# **IT-Technologies - Clouds, Services, Servers Report**

# Introduction:

Servers and Clouds are a rather large area of the IT world that allows businesses and consumers to access data over a network. Everyone has accessed some sort of server whether it’s a web page or a game server. Businesses used to use a local server to store, manage and process data. However today many businesses are now using a cloud computing service which allow access to this over the internet.

# What is it?

Cloud computing is the concept of having access to computer resources such as processing power or storage without having to directly maintain the service. The most common use of a cloud-based product is online storage which many people use as a backup of important information. Cloud computing often is used to describe large data centres which sell services such as storage to users over the internet.

This technology has come a long way in the last 5 years. As more people have access to high speed internet and as more companies create data centres the ability to have files stored in the ‘cloud’ is becoming easy. As a cloud server share resources with other servers it allows a process load to be shared.

Storage/Backup Clouds are beneficial for businesses as it allows businesses to store data offsite without having to deal with the process of maintaining an offsite server. Meaning a business will save money as they don’t have to pay for maintaining the hardware involved or the cost of staffing such a server. Some downsides exist for using cloud services though.

There are several types of cloud computing as shown in Microsoft’s “What is cloud computing” webpage. The first type is called a Public Cloud. These are owned and operated by third-party cloud service providers. Which sell access to use the cloud to users and businesses. One example of a public cloud is Microsoft Azure. The benefit of a public cloud is that all the hardware, software and supporting infrastructure is managed by the provider of the cloud service. Users access this service using the internet (Microsoft Corporation, 2019).

The second type of cloud computing is called a Private Cloud. This has the same principles as a Public Cloud however all the computing resources are exclusively for a single organisation or business. It also is maintained by the business instead of a third party (Microsoft Corporation, 2019). As private clouds tend to use proprietary technologies such as increased automation (Rouse, 2017). The cost involved in maintaining a cloud by having the necessary staff may go up. A private cloud is expensive as you are paying for all the server acquisition costs, support and maintenance. While if you use a public cloud, you are only paying for the resources you need/use.

The third and final type of cloud computing is called a Hybrid Cloud. A Hybrid Cloud is a combination of a public and private clouds which are bound together by technology that allows data and applications to be shared between them. This allows greater flexibility and more deployment options. Some downsides of using a Hybrid cloud is that the integration of the public and private clouds requires a software layer that allows them to communicate and a good internet connection to make sure that they communicate.

# The Future:

The future of the cloud computing and servers has been forecasted by Cisco in their 2016-2021 White Paper. They believe that by 2021 ‘94 percent of workloads and compute instances will be processed by cloud data centres; 6 percent will be processed by traditional data centres’ (Cisco Systems, 2018). Cisco says of the cloud workloads ‘By 2021, 73 percent of the cloud workloads and compute instances will be in public cloud data centres’ (Cisco Systems, 2018). This would mean that most businesses who rely on traditional data centres are migrating to public cloud systems to help cut costs.

Cloud computing mainly impacts business however it also has an impact on everyday lives. Google just announced Google Stadia which is a cloud gaming service that will be able to stream video games to almost any device with an internet connection. Now this type of service isn’t new as Nvidia has GeForce Now, PlayStation has PlayStation Now, and Microsoft has Project xCloud in development. All these services stream games from a data centre and stream it to a device. Google Stadia however has the backing of a large amount of data centres which google has been building around the world. This service supports the streaming of games at 4k resolution in HDR at 60fps and Google has said that the servers could eventually support streaming at 8k resolution at 120fps. The idea of streaming games is a very good idea. Console and Computer Hardware is expensive and having the ability to play 4k content at high frame rates requires extremely expensive hardware. Cloud computing solves this problem as the hardware itself is in a server. The cost of purchasing the hardware and maintaining it is done by Google. The customer pays a monthly fee to use the service. The only thing the customer needs is access to high speed internet and a device with a web browser.

# How cloud computing will impact?

Cloud computing has already impacted the world in a big way. Allowing large amounts of computing power to be available at the push of a button. Servers/clouds have allowed services such as Netflix and Stan to exist. Giving consumers the ability to watch a huge library of movies and TV shows at any time. The future of the cloud will mainly be more businesses migrating to the cloud instead of spending large amounts of money on buying and maintaining onsite servers. As you only need to pay for the resources you need and can easily pay for more resources if you need it. As businesses move towards using the cloud, they won’t require any staff to maintain a server (unless they are using a hybrid cloud system). This could make it harder for people to find server-based IT jobs locally unless you live near a cloud data centre. However as more businesses start using the cloud, cloud providers will make more large server farms to keep up with the demand. In turn this would create more Cloud/server related jobs. As people will need to build and maintain these systems.

# How cloud computing will affect me?

Cloud computing already affects me in a couple of ways. For instance, I use OneDrive for storing important files such as photos and study work. The future of cloud computing may change how I game with Google Stadia coming out it may change the way I games. As cloud continue to grow more and more services will exist for consumers to buy. For instance, a service might exist where you have a complete computer in the cloud that wirelessly gets sent to a monitor with keyboard and mouse and you do all your work that way with little to no latency. As computers evolve the provider of the service upgrades the hardware. Instead of renting storage and processing power you are instead renting an entire working computer. That can browse the internet, play games, do video editing. All without the need of buying and maintaining the hardware. However, something like this may be quite a long way a way for consumers especially in Australia. As a service like this would require high speed internet and very low latency.

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