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Technologies

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Testlet 1

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To start the case study

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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 43894a43-17c2-4a39-8cfc-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://www.litwareinc.com and http://www.litwareinc.com .
RG1	Resource group	RG1 is a resource group that contains VNet1, VM0, and VM1.
RG2	Resource group	RG2 is a resource group that contains shared IT resources.

Azure Security Center is set to the Standard tier.

Requirements

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

Identity and Access Requirements

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 RG2 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 RG1.

The members of Group2 must be assigned the Azure Kubernetes Service Cluster Admin Role.

Azure AD users must be able 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 RG1. Role1 must be available only for RG1.

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 maximized.

Q1

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 group 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.

Answer: B

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>

Q2

HOTSPOT

You need to ensure that the Azure AD application registration and consent configurations meet the identity and access requirements.

What should you use in the Azure portal? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To configure the registration settings:

	▼
Azure AD – User settings	
Azure AD – App registrations settings	
Enterprise Applications – User settings	

To configure the consent settings:

	▼
Azure AD – User settings	
Azure AD – App registrations settings	
Enterprise Applications – User settings	

Answer:

Answer Area

To configure the registration settings:

	▼
Azure AD – User settings	
Azure AD – App registrations settings	
Enterprise Applications – User settings	

To configure the consent settings:

	▼
Azure AD – User settings	
Azure AD – App registrations settings	
Enterprise Applications – User settings	

Reference:

<https://docs.microsoft.com/en-us/azure/active-directory/manage-apps/configure-user-consent>

Manage identity and access

Testlet 2

Case Study

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problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

Contoso, Ltd. is a consulting company that has a main office in Montreal and two branch offices in Seattle and New York.

The 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.

Existing Environment

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	<i>None</i>
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	networkSecurityGroups	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	None	Subnet12
VM4	NIC4	ASG1	Subnet13
VM5	NIC5	None	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.

Q3

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.

Answer: A

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>

Manage identity and access

Question Set 3

Q4

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

Answer: A

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>

Q5

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

Answer: B

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>

Q6

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

Answer: A

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>

Q7

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)

Answer: B

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-pta>

Q8

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. Azure Portal
- D. Active Directory Users and Computers

Answer: A

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>