Cloud Computing Overview

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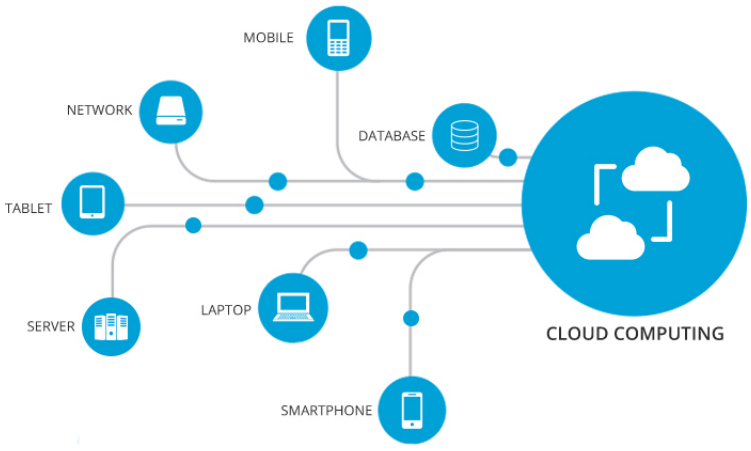
1 Introduction

The popular trend in today's technology driven world is 'Cloud Computing'. Cloud computing is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the Internet with pay-as-you-go pricing. The term is generally used to describe data centers available to many users over the Internet. Large clouds, predominant today, often have functions distributed over multiple locations from central servers.

One prominent example of cloud computing is Google Drive which allows users to store, access, edit their Drive documents online (in browser) without installing the actual program on their device.



2 History

Cloud computing was popularized with Amazon.com releasing its Elastic Compute Cloud product in 2006. Jeff Bezos, CEO of Amazon, realized that many companies were paying for expensive infrastructure to handle loads they rarely recieved. On days like Black Friday and Christmas, Amazon had to beef up their servers or else they would crash and lose business. But what would happen with those extra servers the rest of the year? The Elastic Compute Cloud product answered that question and more and more companies are now realizing the benefit of the cloud and moving to it.

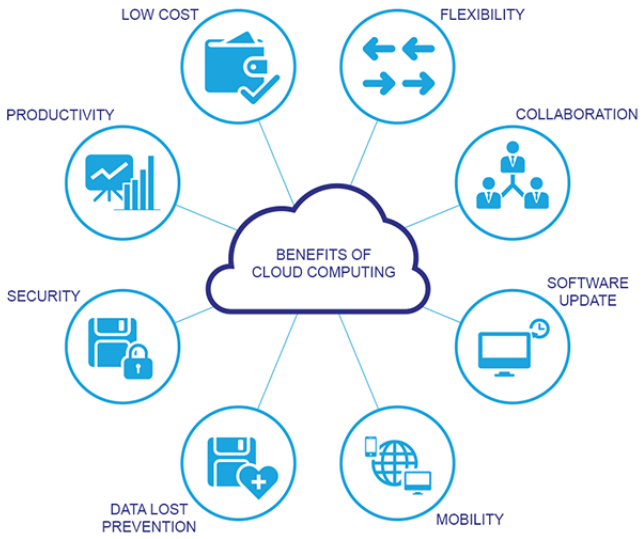
3 When You've Use Cloud Technology

- Every time you go to any website
- Every time you use Google Drive
- Every time you buy anything online (Amazon etc.)
- Every time you stream video or audio online
- Every time you use social media
- Every time you use Google Assistant

4 Benefits of Cloud Technology

- Scalable - Cloud service offers scalability. Resource allocation and deallocation is dynamically available to fit your exact needs instantly
- Affordable - It saves on cost by reducing capital infrastructure.
- Mobility - It allows the user to access the application from anywhere on any machine.

- Simple - It simplifies the network and lets the client access the application without buying license for individual machine.
- Reliable - Storing data on the cloud is more reliable since it is not lost easily.
- Collaboration - Many people can access the same files at the same time no matter where they are



5 Account Setup

There are 3 major public cloud providers: AWS, Microsoft Azure, and Google Cloud. AWS and Microsoft Azure provide specific accounts for students which allows students to get hands-on experience with their cloud platforms without the worry of prices. These accounts will allow us to use the free-tier services of AWS and Microsoft Azure and will also give us some credits we can use. The instructions for setting up these accounts are below.

If you want access to more cloud services, you can make a normal account instead. You will have access to everything in the educate account and more! The account is still free, but it will require **credit card information**. If you need help with this, please let one of the officers know.

5.1 AWS Educate

1. Go to https://tinyurl.com/tjawssignup and fill out the Google Form
   (a) Make sure to use your @tjhsst.edu email address in the form
2. You should receive an email to set up your AWS Educate account

5.2 Microsoft Azure for Education

1. Go to https://tinyurl.com/azureEducate and click on "Activate now"
2. Sign into your Microsoft account (or make a free account using either your personal or school email address)
3. If prompted, enter a phone number you can access to for identity verification. If you do not have a phone number you can access, let one of the officers know and they will help you
4. Enter your fcps email to verify your academic status
5. Open the email sent to your fcps email and follow the link, enter the basic info and press "Sign up"
6. You will be redirected to the Microsoft Azure platform which you now have access to!

5.3 Google Cloud

We will be using Qwiklabs to use Google Cloud Platform since Google does not provide any sort of student account

1. Go to qwiklabs.com
2. Press "Join" at the top right corner and enter your basic info in – for company name you can put "Thomas Jefferson High School for Science and Technology" (if you already have a qwiklabs account, you can skip this step)
3. You're all set up! You should have 0 credits right now so you can only do the basic, free tutorials, but we will get you more credits in the future so you can do more interesting labs