CMPT 733
Introduction to AWS

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Amazon

From Wikipedia 2006

Article Talk Read

Amazon.com

From Wikipedia, the free encyclopedia

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Amazon.com
(NASDAQ: AMZN) is an American electronic commerce company based in Seattle, Washington. It was one of the

From Wikipedia 2020

Amazon (company)

From Wikipedia, the free encyclopedia

Amazon.com, Inc.[7] (/ˈæməzɒn/), is an American multinational technology company based in Seattle, with 750,000 employees.[8] It focuses on e-commerce, cloud computing, digital streaming, and artificial intelligence. It is considered one of the Big Four tech companies, along with Google, Apple, and Microsoft.[9][10][11] It has been referred to as "one of the most influential economic and cultural forces in the world."[12]

What is Cloud Computing?

The buzz word before “Big Data”

Larry Ellison’s response in 2009
(https://youtu.be/UOEFXaWHppE?t=7s)
Berkeley RADLab’s paper in 2009 (https://www.youtube.com/watch?v=IJCxqoh5ep4)

A technical point of view

Internet-based computing
(i.e., computers attached to network)

A business-model point of view

Pay-as-you-go (i.e., rental, tenancy)

- Car rental
- Uber

Three Types of Cloud Computing

CourSys

Application + Cloud = **SaaS** (Software as a service)

Database

Platform + Cloud = **PaaS** (Platform as a service)

Servers

Infrastructure + Cloud = **IaaS** (Infrastructure as a service)

How does AWS fit into the picture?

IaaS

EC2, S3, …

Highlight: EC2 and S3 are two of the earliest products in AWS

PaaS

Aurora, Redshift, …

Highlight: These are among the fastest growing products in AWS

SaaS

WorkDocs, WorkMail, AWS SageMaker (Tutorial)

Hightlight: May not be the main focus of AWS

Why did AWS succeed?

Starting from IaaS (i.e., S3 and EC2) is the key

- Although there are many SaaS and PaaS companies before AWS, mostly people still wanted to have full control of computing resources

10-100 times less expensive than alternatives (2006)

- Apply the existing *unused* resources (that are for Amazon.com) to cloud computing

The speed of provisioning is really fast

- Similar to “1-click buy”

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Google and Microsoft

Google Compute Platform (GCP)

- Compute Engine is analog to AWS EC2

Highlights:

- Large data service: Big Query (static) and Big Table (dynamic data)
- Big Table, Big Query
- What-if tool in tensorboard
- Cloud AI

Microsoft Azure

Highlights: Data Factory (Tutorial)

Trend

Increasing investment in AI (deployment) and data pipelines

Further pointers

Digital Ocean (cloud provider)

- Developer focus
- Kubernetes cluster, VMs

MyBinder.org (service)

- Run Jupyter notebooks off of Github repo
- Alternative to Google Colab

Cortex (library/service)

- Model serving for machine learning and engineering
- Provider agnostic alternative to AWS SageMaker
- Source on Github

Continuous Integration (CI)

- Native in Gitlab and Github
- Travis-CI provides free CI for public repos