AZ-303

Number: AZ-303
Passing Score: 800
Time Limit: 120 min
File Version: 1

AZ-303

Implement and Monitor an Azure Infrastructure

Question Set 1

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?

A. From Activity log, use quick insights.
B. From Metrics, create a chart.
C. From Logs, create a new query.
D. From Workbooks, create a workbook.

Correct Answer: C
Section: (none)
Explanation

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

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.

A. Azure Automation runbook
B. an alert rule
C. an Azure Monitor query
D. a virtual machine that has network access to the 100 virtual machines
E. an alert action group

Correct Answer: ABE
Section: (none)
Explanation

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

QUESTION 3
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?

A. Syslog

B. Linux performance counters

C. custom fields

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

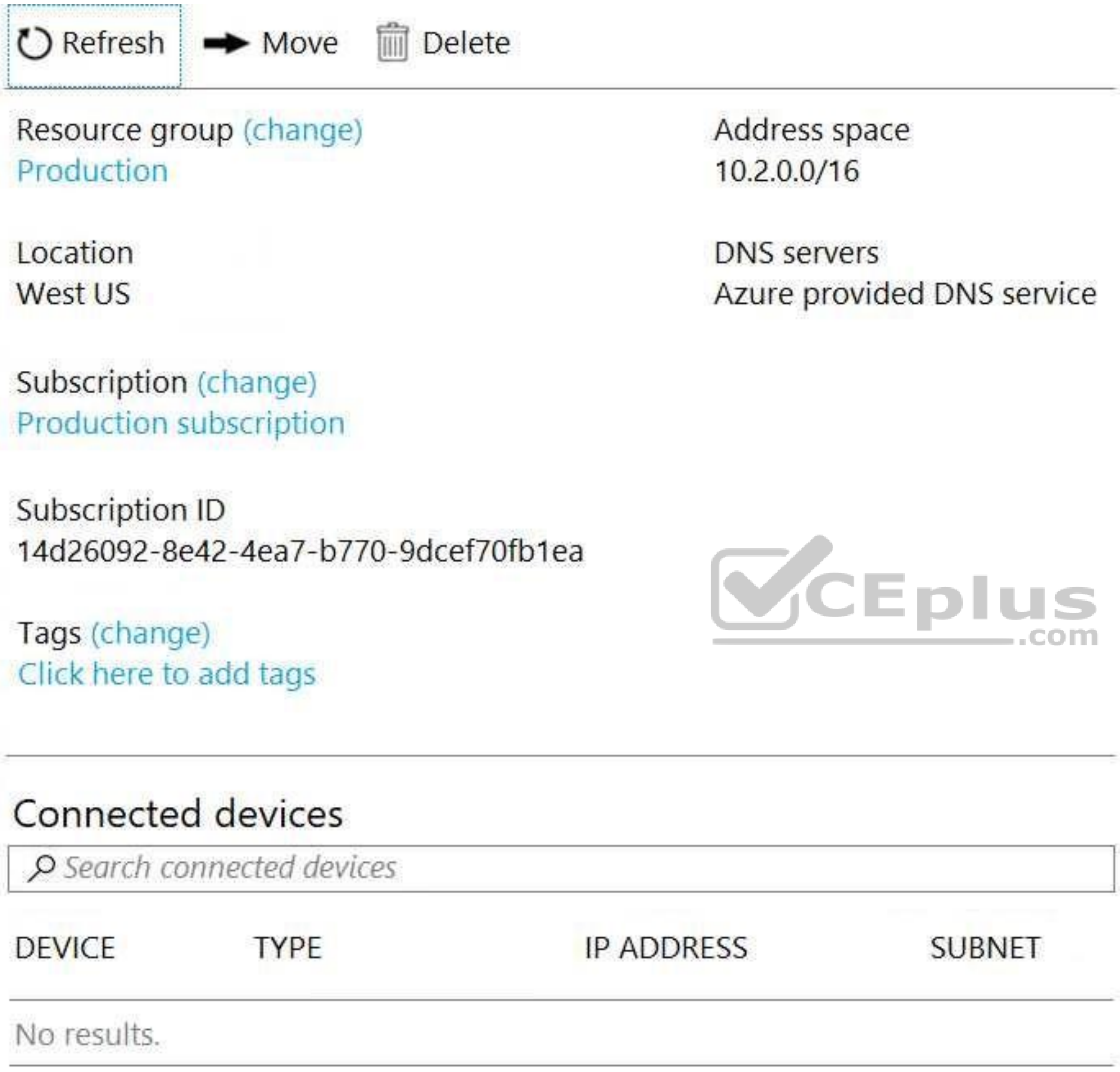
Explanation:

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

QUESTION 4

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



Resource group (change)
Production

Address space
10.2.0.0/16

Location
West US

DNS servers
Azure provided DNS service

Subscription (change)
Production subscription

Subscription ID
14d26092-8e42-4ea7-b770-9dcef70fb1ea

Tags (change)
Click here to add tags

Connected devices

Search connected devices

DEVICE	TYPE	IP ADDRESS	SUBNET
No results.			

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?

A. Configure a service endpoint on VNet2.
B. Add a gateway subnet to VNet1.
C. Create a subnet on VNEt1 and VNet2.
D. Modify the address space of VNet1.

Correct Answer: D
Section: (none)
Explanation

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.

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

QUESTION 5
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?

A. Metrics
B. Customer sights
C. Monitor
D. Advisor

Correct Answer: D
Section: (none)
Explanation

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 6

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?

A. Configure IIS logging in Azure Log Analytics.
B. Configure a connection monitor in Azure Network Watcher.
C. Configure custom logs in Azure Log Analytics.
D. Enable the Azure Application Insights site extension.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

Explanation:

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

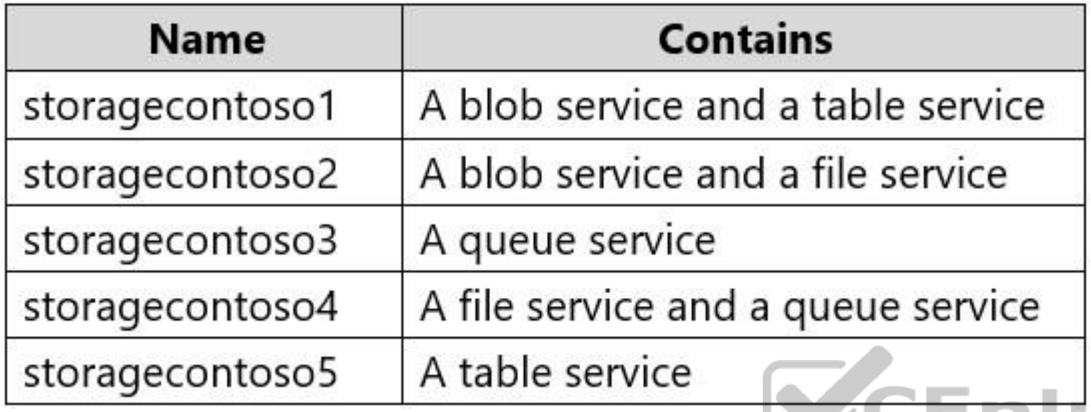
Note: Some of the things you can track or collect are:

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

QUESTION 7
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.

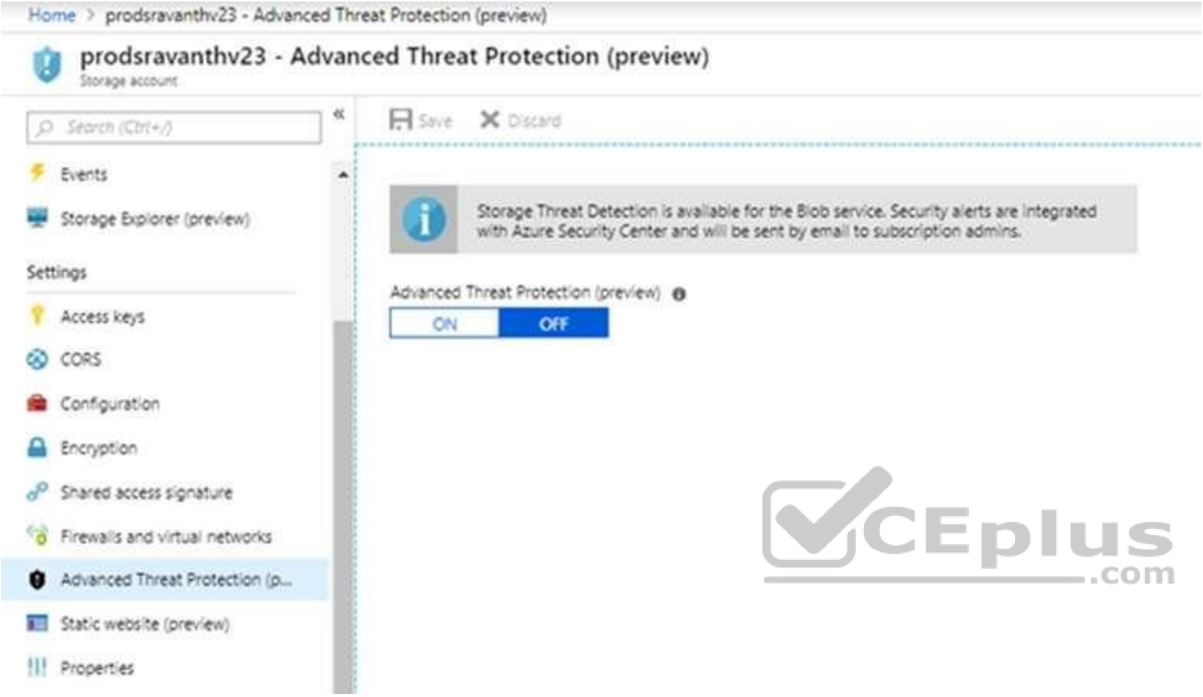
A. storagecontoso1
B. storagecontoso2
C. storagecontoso3
D. storagecontoso4
E. storagecontoso5

Correct Answer: AB
Section: (none)
Explanation

Explanation/Reference:

Explanation:

Storage Threat Detection is available for the Blob Service.


Home > prodsravanthv23 - Advanced Threat Protection (preview)
prodsravanthv23 - Advanced Threat Protection (preview)
Storage account
Search (Ctrl+/)
Save
Discard
Events
Storage Explorer (preview)
Settings
Access keys
CORS
Configuration
Encryption
Shared access signature
Firewalls and virtual networks
Advanced Threat Protection (p...
Static website (preview)
Properties

Storage Threat Detection is available for the Blob service. Security alerts are integrated with Azure Security Center and will be sent by email to subscription admins.

Advanced Threat Protection (preview): ON [✓ OFF]

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

QUESTION 8

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?

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

Correct Answer: B
Section: (none)
Explanation

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

QUESTION 9
You are designing an Azure solution.

The solution must meet the following requirements:

▪ Distribute traffic to different pools of dedicated virtual machines (VMs) based on rules. ▪ Provide SSL offloading capabilities.

You need to recommend a solution to distribute network traffic.

Which technology should you recommend?

A. Azure Application Gateway
B. Azure Load Balancer
C. Azure Traffic Manager
D. server-level firewall rules

Correct Answer: A
Section: (none)
Explanation

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

Implement and Monitor an Azure Infrastructure

Testlet 2

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.

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.
- 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.

Implement Management and Security Solutions

Question Set 1

QUESTION 1
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.

A. Authenticator app

B. Email addresses
C. App passwords
D. Short Message Service (SMS) messages
E. Security questions

Correct Answer: AD
Section: (none)
Explanation

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

- Short Message Service (SMS) messages

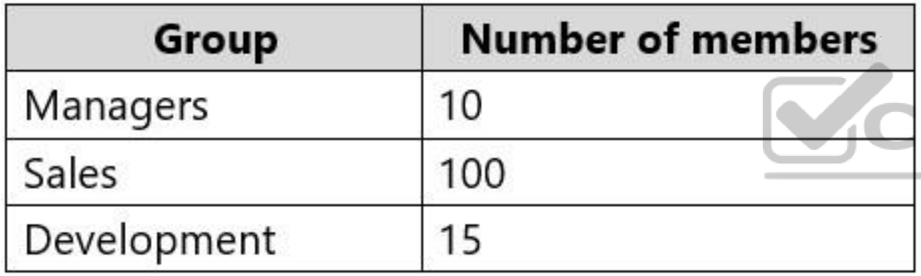
▪ Azure AD passwords
▪ Microsoft Authenticator app ▪
Voice call

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

QUESTION 2
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?

A. Assign an Azure AD Privileged Identity Management (PIM) role to Admin1.
B. Purchase an Azure Rights Management (Azure RMS) license for each user in the Managers group.

C. Enforce Azure Multi-Factor Authentication (MFA) for Admin1.
D. Purchase an Azure AD Premium P1 license for each user in the Managers group.

Correct Answer: D
Section: (none)
Explanation

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 3
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?

A. From Conditional access in Azure Active Directory (Azure AD), create a named location.
B. From the MFA service settings, create a trusted IP range.
C. From Conditional access in Azure Active Directory (Azure AD), create a custom control.
D. From Azure Active Directory (Azure AD), configure organizational relationships.

Correct Answer: B
Section: (none)
Explanation

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/

QUESTION 4
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?

A. Configure Access control (IAM) for the Service Bus.
B. Add a shared access policy to the queue.
C. Modify the locks of the queue.
D. Configure Access control (IAM) for the queue.

Correct Answer: B
Section: (none)
Explanation

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 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 5
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?

A. Runtime stack
B. Enable Application Insights
C. Operating System
D. Plan type

Correct Answer: D
Section: (none)
Explanation

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

QUESTION 6
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.

A. Add health probes to LB1.
B. Add the network interfaces of the virtual machines to the backend pool of LB1.
C. Add an inbound rule to LB1.
D. Add an outbound rule to LB1.
E. Associate a network security group (NSG) to Subnet1.

F. Associate a user-defined route to Subnet1.

Correct Answer: ABD
Section: (none)
Explanation

Explanation/Reference:
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-portal2

QUESTION 7
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?

A. Elastic Database jobs
B. Azure Key Vault
C. an Azure Storage accountD. a Recovery Services vault

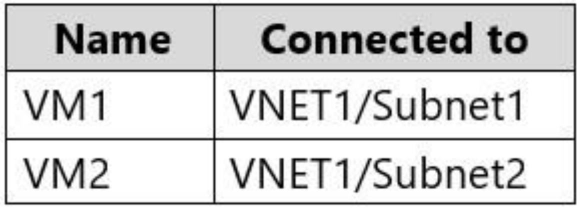
Correct Answer: C
Section: (none)
Explanation

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

QUESTION 8
You have an Azure subscription that contains an Azure key vault named KeyVault1 and the virtual machines shown in the following table.



Name	Connected to
VM1	VNET1/Subnet1
VM2	VNET1/Subnet2

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

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

What should you do?

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

Correct Answer: C
Section: (none)
Explanation

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

QUESTION 9
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?

A. Azure Private Link
B. service endpoints
C. network security groups (NSGs) with service tags
D. network security groups (NSGs) with application security groups

Correct Answer: C
Section: (none)
Explanation

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

QUESTION 10
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.

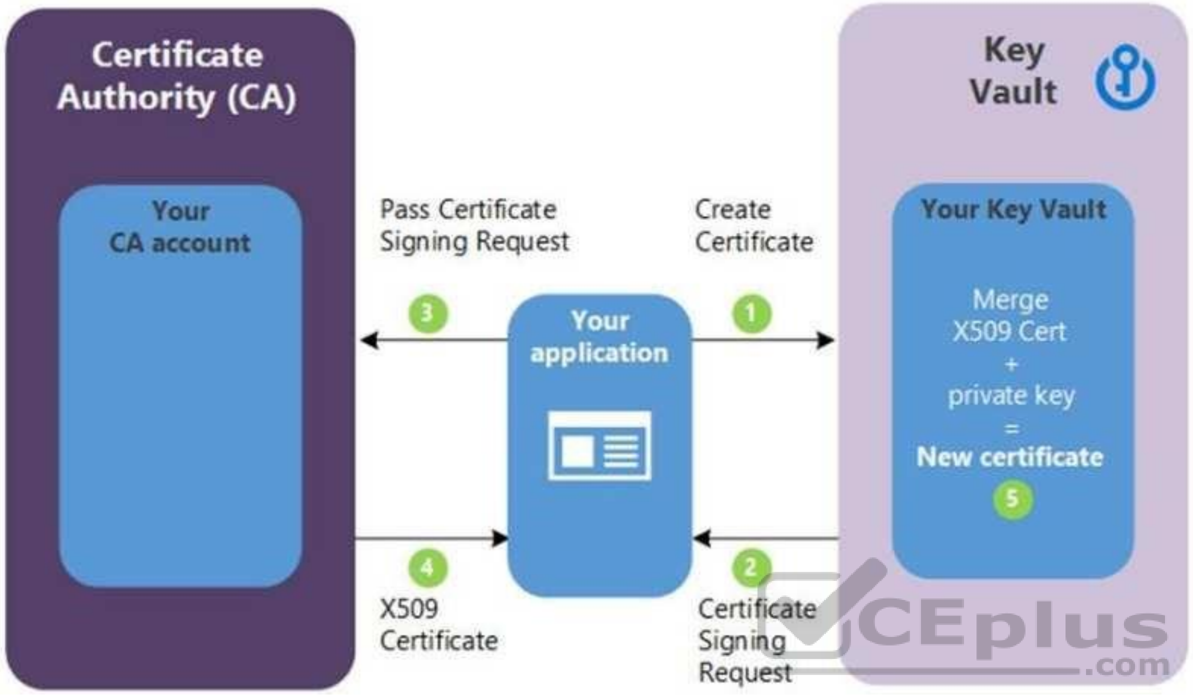
A. From KV1, create a certificate issuer resource.
B. Obtain the CA account credentials.
C. Obtain the root CA certificate.
D. From KV1, create a certificate signing request (CSR).
E. From KV1, create a private key,

Correct Answer: CD
Section: (none)
Explanation

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.


Certificate Authority (CA)
Your CA account
Pass Certificate Signing Request
3
4
X509 Certificate
Your application
Create Certificate
1
2
Certificate Signing Request
Key Vault
Your Key Vault
Merge X509 Cert + private key = New certificate
5

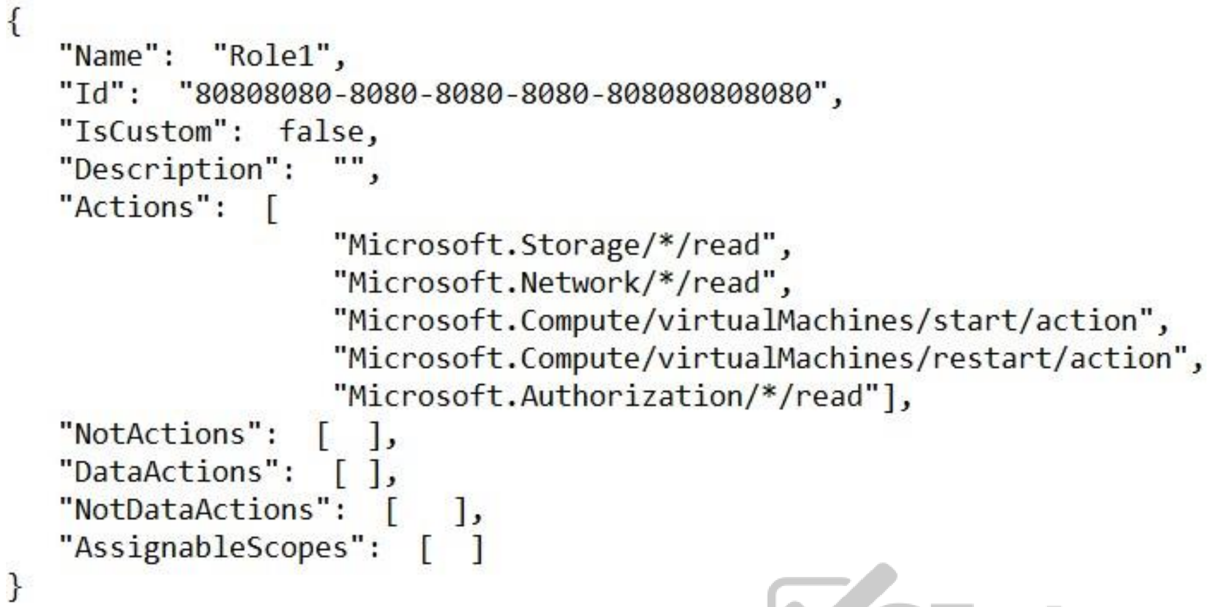
The following step descriptions correspond to the green lettered steps in the preceding diagram.

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 11

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.

A. AssignableScopes
B. Description
C. DataActions
D. IsCustom
E. Id

Correct Answer: AD
Section: (none)
Explanation

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",
  "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

Implement Management and Security Solutions

Testlet 2

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.

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.
- 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.

QUESTION 1

You need to recommend an identity solution that meets the technical requirements.
What should you recommend?

A. password hash synchronization and single sign-on (SSO)
B. federated single sign-on (SSO) and Active Directory Federation Services (AD FS)
C. Pass-thorough Authentication and single sign-on (SSO)
D. cloud-only user accounts

Correct Answer: C
Section: (none)
Explanation

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

Implement Solutions for Apps

Question Set 1

QUESTION 1

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?

A. Yes
B. No

Correct Answer: A
Section: (none)
Explanation

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/

QUESTION 2
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?

A. Yes
B. No

Correct Answer: B
Section: (none)
Explanation

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/

QUESTION 3
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 assign the Global administrator role to Admin1.

Does this meet the goal?

A. Yes
B. No

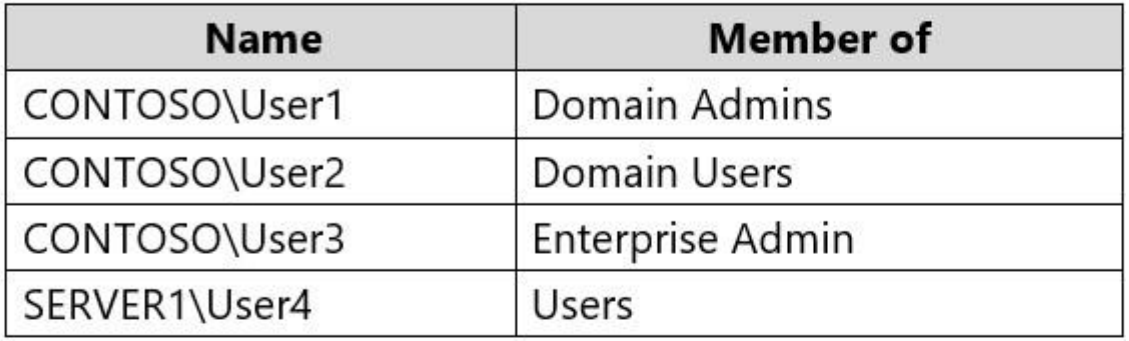
Correct Answer: B
Section: (none)
Explanation

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

QUESTION 4
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?

A. CONTOSO\User2
B. SERVER1\User4
C. CONTOSO\User1
D. CONTOSO\User3

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Explanation:
The default Domain User permissions are sufficient

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