

Basic AWS Interview Questions



1. What is AWS?

AWS (Amazon Web Services) is a secure cloud platform that provides services like computing power, storage, and databases over the internet on a pay-as-you-go basis.

2. Name different types of cloud computing models.

- IaaS (Infrastructure as a Service)
- PaaS (Platform as a Service)
- SaaS (Software as a Service)

3. What is the difference between EC2 and S3?

EC2 provides resizable virtual servers in the cloud, while S3 is a storage service used for storing and retrieving any amount of data.

4. What is an AMI?

An AMI (Amazon Machine Image) is a template that contains the software configuration (OS, application server, and apps) required to launch an EC2 instance.

5. What is an Elastic IP?

An Elastic IP is a static IPv4 address used for dynamic cloud computing, which can be remapped between instances.

6. What is auto-scaling?

Auto-scaling automatically adjusts the number of EC2 instances in response to demand to ensure application availability.

7. What are security groups in AWS?

Security groups are virtual firewalls that control inbound and outbound traffic to AWS resources like EC2 instances.

8. What is the difference between public and private subnets?

- Public subnets can access the internet via an Internet Gateway.
- Private subnets do not have direct internet access and use NAT Gateway for outbound communication.

9. What is VPC?

VPC (Virtual Private Cloud) is a logically isolated section of the AWS cloud where you can launch AWS resources in a virtual network.

10. What is an IAM role vs IAM user?

- IAM user: For long-term access, represents a person or application.
- IAM role: Grants temporary permissions to entities like EC2 or Lambda.

AWS Troubleshooting Interview Questions



1. EC2 instance not accessible via SSH. What will you check?

- Security Group rules (port 22 open)
- Correct key pair used
- Public IP assigned
- NACL rules
- EC2 instance is running and in a public subnet with Internet Gateway

2. Website hosted on EC2 is not loading. How do you troubleshoot?

- Web server (Apache/Nginx) is running
- Security Group allows port 80/443
- DNS is resolving correctly
- EC2 is healthy and publicly accessible

3. S3 bucket shows "Access Denied". How do you fix it?

- Check IAM user permissions
- Verify bucket policy and ACLs
- Ensure public access settings (if needed) are not blocking it

4. EC2 instance fails to start. Why?

- Check instance status checks
- Review system logs
- Ensure the AMI or EBS volume is healthy
- Check quotas and limits

5. High latency between AZs. What to check?

- Application architecture
- Use of placement groups
- Check if services are cross-region instead of cross-AZ
- Network performance metrics

6. Can't connect to RDS. Possible issues?

- Check RDS security group rules (port 3306 for MySQL)
- Ensure RDS is in the correct VPC/subnet

- Database endpoint and credentials are correct
- NACLs or routing issues

7. Auto-scaling group not launching new instances. Steps?

- Check launch configuration/template
- Ensure instance type is available
- Review ASG scaling policies
- Verify IAM roles and permissions

8. Lambda function times out. How to debug?

- Increase timeout setting
- Optimize code
- Use CloudWatch Logs for debugging
- Check upstream/downstream services

9. Route 53 DNS changes not reflecting. What to do?

- Wait for TTL to expire
- Clear local DNS cache
- Check DNS record is correctly configured
- Use dig or nslookup to verify

10. CloudWatch logs not showing. How to fix it?

- Ensure correct IAM permissions
- Log group and stream exist
- Application is configured to send logs
- Check log retention policies

Intermediate AWS Questions



1. Difference between NAT Gateway and Internet Gateway?

- NAT Gateway allows instances in private subnets to access the internet.
- Internet Gateway provides internet access to instances in public subnets.

2. What is EBS and how is it different from S3?

- EBS: Block storage for EC2, like a hard drive.
- S3: Object storage for storing any type of data in buckets.

3. Explain lifecycle policy in S3.

Lifecycle policy automates transition of objects between storage classes (e.g., S3 Standard to Glacier) or deletes them after a set time.

4. What is CloudTrail and how is it used?

CloudTrail records AWS API calls and events for auditing and compliance.

5. How does AWS CloudFormation work?

It enables you to define and provision AWS infrastructure using code (templates in JSON/YAML).

6. What are Reserved Instances and Spot Instances?

- Reserved: Pre-purchased capacity for long-term savings.
- Spot: Unused EC2 capacity at reduced rates, can be interrupted.

7. What is an Elastic Load Balancer (ELB)?

ELB automatically distributes incoming traffic across multiple targets (e.g., EC2 instances) for fault tolerance.

8. Difference between Application and Network Load Balancer?

- ALB: Works at Layer 7 (HTTP/HTTPS), supports routing and content-based routing.
- NLB: Works at Layer 4 (TCP), handles high performance and static IP.

9. How do you secure data in S3?

- Use bucket policies and IAM permissions
- Enable encryption (SSE-S3, SSE-KMS)
- Enable MFA Delete
- Block public access settings

10. How do you migrate a server to AWS?

- Use AWS Server Migration Service (SMS), AWS Application Migration Service (MGN), or manual AMI creation and EC2 launch.

Advanced AWS Questions



1. How does AWS ensure high availability across regions?

By deploying services across multiple Availability Zones and Regions with redundancy and failover mechanisms.

2. Design a multi-tier architecture with high availability.

Use Load Balancers, Auto Scaling, Multi-AZ RDS, and deploy across multiple Availability Zones in a VPC with private/public subnets.

3. How do you secure a VPC with multiple layers?

- Use Security Groups and NACLs
- Create public/private subnets
- Deploy bastion host for SSH access
- Use VPC flow logs and monitoring

4. How do you troubleshoot performance in microservices setup?

- Use CloudWatch, X-Ray for tracing
- Analyze latency and errors
- Check resource limits, network, and dependency services

5. Best practices for CI/CD on AWS?

- Use CodePipeline, CodeBuild, CodeDeploy
- Automate testing
- Secure secrets with Parameter Store
- Use version control and rollback mechanisms

6. AWS Config and Organizations for compliance?

- AWS Config tracks resource changes
- AWS Organizations enforces policies across accounts using Service Control Policies (SCPs)

7. Explain AWS Transit Gateway and use cases.

Transit Gateway connects multiple VPCs and on-prem networks through a central hub, simplifying network management.

8. How do you manage cross-region data replication securely?

- Use S3 Cross-Region Replication with SSE
- Use encrypted VPC peering or VPN for RDS
- Use IAM policies to control access

9. How would you design for disaster recovery on AWS?

- Use Multi-AZ and Multi-Region deployments
- Backup with AWS Backup or snapshots
- Implement failover strategies using Route 53

10. Use of SQS, SNS, and EventBridge in decoupled systems?

- SQS: Message queuing between services
- SNS: Publish/subscribe messaging
- EventBridge: Event-driven architecture to connect apps using events