Cloud Computing (COCSC15)

Case Study

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Amazon Web Service

Introduction

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

Foundation and Motivation

The genesis of AWS was in the early 2000s, when Amazon switched to service-oriented architecture to serve their *Merchant.com*, Amazon's third-party retailers. This was to be a means of scaling their engineering operations led by the then CTO, Allan Vermeulen.

In November 2004, the first AWS infrastructure service launched for public usage: Simple Queue Service (SQS).

Deployment model

The cloud deployment model refers to applications that are deployed and run entirely in the cloud. There are two ways in the cloud. First, they are either created in the cloud. Second, they are migrated to the cloud from their current infrastructure. The low-level infrastructure fragments can accommodate the development of cloud-based applications.

AWS uses hybrid cloud computing model. The hybrid deployment model refers to devising an infrastructure and applications connectivity between cloud-based resources and

legacy resources that are located on-premise. The most frequently employed hybrid development method is between an organization and on-premises infrastructure to expand the overall set-up into the cloud and link the cloud resources to its in-house core system.

The on-premises deployment model is employed for its ability to provide organizations with maximum resource utilization. It is basically referred to as on-premises resource delivery using various virtualization and resource management tools, which has lent it the name private cloud. Although the on-premises deployment does not do justice to the huge benefits cloud computing proffers, its ability to facilitate the connectivity between op-premises infrastructure and cloud keen resources makes it a sought-after deployment model of high profile organizations.

Service Model

To understand AWS deployment, it's important to have a basic awareness of cloud computing's main types. IaaS, PaaS and SaaS each function to a different capacity but essentially have similar jobs. They do a certain amount of the heavy-lifting and simplify functions in the cloud that would otherwise require a ton of infrastructure to perform.

Aws works as

1.)Infrastructure as a Service (IaaS)

Infrastructure as a Service, sometimes abbreviated as IaaS, contains the basic building blocks for cloud IT and typically provide access to networking features, computers (virtual or on dedicated hardware), and data storage space.

2.)Platform as a Service (PaaS)

Platforms as a service remove the need for organizations to manage the underlying infrastructure (usually hardware and operating systems) and allow you to focus on the deployment and management of your applications.

3.)Software as a Service (SaaS)

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<u>Virtualisation</u>

Amazon Elastic Compute Cloud (EC2) instances are the central part of Amazon.com's cloud computing platform, Amazon Web Services (AWS). An instance type determines the hardware of the host computer used. Each instance type offers different compute and memory capabilities. Amazon Machine Image (AMI) provides the software profile of the EC2 instance including OS, applications installed, services started by default, etc.

Thus, EC2 allows scalable deployment of applications by providing a web service through which a user can boot an AMI to create a virtual machine, which Amazon calls an "instance", containing any desired software. AWS supports two different types of virtualization for EC2 instances:

1. Para Virtualization (PV)

2. Hardware-assisted Virtual Machine (HVM)
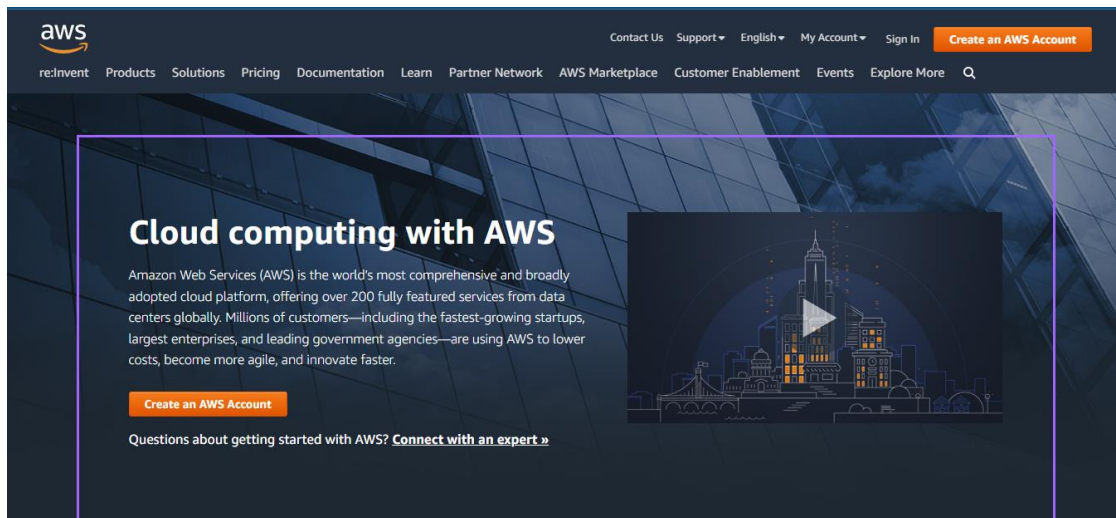
<u>Framework</u>

The firve pillars of framework are:

- Operational excellence
- Security
- Reliability
- Performance efficieny
- Cost Optimisation

Characteristics

- Most functionality
- Largest community of customers and partners
- Largest community of customers and partners
- Most proven operational expertise

Hands on experience

Landing page web UI:

2.)sign up page