☁️ AWS Interview Q/A

📌 Section 1: Basics & Core Concepts

Q1. What is AWS?

Answer: AWS (Amazon Web Services) is the world's largest cloud computing platform that provides on-demand services like compute, storage, databases, networking, AI, and more.

Key Point: AWS = Pay-as-you-go + Scalability + Global Reach.

Q2. What are the benefits of using AWS?

Answer:

- Cost-effective (pay for what you use)
- Highly scalable and elastic
- Secure with compliance certifications
- Global infrastructure (Regions & Availability Zones)
- Wide range of services

Q3. Explain AWS Global Infrastructure.

Answer:

- Regions → Geographical areas (e.g., us-east-1)
- Availability Zones (AZs) → Data centers inside regions
- Edge Locations → CDN caching points (CloudFront)

Takeaway: Regions → AZs → Edge Locations.

Q4. What is the difference between Scalability and Elasticity?

Answer:

- Scalability: Ability to increase capacity (vertically/horizontally).
- Elasticity: Automatic scaling up/down based on demand.

Q5. What are the types of Cloud Computing models?

Answer:

1. IaaS – Infrastructure as a Service (EC2, VPC)
2. PaaS – Platform as a Service (Elastic Beanstalk)
3. SaaS – Software as a Service (WorkMail, Chime)

📌 Section 2: Compute Services

Q6. What is Amazon EC2?

Answer:
EC2 (Elastic Compute Cloud) provides resizable virtual servers in the cloud.

Key Features: On-demand, Reserved, Spot Instances.

Q7. Difference between EC2 On-demand, Reserved, and Spot Instances?

Answer:

- On-demand: Pay by hour/second, flexible.
- Reserved: Commit for 1-3 years, cheaper.
- Spot: Bid for unused capacity, up to 90% cheaper.

Q8. What is Auto Scaling in AWS?

Answer:
Auto Scaling automatically adjusts EC2 instances based on load/demand.

Q9. What is Elastic Load Balancing (ELB)?

Answer:
Distributes incoming traffic across multiple EC2 instances.

Types: Application (ALB), Network (NLB), Gateway (GLB).

Q10. What is AWS Lambda?

Answer:
Lambda is a serverless compute service where you run code without managing servers.

Use Case: Event-driven applications (S3 uploads, API Gateway triggers).

📌 Section 3: Storage & Databases

Q11. Difference between S3 and EBS?

Answer:

- S3 (Simple Storage Service): Object storage for files.
- EBS (Elastic Block Store): Block storage for EC2 (like virtual hard drives).

Q12. What is S3 Bucket?

Answer:
A container for storing objects (files, metadata). Each bucket has a unique name.

Q13. What is Amazon Glacier?

Answer:
Low-cost archival storage for long-term data retention.

Q14. What are RDS and DynamoDB?

Answer:

- RDS: Managed relational database service (MySQL, PostgreSQL, Oracle, etc.)
- DynamoDB: NoSQL key-value database.

Q15. What is Amazon Aurora?

Answer:
A MySQL and PostgreSQL-compatible relational database with high performance and scalability.

📌 Section 4: Networking & Security

Q16. What is Amazon VPC?

Answer:
A Virtual Private Cloud that allows you to create an isolated network inside AWS.

Q17. Difference between Security Groups and NACLs?

Answer:

- Security Groups: Stateful, applied to instances.
- NACLs: Stateless, applied at subnet level.

Q18. What is Route 53?

Answer:
AWS DNS and domain registration service with routing and health checks.

Q19. What is AWS IAM?

Answer:
Identity and Access Management for secure access control to AWS resources.

Key Features: Users, Groups, Roles, Policies.

Q20. What is AWS Shield?

Answer:
A managed DDoS protection service for apps running on AWS.

📌 Section 5: DevOps & Management

Q21. What is AWS CloudFormation?

Answer:
An Infrastructure as Code (IaC) service to create resources using YAML/JSON templates.

Q22. What is AWS Elastic Beanstalk?

Answer:
A PaaS service for deploying applications without worrying about infrastructure.

Q23. What is AWS CloudWatch?

Answer:
Monitoring and observability service for AWS resources (metrics, logs, alarms).

Q24. What is AWS CloudTrail?

Answer:
Service that records all API calls and user activity for auditing.

Q25. What is AWS CodePipeline?

Answer:
A CI/CD service to automate application build, test, and deployment pipelines.

📌 Section 6: Advanced & Real-World

Q26. What is the Shared Responsibility Model?

Answer:

- AWS: Responsible for security *of* the cloud (infrastructure, hardware).

- Customer: Responsible for security *in* the cloud (apps, data, IAM).

Q27. Difference between CloudFront and Route 53?

Answer:

- CloudFront: CDN for content delivery.
- Route 53: DNS service for domain management.

Q28. What is AWS Well-Architected Framework?

Answer:
A set of best practices to design secure, reliable, efficient, and cost-optimized workloads.

Pillars: Operational Excellence, Security, Reliability, Performance, Cost.

Q29. What are AWS Trusted Advisor checks?

Answer:
Trusted Advisor provides recommendations on cost optimization, performance, security, and fault tolerance.

Q30. Real-world use cases of AWS?

Answer:

- Hosting websites & applications
- Big data analytics (EMR, Redshift)
- AI/ML workloads (SageMaker)
- IoT applications
- Backup and disaster recovery