

AWS Essential Ques and Ans

1. What is AWS ?

Answer: Amazon Web Services (AWS) is a comprehensive cloud computing platform provided by Amazon. It offers services such as computing power, storage, networking, and databases, which help businesses scale their applications globally.

2. What are Availability Zones (AZs) in AWS?

Answer: Availability Zones are isolated locations within a region where AWS data centers are located. Each region contains multiple AZs to provide redundancy, reducing the chance of downtime due to outages in one data center.

3. What is an AWS Region?

Answer: An AWS Region is a geographic area that consists of multiple Availability Zones. Each region operates independently and contains its own set of data centers, allowing for data redundancy and compliance with local regulations.

4. What is Amazon EC2?

An EC2 instance is a service from AWS that lets you run apps, websites, or other tasks in the cloud. Instead of using a physical computer, AWS gives you a resource that acts like one, where you can store and process data.

The best part about EC2 is that it's flexible. You can choose how much computing power, memory, or storage you need, depending on your workload. If your app or website gets more traffic and needs more resources, you can create a new, bigger instance to handle it. If traffic goes down, you can switch to a smaller instance to save money.

5. What are the types of EC2 instances?

Answer: AWS offers different EC2 instance types optimized for various tasks:

□ *General Purpose*: For balanced compute, memory, and networking.

□ *Compute Optimized*: For compute-intensive applications.

□ *Memory Optimized*: For memory-intensive applications.

□ *Storage Optimized*: For high-performance storage needs.

□ *Accelerated Computing*: For hardware acceleration (e.g., GPUs).

6. What is S3 (Simple Storage Service) in AWS?

Answer: An S3 bucket is a storage container in Amazon S3 where you store data as objects. Each bucket is globally unique and serves as a namespace to organize and store files.

7. What is IAM in AWS?

IAM (Identity and Access Management) is a service in AWS that helps you control who can access your AWS resources and what actions they can perform. You can create users, groups, and roles, and set permissions to ensure that only authorized people or services can access specific resources in your AWS account.

8. Explain the concept of Security Groups in AWS.

Security Groups act as virtual firewalls at the instance level, controlling inbound and outbound traffic, and are stateful, meaning return traffic is automatically allowed. They support only allow rules and are directly associated with EC2 instances.

9. What is an Elastic IP in AWS?

An Elastic IP in AWS is a static (fixed) public IP address that you can assign to an EC2 instance. It ensures that your instance keeps the same IP address even if it stops or restarts. This is useful for hosting websites, applications, or services that need a consistent IP address.

10. What is Elastic Load Balancing (ELB) in AWS?

Elastic Load Balancing (ELB) in AWS automatically distributes incoming traffic across multiple servers (EC2 instances) to ensure no single server is overloaded. It improves application availability, handles traffic spikes, and ensures smooth performance by routing requests to healthy servers.

11. What are the types of load balancers in AWS?

Ans: AWS provides four types of Load Balancers under Elastic Load Balancing (ELB):

1. Application Load Balancer (ALB) – Best for web applications. It routes traffic based on the URL path or host (host-based and path-based routing) and works at Layer 7. ALB supports HTTP and HTTPS protocols.

2. Network Load Balancer (NLB) – Best for handling high traffic with low latency. It routes traffic based on IP and ports at Layer 4 and supports TCP, TLS, and UDP protocols.

3. Gateway Load Balancer (GWLB) – Used for managing third-party security appliances like firewalls. It works at Layer 3 and supports the GTP protocol for traffic management in security appliances.

4. Classic Load Balancer (CLB) – The older version that works at both Layer 4 and Layer 7 but is less advanced than ALB and NLB. CLB supports HTTP, HTTPS, TCP, and SSL protocols.

HTTP (HyperText Transfer Protocol) is the system used for transferring web pages and other content over the internet. It's the protocol that allows your browser to communicate with websites, asking for information (like a webpage or image) and receiving it. When you type a web address, your browser uses HTTP to request the page, and the server sends it back to you.

HTTPS (HyperText Transfer Protocol Secure) is the secure version of HTTP. It encrypts the data transferred between your browser and a

website, ensuring that any information you share, like passwords or credit card details, is kept private and safe from hackers. Websites using HTTPS are safer, especially for activities like online shopping or banking.

TCP (Transmission Control Protocol) ensures that data sent over the internet arrives in the right order and without errors. It's reliable, meaning it checks for lost data and resends it if needed, making it ideal for things like emails and web browsing.

UDP (User Datagram Protocol) is faster but less reliable than TCP. It sends data without checking if it arrives correctly. It's used for things like streaming or online gaming, where speed matters more than perfect accuracy.

TLS (Transport Layer Security) is a protocol that encrypts data to keep it safe when sent over the internet. It's used in HTTPS to protect sensitive information, like passwords or credit card numbers, from being intercepted by hackers.

12. What is Amazon RDS?

RDS (Relational Database Service) is a service from AWS that makes it easy to set up, operate, and scale relational databases like MySQL, PostgreSQL, and SQL Server. It handles tasks like database management, backups, and software patching, so you don't have to worry about the technical details. RDS helps ensure your database is reliable, secure, and scalable without needing to manage the infrastructure yourself.

13. What is Amazon VPC?

VPC (Virtual Private Cloud) is a service in AWS that lets you create your own private network in the cloud. You can control things like which resources can communicate with each other and how they connect to the internet. It allows you to have your own IP address range, subnets, and routing tables, giving you full control over your

network setup. It's like setting up your own secure space in the cloud to run your applications and store data.

14. What is the purpose of AWS CloudFormation?

AWS CloudFormation is a tool that helps you set up and manage your cloud resources, like servers, databases, and storage, in an organized and automated way. Instead of manually creating and configuring each resource one by one, you can use CloudFormation to write a template that describes everything you need. AWS then uses that template to automatically create and configure all the resources for you.

15. What is AWS Lambda?

AWS Lambda is a serverless compute service that allows you to run code in response to events without provisioning or managing servers. You only pay for the compute time you use.

16. What is Amazon CloudWatch?

AWS CloudWatch is a service that helps you monitor and track the performance of your AWS resources and applications. It collects data like CPU usage, memory, and network activity, and shows you this information in real-time. You can set alarms to get notified if something goes wrong, helping you keep your systems running smoothly.

17. What is AWS CloudTrail?

AWS CloudTrail is a service that records all the actions taken in your AWS account. It tracks who did what and when, helping you monitor and review activity for security, compliance, and troubleshooting purposes. It's like having a detailed log of everything that happens in your AWS environment.

18. What are AWS Auto Scaling and its benefits?

Answer: AWS Auto Scaling automatically adjusts the number of EC2 instances based on demand. This ensures high availability and cost savings by scaling resources up or down as needed.

19. What is Amazon Route 53?

Answer: Amazon Route 53 is a scalable DNS (Domain Name System) service that translates domain names into IP addresses, helping users connect to applications. It also lets you register domains, manage DNS records, and route traffic using methods like latency-based and geolocation routing. Route 53 includes health checks to monitor resources and can automatically reroute traffic if a resource fails, ensuring high availability and reliability.

20. What is Amazon EBS?

EBS (Elastic Block Store) volume is a storage service in AWS that provides block-level storage for your EC2 instances. It's like a hard drive in the cloud that you can attach to your virtual server. You can store data, files, or even run databases on EBS volumes, and they remain intact even if your EC2 instance is stopped or terminated.

21. What are EBS Volume types?

Answer: EBS volume types include:

- *General Purpose SSD (gp2, gp3)*: For balanced performance.
- *Provisioned IOPS SSD (io1, io2)*: For high-performance needs.
- *Throughput Optimized HDD (st1)*: For frequently accessed data.
- *Cold HDD (sc1)*: For infrequent access, lower-cost storage.

22. What is an Amazon EC2 Reserved Instance?

Answer: Reserved Instances allow you to reserve EC2 instances for a set term (1-3 years), providing a significant discount compared to On-Demand instances.

23. What is the difference between RDS and DynamoDB?

Answer: *RDS (Relational Database Service)* is used for structured data with tables, rows, and columns, like MySQL or PostgreSQL. It's good for applications that need complex queries and transactions.

DynamoDB is a NoSQL database that stores unstructured data in a flexible way. It's fast, scalable, and works well for applications with simple queries, like mobile apps or websites with high traffic.

24. What is Amazon CloudFront?

Amazon CloudFront is a content delivery network (CDN) that helps deliver your website's content, like images, videos, and web pages, quickly to users around the world. It stores copies of your content in multiple edge locations (servers located in different parts of the world) so users can access it from the nearest one, improving speed and performance.

25. Explain Multi-AZ deployments in RDS.

we used Multi-AZ deployment in RDS to ensure high availability. It creates a standby copy of the database in another availability zone. If the primary database fails, it automatically switches to the standby, minimizing downtime and ensuring the application keeps running smoothly.

26. What is the purpose of Amazon SNS?

Answer: AWS SNS (Simple Notification Service) is a service that helps you send messages or notifications to multiple people or systems. You can use it to send alerts, updates, or information via email, SMS, or other messaging services. It's simple to set up and allows you to quickly notify users or trigger actions in your applications.

27. What are the storage classes in Amazon S3?

Amazon S3 offers different storage classes to help you choose the best and most cost-effective way to store your data, depending on

how often you need to access it and how quickly you need it.

Standard: This is for data that you access frequently, like your active files, databases, or applications. It provides fast access with high durability, meaning your data is stored safely.

Intelligent-Tiering: This storage class automatically moves your data between different classes based on how often it's accessed. If you don't access data frequently, it will save you money by moving it to a cheaper storage option, but still keep it readily available when needed.

Standard-IA (Infrequent Access): This is for data that you don't access often but still need to retrieve quickly when required. It's cheaper than Standard storage, but you pay a little more when you access the data.

One Zone-IA: This class is similar to Standard-IA but stores your data in just one availability zone (one location). It's cheaper, but if that zone goes down, your data could be lost. It's good for data you don't need to access often and can tolerate some risk.

Glacier: Ideal for data that you need to archive and access only occasionally. It's very cheap for long-term storage, but retrieving your data can take a few hours. Good for backups or old records.

Glacier Deep Archive: The cheapest option for storing data you rarely need, like historical records or old backups. Retrieval can take up to 12 hours, so it's best for data that's unlikely to be needed quickly.

28. What is Amazon Aurora?

Answer: Amazon Aurora is a fast, fully managed relational database service from AWS. It is compatible with MySQL and PostgreSQL, but it is designed to be faster, more reliable, and scalable. Aurora automatically scales storage, provides built-in backups, and ensures high availability, making it a great choice for applications that require

a high-performance, secure database without the need for manual management.

29. What is AWS CLI?

Answer: AWS CLI (Command Line Interface) is a tool that lets you manage AWS services using simple commands in your terminal or command prompt. Instead of using the AWS Management Console (web interface), you can type commands to create, update, or delete resources in AWS. It's useful for automating tasks and managing AWS more quickly and efficiently.

30. What is a Lambda function timeout?

Answer: Lambda functions have a maximum timeout of 15 minutes, after which the function execution is terminated automatically.

31. What is AWS WAF?

Answer: AWS WAF (Web Application Firewall) is a service that helps protect your website or app from harmful traffic, like hackers or malicious bots. You can set rules to block bad requests and only allow safe ones, keeping your site secure.

32. What is a VPC Peering Connection?

Answer: VPC Peering is a service that lets you connect two Virtual Private Clouds (VPCs) in AWS. It allows resources in one VPC to communicate with resources in another VPC, even if they are in different regions. This is useful when you want to share resources or connect applications across different VPCs securely.

33. What is AWS IAM?

IAM (Identity and Access Management) is a service in AWS that helps you control who can access your AWS resources and what actions they can perform. You can create users, groups, and roles, and set permissions to ensure that only authorized people or services can access specific resources in your AWS account.

34. What are IAM Roles?

IAM Roles are a way to give permissions to AWS services or users to perform specific actions. Instead of giving a user direct access to resources, you assign them a role that defines what they can and can't do. These roles can be used by AWS services (like EC2 or Lambda) or users, allowing them to access only what's necessary for their tasks.

35. What is IAM Policies?

Answer: IAM Policies are rules that define what actions a user, group, or role can perform on AWS resources. These policies specify what is allowed or denied, such as creating, deleting, or modifying resources. They are written in a special format called JSON and are used to control access to AWS services in a secure way.

36 What is AWS KMS?

AWS KMS (Key Management Service) is a service that helps you create and manage encryption keys to protect your data. It allows you to securely encrypt sensitive information, like files or database records, and control who can access and use those encryption keys. This helps keep your data safe and secure in the cloud.

37. What is Amazon ECR?

Answer: AWS ECR (Elastic Container Registry) is a service that stores and manages Docker container images. It works like Docker Hub but is integrated with AWS, allowing you to store, share, and deploy container images securely.

38. What is Amazon S3 Bucket Versioning?

Answer: Amazon S3 Bucket Versioning is a feature that keeps multiple versions of an object in a bucket. It helps protect against accidental deletions or overwrites by allowing you to restore previous versions of files.

39. What is Aws Codebuild?

AWS CodeBuild is a fully managed service that compiles code, runs tests, and produces deployable software packages. It eliminates the need to set up and manage your own build servers.

40. What is Aws Secret Manager ?

Answer: AWS Secrets Manager is a service that securely stores and manages sensitive information like passwords, API keys, and database credentials. It helps in automatically rotating and retrieving secrets when needed.

41. What is Amazon RDS Read Replica?

Answer: Amazon RDS Read Replica is a copy of your database that helps improve performance by handling read requests separately. It reduces the load on the main database and ensures faster query processing.

42. What is AWS Transit Gateway?

Answer: AWS Transit Gateway is a service that connects multiple VPCs and on-premises networks through a single gateway. It simplifies network management and improves communication between different AWS resources.

43. What is Subnet?

A subnet is a smaller network within a larger network. It divides an IP network into multiple parts to improve performance, security, and organization. Each subnet can have its own range of IP addresses and be isolated from other subnets.

44. What is Internet Gateway?

Answer: An Internet Gateway is a service in AWS that allows resources in a public subnet to connect to the internet. It helps instances in your VPC send and receive data from the internet. For example, if you have a web server that needs to be accessed by users online, the Internet Gateway makes that possible.

45. What is NAT Gateway?

A NAT (Network Address translation) Gateway is a service in AWS that helps instances in a private subnet connect to the internet to download updates or send data. However, it blocks any incoming connections from the internet, keeping those instances secure.