Clouds services & servers

## What does it do?

The cloud or ‘cloud computing’ & ‘internet computing’ are simple terms used to describe the use of multiple hosts to provide storage or computational performance over a network, usually the internet.

The hosts can be as simple as mass storage servers that store and backup files for a user that can then in turn add or retrieve files on request, high powered data servers that can process instructions remotely or a mixture of both.

The most common types of use of the cloud are services like dropbox or google drive, where the user has an account that lets them store files online that are stored by the hosting company that can be retrieved by the user as required. Another use of cloud is being able to run complex calculations over multiple computers as is common with crypto miners.

A more recent example in cloud usage is being able to play games over a network using the processing power of a hosting company as tried with OnLive in the past and that Nvidia is rolling out today with Geforce Now.

As the technology becomes more powerful, power efficient and costs go down, there are more and more use cases for the Cloud to become a more common implementation in people’s personal life and work places. Being able to rely less on physical hardware for storage and system performance and only requiring a steady network connection.

The most simplest conception of a cloud server is a server of multiple hard drives that a subscriber then can access via a network connection. Having a storage allowance to each user.

In practice, there are 2 types of the Cloud. Public Cloud and Private Cloud. The public cloud is a cloud platform that is outside of a Firewall and has an infrastructure controlled and maintained by a Cloud Service Provider. There are many positives to this, some including easy and quick access to files and services from different devices and locations. However there is a security concern also as public servers can become more easily compromised. A private cloud is controlled by a private organization that has it within a Firewall and has control over the security and integrity of the data in the platform as well as monitoring regulatory compliance on the material stored in the private cloud.

Many benefits of the Cloud that are described by cloud service providers are as follows;

**Low Cost** - Outside of the Cloud platform itself, there is very little infrastructure costs compared to having physical hardware for services and storage.

**Low Maintenance** - Having a more simple infrastructure means less issues with hardware. No failing hard drives or system crashes compromising data. Everything is stored and accessed online.

**Scalability and Flexibility** - Having no restrictions to the size of your Cloud access means it is simple to expand or reduce your solutions as required. Instead of investing in more and more physical hardware, a Cloud service plan can be increased and decreased as required. If a business needs to downscale quickly, this is more easily achievable in a cloud environment as opposed to having physical hardware.

There are of course negatives to the Cloud;

**Security, data integrity and regulatory compliance** - because the data and services is not local, the user is relying on a 3rd party (unless it's a private cloud) to keep the platform protected from outside threats like viruses and hackers. They will also have certain regulations about the kinds of data that can be stored on their platform.

**Possible downtime** - if the Cloud Service Provider or the user has any network issues, this can lead to significant downtime in productivity.

## What is the likely impact?

The future impact of cloud computing is already becoming apparent now. Less and less are companies relying on huge local data centres and opting for turning to cloud services. This has many impacts on the IT industry. More and more smaller companies will be able to function on a global scale. Not being limited to a single location. More and more industries, not just IT focused, to move to using software and storage services over the internet opposed to having physical infrastructure.

Jobs affected directly include System and Database Administrators who previously would be staffed in order to install and maintain the infrastructure in a company. This will be instead change the need from the companies themselves to the data centres owned by the Cloud Service Providers. Companies local Help Desk Support will be reduced as well.

More jobs will be created because of this however. As the digital world moves online more and more, more administrators with the skills in operating and maintaining the cloud will be required. As more services move to a purely online service, this will require new skills that are not available at this time.

With the threat to online data from cyberattacks, more security positions will become in higher demand as well.

## How will this affect you?

For myself personally, I have already started getting used to relying on the cloud. Having instant access to my data from any device at any location is incredible compared to the past when I would have to carry around USB drives, rewritable DVDs/CDs all the back to 3 ¼ floppy drives. Not only were these storage mediums limited by the size, but I have had issues in every case with data integrity because a USB fails, a disc gets scratched or floppy gets demagnetized. My information might be out there and not in my direct control, I am confident in companies like google being able to keep it safe (Apple not so much).

In the future I look forward to playing the latest games with the most intensive graphics at the highest resolutions with little more than a PC on a Stick plugged into a monitor or TV. I will miss having my leg warmer next to me with all the RGB and tempered glass I could need, but not having to worry about performance limitations and power bills that come with over the top hardware will be great.

Professionally in the future I will have to learn the skills to work within the cloud environment as that is what everything will essentially be based on, unless you actually work for the Cloud Service Provider themselves.

I can be a little concerned about data security as there will always be another cyber attack and virus that will not be predicted. All that can be done is for people to take precautions with their online footprint (password managers, up to date security software) and be aware that there will always be a threat to their information.

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