

## **Amazon Web Services (AWS) :**

It is a comprehensive and widely used cloud computing platform offered by Amazon. It provides a vast array of services, including computing power, storage options, networking, databases, machine learning, analytics, security, and more. Here's an introduction to AWS in a detailed point-wise manner with examples for each:

### **1. Compute Services:**

- **EC2 (Elastic Compute Cloud):** Virtual servers in the cloud. Example: Launching an EC2 instance to host a web application.

- **Lambda:** Serverless computing service. Example: Running code in response to events, such as file uploads or database changes.

### **2. Storage Services:**

- **S3 (Simple Storage Service):** Object storage for files and data. Example: Storing and retrieving files for a website.

- **EBS (Elastic Block Store):** Persistent block-level storage for EC2 instances. Example: Attaching additional storage to an EC2 instance.

### **3. Database Services:**

- **RDS (Relational Database Service):** Managed relational databases. Example: Setting up a MySQL or PostgreSQL database.

- **DynamoDB:** Fully managed NoSQL database. Example: Storing and retrieving non-relational data with high throughput.

### **4. Networking:**

- **VPC (Virtual Private Cloud):** Isolated network within the AWS cloud. Example: Creating a private network for resources.

- **Route 53:** Domain Name System (DNS) web service. Example: Registering a domain and managing DNS records.

### **5. Security and Identity:**

- **IAM (Identity and Access Management):** Access control for AWS resources. Example: Creating users with specific permissions.

- **Cognito:** Identity management for web and mobile apps. Example: Implementing user authentication.

### **6. Machine Learning:**

- **Sagemaker:** Fully managed machine learning service. Example: Building, training, and deploying machine learning models.

- **Rekognition:** Image and video analysis service. Example: Detecting objects or faces in images.

#### 7. **Analytics:**

- **Redshift:** Fully managed data warehouse. Example: Running complex queries on large datasets.

- **Glue:** ETL (Extract, Transform, Load) service. Example: Preparing and transforming data for analysis.

#### 8. **Developer Tools:**

- **CodeCommit:** Git repository hosting service. Example: Storing and managing source code securely.

- **CodePipeline:** Continuous integration and delivery service. Example: Automating the build and deployment process.

#### 9. **Management and Monitoring:**

- **CloudWatch:** Monitoring and management service. Example: Setting up alarms for resource usage.

- **CloudFormation:** Infrastructure as Code (IaC) service. Example: Defining and deploying AWS infrastructure using templates.

#### 10. **Internet of Things (IoT):**

- **IoT Core:** Managed service for IoT devices. Example: Connecting and managing IoT devices securely.

- **Greengrass:** Extends AWS capabilities to local devices. Example: Running Lambda functions on edge devices.