**What is Azure?**

* Azure is Microsoft’s cloud platform.
* It lets you store data, run apps, and manage services over the internet instead of your own computer.

**Types of Cloud Services**

1. **IaaS (Infrastructure as a Service):** Rent computers and storage.
2. **PaaS (Platform as a Service):** Rent tools to build and run apps.
3. **SaaS (Software as a Service):** Use ready-made apps (like Office 365).

**Azure Regions and Availability Zones**

* **Region:** A place (like East US or West Europe) where Azure has servers.
* **Availability Zone:** Backup places in a region to keep your app running even if one goes down.

**Resource Group vs. Subscription**

* **Subscription:** Your Azure account for billing and resource usage.
* **Resource Group:** A folder where you keep related things (like VMs, databases, etc.).

**What is a Virtual Machine (VM)?**

* A VM is like a computer in the cloud. You can run software and store data on it.

**What is Azure Portal?**

* It’s a web-based dashboard where we can manage all our Azure Services.

**What is Azure Storage?**

* Azure storage allows us to save files, images and data safely in the cloud.

**What is Azure Virtual Network (VNet)?**

* It’s like your own private network in Azure.
* It lets your Azure resources talk to each other securely.

**Common Azure Services**

* **Virtual Machine (VM):** A computer in the cloud.
* **App Service:** A place to run websites and apps.
* **Blob Storage:** Store files like photos and videos.
* **SQL Database:** A cloud-based database to store structured data.
* **Azure Functions:** Run small pieces of code without needing a full server.

**Security and Access**

* **Azure Active Directory (Azure AD):** Manages user logins. It controls who can access what in Azure.
* **Key Vault:** Stores secrets like passwords safely.
* **RBAC (Role-Based Access Control):** Gives the right people the right access.

**Monitoring and Cost**

* **Azure Monitor:** Keeps an eye on how your apps and resources are doing.
* **Cost Management:** Helps you track and control spending.

**Other Simple Concepts**

* **ARM (Azure Resource Manager):** The boss of all resources in Azure.
* **Tags:** Labels to help organize things.
* **Virtual Network (VNet):** A private network in Azure for your services.
* **Azure DevOps vs. GitHub:** Tools to manage code and automate testing/deployment.

**Azure Marketplace**

* Like an app store for ready-to-use tools and software for your cloud projects.

**How to Work with Azure**

* **Azure Portal:** Website to manage everything.
* **Azure CLI / PowerShell:** Command-line tools for pros.
* **Templates (ARM or Bicep):** Like a recipe to set up resources automatically.

**What is Azure Blob Storage?**

* It’s a place to store large files like videos, backups, and documents in the cloud.

**What’s Azure Functions?**

* It’s a way to run small bits of code without managing servers. You only pay when your code runs.

**What is Azure DevOps?**

* It’s a set of tools to plan, build, test, and deploy software. It supports the whole development process.

**What is the difference between a public cloud and a private cloud?**

* **Public Cloud:** Shared by many users (like Azure).
* **Private Cloud:** Used by only one company.

**What is an Azure Subscription?**

* It’s like a billing account. It groups the services you use and charges you for them.

**What is Azure Monitor?**

* It helps you track the health and performance of your Azure resources.

**What is Azure Load Balancer?**

* It spreads traffic across multiple servers so no one server gets too busy.

**What is Azure Marketplace?**

* It’s an online store where you can find and use software and services that run on Azure.

**What is the benefit of using Azure over traditional data centers?**

* You don’t need to buy hardware. Azure is flexible, scalable, and you pay only for what you use.

**What is Azure CDN (Content Delivery Network)?**

* Azure CDN helps deliver content like images, videos, and websites faster by storing copies closer to users around the world.

**What is Azure Key Vault?**

* It’s a secure place to store secrets like passwords, API keys, and certificates.

**What is Azure Backup?**

* A service that helps you automatically save copies of your data so you can recover it if something goes wrong.

**What is Azure Logic Apps?**

* It helps automate workflows — for example, sending an email when a file is uploaded.

**What is Azure Site Recovery?**

* It helps keep your business running by automatically switching to a backup system if your main system fails.

**What is the difference between Availability Zone and Availability Set?**

* **Availability Zone:** Different physical locations to protect against data center failures.
* **Availability Set:** Keeps your VMs in different racks in the same data center to avoid a single point of failure.

**What is Azure ARM (Azure Resource Manager)?**

* It’s a management tool that helps organize and control all your Azure resources.

**What is Azure Container Instance (ACI)?**

* It allows you to run containers (like mini-apps) in the cloud without managing servers.

**What is Azure Kubernetes Service (AKS)?**

* It’s a service that helps you manage containers using Kubernetes in the cloud.

**What are Tags in Azure?**

* Tags are labels (like “Project=App1”) that help you organize and manage Azure resources easily.

**What is Azure ARM Template?**

* It’s a JSON file that defines what resources you want to create in Azure. It helps automate deployments.

**What is Azure Policy?**

* It helps you control what people can do in your Azure environment, like allowing only certain regions or resource types.

**What is Azure Resource Manager (ARM)?**

* It’s the main way to manage Azure resources, like creating, updating, or deleting them.

**What is Azure Traffic Manager?**

* It directs user traffic to different locations based on performance, location, or availability.

**What is the difference between Azure Storage Account types?**

* **General-purpose v2:** Most features and common use.
* **Blob Storage:** Best for storing large unstructured data like images or videos.
* **File Storage:** For shared file systems.

**What is a Service Principal in Azure?**

* It’s like a user account for apps or tools so they can access Azure resources securely.

**What is Azure Bastion?**

* It lets you connect to your virtual machines through the Azure Portal — no need for a public IP or RDP/SSH exposed to the internet.

**What is Azure Cost Management?**

* It helps you track and control your spending in Azure.

**What is Azure ExpressRoute?**

* It’s a private, fast, and secure connection between your data center and Azure, not over the public internet.

**What is Azure API Management?**

* It helps you manage, secure, and monitor APIs (like mini services) that your apps or users access.

# Basic Azure Interview Questions for Beginners (Simplified)

1. 1. What is Microsoft Azure?

It’s a service that lets you use computers, storage, and apps over the internet.

1. 2. What are the types of cloud services in Azure?

- IaaS: You rent computers.  
- PaaS: You build apps without managing servers.  
- SaaS: You just use ready apps.

1. 3. What is a Resource Group?

It’s like a folder to keep all related Azure services together.

1. 4. What is Azure Portal?

A website where you can manage all your Azure services.

1. 5. What is Azure Resource Manager (ARM)?

A tool that manages and organizes all your Azure resources.

1. 6. What is an Azure Virtual Machine (VM)?

A computer in the cloud you can use like a normal PC.

1. 7. What is Azure App Service?

A place to run websites without managing servers.

1. 8. Difference between VM and App Service?

- VM: You manage everything.  
- App Service: Azure manages most things.

1. 9. What types of storage does Azure offer?

Blob, File, Queue, and Table storage for different data needs.

1. 10. What is Blob Storage?

A cloud space to save files like pictures or videos.

1. 11. What is a Virtual Network (VNet)?

Your own private network inside Azure.

1. 12. What is Azure Load Balancer?

It shares traffic between servers to keep things running smoothly.

1. 13. What is Azure Active Directory (AAD)?

A service to handle logins and user access.

1. 14. What is RBAC?

You control who can access or change what in your Azure resources.

1. 15. What is Azure Monitor?

A tool to check how your apps and services are doing.

1. 16. What is Azure Advisor?

It gives tips to improve speed, cost, and security.

1. 17. Availability Set vs Availability Zone?

- Set: VMs in different machines.  
- Zone: VMs in different buildings.

1. 18. What is Azure Marketplace?

An online store to get tools and apps for Azure.

1. 19. What is Azure DevOps?

Tools for building and releasing apps in teams.

1. 20. How does Azure keep data secure?

It uses encryption, secure login, and safety checks.

**🔹 General Azure Basics**

1. **What is Microsoft Azure?**  
   👉 It's a service from Microsoft that lets you run apps, store data, and do computing over the internet instead of on your local computer.
2. **What are the types of cloud services in Azure?**
   * **IaaS**: You rent virtual computers and do everything yourself.
   * **PaaS**: You build your app, and Azure handles the background stuff.
   * **SaaS**: You just use the app (like Outlook or Teams); everything else is managed by the provider.
3. **What is a Resource Group?**  
   👉 It's like a folder where you keep all the things (like virtual machines, storage, databases) that work together for your project.
4. **What is Azure Portal?**  
   👉 It’s a website where you can log in and manage all your Azure services using buttons and menus.
5. **What is Azure Resource Manager (ARM)?**  
   👉 It’s the tool Azure uses behind the scenes to organize and manage everything you create.

**🔹 Compute Services**

1. **What is an Azure Virtual Machine (VM)?**  
   👉 A virtual computer you can rent. It works like a regular computer but lives in the cloud.
2. **What is Azure App Service?**  
   👉 A place to run websites or web apps without worrying about managing the server.
3. **Difference between VM and App Service?**
   * **VM**: You manage everything (like updates, OS).
   * **App Service**: Azure takes care of most of it; you just focus on your app.

**🔹 Storage Services**

1. **What types of storage does Azure offer?**  
   👉 Different kinds like:
   * **Blob**: For files like images, videos.
   * **File**: Like a shared folder.
   * **Queue**: For passing messages between apps.
   * **Table**: For simple structured data (like spreadsheets).
2. **What is Blob Storage?**  
   👉 It's like a big cloud hard drive for storing files.

**🔹 Networking**

1. **What is a Virtual Network (VNet)?**  
   👉 It’s like your own private network inside Azure to connect your services.
2. **What is Azure Load Balancer?**  
   👉 It spreads traffic across multiple servers so one doesn’t get overwhelmed.

**🔹 Security and Identity**

1. **What is Azure Active Directory (AAD)?**  
   👉 A service to manage users and their logins, like a secure office entrance system.
2. **What is RBAC (Role-Based Access Control)?**  
   👉 It lets you choose who can do what in your Azure account (like giving read-only or admin access).

**🔹 Monitoring and Management**

1. **What is Azure Monitor?**  
   👉 A tool to watch how your apps and services are doing—like checking their health and performance.
2. **What is Azure Advisor?**  
   👉 A smart assistant that gives tips to make your setup faster, cheaper, and more secure.

**🔹 Miscellaneous**

1. **Availability Set vs Availability Zone?**

* **Set**: Keeps your VMs on different machines in the same data center.
* **Zone**: Puts your services in separate buildings, so if one building fails, others still work.

1. **What is Azure Marketplace?**  
   👉 An online shop to find and use ready-made apps or tools that work with Azure.
2. **What is Azure DevOps?**  
   👉 A set of tools for developers and teams to plan, build, test, and release software efficiently.
3. **How does Azure keep data secure?**  
   👉 Azure protects your data using encryption, secure access, and regular safety checks.