Over the past ten years, typical business application architecture has evolved from a desktop-centric to client/server solutions, and now to loosely coupled web services and service-oriented architectures (SOA).

Recently, virtualization has become a widely accepted way to reduce operating costs and increase the reliability of enterprise IT.

**Amazon Web Services** (**AWS**), a subsidiary of Amazon.com, offers a suite of cloud-computing services that make up an on-demand computing platform.

**Cloud Computing:** Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand.

Why AWS?

**Flexible:** AWS enables organizations to use the programming models, operating systems, databases, and architectures with which they are already familiar. In addition, this flexibility helps organizations mix and match architectures in order to serve their diverse business needs.

**Cost-effective**. With AWS, organizations pay only for what they use, without up-front or long-term commitments.

**Scalable and elastic**. Organizations can quickly add and subtract AWS resources to their applications in order to meet customer demand and manage costs.

**Secure**. In order to provide end-to-end security and end-to-end privacy, AWS builds services in accordance with security best practices, provides the appropriate security features in those services, and documents how to use those features.

**Experienced**. When using AWS, organizations can leverage Amazon’s more than fifteen years of experience delivering large-scale, global infrastructure in a reliable, secure fashion.

Architecture

* AWS is located in 13 geographical "regions".
* Each Region is wholly contained within a single country and all of its data and services stay within the designated Region.
* Each Region has multiple "Availability Zones", which are distinct data centers providing AWS services.
* AWS has announced another 5 Regions (and 11 Availability Zones) in Canada, China, India, Ohio, and the United Kingdom coming online throughout 2017.
* Availability Zones are isolated from each other to prevent outages from spreading between Zones.
* An **edge location** is where end users access services located at **AWS**. They are located in most of the major cities around the world and are specifically used by CloudFront (CDN) to distribute content to end user to reduce latency. It is like frontend for the service we access which are located in **AWS** cloud.

Services

**EC2:** Amazon Elastic Compute Cloud (EC2) forms a central part of Amazon.com's cloud-computing platform, Amazon Web Services (AWS), by allowing users to rent virtual computers on which to run their own computer applications. EC2 encourages scalable deployment of applications by providing a web service through which a user can boot an Amazon Machine Image to configure a virtual machine, which Amazon calls an "instance", containing any software desired. A user can create, launch, and terminate server-instances as needed, paying by the hour for active servers - hence the term "elastic".

**S3:** Amazon S3 (Simple Storage Service) is an online file storage web service offered by Amazon Web Services. Amazon S3 provides storage through web services interfaces (REST, SOAP, and BitTorrent).

**IAM:** AWS Identity and Access Management (IAM) enables you to securely control access to AWS services and resources for your users. Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.

**DynamoDb:** Amazon DynamoDB is a fast and flexible NoSQL database service for all applications.