AWS

**Amazon Web Services** (**AWS**) is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis. In aggregate, these cloud computing web services provide a set of primitive abstract technical infrastructure and distributed computing building blocks and tools. One of these services is Amazon Elastic Compute Cloud, which allows users to have at their disposal a virtual cluster of computers, available all the time, through the Internet. AWS's version of virtual computers emulate most of the attributes of a real computer, including hardware central processing units (CPUs) and graphics processing units (GPUs) for processing; local/RAM memory; hard-disk/SSD storage; a choice of operating systems; networking; and pre-loaded application software such as web servers, databases, and customer relationship management (CRM).

Why AWS

* Security
* APIs
* Recovery
* Customization
* Automated scheduling
* Consistency and Reliability
* Paas offerings
* Global Architecture
* Scalability
* Pricing

AWS management console

AWS Management Console is a web application for managing Amazon Web Services. AWS Management Console consists of a list of various services to choose from. It also provides all information related to our account like billing.

This console provides an inbuilt user interface to perform AWS tasks like working with Amazon S3 buckets, launching and connecting to Amazon EC2 instances, setting Amazon CloudWatch alarms, etc.

Regions

AWS has the concept of a Region, which is a physical location around the world where we cluster data centers. We call each group of logical data centers an Availability Zone. Each AWS Region consists of multiple, isolated, and physically separate AZ's within a geographic area. Unlike other cloud providers, who often define a region as a single data center, the multiple AZ design of every AWS Region offers advantages for customers. Each AZ has independent power, cooling, and physical security and is connected via redundant, ultra-low-latency networks. AWS customers focused on high availability can design their applications to run in multiple AZ's to achieve even greater fault-tolerance. AWS infrastructure Regions meet the highest levels of security, compliance, and data protection.

AWS provides a more extensive global footprint than any other cloud provider, and to support its global footprint and ensure customers are served across the world, AWS opens new Regions rapidly. AWS maintains multiple geographic Regions, including Regions in North America, South America, Europe, China, Asia Pacific, and the Middle East.

Availability Zones

An Availability Zone (AZ) is one or more discrete data centers with redundant power, networking, and connectivity in an AWS Region. AZ’s give customers the ability to operate production applications and databases that are more highly available, fault-tolerant, and scalable than would be possible from a single data center. All AZ’s in an AWS Region are interconnected with high-bandwidth, low-latency networking, over fully redundant, dedicated metro fiber providing high-throughput, low-latency networking between AZ’s. All traffic between AZ’s is encrypted. The network performance is sufficient to accomplish synchronous replication between AZ’s. AZ’s make partitioning applications for high availability easy. If an application is partitioned across AZ’s, companies are better isolated and protected from issues such as power outages, lightning strikes, tornadoes, earthquakes, and more. AZ’s are physically separated by a meaningful distance, many kilometers, from any other AZ, although all are within 100 km (60 miles) of each other.