

AZ-500.examcollection.premium.exam.74q

Number: AZ-500
Passing Score: 800
Time Limit: 120 min
File Version: 3.0



AZ-500

Microsoft Azure Security Technologies (beta)

Version 3.0

This file was created using [VCE Simulator](#) from [Avanset.com](#)

Testlet 1

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 question on 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 sections 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 on 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

Litware, Inc. is a digital media company that has 500 employees in the Chicago area and 20 employees in the San Francisco area.

Existing Environment

Litware has an Azure subscription named Sub1 that has a subscription ID of 43894a43-17c2-4a39-8fcf-3540c2653ef4.

Sub1 is associated to an Azure Active Directory (Azure AD) tenant named litwareinc.com. The tenant contains the user objects and the device objects of all the Litware employees and their devices. Each user is assigned an Azure AD Premium P2 license. Azure AD Privileged Identity Management (PIM) is activated.

The tenant contains the groups shown in the following table.

Name	Type	Description
Group1	Security group	A group that has the Dynamic User membership type, contains all the San Francisco users, and provides access to many Azure AD applications and Azure resources.
Group2	Security group	A group that has the Dynamic User membership type and contains the Chicago IT team

The Azure subscription contains the objects shown in the following table.

Name	Type	Description
VNet1	Virtual network	VNet1 is a virtual network that contains security-sensitive IT resources. VNet1 contains three subnets named Subnet0, Subnet1, and AzureFirewallSubnet.
VM0	Virtual machine	VM0 is an Azure virtual machine that runs Windows Server 2016, connects to Subnet0, and has just in time (JIT) VM access configured.
VM1	Virtual machine	VM1 is an Azure virtual machine that runs Windows Server 2016 and connects to Subnet0.
SQLDB1	Azure SQL Database	SQLDB1 is an Azure SQL database on a SQL Database server named LitwareSQLServer1.
WebApp1	Web app	WebApp1 is an Azure web app that is accessible by using https://litwareinc.com and http://www.litwareinc.com .
Resource Group1	Resource group	Resource Group1 is a resource group that contains VNet1, VM0, and VM1.
Resource Group2	Resource group	Resource Group2 is a resource group that contains shared IT resources.

Azure Security Center is set to the Free tier.

Planned changes

Litware plans to deploy the Azure resources shown in the following table.

Name	Type	Description
Firewall1	Azure Firewall	An Azure firewall on VNet1.
RT1	Route table	A route table that will contain a route pointing to Firewall1 as the default gateway and will be assigned to Subnet0.
AKS1	Azure Kubernetes Service (AKS)	A managed AKS cluster

Litware identifies the following identity and access requirements:

- All San Francisco users and their devices must be members of Group1.
- The members of Group2 must be assigned the Contributor role to Resource Group2 by using a permanent eligible assignment.
- Users must be prevented from registering applications in Azure AD and from consenting to applications that access company information on the users' behalf.

Platform Protection Requirements

Litware identifies the following platform protection requirements:

- Microsoft Antimalware must be installed on the virtual machines in Resource Group1.
- The members of Group2 must be assigned the Azure Kubernetes Service Cluster Admin Role.
- Azure AD users must be authenticated to AKS1 by using their Azure AD credentials.

- Following the implementation of the planned changes, the IT team must be able to connect to VM0 by using JIT VM access.
- A new custom RBAC role named Role1 must be used to delegate the administration of the managed disks in Resource Group1. Role1 must be available only for Resource Group1.

Security Operations Requirements

Litware must be able to customize the operating system security configurations in Azure Security Center.

Data and Application Requirements

Litware identifies the following data and applications requirements:

- The users in Group2 must be able to authenticate to SQLDB1 by using their Azure AD credentials
- WebApp1 must enforce mutual authentication

General Requirements

Litware identifies the following general requirements:

- Whenever possible, administrative effort must be minimized
- Whenever possible, use of automation must be minimized

QUESTION 1

You need to meet the identity and access requirements for Group1.

What should you do?

- A. Add a membership rule to Group1.
- B. Delete Group1. Create a new group named Group1 that has a membership type of Office 365. Add users and devices to the group.
- C. Modify the membership rule of Group1.
- D. Change the membership type of Group1 to Assigned. Create two groups that have dynamic memberships. Add the new groups to Group1.

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Incorrect Answers:

A, C: You can create a dynamic group for devices or for users, but you can't create a rule that contains both users and devices.

D: For assigned group you can only add individual members.

Scenario:

Litware identifies the following identity and access requirements: All San Francisco users and their devices must be members of Group1.

The tenant currently contain this group:

Name	Type	Description
Group1	Security group	A group that has the Dynamic User membership type, contains all the San Francisco users, and provides access to many Azure AD applications and Azure resources.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/users-groups-roles/groups-dynamic-membership>

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-groups-create-azure-portal>

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 question on 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 sections 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 on 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.

Existing Environment

The company hosts its entire server infrastructure in Azure.

Contoso has two Azure subscriptions named Sub1 and Sub2. Both subscriptions are associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

Azure AD

Contoso.com contains the users shown in the following table.

Name	City	Role
User1	Montreal	Global administrator
User2	MONTREAL	Security administrator
User3	London	Privileged role administrator
User4	Ontario	Application administrator
User5	Seattle	Cloud application administrator
User6	Seattle	User administrator
User7	Sydney	Reports reader
User8	Sydney	None
User9	Sydney	Owner

Contoso.com contains the security groups shown in the following table.

Name	Membership type	Dynamic membership rule
Group1	Dynamic user	user.city -contains "ON"
Group2	Dynamic user	user.city -match "*on"

Sub1

Sub1 contains six resource groups named RG1, RG2, RG3, RG4, RG5, and RG6.

User9 creates the virtual networks shown in the following table.

Name	Resource group
VNET1	RG1
VNET2	RG2
VNET3	RG3
VNET4	RG4

Sub1 contains the locks shown in the following table.

Name	Set on	Lock type
Lock1	RG1	Delete
Lock2	RG2	Read-only
Lock3	RG3	Delete
Lock4	RG3	Read-only

Sub1 contains the Azure policies shown in the following table.

Policy definition	Resource type	Scope
Allowed resource types	networkSecurityGroups	RG4
Not allowed resource types	virtualNetworks/subnets	RG5
Not allowed resource types	networksSecurityGroups	RG5
Not allowed resource types	virtualNetworks/virtualNetworkPeerings	RG6

Sub2

Sub2 contains the virtual networks shown in the following table.

Name	Subnet
VNetwork1	Subnet11, Subnet12, and Subnet13
VNetwork2	Subnet21

Sub2 contains the virtual machines shown in the following table.

Name	Network interface	Application security group	Connected to
VM1	NIC1	ASG1	Subnet11
VM2	NIC2	ASG2	Subnet11
VM3	NIC3	<i>None</i>	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	<i>None</i>	Subnet21

All virtual machines have public IP addresses and the Web Server (IIS) role installed. The firewalls for each virtual machine allow ping requests and web requests.

Sub2 contains the network security groups (NSGs) shown in the following table.

Name	Associated to
NSG1	NIC2
NSG2	Subnet11
NSG3	Subnet13
NSG4	Subnet21

NSG1 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG2 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	80	TCP	Internet	VirtualNetwork	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG3 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	TCP	ASG1	ASG1	Allow
150	Any	Any	ASG2	VirtualNetwork	Allow
200	Any	Any	Any	Any	Deny
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG4 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	Any	Any	Any	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG1, NSG2, NSG3, and NSG4 have the outbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	Any	Internet	Allow
65500	Any	Any	Any	Any	Deny

Technical requirements

Contoso identifies the following technical requirements:

- Deploy Azure Firewall to VNetwork1 in Sub2.
- Register an application named App2 in contoso.com.
- Whenever possible, use the principle of least privilege.
- Enable Azure AD Privileged Identity Management (PIM) for contoso.com.

QUESTION 1

You need to ensure that User2 can implement PIM.

What should you do first?

- A. Assign User2 the Global administrator role.
- B. Configure authentication methods for contoso.com.
- C. Configure the identity secure score for contoso.com.
- D. Enable multi-factor authentication (MFA) for User2.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

To start using PIM in your directory, you must first enable PIM.

1. Sign in to the Azure portal as a Global Administrator of your directory.

You must be a Global Administrator with an organizational account (for example, @yourdomain.com), not a Microsoft account (for example, @outlook.com), to enable PIM for a directory.

Scenario: Technical requirements include: Enable Azure AD Privileged Identity Management (PIM) for contoso.com

References:

<https://docs.microsoft.com/bs-latn-ba/azure/active-directory/privileged-identity-management/pim-getting-started>

Question Set 3

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 an Azure Subscription named Sub1.

You have an Azure Storage account named Sa1 in a resource group named RG1.

Users and applications access the blob service and the file service in Sa1 by using several shared access signatures (SASs) and stored access policies.

You discover that unauthorized users accessed both the file service and the blob service.

You need to revoke all access to Sa1.

Solution: You generate new SASs.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Instead you should create a new stored access policy.

To revoke a stored access policy, you can either delete it, or rename it by changing the signed identifier. Changing the signed identifier breaks the associations between any existing signatures and the stored access policy. Deleting or renaming the stored access policy immediately affects all of the shared access signatures associated with it.

References:

<https://docs.microsoft.com/en-us/rest/api/storageservices/Establishing-a-Stored-Access-Policy>

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 an Azure Subscription named Sub1.

You have an Azure Storage account named Sa1 in a resource group named RG1.

Users and applications access the blob service and the file service in Sa1 by using several shared access signatures (SASs) and stored access policies.

You discover that unauthorized users accessed both the file service and the blob service.

You need to revoke all access to Sa1.

Solution: You create a new stored access policy.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

To revoke a stored access policy, you can either delete it, or rename it by changing the signed identifier. Changing the signed identifier breaks the associations between any existing signatures and the stored access policy. Deleting or renaming the stored access policy immediately effects all of the shared access signatures associated with it.

References:

<https://docs.microsoft.com/en-us/rest/api/storageservices/Establishing-a-Stored-Access-Policy>

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 a hybrid configuration of Azure Active Directory (Azure AD).

You have an Azure HDInsight cluster on a virtual network.

You plan to allow users to authenticate to the cluster by using their on-premises Active Directory credentials.

You need to configure the environment to support the planned authentication.

Solution: You deploy the On-premises data gateway to the on-premises network.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Instead, you connect HDInsight to your on-premises network by using Azure Virtual Networks and a VPN gateway.

Note: To allow HDInsight and resources in the joined network to communicate by name, you must perform the following actions:

- Create Azure Virtual Network.
- Create a custom DNS server in the Azure Virtual Network.
- Configure the virtual network to use the custom DNS server instead of the default Azure Recursive Resolver.
- Configure forwarding between the custom DNS server and your on-premises DNS server.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/connect-on-premises-network>

QUESTION 4

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 hybrid configuration of Azure Active Directory (Azure AD).

You have an Azure HDInsight cluster on a virtual network.

You plan to allow users to authenticate to the cluster by using their on-premises Active Directory credentials.

You need to configure the environment to support the planned authentication.

Solution: You create a site-to-site VPN between the virtual network and the on-premises network.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You can connect HDInsight to your on-premises network by using Azure Virtual Networks and a VPN gateway.

Note: To allow HDInsight and resources in the joined network to communicate by name, you must perform the following actions:

- Create Azure Virtual Network.
- Create a custom DNS server in the Azure Virtual Network.
- Configure the virtual network to use the custom DNS server instead of the default Azure Recursive Resolver.
- Configure forwarding between the custom DNS server and your on-premises DNS server.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/connect-on-premises-network>

QUESTION 5

Your network contains an Active Directory forest named contoso.com. The forest contains a single domain.

You have an Azure subscription named Sub1 that is associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

You plan to deploy Azure AD Connect and to integrate Active Directory and the Azure AD tenant.

You need to recommend an integration solution that meets the following requirements:

- Ensures that password policies and user logon restrictions apply to user accounts that are synced to the tenant
- Minimizes the number of servers required for the solution.

Which authentication method should you include in the recommendation?

- A. federated identity with Active Directory Federation Services (AD FS)
- B. password hash synchronization with seamless single sign-on (SSO)
- C. pass-through authentication with seamless single sign-on (SSO)

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Password hash synchronization requires the least effort regarding deployment, maintenance, and infrastructure. This level of effort typically applies to organizations that only need their users to sign in to Office 365, SaaS apps, and other Azure AD-based resources. When turned on, password hash synchronization is part of the Azure AD Connect sync process and runs every two minutes.

Incorrect Answers:

A: A federated authentication system relies on an external trusted system to authenticate users. Some companies want to reuse their existing federated system investment with their Azure AD hybrid identity solution. The maintenance and management of the federated system falls outside the control of Azure AD. It's up to the organization by using the federated system to make sure it's deployed securely and can handle the authentication load.

C: For pass-through authentication, you need one or more (we recommend three) lightweight agents installed on existing servers. These agents must have access to your on-premises Active Directory Domain Services, including your on-premises AD domain controllers. They need outbound access to the Internet and access to your domain controllers. For this reason, it's not supported to deploy the agents in a perimeter network.

Pass-through Authentication requires unconstrained network access to domain controllers. All network traffic is encrypted and limited to authentication requests.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-ptc>

QUESTION 6

Your network contains an on-premises Active Directory domain named corp.contoso.com.

You have an Azure subscription named Sub1 that is associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

You sync all on-premises identities to Azure AD.

You need to prevent users who have a `givenName` attribute that starts with `TEST` from being synced to Azure AD. The solution must minimize administrative effort.

What should you use?

- A. Synchronization Rules Editor
- B. Web Service Configuration Tool

- C. the Azure AD Connect wizard
- D. Active Directory Users and Computers

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Use the Synchronization Rules Editor and write attribute-based filtering rule.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-sync-change-the-configuration>

QUESTION 7

DRAG DROP

You are implementing conditional access policies.

You must evaluate the existing Azure Active Directory (Azure AD) risk events and risk levels to configure and implement the policies.

You need to identify the risk level of the following risk events:

- Users with leaked credentials
- Impossible travel to atypical locations
- Sign-ins from IP addresses with suspicious activity

Which level should you identify for each risk event? To answer, drag the appropriate levels to the correct risk events. Each level 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.

Select and Place:

Levels	Answer Area
High	Impossible travel to atypical locations:
Low	Users with leaked credentials:
Medium	Sign-ins from IP addresses with suspicious activity:

Correct Answer:

Levels	Answer Area
High	Impossible travel to atypical locations:
Low	Users with leaked credentials:
Medium	Sign-ins from IP addresses with suspicious activity:

Section: [none]
Explanation

Explanation/Reference:

Explanation:

Azure AD Identity protection can detect six types of suspicious sign-in activities:

- Users with leaked credentials
- Sign-ins from anonymous IP addresses
- Impossible travel to atypical locations
- Sign-ins from infected devices
- Sign-ins from IP addresses with suspicious activity
- Sign-ins from unfamiliar locations

These six types of events are categorized into 3 levels of risks – High, Medium & Low:

Sign-in Activity	Risk Level
Users with leaked credentials	High
Sign-ins from anonymous IP addresses	Medium
Impossible travel to atypical locations	Medium
Sign-ins from infected devices	Medium
Sign-ins from IP addresses with suspicious activity	Low
Sign-ins from unfamiliar locations	Medium

References:

<http://www.rebeladmin.com/2018/09/step-step-guide-configure-risk-based-azure-conditional-access-policies/>

QUESTION 8**HOTSPOT**

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

Name	Member of	Mobile phone	Multi-factor authentication (MFA) status
User1	Group1	123 555 7890	Disabled
User2	Group1, Group2	None	Enabled
User3	Group1	123 555 7891	Required

You create and enforce an Azure AD Identity Protection user risk policy that has the following settings:

- Assignment: Include Group1, Exclude Group2
- Conditions: Sign-in risk of Medium and above
- Access: Allow access, Require password change

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
------------	-----	----

- If User1 signs in from an unfamiliar location, he must change his password.
- If User2 signs in from an anonymous IP address, she must change her password.
- If User3 signs in from a computer containing malware that is communicating with known bot servers, he must change his password.

Correct Answer:

Answer Area

Statements	Yes	No
------------	-----	----

- If User1 signs in from an unfamiliar location, he must change his password.
- If User2 signs in from an anonymous IP address, she must change her password.
- If User3 signs in from a computer containing malware that is communicating with known bot servers, he must change his password.

Section: [none]**Explanation****Explanation/Reference:**

Explanation:

Box 1: Yes

User1 is member of Group1. Sign in from unfamiliar location is risk level Medium.

Box 2: Yes

User2 is member of Group1. Sign in from anonymous IP address is risk level Medium.

Box 3: No

Sign-ins from IP addresses with suspicious activity is low.

Note:

Sign-in Activity	Risk Level
Users with leaked credentials	High
Sign-ins from anonymous IP addresses	Medium
Impossible travel to atypical locations	Medium
Sign-ins from infected devices	Medium
Sign-ins from IP addresses with suspicious activity	Low
Sign-ins from unfamiliar locations	Medium

Azure AD Identity protection can detect six types of suspicious sign-in activities:

- Users with leaked credentials
- Sign-ins from anonymous IP addresses
- Impossible travel to atypical locations
- Sign-ins from infected devices
- Sign-ins from IP addresses with suspicious activity
- Sign-ins from unfamiliar locations

These six types of events are categorized in to 3 levels of risks – High, Medium & Low:

References:

<http://www.rebeladmin.com/2018/09/step-step-guide-configure-risk-based-azure-conditional-access-policies/>**QUESTION 9**

DRAG DROP

You need to configure an access review. The review will be assigned to a new collection of reviews and reviewed by resource owners.

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.

Select and Place:

Actions	Answer Area
Create an access review program.	
Set Reviewers to Selected users.	
Create an access review audit.	
Create an access review control.	
Set Reviewers to Group owners.	
Set Reviewers to Members.	

Correct Answer:

Actions	Answer Area
Create an access review program.	Create an access review program.
Set Reviewers to Selected users.	Create an access review control.
Create an access review audit.	Set Reviewers to Group owners.
Create an access review control.	
Set Reviewers to Group owners.	
Set Reviewers to Members.	

Section: [none]

Explanation

Explanation/Reference:

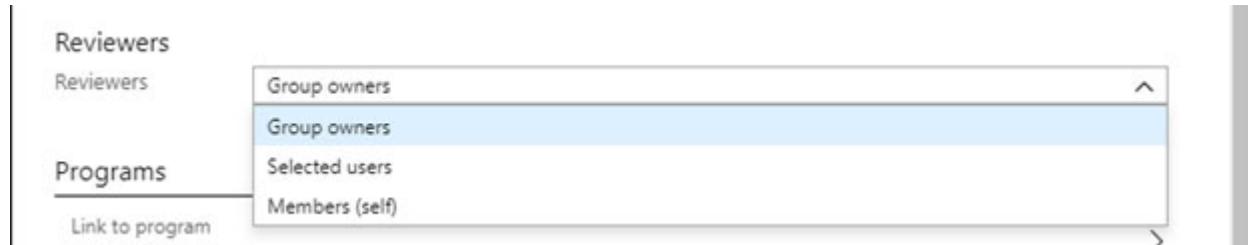
Explanation:

Step 1: Create an access review program

Step 2: Create an access review control

Step 3: Set Reviewers to Group owners

In the Reviewers section, select either one or more people to review all the users in scope. Or you can select to have the members review their own access. If the resource is a group, you can ask the group owners to review.



References:

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

<https://docs.microsoft.com/en-us/azure/active-directory/governance/manage-programs-controls>

QUESTION 10

HOTSPOT

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

Name	Role	Sign in frequency
User1	Password administrator	Sign in every work day
User2	Password administrator	Sign in bi-weekly
User3	Global administrator, Password administrator	Signs in every month

You configure an access review named Review1 as shown in the following exhibit.

Create an access review

Access reviews enable reviewers to attest to users access.

* Review name

Description (1)

* Start date (2)

Frequency

Duration (in days) (3)

End (4)

* Number of times

* End date (5)

Users

Scope Everyone

* Review role membership >

Password administrator

Reviewers

Reviewers

Upon completion settings

Auto apply results to resource (6)

Should reviewer not respond (7)

Advanced settings

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.

Hot Area:

Answer Area

User3 can perform Review1 for

User3 only
User1 and User2 only
User1, User2, and User3

If User2 fails to complete Review1 by March 20, 2019

The Password administrator role will be revoked from User2
User2 will retain the Password administrator role
User3 will receive a confirmation request

Correct Answer:

Answer Area

User3 can perform Review1 for

User3 only
User1 and User2 only
User1, User2, and User3

If User2 fails to complete Review1 by March 20, 2019

The Password administrator role will be revoked from User2
User2 will retain the Password administrator role
User3 will receive a confirmation request

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: User3 only

Use the Members (self) option to have the users review their own role assignments.

Box 2: User3 will receive a confirmation request

Use the Should reviewer not respond list to specify what happens for users that are not reviewed by the reviewer within the review period. This setting does not impact users who have been reviewed by the reviewers manually. If the final reviewer's decision is Deny, then the user's access will be removed.

No change - Leave user's access unchanged

Remove access - Remove user's access

Approve access - Approve user's access

Take recommendations - Take the system's recommendation on denying or approving the user's continued access

References:

<https://docs.microsoft.com/bs-latn-ba/azure/active-directory/privileged-identity-management/pim-how-to-start-security-review>

QUESTION 11

DRAG DROP

You create an Azure subscription.

You need to ensure that you can use Azure Active Directory (Azure AD) Privileged Identity Management (PIM)

to secure Azure AD roles.

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.

Select and Place:

Actions	Answer Area
Verify your identity by using multi-factor authentication (MFA).	
Consent to PIM.	
Sign up PIM for Azure AD roles.	 
Discover privileged roles.	 
Discover resources.	

Correct Answer:

Actions	Answer Area
Verify your identity by using multi-factor authentication (MFA).	Consent to PIM.
Consent to PIM.	Verify your identity by using multi-factor authentication (MFA).
Sign up PIM for Azure AD roles.	  Sign up PIM for Azure AD roles.
Discover privileged roles.	 
Discover resources.	

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Step 1: Consent to PIM

The screenshot shows the Microsoft Azure portal interface. The URL in the browser is https://portal.azure.com/#blade/Microsoft_Azure_PIM/CommonMenuBlade/PIMConsent. The left sidebar contains a list of services and resources, with 'Consent to PIM' highlighted by a red box. The main content area is titled 'Privileged Identity Management - Consent to PIM'. It includes sections for 'Quick start', 'Tasks' (My roles, My requests, Application access, Approve requests, Review access), 'Manage' (Azure AD roles, Azure resources), 'Activity' (My audit history), and 'Troubleshooting + Support' (Troubleshoot, New support request). A large button labeled 'Verify my identity' with an exclamation mark icon is prominently displayed. To the right, there is a section titled 'Azure AD Privileged Identity' with a green icon, followed by text about Azure AD PIM being a Premium feature.

Step: 2 Verify your identity by using multi-factor authentication (MFA)

Click Verify my identity to verify your identity with Azure MFA. You'll be asked to pick an account.

Step 3: Sign up PIM for Azure AD roles

Once you have enabled PIM for your directory, you'll need to sign up PIM to manage Azure AD roles.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-getting-started>

QUESTION 12

HOTSPOT

Your company has two offices in Seattle and New York. Each office connects to the Internet by using a NAT device. The offices use the IP addresses shown in the following table.

Location	IP address space	Public NAT segment
Seattle	10.10.0.0/16	190.15.1.0/24
New York	172.16.0.0/16	194.25.2.0/24

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

Name	Multi-factor authentication (MFA) status
User1	Enabled
User2	Enforced

The MFA service settings are configured as shown in the exhibit. (Click the Exhibit tab.)

trusted ips ([learn more](#))

Skip multi-factor authentication for requests from federated users on my intranet

Skip multi-factor authentication for requests from following range of IP address subnets

10.10.0.0/16

194.25.2.0/24

verification options ([learn more](#))

Methods available to users:

- Call to phone
- Text message to phone

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

	Yes	No
If User1 signs in to Azure from a device that uses an IP address of 134.18.14.10, User1 must be authenticated by using a phone.	<input type="radio"/>	<input type="radio"/>
If User2 signs in to Azure from a device in the Seattle office, User2 must be authenticated by using the Microsoft Authenticator app.	<input type="radio"/>	<input type="radio"/>
If User2 signs in to Azure from a device in the New York office, User1 must be authenticated by using a phone	<input type="radio"/>	<input type="radio"/>

Correct Answer:

Answer Area

	Yes	No
If User1 signs in to Azure from a device that uses an IP address of 134.18.14.10, User1 must be authenticated by using a phone.	<input checked="" type="radio"/>	<input type="radio"/>
If User2 signs in to Azure from a device in the Seattle office, User2 must be authenticated by using the Microsoft Authenticator app.	<input type="radio"/>	<input checked="" type="radio"/>
If User2 signs in to Azure from a device in the New York office, User1 must be authenticated by using a phone	<input type="radio"/>	<input checked="" type="radio"/>

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 2: No

Use of Microsoft Authenticator is not required.

Note: Microsoft Authenticator is a multifactor app for mobile devices that generates time-based codes used during the Two-Step Verification process.

Box 3: No

The New York IP address subnet is included in the "skip multi-factor authentication for request."

References:

<https://www.cayosoft.com/difference-enabling-enforcing-mfa/>

QUESTION 13

Your company plans to create separate subscriptions for each department. Each subscription will be associated to the same Azure Active Directory (Azure AD) tenant.

You need to configure each subscription to have the same role assignments.

What should you use?

- A. Azure Security Center
- B. Azure Blueprints
- C. Azure AD Privileged Identity Management (PIM)
- D. Azure Policy

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The Azure AD Privileged Identity Management (PIM) service also allows Privileged Role Administrators to make permanent admin role assignments.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-how-to-add-role-to-user>

QUESTION 14

HOTSPOT

You have an Azure Container Registry named Registry1.

You add role assignment for Registry1 as shown in the following table.

User	Role
User1	AcrPush
User2	AcrPull
User3	AcrImageSigner
User4	Contributor

Which users can upload images to Registry1 and download images from Registry1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Upload images:

User1 only
User1 and User4 only
User1, User3, and User4
User1, User2, User3, and User4

Download images:

User2 only
User1 and User2 only
User2 ad User4 only
User1, User2, and User4
User1, User2, User3, and User4

Correct Answer:

Answer Area

Upload images:

User1 only
User1 and User4 only
User1, User3, and User4
User1, User2, User3, and User4

Download images:

User2 only
User1 and User2 only
User2 ad User4 only
User1, User2, and User4
User1, User2, User3, and User4

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: User1 and User4 only

Owner, Contributor and AcrPush can push images.

Box 2: User1, User2, and User4

All, except AcrImageSigner, can download/pull images.

Role/Permission	Access Resource Manager	Create/delete registry	Push image	Pull image	Delete image data
Owner	X	X	X	X	X
Contributor	X	X	X	X	X
Reader	X			X	
AcrPush			X	X	
AcrPull				X	
AcrDelete					X
AcrImageSigner					

References:

<https://docs.microsoft.com/bs-latn-ba/azure/container-registry/container-registry-roles>

QUESTION 15

You have an Azure subscription.

You create an Azure web app named Contoso1812 that uses an S1 App service plan.

You create a DNS record for www.contoso.com that points to the IP address of Contoso1812.

You need to ensure that users can access Contoso1812 by using the https://www.contoso.com URL.

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

NOTE: Each correct selection is worth one point.

- A. Turn on the system-assigned managed identity for Contoso1812.
- B. Add a hostname to Contoso1812.
- C. Scale out the App Service plan of Contoso1812.
- D. Add a deployment slot to Contoso1812.
- E. Scale up the App Service plan of Contoso1812.

Correct Answer: BE

Section: [none]**Explanation****Explanation/Reference:**

Explanation:

B: You can configure Azure DNS to host a custom domain for your web apps. For example, you can create an Azure web app and have your users access it using either www.contoso.com or contoso.com as a fully qualified domain name (FQDN).

To do this, you have to create three records:

A root "A" record pointing to contoso.com

A root "TXT" record for verification

A "CNAME" record for the www name that points to the A record

E: To map a custom DNS name to a web app, the web app's App Service plan must be a paid tier (Shared, Basic, Standard, Premium or Consumption for Azure Functions). I

Scale up the App Service plan: Select any of the non-free tiers (D1, B1, B2, B3, or any tier in the Production category).

References:

<https://docs.microsoft.com/en-us/azure/dns/dns-web-sites-custom-domain>

QUESTION 16

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 subscription named Sub1.

You have an Azure Storage account named Sa1 in a resource group named RG1.

Users and applications access the blob service and the file service in Sa1 by using several shared access signatures (SASs) and stored access policies.

You discover that unauthorized users accessed both the file service and the blob service.

You need to revoke all access to Sa1.

Solution: You create a lock on Sa1.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section: [none]**Explanation****Explanation/Reference:**

Explanation:

To revoke a stored access policy, you can either delete it, or rename it by changing the signed identifier. Changing the signed identifier breaks the associations between any existing signatures and the stored access policy. Deleting or renaming the stored access policy immediately affects all of the shared access signatures

associated with it.

References:

<https://docs.microsoft.com/en-us/rest/api/storageservices/Establishing-a-Stored-Access-Policy>

QUESTION 17

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 hybrid configuration of Azure Active Directory (Azure AD).

You have an Azure HDInsight cluster on a virtual network.

You plan to allow users to authenticate to the cluster by using their on-premises Active Directory credentials.

You need to configure the environment to support the planned authentication.

Solution: You deploy Azure Active Directory Domain Services (Azure AD DS) to the Azure subscription.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Instead, you connect HDInsight to your on-premises network by using Azure Virtual Networks and a VPN gateway.

Note: To allow HDInsight and resources in the joined network to communicate by name, you must perform the following actions:

- Create Azure Virtual Network.
- Create a custom DNS server in the Azure Virtual Network.
- Configure the virtual network to use the custom DNS server instead of the default Azure Recursive Resolver.
- Configure forwarding between the custom DNS server and your on-premises DNS server.

References:

<https://docs.microsoft.com/en-us/azure/hdinsight/connect-on-premises-network>

QUESTION 18

Your network contains an Active Directory forest named contoso.com. You have an Azure Directory (Azure AD) tenant named contoso.com.

You plan to configure synchronization by using the Express Settings installation option in Azure AD Connect.

You need to identify which roles and groups are required to perform the planned configurations. The solution must use the principle of least privilege.

Which two roles and groups should you identify? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. the Domain Admins group in Active Directory
- B. the Security administrator role in Azure AD
- C. the Global administrator role in Azure AD
- D. the User administrator role in Azure AD
- E. the Enterprise Admins group in Active Directory

Correct Answer: CE

Section: [none]

Explanation

Explanation/Reference:

References:

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

QUESTION 19

DRAG DROP

You create an Azure subscription with Azure AD Premium P2.

You need to ensure that you can use Azure Active Directory (Azure AD) Privileged Identity Management (PIM) to secure Azure roles.

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.

Select and Place:

Actions	Answer Area
Discover privileged roles.	
Sign up PIM for Azure AD roles.	
Consent to PIM.	
Discover resources.	
Verify your identity by using multi-factor authentication (MFA).	

Correct Answer:

Actions	Answer Area
Discover privileged roles.	Consent to PIM.
	Verify your identity by using multi-factor authentication (MFA).
Discover resources.	Sign up PIM for Azure AD roles.

Section: [none]

Explanation

Explanation/Reference:

Testlet 1

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 question on 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 sections 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 on 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

Litware, Inc. is a digital media company that has 500 employees in the Chicago area and 20 employees in the San Francisco area.

Existing Environment

Litware has an Azure subscription named Sub1 that has a subscription ID of 43894a43-17c2-4a39-8fcf-3540c2653ef4.

Sub1 is associated to an Azure Active Directory (Azure AD) tenant named litwareinc.com. The tenant contains the user objects and the device objects of all the Litware employees and their devices. Each user is assigned an Azure AD Premium P2 license. Azure AD Privileged Identity Management (PIM) is activated.

The tenant contains the groups shown in the following table.

Name	Type	Description
Group1	Security group	A group that has the Dynamic User membership type, contains all the San Francisco users, and provides access to many Azure AD applications and Azure resources.
Group2	Security group	A group that has the Dynamic User membership type and contains the Chicago IT team

The Azure subscription contains the objects shown in the following table.

Name	Type	Description
VNet1	Virtual network	VNet1 is a virtual network that contains security-sensitive IT resources. VNet1 contains three subnets named Subnet0, Subnet1, and AzureFirewallSubnet.
VM0	Virtual machine	VM0 is an Azure virtual machine that runs Windows Server 2016, connects to Subnet0, and has just in time (JIT) VM access configured.
VM1	Virtual machine	VM1 is an Azure virtual machine that runs Windows Server 2016 and connects to Subnet0.
SQLDB1	Azure SQL Database	SQLDB1 is an Azure SQL database on a SQL Database server named LitwareSQLServer1.
WebApp1	Web app	WebApp1 is an Azure web app that is accessible by using https://litwareinc.com and http://www.litwareinc.com .
Resource Group1	Resource group	Resource Group1 is a resource group that contains VNet1, VM0, and VM1.
Resource Group2	Resource group	Resource Group2 is a resource group that contains shared IT resources.

Azure Security Center is set to the Free tier.

Planned changes

Litware plans to deploy the Azure resources shown in the following table.

Name	Type	Description
Firewall1	Azure Firewall	An Azure firewall on VNet1.
RT1	Route table	A route table that will contain a route pointing to Firewall1 as the default gateway and will be assigned to Subnet0.
AKS1	Azure Kubernetes Service (AKS)	A managed AKS cluster

Litware identifies the following identity and access requirements:

- All San Francisco users and their devices must be members of Group1.
- The members of Group2 must be assigned the Contributor role to Resource Group2 by using a permanent eligible assignment.
- Users must be prevented from registering applications in Azure AD and from consenting to applications that access company information on the users' behalf.

Platform Protection Requirements

Litware identifies the following platform protection requirements:

- Microsoft Antimalware must be installed on the virtual machines in Resource Group1.
- The members of Group2 must be assigned the Azure Kubernetes Service Cluster Admin Role.
- Azure AD users must be to authenticate to AKS1 by using their Azure AD credentials.

- Following the implementation of the planned changes, the IT team must be able to connect to VM0 by using JIT VM access.
- A new custom RBAC role named Role1 must be used to delegate the administration of the managed disks in Resource Group1. Role1 must be available only for Resource Group1.

Security Operations Requirements

Litware must be able to customize the operating system security configurations in Azure Security Center.

Data and Application Requirements

Litware identifies the following data and applications requirements:

- The users in Group2 must be able to authenticate to SQLDB1 by using their Azure AD credentials
- WebApp1 must enforce mutual authentication

General Requirements

Litware identifies the following general requirements:

- Whenever possible, administrative effort must be minimized
- Whenever possible, use of automation must be minimized

QUESTION 1

You need to ensure that users can access VM0. The solution must meet the platform protection requirements.

What should you do?

- A. Move VM0 to Subnet1.
- B. On Firewall, configure a network traffic filtering rule.
- C. Assign RT1 to AzureFirewallSubnet.
- D. On Firewall, configure a DNAT rule.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Azure Firewall has the following known issue:

Conflict with Azure Security Center (ASC) Just-in-Time (JIT) feature.

If a virtual machine is accessed using JIT, and is in a subnet with a user-defined route that points to Azure Firewall as a default gateway, ASC JIT doesn't work. This is a result of asymmetric routing – a packet comes in via the virtual machine public IP (JIT opened the access), but the return path is via the firewall, which drops the packet because there is no established session on the firewall.

Solution: To work around this issue, place the JIT virtual machines on a separate subnet that doesn't have a user-defined route to the firewall.

Scenario:

Scenario: VM0 connects to Subnet0		
VM0	Virtual machine	VM0 is an Azure virtual machine that runs Windows Server 2016, connects to Subnet0, and has just in time (JIT) VM access configured.

Following the implementation of the planned changes, the IT team must be able to connect to VM0 by using JIT VM access.

Name	Type	Description
Firewall1	Azure Firewall	An Azure firewall on VNet1.
RT1	Route table	A route table that will contain a route pointing to Firewall1 as the default gateway and will be assigned to Subnet0.

References:

<https://docs.microsoft.com/en-us/azure/firewall/overview>

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 question on 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 sections 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 on 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.

Existing Environment

The company hosts its entire server infrastructure in Azure.

Contoso has two Azure subscriptions named Sub1 and Sub2. Both subscriptions are associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

Azure AD

Contoso.com contains the users shown in the following table.

Name	City	Role
User1	Montreal	Global administrator
User2	MONTREAL	Security administrator
User3	London	Privileged role administrator
User4	Ontario	Application administrator
User5	Seattle	Cloud application administrator
User6	Seattle	User administrator
User7	Sydney	Reports reader
User8	Sydney	None
User9	Sydney	Owner

Contoso.com contains the security groups shown in the following table.

Name	Membership type	Dynamic membership rule
Group1	Dynamic user	user.city -contains "ON"
Group2	Dynamic user	user.city -match "*on"

Sub1

Sub1 contains six resource groups named RG1, RG2, RG3, RG4, RG5, and RG6.

User9 creates the virtual networks shown in the following table.

Name	Resource group
VNET1	RG1
VNET2	RG2
VNET3	RG3
VNET4	RG4

Sub1 contains the locks shown in the following table.

Name	Set on	Lock type
Lock1	RG1	Delete
Lock2	RG2	Read-only
Lock3	RG3	Delete
Lock4	RG3	Read-only

Sub1 contains the Azure policies shown in the following table.

Policy definition	Resource type	Scope
Allowed resource types	networkSecurityGroups	RG4
Not allowed resource types	virtualNetworks/subnets	RG5
Not allowed resource types	networksSecurityGroups	RG5
Not allowed resource types	virtualNetworks/virtualNetworkPeerings	RG6

Sub2

Sub2 contains the virtual networks shown in the following table.

Name	Subnet
VNetwork1	Subnet11, Subnet12, and Subnet13
VNetwork2	Subnet21

Sub2 contains the virtual machines shown in the following table.

Name	Network interface	Application security group	Connected to
VM1	NIC1	ASG1	Subnet11
VM2	NIC2	ASG2	Subnet11
VM3	NIC3	<i>None</i>	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	<i>None</i>	Subnet21

All virtual machines have public IP addresses and the Web Server (IIS) role installed. The firewalls for each virtual machine allow ping requests and web requests.

Sub2 contains the network security groups (NSGs) shown in the following table.

Name	Associated to
NSG1	NIC2
NSG2	Subnet11
NSG3	Subnet13
NSG4	Subnet21

NSG1 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG2 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	80	TCP	Internet	VirtualNetwork	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG3 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	TCP	ASG1	ASG1	Allow
150	Any	Any	ASG2	VirtualNetwork	Allow
200	Any	Any	Any	Any	Deny
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG4 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	Any	Any	Any	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG1, NSG2, NSG3, and NSG4 have the outbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	Any	Internet	Allow
65500	Any	Any	Any	Any	Deny

Technical requirements

Contoso identifies the following technical requirements:

- Deploy Azure Firewall to VNetwork1 in Sub2.
- Register an application named App2 in contoso.com.
- Whenever possible, use the principle of least privilege.
- Enable Azure AD Privileged Identity Management (PIM) for contoso.com.

QUESTION 1

HOTSPOT

What is the membership of Group1 and Group2? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Group1:

No members
Only User2
Only User2 and User4
User1, User2, User3, and User4

Group2:

No members
Only User3
Only User1 and User3
User1, User2, User3, and User4

Correct Answer:

Answer Area

Group1:

No members
Only User2
Only User2 and User4
User1, User2, User3, and User4

Group2:

No members
Only User3
Only User1 and User3
User1, User2, User3, and User4

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: User1, User2, User3, User4

Contains "ON" is true for Montreal (User1), MONTREAL (User2), London (User 3), and Ontario (User4) as string and regex operations are not case sensitive.

Box 2: Only User3

Match "*on" is only true for London (User3) as 'London' is the only word that ends with 'on'.

Scenario:

Contoso.com contains the users shown in the following table.

Name	City	Role
User1	Montreal	Global administrator
User2	MONTREAL	Security administrator
User3	London	Privileged role administrator
User4	Ontario	Application administrator
User5	Seattle	Cloud application administrator
User6	Seattle	User administrator
User7	Sydney	Reports reader
User8	Sydney	None

Contoso.com contains the security groups shown in the following table.

Name	Membership type	Dynamic membership rule
Group1	Dynamic user	user.city -contains "ON"
Group2	Dynamic user	user.city -match "*on"

References:

<https://docs.microsoft.com/en-us/azure/active-directory/users-groups-roles/groups-dynamic-membership>

QUESTION 2

HOTSPOT

You are evaluating the security of the network communication between the virtual machines in Sub2.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
From VM1, you can successfully ping the public IP address of VM2.	<input type="radio"/>	<input type="radio"/>
From VM1, you can successfully ping the private IP address of VM3.	<input type="radio"/>	<input type="radio"/>
From VM1, you can successfully ping the public IP address of VM5.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

Answer Area

Statements	Yes	No
From VM1, you can successfully ping the public IP address of VM2.	<input checked="" type="radio"/>	<input type="radio"/>
From VM1, you can successfully ping the private IP address of VM3.	<input checked="" type="radio"/>	<input type="radio"/>
From VM1, you can successfully ping the public IP address of VM5.	<input type="radio"/>	<input checked="" type="radio"/>

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: Yes

NSG1 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG2 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	80	TCP	Internet	VirtualNetwork	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

Box 2: Yes. VM3 is on Subnet12. There is no NSG attached to Subnet12 so the traffic will be allowed by default.

Name	Network interface	Application security group	Connected to
VM1	NIC1	ASG1	Subnet11
VM2	NIC2	ASG2	Subnet11
VM3	NIC3	<i>None</i>	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	<i>None</i>	Subnet21

Name	Associated to
NSG1	NIC2
NSG2	Subnet11
NSG3	Subnet13
NSG4	Subnet21

Box 3: No (because VM5 is in a separate VNet).

Note: Sub2 contains the virtual machines shown in the following table.

Name	Network interface	Application security group	Connected to
VM1	NIC1	ASG1	Subnet11
VM2	NIC2	ASG2	Subnet11
VM3	NIC3	<i>None</i>	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	<i>None</i>	Subnet21

Name	Subnet
VNetwork1	Subnet11, Subnet12, and Subnet13
VNetwork2	Subnet21

QUESTION 3

HOTSPOT

You are evaluating the effect of the application security groups on the network communication between the virtual machines in Sub2.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer area	Statements	Yes	No
	From VM1, you can successfully ping the private IP address of VM4.	<input type="radio"/>	<input type="radio"/>
	From VM2, you can successfully ping the private IP address of VM4.	<input type="radio"/>	<input type="radio"/>
	From VM1, you can connect to the web server on VM4.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

Answer area	Statements	Yes	No
	From VM1, you can successfully ping the private IP address of VM4.	<input checked="" type="radio"/>	<input type="radio"/>
	From VM2, you can successfully ping the private IP address of VM4.	<input type="radio"/>	<input checked="" type="radio"/>
	From VM1, you can connect to the web server on VM4.	<input checked="" type="radio"/>	<input type="radio"/>

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: No. VM4 is in Subnet13 which has NSG3 attached to it.

VM1 is in ASG1. NSG3 would only allow ICMP pings from ASG2 but not ASG1. Only TCP traffic is allowed from ASG1.

NSG3 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	TCP	ASG1	ASG1	Allow
150	Any	Any	ASG2	VirtualNetwork	Allow
200	Any	Any	Any	Any	Deny
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

Box 2: Yes.

VM2 is in ASG2. Any protocol is allowed from ASG2 so ICMP ping would be allowed.

Box3. VM1 is in ASG1. TCP traffic is allowed from ASG1 so VM1 could connect to the web server as connections to the web server would be on ports TCP 80 or TCP 443.

QUESTION 4

You need to meet the technical requirements for VNetwork1.

What should you do first?

- A. Create a new subnet on VNetwork1.
- B. Remove the NSGs from Subnet11 and Subnet13.
- C. Associate an NSG to Subnet12.
- D. Configure DDoS protection for VNetwork1.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

From scenario: Deploy Azure Firewall to VNetwork1 in Sub2.

Azure firewall needs a dedicated subnet named AzureFirewallSubnet.

References:

<https://docs.microsoft.com/en-us/azure/firewall/tutorial-firewall-deploy-portal>

Question Set 3

QUESTION 1

You have an Azure subscription named Sub1. Sub1 contains a virtual network named VNet1 that contains one subnet named Subnet1.

Subnet1 contains an Azure virtual machine named VM1 that runs Ubuntu Server 18.04.

You create a service endpoint for MicrosoftStorage in Subnet1.

You need to ensure that when you deploy Docker containers to VM1, the containers can access Azure Storage resources by using the service endpoint.

What should you do on VM1 before you deploy the container?

- A. Create an application security group and a network security group (NSG).
- B. Edit the docker-compose.yml file.
- C. Install the container network interface (CNI) plug-in.

Correct Answer: C

Section: [none]

Explanation

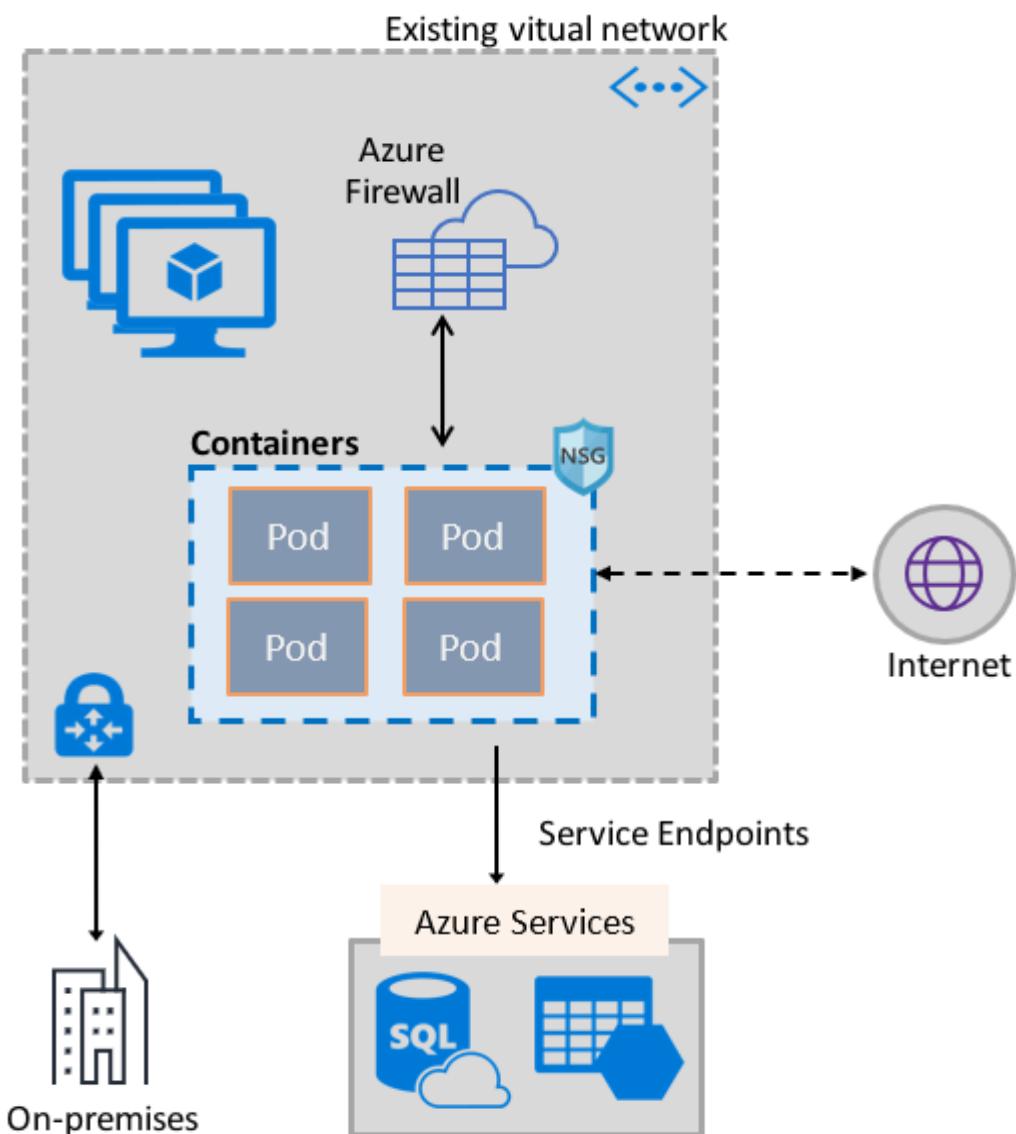
Explanation/Reference:

Explanation:

The Azure Virtual Network container network interface (CNI) plug-in installs in an Azure Virtual Machine. The plug-in supports both Linux and Windows platform.

The plug-in assigns IP addresses from a virtual network to containers brought up in the virtual machine, attaching them to the virtual network, and connecting them directly to other containers and virtual network resources. The plug-in doesn't rely on overlay networks, or routes, for connectivity, and provides the same performance as virtual machines.

The following picture shows how the plug-in provides Azure Virtual Network capabilities to Pods:



References:

<https://docs.microsoft.com/en-us/azure/virtual-network/container-networking-overview>

QUESTION 2

You have Azure Resource Manager templates that you use to deploy Azure virtual machines.

You need to disable unused Windows features automatically as instances of the virtual machines are provisioned.

What should you use?

- A. device configuration policies in Microsoft Intune
- B. an Azure Desired State Configuration (DSC) virtual machine extension
- C. application security groups
- D. Azure Logic Apps

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You can use Azure Automation State Configuration to manage Azure VMs (both Classic and Resource Manager), on-premises VMs, Linux machines, AWS VMs, and on-premises physical machines.

Note: Azure Automation State Configuration provides a DSC pull server similar to the Windows Feature DSC-Service so that target nodes automatically receive configurations, conform to the desired state, and report back on their compliance. The built-in pull server in Azure Automation eliminates the need to set up and maintain your own pull server. Azure Automation can target virtual or physical Windows or Linux machines, in the cloud or on-premises.

References:

<https://docs.microsoft.com/en-us/azure/automation/automation-dsc-getting-started>

QUESTION 3

DRAG DROP

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

Name	Region	Description
HubVNet	East US	HubVNet is a virtual network connected to the on-premises network by using a site-to-site VPN that has BGP route propagation enabled. HubVNet contains a subnet named HubVNetSubnet0.
SpokeVNet	East US	SpokeVNet is a virtual network connected to HubVNet by using VNet peering. SpokeVNet contains a subnet named SpokeVNetSubnet0.

The Azure virtual machines on SpokeVNetSubnet0 can communicate with the computers on the on-premises network.

You plan to deploy an Azure firewall to HubVNet.

You create the following two routing tables:

- RT1: Includes a user-defined route that points to the private IP address of the Azure firewall as a next hop address
- RT2: Disables BGP route propagation and defines the private IP address of the Azure firewall as the default gateway

You need to ensure that traffic between SpokeVNetSubnet0 and the on-premises network flows through the Azure firewall.

To which subnet should you associate each route table? To answer, drag the appropriate subnets to the correct route tables. Each subnet 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.

Select and Place:

Subnets

Azure FirewallSubnet

GatewaySubnet

HubVNetSubnet0

Answer Area

RT1:

RT2:

Correct Answer:

Subnets

Azure FirewallSubnet

GatewaySubnet

HubVNetSubnet0

Answer Area

RT1:

GatewaySubnet

RT2:

HubVNetSubnet0

Section: [none]

Explanation

Explanation/Reference:

QUESTION 4

HOTSPOT

You have an Azure subscription. The subscription contains Azure virtual machines that run Windows Server 2016.

You need to implement a policy to ensure that each virtual machine has a custom antimalware virtual machine extension installed.

How should you complete the policy? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
[{"  
  "if": {  
    "allOf": [  
      {  
        "field": "type",  
        "equals": "Microsoft.Compute/virtualMachines"  
      },  
      {  
        "field": "Microsoft.Compute/imagesSKU",  
        "equals": "2016-Datacenter"  
      }  
    ]  
  },  
  "then": {  
    "effect": "Allow",  
    "details": {  
      "type": "Microsoft.GuestConfiguration/guestConfigurationAssignments",  
      "roleDefinitionIds": [  
        "/providers/microsoft.authorization/roleDefinitions/12345678-1234-5678-abcd-012345678910"  
      ],  
      "name": "customExtension",  
      "deployment": {  
        "properties": {  
          "mode": "incremental"  
        },  
        "parameters": {  
          "": {  
            "existenceCondition": "exists",  
            "resources": "https://management.azure.com/resources",  
            "template": "https://management.azure.com/resources"  
          }  
        }  
      }  
    }  
  }  
}
```

Correct Answer:

Answer Area

```
[{"  
  "if": {  
    "allOf": [  
      {  
        "field": "type",  
        "equals": "Microsoft.Compute/virtualMachines"  
      },  
      {  
        "field": "Microsoft.Compute/imagesSKU",  
        "equals": "2016-Datacenter"  
      }  
    ]  
  },  
  "then": {  
    "effect": "  
      Append  
      Deny  
      DeployIfNotExists  
    ",  
    "details": {  
      "type": "Microsoft.GuestConfiguration/guestConfigurationAssignments",  
      "roleDefinitionIds": [  
        "/providers/microsoft.authorization/roleDefinitions/12345678-1234-5678-abcd-012345678910"  
      ],  
      "name": "customExtension",  
      "deployment": {  
        "properties": {  
          "mode": "incremental"  
        },  
        "parameters": {  
        },  
        "existenceCondition": "  
          resources  
          template  
        ",  
        "resources": [  
        ],  
        "template": "  
          ${{ parameters }}  
        "  
      }  
    }  
  }  
}
```

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: DeployIfNotExists

DeployIfNotExists executes a template deployment when the condition is met.

Box 2: Template

The details property of the DeployIfNotExists effects has all the subproperties that define the related resources to match and the template deployment to execute.

Deployment [required]

This property should include the full template deployment as it would be passed to the Microsoft.Resources/deployment

References:

<https://docs.microsoft.com/en-us/azure/governance/policy/concepts/effects>

QUESTION 5

You are configuring an Azure Kubernetes Service (AKS) cluster that will connect to an Azure Container Registry.

You need to use the auto-generated service principal to authenticate to the Azure Container Registry.

What should you create?

- A. an Azure Active Directory (Azure AD) group
- B. an Azure Active Directory (Azure AD) role assignment
- C. an Azure Active Directory (Azure AD) user
- D. a secret in Azure Key Vault

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

When you create an AKS cluster, Azure also creates a service principal to support cluster operability with other Azure resources. You can use this auto-generated service principal for authentication with an ACR registry. To do so, you need to create an Azure AD role assignment that grants the cluster's service principal access to the container registry.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/container-registry/container-registry-auth-aks>

QUESTION 6

HOTSPOT

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

Name	Resource group	Status
VM1	RG1	Stopped (Deallocated)
VM2	RG2	Stopped (Deallocated)

You create the Azure policies shown in the following table.

Policy definition	Resource type	Scope
Not allowed resource types	virtualMachines	RG1
Allowed resource types	virtualMachines	RG2

You create the resource locks shown in the following table.

Name	Type	Created on
Lock1	Read-only	VM1
Lock2	Read-only	RG2

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Statements	Yes	No
You can start VM1.	<input type="radio"/>	<input type="radio"/>
You can start VM2.	<input type="radio"/>	<input type="radio"/>
You can create a virtual machine in RG2.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

Answer Area

Statements	Yes	No
You can start VM1.	<input type="radio"/>	<input checked="" type="radio"/>
You can start VM2.	<input checked="" type="radio"/>	<input type="radio"/>
You can create a virtual machine in RG2.	<input checked="" type="radio"/>	<input type="radio"/>

Section: [none]

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/governance/blueprints/concepts/resource-locking>

QUESTION 7

HOTSPOT

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

Name	Operating system	Region	Resource group
VM1	Windows Server 2012	East US	RG1
VM2	Windows Server 2012 R2	West US	RG1
VM3	Windows Server 2016	West US	RG2
VM4	Ubuntu Server 18.04 LTS	West US	RG2
VM5	Red Hat Enterprise Linux 7.4	East US	RG1
VM6	CentOS 7.5	East US	RG1

You schedule two update deployments named Update1 and Update2. Update1 updates VM3. Update2 updates VM6.

Which additional virtual machines can be updated by using Update1 and Update2? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Update1:

- VM2 only
- VM4 only
- VM1 and VM2 only
- VM1, VM2, VM4, VM5, and VM6

Update2:

- VM5 only
- VM1 and VM5 only
- VM4 and VM5 only
- VM1, VM2, and VM5 only
- VM1, VM2, VM3, VM4, and VM5

Correct Answer:

Answer Area

Update1:

VM2 only
VM4 only
VM1 and VM2 only
VM1, VM2, VM4, VM5, and VM6

Update2:

VM5 only
VM1 and VM5 only
VM4 and VM5 only
VM1, VM2, and VM5 only
VM1, VM2, VM3, VM4, and VM5

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Update1: VM1 and VM2 only

VM3: Windows Server 2016 West US RG2

Update2: VM4 and VM5 only

VM6: CentOS 7.5 East US RG1

For Linux, the machine must have access to an update repository. The update repository can be private or public.

References:

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

QUESTION 8

HOTSPOT

You have an Azure subscription named Sub1.

You create a virtual network that contains one subnet. On the subnet, you provision the virtual machines shown in the following table.

Name	Network interface	Application security group assignment	IP address
VM1	NIC1	AppGroup12	10.0.0.10
VM2	NIC2	AppGroup12	10.0.0.11
VM3	NIC3	AppGroup3	10.0.0.100
VM4	NIC4	AppGroup4	10.0.0.200

Currently, you have not provisioned any network security groups (NSGs).

You need to implement network security to meet the following requirements:

- Allow traffic to VM4 from VM3 only.
- Allow traffic from the Internet to VM1 and VM2 only.
- Minimize the number of NSGs and network security rules.

How many NSGs and network security rules should you create? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

NSGs:

1
2
3
4

Network security rules:

1
2
3
4

Correct Answer:

Answer Area

NSGs:

1
2
3
4

Network security rules:

1
2
3
4

Section: [none]

Explanation

Explanation/Reference:

Explanation:

NSGs: 2

Network security rules: 3

Not 2: You cannot specify multiple service tags or application groups) in a security rule.

References:

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

QUESTION 9

HOTSPOT

You have an Azure key vault.

You need to delegate administrative access to the key vault to meet the following requirements:

- Provide a user named User1 with the ability to set advanced access policies for the key vault.
- Provide a user named User2 with the ability to add and delete certificates in the key vault.
- Use the principle of least privilege.

What should you use to assign access to each user? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

User1:

- A key vault access policy
- Azure Information Protection
- Azure Policy
- Managed identities for Azure resources
- RBAC

User2:

- A key vault access policy
- Azure Information Protection
- Azure Policy
- Managed identities for Azure resources
- RBAC

Correct Answer:

Answer Area

User1:

A key vault access policy
Azure Information Protection
Azure Policy
Managed identities for Azure resources
RBAC

User2:

A key vault access policy
Azure Information Protection
Azure Policy
Managed identities for Azure resources
RBAC

Section: [none]

Explanation

Explanation/Reference:

Explanation:

User1: RBAC

RBAC is used as the Key Vault access control mechanism for the management plane. It would allow a user with the proper identity to:

- set Key Vault access policies
- create, read, update, and delete key vaults
- set Key Vault tags

Note: Role-based access control (RBAC) is a system that provides fine-grained access management of Azure resources. Using RBAC, you can segregate duties within your team and grant only the amount of access to users that they need to perform their jobs.

User2: A key vault access policy

A key vault access policy is the access control mechanism to get access to the key vault data plane. Key Vault access policies grant permissions separately to keys, secrets, and certificates.

References:

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

QUESTION 10

HOTSPOT

You have two Azure virtual machines in the East US2 region as shown in the following table.

Name	Operating system	Type	Tier
VM1	Windows Server 2008 R2	A3	Basic
VM2	Ubuntu 16.04-DAILY-LTS	L4s	Standard

You deploy and configure an Azure Key vault.

You need to ensure that you can enable Azure Disk Encryption on VM1 and VM2.

What should you modify on each virtual machine? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

VM1:

The operating system version
The tier
The type

VM2:

The operating system version
The tier
The type

Correct Answer:

Answer Area

VM1:	<table border="1"><tr><td>The operating system version</td></tr><tr style="background-color: #90EE90;"><td>The tier</td></tr><tr><td>The type</td></tr></table>	The operating system version	The tier	The type
The operating system version				
The tier				
The type				
VM2:	<table border="1"><tr><td>The operating system version</td></tr><tr><td>The tier</td></tr><tr style="background-color: #90EE90;"><td>The type</td></tr></table>	The operating system version	The tier	The type
The operating system version				
The tier				
The type				

Section: [none]
Explanation

Explanation/Reference:

Explanation:

VM1: The Tier

The Tier needs to be upgraded to standard.

Disk Encryption for Windows and Linux IaaS VMs is in General Availability in all Azure public regions and Azure Government regions for Standard VMs and VMs with Azure Premium Storage.

VM2: The type

Need to change the VMtype to any of A, D, DS, G, GS, F, and so on, series IaaS VMs.

Not the operating system version: Ubuntu 16.04 is supported.

References:

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

https://docs.microsoft.com/en-us/azure/security/azure-security-disk-encryption-faq#bkmk_LinuxOSSupport

QUESTION 11

You have an Azure virtual machines shown in the following table.

Name	Operating system	Region	Resource group
VM1	Windows Server 2012	East US	RG1
VM2	Windows Server 2012 R2	West Europe	RG1
VM3	Windows Server 2016	West Europe	RG2
VM4	Red Hat Enterprise Linux 7.4	East US	RG2

You create an Azure Log Analytics workspace named Analytics1 in RG1 in the East US region.

Which virtual machines can be enrolled in Analytics1?

- A. VM1 only
- B. VM1, VM2, and VM3 only
- C. VM1, VM2, VM3, and VM4
- D. VM1 and VM4 only

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Note: Create a workspace

- In the Azure portal, click All services. In the list of resources, type Log Analytics. As you begin typing, the list filters based on your input. Select Log Analytics.
- Click Create, and then select choices for the following items:

Provide a name for the new Log Analytics workspace, such as DefaultLAWorkspace. OMS workspaces are now referred to as Log Analytics workspaces.

Select a Subscription to link to by selecting from the drop-down list if the default selected is not appropriate.

For Resource Group, select an existing resource group that contains one or more Azure virtual machines.

Select the Location your VMs are deployed to. For additional information, see which regions Log Analytics is available in.

Incorrect Answers:

B, C: A Log Analytics workspace provides a geographic location for data storage. VM2 and VM3 are at a different location.

D: VM4 is a different resource group.

References:

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/manage-access>

QUESTION 12

You are testing an Azure Kubernetes Service (AKS) cluster. The cluster is configured as shown in the exhibit.
(Click the **Exhibit** tab.)

BASICS

Subscription	Microsoft Azure Sponsorship
Resource group	AzureBackupRG_eastus2_1
Region	East US
Kubernetes cluster name	akscluster2
Kubernetes version	1.11.5
DNS name prefix	akscluster2
Node count	3
Node size	Standard_DS2_v2
Virtual nodes (preview)	Disabled
AUTHENTICATION	
Enable RBAC	No
NETWORKING	
HTTP application routing	Yes
Network configuration	Basic
MONITORING	
Enable container monitoring	No
TAGS	

You plan to deploy the cluster to production. You disable HTTP application routing.

You need to implement application routing that will provide reverse proxy and TLS termination for AKS services by using a single IP address.

What should you do?

- A. Create an AKS Ingress controller.
- B. Install the container network interface (CNI) plug-in.
- C. Create an Azure Standard Load Balancer.
- D. Create an Azure Basic Load Balancer.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

An ingress controller is a piece of software that provides reverse proxy, configurable traffic routing, and TLS termination for Kubernetes services.

References:

<https://docs.microsoft.com/en-us/azure/aks/ingress-tls>

QUESTION 13

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 use Azure Security Center for the centralized policy management of three Azure subscriptions.

You use several policy definitions to manage the security of the subscriptions.

You need to deploy the policy definitions as a group to all three subscriptions.

Solution: You create a policy definition and assignments that are scoped to resource groups.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

References:

<https://4sysops.com/archives/apply-governance-policy-to-multiple-azure-subscriptions-with-management-groups/>

QUESTION 14

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 use Azure Security Center for the centralized policy management of three Azure subscriptions.

You use several policy definitions to manage the security of the subscriptions.

You need to deploy the policy definitions as a group to all three subscriptions.

Solution: You create a resource graph and an assignment that is scoped to a management group.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

References:

<https://4sysops.com/archives/apply-governance-policy-to-multiple-azure-subscriptions-with-management-groups/>

QUESTION 15

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 Subscription. The subscription contains 50 virtual machines that run Windows Server 2012 R2 or Windows Server 2016.

You need to deploy Microsoft Antimalware to the virtual machines.

Solution: You add an extension to each virtual machine.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You can use Visual Studio to enable and configure the Microsoft Antimalware service. This entails selecting Microsoft Antimalware extension from the dropdown list under Installed Extensions and click Add to configure with default antimalware configuration.

References:

<https://docs.microsoft.com/en-us/azure/security/fundamentals/antimalware>

QUESTION 16

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 Subscription. The subscription contains 50 virtual machines that run Windows Server 2012 R2 or Windows Server 2016.

You need to deploy Microsoft Antimalware to the virtual machines.

Solution: You connect to each virtual machine and add a Windows feature.

Does this meet the goal?

- A. Yes
- B. No

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Microsoft Antimalware is deployed as an extension and not a feature.

References:

<https://docs.microsoft.com/en-us/azure/security/fundamentals/antimalware>

QUESTION 17

From Azure Security, you create a custom alert rule.

You need to configure which users will receive an email message when the alert is triggered.

What should you do?

- A. From Azure Monitor, create an action group.
- B. From Security Center, modify the Security policy settings of the Azure subscription.
- C. From Azure Active Directory (Azure AD), modify the members of the Security Reader role group.
- D. From Security Center, modify the alert rule.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/action-groups>

Testlet 1

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 question on 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 sections 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 on 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.

Existing Environment

The company hosts its entire server infrastructure in Azure.

Contoso has two Azure subscriptions named Sub1 and Sub2. Both subscriptions are associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

Azure AD

Contoso.com contains the users shown in the following table.

Name	City	Role
User1	Montreal	Global administrator
User2	MONTREAL	Security administrator
User3	London	Privileged role administrator
User4	Ontario	Application administrator
User5	Seattle	Cloud application administrator
User6	Seattle	User administrator
User7	Sydney	Reports reader
User8	Sydney	None
User9	Sydney	Owner

Contoso.com contains the security groups shown in the following table.

Name	Membership type	Dynamic membership rule
Group1	Dynamic user	user.city -contains "ON"
Group2	Dynamic user	user.city -match "*on"

Sub1

Sub1 contains six resource groups named RG1, RG2, RG3, RG4, RG5, and RG6.

User9 creates the virtual networks shown in the following table.

Name	Resource group
VNET1	RG1
VNET2	RG2
VNET3	RG3
VNET4	RG4

Sub1 contains the locks shown in the following table.

Name	Set on	Lock type
Lock1	RG1	Delete
Lock2	RG2	Read-only
Lock3	RG3	Delete
Lock4	RG3	Read-only

Sub1 contains the Azure policies shown in the following table.

Policy definition	Resource type	Scope
Allowed resource types	networkSecurityGroups	RG4
Not allowed resource types	virtualNetworks/subnets	RG5
Not allowed resource types	networksSecurityGroups	RG5
Not allowed resource types	virtualNetworks/virtualNetworkPeerings	RG6

Sub2

Sub2 contains the virtual networks shown in the following table.

Name	Subnet
VNetwork1	Subnet11, Subnet12, and Subnet13
VNetwork2	Subnet21

Sub2 contains the virtual machines shown in the following table.

Name	Network interface	Application security group	Connected to
VM1	NIC1	ASG1	Subnet11
VM2	NIC2	ASG2	Subnet11
VM3	NIC3	<i>None</i>	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	<i>None</i>	Subnet21

All virtual machines have public IP addresses and the Web Server (IIS) role installed. The firewalls for each virtual machine allow ping requests and web requests.

Sub2 contains the network security groups (NSGs) shown in the following table.

Name	Associated to
NSG1	NIC2
NSG2	Subnet11
NSG3	Subnet13
NSG4	Subnet21

NSG1 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG2 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	80	TCP	Internet	VirtualNetwork	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG3 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	TCP	ASG1	ASG1	Allow
150	Any	Any	ASG2	VirtualNetwork	Allow
200	Any	Any	Any	Any	Deny
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG4 has the inbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
100	Any	Any	Any	Any	Allow
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	AzureLoadBalancer	Any	Allow
65500	Any	Any	Any	Any	Deny

NSG1, NSG2, NSG3, and NSG4 have the outbound security rules shown in the following table.

Priority	Port	Protocol	Source	Destination	Action
65000	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	Any	Any	Any	Internet	Allow
65500	Any	Any	Any	Any	Deny

Technical requirements

Contoso identifies the following technical requirements:

- Deploy Azure Firewall to VNetwork1 in Sub2.
- Register an application named App2 in contoso.com.
- Whenever possible, use the principle of least privilege.
- Enable Azure AD Privileged Identity Management (PIM) for contoso.com.

QUESTION 1

HOTSPOT

You assign User8 the Owner role for RG4, RG5, and RG6.

In which resource groups can User8 create virtual networks and NSGs? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

User8 can create virtual networks in:

RG4 only
RG6 only
RG4 and RG6 only
RG4, RG5, and RG6

User8 can create NSGs in:

RG4 only
RG4 and RG5 only
RG4 and RG6 only
RG4, RG5, and RG6

Correct Answer:

Answer Area

User8 can create virtual networks in:

RG4 only
RG6 only
RG4 and RG6 only
RG4, RG5, and RG6

User8 can create NSGs in:

RG4 only
RG4 and RG5 only
RG4 and RG6 only
RG4, RG5, and RG6

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: RG4 only

The policy does not allow the creation of virtual networks in RG5 or RG6.

Box 2: The policy does not allow the creation of NSGs in RG5.

Policy definition	Resource type	Scope
Allowed resource types	networkSecurityGroups	RG4
Not allowed resource types	virtualNetworks/subnets	RG5
Not allowed resource types	networkSecurityGroups	RG5
Not allowed resource types	virtualNetworks/virtualNetworkPeerings	RG6

References:

<https://docs.microsoft.com/en-us/azure/governance/policy/overview>

QUESTION 2

HOTSPOT

Which virtual networks in Sub1 can User2 modify and delete in their current state? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Virtual networks that User2 can modify:

VNET4 only
VNET4 and VNET1 only
VNET4, VNET3, and VNET1 only
VNET4, VNET3, VNET2, and VNET1

Virtual networks that User2 can delete:

VNET4 only
VNET4 and VNET1 only
VNET4, VNET3, and VNET1 only
VNET4, VNET3, VNET2, and VNET1

Correct Answer:

Answer Area

Virtual networks that User2 can modify:

VNET4 only
VNET4 and VNET1 only
VNET4, VNET3, and VNET1 only
VNET4, VNET3, VNET2, and VNET1

Virtual networks that User2 can delete:

VNET4 only
VNET4 and VNET1 only
VNET4, VNET3, and VNET1 only
VNET4, VNET3, VNET2, and VNET1

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: VNET4 and VNET1 only

RG1 has only Delete lock, while there are no locks on RG4.

RG2 and RG3 both have Read-only locks.

Box 2: VNET4 only

There are no locks on RG4, while the other resource groups have either Delete or Read-only locks.

Note: As an administrator, you may need to lock a subscription, resource group, or resource to prevent other users in your organization from accidentally deleting or modifying critical resources. You can set the lock level to CanNotDelete or ReadOnly. In the portal, the locks are called Delete and Read-only respectively.

- CanNotDelete means authorized users can still read and modify a resource, but they can't delete the resource.
- ReadOnly means authorized users can 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.

Scenario:

User2 is a Security administrator.

Sub1 contains six resource groups named RG1, RG2, RG3, RG4, RG5, and RG6.

User2 creates the virtual networks shown in the following table.

Name	Resource group
VNET1	RG1
VNET2	RG2
VNET3	RG3
VNET4	RG4

Sub1 contains the locks shown in the following table.

Name	Set on	Lock type
Lock1	RG1	Delete
Lock2	RG2	Read-only
Lock3	RG3	Delete
Lock4	RG3	Read-only

References:

<https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-lock-resources>

Testlet 2

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 question on 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 sections 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 on 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

Litware, Inc. is a digital media company that has 500 employees in the Chicago area and 20 employees in the San Francisco area.

Existing Environment

Litware has an Azure subscription named Sub1 that has a subscription ID of 43894a43-17c2-4a39-8fcf-3540c2653ef4.

Sub1 is associated to an Azure Active Directory (Azure AD) tenant named litwareinc.com. The tenant contains the user objects and the device objects of all the Litware employees and their devices. Each user is assigned an Azure AD Premium P2 license. Azure AD Privileged Identity Management (PIM) is activated.

The tenant contains the groups shown in the following table.

Name	Type	Description
Group1	Security group	A group that has the Dynamic User membership type, contains all the San Francisco users, and provides access to many Azure AD applications and Azure resources.
Group2	Security group	A group that has the Dynamic User membership type and contains the Chicago IT team

The Azure subscription contains the objects shown in the following table.

Name	Type	Description
VNet1	Virtual network	VNet1 is a virtual network that contains security-sensitive IT resources. VNet1 contains three subnets named Subnet0, Subnet1, and AzureFirewallSubnet.
VM0	Virtual machine	VM0 is an Azure virtual machine that runs Windows Server 2016, connects to Subnet0, and has just in time (JIT) VM access configured.
VM1	Virtual machine	VM1 is an Azure virtual machine that runs Windows Server 2016 and connects to Subnet0.
SQLDB1	Azure SQL Database	SQLDB1 is an Azure SQL database on a SQL Database server named LitwareSQLServer1.
WebApp1	Web app	WebApp1 is an Azure web app that is accessible by using https://litwareinc.com and http://www.litwareinc.com .
Resource Group1	Resource group	Resource Group1 is a resource group that contains VNet1, VM0, and VM1.
Resource Group2	Resource group	Resource Group2 is a resource group that contains shared IT resources.

Azure Security Center is set to the Free tier.

Planned changes

Litware plans to deploy the Azure resources shown in the following table.

Name	Type	Description
Firewall1	Azure Firewall	An Azure firewall on VNet1.
RT1	Route table	A route table that will contain a route pointing to Firewall1 as the default gateway and will be assigned to Subnet0.
AKS1	Azure Kubernetes Service (AKS)	A managed AKS cluster

Litware identifies the following identity and access requirements:

- All San Francisco users and their devices must be members of Group1.
- The members of Group2 must be assigned the Contributor role to Resource Group2 by using a permanent eligible assignment.
- Users must be prevented from registering applications in Azure AD and from consenting to applications that access company information on the users' behalf.

Platform Protection Requirements

Litware identifies the following platform protection requirements:

- Microsoft Antimalware must be installed on the virtual machines in Resource Group1.
- The members of Group2 must be assigned the Azure Kubernetes Service Cluster Admin Role.
- Azure AD users must be to authenticate to AKS1 by using their Azure AD credentials.

- Following the implementation of the planned changes, the IT team must be able to connect to VM0 by using JIT VM access.
- A new custom RBAC role named Role1 must be used to delegate the administration of the managed disks in Resource Group1. Role1 must be available only for Resource Group1.

Security Operations Requirements

Litware must be able to customize the operating system security configurations in Azure Security Center.

Data and Application Requirements

Litware identifies the following data and applications requirements:

- The users in Group2 must be able to authenticate to SQLDB1 by using their Azure AD credentials
- WebApp1 must enforce mutual authentication

General Requirements

Litware identifies the following general requirements:

- Whenever possible, administrative effort must be minimized
- Whenever possible, use of automation must be minimized

QUESTION 1

You need to ensure that you can meet the security operations requirements.

What should you do first?

- A. Turn on Auto Provisioning in Security Center.
- B. Integrate Security Center and Microsoft Cloud App Security.
- C. Upgrade the pricing tier of Security Center to Standard.
- D. Modify the Security Center workspace configuration.

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The Standard tier extends the capabilities of the Free tier to workloads running in private and other public clouds, providing unified security management and threat protection across your hybrid cloud workloads. The Standard tier also adds advanced threat detection capabilities, which uses built-in behavioral analytics and machine learning to identify attacks and zero-day exploits, access and application controls to reduce exposure to network attacks and malware, and more.

Scenario: Security Operations Requirements

Litware must be able to customize the operating system security configurations in Azure Security Center.

References:

<https://docs.microsoft.com/en-us/azure/security-center/security-center-pricing>

Question Set 3

QUESTION 1

HOTSPOT

You plan to use Azure Monitor Logs to collect logs from 200 servers that run Windows Server 2016.

You need to automate the deployment of the Log Analytics Agent to all the servers by using an Azure Resource Manager template.

How should you complete the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
[  
    "type" : "Microsoft.Compute/virtualMachines/extensions",  
    "name" : "[concat(parameter('vmname'), '/OMSExtension')]",  
    "apiVersion" : "[variables('apiVersion')]",  
    "location" : "[resourceGroup().location]",  
    "dependsOn" : [  
        "[concat('Microsoft.Compute/virtualMachines/', parameters('vmName'))]"  
    ],  
    "properties" : {  
        "publisher" : "Microsoft.EnterpriseCloud.Monitoring",  
        "type" : "MicrosoftMonitoringAgent",  
        "typeHandlerVersion" : "1.0",  
        "autoUpgradeMinorVersion" : true,  
        "settings" : {  
            : "[variable('var1')]"  
            "AzureADApplicationID"  
            "WorkspaceID"  
            "WorkspaceName"  
            "WorkspaceURL"  
        },  
        "protectedSettings" : {  
            : "[variable ('var2')]"  
            "AzureADApplicationSecret"  
            "StorageAccountKey"  
            "WorkspaceID"  
            "WorkspaceKey"  
        }  
    }  
]
```

Correct Answer:

Answer Area

```
[{"type" : "Microsoft.Compute/virtualMachines/extensions",
"name" : "[concat(parameter('vmname'), '/OMSExtension')]",
"apiVersion" : "[variables('apiVersion')]",
"location" : "[resourceGroup().location]",
"dependsOn" : [
    "[concat('Microsoft.Compute/virtualMachines/', parameters('vmName'))]"
],
"properties" : {
    "publisher" : "Microsoft.EnterpriseCloud.Monitoring",
    "type" : "MicrosoftMonitoringAgent",
    "typeHandlerVersion" : "1.0",
    "autoUpgradeMinorVersion" : true,
    "settings" : {
        "AzureADApplicationID" : "[variable('var1')]",
        "WorkspaceID" : "[variable('var1')]",  
        "WorkspaceName" : "[variable('var1')]",
        "WorkspaceURL" : "[variable('var1')]"
    },
    "protectedSettings" : {
        "AzureADApplicationSecret" : "[variable ('var2')]",
        "StorageAccountKey" : "[variable ('var2')]",
        "WorkspaceID" : "[variable ('var2')]",  
        "WorkspaceKey" : "[variable ('var2')]"
    }
}
}]
```

Section: [none]

Explanation

Explanation/Reference:

References:

<https://blogs.technet.microsoft.com/manageabilityguys/2015/11/19/enabling-the-microsoft-monitoring-agent-in-windows-json-templates/>

QUESTION 2

You have an Azure subscription named Sub1 that is associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

You are assigned the Global administrator role for the tenant. You are responsible for managing Azure Security Center settings.

You need to create a custom sensitivity label.

What should you do first?

- A. Create a custom sensitive information type.
- B. Elevate access for global administrators in Azure AD.
- C. Change Azure Security Center to use Standard-tier-pricing.
- D. Enable integration with Microsoft Cloud App Security.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

First, you need to create a new sensitive information type because you can't directly modify the default rules.

References:

<https://docs.microsoft.com/en-us/office365/securitycompliance/customize-a-built-in-sensitive-information-type>

QUESTION 3

HOTSPOT

You suspect that users are attempting to sign in to resources to which they have no access.

You need to create an Azure Log Analytics query to identify failed user sign-in attempts from the last three days. The results must only show users who had more than five failed sign-in attempts.

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

NOTE: Each correct selection is worth one point.

Hot Area:

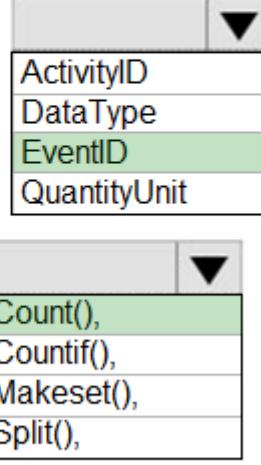
Answer Area

```
let timeframe = 3d;
SecurityEvent
| where TimeGenerated > ago(3d)
| where AccountType == 'User' and
    ActivityID == 4625
| Summarize failed_login_attempts=
    Count(),
    Countif(),
    Makeset(),
    Split(),
latest_failed_login=arg_max(TimeGenerated by Account
| where failed login attempts > 5
```

Correct Answer:

Answer Area

```
let timeframe = 3d;
SecurityEvent
| where TimeGenerated > ago(3d)
| where AccountType == 'User' and EventID == 4625
| Summarize failed_login_attempts=Count()
| latest_failed_login=arg_max(TimeGenerated by Account
| where failed login attempts > 5
```



The screenshot shows a table of available functions in the Log Analytics query editor. The table has four columns: ActivityID, DataType, EventID (which is highlighted in green), and QuantityUnit. Below the table, another table shows summarize functions: Count(), Countif(), Makeset(), and Split().

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The following example identifies user accounts that failed to log in more than five times in the last day, and when they last attempted to log in.

```
let timeframe = 1d;
SecurityEvent
| where TimeGenerated > ago(1d)
| where AccountType == 'User' and EventID == 4625 // 4625 - failed log in
| summarize failed_login_attempts=count(), latest_failed_login=arg_max(TimeGenerated, Account) by Account
| where failed_login_attempts > 5
| project-away Account1
```

References:

<https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/examples>

QUESTION 4

You have an Azure subscription named Sub1.

In Azure Security Center, you have a security playbook named Play1. Play1 is configured to send an email message to a user named User1.

You need to modify Play1 to send email messages to a distribution group named Alerts.

What should you use to modify Play1?

- A. Azure DevOps

- B. Azure Application Insights
- C. Azure Monitor
- D. Azure Logic Apps Designer

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You can change an existing playbook in Security Center to add an action, or conditions. To do that you just need to click on the name of the playbook that you want to change, in the Playbooks tab, and Logic App Designer opens up.

References:

<https://docs.microsoft.com/en-us/azure/security-center/security-center-playbooks>

QUESTION 5

You create a new Azure subscription.

You need to ensure that you can create custom alert rules in Azure Security Center.

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

NOTE: Each correct selection is worth one point.

- A. Onboard Azure Active Directory (Azure AD) Identity Protection.
- B. Create an Azure Storage account.
- C. Implement Azure Advisor recommendations.
- D. Create an Azure Log Analytics workspace.
- E. Upgrade the pricing tier of Security Center to Standard.

Correct Answer: BD

Section: [none]

Explanation

Explanation/Reference:

Explanation:

D: You need write permission in the workspace that you select to store your custom alert.

References:

<https://docs.microsoft.com/en-us/azure/security-center/security-center-custom-alert>

QUESTION 6

You have an Azure subscription named Sub1 that contains an Azure Log Analytics workspace named LAW1.

You have 100 on-premises servers that run Windows Server 2012 R2 and Windows Server 2016. The servers connect to LAW1. LAW1 is configured to collect security-related performance counters from the connected servers.

You need to configure alerts based on the data collected by LAW1. The solution must meet the following requirements:

- Alert rules must support dimensions.
- The time it takes to generate an alert must be minimized.
- Alert notifications must be generated only once when the alert is generated and once when the alert is resolved.

Which signal type should you use when you create the alert rules?

- A. Log
- B. Log (Saved Query)
- C. Metric
- D. Activity Log

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Metric alerts in Azure Monitor provide a way to get notified when one of your metrics cross a threshold. Metric alerts work on a range of multi-dimensional platform metrics, custom metrics, Application Insights standard and custom metrics.

Note: Signals are emitted by the target resource and can be of several types. Metric, Activity log, Application Insights, and Log.

References:

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-metric>

QUESTION 7

DRAG DROP

You have an Azure subscription that contains 100 virtual machines. Azure Diagnostics is enabled on all the virtual machines.

You are planning the monitoring of Azure services in the subscription.

You need to retrieve the following details:

- Identify the user who deleted a virtual machine three weeks ago.
- Query the security events of a virtual machine that runs Windows Server 2016.

What should you use in Azure Monitor? To answer, drag the appropriate configuration settings to the correct details. Each configuration setting 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.

Select and Place:

Settings

Answer Area

Activity log

Logs

Identify the user who deleted a virtual machine three weeks ago:

Metrics

Query the security events of a virtual machine that runs Windows Server 2016:

Service Health

Correct Answer:

Settings	Answer Area
Activity log	
Logs	Identify the user who deleted a virtual machine three weeks ago: Activity log
Metrics	Query the security events of a virtual machine that runs Windows Server 2016: Logs
Service Health	

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box1: Activity log

Azure activity logs provide insight into the operations that were performed on resources in your subscription. Activity logs were previously known as “audit logs” or “operational logs,” because they report control-plane events for your subscriptions.

Activity logs help you determine the “what, who, and when” for write operations (that is, PUT, POST, or DELETE).

Box 2: Logs

Log Integration collects Azure diagnostics from your Windows virtual machines, Azure activity logs, Azure Security Center alerts, and Azure resource provider logs. This integration provides a unified dashboard for all your assets, whether they’re on-premises or in the cloud, so that you can aggregate, correlate, analyze, and alert for security events.

References:

<https://docs.microsoft.com/en-us/azure/security/azure-log-audit>

QUESTION 8

HOTSPOT

You create an alert rule that has the following settings:

- Resource: RG1
- Condition: All Administrative operations
- Actions: Action groups configured for this alert rule: ActionGroup1
- Alert rule name: Alert1

You create an action rule that has the following settings:

- Scope: VM1
- Filter criteria: Resource Type = "Virtual Machines"
- Define on this scope: Suppression
- Suppression config: From now (always)
- Name: ActionRule1

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

Note: Each correct selection is worth one point.

Hot Area:

Answer area	Statements	Yes	No
If you start VM1, an alert is triggered.	<input type="radio"/>	<input type="radio"/>	
If you start VM2, an alert is triggered.	<input type="radio"/>	<input type="radio"/>	
If you add a tag to RG1, an alert is triggered.	<input type="radio"/>	<input type="radio"/>	

Correct Answer:

Answer area	Statements	Yes	No
If you start VM1, an alert is triggered.	<input type="radio"/>	<input checked="" type="radio"/>	
If you start VM2, an alert is triggered.	<input checked="" type="radio"/>	<input type="radio"/>	
If you add a tag to RG1, an alert is triggered.	<input type="radio"/>	<input checked="" type="radio"/>	

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1:

The scope for the action rule is set to VM1 and is set to suppress alerts indefinitely.

Box 2:

The scope for the action rule is not set to VM2.

Box 3:

Adding a tag is not an administrative operation.

References:

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

<https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-action-rules>

QUESTION 9
DRAG DROP

You have an Azure subscription named Sub1 that contains an Azure Log Analytics workspace named LAW1.

You have 500 Azure virtual machines that run Windows Server 2016 and are enrolled in LAW1.

You plan to add the System Update Assessment solution to LAW1.

You need to ensure that System Update Assessment-related logs are uploaded to LAW1 from 100 of the virtual machines only.

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.

Select and Place:

Actions	Answer Area
Create a new workspace.	
Apply the scope configuration to the solution.	
Create a scope configuration.	
Create a computer group.	
Create a data source.	

Correct Answer:

Actions	Answer Area
Create a new workspace.	Create a computer group.
	Create a scope configuration.
	Apply the scope configuration to the solution.
Create a data source.	

Section: [none]

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/azure-monitor/insights/solution-targeting>

Testlet 1

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 question on 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 sections 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 on 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

Litware, Inc. is a digital media company that has 500 employees in the Chicago area and 20 employees in the San Francisco area.

Existing Environment

Litware has an Azure subscription named Sub1 that has a subscription ID of 43894a43-17c2-4a39-8fcf-3540c2653ef4.

Sub1 is associated to an Azure Active Directory (Azure AD) tenant named litwareinc.com. The tenant contains the user objects and the device objects of all the Litware employees and their devices. Each user is assigned an Azure AD Premium P2 license. Azure AD Privileged Identity Management (PIM) is activated.

The tenant contains the groups shown in the following table.

Name	Type	Description
Group1	Security group	A group that has the Dynamic User membership type, contains all the San Francisco users, and provides access to many Azure AD applications and Azure resources.
Group2	Security group	A group that has the Dynamic User membership type and contains the Chicago IT team

The Azure subscription contains the objects shown in the following table.

Name	Type	Description
VNet1	Virtual network	VNet1 is a virtual network that contains security-sensitive IT resources. VNet1 contains three subnets named Subnet0, Subnet1, and AzureFirewallSubnet.
VM0	Virtual machine	VM0 is an Azure virtual machine that runs Windows Server 2016, connects to Subnet0, and has just in time (JIT) VM access configured.
VM1	Virtual machine	VM1 is an Azure virtual machine that runs Windows Server 2016 and connects to Subnet0.
SQLDB1	Azure SQL Database	SQLDB1 is an Azure SQL database on a SQL Database server named LitwareSQLServer1.
WebApp1	Web app	WebApp1 is an Azure web app that is accessible by using https://litwareinc.com and http://www.litwareinc.com .
Resource Group1	Resource group	Resource Group1 is a resource group that contains VNet1, VM0, and VM1.
Resource Group2	Resource group	Resource Group2 is a resource group that contains shared IT resources.

Azure Security Center is set to the Free tier.

Planned changes

Litware plans to deploy the Azure resources shown in the following table.

Name	Type	Description
Firewall1	Azure Firewall	An Azure firewall on VNet1.
RT1	Route table	A route table that will contain a route pointing to Firewall1 as the default gateway and will be assigned to Subnet0.
AKS1	Azure Kubernetes Service (AKS)	A managed AKS cluster

Litware identifies the following identity and access requirements:

- All San Francisco users and their devices must be members of Group1.
- The members of Group2 must be assigned the Contributor role to Resource Group2 by using a permanent eligible assignment.
- Users must be prevented from registering applications in Azure AD and from consenting to applications that access company information on the users' behalf.

Platform Protection Requirements

Litware identifies the following platform protection requirements:

- Microsoft Antimalware must be installed on the virtual machines in Resource Group1.
- The members of Group2 must be assigned the Azure Kubernetes Service Cluster Admin Role.
- Azure AD users must be to authenticate to AKS1 by using their Azure AD credentials.

- Following the implementation of the planned changes, the IT team must be able to connect to VM0 by using JIT VM access.
- A new custom RBAC role named Role1 must be used to delegate the administration of the managed disks in Resource Group1. Role1 must be available only for Resource Group1.

Security Operations Requirements

Litware must be able to customize the operating system security configurations in Azure Security Center.

Data and Application Requirements

Litware identifies the following data and applications requirements:

- The users in Group2 must be able to authenticate to SQLDB1 by using their Azure AD credentials
- WebApp1 must enforce mutual authentication

General Requirements

Litware identifies the following general requirements:

- Whenever possible, administrative effort must be minimized
- Whenever possible, use of automation must be minimized

QUESTION 1

You need to configure WebApp1 to meet the data and application requirements.

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

NOTE: Each correct selection is worth one point.

- A. Upload a public certificate.
- B. Turn on the HTTPS Only protocol setting.
- C. Set the Minimum TLS Version protocol setting to 1.2.
- D. Change the pricing tier of the App Service plan.
- E. Turn on the Incoming client certificates protocol setting.

Correct Answer: AC

Section: [none]

Explanation

Explanation/Reference:

Explanation:

A: To configure Certificates for use in Azure Websites Applications you need to upload a public Certificate.

C: Over time, multiple versions of TLS have been released to mitigate different vulnerabilities. TLS 1.2 is the most current version available for apps running on Azure App Service.

Incorrect Answers:

B: We need support the http url as well.

Note:

WebApp1 is an Azure web app that is accessible by using <https://litwareinc.com> and <http://www.litwareinc.com>.

References:

<https://docs.microsoft.com/en-us/azure/app-service/app-service-web-configure-tls-mutual-auth>

<https://azure.microsoft.com/en-us/updates/app-service-and-functions-hosted-apps-can-now-update-tls-versions/>

QUESTION 2**HOTSPOT**

You need to create Role1 to meet the platform protection requirements.

How should you complete the role definition of Role1? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
{
  "Name" : "Role1",
  "Id" : "11111111-1111-1111-1111-111111111111",
  "IsCustom" : true,
  "Description": "VM storage operator"
  "Actions" : [
    

|                       |   |
|-----------------------|---|
| "Microsoft.Compute/   | ▼ |
| "Microsoft.Resources/ | ▼ |
| "Microsoft.Storage/   | ▼ |



|                          |   |
|--------------------------|---|
| disks/*,                 | ▼ |
| storageAccounts/*,       | ▼ |
| virtualMachines/disks/*, | ▼ |


  ],
  "NotActions": [
  ],
  "AssignableScopes" : [
    ]
}
```

"/"	▼
"/subscriptions/43894a43-17c2-4a39-8efc-3540c2653cf4/resourceGroups/Resource Group 1"	▼
"/subscriptions/43894a43-17c2-4a39-8efc-3540c2653cf4	▼

Correct Answer:

Answer Area

```
{  
  "Name" | "Role1",  
  "Id" | "11111111-1111-1111-1111-111111111111",  
  "IsCustom" : true,  
  "Description": "VM storage operator"  
  "Actions" : [  
    "Microsoft.Compute/",  
    "Microsoft.Resources/",  
    "Microsoft.Storage/"  
  ],  
  "NotActions": [  
  ],  
  "AssignableScopes" : [  
    "/"  
    "/subscriptions/43894a43-17c2-4a39-8efc-3540c2653ef4/resourceGroups/Resource Group1"  
    "/subscriptions/43894a43-17c2-4a39-8efc-3540c2653ef4"  
  ]  
}
```

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: A new custom RBAC role named Role1 must be used to delegate the administration of the managed disks in Resource Group1. Role1 must be available only for Resource Group1.

Azure RBAC template managed disks "Microsoft.Storage/"

References:

<https://blogs.msdn.microsoft.com/azureedu/2017/02/11/new-managed-disk-storage-option-for-your-azure-vms/>

<https://blogs.msdn.microsoft.com/azure4fun/2016/10/21/custom-azure-rbac-roles-and-how-to-extend-existing-role-definitions-scope/>

QUESTION 3

DRAG DROP

You need to configure SQLDB1 to meet the data and application requirements.

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

Select and Place:

Actions	Answer Area
---------	-------------

From the Azure portal, create an Azure AD administrator for LitwareSQLServer1.

In SQLDB1, create contained database users.

Connect to SQLDB1 by using Microsoft SQL Server Management Studio (SSMS).



In Azure AD, create a system-assigned managed identity.

In Azure AD, create a user-assigned managed identity.

Correct Answer:

Actions	Answer Area
---------	-------------

From the Azure portal, create an Azure AD administrator for LitwareSQLServer1.

Connect to SQLDB1 by using Microsoft SQL Server Management Studio (SSMS).

In SQLDB1, create contained database users.

In SQLDB1, create contained database users.

Connect to SQLDB1 by using Microsoft SQL Server Management Studio (SSMS).

In Azure AD, create a system-assigned managed identity.

In Azure AD, create a system-assigned managed identity.

In Azure AD, create a user-assigned managed identity.

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Step 1: Connect to SQLDB1 by using Microsoft SQL Server Management Studio (SSMS)

Step 2: In SQLDB1, create contained database users.

Create a contained user in the database that represents the VM's system-assigned identity.

Step 3: In Azure AD, create a system-assigned managed identity.

A system-assigned identity for a Windows virtual machine (VM) can be used to access an Azure SQL server.

Managed Service Identities are automatically managed by Azure and enable you to authenticate to services that support Azure AD authentication, without needing to insert credentials into your code.

References:

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

Question Set 2

QUESTION 1

Your company has an Azure subscription named Sub1 that is associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

The company develops an application named App1. App1 is registered in Azure AD.

You need to ensure that App1 can access secrets in Azure Key Vault on behalf of the application users.

What should you configure?

- A. an application permission without admin consent
- B. a delegated permission without admin consent
- C. a delegated permission that requires admin consent
- D. an application permission that requires admin consent

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Delegated permissions - Your client application needs to access the web API as the signed-in user, but with access limited by the selected permission. This type of permission can be granted by a user unless the permission requires administrator consent.

Incorrect Answers:

A, D: Application permissions - Your client application needs to access the web API directly as itself (no user context). This type of permission requires administrator consent and is also not available for public (desktop and mobile) client applications.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/develop/quickstart-configure-app-access-web-apis>

QUESTION 2

DRAG DROP

Your company has an Azure Active Directory (Azure AD) tenant named contoso.com.

The company is developing an application named App1. App1 will run as a service on server that runs Windows Server 2016. App1 will authenticate to contoso.com and access Microsoft Graph to read directory data.

You need to delegate the minimum required permissions to App1.

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

Select and Place:

Actions Answer Area

Grant permissions



Add a delegated permission.



Configure Azure AD Application Proxy.

Add an application permission.

Create an app registration.

Correct Answer:

Actions Answer Area

Grant permissions

Create an app registration.

Add a delegated permission.

Add an application permission.



Configure Azure AD Application Proxy.

Grant permissions



Add an application permission.

Create an app registration.

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Step 1: Create an app registration

First the application must be created/registered.

Step 2: Add an application permission

Application permissions are used by apps that run without a signed-in user present.

Step 3: Grant permissions

Incorrect Answers:

Delegated permission

Delegated permissions are used by apps that have a signed-in user present.

Application Proxy:

Azure Active Directory's Application Proxy provides secure remote access to on-premises web applications.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/develop/v2-permissions-and-consent>

QUESTION 3

Your company has an Azure subscription named Sub1 that is associated to an Azure Active Directory Azure (Azure AD) tenant named contoso.com.

The company develops a mobile application named App1. App1 uses the OAuth 2 implicit grant type to acquire Azure AD access tokens.

You need to register App1 in Azure AD.

What information should you obtain from the developer to register the application?

- A. a redirect URI
- B. a reply URL
- C. a key
- D. an application ID

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

For Native Applications you need to provide a Redirect URI, which Azure AD will use to return token responses.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/develop/v1-protocols-oauth-code>

QUESTION 4

From the Azure portal, you are configuring an Azure policy.

You plan to assign policies that use the DeployIfNotExist, AuditIfNotExist, Append, and Deny effects.

Which effect requires a managed identity for the assignment?

- A. AuditIfNotExist
- B. Append
- C. DeployIfNotExist
- D. Deny

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

When Azure Policy runs the template in the deployIfNotExists policy definition, it does so using a managed identity.

References:

<https://docs.microsoft.com/bs-latn-ba/azure/governance/policy/how-to/remediate-resources>

QUESTION 5

HOTSPOT

You have an Azure subscription named Sub1 that is associated to an Azure Active Directory (Azure AD) tenant named contoso.com.

You plan to implement an application that will consist of the resources shown in the following table.

Name	Type	Description
CosmosDBAccount1	Azure Cosmos DB account	A Cosmos DB account containing a database Named CosmosDB1 that serves as a back-end tier of the application
WebApp1	Azure web app	A web app configured to serve as the middle tier of the application

Users will authenticate by using their Azure AD user account and access the Cosmos DB account by using resource tokens.

You need to identify which tasks will be implemented in CosmosDB1 and WebApp1.

Which task should you identify for each resource? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

CosmosDB1:

- Authenticate Azure AD users and generate resource tokens.
- Authenticate Azure AD users and relay resource tokens.
- Create database users and generate resource tokens.

WebApp1:

- Authenticate Azure AD users and generate resource tokens.
- Authenticate Azure AD users and relay resource tokens.
- Create database users and generate resource tokens.

Correct Answer:

Answer Area

CosmosDB1:

- Authenticate Azure AD users and generate resource tokens.
- Authenticate Azure AD users and relay resource tokens.
- Create database users and generate resource tokens.

WebApp1:

- Authenticate Azure AD users and generate resource tokens.
- Authenticate Azure AD users and relay resource tokens.
- Create database users and generate resource tokens.

Section: [none]

Explanation:

Explanation/Reference:

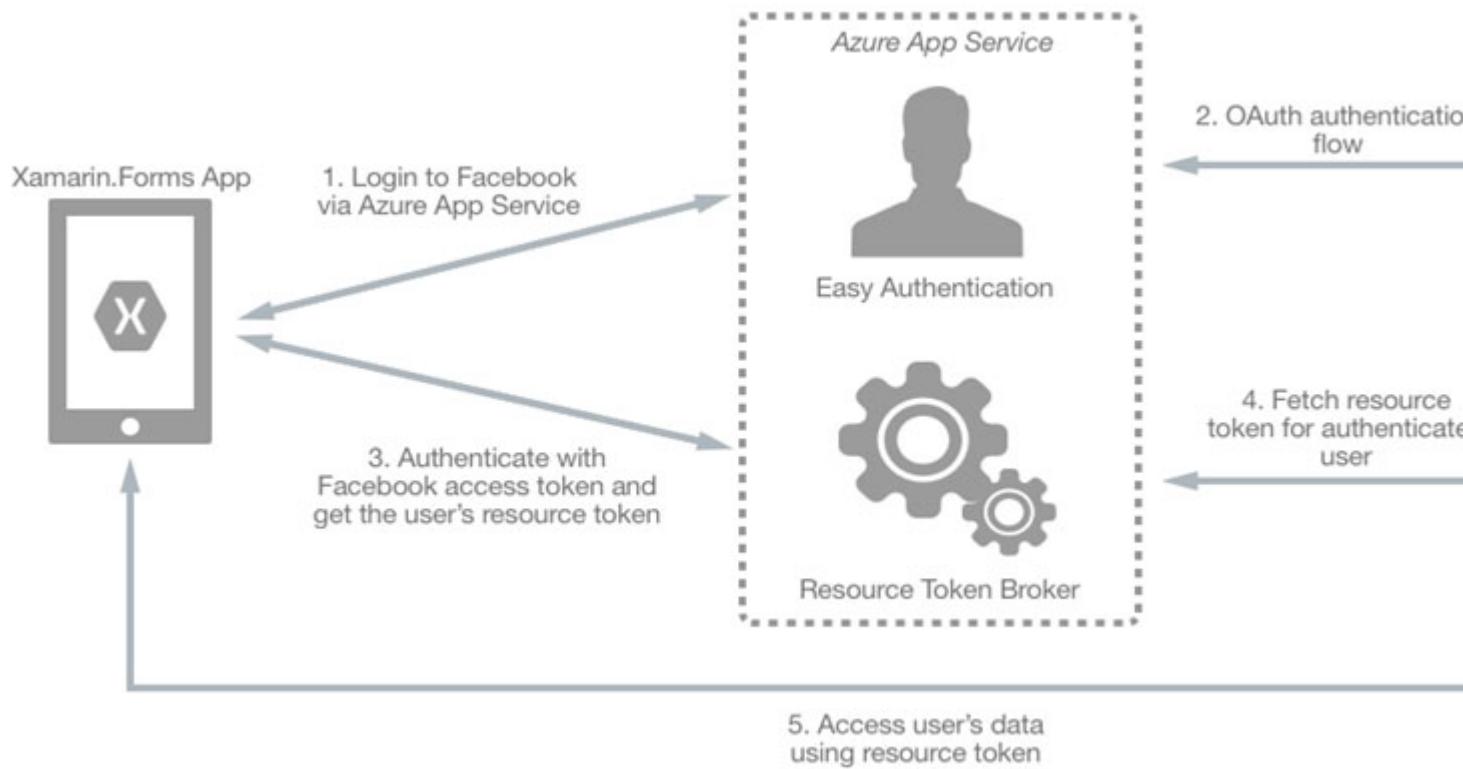
Explanation:

CosmosDB1: Create database users and generate resource tokens.

Azure Cosmos DB resource tokens provide a safe mechanism for allowing clients to read, write, and delete specific resources in an Azure Cosmos DB account according to the granted permissions.

WebApp1: Authenticate Azure AD users and relay resource tokens

A typical approach to requesting, generating, and delivering resource tokens to a mobile application is to use a resource token broker. The following diagram shows a high-level overview of how the sample application uses a resource token broker to manage access to the document database data:



References:

<https://docs.microsoft.com/en-us/xamarin/xamarin-forms/data-cloud/cosmosdb/authentication>

QUESTION 6

HOTSPOT

You need to create an Azure key vault. The solution must ensure that any object deleted from the key vault be retained for 90 days.

How should you complete the command? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
New-AzureRmKeyVault -VaultName 'KeyVault1' -ResourceGroupName 'RG1'
```

```
-Location 'East US'
```

-EnabledForDeployment
-EnablePurgeProtection
-Tag

-Confirm
-DefaultProfile
-EnableSoftDelete
-SKU

Correct Answer:

Answer Area

```
New-AzureRmKeyVault -VaultName 'KeyVault1' -ResourceGroupName 'RG1'
```

```
-Location 'East US'
```

-EnabledForDeployment
-EnablePurgeProtection
-Tag

-Confirm
-DefaultProfile
-EnableSoftDelete
-SKU

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: -EnablePurgeProtection

If specified, protection against immediate deletion is enabled for this vault; requires soft delete to be enabled as well.

Box 2: -EnableSoftDelete

Specifies that the soft-delete functionality is enabled for this key vault. When soft-delete is enabled, for a grace period, you can recover this key vault and its contents after it is deleted.

References:

<https://docs.microsoft.com/en-us/powershell/module/azurerm.keyvault/new-azurermkeyvault>

QUESTION 7

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

In Vault1, you create a secret named Secret1.

An application developer registers an application in Azure Active Directory (Azure AD).

You need to ensure that the application can use Secret1.

What should you do?

- A. In Azure AD, create a role.
- B. In Azure Key Vault, create a key.
- C. In Azure Key Vault, create an access policy.
- D. In Azure AD, enable Azure AD Application Proxy.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Azure Key Vault provides a way to securely store credentials and other keys and secrets, but your code needs to authenticate to Key Vault to retrieve them.

Managed identities for Azure resources overview makes solving this problem simpler, by giving Azure services an automatically managed identity in Azure Active Directory (Azure AD). You can use this identity to authenticate to any service that supports Azure AD authentication, including Key Vault, without having any

credentials in your code.

Example: How a system-assigned managed identity works with an Azure VM

After the VM has an identity, use the service principal information to grant the VM access to Azure resources. To call Azure Resource Manager, use role-based access control (RBAC) in Azure AD to assign the appropriate role to the VM service principal. To call Key Vault, grant your code access to the specific secret or key in Key Vault.

References:

<https://docs.microsoft.com/en-us/azure/key-vault/quick-create-net>

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

QUESTION 8

You have an Azure SQL database.

You implement Always Encrypted.

You need to ensure that application developers can retrieve and decrypt data in the database.

Which two pieces of information should you provide to the developers? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. a stored access policy
- B. a shared access signature (SAS)
- C. the column encryption key
- D. user credentials
- E. the column master key

Correct Answer: CE

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Always Encrypted uses two types of keys: column encryption keys and column master keys. A column encryption key is used to encrypt data in an encrypted column. A column master key is a key-protecting key that encrypts one or more column encryption keys.

References:

<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/always-encrypted-database-engine>

QUESTION 9

You have a hybrid configuration of Azure Active Directory (Azure AD).

All users have computers that run Windows 10 and are hybrid Azure AD joined.

You have an Azure SQL database that is configured to support Azure AD authentication.

Database developers must connect to the SQL database by using Microsoft SQL Server Management Studio (SSMS) and authenticate by using their on-premises Active Directory account.

You need to tell the developers which authentication method to use to connect to the SQL database from SSMS. The solution must minimize authentication prompts.

Which authentication method should you instruct the developers to use?

- A. SQL Login
- B. Active Directory – Universal with MFA support
- C. Active Directory – Integrated
- D. Active Directory – Password

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Azure AD can be the initial Azure AD managed domain. Azure AD can also be an on-premises Active Directory Domain Services that is federated with the Azure AD.

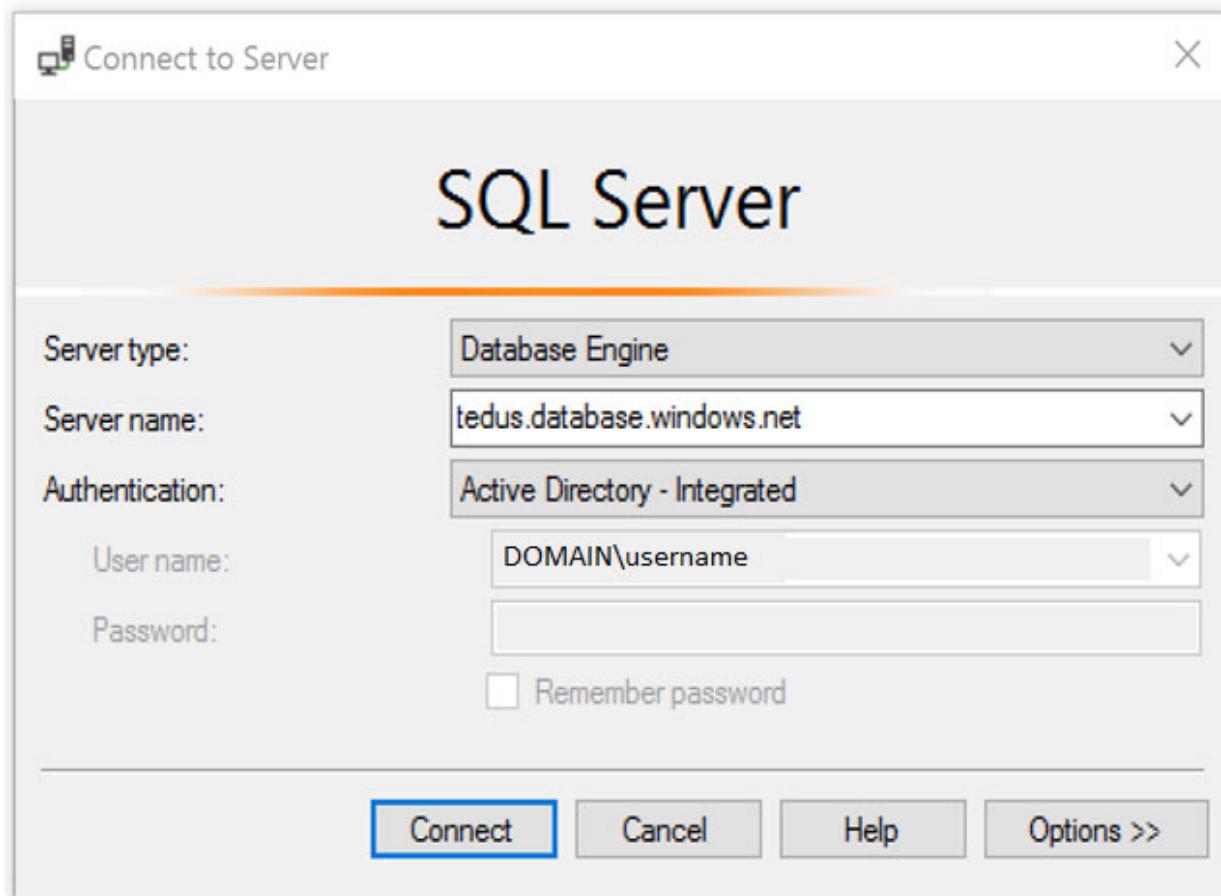
Using an Azure AD identity to connect using SSMS or SSDT

The following procedures show you how to connect to a SQL database with an Azure AD identity using SQL Server Management Studio or SQL Server Database Tools.

Active Directory integrated authentication

Use this method if you are logged in to Windows using your Azure Active Directory credentials from a federated domain.

1. Start Management Studio or Data Tools and in the Connect to Server (or Connect to Database Engine) dialog box, in the Authentication box, select Active Directory - Integrated. No password is needed or can be entered because your existing credentials will be presented for the connection.



2. Select the Options button, and on the Connection Properties page, in the Connect to database box, type the name of the user database you want to connect to. (The AD domain name or tenant ID" option is only supported for Universal with MFA connection options, otherwise it is greyed out.)

References:

<https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/sql-database/sql-database-aad-authentication-configure.md>

QUESTION 10

DRAG DROP

You have an Azure subscription named Sub1 that contains an Azure Storage account named Contosostorage1 and an Azure key vault named Contosokeyvault1.

You plan to create an Azure Automation runbook that will rotate the keys of Contosostorage1 and store them in Contosokeyvault1.

You need to implement prerequisites to ensure that you can implement the runbook.

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.

Select and Place:

Actions	Answer Area
Run Set-AzureRmKeyVaultAccessPolicy	
Create an Azure Automation account.	
Import PowerShell modules to the Azure Automation account.	 
Create a user-assigned managed identity.	
Create a connection resource in the Azure Automation account.	 

Correct Answer:

Actions	Answer Area
Run Set-AzureRmKeyVaultAccessPolicy	Create an Azure Automation account.
Create an Azure Automation account.	Import PowerShell modules to the Azure Automation account.
Import PowerShell modules to the Azure Automation account.	 
Create a user-assigned managed identity	Create a connection resource in the Azure Automation account.
Create a connection resource in the Azure Automation account.	 

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Step 1: Create an Azure Automation account

Runbooks live within the Azure Automation account and can execute PowerShell scripts.

Step 2: Import PowerShell modules to the Azure Automation account

Under 'Assets' from the Azure Automation account Resources section select 'to add in Modules to the runbook. To execute key vault cmdlets in the runbook, we need to add AzureRM.profile and AzureRM.key vault.

Step 3: Create a connection resource in the Azure Automation account

You can use the sample code below, taken from the AzureAutomationTutorialScript example runbook, to authenticate using the Run As account to manage Resource Manager resources with your runbooks. The AzureRunAsConnection is a connection asset automatically created when we created 'run as accounts' above. This can be found under Assets -> Connections. After the authentication code, run the same code above to get all the keys from the vault.

```
$connectionName = "AzureRunAsConnection"
try
{
    # Get the connection "AzureRunAsConnection "
    $servicePrincipalConnection=Get-AutomationConnection -Name $connectionName

    "Logging in to Azure..."
    Add-AzureRmAccount ` 
        -ServicePrincipal ` 
        -TenantId $servicePrincipalConnection.TenantId ` 
        -ApplicationId $servicePrincipalConnection.ApplicationId ` 
        -CertificateThumbprint $servicePrincipalConnection.CertificateThumbprint
}
```

References:

<https://www.rahulpnath.com/blog/accessing-azure-key-vault-from-azure-runbook/>

QUESTION 11

You have an Azure SQL Database server named SQL1.

You plan to turn on Advanced Threat Protection for SQL1 to detect all threat detection types.

Which action will Advanced Threat Protection detect as a threat?

- A. A user updates more than 50 percent of the records in a table.
- B. A user attempts to sign as select * from table1.
- C. A user is added to the db_owner database role.
- D. A user deletes more than 100 records from the same table.

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Advanced Threat Protection can detect potential SQL injections: This alert is triggered when an active exploit happens against an identified application vulnerability to SQL injection. This means the attacker is trying to inject malicious SQL statements using the vulnerable application code or stored procedures.

References:

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-threat-detection-overview>

QUESTION 12

HOTSPOT

You have the Azure Information Protection conditions shown in the following table.

Name	Use condition	Label is applied	Pattern	Case sensitivity
Label1	Condition1	Automatically	White	On
Label2	Condition2	Automatically	Black	Off

You have the Azure Information Protection policies shown in the following table.

Name	Applies to	Use label	Set the default label
Global	<i>Not applicable</i>	None	None
Policy1	User1	Label1	None
Policy2	User1	Label2	None

You need to identify how Azure Information Protection will label files.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

If User1 creates a Microsoft Word file that includes the text "Black and White", the file will be assigned:

No label
 Label1 only
 Label2 only
 Label1 and Label2

If User1 creates a Microsoft Notepad file that includes the text "Black or white", the file will be assigned:

No label
 Label1 only
 Label2 only
 Label1 and Label2

Correct Answer:

Answer Area

If User1 creates a Microsoft Word file that includes the text "Black and White", the file will be assigned:

No label
Label1 only
Label2 only
Label1 and Label2

If User1 creates a Microsoft Notepad file that includes the text "Black or white", the file will be assigned:

No label
Label1 only
Label2 only
Label1 and Label2

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Box 1: Label 2 only

How multiple conditions are evaluated when they apply to more than one label

1. The labels are ordered for evaluation, according to their position that you specify in the policy: The label positioned first has the lowest position (least sensitive) and the label positioned last has the highest position (most sensitive).
2. The most sensitive label is applied.
3. The last sublabel is applied.

Box 2: No Label

Automatic classification applies to Word, Excel, and PowerPoint when documents are saved, and apply to Outlook when emails are sent. Automatic classification does not apply to Microsoft Notepad.

References:

<https://docs.microsoft.com/en-us/azure/information-protection/configure-policy-classification>

QUESTION 13

Your company uses Azure DevOps.

You need to recommend a method to validate whether the code meets the company's quality standards and code review standards.

What should you recommend implementing in Azure DevOps?

- A. branch folders
- B. branch permissions
- C. branch policies
- D. branch locking

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Branch policies help teams protect their important branches of development. Policies enforce your team's code quality and change management standards.

References:

<https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies?view=azure-devops&viewFallbackFrom=vsts>

QUESTION 14

DRAG DROP

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 Subscription named Sub1. Sub1 contains an Azure virtual machine named VM1 that runs Windows Server 2016.

You need to encrypt VM1 disks by using Azure Disk Encryption.

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.

Select and Place:

Actions	Answer Area
Configure secrets for the Azure key vault.	
Create an Azure key vault.	
Run Set-AzureRmStorageAccount.	
Configure access policies for the Azure key vault.	
Run Set-AzureRmVmDiskEncryptionExtension.	

Correct Answer:

Actions	Answer Area
Configure secrets for the Azure key vault.	Create an Azure key vault.
Run <code>Set-AzureRmStorageAccount</code> .	Configure access policies for the Azure key vault.

Section: [none]

Explanation

Explanation/Reference:

References:

<https://docs.microsoft.com/en-us/azure/virtual-machines/windows/encrypt-disks>

QUESTION 15

You have an Azure subscription that contains a virtual machine named VM1.

You create an Azure key vault that has the following configurations:

- Name: Vault5
- Region: West US
- Resource group: RG1

You need to use Vault5 to enable Azure Disk Encryption on VM1. The solution must support backing up VM1 by using Azure Backup.

Which key vault settings should you configure?

- A. Access policies
- B. Secrets
- C. Keys
- D. Locks

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

References:

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

QUESTION 16

You have an Azure subscription named Sub1 that contains the resources shown in the following table.

Name	Type	Region	Resource group
Sa1	Azure Storage account	East US	RG1
VM1	Azure virtual machine	East US	RG2
KV1	Azure key vault	East US 2	RG1
SQL1	Azure SQL database	East US 2	RG2

You need to ensure that you can provide VM1 with secure access to a database on SQL1 by using a contained database user.

What should you do?

- A. Enable a managed service identity on VM1.
- B. Create a secret in KV1.
- C. Configure a service endpoint on SQL1.
- D. Create a key in KV1.

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference: