AWS Interview Questions ✨  
  
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**Basic AWS Questions**

**What is AWS?**

AWS (Amazon Web Services) is a cloud computing platform that provides a wide range of on-demand services like computing power (EC2), storage (S3), databases (RDS), and machine learning, among others.

**What is a cloud?**

Cloud computing refers to the delivery of computing services over the internet (cloud), offering scalable and elastic resources like servers, storage, databases, networking, software, and more.

**What is EC2?**

EC2 (Elastic Compute Cloud) is a web service that provides resizable compute capacity in the cloud. It allows users to rent virtual servers to run applications.

**What is AZ?**

An Availability Zone (AZ) is a distinct location within a region that is engineered to be isolated from failures in other AZs. Each AZ has independent power, cooling, and networking.

**What is Lambda, and what is the use of it?**

AWS Lambda is a serverless compute service that lets you run code in response to events without provisioning or managing servers. It is used for event-driven programming.

**What have you developed using Lambda?**

Lambda can be used for various use cases like handling S3 events, automating EC2 instance management, processing data from streams, or building microservices.

**What automation have you done with Lambda?**

Lambda can automate tasks like sending notifications via SNS, scaling resources based on CloudWatch events, or automating backups and monitoring.

**What is a static IP?**

A static IP is an IP address that doesn’t change over time, typically used for permanent assignments to devices or resources (like an Elastic IP in AWS).

**What is ELB?**

ELB (Elastic Load Balancer) automatically distributes incoming traffic across multiple targets, such as EC2 instances, to ensure high availability and fault tolerance.

**What types of ELB are there?**

**Application Load Balancer (ALB)**: Operates at the HTTP/HTTPS level.

**Network Load Balancer (NLB)**: Operates at the TCP/UDP level for high performance.

**Classic Load Balancer (CLB)**: Supports both HTTP/HTTPS and TCP traffic but is deprecated.

**What is autoscaling?**

Autoscaling automatically adjusts the number of EC2 instances based on demand to maintain performance and reduce costs.

**If you lost the PEM file, how will you connect to EC2?**

You can create a new key pair and attach it to the EC2 instance by stopping it, detaching the root volume, attaching it to another instance, and copying the public key to the .ssh/authorized\_keys file.

**Storage and Services**

**What is the difference between EBS, S3, and EFS?**

**EBS (Elastic Block Store)**: Persistent block storage attached to EC2 instances.

**S3 (Simple Storage Service)**: Object storage for storing and retrieving data in any scale.

**EFS (Elastic File System)**: A scalable file storage service that can be accessed concurrently by multiple EC2 instances.

**What type of data do you store in S3 and EBS?**

**S3**: Suitable for static data like images, videos, backups, logs, etc.

**EBS**: Suitable for persistent storage used by EC2 instances, such as operating systems, databases, and applications.

**Replication in S3?**

S3 supports replication across regions or within the same region for higher availability and durability.

**What is CloudFront/CDN?**

Amazon CloudFront is a Content Delivery Network (CDN) that speeds up the distribution of static and dynamic web content to users globally by caching copies of the content at edge locations.

**What is CloudWatch?**

Amazon CloudWatch is a monitoring service that tracks AWS resources and applications in real-time, providing metrics, logs, and alarms.

**What is CloudFormation?**

AWS CloudFormation allows you to define and provision infrastructure as code, creating and managing AWS resources using templates.

**What is the use of the IAM role?**

An IAM role is used to grant permissions to entities (users, services) in AWS, allowing them to perform specific actions.

**Networking and Security**

**What is VPC?**

A VPC (Virtual Private Cloud) is a logically isolated section of the AWS cloud where you can define and control the network environment, including IP address ranges, subnets, route tables, and network gateways.

**What is VPC peering?**

VPC peering allows you to connect two VPCs, enabling them to route traffic between each other.

**Why use VPC peering? Real-time example?**

VPC peering is used for secure communication between VPCs, such as connecting development and production environments across regions.

**Why use events in CloudWatch in AWS?**

CloudWatch Events allow you to automatically respond to changes in your AWS environment, such as scaling EC2 instances or triggering Lambda functions based on system states.

**Difference between NACL and SG?**

**NACL (Network Access Control List)**: Operates at the subnet level and provides stateless filtering.

**SG (Security Group)**: Operates at the instance level and provides stateful filtering.

**S3 lifecycle?**

S3 lifecycle policies automate the transition of objects between storage classes or deletion based on age, reducing costs.

**How many subnets are assigned to the routing table?**

Multiple subnets can be associated with a single routing table, with each subnet having routes for internal and external traffic.

**How will you get access to private subnets?**

You can access private subnets via a **VPN** or **bastion host** placed in a public subnet.

**What is the difference between VPC-level security and system-level security?**

**VPC-level security**: Managed using NACLs, security groups, and route tables.

**System-level security**: Managed on individual instances (e.g., operating system-level firewalls).

**What is the subnet group in DB?**

A subnet group in RDS defines which subnets in a VPC the RDS instance can use.

**DevOps and CI/CD**

**What is DevOps?**

DevOps is a set of practices that aim to automate and integrate the processes of software development and IT operations, improving collaboration and efficiency.

**What are Agile and Waterfall methods?**

**Agile**: An iterative and incremental approach to software development with frequent feedback and adaptation.

**Waterfall**: A linear and sequential software development process.

**What tools does DevOps contain?**

DevOps tools include CI/CD tools (Jenkins, GitLab CI), configuration management (Ansible, Chef, Puppet), version control (Git), monitoring (Nagios, Prometheus), containerization (Docker, Kubernetes), and cloud infrastructure tools (Terraform, AWS).

**What is the Git lifecycle?**

The Git lifecycle includes stages like **untracked**, **modified**, **staged**, and **committed**, representing the state of changes to a repository.

**What is Build? Explain technically.**

A build refers to the process of converting source code into executable software by compiling, linking, and packaging the code into an artifact.

**What is Automation in DevOps?**

Automation in DevOps refers to using scripts, tools, and processes to automate the software development lifecycle, from code writing to deployment.

**What is CI/CD?**

CI/CD (Continuous Integration/Continuous Deployment) is a practice where code is automatically built, tested, and deployed, allowing faster release cycles.

**What are the stages in Jenkins?**

Jenkins stages include **Build**, **Test**, and **Deploy**, where each stage performs a specific function during the CI/CD pipeline.

**Is only Jenkins enough for automation?**

Jenkins is a powerful tool, but other tools may be required for infrastructure management (e.g., Terraform), containerization (Docker), and monitoring (Prometheus).

**Where will you deploy the application?**

Applications can be deployed on services like EC2, Elastic Beanstalk, Lambda, or Kubernetes in AWS.

**Miscellaneous Questions**

**Can you increase the size of the root volume without shutting down the instance?**

Yes, you can increase the size of the root EBS volume without stopping the instance by using the resize2fs command to resize the file system.

**Df -h?**

The df -h command displays disk space usage in a human-readable format (e.g., GB or MB).

**What is the hosted zone and what are the uses of the recordset?**

A **hosted zone** is a container for DNS records for a domain in Route 53. A **record set** defines the type and value of the DNS record.

**How to encrypt the root volume?**

You can enable encryption at launch for an EC2 instance's root volume or use the AWS CLI to encrypt an existing volume.

**How will you access AS account?**

You can access AWS account using IAM users, roles, or federated access.

**How do you connect to Windows instances?**

You connect to Windows EC2 instances using Remote Desktop Protocol (RDP) after obtaining the administrator password (via EC2 key pair).

**Port numbers of RDP, SSH, and HTTPS?**

**RDP**: 3389

**SSH**: 22

**HTTPS**: 443