

## AWS - 100 Essential Questions and Answers

### 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?

**Answer:** Amazon Elastic Compute Cloud (EC2) provides resizable compute capacity in the cloud. It allows users to deploy virtual servers (instances) to run applications and manage traffic effectively with scalability.

### 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:** Amazon S3 is a scalable storage service for storing and retrieving large amounts of data from anywhere on the web. S3 is commonly used for data storage, backup, and archiving.

## **7. What is an S3 Bucket?**

**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.

## **8. What is IAM in AWS?**

**Answer:** Identity and Access Management (IAM) is a service that enables you to control access to AWS resources securely. It allows you to manage users, groups, permissions, and roles to ensure only authorized individuals access specific resources.

## **9. Explain the concept of Security Groups in AWS.**

**Answer:** Security Groups act as virtual firewalls for EC2 instances, controlling inbound and outbound traffic. You can define rules to allow or restrict specific IPs, protocols, or ports to increase security.

## **10. What is an Elastic IP in AWS?**

**Answer:** An Elastic IP is a static, public IPv4 address designed for dynamic cloud computing. It can be attached to an EC2 instance, allowing it to have a persistent IP address even after stopping and restarting the instance.

### **11. What is Elastic Load Balancing (ELB) in AWS?**

**Answer:** ELB automatically distributes incoming application traffic across multiple targets, such as EC2 instances. It helps improve fault tolerance and availability of your applications.

### **12. What are the types of load balancers in AWS?**

**Answer:** AWS offers three types of load balancers:

- **Application Load Balancer (ALB):** For HTTP and HTTPS traffic.
- **Network Load Balancer (NLB):** For TCP/UDP traffic, providing high performance.
- **Classic Load Balancer (CLB):** For legacy applications.

### **13. What is Amazon RDS?**

**Answer:** Amazon Relational Database Service (RDS) is a managed relational database service supporting databases like MySQL, PostgreSQL, Oracle, and SQL Server. It automates database setup, patching, and backups.

### **14. What is Amazon VPC?**

**Answer:** Amazon Virtual Private Cloud (VPC) allows you to create a private network in AWS, where you can launch resources in a logically isolated environment, defining your own IP range, subnets, and gateways.

### **15. What is the purpose of AWS CloudFormation?**

**Answer:** AWS CloudFormation automates the process of setting up and managing resources using templates. It allows you to define your infrastructure as code (IaC) for repeatability and consistency.

### **16. What is AWS Lambda?**

**Answer:** 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.

### **17. What is Amazon CloudWatch?**

**Answer:** Amazon CloudWatch is a monitoring and observability service for AWS resources and applications. It provides real-time insights, alerts, and logging for troubleshooting and optimizing performance.

### **18. What is AWS CloudTrail?**

**Answer:** AWS CloudTrail records and monitors AWS account activity, logging API calls made within AWS services. It is essential for auditing, compliance, and security monitoring.

### **19. 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.

### **20. What is Amazon Route 53?**

**Answer:** Amazon Route 53 is a scalable Domain Name System (DNS) web service. It provides domain registration, DNS routing, and health checking, allowing reliable routing of end-user requests.

### **21. What is Amazon EBS?**

**Answer:** Amazon Elastic Block Store (EBS) provides block storage for EC2 instances. EBS volumes are automatically replicated within their AZ for durability and are ideal for databases and file systems.

### **22. 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.

### **23. What is Amazon S3 Glacier?**

**Answer:** Amazon S3 Glacier is a low-cost cloud storage service for data archiving and long-term backup, offering retrieval times from minutes to hours.

### **24. What is the AWS Shared Responsibility Model?**

**Answer:** AWS is responsible for the security "of" the cloud (infrastructure, hardware, and software), while customers are responsible for security "in" the cloud (data, applications, access management).

### **25. 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.

### **26. What is the difference between RDS and DynamoDB?**

**Answer:** RDS is a relational database service, supporting SQL databases, while DynamoDB is a NoSQL database service optimized for scalability and low-latency performance.

### **27. What is Amazon CloudFront?**

**Answer:** Amazon CloudFront is a Content Delivery Network (CDN) that delivers data, videos, and applications globally with low latency through a network of edge locations.

### **28. What is AWS Elastic Beanstalk?**

**Answer:** AWS Elastic Beanstalk is a Platform-as-a-Service (PaaS) that allows you to deploy applications easily. It automatically handles infrastructure provisioning, load balancing, and scaling.

### **29. Explain Multi-AZ deployments in RDS.**

**Answer:** Multi-AZ deployments provide high availability for RDS by automatically replicating data to a standby instance in a different Availability Zone.

### **30. What is the purpose of Amazon SNS?**

**Answer:** Amazon Simple Notification Service (SNS) is a messaging service that allows you to send notifications to subscribers or trigger other AWS services through a publish/subscribe model.

### **31. What is Amazon SQS?**

**Answer:** Amazon Simple Queue Service (SQS) is a fully managed message queuing service for decoupling applications, allowing reliable and scalable message storage and delivery.

### **32. What are the storage classes in Amazon S3?**

**Answer:** S3 storage classes include:

- **Standard:** For frequently accessed data.
- **Intelligent-Tiering:** For automatic cost-optimization.
- **Standard-IA:** For infrequently accessed data.
- **One Zone-IA:** For infrequent access within a single AZ.
- **Glacier:** For long-term archiving.
- **Glacier Deep Archive:** For lowest-cost long-term archiving.

### **33. What is AWS Direct Connect?**

**Answer:** AWS Direct Connect provides a dedicated network connection from your on-premises environment to AWS, enhancing network performance and security for hybrid setups.

### **34. What is AWS Config?**

**Answer:** AWS Config provides configuration monitoring for AWS resources. It helps track changes, maintain compliance, and troubleshoot configurations.

### **35. What are Spot Instances?**

**Answer:** Spot Instances allow you to bid on unused EC2 capacity at reduced rates, ideal for workloads that can handle interruptions.

### **36. What is Amazon Aurora?**

**Answer:** Amazon Aurora is a fully managed MySQL- and PostgreSQL-compatible relational database engine designed for performance and availability, with up to five times the throughput of standard MySQL.

### **37. What is AWS CLI?**

**Answer:** The AWS Command Line Interface (CLI) is a tool that allows you to manage AWS services directly from your command line, offering automation and scripting capabilities.

### **38. What is a Lambda function timeout?**

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

### **39. What is AWS Trusted Advisor?**

**Answer:** AWS Trusted Advisor provides real-time best-practice recommendations to optimize resources, improve performance, and enhance security.

### **40. What is Amazon Elastic File System (EFS)?**

**Answer:** Amazon EFS provides scalable, shared file storage for use with EC2 instances, supporting multiple EC2 instances in different AZs.

### **41. What is AWS Outposts?**

**Answer:** AWS Outposts is a fully managed service that extends AWS infrastructure, APIs, and tools to on-premises environments for a consistent hybrid experience.

#### **42. What is AWS WAF?**

**Answer:** AWS Web Application Firewall (WAF) protects web applications by filtering and monitoring HTTP and HTTPS requests, helping to block common attacks like SQL injection.

#### **43. What is AWS Global Accelerator?**

**Answer:** AWS Global Accelerator improves the performance of your applications by directing traffic through the AWS global network, providing lower latency and redundancy.

#### **44. What is CloudEndure Disaster Recovery?**

**Answer:** CloudEndure provides continuous backup and disaster recovery for applications, allowing fast recovery of resources in AWS.

#### **45. What is Amazon WorkSpaces?**

**Answer:** Amazon WorkSpaces is a managed desktop computing service in the cloud, providing virtual desktops for remote work.

#### **46. Explain Amazon EC2 Auto Recovery.**

**Answer:** EC2 Auto Recovery enables automatic recovery of instances due to hardware or software failures, ensuring high availability without manual intervention.

#### **47. What is AWS Glue?**

**Answer:** AWS Glue is a managed ETL service that simplifies data preparation, transformation, and loading for analytics.

#### **48. What is a VPC Peering Connection?**



**Answer:** A VPC peering connection allows you to connect two VPCs so that they can communicate with each other as if they were on the same network.

#### **49. What is Amazon Elastic Transcoder?**

**Answer:** Amazon Elastic Transcoder is a media transcoding service in the cloud, allowing you to convert media files into formats for various devices.

#### **50. What is Amazon Cognito?**

**Answer:** Amazon Cognito enables secure authentication for web and mobile apps, allowing users to sign in directly or via social identity providers

#### **51. What is AWS IAM?**

**Answer:** AWS Identity and Access Management (IAM) enables secure control over access to AWS services. It lets you create and manage users, groups, and permissions.

#### **52. What are IAM Roles?**

**Answer:** IAM roles are a way to grant permissions to entities (like users or services) without using hard-coded credentials, allowing temporary access with specified permissions.

#### **53. What is AWS Elastic Transcoder?**

**Answer:** Elastic Transcoder is a media transcoding service that converts media files into formats suitable for playback on devices like smartphones, tablets, and PCs.

#### **54. What is AWS Data Pipeline?**

**Answer:** AWS Data Pipeline automates data-driven workflows. It helps you move and process data across AWS services and on-premises sources on a scheduled basis.

### **55. What is AWS Glue Data Catalog?**

**Answer:** Glue Data Catalog is a metadata repository that enables data discovery and provides a centralized data catalog for managing ETL jobs and data classification.

### **56. What is Amazon MQ?**

**Answer:** Amazon MQ is a managed message broker service for Apache ActiveMQ and RabbitMQ, simplifying the setup and operation of message brokers.

### **57. What is AWS X-Ray?**

**Answer:** AWS X-Ray is a service that helps developers analyze and debug distributed applications by tracing requests through microservices.

### **58. What is Amazon Polly?**

**Answer:** Amazon Polly is a service that converts text into lifelike speech, useful for creating applications that can talk or for accessibility purposes.

### **59. What is Amazon Rekognition?**

**Answer:** Amazon Rekognition is a deep learning-based image and video analysis service for facial recognition, object detection, and activity tracking.

### **60. What is Amazon Lex?**

**Answer:** Amazon Lex is a service for building conversational interfaces, such as chatbots, using voice and text, powered by the same deep learning as Alexa.

### **61. What is Amazon SageMaker?**

**Answer:** Amazon SageMaker is a fully managed machine learning service that enables data scientists and developers to build, train, and deploy ML models at scale.

## **62. What is AWS KMS?**

**Answer:** AWS Key Management Service (KMS) is a managed service for creating and controlling encryption keys for data protection across AWS services.

## **63. What is Amazon ECR?**

**Answer:** Amazon Elastic Container Registry (ECR) is a fully managed Docker container registry for storing, managing, and deploying container images.

## **64. What is AWS CodeBuild?**

**Answer:** AWS CodeBuild is a fully managed build service for compiling source code, running tests, and producing deployable software packages.

## **65. What is AWS CodePipeline?**

**Answer:** AWS CodePipeline is a continuous integration and delivery (CI/CD) service that automates the release process, allowing for frequent and reliable updates.

## **66. What is AWS Secrets Manager?**

**Answer:** AWS Secrets Manager enables secure storage, management, and retrieval of credentials, API keys, and other secrets.

## **67. What is Amazon Macie?**

**Answer:** Amazon Macie is a data security service that uses machine learning to detect, classify, and protect sensitive data like personally identifiable information (PII).

## **68. What is AWS Organizations?**

**Answer:** AWS Organizations enables central management of multiple AWS accounts, providing consolidated billing and service control policies for governance.

### **69. What is Amazon S3 Bucket Versioning?**

**Answer:** S3 Bucket Versioning allows you to keep multiple versions of an object in the same bucket, helping to restore data after accidental deletion or overwriting.

### **70. What is AWS Cloud9?**

**Answer:** AWS Cloud9 is a cloud-based integrated development environment (IDE) that supports code development, debugging, and running directly within a browser.

### **71. What is Amazon RDS Read Replica?**

**Answer:** RDS Read Replica allows you to create read-only copies of your database instance, which can be used to improve performance by distributing read traffic.

### **72. What is AWS DataSync?**

**Answer:** AWS DataSync is a service to automate and accelerate data transfer between on-premises storage and AWS, useful for backups and migrations.

### **73. What is AWS Certificate Manager?**

**Answer:** AWS Certificate Manager (ACM) allows you to provision, manage, and deploy SSL/TLS certificates for securing web applications.

### **74. What is Amazon Athena?**

**Answer:** Amazon Athena is an interactive query service that allows you to analyze data in S3 using standard SQL without managing any servers.

### **75. What is AWS Batch?**

**Answer:** AWS Batch enables the running of batch computing workloads at any scale, automatically provisioning compute resources based on the requirements.

### **76. What is Amazon EMR?**

**Answer:** Amazon Elastic MapReduce (EMR) is a managed service for processing large datasets using big data frameworks like Apache Spark and Hadoop.

### **77. What is AWS OpsWorks?**

**Answer:** AWS OpsWorks is a configuration management service that uses Chef and Puppet to automate operational tasks for infrastructure.

### **78. What is AWS Transit Gateway?**

**Answer:** AWS Transit Gateway connects VPCs and on-premises networks through a central hub, simplifying network management.

### **79. What is AWS Artifact?**

**Answer:** AWS Artifact provides on-demand access to compliance reports and agreements for AWS, helping meet security and audit requirements.

### **80. What is the AWS Snowball family?**

**Answer:** The AWS Snowball family provides data migration and edge computing devices (Snowball Edge) for physically transferring large datasets to AWS.

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### **81. What is Amazon WorkLink?**

**Answer:** Amazon WorkLink is a service for securely accessing internal corporate websites and applications from mobile devices without a VPN.

### **82. What is AWS Fargate?**

**Answer:** AWS Fargate is a serverless compute engine for containers, letting you run containers without managing the underlying infrastructure.

### **83. What is Amazon Redshift?**

**Answer:** Amazon Redshift is a fast, fully managed data warehouse service for big data analytics, supporting SQL-based queries.

### **84. What is AWS Service Catalog?**

**Answer:** AWS Service Catalog enables organizations to create and manage catalogs of approved products, ensuring consistency and compliance.

### **85. What is AWS Elastic Inference?**

**Answer:** AWS Elastic Inference provides on-demand GPU acceleration to reduce inference costs for deep learning models.

### **86. What is Amazon FSx?**

**Answer:** Amazon FSx is a managed file system service that provides high-performance file storage for Windows File Server and Lustre.

### **87. What is AWS AppSync?**

**Answer:** AWS AppSync is a managed GraphQL service for real-time data synchronization and offline programming.

### **88. What is AWS Ground Station?**

**Answer:** AWS Ground Station is a fully managed satellite communications service that allows you to control satellites and process satellite data.

### **89. What is AWS Elemental MediaConvert?**

**Answer:** AWS Elemental MediaConvert is a service for transcoding media files to various formats, used for on-demand video delivery.

### **90. What is AWS Lightsail?**

**Answer:** AWS Lightsail provides simple virtual private servers for developers who need a user-friendly way to manage cloud-based resources.

### **91. What is Amazon EventBridge?**

**Answer:** Amazon EventBridge is a serverless event bus that makes it easy to connect applications using events and triggers.

### **92. What is AWS CloudHSM?**

**Answer:** AWS CloudHSM provides hardware security modules for secure cryptographic key management within AWS.

### **93. What is Amazon Detective?**

**Answer:** Amazon Detective helps analyze and visualize security data, making it easier to identify and investigate security issues.

### **94. What is AWS CodeArtifact?**

**Answer:** AWS CodeArtifact is a managed artifact repository for securely storing and sharing software packages within your organization.

### **95. What is Amazon Managed Blockchain?**

**Answer:** Amazon Managed Blockchain simplifies setting up and managing scalable blockchain networks for applications like supply chain management.

### **96. What is AWS IoT Core?**

**Answer:** AWS IoT Core enables secure device connectivity to the cloud, allowing applications to interact with connected devices and analyze data.

### **97. What is AWS Savings Plans?**

**Answer:** AWS Savings Plans provide flexible pricing options that offer discounts in exchange for a commitment to a consistent amount of usage.

**98. What is AWS Amplify?**

**Answer:** AWS Amplify provides a set of tools and services for building full-stack web and mobile applications with a serverless backend.

**99. What is Amazon QuickSight?**

**Answer:** Amazon QuickSight is a business intelligence service that provides data visualization and dashboarding with machine learning insights.

**100. What is AWS Lake Formation?**

**Answer:** AWS Lake Formation is a service that makes it easy to set up, manage, and secure a data lake for storing and analyzing data at scale.