

## **Amazon EC2 (Elastic Compute Cloud)**

1. **What does EC2 stand for?**  
**A:** Elastic Compute Cloud
  2. **What is a key pair used for in EC2?**  
**A:** To securely SSH into Linux instances.
  3. **What instance type is free-tier eligible?**  
**A:** t2.micro or t3.micro
  4. **What happens when you stop an EC2 instance?**  
**A:** Instance shuts down, root EBS volume is preserved, public IP may change.
  5. **Can you attach multiple security groups to an instance?**  
**A:** Yes.
  6. **Which port is used for HTTP access to EC2?**  
**A:** Port 80
  7. **What is the difference between EBS and Instance Store?**  
**A:** EBS is persistent; Instance Store is temporary and lost on stop/terminate.
  8. **What is the use of a user-data script?**  
**A:** Automates software installation/configuration at instance launch.
  9. **How can you ensure high availability of EC2?**  
**A:** Use Auto Scaling + deploy instances across multiple AZs.
  10. **Can EC2 autoscale?**  
**A:** Yes, with Auto Scaling Groups (ASG).
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## **◆ Amazon S3 (Simple Storage Service)**

1. **What is the default storage class in S3?**  
**A:** S3 Standard
2. **What is the max object size you can upload in a single PUT?**  
**A:** 5 GB
3. **What is S3 Versioning?**  
**A:** Allows multiple versions of an object to be stored.
4. **How do you make an object public in S3?**  
**A:** Via bucket policy or object ACL, and disabling Block Public Access.
5. **Can S3 host a static website?**  
**A:** Yes.
6. **What is the durability of S3?**  
**A:** 99.99999999% (11 9s)
7. **What is a bucket in S3?**  
**A:** A logical container for storing objects.

8. **What is a lifecycle policy in S3?**  
**A:** Automatically transitions or deletes objects over time.
  9. **What is S3 Glacier?**  
**A:** A low-cost storage class for long-term archive.
  10. **Is S3 region-specific?**  
**A:** Yes, each bucket exists in one AWS region.
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◆ **IAM (Identity and Access Management)**

1. **What is IAM used for?**  
**A:** Manage user access and permissions to AWS services.
  2. **What is the difference between IAM user and role?**  
**A:** Users have long-term credentials; roles are for temporary access.
  3. **What is an IAM policy?**  
**A:** A JSON document defining permissions.
  4. **What is MFA?**  
**A:** Multi-Factor Authentication – extra layer of security.
  5. **What is the least privilege principle?**  
**A:** Grant only the permissions needed to perform a task.
  6. **Can IAM roles be assigned to EC2?**  
**A:** Yes.
  7. **Can one IAM user assume multiple roles?**  
**A:** Yes.
  8. **What is a group in IAM?**  
**A:** Collection of users with shared permissions.
  9. **Where are IAM credentials stored in CLI?**  
**A:** `~/.aws/credentials`
  10. **Is root user safe to use daily?**  
**A:** No, use IAM users for daily access.
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◆ **AWS Lambda**

1. **What is AWS Lambda?**  
**A:** A serverless compute service that runs code on-demand.
2. **What languages are supported in Lambda?**  
**A:** Python, Node.js, Java, Go, Ruby, C#
3. **What is the default timeout for a Lambda function?**  
**A:** 3 seconds (max 15 minutes)

4. **Where are Lambda logs stored?**  
**A:** CloudWatch Logs
  5. **What can trigger Lambda?**  
**A:** S3, DynamoDB, API Gateway, EventBridge, etc.
  6. **What is the Lambda execution role?**  
**A:** IAM role that grants Lambda permissions to access AWS services.
  7. **Can Lambda access private VPC resources?**  
**A:** Yes, if attached to a VPC.
  8. **How is Lambda billed?**  
**A:** Per request and execution time.
  9. **Can Lambda be used for automation?**  
**A:** Yes, for serverless event-driven tasks.
  10. **Is provisioning of infrastructure needed for Lambda?**  
**A:** No, it's fully managed.
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#### ◆ Amazon RDS

1. **What is Amazon RDS?**  
**A:** A managed relational database service.
2. **Which engines does RDS support?**  
**A:** MySQL, PostgreSQL, MariaDB, Oracle, SQL Server, Aurora.
3. **What is Multi-AZ deployment?**  
**A:** Automatically creates standby in another AZ for high availability.
4. **What is a read replica?**  
**A:** A read-only copy for scaling read operations.
5. **What is a snapshot?**  
**A:** A manual backup of the RDS instance.
6. **Is RDS serverless available?**  
**A:** Yes, in Amazon Aurora.
7. **Can RDS be paused or stopped?**  
**A:** Yes, non-production DBs can be paused for up to 7 days.
8. **Where are backups stored?**  
**A:** In S3 by default.
9. **Can RDS be made public?**  
**A:** Yes, with proper subnet, security group, and public access enabled.
10. **Can you access RDS from Lambda?**  
**A:** Yes, with proper VPC and security group config.

## **Amazon VPC (Virtual Private Cloud)**

1. **What is a VPC?**  
**A:** A logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network.
  2. **What is a CIDR block?**  
**A:** It defines the IP address range of a VPC, e.g., 10.0.0.0/16.
  3. **What is an Internet Gateway (IGW)?**  
**A:** A gateway attached to a VPC that enables internet connectivity.
  4. **What is a Subnet?**  
**A:** A sub-range of IP addresses in your VPC.
  5. **Difference between Public and Private Subnet?**  
**A:** Public subnets have a route to the internet via IGW; private subnets do not.
  6. **What is a Route Table?**  
**A:** It controls the routing of traffic within the VPC.
  7. **What is a NAT Gateway?**  
**A:** Allows instances in a private subnet to access the internet.
  8. **What are NACLs (Network ACLs)?**  
**A:** Stateless firewall rules applied at the subnet level.
  9. **Difference between NACL and Security Group?**  
**A:** NACL is stateless and applies at the subnet level; SG is stateful and applies at the instance level.
  10. **Can multiple subnets be in the same VPC?**  
**A:** Yes.
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### ◆ **Amazon CloudWatch**

1. **What is AWS CloudWatch used for?**  
**A:** Monitoring resources and applications in AWS.
2. **What is a CloudWatch Alarm?**  
**A:** A rule that monitors a metric and performs actions when it breaches a threshold.
3. **What are CloudWatch Logs?**  
**A:** Store logs from services like EC2, Lambda, and others.
4. **Can CloudWatch monitor custom metrics?**  
**A:** Yes, via PutMetricData.
5. **What is the default metric collection interval?**  
**A:** 5 minutes (1 minute with detailed monitoring).
6. **Can CloudWatch trigger Auto Scaling?**  
**A:** Yes, using alarms.

7. **How are logs retained in CloudWatch?**  
**A:** By default indefinitely, but retention can be configured.
  8. **Can CloudWatch send email alerts?**  
**A:** Yes, using Amazon SNS.
  9. **What is a CloudWatch Dashboard?**  
**A:** A customizable screen to visualize metrics.
  10. **Where are Lambda logs stored?**  
**A:** In CloudWatch Logs.
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◆ **Amazon Route 53**

1. **What is Route 53 used for?**  
**A:** Domain registration and DNS routing.
  2. **What is a Hosted Zone?**  
**A:** A container for records of a domain.
  3. **What is a CNAME record?**  
**A:** Maps one domain to another domain name.
  4. **What is an A record?**  
**A:** Maps a domain name to an IPv4 address.
  5. **What is TTL in DNS?**  
**A:** Time-to-live; how long a record is cached.
  6. **Does Route 53 support load balancing?**  
**A:** It integrates with ELB but doesn't perform load balancing itself.
  7. **What is a Latency-Based Routing Policy?**  
**A:** Routes users to the region with the lowest latency.
  8. **What is a Failover Routing Policy?**  
**A:** Routes traffic to a backup site if the primary fails.
  9. **Can Route 53 monitor health checks?**  
**A:** Yes.
  10. **What is an Alias record?**  
**A:** Points to AWS resources like S3 or CloudFront.
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◆ **AWS CLI (Command Line Interface)**

1. **What is AWS CLI?**  
**A:** A tool to manage AWS services via terminal.
2. **How do you configure AWS CLI?**  
**A:** aws configure

3. **How do you list S3 buckets?**  
**A:** aws s3 ls
  4. **How to copy a file to S3 using CLI?**  
**A:** aws s3 cp file.txt s3://mybucket/
  5. **How to create an IAM user via CLI?**  
**A:** aws iam create-user --user-name testuser
  6. **How to launch an EC2 instance from CLI?**  
**A:** aws ec2 run-instances ...
  7. **Where are CLI credentials stored?**  
**A:** ~/.aws/credentials
  8. **How to check configured profile?**  
**A:** aws configure list
  9. **Can CLI manage S3, EC2, IAM?**  
**A:** Yes.
  10. **Can CLI be used in scripts?**  
**A:** Yes, for automation.
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◆ **Billing & Pricing**

1. **What is AWS's pricing model?**  
**A:** Pay-as-you-go
2. **What tool helps estimate AWS costs?**  
**A:** AWS Pricing Calculator
3. **What is the AWS Free Tier?**  
**A:** 12-month access to certain services at no cost (e.g., EC2 t2.micro).
4. **How can you track AWS spend?**  
**A:** AWS Cost Explorer and Billing Dashboard.
5. **What is consolidated billing?**  
**A:** Combine multiple accounts under one bill.
6. **How are EC2 instances billed?**  
**A:** Per hour or second, based on type.
7. **Do stopped EC2 instances incur charges?**  
**A:** No compute charges, but EBS may incur cost.
8. **How is S3 billed?**  
**A:** Based on storage, requests, and data transfer.
9. **Can you set billing alarms?**  
**A:** Yes, using CloudWatch + Budgets.

**10. Are intra-region data transfers free?**

**A:** Mostly yes; inter-region transfers are chargeable.

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◆ **Amazon CloudFront**

**1. What is CloudFront?**

**A:** A global Content Delivery Network (CDN).

**2. What is an Edge Location?**

**A:** A location where content is cached close to users.

**3. What is an Origin in CloudFront?**

**A:** The source of the content (e.g., S3 or EC2).

**4. What is caching in CloudFront?**

**A:** Temporarily storing content at edge locations.

**5. Can CloudFront deliver dynamic content?**

**A:** Yes.

**6. Does CloudFront support HTTPS?**

**A:** Yes, with SSL certificates.

**7. What is a distribution?**

**A:** The CloudFront configuration for a specific website or app.

**8. Can CloudFront work with Route 53?**

**A:** Yes.

**9. Is CloudFront integrated with AWS Shield?**

**A:** Yes, for DDoS protection.

**10. How is CloudFront billed?**

**A:** Based on data transfer and number of requests.

## Basic Cloud & AWS Fundamentals

### **Q1: What is Cloud Computing?**

A: On-demand access to computing resources via the internet.

### **Q2: Name 3 key benefits of cloud computing.**

A: Scalability, cost-efficiency, high availability.

### **Q3: What is the difference between IaaS, PaaS, and SaaS?**

A: IaaS: EC2 (infrastructure); PaaS: Lambda (platform); SaaS: Gmail, Dropbox (software).

### **Q4: What are the core AWS global infrastructure components?**

A: Region, Availability Zone, Edge Location.

### **Q5: What is the AWS Shared Responsibility Model?**

A: AWS secures the cloud infrastructure; customers secure their applications and data.

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#### ◆ **Amazon EC2**

### **Q6: What happens when you stop vs terminate an EC2 instance?**

A: Stop keeps EBS; terminate deletes EBS if not set to retain.

### **Q7: What is an AMI?**

A: Amazon Machine Image – used to launch EC2 instances.

### **Q8: How do you connect to a Linux EC2 instance?**

A: Using SSH: ssh -i key.pem ec2-user@<public-ip>

### **Q9: What is a Security Group?**

A: A virtual firewall that controls inbound and outbound traffic for EC2.

### **Q10: How do you scale EC2 automatically?**

A: Using Auto Scaling Groups and CloudWatch alarms.

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#### ◆ **Amazon S3**

### **Q11: What is the difference between S3 and EBS?**

A: S3 is object storage; EBS is block storage attached to EC2.

### **Q12: How can you make an object public in S3?**

A: Modify bucket policy or object ACL and disable "Block Public Access".

### **Q13: What is S3 Versioning?**

A: Keeps multiple versions of an object to prevent accidental loss.

### **Q14: What is a lifecycle rule?**

A: Automates object transition or deletion over time.

**Q15: Can S3 host a static website?**

A: Yes, using static website hosting feature.

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**◆ IAM (Identity & Access Management)****Q16: What is IAM and why is it important?**

A: IAM manages who can access AWS and what they can do.

**Q17: What is the difference between an IAM user and a role?**

A: Users have long-term credentials; roles are for temporary access.

**Q18: What does MFA do in IAM?**

A: Adds an extra layer of security with a second authentication factor.

**Q19: What is an IAM policy?**

A: A JSON document defining permissions for a user, group, or role.

**Q20: Should the root account be used daily?**

A: No. Create and use IAM users for daily tasks.

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**◆ Amazon VPC (Networking)****Q21: What is a VPC?**

A: A logically isolated network in the AWS cloud.

**Q22: What is the difference between public and private subnets?**

A: Public subnets have internet access via an Internet Gateway.

**Q23: What is the purpose of a NAT Gateway?**

A: Allows private subnet instances to access the internet.

**Q24: What is a Route Table?**

A: Determines how network traffic is directed.

**Q25: What is the difference between a Security Group and a NACL?**

A: SG is stateful and instance-level; NACL is stateless and subnet-level.

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**◆ CloudWatch, CLI, and Misc****Q26: What is AWS CloudWatch used for?**

A: Monitoring AWS services, collecting logs, and setting alarms.

**Q27: How can you monitor EC2 CPU usage?**

A: Through CloudWatch metrics and alarms.

**Q28: What is the CLI command to upload a file to S3?**

A: aws s3 cp file.txt s3://mybucket/

**Q29: How do you configure AWS CLI?**

A: By running aws configure and entering keys, region, and output format.

**Q30: What is the difference between horizontal and vertical scaling?**

A: Horizontal: more instances; Vertical: bigger instances.

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◆ Behavioral Questions

**Q31: Tell me about a time you solved a technical issue.**

A: (Use STAR – Situation, Task, Action, Result)

**Q32: Why do you want to work in cloud support?**

A: Passion for cloud computing, problem-solving, and customer service.

**Q33: What AWS project did you enjoy the most and why?**

A: (Example: EC2-S3 integration or website hosting on S3.)

**Q34: How do you keep your cloud knowledge updated?**

A: AWS Skill Builder, hands-on labs, YouTube tutorials, and AWS blogs.