

Question 1: Correct

Please read the following question and choose the most appropriate response:

Azure virtual machines (VM) are classified as which of the following offerings?

- Infrastructure-as-a-service (IaaS)
(Correct)
- Platform-as-a-service (PaaS)
- Database-as-a-service (DaaS)
- Software-as-a-service (SaaS)

Explanation

According to the **official** Azure website, Azure VMs are classified as IaaS since you are renting out physical hardware. Refer to this image :

Infrastructure as a Service Series: Virtual Machines and Windows

Posted on 25 June, 2012



Microsoft Azure



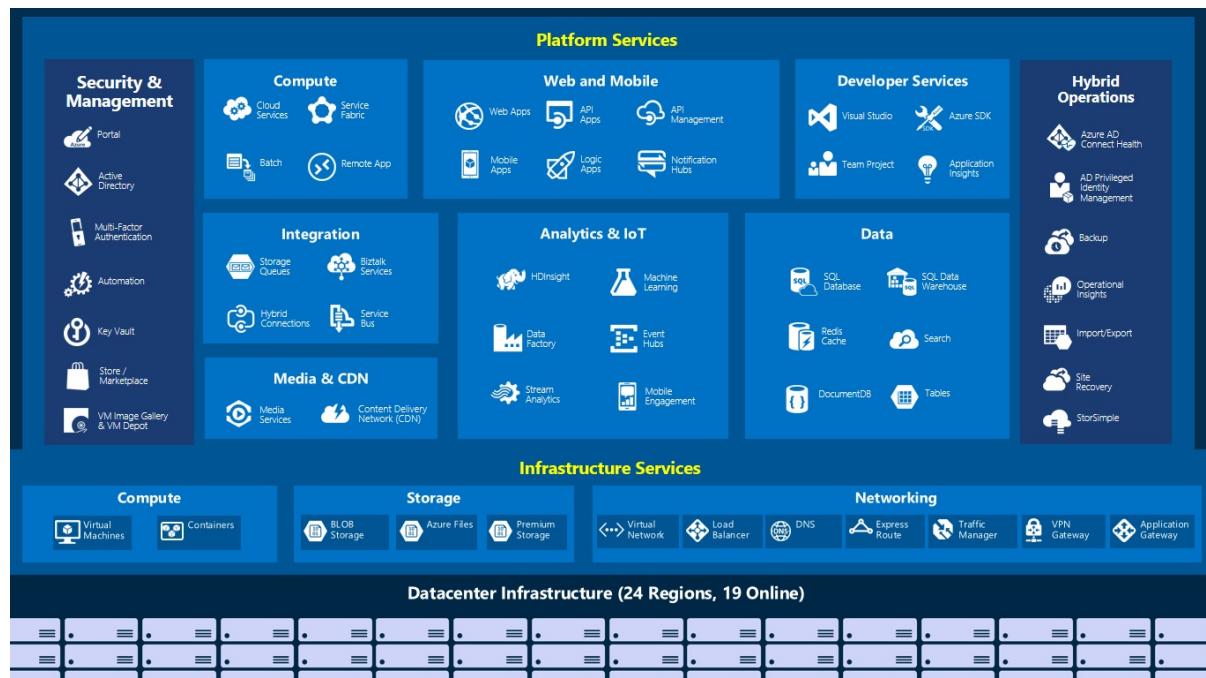
We recently announced the release of [Windows Azure Virtual Machines](#), an Infrastructure-as-a-Service (IaaS) offering in [Windows Azure](#). I wanted to share my insights into how you can quickly start to use and best take advantage of this service.

Since I helped build it, I will warn you: I do love it!

Virtual Machines Migration Patterns

At a glance, Virtual Machines (VMs) consist of **infrastructure** to **deploy an application**. Specifically, this includes a persistent OS disk, possibly some persistent data disks, and internal/external networking glue to hold it all together. Despite the boring list, with these infrastructure ingredients, the possibilities are so much more exciting...

To understand all the services in depth and which category they belong to:



Read more about this: <https://azure.microsoft.com/en-in/services/virtual-machines/#features>

Question 2: **Incorrect**

This question requires that you evaluate the bolded text to determine if it is correct.

When you are implementing a Software as a Service (SaaS) solution, you are responsible for **configuring high availability**.

Instructions : Review the bolded text. If the statement is already correct, select "No change is needed". If the statement is incorrect, choose the option below that would make the statement correct.

- **No change is needed**
(Incorrect)
- **Installing the SaaS solution**
- **Configuring the SaaS solution**
(Correct)
- **Creating a resource group**

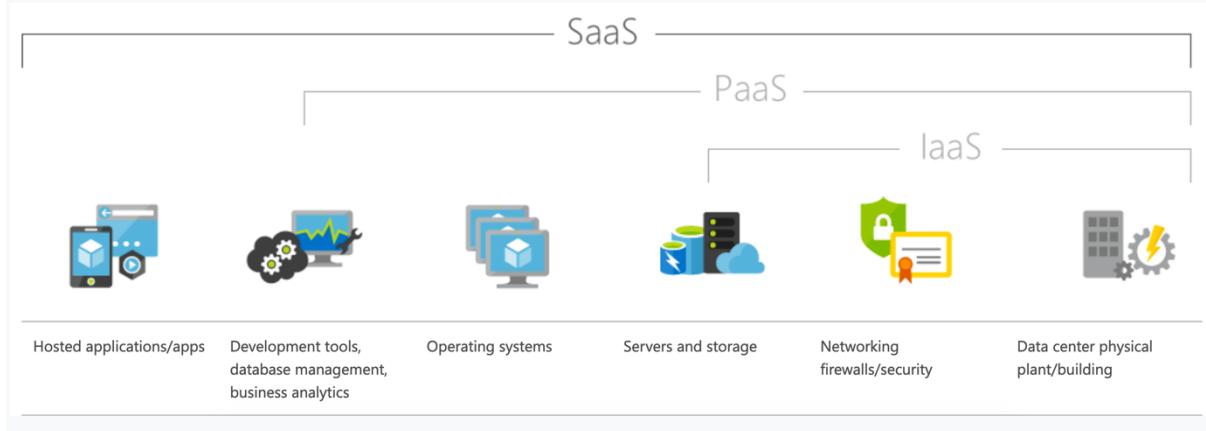
Explanation

Software as a service (SaaS) allows users to connect to and use cloud-based apps over the Internet. Common examples are email, calendaring, and office tools (such as Microsoft Office 365).

SaaS provides a complete software solution that you purchase on a pay-as-you-go basis from a [cloud service provider](#). You rent the use of an app for your organization, and your users connect to it over the Internet, usually with a web browser. All of the underlying infrastructure, middleware, app software, and app data are located in the service provider's data center. The service provider manages the hardware and software, and with the appropriate service agreement, will ensure the availability and the security of the app and your data as well. SaaS allows your organization to get quickly up and running with an app at minimal upfront cost.

If you've used a web-based email service such as Outlook, Hotmail, or Yahoo! Mail, then you've already used a form of **SaaS**. With these services, you log into your account over the Internet, often from a web browser. The email software is located on the service provider's network, and your messages are stored there as well. You can access your email and stored messages from a web browser on any computer or Internet-connected device.

The previous examples are free services for personal use. For organizational use, you can rent productivity apps, such as email, collaboration, and calendaring; and sophisticated business applications such as customer relationship management (CRM), enterprise resource planning (ERP), and document management. You pay for the use of these apps by **subscription** or according to the **level of use**.



Reference : <https://azure.microsoft.com/en-us/overview/what-is-saas/>

Question 3: **Correct**

You have an on-premise network that contains several servers. You plan to migrate all the servers to Azure.

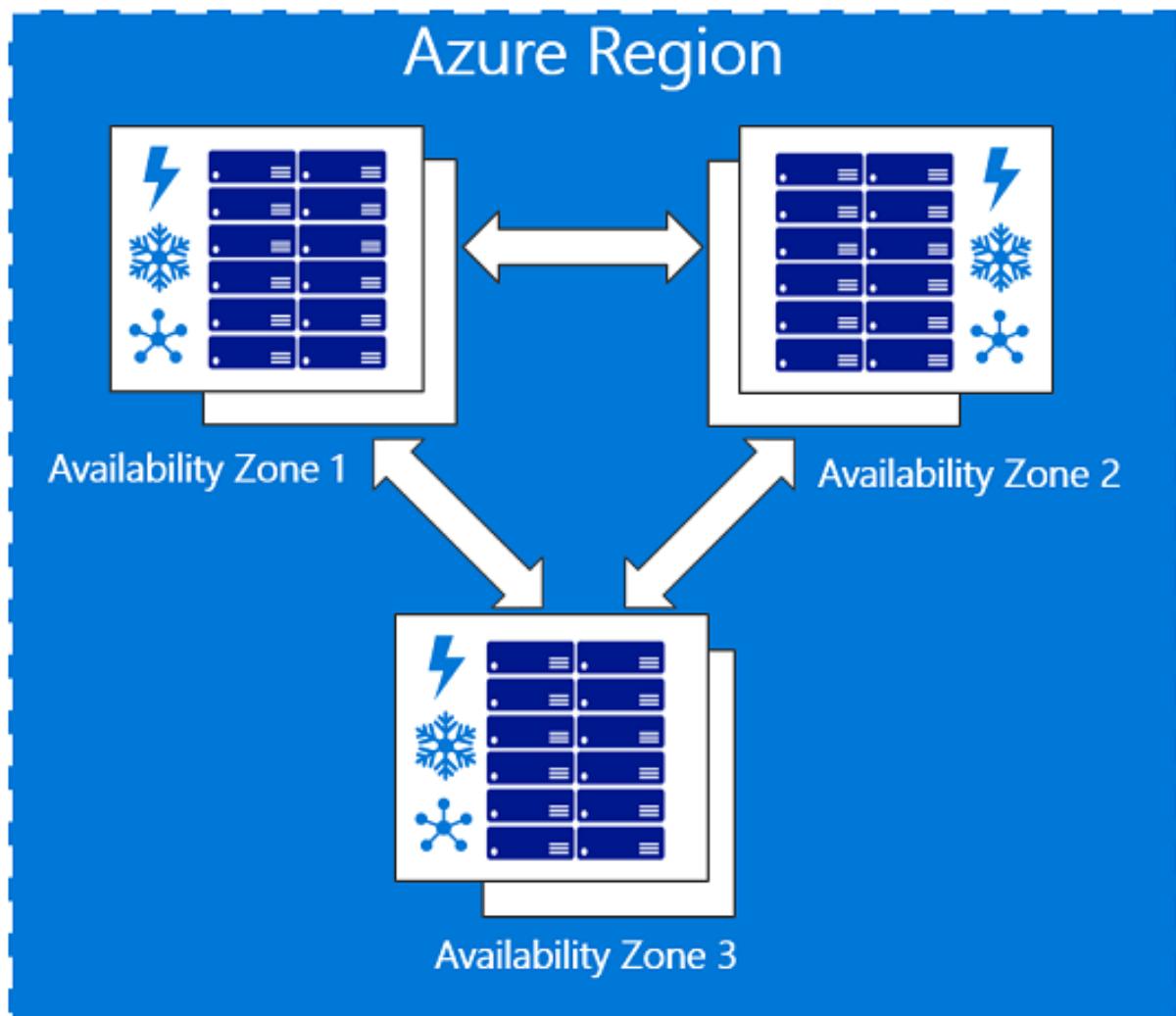
You need to recommend a solution to ensure that some of the servers are available if a single Azure data center goes offline for an extended period.

What should you include in the recommendation?

- Scalability
- Elasticity
- Fault Tolerance
(Correct)
- Cheap resources

Explanation

There are several mechanisms built into Microsoft Azure to ensure services and applications remain available in the event of a failure. Such failures can include **hardware failures**, such as hard-disk crashes, or temporary **availability issues** of dependent services, such as storage or networking services. Azure and its software-controlled infrastructure are written in a way to anticipate and manage such failures.



In the event of a failure, the Azure infrastructure (**the Fabric Controller**) reacts immediately to restore services and infrastructure. For example, if a virtual machine (VM) fails due to a hardware failure on the physical host, the Fabric Controller moves that VM to another physical node based on the same hard disk stored in Azure storage. Azure is similarly capable of coordinating upgrades and updates in such a way as to avoid service downtime.

For **computing resources** (such as cloud services, traditional IaaS VMs, VM scale sets), the most important and fundamental concepts for enabling high availability are fault domains and upgrade domains. These have been part of Azure since its inception.

Reference : <https://azure.microsoft.com/en-us/blog/introducing-azure-availability-zones-for-resiliency-and-high-availability/>

Question 4: **Correct**

Your company plans to migrate all its data and resources to Azure.

The company's migration plan states that only **Platform as a Service (PaaS)** solutions must be used in Azure.

You need to deploy an Azure environment that supports the planned migration.

Solution: You create an Azure App Service and Azure SQL databases.

Does this meet the goal?

- Yes
(Correct)
- No

Explanation

Please always remember - Azure App Service and Azure SQL Databases are both PaaS services!

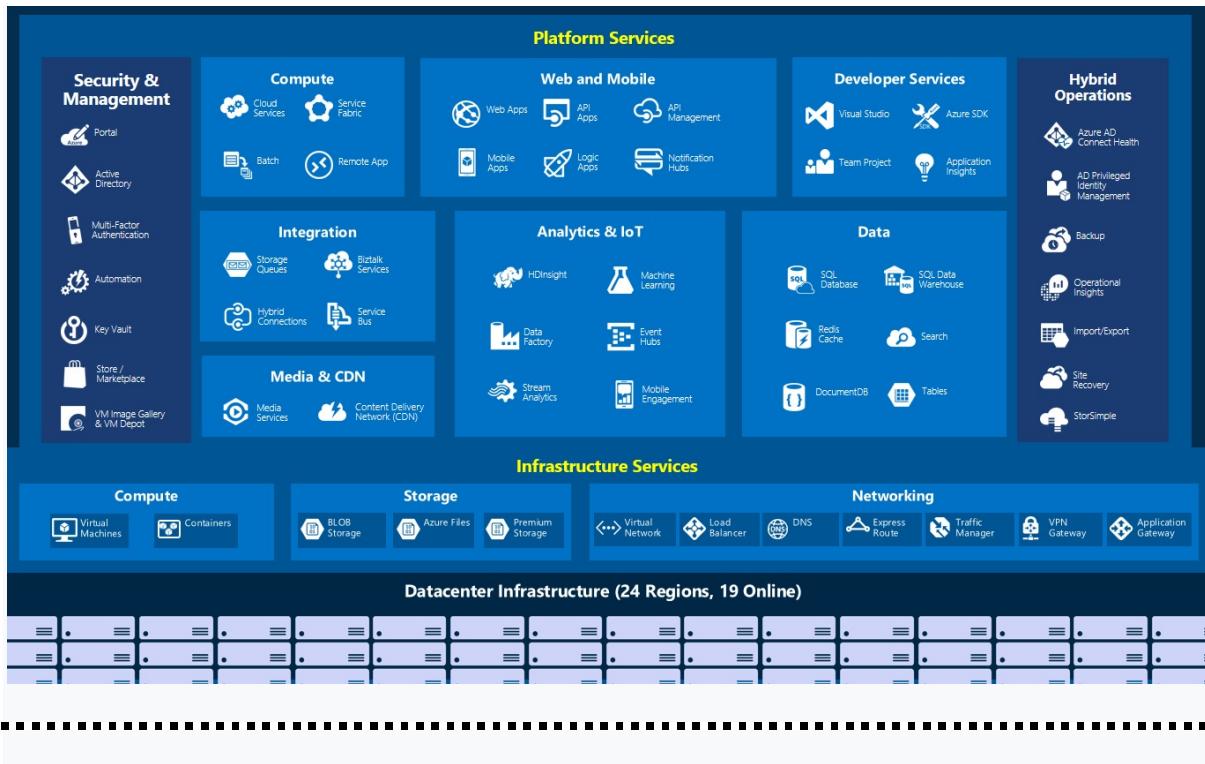
Azure App Service - Allows us to quickly build, deploy, and scale web apps created with popular frameworks such as .NET, .NET Core, Node.js, Java, PHP, Ruby, or Python, in containers or running on any operating system. It offers rigorous, enterprise-grade performance, security, and compliance requirements by using the fully managed platform for your operational and monitoring tasks.

Reference: <https://azure.microsoft.com/en-in/services/app-service/>

Azure SQL Database - Microsoft Azure SQL Database is a managed cloud database provided as a part of Microsoft Azure. A cloud database is a database that runs on a cloud computing platform, and access to it is provided as a service. Managed database services take care of scalability, backup, and high availability of the database.

Reference: <https://azure.microsoft.com/en-in/services/sql-database/>

Please refer to the image below, and make sure you remember it properly. A lot of the questions in the exam can be answered using this image alone:



Question 5: **Correct**

You plan to deploy several Azure virtual machines.

You need to ensure that the services running on the virtual machines are available if a single data center fails.

Solution: You deploy the virtual machines to two or more Availability Zones.

Does this meet the goal?

- Yes
(Correct)
- No

Explanation

Absolutely! The answer is in the question itself. If one data center goes down, we can make sure our VM is still running in another data center! This is the entire concept of fault tolerance - Make sure you have enough backups to prevent downtime!

Availability Zones -

An Availability Zone is a high-availability offering that protects your applications and data from datacenter failures. Availability Zones are **unique physical locations** within an Azure region. Each zone is made up of one or more datacenters equipped with **independent power, cooling, and networking (VERY IMPORTANT PLEASE NOTE)**.

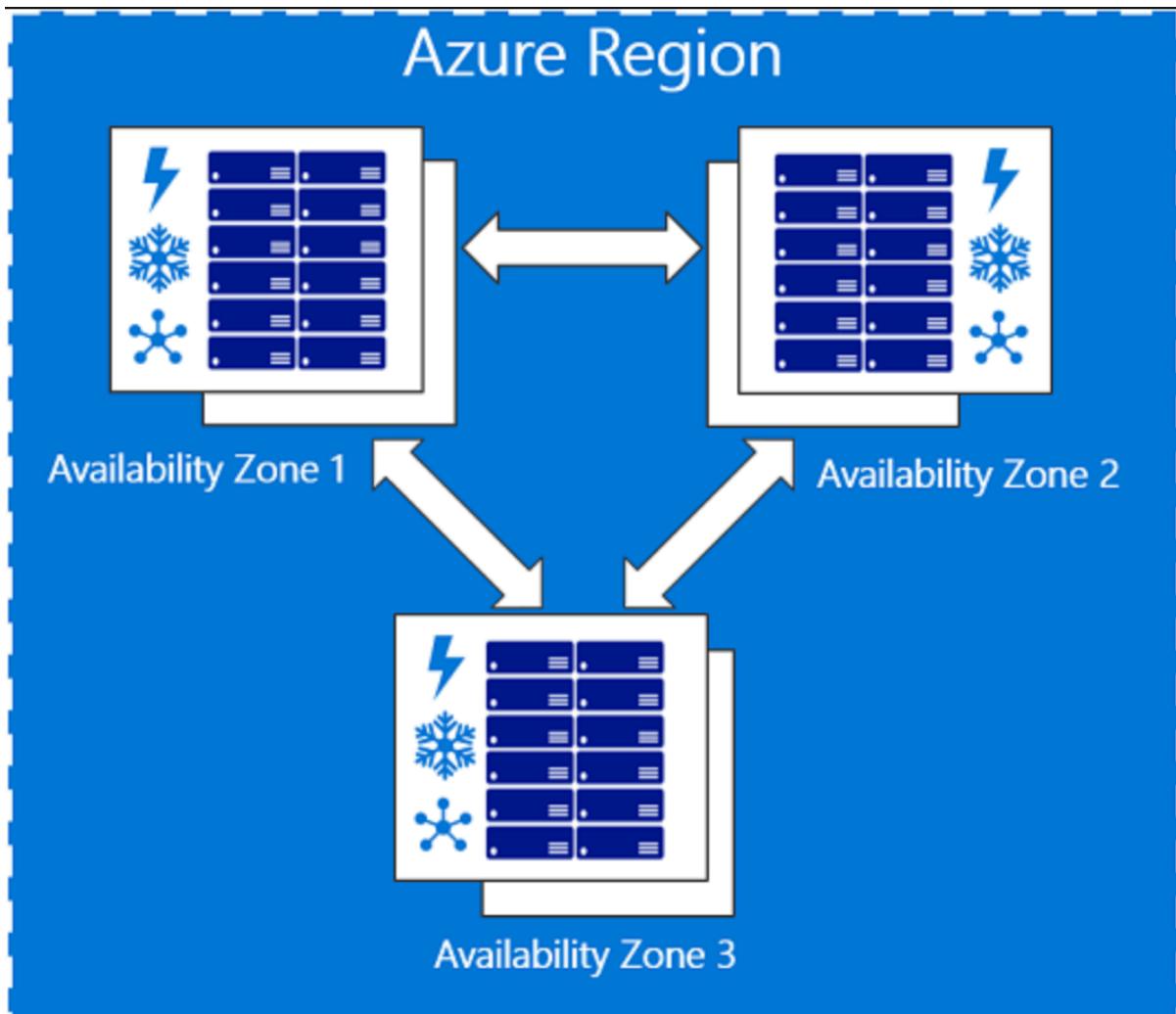
To ensure resiliency, there's a minimum of **three** separate zones in all enabled regions. The physical separation of Availability Zones within a region protects applications and data from datacenter failures. Zone-redundant services replicate your applications and data across Availability Zones to protect from single-points-of-failure. With Availability Zones, Azure offers **industry best 99.99% VM uptime SLA**.

Azure services that support Availability Zones fall into two categories:

1) Zonal services – where a resource is pinned to a specific zone (for example, virtual machines, managed disks, Standard IP addresses), or

2) Zone-redundant services – when the Azure platform replicates automatically across zones (for example, zone-redundant storage, SQL Database).

To achieve comprehensive business continuity on Azure, build your application architecture using the combination of Availability Zones with Azure region pairs. You can synchronously replicate your applications and data using Availability Zones within an Azure region for high-availability and asynchronously replicate across Azure regions for disaster recovery protection.



Reference : <https://docs.microsoft.com/en-us/azure/availability-zones/az-overview>

Question 6: **Correct**

You have 500 virtual machines hosted on the Hyper-V hosts in a data center. You plan to migrate all the virtual machines to an Azure pay-as-you-go subscription. You need to identify which expenditure model to use for the planned Azure solution.

Which expenditure model should you identify?

- Operational
(Correct)
- Capital
- Fault Tolerant

- Scalable

Explanation

Fault Tolerant and Scalable are wrong answers because such payment models don't exist. Capital expenditure is also incorrect since we aren't going to be paying anything up front. Operational makes most sense since it means '**pay as you go**', i.e paying only for what you consume and nothing else.

Pay-As-You-Go

This offer is billed at the standard [Pay-As-You-Go](#) rates, except as otherwise specified.

You will be notified through email at least 30 days in advance of any changes to the Pay-As-You-Go rates. New services may be added periodically to the Azure platform. Azure will notify you in advance of these new services and any fees that might be charged for using them. However, you would only be charged if you elect to use the new services.

Any taxes which may result from receiving services at no charge are the sole responsibility of the recipient.

Reference : <https://azure.microsoft.com/en-us/offers/ms-azr-0003p/>

Question 7: Incorrect

For the following statement, select Yes if the statement is True, otherwise select

No.

A resource can belong to more than one resource group

- Yes
(Incorrect)
- No
(Correct)

Explanation

No! 1 resource = 1 resource group (very simply logic)

From the official documentation :

Resource groups

There are some important factors to consider when defining your resource group:

- All the resources in your group should share the same lifecycle. You deploy, update, and delete them together. If one resource, such as a database server, needs to exist on a different deployment cycle it should be in another resource group.
- Each resource can only exist in one resource group.

Reference : <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview#resource-groups>

Question 8: Correct

For the following statement, select Yes if the statement is True, otherwise select

No.

If you assign permissions to a resource group, all the resources inside it inherit these permissions

- Yes
(Correct)
- No

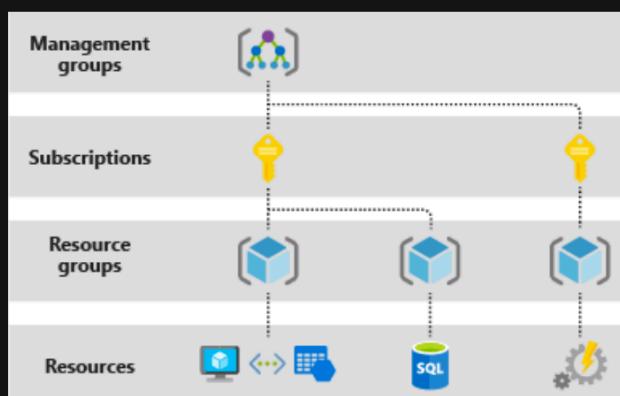
Explanation

Yes, it is true that if you assign certain permissions to a resource group, then all the resources inside it inherit those permissions.

See below (**VERY IMPORTANT TO UNDERSTAND AND REMEMBER THIS DIAGRAM**):

Understand scope

Azure provides four levels of scope: [management groups](#), subscriptions, resource groups, and resources. The following image shows an example of these layers.



You apply management settings at any of these levels of scope. The level you select determines how widely the setting is applied. Lower levels inherit settings from higher levels. For example, when you apply a [policy](#) to the subscription, the policy is applied to all resource groups and resources in your subscription. When you apply a policy on the resource group, that policy is applied to the resource group and all its resources. However, another resource group doesn't have that policy assignment.

You can deploy templates to tenants, management groups, subscriptions, or resource groups.

A resource group is a **container** that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization.

Generally, we add resources that share the same lifecycle to the same resource group so you can easily deploy, update, and delete them as a group.

Reference : <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/overview#resource-groups>

Question 9: **Correct**

For the following statement, select Yes if the statement is True, otherwise select

No.

Data that is copied to an Azure storage account is maintained in 3 different copies automatically.

- Yes
(Correct)
- No

Explanation

Azure Storage always stores **multiple** copies of your data so that it is protected from planned and unplanned events, including transient hardware failures, network or power outages, and massive natural disasters. Redundancy ensures that your storage account meets the [Service-Level Agreement \(SLA\) for Azure Storage](#) even in the face of failures.

See below:

Redundancy in the primary region

Data in an Azure Storage account is always replicated three times in the primary region. Azure Storage offers two options for how your data is replicated in the primary region:

- **Locally redundant storage (LRS)** copies your data synchronously three times within a single physical location in the primary region. LRS is the least expensive replication option, but is not recommended for applications requiring high availability.
- **Zone-redundant storage (ZRS)** copies your data synchronously across three Azure availability zones in the primary region. For applications requiring high availability, Microsoft recommends using ZRS in the primary region, and also replicating to a secondary region.

Locally-redundant storage

Locally redundant storage (LRS) replicates your data three times within a single physical location in the primary region. LRS provides at least 99.99999999% (11 nines) durability of objects over a given year.

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

Question 10: **Incorrect**

Power BI can access infrequently used data from which of the following? (Choose 2)

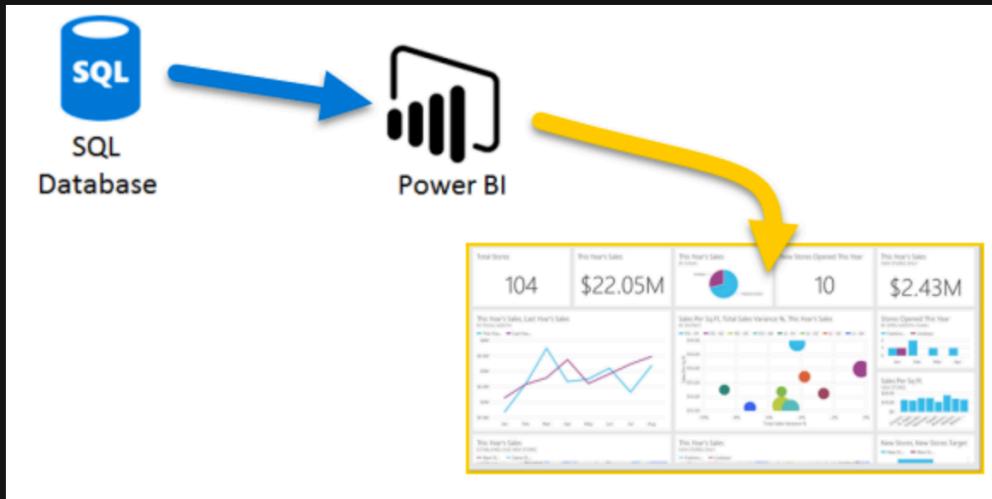
- Azure Cosmos DB
- Azure DataLake
(Correct)
- Azure SQL Data Warehouse
(Correct)
- Azure PostgreSQL

Explanation

Azure DataLake and Azure SQL Data Warehouse are the correct options:

Azure SQL Database and Power BI

You can start with a straightforward connection to an Azure SQL Database, and create reports to monitor the progress of your business. Using the [Power BI Desktop](#), you can create reports that identify trends and key performance indicators that move your business forward.



Power BI and Azure Data Lake Storage Gen2 Integration features

Power BI customers can now:

- Connect an Azure Data Lake Storage Gen2 account to Power BI
- Configure workspaces to store dataflow definition and data files in CDM folders in Azure Data Lake
- Attach CDM folders created by other services to Power BI as dataflows
- Create datasets, reports, dashboards, and apps using dataflows created from CDM folders in Azure Data Lake

These new Power BI capabilities are available today for Power BI Pro, Power BI Premium and Power BI Embedded customers. All you need to get started is an Azure Data Storage account.

Reference : <https://powerbi.microsoft.com/fr-fr/blog/power-bi-dataflows-and-azure-data-lake-storage-gen2-integration-preview/>

Question 11: **Incorrect**

For the following statement, select Yes if the statement is True, otherwise select No.

A company really likes some of the services being offered in Azure public preview. Is it advisable for them to deploy their production environment on services that are in public preview?

- Yes
(Incorrect)
- No
(Correct)

Explanation

It is important to note that the services offered in public preview are **excluded from the Service Level Agreements (SLAs)**. It is therefore not a good idea to deploy production environments on resources / services that are in preview (public or private).

Azure may include preview, beta, or other pre-release features, services, software, or regions offered by Microsoft to obtain customer feedback ("Previews"). Previews are made available to you on the condition that you agree to these terms of use, which supplement [your agreement](#) governing use of Azure.

PREVIEWS ARE PROVIDED "AS-IS," "WITH ALL FAULTS," AND "AS AVAILABLE," AND ARE EXCLUDED FROM THE SERVICE LEVEL AGREEMENTS AND LIMITED WARRANTY.
Previews may not be covered by customer support. Previews may be subject to reduced or different security, compliance and privacy commitments, as further explained in the [Microsoft Online Services Privacy Statement](#), [Microsoft Azure Trust Center](#), the [Online Services Terms](#), and any additional notices provided with the Preview. Customers should not use Previews to process Personal Data or other data that is subject to heightened compliance requirements. Certain named Previews may also be subject to additional terms set forth below, if any. We may change or discontinue Previews at any time without notice. We also may choose not to release a Preview into "General Availability."

Reference : <https://azure.microsoft.com/en-ca/support/legal/preview-supplemental-terms/>

Question 12: Correct

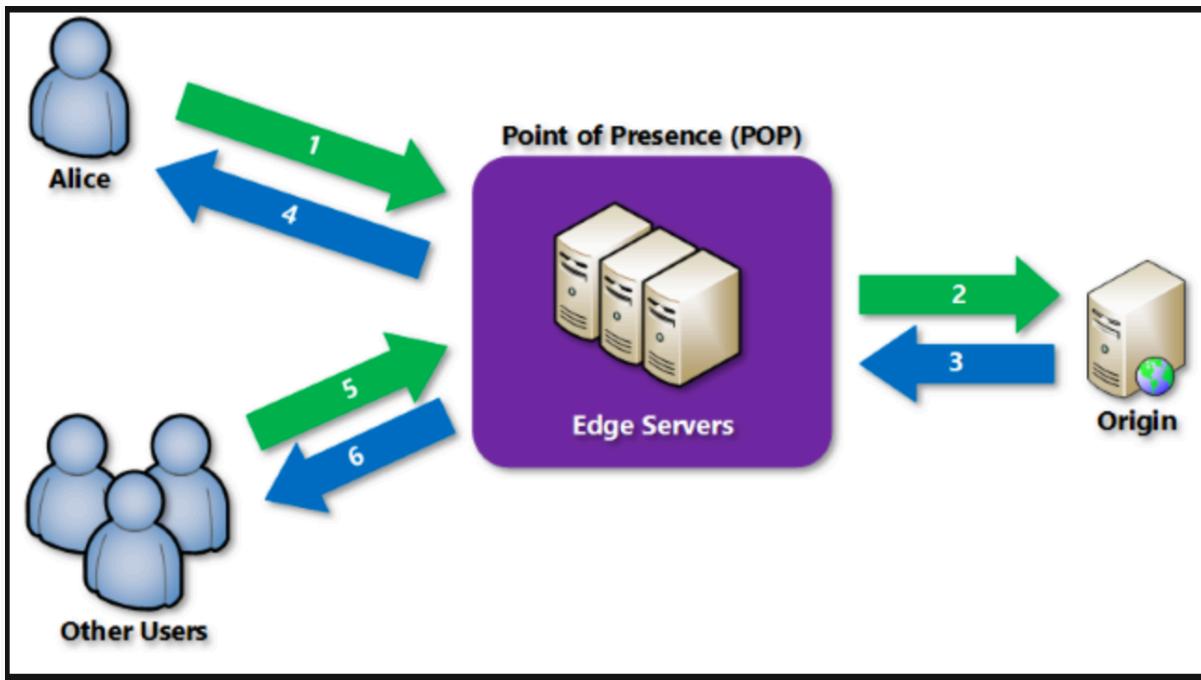
A company is aiming to distribute its content to users around the world with the least possible latency. Which of the following services can accomplish this?

- Azure Content Delivery Network
(Correct)
- Azure Application Gateway
- Azure Logic Apps
- Azure Virtual Network

Explanation

A content delivery network (CDN) is a distributed network of servers that can efficiently deliver web content to users. CDNs store cached content on edge servers in point-of-presence (POP) locations that are close to end users, to minimize latency.

Azure Content Delivery Network (CDN) offers developers a global solution for rapidly delivering high-bandwidth content to users by caching their content at strategically placed physical nodes across the world. Azure CDN can also accelerate dynamic content, which cannot be cached, by leveraging various network optimizations using CDN POPs. For example, route optimization to bypass Border Gateway Protocol (BGP).



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

Question 13: **Incorrect**

Your company is planning to purchase an Azure support plan and has the following requirements:

- 1) 24x7 Access to Support Engineers via email and phone
- 2) Guidance from a pool of ProDirect delivery managers

Which of the following plans fulfills these requirements?

- Basic
(Incorrect)
- Standard
- Developer
- Professional Direct
(Correct)

Explanation

Look at the table below. Clearly, Professional Direct is the correct option.

IT IS THE ONLY OPTION OFFERING GUIDANCE FROM A POOL OF PRODIRECT DELIVERY MANAGERS.

PROFESSIONAL DIRECT

Purchase support

24/7 access to technical support by email and phone

Available during business hours by email only.



Guidance from a pool of ProDirect delivery managers

Reference : <https://azure.microsoft.com/en-us/support/plans/>

Question 14: **Incorrect**

Which of the following is a solution for running small pieces of code in the cloud?

- Azure DevOps
(Incorrect)
- Azure Functions
(Correct)
- Azure Logic Apps
- Azure App Service

Explanation

Azure Functions allows you to run small pieces of code (called "functions") without worrying about application infrastructure. With Azure Functions, the cloud infrastructure provides all the up-to-date servers you need to keep your application running at scale.

A function is "**triggered**" by a specific type of event. [Supported triggers](#) include responding to changes in data, responding to messages, running on a schedule, or as the result of an HTTP request.

Few of the features of Azure Functions are:

Features

Some key features of Azure Functions include:

- **Serverless applications:** Functions allow you to develop [serverless](#) applications on Microsoft Azure.
- **Choice of language:** Write functions using your choice of C#, Java, JavaScript, Python, and PowerShell.
- **Pay-per-use pricing model:** Pay only for the time spent running your code. See the Consumption hosting plan option in the [pricing section](#).
- **Bring your own dependencies:** Functions supports NuGet and NPM, giving you access to your favorite libraries.
- **Integrated security:** Protect HTTP-triggered functions with OAuth providers such as Azure Active Directory, Facebook, Google, Twitter, and Microsoft Account.
- **Simplified integration:** Easily integrate with Azure services and software-as-a-service (SaaS) offerings.
- **Flexible development:** Set up continuous integration and deploy your code through [GitHub](#), [Azure DevOps Services](#), and other [supported development tools](#).

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

Question 15: **Correct**

Your company is planning to deploy 100 identical Virtual Machines and has the following requirements :

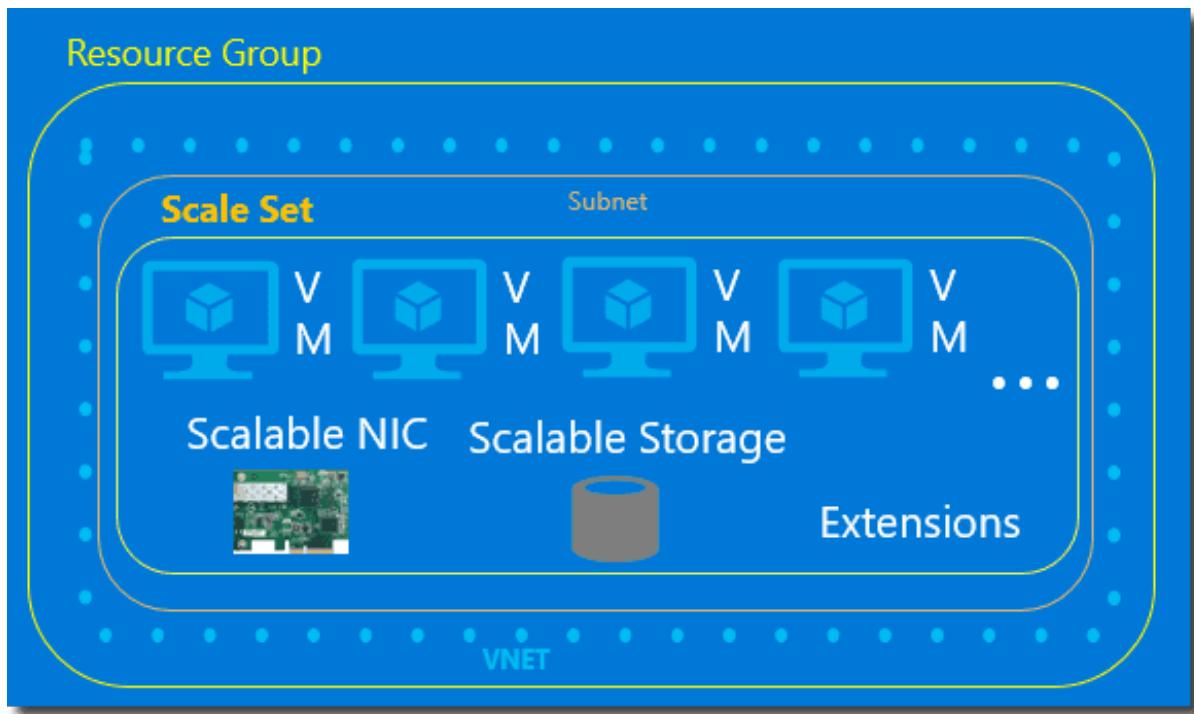
- 1) Deploy and manage these Virtual Machines
- 2) Scale these VMs automatically on the basis of demand and usage

Which of the following would best satisfy this requirement?

- **Azure Scale Sets**
(Correct)
- **Azure Region Pairs**
- **Azure Resource Groups**
- **Azure Subscriptions**

Explanation

Azure virtual machine scale sets let you create and manage a group of identical, load balanced VMs. The number of VM instances can automatically increase or decrease in response to **demand** or a **defined schedule**. Scale sets provide high **availability** to your applications, and allow you to centrally manage, configure, and update a large number of VMs. With virtual machine scale sets, you can build large-scale services for areas such as compute, big data, and container workloads.



Reference : <https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/overview>

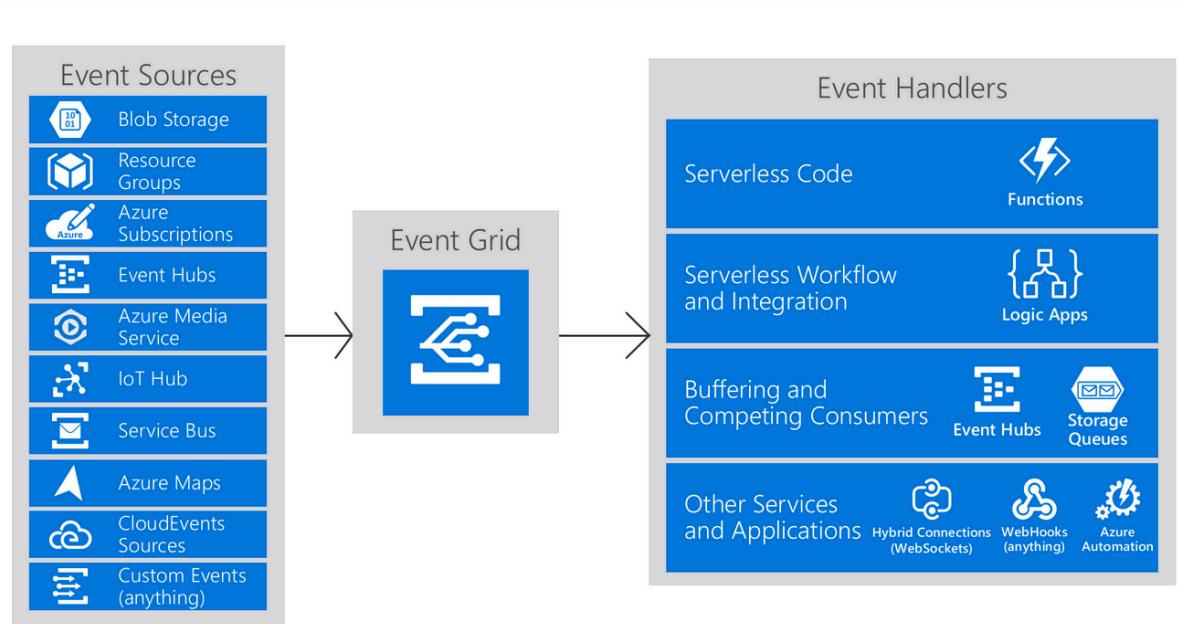
Question 16: **Incorrect**

Which of the following services allows you to send events generated from Azure resources to applications?

- Azure Event Hub
(Incorrect)
- Azure Event Grid
(Correct)
- Azure Cognitive Services
- Azure App Service

Explanation

Azure Event Grid allows you to easily build applications with **event-based architectures**. First, select the Azure resource you would like to subscribe to, and then give the event handler or WebHook endpoint to send the event to. Event Grid has built-in support for events coming from Azure services, like storage blobs and resource groups. Event Grid also has support for your own events, using **custom topics**.



Reference : <https://docs.microsoft.com/en-us/azure/event-grid/overview>

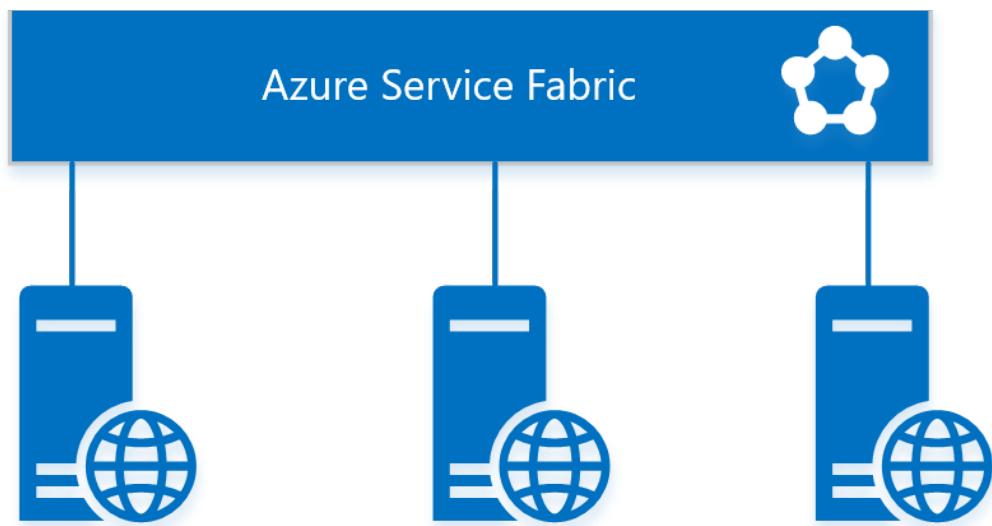
Question 17: **Correct**

Your company is planning to deploy a mobile application and wants to store user details on the back-end in a hosted SQL database. Which of the following services can ease this process?

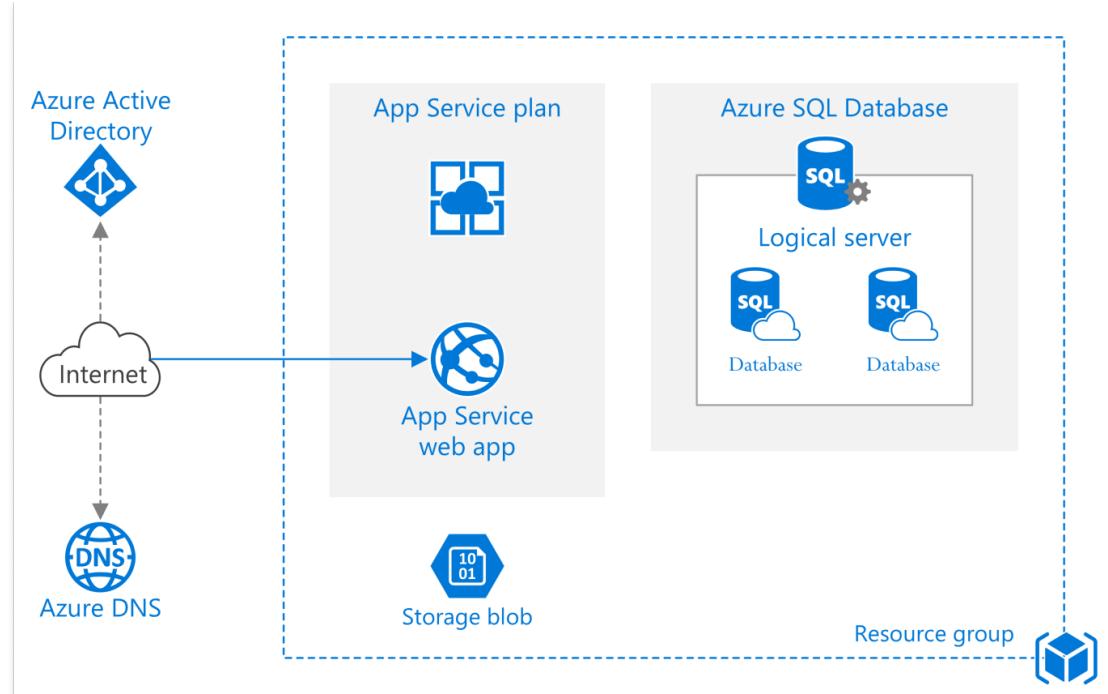
- Azure App Service
(Correct)
- Azure Kubernetes
- Azure Functions
- Azure Cosmos DB

Explanation

Azure App Service enables you to build and host web apps, mobile back ends, and RESTful APIs in the programming language of your choice without managing infrastructure. It offers auto-scaling and high availability, supports both Windows and Linux, and enables automated deployments from GitHub, Azure DevOps, or any Git repo.



It is also possible to scale apps on an enterprise grade platform:



Reference : <https://docs.microsoft.com/en-us/azure/app-service/overview>

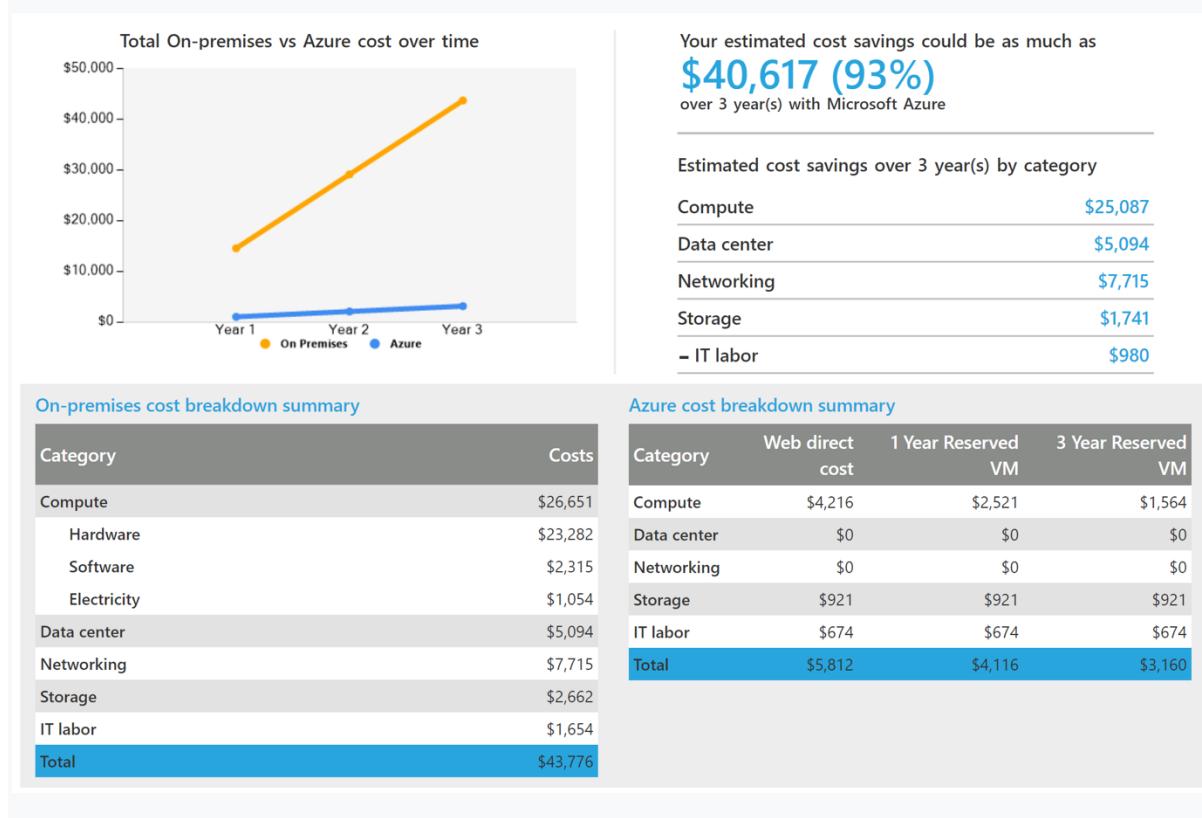
Question 18: Correct

A senior IT official wants to convince the management to move all their resources to Azure as they could end up saving a lot of money. Which of the following can the official use to make a strong case for migrating to Azure?

- Azure TCO calculator
(Correct)
- Azure Monitor
- Azure Cost Management
- Azure Advisor

Explanation

For users wishing to adopt cloud services, Azure provides a web-based TCO Calculator. You can use this calculator to estimate the **costs of migrating your data and applications to Azure and predict potential savings.**



Total Cost of Ownership (TCO) Calculator
Estimate the cost savings you can realize by migrating your workloads to Azure

1 Define your workloads 2 Adjust assumptions 3 View report

0 My saved reports

Define your workloads

Enter the details of your on-premises workloads. This information will be used to understand your current TCO and recommended services in Azure.

Servers

Enter the details of your on-premises server infrastructure. After adding a workload, select the workload type and enter the remaining details.

[Add server workload](#)

Databases

Enter the details of your on-premises database infrastructure. After adding a database, enter the details of your on-premises database infrastructure in the Source section. In the Destination section, select the Azure service you would like to use.

[Add database](#)

Reference: <https://azure.microsoft.com/en-in/pricing/tco/calculator/>

Question 19: **Incorrect**

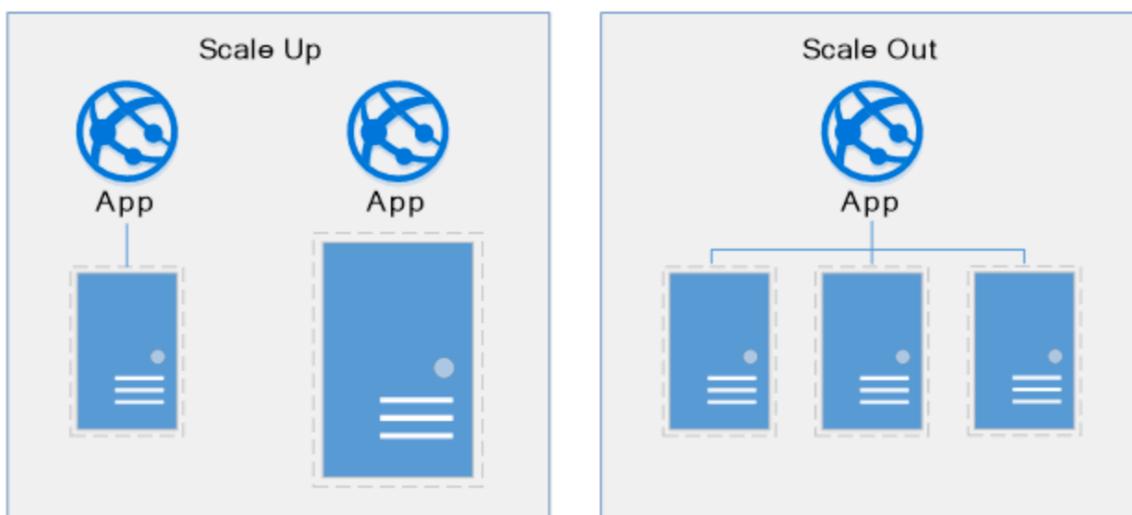
When should you **scale out** your deployment?

- When you need a stronger CPU to make your application run faster
(Incorrect)
- When you need additional Virtual Machines to speed up your application
(Correct)
- When you need to reduce your cost of operation
- When you want to reduce the unused capacity of your system

Explanation

Scale Out

A scale out operation is the equivalent of creating multiple copies of your web site and adding a load balancer to distribute the demand between them. When you scale out a web site in Azure, there is no need to configure load balancing separately since this is already provided by the platform



References : <https://www.azurebarry.com/how-to-autoscale-azure-app-services-cloud-services/>

Question 20: **Incorrect**

You have recently created a news sharing app and notice that the demand is unpredictable. There is a spike in usage whenever an event of national significance occurs. Which of the Azure compute resources is the best match for this type of workload?

- Containers
(Incorrect)
- Kubernetes
- Serverless Computing
(Correct)
- Virtual Machines

Explanation

Serverless computing enables developers to build applications faster by eliminating the need for them to manage infrastructure. With serverless applications, the cloud service provider automatically provisions, scales, and manages the infrastructure required to run the code.

While understanding the definition of serverless computing, it's important to note that servers are still running the code. The serverless name comes from the fact that the tasks associated with infrastructure provisioning and management are invisible to the developer. This approach enables developers to increase their focus on the **business logic and deliver more value to the core of the business (IMPORTANT)**. Serverless computing helps teams increase their productivity and bring products to market faster, and it allows organizations to better optimize resources and stay focused on innovation.

Top benefits of serverless computing



No infrastructure management

Using fully managed services enables developers to avoid administrative tasks and focus on core business logic. With a serverless platform, you simply deploy your code, and it runs with high availability.



Dynamic scalability

With serverless computing, the infrastructure dynamically scales up and down within seconds to match the demands of any workload.



Faster time to market

Serverless applications reduce the operations dependencies on each development cycle, increasing development teams' agility to deliver more functionality in less time.



More efficient use of resources

Shifting to serverless technologies helps organizations reduce TCO and reallocate resources to accelerate the pace of innovation.

Reference : <https://azure.microsoft.com/en-us/overview/serverless-computing/>

Question 21: **Incorrect**

Which of the following is the best way to disable an employee account when he/she leave the company?

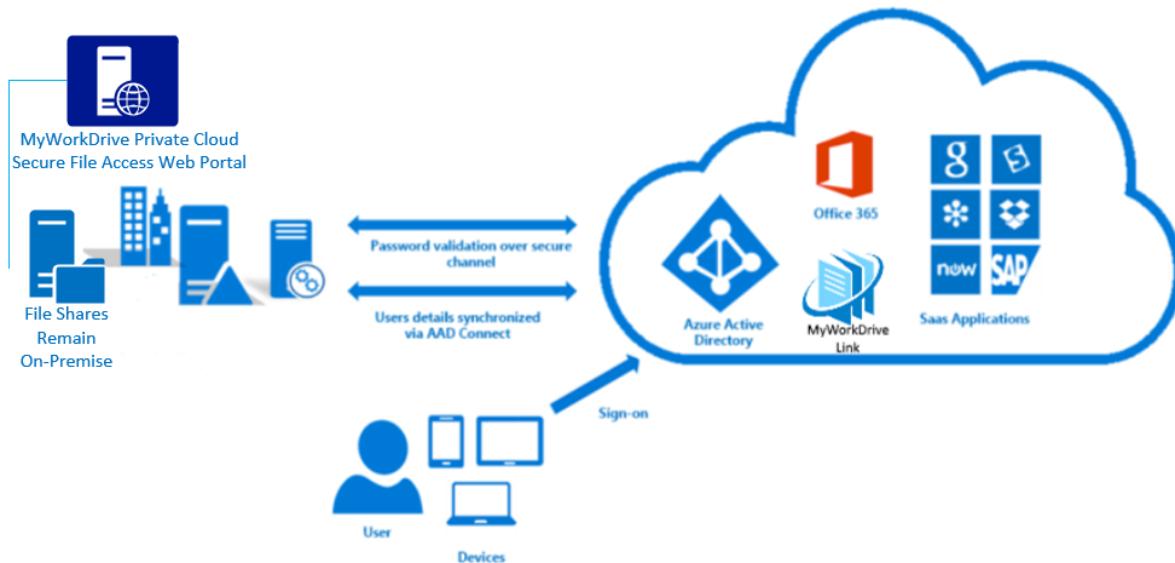
- Enable Multi-Factor Authentication (MFA)
(Incorrect)
- Use Single-Sign-On (SSO)
(Correct)
- Monitor their sign-in attempts

- Reassign everyone new credentials

Explanation

With single sign-on, users sign in once with one account to access domain-joined devices, company resources, software as a service (SaaS) applications, and web applications. After signing in, the user can launch applications from the Office 365 portal or the Azure AD MyApps access panel. Administrators can centralize user account management, and automatically add or remove user access to applications based on group membership.

MyWorkDrive Azure AD SAML Integration Diagram



Reference : <https://docs.microsoft.com/en-us/azure/active-directory/manage-apps/what-is-single-sign-on>

Question 22: **Correct**

There was a strong attack against your website and all your resources were exhausted and unavailable to your users. What can you do to prevent this type of attack in the future?

- Use Azure DDoS protection
(Correct)
- Use a Network Security Group
- Use an Azure Firewall
- Use Azure Virtual Networks

Explanation

Azure has two DDoS service offerings that provide protection from network attacks (Layer 3 and 4): **DDoS Protection Basic** and **DDoS Protection Standard**.

DDoS Protection Basic

Basic protection is integrated into the Azure by default at no additional cost. The scale and capacity of the globally deployed Azure network provides defense against common network-layer attacks through always-on traffic monitoring and real-time mitigation. DDoS Protection Basic requires no user configuration or application changes. DDoS Protection Basic helps protect all Azure services, including PaaS services like Azure DNS.

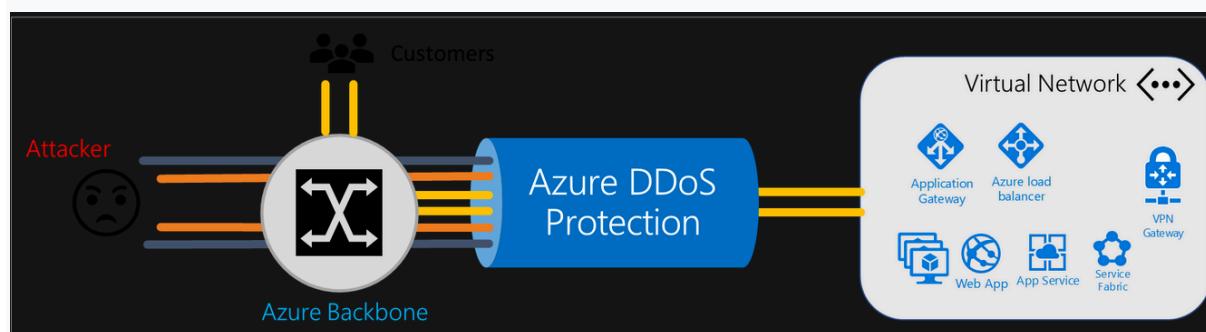
Basic DDoS protection in Azure consists of both software and hardware components. A software control plane decides when, where, and what type of traffic should be steered through hardware appliances that analyze and remove attack traffic. The control plane makes this decision based on an infrastructure-wide DDoS Protection *policy*. This policy is statically set and universally applied to all Azure customers.

For example, the DDoS Protection policy specifies at what traffic volume the protection should be *triggered*. (That is, the tenant's traffic should be routed through scrubbing appliances.) The policy then specifies how the scrubbing appliances should *mitigate* the attack.

The Azure DDoS Protection Basic service is targeted at protection of the infrastructure and protection of the Azure platform. It mitigates traffic when it exceeds a rate that is so significant that it might affect multiple customers in a multitenant environment. It doesn't provide alerting or per-customer customized policies.

DDoS Protection Standard

Standard protection provides enhanced DDoS mitigation features. It's automatically tuned to help protect your specific Azure resources in a virtual network. Protection is simple to enable on any new or existing virtual network, and it requires no application or resource changes. It has several advantages over the basic service, including logging, alerting, and telemetry. The following sections outline the key features of the Azure DDoS Protection Standard service.



Reference : <https://docs.microsoft.com/en-us/azure/security/fundamentals/ddos-best-practices>

Question 23: **Incorrect**

You are the Sr. Security Engineer in your company and you want to ensure that users MUST use Multi-Factor-Authentication (MFA) whenever trying to authenticate to Azure. Which of the following services can help you achieve this?

- Azure Advanced Threat Protection (ATP)
(Incorrect)
- Azure Privileged Identity Management
(Correct)
- Azure DDoS Protection
- Azure Security Center

Explanation

(IMPORTANT QUESTION)

Azure Active Directory (Azure AD) Privileged Identity Management (PIM) is a service that enables you to manage, control, and monitor access to important resources in your organization. These resources include resources in Azure AD, Azure, and other Microsoft Online Services like Office 365 or Microsoft Intune.

Reasons to use:

Organizations want to **minimize** the number of people who have access to secure information or resources, because that reduces the chance of a malicious actor getting that access, or an authorized user inadvertently impacting a sensitive resource. However, users still need to carry out privileged operations in Azure AD, Azure, Office 365, or SaaS apps. Organizations can give users **just-in-time (JIT) privileged access** to Azure resources and Azure AD. There is a need for oversight for what those users are doing with their administrator privileges.

What does it do?

Privileged Identity Management provides time-based and approval-based role activation to mitigate the risks of excessive, unnecessary, or misused access permissions on resources that you care about. Here are some of the key features of Privileged Identity Management:

- Provide **just-in-time** privileged access to Azure AD and Azure resources
- Assign **time-bound** access to resources using start and end dates
- Require **approval** to activate privileged roles
- Enforce **multi-factor authentication** to activate any role
- Use **justification** to understand why users activate
- Get **notifications** when privileged roles are activated
- Conduct **access reviews** to ensure users still need roles
- Download **audit history** for internal or external audit

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

Question 24: **Correct**

What is the maximum capacity for storage accounts?

- **5 PB**
(Correct)
- **500 TB**
- **2 PB**
- **750 TB**

Explanation

The maximum storage account capacity currently is : 5PB

*These might change with time so if you feel it has changed, inform me through message or in the Q/A section, I'll highly appreciate it :)

Scale targets for standard storage accounts

The following table describes default limits for Azure general-purpose v1, v2, Blob storage, block blob storage, and Data Lake Storage Gen2 enabled storage accounts. The *ingress* limit refers to all data that is sent to a storage account. The *egress* limit refers to all data that is received from a storage account.

Resource	Limit
Number of storage accounts per region per subscription, including standard, premium, and Data Lake Storage Gen2 enabled storage accounts. ³	250
Maximum storage account capacity	5 PiB ¹

Reference : <https://docs.microsoft.com/en-us/azure/storage/common/scalability-targets-standard-account>

Question 25: **Incorrect**

Which of the following affect costs in Azure? (Choose 2)

- Location
(Correct)
- Instance size
(Correct)
- Availability Zone
- Knowledge center usage

Explanation

(IMPORTANT QUESTION AGAIN) - asked a lot in the exam

The instance size and the location (eg -US or Europe etc) affect the prices. The knowledge center is completely free to use, and you aren't charged for an Availability Zone.

Reference : <https://azure.microsoft.com/en-us/pricing/>

Question 26: **Incorrect**

As an Azure customer, you are offered discounted prices for Azure reservations if

you _____

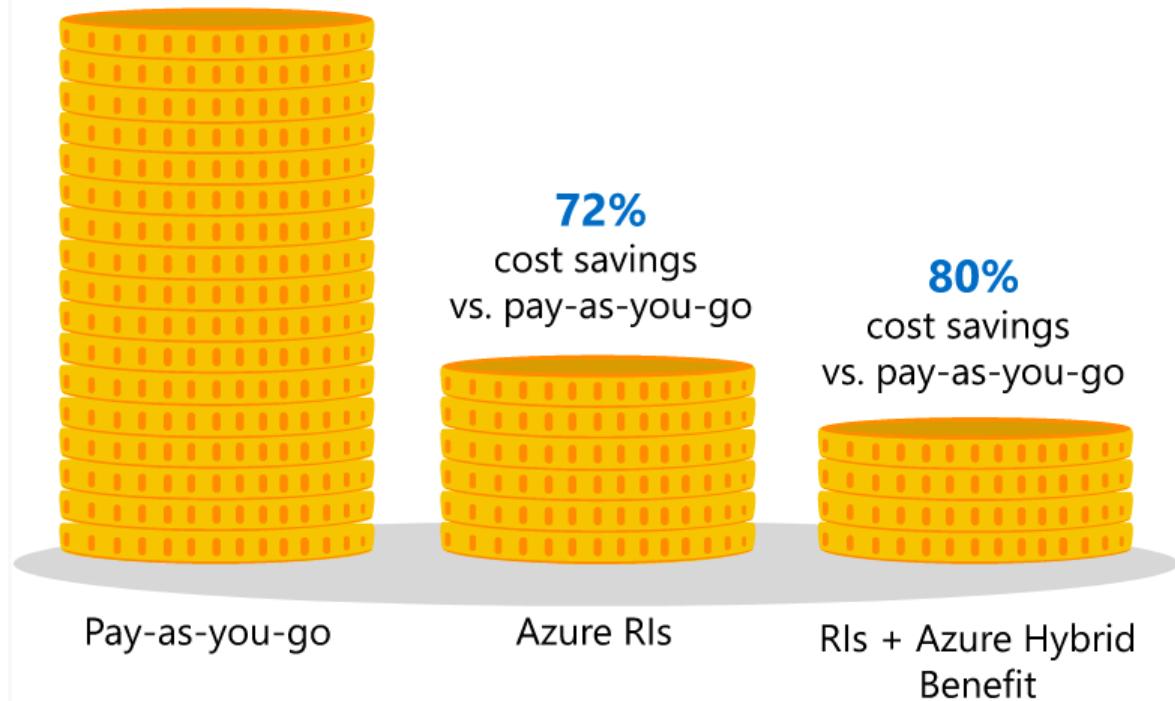
- Provision a lot of resources
- Make upfront commitments on compute capacity
(Correct)
- Use the free tier
- Don't use a lot of resources
(Incorrect)

Explanation

You can significantly reduce costs — **up to 72 percent** compared to pay-as-you-go prices—with one-year or three-year terms on Windows and Linux virtual machines (VMs). When you combine the cost savings gained from Azure RIs (reserved instances) with the added value of the Azure Hybrid Benefit, you can save up to 80 percent**.

It is possible to lower your total cost of ownership by combining Azure Reserved Instances with pay-as-you-go prices to manage costs across predictable and variable workloads. In many cases, you can further reduce your costs with reserved instance size flexibility.

Save up to **80%** with RIs and Azure Hybrid Benefit



Reference : <https://azure.microsoft.com/en-us/pricing/reserved-vm-instances/>

Question 27: **Correct**

For the following statement, select Yes if the statement is True, otherwise select

No.

Tags can be applied to any type of resource in Azure

- Yes
 - No
- (Correct)**

Explanation

No, according to the official documentation, Tags **CANNOT** be applied to all resource types. See below:

Limitations

The following limitations apply to tags:

- Not all resource types support tags. To determine if you can apply a tag to a resource type, see [Tag support for Azure resources](#).
- Management groups currently don't support tags.

Reference : <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/tag-resources>

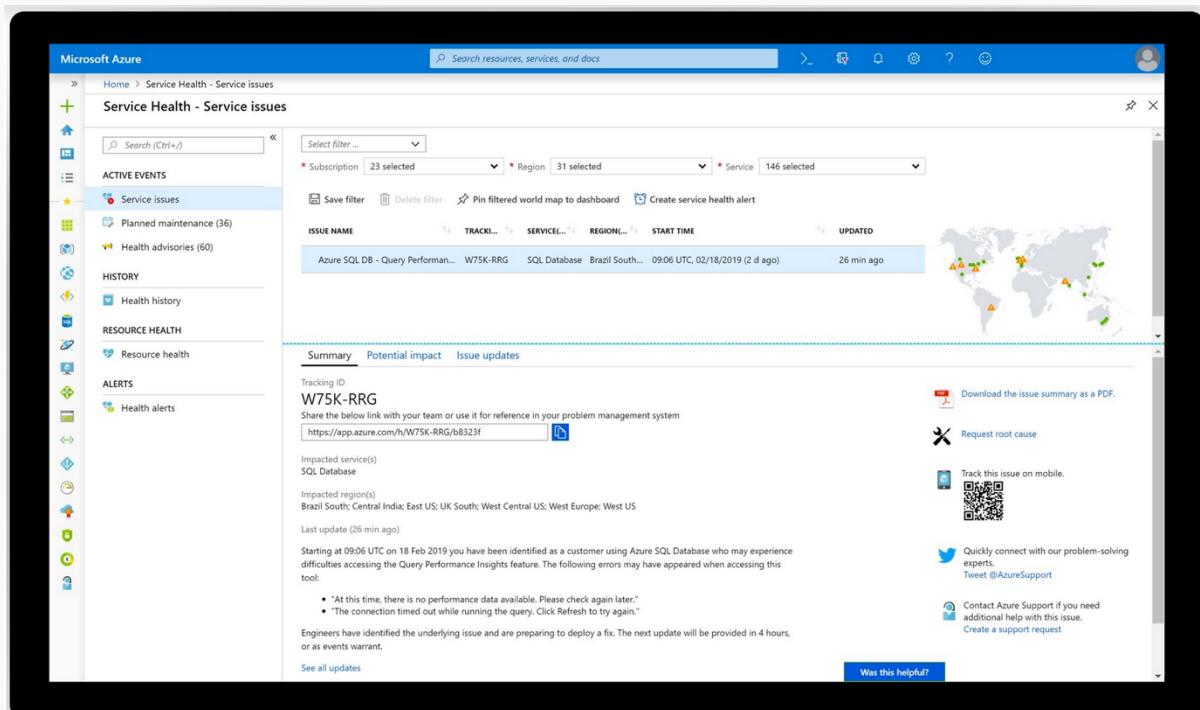
Question 28: Incorrect

Which of the following services provides an up-to-date status on the health of Azure services?

- Azure Monitor
- Azure Service Health
(Correct)
- Azure Trust Portal
- Azure Initiatives
(Incorrect)

Explanation

Azure Service Health notifies you about Azure service incidents and planned maintenance so you can take action to mitigate downtime. We can configure customizable **cloud alerts** and use your personalized dashboard to analyze health issues, monitor the impact to your cloud resources, get guidance and support, and share details and updates.



Reference : <https://azure.microsoft.com/en-us/features/service-health/#features>

Question 29: **Incorrect**

You have an Azure environment. You need to create a new Azure virtual machine from a tablet that runs the Android operating system.

Solution: You use Bash in Azure Cloud Shell.

Does this meet the goal?

- Yes
(Correct)
- No
(Incorrect)

Explanation

With Azure Cloud Shell, you can create virtual machines using Bash or PowerShell.

Azure Cloud Shell is an interactive, authenticated, browser-accessible shell for managing Azure resources. It provides the flexibility of choosing the shell experience that best suits the way you work, either Bash or PowerShell.

Reference: <https://docs.microsoft.com/en-us/azure/cloud-shell/quickstart>

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

Question 30: **Incorrect**

You plan to create an Azure virtual machine.

You need to identify which storage service must be used to store the unmanaged data disks of the virtual machine.

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



Blobs

REST-based object storage for unstructured data

[Explore data using OAuth preview](#)

[Learn more](#)



Files

File shares that use the standard SMB 3.0 protocol

[Learn more](#)



Tables

Tabular data storage

[Learn more](#)



Queues

Effectively scale apps according to traffic

[Explore data using OAuth preview](#)

[Learn more](#)

- **Blobs**
(Correct)
- **Files**
(Incorrect)
- **Queues**
- **Tables**

Explanation

Azure Blob storage is a massively scalable and secure object storage for cloud-native workloads, archives, data lakes, high-performance computing and machine learning.

Azure page blobs are the backbone of the virtual disk platforms for Azure IaaS. Both Azure OS and data disks are implemented as virtual disks where data is durably persisted in the Azure Storage platform and then delivered to the virtual machines for maximum performance. Azure Disks are persisted in Hyper-V VHD format and stored as a page blob in Azure Storage.

**Scalable, durable and available**

Sixteen nines of designed durability with geo-replication and flexibility to scale as needed

**Secured**

Authentication with Azure Active Directory and role-based access control (RBAC), plus encryption at rest and advanced threat protection

**Optimised for data lakes**

File namespace and multi-protocol access support enabling analytics workloads for data insights

**Comprehensive data management**

End-to-end lifecycle management, policy-based access control and immutable (WORM) storage

References: <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-pageblob-overview>

Question 31: **Incorrect**

Your company plans to move several servers to Azure.

The company's compliance policy states that a server named LiveServer must be on a separate network segment.

You are evaluating which Azure services can be used to meet the compliance policy requirements.

Which Azure solution should you recommend?

- A resource group for LiveServer and another resource group for all the other servers (**Incorrect**)
- A virtual network for LiveServer and another virtual network for all the other servers (**Correct**)
- A VPN for LiveServer and a virtual network gateway for every other server
- One resource group for all the servers and a resource lock for LiveServer

Explanation

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premise networks. VNet is similar to a traditional network such that you'd operate in your own data center, but bring with it additional benefits of Azure's infrastructure such as scale, availability, and isolation.

Networks in Azure are known as virtual networks. A virtual network can have multiple IP address spaces and multiple subnets. Azure automatically routes traffic between different subnets within a virtual network.

The question states that LiveServer must be on a separate network segment. The only way to separate LiveServer from the other servers in networking terms is to place the server in a different virtual network than the other servers.

References: <https://docs.microsoft.com/en-us/azure/virtual-network/virtual-network-vnet-plan-design-arm>

Question 32: **Incorrect**

You plan to map a network drive from several computers that run Windows 10 to Azure Storage.

You need to create a storage solution in Azure for the planned mapped drive.

What should you create?

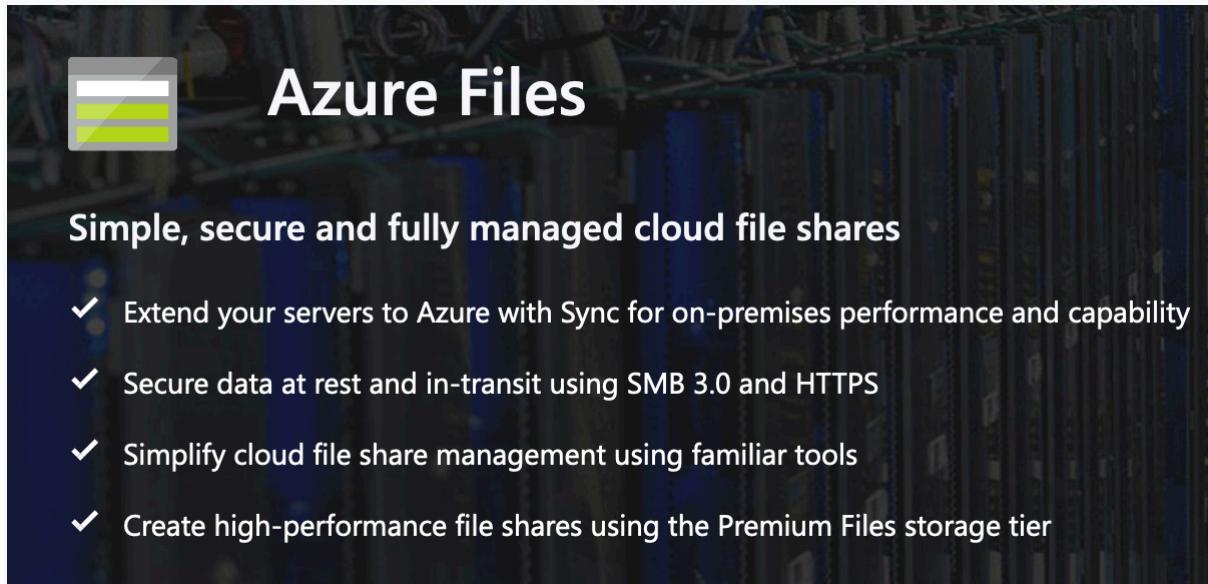
- An Azure SQL database

(Incorrect)

- A virtual machine data disk
 - A Files service in a storage account
- (Correct)**
- A Blobs service in a storage account

Explanation

Azure Files is Microsoft's easy-to-use cloud file system. Azure file shares can be seamlessly used in Windows and Windows Server. To use an Azure file share with Windows, you must either mount it, which means assigning it a drive letter or mount point path, or access it via its UNC path.



The screenshot shows the Azure Files landing page. It features a large 'Azure Files' logo with a file icon. Below the logo, the text 'Simple, secure and fully managed cloud file shares' is displayed. A bulleted list of benefits follows:

- ✓ Extend your servers to Azure with Sync for on-premises performance and capability
- ✓ Secure data at rest and in-transit using SMB 3.0 and HTTPS
- ✓ Simplify cloud file share management using familiar tools
- ✓ Create high-performance file shares using the Premium Files storage tier

Unlike other SMB shares you may have interacted with, such as those hosted on a Windows Server, Linux Samba server, or NAS device, Azure file shares do not currently support Kerberos authentication with your Active Directory (AD) or Azure Active Directory (AAD) identity.

Instead, you must access your Azure file share with the storage account key for the storage account containing your Azure file share. A storage account key is an administrator key for a storage account, including administrator permissions to all files and folders within the file share you're accessing, and for all file shares and other storage resources (blobs, queues, tables, etc) contained within your storage account.

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

Question 33: **Incorrect**

You plan to implement an Azure database solution.

You need to implement a database solution that meets the following requirements:

- 1) Can add data concurrently from multiple regions
- 2) Can store JSON documents

Which database service should you deploy? To answer, select the appropriate service in the answer area.

DATABASES (16)

 Azure Cosmos DB	★
 Azure Database for MySQL servers	★
 Azure Database for MariaDB servers	★
 SQL Data warehouses	★
 Azure Cache for Redis	★
 Data factories	★
 Virtual Clusters	★
 Elastic Job agents	PREVIEW ★
 SQL databases	★
 Azure Database for PostgreSQL servers	★
 SQL servers	★
 Azure Database Migration Services	★
 SQL Server stretch databases	★
 SQL elastic pools	★
 Managed databases	★
 SQL managed instances	★

- **Azure Cosmos DB**
(Correct)
- **Azure Database for MySQL servers**
- **Azure Database for MariaDB servers**
- **SQL Datawarehouses**
- **Azure Cache for Redis**
- **Data Factories**
- **Virtual Clusters**
- **Elastic Job Agents**
- **SQL Databases**
- **SQL servers**
- **Azure Database for PostgreSQL servers**
(Incorrect)
- **Azure database migration service**

Explanation

Today's applications are required to be highly responsive and always online. To achieve low latency and high availability, instances of these applications need to be deployed in datacenters that are close to their users. Applications need to respond in real time to large changes in usage at peak hours, store ever increasing volumes of data, and make this data available to users in milliseconds.

Azure Cosmos DB is Microsoft's globally distributed, multi-model database service. With the click of a button, Cosmos DB enables you to elastically and independently scale throughput and storage across any number of Azure regions worldwide. You can elastically scale throughput and storage, and take advantage of fast, single-digit-millisecond data access using your favorite API including: SQL, MongoDB, Cassandra, Tables, or Gremlin. Cosmos DB provides comprehensive [service level agreements \(SLAs\)](#) for throughput, latency, availability, and consistency guarantees, something no other database service offers.

Azure Cosmos DB is a great way to store unstructured and JSON data. Combined with Azure Functions, Cosmos DB makes storing data quick and easy with much less code than required for storing data in a relational database.



SQL



JavaScript



API for MongoDB



Gremlin



Cassandra

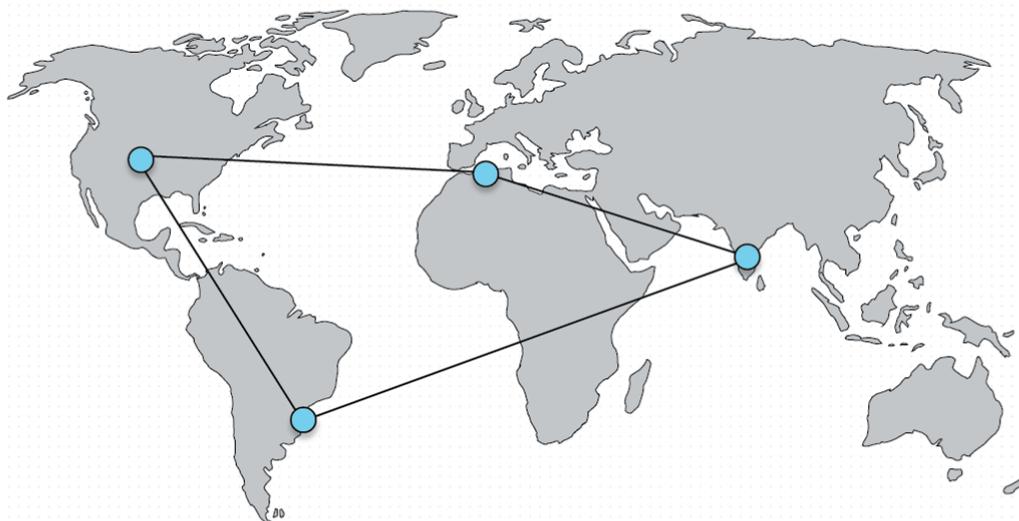


Spark



ETCD

...more APIs coming



Key-Value



Column-Family



Documents



Graph



Global distribution

Elastic scale-out

Guaranteed low latency

Five consistency models

Comprehensive SLAs

References:

<https://docs.microsoft.com/en-us/azure/cosmos-db/introduction>

<https://docs.microsoft.com/en-us/azure/functions/functions-integrate-store-unstructured-data-cosmosdb?tabs=csharp>

Question 34: Incorrect

Your company plans to migrate all its network resources to Azure.

You need to start the planning process by exploring Azure.

What should you create first?

- A subscription
(Correct)
- A resource group
(Incorrect)
- A Virtual Network
- A management group

Explanation

The first thing you create in Azure is a **subscription**. You can think of an Azure subscription as an Azure account. You get billed per subscription. A subscription is an agreement with Microsoft to use one or more Microsoft cloud platforms or services, for which charges accrue based on either a per-user license fee or on cloud-based resource consumption.

Microsoft's Software as a Service (SaaS)-based cloud offerings (Office 365, Intune/EMS, and Dynamics 365) charge per-user license fees. Microsoft's Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) cloud offerings (Azure) charge based on cloud resource consumption.

You can also use a trial subscription, but the subscription expires after a specific amount of time or consumption charges. You can convert a trial subscription to a paid subscription. Organizations can have multiple subscriptions for Microsoft's cloud offerings.

References:

<https://docs.microsoft.com/en-us/office365/enterprise/subscriptions-licenses-accounts-and-tenants-for-microsoft-cloud-offerings>

Question 35: **Incorrect**

You have an on-premise application that sends email notifications automatically based on a rule.

You plan to migrate the application to Azure.

You need to recommend a serverless computing solution for the application.

What should you include in the recommendation?

- A web app
- A server image in Azure Marketplace
(Incorrect)
- A logic app
(Correct)
- An API app

Explanation

Azure Logic Apps is a cloud service that helps you schedule, automate, and orchestrate tasks, business processes, and workflows when you need to integrate apps, data, systems, and services across enterprises or organizations. Logic Apps simplifies how you design and build scalable solutions for app integration, data integration, system integration, enterprise application integration (EAI), and business-to-business (B2B) communication, whether in the cloud, on premises, or both.

For example, here are just a few workloads you can automate with logic apps:

- > Process and route orders across on-premises systems and cloud services.
- > Send email notifications with Office 365 when events happen in various systems, apps, and services.
- > Move uploaded files from an SFTP or FTP server to Azure Storage.
- > Monitor tweets for a specific subject, analyze the sentiment, and create alerts or tasks for items that need review.

References: <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-overview>

Question 36: **Incorrect**

You plan to deploy a website to Azure. The website will be accessed by users worldwide and will host large video files.

You need to recommend which Azure feature must be used to provide the best video playback experience.

What should you recommend?

- An application gateway
- An Azure ExpressRoute circuit
(Incorrect)
- A content delivery network (CDN)
(Correct)
- An Azure Traffic Manager profile

Explanation

The question states that users are located worldwide and will be downloading large video files. The video playback experience would be improved if they can download the video from servers in the same region as the users. We can achieve this by using a content delivery network.

A content delivery network (CDN) is a distributed network of servers that can efficiently deliver web content to users. CDNs store cached content on edge servers in point-of-presence (POP) locations that are close to end users, to minimize latency.

Azure Content Delivery Network (CDN) offers developers a global solution for rapidly delivering high-bandwidth content to users by caching their content at strategically placed physical nodes across the world. Azure CDN can also accelerate dynamic content, which cannot be cached, by leveraging various network optimizations using CDN POPs. For example, route optimization to bypass Border Gateway Protocol (BGP).

The benefits of using Azure CDN to deliver website assets include:

- > Better performance and improved user experience for end users, especially when using applications in which multiple round-trips are required to load content.
- > Large scaling to better handle instantaneous high loads, such as the start of a product launch event.
- > Distribution of user requests and serving of content directly from edge servers so that less traffic is sent to the origin server.

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

Question 37: **Incorrect**

You have an Azure web app.

You need to manage the settings of the web app from an iPhone.

What are TWO Azure management tools that you can use?

NOTE: Each correct selection is worth one point.

- Azure CLI
- Azure Portal
(Correct)
- Azure Cloud Shell
(Correct)
- Windows PowerShell
- Azure Storage Explorer

Explanation

The Azure portal is the web-based portal for managing Azure. Being web-based, you can use the Azure portal on an iPhone.

Azure Cloud Shell is a web-based command line for managing Azure. You access the Azure Cloud Shell from the Azure portal. Being web-based, you can use the Azure Cloud Shell on an iPhone.

Incorrect Answers:

- A: Azure CLI can be installed on MacOS but it cannot be installed on an iPhone.
- D: Windows PowerShell can be installed on MacOS but it cannot be installed on an iPhone.
- E: Azure Storage Explorer is not used to manage Azure web apps.

References: <http://www.deployazure.com/management/managing-azure-from-ipad/>

Question 38: **Correct**

You have an application that is comprised of an Azure web app that has a Service Level Agreement (SLA) of 99.95 percent and an Azure SQL database that has an SLA of 99.99 percent.

The composite SLA for the application is **the product of both SLAs, which equals 99.94 percent.**

Instructions: Review the bolded text. If it is already correct, select No change is needed. If the statement is incorrect, select the answer choice that makes the statement correct.

- **No change is needed**
(Correct)
- **The lowest SLA associated to the application, which is 99.95 percent**
- **The highest SLA associated to the application, which is 99.99 percent**
- **The difference between the two SLAs, which is 0.05 percent**

Explanation

Composite SLAs involve multiple services supporting an application, each with differing levels of availability.

For example, consider an App Service web app that writes to Azure SQL Database. At the time of writing this answer, these Azure services have the following SLAs:

- > App Service web apps = 99.95%
- > SQL Database = 99.99%

What is the maximum downtime you would expect for this application? If either service fails, the **WHOLE** application fails. The probability of each service failing is independent, so the composite SLA for this application is $0.9995\% * 0.9999\% = 99.94\%$. That's lower than the individual SLAs, which isn't surprising because an application that relies on multiple services has more potential failure points.

References: <https://docs.microsoft.com/en-us/azure/architecture/reliability/requirements#understand-service-level-agreements>

Question 39: **Correct**

For the following statement, select Yes if the statement is True, otherwise select No.

If you assign a tag to a resource group, all the resources in that resource group inherit the same tag.

- Yes

- No
(Correct)

Explanation

No, Tags for Resources are not inherited by default from their Resource Group

Reference: <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/manage-resource-groups-portal>

Question 40: **Incorrect**

For the following statement, select Yes if the statement is True, otherwise select No.

If you set permissions to a resource group, all the resources inside it inherit the permissions.

- Yes
(Correct)
- No
(Incorrect)

Explanation

A resource group can be used to scope access control for administrative actions. By default, permissions set at the resource level **are inherited** by the resources in the resource group.

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

Question 41: **Incorrect**

What are **two** characteristics of the public cloud? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- Dedicated hardware
- Unsecured connections
- Limited storage
(Incorrect)
- Metered pricing
(Correct)
- Self-service management
(Correct)

Explanation

With the public cloud, you get pay-as-you-go pricing and you pay only for what you use, no CapEx costs are involved.

With the public cloud, you have self-service management. You are responsible for the deployment and configuration of the cloud resources such as virtual machines or web sites. The underlying hardware that hosts the cloud resources is managed by the cloud provider.

Incorrect Answers:

A: You dont have dedicated hardware. The underlying hardware is shared so you could have multiple customers using cloud resources hosted on the same physical hardware.

B: Connections to the public cloud are secure.

C: Storage is not limited. You can have as much storage as you like.

References : <https://docs.microsoft.com/en-gb/learn/modules/principles-cloud-computing/4-cloud-deployment-models>

Question 42: Correct

This question requires that you evaluate the bolded text to determine if it is correct.

When planning to migrate a public website to Azure, **you must plan to pay monthly usage costs.**

Instructions: Review the bolded text. If the statement is already correct, select No change is needed. If the statement is incorrect, select the answer choice that makes the statement correct.

- **No change is needed**
(Correct)
- Deploy a VPN
- Pay to transfer all the website data to Azure
- Reduce the number of connections to the website

Explanation

When planning to migrate a public website to Azure, you must plan to pay monthly usage costs. This is because Azure uses the pay-as-you-go model.

Incorrect Answers:

B: You do not need a VPN for Azure web sites.

C: You do not pay to transfer data into Azure web sites.

D: You do not need to reduce the number of connections to the website.

Question 43: Incorrect

Your company plans to migrate all its data and resources to Azure.

The company's migration plan states that only Platform as a Service (PaaS) solutions must be used in Azure.

You need to deploy an Azure environment that meets the company migration plan.

Solution: You create an Azure App Service and Azure virtual machines that have Microsoft SQL Server installed.

Does this meet the goal?

- Yes
(Incorrect)
- No
(Correct)

Explanation

Azure App Service is a PaaS (Platform as a Service) service.

However, Azure virtual machines are an IaaS (Infrastructure as a Service) service. Therefore, this solution does not meet the goal.

References:

<https://azure.microsoft.com/en-us/overview/what-is-paas/>

<https://azure.microsoft.com/en-us/overview/what-is-iaas/>

Question 44: **Correct**

You plan to migrate a web application to Azure. The web application is accessed by external users. You need to recommend a cloud deployment solution to minimize the amount of administrative effort used to manage the web application.

What should you include in the recommendation?

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
(Correct)
- Infrastructure as a Service (IaaS)
- Database as a Service (DaaS)

Explanation

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications. You purchase the resources you need from a [cloud service provider](#) on a pay-as-you-go basis and access them over a secure Internet connection.

Like [IaaS](#), PaaS includes infrastructure—servers, storage, and networking—but also middleware, development tools, business intelligence (BI) services, database management systems, and more. PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware, container orchestrators such as [Kubernetes](#), or the development tools and other resources. You manage the applications and services you develop, and the cloud service provider typically manages everything else.

References: <https://docs.microsoft.com/en-us/azure/security/fundamentals/paas-applications-using-app-services>

Question 45: **Correct**

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

To achieve a hybrid cloud model, a company must always migrate from a private cloud model.

- Yes
- No
(Correct)

Explanation

It is NOT true that a company must always migrate from a private cloud model to implement a hybrid cloud. You could start with a public cloud and then combine that with an on-premise infrastructure to implement a hybrid cloud.

Reference: <https://azure.microsoft.com/en-gb/overview/what-is-hybrid-cloud-computing/>

Question 46: **Incorrect**

For the following statement, select Yes if the statement is true. Otherwise, select

No.

A company can extend the capacity of its internal network by using the public cloud.

- Yes
(Correct)
- No
(Incorrect)

Explanation

A company can extend the capacity of its internal network by using the public cloud. This is very common. When you need more capacity, rather than pay for new on-premises infrastructure, you can configure a cloud environment and connect your on-premises network to the cloud environment by using a VPN.

Reference: <https://azure.microsoft.com/en-gb/overview/what-is-hybrid-cloud-computing/>

Question 47: **Correct**

For the following statement, select Yes if the statement is true. Otherwise, select

No.

In a public cloud model, only the guest users at your company can access the resources in the cloud.

- Yes
- No
(Correct)

Explanation

It is not true that only guest users can access cloud resources. You can give anyone with an account in Azure Active Directory access to the cloud resources.

There are many authentication scenarios but a common one is to replicate your on-premises Active Directory accounts to Azure Active Directory and provide access to the Azure Active Directory accounts. Another commonly used authentication method is a Federation where authentication for access to cloud resources is passed to another authentication provider such as an on-premises Active Directory.

Reference: <https://azure.microsoft.com/en-gb/overview/what-is-hybrid-cloud-computing/>

Question 48: **Incorrect**

You plan to migrate several servers from an on-premises network to Azure.

What is an advantage of using a public cloud service for the servers over an on-premises network?

- The public cloud is owned by the public, NOT a private corporation
- The public cloud is a crowd-sourcing solution that provides corporations with the ability to enhance the cloud
- All public cloud resources can be freely accessed by every member of the public
(Incorrect)

- The public cloud is a shared entity whereby multiple corporations each use a portion of the resources in the cloud
(Correct)

Explanation

The public cloud is a **shared** entity whereby multiple corporations each use a portion of the resources in the cloud. The hardware resources (servers, infrastructure etc.) are managed by the cloud provider. Multiple companies create resources such as virtual machines and virtual networks on the hardware resources.

Incorrect Answers:

A: The public cloud is not owned by the public. In the case of Microsoft Azure, it is owned by Microsoft, just like AWS is owned by Amazon.

B: The public cloud is not a crowd-sourcing solution. In the case of Microsoft Azure, the cloud is owned by Microsoft.

C: It is not true that public cloud resources can be freely accessed by every member of the public. You pay for a cloud subscription and create accounts for your users to access your cloud resources. No one can access your cloud resources until you create user accounts and provide the appropriate access permissions.

Question 49: **Incorrect**

Match the Azure Cloud Services benefit to the correct description.

Instructions: To answer, match the appropriate benefit from the column on the left to its description on the right. Each benefit may be used once, more than once, or not at all.

Answer Options	Answer Area
Disaster recovery	A cloud service that remains available after a failure occurs
Fault tolerance	A cloud service that can be recovered after a failure occurs
Low latency	A cloud service that performs quickly when demand increases
Dynamic scalability	A cloud service that can be accessed quickly from the Internet.

NOTE: Each correct match is worth one point.

- 1) Fault Tolerance
2) Disaster Recovery
3) Dynamic Scalability
4) Low Latency
(Correct)
- 1) Fault Tolerance
2) Low Latency
3) Dynamic Scalability
4) Disaster Recovery
- 1) Low Latency

- 2) Disaster Recovery**
 - 3) Dynamic Scalability**
 - 4) Fault Tolerance**
 - **1) Disaster Recovery**
 - 2) Fault Tolerance**
 - 3) Low Latency**
 - 4) Dynamic Scalability**
- (Incorrect)**

Explanation

Box 1:

Fault tolerance is the ability of a service to remain available after a failure of one of the components of the service. For example, a service running on multiple servers can withstand the failure of one of the servers.

Box 2:

Disaster recovery is the recovery of a service after a failure. For example, restoring a virtual machine from backup after a virtual machine failure.

Box 3:

Dynamic scalability is the ability for compute resources to be added to a service when the service is under heavy load. For example, in a virtual machine scale set, additional instances of the virtual machine are added when the existing virtual machines are under heavy load.

Box 4:

Latency is the time a service to respond to requests. For example, the time it takes for a web page to be returned from a web server. Low latency means low response time which means a quicker response.

References:

<https://msdn.microsoft.com/en-us/magazine/mt422582.aspx>
<https://searchdisasterrecovery.techtarget.com/definition/cloud-disaster-recovery-cloud-DR> <http://www.siasmsp.com/the-benefit-of-scalability-in-cloud-computing-2/>
<https://azure.microsoft.com/en-in/overview/what-is-cloud-computing/>

Question 50: **Correct**

For the following statement, select Yes if the statement is true. Otherwise, select

No.

Azure resources can only access other resources in the same resource group.

- Yes
 - No
- (Correct)**

Explanation

A resource can interact with resources in other resource groups.

Reference: <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/manage-resource-groups-portal>

Question 51: Incorrect

Your company plans to migrate all its data and resources to Azure.

The company's migration plan states that only Platform as a Service (PaaS) solutions must be used in Azure.

You need to deploy an Azure environment that meets the company's migration plan.

Solution: You create an Azure App Service and Azure Storage accounts.

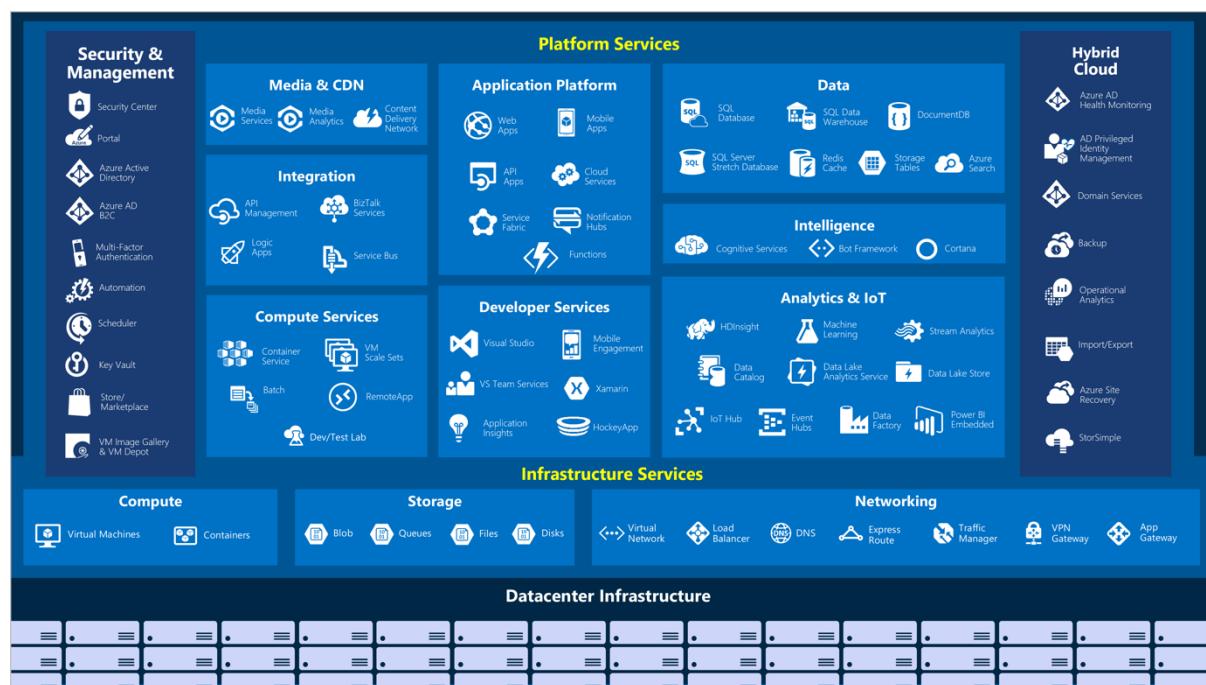
Does this meet the goal?

- Yes
(Incorrect)
- No
(Correct)

Explanation

Azure App Service is a **PaaS** (Platform as a Service) service.

However, Azure Storage accounts are an **IaaS** (Infrastructure as a Service) service. Therefore, this solution does not meet the goal.



References:

<https://azure.microsoft.com/en-us/overview/what-is-iaas/>

<https://azure.microsoft.com/en-us/overview/what-is-paas/>

Question 52: Incorrect

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

If you delete a resource group, all the resources inside it are also deleted.

- Yes
(Correct)
- No
(Incorrect)

Explanation

Deleting the resource group will remove the resource group as well as all the resources in that resource group. This can be useful for the management of resources. For example, a virtual machine has several components (the VM itself, virtual disks, network adapter etc.).

By placing the VM in its own resource group, you can delete the VM along with all its associated components by deleting the resource group.

Another example is when creating a test environment. You could place the entire test environment (Network components, virtual machines etc.) in one resource group. You can then delete the entire test environment by deleting the resource group.

Reference: <https://docs.microsoft.com/en-us/azure/azure-resource-manager/management/manage-resource-groups-portal>

Question 53: **Incorrect**

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

A resource group can contain resources from multiple Azure regions.

- Yes
(Correct)
- No
(Incorrect)

Explanation

Resources from multiple different regions can be placed in a resource group. The resource group only contains metadata about the resources it contains.

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

Question 54: **Incorrect**

Azure Key Vault is used to store secrets for **Azure Active Directory (Azure AD) user accounts**.

Instructions: Review the bolded text. If the statement is already correct, select No change is needed. If the statement is incorrect, select the answer choice that makes the statement correct.

- **No change is needed**
- **Azure Active Directory (Azure AD) administrative accounts**
(Incorrect)
- **Personally Identifiable Information (PII)**
- **Server applications**
(Correct)

Explanation

Centralizing storage of application secrets in **Azure Key Vault** allows you to control their distribution. Key Vault greatly reduces the chances that secrets may be accidentally leaked. When using Key Vault, **application** developers no longer need to store security information in their application. Not having to store security information in applications eliminates the need to make this information part of the code.

For example, an application may need to connect to a database. Instead of storing the connection string in the app's code, you can store it securely in Key Vault.

Reference: <https://docs.microsoft.com/en-us/azure/key-vault/key-vault-overview>

Question 55: **Correct**

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

Authorisation to access Azure resources can only be granted to Azure Active Directory (AD) users

- Yes
 - No
- (Correct)

Explanation

No, Azure Active Directory is not the only means to authorise users.

Examples - You can access BLOB with a SAS key and SQL DB doesn't support AD authentication.

Question 56: **Correct**

For the following statement, select Yes if the statement is True, otherwise select No.

Transferring data between Azure services located in different Azure regions is always free

- Yes
 - No
- (Correct)

Explanation

It is important to note that data inbound (ingress) is FREE, but data outbound (egress) is NOT FREE.

Look at the following details from the official documentation:

Pricing details

Data Transfer	Price
Data Transfer In	Free
Data transfer between Availability Zones*	Free
Data transfer within same Availability Zone	Free
Data transfer from Azure origin to Azure CDN	Free

*Starting from July 1, 2021, Data transfer billing between Virtual machines across availability zones will begin. Please see FAQ for additional details.

Is data transfer between Azure services located within the same region charged?



No. For example, an Azure SQL database in the same region will not have any additional data transfer costs.

Is data transfer between Azure services located in two regions charged?



Yes. Outbound data transfer is charged at the normal rate and inbound data transfer is free.

Reference: <https://azure.microsoft.com/en-us/pricing/details/bandwidth/>

Question 57: **Incorrect**

For each of the following statements, select Yes if the statement is True, otherwise select No.

1) A Platform As a Service (PaaS) solution that hosts web apps in Azure provides full control of the operating systems that host applications.

2) A Platform As a Service (PaaS) solution that hosts web apps in Azure provides the ability to scale the platform automatically.

3) A Platform As a Service (PaaS) solution that hosts web apps in Azure provides professional development services to continuously add features to custom applications.

- 1) Yes , 2) Yes , 3) Yes
- 1) Yes , 2) No , 3) No
- 1) No , 2) Yes , 3) Yes
(Correct)
- 1) No , 2) Yes , 3) No
(Incorrect)

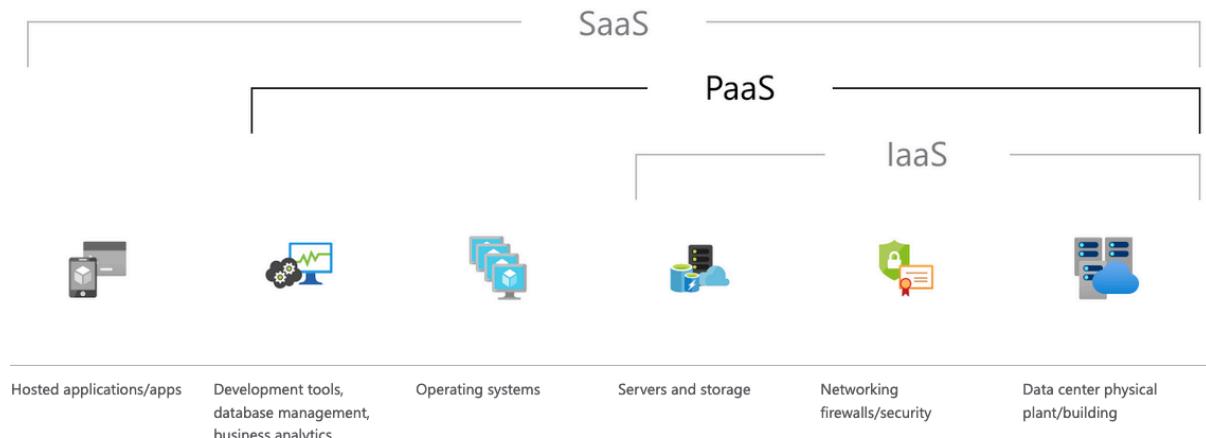
Explanation

Platform as a service (PaaS) is a complete development and deployment environment in the cloud, with resources that enable you to deliver everything from simple cloud-based apps to sophisticated, cloud-enabled enterprise applications. You purchase the resources you need from a [cloud service provider](#) on a pay-as-you-go basis and access them over a secure Internet connection.

Like [IaaS](#), PaaS includes infrastructure—servers, storage, and networking—but also middleware, development tools, business intelligence (BI) services, database management systems, and more.

PaaS is designed to support the complete web application lifecycle: building, testing, deploying, managing, and updating.

PaaS allows you to avoid the expense and complexity of buying and managing software licenses, the underlying application infrastructure and middleware, container orchestrators such as [Kubernetes](#), or the development tools and other resources. You manage the applications and services you develop, and the cloud service provider typically manages everything else.



1) With PaaS, we DO NOT have access to the Operating System that hosts applications.

2) Autoscaling is the process of dynamically allocating resources to match performance requirements. As the volume of work grows, an application may need additional resources to maintain the desired performance levels and satisfy service-level agreements (SLAs). As demand slackens and the additional resources are no longer needed, they can be de-allocated to minimize costs.

From the official documentation:

Configure autoscaling for an Azure solution

Azure provides built-in autoscaling for most compute options.

- Azure Virtual Machines autoscale via [virtual machine scale sets](#), which manage a set of Azure virtual machines as a group. See [How to use automatic scaling and virtual machine scale sets](#).
- Service Fabric also supports autoscaling through virtual machine scale sets. Every node type in a Service Fabric cluster is set up as a separate virtual machine scale set. That way, each node type can be scaled in or out independently. See [Scale a Service Fabric cluster in or out using autoscale rules](#).
- Azure App Service has built-in autoscaling. Autoscale settings apply to all of the apps within an App Service. See [Scale instance count manually or automatically](#).
- Azure Cloud Services has built-in autoscaling at the role level. See [How to configure auto scaling for a Cloud Service in the portal](#).

You can also use Azure Monitor autoscale:

[Azure Monitor autoscale](#) provide a common set of autoscaling functionality for virtual machine scale sets, Azure App Service, and Azure Cloud Service. Scaling can be performed on a schedule, or based on a runtime metric, such as CPU or memory usage.

Examples:

- 1) Scale out to 10 instances on weekdays, and scale in to 4 instances on Saturday and Sunday.
- 2) Scale out by one instance if average CPU usage is above 70%, and scale in by one instance if CPU usage falls below 50%.
- 3) Scale out by one instance if the number of messages in a queue exceeds a certain threshold.
- 3) The entire concept of PaaS is to allow you to build apps that you don't need to manage from end to end but rather to integrate different solutions. Following are some advantages of PaaS:

- 1) Cut coding time.** PaaS development tools can cut the time it takes to code new apps with pre-coded application components built into the platform, such as workflow, directory services, security features, search, and so on.
- 2) Add development capabilities without adding staff.** Platform as a Service components can give your development team new capabilities without your needing to add staff having the required skills.
- 3) Develop for multiple platforms—including mobile—more easily.** Some service providers give you development options for multiple platforms, such as computers, mobile devices, and browsers making cross-platform apps quicker and easier to develop.
- 4) Use sophisticated tools affordably.** A pay-as-you-go model makes it possible for individuals or organizations to use sophisticated development software and business intelligence and analytics tools that they could not afford to purchase outright.
- 4) Support geographically distributed development teams.** Because the development environment is accessed over the Internet, development teams can work together on projects even when team members are in remote locations.
- 5) Efficiently manage the application lifecycle.** PaaS provides all of the capabilities that you need to support the complete web application lifecycle: building, testing, deploying, managing, and updating within the same integrated environment.

Reference: <https://azure.microsoft.com/en-us/overview/what-is-paas/>

Question 58: **Incorrect**

Which set of security standards in Azure relates to cardholder data?

- FedRAMP
- PCI DSS
(Correct)
- ISO
- HIPPA
(Incorrect)

Explanation

Azure adheres to security controls for ISO 27001, ISO 27018, SOC 1, SOC 2, SOC3, FedRAMP, HITRUST, MTCS, IRAP and ENS.

- 1) The security standard relating to cardholder data is - **PCI DSS (Payment Card Industry Data Security Standard)**

Reference: https://en.wikipedia.org/wiki/Payment_Card_Industry_Data_Security_Standard
<https://azure.microsoft.com/en-ca/blog/payment-processing-blueprint-for-pci-dss-compliant-environments/>

2) HIPPA - The Health Insurance Portability and Accountability Act of 1996 (**HIPAA**) is a federal law that required the creation of national standards to protect sensitive patient health information from being disclosed without the patient's consent or knowledge.

Reference: https://en.wikipedia.org/wiki/Health_Insurance_Portability_and_Accountability_Act

3) FedRAMP - The Federal Risk and Authorization Management Program (**FedRAMP**) is a US government-wide program that provides a standardized approach to security assessment, authorization, and continuous monitoring for cloud products and services

Reference: <https://en.wikipedia.org/wiki/FedRAMP>

4) ISO - The International Organization for Standardization is an international standard-setting body composed of representatives from various national standards organizations. Founded on 23 February 1947, the organization promotes worldwide proprietary, industrial, and commercial standards

Reference: https://en.wikipedia.org/wiki/International_Organization_for_Standardization

Question 59: **Incorrect**

Match the terms on the left, to the correct definition:

Each term may be used once, more than once, or not at all.

Azure Government

1

An organisation that defines international standards across all industries

GDPR

2

An organisation that defines standards used by the United States Goverment.

ISO

3

A European policy that regulates data privacy and data protection.

NIST

4

A dedicated public cloud for federal and state agencies in the United States.

- **1) ISO**
- 2) NIST**
- 3) GDPR**
- 4) Azure Government**
(Correct)
- **1) GDPR**
- 2) NIST**

- 3) ISO**
 - 4) Azure Government**
 - **1) Azure Government**
 - 2) NIST**
 - 3) GDPR**
 - 4) ISO**
 - **1) GDPR**
 - 2) Azure Government**
 - 3) NIST**
 - 4) ISO**
- (Incorrect)**

Explanation

The correct answer is as follows:

1) ISO - The International Organization for Standardization is an international standard-setting body composed of representatives from various national standards organizations. Founded on 23 February 1947, the organization promotes worldwide proprietary, industrial, and commercial standards.

Reference: https://en.wikipedia.org/wiki/International_Organization_for_Standardization

2) NIST - The National Institute of Standards and Technology is a physical sciences laboratory and a non-regulatory agency of the United States Department of Commerce. Its mission is to promote innovation and industrial competitiveness.

Reference: https://en.wikipedia.org/wiki/National_Institute_of_Standards_and_Technology

3) GDPR - The General Data Protection Regulation 2016/679 is a regulation in EU law on data protection and privacy in the European Union and the European Economic Area. It also addresses the transfer of personal data outside the EU and EEA areas.

Reference: https://en.wikipedia.org/wiki/General_Data_Protection_Regulation

4) Azure Government - It is the mission-critical cloud, delivering breakthrough innovation to US **government** customers and their partners. Only US federal, state, local, and tribal **governments** and their partners have access to this dedicated instance, with operations controlled by screened US citizens.

Reference: <https://azure.microsoft.com/en-us/global-infrastructure/government/get-started/>

Question 60: **Incorrect**

Azure has built in authorization and authentication services that provide access to Azure resources.

- Yes
(Correct)
- No
(Incorrect)

Explanation

Yes, of course Azure has very secure methods to implement authentication and authorisation to access Azure resources.

Reference: <https://docs.microsoft.com/en-us/azure/active-directory/authentication/overview-authentication>