**1. What is Azure Cloud Service?**

Cloud service can convey multiple web applications in Azure, characterizing a number of parts to disseminate handling and permit adaptable scaling of your application. A cloud service comprises a minimum of one web part, as well as specialist parts, each with its own particular application documents and design. The fundamental favorable position of cloud service is the capacity to help more complex multilevel structures.

***Learn end-to-end Azure concepts through the***[***Microsoft Azure Course in Hyderabad***](https://intellipaat.com/microsoft-azure-training-hyderabad/)***to take your career to a whole new level!***

**2. Differentiate between Microsoft Azure and AWS.**

|  |  |  |
| --- | --- | --- |
| **Features** | **Microsoft Azure** | **Amazon Web Services (AWS)** |
| Analytics | Azure Stream Analytics | Amazon Kinesis |
| Backup Options | Azure Backup | [Amazon Glacier](https://intellipaat.com/blog/aws-amazon-glacier-tutorial/) |
| Compliance | Azure Trust Center | AWS CLoudHSM |
| Content Delivery Network (CDN) | Azure CDN | [**Amazon CloudFront**](https://intellipaat.com/blog/what-is-amazon-cloudfront/) |
| Data Orchestration | Azure Data Factory | AWS Data Pipeline |
| Hybrid Cloud Storage | StorSimple | [AWS Storage Gateway](https://intellipaat.com/blog/aws-storage-gateway/) |
| Monitoring | Azure Operational Insights | Amazon CloudTrail |
| NoSQL Database Options | Azure DocumentDB | Amazon DynamoDB |

**3. What is Azure DevOps?**

[***Azure DevOps***](https://intellipaat.com/blog/what-is-azure-devops/) is a SaaS platform that provides development services for creating work plans, working together on code, developing applications, and deploying them. It offers an end-to-end DevOps toolchain for the development and deployment of software. It is able to integrate with a number of popular tools in the market and is a great way for setting up a DevOps toolchain.

***Learn more about Azure DevOps from this***[***Azure DevOps Interview Questions***](https://intellipaat.com/blog/interview-question/azure-devops-interview-questions/)***blog by Intellipaat.***

**4. What is Azure Active Directory (Azure AD)?**

Azure AD is a cloud-based IAM solution and directory by Microsoft. It brings together application access management, core directory services, and identity protection and turns them into a single solution. It helps employees of an organization sign in and access resources such as:

* External resources, including Microsoft 365, the Azure portal, and a big number of SaaS applications
* Internal resources, such as apps on a corporate network and intranet, as well as any cloud-based apps built by that organization

Azure AD is intended for use by:

* IT Admins
* App Developers
* Azure, Office 365, Microsoft 365, or Dynamics CRM online subscribers

**5. What is Azure Data Factory?**

[Azure Data Factory](https://intellipaat.com/blog/what-is-azure-data-factory/) is a serverless and cloud-based data integration service and platform used for the creation of ETL and ELT pipelines. It helps in the creation of data-driven workflows for the planning and execution of data movements and data transformation at scale.

**6. What is Azure Databricks?**

[Azure Databricks](https://intellipaat.com/blog/what-is-azure-databricks/) is a Data Analytics platform that offers two environments for the development of data-intensive applications:

* Azure Databricks SQL Analytics
* Azure Databricks Workspace

Azure Databricks’ integration with the security, compute, analytics, storage, and AI services that are natively provided by cloud providers facilitate the unification of data and AI workloads.

**7. What is Azure Data Lake?**

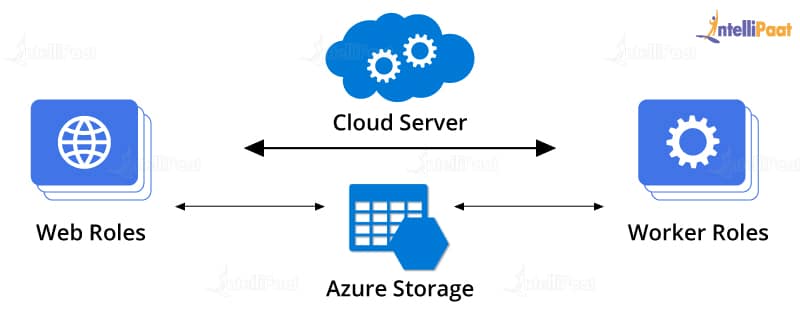
[Azure Data Lake](https://intellipaat.com/blog/what-is-azure-data-lake/) is a cloud platform that supports [Big Data Analytics](https://intellipaat.com/blog/big-data-analytics/) through its unlimited storage for structured, semi-structured, or unstructured data of all types and sizes.

**8. What are Azure resources?**

Any entity managed by Azure can be referred to as an Azure resource. The following are some examples of Azure resources: Storage accounts, virtual networks, virtual machines, etc.

**9. What are the roles implemented in Windows Azure?**

* Web Role
* Worker Role
* Virtual Machine Role



Web Role: It gives a web solution that is front-end. This is like an ASP.NET application. While under facilitating, Azure gives IIS and required services.

Worker Role: It gives solutions for background service. It can run long activities.

Virtual Machine Role: The roles of both web and worker are executed on virtual machines. The Virtual Machine Roles give the client the capacity to modify the [Azure Virtual Machine](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/constructing-azure-virtual-machine/) on which the web and worker roles are running.

***Go through this***[***Microsoft Azure Certification***](https://intellipaat.com/blog/microsoft-azure-certification/)***to get a clear understanding of various certifications Microsoft Azure!***

**10. What are the three principal segments of the Windows Azure platform?**

Windows Azure has three principal segments: Compute, Storage, and Fabric.

**A. Windows Azure Compute**

Windows Azure gives a code that can be managed by the hosting environment. It gives the calculation benefit through parts. Windows Azure backs three types of roles:

* Web roles utilized for web application programming and upheld by IIS7
* Worker roles utilized for foundation handling of web roles
* Virtual machine (VM) roles utilized for moving windows server applications to Windows Azure in a simple way

**B. Windows Azure Storage**

It gives four types of storage services:

* Queues for informing between web parts and worker roles
* Tables for storing structural data
* BLOBs (Binary Large Objects) to store contents, records, or vast information
* Windows Azure Drives (VHD) to mount a page BLOB. These can be transferred and downloaded by means of BLOBs

**C. Windows Azure AppFabric**

AppFabric provides five services:

* Service bus
* Access
* Caching
* Integration
* Composite

***Learn from the***[***Azure DevOps Tutorial***](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/azure-devops-tutorial/)***blog by Intellipaat.***

**11. Define Windows Azure AppFabric.**

Windows Azure Diagnostics empowers you to gather diagnostic data from an application running in Windows Azure. Diagnostic data is used for capacity planning and evaluation.

**12. What is the distinction between Windows Azure Queues and Windows Azure Service Bus Queues?**

Azure Queues give a solid, diligent messaging between and within the services. They also highlight a very straightforward rest-based get/put/peek interface.

Bus Queues are part of a more extensive Windows Azure messaging framework that supports queuing.

**13. What is table storage in Windows Azure?**

Windows Azure Table storage service stores a lot of organized information. Windows Azure tables are perfect for putting away organized, non-relational data.

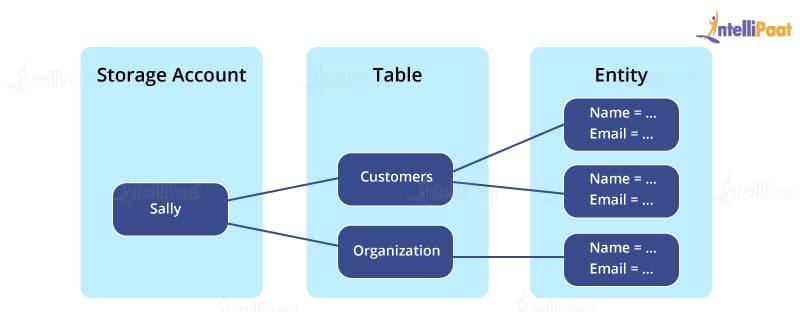


Table: A table is a collection of entities. Tables don’t uphold a blueprint on elements, which implies that a solitary table can contain substances that have distinctive arrangements of properties. A record can contain numerous tables.

Entity: An entity is an arrangement of properties, like a database row. An entity can be up to 1 MB in size.

Properties: A property is a name-value pair. Every entity can incorporate up to 252 properties to store data. Every entity likewise has three system properties that determine a segment key, a row key, and a timestamp.

***Become a master of Azure by going through this online***[***Azure Training in Toronto***](https://intellipaat.com/microsoft-azure-training-toronto/)***!***

**14. What is autoscaling in Azure?**

Scaling by including extra instances is frequently referred to as scaling out. Windows Azure likewise supports scaling up by utilizing bigger roles rather than more role instances.

By adding and expelling role instances to our Windows Azure application while it is running, we can adjust the execution of the application against its running costs.

An autoscaling solution reduces the amount of manual work engaged in dynamically scaling an application.

**15. What are the features of Windows Azure?**

Windows Azure runs and stores the information on Microsoft data centers.

The main features are as follows:

* Websites enable the designers to assemble the sites utilizing ASP.NET, PHP, etc., and send these websites utilizing FTP, [Git](https://intellipaat.com/blog/tutorial/devops-tutorial/git-tutorial/), etc.
* SQL database, formally known as [Azure database](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/azure-sql/), makes, broadens, and scales the application into the cloud utilizing Microsoft SQL Server.
* This is Microsoft’s Platform as a Service that supports multilevel applications and automated deployment.

**16. What are the differences between a public cloud and a private cloud?**

Private clouds are those that are constructed solely for an individual enterprise. They enable a firm to have applications in the cloud while tending to concerns with respect to data security and control that is frequently ailing in a public cloud environment.

Private cloud is otherwise called an internal cloud or enterprise cloud and dwells on the organization’s Intranet or hosted data center where the data is protected.

**17. What is IaaS, PaaS, and SaaS?**

**IaaS:** IaaS is short for Infrastructure as a Service. It offers a range of capabilities, such as OS and network connectivity, that are at the infrastructural level. It follows a pay-per-use policy. It is used to host applications. Azure VM and VNET are examples of this kind of infrastructure.

**PaaS:** PaaS is an acronym for Platform as a Service. It primarily includes underlying infrastructure abstraction that allows quicker development of applications without the hassle of hosting management. Azure web apps, cloud services, storage services, etc., are all examples of PaaS.

**SaaS:** SaaS stands for Software as a Service.  These applications are delivered with the help of a service delivery model where applications are simply used by an organization. SaaS follows subscription-based payments or ads. Examples of SaaS are Gmail, Office 365, SharePoint Online, etc.

**18. Is it possible to get a public DNS or IP address for the Azure Internal Load Balancer?**

No. Azure Internal Load Balancer supports only private IP addresses.

**19. What is Azure Resource Manager?**

[Azure Resource Manager](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/azure-resource-manager/), offered by Azure, provides management and application deployment in Azure. The management layer helps to build, modify, or delete resources in the Azure subscription account. It is useful while managing access controls, locks, and security of resources.

**20. What is NSG?**

NSG or Network Security Group contains a list of ACL rules that allow or deny network traffic to subnets, network interface cards (NICs) linked to a subnet, or both. When an NSG is connected to a subnet, the ACL rules are for all virtual machines that are located in that subnet. The traffic restrictions to an individual NIC are achieved by linking the NSG directly to that NIC.

**21. What is Azure Redis Cache?**

Azure Redis Cache is an in-memory Redis cache system by Azure that helps web applications to optimize performance. Data is fetched from the backend database and stored in the Redis cache for the first request. On subsequent requests, data is fetched from the Redis cache. Azure Redis cache provides powerful and secure caching mechanisms by using Azure Cloud.

**22. Define Azure storage key**

Azure storage key is used to authenticate access to Azure storage service data depending on the project requirements. There are two types of storage keys that are used for authentication:

* Primary access key
* Secondary access key, to avoid downtime of the website or application

**23. What is CSPack in Azure?**

CSPack is a command-line tool that generates the service package file and prepares an application for deployment in Azure or Compute Emulator. Every cloud service type project includes the cloud service configuration file, .cscfg file, generated using CSPack. It stores:

* The number of role instances for each role deployment
* The certificate thumbprints
* User-defined configurations

**Intermediate Azure Interview Questions**

**24. Why is Azure Diagnostics API necessary?**

Azure Diagnostics API helps to gather diagnostic data, such as system event logs and performance monitoring, from applications operating on Azure. Azure Diagnostics has to be enabled for the cloud service roles. The collected data can be later used for creating visual chart representations that enable better monitoring and create performance metric alerts.

**25. What are the deployment environment options provided by Azure?**

There are two deployment environments:

* **Staging environment:**It is used to validate the changes of an application before making it live.
* **Production environment:**This is where applications go live and can be accessed by target users with a DNS-friendly URL.

**26. What is Azure Blob Storage?**

Azure Blob (binary large object) storage is the object storage solution for the cloud. It is capable of storing large unstructured data in text or binary format and is suitable for serving documents, media, or text to the browser directly. The data is accessible from anywhere.

The blobs are grouped into containers and tied to user accounts. This service has three components:

* **Storage account:**This can be a general storage account or a blob storage account registered in Microsoft Azure.
* **Container:** Containers are used for grouping blobs. Each container can store an unlimited number of blobs. The container name should be in lowercase.
* **Blob:** A blob is a file or document of any type and size. Three kinds of blobs are supported by Azure:
  + **Block blobs:**Text and binary files up to 195GB, 50,000 blocks of maximum 4 MB each
  + **Append blobs:** Appends operations such as logging data in log files
  + **Page blobs:** For frequent read or write operations

**27. What is a role instance in Azure?**

Role instance is a virtual machine where application code is run using running role configurations. Multiple instances of a role are also possible according to the definition in cloud service configuration files.

**28. What is Windows Azure Portal?**

To run an application, a designer gets to the Windows Azure Portal through his/her web program by logging in with a Windows Live ID. The user at that point chooses whether to create a host account for running applications, a storage account for storing data, or both.

Once the designer has a host account, he/she can utilize a Windows Azure Portal to submit applications to Windows Azure.

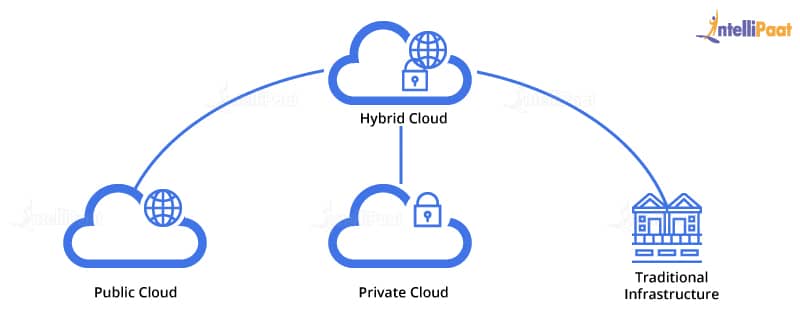
**29. Explain Azure Fabric.**

[Azure Fabric](https://intellipaat.com/blog/what-is-azure-service-fabric/) is the principal core concept. It gives a service called Azure Fabric Controller. It is called the OS for Azure since it handles/oversees:

* All roles (processing) and resources
* Sending and activating services
* Monitoring the health of all services
* Releasing and allocating resources
* Provisioning VM, terminating, etc.
* Patches get updated for the installed OS on VM in the most automated form

**30. What do you comprehend about Hybrid Cloud?**

A hybrid cloud is a blend of internal and external cloud services, a mix of a private cloud joined with the utilization of public cloud services. This kind of cloud is most appropriate when you need to keep the classified information in your vicinity (private cloud) and consume alternate services from a public cloud.



**31. What is a storage key?**

Storage keys or access keys are utilized as a validation mode for accessing the storage services account to control data based on our prerequisites. In Windows Azure, we have an alternative to give a primary access key and a secondary access key, despite the fact that we will utilize a solitary access key to confirm our application to the storage. The primary reason to give the secondary access key is to avoid downtime to the application.

**32. What is Windows Azure Traffic Manager?**

It enables users to control the distribution of user traffic of installed Azure cloud services. There are three distinctive load-balancing strategies provided by Azure. The Manager who works on traffic applies a routing policy to the Domain Name Service (DNS) questions on your domain names and maps the DNS courses to the apt instances of your applications.

**33. What is federation in SQL Azure?**

Organization in SQL Azure is introduced for scalability. Federation helps both managers and developers scale information. It helps managers by making repartitioning and redistributing of information in a simpler manner. It enables developers in the layer of routing and sharing of information. It helps in routing without application downtime.

**34. What is SQL Azure database?**

SQL Azure database is just an approach to get associated with cloud services where you can store your database into the cloud. Microsoft Azure is the most ideal approach to utilize PaaS where you can have different databases on a similar account.

Microsoft SQL Azure has a similar component of SQL Server, i.e., high accessibility, versatility, and security in the core.

Microsoft Azure SQL database has an element; it makes backups of each active database automatically. Consistently a backup is taken and geo-repeated to empower the 1-hour recuperation point objective (RPO) for Geo-Restore.

**35. What are the different types of Storage areas in Windows Azure?**

BLOB: BLOBs offer a component for storing a lot of content or binary data, for example, pictures, audio, and visual documents. They can scale up to 200 terabytes and can be acquired by utilizing REST APIs.

Table: Tables represent storage areas across machines for information that is in the form of properties on the cloud.

Line: The sole target of a queue is to empower communication among Web and Worker Role

**36. What is the concept of the table in Windows Azure?**

A table is a kind of [Azure Storage](https://intellipaat.com/blog/azure-storage/) where you can store your information. BLOBs are put in a compartment and an entity on a table.

Following are the key concepts in a table:

* Tables allow structured data storage.
* There can be 0 to n number of tables in a storage account.
* Tables store information as an accumulation of elements.
* An element has an essential key and properties as a key–value pair.

**37. How to secure Azure functions?**

One can secure [Azure functions](https://intellipaat.com/blog/what-is-azure-functions/) through the following:

* Security Center
* Log and monitor
* HTTPS
* Function access keys
* Authentication/authorization
* Permissions
* Secret management
* Set up usage quotas
* Data validation
* Error handling
* Disabled remote debugging
* Restricted CORS access
* Store the data encrypted
* Secure deployment
* Deployment credentials
* Disabled FTP
* Secure scm endpoint
* Continuous security validation
* Network security

**38. What is Conditional Access in Azure?**

Conditional Access is used by Azure AD as a tool to make decisions, bring signals together, and impose organizational policies.

Through Conditional Access policies, one can implement the right access controls whenever required to keep the organization secure and stay out of the users’ way when not needed.

**39. When should you use a static IP address in Azure?**

In Azure, a static IP address is used when the address connected to the device is not to be changed.

**40. How does Azure Site Recovery work?**

Site Recovery orchestrates and automates the replication of Azure VMs in different locations—on-premises machines to a secondary data center, and on-premises VMs and physical servers to Azure.

It contributes to business continuity and disaster recovery (BCDR) by enabling access to apps from the secondary location in case of an outage at the primary site.

***Wish to make a career in the world of Cloud Computing? Start with***[***Azure Tutorial***](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/)***!***

**41. Why should you use Azure CDN?**

Azure CDN reduces the bandwidth and load time. It also helps speed up the responsiveness.

**42. Explain the benefits of Traffic Manager.**

Azure Traffic Manager has the following benefits:

* Optimized performance
* No downtime during the update or maintenance process
* Easily configurable on the Windows Azure portal

**43. What is the difference between a library and a list?**

A library is an interface that enables the management and storage of a document created in Word, Excel, or PowerPoint. A list, on the other hand, is the representation of an item in a tabular format (with columns and rows). It can be attached with documents.

**44. How many services are there in Azure?**

Azure has over 6,000 flexible offerings, and it utilizes the data capacity offered by Microsoft for Software, Platform, and Infrastructure as a Service (SaaS, PaaS, and IaaS).

**45. How many types of backups are there in Azure?**

Azure Backup includes three types of replications that keep both storage and data highly available.

* **Geo-redundant storage (GRS):** The default and recommended option that replicates data to a secondary region far from the primary location
* **Locally redundant storage (LRS):** Creates three copies of the data in a storage scale unit within a data center
* **Zone-redundant storage (ZRS):** Replicates the data in availability zones with data residency and resiliency in the same region and has no downtime

That’s it for Intermediate Azure Interview questions and answers. Now, we will move on to advanced Azure Interview questions.

**46. How can you have a common file-sharing system among multiple virtual machines?**

Azure files system is used as a common repository system for data sharing among virtual machines that are configured using protocols such as NFS, FTPS, SMB, etc.

**Advanced Azure Interview Questions**

**47. What is the TFS build system in Azure?**

A build is the solution of an output. In Azure projects, you get the record with a .cspkg extension, that is, a Cloud Service Package is utilized for the deployment of your cloud administration.

Build Servers: In general terms, a build server is a machine where you put your deployment packages.

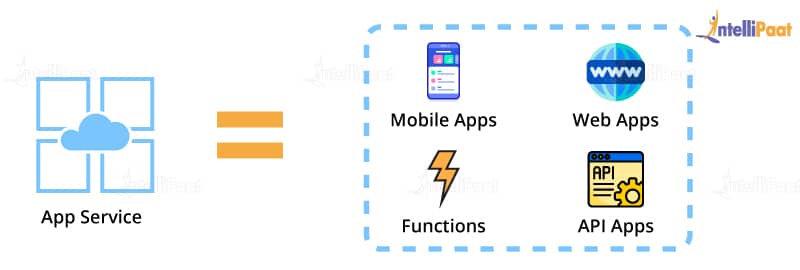
To utilize Team Foundation Build, you should have no less than one build machine. This machine can be a physical machine or a virtual machine.

Build Controllers: Manufacture Controllers are the component in the build system that accepts the build requests from any task inside the group project. Each build controller is dedicated to a solitary team project collection. So, there is a balanced relationship between a team project and a build controller.

Build Agents: Build Agents are components in the build system that accomplishes more processor-concentrated work.

**48. What is Azure App Service?**

[Azure App Service](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/azure-web-apps/) is a completely managed Platform-as-a-Service (PaaS) offering for proficient developers that conveys a rich arrangement of abilities to the web, mobile, and integration scenarios. Mobile apps in Azure App Service offer a very adaptable, universally accessible mobile application development platform for Enterprise Developers and System Integrators that conveys a rich set of capacities to mobile engineers.



**49. What is profiling in Azure?**

Profiling is only a procedure for measuring the performance analysis of an application. It is normally done to guarantee that the application is sufficiently steady and can maintain overwhelming traffic.

Visual Studio gives us different tools to do it by gathering the performance information from the application that likewise helps in troubleshooting issues.

Once the profiling wizard is run, it sets up the execution session and collects the data of the sample.

The profiling reports help in:

* Deciding the longest running strategies inside the application
* Measuring the execution time of every strategy in the call stack
* Assessing memory allocation

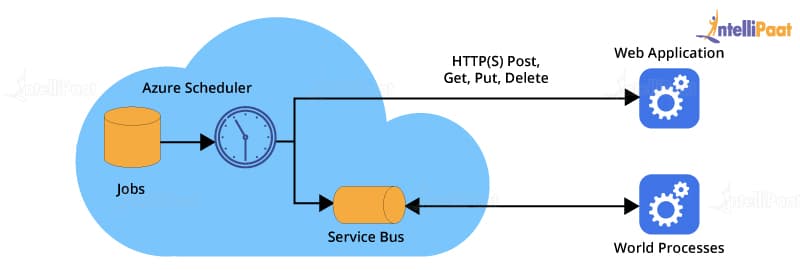
**50. What is cmdlet in Azure?**

A cmdlet is a lightweight command that is utilized as a part of the Microsoft PowerShell environment. The cmdlets are summoned by the Windows PowerShell to automate the scripts which are in the command line. Windows PowerShell runtime additionally invokes them automatically through Windows PowerShell APIs.

**51. What is Windows Azure Scheduler?**

Windows Azure Scheduler enables you to invoke activities, for example, calling HTTP/S endpoints or presenting a message on a storage queue on any schedule.

With Scheduler, you make jobs in the cloud that dependably call services both inside and outside of Windows Azure and execute those jobs on-demand, on a routinely repeating schedule, or assign them for a future date.



**52. How can you create an HDInsight Cluster in Azure?**

To make an Azure HDInsight Cluster, open the Azure portal > click on New > select Data Services > click on HDInsight.

[Hadoop](https://intellipaat.com/blog/what-is-hadoop/) is the default and native execution of Apache Hadoop.

[HBase](https://intellipaat.com/blog/what-is-apache-hbase/) is an Apache open-source NoSQL database based on Hadoop that gives random access and solid consistency for a lot of unstructured data.

[Apache Storm](https://intellipaat.com/blog/what-is-apache-storm/) is a distributed, fault-tolerant, open-source computation system that enables you to process data in real-time.

**53. What is Text Analytics API in Azure Machine?**

Content Analytics API is a part of content examination web administrations worked with [Azure Machine Learning](https://intellipaat.com/blog/tutorial/microsoft-azure-tutorial/azure-machine-learning-ml-tutorial/). The API can be utilized to analyze unstructured content for tasks such as sentiment analysis and key-phrase extraction.

The API restores a numeric score between 0 and 1. Scores near 1 show positive sentiment, while scores near 0 demonstrate negative sentiment.

The upside of this API is that another new model need not be planned and prepared; the user just needs to bring the data and call the service to get the sentiment results.

**54. What is the Migration Assistant tool in Azure Websites?**

Migration Assistant tool will examine our IIS installation and recognize the sites that can be migrated to the cloud, featuring any components which can’t be migrated or are unsupported on the platform.

Once broken down, this tool will likewise create sites and databases provided under the given Azure membership.

**55. What is the distinction between Public Cloud and Private Cloud?**

A public cloud is utilized as a service through the Internet by users, while a private cloud is deployed within specific limits like firewall settings and is totally overseen and checked by the users dealing with it in an organization.

**56. What is Azure Service Level Agreement (SLA)?**

The SLA ensures that, when you send two or more role instances for each role, access to your cloud service will be maintained not less than 99.95 percent of the time. Additionally, identification and re-correction activities will be started 99.9 percent of the time when a role instance’s procedure isn’t running.

**57. How to add an administrator to the Azure portal?**

To add an administrator to the [Azure portal](https://intellipaat.com/blog/azure-portal/), it has to be given the owner role. It will be able to manage only those resources in the subscription that are assigned to it. To add an administrator, follow these steps:

1. Sign in to the Azure portal
2. Go to the Hub menu and then to **Subscription** and select the subscription that the administrator will need access to
3. Select **Access control (IAM)** in the subscription blade, and then click on **Add**
4. Go to **Select a role**, and click on **Owner**
5. Here, provide the email address of the user to be assigned as the owner
6. Click on the user, and then click on **Select**

**58. How to connect to Azure Database from SQL Management Studio?**

1. The first time you start the SQL Server Management Studio, the **Connect to Server** dialog box opens up automatically. You can also open it manually by going to **Object Explorer**> **Connect** > **Database Engine**.
2. Then, enter the following information in the **Connect to Server** window:  
   **Server Type** Database Engine  
   **Server Name** Enter the name of your Azure SQL Database or Azure Managed Instance  
   **Authentication** SQL Server Authentication  
   **Login** Enter the server account user ID  
   **Password** Enter the server account passwordYou can also choose to change the additional connection options by going to **Options**.
3. Click on **Connect**after completing all the required fields  
     
   If the firewall settings are not set up, a prompt appears to configure the same. Once signed in, provide the Azure account login information, and set the firewall rule. Then, click on **OK**.
4. To verify if your Azure Database connection is successful, expand and explore **Object Explorer** for the server name, the SQL Server version, and the username.

**59. How to create a virtual machine on Azure?**

To create a VM on Azure, you need to follow the below steps:

1. Sign in to Azure
2. Sign in to the Azure portal
3. Search for virtual machines in the search box
4. Under **Services**, select **Virtual machines**
5. Click on **Add** in the **Virtual machines**page
6. In the **Basics** tab, under **Project details**, select the correct subscription, and choose **Create new resource group**
7. Type **myResourceGroup** for the name
8. Under Instance details, the **Virtual machine name** should be **myVM**
9. Choose your **Region** [e.g., (US) East US]
10. Choose **Windows Server 2019 Datacenter** for the**Image**
11. Leave the rest as default
12. Under **Administrator account**, enter a username and a password
13. Under **Inbound port rules**, click on **Allow selected ports,** and then select HTTP (80) and RDP (3389) for **Select inbound ports**
14. The rest will remain as default here
15. Finally, click on the **Review + create** button

**60. How to deploy SQL Database in Azure?**

1. Authenticate to the Azure portal
2. Click on **SQL Databases**
3. Click on **Servers**
4. Click on a server name to connect to
5. Press **Configure**
6. Open SQL Server Management Studio
7. Connect to Database services (usually, this happens by default)
8. Finally, click on **Connect**

**61. How to export users from Azure Active Directory?**

You can export users from Azure AD by following the below-mentioned steps:

1. Install the [Azure PowerShell](https://intellipaat.com/blog/azure-poweshell/) module using the following cmdlet:

install-module az

1. To connect to Azure AD and Azure, run:

Connect-azaccount

1. To export, all users to a CSV file, run:

Get-AzADUser | export-csv file.csv

1. If you only need to export the first 10 users, then you can use:

Get-AzADUser -First 10 |  export-csv file.csv

1. To export all users after the first 2 users, you can use:

Get-AzADUser -Skip 2 | ft

**62. How to create a resource group in Azure?**

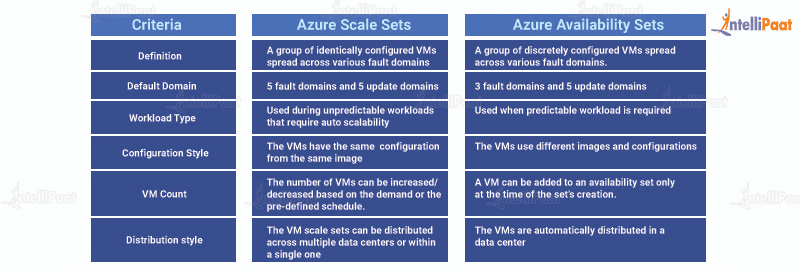
To create a resource group in Azure:

1. Log in to the Azure portal
2. In the menu on the left, select **Resource groups**
3. In the Resource groups page, click on **Add**
4. Fill in the details in the fields as follows:
   * **Subscription:**Select your Microsoft Azure subscription
   * **Resource group name:**Enter a unique name
   * Resource details region: Select a location
5. Click on**Review + create**
6. Once validation is passed, click on **Create**to create your resource group

That’s it in our blog on MS Azure interview questions and answers. Hope these Azure questions help you in your Azure Interview job preparation.

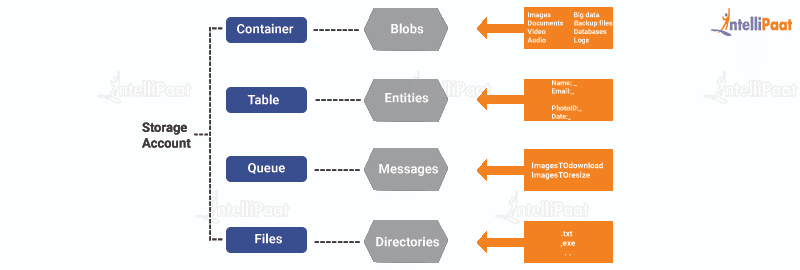
**63. What are the differences between Azure Scale Sets and Availability Sets?**

The major difference is that Azure scale sets have identical VM’s, and in the case of Availability sets, there is no hard and fast rule for the VM’s to be identical. Let us see other differences here –



**64. What are the different storage services available in Azure apart from Blob storage?**

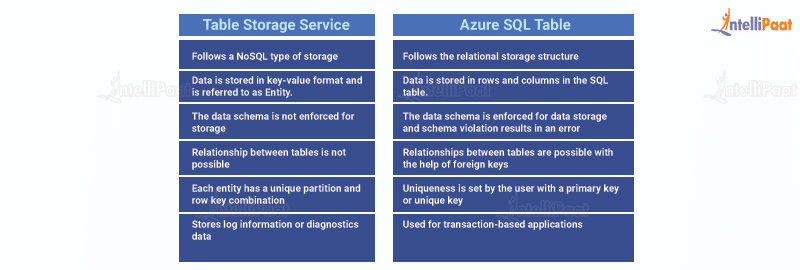
Azure offers three other types of storage services, apart from Blob storage, table storage, queue Storage, and file storage.



* **Azure table storage:**It allows the deployment of applications with semi-structured data and a key-value store, which is NoSQL-based.
  + Used when there is a requirement for applications with a flexible data schema
  + Emphasis is on enterprise-level data and strongly follows consistent models
  + Data is in terms of entities grouped under tables
* **Azure queue storage:**The message queue system is capable of handling large workloads through the development of flexible and durable applications.
  + Ensures that the applications are scalable and less likely to have component failures
  + The queue monitoring helps the application ensure that the requirements are met
* **Azure file storage:**It offers file sharing and access using server message block (SMB) protocol. The data is secured with SMB 3.0 and HTTPS.
  + Improves the performance of on-premise applications
  + Azure takes care of OS deployments and hardware management

**65. What is the difference between Azure Table Storage and the Azure SQL service?**

The major difference is that Azure SQL uses a relational storage structure and Azure Table follows centralized structured data without relations. Other differences are –



**66. Create a Virtual Machine with Azure CLI.**

Following is an example how one can create a VM using Azure CLI:

az vm create \

--resource-group myResourceGroupName \

--name myVM \

--image Win19Datacenter \

--public-ip-sku Standard \

--admin-username AzureuserNAME \

--admin-password AzurePASSWORD

**Scenario-based Azure Interview Questions**

**67. How will you execute code with the help of Azure if there is no server?**

Azure Functions can execute code without a server. These services simplify complex orchestration and challenges. They help connect with other services without hard coding of integrations, which speeds up the development process.

Developers can write and focus on the business logic code saving time and effort. Azure Application Insights can help analyze and monitor code performance as well as identify hiccups and failure points across various application components.

**68. What will you do in case of a drive failure?**

When a drive failure occurs, the following steps need to be performed:

* Ensure that the drive is not mounted so that Azure Storage is functioning without fail
* Replace the drive so that it is remounted and formatted

**69. What could be the reason for the client application to be disconnected from the cache?**

There could be two possible reasons:

* **Client-end**
  + Redeployment of application
  + Scaling operation by application
  + Change in the client-side networking layer
  + Transient errors in the client or network between the client and the server
  + The crossing of bandwidth threshold limits
* **Server-end**
  + Azure Redis Cache service had a failover from the primary node to the secondary node
  + The server instance where the cache was deployed had patching or maintenance

**70. How can you stop the high load issue on an application in cases of no man support on the flow?**

Azure VM Scale Sets can be used to define proper configurations and conditions and provide a new VM whenever there is a high load.

The VM Scale Sets allows the developer to create and manage a group of load-balanced VMs. The scale sets can be configured in accordance with the demand of the application or a predefined schedule that automatically adjusts the number of VMs.

Using scale sets ensures that the applications are highly available and enable the management, updation, and configuration of large VMs centrally. It also supports large-scale application development with big workloads, big data, and compute loads. Azure Scale Sets supports up to 1,000 VMs and 600 VMs for custom VM images.

**71. What would happen if tone reaches the maximum failed attempts for Azure ID authentication?**

In this situation, the Azure account will get locked depending on the protocol analyzing the entered password and the IP address from where the login is requested.

**72. If you have an application running on the on-premise server and Azure East US region has a backup, will you be able to access the application via the Azure environment in case of an on-premise server application access failure?**

Yes. One can access the application by using the Site Recovery Service by Azure. It is capable of handling fail-over and fail-back scenarios between on-premise servers and Azure environments.

**73. In case the front-end hosting of an application is done on Azure, if the user needs the database hosting to be done on an on-premise server due to security concerns, how will you handle the Azure connectivity?**

There are a few possibilities to resolve this:

* Azure VNET based point-to-site service can be used to connect one on-premise DB to an Azure-hosted application. This is valid where there are limited resources to be connected via VPN.
* In case of more resources for connection, site to site or express routes are the solution. Site to site might cause network latency as the VPN works only via public infrastructure, which is the internet. In that case, express routes can be used as it has a dedicated leased line that solves latency issues.
* In case VNET is not preferred, Windows Communication Foundation (WCF) service can be developed and hosted on-premise. It will have CRUD operations intended solely for the database that is hosted on-premise. It uses the service bus relay that can build communication between the Azure-hosted app to the WCF service for database access.

**74. You have an Azure subscription that contains an Azure Log Analytics workspace. You have a resource group that contains 100 virtual machines. The virtual machines run Linux. You need to collect events from the virtual machines to the log analytics workspace. Which type of data source should be configured in the workspace?**

The answer is Syslog, which is an event logging protocol that is common to Linux. Applications will send messages that may be stored on the local machine or delivered to a Syslog collector. When the log analytics agent for Linux is installed, it configures the local Syslog daemon to forward messages to the agent. The agent then sends the message to [Azure Monitor](https://intellipaat.com/blog/what-is-azure-monitor/) where a corresponding record is created.

**75. You create a container image named Image1 on a developer workstation. You plan to create an Azure web app for containers named WebAppContainer that will use Image1. You need to upload Image1 to Azure. The solution must ensure that WebAppContainer can use Image1. To which storage type should you upload Image1?**

Image1 should be uploaded to the Azure container registry. The registry credentials are configured in the web app. App service needs information about the registry and image to pull the private image. In the Azure portal, go to Container settings from the web app and update the Image source, Registry, and Save.

**76. You have an Azure subscription that contains 100 virtual machines. You have a set of Pester tests in PowerShell that validate the virtual machine environment. You need to run the tests whenever there is an operating system update on the virtual machines. The solution must minimize implementation time and recurring costs. Which three resources should you use to implement the tests?**

The three resources to use to implement the test are the Azure Automation runbook, an alert rule, and an alert action group. Azure Automation runbooks can be called by using action groups or by using classic alerts to automate tasks based on alerts. Alerts are one of the key features of [Azure Monitor](https://intellipaat.com/blog/what-is-azure-monitor/). They allow alerts on actions within an Azure subscription.

**77. You have an Azure App Service app. You need to implement tracing for the app. The tracing information must include the following:**

* **Usage trends**
* **AJAX call responses**
* **Page load speed by browser server and browser exceptions**

**What should you do?**

The Azure Application Insights site extension should be enabled in this scenario. For web pages, Application Insights JavaScript SDK automatically collects AJAX calls as dependencies.

**78. You have an Azure virtual machine named VM1 and an Azure Active Directory (Azure AD) tenant named adatum.com. VM1 has the following settings:**

IP address: 10.10.0.10

System-assigned managed identity: On

**You need to create a script that will run from within VM1 to retrieve the authentication token of VM1. Which address should you use in the script?**

The answer is 169.254.169.254. The code that is running on the VM can request a token from the Azure Instance Metadata Service identity endpoint, accessible only from within the VM:

http://169.254.169.254/metadata/identity/oauth2/token

**79. You are designing an Azure solution. The solution must meet the following requirements:**

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

**You need to recommend a solution to distribute network traffic. Which technology should you recommend?**

If you require SSL offloading, application layer treatment, or wish to delegate certificate management to Azure, Azure’s Layer 7 load balancer application gateway should be used.

**80. You have an Azure Cosmos DB account named Account1. Account1 includes a database named DB1 that contains a container named Container1. The partition key for Container1 is set to /city. You plan to change the partition key for Container1. What should you do first?**

The Change Feed Processor and Bulk Executor Library, in [Azure Cosmos DB](https://intellipaat.com/blog/what-is-azure-cosmos-db/), can be leveraged to achieve a live migration of data from one container to another. This allows the redistribution of data to match the desired new partition key scheme and make the relevant application changes afterward. Thus, achieving the effect of updating your partition key.

**81. You have an Azure subscription that contains a resource group named RG1. RG1 contains multiple resources. You need to trigger an alert when the resources in RG1 consume US$1,000. What should you do?**

Budgets should be created to manage costs and alerts should be set to automatically notify if stakeholders are overspending. To set it up, one should go to the Azure Portal, select Cost Management + Billing -> Cost Management -> Go to Cost Management.

**82. You have an Azure Kubernetes Service (AKS) cluster named Clus1 in a resource group named RG1. An administrator plans to manage Clus1 from an Azure AD-joined device. You need to ensure that the administrator can deploy the YAML application manifest file for a container application. You install the Azure CLI on the device. Which command should you run next?**

kubectl apply –f appl.yaml

applies a configuration change to a resource from a file or stdin.

**83. Your company has the groups shown in the following table.**

|  |  |
| --- | --- |
| **Group** | **Number of Members** |
| **Managers** | **10** |
| **Sales** | **100** |
| **Development** | **15** |

**The company has an Azure subscription that contains an Azure AD tenant named contoso.com. An administrator named Admin1 attempts to enable Enterprise State Roaming for all the users in the Managers group. Admin1 reports that the options for enterprise state roaming are unavailable from Azure AD. You verify that Admin1 is assigned the global administrator role. You need to ensure that Admin1 can enable enterprise state roaming. What should you do?**

Purchase an Azure AD Premium P1 license for each user in the Managers group. Enterprise state roaming is available to any organization with an Azure AD Premium or Enterprise Mobility + Security (EMS) license.

**84. Your company has an office in Seattle. You have an Azure subscription that contains a virtual network named VNET1. You create a site-to-site VPN between the Seattle office and VNET1. VNET1 contains the subnets shown in the following table.**

|  |  |
| --- | --- |
| **Name** | **IP Address Space** |
| **Subnet1** | **10.1.1.0/24** |
| **GatewaySubnet** | **10.1.200.8/28** |

**You need to route all internet-bound traffic from Subnet1 to the Seattle office. What should you create?**

A route for Subnet1 that uses the virtual network gateway as the next hop should be created. A route with the 0.0.0.0/0 address prefix instructs Azure how to route traffic destined for an IP address that is not within the address prefix of any other route in a subnet’s route table.

When a subnet is created, Azure creates a default route to the 0.0.0.0/0 address prefix, with the internet next hop type. We need to create a custom route in Azure to use a virtual network gateway in the Seattle office as the next hop.

**85. You have an Azure web app named App1 that is configured to run between two and five instances. There are currently three instances of App1 running. App1 has the following autoscale rules: Increase the instance count by one when the CPU percentage is greater or equal to 80. Decrease the instance count by one when the CPU percentage is less than or equal to 60. You are evaluating the following CPU percentage of utilization for App1:**

* **60 percent**
* **55 percent**
* **50 percent**
* **45 percent**

**You need to identify which utilizations will cause App1 to scale in.**

Azure Monitor autoscaling allows you to scale the number of running instances up or down, based on telemetry data or metrics. Scale-in occurs when the instances are decreased. For this rule, the instances are decreased when the CPU usage is 60 percent or lower. Hence, the answer is 45 percent, 50 percent, and 55 percent.

**86. You have an on-premises network that contains a Hyper-V host named Host1. Host1 runs Windows Server 2016 and hosts 10 virtual machines that run Windows Server 2016. You plan to replicate the virtual machines to Azure by using Azure Site Recovery. You create a Recovery Services vault named ASR1 and a Hyper-V site named Site1. You need to add Host1 to ASR1. What should you do?**

Download the installation file for the Azure Site Recovery Provider. Download the vault registration key.  
Install the Azure Site Recovery Provider on Host1 and register the server.

**87. You have an Azure subscription named Subscription1 that contains a virtual network named VNet1. VNet1 is in a resource group named RG1. Subscription1 has a user named User1. User1 has the following roles:**

* **Reader**
* **Security admin**
* **Security reader**

**You need to ensure that User1 can assign the reader role for VNet1 to other users. What should you do?**

User1 should be assigned the owner role for VNet1.

**88. A company hosts virtual machines (VMs) in an on-premises data center and in Azure. The on-premises and Azure-based VMs communicate using ExpressRoute. The company wants to be able to continue regular operations if the ExpressRoute connection fails. Failover connections must use the internet and must not require multiprotocol label switching (MPLS) support. You need to recommend a solution that provides continued operations. What should you recommend?**

In this case, a VPN connection should be set up.

**89. You have a resource group named RG1. RG1 contains an Azure Storage account named storageaccount1 and a virtual machine named VM1 that runs Windows Server 2016. storageaccount1 contains the disk files for VM1. You apply a ReadOnly lock to RG1. What can you do from the Azure portal?**

View the keys of storageaccount1. ReadOnly allows authorized users to read a resource, but they cannot delete or update the resource. Applying this lock is similar to restricting all authorized users to the permissions granted by the reader role.

**1. What is AWS Lambda?**

It is an [AWS serverless computing](https://intellipaat.com/blog/aws-serverless-computing/) service offered by [Amazon Web Services](https://intellipaat.com/blog/what-is-amazon-web-services-aws/) that runs the code in response to events and automatically manages the compute resource.

**2. What are the languages supported by AWS Lambda?**

**The languages supported by AWS Lambda are as follows:**

* Java
* Python
* js
* C#
* Ruby
* Go
* PowerShell

***Watch this video on Free AWS Full Course:***

**×**

**3. What is automated deployment?**

While automated deployment is similar to [programming](https://intellipaat.com/community/67271/what-is-computer-programming-language) in other languages, it cuts down a lot of associated challenges. It also cuts down all human interferences; this, in turn, helps organizations ensure quality-based outcomes that are best in every parameter. As one becomes more proficient in it, deployment of the pipeline can easily be created.

**4. What is Auto Scaling in Lambda?**

It is one of the features of AWS that helps one to automatically configure and spin novel instances. One of the best things about [AWS Auto Scaling](https://intellipaat.com/blog/what-is-auto-scaling-in-aws/) is that it does not require any interference at any stage. However, users can monitor everything through metrics and thresholds. To enable this task, one needs to cross a threshold, and without interference, one can see the instances scaled horizontally.Bottom of Form

**5. What type of storage is provided by Amazon?**

There are different types of storage options provided by Amazon that are effective in terms of durability as well as performance. While the combination of storage access works fine, independent access can also be provided as per the requirements.

The first storage is EBS, which is actually block-level storage. It has an encryption feature and is a good option to consider when independent storage is required.

The next storage type is [EC2](https://intellipaat.com/blog/what-is-amazon-ec2-in-aws/) instance, which is a good fit for permanent storage needs. It is directly connected to the host PC as a storage disk. The data on this storage is valid as long as the instance is valid.

Another type of Amazon storage is called the Adding storage, which contains all information related to the boot instance. [Amazon S3](https://intellipaat.com/blog/what-is-amazon-s3/) is another option available for storage that can store large amounts of data and is often known to be an inexpensive storage option.

**6. While performing DDOS, what is the limit for execution in Lambda?**

The limit is five minutes while performing DDOS.

**7. What do you think makes Lambda a timesaving approach?**

There can be a number of reasons behind this. One of which is that Lambda stores everything in a local server memory.  Another reason can be that data is stored directly in the database without it affecting the performance. In addition to these features, Lambda also has simple testing techniques; for example, integration testing can be made powerful through multiple vendors.

***Before moving ahead, you can check out this***[***AWS Lambda YouTube tutorial***](https://www.youtube.com/watch?v=MrBo_m1-gFY&t=2s)***to gain a better understanding of the topic.***

**8. What is your understanding of AMI?**

AMI is [Amazon Machine Image](https://intellipaat.com/blog/what-is-amazon-machine-image/); it provides the information required to launch an instance. One can also launch multiple instances using AMI when there are multiple vendors.

**9. Do you think there is a relation between Instance and AMI?**

Yes, they are related to each other. An instance is a virtual machine with particular specifications and OS that one can choose while creating them. While AMI or Amazon Machine Image is the complete backup of an instance.

**10. What are the best practices for security in Lambda?**

Using [AWS IAM](https://intellipaat.com/blog/what-is-aws-iam/) (Identity Access and Management) is one of the widely used security practices in Lambda. Granting specific user access to particular roles is another effective option to enhance security. In this security practice, access can be restricted to hosts that are not trusted or authorized. In addition to this, no matter how effective and stringent the security protocols are, they should always be updated timely.

**Intermediate AWS Lambda Interview Questions**

**11. What is elastic blockage storage in Lambda?**

[Amazon’s elastic block storage](https://intellipaat.com/blog/what-is-aws-ebs-in-amazon/) (EBS) can be defined as a virtual storage area network where tasks can be started. It can tolerate faults easily, and users need not worry about loss of data even if the disk is damaged in the RAID. Provisioning and allocating the storage can also be done in EBS. If required, it can also be connected to an API.

**12. How does Lambda handle failure during event processing?**

In Lambda, a function is run in either synchronous or asynchronous mode. If a function fails in synchronous mode, then it just gives an exception to the calling application. If a function fails in asynchronous mode, then it is retried at least three times.

**13. Is vertical scaling possible in Lambda?**

Yes, vertical scaling is possible in Lambda. Vertical scaling is one of the  most in-demand features of AWS Lambda. This feature is generally used when a user needs to spin a larger instance. If, in case, they are already using an instance, it can be paused and detached from the server. In this process, it is important to note the ID of the new device post that can continue the process.

**14. What are the limitations of AWS Lambda?**

**Some of the limitations of AWS Lambda are as follows:**

* The default deployment package size is 50 MB.
* The ephemeral disk space is limited to 512 MB as the Lambda function will take longer time to execute with a larger package size.
* The execution time is more when the memory allocation is less.
* The memory range is from 128 MB to 10,240 MB.
* The maximum execution timeout for a function is 15 minutes.

**15. How is a Lambda function executed?**

A Lambda function can be directly invoked by the Lambda console, Lambda API, AWS SDK, [**AWS CLI**](https://intellipaat.com/blog/what-is-aws-cli/), and AWS toolkits.

**16. Name a simple method to improve performance in AWS Lambda.**

Performance in AWS Lambda can be simply improved by using RAID, the Linux software. It also helps in increasing security.

**17. In how many ways can AWS Lambda be used?**

**One can use Lambda in the following ways:**

* As an event-driven compute service, AWS Lambda runs code in response to events.
* These events can be the changes to data in an Amazon S3 bucket or [AWS DynamoDB](https://intellipaat.com/blog/amazon-aws-dynamodb-tutorial/)
* Lambda can run code in response to HTTP requests using [Amazon API Gateway](https://intellipaat.com/blog/what-is-amazon-api-gateway/) or API calls made using AWS SDKs.

**18. How does AWS Lambda secure my code?**

Lambda secures the code by encrypting it. Lambda stores the code in Amazon S3 buckets and encrypts it when it is resting. Further, AWS Lambda performs an additional integrity check on the code while it is running.

**19. What is serverless computing?**

[Serverless computing](https://intellipaat.com/blog/serverless-computing-next-step-cloud-infrastructure/) is a cutting-edge computing execution model wherein a cloud provider runs the virtual server and dynamically manages the allocation of machine resources. Serverless computing helps build and run applications and services without being concerned about servers. With the prowess of serverless computing, applications run on servers, but the servers are managed by AWS. This gives developers a lot of flexibility and freedom to focus on app development. AWS Lambda is at the core of serverless computing as it helps to run code without servers.

**Advanced AWS Lambda Interview Questions**

**20. What is the procedure to build an AMI ?**

To build an AMI, first you need to get an instance from another trusted AMI. After this, you need  to add components, as well as packages. You can avoid adding data if it is sensitive due to security reasons. As the next step, add the access credentials post which you can sign up with a database. The total amount of data that you need and stored already can be enhanced up to any level depending on the exact requirements.

**21. Do Lambda-based functions stay available after the code or configuration is changed?**

Yes, Lambda-based functions remain available after the code or configuration is changed. When a Lambda function is updated, there is a brief period, less than a minute, when requests can be served by either the old or new version of the function.

**22. What are the restrictions applied to the AWS Lambda function code?**

Although AWS Lambda has very few restrictions on various kinds of operating systems activities and standard programming languages, there are a few restrictions on activities that disable instances and trace calls and inbound network connections. In addition to this, AWS Lambda also disables activities such as debugging systems and TCP ports. For outbound data connection, [TCP or IP](https://intellipaat.com/blog/what-is-tcp-ip-model/) sockets are very supportive.

**23. How to get started with a serverless application?**

In order to get started with a serverless application, a user needs to console AWS Lambda and download the blueprint. The original file that will be downloaded should have an AWS Sam file, also known as AWS resource in the application, and a ZIP file. AWS Cloud formation commands can be used for packaging and deploying serverless application codes and documentation can also be performed.

**24. What are the disadvantages of using the serverless approach?**

Everything in AWS Lambda comes with its own merits and demerits depending on the task performed. The upper limit is strictly on the vendor control in the serverless approach and offers more downtime. Sometimes there is a loss of system functionality and the system’s limits are other issues; no dedicated hardware is available for AWS serverless approach. In most cases, customer errors can also give rise to problems.

**25. What is the difference between an anonymous class and the Lambda function?**

One of the biggest differences between an anonymous class and the Lambda function is the use of keywords. While the keywords in a Lambda function are used to resolve functional classes, the keywords in anonymous classes are used to resolve anonymous functional classes.

**26. Is Lambda Expression a nameless suspension of code?**

Yes, it is a nameless suspension of code.

**27. What kind of code can run on AWS Lambda?**

There are many activities that can be performed on AWS Lambda; for example, it can be used to build mobile backends from Amazon DynamoDB to retrieve and transform data. Handlers transform and compress objects as they get uploaded to Amazon S3. This is done by using Amazon Kinesis, serverless processing of streaming data. The reporting and auditing of API calls can be made to any web service of Amazon, and many other activities can also be done with the help of AWS Lambda.

**28. What are final variables and effectively final variables in Lambda?**

Final variables are those that cannot be modified once assigned, while effectively final variables can be changed as they are in their earlier stage and have not been assigned a value. Effectively final variables play a huge role in testing as well. If final variables are to be equipped with several additional features, this can be done through effectively final variables.

**29. How does AWS Lambda work?**

Many people consider AWS Lambda to be a little confusing, but it is not. It is just a simple four-step process that begins with uploading code to AWS Lambda. The next step is to set up your code to trigger from other AWS services, HTTP endpoints, or mobile apps. AWS Lambda will only run a code when it is triggered and will only use the computing resources needed to run it.

**30. What can one build with AWS Lambda?**

**The following is the list of what all can one build with AWS Lambda:**

* Real-time file processing
* Sorting real-time stream processing
* Data processing
* Data validation
* Filtering
* Third-party API requests

## Basic Azure Interview Questions

### 1. Why Did You Choose a Career in Cloud Computing?

These types of Azure interview questions require a thoughtful, honest response. By thinking through your answer ahead of time, you’ll be ready to say something your interviewer will approve of. Show that you care about the field and that you have a passion for [cloud computing](https://www.simplilearn.com/tutorials/cloud-computing-tutorial/what-is-cloud-computing) and the problems it can solve.

### 2. Why Did You Choose Microsoft Azure and Not Aws?

Your response to this question is based on your own background and experience. Maybe you come from a developer background, so Azure appealed to you. Maybe your first cloud computing role just happened to be with [Azure](https://www.simplilearn.com/getting-started-with-azure-article). As with the question above, the key here is to be ready to give an intelligent answer to the question.

### 3. How Does Microsoft Azure Compare to Aws?

This might be a matter of opinion for you, so answer as you see fit. In general, people say Azure is a better choice because it’s a Microsoft product, making it easier for organizations already using Windows Server, [SQL Server,](https://www.simplilearn.com/what-is-microsoft-sql-server-architecture-article) and Exchange to move to the cloud. In addition, because of Microsoft’s deep knowledge of developer tools, Azure offers multiple app deployment options for developers, which makes it stand out against [AWS](https://www.simplilearn.com/introduction-to-amazon-web-services-aws-article).

### 4. How Did You Learn Azure?

Did you learn Azure through a certification? Through on-the-job experience? A little of each? However you learned it, make sure to demonstrate to the interviewer that you have practical experience (if you’re new to the field) and that you are continuing to learn.

### 5. Tell Me About a Problem You Solved at Your Prior Job.

This is something to spend some time on when you’re preparing responses to possible Azure interview questions. As a cloud architect, you need to show that you are a good listener and problem solver, as well as a good communicator. Yes, you need to know the technology, but cloud computing does not usually involve sitting isolated in a cubicle. You’ll have stakeholders to listen to, problems to solve, and options to present. When you answer questions like these, try to convey that you are a team player and a good communicator, in addition to being a really good Azure architect.

### 6. What is the difference between SaaS, PaaS, and IaaS?

This is one of the most common Azure interview questions. Cloud Computing has three types of service models, that are [IaaS, PaaS, and SaaS](https://www.simplilearn.com/saas-paas-iaas-quick-comparison-article)

|  |  |  |
| --- | --- | --- |
| **Infrastructure as a Service(IaaS)** | **Platform as a Service(PaaS)** | **Software as a Service(SaaS)** |
| It provides users with components such as OS, networking capabilities, etc. This is a paid service, based on usage and can be used to host applications. | It enables developers to build and work with applications without having to worry about the infrastructure or management of the hosting environment. | It involves applications being consumed and used by organizations. Usually, organizations pay for their use of the application |
| **Example -**Azure Virtual Machine, Azure VNET | **Example -**Azure SQL, Azure Storage | **Example -**Office 365, Salesforce |

## Azure Interview Questions and Answers for Experienced

### 7. What are the instance types offered by Azure?

Azure offers a number of different instance types based on what needs they fulfill.

* **General Purpose -**CPU to memory ratio is balanced. Provides low to medium traffic web servers, small to medium databases and is ideal for testing and development

Largest instance size: Standard\_D64\_v3

256 GB Memory and 1600 GB SSD Temp Storage

* **Compute Optimized -** High CPU to memory ratio. Best suited for medium traffic web servers, application servers, batch processes, and network appliances

Largest instance size: Standard\_F72s\_V2

144 GB Memory and 576 GB SSD Temp Storage

* **Memory-Optimized -**High memory to CPU ratio. Best suited for relational database servers, in-memory analytics, and medium to large caches

Largest instance size: Standard\_M128m

3892 GB Memory and 14,336 GB SSD Temp Storage

* **Storage Optimized -** Provides high disk IO and throughput. Best suited for Big Data, NoSQL and SQL Databases

Largest instance size: Standard\_L32s

256 GB Memory and 5630 GB SSD Temp Storage

* **GPU -** Virtual Machines that specialize in heavy graphic rendering and video editing. It also helps with model training and inferencing with deep learning

Largest instance size: Standard\_ND24rs

448 GB Memory and 2948 GB SSD Temp Storage  
4 GPUs and 96 GB Memory

* **High-Performance Compute -** Provides Azure’s fastest and powerful CPU virtual machines with optional high throughput interfaces

Largest instance size: Standard\_L32s

224 GB Memory and 2000 GB SSD Temp Storage

### 8. What are the deployment environments offered by Azure?

This is one of the most frequently asked **Azure interview questions,**and you must know the answer. Azure offers two deployment environments:

#### **Staging Environment:**

* It provides a platform to validate changes to your application before it can be made live in the production environment
* In this stage, the app can be identified using the Azure’s Globally Unique Identifier (GUID) in URL form (GUID.cloudapp.net)

#### **Production Environment:**

* This environment is used to store the live application
* It can be differentiated from the staging environment with an URL that’s more DNS friendly (servicename.cloudapp.net)

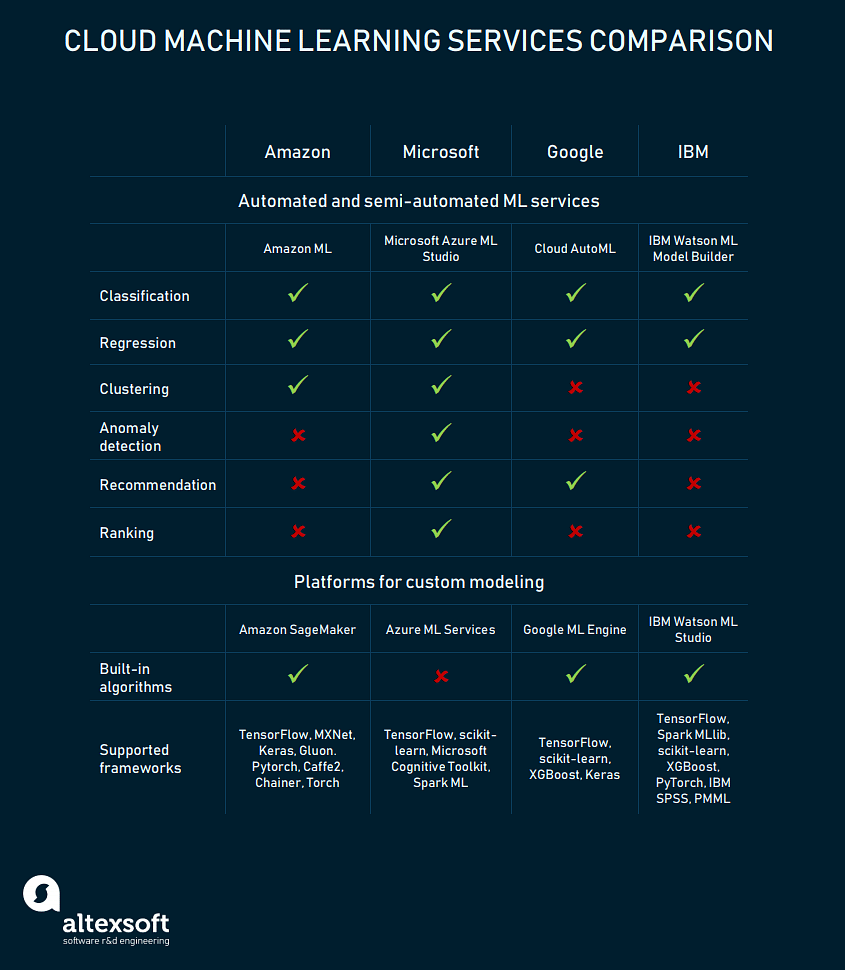
### 9. Differentiate between repetitive and minimal monitoring.

|  |  |
| --- | --- |
| **Repetitive / Verbose Monitoring** | **Minimal Monitoring** |
| It collects metrics based on performance | It is a default configuration method |
| It allows a close analysis of data fed during the process of application | It allows a close analysis of data fed during the process of application |

### 10. Which one amongst Microsoft Azure ML Studio and GCP Cloud AutoML is better?

When we compare both in terms of services, Azure ML Studio wins the verdict since it has Classification, Regression, Anomaly Detection, Clustering, Recommendation, and Ranking features.

On the other hand, GCP Cloud AutoML has Clustering, Regression, and Recommendation features. Moreover, Azure has a drag and drop options that make the process easier to carry out.



### 11. What are the advantages of Scaling in Azure?

Azure performs scaling with the help of a feature known as Autoscaling. Autoscaling helps to deal with changing demands in Cloud Services, Mobile Services, Virtual Machines, and Websites. Below are a few of its advantages:

* Maximizes application performance
* Scale up or down based on demand
* Schedule scaling to particular time periods
* Highly cost-effective

### 12. How is Windows Active Directory and Azure Active Directory different?

This one’s another regular question from the list of Azure interview questions.

|  |  |
| --- | --- |
| **Windows Active Directory** | **Azure Active Directory** |
| It is a directory service that facilitates working with interconnected, complex and different network resources in a unified manner | [Azure Active Directory](https://www.simplilearn.com/tutorials/azure-tutorial/azure-active-directory) (Azure AD) is Microsoft’s multi-tenant, cloud-based directory and identity management service |
| Uses 5 layers to store data, store user details, issue and manage certifications, etc. | Uses 5 layers to store data, store user details, issue and manage certifications, etc. |
| Works with an emphasis on on-premises units like applications, file services, printers, etc. | Emphasizes on web-based services that use RESTful interfaces |

### 13. What are the types of Queues offered by Azure?

Azure offers two types of queues:

#### **Storage Queues:**

* It is a part of Azure’s Storage infrastructure
* It provides messaging within and between services
* It is best suited when users need to store more than 80 GB of messages in queues
* It can provide side logs of all transactions executed against the user’s queues

#### **Service Bus Queues:**

* It is a part of Azure’s messaging infrastructure
* It integrates application or application components that span multiple communication protocols, network environments, etc.
* It provides a FIFO style of delivery
* The user’s queue size has to remain under 80 GB

### 14. What are the advantages of the Azure Resource Manager?

Azure Resource Manager enables users to manage their usage of application resources. Few of the advantages of Azure Resource Manager are:

* ARM helps deploy, manage and monitor all the resources for an application, a solution or a group
* Users can be granted access to resources they require
* It obtains comprehensive billing information for all the resources in the group
* Provisioning resources is made much easier with the help of templates

### 15. Azure interview questions can also have MCQ’s like follows: Which of the following web applications can be deployed with Azure?

a. ASP.NET

b. PHP

c. WCF

d. All of the mentioned

Answer:**a)  ASP.NET**

### 16. How has integrating hybrid cloud been useful for Azure?

The [Hybrid Cloud](https://www.simplilearn.com/what-is-hybrid-cloud-article) boosts productivity by using Azure and the Azure stack for building and deploying applications for the cloud and on-premises applications. Integrating hybrid cloud been useful for Azure in the following ways:

* It obtains greater efficiency with a combination of Azure services and [DevOps](https://www.simplilearn.com/tutorials/devops-tutorial/what-is-devops) processes and tools
* Users can take advantage of constantly updated Azure services and other Azure Marketplace applications
* It enables it to be deployed regardless of its location, the cloud, or on-premises.
* This enables applications to be created at a higher speed

### 17. What is the Federation in Azure SQL?

SQL Azure Federation provides tools that can enable developers to access or share databases among themselves in SQL Azure.

* It enables users to take advantage of resources within the cloud
* It allows users to have their own database or share databases amongst each other
* It reduces the possibility of a single point of failure
* It provides cost-effectiveness, by using cloud resources only when needed

Learn how to design, plan, and scale cloud implementation and excel in the field of cloud computing with our popular [Cloud Architect Master's course](https://www.simplilearn.com/cloud-solutions-architect-masters-program-training)

### 18. What are the different types of storage offered by Azure?

Storage questions are very commonly asked during an Azure Interview. Azure has four different types of storage. They are:

#### **Azure Blob Storage**

Blob Storage enables users to store unstructured data that can include pictures, music, video files, etc. along with their metadata.

* When an object is changed, it is verified to ensure it is of the latest version.
* It provides maximum flexibility to optimize the user’s storage needs.
* Unstructured data is available to customers through REST-based object storage

#### **Azure Table Storage**

Table Storage enables users to perform deployment with semi-structured datasets and a [NoSQL](https://www.simplilearn.com/rise-of-nosql-and-why-it-should-matter-to-you-article) key-value store.

* It is used to create applications requiring flexible data schema
* It follows a strong consistency model, focusing on enterprises

#### **Azure File Storage**

File Storage provides file-sharing capabilities accessible by the SMB (Server Message Block) protocol

* The data is protected by SMB 3.0 and HTTPS
* Azure takes care of managing hardware and operating system deployments
* It improves on-premises performance and capabilities

#### **Azure Queue Storage**

Queue Storage provides message queueing for large workloads

* It enables users to build flexible applications and separate functions
* It ensures the application is scalable and less prone to individual components failing
* It enables queue monitoring which helps ensure customer demands are met

### 19. What is the Text Analysis API in Azure Machine Learning?

Text Analysis API is a set of web services that can be used for text analysis. It is used to analyze unstructured text for sentiment analysis and keyphrase extraction. It provides results that range between 0 and 1, to elicit a positive or negative sentiment.



When a new model is created, it doesn’t need to be designed and trained, users need to add the data and call the service to obtain the sentiment analysis.

### 20. What are the advantages of Azure Queue Storage?

Queue storage enables message queueing for large workloads in a simple, cost-effective, and durable manner. Few of its advantages are:

* It provides rich client libraries for [Java](https://www.simplilearn.com/tutorials/java-tutorial/what-is-java), Android, [C++,](https://www.simplilearn.com/tutorials/cpp-tutorial/learn-cpp-basics) PHP, Ruby, etc.
* It enables users to build flexible apps and separate functions for greater durability
* It ensures users’ applications are scalable and less prone to individual component failure
* It enables queue monitoring to ensure servers aren’t overwhelmed by sudden traffic bursts

### 21. What are the two kinds of Azure Web Service roles?

A cloud service role is a set of managed and load-balanced virtual machines that work together to perform tasks. The two kinds of Azure Web Service roles are:

#### **Web Roles**

* It is a cloud service role that is used to run web applications developed in programming languages supported by IIS (Internet Information Services) like ASP.NET, PHP, etc.
* It automatically deploys and hosts applications through the users IIS

#### **Worker Roles**

* It runs applications and other tasks that don't require IIS. It performs supporting background tasks along with web roles
* It doesn’t use IIS and runs user applications standalone

### 22. What is Azure Service Fabric?

Service Fabric provides a platform that makes the process of developing microservices and managing the application lifecycle easier.

* It produces applications with a faster time to market
* It supports Windows/ Linux, on-premises or other clouds
* It provides the ability to scale up to a thousand machine

### 23. How can Azure handle this situation?

A client wants the front end of his/ her application to be hosted on Azure, but wants the database to be hosted on-premises.



Solution - The ideal solution in this scenario is to use Azure VNET based “Point to Site”. It’s best suited for scenarios where there are only a limited number of resources that need to be connected

### 24. What is the Azure Traffic Manager?

Azure Traffic Manager is a traffic load balancer that enables users to provide high availability and responsiveness by distributing traffic in an optimal manner across global Azure regions.

* It provides multiple automatic failover options
* It helps reduce application downtime
* It enables the distribution of user traffic across multiple locations
* It enables users to know where customers are connecting from

### 25. How can Azure handle this situation?

You need to isolate network traffic among VMs in a subnet, which is part of a [Virtual Network](https://www.simplilearn.com/tutorials/azure-tutorial/azure-virtual-network-vnet) with little downtime and impact on users?



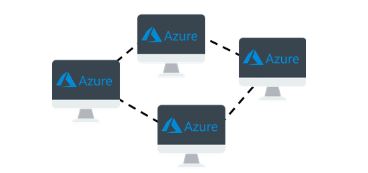
Solution - This would ensure that the virtual machines are kept isolated without the need for additional security, like a Network Security Group.

### 26. With respect to Azure, what is public, private, and hybrid cloud?

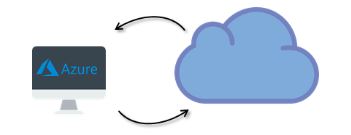
[Public Cloud](https://www.simplilearn.com/difference-between-private-and-public-cloud-article)**-** Every component that the user is using in his/ her application are running only on Azure



**Private Cloud -**Azure services are being run within an on-premises data center or on-premises data centers are used by the user to host systems or applications



**Hybrid Cloud -**Combines features of both Public and Private cloud. Some of the user’s components are being run on Azure and others within an on-premises datacenter



### 27. What kind of storage is best suited to handle unstructured data?

Questions on Blob Storage can be seen in the list of Azure Interview Questions.

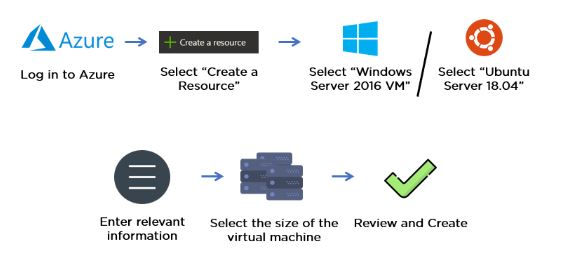
Blob Storage provides storage capacity for data. It places data into different tiers based on how often they’re accessed.

* Any type of unstructured data can be stored
* Data integrity is maintained every time an object is changed
* It helps to increase app performance and reduces bandwidth consumption

### 28. How do you set up an Azure Virtual Machine?

Setting up a VM is one of the most important Azure Interview Questions.

The below image would explain clearly how to set up an Azure Virtual Machine:



### 29. How do you handle this scenario?

You need to make sure your Virtual Machines are able to communicate securely with each other to ensure security.

Solution -  Azure Virtual Network enables Azure resources to communicate with each other, the internet, or on-premises networks securely.

* Users can create their own private networks
* It provides users with an isolated and highly secure environment for applications
* All traffic stays within the Azure network
* It allows users to design their own networks

### 30. How do you handle this scenario?

You need to ensure that every time a user logs in, they are not asked to re-enter their passwords as part of the authentication.

a. To enable Microsoft Account authentication

b. Deploy ExpressRoute

c. Set up a VPN between premises and datacenter. Set up an AD domain controller in VM and implement integrated Windows Authentication

d. Configure Azure AD Sync to use single sign-on

Solution - **d) Configure Azure AD Sync to use single sign-on**

* Single sign-on (SSO) is a property of access control of multiple related, but independent software systems. With this property, a user logs in once and gains access to all systems without being prompted to log in again at each of them.

### 31. Azure Storage plays the same role in Azure that \_\_\_\_\_\_ plays in Amazon Web Services.

a. S3.

b. EC2

c. EC3

d. All of the mentioned

Answer: **a)  S3**

### 32. Which service in Azure is used to manage resources in Azure?

a. Azure Resource Manager

b. Application Insights

c. Log Analytics

d. Azure Portal

Answer: **a) Azure Resource Manager**

### 33. How do you handle this scenario?

You need to ensure that virtual machines remain available while migrating to Azure. What would be the appropriate service to use?

a. Traffic Manager

b. Update Domains

c. Express Route

d. Cloud Services

Solution - **c)  Express Route**

### 34. How do you handle this scenario?

a. You administer a website called web game. You’re required to validate and deploy changes made to your website by your development team with minimum downtime

b. Create a new linked resource

c. Create a staging environment for the site

d. Enable remote debugging on the website

Solution - **b) Create a staging environment for the site**

### 35. How do you handle this scenario?

These scenarios are important on the list of Azure Interview Questions

Your standard tier application is used across the world and uses the Azure website standard tier. It uses a large number of image files. However, this causes the application to load slowly

a. Configure Azure blob storage with a custom domain

b. Configure Azure website Autoscaling to increase instances at high loads

c. Configure Azure CDN to cache all responses from the application’s web endpoint

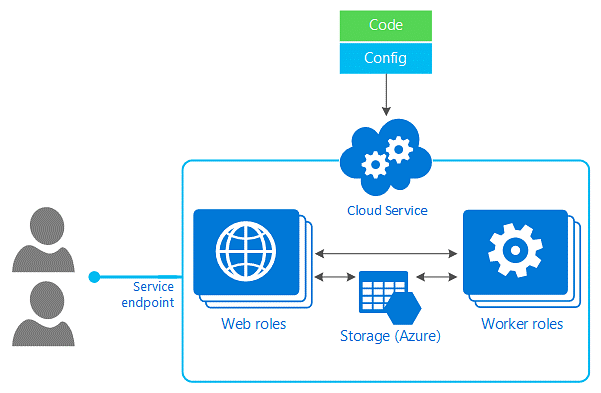
d. Configure Azure CDN to cache site images and content stored in Azure blob storage

Solution - **d)Configure Azure CDN to cache site images and content stored in Azure blob storage**

Blobs that benefit the most from Azure CDN caching are those that are accessed frequently during their time-to-live (TTL) period. A blob stays in the cache for the TTL period and then is refreshed by the blob service after that time is elapsed. Then the process repeats.

1. **Explain Azure Cloud Services.**

Azure Cloud Services is a Paas (platform-as-a-service) product that intends to provide robust, efficient, and cost-effective applications. Azure Cloud Services are hosted on virtual machines, and they let one have a higher degree of control over the VMs by allowing software installation on the VMs and also making them remotely accessible.



Source: [Microsoft Azure docs](https://docs.microsoft.com/en-us/azure/cloud-services/cloud-services-choose-me)

By launching a cloud service instance, Azure cloud services can be utilized to implement multi-tier web-based apps in Azure. Azure cloud services aid an application's scalability by making it easier and more adaptable. The two types of Azure Cloud Services roles are-

1. Web role (has a dedicated web server that uses IIS to automatically launch and host your app).
2. Worker role (allows apps to run by themselves without using IIS and helps run background processes).
3. **What do you understand about the Azure SLA?**

As the name suggests, Azure SLA (Service Level Agreement) is a service contract stating that when you deploy two or more role instances of a service on Azure, access to that cloud service is available for at least 99.9% of the time. It also indicates that if the role instance is not functioning, it will identify and resolve that role instance 99.9% of the time.

Suppose any of the points mentioned above fail to satisfy at any moment. In that case, Azure will credit the concerned user a certain percentage of their monthly payments based on the pricing model of the Azure services in question.

1. **List the different cloud deployment models available in Azure.**

Based on one's business requirements, there are three different cloud deployment models in which you can deploy any Azure cloud service -

* Private Cloud- It comprises cloud computing resources owned entirely by a single company. This could mean hosting one's apps on their on-site servers or a dedicated server offered by the cloud service provider.
* Public Cloud- The most common cloud deployment model, the public cloud, involves a third-party cloud service provider to manage and control the cloud resources distributed via the internet. The cloud provider owns all hardware, software, and other supporting facilities in this case. Example- Microsoft Azure.
* Hybrid Cloud- A hybrid cloud is a blend of private and public clouds. These cloud deployment models employ private cloud service features such as processing confidential data and public cloud services such as hosting commercial applications.

1. **Define IaaS, PaaS, and SaaS.**

* IaaS- IaaS stands for Infrastructure as a Service. It is a cloud computing service that hosts apps on the infrastructure and allows you to avail storage, networking resources, etc., on demand. Each resource is available as an individual service facility, and one has to only pay for it for as long as he needs to use it. Azure VM, VNET, etc., are some popularly known examples of IaaS.
* PaaS- PaaS stands for Platform as a Service. It offers both- a cloud development and deployment environment, with facilities that enable users to produce simple cloud-based apps or even complex, cloud-enabled business systems. A user only pays for the resources he needs from a cloud service provider and accesses them over a secure Internet connection. Users are in charge of the applications and services they create, and the cloud service provider manages the rest.  Azure web apps, Storage services, cloud services, and other services are all examples of PaaS.
* SaaS- SaaS stands for Software as a Service. Organizations avail SaaS applications through a service delivery mechanism. This works by charging the organization for their use or by displaying advertisements. User interaction with cloud-based programs through the Internet can occur through software as a service (SaaS). The service provider's data center hosts the underlying infrastructure, software, and app data. Applications such as Office 365, Gmail, SharePoint Online, and others are examples of SaaS.

1. **Explain Azure Redis Cache.**

Azure Redis Cache is an in-memory data storage, or cache system, based on Redis that boosts the flexibility and efficiency of applications that rely significantly on backend data stores. It can handle massive numbers of application requests by storing highly trafficked data in server memory, where it can be written to and read fast. Redis open-source (OSS Redis) and Redis Enterprise (from Redis Labs) are both available as managed services through Azure Redis Cache. It offers safe and dedicated Redis server facilities and complete Redis API support. Microsoft runs this service, which can be helpful for any Azure-based or non-Azure-based application.

1. **Why isn't there an MSDN class library reference for Azure Redis Cache?**

Microsoft Azure Redis Cache is built on the famous open source Redis Cache and can be accessible by several Redis clients written in various computer languages. Every client has its API for making Redis commands calls to the cache instance. There is no unified class reference on MSDN since each client is unique and keeps its reference data.

1. **What are availability sets?**

An availability set is a cluster of virtual machines that enables Azure to understand how an application offers redundancy and high accessibility. To provide a highly available application and achieve the 99.95 percent Azure SLA, creating two or more VMs within an availability set is safer. The two domains assigned to every VM in an availability set are- an update domain and a fault domain.

Update domains combine virtual machines and the underlying hardware that can reboot simultaneously. Before the maintenance on a different update domain, a restarted update domain takes 30 minutes to recover.

Fault domains are the set of virtual machines that share a common power source and a common network switch. Virtual machines specified in your availability set are split into up to three failure domains by default. Integrating virtual machines into an availability set helps mitigate the impact of hardware malfunctions, network outages, and power outages.

1. **Define Azure Functions in detail.**

The Azure Functions is a serverless code computation service that allows you to run code without a server on demand, such as Events and External-Invoke. They are stateless and short-lived, and azure Functions may automatically scale up in response to the request. They tend to speed up the development process by avoiding the need to perform any integration coding for you to connect to other services. They also offer Azure Application Insights for monitoring and evaluating code performance, which aids in the identification of bottlenecks and failure locations throughout the application's components. You can write Functions in C#, Node, Java, Python, and other languages.

1. **What do you understand about Azure Active Directory?**

Microsoft's Azure Active Directory (Azure AD) is a cloud-based authentication and authorization service. It weaves application access management, core directory services, and identity protection into a single solution. It enables all employees in an organization to sign in and access resources in the following areas:

i) External resources such as Microsoft 365, the Azure gateway, and millions of other SaaS services.

ii) Internal resources, such as apps on your company's intranet and network and any cloud service apps built by your company.

1. **Define CSPack in Azure.**

CSPack is a command-line tool that generates package files for applications that must deploy in Azure. CSPack uses the data from the service definition and service configuration files to define the content within a package. You can upload an application package file (.cspkg) to Azure via the Azure site using CSPack. The package is named [ServiceDefinitionFileName].cspkg by default, but you can change it with the /out option of CSPack. Every cloud service project contains a cscfg file, essentially a cloud service configuration file generated by the cspack tool.

1. **Explain Azure Blob storage.**

Azure Blob storage is a Microsoft storage offering that is meant explicitly for cloud objects and is suitable for holding vast quantities of unstructured data. Unstructured data, such as text or binary data, does not correspond to a specific data model or description.

Blob storage is suitable for sharing images/docs directly to a browser, storing files meant for multiple access, streaming audio/video files, backing up data, creating log files, etc.

There are three types of resources available in blob storage:

* A storage account- In Azure, a storage account gives your data its namespace.
* A container in the storage account- A container manages a group of blobs, and there are no constraints on the number of blobs stored in a container.
* A blob within the container- A blob is a Binary Large Object (BLOB), which can be any form of file or document of any size. Azure supports three different types of Blobs:
* Block blobs: These are meant to store individual blocks of text and binary files and have a storage capacity of up to 195GB.
* Append blobs: These are useful for append tasks like logging data in log files.
* Page blobs: These store random access files up to 8 TiB and are intended for reading/writing operations that occur often.

**Azure Solution Architect Interview Questions**

1. **Explain Service Bus Queue and Storage Queue.**

Azure Service Bus Queues belong to the Azure messaging framework and include queuing, publishing, subscribing, etc. They are part of the Service Bus and can pass messages through to other Queues and Topics. The Azure Service Bus Queues feature a built-in dead-letter queue and allow you to choose a timeline for messages so they can last as long as you want them to! They connect applications or parts of applications that cover different communication protocols, data treaties, trust domains, or security protocols.

Azure Storage Queues belong to the Azure storage framework and are easy to use. They allow easy debugging by using the local Azure Storage Emulator. The set of Azure Storage Queue tools enables you to take a quick look at the top 32 messages and visualize the contents of those belonging to XML/JSON right from Visual Studio. Another feature of storage queues that ensures smooth development and QA operations is that the contents of these queues can be emptied when needed. Authenticated HTTP or HTTPS calls allow you to access the queue messages regardless of your geographical location. Queue messages have a maximum capacity of 64 KB and can hold millions of messages depending upon the storage account's overall capacity limit.

1. **Can you specify the storage limit associated with a virtual machine?**

When it comes to the storage limit associated with virtual machines, each data disk has a maximum capacity of 1 TB. The amount of data disks one can use is determined by the virtual machine's size. Azure Managed Disks is a new and highly recommended disk storage option for Azure Virtual Machines for long-term data storage. Each Virtual Machine can have many Managed Disks. Premium and Standard Managed Disks are two types of long-term storage options offered by Managed Disks. Also, storage for the OS disk and any data disks can be provided via Azure storage accounts. Each disk is a page blob that is stored in a .vhd file format.

1. **What is meant by Azure Cognitive Search?**

Azure Cognitive Search is a cloud search solution that entrusts server and infrastructure maintenance to Microsoft. It provides developers with platforms, APIs, and tools for creating ready-to-use advanced search experiences in web, mobile, and corporate applications over private, diverse content. By using a simple REST API or.NET SDK, you can easily add a powerful search experience to your applications without having to manage search infrastructure or become a search specialist. For apps that depend exclusively on the search for both feature extraction and content navigation, Azure Cognitive Search is the ideal cloud provider for full-text search operations over content repositories and databases on Azure.

1. **What is Azure CosmosDB?**

Azure CosmosDB is one of the PaaS features offered by Microsoft. It is a cloud-based NoSQL database that deals mainly with modern app development. CosmosDB data can be easily shared and replicated anywhere in the world, which ensures faster and more efficient app development. Capacity management, automatic scaling, and serverless databases aid in matching demand with storage capacity.

Azure Cosmos DB takes care of database administration for you, including auto-management, updates, etc., and also includes features such as single-digit millisecond response times, rapid scalability, SLA-backed availability, and enterprise-grade privacy.

1. **Which Cosmos DB component will you use if you need to provide your application temporary access to Cosmos DB?**

The two URLs, Read and Read-Write, allow you to share your Azure Cosmos DB account with other people for a specified duration of time. Since the account access has an expiration time window of 24 hours, you can regain access by using a newly-generated access URL or the connection string.

* Read URL- Other users can browse the databases, collections, queries, and other resources linked with that specific account, provided you share the read-only URL with them.
* Read-Write URL- Other users can read and alter the databases, collections, queries, and other resources linked with that specific account if you share the Read-Write URL with them.

1. **What Azure feature may be used to prevent high application load in the case of no-man assistance on the flow?**

The solution to this problem involves using VM Scale sets, which define the necessary configuration and requirements for provisioning a new VM whenever there is an escalation in the application load. Developers can use Azure VM Scale Sets to build and manage a load-balanced collection of VMs. The number of virtual machine instances can be increased or decreased automatically in response to demand or a set timeline. Scale sets enable developers to facilitate the construction of large-scale applications that support huge data, massive workloads, and compute loads. They ensure the high availability of the applications and allow developers to manage, update, and configure large VMs centrally.

1. **Is sticky session support available in Traffic Manager?**

Since the Traffic Manager works at the DNS level, clients are directed to the ideal service endpoint using DNS responses. This also means that clients manage to connect directly to the service endpoint, bypassing Traffic Manager, which results in the HTTP traffic between the client and the server remaining unknown to the Traffic Manager. Furthermore, the recursive DNS service owns the source IP address of the DNS query received by the Traffic Manager instead of the client. As a result, Traffic Manager is unable to track individual clients or create sticky sessions. This constraint exists in the case of all DNS-based traffic control solutions, including Traffic Manager.

1. **Explain the Site Recovery feature of Azure.**

Site Recovery is a service that keeps corporate apps and workloads operational during outages, assuring smooth business processes. This feature offered by Azure works in such a way that it copies activities from a primary location to a secondary location with the help of physical and virtual machines (VMs). When your primary location goes down, you switch to the secondary location, where you can access the apps. You can roll back to the principal location once it has been restored. Site Recovery ensures replication for Azure VMs, on-site VMs, Azure Stack VMs, and physical servers.

1. **What is meant by Azure Service Fabric?**

Azure Service Fabric is a parallel processing platform that ensures simple packaging, smooth deployment, and efficient handling of robust and reliable microservices and containers. Service Fabric allows you to create microservice-based applications. The major constraints in designing and administering cloud-native apps are also handled by Service Fabric. It has a huge emphasis on designing stateful services. You can run container-based stateful services written in any language or code using the Service Fabric computing architecture. Also, you can create Service Fabric clusters in the private clouds with Windows Server and Linux, as well as in other public clouds.

1. **How does Azure Traffic Manager differ from Azure Load Balancer?**

Azure Traffic Manager is mainly responsible for sending traffic globally on the basis of dynamic principles. This leads to an enhanced user experience that reflects how your application is distributed worldwide. Your public endpoints will also experience benefits such as high accessibility and responsiveness. For diverse application objectives and spontaneous recovery systems, Traffic Manager offers a variety of traffic-routing mechanisms and endpoint tracking solutions.

The Azure Load Balancer handles the routing of traffic within a certain region. It is used together with Azure Traffic Manager, which directs traffic to a region between virtual machines. When the two are coupled, you get global traffic control with local backup. The Azure Load Balancer service offers a high-performance, low bandwidth Layer 4 load-balancing solution for all UDP and TCP protocols. It can ensure the smooth handling of millions of queries per second while maintaining high availability.

1. **Distinguish between an Azure SQL Database and a SQL managed instance.**

Azure SQL Database is a fully managed PaaS database server that keeps track of most database management tasks like data upgradations, patching, data backups, etc., without the need for human intervention. Azure SQL Database always runs on the most recent stable version of the Microsoft SQL Server database system, and its built-in PaaS capabilities allow you to concentrate on the domain-specific database management and performance activities that play a major role in upscaling your business. It also enables you to develop a highly accessible and rich in performance data storage layer for Azure apps and solutions.

Azure SQL Managed Instance is an efficient, highly scalable database solution by Microsoft. It is fully compatible with the latest SQL Server (Enterprise Edition) database system and offers a native VNet implementation that resolves basic safety issues, as well as a commercial model that is appealing to existing SQL Server users. Existing SQL Server users are enabled to migrate their local workloads to the cloud with minimal changes. Simultaneously, SQL Managed Instance retains all PaaS functionalities, including automated upgrades, automated backups, and high accessibility, thereby lowering administration expenses.

1. **In Azure Synapse Analytics, what does a dedicated SQL pool mean?**

The enterprise data warehousing solutions included in Azure Synapse Analytics are referred to as a dedicated SQL pool. When using Synapse SQL, a dedicated SQL pool constitutes a group of analytic tools that are deployed. Data Warehousing Units are solely responsible for determining the size of a dedicated SQL pool. Once the dedicated SQL pool is established, you can use basic PolyBase T-SQL queries to import massive amounts of data and then leverage the distributed data processor to run high-performance analyses. As data gets merged and analyzed, a dedicated SQL pool becomes the only source your company can rely on for reliable high-speed insights.

1. **What are the steps to link SQL Management Studio to an Azure database?**

i. The Connect to Server dialogue box automatically appears when you launch SQL Server Management Studio for the first time. Alternatively, you can also go to Object Explorer > Connect > Database Engine.

ii. Then, in the Connect to Server window, input the following information-

            Server Type- Here, you need to enter the database engine

            Server Name- Enter the name of the Azure SQL Database or Azure Managed Instance you want to use.

            Authentication- Enter the SQL Server Authentication

            Login- Enter the user ID for the server account.

            Password- Enter the password for the server account.

iii. Once you've filled all the required fields, click on Connect.

If the firewall settings aren't configured, a popup occurs to do so. Provide the Azure account login credentials once you've signed in. After that, click OK.

iv. Select and browse Object Explorer for the hostname, SQL Server version, and username to see whether your Azure Database connection is successful.

1. **Explain Azure Backup. Mention some of its advantages.**

Azure Backup is a cloud-based solution offered by Microsoft that allows you to backup Azure Windows VMs, Azure Managed Disks, Azure File shares, SQL Server databases, SAP HANA databases, Azure PostgreSQL databases, etc.

Some primary benefits of Azure Backup include-

* Azure Backup is a convenient way to back up your on-premises data to the cloud. Without building extensive on-premises backup solutions, you may get short and long-term backup.
* Azure Backup enables separate backups to protect original data from unexpected damage. Backups are retained in a Recovery Services storage with built-in recovery point management.
* Azure Backup delivers high availability with minimal maintenance or monitoring overhead by leveraging the Azure cloud's core ability and infinite capacity.

1. **Discuss the different types of backups available in Azure?**

To maintain the high availability of your data as well as storage, Azure Backup supports three methods of backup-

i. Locally redundant storage (LRS) copies your data three times in a centralized storage unit within the same region. LRS is a cost-effective option for safeguarding data against local hardware breakdowns.

ii. Geo-redundant storage (GRS) is the standard and preferred backup mode that replicates your data to a secondary region far away from the primary location of the source data. GRS is more expensive than LRS, but it provides greater data resilience, even in the event of a local disruption.

iii. Zone-redundant storage (ZRS) backs up data in availability zones, ensuring data retention and durability in the same zone. You can back up your essential activities that involve data retention and must run without disruption since ZRS has zero latency.

1. **What types of storage services does Azure provide?**

The following data options are provided on the Azure Storage platform:

i. Azure Blob Storage- Text and binary data can be stored in Azure Blobs, which is highly scalable object storage. It stores arbitrary data and allows them to be retrieved as block blobs on a huge scale.

ii. Azure File Storage- Managed file sharing for cloud and on-premises operations can be done with Azure Files. Using the standard Server Message Block (SMB) protocol, you can access fully managed cloud file shares from just about anywhere.

iii. Azure Queue Storage- Azure Queues is a messaging repository that allows application modules to communicate reliably. Asynchronous message queueing between software modules is supported.

iv. Azure Table Storage- Azure Tables is a NoSQL database for storing structured data without a schema. It lets you store organized NoSQL data in the cloud and provides a schemaless key/attribute storage.

v. Azure Disk Storage- Block-level storage units for Azure VMs are called Azure Disks. They allow data to be kept and retrieved from an associated virtual hard disk continuously.

1. **How does a Classic Subscription Administrator role differ from a Directory Administrator role?**

When you sign up for an Azure subscription, you are automatically assigned the Classic Subscription Administrator position. You have full access to the Azure subscription and can log in with a Microsoft account or an office/a personal account from the Azure subscription's directory. This job has access to the Azure interface and can manage services there with the help of the Azure site, Azure Resource Manager APIs, etc. You can add others as co-admins if they need to sign in and access services using the same Azure subscription. Both the owner and the co-admins have the same access.

Azure AD offers a set of various different admin roles that are responsible for governing different features. These administrators will be able to use the Azure portal to access a wide range of capabilities. The admin's status dictates the functions they can perform, such as modifying users, assigning administrative duties to others, handling domains, and all other tasks that belong to Azure AD resources in a directory.

1. **What are Network Security Groups in Azure?**

A network security group is a group of security rules (Access Control List of rules) that allow or prohibit incoming and outgoing network traffic for various Azure resources.  Subnets or specific NICs connected to a subnet can be linked with NSGs in such a way that the rules apply to every single VM in that particular subnet. You can define the sender and receiver address, as well as the host and protocol, for each rule.

1. **Define application partitions in Azure Active Directory.**

The application partitions are directory partitions that are copied to domain controllers and belong to the Azure Active Directory system. These domain controllers that are involved in the partitioning procedure keep a copy of the partition. Application partitions have the advantage of being able to be cloned to any individual domain controller, potentially leading to traffic reduction. Although domain directory partitions can transport their entire data to all the domains, application partitions in the domain area can only target one. This minimizes the need for application partitions and thereby increases their availability.

1. **What do you mean by Azure Resource Manager Templates (ARM)?**

Azure Resource Manager (ARM) templates are JSON files mainly used to implement infrastructure as code for your Azure solutions. The template outlines your project's infrastructure and configuration. A declarative syntax is used in the template, which allows you to declare what you want to deliver without the use of any actual programming/coding. The template must include the resources to launch as well as their attributes.

1. **Briefly discuss the Azure Kubernetes Service (AKS).**

Azure Kubernetes Service (AKS) aims at the easy installation of a hosted Kubernetes cluster on Azure. It is solely responsible for managing containerized applications. It's an open-source solution for scaling, automatic deployment, and managing traffic. Azure deals with important functions like health diagnosis and management as a managed Kubernetes service. You solely manage and maintain the agent nodes because the Kubernetes masters are controlled by Azure. As a result, AKS is completely free; you only have to pay for the agent nodes in your clusters.

1. **What is the procedure for adding an administrator to the Azure portal?**

The owner role must be assigned to an administrator before it may be added to the Azure portal. It will only be able to control the subscription's resources that have been assigned to it. These are the steps to add an administrator:

i. Firstly, to use the Azure portal, go to [https://azure.microsoft.com/en-in/features/azure-portal/](https://azure.microsoft.com/en-in/features/azure-portal) and sign in.

ii. Then, select the Hub menu followed by Subscription, and select the subscription that the administrator will need access to.

iii. In the subscription blade, select Access control (IAM) and then click Add.

iv. Select Owner from the drop-down menu under Select a role.

v. In this field, enter the email address of the user who will be designated as the owner.

vi. Select the user by clicking on his or her name.

1. **Define table storage in Azure.**

Huge quantities of structured data are stored in the Windows Azure Table storage service.

It is a NoSQL service that takes calls from both inside and outside the Windows Azure cloud.

Table: A table is a grouping of objects. Tables do not impose a format on entities; therefore, a single table can contain entities with various sets of characteristics. Many tables can be found in a single account.

Entity: Similar to a database entry, an entity is a collection of attributes. A single entity can be 1MB in size.

Properties: A name-value pair is referred to as a property. Each object can have up to 252 properties. In addition, each entity has three system properties: a partition key, a row key, and a timestamp.

**Azure Cloud Engineer Interview Questions**

1. **Why do we use Profilers in Azure?**

Azure Profilers are used to trace and assess the performance of applications that are under production in Azure. This is usually done to ensure that the application is stable and capable of handling high traffic. Profiler automatically collects data at scale without causing any inconvenience to your consumers. In order to address a certain web request, Profiler can assist you in finding the "hot" code route that takes up the longest time duration.

1. **Define Content Delivery Networks in Azure.**

A content delivery network (CDN) is a decentralized network of servers that delivers web information to users quickly and effectively. In order to reduce latency, CDNs keep buffer data on edge nodes in point-of-presence (POP) locations close to target users. Whether you are building or maintaining websites or mobile apps, encrypting and delivering streaming services, system updates, etc., the Azure Content Delivery Network (CDN) can help you minimize the page load time, reduce bandwidth, and improve responsiveness.

1. **What do you mean by Azure HDInsight?**

Azure HDInsight is a Hadoop feature distribution on the cloud. It is responsible for faster and cost-effective processing of vast amounts of data in a configurable framework. You can deploy Hadoop, Spark, Hive, LLAP, Kafka, Storm, R, and other popular open-source frameworks. You can use these frameworks to allow situations that deal with extract, transform, and load (ETL), data warehousing, machine learning, and the Internet of Things (IoT).

1. **What do you mean by Azure File Sync?**

Azure File Sync is a Microsoft service that enables you to centralize your organization's file shares in Azure Files in a way that does not hamper the flexibility, scalability, and consistency of a local file server. Your Windows Server machines become a rapid cache of your Azure file sharing, and to access your data locally, you can use any method supported by Windows Server, including SMB, Network File System (NFS), and File Transfer Protocol Service (FTPS).

1. **Which Azure service allows users to identify email messages that should be regulated from a safety point of view through authentication, encryption, and identity regulations, and why?**

The answer is the Azure Information Protection service.

When the Azure Information Protection client is installed, it interacts with the operations of end-users. Users and admins can access a file tracking website once a file has been protected. This gives them insight into who accesses the files and when these materials are accessed. Users have the opportunity to withdraw access to the file(s) in question if they detect any type of violation.

1. **Explain Azure Virtual Networks (VNet).**

The Azure Virtual Network (VNet) is the most basic component of your Azure private network. With the help of VNet, many types of Azure resources, such as Azure Virtual Machines (VM), can connect anonymously with one other, the internet, and even local networks. VNet works just like any standard network in a locally-owned data center, but in addition to a standard network's features, it offers Azure's operational features like scalability, availability, and exclusion. Interaction of Azure resources with the internet, connection with Azure resources, communication with local resources, screening and directing network traffic, and connection with Azure services are all scenarios that can be executed with a virtual network.

1. **Mention the key segments of Windows Azure.**

* Windows Azure Compute: It provides a code that the hosting environment can control. A key benefit of using Azure Compute is that it is able to calculate through sections. Web Role, Worker Role, and VM Role are the three sorts of roles available.
* Windows Azure Storage (VHD): Queue, Tables, Blobs, and Windows Azure Drives are the four types of storage services provided by Windows Azure Storage (VHD)
* Windows Azure AppFabric: Service bus, Access, Caching, Integration, and Composite are the five services provided by Windows Azure AppFabric.

1. **What is meant by autoscaling in Azure?**

Autoscale is an inbuilt feature of Cloud Services, Virtual Machine Scale Sets, and Websites that enables applications to expand to adapt to changing demand. Scaling out refers to increasing the number of instances in a system. Scaling up in Windows Azure is also possible by using larger role instances rather than additional role instances. You may balance the performance of your Windows Azure application against its operational costs by adding and removing role instances while it is running. The amount of manual work necessary in dynamically scaling an application is reduced with an autoscaling solution.

1. **Password resets are frequently required when users are shut out of their accounts. You opt to use Azure Self-Service to reset your password. What are your options for deploying this service? What types of authentication are accepted?**

First, you need to select the total number of authentication techniques for a password reset, and the number of authentication techniques users can access once you've enabled password reset for all. Ideally, you should keep multiple authentication options even though there's a need for just one. You can either send an email notification to the user's registered email address, a text or security code to the user's phone, or a series of security questions. Security questions can be customized to mandate a specified number of questions to be submitted for users in your Active Directory tenant (3-5). In addition, you must specify the number of correctly answered security questions that must be answered in order for an effective password reset.

**Scenario-Based Azure Interview Questions**

In any job interview, scenario-based questions are one of the most challenging and crucial segments. Here are some of the scenario-based azure interview questions, along with their answers.

1. **In case of a missing server, how will you use Azure to execute code?**

Azure Functions may run code without the need for a server. These services make complicated operations and issues easier to manage. They let clients access other services without having to manually code integrations, which accelerates development.  Azure Application Insights can assist with code performance analysis and monitoring, as well as identifying inefficiencies and problem areas across multiple application modules.

1. **In what way will you manage the Azure connectivity if an application's front-end hosting is done on Azure, but the user requires database hosting on a local server owing to safety reasons?**

There are different ways to deal with this:

i. In case of fewer resources to be connected, a local database can be connected to such an application using the Azure VNET-based point-to-site service.

ii. Site-to-site or express routes are the solutions if more resources need to be connected. Due to the VPN's reliance on public infrastructures, such as the internet, response time may get delayed from site to site. Alternatively, express routes can be used in this scenario because they have a dedicated leased line that overcomes lag constraints.

iii. In case none of the above options are suitable, a Windows Communication Foundation (WCF) service can be built and hosted locally. The CRUD operations in the service would remain specific to the local database.

1. **Suppose ‘Acc1' is the name of your Azure Cosmos DB account. Acc1 has a database associated with it called DB1. The database again consists of a container named Cont1, which has its partition key set to /city. What should you do if you wish to modify Container1's partition key?**

Certain features offered by Azure Cosmos DB, such as Change Feed Processor and Bulk Executor Library, can be used to perform a live data transfer between containers. This enables data redistribution to meet the intended new partition key strategy, as well as subsequent application updates. As a result, you'll be able to update your partition key.

1. **Suppose you're working on building an Azure web app as part of a solution for your business. The web app must allow users to sign in with their Facebook login credentials. What would you suggest, and why?**

Business-to-Consumer (B2C) functionalities offered by the Azure Active Directory (Azure AD) can be linked into applications. Azure AD B2C uses OpenID Connect, which is supported by a wide network of services, including Twitter, Google, and several others. Azure AD B2C safeguards your applications from denial-of-service and password threats and features user interface customizations that make it simple to deploy into your existing applications.

1. **Your company acquires customer purchase data from a variety of retail outlets, and you're working on a system that will analyze the data and forecast future customer purchases for each retailer. Which Azure service do you recommend?**

Azure Machine Learning is a data analytics service offered by Microsoft that provides end-to-end solutions for data science problems. It is a data science method that enables computers to predict future actions, results, and trends on the basis of given data. Computers that implement the machine learning technology can operate without any specific hard-core programming. Azure Machine Learning offers many open-source features that allow users to design, implement, and manage predictive models across a variety of environments.

1. **A company has multiple virtual machines (VMs) that were generated using the standard deployment approach. To improve administration, you should transfer the standard VMs to Azure Resource Groups. What are your alternatives for resolving this?**

When resources were produced under the old deployment model, there was no provision for resource group management, resulting in the management of higher numbers of resources and the difficulty of executing easy resource management in a unified manner. The latest Azure Resource Manager deployment approach, on the other hand, allows you to move resources like virtual machines between resources, even VMs produced using the classic deployment style. To migrate standard VMs to resource groups, you can try using the Azure portal, Azure PowerShell, or the Azure CLI.

1. **You've decided to use Multiple Stage Builds to improve the accessibility and management of the Dockerfile. What are the points to consider for having multiple-stage builds?**

You should consider using Container Modularity, avoiding Application Data, avoiding any extra modules, and adopting an Appropriate Base. Multi-stage builds are a recently updated feature that requires at least Docker 17.05 on both the daemon and the client. Those who are willing to improve Dockerfiles while making them comprehensible and manageable would benefit from multi-stage builds.

1. **You are employed as an architect in a company that keeps track of Azure environments for clients. During peak activity hours, a client reports that various Azure services are inefficient and unavailable. You must assist the client in addressing the problem and find solutions for modifying Azure resources. What are the necessary tools you can use to fix this?**

There are two tools- Azure Monitor and Azure Advisor should be used.

* You should utilize Azure Monitor for time-critical alerts and notifications because it has the fastest monitoring processor. For a more detailed review, these statistics can be forwarded to Azure Log Analytics.
* Azure Advisor examines your resource configuration and performance statistics and provides solutions that enable you to optimize the cost-effectiveness, efficiency, accessibility, and integrity of your Azure services after the data is available. Moreover, the Advisor cost recommendations page can help you streamline and lower your entire Azure expense.

**Azure Data Factory Interview Questions**

1. **What is Integration Runtime? What are the different types of integration runtimes?**

Integration runtime is a computational infrastructure that [Azure Data Factory](https://www.projectpro.io/article/azure-data-factory-etl-pipeline/577) uses to deliver integration features, such as Data Flows and Data Movement, across various network settings. It can employ resources from public networks or hybrid settings (public and private networks).

There are three different types of integration runtimes-

i. Azure Integration Runtime- It is responsible for patching, scaling, and maintaining the underlying infrastructure.

ii. Self-Hosted Integration Runtime-  It is similar to Azure Integration Runtime in terms of code, but it's installed on-premises systems or virtual machines across virtual networks.

iii. Azure SSIS Integration Runtime- It allows users to run SSIS packages in a controlled environment. You can use Azure SSIS Integration Runtime to lift and shift SSIS packages to the data factory.

1. **What are the two levels of security in Windows Azure ADLS Gen2?**

i. Role-based Access Control- It covers built-in Azure roles such as reader, contributor, owner, or customer roles. It specifies who can run the service and also gives users access to built-in data explorer tools.

ii. Access Control List - Azure Data Lake Storage determines which data objects users can read, write, or execute.

1. **What are the two different types of data flow transformations in Azure Data Factory?**

i. Mapping data flow- This is a visually oriented data transformation task that allows users to create graphical data transformation logic without the need for any expert/professional.

ii. Wrangling data flow- This is a Power Query Online-integrated data preparation process that doesn't require any coding.

**Azure Power BI Interview Questions**

The integration of Azure Analytics and [Power BI](https://www.projectpro.io/article/power-bi-interview-questions-and-answers/499) provides scalable insights, helping you to build the data-driven mindset you need to succeed in today's fast-paced, competitive world. Business analysts, IT experts, and data scientists can all work together seamlessly using Azure Power BI, resulting in a uniform version of events that delivers insights throughout their organization.

Check out these Azure interview questions on Azure Power BI-

1. **What do you understand by Power BI-Embedded in Windows Azure?**

Power BI Embedded is a platform-as-a-service (PaaS) analytics solution that allows developers and ISVs (Individual Software Vendors) to seamlessly integrate their dashboards, Visuals, and insights into an application for their clients. One of the best features of Power BI Embedded is that customers require no prior knowledge about Power BI.

1. **What are the two types of analytics solutions available in Power BI-Embedded?**

There are two types of analytics solutions in Power BI-embedded:

i. Embed for your customers- You can use this solution to create a Power BI app with non-interactive authentication. Independent software providers (ISVs) who develop applications for third parties are most likely to choose this approach.

ii. Embed for your organization- You can use this solution to create an app that requires you to login in with your Power BI credentials. Users can only access embedded content on the Power BI service once they have signed in. This solution is intended for large enterprises that are developing an internal app.

1. **What are the different types of Power BI-embedded authentication flows?**

There are different authentication flows for the embed for your customers and embed for your organization embedding solutions.

i. The authentication flow for the embed for your customers solution is non-interactive. To access Power BI, users do not need to sign in to Azure AD. Instead, your web app authenticates against Azure AD and generates the embed token using a reserved Azure AD identity. A service principal or a master user can be used as the reserved identity.

ii. An interactive authentication flow is used in the Embed for your organization solution. Users of the web app log in to Azure AD using their Power BI credentials. They must accept the API permissions that were assigned to the app when it was registered with Azure AD.

**Microsoft SQL Azure Interview Questions**

Azure SQL services are efficient and reliable, making it easier to deploy [SQL](https://www.projectpro.io/article/sql-database-projects-for-data-analysis-to-practice/565) workloads to Azure Virtual Machines. Azure SQL provides a uniform, consistent experience across your entire SQL portfolio and a wide range of deployment solutions from the edge to the cloud.

Take a look at these Microsoft SQL Azure interview questions-

1. **Briefly define SQL Azure firewall.**

SQL Azure Firewall is a cloud-based service that enables you to determine IP addresses and filter traffic to a VNet. It is designed for high availability and unlimited cloud scalability, as well as protecting inbound and outbound traffic to the VNet.

SQL Azure firewall is a Microsoft Azure Platform cloud computing database service that allows you to host and access SQL databases.

1. **What is the best way to back up SQL Azure data in Windows Azure?**

To deal with hardware failures, SQL Azure stores three copies of a database. You can use the COPY command to generate a copy of a SQL Azure database to deal with user-level problems. You can also use BCP, SSIS, and other tools to backup SQL Azure data to a local SQL server, but point-in-time recovery is currently unavailable.

1. **How can you make a SQL Azure Database perform better?**

The execution plan and statistics of a query can be used to tune a SQL Azure database. To monitor and manage SQL Azure databases, you can use SQL Azure's Dynamic Management views. Network latency and bandwidth also have an impact on SQL Azure performance. In this case, the best performance comes from code that is close to the application topology.

**Azure Interview Questions on Service Bus**

1. **Give a brief overview of Azure Service Bus Queue.**

Azure Service Bus Queues are storage locations for messages. When you have numerous apps or pieces of a distributed application that need to communicate with each other, service bus queues prove to be very helpful. Multiple messages are received and subsequently sent from the queue, which is similar to a distribution center.

1. **How do you move a namespace from one Azure subscription to another?**

Using the Azure portal or PowerShell instructions, you can migrate a namespace from one Azure subscription to another. The namespace must already be active in order to perform the operation. On both the source and destination subscriptions, the user running the commands must be an administrator.

1. **What is the storage location for data in Azure Service Bus?**

For its backend storage layer, the Azure Service Bus standard tier uses Azure SQL Database. The premium tier of Azure Service Bus saves metadata and data in the locations you choose. When you configure geo-disaster recovery for an Azure Service Bus premium namespace, the metadata is copied to the secondary region you choose.

**Azure Migration Interview Questions**

Azure Migrate is a migration solution that assists businesses in determining the benefits of shifting their on-premises infrastructure, data, and apps to the public cloud.

1. **What migration options are available in Azure Migrate: Server Migration?**

Agentless migration and agent-based migration are two solutions for migrating your source servers and virtual machines to Azure using the Azure Migrate: Server Migration tool.

i. Agentless migrations- These migrations do not involve the installation of any software (agents) on the source VMs/servers. The agentless option enables replication by integrating with the virtualization provider.

ii. Agent-based migrations- These migrations involve the installation of Azure Migrate software (agents) on the source VMs/machines to be migrated. The replication ability of the agent-based solution is not dependent on the virtualization platform.

1. **Is it possible to migrate to several subscriptions using the same Azure Migrate project?**

Yes, an Azure Migrate project can migrate to multiple subscriptions (same Azure tenant) in the same destination region. When allowing replication for a machine or a group of machines, you can choose the target subscription. For agentless VMware migrations, the target region is locked after the first replication, and for agent-based and agentless Hyper-V migrations, the target region is locked during the replication appliance and Hyper-V provider installation, respectively.

1. **What effect does the churn rate have on agentless replication?**

The churn pattern is more relevant than the churn rate since agentless replication takes in data. When a file is written multiple times, the rate has little effect. In the next cycle, however, a pattern in which any other sector is written produces a lot of churns. You can let the data fold as much as necessary before scheduling the next cycle if you want to transfer the least volume of data possible.

1. **What do you mean by Azure Route Server in Windows Azure?**

Azure Route Server allows you to share routing data easily via the Border Gateway Protocol (BGP) routing protocol between any NVA that supports BGP and the Azure Software Defined Network (SDN) on the Azure Virtual Network (VNET) without manually setting or maintaining route tables. Azure Route Server is a completely managed service with high availability. Dynamic routing between the network virtual appliance (NVA) and virtual network is easier with Azure Route Server.

1. **What is the purpose of using virtual hub routing in Windows Azure?**

A router oversees all routing between gateways using the Border Gateway Protocol and hence provides routing capabilities to a virtual hub. Virtual hubs include several gateways, such as a Site-to-Site VPN gateway, an ExpressRoute gateway, a point-to-site gateway, and an Azure Firewall. This router can also enable transit connections between virtual networks connected to a virtual hub, with an average speed of up to 50 Gbps. These routing options are accessible to customers with Standard Virtual WAN.

1. **Briefly explain the concept of network security groups (NSGs).**

A network security group (NSG) is a collection of access control lists (ACLs) that allow or deny network traffic to subnets, network interface cards (NICs), or both. NSGs can be associated with subnets or individual NICs belonging to a subnet. When an NSG is attached to a subnet, the ACL rules apply to all VMs on that subnet. Furthermore, traffic to a NIC can be managed by directly connecting an NSG to it.

**Wipro Azure Interview Questions | Azure**

1. **How do you connect Azure Databricks to an Azure storage account?**
2. Create a Storage Account and a private container in which you will upload a blob file.
3. Once you upload the blob file, select Generate SAS from the context menu.

Copy the blob SAS Token and save it for future use.

1. Make an Azure Databricks account. Now, click on Create and pick the subscription (if you have any) and the resource group name (if you have any). Select the location where you want to build these data bricks and then the pricing tier.
2. Click Review + Create, then wait for the validation to complete.

Once your validation is done, click Create.

1. Once your deployment is complete, click the Go to resource option.
2. Click on Launch Workspace, and it will redirect you to the Azure Databricks page.
3. Now, in the left pane, select Clusters and then Create Cluster, giving the cluster a name and selecting Standard as the Cluster-Mode.
4. Now you must start your cluster and ensure that it is operational.

In the left pane, right-click on workspace -> create -> notebook.

1. Now assign a name for the notebook, choose Scala as the default language, and choose the previous cluster you built before clicking on Create.
2. To connect your storage account, place the following code into the notebook.

*val containerName = ""*

*val storageAccountName = ""*

*val sas = ""*

*val config = "fs.azure.sas." + containerName+ "." + storageAccountName + ".blob.core.windows.net"*

*dbutils.fs.mount(*

*source = "wasbs://"+containerName+"@"+storageAccountName+".blob.core.windows.net/employe\_data.csv",*

*extraConfigs = Map(config -> sas))*

*val mydf = spark.read.option("header","true").option("inferSchema", "true").csv("/mnt/myfile")*

*display(mydf)*

1. You've successfully connected your Azure DataBricks to your storage account if you can retrieve the relevant data.

71. **State the primary difference between the repository and the powerhouse server.**

The key difference is that repository servers manage the accuracy, consistency, and uniformity of the database repository, whereas the powerhouse server manages the integration of multiple elements of the database repository.

72.**What do you mean by role instance in Windows Azure?**

A role instance is a virtual instance that runs the application code as well as the role configuration. Multiple instances of a role can be specified in the service configuration file.

**HCL Azure Interview Questions**

73. **What does the cmdlet command do in Windows Azure?**

You can use the cmdlet command in the Microsoft PowerShell environment. Windows PowerShell uses this cmdlet to automate command-line scripts.

**74. What do you understand by HDInsight in Windows Azure?**

Azure HDInsight is a customizable, enterprise-grade solution for open-source analytics that allows you to run popular open-source frameworks like Apache Hadoop, [Spark](https://www.projectpro.io/article/scala-interview-questions-and-answers-for-spark-developers/302), Hive, Kafka, and more. You can also process large volumes of data quickly and easily while making use of the vast open-source project ecosystem and Azure's global scale. HDInsight enables you to move your large data workloads and processing to the cloud with ease.

**75. Briefly define enterprise warehousing in Windows Azure.**

Enterprise warehousing is a feature in which an organization creates data and accesses it from a single location around the world. With the use of periodic handling, warehousing allows serving to be associated to a single point.

**Accenture Azure Interview Questions**

Here are a few Azure interview questions from various cloud computing job interviews in Accenture-

**76. Define Cspack and Csrun in Microsoft Azure.**

Cspack is a command-line tool that creates a service package file and aids in preparing an application for deployment to compute emulator or on Microsoft Azure.

Csrun is a command-line tool for deploying and managing bundled applications on the Windows Azure compute emulator.

**77. How do you define Windows Azure Diagnostics?**

The Azure Diagnostics VM extension allows you to collect tracking data from your Windows VM, such as performance counters and event logs. You can specify what data you want to gather and where do you want to send it, such as an Azure Storage account or an Azure Event Hub. You can also leverage this information to create charts and metric alerts in the Windows Azure platform.

**78. How do you handle session states in Windows Azure?**

There are three ways of managing session states in Windows Azure.

i. In-Proc, which saves session state in the memory of each web server.

ii. State Server, which maintains the state of a session in another process (ASP.NET state service).

iii. SQL Server, that keeps session state in a database.

**1. Where can I find Azure projects/project ideas to enhance my skills?**

Many open-source Azure projects, as well as project ideas, are available on various sites, including Kaggle, GitHub, ProjectPro, and so on. You can go to any of these websites and choose a project or project idea that best suits your needs.

**2. What makes Azure better than AWS?**

Microsoft Azure is better than Amazon Web Services in various ways, including lower latency, enhanced security, cost efficiency, increased hybrid flexibility, continuous innovation, and a worldwide reach. Users can select the language they wish to use and the framework in which they want to deploy their work in Azure.

**3. What do you understand about cloud computing?**

Anything that includes offering hosted services via the internet is referred to as cloud computing. Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) are the three basic forms of cloud computing services.

**4. Can you tell something about Azure Cloud Service?**

Azure Cloud Services is a platform-as-a-service (PaaS) technology that aims to provide scalable, stable, and cost-effective apps. Azure Cloud Services, like App Service, is hosted on virtual machines (VMs).

**5. What are the various models available for cloud deployment?**

The various models available for cloud deployment are public, private, hybrid, and community clouds. There are other distributed clouds that aren't as common, such as multi-clouds, poly clouds, and other models.

**6. Define role instance in Azure.**

A virtual instance that runs both the application code and the role configuration is known as a role instance in Azure.

**7. How many cloud service roles are provided by Azure?**

There are two types of Azure Cloud Services roles.

1. Web role: Uses IIS to automatically deploy and host your program.
2. Worker role: This role does not require IIS and instead runs your app on its own.

**8. Why is Azure Diagnostics API needed?**

The Azure Diagnostics API is needed as it allows you to collect diagnostic data from Azure-based apps such as performance monitoring, system event logs, and so on. The diagnostics information can be applied to create visual chart representations for enhanced monitoring and performance metric reports.

## ****Section 1: General Cloud Questions****

### 1. What are the different types of services offered in the cloud?

|  |  |  |
| --- | --- | --- |
| **IAAS VS PAAS VS SAAS** | | |
| **IAAS** | **PAAS** | **SAAS** |
| In infrastructure as a service, you get the raw hardware from your cloud provider as a service i.e you get a server which you can configure with your own will. | Platform as a Service, gives you a platform to publish without giving the access to the underlying software or OS. | You get software as a service in Azure, i.e no infrastructure, no platform, simple software that you can use without purchasing it. |
| For Example: Azure VM, Amazon EC2. | For example: Web Apps, Mobile Apps in Azure. | For example: when you launch a VM on Azure, you are not buying the OS, you are basically renting it for the time you will be running that instance. |

### 2. What is cloud computing?

**Explanation:** It is the use of servers on the internet to “store”, “manage” and “process” data. The difference is, instead of using your own servers, you are using someone else’s servers to do your task, paying them for the amount of time you use it for.

### 3. What are the different cloud deployment models?

**Explanation:** Following are the three cloud deployment models:

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**Public Cloud:** The infrastructure is owned by your cloud provider and the server that you are using could be a multi-tenant system.

**Private Cloud:**The infrastructure is owned by you or your cloud provider gives you that service exclusively. For eg: Hosting your website on your servers, or hosting your website with the cloud provider on a dedicated server.

**Hybrid Cloud:**When you use both Public Cloud, Private Cloud together, it is called Hybrid Cloud. For Example: Using your in-house servers for confidential data, and the public cloud for hosting your company’s public facing website. This type of setup would be a hybrid cloud.

### 4. I have some private servers on my premises, also I have distributed some of my workload on the public cloud, what is this architecture called?

1. Virtual Private Network
2. Private Cloud
3. Virtual Private Cloud
4. Hybrid Cloud

**Answer: D. Hybrid Cloud**  
  
**Explanation:**This type of architecture would be a hybrid cloud. Why? Because we are using both, the public cloud, and on premises servers i.e the private cloud. To make this hybrid architecture easy to use, wouldn’t it be better if your private and public cloud were all on the same network (virtually). This is established by including your public cloud servers in a virtual private cloud, and connecting virtual cloud with your on premise servers using a VPN (Virtual Private Network).

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## ****Section 2: Basic Azure Questions and Answers for Freshers****

### 5. What is Microsoft Azure and why is it used?

**Explanation:**As discussed above, the companies which provide the cloud service are called the Cloud Providers. There are a lot of cloud providers out there, out of them one is Microsoft Azure. It is used for accessing Microsoft’s infrastructure for cloud.

### 6. Which service in Azure is used to manage resources in Azure?

1. Application Insights
2. Azure Resource Manager
3. Azure Portal
4. Log Analytics

**Answer: B Azure Resource Manager**

**Explanation:**Azure Resource Manager is used to “manage” infrastructures which involve a no. of azure services. It can be used to deploy, manage and delete all the resources together using a simple JSON script.

### 7. Which of the following web applications can be deployed with Azure?

1. ASP.NET
2. PHP
3. WCF
4. All of the mentioned

**Answer: D All of the mentioned**  
  
**Explanation:**Microsoft also has released SDKs for both Java and Ruby to allow applications written in those languages to place calls to the Azure Service Platform API to the AppFabric Service.

## ****Section 3: Azure Interview Questions and Answers for Experienced Professional****

### 8. What are Roles and why do we use them?

**Explanation:**Roles are nothing servers in layman terms. These servers are managed, load balanced, Platform as a Service virtual machines that work together to achieve a common goal.

There are 3 types of roles in Microsoft Azure:

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Next

* Web Role
* Worker Role
* VM  Role

Let’s discuss each of these roles in detail:

* **Web Role –** A web role is basically used to deploy a website, using languages supported by the IIS platform like, PHP, .NET etc. It is configured and customized to run web applications.
* **Worker Role –**A worker role is more like an help to the Web role, it used to execute background processes unlike the Web Role which is used to deploy the website.
* **VM Role –**The VM role is used by a user to schedule tasks and other windows services. This role can be used to customize the machines on which the web and worker role is running.

### 9. A \_\_\_\_\_\_\_\_\_ role is a virtual machine instance running Microsoft IIS Web server that can accept and respond to HTTP or HTTPS requests.

1. Web
2. Server
3. Worker
4. Client

**Answer: A. Web**

**Explanation:**The answer should be Web Roles, there are no roles such as Server or Client roles. Also, Worker roles can only communicate with Azure Storage or through direct connections to clients.

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### 10. Is it possible to create a Virtual Machine using Azure Resource Manager in a Virtual Network that was created using classic deployment?

**Explanation:**This is not supported. You cannot use Azure Resource Manager to deploy a virtual machine into a virtual network that was created using classic deployment.

### 11. What are virtual machine scale sets in Azure?

**Explanation:**Virtual machine scale sets are Azure compute resource that you can use to deploy and manage a set of identical VMs. With all the VMs configured the same, scale sets are designed to support true autoscale, and no pre-provisioning of VMs is required. So it’s easier to build large-scale services that target big compute, big data, and containerized workloads.

### 12. Are data disks supported within scale sets?

**Explanation:**Yes. A scale set can define an attached data disk configuration that applies to all VMs in the set. Other options for storing data include:

* Azure files (SMB shared drives)
* OS drive
* Temp drive (local, not backed by Azure Storage)
* Azure data service (for example, Azure tables, Azure blobs)
* External data service (for example, remote database)

### ****13. What is an Availability Set?****

**Explanation:** An availability set is a logical grouping of VMs that allows Azure to understand how your application is built to provide redundancy and availability. It is recommended that two or more VMs are created within an availability set to provide for a highly available application and to meet the 99.95% Azure SLA. When a single VM is used with Azure Premium Storage, the Azure SLA applies for unplanned maintenance events.

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### ****14. What are Fault Domains?****

**Explanation:** A fault domain is a logical group of underlying hardware that share a common power source and network switch, similar to a rack within an on-premise data-centers. As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these fault domains. This approach limits the impact of potential physical hardware failures, network outages, or power interruptions.

### ****15. What are Update Domains?****

**Explanation:** An update domain is a logical group of underlying hardware that can undergo maintenance or can be rebooted at the same time. As you create VMs within an availability set, the Azure platform automatically distributes your VMs across these update domains. This approach ensures that at least one instance of your application always remains running as the Azure platform undergoes periodic maintenance. The order of update domains being rebooted may not proceed sequentially during planned maintenance, but only one update domain is rebooted at a time.

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### ****16. What are Network Security Groups?****

**Explanation:**A network security group (NSG) contains a list of Access Control List (ACL) rules that allow or deny network traffic to subnets, NICs, or both. NSGs can be associated with either subnets or individual NICs connected to a subnet. When an NSG is associated with a subnet, the ACL rules apply to all the VMs in that subnet. In addition, traffic to an individual NIC can be restricted by associating an NSG directly to a NIC.

### 17. Do scale sets work with Azure availability sets?

**Explanation:**Yes. A scale set is an implicit availability set with 5 fault domains and 5 update domains. Scale sets of more than 100 VMs span multiple *placement groups*, which are equivalent to multiple availability sets. An availability set of VMs can exist in the same virtual network as a scale set of VMs. A common configuration is to put control node VMs (which often require unique configuration) in an availability set and put data nodes in the scale set.

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### 18. What is a break-fix issue?

**Explanation:**Technical problems are called break-fix issue, it is an industry term which refers to “work involved in supporting a technology when it fails in the normal course of its function, which requires intervention by a support organization to be restored to working order”.

### 19. Why is Azure Active Directory used?

**Explanation:**Azure Active Directory is an Identity and Access Management system. It is used to grant access to your employees to specific products and services in your network. For example: Salesforce.com, twitter etc. Azure AD has some in-built support for applications in its gallery which can be added directly.

### 20. What happens when you exhaust the maximum failed attempts for authenticating yourself via Azure AD?

**Explanation:**We use a more sophisticated strategy to lock accounts. This is based on the IP address of the request and the passwords entered. The duration of the lockout also increases based on the likelihood that it is an attack.

### 21. Where can I find a list of applications that are pre-integrated with Azure AD and their capabilities?

**Explanation:**Azure AD has around 2600 pre-integrated applications. All pre-integrated applications support single sign-on (SSO). SSO let you use your organizational credentials to access your apps. Some of the applications also support automated provisioning and de-provisioning.

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### 22. How can I use applications with Azure AD that I’m using on-premises?

**Explanation:**Azure AD gives you an easy and secure way to connect to the web applications you choose. You can access these applications in the same way you access your SaaS apps in Azure AD, no need for a VPN to change your network infrastructure.

### 23. What is Azure Service Fabric?

**Explanation:**Azure Service Fabric is a distributed systems platform that makes it easy to package, deploy, and manage scalable and reliable micro-services. Service Fabric also addresses the significant challenges in developing and managing cloud applications. Developers and administrators can avoid complex infrastructure problems and focus on implementing mission-critical, demanding workloads that are scalable, reliable, and manageable. Service Fabric represents the next-generation middleware platform for building and managing these enterprise-class, tier-1, cloud-scale applications.

### 24. What is a VNet?

**Explanation:**VNet is a representation of your own network in the cloud. It logically isolates your instances launched in the cloud, from the rest of your resources.

### 25. What are the differences between Subscription Administrator and Directory Administrator?

**Explanation:**By default, one is assigned the Subscription Administrator role when he/she signs up for Azure. A subscription admin can use either a Microsoft account or a work or school account from the directory that the Azure subscription is associated with. This role is authorized to manage services in the Azure portal. If others need to sign in and access services by using the same subscription, you can add them as co-admins.

Azure AD has a different set of admin roles to manage the directory and identity-related features. These admins will have access to various features in the Azure portal or the Azure classic portal. The admin’s role determines what they can do, like create or edit users, assign administrative roles to others, reset user passwords, manage user licenses, or manage domains.

### 26. Are there any scale limitations for customers using managed disks?

**Explanation:** Managed Disks eliminates the limits associated with storage accounts. However, the number of managed disks per subscription is limited to 2000 by default.

### 27. What is the difference between Service Bus Queues and Storage Queues?

**Explanation:**The Azure Storage Queue is simple and the developer experience is quite good. It uses the local Azure Storage Emulator and debugging is made quite easy. The tooling for Azure Storage Queues allows you to easily peek at the top 32 messages and if the messages are in XML or Json, you’re able to visualize their contents directly from Visual Studio Furthermore, these queues can be purged of their contents, which is especially useful during development and QA efforts.

The Azure Service Bus Queues are evolved and surrounded by many useful mechanisms that make it enterprise worthy! They are built into the Service Bus and are able to forward messages to other Queues and Topics. They have a built-in dead-letter queue and messages have a time to live that you control, hence messages don’t automatically disappear after 7 days.

Furthermore, Azure Service Bus Queues have the ability of deleting themselves after a configurable amount of idle time. This feature is very practical when you create Queues for each user, because if a user hasn’t interacted with a Queue for the past month, it automatically gets clean it up. Its also a great way to drive costs down. You shouldn’t have to pay for storage that you don’t need. These Queues are limited to a maximum of 80gb. Once you’ve reached this limit your application will start receiving exceptions.

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### 28. What is Azure Redis Cache?

**Redis** is an open source (BSD licensed), in-memory data structure store, used as a database, **cache** and message broker. Azure Redis Cache is based on the popular open-source Redis cache. It gives you access to a secure, dedicated Redis cache, managed by Microsoft, and accessible from any application within Azure.  It supports data structures such as strings, hashes, lists, sets, sorted sets with range queries, bitmaps, hyperloglogs and geospatial indexes with radius queries.

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### 29. Why doesn’t Azure Redis Cache have an MSDN class library reference like some of the other Azure services?

**Explanation:**Microsoft Azure Redis Cache is based on the popular open source Redis Cache and can be accessed by a wide variety of Redis clients for many programming languages. Each client has its own API that makes calls to the Redis cache instance using Redis commands.

Because each client is different, there is not one centralized class reference on MSDN, and each client maintains its own reference documentation. In addition to the reference documentation, there are several tutorials showing how to get started with Azure Redis Cache using different languages and cache clients. To access these tutorials, see How to use Azure Redis Cache and click the desired language from the language switcher at the top of the article.

### 30. What are Redis databases?

**Explanation:**Redis Databases are just a logical separation of data within the same Redis instance. The cache memory is shared between all the databases and actual memory consumption of a given database depends on the keys/values stored in that database. For example, a C6 cache has 53 GB of memory. You can choose to put all 53 GB into one database or you can split it up between multiple databases.

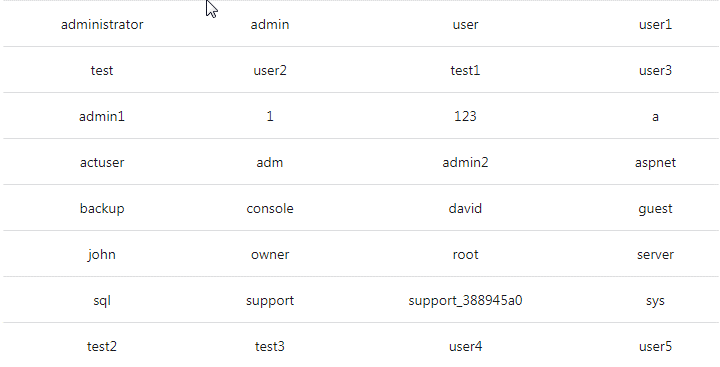
### ****31. Is it possible to add an existing VM to an availability set?****

**Explanation:** No. If you want your VM to be part of an availability set, you need to create the VM within the set. There currently no way to add a VM to an availability set after it has been created.

### ****32. What are the username requirements when creating a VM?****

**Explanation:** Usernames can be a maximum of 20 characters in length and cannot end in a period (“.”).

The following usernames are not allowed:

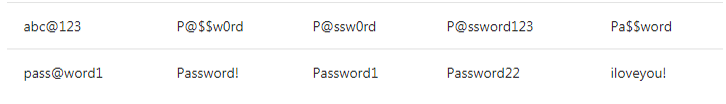
****

### ****33. What are the password requirements when creating a VM?****

**Explanation:** Passwords must be 12 – 123 characters in length and meet 3 out of the following 4 complexity requirements:

* Have lower characters
* Have upper characters
* Have a digit
* Have a special character (Regex match [W\_])

The following passwords are not allowed:

****

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### ****34. How much storage can I use with a virtual machine?****

**Explanation:**Each data disk can be up to 1 TB. The number of data disks which you can use depends on the size of the virtual machine.

Azure Managed Disks are the new and recommended disk storage offerings for use with Azure Virtual Machines for persistent storage of data. You can use multiple Managed Disks with each Virtual Machine. Managed Disks offer two types of durable storage options: Premium and Standard Managed Disks.

Azure storage accounts can also provide storage for the operating system disk and any data disks. Each disk is a .vhd file stored as a page blob.

### ****35. How can one create a Virtual Machine in Powershell?****

# Define a credential object

$cred = Get-Credential

# Create a virtual machine configuration

$vmConfig = New-AzureRmVMConfig -VMName myVM -VMSize Standard\_DS2 |

` Set-AzureRmVMOperatingSystem -Windows -ComputerName myVM -Credential $cred |

` Set-AzureRmVMSourceImage -PublisherName MicrosoftWindowsServer -Offer WindowsServer `

-Skus 2016-Datacenter -Version latest | Add-AzureRmVMNetworkInterface -Id $nic.Id

### ****36. How to create a Network Security Group and a Network Security Group Rule?****

# Create an inbound network security group rule for port 3389

$nsgRuleRDP = New-AzureRmNetworkSecurityRuleConfig -Name myNetworkSecurityGroupRuleRDP -Protocol Tcp `

-Direction Inbound -Priority 1000 -SourceAddressPrefix \* -SourcePortRange \* -DestinationAddressPrefix \* `

-DestinationPortRange 3389 -Access Allow

# Create an inbound network security group rule for port 80

$nsgRuleWeb = New-AzureRmNetworkSecurityRuleConfig -Name myNetworkSecurityGroupRuleWWW -Protocol Tcp `

-Direction Inbound -Priority 1001 -SourceAddressPrefix \* -SourcePortRange \* -DestinationAddressPrefix \* `

-DestinationPortRange 80 -Access Allow

# Create a network security group

$nsg = New-AzureRmNetworkSecurityGroup -ResourceGroupName myResourceGroup -Location EastUS `

-Name myNetworkSecurityGroup -SecurityRules $nsgRuleRDP,$nsgRuleWeb

### ****37. How to create a new storage account and container using Power Shell?****

$storageName = "st" + (Get-Random)

New-AzureRmStorageAccount -ResourceGroupName "myResourceGroup" -AccountName $storageName -Location "West US" -SkuName "Standard\_LRS" -Kind Storage

$accountKey = (Get-AzureRmStorageAccountKey -ResourceGroupName myResourceGroup -Name $storageName).Value[0]

$context = New-AzureStorageContext -StorageAccountName $storageName -StorageAccountKey $accountKey

New-AzureStorageContainer -Name "templates" -Context $context -Permission Container

### ****38. How can one create a VM in Azure CLI?****

az vm create ` --resource-group myResourceGroup ` --name myVM --image win2016datacenter ` --admin-username azureuser ` --admin-password myPassword12

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### ****39. What are the various power states of a VM?****

|  |  |
| --- | --- |
| **Power State** | **Description** |
| Starting | Indicates the virtual machine is being started |
| Running | Indicates that the virtual machine is running |
| Stopping | Indicates that the virtual machine is being stopped |
| Stopped | Indicates that the virtual machine is stopped |
| Deallocating | Indicates that the virtual machine is being deallocated |
| Deallocated | Indicates that the virtual machine is completely removed from the hypervisor but still available in the control plane. Virtual Machines in the deallocated state do not incur compute charges. |

### ****40. How can you retrieve the state of a particular VM?****

Get-AzureRmVM `

-ResourceGroupName myResourceGroup `

-Name myVM `

-Status | Select @{n="Status"; e={$\_.Statuses[1].Code}}

### ****41. How can you stop a VM using Power Shell?****

Stop-AzureRmVM -ResourceGroupName myResourceGroupVM -Name "myVM" -Force

### 42. Why was my client disconnected from the cache?

**Explanation:**The following are some common reason for a cache disconnect.

* Client-side causes
  + The client application was redeployed.
  + The client application performed a scaling operation.
  + In the case of Cloud Services or Web Apps, this may be due to auto-scaling.
  + The networking layer on the client side changed.
  + Transient errors occurred in the client or in the network nodes between the client and the server.
  + The bandwidth threshold limits were reached.
  + CPU bound operations took too long to complete.
* Server-side causes
  + On the standard cache offering, the Azure Redis Cache service initiated a fail-over from the primary node to the secondary node.
  + Azure was patching the instance where the cache was deployed
  + This can be for Redis server updates or general VM maintenance.

### 43. What is Azure Search?

**Explanation:**Azure Search is a cloud search-as-a-service solution that delegates server and infrastructure management to Microsoft, leaving you with a ready-to-use service that you can populate with your data and then use to add search to your web or mobile application. Azure Search allows you to easily add a robust search experience to your applications using a simple REST API or .NET SDK without managing search infrastructure or becoming an expert in search.

### 44. My web app still uses an old Docker container image after I’ve updated the image on Docker Hub. Does Azure support continuous integration/deployment of custom containers?

**Explanation:**Yes, it does. For private registries, you can update the container by stopping and then re-starting your web app. Alternatively, you can also change or add a dummy application setting to force an update of your container.

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### 45. What are the expected values for the Startup File section when I configure the runtime stack?

**Explanation:**For Node.Js, you specify the PM2 configuration file or your script file. For .NET Core, specify your compiled DLL name. For Ruby, you can specify the Ruby script that you want to initialize your app with.

### 46. How are Azure Marketplace subscriptions priced?

**Explanation:**

Pricing will vary based on product types. ISV software charges and Azure infrastructure costs are charged separately through your Azure subscription. Pricing models include:

**BYOL Model:** Bring-your-own-license. You obtain outside of the Azure Marketplace, the right to access or use the offering and are not charged Azure Marketplace fees for use of the offering in the Azure Marketplace.

**Free:**Free SKU. Customers are not charged Azure Marketplace fees for use of the offering.

**Free Software Trial:** Full-featured version of the offer that is promotionally free for a limited period of time. You will not be charged Azure Marketplace fees for use of the offering during a trial period. Upon expiration of the trial period, customers will automatically be charged based on standard rates for use of the offering.

**Usage-Based:**You are charged or billed based on the extent of your use of the offering. For Virtual Machines Images, you are charged an hourly Azure Marketplace fee. For Data Services, Developer services, and APIs, you are charged per unit of measurement as defined by the offering.

**Monthly Fee:**You are charged or billed a fixed monthly fee for a subscription to the offering (from the date of subscription start for that particular plan). The monthly fee is not prorated for mid-month cancellations or unused services.

### 47. What is the difference between “price,” “software price,” and “total price” in the cost structure for Virtual Machine offers in the Azure Marketplace?

**Explanation:**“Price” refers to the cost of the Azure Virtual Machine to run the software. “Software price” refers to the cost of the publisher software running on an Azure Virtual Machine. “Total price” refers to the combined total cost of the Azure Virtual Machine and the publisher software running on an Azure Virtual Machine.

### 48. What are stateful and stateless microservices for Service Fabric?

**Explanation:**Service Fabric enables you to build applications that consist of microservices. Stateless microservices (such as protocol gateways and web proxies) do not maintain a mutable state outside a request and its response from the service. Azure Cloud Services worker roles are an example of a stateless service. Stateful microservices (such as user accounts, databases, devices, shopping carts, and queues) maintain a mutable, authoritative state beyond the request and its response. Today’s Internet-scale applications consist of a combination of stateless and stateful microservices.

### 49. What is the meaning of application partitions?

**Explanation:**The application partitions are a part of the Active Directory system and having said so, they are directory partitions which are replicated to domain controllers. Usually, domain controllers that are included in the process of directory partitions hold a replica of that directory partition. The attributes and values of application partitions is that you can replicated them to any specific domain controller in a forest, meaning that it could lessen replication traffic. While the domain directory partitions transfer all their data to all of the domains, the application partitions can focus on only one in the domain area. This makes application partitions redundant and more available.

### ****50. What are special Azure Regions?****

**Explanation:**Azure has some special regions that you may wish to use when buildingyour applications for compliance or legal purposes. These special regions include:

* **US Gov Virginia** and **US Gov Iowa**
  + A physical and logical network-isolated instance of Azure for US government agencies and partners, operated by screened US persons. Includes additional compliance certifications such as [FedRAMP](https://www.microsoft.com/en-us/TrustCenter/Compliance/FedRAMP) and [DISA](https://www.microsoft.com/en-us/TrustCenter/Compliance/DISA).
* **China East** and **China North**
  + These regions are available through a unique partnership between Microsoft and 21Vianet, whereby Microsoft does not directly maintain the datacenters.
* **Germany Central** and **Germany Northeast**
  + These regions are available via a data trustee model whereby customer data remains in Germany under control of T-Systems, a Deutsche Telekom company, acting as the German data trustee.

#### **1. What is Infrastructure as a Service?**

Infrastructure as a Service, or IaaS, is a type of cloud computing that delivers computer infrastructure—typically a platform virtualization environment—as a service. IaaS is designed to provide a scalable, pay-as-you-go service that can be quickly provisioned and released with minimal management effort or service provider interaction.

#### **2. Can you give me some examples of IaaS providers?**

Some popular IaaS providers include Amazon Web Services, Google Cloud Platform, and Microsoft Azure.

#### **3. How do you think IaaS helps organizations in their digital transformation efforts?**

IaaS provides organizations with the ability to quickly provision and scale IT resources as needed, which can be a major help in digital transformation efforts. By being able to quickly adapt to changing needs, organizations can avoid many of the pitfalls that can occur when trying to implement new digital technologies.

#### **4. How does an organization benefit from using IaaS instead of owning its own physical infrastructure?**

IaaS provides organizations with a number of benefits over owning and maintaining their own physical infrastructure. Perhaps most importantly, it can save a significant amount of money in terms of both upfront costs and ongoing maintenance and operations expenses. Additionally, IaaS can provide greater flexibility and scalability, as well as improved disaster recovery capabilities.

#### **5. Is it possible to create a hybrid cloud environment with IaaS? If yes, then how?**

Yes, it is possible to create a hybrid cloud environment with IaaS. This can be done by connecting two or more IaaS providers together, or by connecting an IaaS provider to an on-premises infrastructure. This allows organizations to use the best features of each environment to create a custom solution that meets their specific needs.

#### **6. Why are many organizations moving away from private clouds and adopting public cloud services like IaaS?**

There are many reasons why organizations are moving away from private clouds and adopting public cloud services like IaaS. One of the main reasons is that public cloud services are often more cost-effective than private clouds. Additionally, public cloud services are usually more scalable and offer more flexibility than private clouds.

#### **7. In what situations can IaaS provide cost savings over managing your own data center?**

IaaS can provide cost savings over managing your own data center in a number of situations. One common scenario is when an organization does not have the internal resources required to manage their data center effectively. In this case, IaaS can provide the organization with access to the expertise and resources required to manage their data center effectively, without incurring the cost of hiring and training internal staff.

Another common scenario is when an organization needs to scale their data center quickly to meet increased demand. In this case, IaaS can provide the organization with the ability to quickly provision additional resources, without incurring the cost of purchasing and configuring new hardware.

#### **8. Do all IaaS offerings include network connectivity such as VPNs etc.?**

No, not all IaaS offerings include network connectivity. Some IaaS providers may offer network connectivity as an add-on service, while others may not offer it at all. It is important to check with your IaaS provider to see what services are included in your package.

#### **9. Which AWS service provides access to virtual machines that run on the same hardware used by Amazon’s EC2 instances?**

The AWS service that provides access to virtual machines that run on the same hardware used by Amazon’s EC2 instances is called Amazon Elastic Compute Cloud (EC2).

#### **10. What is the biggest difference between IaaS and PaaS?**

The biggest difference between IaaS and PaaS is that IaaS provides you with the infrastructure to run your applications, while PaaS provides you with the platform to develop and run your applications. With IaaS, you are responsible for managing and configuring the underlying infrastructure, while with PaaS, the provider takes care of that for you.

#### **11. What are some common use cases for IaaS?**

IaaS can be used for a variety of purposes, but some of the most common use cases include hosting websites and web applications, storing data, and running business applications. IaaS can also be used for disaster recovery, as it provides a way to quickly provision new resources in the event of an outage.

#### **12. When would you choose IaaS over SaaS or PaaS?**

IaaS is usually chosen when an organization wants more control over its data and infrastructure than what is offered by SaaS or PaaS. IaaS can be more expensive than the other two options, but it can also be more flexible.

#### **13. Can you explain the concept of multi-tenancy in today’s cloud computing environments?**

Multi-tenancy is the ability of a cloud computing environment to support multiple users. Each user has their own “tenant” within the environment, which is isolated from the other tenants. This allows each user to have their own private space within the cloud environment, while still being able to share resources with other tenants.

#### **14. What is the difference between Type 1 and Type 2 hypervisors?**

Type 1 hypervisors are installed directly on the server hardware, while Type 2 hypervisors are installed on top of an operating system. Type 1 hypervisors are typically more efficient and offer better performance, while Type 2 hypervisors are more convenient and easier to set up.

#### **15. Can you give me some examples of Type 1 and Type 2 hypervisors?**

Type 1 hypervisors are typically used in enterprise environments and run directly on the host server’s hardware. Examples of Type 1 hypervisors include VMware ESXi, Microsoft Hyper-V, and Citrix XenServer. Type 2 hypervisors, on the other hand, are designed to run on top of a host operating system. Examples of Type 2 hypervisors include VMware Workstation, Oracle VM VirtualBox, and Microsoft Virtual PC.

#### **16. How do you think the market share of IaaS will change in the next 5 years?**

There is no one-size-fits-all answer to this question, as the market share of IaaS will vary depending on the specific industry and region. However, it is generally expected that the market share of IaaS will continue to grow in the next 5 years, as more and more businesses move to the cloud.

#### **17. Can you explain what “serverless” means in context with Iaas?**

Serverless is a term used to describe a type of IaaS architecture where there is no need for the customer to provision or manage any servers. Instead, all of the necessary infrastructure is managed by the provider. This can include things like storage, networking, and even some application logic.

#### **18. What are the main components of IaaS?**

The main components of IaaS are the servers, storage, and networking that make up the infrastructure of a cloud computing system. IaaS providers offer these resources on demand, so that users can access them as needed, and only pay for what they use. This makes IaaS a very flexible and scalable option for businesses that need to be able to quickly scale their infrastructure up or down as their needs change.

#### **19. What do you understand about the term “hybrid IT”?**

Hybrid IT is a term used to describe an IT infrastructure that is a mix of on-premises and cloud-based services. This can provide organizations with greater flexibility and scalability, as well as the ability to take advantage of the best features of both on-premises and cloud-based solutions.

#### **20. What is the relationship between IaaS, PaaS, and SaaS?**

IaaS, PaaS, and SaaS are all types of cloud computing. IaaS is the most basic type of cloud computing, where you simply rent access to a remote server. PaaS is a bit more advanced, and allows you to rent access to a remote server and also use that server to host applications. SaaS is the most advanced type of cloud computing, and allows you to rent access to a remote server and also use that server to host applications and data.