

Microsoft Azure

**Azure Interview Questions & Answers**

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# Azure Interview Questions And Answers

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## Introduction

Cloud computing is nothing more than the use of technology resources to store, retrieve, and process data over the internet for greater speed, availability, scalability, and decreased cost. Cloud service companies offer these tools and Microsoft's Azure is a cloud service. Microsoft released Azure on 1 February 2010 using a pay-per-use approach so users only pay for what they use.

Azure is a leading service provider where 80% of Fortune 500 organisations host their apps, resources, or other computing needs. Azure supports Java, C#, NodeJS, etc.

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Other cloud providers exist besides

Azure. Canals reports that Amazon Web Services has 31% of the cloud market, while Azure has 20%. Google, Alibaba Cloud, Oracle, Salesforce, and IBM own the remaining shares.

Azure's computing services include networking, computing, storage, migration, IoT, analytics, containers, management tools, monitoring tools, developer tools, security, DevOps, etc.

## 1. What's the point of using Azure?

Azure, on the other hand, offers a large range of services that make it possible to build and host virtually any type of online application. In addition, Azure provides a specialised environment for testing the application before it is released to the public. Azure has made it easier than ever to create and configure virtual machines.

Virtual directories and virtual devices can also be integrated and synced with Azure. Azure also offers a wide range of monitoring tools to assist you in gathering analytics about your application's performance. Virtual hard drives have made it possible to store enormous amounts of data in the cloud.

Becoming an Azure certified professional opens up a vast range of career options, like being an Azure Administrator, an Azure Developer, an Azure Solutions Architect, and so on, all of which offer incredible income benefits. Your Azure Interview preparation begins right now with us! Greetings, and thank you for stopping by this page on Azure Interview Questions.

## 2. What are your understandings of cloud computing?

Data is stored, managed, analysed, and processed by means of internet-based computing resources (servers,



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hence the word “cloud”). By using third-party infrastructure offered and managed by companies like Microsoft, AWS, and others, we are able to avoid the costs associated with maintaining our own server infrastructure.

Cloud computing allows for faster processing, greater resource flexibility, and easier expansion. With cloud computing, it is possible to achieve fault tolerance and high system availability dynamically, depending on the application’s infrastructure needs.

### 3. Describe the Azure Cloud Service.

Platform as a service, like Azure, is one of the most well-known examples of this model (PaaS). These applications demand excellent scalability, dependability, and availability all within the limits of decreased operational costs. Designed for this purpose These are hosted on virtual machines (VMs), which Azure gives developers more control over by allowing them to install and manage applications remotely.

Multi-tier web applications can be deployed in Azure by creating an instance of a cloud service. Web and worker roles can also be defined in order to distribute the job over multiple machines. The scalability of the application is made easier and more flexible using Azure cloud services.

Each cloud service role serves a specific function, and as a result, each role’s configuration and application files reflect this.

### 4. What are the different cloud deployment model options?

There are three models for deploying the cloud:

**Public Cloud:** The cloud infrastructure in a public cloud model is owned by the cloud provider and may be shared

by several different applications.

**Private Cloud:** In this case, the cloud infrastructure is either owned by us or offered to us as an exclusive service.

For example, we could use a cloud provider's server or one of our own on-premise servers for this purpose.

A hybrid cloud model is a blend of both private and public cloud services.

**Hybrid Cloud:** Public cloud features can be used to host public-facing applications while on-premise servers can be used to process confidential, sensitive data.

## **5. Describe the Azure role instance.**

Application code is executed on a role instance through the use of running role configurations on a virtual machine. Depending on how a role is defined in the cloud service configuration files, there may be many instances of that position.

## **6. Is there a limit to the number of cloud service roles that Azure offers?**

Applications and configuration files make up the components of a cloud service role. Azure provides two distinct types of roles:

Automatic deployment and hosting of front-end websites are made possible with this IIS (Internet Information Services) web server function.

These roles help the programmes hosted within them to operate asynchronously for longer periods of time and are independent of the user interactions and generally don't use IIS. They are also perfect for running background operations. The programmes are self-contained executables.

## **7. What is the requirement for Azure Diagnostics API?**

We may gather diagnostic information from apps operating on Azure, such as performance monitoring, system event logs, etc., with the use of the Azure Diagnostics API.

Azure Diagnostics must be enabled for the cloud service roles in order to observe the data verbosely.

The diagnostics data can be utilised to generate performance metric warnings as well as visual chart representations for improved monitoring.

## **8. What does Azure Service Level Agreement (SLA) stand for?**

The Azure SLA is a contract that ensures or guarantees that access to a cloud service is guaranteed for at least 99.95 percent of the time when two or more role instances of a role are installed on Azure.

Additionally, it adds that 99.9% of the time, such processes will be detected and corrective action will be performed for them if the role instance process is not in the operating state.

Depending on the pricing structure of the relevant Azure services, Azure credits us a portion of our monthly expenses if the aforementioned assurances are not met at any time.

## **9. How do you define Azure Resource Manager?**

A service offered by Azure for administration and application deployment in Azure is called Azure Resource Manager.

When a developer wants to add, edit, or remove resources from an Azure subscription account, the resource manager offers a management layer that can

assist with such tasks.

When we need to manage access restrictions, locks, ensure the security of the resources after deployment, and organise those resources, this function is quite helpful.

## **10. Describe NSG.**

Network Security Group, or NSG, is a collection of ACL (Access Control List) rules that either permit or prohibit network traffic from reaching subnets, network interface cards (NICs) connected to a subnet, or both. The ACL rules are applied to all the Virtual Machines in the subnet when NSG is attached to it.

By directly linking NSG to a particular NIC, traffic restrictions to that NIC can be implemented.

## **11. Azure Resource Manager allows for the construction of VMs in Virtual Networks that were formed using the conventional deployment method. Is this statement true or false?**

False. This is not supported by Azure.

## **12. What is Azure Redis Cache, exactly?**

It is an in-memory, open-source Redis caching solution that Azure offers and supports.

By retrieving data from the backend database and temporarily storing it in the Redis cache for the initial request, and then retrieving data from the Redis cache for all subsequent requests, it helps web applications run better.

Utilizing the Azure cloud, Azure Redis Cache offers robust and secure caching technologies.

## **13. Describe scale sets for Azure virtual machines**

To install and maintain groups of similar Virtual Machines, use these Azure compute resources (VMs).

These scale sets are similarly prepared and built to facilitate autoscaling of the applications without the need for VM pre-provisioning.

They make it simpler to develop large-scale apps that target containerized workloads and big data.

#### **14. How well do you comprehend the term “Availability Set”?**

A logical grouping of virtual machines (VMs) known as a “Availability Set” enables Azure cloud to comprehend how an application was created to provide availability and redundancy.

Azure assigns 2 different types of domains to each VM in the availability set:

**Fault Domain:** These describe the collection of virtual machines (VMs) that would share a common network switch and power source. By default, the VMs in availability sets are dispersed across up to 3 fault domains. By lessening the effects of network outages, power outages, and some hardware problems, this division of VMs into fault domains contributes to the availability of our applications.

**Update Domain:** These show the collection of virtual machines and underlying hardware that can all be rebooted simultaneously. The sequencing of reboots does not follow a consecutive pattern, and only one update domain can be rebooted at once. The previously rebooted domain is given a recovery time of 30 minutes to guarantee that the domain is up before the maintenance of another update domain.

Up to three fault domains and twenty update domains can be configured for an availability set in Azure.

## 15. What choices are there for the Azure deployment environments?

Azure offers the following two deployment environments:

**Environment for Staging** : Before making updates live in the primary environment, our application is tested in this environment.

The GUID (Globally Unique Identifier) of Azure, which bears the URL GUID.cloudapp.net, is used to identify this application.

**Production Environment:** This is the primary environment where our application is made available to the public and may be accessed by the intended audience via the DNS-friendly URL appName.cloudapp.net.

## 16. What should you do in the event of a drive failure?

When a drive failure occurs, the following actions must be taken:

We must make sure the drive is not mounted in order for Azure Storage to operate flawlessly.

In order for the drive to be remounted and formatted, swap out the drive.

## 17. Is it workable to create applications for Azure that can deal with connection failure?

The Transient Fault Handling Block enables this, hence the answer is yes. While utilising the cloud environment, transient failures might have a variety of causes, including:

- We can notice that the application to database connections occasionally fail as a result of the



increased number of load balancers.

- Due to other applications employing resources to heavily hit the same resource, calls made when using multi-tenant services slow down and finally time out.
- The service may purposefully block our connection in order to support other tenants in the architecture as a result of our repeated attempts to access the resource as users.
- The application can identify momentary failures and automatically attempt to conduct the same activity again, often after a few seconds, in the hopes of establishing the connection, as opposed to periodically informing the user of errors.
- We may generate the retry intervals and force the programme to conduct retries by using the Transient Fault Handling Application Block technique. The majority of the time, the issue would be fixed on the second attempt, therefore it was not necessary to notify the user of these errors.

## **18. Explain the Azure storage key.**

In order to manage access to data depending on project needs, the Azure storage key is utilised for authentication and validation of access.

For the purpose of authentication, two types of storage keys are provided:

1. Key for Primary Access
2. Additional Access Key

The primary goal of the secondary access key is to prevent application or website downtime.

## **19. In Azure, what is cspack?**

It is a programme for creating service package files that runs from the command line. Additionally, the tool aids in

setting up the application for deployment in Microsoft Azure or a computing emulator.

The.cscfg file, which is effectively the cloud service configuration file generated by the cspack programme and is primarily used to contain the following information, is present in every project of the cloud service type.

- The quantity of instances for each role that will be deployed in the project.
- The certificates' thumbprint.
- Setup and settings that the user defines.

## **20. Which Azure option is best for running the code without a server?**

- Code can be run without a server using the Azure Functions service.
- Serverless Azure Functions are used to make difficult problem-solving and complex orchestration simpler. They are designed to be transient and without states.
- They facilitate connections with other services without the requirement for integrations to be hard coded, accelerating the development cycle.
- It facilitates the developer's ability to focus on writing business logic code and thereby saves time and effort.
- Additionally, they offer Azure Application Insights services for monitoring and evaluating code performance, which aid in finding bottlenecks and failure locations among the application's various components.

## **21. Which Azure feature would be the best for recommending in order to have a shared file system amongst numerous virtual machines?**

When configuring Virtual Machines to use protocols like

SMB, FTPS, NFS, etc., Azure offers a service called Azure File System that serves as a common repository system for sharing data.

## 22. Can one access a Linux virtual machine without entering a password?

Yes, it is possible to log into another VM without a password by using the Key Vault mapping to any Admin VM.

## 23. Differentiate Azure Scale Sets and Availability Sets?

The primary differentiation between Azure Scale Sets and Availability Sets are stated below:		
Specification	Azure Scale Sets	Azure Availability Sets
Definition	Sets of identically configured VMs are distributed across multiple fault domains.	Set of discretely configured VMs are distributed across various fault domains.
Default Domain	Possess 5 fault domains and 5 update domains	Possess 3 fault domains and 5 update domains.
Workload Type	Used when there are unpredictable workloads requiring auto scalability.	Used when there are requirements for predictable workload.
	Similar image	Different

Configuration Style	and configuration is used for VMs making	images and configurations are used to create VMs
VM Count	Demand or the pre-defined schedule determines the number of VM	Only at the time of the set's creation, a VM can be added.
Distribution style	Spread across multiple data centres or within a single data centre.	Automatically spread in a data centre.

**24. What would happen if the Azure ID authentication procedure reached the maximum number of failed attempts?**

The protocol that analyses the entered password and the IP addresses of the login requests determines the mechanism of locking when there have been a maximum number of unsuccessful login attempts.

**25. Can the Azure Internal Load Balancer have a public DNS or IP address?**

No! The assignment of a public IP address or DNS name is not feasible since, as the name implies, Azure Internal Load Balancer only allows Private IP addresses.

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

Azure Blob storage is the cloud-based object storage option offered by Microsoft. A Binary Large Object is referred to as Blob. Massive amounts of unstructured text or binary data are stored using blob-based storage. It is perfect for serving text, music, video, and documents straight to browsers.

Anywhere in the world can access the data kept in the blob storage. By organising the blobs into containers, user accounts are connected to the blobs. There are three parts to the Azure Blob Service:

- A General Storage Account or a Blob Storage Account that has been registered with Microsoft Azure.
- Blobs are grouped together in containers. Blobs can be kept in a container indefinitely. The container's name should begin in lowercase.
- A blob is a binary large object, which can be any form of file or document of any size. Azure supports three various kinds of blobs..
- Block blobs can accommodate up to 195GB, or up to 50k blocks of up to 4MB each, and are designed for text and binary data.
- Blobs that are utilised for appending tasks, such as logging data in log files, are known as blobs.
- Page blobs are intended for read/write operations that happen often.

## **27. What does Azure Scheduler mean to you?**

We can call specific background trigger events or activities, such as calling HTTP/S endpoints, or present a message on the queue at any time with the aid of Azure Scheduler.

By using this Azure Schedule, the jobs now running in the cloud can summon services running both within and outside of Azure to execute jobs that are typically run on a set schedule on demand or to launch jobs at a later date.

## **28. Is it possible to map the Windows workstations that are connected to an IIS Web Server via two different port numbers, such as 80 and 81, to an Azure Load Balancer?**

Yes, you may accomplish this by creating a unique load

balancer role in Azure.

**29. You have a backup on an Azure East US region server and an application operating on an on-premises server. Currently, access to On-Prem server applications fails. Is it possible to use the Azure environment to access the application?**

Utilizing Azure's Site Recovery Service will allow you to achieve your goal. Between On-Prem Servers and Azure environments, it can manage fail-over and fail-back scenarios.

**30. What Azure feature can be used to address the problem of high application demand when there is no human support on the flow?**

- By specifying the right configuration and criteria to provision a new VM whenever the load on the application grows, this problem can be resolved by using VM Scale sets.
- A set of load-balanced VMs can be created and managed by a developer using Azure VM Scale Sets. The scale sets can be set up such that the number of VMs automatically rises or falls in response to application demand or in accordance with a predetermined timetable.
- The use of Scale Sets guarantees high availability of the applications, enables developers to manage, update, and configure massive VMs centrally, and supports the development of big data, enormous workloads, and compute-intensive applications.

Up to 1,000 VMs can be supported by Azure scale settings. The cap is 600 VMs if the custom VM images are made and uploaded.<sup>3</sup>

**31. What other sorts of storage services does Azure offer besides blob storage?**

As can be seen in the graphic below, Azure offers four

different types of storage services: Blob Service, Table Storage, Queue Storage, and File Storage Services.

### **Storage Services Types**

**Azure Table Storage:** Using a NoSQL-based key-value store and semi-structured data, this sort of storage enables users to launch their applications.

- When applications that adhere to a flexible data structure are required, this is employed.
- Table Storage adheres to strongly consistent concepts and concentrates on enterprise-level data.
- Entities grouped under tables are used to represent the data.

**Azure Queue Storage:** By enabling customers to create and construct adaptable and modular applications, Azure Queue Storage offers a message queue system for managing heavy workloads.

- This storage guarantees that the application is scalable and less susceptible to failure of individual components.
- Message queues are used to give the queue monitoring capability, which helps the application make sure the needs of the users are met.

**Azure File Storage:** SMB (Server Message Block) Protocol is used to access the file sharing functionalities offered by Azure File Storage. HTTPS and SMB 3.0 Protocol are used to secure the data in this storage.

- They are employed to enhance the functionality and performance of on-premise applications.
- Azure itself is in charge of managing the hardware and OS installs.

### **32. IaaS, PaaS, and SaaS are what?**

**IaaS stands for “Infrastructure as a Service”** and refers to a set of infrastructure-level capabilities, such as operating systems, network connectivity, etc., that are provided on a pay-per-use basis. Applications are hosted on the infrastructure. Azure VM, VNET, and more examples are shown.

**PaaS stands for “Platform as a Service,”** which focuses on providing developers with an abstraction of the underlying infrastructure to enable faster application development without having to worry about hosting maintenance. Examples include cloud services, storage services, and Azure web apps.

**Software as a Service, or SaaS,** refers to those applications that are provided utilising the service delivery paradigm and are merely consumed and used by an enterprise. In most cases, these applications are funded by charging the company to use them or by using advertisements. Applications like Office 365, Gmail, SharePoint Online, and others serve as examples.

**33. Imagine a situation where an application’s front end is hosted on Azure, but the customer demands that the database be hosted on an on-premises server for security reasons. What options are there for handling connectivity in Azure in this situation?**

**Possibility 1:** For this case of connecting one on-premise DB to an Azure-hosted app, the “Point to Site” service based on Azure VNET may be the best option. “Point to Site” is appropriate when there are only a few resources that need to be connected over VPN.

**Possibility 2:** If there are many resources that need to be connected, “Site to Site” or “Express routes” are the other possibilities that might be taken into account.

Due to the fact that “Site to Site” VPNs only function via the Internet, there is a potential that utilising them could



cause network latency (public infrastructure). Express Routes are employed in these situations because they offer a dedicated leased line for resolving latency difficulties.

**Possibility 3** : If the customer is unwilling to work through a VNET, an on-premises Windows Communication Foundation (WCF) service can be created and hosted. This service would contain CRUD functions designed just for the on-premises database. This is accomplished by creating communication between the Azure-hosted app and the WCF service for database access using the "Service bus relay" option.

### **34. What can be the reasons why the client application is no longer connected to the cache?**

There are two potential causes:

#### **Customer-side causes**

- It's possible that the application was re-deployed.
- It's possible that the application was merely scaling.
- The networking layer on the client side has been modified.
- The client or the network connecting the client and the server could experience momentary issues.
- The bandwidth threshold restrictions having been exceeded is still another explanation.

#### **Client-side causes :**

- If the Azure Redis Cache service itself has a failover from the primary to the secondary node, it might happen.
- It's possible that maintenance or patching were performed on the server instance where the cache was installed.

#### **Conclusion**

Due to its more than 200 service offerings and advantages with a pay per use pricing strategy, Microsoft Azure has established itself as the cloud platform with the quickest growth. From \$880 million in 2015 to a staggering \$14.6 billion in 2020, Microsoft Azure's income has been steadily increasing.

By opening up numerous opportunities in both the technical and non-technical fields, Azure's phenomenal growth has opened the way for many organizations, making it an extremely lucrative field in which to pursue a career.

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