AWS

(Amazon Web Services)

Introduction for AWS

Amazon Web Services (AWS) is Amazon's cloud web hosting platform that offers flexible, reliable, scalable, easy-to-use, and cost-effective solutions.

AWS launched in 2006 from the internal infrastructure that Amazon.com built to handle its online retail operations.

Introduction for AWS

AWS was one of the first companies to introduce a pay-as-you-go cloud computing model that scales to provide users with compute, storage or throughput as needed.

Amazon Web Services provides services from dozens of data centers spread across availability zones (AZs) in regions across the world.

Cloud Service Models:

- IaaS (**Infrastructure as a Service)**
- PaaS (**Platform as a Service)**
- SaaS (**Software as a Service)**

IaaS : IaaS stands for **Infrastructure as a Service**. It provides users with the capability to provision processing, storage, and network connectivity on demand.

PaaS : PaaS stands for **Platform as a Service**. Here, the service provider provides various services like databases, queues, workflow engines, e-mails, etc. to their customers. The customer can then use these components for building their own applications.

SaaS: SaaS stands for **Software as a Service**. As the name suggests, here the third-party providers provide end-user applications to their customers with some administrative capability at the application level, such as the ability to create and manage their users.

Amazon Web Services

Compute:

- Amazon Elastic Compute Cloud (EC2) provides virtual servers -- called instances -- for compute capacity. The EC2 service offers dozens of instance types with varying capacities and sizes, tailored to specific workload types and applications, such as memory-intensive and accelerated-computing jobs.

Storage:

- Amazon Simple Storage Service (S3) provides scalable object storage for data backup, archival and analytics. An IT professional stores data and files as S3 objects -- which can range up to 5 GB -- inside S3 buckets to keep them organized. A business can save money with S3 through its Infrequent Access storage tier or use Amazon Glacier for long-term cold storage.

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- **Amazon Elastic Block Store** provides block-level storage volumes for persistent data storage for use with EC2 instances, while Amazon Elastic File System offers managed cloud-based file storage.

Databases, data management

- AWS provides managed database services through its Amazon Relational Database Service, which includes options for Oracle, SQL Server, PostgreSQL, MySQL, MariaDB and a proprietary high-performance database called Amazon Aurora.
- AWS offers managed NoSQL databases through Amazon DynamoDB.

Networking

- An Amazon Virtual Private Cloud (VPC) gives an administrator control over a virtual network to use an isolated section of the AWS cloud.
- AWS automatically provisions new resources within a VPC for extra protection.

Management, monitoring

- An admin can manage and track cloud resource configuration via AWS Config and AWS Config Rules.
- Those tools, along with AWS Trusted Advisor, can help an IT team avoid improperly configured and needlessly expensive cloud resource deployments.

Security, governance

- AWS provides a range of services for cloud security, including AWS Identity and Access Management (IAM), which allows admins to define and manage user access to resources.
- An admin can also create a user directory with Amazon Cloud Directory, or connect cloud resources to an existing Microsoft Active Directory with the AWS Directory Service.