Intro to Cloud Computing and Amazon Web Services

Presented by Saurav Sharma

About me

Saurav Sharma
I have 7 AWS Certifications and I work as a cloud engineer. I’m also a professional cloud instructor. I have helped several people transition into a career in cloud computing.

History of Cloud Computing

1950’s and 1960’s: Timeshare and Computing as a Utility

MIT Scientists published papers on a concept called time sharing in the 1950’s.

Time sharing allowed several people to use a central giant computer almost simultaneously using terminals. .

Prediction about Cloud Computing

“it is conceivable that one or several computers, much larger than anything presently contemplated, could service a multitude of users .. they would rent input-output equipment ...this peripheral equipment would perhaps be rented at a base price plus a variable usage charge..”

- **Bob Bemer in 1957**

“The computers would handle a number of problems concurrently. Organizations would have input-output equipment installed on their own premises and would buy time on the computer much the same way that the average household buys power and water from utility companies”

- **W.F. Bauer in 1958**

Application of timeshare

First Implementation on IBM 704 by John McCarthy at MIT in 1959

In the **1960s**, several companies started providing time-sharing services as **service bureaus** by using systems like **IBM System/360 (S/360)**

What else contributed to the origin of Cloud Computing

- Developments in Virtualization
- ARPAnet and Internet
- Chip Revolution
- Software as a Service.

2000

Amazon's team realizes that they need to decouple their code better, with cleaner interfaces and access APIs. Also realize the need to build **infrastructure-as-a-service internally,** to improve the speed of development and not have it bottlenecked by infrastructure availability.

2003

Benjamin Black and Chris Pinkham write a short paper describing a vision for Amazon infrastructure that, in Black's words, "was completely standardized, completely automated, and relied extensively on web services for things like storage.

2004

Jeff Bezos approves the idea of experimenting with Amazon infrastructure. Pinkham leaves for South Africa to set up a satellite development office.

https://en.wikipedia.org/wiki/Timeline_of_Amazon_Web_Services

2006: Amazon Web Services

Amazon re-launched Amazon Web Services (AWS) and introduced offered Simple Storage Service (S3) and Elastic Compute Cloud (EC2), with Simple Queue Service (SQS)

Amazon Web Services popularized the term cloud computing and started offering more services.

What is Cloud Computing

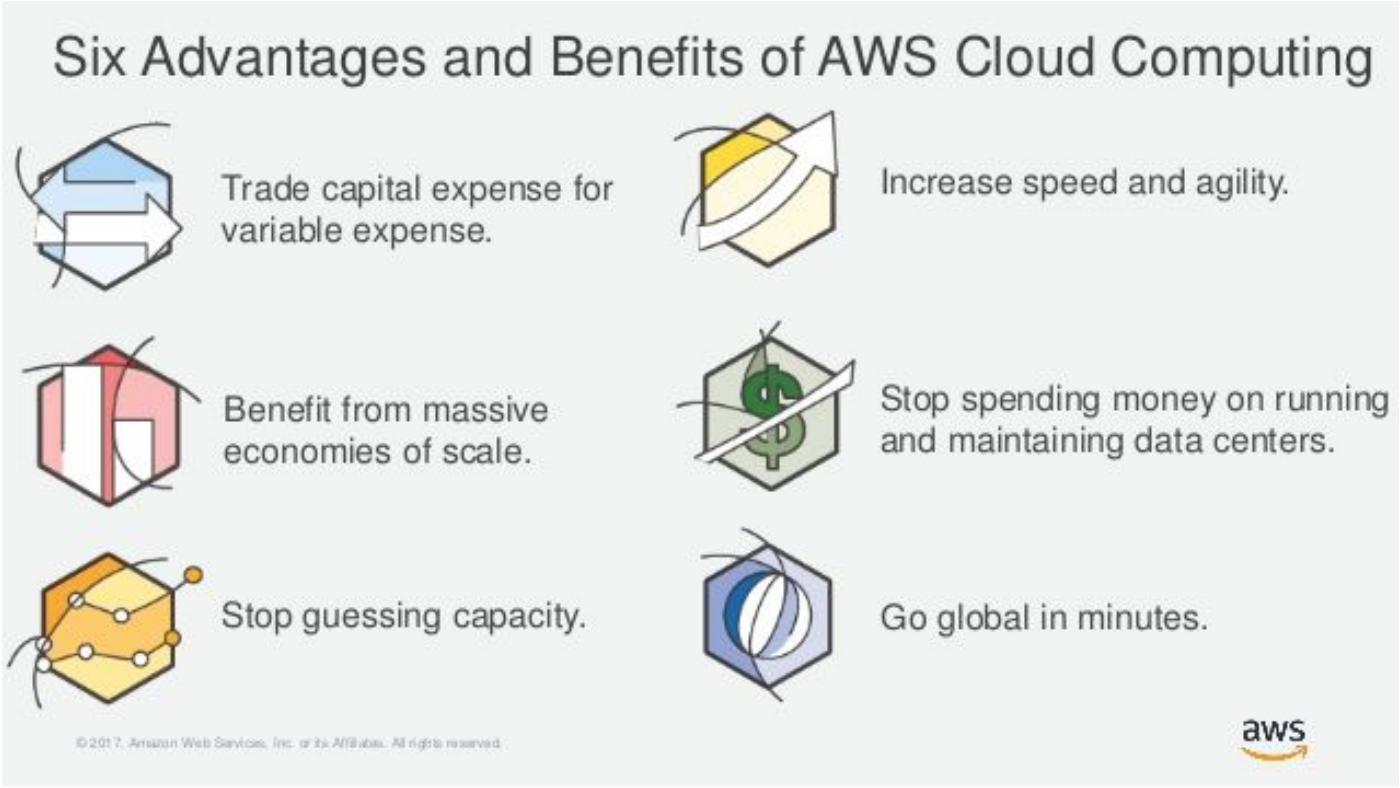
Cloud computing is the on-demand delivery of compute power, database, storage, applications, and other IT resources via the internet with pay-as-you-go pricing.

- Amazon’s definition of cloud computing

Simply put, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet (“the cloud”) to offer faster innovation, flexible resources, and economies

- Microsoft's definition of Cloud computing

Benefits of Cloud computing



Global Infrastructure (Regions and Availability Zones)

AWS Global Infrastructure

Microsoft Azure Global Infrastructure

Amazon Web Services offers over 165 fully featured services


Analytics


Application Integration


AR & VR


AWS Cost Management

Blockchain


Business Applications


Compute


Customer Engagement


Database


Developer Tools


End User Computing


Game Tech


Internet of Things


Machine Learning


Management & Governance


Media Services


Migration & Transfer


Mobile


Networking & Content Delivery


Robotics


Satellite


Security, Identity & Compliance


Storage

Cloud Computing Today

Gartner Projects Cloud Services Industry to Grow Exponentially Through 2022

The worldwide public cloud services market is projected to grow 17.5 percent in 2019 to total $214.3 billion, up from $182.4 billion in 2018, according to Gartner, Inc.

More than $1.3 trillion in IT spending will be directly or indirectly affected by the shift to cloud by 2022, according to Gartner.

https://www.gartner.com/en/newsroom/press-releases/2019-04-02-gartner-forecasts-worldwide-public-cloud-revenue-to-g

References

https://www.dataversity.net/brief-history-cloud-computing/

http://web.mit.edu/smadnick/www/wp/2013-01.pdf

https://web.archive.org/web/20071020032705/http://www-formal.stanford.edu/jmc/history/timesharing/timesharing.html

https://www.gartner.com/en/newsroom/press-releases/2019-04-02-gartner-forecasts-worldwide-public-cloud-revenue-to-g