting the call rate to 100 calls per minute.
- The Inventory API must be written by using ASP.NET Core and Node.js.
- The API must be updated to provide an interface to Azure SQL Database objects must be managed by using code.
- The Delivery API must be protected by using the OAuth 2.0 protocol with Azure Active Directory (Azure AD) when called from the Azure web app. You register the Delivery API and web app in Azure AD. You enable OAuth 2.0 in the web app.
- The delivery API must update the Products table, the Vendor transactions table, and the Billing table in a single transaction.

The Best For You Organics Company architecture team has created the following diagram depicting the expected deployments into Azure:

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- Ensure that chatbot is secure by using the Bot Framework connector.
- Use natural language processing and speech recognition so that users can interact with the chatbot by using text and voice. Processing must be server-based.
- Alert users about promotions at local restaurants.
- Enable users to place an order for delivery or pickup by using their voice.
- Greet the user upon sign-in by displaying a graphical interface that contains action buttons.
- The chatbot greeting interface must match the formatting of the following example:

Question 421

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets the stated goals.

You need to meet the vendor notification requirement.

Solution: Update the Delivery API to send emails by using a Microsoft Office 365 SMTP server.

Does the solution meet the goal?

☐ Yes
☒ No

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-configure-notifications

Question 422

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets the stated goals.

You need to meet the vendor notification requirement.

Solution: Configure notifications in the Azure API Management instance.

Does the solution meet the goal?

☒ Yes
☐ No

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-configure-notifications

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Question 423

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution. Determine whether the solution meets the stated goals.

You need to meet the vendor notification requirement.

Solution: Update the Delivery API to send emails by using a cloud-based email service.

Does the solution meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-configure-notifications

Question 424

You need to meet the vendor notification requirement.

Solution: Create and apply a custom outbound Azure API Management policy.

Does the solution meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-configure-notifications

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Question 425

You need to resolve the delivery API error.

What should you do?

- ☐ Implement simple retry by using the **EnableRetryOnFailure** feature of Entity Framework.
- ☒ Implement exponential backoff by using the **EnableRetryOnFailure** feature of Entity Framework.
- ☐ Implement a Circuit Breaker pattern by using the **EnableRetryOnFailure** feature of Entity Framework.
- ☐ Invoke a custom execution strategy in Entity Framework.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/sql-database/sql-database-develop-error-messages

Question 426

You need to implement the purchase requirement.

What should you do?

- ☒ Use the Bot Framework REST API conversation operations to send the user's voice and the Speech Service API to recognize intents.
- ☐ Use the Direct Line REST API to send the user's voice and the Speech Service API to recognize intents.
- ☐ Use the Speech Service API to send the user's voice and the Bot Framework REST API conversation operations to recognize intents.
- ☐ Use the Bot Framework REST API attachment operations to send the user's voice and the Speech Service API to recognize intents.

Question 427

You need to meet the security requirements.

What should you use?

- ☐ HTTP Strict Transport Security (HSTS)
- ☐ Direct Line API
- ☐ Multi-Factor Authentication (MFA)
- ☐ Bot Framework Portal
- ☒ Bot Framework authentication

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Question 386

HOTSPOT

You are developing a SMS-based testing solution. The solution sends users a question by using SMS. Early responders may qualify for prizes.

Users must respond with an answer choice within 90 seconds. You must be able to track how long it takes each user to respond. You create a durable Azure Function named SendSmsQuizQuestion that uses Twilio to send messages.

You need to write the code for MessageQuiz.

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

NOTE: Each correct selection is worth one point.

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```
[FunctionName("MessageQuiz")]
public static async Task<bool> Run([OrchestrationTrigger]
DurableOrchestrationContext context)
{
string phoneNumber = context.GetInput<string>();
int correctAnswerCode = await context.CallActivityAsync<int>
("SendSmsQuizQuestion", phoneNumber);
using (var cts = new CancellationTokenSource())
{

DateTime expiration = DateTime.UtcNow;
DateTime expiration = DateTime.UtcNow.AddSeconds(90);
DateTime expiration = DateTime.Now();
DateTime expiration = context.CurrentUtcDateTime.AddSeconds(90);

var timeoutTask = context.CallActivityAsync<DateTime>("timeout",expiration);
var timeoutTask = context.CreateTimer(expiration, cts.Token);
var timeoutTask = context.WaitForExternalEvent("timeout", 90000);
var timeoutTask = context.CallSubOrchestratorAsync("timeout", expiration);

bool isWinner = false;
for (int retryCount = 0;retryCount <= 3;retryCount++)
{
Task<int> challengeResponseTask =
context.WaitForExternalEvent<int>("SmsQuizResponse");
Task winner = await Task.WhenAny(challengeResponseTask,
timeoutTask);
if (winner == challengeResponseTask)
{
if(challengeResponseTask.Result == correctAnswerCode)
{
isWinner = true;
break;
}
}
else
{
break;
}
}

if (!timeoutTask.IsCompleted)
if(!timeoutTask.IsCanceled)
if(!context.IsReplaying)
if (!cts.IsCancellationRequested)

{
cts.Cancel();
}
return isWinner;
}
```


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Solution:

```
[FunctionName("MessageQuiz")]
public static async Task<bool> Run([OrchestrationTrigger]
DurableOrchestrationContext context)
{
string phoneNumber = context.GetInput<string>();
int correctAnswerCode = await context.CallActivityAsync<int>
("SendSmsQuizQuestion", phoneNumber);
using (var cts = new CancellationTokenSource())
{

DateTime expiration = DateTime.UtcNow;
DateTime expiration = DateTime.UtcNow.AddSeconds(90);
DateTime expiration = DateTime.Now();
DateTime expiration = context.CurrentUtcDateTime.AddSeconds(90);

var timeoutTask = context.CallActivityAsync<DateTime>("timeout",expiration);
var timeoutTask = context.CreateTimer(expiration, cts.Token);
var timeoutTask = context.WaitForExternalEvent("timeout", 90000);
var timeoutTask = context.CallSubOrchestratorAsync("timeout", expiration);

bool isWinner = false;
for (int retryCount = 0;retryCount <= 3;retryCount++)
{
Task<int> challengeResponseTask =
context.WaitForExternalEvent<int>("SmsQuizResponse");
Task winner = await Task.WhenAny(challengeResponseTask,
timeoutTask);
if (winner == challengeResponseTask)
{
if(challengeResponseTask.Result == correctAnswerCode)
{
isWinner = true;
break;
}
}
else
{
break;
}
}

if (!timeoutTask.IsCompleted)
if(!timeoutTask.IsCanceled)
if(!context.IsReplaying)
if (!cts.IsCancellationRequested)

{
cts.Cancel();
}
return isWinner;
}
```

Explanation/Reference

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Question 387

HOTSPOT

You are developing a solution that requires serverless code execution in Azure.

The solution has two functions that must run in a specific order.

You need to ensure that the second function can use the output from the first function.

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

NOTE: Each correct selection is worth one point.

Answer Area

```
public static async Task<object> Run(
    [DurableOrchestrationContext / DurableActivityContext / DurableOrchestrationClient / DurableOrchestrationStatus] c)
{
try
{
var f1Result = await c.[CallActivityAsync / CallSuborchestratorAsync / WaitForExternalEvent]<object>("AzureFunction01", null);

return await c.[CallActivityAsync / CallSubOrchestratorAsync / WaitForExternalEvent]<object>("AzureFunction02",f1Result);
}

catch(Exception e)
{
...
}
}
```


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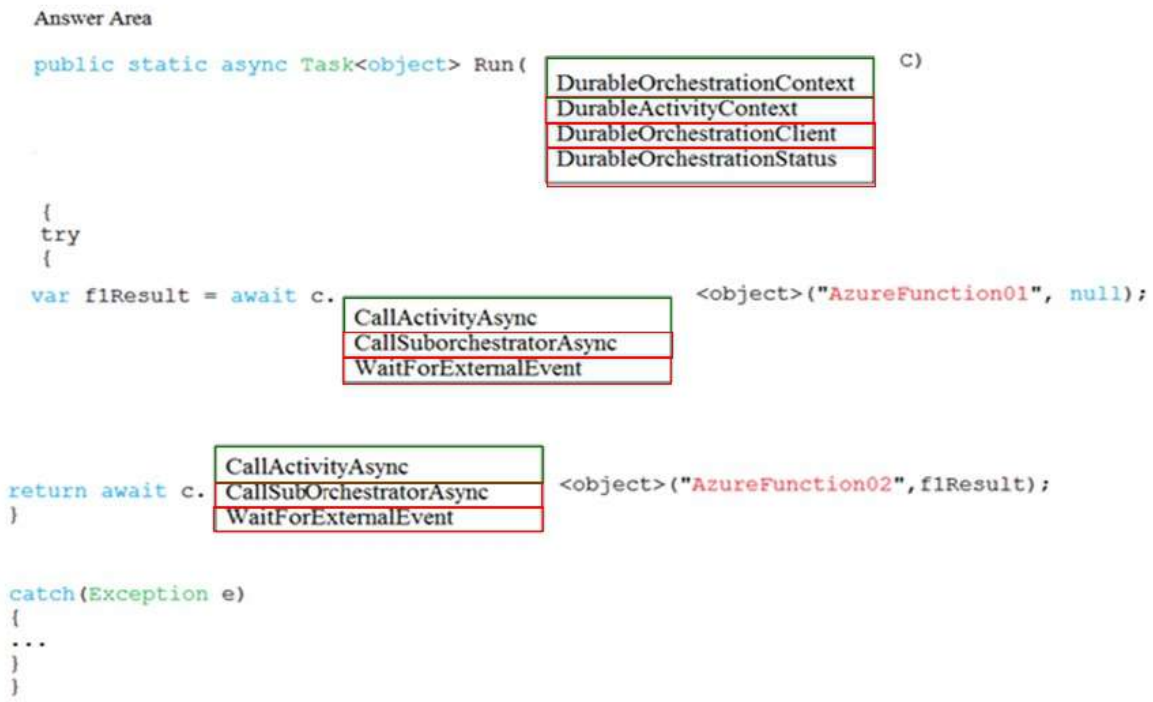
Solution:



Explanation/Reference

Question 388

You are developing an app that references data which is sharded across multiple Azure SQL databases.

The app must guarantee transactional consistency for changes across several different sharding key values.

You need to manage the transactions.

What should you implement?

- ☒ Elastic database transactions with horizontal partitioning.
- ☐ Distributed transactions coordinated by Microsoft Distributed Transaction Coordinator (MSDTC).
- ☐ Server-coordinated transactions from .NET application.
- ☐ Elastic database transactions with vertical partitioning.

Explanation/Reference

References:
https://docs.microsoft.com/mt-mt/azure/sql-database/sql-database-elastic-transactions-overview?view=azurermps-6.13.0

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Question 389

HOTSPOT

You are creating a bot for a company by using QnA Maker.

You need to ensure that the company can update the bot without third-party assistance.

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

NOTE: Each correct selection is worth one point.

Answer Area

Scenario	Component
Add customer question/answer content.	QnA Maker runtime QnA Maker management service.
Use an Azure Application Insights resource for analytics.	QnA Maker runtime QnA Maker management service.
Update and train a knowledge base.	QnA Maker runtime QnA Maker management service.

Solution:

Answer Area

Scenario	Component
Add customer question/answer content.	QnA Maker runtime QnA Maker management service.
Use an Azure Application Insights resource for analytics.	QnA Maker runtime QnA Maker management service.
Update and train a knowledge base.	QnA Maker runtime QnA Maker management service.

Explanation/Reference

References:
https://docs.microsoft.com/en-us/azure/cognitive-services/qnamaker/overview/overview

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Question 390

You are developing a speech-enabled home automation control bot.

The bot interprets some spoken words incorrectly.

You need to improve the spoken word recognition for the bot.

What should you implement?

- ☐ The Skype for Business Channel and use scorable dialogs for improving conversation flow.
- ☒ The Web Chat Channel and Speech priming using a Bing Speech Service and LUIS app.
- ☐ The Skype Channel and use scorable dialogs for improving conversation flow.
- ☐ The Cortana Channel and use scorable dialogs for improving conversation flow.

Question 391

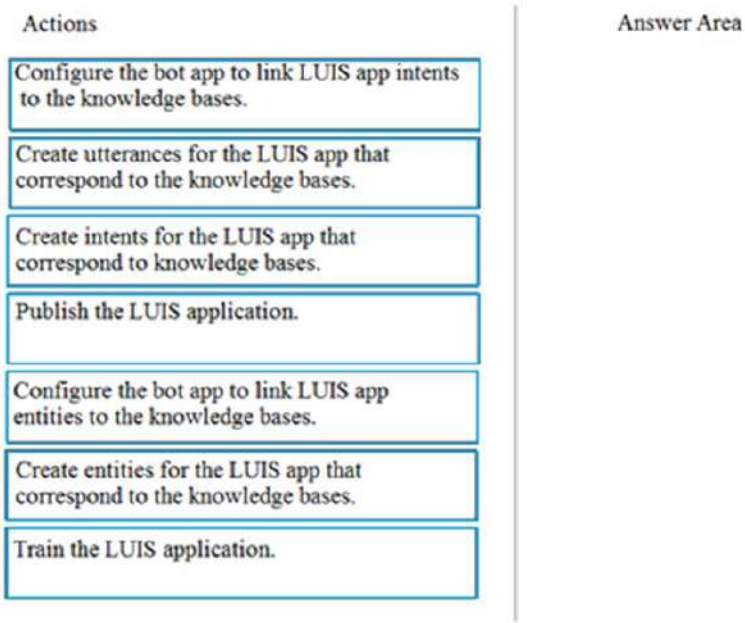
DRAG DROP

Your company develops a bot that uses QnA Maker knowledge bases and Language Understanding Intelligence Services (LUIS). You create the QnA Maker service, knowledge bases, and the LUIS app.

The bot application must use LUIS to determine which QnA Maker knowledge base to use.

You need to integrate LUIS with the QnA Maker knowledge bases and maximize the effectiveness for selecting the QnA Maker knowledge bases before testing the bot.

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



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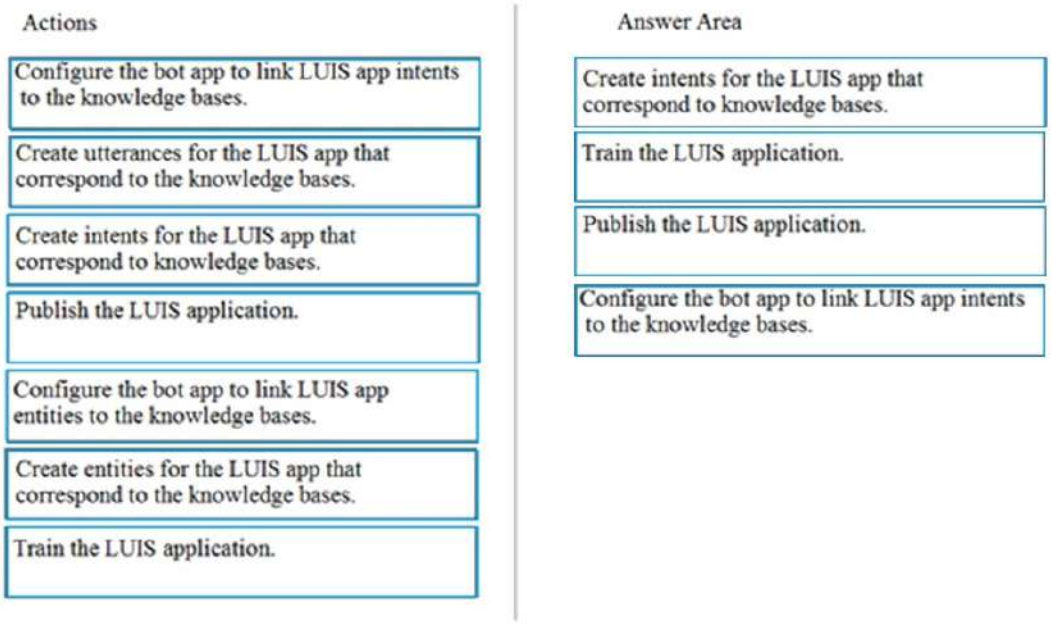
Solution:



Explanation/Reference

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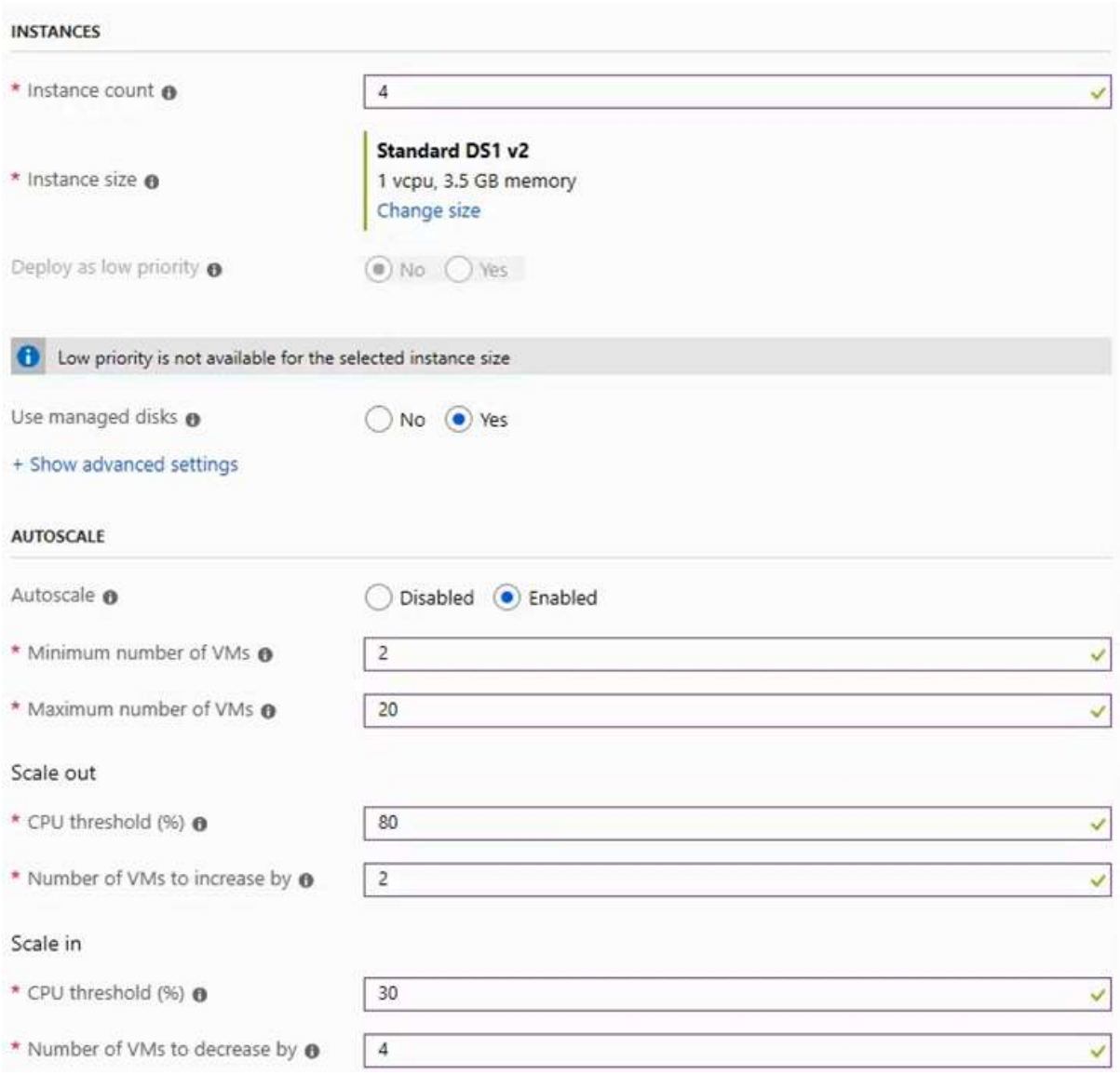
Question 392

HOTSPOT

You create a virtual machine scale set named Scale1. Scale1 is configured as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

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Answer Area

If Scale1 is utilized at 85 percent for six minutes, Scale1 will be running **[answer choice]**.

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 10 virtual machines
- 20 virtual machines

If Scale1 is first utilized at 25 percent for six minutes, and then utilized at 50 percent for six minutes, Scale1 will be running **[answer choice]**.

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 8 virtual machines
- 10 virtual machines

Solution:

Answer Area

If Scale1 is utilized at 85 percent for six minutes, Scale1 will be running **[answer choice]**.

- 2 virtual machines
- 4 virtual machines
- **6 virtual machines**
- 10 virtual machines
- 20 virtual machines

If Scale1 is first utilized at 25 percent for six minutes, and then utilized at 50 percent for six minutes, Scale1 will be running **[answer choice]**.

- 2 virtual machines
- 4 virtual machines
- 6 virtual machines
- 8 virtual machines
- 10 virtual machines

Explanation/Reference

Explanation:

Box 1:
The Autoscale scale out rule increases the number of VMs by 2 if the CPU threshold is 80% or higher. The initial instance count is 4 and rises to 6 when the 2 extra instances of VMs are added.

Box 2:
The Autoscale scale in rule decreases the number of VMs by 4 if the CPU threshold is 30% or lower. The initial instance count is 4 and thus cannot be reduced to 0 as the minimum instances is set to 2.

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Instances are only added when the CPU threshold reaches 80%.

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-overview

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-best-practices

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-scale-patterns

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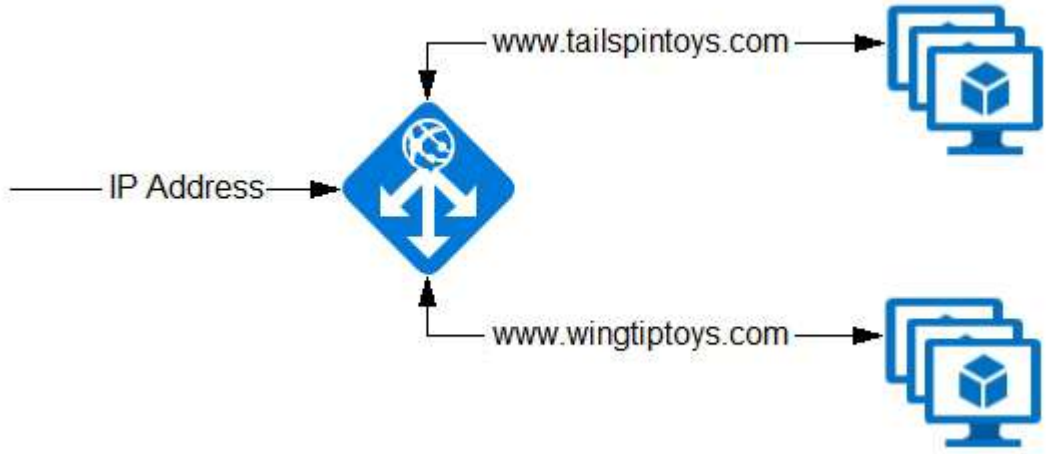
Question 393

HOTSPOT

Your company hosts multiple website by using Azure virtual machine scale sets (VMSS) that run Internet Information Server (IIS).

All network communications must be secured by using end to end Secure Socket Layer (SSL) encryption. User sessions must be routed to the same server by using cookie-based session affinity.

The image shown depicts the network traffic flow for the web sites to the VMSS.



Use the drop-down menus to select the answer choice that answers each question.

NOTE: Each correct selection is worth one point.

Answer Area

Which Internet Protocol (IP) address type should you use?	Public Private
Which Azure solution should you create to route the web application traffic to the VMSS?	Azure VPN Gateway Azure Application Gateway Azure ExpressRoute Azure Network Watcher
What should you configure to make sure web traffic arrives at the appropriate server in the VMSS?	Routing rules and backend listeners CNAME and A records Routing method and DNS tile to live (TTL) Path-based redirection and WebSockets

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Solution:

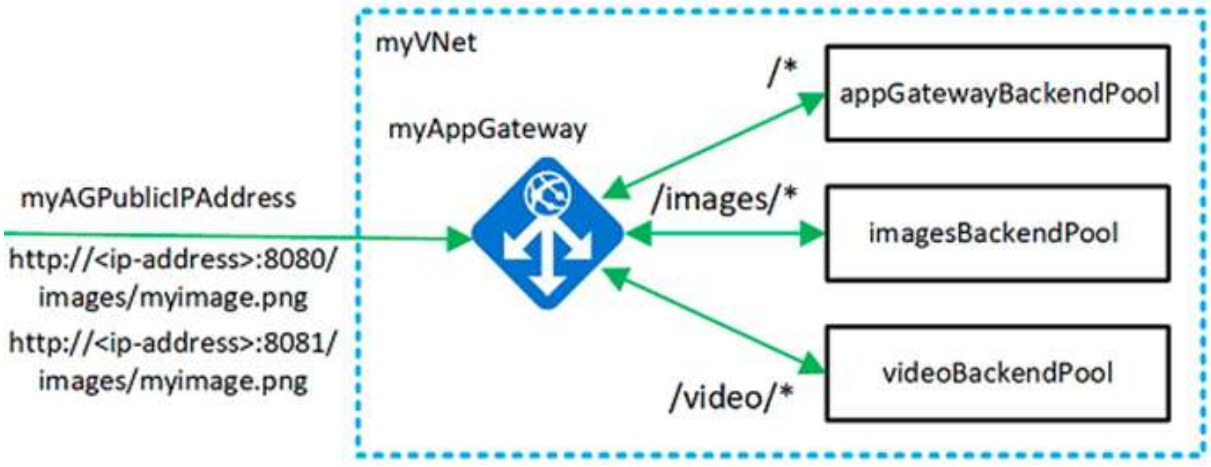
Answer Area

Which Internet Protocol (IP) address type should you use?	Public Private
Which Azure solution should you create to route the web application traffic to the VMSS?	Azure VPN Gateway Azure Application Gateway Azure ExpressRoute Azure Network Watcher
What should you configure to make sure web traffic arrives at the appropriate server in the VMSS?	Routing rules and backend listeners CNAME and A records Routing method and DNS tile to live (TTL) Path-based redirection and WebSockets

Explanation/Reference

Explanation:

Box 1: Public
The following example shows site traffic coming from both ports 8080 and 8081 and being directed to the same backend pools.



Box 2: Application Gateway
You can create an application gateway with URL path-based redirection using Azure PowerShell.

Box 3: Path-based redirection and Websockets

References:
https://docs.microsoft.com/bs-latn-ba/azure//application-gateway/tutorial-url-redirect-powershell

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Question 394

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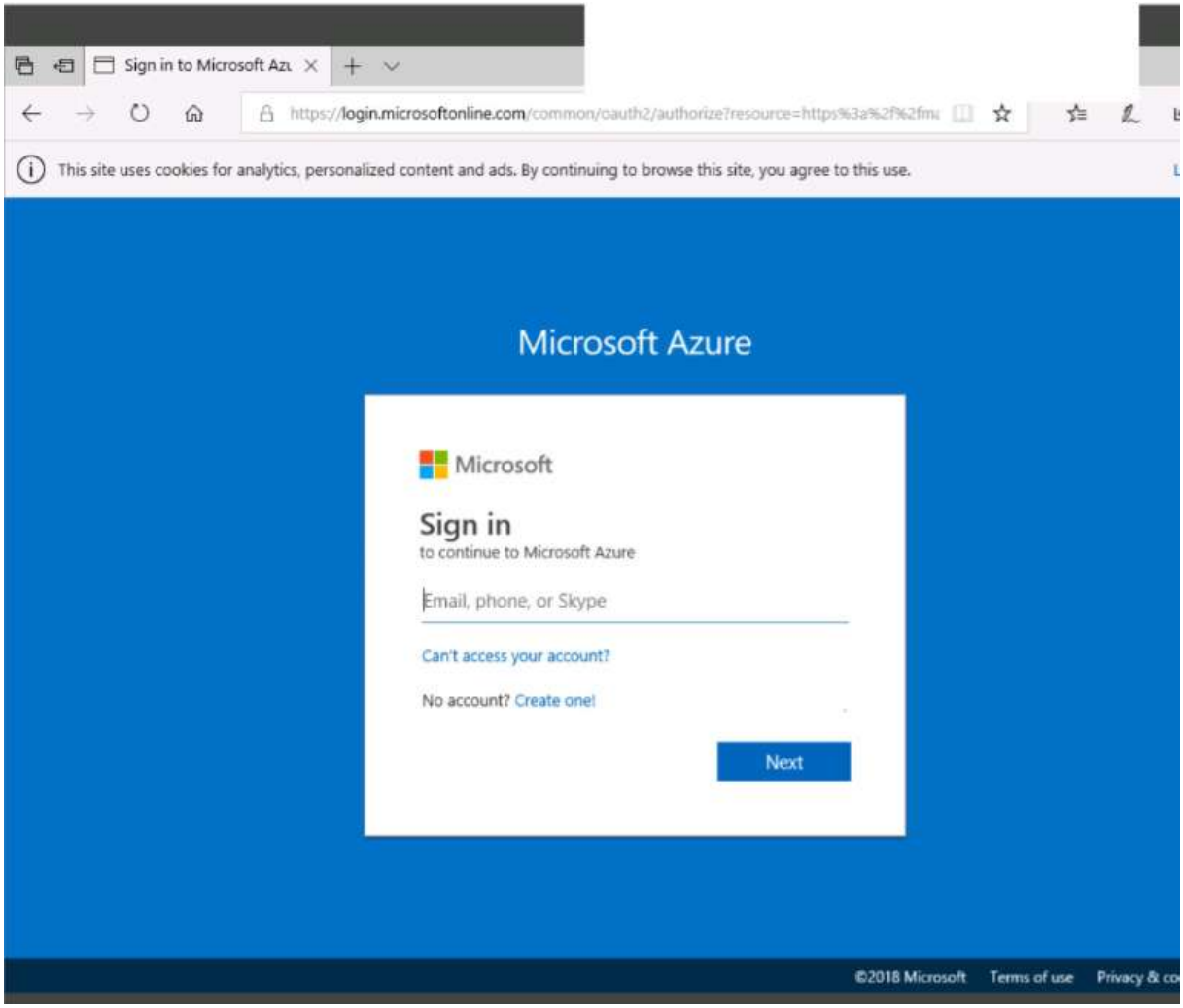
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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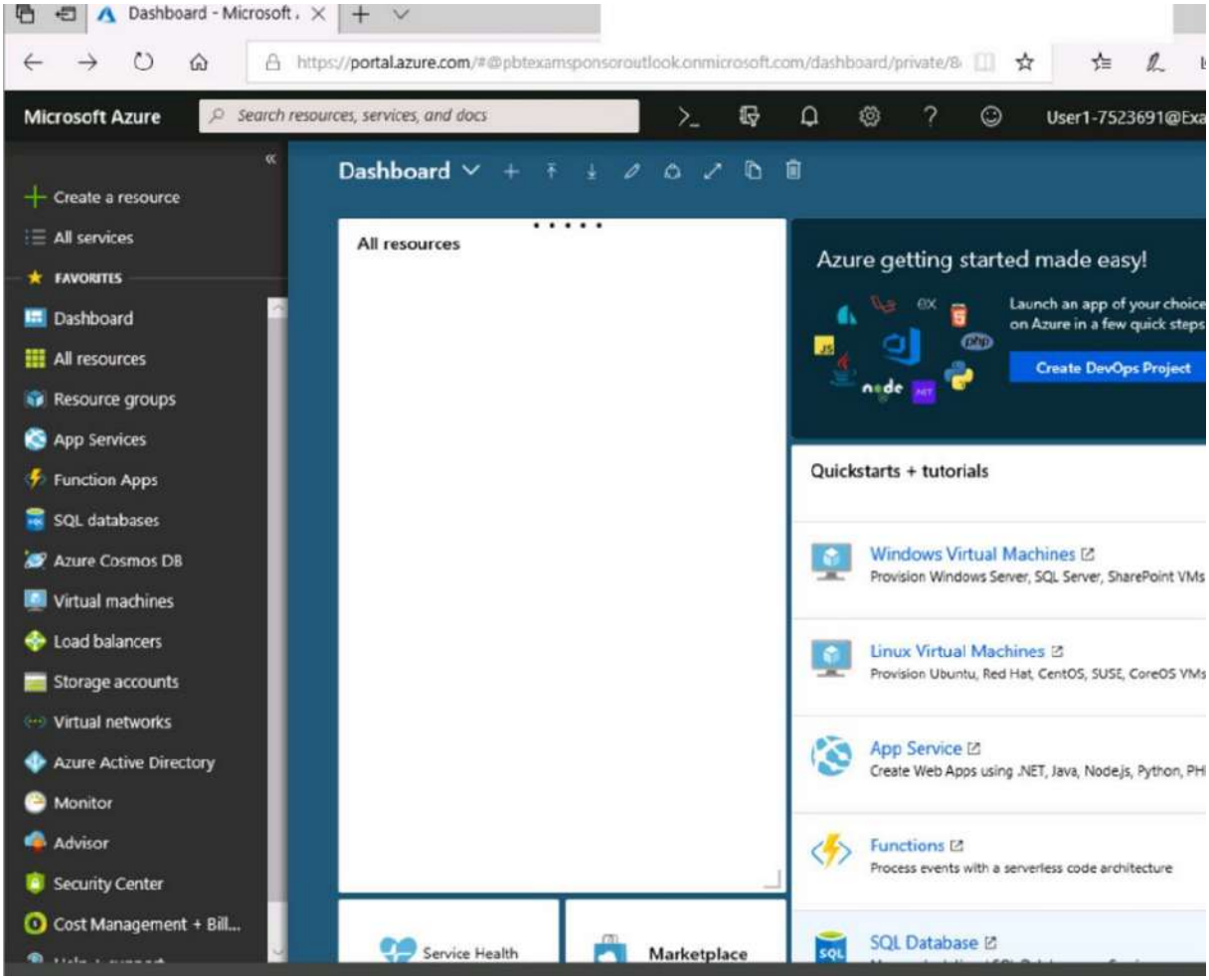

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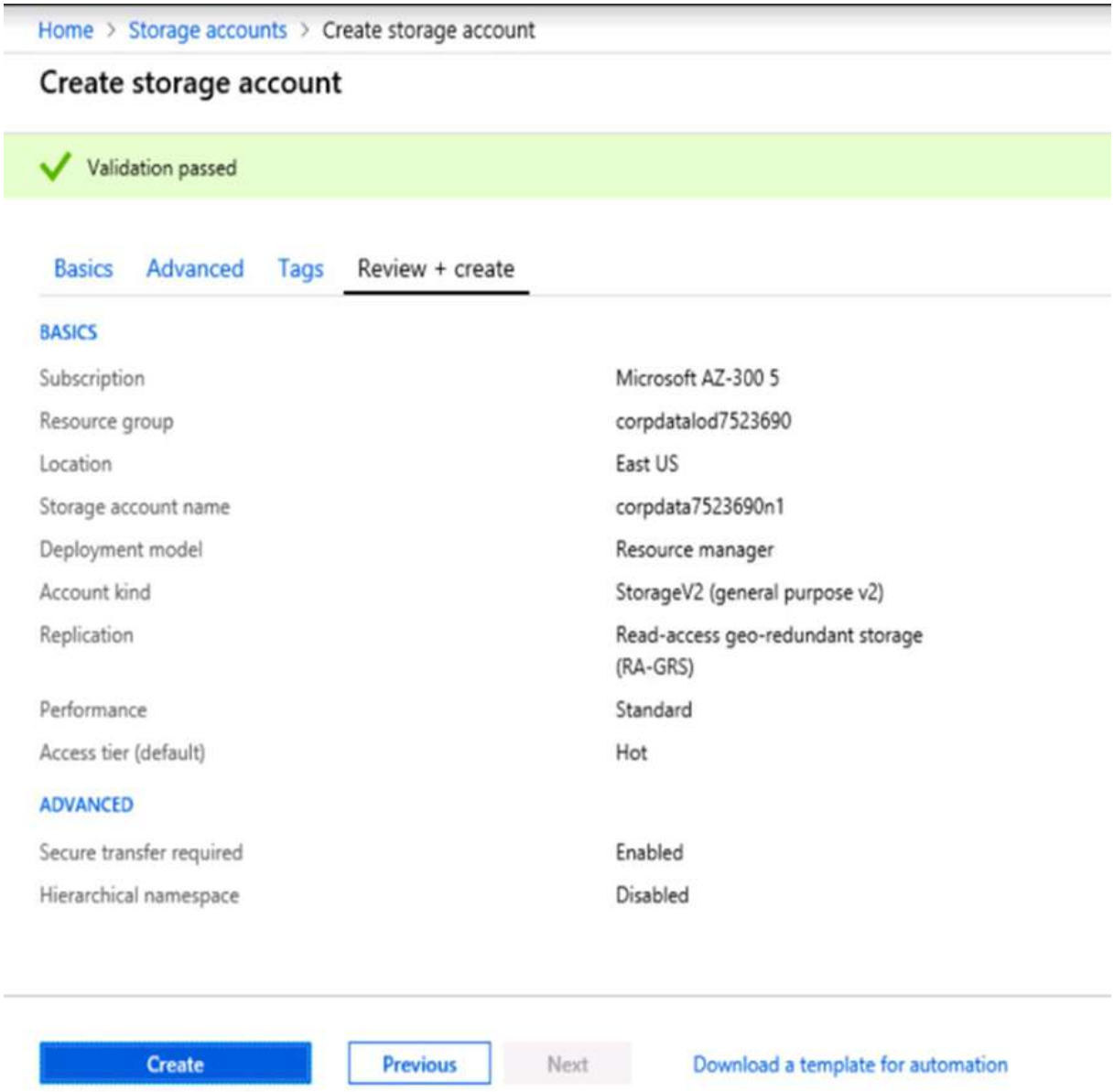

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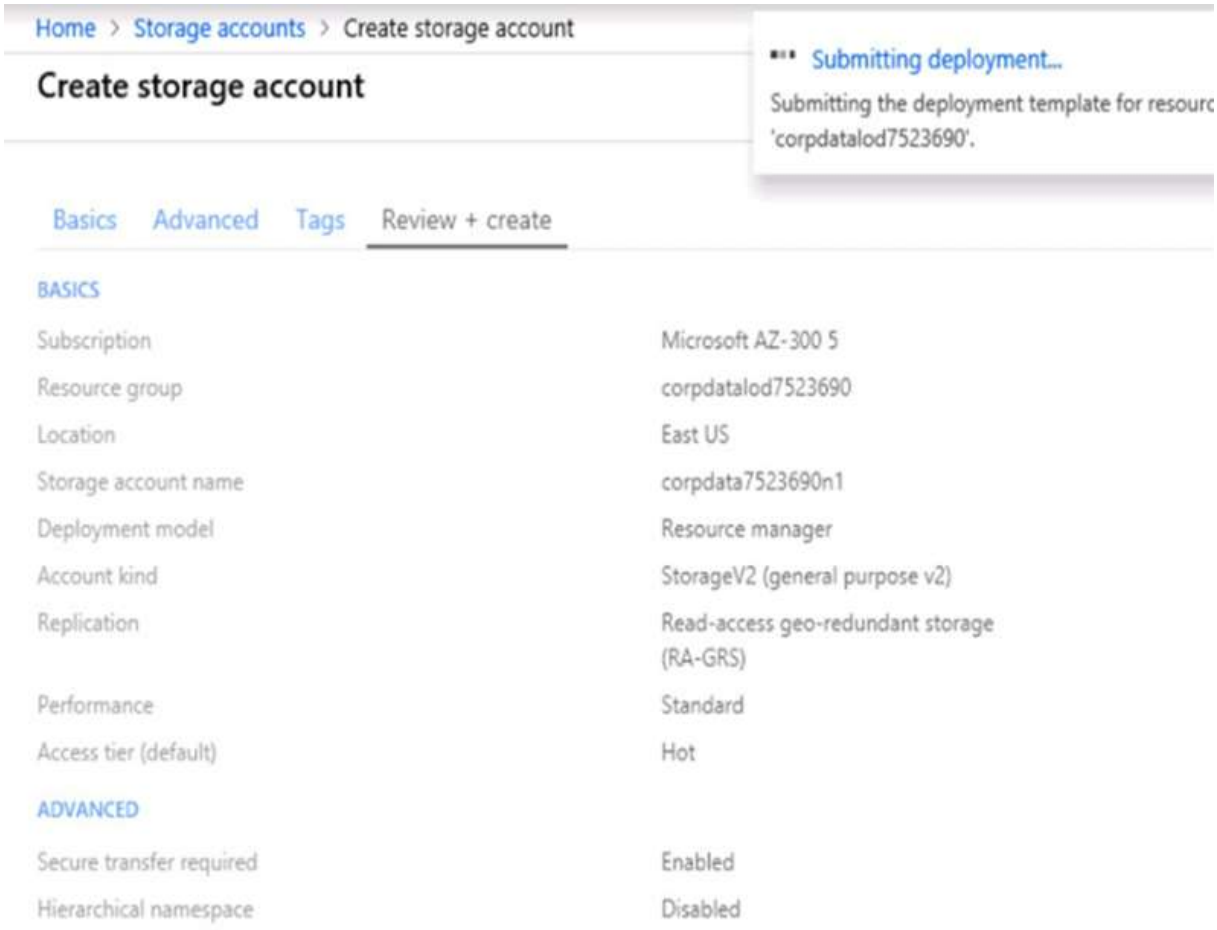

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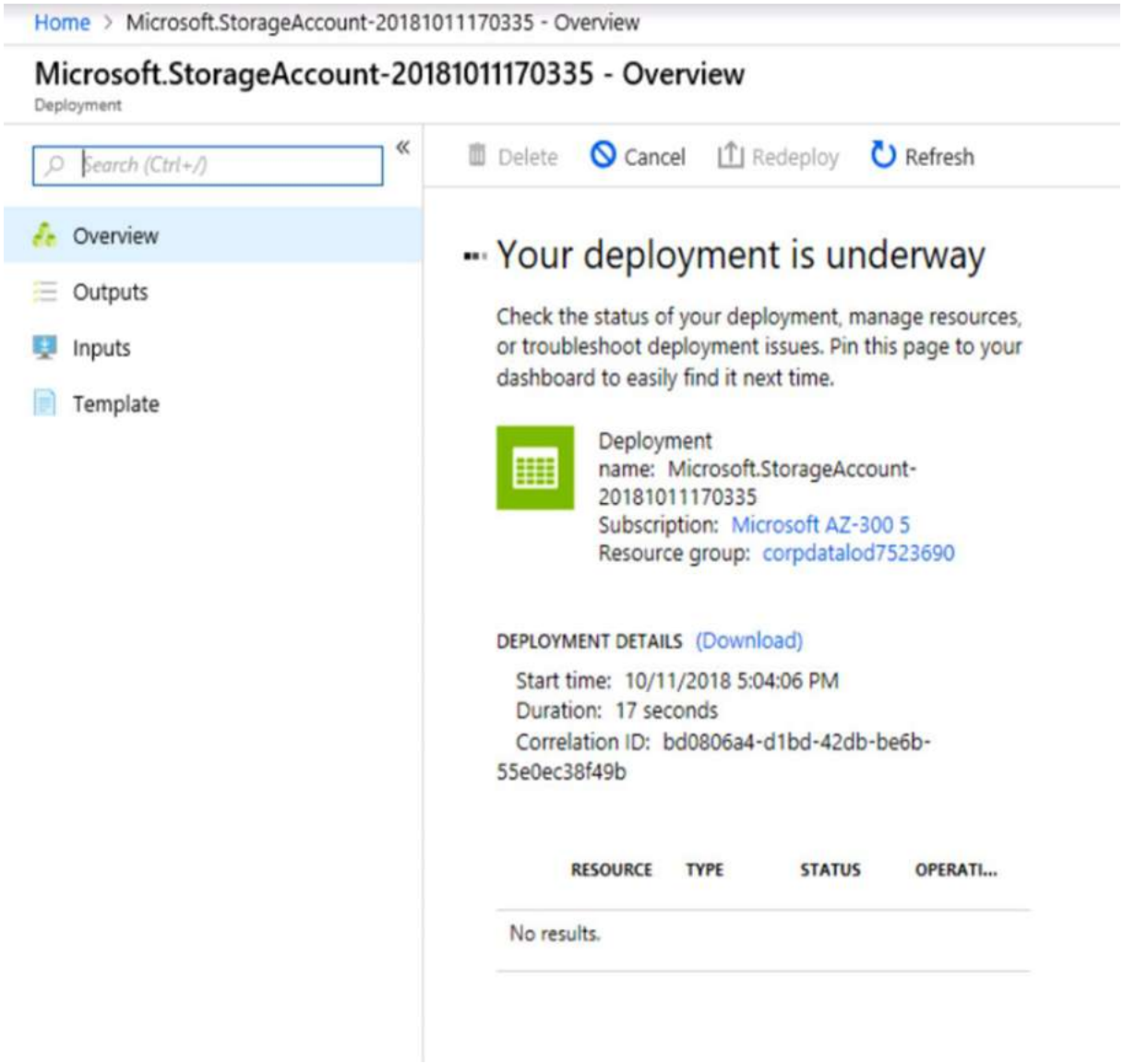

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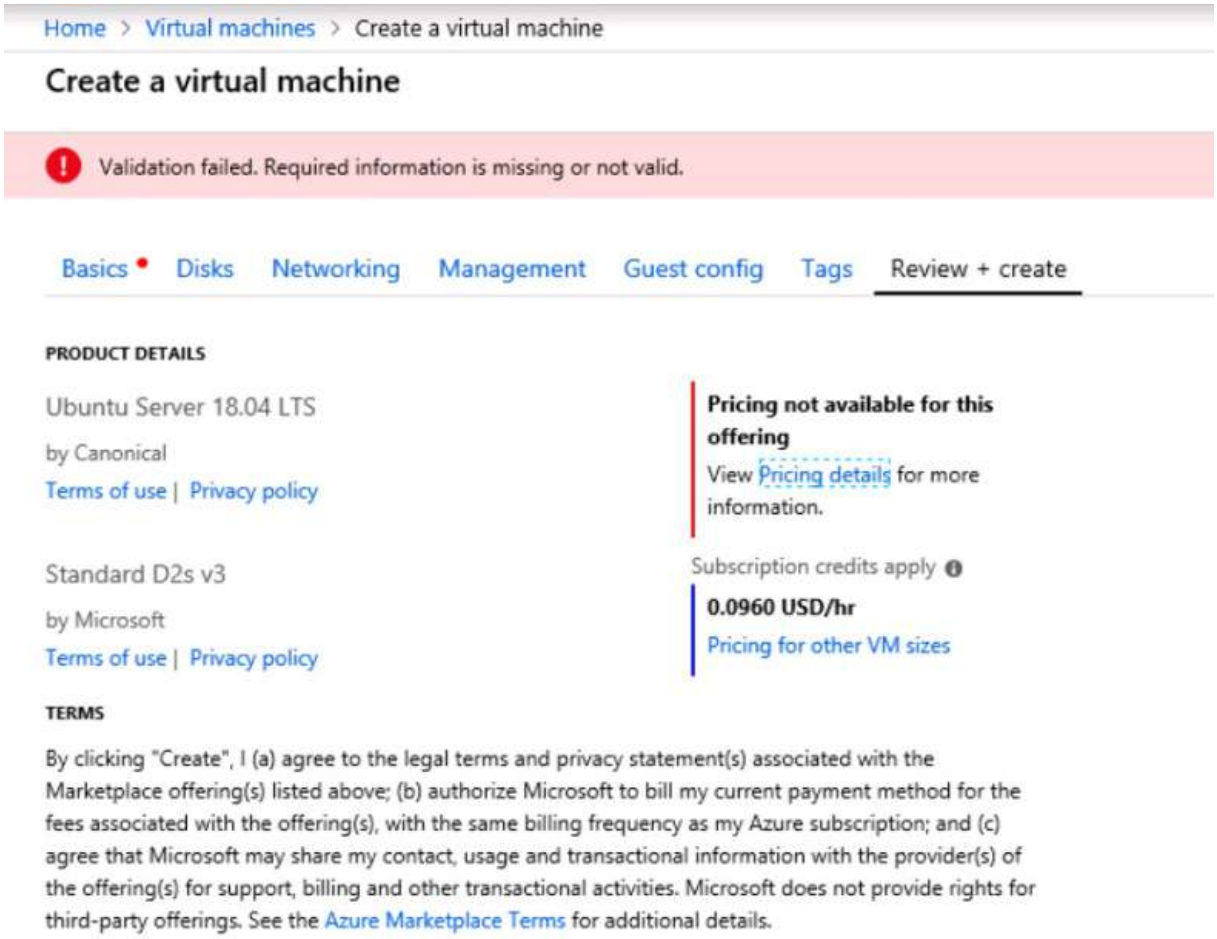

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

Scoring is based on the outcome of performing the tasks stated in the lab. In other words, it doesn't matter how you accomplish the task, if you successfully perform it, you will earn credit for that task.

Labs are not timed separately, and this exam may have more than one lab that you must complete. You can use as much time as you would like to complete each lab. But, you should manage your time appropriately to ensure that you are able to complete the lab(s) and all other sections of the exam in the time provided.

Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You need to create a virtual network named VNET1008 that contains three subnets named subnet0, subnet1, and subnet2. The solution must meet the following requirements:

- Connections from any of the subnets to the Internet must be blocked
- Connections from the Internet to any of the subnets must be blocked
- The number of network security groups (NSGs) and NSG rules must be minimized

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1: Click Create a resource in the portal.

Step 2: Enter Virtual network in the Search the Marketplace box at the top of the New pane that appears. Click Virtual network when it appears in the search results.

Step 3: Select Classic in the Select a deployment model box in the Virtual Network pane that appears, then click Create.

Step 4: Enter the following values on the Create virtual network (classic) pane and then click Create:
Name: VNET1008
Address space: 10.0.0.0/16
Subnet name: subnet0
Resource group: Create new
Subnet address range: 10.0.0.0/24
Subscription and location: Select your subscription and location.

Step 5: In the portal, you can create only one subnet when you create a virtual network. Click Subnets (in the SETTINGS section) on the Create virtual network (classic) pane that appears.
Click +Add on the VNET1008 - Subnets pane that appears.

Step 6: Enter subnet1 for Name on the Add subnet pane. Enter 10.0.1.0/24 for Address range. Click OK.

Step 7: Create the third subnet: Click +Add on the VNET1008 - Subnets pane that appears. Enter subnet2 for Name on the Add subnet pane. Enter 10.0.2.0/24 for Address range. Click OK.

References:
https://docs.microsoft.com/en-us/azure/virtual-network/create-virtual-network-classic

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Question 395

A company is migrating an existing on-premises third-party website to Azure. The website is stateless.

The company does not have access to the source code for the website. They do not have the original installer.

The number of visitors at the website varies throughout the year. The on-premises infrastructure was resized to accommodate peaks but the extra capacity was not used.

You need to implement a virtual machine scale set instance.

What should you do?

- ☐ Use an autoscale setting to scale instances vertically
- ☐ Create 100 autoscale settings per resource
- ☐ Scale out by one instance when the average CPU usage of one of the instances is over 80 percent
- ☒ Use Azure Monitor to create autoscale settings using custom metrics
- ☐ Use an autoscale setting with unlimited maximum number of instances
- ☐ Use a webhook to log autoscale failures

Explanation/Reference

Explanation:
Azure Monitor autoscale can be used on Virtual Machine Scale Sets.

References:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-custom-metric

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Question 396

You have an Azure subscription named Subscription1.

You create several Azure virtual machines in Subscription1. All of the virtual machines belong to the same virtual network.

You have an on-premises Hyper-V server named Server1. Server1 hosts a virtual machine named VM1.

You plan to replicate VM1 to Azure.

You need to create additional objects in Subscription1 to support the planned deployment.

Which three objects should you create? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ Hyper-V site
- ☒ Azure Recovery Services Vault
- ☐ storage account
- ☒ replication policy
- ☐ Azure Traffic Manager instance
- ☐ endpoint

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Question 397

Your company is developing an e-commerce Azure App Service Web App to support hundreds of restaurant locations around the world.

You are designing the messaging solution architecture to support the e-commerce transactions and messages. The e-commerce application has the following features and requirements:

Feature	Requirement
Shopping Cart	• Items in a shopping cart must be processed by an Azure Function within a specified number of minutes. • Failure to process should move the items to a failed state for processing by a separate Azure Function. • Shopping cart transactions must not be lost and fault conditions must be processed separately. • Shopping cart transactions must be read by the inventory and sales systems for further processing.
Inventory Distribution	• Items sent to the inventory system must run a separate workflow for each item that includes warehouse, shipping, and order processing updates. • Inventory uses Azure Blob storage to store inventory items and related information. • Inventory is processed by using an Azure Logic App.
Restaurant Telemetry	• Restaurants stream millions of daily events from all locations. • Restaurant data should be captured in Azure Blob storage for conditional processing. • Restaurant event data should expire after 24 hours.

You need to choose the Azure messaging solution to support the Restaurant Telemetry feature.

Which Azure service should you use?

- ☐ Azure Relay
- ☐ Azure Event Grid
- ☒ Azure Event Hub
- ☐ Azure Service Bus

Explanation/Reference

Explanation:
Azure Event Hubs is a big data pipeline. It facilitates the capture, retention, and replay of telemetry and event stream data. The data can come from many concurrent sources. Event Hubs allows telemetry and event data to be made available to a variety of stream-processing infrastructures and analytics services. It is available either as data streams or bundled event batches. 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:

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Service	Purpose	Type	When to use
Event Grid	Reactive programming	Event distribution (discrete)	React to status changes
Event Hubs	Big data pipeline	Event streaming (series)	Telemetry and distributed data streaming
Service Bus	High-value enterprise messaging	Message	Order processing and financial transactions

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

- low latency
- capable of receiving and processing millions of events per second
- at least once delivery

Note: Comparison of services

Question 398

A company is migrating an existing on-premises third-party website to Azure. The website is stateless.

The company does not have access to the source code for the website. They have the original installer.

The number of visitors at the website varies throughout the year. The on-premises infrastructure was resized to accommodate peaks but the extra capacity was not used.

You need to implement a virtual machine scale set instance.

What should you do

- ☐ Use an autoscale setting with unlimited maximum number of instances.
- ☐ Use an autoscale setting to scale instances vertically.
- ☐ Use only default diagnostics metrics to trigger autoscaling.
- ☒ Use Azure Monitor to create autoscale settings using custom metrics.

Explanation/Reference

Explanation:
With Azure Monitor you can auto scale by custom metric for Virtual Machine Scale Sets.

Note: By default, Resource Manager-based Virtual Machines and Virtual Machine Scale Sets emit

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basic (host-level) metrics. In addition, when you configure diagnostics data collection for an Azure VM and VMSS, the Azure diagnostic extension also emits guest-OS performance counters (commonly known as "guest-OS metrics"). You use all these metrics in autoscale rules.

Note 2: In-guest VM metrics with the Azure diagnostics extension
The Azure diagnostics extension is an agent that runs inside a VM instance. The agent monitors and saves performance metrics to Azure storage. These performance metrics contain more detailed information about the status of the VM, such as AverageReadTime for disks or PercentIdleTime for CPU. You can create autoscale rules based on a more detailed awareness of the VM performance, not just the percentage of CPU usage or memory consumption.

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-custom-metric

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-metrics

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Question 399

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value" : "10" }
Item2	{ "id": "2", "day": "Mon", "value" : "15" }
Item3	{ "id": "3", "day": "Tue", "value" : "10" }
Item4	{ "id": "4", "day": "Wed", "value" : "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT day
  WHERE value = "10
```

You set the `EnableCrossPartitionQuery` property to `False`.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

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Explanation:
Returns Item1 only as EnableCrossPartitionQuery property to False. If EnableCrossPartitionQuery property is set to true, it will return Item1 and Item3.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

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Question 400

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value" : "10" }
Item2	{ "id": "2", "day": "Mon", "value" : "15" }
Item3	{ "id": "3", "day": "Tue", "value" : "10" }
Item4	{ "id": "4", "day": "Wed", "value" : "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT day FROM c
  WHERE c.value = "10" OR c.value = "15"
```

You set the `EnableCrossPartitionQuery` property to `True`.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Returns Item1, Item2, Item3, and Item4.

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Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

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Question 401

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value" : "10" }
Item2	{ "id": "2", "day": "Mon", "value" : "15" }
Item3	{ "id": "3", "day": "Tue", "value" : "10" }
Item4	{ "id": "4", "day": "Wed", "value" : "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT id FROM c
   WHERE c.day = "Mon"
```

You set the `EnableCrossPartitionQuery` property to `True`.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation/Reference

Explanation:
Returns Item1 and Item2 only.

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Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

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Question 402

HOTSPOT

From Azure Cosmos DB, you create the containers shown in the following table.

Container ID	Partition key	Unique key
Container1	/category	*None*
Container2	/id	/importance

You add the following item to Container1.

```
{
    "id": "1",
    "category": "personal",
    "name": "Name1",
    "description": "Description1"
}
```

You plan to add items to Azure Cosmos DB as shown in the following table.

Name	Content
Item1	{ "id": "1", "category": "personal", "name": "Name1", "description": "Description1" }
Item2	{ "category": "business", "name": "Name2", "description": "Description2" "importance": "High" }
Item3	{ "id": "3", "name": "Name3", "description": "Description3" }
Item4	{ "id": "4", "importance": "Low" }

You need to identify which items can be added successfully to Container1 and Container2.

What should you identify for each container? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

Container1:

- Item2 only
- Item1 and Item2 only
- Item3 and Item4 only
- Item2, Item3, and Item4 only
- Item1, Item2, Item3, and Item4

Container2:

- Item4 only
- Item2 and Item4 only
- Item1, Item3, and Item4 only
- Item1, Item2, Item3, and Item4

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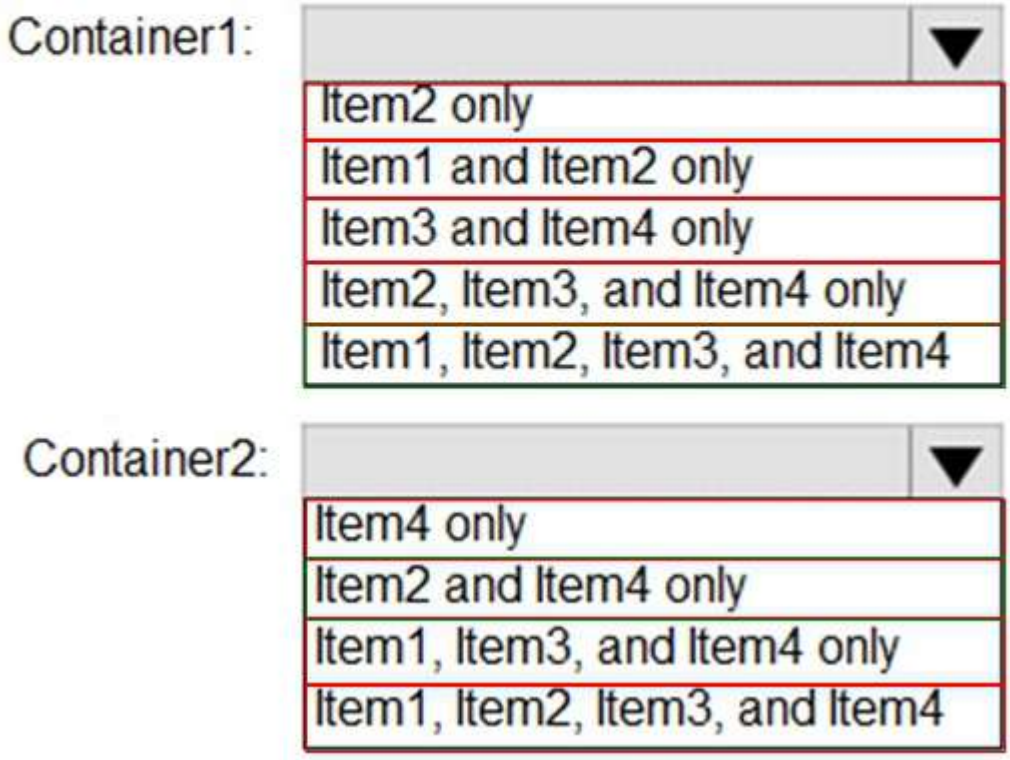
Solution:

Answer Area



Explanation/Reference

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Question 403

Note: This question is part of series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

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You have an Azure Cosmos DB database that contains a container named Container1. The partition key for Container1 is set to `/day`. Container1 contains the items shown in the following table.

Name	Content
Item1	{ "id": "1", "day": "Mon", "value" : "10" }
Item2	{ "id": "2", "day": "Mon", "value" : "15" }
Item3	{ "id": "3", "day": "Tue", "value" : "10" }
Item4	{ "id": "4", "day": "Wed", "value" : "15" }

You need to programmatically query Azure Cosmos DB and retrieve Item1 and Item2 only.

Solution: You run the following query.

```
SELECT id FROM c
  WHERE c.day = "Mon" OR c.day = "Tue"
```

You set the `EnableCrossPartitionQuery` property to `False`.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation/Reference

Explanation:
Returns Item1 only as EnableCrossPartitionQuery property to False. If EnableCrossPartitionQuery

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property is set to true, it will return Item1, Item2, and Item3.

Reference:
https://docs.microsoft.com/en-us/azure/cosmos-db/sql-query-where

https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.documents.client.feedoptions.enablecrosspartitionquery?view=azure-dotnet

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Question 404

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You have an Azure SQL database named DB1.

You plan to create the following four tables in DB1 by using the following code.

Table1.

```
CREATE TABLE Table1
(
    StudentId INT IDENTITY PRIMARY KEY,
    PersonId INT REFERENCES Table4 (PersonId),
    Email NVARCHAR(256)
)
```

Table2.

```
CREATE TABLE Table2
(
    StudentId INT REFERENCES Table1 (StudentId),
    CourseId INT REFERENCES Table3 (CourseId),
    Grade DECIMAL(5,2) CHECK (Grade <= 100.00),
    Attempt TINYINT
)
```

Table3.

```
CREATE TABLE Table3
(
    CourseId INT IDENTITY PRIMARY KEY,
    Name NVARCHAR(50) NOT NULL,
    Teacher NVARCHAR(256) NOT NULL
)
```

Table4.

```
CREATE TABLE Table4
(
    PersonId INT IDENTITY PRIMARY KEY,
    FirstName NVARCHAR(128) NOT NULL,
    MiddleInitial NVARCHAR(10),
    LastName NVARCHAR(128) NOT NULL,
    DateOfBirth DATE NOT NULL
)
```

You need to identify which table must be created last.

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

NOTE: Each correct selection is worth one point.

- ☐ Table1
- ☒ Table2
- ☐ Table3
- ☐ Table4

Explanation/Reference

Explanation:
Table1 references Table4. Therefore Table4 must be created before Table1.

Table2 references Table1 and Table3. Therefore Table1 and Table3 must be created before Table2.

Note: FOREIGN KEY REFERENCES is a constraint that provides referential integrity for the data in the column or columns. FOREIGN KEY constraints require that each value in the column exists in the corresponding referenced column or columns in the referenced table. FOREIGN KEY constraints can reference only columns that are PRIMARY KEY or UNIQUE constraints in the referenced table or columns referenced in a UNIQUE INDEX on the referenced table.

Incorrect Answers:
A: Table1 is referenced by Table2 and should be crated before Table2.
C: Table3 is referenced by Table2 and should be crated before Table2.
D: Table4 is referenced by Table1 and should be crated before Table1.

Reference:
https://docs.microsoft.com/en-us/sql/t-sql/statements/create-table-transact-sql?view=sql-server-ver15

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Question 405

You have an Azure subscription that contains the resource groups shown in the following table.

Name	Region
RG1	West US
RG2	West US
RG3	East US

You have the Azure SQL servers shown in the following table.

Name	Region	In resource group
Sql1	West US	RG1
Sql2	East US	RG2
Sql3	West US	RG3
Sql4	West US	RG1

You create an Azure SQL database named DB1 on Sql1 in an elastic pool named Poo11.

You need to create an Azure SQL database named DB2 in Poo11.

Where should you deploy DB2?

- ☒ Sql1
- ☐ Sql2
- ☐ Sql3
- ☐ Sql4

Explanation/Reference

Explanation:
The databases in an elastic pool are on a single Azure SQL Database server and share a set number of resources at a set price.

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

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Question 406

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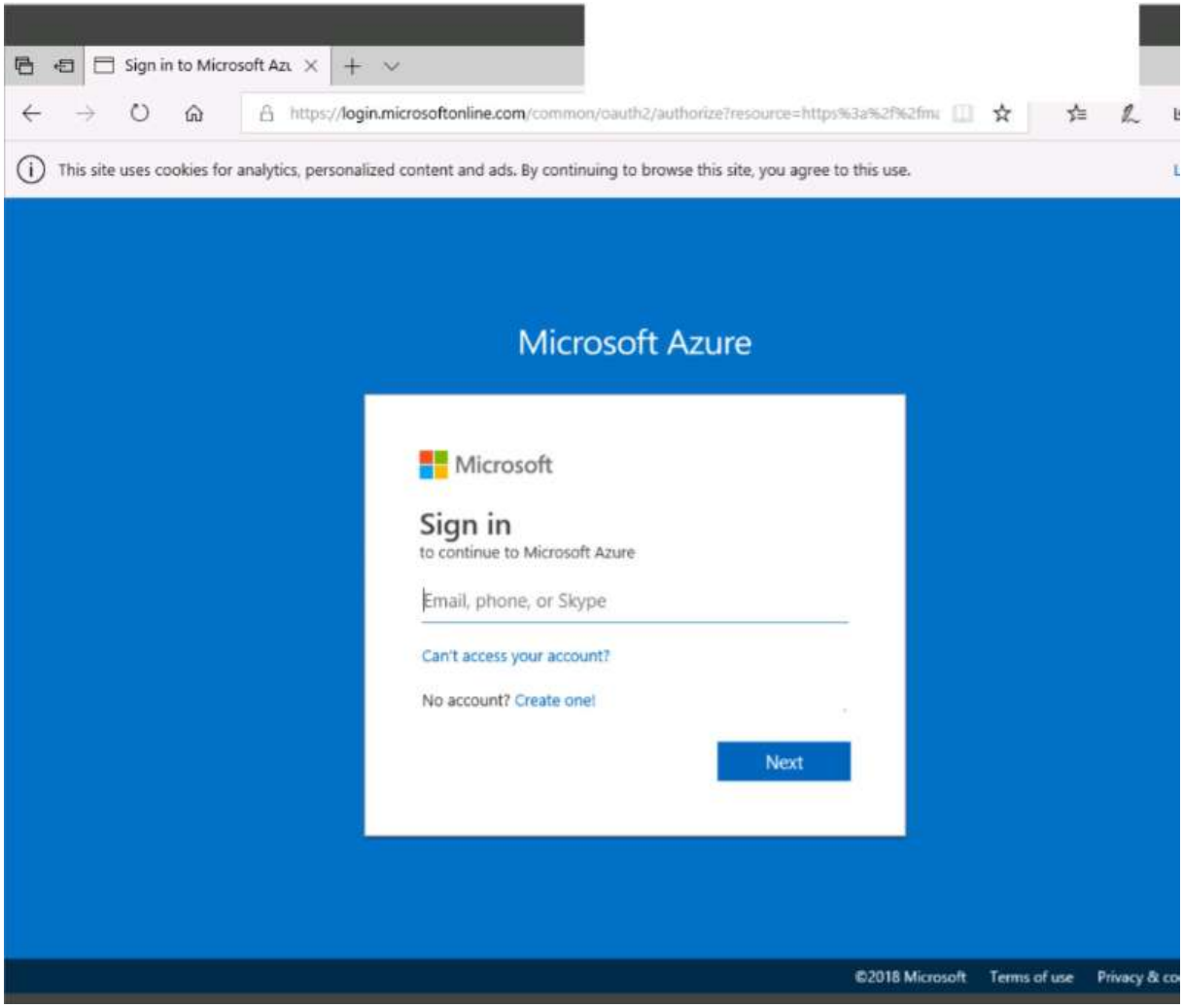
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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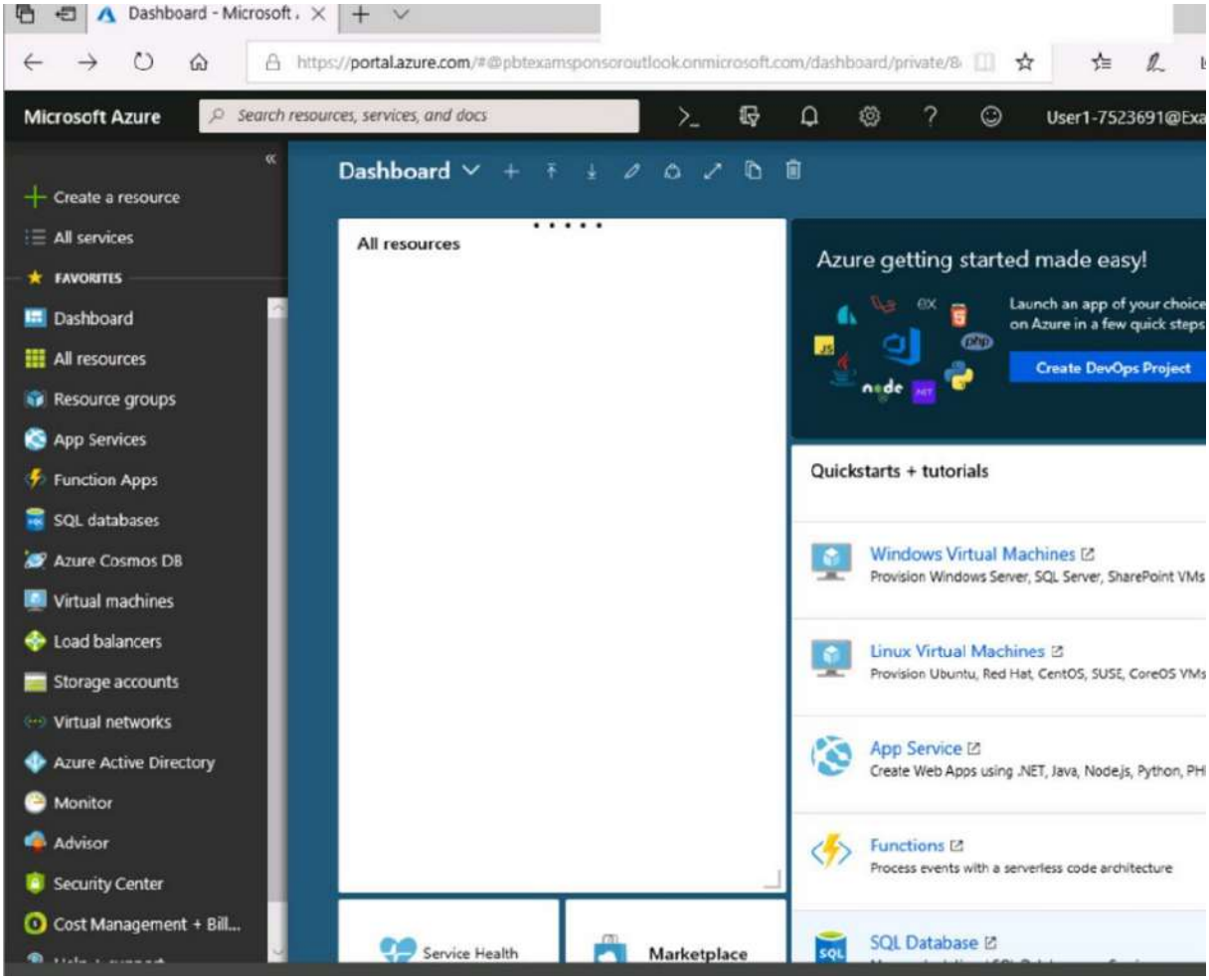

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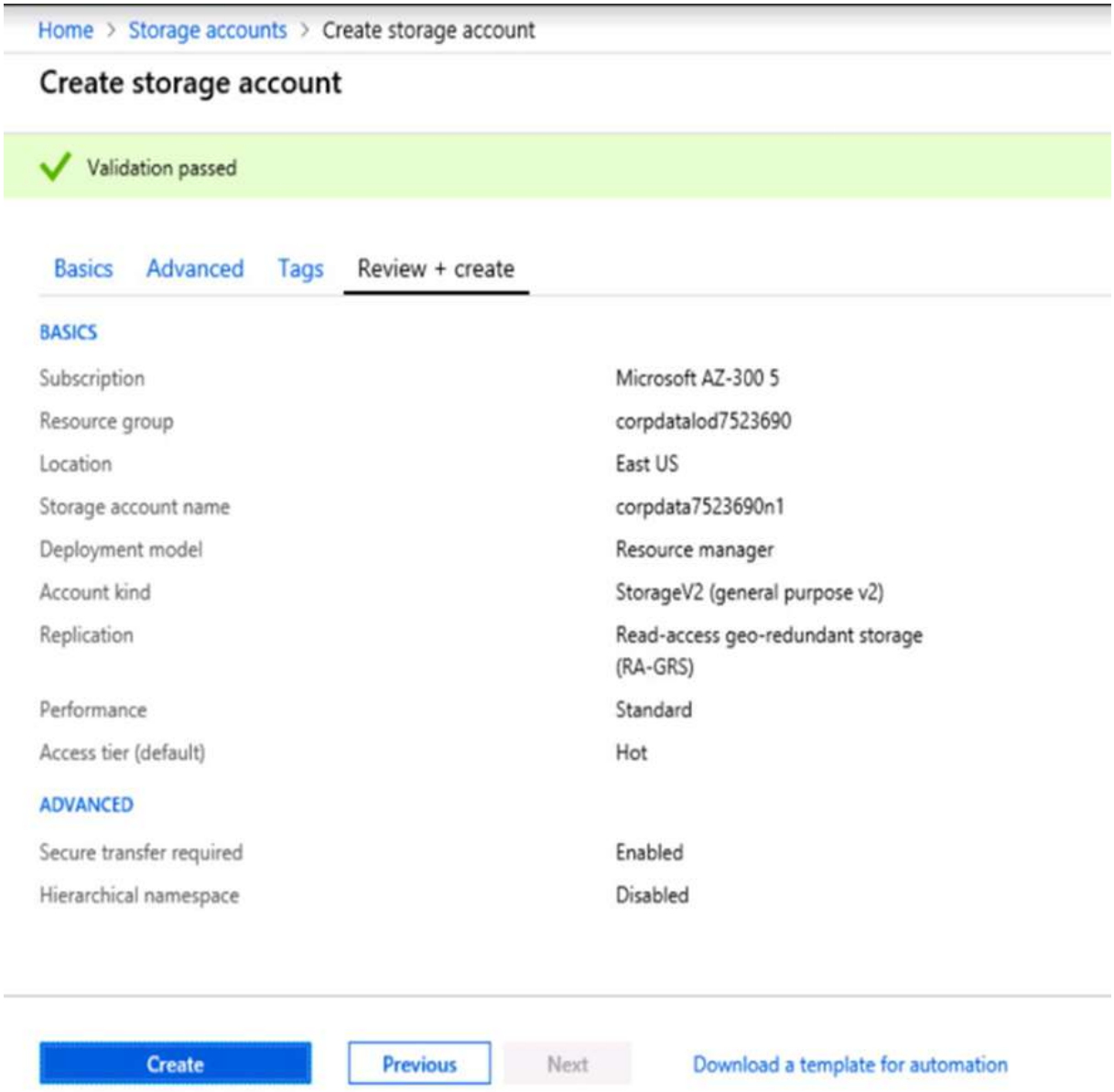

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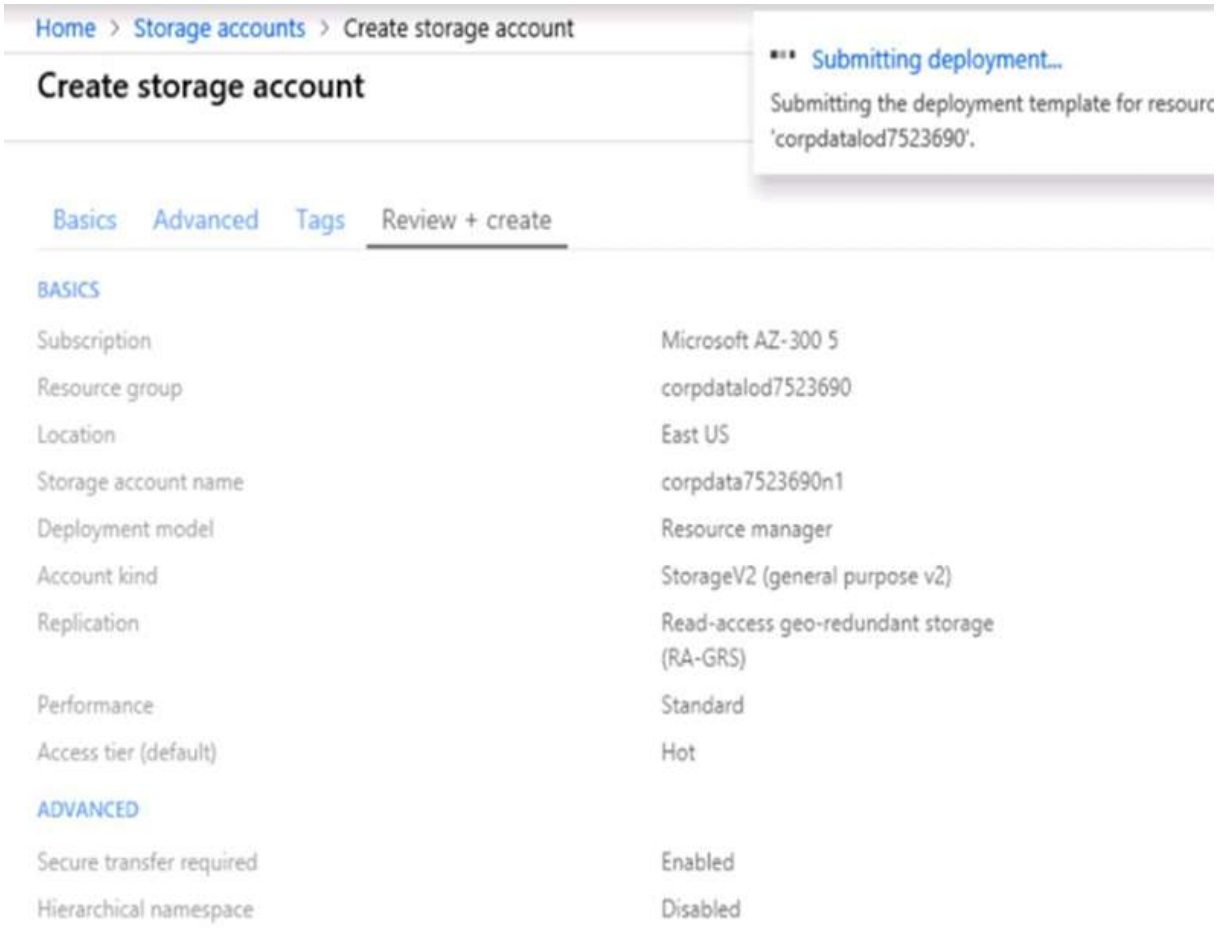

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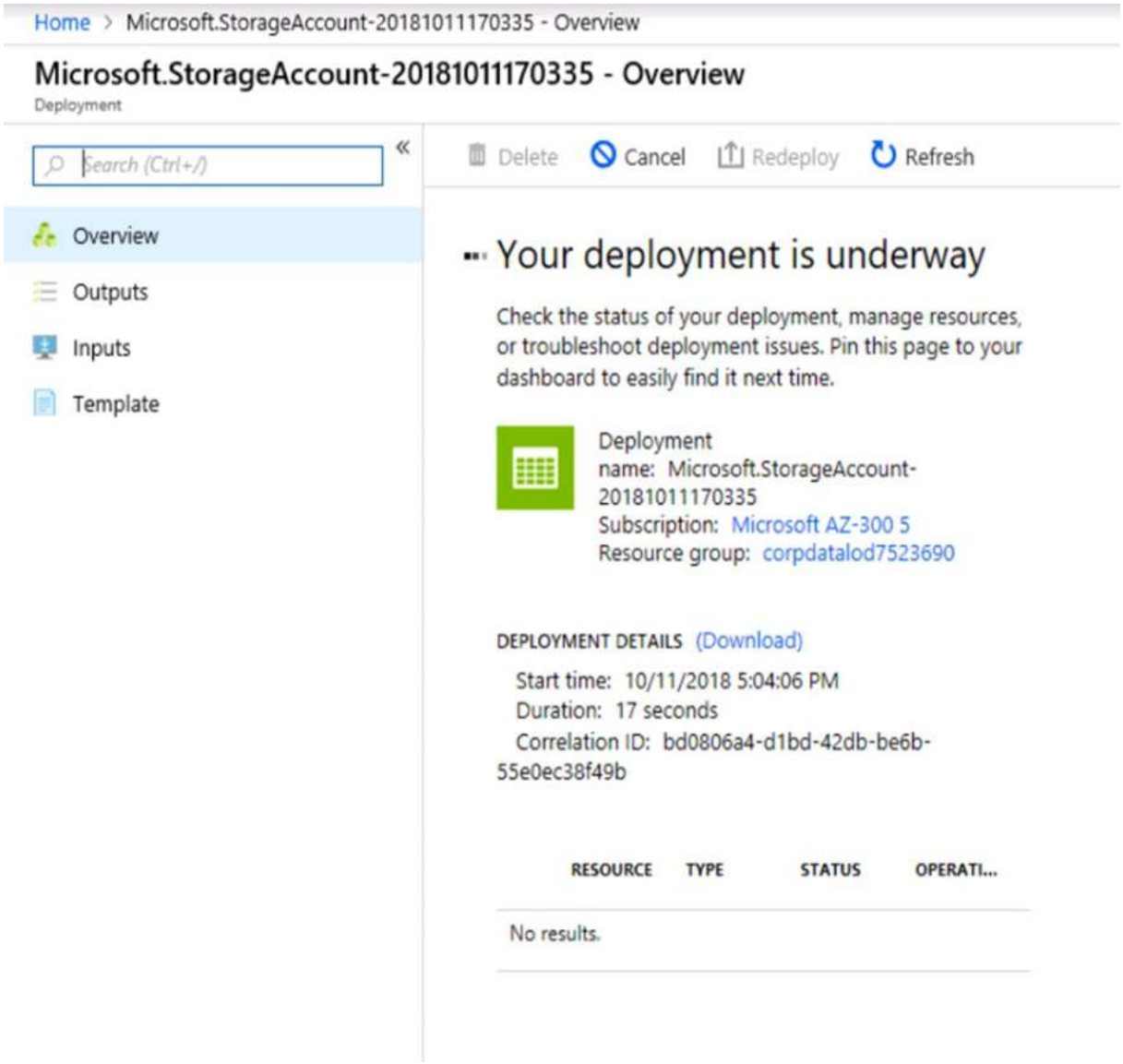

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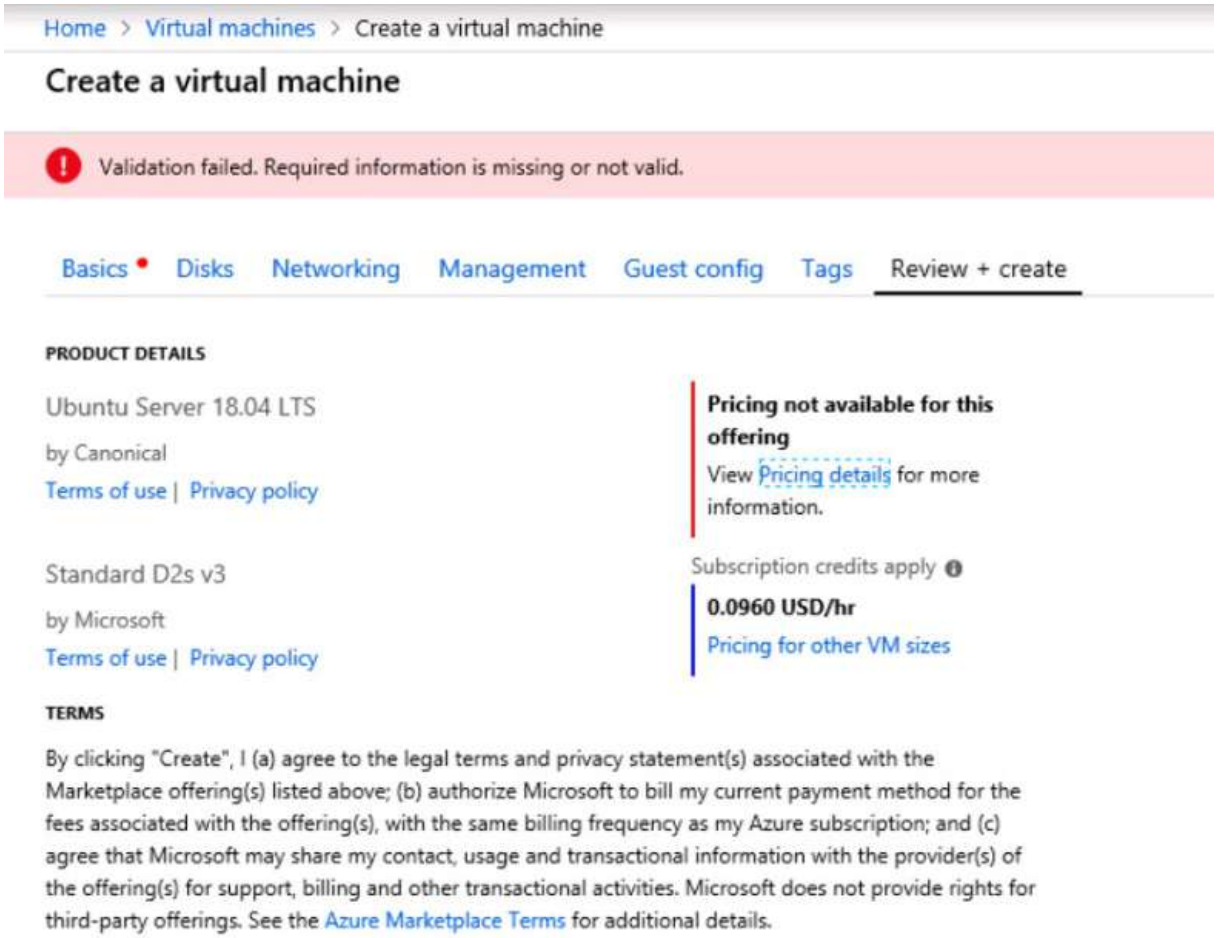

When you are finished performing all the tasks, click the 'Next' button.

Note that you cannot return to the lab once you click the 'Next' button. Scoring occur in the background while you complete the rest of the exam.

Overview
The following section of the exam is a lab. In this section, you will perform a set of tasks in a live environment. While most functionality will be available to you as it would be in a live environment, some functionality (e.g., copy and paste, ability to navigate to external websites) will not be possible by design.

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Please note that once you submit your work by clicking the Next button within a lab, you will NOT be able to return to the lab.

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To start the lab
You may start the lab by clicking the Next button.

You need to create a function app named corp10217507n1 that supports sticky sessions. The solution must minimize the Azure-related costs of the App Service plan.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Select the New button found on the upper left-hand corner of the Azure portal, then select Compute > Function App.

Step 2:
Use the function app settings as listed below.
App name: corp10217507n1
Hosting plan: Azure App Service plan (required for sticky sessions)
Pricing tier of the App Service plan: Shared compute: Free

Step 3:
Select Create to provision and deploy the function app.

References:
https://docs.microsoft.com/en-us/azure/azure-functions/functions-create-function-app-portal

Question 407

HOTSPOT

You have an Azure web app named App1 that contains the following autoscale conditions: The default auto created scale condition has a scale mode that has Scale to a specific instance count set to 2.

Scale condition 1 has the following configurations:

- Scale mode: Scale to a specific instance count
- Instance count: 3
- Schedule: Specify start/end dates
- Start date: August 1, 2019, 06:00
- End date: September 1, 2019, 18:00

Scale condition 2 has the following configurations:

- Scale mode: Scale to a specific instance count

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- Instance count: 4
- Schedule: Repeat specific days
- Repeat every: Monday
- Start time: 06:00
- End time: 18:00

Scale condition 3 has the following configurations:

- Scale mode: Scale to a specific instance count
- Instance count: 5
- Schedule: Repeat specific days
- Repeat every: Monday
- Start time: 15:00
- End time: 20:00

You need to identify the number of running App1 instances.

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

Answer Area

Number of App1 instances that run on Monday, August 5, 2019, at 17:00: [▼]
2
3
4
5

Number of App1 instances that run on Monday, August 3, 2020, at 16:00: [▼]
2
3
4
5

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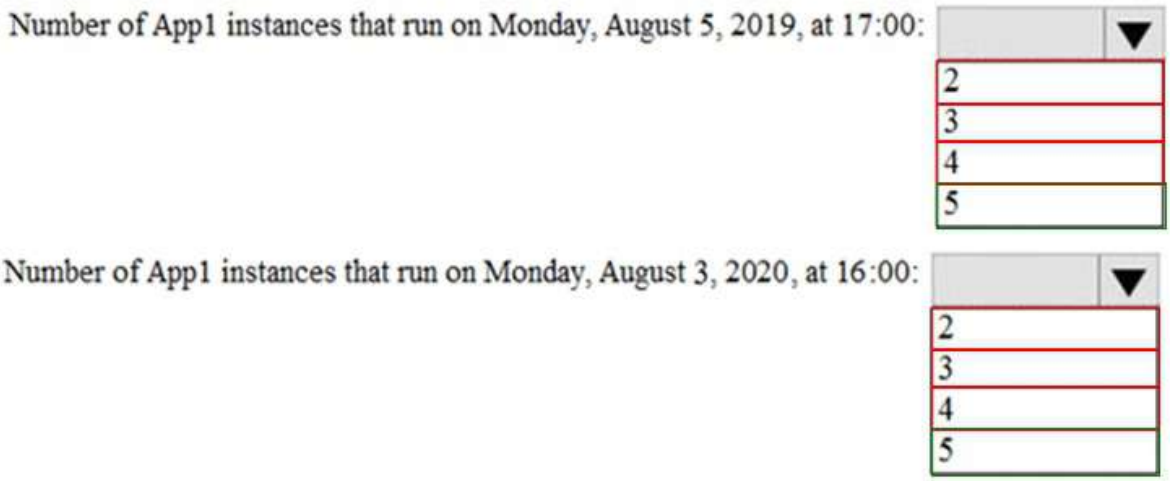
Solution:

Answer Area



Explanation/Reference

Explanation:

Box 1: 5
Scale condition 1, Scale condition 2, and Scale condition 3 applies.
Scale condition 3 takes precedence as it the largest increase in the number of instances.

Box 2: 5
Scale condition 1 does not apply as its end date is exceeded.
Scale condition 2 and Scale condition 3 applies.
Scale condition 3 takes precedence as it the largest increase in the number of instances.

When you configure multiple policies and rules, they could conflict with each other. Autoscale uses the following conflict resolution rules to ensure that there is always a sufficient number of instances running:

- Scale-out operations always take precedence over scale-in operations.
- When scale-out operations conflict, the rule that initiates the largest increase in the number of instances takes precedence.
- When scale in operations conflict, the rule that initiates the smallest decrease in the number of instances takes precedence.

References:
https://docs.microsoft.com/en-us/azure/architecture/best-practices/auto-scaling

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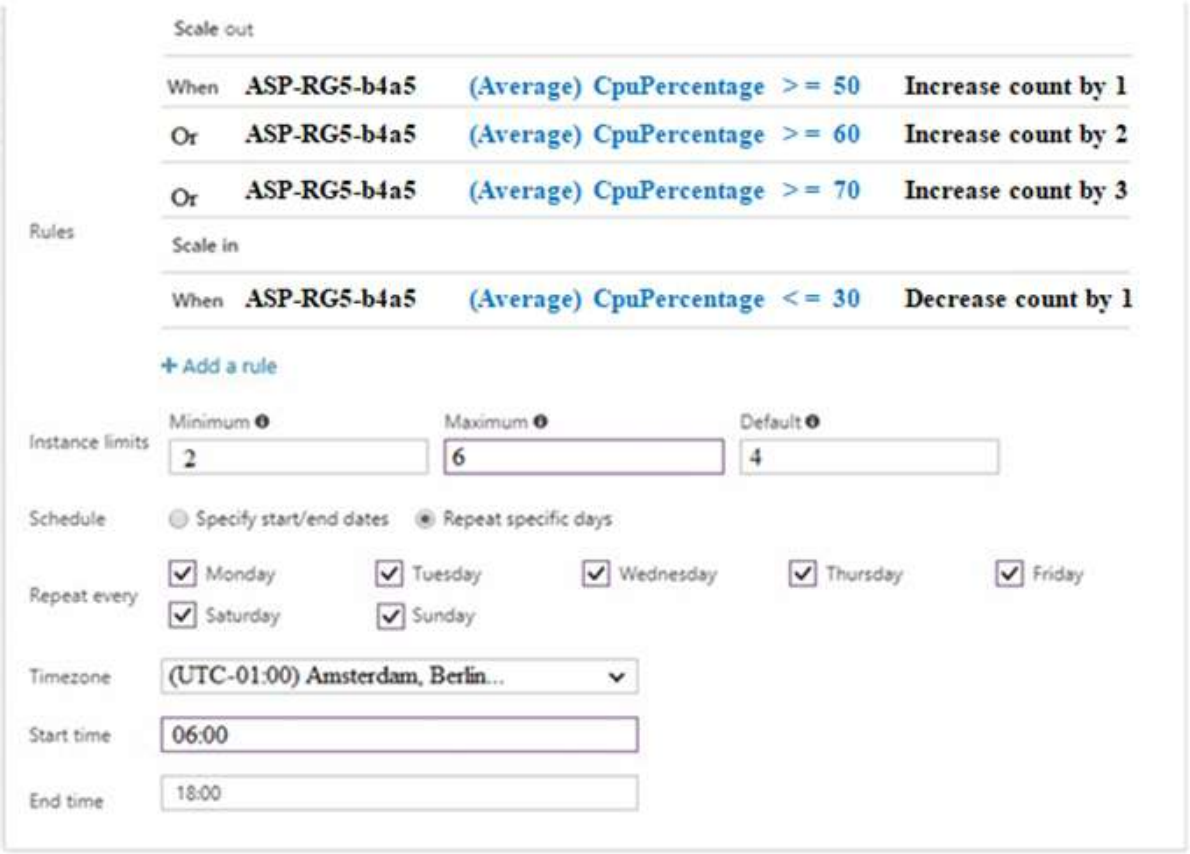
Question 408

HOTSPOT

You have an Azure web app named App1 that contains the following autoscale conditions:



Every autoscale condition rule is configured to have a duration of 20 minutes and a cool down time of 10 minutes.

At 06:00, WebApp1 is running four instances.

You need to identify how many instances are running on WebApp1 based on the percentage of the CPU utilization.

How many instances should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Answer Area

If the WebApp1 CPU utilization is 10 percent at 06:00, at 06:25 WebApp1 will have:

- 4 instances
- 3 instances
- 2 instances
- 1 instance

If the WebApp1 CPU utilization is 70 percent at 06:00, at 06:25 WebApp1 will have:

- 4 instances
- 5 instances
- 6 instances
- 7 instances

Solution:

Answer Area

If the WebApp1 CPU utilization is 10 percent at 06:00, at 06:25 WebApp1 will have:

- 4 instances
- 3 instances
- 2 instances
- 1 instance

If the WebApp1 CPU utilization is 70 percent at 06:00, at 06:25 WebApp1 will have:

- 4 instances
- 5 instances
- 6 instances
- 7 instances

Explanation/Reference

Explanation:

Box 1: 3
At 6:00 the default 4 instances are running. The CPU utilization averages 10% for 25 minutes. The

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scale in rules states that 1 instance should be removed when CPU utilization averages 30% or less over a 20 minute period.

Box 2: 6
At 6:00 the default 4 instances are running. The CPU utilization averages 70% for 25 minutes. The scale out rules states that 3 instances should be added when CPU utilization averages 70% or more over a 20 minute period. However, the maximum number of instances is set at 6.

References:
https://docs.microsoft.com/en-us/azure/architecture/best-practices/auto-scaling

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-understanding-settings

Question 409

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

Name	Description
blob1	Blob container in an Azure Storage account
share1	File share in an Azure Storage account
Queue1	Queue in an Azure Storage account
Table1	Table in an Azure Storage account
Vault1	Recovery Services Vault
Database1	Azure SQL database
Datalake1	Azure Data Lake Storage Gen 2 account
Workspace1	Azure Log Analytics workspace

You plan to create an Azure event hub.

You need to retain the messages sent to the event hub for 30 days.

Which location should you use for storage?

- ☒ Datalake1
- ☐ Table1
- ☐ Queue1
- ☐ Workspace1

Explanation/Reference

Explanation:
Azure Event Hubs enables you to automatically capture the streaming data in Event Hubs in an Azure Blob storage or Azure Data Lake Storage Gen 1 or Gen 2 account of your choice

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

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Question 410

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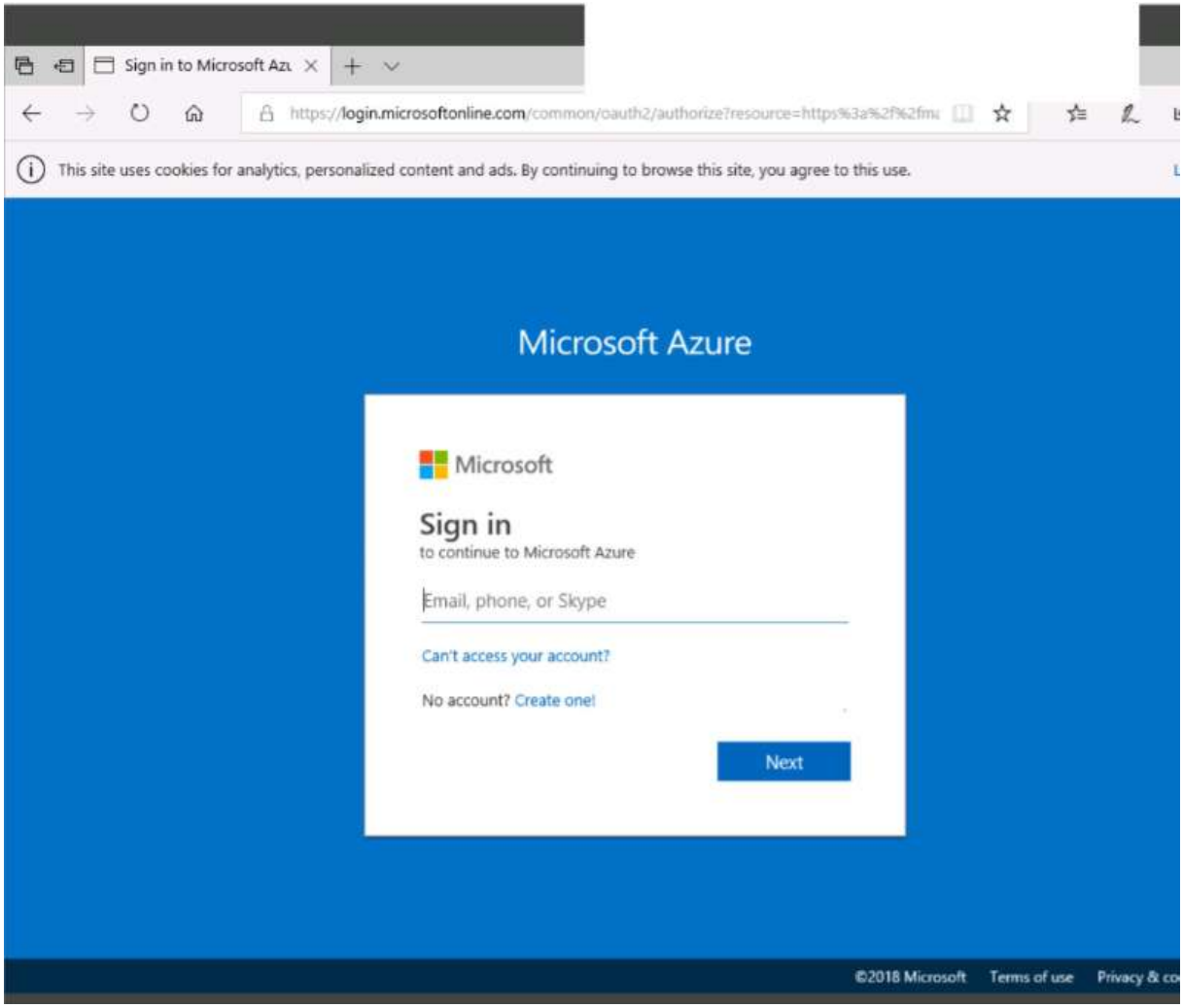
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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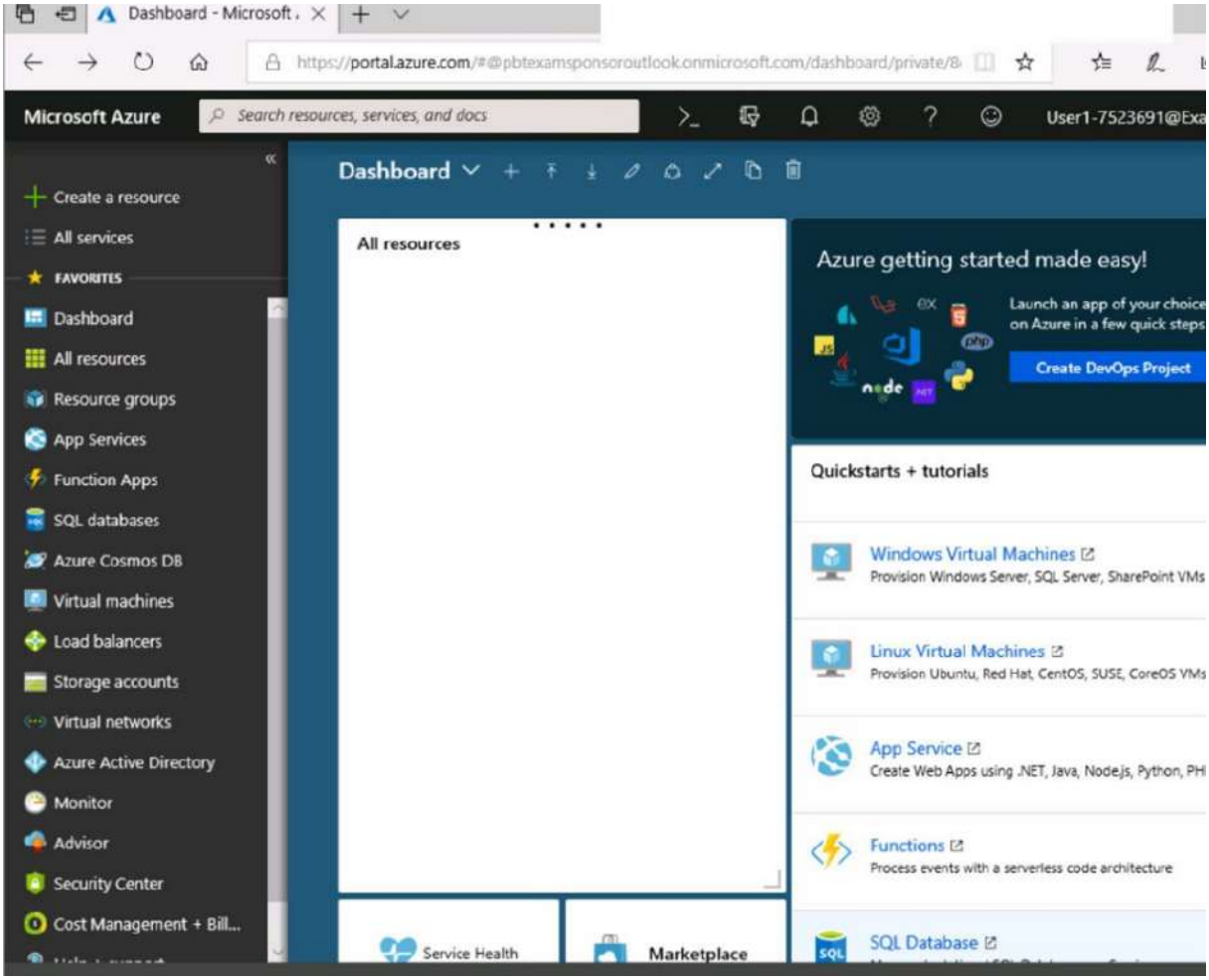

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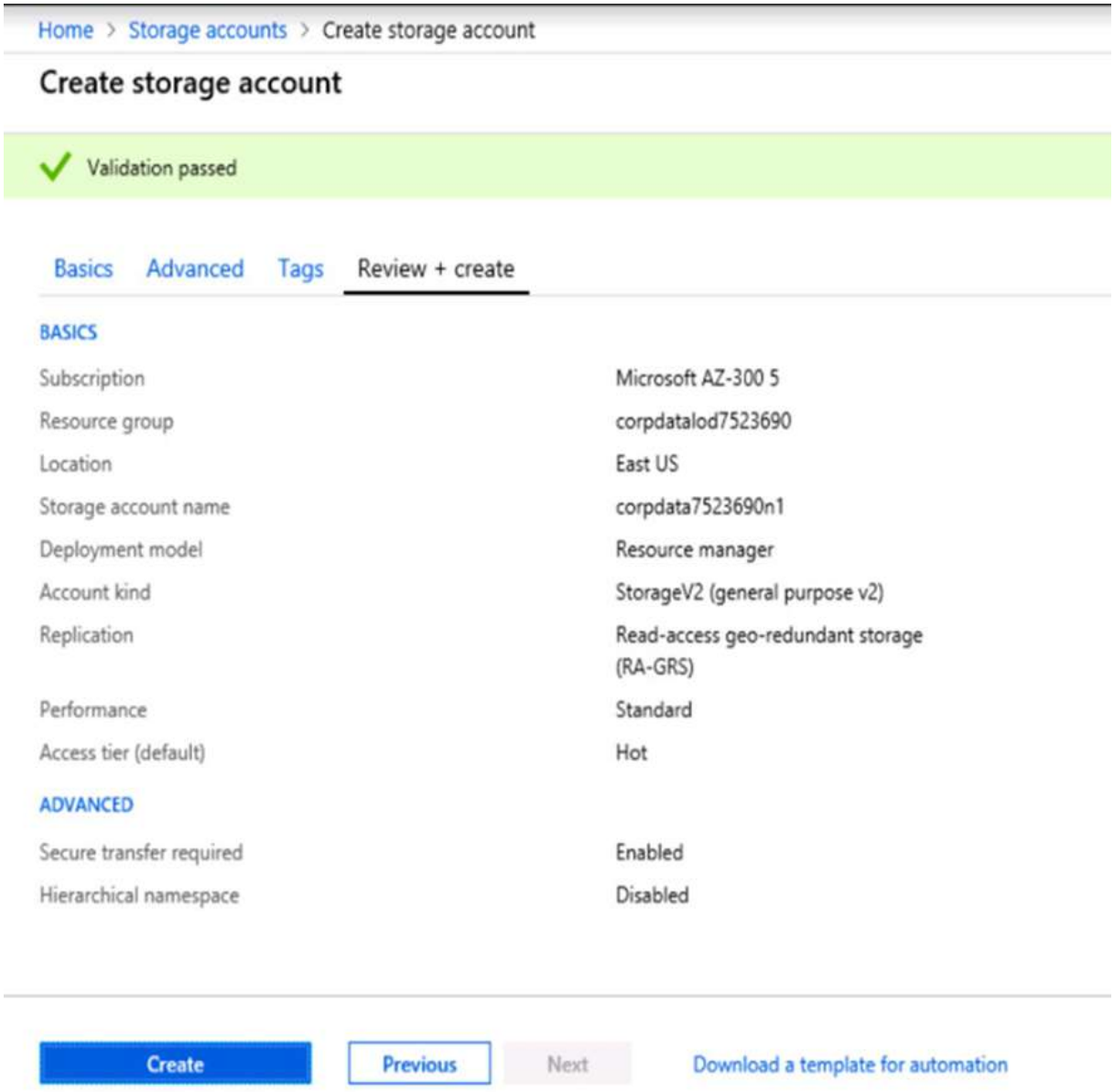

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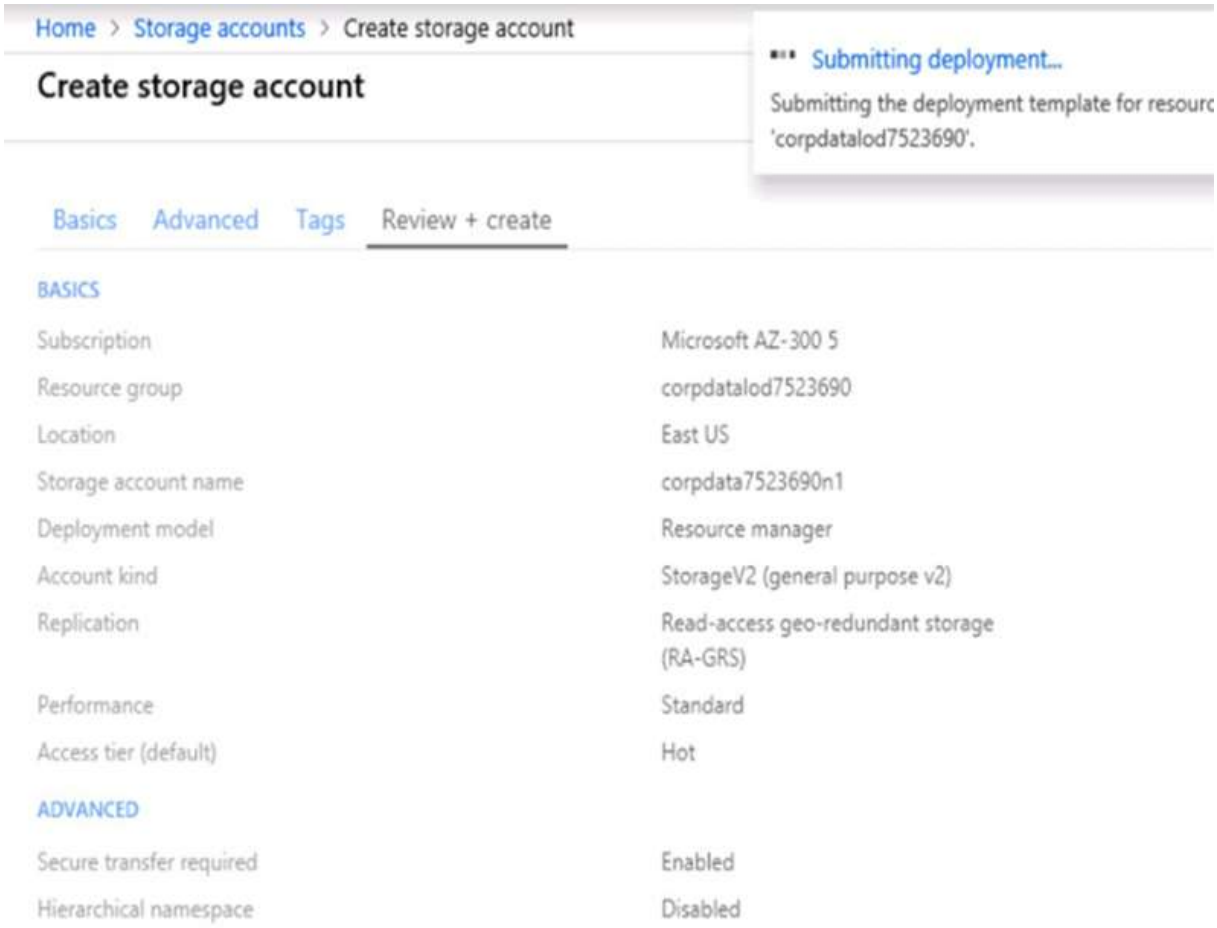

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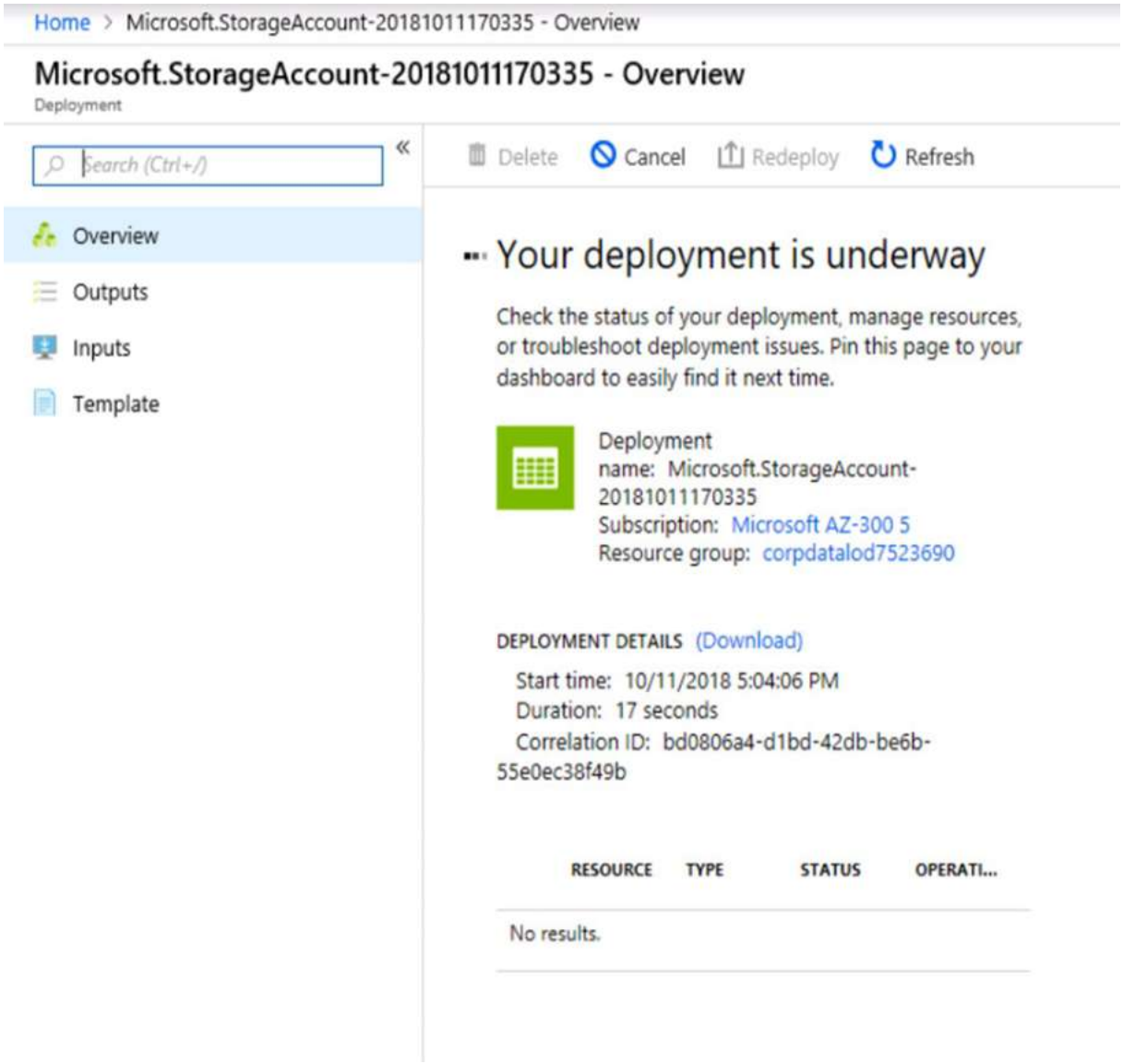

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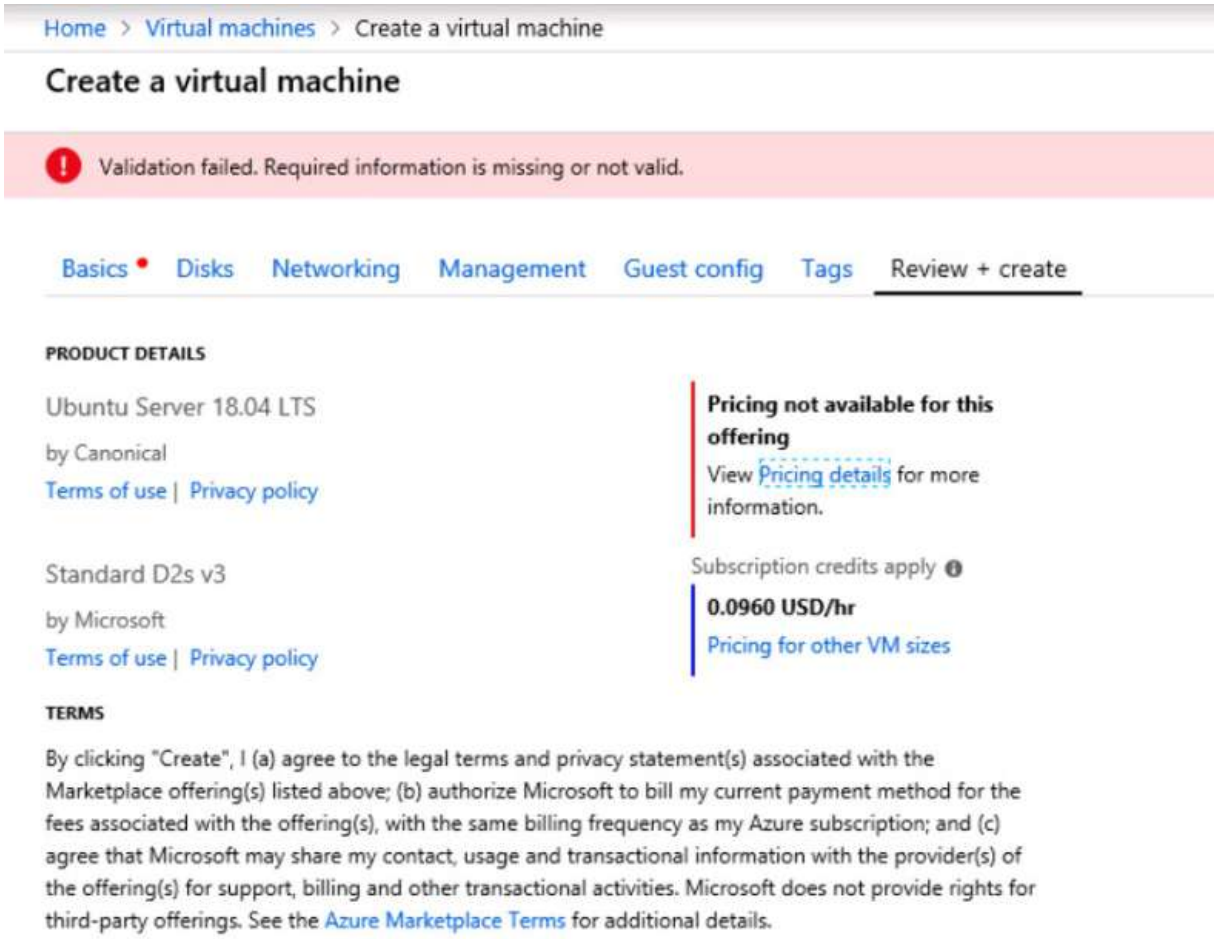

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To start the lab
You may start the lab by clicking the Next button.

You need to create a web app named corp10217507n2 that can be scaled horizontally. The solution must use the lowest possible pricing tier for the App Service plan.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
In the Azure Portal, click Create a resource > Web + Mobile > Web App.

Step 2:
Use the Webb app settings as listed below.
Web App name: corp10217507n2
Hosting plan: Azure App Service plan
Pricing tier of the Pricing Tier: Standard
Change your hosting plan to Standard, you can't setup auto-scaling below standard tier.

Step 3:
Select Create to provision and deploy the Web app.

References:
https://docs.microsoft.com/en-us/azure/app-service/environment/app-service-web-how-to-create-a-web-app-in-an-ase

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

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Question 411

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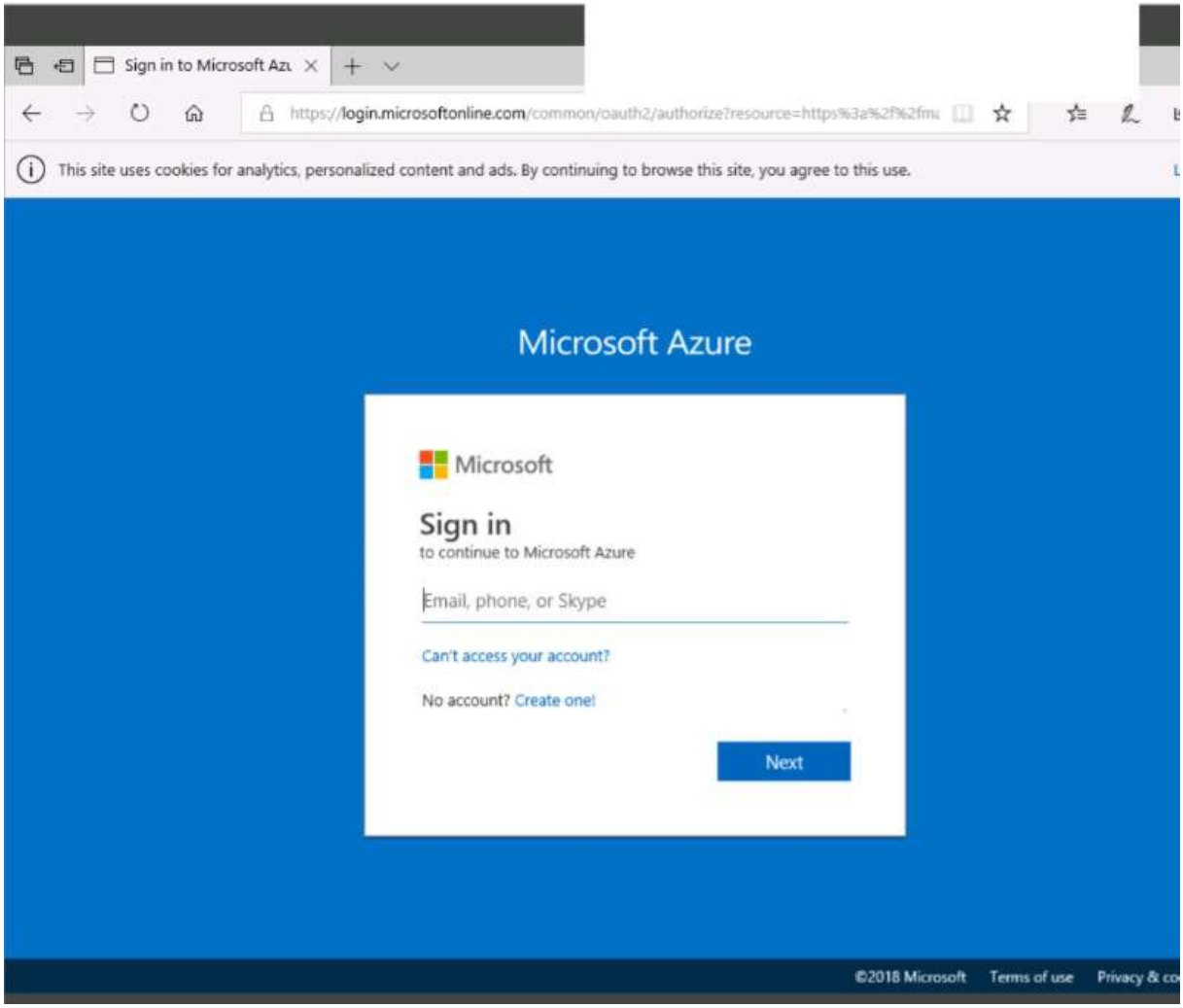
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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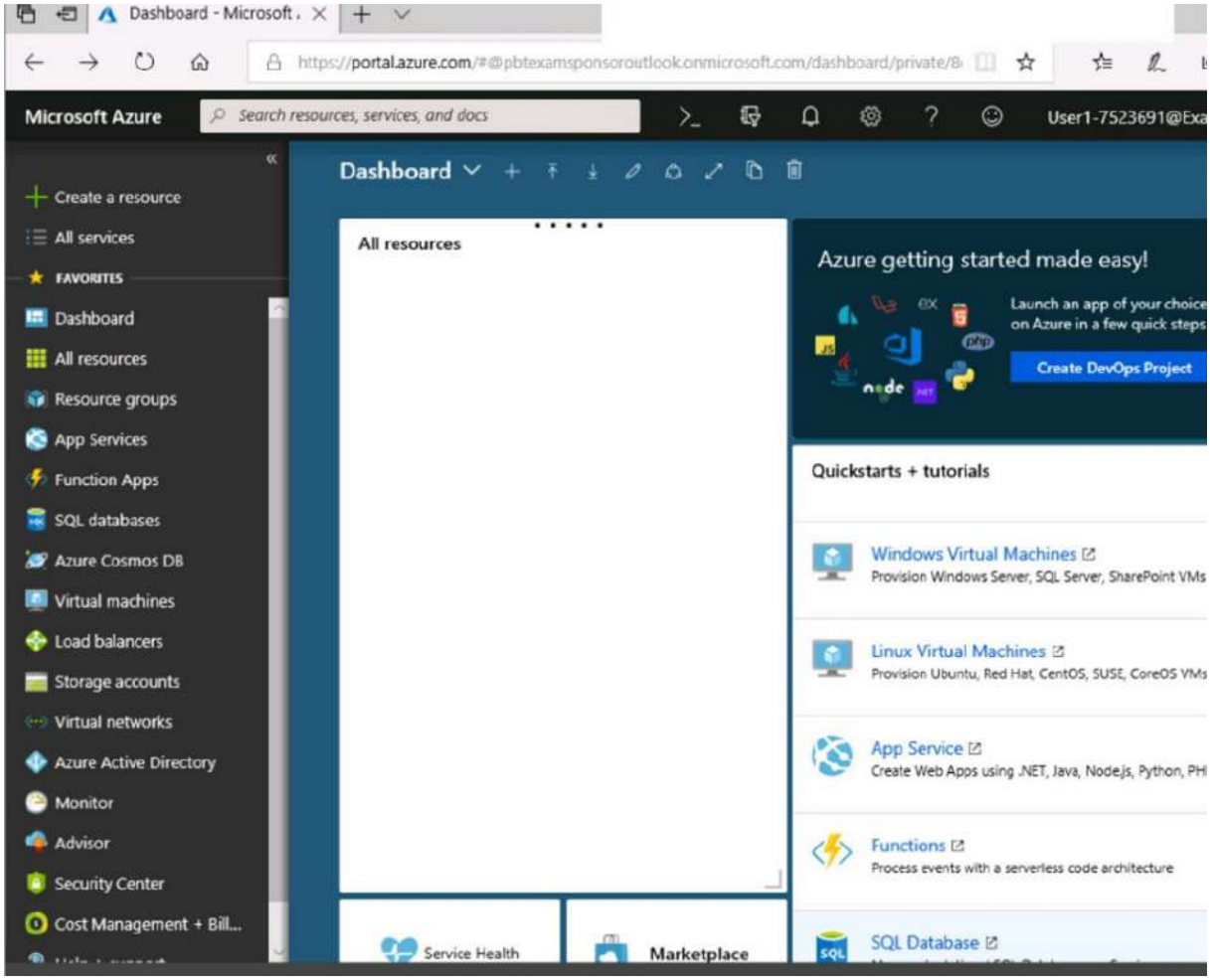

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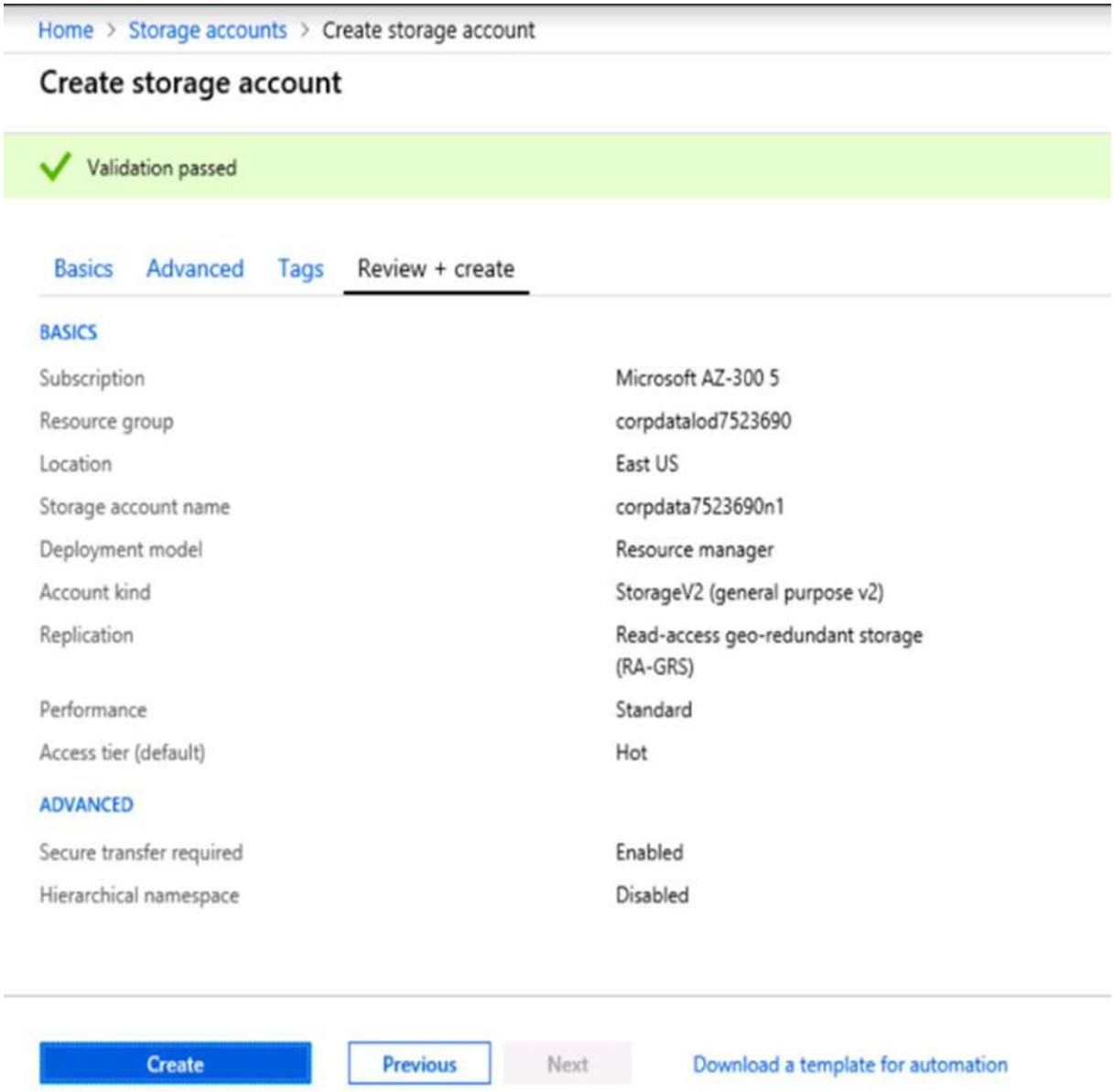

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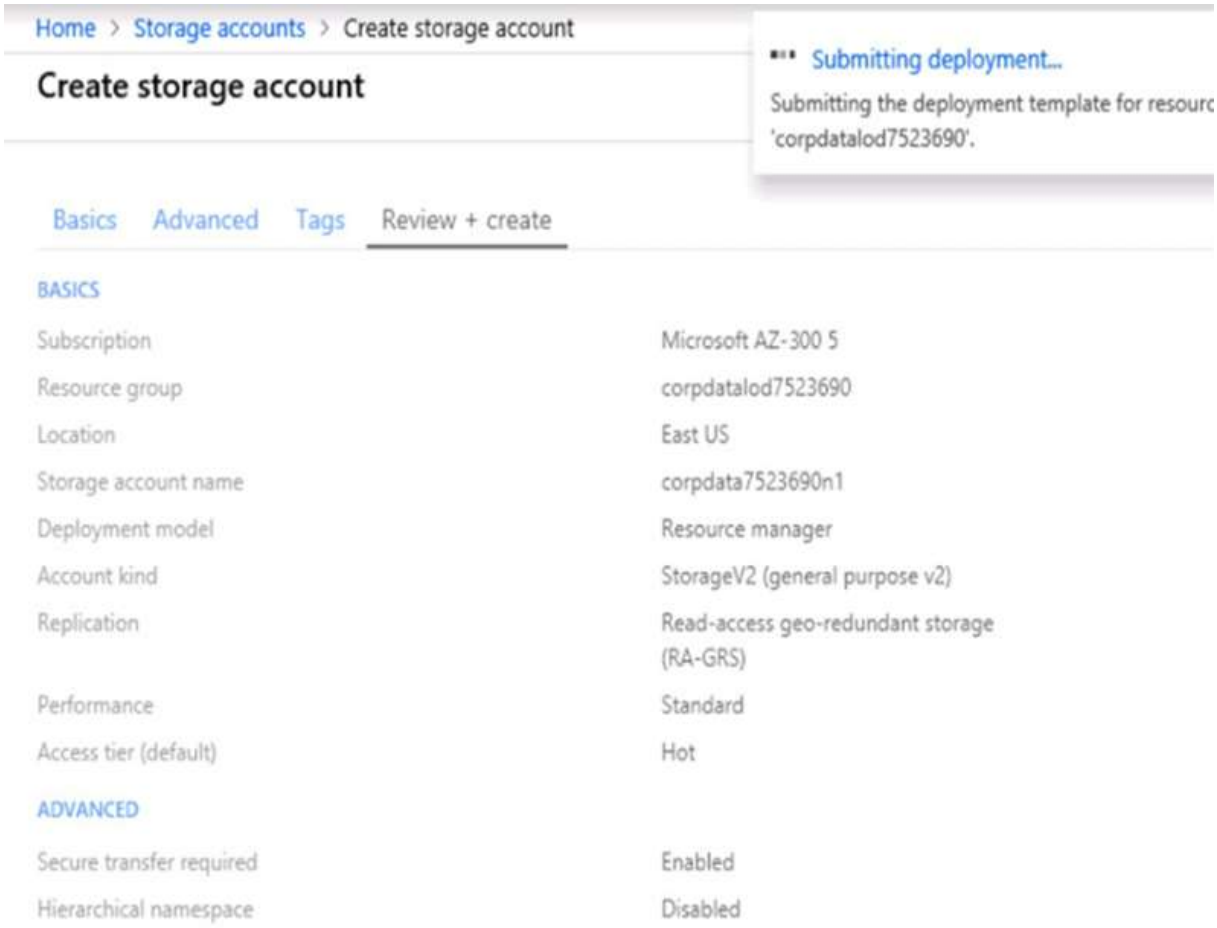

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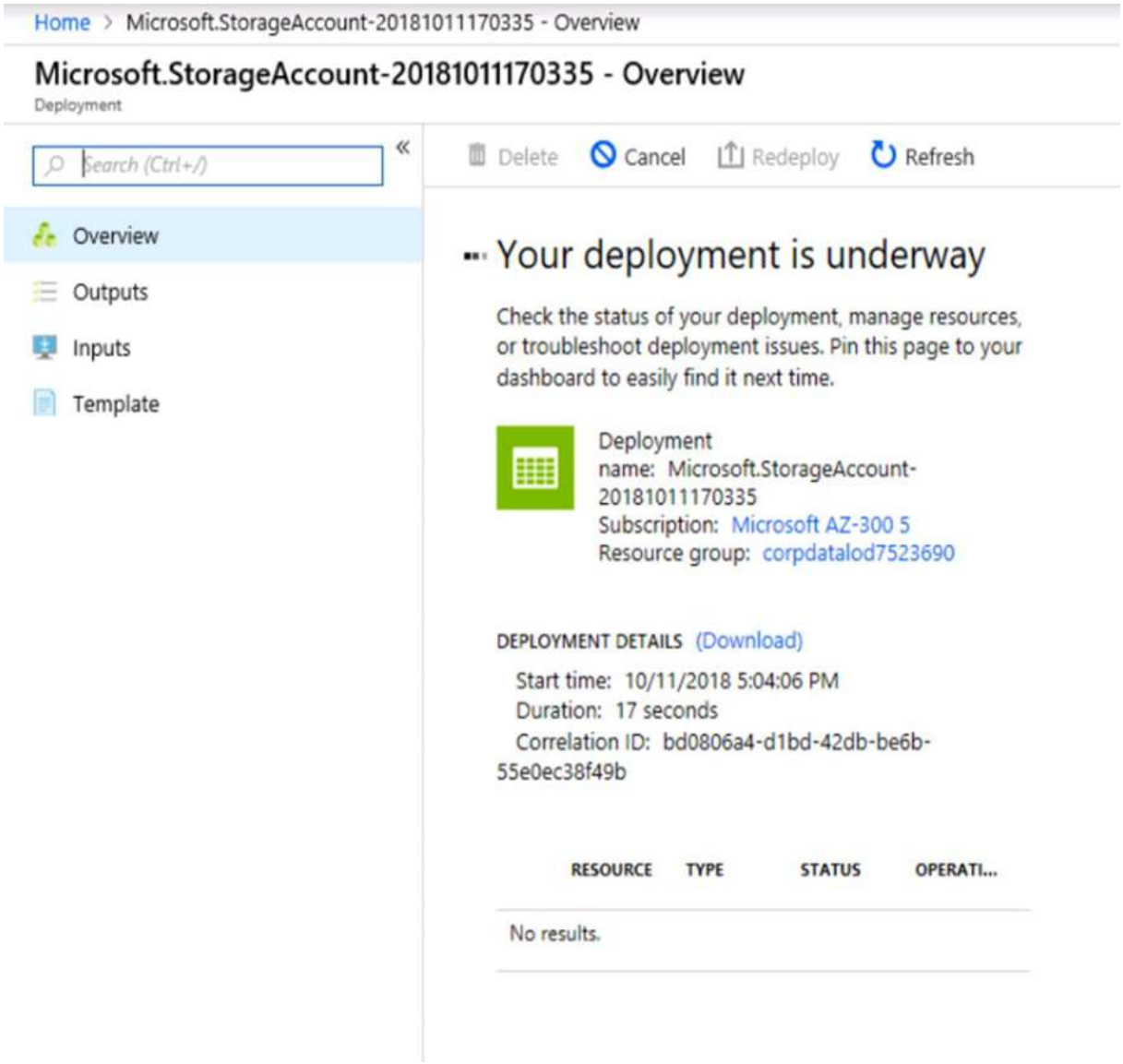

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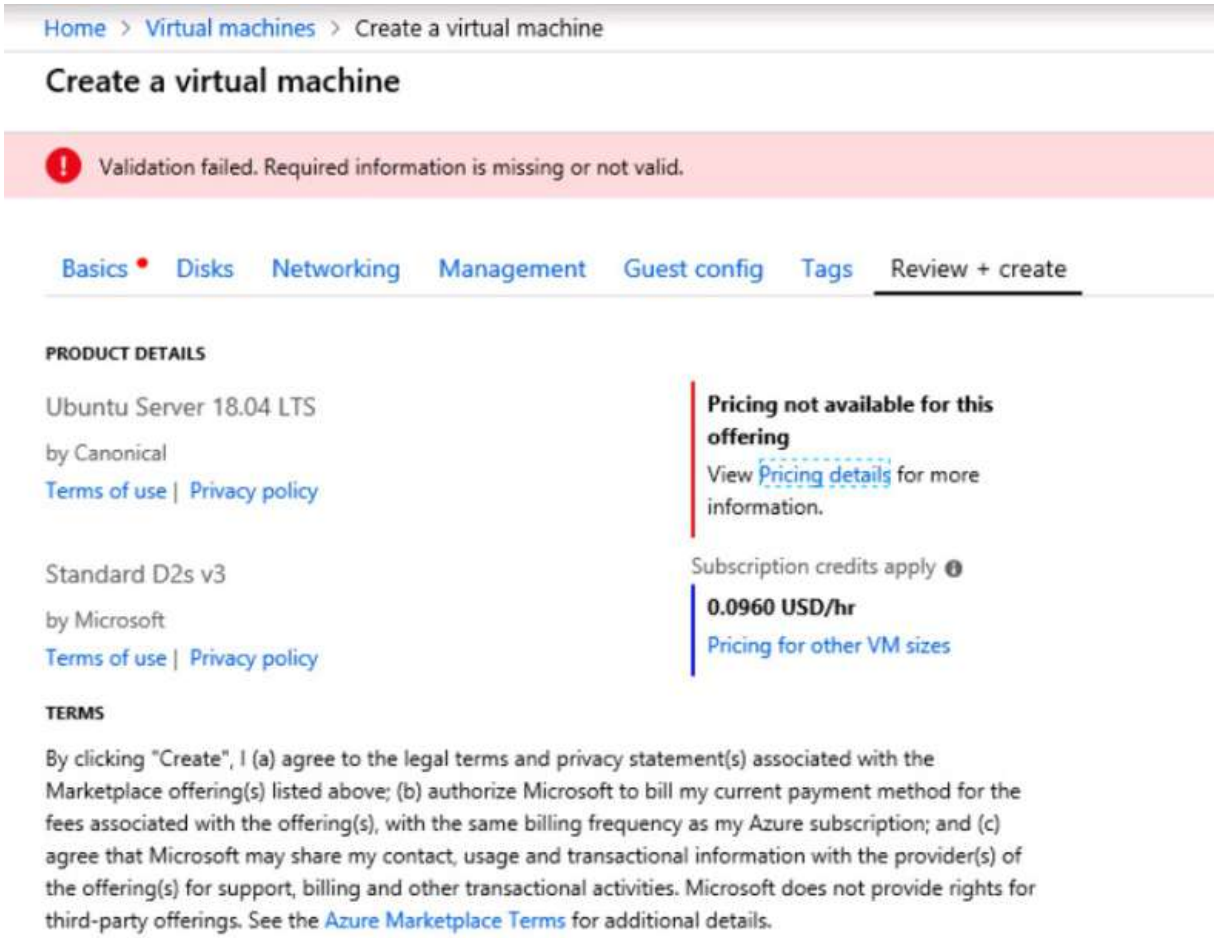

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Overview
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To start the lab
You may start the lab by clicking the Next button.

You need to deploy an application gateway named appgw1015 to meet the following requirements:

- Load balance internal IP traffic to the Azure virtual machines connected to subnet0.
- Provide a Service Level Agreement (SLA) of 99,99 percent availability for the Azure virtual machines.

What should you do from the Azure portal?

Explanation/Reference

Explanation:
Step 1:
Click New found on the upper left-hand corner of the Azure portal.

Step 2:
Select Networking and then select Application Gateway in the Featured list.

Step 3:
Enter these values for the application gateway:
appgw1015 - for the name of the application gateway.
SKU Size: Standard_V2

The new SKU [Standard_V2] offers autoscaling and other critical performance enhancements.

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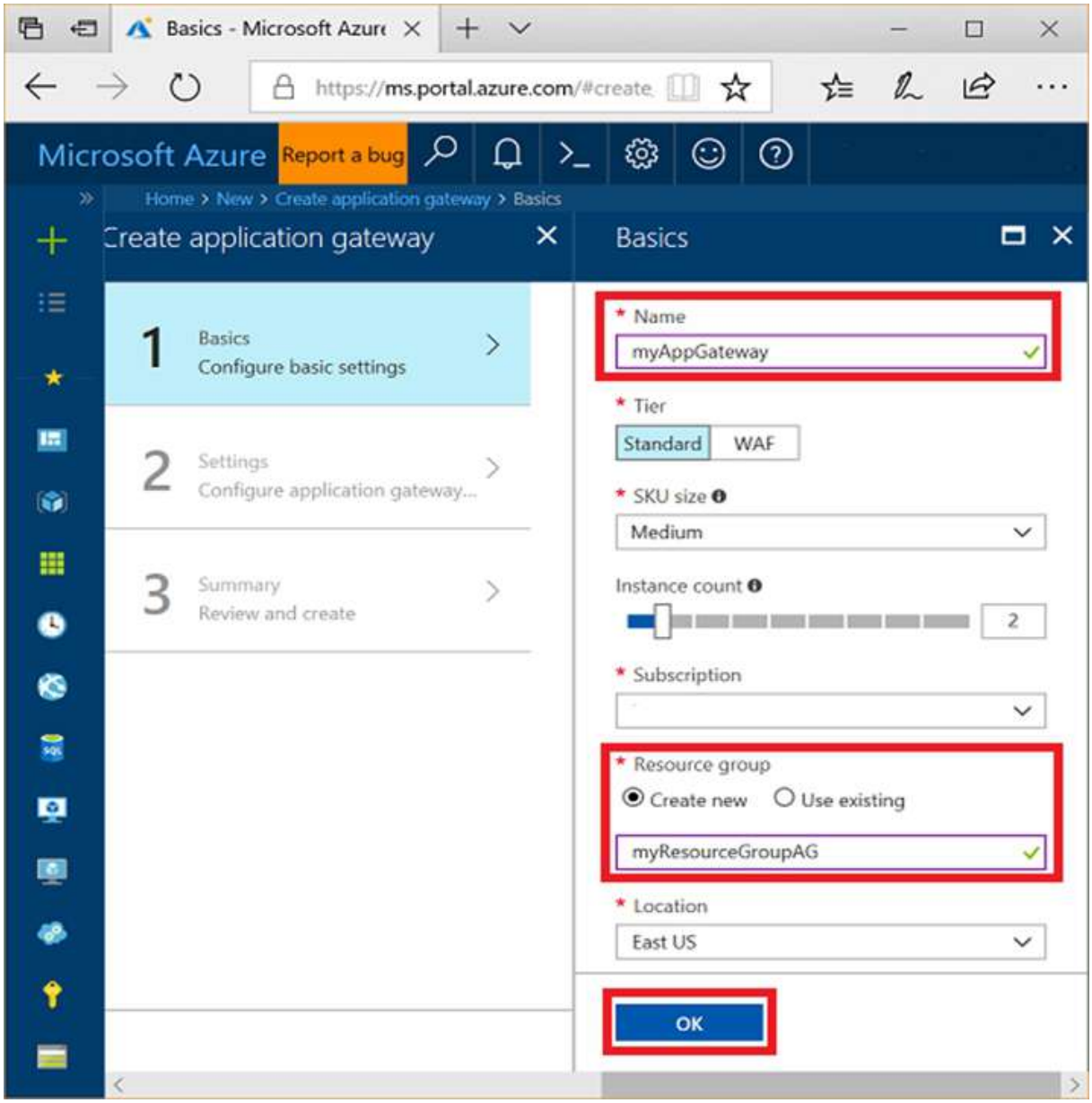

Step 4:
Accept the default values for the other settings and then click OK.

Step 5:
Click Choose a virtual network, and select subnet0.

References:
https://docs.microsoft.com/en-us/azure/application-gateway/application-gateway-create-gateway-portal

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Question 412

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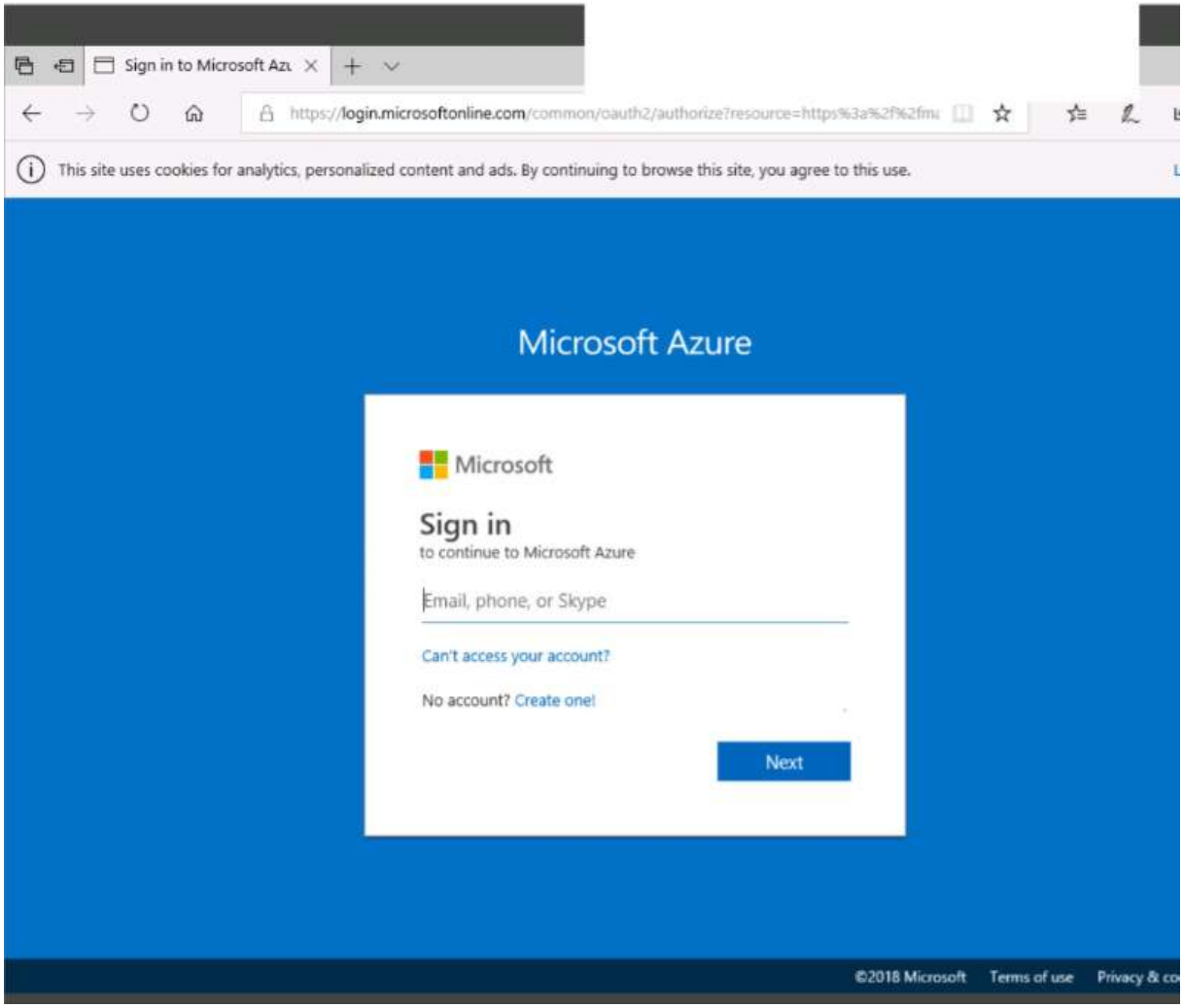
SIMULATION

Click to expand each objective. To connect to the Azure portal, type https://portal.azure.com in the browser address bar.



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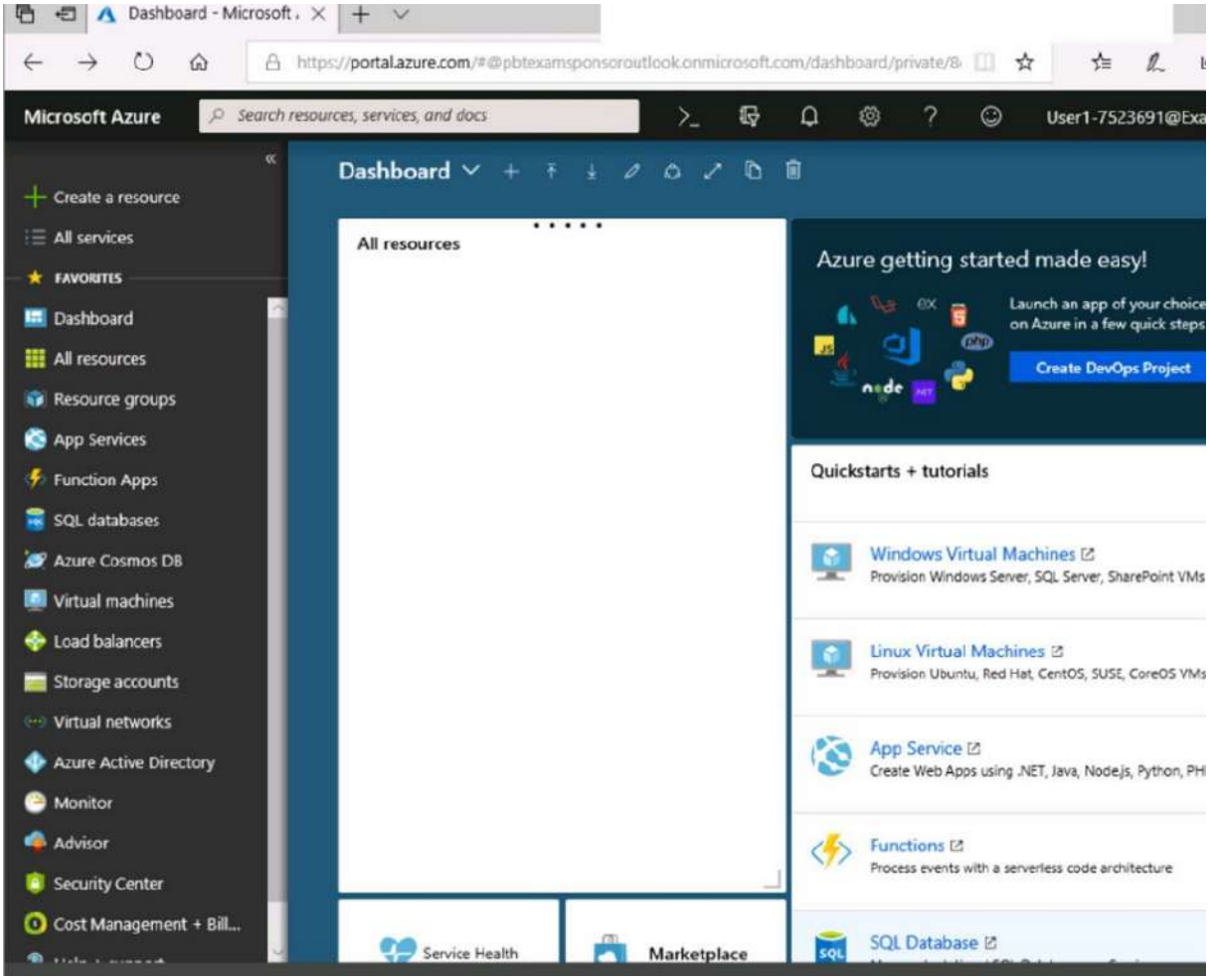

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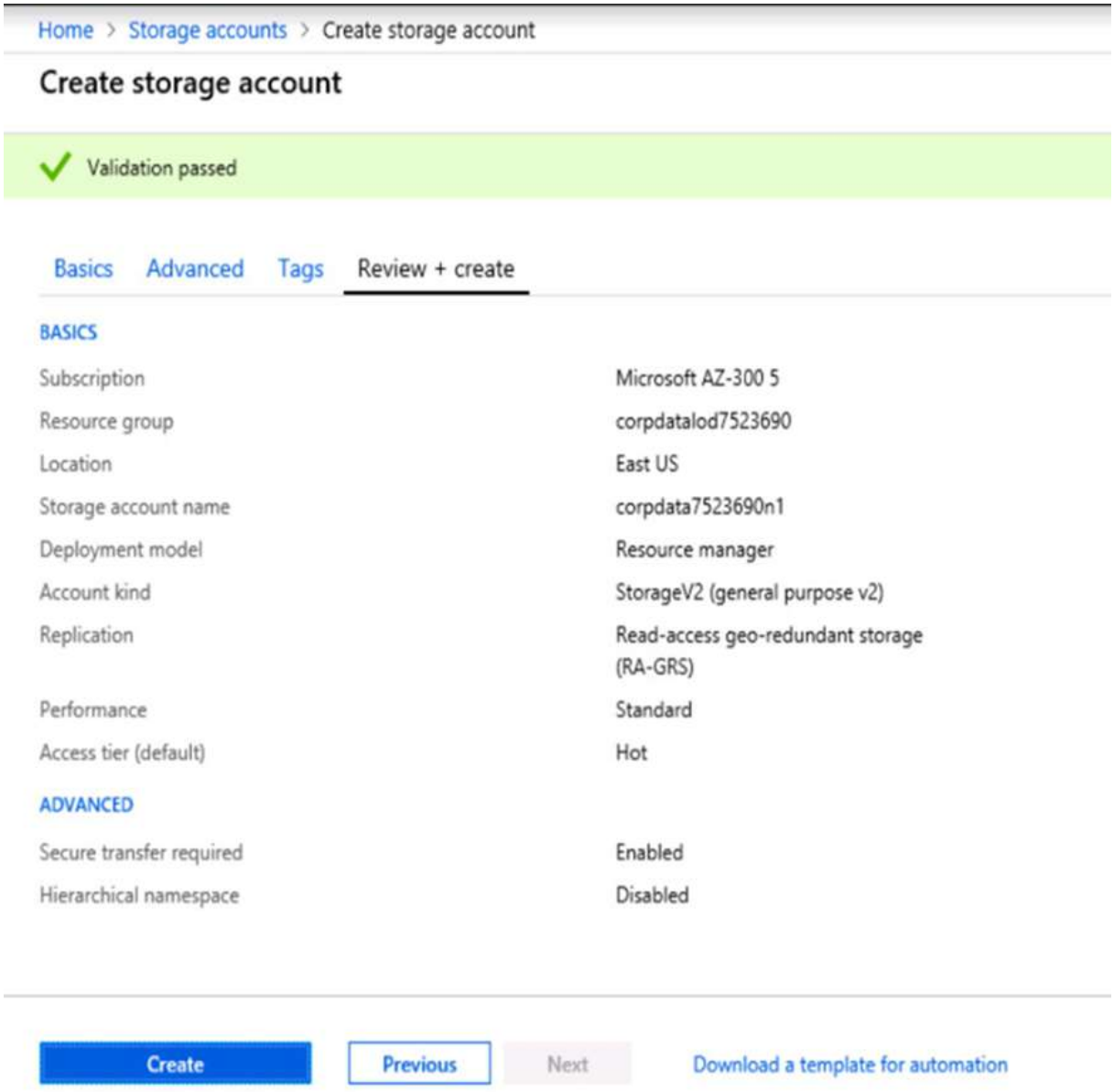

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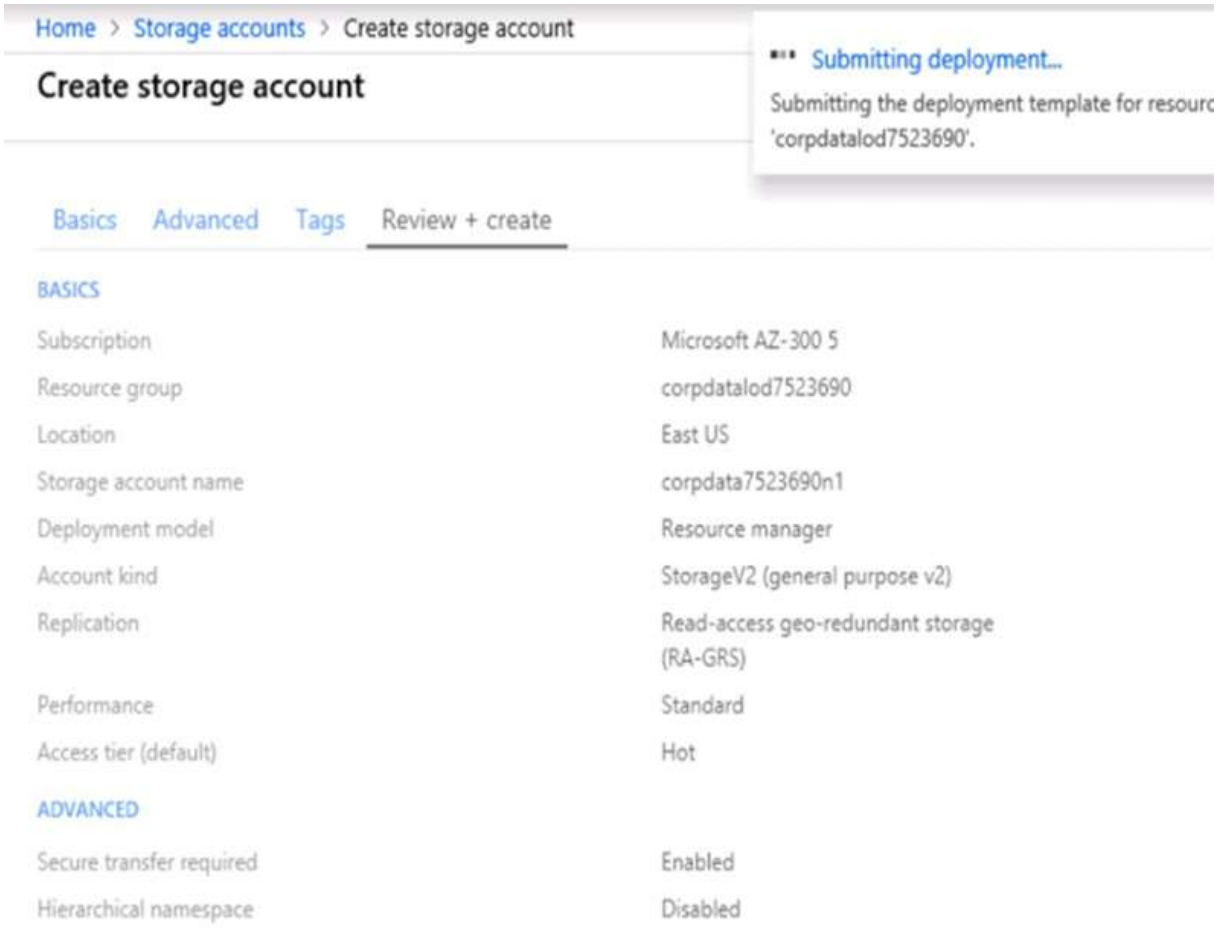

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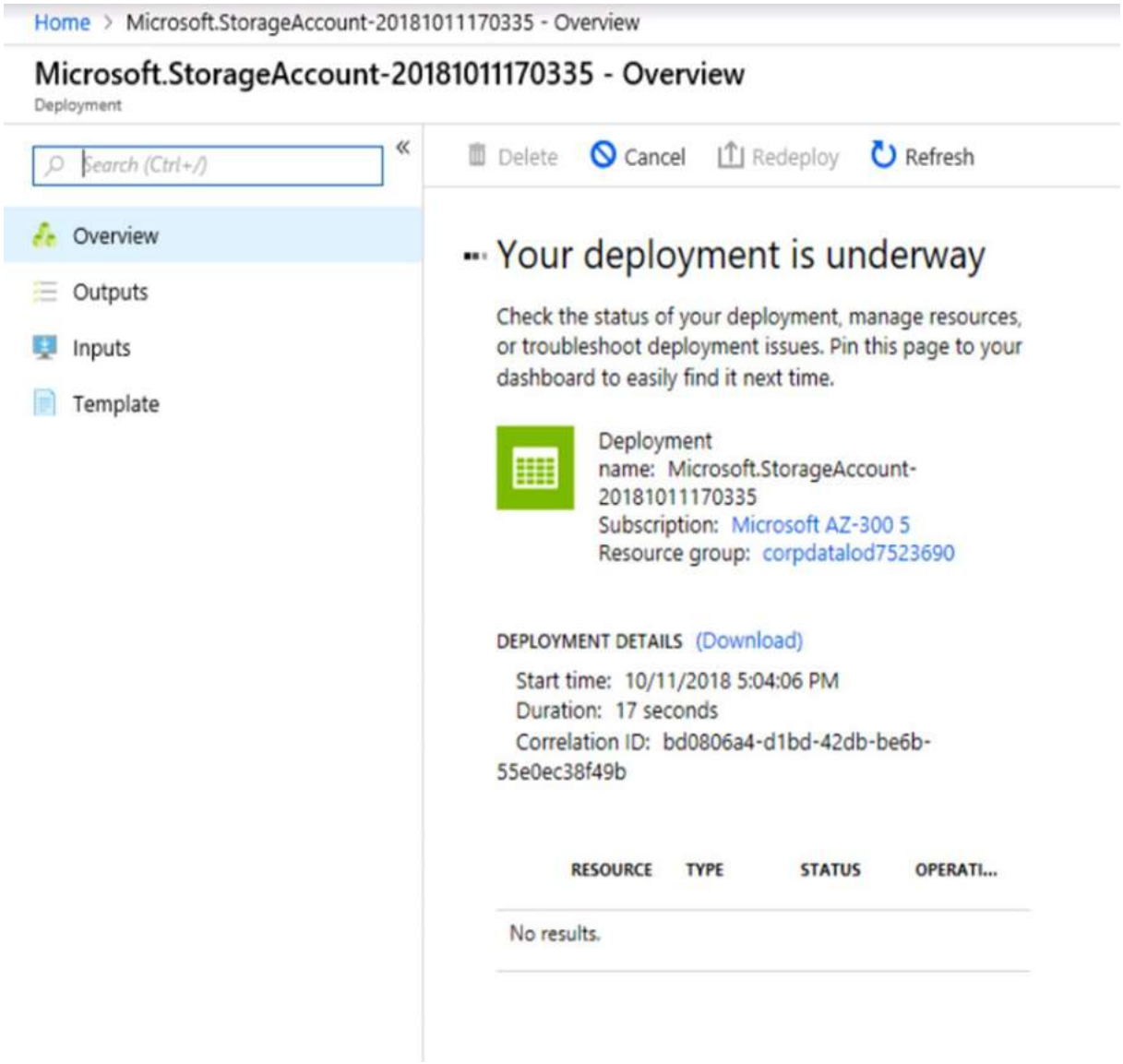

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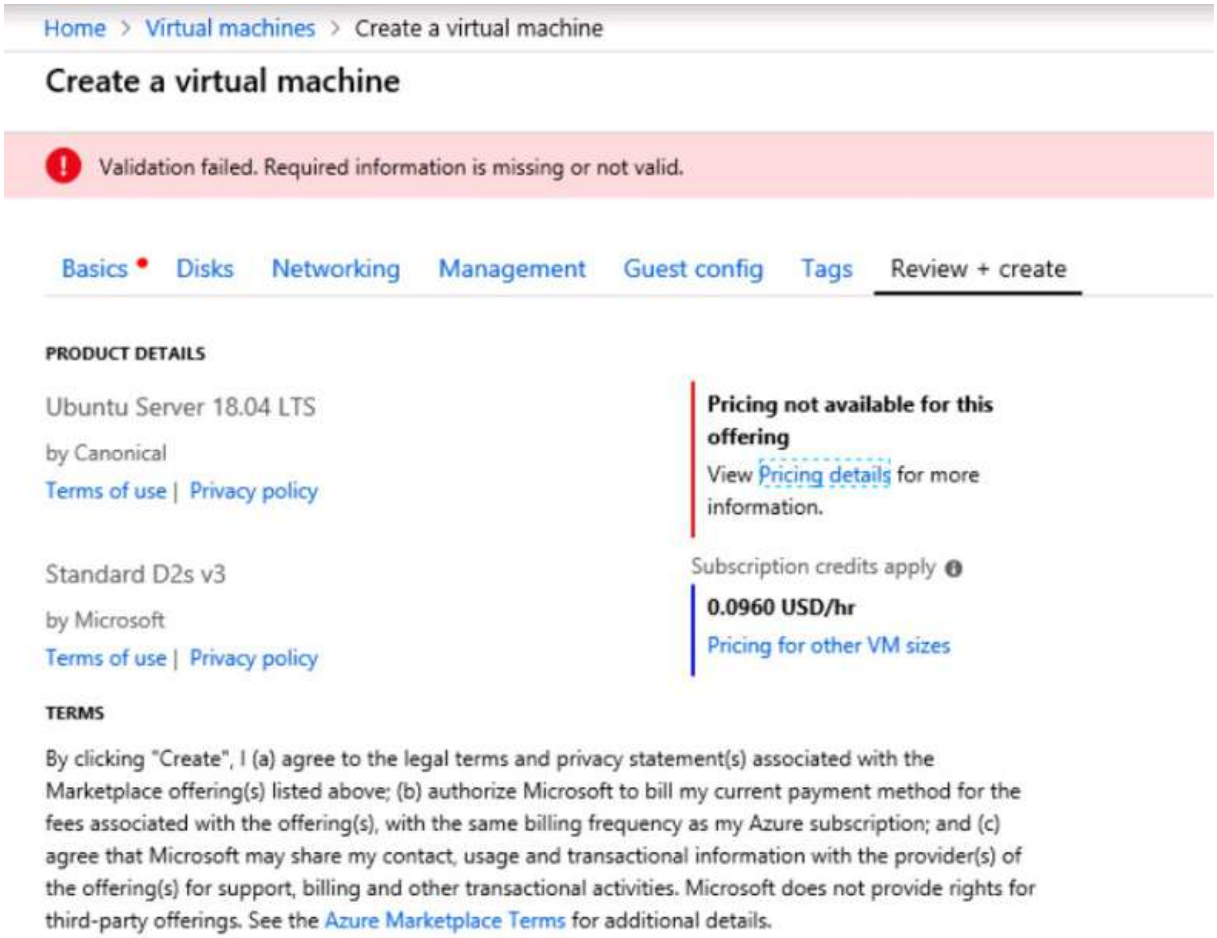

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To start the lab
You may start the lab by clicking the Next button.

You need to deploy an Azure load balancer named ib1016 to your Azure subscription. The solution must meet the following requirements:

- Support the load balancing of IP traffic from the Internet to Azure virtual machines connected to VNET1016\subnet0.
- Provide a Service Level Agreement (SLA) of 99,99 percent availability for the Azure virtual machines.
- Minimize Azure-related costs.

What should you do from the Azure portal?

To complete this task, you do NOT need to wait for the deployment to complete. Once the deployment starts in Azure, you can move to the next task.

Explanation/Reference

Explanation:
Step 1:
On the top left-hand side of the screen, click Create a resource > Networking > Load Balancer.

Step 2:
In the Create a load balancer page enter these values for the load balancer:
myLoadBalancer - for the name of the load balancer.
Internal - for the type of the load balancer.
Basic - for SKU version.
Microsoft guarantees that apps running in a customer subscription will be available 99.99% of the time.
VNET1016\subnet0 - for subnet that you choose from the list of existing subnets.

Step 3: Accept the default values for the other settings and click Create to create the load balancer.

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Question 413

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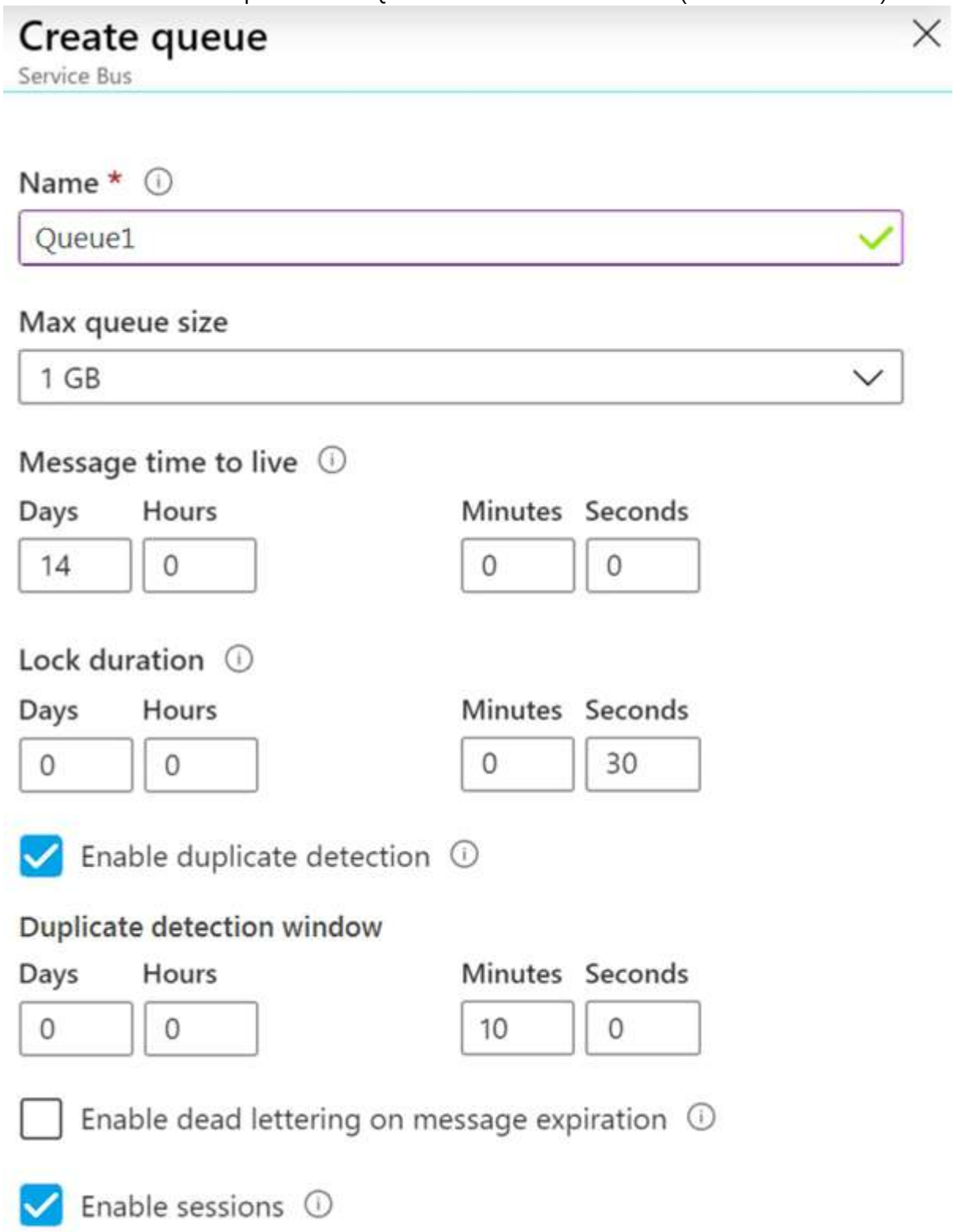
You have an Azure Service Bus and two clients named Client1 and Client2.

You create a Service Bus queue named Queue1 as shown in the exhibit. (Click the **Exhibit** tab.)



Client1 sends messages to Queue1 as shown in the following table.

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Time hh:mm:ss	Message
12:01:01	M3
12:01:02	M2
12:01:03	M1
12:01:04	M3

Client2 reads the messages from Queue1 at 12:01:05.

How will the messages be presented to Client2?

- ☐ Client2 will read four messages in the following order: M3, M1, M2, and then M3.
- ☐ Client2 will read three messages in the following order: M3, M1, and then M2.
- ☐ Client2 will read three messages in the following order: M1, M2, and then M3.
- ☐ Client2 will read four messages in the following order: M3, M2, M1, and then M3.
- ☒ Client2 will read three messages in the following order: M3, M2, and then M1.

Explanation/Reference

Explanation:
Duplicate is enabled, and the duplication detection window is set to 10 minutes. The second M3 message in the queue will be discarded.

Note 1: Duplicate detection enables the sender resend the same message, and the queue or topic discards any duplicate copies.

Note 2: Queues offer First In, First Out (FIFO) message delivery to one or more competing consumers. That is, receivers typically receive and process messages in the order in which they were added to the queue, and only one message consumer receives and processes each message.

References:
https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-queues-topics-subscriptions

https://docs.microsoft.com/en-us/azure/service-bus-messaging/duplicate-detection

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Question 414

You have an Azure Cosmos DB account named Account1. Account1 includes a database named DB1 that contains a container named Container1. The partition key for Container1 is set to `/city`.

You plan to change the partition key for Container1.

What should you do first?

- ☐ Regenerate the keys for Account1.
- ☒ Create a new container in DB1.
- ☐ Delete Container1.
- ☐ Implement the Azure Cosmos DB .NET SDK.

Explanation/Reference

Explanation:
The good news is that there are two features, the Change Feed Processor and Bulk Executor Library, in Azure Cosmos DB that can be leveraged to achieve a live migration of your data from one container to another. This allows you to re-distribute your data to match the desired new partition key scheme, and make the relevant application changes afterwards, thus achieving the effect of "updating your partition key".

Incorrect Answers:
A: It is not possible to "update" your partition key in an existing container.

Reference:
https://devblogs.microsoft.com/cosmosdb/how-to-change-your-partition-key/

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Question 415

Your company is developing an e-commerce Azure App Service Web App to support hundreds of restaurant locations around the world.

You are designing the messaging solution architecture to support the e-commerce transactions and messages. The solution will include the following features:

Feature	Requirement
Shopping Cart	• Items in a shopping cart must be processed by an Azure Function within a specified number of minutes. • Failure to process should move the items to a failed state for processing by a separate Azure Function. • Shopping cart transactions must not be lost and fault conditions must be processed separately. • Shopping cart transactions must be read by the inventory and sales systems for further processing.
Inventory Distribution	• Items sent to the inventory system must run a separate workflow for each item that includes warehouse, shipping, and order processing updates. • Inventory uses Azure Blob storage to store inventory items and related information. • Inventory is processed by using an Azure Logic App.
Restaurant Telemetry	• Restaurants stream millions of daily events from all locations. • Restaurant data should be captured in Azure Blob storage for conditional processing. • Restaurant event data should expire after 24 hours.

You need to design a solution for the Inventory Distribution feature.

Which Azure service should you use?

- ☒ Azure Service Bus
- ☐ Azure Relay
- ☐ Azure Event Grid
- ☐ Azure Event Hub

Explanation/Reference

Explanation:
Microsoft Azure Service Bus is a fully managed enterprise integration message broker. Service Bus is most commonly used to decouple applications and services from each other, and is a reliable and secure platform for asynchronous data and state transfer.

One common messaging scenario is Messaging: transfer business data, such as sales or purchase orders, journals, or inventory movements.

Incorrect Answers:
B: The Azure Relay service enables you to securely expose services that run in your corporate network to the public cloud.

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

Question 416

You are responsible for mobile app development for a company. The company develops apps on IOS, and Android.

You plan to integrate push notifications into every app.

You need to be able to send users alerts from a backend server.

Which two options can you use to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☐ Azure Web App
- ☒ Azure Mobile App Service
- ☐ Azure SQL Database
- ☒ Azure Notification Hubs
- ☐ a virtual machine

Explanation/Reference

Explanation:
The Mobile Apps client enables you to register for push notifications with Azure Notification Hubs.

The following platforms are supported:

- Xamarin Android releases for API 19 through 24 (KitKat through Nougat)
- Xamarin iOS releases for iOS versions 8.0 and later
- Universal Windows Platform
- Windows Phone 8.1
- Windows Phone 8.0 except for Silverlight applications

References:
https://docs.microsoft.com/en-us/azure/app-service-mobile/app-service-mobile-dotnet-how-to-use-client-library

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Question 417

HOTSPOT

You are developing an Azure Function that will be triggered using a webhook from an external application. The Azure Function will receive JSON data in the body of the request.

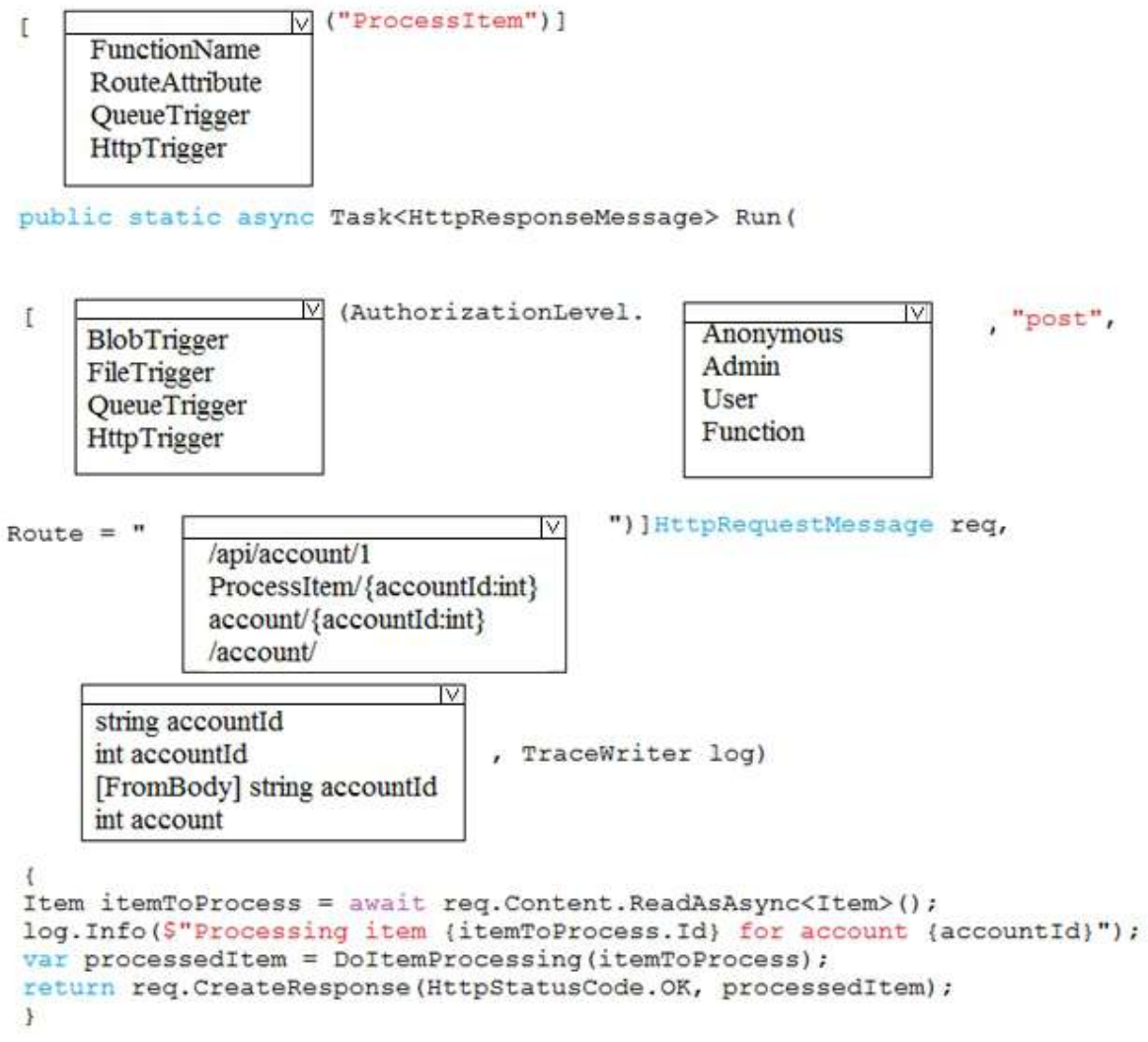
Calling applications send an account ID as part of the URL. The number at the end of the URL is an integer. The format for the URL resembles the following: /api/account/1

The Azure Function must accept all incoming requests without requiring keys or tokens.

You need to complete the attributes for the Azure Function.

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

NOTE: Each correct selection is worth one point.



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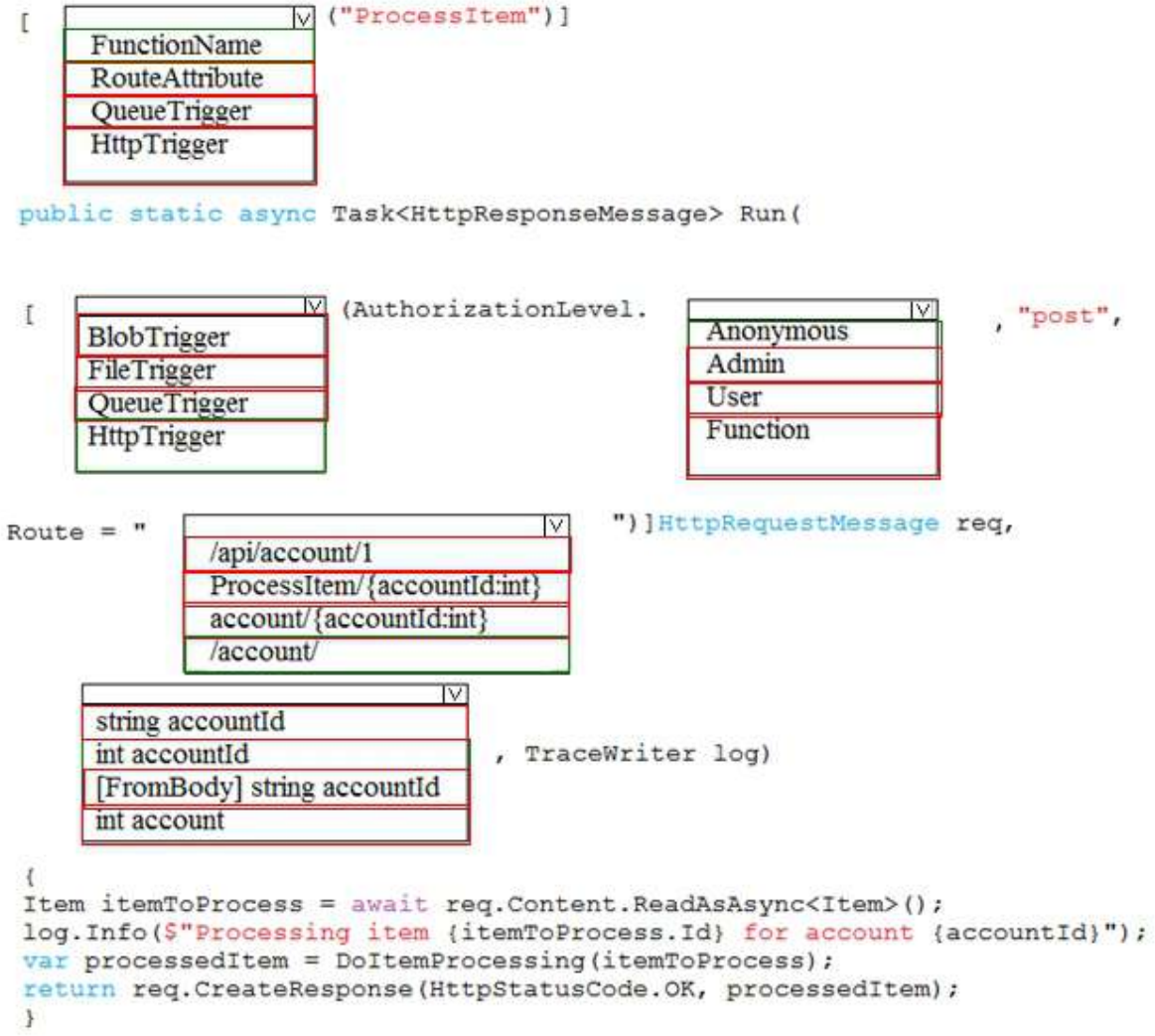
Solution:



Explanation/Reference

Question 418

HOTSPOT

You have an app named App1 that reads messages from an Azure Service Bus queue. App1 has the following requirements:

- Messages must be processed in the order in which they are received.
- No message is to remain in a Service Bus queue named Queue1 for longer than 14 days.
- Messages that cannot be delivered must be retained until they are reviewed, and then manually deleted.

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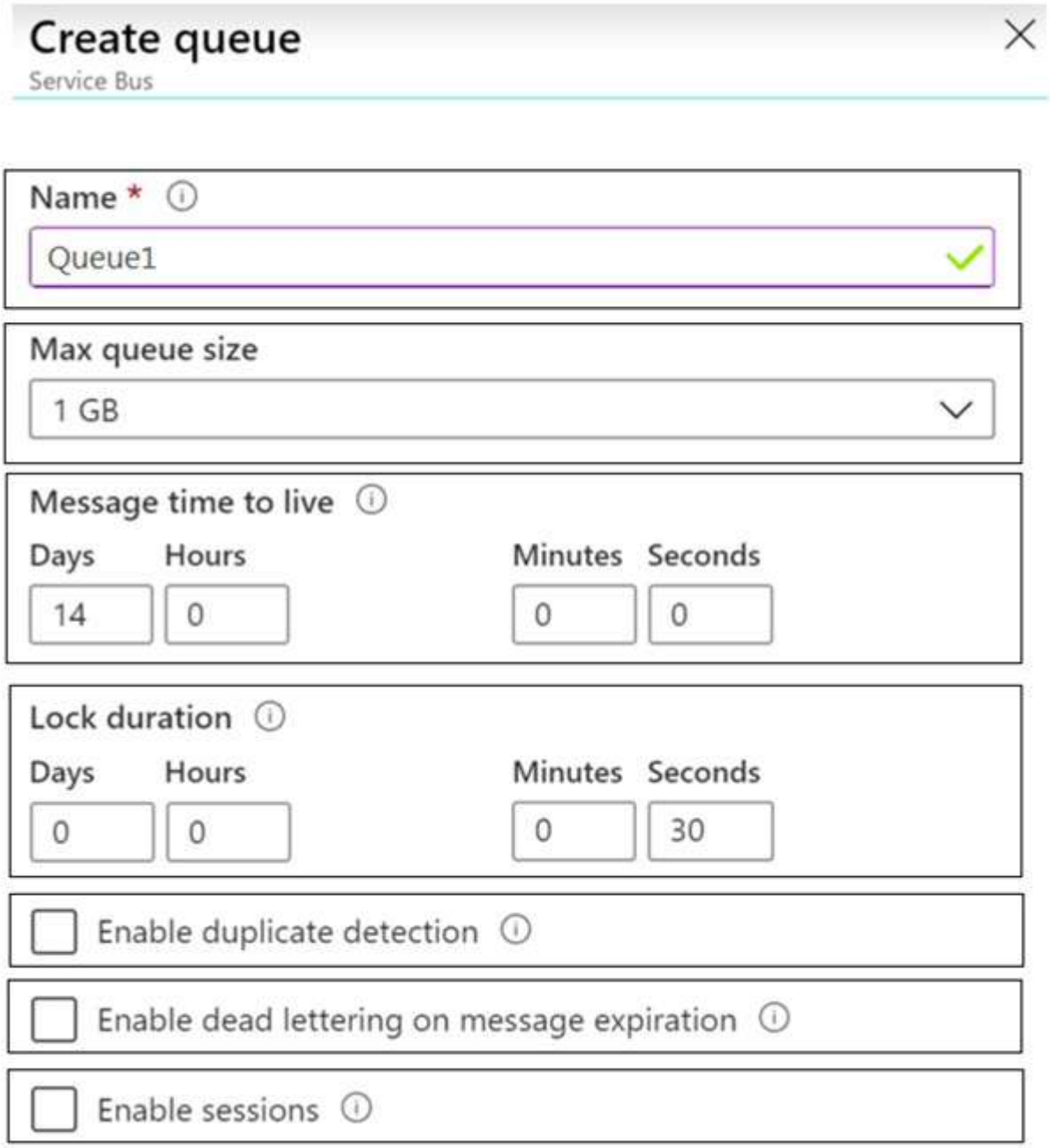
You need to create Queue1.

Which two settings should you modify for Queue1? To answer, select the appropriate settings in the answer area.

NOTE: Each correct selection is worth one point.



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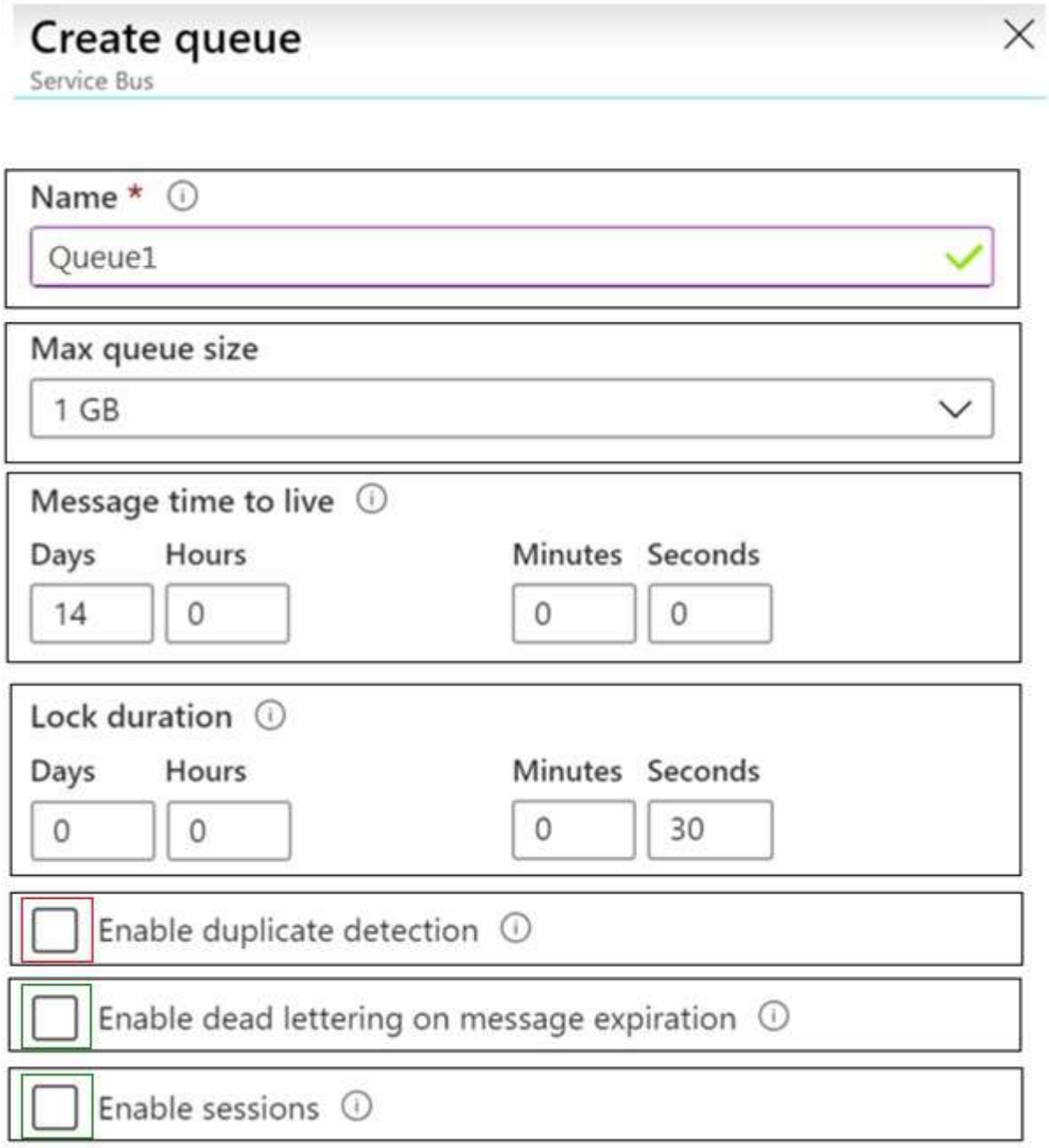
Solution:



Explanation/Reference

Explanation:

- Enable dead lettering on message expiration

Expired messages can optionally be moved to a dead-letter queue by setting the EnableDeadLetteringOnMessageExpiration property, or checking the respective box in the portal. If the option is left disabled, expired messages are dropped.

Note: The purpose of the dead-letter queue is to hold messages that can't be delivered to any receiver, or messages that couldn't be processed. Messages can then be removed from the DLQ and

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inspected. An application might, with help of an operator, correct issues and resubmit the message, log the fact that there was an error, and take corrective action.

- Enable sessions

The session feature in Service Bus enables a specific receive operation, in the form of MessageSession in the C# and Java APIs. You enable the feature by setting the requiresSession property on the queue or subscription via Azure Resource Manager, or by setting the flag in the portal. It's required before you attempt to use the related API operations.

Reference:
https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-dead-letter-queues

Question 419

A company is migrating an existing on-premises third-party website to Azure. The website is stateless.

The company does not have access to the source code for the website. They have the original installer.

The number of visitors at the website varies throughout the year. The on-premises infrastructure was resized to accommodate peaks but the extra capacity was not used.

You need to implement a virtual machine scale set instance.

What should you do?

- ☐ Use an autoscale setting with unlimited maximum number of instances.
- ☐ Use an autoscale setting to scale instances vertically.
- ☐ Use only default diagnostics metrics to trigger autoscaling.
- ☒ Use an autoscale setting to define one or more profiles that have one or more autoscale rules.

Explanation/Reference

Explanation:
With Azure Monitor you can auto scale by custom metric for Virtual Machine Scale Sets.

Note: By default, Resource Manager-based Virtual Machines and Virtual Machine Scale Sets emit basic (host-level) metrics. In addition, when you configure diagnostics data collection for an Azure VM and VMSS, the Azure diagnostic extension also emits guest-OS performance counters (commonly known as "guest-OS metrics"). You use all these metrics in autoscale rules.

Note 2: In-guest VM metrics with the Azure diagnostics extension
The Azure diagnostics extension is an agent that runs inside a VM instance. The agent monitors and saves performance metrics to Azure storage. These performance metrics contain more detailed information about the status of the VM, such as AverageReadTime for disks or PercentIdleTime for CPU. You can create autoscale rules based on a more detailed awareness of the VM performance,

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not just the percentage of CPU usage or memory consumption.

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-custom-metric

https://docs.microsoft.com/en-us/azure/azure-monitor/platform/autoscale-common-metrics

Question 420

HOTSPOT

You are developing a workflow solution using Azure technologies.

What should you implement to meet each requirement? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Requirement	Tool
Debug the solution by using Visual Studio.	Durable functions only Logic Apps only Durable functions and Logic Apps
Use a collection of ready-made actions.	Durable functions only Logic Apps only Durable functions and Logic Apps
Deploy the component by using Visual Studio Team Services.	Durable functions only Logic Apps only Durable functions and Logic Apps

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Solution:

Answer Area

Requirement	Tool
Debug the solution by using Visual Studio.	Durable functions only / Logic Apps only / Durable functions and Logic Apps
Use a collection of ready-made actions.	Durable functions only / Logic Apps only / Durable functions and Logic Apps
Deploy the component by using Visual Studio Team Services.	Durable functions only / Logic Apps only / Durable functions and Logic Apps

Explanation/Reference

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