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 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. 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, 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.

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

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.

CLOUD MACHINE LEARNING SERVICES COMPARISON

	Amazon	Microsoft	Google	IBM
Automated and semi-automated ML services				
	Amazon ML	Microsoft Azure ML Studio	Cloud AutoML	IBM Watson ML Model Builder
Classification	✓	✓	✓	✓
Regression	✓	✓	✓	✓
Clustering	✓	✓	✗	✗
Anomaly detection	✗	✓	✗	✗
Recommendation	✗	✓	✓	✗
Ranking	✗	✓	✗	✗
Platforms for custom modeling				
	Amazon SageMaker	Azure ML Services	Google ML Engine	IBM Watson ML Studio
Built-in algorithms	✓	✗	✓	✓
Supported frameworks	TensorFlow, MXNet, Keras, Gluon, Pytorch, Caffe2, Chainer, Torch	TensorFlow, scikit-learn, Microsoft Cognitive Toolkit, Spark ML	TensorFlow, scikit-learn, XGBoost, Keras	TensorFlow, Spark MLlib, scikit-learn, XGBoost, PyTorch, IBM SPSS, PMML

altexsoft
software r&d engineering

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 (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 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 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

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 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.

Scores closer to 1, would be considered as a positive sentiment

Scores closer to 0, indicates a 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, Android, C++, 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.

On-premises   Azure VNET Point to Site   Front end

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 with little downtime and impact on users?

Create a new Virtual Network

Move all the VMs in the subnet to the new VN

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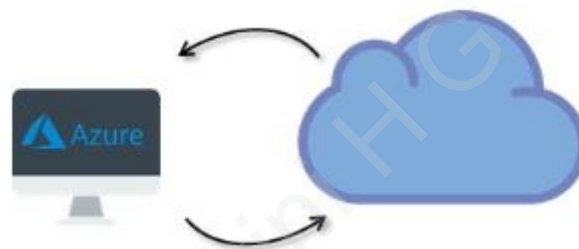
27. What kind of storage is best suited to handle unstructured data?

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:
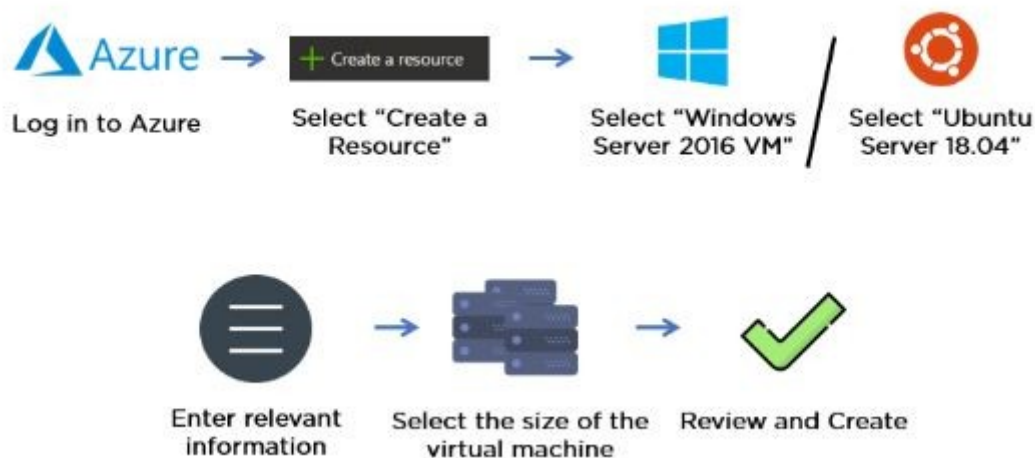
29. How do you handle this scenario?

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.

Top 35 Solution Architect Interview Questions and Example Answers
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By: Indeed Editorial Team

Solutions architects are professionals who are responsible for solving certain business problems and completing projects. Businesses today rely on the expertise of solutions architects to recommend and manage hardware and software systems that are central to operations. For this reason, people with technical acumen and development skills may look into becoming a solution architect. In this article, we'll provide the top 35 solution architect interview questions to expect during a job interview with example answers.

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General questions

These are general questions you might be asked in a solutions architect interview:

- What goals would you set for yourself as a professional solutions architect?
- What projects will you start within three months of starting this job as a solutions architect?
- If we asked your coworkers to describe you in one word, what would they say?
- How comfortable are you speaking to people about technical topics?
- What would a day at your ideal job look like?
- What is your desired salary range?
- Explain a recent professional achievement.
- What qualities make you a good fit for the job?
- What skills are required of a solutions architect?
- Why are you choosing to exit your current role?

Questions about solution architect experience and background

The following solutions architect interview questions will help you prepare for your next interview:

- What's your favorite thing about being a solutions architect?
- How long have you been working as a solutions architect?
- What are your strengths as a solutions architect?
- What are your weaknesses when it comes to performing the duties of a solutions architect?
- Tell me about a recent successful project as a solutions architect?
- Tell me about a time a project was unsuccessful, what happened?
- How many coding languages are you fluent in and what are they?
- In your experience, what's the major benefit of being a solutions architect?
- How does your educational background prepare you to be a solutions architect?
- Explain any solutions architect projects in your portfolio.

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In-depth interview questions

In-depth questions are those that require you to answer in steps or provide examples, like a portfolio, or work-out a sample problem. The most common you'll likely encounter in a solutions architect interview include:

- Explain the projects in your portfolio.
- Share an example in which you analyzed a complex problem, came up with a solution and evaluated results.
- Show me projects you've worked on that demonstrate technical skills in coding.
- Describe a time that you diagnosed the cause of an operating error and fixed it.
- What's an example of a time you had to collect information to solve a problem. How did you do it?
- Explain what tools you use to perform the duties of a solutions architect. Why do you use them and what do they do?
- In steps, describe your approach for working with a lot of data.
- In what ways have you applied new technology to being a solutions architect and innovated the company you were working for?
- Explain your strategy for successfully improving upon existing software.
- Look at this example piece of code and determine the output.

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Common solution architect interview questions

Here are common solution architect interview questions with example answers to help you prepare for your interview:

- What is the most innovative solution you've proposed, working as a solutions architect?

- What is AWS?
- How can you protect against an injection attack?
- Describe your protocol for ensuring security.
- What can a solutions architect do to support functional analysts?

What is the most innovative solution you've proposed, working as a solutions architect?

When an interviewer asks you about innovative solutions you've proposed, they may want to know what experience you have with new technology and how you can apply it to help their business. The most appropriate answer discusses a non-obvious solution and how it impacted business operations.

Example: *"When I worked at Copy Company, I was presented with a problem having to do with a client that was a creditor. The company's website was designed to encourage users to create an account and find the perfect credit card for their lifestyle.*

They wanted to include a way that customers could return to a credit card they had previously viewed. I decided that the best solution would be to create a user interface that allows guests to favorite credit cards. This allowed consumers to mark cards they wanted to return to. As a result, the creditor increased their customer base."

What is AWS?

Many solutions architects work with cloud platform technology. Sometimes, they use Amazon Web Service or AWS. When a solutions architect is specialized in AWS, they are usually referred to as an AWS solutions architect. Whether you are interviewing to be an AWS solutions architect or just a solutions architect, you may need to know about AWS. To answer this question, give a thorough description of what it is.

Example: *"AWS is the leading PaaS service. Produced by Amazon, it provides a development platform with a compute engine and code library. It also is an open-source community where developers can produce and share innovation and advice. Businesses use AWS to build and run applications that power their business with lean resources."*

How can you protect against an injection attack?

An interviewer may ask this question to determine if a candidate has knowledge of injection attacks. To answer this question offer a solution for protecting against this type of attack. There are multiple solutions and anyone will suffice.

Example: *"I protect against injection attacks by avoiding the use of dynamic SQL. Additionally, I enlist a web application firewall. Finally, by ensuring continuous monitoring of SQL statements regarding the connection with web applications."*

Describe your protocol for ensuring security

Security is a top priority for businesses looking to enlist the help of a solutions architect. These professionals may be responsible for providing innovative security solutions, so knowing how to ensure cybersecurity and data protection is a must. To answer this question, provide examples of how you ensure cybersecurity for a company.

Example: *"To make sure cloud environments are the most secure, I backup data daily, ensure continuous monitoring, encrypt data and use virus protection. I would also enlist innovative cloud edge security services to protect the company from an attack where cloud platforms are most vulnerable."*

What can a solutions architect do to support functional analysts?

Functional analysts (FA) and solutions architects often work side-by-side. When you get a question about how you would support FAs, you should assume the interviewer wants you to talk about the ways you can successfully collaborate with an analyst.

Example: *"In my experience working with functional analysts, as a solutions architect I've taken on a leadership role to foster collaboration and communication. I think it's important to be approachable and make sure FAs know that I will help wherever I can."*

Question 1: What is Azure Cloud Service?

Answer: Azure Cloud Service provides the option for conveying multiple web applications in Azure while specifying various parts for the dissemination of management and permission for flexible scaling in an application. Basically, a particular cloud service includes web parts and specialist parts in some cases with their own specific application documents and design.

Question 2: What are the roles of Windows Azure?

Answer: You can find three types of roles in Windows Azure, such as web role, virtual machine role, and worker role.

Question 3: What are the three significant components of the Azure platform?

Answer: The three significant components of Microsoft Azure are Compute, Fabric, and Storage that are present as Azure Compute, Azure AppFabric, and Azure Storage.

Question 4: Define a Cloud architecture?

Answer: A Cloud Architect is an IT expert who builds up an organization's computing strategy. This strategy fuses cloud adoption plans, cloud application design, and cloud management and monitoring. The Architect likewise helps with various cloud environments such as the public Cloud, private Cloud, and hybrid Cloud.

Question 5: What are the different Layers of Cloud architecture?

Answer: The Cloud Architecture consists of the following layers:

- **Infrastructure:** The primary layer of Cloud is the Infrastructure –IaaS, which
  stands for Infrastructure as a service.

- **Platform:** The second layer of the Cloud is the Platform – PaaS, which stands for Platform as a service.
- **Software:** The third Cloud layer is the actual Software – SaaS, which stands for Software as a service.

- BPO.

Question 6: What are the different layers in a cloud reference model?
Answer: The five layers of a Cloud reference model are:

- Physical layer,

- Virtual layer,

- Control layer,

- Service orchestration layer, and

- Service layer

Question 7: What are the various components of the cloud architecture?
Answer: The prime physical components of cloud infrastructure are networking equipment, servers, and data storage. Cloud infrastructure incorporates a hardware abstraction layer as well. The layer enables the virtualization of resources and helps to cut down costs through economies of scale.

Question 8: Which is the most basic cloud service model?
Answer: The most basic cloud service model is the Saas that is Software as a Service model. It is one of the most familiar forms of cloud service for consumers, and it also reallocates the assignment of managing software and its deployment to third-party services.

Question 9: How will you differentiate between a software architect and a solution architect?
Answer: A Solution Architect is answerable for a solitary application or technology product, including both hardware and software, while a Software Architect is answerable for the general plan of an application, especially when there are many subcomponents that need to work together.

Question 10: What does an Azure Solution Architect do?
Answer: The main roles of an Azure Solution Architect are to develop and implement an Azure Cloud Architecture and manage issues like migration. It also incorporates estimating and planning the solutions expected to implement cloud migration and continued operations.

Question 11: What is a service definition file and service configuration file?

Answer: The cloud service definition file (.csdef) gives the definition of the assistance model, close by the number of jobs. Then again, the cloud service configuration file (.csfg) encourages configuration settings for cloud service and individual roles alongside the number of role instances.

Question 12: Define Azure Diagnostics.

Answer: Azure Diagnostics is an Azure API that helps in the collection of diagnostics data from applications that are implemented on Azure. Azure Diagnostics ought to be enabled for various cloud service roles to ensure the activation of verbose monitoring.

Question 13: What are the different cloud deployment models?

Answer: There are three regular cloud deployment models that explain the delivery of cloud services to users. These are the public Cloud, the hybrid Cloud, and the private Cloud.

Question 14: What are the advantages of traffic managers in Azure?

Answer: Some of the notable benefits of traffic managers in Azure incorporate the distribution of traffic as per the different traffic-routing methods and consistent monitoring of automatic failover and endpoint health upon failure of endpoints.

Question 15: What is an Azure SLA (Service Level Agreement)?

Answer: SLA establishes the degree of service you anticipate from a vendor, designing out the metrics by which service is estimated, as well as remedies or penalties should agreed-on service levels not be accomplished. It is a crucial segment of any technology vendor contract. The Azure SLA (Service-level agreement) explains the commitments of Microsoft for uptime and connectivity.

Question 16: What is a guest operating system?

Answer: A guest operating system for a concerned cloud service is an operating system installed on virtual machines that run your application code.

Question 17: What is Azure Resource Manager?

Answer: Azure Resource Manager is the ideal assistance for provisioning management and deployment services on Azure. The management layer aids in enhancing and deleting resources in your Azure subscription. It likewise supports the organization of related resources in resource groups, followed by the deployment of resources with JSON formats.

Question 18: What are Update Domains?

Answer: Update domain in Azure displays the collection of underlying hardware equipped for rebooting or undergoing maintenance. With the development of virtual machines in an availability set, virtual machines are consequently distributed across updated domains on the Azure platform. Subsequently, a single instance of the application is always active during the maintenance of the Azure platform.

Question 19: What is a Fault Domain?

Answer: The fault domain in Azure showcases the set of underlying hardware sharing common

network switches and power sources. Each and every fault domain incorporates various racks, and all individual racks accommodate a virtual machine. Upon the development of virtual machines in an availability set, the virtual machines consequently spread across all fault domains in Azure.

Question 20: Define Azure Service Fabric.

Answer: Azure Service Fabric is the distributed platform custom-made for offering development, deployment, and management of apps having high scalability and customizability. Applications developed in the Azure Service Fabric environment would involve discrete microservices communicating with one another over service application programming interfaces.

Question 21: What are the types of services you can develop with the Service Fabric?

Answer: The two kinds of services that you can develop with Azure Service Fabric are Stateless Services and Stateful Services. On account of stateless services, the service does not store any state, and the long-term state is stored in an external database. On the other hand, Stateful services have the state stored in the service. Additionally, it enables the state to persist without any external database.

Question 22: What are the deployment environments offered by Azure?

Answer: There are two deployment environments provided by the Azure Cloud:

1. Staging Environment:

- It gives a stage to approve changes to your application before it tends to be made live in the production environment.

- In this stage, the application can be distinguished utilizing Azure's Globally Unique Identifier (GUID) in URL form (GUID.cloudapp.net)

2. Production Environment:

- This environment is utilized to store the live app.

- It can be modified from the staging environment with a URL that's more DNS friendly (servicename.cloudapp.net)

Question 23: How can hybrid cloud Integration be useful for Azure?

Answer: The Hybrid Cloud helps profitability by utilizing Azure and the Azure stack for creating

and deploying apps for the Cloud and on-premises apps. Integration of the hybrid Cloud can be useful for Azure in the accompanying manners:

- It acquires more prominent effectiveness with a combination of Azure services and DevOps processes and tools

- Clients can profit from consistently updated Azure services and other Azure Marketplace apps.

- It allows it to be deployed regardless of its location, the Cloud, or on-premises.

- It empowers apps to be made at a higher speed.

Question 24: Mention the components of the Azure Cloud architecture.
Answer: The Azure Cloud architecture has the following components:

- Backend systems

- Azure Logic Apps

- Azure API Management

- Azure DNS

- Azure Active Directory (Azure AD)

Question 25: Define cloud delivery model?
Answer: A cloud delivery model addresses a particular, pre-bundled combination of IT resources offered by a cloud service provider. Three common cloud delivery models have gotten broadly settled and formalized:

- Infrastructure-as-a-Service (IaaS)

- Platform-as-a-Service (PaaS)

- Software-as-a-Service (SaaS)

A good cloud architect must not only possess strong technical skills in enterprise computing, but they must understand the building blocks of IT. It incorporates client systems and applications, networking, infrastructure, data centers, programming languages, web tools & technologies, databases, and big data, and ERP.

Q1. You have been appointed as an Architect to design and deliver a highly available and scalable blogging application on Azure. Which are the services that you will choose and why?

Azure VMSS: Provides automated scale in and scale out facility of VMs whenever the load reaches the defined threshold of incoming requests, compute utilization, or memory utilization.

Azure Application gateway: Provides load balancing to distribute traffic equally and SSL offloading.

Azure blob storage provides storage for static files like images, GIF, and other media files.

Q2. You need to architect an application that accepts any type of blob files from the end-user, where the end-user should be able to share the files by generating time-based sharing links with other users. Which service and features will you choose?

Answer: Azure Blob Storage with shared access signatures

How?

https://docs.microsoft.com/en-us/azure/storage/common/storage-sas-overview

Q3. You have been assigned the task to architect a serverless application on Azure, what would be your approach in defining the solution?

Azure Functions are individual functions in a function app, an event-driven serverless compute platform that can also solve complex orchestration problems. Build and debug locally without additional setup, deploy and operate at scale in the cloud and integrate services using triggers and bindings.

Q4. You need to provide temporary access to Cosmos DB to your application, which component of Cosmos DB you will use?

If you want to provide other users temporary access to your Azure Cosmos DB account, you can do so by using the read-write and read access URLs.

Read-Write – When you share the Read-Write URL with other users, they can view and modify the databases, collections, queries, and other resources associated with that specific account.

Read – When you share the read-only URL with other users, they can view the databases, collections, queries, and other resources associated with that specific account. For example, if you want to share the results of a query with your teammates who do not have access to the Azure portal or your Azure Cosmos DB account, you can provide them with this URL.

Q5. Help me with the use cases about choosing a VMSS over a VM.

1. Ease of creation and management of multiple VMs
2. Makes application highly available and resilient
3. Allows applications to meet demand changes and scale automatically
4. Works at large scale

Q6. How SQL server is different from SQL managed instance

SQL Server provides features such as Dynamic Data Masking, Always Encrypted, Row-Level Security, Query Store, and more. However, Azure SQL Database was built on a database scoped configuration model and has certain limitations compared to on-premises SQL Server.

Though there is certain limitation like it cannot provides scaling up or down (online), no server configuration settings, cannot support cross-database transactions.

SQL Server can be used as a hyper-scale model where it provides elastic jobs, hyperscale architecture, Query Performance Insights (QPI), etc.

SQL managed instance can scale automatically, can deploy multiple instances of SQL Managed Instance in instance pools (preview) that can share the resources and can directly be implemented in VNet.

Q7. What is a SQL pool and how does it affect Synapse Analytics formerly SQL Date warehouse?

Azure Synapse Analytics is an analytics service that brings together enterprise data warehousing and Big Data analytics. Dedicated SQL pool refers to the enterprise data warehousing features that are available in Azure Synapse Analytics.

A dedicated SQL pool represents a collection of analytic resources that are provisioned when using Synapse SQL. The size of a dedicated SQL pool (formerly SQL DW) is determined by Data Warehousing Units (DWU).

Once your dedicated SQL pool is created, you can import big data with simple PolyBase T-SQL queries, and then use the power of the distributed query engine to run high-performance analytics. As you integrate and analyze the data, a dedicated SQL pool (formerly SQL DW) will become the single version of truth your business can count on for faster and more robust insights.

Dedicated SQL pool (formerly SQL DW) stores data in relational tables with columnar storage. This format significantly reduces data storage costs and improves query performance. Once data is stored, you can run analytics on a massive scale. Compared to traditional database systems, analysis queries finish in seconds instead of minutes or hours instead of days.

Q8. How is Azure Data lake storage different from Azure blob storage?

Blob storage excels at non-text-based files – database backups, photos, videos, and audio files. Whereas data lake I feel is a bit better at large

volumes of text data. One would choose the Data Lake Store if using text file data to be loaded into my data warehouse.

Q9. In Azure DevOps, what will be the best practice of using dynamic variables for build pipelines?

By linking Variable Group with the build pipelines. Variable Groups is used to store pipeline-based variables and can be linked with Azure Key Vault.

Q10. You are the security administrator of your company's Azure account. You review security recommendations for multiple subscriptions and need to enforce strict compliance for them. What would you recommend?

Answer: Create an initiative with built-in and custom policies for recommendations and assign the initiative at the management group scope. To create a compliance mechanism for multiple subscriptions, you should create an initiative and assign it to a management group for better management.

Q11. Your organization is running an on-prem ticketing system to receive server monitoring alerts. Your manager asks you to configure Azure monitoring in such a way that you can receive Azure alerts in your on-prem ticketing system. You install the Azure security Center agent in all the on-prem servers and configure the Azure monitor to send alerts to the on-prem ticketing system. Will it solve the purpose? Why?

Answer: No.

Q12. What feature of Application Gateway provides Web App protection from common exploits?

Answer: Web application firewall

Q13. What Azure CLI command is used to create a new Azure AD user?

Answer: az ad user create

Q14. What PowerShell cmdlet is used to encrypt a managed disk in Azure?

Answer: Set-AzVMDiskEncryptionExtension

Q15. You are consulting for an organization that has Azure AD Premium P1 licenses. The organization does not currently have any Azure resources or an Azure AD tenant. You are helping to design an Azure-based solution for the organization. Which service could you include in your design?

Answer: Azure AD Conditional Access.

Q16. You are architecting a web application that will use the Azure App Service. You need to include a monitoring solution within the design that can help you to analyze the user behaviour and the most popular features of your website. Which two items do you include within your design to meet these needs?

Answer: Add application insights instrumentation.

Q17. You have SQL Server on an Azure virtual machine named SQL1. You need to automate the backup of the databases on SQL1 by using Automated Backup v2 for the virtual machines. The backups must meet the following requirements:

- **Meet a recovery point objective (RPO) of 15 minutes.**
- **Retain the backups for 30 days.**
- **Encrypt the backups at rest.**

What would you recommend as part of the backup solution?

Answer**:** An Azure storage account is used for storing Automated Backup files in blob storage. A container is created at this location to store all backup files. The backup file naming convention includes the date, time, and database GUID.

Q18. You have a web app named WebApp1 that uses an Azure App Service plan named Plan1. Plan1 uses the D1 pricing tier and has an instance count of 1. You need to ensure that all connections to WebApp1 use HTTPS. What would you do first?

Answer: Scale-up Plan1.

Q19. You want to optimize the Dockerfile with better readability and maintenance and have decided to use Multiple Stage Builds. What are the considerations for having Multiple Stage Builds?

Answer: I will look for adopting Container Modularity, avoid including Application Data, avoid any unnecessary packages and choose an Appropriate Base. Multi-stage builds is a new feature requiring Docker 17.05 or higher on the daemon and client. Multistage builds are useful to anyone who has struggled to optimize Dockerfiles while keeping them easy to read and maintain.

Q20. Your company – XYZ Inc. uses Azure DevOps for the build pipelines and deployment pipelines of Java-based projects. You need to recommend a technique for managing technical debt. Which two actions would you recommend?

Answer: Configuring pre-deployment approvals in the deployment pipeline as analysis should be at the pre-deployment stage. Integrate Azure DevOps and SonarQube. SonarQube assesses technical debt.

These are some of the frequently asked questions during an interview for the Microsoft Azure Architect role. If you have just started your journey as an Azure Developer, here are some courses reserved for certification to become an Azure expert. Here is the course for **Microsoft Azure Solutions Architect with** AZ-303 **and** AZ-304 **certification exams** to expedite your career as a cloud expert.

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:

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?

    A. Virtual Private Network
    B. Private Cloud

C. Virtual Private Cloud
D. 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

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?

A. Application Insights
B. Azure Resource Manager
C. Azure Portal
D. 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?

A. ASP.NET
B. PHP
C. WCF
D. 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

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:

- 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.

- A. Web
- B. Server
- C. Worker
- D. 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.

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.

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.

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:

administrator	admin	user	user1
test	user2	test1	user3
admin1	1	123	a
actuser	adm	admin2	aspnet
backup	console	david	guest
john	owner	root	server
sql	support	support_388945a0	sys
test2	test3	user4	user5

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:

abc@123	P@$$w0rd	P@ssw0rd	P@ssword123	Pa$$word
pass@word1	Password!	Password1	Password22	iloveyou!

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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
  - o The client application was redeployed.
  - o The client application performed a scaling operation.
  - o In the case of Cloud Services or Web Apps, this may be due to auto-scaling.
  - o The networking layer on the client side changed.
  - o Transient errors occurred in the client or in the network nodes between the client and the server.
  - o The bandwidth threshold limits were reached.
  - o CPU bound operations took too long to complete.
- Server-side causes
  - o On the standard cache offering, the Azure Redis Cache service initiated a fail-over from the primary node to the secondary node.
  - o Azure was patching the instance where the cache was deployed
  - o 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**
  - o 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](#) and [DISA](#).
- **China East** and **China North**
  - o 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**
  - o 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 Cloud Computing?

Cloud computing is a term referred to storing and accessing data over the internet. It doesn't store any data on the hard disk of your personal computer. In cloud computing, you are allowed accessing data from a remote server.

2. What is Microsoft Azure?

Azure is a cloud computing platform which was launched by Microsoft in Feb 2010. It is a highly flexible cloud platform that offers development, data storage, service hosting, and service management.

3. Explain the Importance of the role and how many types of roles are available in Windows Azure?

Roles are a very important concept in Windows Azure, and learning them is the base for further programming.

Three types of roles in Windows Azure are:

- Web Role: It is used to deploy website by using langue which is supported by the IIS platform customized to run the web apps.
- Worker Role: It helps you to execute the process that runs in the background by
- VM Role: It helps you to schedule the windows services and task.

4. Why should you use Azure CDN?

Azure Interview Questions

Azure CDN should be used to reduce load time and bandwidth as well as speed the responsiveness.

5. Name some important applications of Microsoft Azure

Most important application of Microsoft Azure are:

Infrastructure Services, Mobile Apps, Web Applications, Cloud Services, Storage, Media Services, etc.

6. What is Azure as PaaS?

PaaS is a computing platform that includes an operating system, programming language execution environment, database, or web services. Developers and application providers use this type of Azure services.

7. Explain the crucial benefits of Traffic Manager

Traffic management offers many advantages for the user:

- Increase the performance
- No Downtime required for update or Maintenance
- You can easily configure Azure Traffic manager on Windows Azure portal.

8. What are Break-fix issues in Microsoft Azure?

In, Microsoft Azure, all the technical problem is called break-fix issues. This term uses when "work involved in support a technology when it fails in the normal course of its function.

9. Explain Diagnostics in Windows Azure

Windows Azure Diagnostic offers the facility to store diagnostic data. In Azure, some diagnostics data is stored in the table, while some are stored in a blob. The diagnostic monitor runs in Windows Azure as well as in the computer's emulator for collecting data for a role instance.

10. State the difference between repetitive and minimal monitoring.

Verbose monitoring collects metrics based on performance. It allows a close analysis of data fed during the process of application.

On the other hand, minimal monitoring is a default configuration method. It makes the user of performance counters gathered from the operating system of the host.

11. What is the main difference between the repository and the powerhouse server?

The main difference between them is that repository servers are instead of the integrity, consistency, and uniformity while powerhouse server governs the integration of different aspects of the database repository.

12. Explain command task in Microsoft Azure

Command task is an operational window which set off the flow of either single or multiple common whiles when the system is running.

13. What are unconnected lookups?

Unconnected lookup the input ins take by the LKP operation. In this type of lookup method, User-defined values are disregarded in the unconnected lookups.

14.Explain Cmdlet command of Microsoft Azure

A cmdlet is a command which is utilized as a part of the Microsoft PowerShell environment. The cmdlet is called by the Windows PowerShell to automate the scripts which are in the command line.

15. What is the use of the Migration Assistant tool in Azure Websites?

Migration Assistant tool helps you to examine your IIS installation. It helps you to recognize which site can be migrated to the cloud. It is also featuring components which are either not migrated or unsupported on the Azure platform.

16. What is the use of Azure Active Directory?

Azure Active Directory is an identify and access management system. It is very much similar to the active directories. It allows you to grant your employee in accessing specific products and services within the network.

17. What is HDInsight in Microsoft Azure?

HDInsight is a could service which that makes it easy. It is fast and cost-effective to process a massive amount of data using with the help of open-source frameworks like Spark, Hadoop, Hive, Storm and R. HDInsight offers various type of scenarios which includes ETL, data warehousing, and Machine Learning.

18. Explain role instance in Microsoft Azure

A role instance is a virtual instance on which the application code and role configuration run. A role can have multiple instances, which are defined in the service configuration file.

19. Explain the term 'service fabric' in Azure

Service fabric is a middleware platform which gives more scalable outcome. It mostly renders with a more managed and reliable enterprise.

20. Explain Availability Set

It is a logical grouping of Virtual Machines. It allows the Azure cloud to build understand how the application for a user is built to provide availability and redundancy.

21. Name the types of web application which can be deployed with Azure

ASP.Net, PHP, WCF are a type of web application which can be deployed with SQL Azure.

22. How many customers subscriptions allowed in managed disks?

The number of managed disks subscription is limited to 2000.

23. Explain the service definition file

The course service definition file (.csdef) defines the service mode. It includes a number of roles.

24. State the difference between copy and shortcut

Copied means transferring an object from one to another folder which takes double space. The shortcut is a dynamic Link on an object which saves the space which shows changes in the original object.

25. Name the services which are used to manage resources in Azure

- Application Insights
- Azure Portal
- Azure Resource manager
- Log Analytics

26. Explain enterprise warehousing

Enterprise warehousing is the phenomenon where the data is developed by the organization having access at a single point throughout the globe. The warehousing allows serving to get linked to a single point with the assistance of periodic handling.

27. What are the important drawbacks of using Microsoft Azure?

- Cloud computing is not possible if you are not able to connect to the Internet.
- Azure is a web-based app which needs a lot of bandwidth to download, as do large documents.
- Web-based applications can sometimes be slower compared accessing similar software program on your desktop PC.

28. What is MOSS?

Microsoft SharePoint Server (MOSS) that consist of a complete version of the portal platform. It allows a user to manage, share and even create the document.

29. What is the step you need to perform when drive failure occurs?

When there is an instance that the drive has failed, the following step should be performed:

- The drive should be not mounted, which allows the object Azure storage to function without fail.
- The second scenario is replacing the drive in which the desired step will remounting, formatting the drive.

30. What it's the difference between PROC MEANS and PROC SUMMARY?

- **PROC MEANS:** It refers to the subgroup of statist created in the persistence of the BY statement.
- **PROC SUMMARY:** It is the support statistic giving all varieties of information running simultaneously.

31. State the difference between a library and a list

The library is an interface which allows to manage and store a document which can be created using Word, Excel, or PowerPoint.

On the other hand, the list is the representation of the item in a tabular format using column and rows. It can be attached with documents.

32. Can you create VM by using Microsoft Azure Resource Manager in a Virtual Network?

No, it is not possible to create a virtual machine using the Azure Resource Manager.

33. What is the use of VNET?

With the help of VNET, you can represent your network within the cloud. It could insulate the instance logically which are launched within the cloud.

34. What the important requirements when creating a new Virtual Machine?

The length of the user name should not more than 20 characters, and it should not end with a period.

35. Name various power states of a Virtual Machine.

Various power states of a Virtual Machine are: Running, Starting, Stopping, Deallocating, etc.

36. Explain lookup transformation

Lookup transformation helps you to finds outsource qualifier. It may be either active/passive lookup transformation.

37. What are the three main components of the Windows Azure platform?

Three most important components of the Windows Azure platform are:

- Compute
- Storage
- AppFabric

38. Explain cspack in Microsoft Azure

Cspack is a command-line tool which generates a service package file. It also helps you to prepares an application for deployment, either in compute emulator or Microsoft Windows Azure.

39. What is the purpose of using an application partition scheme in Azure?

An application partition aims to reduce the replication traffic within a specific domain area.

40. Explain Azure Service Level Agreement

The Service ensures that when you send two or more roles instances for each role, access to your cloud service will be maintained 9 out of 10 times. Moreover, identification re-correction activity will be stared when the procedure of a role instance is not running.

41. What do you mean by the network security groups?

A network security group allows you to manage the network traffic to NIC or subnets etc. If it is connected in the best possible way, then the network load will be distributed wisely.

42. What happens when you exhaust the maximum failed attempts by authenticating yourself using Azure AD?

We use a more method to lock accounts. This is based on the IP address of the request and the passwords entered by the user.

43. Explain the concept of the table in Windows Azure

A table is one kind of Azure store. In which you can store your information.

Below given are the key concepts of the table:

- Tables allow structure data storage
- There can be 0 to n table in a storage account.
- An element has an essential key and properties as a key-value pair.

44. What is the use of Temp Drive in VM?

Temp Drive is used for Paging in Azure. However, it is a short drive, and you should not use it for storage.

45. Explain guest OS in Microsoft Azure

Guest OS is an operating system which runs on the virtual machine which allows you to hosts an instance of a role.

46. When will you find the list of built-in app with ADD?

The Azure Active Directory has more than 2500 built-in app. It allows you to access the application more securely.

47. Are data disks provide support within scale sets?

Yes, a scale allows you to define an attached data disk configuration which applies to all VMs In the set. Other options for data storing are:

- Azure files
- Azure Data services
- OS drive
- External data service

48. State the difference pricing model of Microsoft Azure

Here, are different pricing model of Microsoft Azure:

BYOL Model: It brings your license model. It is just right to access model. You can obtain it outside of the Azure Marketplace. This model is not charged any fees.

Free Software Trial: It is a full-featured version which is promotionally free for a limited period of time. However, for excessive use, you need to pay fees.

Usage-based: This is a widely used model of Microsoft Azure. Here, user are changed for only that service which is used by them.

Monthly fee: Here, you need to pay a fixed monthly payment for a subscription.

49. What is csrun?

Csrun is a command-line tool that deploys a packaged application to the Windows Azure compute emulator and manages the running service.

50. Name two blobs used in Microsoft Azure

Two types of blobs offer in Azure are:

1. Block Blob
2. Page Blob

51. How much storage can a user with a virtual machine use?

Each data disk on the VM can be up to 1 TB. However, the number of data disks, which you can use depends on the size of the virtual machine.

52. Name three types of Disks used by VMs

Three types of disk used in VMs are:

* Operating system disk
* Temporary disk
* Data disk

53. Name two types of cloud services

Two most common could services are:

* Public cloud
* Private cloud

What is a Microsoft Azure Solution Architect?

The Azure Solution Architect is a leadership position, he/she drives revenue and market share providing customers with insights and solutions leveraging the Microsoft Azure services to meet

their application, infrastructure, and data modernization and cloud needs, to uncover and support the business and IT goals of our customers.

This role will demonstrate the business value of the Microsoft Platform and drive technical decisions at the customer, thus securing long-term sustainable growth for Microsoft.

Below are some of the best Azure interview questions for an Azure Solution Architect role with their relative purpose with an order predefined:

1. Beginner Level: Azure Interview Questions

Here, are some Interview questions for Microsoft Azure Solution Architect:

Question 1: What are the different types of services offered in the cloud?

Explanation:

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.

Question 2: What are the different cloud deployment models?

Explanation: Following are the three cloud deployment models:

- **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.

Go through this **Microsoft Azure Blog** to get a clear understanding of Cloud Deployment Models!

Question 3: I have some private servers on my premises, also I have distributed some of my workloads on the public cloud, what is this architecture called?

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.

Question 4: What are the three main components of the Windows Azure platform?

Explanation: Three most important components of the Windows Azure platform are:

- Compute
- Storage
- AppFabric

You can find these components in the form of Azure Compute, Azure AppFabric, and Azure Storage.

Question 5: Explain the advantage of the Azure CDN?

Explanation: Azure CDN stands for Content Delivery Network. It has three advantages: quick responsiveness, help in saving the bandwidth and reduce the load time.

Question 6: When do Break-fix issues arise in Azure?

Explanation: Break-Fix situation is the technical glitch that arises when the functions intended to support the performance of technology fails to achieve their core implementation.

Question 7: Explain the importance of the Azure HDInsight?

Explanation: HDInsight is part of Hadoop components. It helps in processing a huge amount of data in an effective, smooth and quick manner. It even provides full control to manage the configuration of the clusters and software installed.

Question 8: Define the Role in Azure?

Explanation: In simple language, it can be understood as the set of permission that helps in performing read and write operation. Azure RBAC contain around 120 roles.

Question 9: Describe MOSS in brief?

Explanation: MOSS stand for Microsoft SharePoint Server is a portal-based platform that helps in managing, directing, creating and sharing documents. It creates "Sharepoint Portals" that include shared applications, workspaces and documents that can be accessed from the Web Browser. It also acts like Content Management System.

Question 10: Explain the deployments slot in Azure

Explanation: Deployment slots are present under the Azure Web App Service. There are two types of slot present in Azure Web App: Production slot and Staging slot. The production slot is the default one in which the app runs, but staging slots are the ones that help in testing the application usability before promoting to the production slot.

Question 11: List the three ways in which one can manage the session state in Azure?

Explanation: The three ways of managing sessions include SQL Azure, Windows Azure Caching and Azure Table.

Question 12: How two Virtual Network can communicate with each other?

Explanation: To establish communication between two Virtual Network we need to create a Gateway subnet. The gateway subnet is configured while specifying the range of the Virtual network. It takes the use of IP addresses to specify the quantity of subnet to be contained.

Question 13: Describe the role of Azure Functions?

Explanation: Azure Functions are the serverless solution that helps in developing the application without writing the code. It also helps in improving the development experience.

Question 14: Explain the tasks performed by the Application Gateway?

Explanation: It is a type of load balancer that helps in managing and monitoring the traffic of web application. It is configured under the application layer of the OSI model. Application Gateways helps in URL- based routing, SSL termination, managing sessions, monitor the HTTP traffic, and Web Application firewall management

2. Intermediate Level: Azure Interview Questions

Below, are some Interview questions for Microsoft Azure Solution Architect:

Question 1: What are the different types of Storage areas in Azure?

Explanation:

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.

Queue: The sole target of a queue is to empower communication among Web and Worker Role instances. They help in storing messages that may be accessed by a customer.

Question 2: 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.

Also Check: Our Previous Blog Post On **az 900 vs ai 900 vs dp 900**

Question 3: What are Fault Domains and Update Domains?

Explanation:

A **fault domain** is a logical group of the 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.

An **update domain** is a logical group of the 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.

For more information, read our blog **Azure Availability Zones**

Question 4: What is autoscaling in Azure?

Explanation: Auto-scaling is a way to automatically scale up or down the number of computing resources that are being allocated to your application based on its needs at any given time.

The key point is that you can now design a scalable architecture that will automatically scale up or scale down to meet your needs over the lifetime of your setup regardless of how fast/slow or big/small your site grows over that time.

Here are the most popular ways of autoscaling:

- Horizontal Scaling
- Vertical Scaling

Learn more about **Azure Scale Set (VMSS)**

Question 5: How is Windows Active Directory and Azure Active Directory different?

Explanation:

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 (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

Question 6: 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.

Question 7: 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.

To Know More About **Azure Data Factory** click here

Question 8: Differentiation between Azure Traffic Manager and Azure Load Balancers.

Explanation:

Azure Traffic Manager: The job of Azure Traffic Manager is to route traffic globally based on flexible policies, enabling an excellent user experience that aligns with how you've structured your application across the world.

Azure Load Balancer: The job of Azure Load Balancer is to direct traffic inside a region. This is combined with Azure Traffic Manager, where the traffic manager routes the interior to a region between virtual machines. If you combine the two you get global traffic management combined with local failover.

Read More: About Chatbot In Microsoft Azure click here azure chatbot

Question 9: What are the various power states of a VM?

Explanation:

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.

Question 10: What is Azure App Service?

Explanation: Azure App Service 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.
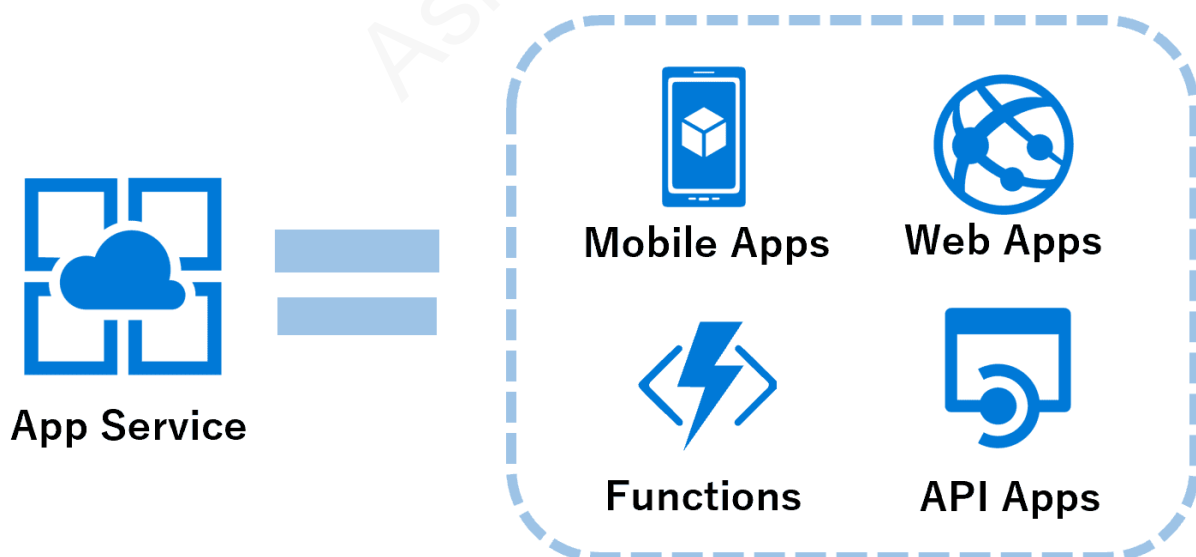
Question 11: What is Azure Service Level Agreement (SLA)?

Explanation: 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 per cent of the time. Additionally, identification and re-correction activities will be started 99.9 per cent of the time when a role instance's procedure isn't running.

Also Check: How to create an **Azure Storage Account**. Click here

Question 12: Give the various advantages of using Azure ML Studio

Explanation: Azure ML Studio is the most popular features as it has a complete package that helps in Classification, Ranking, Clustering, Anomaly Detection, Recommendation, and Ranking. Due to the presence of drag and drop utility, processes become easy to perform. The various framework supported by the Azure ML Studio includes TensorFlow, SparkML, Microsoft Cognitive Toolkit and so on.

Question 13: Brief about the Azure Notification Hub

Explanation: Azure Notification Hub is the notification service provided by Microsoft Azure. These notifications can be sent to various platforms like Windows, Android, iOS, WindowsPhone, etc. It is an infrastructure that sends a *push notification* to any platform. Through Notification Hub, one can monitor, schedule, and telemetry the push notification. Tags and Templates are two main components to understand the Notification Hub

Question 14: Explain the Azure Service Bus and what is its two entities?

Explanation: Azure Service Bus is the cloud-based technology for messaging and communicating between different applications and devices. Azure Service Bus avails '***message brokers***' to conduct the processing of messages and '***messaging stores***' to cache the messages. Queue and Topic are the two entities present in the Azure Service Bus.

Question 15: How hybrid cloud has aided in boosting Azure?

Explanation: Hybrid Cloud allows building application on both clouds as well as on-premises. It helps Azure by attaining efficiency with the help of DevOps tools. Application in the hybrid cloud can be created at a faster pace. The ability to deploy from any remote location makes it more convenient.

Question 16: Describe the use of Text Analysis API?

Explanation: Azure ML Text Analysis API is a type of cloud-based service that is mainly used for the NLP of raw Text. The four major tasks of Text Analysis include language detection, key-phrase extraction, sentiment analysis, and entity recognition.

Question 17: Explain about the Azure Web App?

Explanation: Azure Web App is the service that helps us in developing the user interactive, multi-functional, secured, scalable, and highly reliable application. It is a platform that helps host

web applications by building, deploying, and running applications. Azure Web App comes under Platform-as-a-Service.

Question 18: List the various features of the Azure Web App?

Explanation: The various features of the Azure Web App include high scalability, Multilanguage support, DevOps Optimization, Compliance and Security, Easy Integration with Visual Studio and Code, Serverless Code and low maintenance cost.

Question 19: Explain the concept of the dead letter Queue?

Explanation: The dead letter Queue has a purpose to hold the messages that are not received by the receiver. It also looks for messages that are not processed. It generally occurs when queue length exceeds.

Question 20: Introduce the term Azure Monitoring

Explanation: Azure Monitor is the service offered by Microsoft that helps in analysing, collecting and telemetry data on on-premise and cloud environment. The major advantage of Azure Monitoring is that it helps in identifying the issues in a split of a second. It also helps in improving the performance.

Question 21: Explain Verbose Monitoring in Azure

Explanation: It collects data performance matrix within the particular role instance to analyse the circumstances that arise processing of the application.

3. Advanced Level: Azure Interview Questions

Here, are some Interview questions for Microsoft Azure Solution Architect:

Question 1: 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.

Question 2: What are the three types of RBAC controls in Microsoft Azure?

Explanation: The three different types of roles are :

- Owner: It has full access to all resources including the right to delegate access to others.
- Contributor: It can create and manage all types of Azure resources but can't grant access to others.
- Reader: It can view existing Azure resources.

Question 3: What should you do if your Azure Virtual Machine encounters issues caused by user configurations or host infrastructure?

Explanation: Try to move the virtual machine to a different host.

Use **Virtual Machine** – **Redeploy** blade to do this.

Question 4: What are the steps to move an Azure Virtual Machine from one virtual network to another virtual network?

Explanation: Delete a virtual machine in VNET1
Create a virtual machine in VNET2
Attach an existing disk to the newly created VM

Also Read: Our previous blog post on **Azure Compute**. Click here

Question 5: How do you resize a virtual machine in Azure Availability Set?

Explanation:

Stop all VMs in the availability set
Resize the one VM
Start the one VM that you resized
After the resizing succeeds, start the other VMs

Question 6: Your company has manufacturing facilities worldwide. Each facility has several machines that produce products. The machines generate millions of messages daily to report progress, quality control metrics, and alerts. You need to design a solution to receive and process the messages from the machines. What Azure service should you include in the design?

Explanation: Azure Event Hubs is a highly scalable data streaming platform and ingestion service capable of receiving and processing millions of events per second. It can process and store events, data, or telemetry produced by distributed software and devices. Data sent to an event hub can be transformed and stored using any real-time analytics provider or batching/storage adapters.

Question 7: What do you need to do in order to be able to monitor the metrics and the logs of Linux Azure Virtual Machine?

Explanation: You have to add **Linux Diagnostic Extension (LAD) 3.0**.

The Linux Diagnostic Extension helps a user monitor the health of a Linux VM running on Microsoft Azure.

To know more about **Linux Diagnostic Extension** read this **Microsoft Documentation.**

Question 8: What is Windows Azure Diagnostics?

Explanation: Windows Azure Diagnostics enables you to collect diagnostic data from an application running in Windows Azure. You can use diagnostic data for debugging and troubleshooting, measuring performance, monitoring resource usage, traffic analysis and capacity planning, and auditing.

Question 9: What is the difference between Block Blob vs Page Blob?

Explanation: Block blobs are comprised of blocks, each of which is identified by a block ID. You create or modify a block blob by uploading a set of blocks and committing them by their block IDs. If you are uploading a block blob that is no more than 64 MB in size, you can also upload it in its entirety with a single Put Blob operation.

Page blobs are a collection of pages. A page is a range of data that is identified by its offset from the start of the blob. To create a page blob, you initialize the page blob by calling Put Blob and specifying its maximum size.

Question 10: What is swap deployments?

Explanation: To promote a deployment in the Azure staging environment to the production environment, you can "swap" the deployments by switching the VIPs by which the two deployments are accessed. After the deployment, the DNS name for the cloud service points to the deployment that had been in the staging environment.

Question 11: Explain the class that is used while retrieving the data?

Explanation: SPSite Data query helps in retrieving the data that are present in different lists. It sort and aggregate data with the help of SharePoint.

Question 12: What are ARM template?

Explanation: ARM stands for Azure Resource Manager Template that specifies the resource need for the solutions. ARM templates are JSON file that helps Azure to run as Azure "*Infrastructure as Code".*

Question 13: Explain about the Microservices?

Explanation: Microservices is the approach in which core functions are built independently. Then they are integrated to complete the process. The advantage of microservice architecture is that if one of the functions fails it will not affect the other functions. It is built with the motive to deliver the services faster.

Question 14: Brief about the AKS?

Explanation: AKS stands for Azure Kubernetes Service built with the purpose to manage the containerized application. It helps in smoothly managing the Kubernetes cluster. It is open-

source that scale, automate deployment and manage workload. It also has a self-healing feature. Kubernetes is abbreviated as K8s.

Question 15: Explain about Azure CosmosDB

Explanation: CosmosDB is offered by Microsoft and is a Platform as a Service **(PaaS)**. It is regarded as NoSQL cloud-based database. CosmosDB also contains an Azure Document database and is accessible for all the Azure Regions. The data in CosmosDB is distributed and replicated globally.

In CosmosDB, capacity management, automatic scaling, and serverless databases help match demand with storage capacity. CosmosDB provides a solution for mobile, IoT applications, gaming, and the web that requires a considerable storage platform

Top Answers to Microsoft Azure Interview Questions

Numerous companies are looking for professionals certified in Microsoft Azure, especially after Gartner mentioned it as the second-highest profession in demand today. In this blog on Microsoft Azure interview questions and answers for freshers and experienced, we have combined a few of the most commonly asked questions in job interviews for Azure architect, administrator and developer. Below is the list of the most popular Microsoft Azure questions that are generally asked during job interviews:

Q1.   What   is   Azure   Cloud   Service?
Q2.   Differentiate   between   Microsoft   Azure   and   AWS.
Q3.   What   is   Azure   DevOps?
Q4.   What   is   Azure   Active   Directory   (Azure   AD)?
Q5.   What   is   Azure   Data   Factory?
Q6.   What   is   Azure   Databricks?
Q7.   What   is   Azure   Data   Lake?
Q8.   What   are   Azure   resources?
Q9.   What   are   the   roles   implemented   in   Windows   Azure?
Q10. What are the three principal segments of the Windows Azure platform?

These Azure interview questions are taken from the following roles of

- Azure Architect

- Azure Administrator/Admin
- Azure Developer
- Azure Cloud Solution Architect

Following are the three main categories into which this Microsoft Azure Interview Questions blog is divided:

1. Basic Azure Interview Questions

2. Intermediate Azure Interview Questions

3. Advanced Azure Interview Questions

Watch this video on 'Azure Interview Questions and Answers':
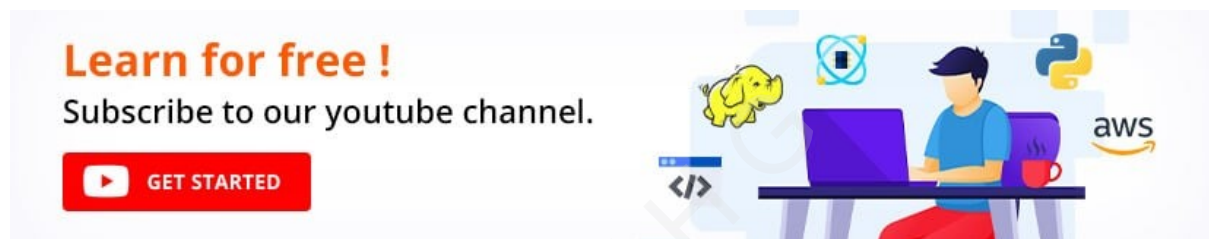
Basic Azure Interview Questions

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 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
Compliance	Azure Trust Center	AWS CLoudHSM
Content Delivery Network (CDN)	Azure CDN	Amazon CloudFront
Data Orchestration	Azure Data Factory	AWS Data Pipeline
Hybrid Cloud Storage	StorSimple	AWS Storage Gateway
Monitoring	Azure Operational Insights	Amazon CloudTrail
NoSQL Database Options	Azure DocumentDB	Amazon DynamoDB

3. What is Azure DevOps?

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.

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 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 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 facilitates the unification of data and AI workloads.

7. What is Azure Data Lake?

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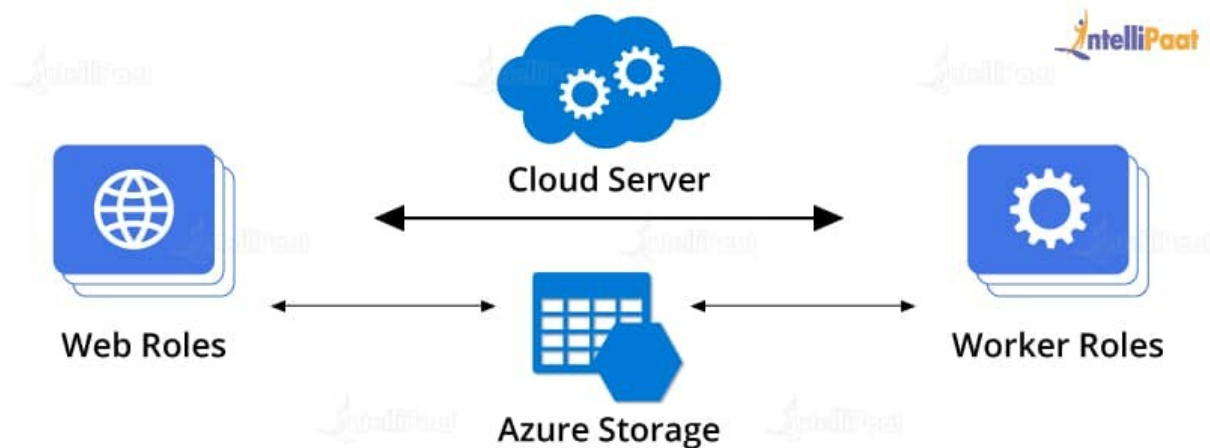
Web Role: It gives a web solution that is front-end. This is like an ASP.NET application. While under facilitating, Azure gives IIS and required services.

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 virtual machine on which the web and worker roles are running.

Go through this 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

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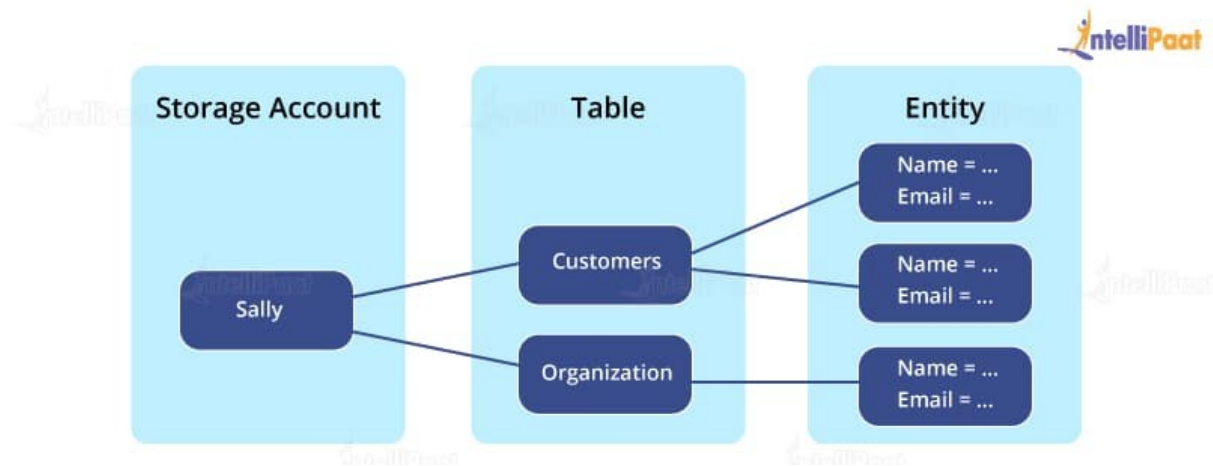
Table: A table is a collection of entities. Tables don't uphold a blueprint on elements, which implies that a solitary table can contain substances that have distinctive arrangements of properties. A record can contain numerous tables.

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**!

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, etc.
- SQL database, formally known as Azure database, 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.

That's it for our basic Azure Architect interview questions. Let's move onto the next section on Intermediate Azure Administrator interview questions.

Watch this video on 'Microsoft Azure Training':
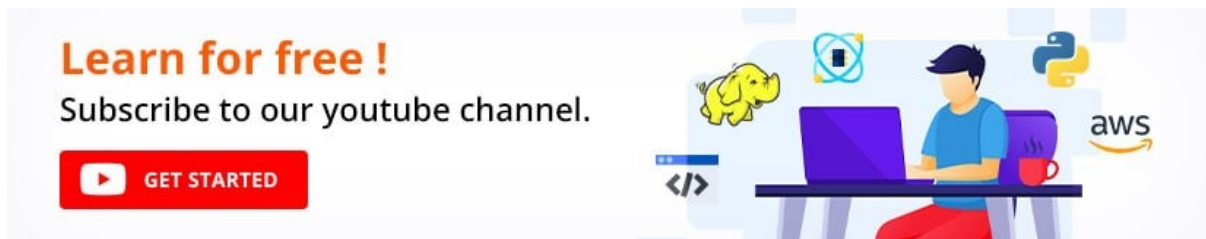
Intermediate Azure Interview Questions

17. 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.

18. Explain Azure Fabric.

Azure 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

19. 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.
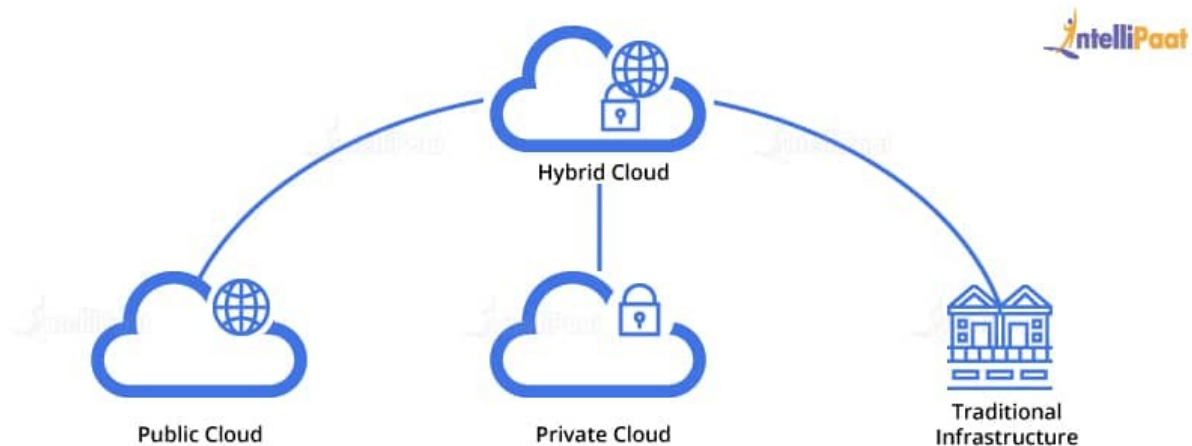
20. What is a storage key?

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.

21. 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.

22. 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.

23. 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.

24. 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 instances. They help in storing messages that may be accessed by a customer.

25. What is the concept of the table in Windows Azure?

A table is a kind of Azure Storage where you can store your information. BLOBs are put in a compartment and an entity in 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.

That's it for Intermediate Azure Admin interview questions and answers for admin. Now, we will move onto advanced Azure Cloud interview questions.

26. How to secure Azure functions?

One can secure 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

27. 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.

28. 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.

29. 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.

30. Why should you use Azure CDN?

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

31. 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

32. 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.

33. 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).

34. 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

Wish to make a career in the world of Cloud Computing? Start with Intellipaat's Azure Tutorial!

Advanced Azure Interview Questions

35. 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.

36. What is Azure App Service?

Azure App Service is a completely managed Platform-as-a-Service (PaaS) offering for proficient developers that conveys a rich arrangement of abilities to 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.

37. 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

38. 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.

39. 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.
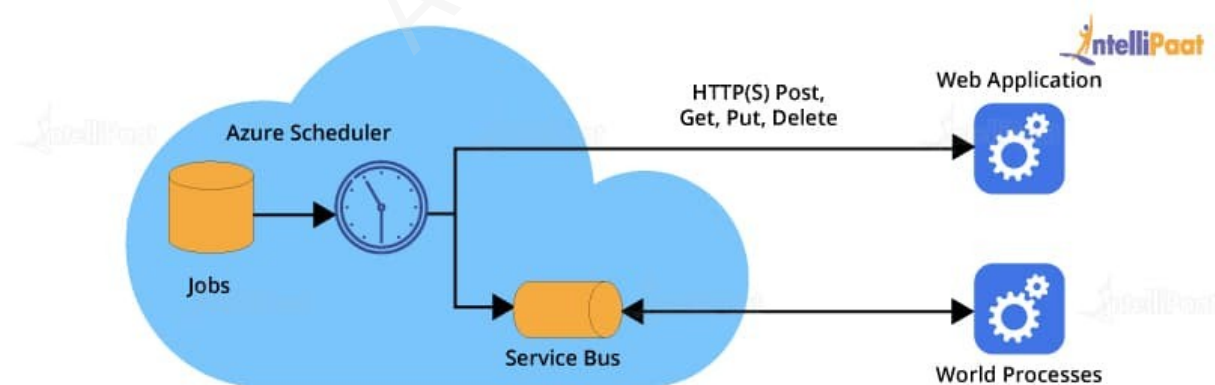
40. How can you create an HDInsight Cluster in Azure?

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

Hadoop is the default and native execution of Apache Hadoop.

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 is a distributed, fault-tolerant, open-source computation system that enables you to process data in real time.

41. What is Text Analytics API in Azure Machine?

Content Analytics API is a part of content examination web administrations worked with Azure Machine Learning. 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.

42. 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.

43. 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.

44. 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.

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.

45. How to add an administrator to the Azure portal?

To add an administrator to the 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**

46. 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.

47. 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

48. 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**

49. 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 module using the following cmdlet:

```
install-module az
```

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

```
Connect-azaccount
```

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

```
Get-AzADUser | export-csv file.csv
```

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

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

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

```
Get-AzADUser -Skip 2 | ft
```

50. 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

Microsoft Azure Solution Architect

General Description

The Azure Solution Architect is a leadership position, he/she drives revenue and market share providing customers with insights and solutions leveraging the Microsoft Azure services to meet their application, infrastructure, and data modernization and cloud needs, to uncover and support the business and IT goals of our customers. This role will demonstrate the business value of the Microsoft Platform and drive technical decisions at the customer, thus securing long-term sustainable growth for Microsoft.

This is a technical, customer-facing role that is accountable for the end-to-end customer cloud deployment experience in identified next-generation high potential cloud customers. This role will own the Azure technical customer engagement including architectural design sessions, specific implementation projects and/or Proofs of Concepts.

The ideal candidate will have experience in the customer-facing roles and success leading deep technical architecture and application design discussions with senior customer executives to drive cloud deployment.

Azure Solution Architects are trusted technology advisors that build deep relationships with our partners and that significantly influence partner innovation, strategy, and adoption of Microsoft technologies. They are responsible for all aspects of the solutions engagement, including

architectural design sessions, driving proof of value/proof of concept and the driving final project engagements.

The ideal candidate will have both customer-facing consulting experience. The outcome will be to drive long-term revenue, accelerate cloud consumption and digital transformation through a set of practices leading to workload/industry based co-sell.

Roles and Responsibilities

- Accelerate Azure consumption in next-gen high potential customer accounts by providing deep technical expertise and support for Datacenter Transformation, Custom Applications, Data Estate Transformation (ML and AI), and Security/Compliance/Privacy.
- Drive the deployment of customer workloads into Azure and increase their consumption of the platform by providing deployment guidance, supporting the development of the customers? cloud adoption model, and providing appropriate recommendations to overcome blockers.
- Establish deep relationships with key ITDMs and BDMs, who drive long-term cloud adoption within their company. Identify, validate and grow opportunities to accelerate consumption in next-gen high potential customer accounts, in partnership with the sales team, by driving solution architecture for both Microsoft and 3rd party solutions.
- Lead deployment of projects, the creation of collateral, and training of sellers and partners in your area of specialization.
- Keep up to date with market trends and competitive insights.
- Coach other technical sellers to become certified in required Azure technical certifications.
- Deep understanding of cloud computing technologies, business drivers, and emerging computing trends
- Proven track record of building deep technical relationships with senior executives and growing cloud consumption share in large or highly strategic accounts
- Proven track record of driving decisions collaboratively, resolving conflicts and ensuring follow through with exceptional verbal and written communication

- Capability to design and implement practice-based architectures or equivalent competitive experience.
- Extensive experience of working with virtual teams across functions and geographies
- Inclusive and collaborative driving teamwork and cross-team alignment
- Strong partner relationship management and solution development skills
- Problem-solving mentality leveraging internal and/or external resources, conflict resolution, and follow through with partners.

Basic   Qualifications

- 10+ years of related experience in technology solutions/practice development, Cloud / Infrastructure technologies.
- 5+ years of success in consultative/complex technical sales and deployment projects
- 5+ years of architecture, design, implementation, and/or support of highly distributed applications
- 2+ years of experience in "migrating" on-premise workloads to the cloud
- Oversight experience on major transformation projects and successful transitions to implementation support teams
- Strong executive presence including communication and presentation skills with a high degree of comfort to large and small technical audiences.
- Prior work experience in a Consulting/Architecture position within a software and/or services company with cloud experience such as Amazon, SalesForce, VMware, Google, IBM, Avanade, T-Systems, Wipro, CSC, HP, Infosys, ServiceNow, Dell, TCS, Rackspace, Softlayer
- Location is flexible near a Microsoft office

Preferred   Qualifications

- Experience migrating or transforming legacy customer solutions to the cloud

- Professional experience architecting/operating solutions built on Microsoft Azure
- Familiarity with common enterprise services, products and enterprise architecture and management frameworks
- Experience working within software development or Internet-related industries
- Willingness to travel between 30% – 50%

Obviously, it is recommended that an Azure Solution Architect has the relative certification: MCSE: Cloud Platform and Infrastructure. According to the Microsoft Certification website, an experimented Azure Solution Architect is required to have:

- Two or more years hands-on experience designing and deploying enterprise cloud architecture on Microsoft Azure
- Skills needed to run a highly efficient and modern data center, with expertise in cloud technologies, identity management, systems management, virtualization, storage, and networking

Note: AWS Machine Learning certification is one of the best among AWS certifications for machine learning professionals. Learn about AWS ML and get ahead towards the certification preparation with the AWS Certified Machine Learning Speciality free test.

What to Ask?

Based on information and previous requirements, now we could think about "*What to ask?*" and start for discovering if the candidate is:

- An IT Leader that can transform how an Enterprise uses the public, private and   hybrid Cloud
- Someone who works equally well with executives and technologists
- Someone that is a technology evangelist
- A professional that is interested in joining a highly technical team that invests in your success by providing a comprehensive learning program
- A professional that has a passion for helping customers design large distributed systems and enterprise architectures
- A person that enjoys doing architecture using the world's most advanced cloud computing technologies

- An Architect that has a knack for helping organizations understand application architectures and integration approaches, architecting advanced cloud-based solutions and launching the build-out of those systems
- One of those rare technologists with the consultative leadership skills to help guide major projects to success

The best interview questions describe the person and professional beyond his resume, revealing the job candidate's personality, strengths, weaknesses, knowledge, skills, and abilities as required before. The best interview questions focus on the skills and qualifications that the hiring company want candidates to have and the contributions that want the candidate to make to their company.

Those questions help you assess the prospective employee's work experience and his approach to architecting enterprise solutions. Those would help you understand how the candidate interacts with people and their future work environment.

These are some of the best Azure interview questions to ask an Azure Solution Architect role with their relative purpose without an order predefined:

Question	Purpose
If an organization is facing a major change, what is your approach as Azure Solution Architect to suggest you face it? What steps are you're going to do? How could resolve this situation?	Reveal if the candidate possesses an open interest about a future customer and understand their business model and actual changes and challenges
From your point of view, what are the relevant responsibilities of an Azure Solution Architect?	Understand the point of view of the candidate about responsibilities, duties, and challenges for an Azure Solution Architect.

How do you normally take Azure architecture requirements through to design?	Identify some procedures and methodology for establishing relationships and how to understand business requirements from customer.
What are key considerations/guidelines when you're going to make some Azure Architecture recommendations?	Identify how the candidate take decisions and make recommendation about Azure Architecture topics
How do you approach a pre-sales engagement? How do you establish a relationship with Azure salespeople? Please describe...	Understand how the candidate create relationship and collaborate with other Azure work teams
What challenges are you looking for in the position as an Azure Enterprise Solution Architect?	Discover what is the candidate purpose and objective of the company or running this role
How do you share (teach) your ideas and knowledge about Microsoft Azure services/technologies to customers or other people on your team? Please describe... Could you please show us?	Reveal about if the candidate has excellent communication and presentation skills and really enjoy sharing their expertise and knowledge as advocate
Could you please describe a situation, where you interacted with CxOs people or other business leaders?	Understand if the candidate has had communication and relationship with C-level people, and how has managed those relationships
Please describe a successful project that reflects your design/implementation/consulting experience about Azure Solution Architecture?	Discover practical experience based on project executed before around Azure Solution Architecture
What enterprise architecture and management frameworks do you know? And how are you have used them?	Reveal their knowledge about enterprise architecture, business architecture, architecture, and management frameworks. Based on experience, how the candidate has used them.
Please describe a before	Understand how the candidate handles issues and

problem or issue during your career? How did you handle them?	problems
What have you done to improve your Azure knowledge in last year?	Discover if the candidate has invested in their personal and professional growth by herself
What are most important characteristics of an Azure solution that you need take in count when you design it?	Understand if the candidate uses Microsoft and Azure best practices or framework and if the candidate has a holistic view of a business solution
Please describe or tell us about a special contribution you have made to your last employer?	Know how the candidate has performed in the past and any special contributions that the candidate could bring to your company
Who are you? Please tell us about yourself?	Discover if the candidate is the best one for the job position and who the candidate is

Table #1. Some of best interview questions to ask

Top 10 Frequently Asked Azure Interview Questions

1. **What is Cloud Computing?**

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

3. **What is a cloud service role?**

4. **What is Azure Diagnostics?**

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

6. **What are the different cloud deployment models?**

7. **What are the three main components of the Windows Azure Platform?**

8. **What is Windows Azure compute emulator?**

9. **Define the Azure Redis Cache?**

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

Azure Basic Interview Questions

1. What is Azure Cloud Service?

By creating a cloud service, you can deploy a multi-tier web application in Azure, defining multiple roles to distribute processing and allow flexible scaling of your application. A cloud service consists of one or more web roles and/or worker roles, each with its own application files and configuration.

Azure Websites and Virtual Machines also enable web applications on Azure. The main advantage of cloud services is the ability to support more complex multi-tier architectures.

2. What is a cloud service role?

A cloud service role is comprised of application files and a configuration. A cloud service can have two types of roles.

3. What is the link to a resource?

To show your cloud service's dependencies on other resources, such as an Azure SQL Database instance, you can "link" the resource to the cloud service. In the Preview Management Portal, you can view linked resources on the Linked Resources page, view their status on the dashboard, and scale a linked SQL Database instance along with the service roles on the Scale page. Linking a resource in this sense does not connect the resource to the application; you must configure the connections in the application code.

4. What is scale a cloud service?

A cloud service is scaled out by increasing the number of role instances (virtual machines) deployed for a role. A cloud service is scaled in by decreasing role instances. In the Preview Management Portal, you can also scale a linked SQL Database instance, by changing the SQL Database edition and the maximum database size, when you scale your service roles.

5. What is a web role?

A web role provides a dedicated Internet Information Services (IIS) web-server used for hosting front-end web applications.

6. What is a worker's role?

Applications hosted within worker roles can run asynchronous, long-running, or perpetual tasks independent of user interaction or input.

7. What is a role instance?

A role instance is a virtual machine on which the application code and role configuration run. A role can have multiple instances, defined in the service configuration file.

8. What is a guest operating system?

The guest operating system for a cloud service is the operating system installed on the role instances (virtual machines) on which your application code runs.

[**Related Article**: **Benefits of Azure Automation**]

9. What is a cloud service component?

Three components are required in order to deploy an application as a cloud service in Azure:

10. What are deployment environments?

Azure offers two deployment environments for cloud services: a staging environment in which you can test your deployment before you promote it to the production environment. The two environments are distinguished only by the virtual IP addresses (VIPs) by which the cloud service is accessed.

In the staging environment, the cloud service's globally unique identifier (GUID) identifies it in URLs (GUID.cloudapp.net). In the production environment, the URL is based on the friendlier DNS prefix assigned to the cloud service (for example, myservice.cloudapp.net).

11. What is a service definition file?

The cloud service definition file (.csdef) defines the service model, including the number of roles.

12. What is a service configuration file?

The cloud service configuration file (.cscfg) provides configuration settings for the cloud service and individual roles, including the number of role instances.

13. What is a service package?

The service package (.cspkg) contains the application code and the service definition file.

14. What is a cloud service deployment?

A cloud service deployment is an instance of a cloud service deployed to the Azure staging or production environment. You can maintain deployments in both staging and production.

15. What is Azure Diagnostics?

Azure Diagnostics is the API that enables you to collect diagnostic data from applications running in Azure. Azure Diagnostics must be enabled for cloud service roles in order for verbose monitoring to be turned on.

16. What is Azure Service Level Agreement (SLA)?

The Azure Compute SLA guarantees that, when you deploy two or more role instances for every role, access to your cloud service will be maintained at least 99.95 percent of the time. Also, detection and corrective action will be initiated 99.9 percent of the time when a role instance's process is not running.

17. What is Cloud Computing?

Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network (typically the Internet).

18. What is the Service Model in Cloud Computing?

Cloud computing providers offer their services according to three fundamental models: Infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models.

- Examples of IaaS include Amazon CloudFormation (and underlying services such as Amazon EC2), Rackspace Cloud, Terremark, Windows Azure Virtual Machines, Google Compute Engine. and Joyent.
- Examples of PaaS include Amazon Elastic Beanstalk, Cloud Foundry, Heroku, Force.com, EngineYard, Mendix, Google App Engine, Windows Azure Compute, and OrangeScape.
- Examples of SaaS include Google Apps, Microsoft Office 365, and Onlive. Source from.

19. What are the different cloud deployment models?

Cloud deployment models describe how cloud services are offered to users. The major deployment models associated with cloud computing are listed below:

- **Public cloud:** Here, computing services are offered through third-party providers across the public internet and server.
- **Private cloud:** Here, computing services are offered either over the private internal network or the internet only to the selected users.

- **Hybrid cloud:** Here, the cloud computing environment combines both public cloud and private cloud, allowing to share data and applications between them.

20. Explain traffic manager benefits in Azure?

The major benefits offered by the traffic manager in Azure are:

- Distribution of traffic based on several traffic-routing methods.
- Continuous monitoring of endpoint health and automatic failover when endpoints fail.

21. What is a break-fix issue?

In Azure, break-fix issues are referred to as technical problems. It is an industry term used when "work involved in supporting a technology when it fails its normal course of action".

22. What is Azure Active Directory and how it is used?

Microsoft offers Azure active directory(Azure AD), a fully managed multi-tenant service that implements identity and access capabilities for applications running in Azure as well as applications operating in the on-premises environment. It is used for providing single sign-on and multi-factor authentication to help users from protecting attacks.

[**Related Article**: **What is Azure Arc?**]

23. What is an Availability Set?

Availability Set is a logical grouping capability majorly employed for separating VM sources from each other when they are deployed. They are used for building reliable cloud solutions.

The VMs placed in the Availability set are run across various physical servers, storage units, compute racks, and network switches in Azure. If any failure occurs, only VMs subset is affected, and the overall solution stays operational.

24. What is the use of a Lookup transformation?

Lookup transformation is used for performing lookups by combining data in input columns with columns in the reference dataset. The reference table can be a new table or an existing table, view, or the SQL result query result.

25. Name the web application types that can be deployed with Azure?

The web applications that can be deployed with Azure are ASP.Net, PHP, and WCF.

26. Explain Azure Resource Manager?

Azure Resource Manager is used for provisioning management and deployment services in Azure. The management layer is used for updating and deleting resources in Azure subscription. You can organize related resources in resource groups and deploy your resources with JSON templates.

27. What is a Fault Domain?

A Fault domain represents the group of the underlying hardware that shares a common power source and network switch. Every fault domain comprises some racks and each contains a virtual machine. When you create virtual machines within an availability set, your virtual machines are automatically distributed across the fault domains in the Azure platform.

28. What are Update Domains?

The updated domain represents the group of the underlying hardware that can be rebooted or can withstand maintenance at the same time. When you create virtual machines within an availability set, your virtual machines are automatically distributed across the update domains by the Azure platform. This ensures that at least one instance of your applications always remains working when the Azure platform is under periodic maintenance.

29. What is the difference between Azure Service Bus Queues and Storage Queues?

Two types of queue mechanisms are supported by Azure: Storage queues and Service Bus queues.

- **Storage queues:** These are part of the Azure storage infrastructure, features a simple REST-based GET/PUT/PEEK interface. Provides persistent and reliable messaging within and between services.
- **Service Bus queues:** These are part of a broader Azure messaging infrastructure that helps to queue as well as publish/subscribe, and more advanced integration patterns.

30. Explain Azure Service Fabric?

Azure Service Fabric is a distributed platform designed by Microsoft to facilitate the development, deployment, and management of highly scalable and customizable applications. The applications created in this environment consist of detached microservices that communicate with each other through service application programming interfaces.

31. Define the Azure Redis Cache?

Azure Redis Cache is an open-source and in-memory Redis cache that helps web applications to fetch data from a backend data source into cache and server web pages from the cache to enhance the application performance. It

provides a powerful and secure way to cache the application's data in the Azure cloud.

32. Explain the types of services you can build with the Service Fabric?

Majorly, two types of services you can build on Service Fabric:

- Stateless Services: No state is stored in the service. The longer-term state is stored in an external database. This is the typical application/data layer approach to build services.
- Stateful Services: The state is stored in the service. Allows the state to persist without the need for an external database.

33. What is the Windows Azure Platform?

A collective name of Microsoft's Platform as a Service (PaaS) offering which provides a programming platform, a deployment vehicle, and a runtime environment of cloud computing hosted in Microsoft data centers.

34. What are the roles available in Windows Azure?

All three roles (web, worker, VM) are essentially Windows Server 2008. Web and Worker roles are nearly identical: With Web and Worker roles, the OS and related patches are taken care of for you; you build your app's components without having to manage a VM

35. What is the difference between the Windows Azure Platform and Windows Azure?

The former is Microsoft's PaaS offering including Windows Azure, SQL Azure, and AppFabric; while the latter is part of the offering and Microsoft's cloud OS.

36. What are the three main components of the Windows Azure Platform?

- Compute.
- Storage.
- AppFabric.

Microsoft Azure Advanced Interview Questions

37. What is Windows Azure compute emulator?

The compute emulator is a local emulator of Windows Azure that you can use to build and test your application before deploying it to Windows Azure.

38. What is the fabric?

In the Windows Azure cloud fabric is nothing but a combination of many virtualized instances which run the client application

39. How many instances of a Role should be deployed to satisfy Azure SLA (service level agreement)? And what's the benefit of Azure SLA?

TWO. And if we do so, the role would have external connectivity at least 99.95% of the time.

40. What are the options to manage session state in Windows Azure?

- Windows Azure Caching
- SQL Azure
- Azure Table

41. What is CSPack?

It is a command-line tool that generates a service package file (.cspkg) and prepares an application for deployment, either to Windows Azure or to the compute emulator.

42. What is Csrun?

It is a command-line tool that deploys a packaged application to the Windows Azure compute emulator and manages the running service.

43. What is the guest OS?

It is the operating system that runs on the virtual machine that hosts an instance of a role.

[Related Article: Learn Azure Key Vault]

44. How to programmatically scale out Azure Worker Role instances?

Using AutoScaling Application Block

45. What is the difference between Public Cloud and Private Cloud?

A public cloud is used as a service via the Internet by the users, whereas a private cloud, as the name conveys is deployed within certain boundaries like firewall settings and is completely managed and monitored by the users working on it in an organization.

46. How to design applications to handle connection failure in Windows Azure?

The Transient Fault Handling Application Block supports various standard ways of generating the retry delay time interval, including fixed interval, incremental interval (the interval increases by a standard amount), and exponential back-off (the interval doubles with some random variation).

```
static RetryPolicy policy = new RetryPolicy(5,
TimeSpan.FromSeconds(2), TimeSpan.FromSeconds(2));
policy.ExecuteAction(() => { try { string federationCmdText =
@"USE FEDERATION Customer_Federation(ShardId =" + shardId + ")
WITH RESET, FILTERING=ON"; customerEntity.Connection.Open();
customerEntity.ExecuteStoreCommand(federationCmdText); } catch
(Exception e) { customerEntity.Connection.Close();
SqlConnection.ClearAllPools(); } });
```

47. What is Windows Azure Diagnostics?

Windows Azure Diagnostics enables you to collect diagnostic data from an application running in Windows Azure. You can use diagnostic data for debugging and troubleshooting, measuring performance, monitoring resource usage, traffic analysis and capacity planning, and auditing.

```
HTTP://WWW.WINDOWSAZURE.COM/EN-US/DEVELOP/NET/COMMON-TASKS/
DIAGNOSTICS/
```

48. What is Blob?

BLOB stands for Binary Large Object. Blob is a file of any type and size. The Azure Blob Storage offers two types of blobs:

1. Block Blob
2. Page Blob

URL format: Blobs are addressable using the following URL format:

49. What is the difference between Block Blob vs Page Blob?

Block blobs are comprised of blocks, each of which is identified by a block ID. You create or modify a block blob by uploading a set of blocks and committing them by their block IDs.
If you are uploading a block blob that is no more than 64 MB in size, you can also upload it in its entirety with a single Put Blob operation. -Each block can be a maximum of 4 MB in size. The maximum size for a block blob in version 2009-09-19 is 200 GB or up to 50,000 blocks.

Page blobs are a collection of pages. A page is a range of data that is

identified by its offset from the start of the blob. To create a page blob, you initialize the page blob by calling Put Blob and specifying its maximum size. -The maximum size for a page blob is 1 TB. A page written to a page blob may be up to 1 TB in size.
what to use block blobs for streaming video. "The application must provide random read/write access" which is supported by Page Blobs

50. What is the difference between Windows Azure Queues and Windows Azure Service Bus Queues?

Windows Azure supports two types of queue mechanisms: Windows Azure Queues and Service Bus Queues.

- Windows Azure Queues, which are part of the Windows Azure storage infrastructure, feature a simple REST-based Get/Put/Peek interface, providing reliable, persistent messaging within and between services.
- Service Bus Queues are part of a broader Windows Azure messaging infrastructure dead-letters queuing as well as publish/subscribe, Web service remoting, and integration patterns.

HTTP://WCFPRO.WORDPRESS.COM/2010/12/06/COMMUNICATION-IN-WINDOWS-AZURE/

HTTP://MSDN.MICROSOFT.COM/EN-US/LIBRARY/WINDOWSAZURE/HH767287.ASPX

51. What is the dead letter queue?

1. Messages are placed on the dead-letter sub-queue by the messaging system in the following scenarios.
2. When a message expires and dead-lettering for expired messages is set to true in a queue or subscription.
3. When the max delivery count for a message is exceeded on a queue or subscription.
4. When a filter evaluation exception occurs in a subscription and dead-lettering is enabled on filter evaluation exceptions.

52. What are swap deployments?

 To promote a deployment in the Azure staging environment to the production environment, you can "swap" the deployments by switching the VIPs by which the two deployments are accessed. After the deployment, the DNS name for the cloud service points to the deployment that had been in the staging environment.

53. What is minimal vs. verbose monitoring?

 Minimal monitoring, which is configured by default for a cloud service, uses performance counters gathered from the host operating systems for role instances (virtual machines). Verbose monitoring gathers additional metrics

based on performance data within the role instances to enable closer analysis of issues that occur during application processing. For more information

54. What are the instance sizes of Azure?

Windows Azure will handle the load balancing for all of the instances that are created. The VM sizes are as follows:

- Compute Instance Size CPU Memory Instance Storage I/O Performance
- Extra Small 1.0 GHz 768 MB 20 GB Low
- Small 1.6 GHz 1.75 GB 225 GB Moderate
- Medium 2 x 1.6 GHz 3.5 GB 490 GB High
- Large 4 x 1.6 GHz 7 GB 1,000 GB High
- Extra-large 8 x 1.6 GHz 14 GB 2,040 GB High

55. What is table storage in Windows Azure?

The Windows Azure Table storage service stores large amounts of structured data.
The service is a NoSQL data store that accepts authenticated calls from inside and outside the Windows Azure cloud.
Windows Azure tables are ideal for storing structured, non-relational data

- **Table:** A table is a collection of entities. Tables don't enforce a schema on entities, which means a single table can contain entities that have different sets of properties. An account can contain many tables
- **Entity:** An entity is a set of properties, similar to a database row. An entity can be up to 1MB in size.
- **Properties:** A property is a name-value pair. Each entity can include up to 252 properties to store data. Each entity also has 3 system properties that specify a partition key, a row key, and a timestamp. Entities with the same partition key can be queried more quickly, and inserted/updated in atomic operations. An entity's row key is its unique identifier within a partition.

Azure Interview Questions For Freshers

## 1. What do you understand about cloud computing?

- Cloud computing refers to the usage of **computing resources (servers)** on the internet (refers to the term cloud) for the purpose of storing, managing, analyzing, and processing the data. Here, instead of maintaining our own servers, we use the infrastructure provided and maintained by third-party vendors such as Microsoft, AWS, etc, and pay them based on the server usage time duration.
- Cloud computing enhances the speed of execution, ensures flexibility of resources, and easier scalability.
- Cloud computing can be used to attain high fault tolerance and high system availability and this can also be done dynamically as per the infrastructural requirements of the application.
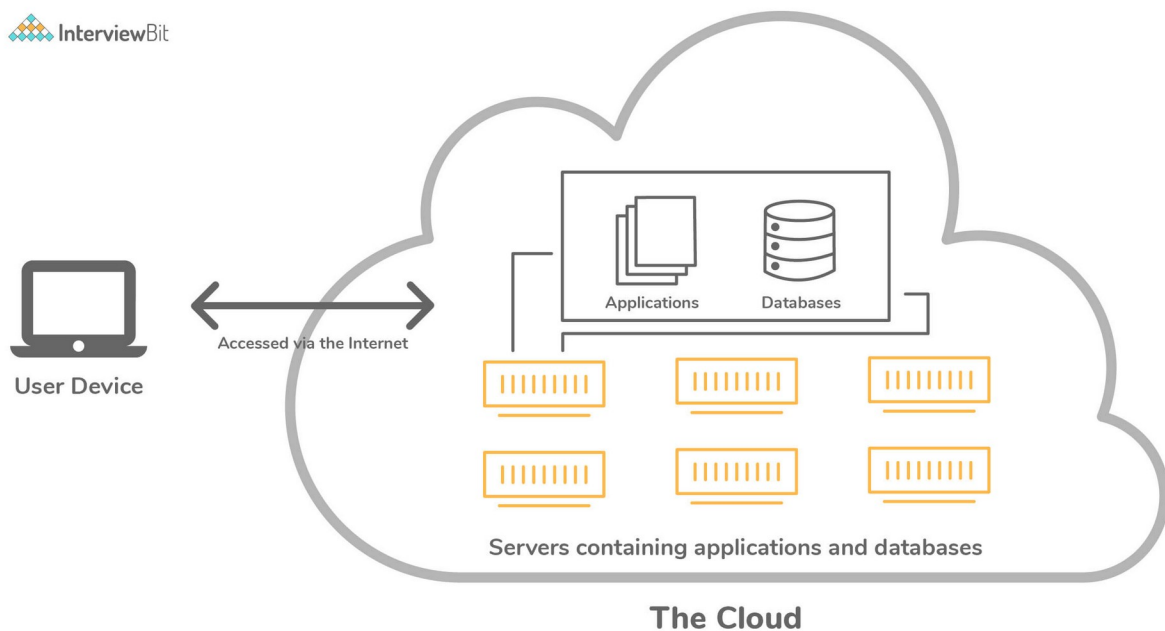
Cloud Computing

## 2. Can you tell something about Azure Cloud Service?

- Azure Cloud Service is a classic example of a platform as a service (PaaS). This was designed to support those applications which demand high scalability, reliability, and availability all within the constraints of reduced cost of operations. These are hosted on virtual VMs and Azure provides more control over them by letting the developers install the necessary software and enabling them to control remotely.
- Azure cloud services are used for deploying multi-tier web-based applications in Azure by means of creating an instance of cloud service. It is also possible to define multiple roles such as web roles, worker roles, etc for the purpose of distributed processing. Azure cloud services help in the easier and flexible scalability of the application.
- Each role of the cloud service has its own purpose and thereby its own configuration and application files.
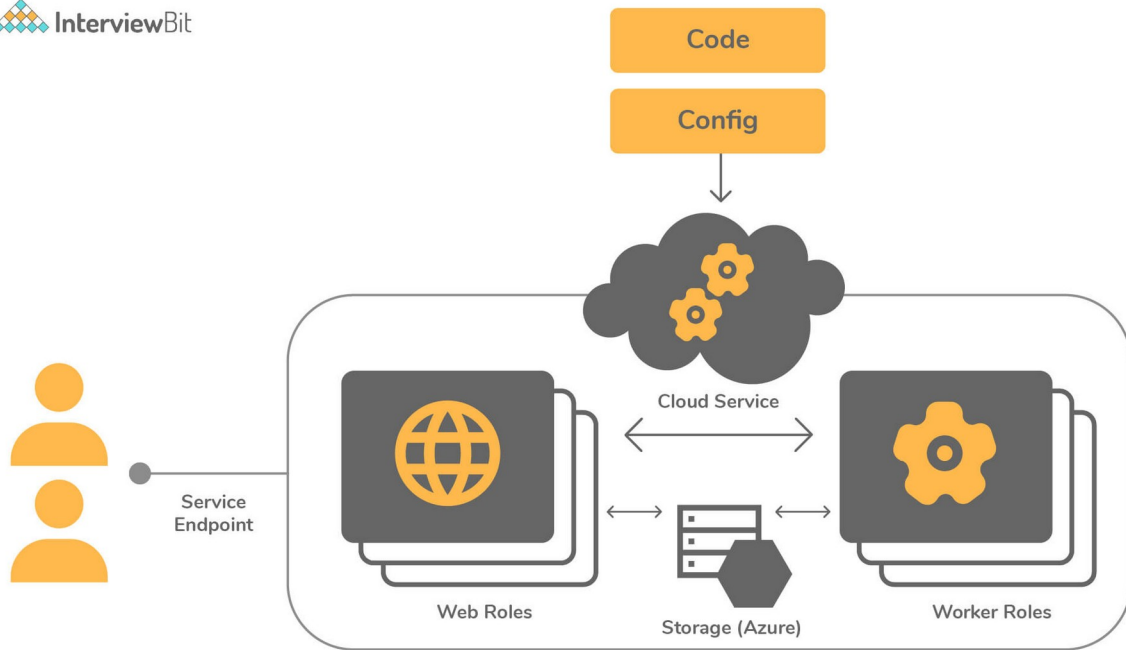
Azure Cloud Service

## 3. What are the various models available for cloud deployment?

There are 3 models available for cloud deployment:
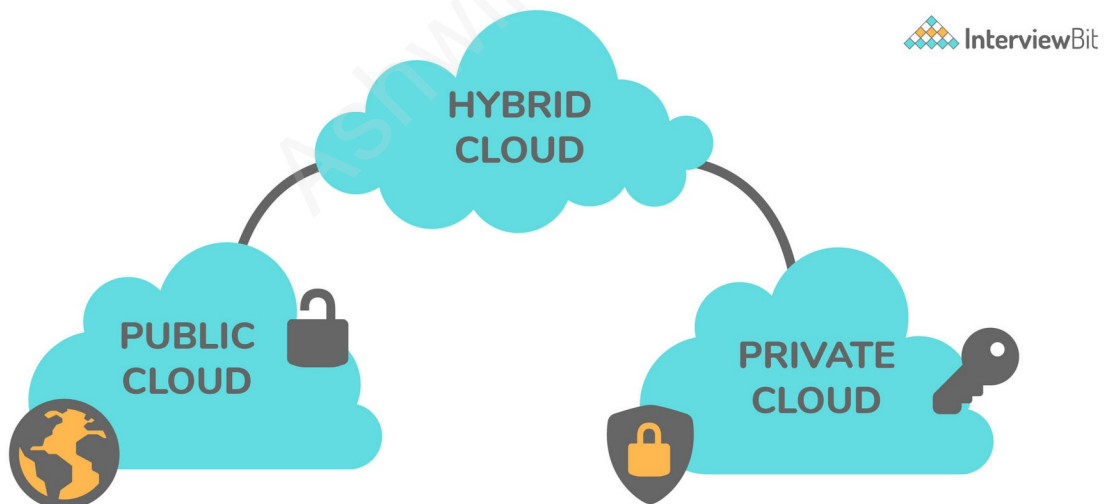
Models For Cloud Deployment

- Public Cloud: In this model, the cloud infrastructure is owned publicly by the cloud provider and there are chances that the server resources could be shared between multiple applications.
- Private Cloud: Here, the cloud infrastructure is owned exclusively by us or exclusive service is provided by the cloud provider to us.
  - o This includes hosting our applications on our own on-premise servers or hosting the application on a dedicated server provided by the cloud provider.

- Hybrid Cloud: As the name itself says, this model is the hybrid combination of private cloud and the public cloud.
  - o This might include the scenario of using on-premise servers for processing confidential, sensitive data and using public cloud features for hosting public-facing applications.
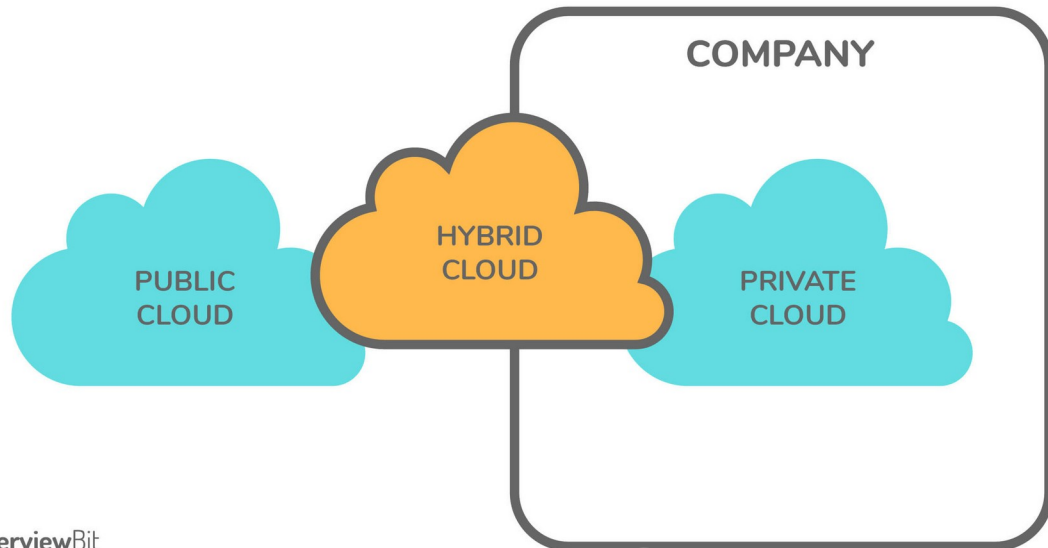
Hybrid Cloud

Here, we use the best of both worlds to our requirements and advantage.

You can download a PDF version of Azure Interview Questions.

Download PDF

4. Define role instance in Azure.

A role instance is nothing but a virtual machine where the application code runs with the help of running role configurations. There can also be multiple instances of a role as per the definition in the cloud service configuration files.

5. How many cloud service roles are provided by Azure?

Cloud service roles comprise a set of application and configuration files. There are 2 kinds of roles provided by Azure:

- Web role: This provides a dedicated web server belonging to IIS (Internet Information Services) that is used for automatic deployment and hosting of front-end websites.

- Worker role: These roles help the applications hosted within them to run asynchronously for longer durations and are independent of the user interactions and generally do not use IIS. They are also ideal for performing background processes. The applications are run in a standalone manner.

6. Why is Azure Diagnostics API needed?

- Azure Diagnostics API helps us collect diagnostic data such as performance monitoring, system event logs, etc from the applications that are running on Azure.
- For the verbose monitoring of the data, Azure Diagnostics has to be enabled for the cloud service roles.
- The diagnostics data can be used for building visual chart representations for better monitoring and also for creating performance metric alerts.

7. Define Azure Service Level Agreement (SLA)?

- The Azure SLA is a contract that ensures or guarantees that when two or more role instances of a role are deployed on Azure, access to that cloud service is guaranteed for at least 99.95% of the time.
- It also states that if the role instance process is not in the running state, then the detection of such processes and corrective action for the same will be taken 99.9% percent of the time.
- If the mentioned guarantees are not satisfied at any point in time, then Azure credits a percentage of monthly fees to us depending on the pricing model of the respective Azure services.

8. What is Azure Resource Manager?

Azure Resource Manager is a service provided by Azure to provide management and application deployment in Azure.

The resource manager provides the management layer that helps the developer to create, modify or delete the resources in the Azure subscription account. This feature comes in handy when we have requirements like managing access controls, locks, ensuring the security of the resources post-deployment, and organization of those resources.

9. What is NSG?

NSG stands for Network Security Group that has a list of ACL (Access Control List) rules which either allows/denies network traffic to subnets or NICs (Network Interface Card) connected to a subnet or both. When NSG is linked with a subnet, then the ACL rules are applied to all the Virtual Machines in that subnet.

Restrictions of traffic to individual NIC can be done by associating NSG directly to that NIC.

10. VM creation is possible using Azure Resource Manager in a Virtual Network which was created by means of classic deployment. True or False?

False. Azure does not support this.

Intermediate Interview Questions

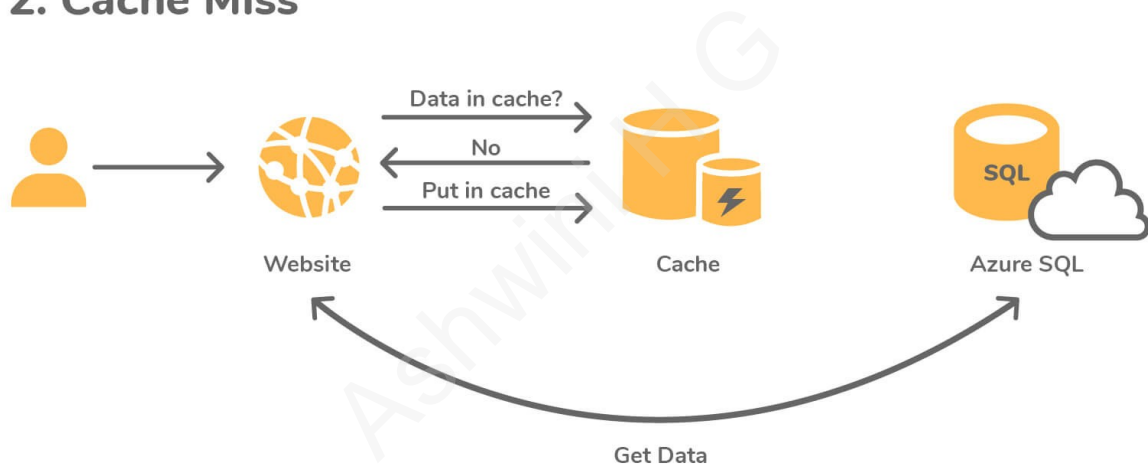### 11. What is Azure Redis Cache?

- It is an open-source, in-memory Redis cache system provided and maintained by Azure.
- It helps the web applications to improve the performance by fetching data from the backend database and storing it into the Redis cache for the first request and then fetching data from the Redis cache for all subsequent requests.
- Azure Redis Cache provides powerful and secure caching mechanisms by making use of the Azure cloud.
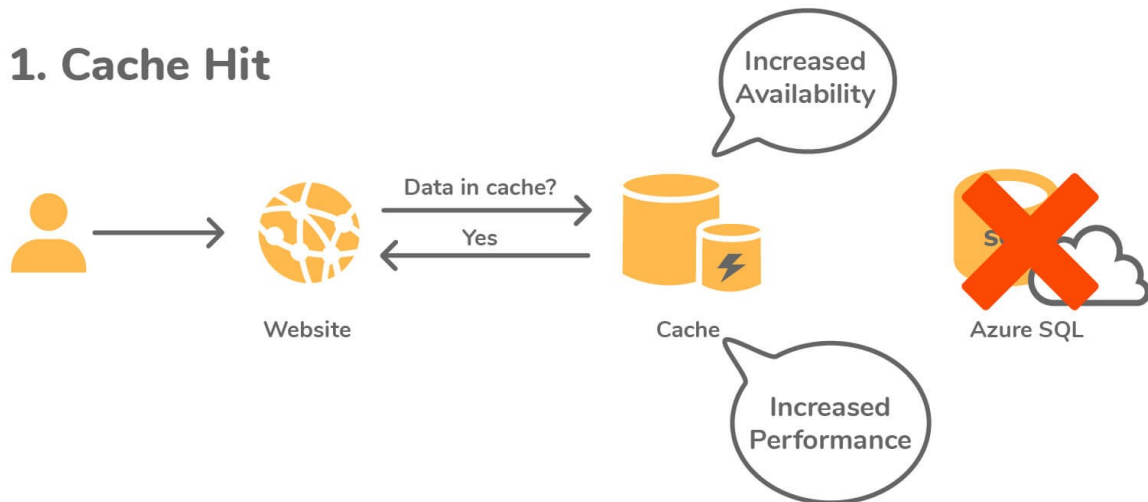
Azure Redis Cache

12. Define Azure virtual machine scale sets

- These are the Azure computation resources that can be used to deploy and manage sets of identical Virtual Machines (VMs).
- These scale sets are configured in the same manner and are designed to support the autoscaling of the applications without the need for pre-provisioning of the VMs.
- They help to build large-scale applications targeting big data and containerized workloads in an easier manner.
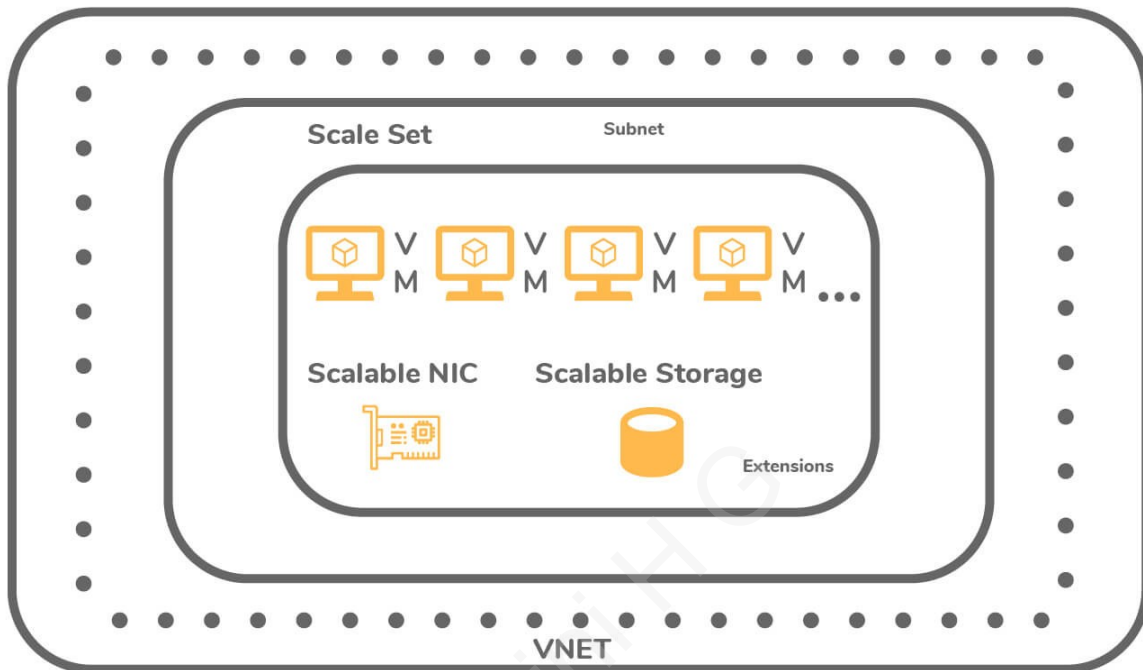
Azure virtual machine

13. What do you understand about the "Availability Set"?

- Availability Set is nothing but a logical grouping of VMs (Virtual Machines) that allows Azure cloud to understand how the application was developed for providing availability and redundancy.
- Each VM in the availability set is assigned 2 kinds of domains by Azure:
  - o Fault Domain: These define the grouping of VMs that would share a common power source and common network switch. The VMs within availability sets are separated across up to 3 fault domains by default. This separation of VMs in fault domains helps our applications to be available by reducing impacts of network outages, power interruptions, and certain hardware failures.
  - o Update Domain: These indicate the grouping of VMs and underlying hardware which are eligible to be rebooted at the same time. Only one update domain can be rebooted at a time, however, the order of reboot does not proceed in a sequential manner. Before the maintenance of another update domain, the previously rebooted domain is given a recovery time of 30 minutes to ensure that the domain is up.

- Azure provides flexibility to configure up to 3 fault domains and 20 update domains for an availability set.
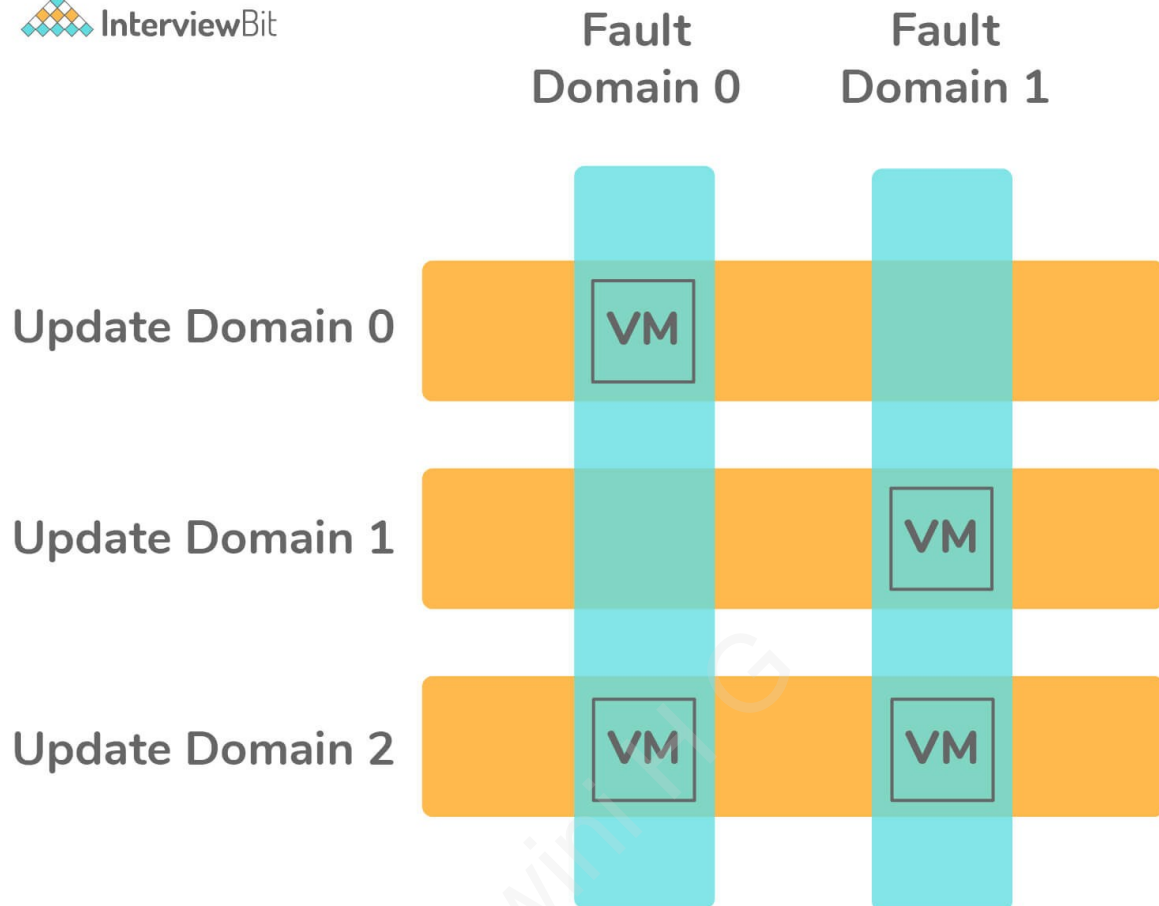
Availability Set

14. What are the available options for deployment environments provided by Azure?

Azure provides two deployment environments, they are:

- Staging Environment: This environment is used for validating the changes of our application before making them live into the main environment.
    - o Here, the application is identified by means of GUID (Globally Unique Identifier) of Azure which has the URL as: `GUID.cloudapp.net`
- Production Environment: This is the main environment where our application goes live and can be accessed by the target audience which can be accessed by means of DNS friendly URL: `appName.cloudapp.net`

15. What do you need to do when drive failure occurs?

The following steps need to be performed when the drive failure occurs:

- To make sure that the Azure Storage functions without fail, we need to ensure that the drive is not mounted.
- Replace the drive so that the drive gets remounted and formatted.

16. Is it possible to design applications that handle connection failure in Azure?

Yes, it is possible and is done by means of the Transient Fault Handling Block. There can be multiple causes of transient failures while using the cloud environment:

- Due to the presence of more load balancers, we can see that the application to database connections fail periodically.
- While using multi-tenant services, the calls get slower and eventually time out because other applications are using resources to hit the same resource heavily.
- The last cause can be we ourselves as the user trying to hit the resource very frequently which causes the service to deliberately deny the connection to us to support other tenants in the architecture.

Instead of showing errors to the user periodically, the application can recognize the errors that are transient and automatically try to perform the same operation again typically after some seconds with the hope of establishing the connection. By making use of the Transient Fault Handling Application Block mechanism, we can generate the retry intervals and make the application perform retries. In the majority of the cases, the error would be resolved on the second try and hence the user need not be made aware of these errors unnecessarily.

Following is the sample code that can be used for the retry policy. Here, if the connection is not successful, then the action is retried based on the retry policy defined. There are 3 retry strategies - Fixed Interval, Incremental Interval, Exponential Backoff Strategy.

```
/***
* Class to detect Transient Blocks - Here
* OperationCancelledException is
* detected and then the retry strategy is employed.
*/
internal class AppTransientDetection : ITransientErrorDetectionStrategy
{
    bool IsTransient(Exception exception) =>
        exception is OperationCanceledException;
}


/***
* Retry Strategy - Here Fixed Interval Strategy is employed and is retried
for 5 times.
*/
```

```
RetryStrategy retryStrategy = new FixedInterval(retryCount: 5,
retryInterval: TimeSpan.FromSeconds(2));

RetryPolicy retryPolicy = new RetryPolicy(new AppTransientDetection(),
retryStrategy);
retryPolicy.ExecuteAction(() => {
    try {
        string commandText = @"USE FEDERATION User_Federation(ShardId =" +
shardId + ") WITH RESET, FILTERING=ON";
        userEntity.Connection.Open();
        userEntity.ExecuteStoreCommand(commandText);
    } catch (Exception e) {
        userEntity.Connection.Close();
        SqlConnection.ClearAllPools();
    }
});
```

17. Define azure storage key.

- Azure storage key is used for authentication for validating access for the azure storage service to control access of data based on the project requirements.
- 2 types of storage keys are given for the authentication purpose -
  - o Primary Access Key
  - o Secondary Access Key
- The main purpose of the secondary access key is for avoiding downtime of the website or application.

18. What is cspack in Azure?

It is a command-line tool that is used for generating service package files. The tool also helps in preparing the application for deployment in Microsoft Azure or compute emulator.

Every project of cloud service type has the .cscfg file which is basically the cloud service configuration file that is generated by means of cspack tool and is primarily used to store:

- The number of role instances for the deployment of each role in the project.
- The thumbprint of the certificates.
- User-defined configuration and settings.

19. What is the best Azure solution for executing the code without a server?

- Azure Functions service can be used for executing the code without a server.
- Serverless Azure Functions are used for simplifying complex orchestration and challenging resolutions. They are meant for being stateless and short-lived.

- They help to connect with other services without the need for hard coding of the integrations thereby making the development process faster.
- It helps the developer to write and concentrate on the business logic code thereby saving time and effort.
- They also provide the features of monitoring and analyzing code performance by means of Azure Application Insights that help in identifying bottlenecks and failure points across the components of the application.

20. What would be the best feature recommended by Azure for having a common file sharing system between multiple virtual machines?

Azure provides a service called Azure File System which is used as a common repository system for sharing the data across the Virtual Machines configured by making use of protocols like SMB, FTPS, NFS, etc.

21. Is it possible to login to a Linux Virtual Machine without using a password?

Yes, it is possible by making use of the Key Vault mapping to any Admin VM, we can log in to another VM without the need for a password.

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

The main difference between Azure Scale Sets and Availability Sets are given below:

Criteria	Azure Scale Sets	Azure Availability Sets
Definition	They are a group of identically configured VMs that are spread across multiple fault domains.	They are the group of discretely configured VMs that are spread across various fault domains.
Default Domain	These have 5 fault domains and update domains by default.	By default, these have 3 fault domains and 5 update domains.
Workload Type	These are used when there are unpredictable workloads that require the feature of auto scalability.	These are used when there are predictable workload requirements.
Configuration Style	Here, the VMs are configured and created in the same manner from the same image.	Here, the VMs are created by making use of different images and configurations.
VM Count	The number of VMs can be increased/decreased based	A VM can be added to an availability set only at the time

Criteria	Azure Scale Sets	Azure Availability Sets
	on the demand or the pre-defined schedule.	of the set's creation.
Distribution style	Here, the VM scale sets can be distributed across multiple data centers or within a single data center.	Here, the VMs are automatically distributed in a data center.

23. What would happen when the maximum failed attempts are reached during the process of Azure ID Authentication?

In case of maximum failed attempts, the azure account would get locked and the method of locking is dependent on the protocol that analyzes the entered password and the IP addresses of the login requests.

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

No! As the name itself says, Azure Internal Load Balancer supports only Private IP addresses, and hence the assignment of a public IP address or DNS name is not possible.

25. What is Azure Blob Storage?

- Azure Blob storage is the object storage solution provided by Microsoft for the cloud. Blob stands for "Binary Large Object". Blob-based storage is used to store massive unstructured data in terms of text or binary format. It is ideal for serving documents/images/audio/video/text directly to browser.
- The data stored in the blob storage is accessible from anywhere in the world. The blobs are tied to user accounts by grouping them into containers. The Azure Blob Service has 3 components:
  - o Storage Account: This can be a General Storage Account or Blob Storage Account registered in Microsoft Azure.
  - o Container: Container is used for grouping blobs. We can store an unlimited number of blobs in a container. The name of the container should start in lowercase.
  - o Blob: A blob is a Binary Large Object like a file or document of any type and size. There are 3 kinds of Blobs supported by Azure:
    - Block blobs: These are intended for text and binary files and can support up to 195GB, i.e up to 50k blocks of up to 4MB each.
    - Append blobs: These are used for appending operations like logging data in log files.
   - Page blobs: These are meant for frequent read/write operations.
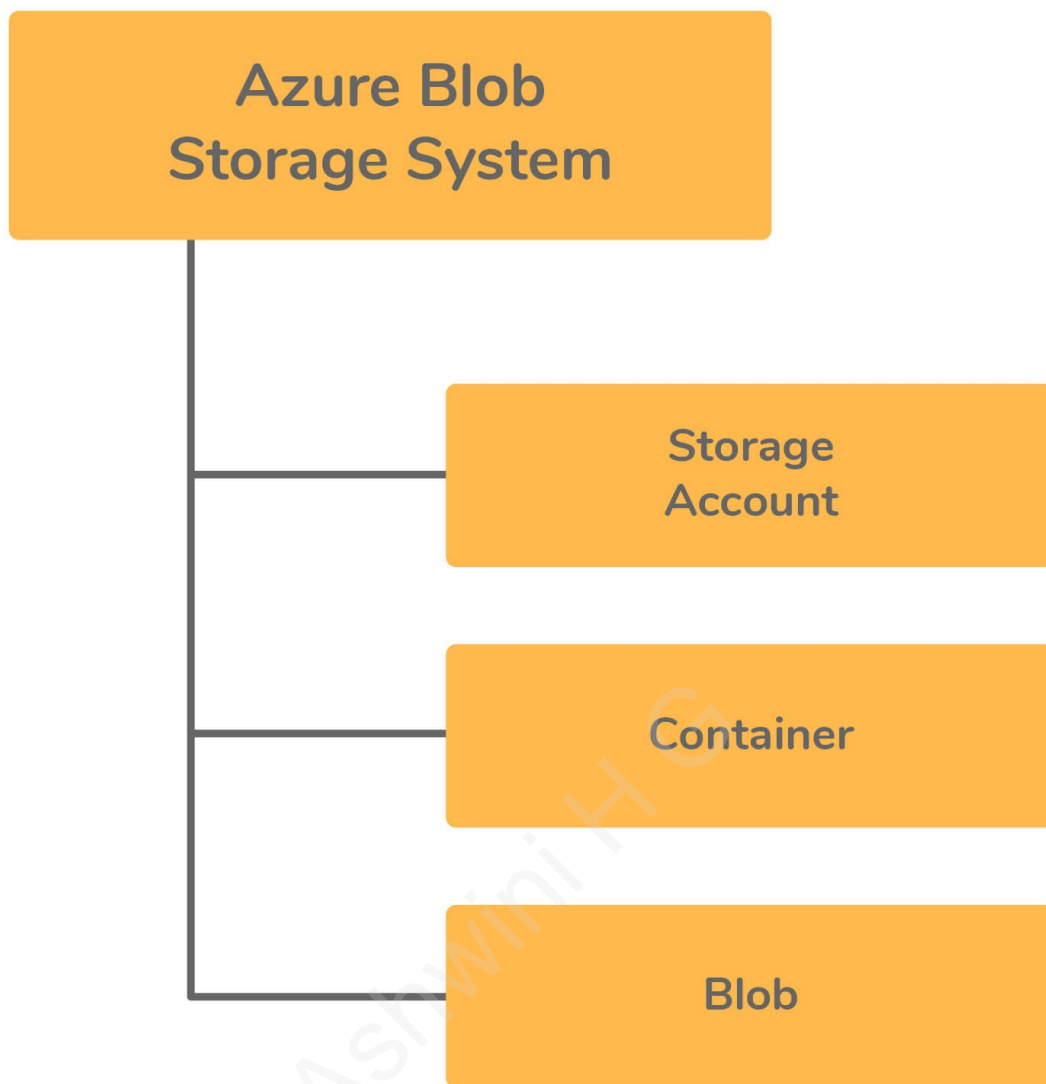
Azure Blob Storage

Azure Interview Questions For Experienced

26. What do you understand by Azure Scheduler?

Azure Scheduler helps us to invoke certain background trigger events or activities like calling HTTP/S endpoints or to present a message on the queue on any schedule.

By using this Azure Schedule, the jobs present in the cloud call services present within and outside of the Azure to execute those jobs on-demand that are routinely on a repeated regular schedule or start those jobs at a future specified date.
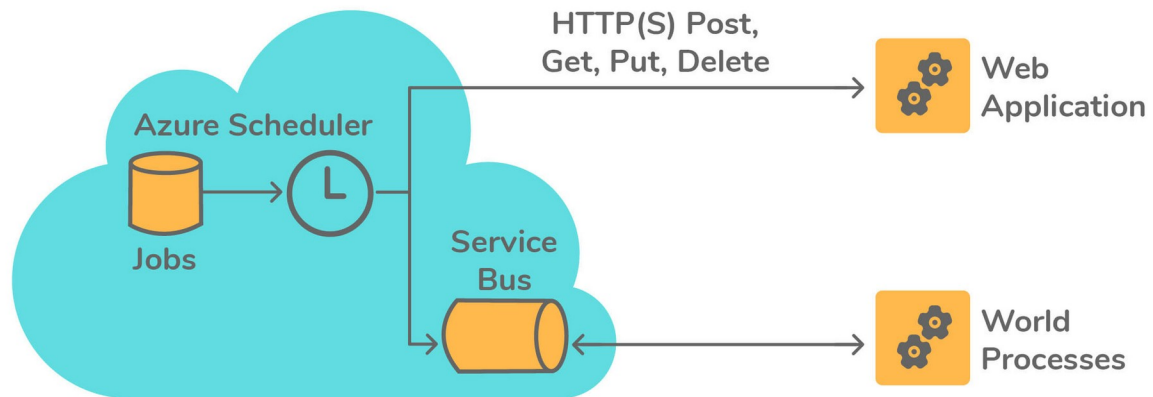
Azure Scheduler

27. Is it possible to map the Windows machines running on two different port numbers, say 80 and 81, on an IIS Web Server to an Azure Load Balancer?

Yes, it can be done by defining a separate Load Balancer Role in Azure.

28. You have an application running on the On-Prem Server and have backup on Azure East US region. Now, On-Prem server application access fails. Is it possible to access the application via the Azure environment?

Yes, it is totally possible by making use of the Site Recovery Service provided by Azure. It is capable of handling fail-over and fail-back scenarios between On-Prem Servers and Azure environments.

29. What feature of Azure can be used to stop the issue of high load on the application in cases of no man support on the flow?

This issue can be stopped by making use of VM Scale sets by defining proper configuration and conditions to provision a new VM whenever the load to the application increases.

- Azure VM Scale Sets lets the developer create and manage a group of VMs that are load balanced. The scale sets can be configured in such a way that the count of VMs can automatically be increased or decreased based on the application demand or based on a pre-defined schedule.
- Usage of Scale Sets ensures high availability of the applications and allows the developers to manage, update and configure large VMs centrally and also help them support the development of large-scale applications supporting big data, big workloads, and compute loads.

- Azure scale sets can support up to 1,000 VMs. If the custom VM images are created and uploaded, then the limit is 600 VMs.

30. What are the types of storage services apart from blob storage provided by Azure?

Azure provides overall 4 types of storage services - Blob Service, Table Storage, Queue Storage, and File Storage Services as shown in the figure below:
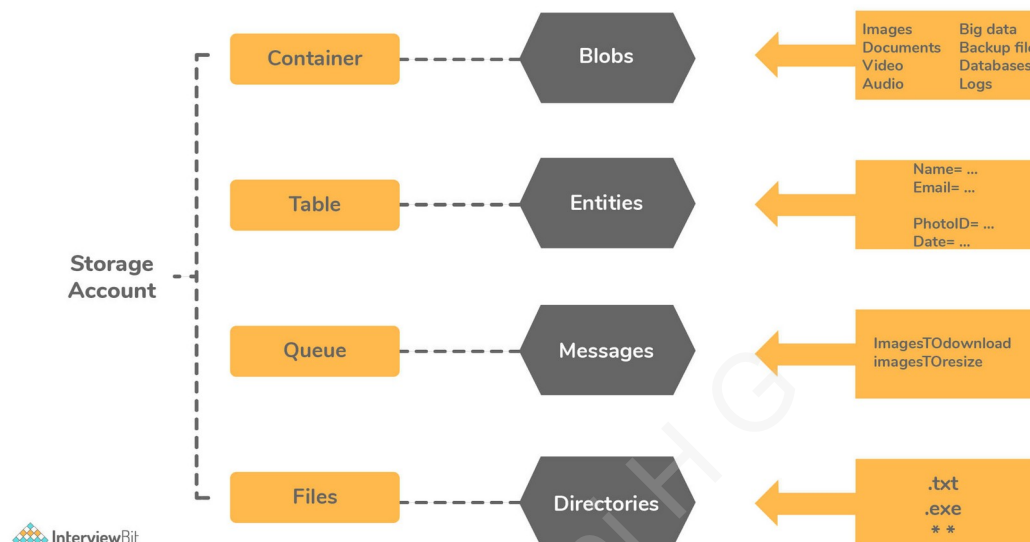
Types of Storage Services
- Azure Table Storage: This type of storage lets user deploy their applications with semi-structured data and a NoSQL-based key-value store.
  - o This is used when there is a need for applications that follow a flexible schema of data.
  - o Table Storage focuses on enterprise-level data and follows strongly consistent models.
  - o The data is represented in terms of Entities grouped under tables.
- Azure Queue Storage: This storage provides a message queue system for handling large workloads by letting users develop and build flexible and modular applications.
  - o This storage ensures that the application becomes less prone to failure of individual components and is scalable.
  - o With the help of message queues, it provides the queue monitoring feature for helping the application to ensure the user demands are met.
- Azure File Storage: This storage type provides features of file sharing that are accessible using SMB (Server Message Block) Protocol. The data in this storage is protected by HTTPS and SMB 3.0 Protocol.
  - o They are used for improving the performance and capabilities of on-premise applications.

o The OS deployments and hardware management is taken by Azure itself.

31. What are IaaS, PaaS and SaaS?

IaaS: This stands for "Infrastructure as a Service" which provides a set of capabilities like OS, network connectivities, etc which are at the infrastructural level and are delivered as pay per use policy. The infrastructure is used for hosting applications. Examples include Azure VM, VNET, etc.

PaaS: PaaS stands for "Platform as a Service" which is mostly about underlying infrastructure abstraction to the developers for enabling quicker development of the applications without the need for worry about hosting management. Examples include Azure web apps, Storage services, cloud services, etc.

SaaS: SaaS stands for "Software as a Service" and are those applications which are delivered using the service delivery model where the applications are simply consumed and used by an organization. These applications are generally mobilized by making the organization pay for their usage or through ads. Examples include applications like Office 365, Gmail, SharePoint Online, and so on.

The following table shows the difference between the On-Prem Service, IaaS, PaaS, and SaaS services. We can observe that as we go right, the level of control the developer or the user has over the application reduces.

IaaS, PaaS and SaaS
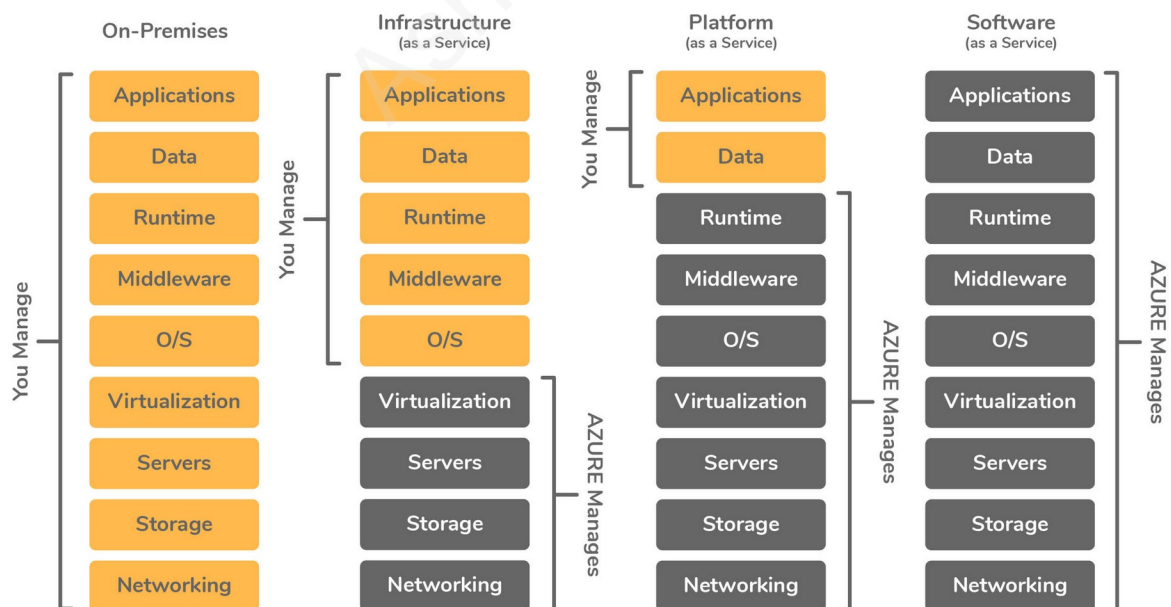
32. What are the differences between the Azure Table Storage and the Azure SQL service?

The main difference between Azure Table Storage and Azure SQL Service is given below:

Table Storage Service	Azure SQL Table
This follows a NoSQL type of storage on Azure.	This follows the relational storage structure on Azure.
The data is stored in key-value format and is referred to as Entity.	The data here is stored in rows and columns combination in the SQL table.
The data schema is not enforced for storage.	The data schema is enforced for storing data and if the schema violation occurs, then it results in an error.
The relationship between tables is not possible.	Relationships between tables are defined by means of the foreign keys.
The partition and row key combination are considered unique for each entity.	Uniqueness can be defined by the user by means of a primary key or unique key.
This service can be used for storing log information or diagnostics data.	This service is widely used for transaction-based applications.

33. Consider a scenario where an application front end hosting is done on Azure but the customer needs the database hosting to be done on on-premise server due to security concerns. What are the ways to handle the connectivity in Azure for this scenario?

- **Possibility 1:** Azure VNET based "Point to Site" service can be a correct choice for this scenario of connecting one on-premise DB to an Azure-hosted app. "Point to Site" is valid for cases where the count of resources to be connected via VPN is very limited.
- **Possibility 2:** In case there is a large number of resources for connection, then "Site to Site" or "Express routes" are the other options that could be considered.
  - o There might be chances that using "Site to Site" might lead to network latency as VPN due to these work only via Internet (public infrastructure). In such cases, "Express Routes" are used as it provides dedicated leased line for overcoming latency issues.
- **Possibility 3:** In case the customer is not willing to work via VNET, then Windows Communication Foundation (WCF) service can be developed and hosted on-premise which would have CRUD operations meant only for the database hosted on-premise. This works by means of using the "Service bus relay" option for developing communication between the Azure-hosted app to the WCF service for database access.

34. What are the differences between the Azure Storage Queue and the Azure Service Bus Queue?

The main difference between Azure Storage Queue and the Azure Service Bus Queue is given below:

Azure Storage Queue	Azure Service Bus Queue
Here, the FIFO (First In First Out) ordering is not guaranteed.	The FIFO order is guaranteed for the messages by means of sessions.
Sessions are not supported.	Sessions that are messaging level are supported here.
Here, only the "At Least Once delivery" model is supported.	This supports "At least once", "Atmost once" and "Exactly once" delivery models for the messages.
There is no automatic detection of duplicates here.	Automatic duplicate detection is supported here.
Does not support dead lettering.	Supports dead lettering.
The size of the message is 64KB.	The size of the message is 256KB.
Supports one-to-one delivery of messages.	Supports both one to one and one-to-many deliveries of messages.
The transaction is not supported.	The transaction is supported here.
This queue supports only batch receive.	This supports both batch send and batch receive of messages.
The behavior of receiving messages is non-blocking.	The behavior can be either blocking or non-blocking based on the configuration.

35. What are the possible causes of the client application to be disconnected from the cache?

There can be 2 possible causes:

- Client-side causes:
  - o The application might have been redeployed.
  - o The application might have just performed a scaling operation.
  - o The client-side networking layer has been changed.
  - o There might be transient errors in the client or the network between the client and the server.
  - o Another possible reason could be the bandwidth threshold limits have been crossed.
- Server-side causes:
  - o It might occur if the Azure Redis Cache service itself might undergo a failover from the primary to the secondary node.
  - o The server instance where the cache was deployed might have undergone patching or maintenance.

36. How can a VM be created by means of Azure CLI?

```
az vm create `
--resource-group myResourceGroupName `
--name myVM --image win2016datacenter `
--admin-username AzureuserNAME `
--admin-password AzurePASSWORD
```

Conclusion

Microsoft Azure has proven itself to be the fastest-growing cloud platform due to its more than 200 service offerings and benefits with pay per use pricing strategy. The revenue generated by Microsoft Azure has been growing constantly from $880 million in 2015 to a whopping $14.6 billion in 2020.

This tremendous growth in Azure has paved the path to many businesses by creating lots of opportunities in both tech and non-tech domains thereby making it a very lucrative domain for building one's career.

Additional Resources

Learn Azure

Practice Coding

Azure MCQs

1.

What kind of web applications can be deployed on azure?

○ PHP
○ ASP.NET
○ WCFD
○ All of the Above

2.

Azure storage is similar to what component of AWS (Amazon Web Services)?

○ EC2
○ EC3
○ S3
○ No similarities between Azure storage and any component of AWS at all.

3.

Azure storage services and VMs belong to which cloud computing models?

○ PaaS
○ IaaS
○ SaaS
○ All the above

4.

Which Azure service helps to deploy and manage enterprise-level applications with hybrid cloud architecture?

○ Azure Hybrid
○ Azure Pack
○ Azure Blob
○ Azure Stack

5.

Which among the following Azure tool is used for enterprise-level key management?

○ Azure Key Vault
○ Azure Guard
○ Azure Key Sessions
○ Azure Blob

6.

Select the correct roles in Azure.

○ Admin Role, Web Role, OS Role
○ Web Role, Worker Role, VM Role
○ Worker Role, Read Role, Write Role
○ None of the Above

7.

True or False - Azure cloud provides serverless capabilities.

○ True
○ False

8.

What role is an instance that runs Microsoft IIS Web Server for accepting and responding to HTTP/HTTPS requests?

- ○ Server
- ○ Worker
- ○ Admin
- ○ Web

9.

What are the service components of Azure Cognitive Services?

- ○ Language, Translation, Vision, Knowledge, and Audio
- ○ Speech, Language, Search, Video and Translation
- ○ Vision, Speech, Language, Search and Decision
- ○ Knowledge, Translation, Audio, Visual, and Speech

10.

What role does the task of running background tasks and applications that don't need IIS?

- ○ Web
- ○ Worker
- ○ VM
- ○ None of the Above

Windows Azure Skills

- Ability to design, build, and modify existing business-tier components, web applications, and database objects using ASP.NET Web API and Azure

- Excellent experience on Azure Command Line Interface

- Ability to design/implement /migrate & troubleshooting Azure apps

- Familiarity with Microsoft Azure virtual network appliances

- Ability to deploy a virtual machine on Azure Portal

- Familiarity with Azure app services, Bot services, Azure Data factory

It will be difficult to quantify these skills in the interview process. You can use imocha's Azure skills test to evaluate Azure's practical knowledge of the developer.

[Windows Azure Programming Test:](#) Assess the ability of a developer to deploy apps and services on Azure clouds.
[Azure App Services Assessment Test:](#) Quantify skills like load balancing, configuration, functionality, hybrid, and more.
[Azure Bot Services Online Test:](#) Evaluate skills like chatbot development, BOT templates, Channel integrations, and more.
[Azure Data Factory Online Test:](#) Assess candidates skills to develop solutions using Azure data factory
You will get instant reports after the evaluation. Comparative reports will help you to summarize the strengths and skill gaps of a group of candidates. You can identify top performers and invite them for the interview process.

Let me take you through a few critical topics and interview questions that will help you to evaluate candidates in the interview.

Windows Azure Topics

Grill candidates on the below topics, go more in depth. This will provide you a fair view of candidate's knowledge.

- Web role

- Worker role

- SQL Azure

- Azure Tables

- PaaS

- IaaS

- Migration to Cloud

- Mango DB

- Azure Queue

- Mobile Services

- Microsoft Azure SDK

- Virtual Network

- Azure App Services

- Azure Bot Services

- Azure Data Factory

Interview Question to hire Windows Azure Developer

Here is the list of Microsoft Azure Interview Questions. Read them, bookmark them, even add your own interview questions in the comments below.

1. How to create a Virtual Machine in Azure?

2. What is Azure Diagnostics? When can we use it?

3. Recommend approaches for controlling access to the service by using the Windows Azure AppFabric Access Control Service.

4. What are blobs, tables, and Queues? Is SQL is the standard way to query blobs, tables, and queues?

5. How to Sync Two SQL Azure Databases?

6. You are designing a strategy for synchronizing an SQL Azure database and multiple remote Microsoft SQL Server 2008 databases. The SQL Azure database contains many tables that have circular foreign key relationships.

7. Recommend an approach to ensuring that all changes in the remote databases synchronize with the SQL Azure database.

8. Mention in what ways cloud architecture provide automation and performance transparency? Elaborate

9. Explain the troubleshooting procedure to integrate the build system with Azure cloud services for continuous deployments.

10. Explain the troubleshooting procedure to integrate the build system with Azure cloud services for continuous deployments.

11. How can you demonstrate between Azure mobile service and Web API?

12. Explain in detail hybrid and community cloud. When hybrid and community cloud is required?

13. Why should you use Windows Azure Storage as opposed to Local Resources/Storage?

14. How do web role and work role communicate with each other?

15. Explain Windows Azure Cloud Service Lifecycle.

16. Explain Azure Mobile Service. How can we create and integrate new mobile service in the new or existing application?

17. When does a workload on SQL Azure get throttled?

18. What is Text Analytics API in Azure Machine? How does it work?

19. Give some examples of hybrid applications using Windows Azure.

20. While migrating Microsoft SQL Server 2008 database to SQL Azure, what can be done to ensure the database connectivity does not degrade?

21. Why is Azure Active Directory used?

22. How can one create a VM in Azure CLI?

23. Define Windows Azure AppFabric

24. What is table storage in Windows Azure?

25. What is Windows Azure Traffic Manager?

Interview Questions to hire Windows Azure Architect

A recruiter also faces some recruitment challenges and you must beat them before you hire your next Azure Architect. A Windows Azure Architect should have deep knowledge of the Windows Azure Platform and its technologies. Apart from architecturally designing efficient applications, today's developers need talent that needs to be outside of the development, such as business operations, tools, and integration skills. These questions along with our skill assessment test will help you find the perfect candidate. For architects, the question needs to be framed in a way that is more related to his personal experience, and which can dig more about him in terms of how well he knows the technology, how he overcame difficult challenges, his interpersonal skills, and ability to lead to stable solutions.

Here's just a quick list of questions, when interviewing candidates for a Windows Azure architect. A seasoned Windows Azure developer would be able to handle the majority of these.

1. Describe scenarios where they would combine (or separate) tasks into the same (or separate) roles.

2. Explain how to monitor and scale an app.

3. Understand the various aspects of upgrading an app.

4. Know how to install and run 3rd-party tools and alternative (non-.NET) languages.

5. Architect for cost vs performance vs availability.

6. Know about storage solutions (SQL, 3rd-party SQL & NoSQL, blobs/tables/queues).

7. Know the pros and cons of Windows Azure Queues vs. Service Bus queues.

8. Differences between SQL Server and Windows Azure SQL Database, including federations, security, transient faults, cross-database queries, and transactions.

9. Understand the capabilities (and limitations) of Content Delivery Network edge-cache.

10. How do you normally take Azure architecture requirements through to design?

Interview Questions to hire Azure Bot Developer

1. What is the v4 SDK?

2. How do you ban or remove bots from the service?

3. Explain what logic is and connected sequences for Chatbot?

4. How do we teach the bot?

5. Have you done integrations into your Chatbot?

Interview Questions to hire Azure Data Developer

1. What is Azure Data Factory?

2. Can you explain Integration runtimes?

3. How can you schedule a pipeline?

4. Explain the two levels of security in ADLS Gen2?

5. What is the difference between Azure Data Lake Store and Blob storage?