

30 Must-Know Cloud Interview Q&As

◆ Section 1: Cloud Basics

Q1. What is cloud computing? Explain its key characteristics.

Answer: Cloud computing delivers IT services (compute, storage, networking, databases, AI, etc.) over the internet on a pay-as-you-go model.

Key Characteristics: On-demand self-service, scalability, broad network access, elasticity, resource pooling, and measured billing.

Q2. What are the differences between IaaS, PaaS, and SaaS?

Answer:

- **IaaS** → Infrastructure (VMs, networks, storage).
- **PaaS** → Platforms for app development (App Engine, Azure App Service).
- **SaaS** → Software delivered over the internet (Office 365, Gmail).

Q3. What is elasticity vs scalability in cloud?

Answer:

- **Elasticity** → Auto-increase/decrease resources based on demand.
- **Scalability** → Ability to grow resources (vertically or horizontally) to meet long-term growth.

Q4. What is a multi-tenant architecture in cloud?

Answer: A model where multiple customers share the same infrastructure securely while keeping data isolated.

Q5. What are availability zones and regions in cloud?

Answer:

- **Region** → A geographical area (e.g., us-east-1).

- **Availability Zone** → Independent data centers within a region for redundancy and high availability.

◆ **Section 2: AWS, Azure, GCP Comparison**

Q6. Compare AWS EC2, Azure VMs, and GCP Compute Engine.

Answer: All provide IaaS virtual machines.

- **AWS EC2** → Most flexible, largest market.
- **Azure VMs** → Tight integration with Microsoft ecosystem.
- **GCP Compute Engine** → Strong networking, live migration support.

Q7. Compare AWS S3, Azure Blob, and GCP Cloud Storage.

Answer: All are object storage services supporting tiers, lifecycle policies, and global durability.

Q8. What are managed Kubernetes services in AWS, Azure, and GCP?

Answer:

- **AWS** → Elastic Kubernetes Service (EKS).
- **Azure** → Azure Kubernetes Service (AKS).
- **GCP** → Google Kubernetes Engine (GKE, most mature).

Q9. Compare IAM models across AWS, Azure, and GCP.

Answer:

- **AWS IAM** → Users, groups, roles, policies.
- **Azure AD/IAM** → RBAC + directory integration.
- **GCP IAM** → Fine-grained, role-based at resource/project/org level.

Q10. Which cloud provider is best for AI/ML workloads?

Answer:

- **AWS** → Broad AI services (SageMaker).
- **Azure** → Cognitive Services, AI Studio.
- **GCP** → Strongest ML/AI (Vertex AI, TensorFlow).

◆ Section 3: Cloud Networking & Security

Q11. What is a VPC (Virtual Private Cloud)?

Answer: A logically isolated private network in the cloud where you define subnets, IP ranges, and security rules.

Q12. Difference between Load Balancer types (L4 vs L7).

Answer:

- **Layer 4 (L4)** → Distributes traffic based on IP & TCP/UDP.
- **Layer 7 (L7)** → Routes based on content (URLs, headers, cookies).

Q13. What is a CDN, and why use it?

Answer: A **Content Delivery Network** caches content at edge locations closer to users → improves performance and reduces latency.

Q14. What is Zero Trust in cloud security?

Answer: A security model where no user or system is trusted by default — every request is verified continuously.

Q15. What are service accounts vs user accounts?

Answer:

- **Service Account** → Identity for apps/workloads.
- **User Account** → Identity for individuals.

◆ Section 4: Cloud Storage & Databases

Q16. What are object, block, and file storage in cloud?

Answer:

- **Object** → Unstructured (images, backups).

- **Block** → Disk volumes for VMs.
- **File** → Shared file systems.

Q17. Compare Cloud SQL, Azure SQL DB, and Amazon RDS.

Answer: All are **managed relational databases** with automated scaling, backups, and patching.

Q18. What is BigQuery vs Redshift vs Synapse Analytics?

Answer: All are **data warehouses**.

- **BigQuery** → Serverless, scalable, GCP-native.
- **Redshift** → AWS, cluster-based.
- **Synapse** → Azure-native analytics platform.

Q19. What are cloud storage lifecycle policies?

Answer: Rules to automatically move/delete objects across storage tiers (e.g., hot → cold → archive).

Q20. Difference between hot, cold, and archive storage.

Answer:

- **Hot** → Frequent access (higher cost).
- **Cold** → Infrequent access.
- **Archive** → Long-term backup (lowest cost).

◆ **Section 5: Cloud DevOps & Automation**

Q21. What is Infrastructure as Code (IaC)?

Answer: Managing infrastructure via code templates → automation, consistency, and version control.

Q22. Difference between Terraform, CloudFormation, and ARM templates.

Answer:

- **Terraform** → Multi-cloud, HashiCorp HCL.

- **CloudFormation** → AWS-only, YAML/JSON.
- **ARM Templates** → Azure-only, JSON.

Q23. What is CI/CD in cloud?

Answer: Continuous Integration & Delivery pipelines automate build, test, and deployment of cloud workloads.

Q24. Explain GitOps in a cloud-native setup.

Answer: GitOps uses Git as the single source of truth — deployments happen automatically based on Git commits.

Q25. What is serverless computing (Lambda, Azure Functions, Cloud Functions)?

Answer: A model where cloud providers manage servers — developers only deploy code that runs on demand.

◆ Section 6: Multi-Cloud & Cost Optimization

Q26. What are the pros & cons of multi-cloud strategy?

Answer:

- **Pros** → Avoid vendor lock-in, higher availability, best-of-breed services.
- **Cons** → More complexity, skill requirements, and cost management issues.

Q27. How to handle IAM in multi-cloud?

Answer: Use **federated identity** (SSO, Okta, Azure AD) and centralized policy enforcement.

Q28. What are cloud cost optimization best practices?

Answer: Rightsizing, auto-scaling, shutting unused resources, reserved instances, and monitoring costs.

Q29. What are reserved instances vs on-demand vs spot instances?

Answer:

- **On-Demand** → Pay per use.
- **Reserved** → Commit 1–3 years for discounts.
- **Spot/Preemptible** → Very cheap but can be interrupted anytime.

Q30. What are the top challenges in cloud migration?

Answer: Cost control, downtime, data security, compliance, and lack of cloud expertise.