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**INTRODUCTION TO AMAZON WEB SERVICES (AWS)**

The full form of AWS is Amazon Web Services. It is a platform that offers flexible, reliable, scalable, easy-to-use and, cost-effective cloud computing solutions.

AWS is a comprehensive, easy to use computing platform offered Amazon. The platform is developed with a combination of infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS) offering.

**Important AWS Services:**

* **Compute Services:**
* Amazon Elastic Compute Cloud (EC2): Provides scalable virtual servers in the cloud.
* AWS Lambda: Runs code in response to events without the need to provision or manage servers.
* Amazon Elastic Container Service (ECS): Orchestrates and manages Docker containers.
* **Storage Services:**
* Amazon Simple Storage Service (S3): Object storage for storing and retrieving data.
* Amazon Elastic Block Store (EBS): Persistent block-level storage volumes for EC2 instances.
* Amazon Glacier: Secure and durable long-term storage for infrequently accessed data.
* **Database Services:**
* Amazon Relational Database Service (RDS): Managed relational database service supporting various database engines like MySQL, PostgreSQL, and Oracle.
* Amazon DynamoDB: Fully managed NoSQL database.
* Amazon Aurora: MySQL and PostgreSQL-compatible relational database engine with high performance and scalability.
* **Networking Services:**
* Amazon Virtual Private Cloud (VPC): Provides isolated virtual networks in the AWS cloud.
* Amazon Route 53: Scalable domain name system (DNS) web service.
* Elastic Load Balancing (ELB): Distributes incoming application traffic across multiple targets.
* **Security and Identity Services:**
* AWS Identity and Access Management (IAM): Manages access and permissions to AWS services and resources.
* AWS Key Management Service (KMS): Manages encryption keys and cryptographic operations.
* Amazon GuardDuty: Intelligent threat detection service for protecting AWS accounts and workloads.
* **Analytics and Big Data Services:**
* Amazon S3 (Simple Storage Service): Can be used for storing and analyzing large datasets.
* Amazon Redshift: Fully managed data warehousing service.
* Amazon Athena: Query service that allows you to analyze data in S3 using SQL.
* **AI and Machine Learning Services:**
* Amazon SageMaker: Fully managed machine learning service to build, train, and deploy ML models.
* Amazon Rekognition: Image and video analysis service for object and facial recognition.
* Amazon Lex: Enables building conversational interfaces using voice and text.

**Applications of AWS:**

Amazon Web services are widely used for various computing purposes like:

* Web site hosting
* Application hosting/SaaS hosting
* Media Sharing (Image/ Video)
* Mobile and Social Applications
* Content delivery and Media Distribution
* Storage, backup, and disaster recovery
* Development and test environments
* Academic Computing
* Search Engines
* Social Networking

**Advantages of AWS:**

* AWS allows organizations to use the already familiar programming models, operating systems, databases, and architectures.
* It is a cost-effective service that allows you to pay only for what you use, without any up-front or long-term commitments.
* You will not require to spend money on running and maintaining data centers.
* Offers fast deployments
* You can easily add or remove capacity.
* You are allowed cloud access quickly with limitless capacity.
* Total Cost of Ownership is very low compared to any private/dedicated servers.
* Offers Centralized Billing and management
* Offers Hybrid Capabilities
* Allows you to deploy your application in multiple regions around the world with just a few clicks