**Clouds, services, servers: - Draft 1 – Sam**

**What does it do?**

Cloud services and servers are examples of cloud computing, which is used to host various types of services and applications online. Cloud computing comes in three different forms; Infrastructure as a service, platform as a service, and software as a service. These services can be provided by companies with the hardware to support it and can then be rented by people who need the infrastructure, but don’t have the capability to get the hardware themselves. This makes cloud services and servers very necessary in today’s world as just about every business needs to have some sort of network set up to manage their business, and these cloud services make that very easy.

Infrastructure as a service is when online resources like storage or servers are rented out for the buyer to use for their products. This is what a new company or one moving to the cloud would buy to get started. Renting cloud servers is a very affordable alternative to setting up servers and paying for maintenance on them, while easily being able to scale the number of servers that are being rented. Users of IaaS have reported that it’s cut down time to deploy new applications and has largely reduces maintenance costs, however some users are saying that the security when using IaaS just isn’t enough for storing important information (Steve Ranger 2018).

Platform as a service refers to online platforms that are rented out and used by buyers to develop and host their applications. PaaS is used to deliver developers a platform on which they can create and test applications. This service comes with the software and tools needed to develop applications and lets multiple developers work on the project remotely. Similar to IaaS this service allows companies to create applications without needing to set up the infrastructure to do so which saves money and time.

Software as a service is for providing users access to software that is hosted online so there is no need to download it. SaaS is the most common type of cloud computing because it’s easy to use and it can be used for so many different types of applications. Hosting the software online instead of downloading it has the benefit of being able to instantly access it anywhere with an internet connection, and on many different devices. On top of this it means that users don’t have to install and manage the product, and any issues that happen can be fixed without any need for the user to update.

Currently the leading companies in the cloud computing industry are Amazon, Google, and Microsoft. All three of these companies are currently offering their own version of a hybrid service, combining IaaS and PaaS into one platform. This means that people using these platforms can develop applications using all the tools a PaaS will provide, while having access to servers and storage an IaaS gives without the need to buy two separate services. These companies are providing the latest technology with their services, including strong security systems that relieve some of the worries users were having about cloud storage not being secure.

The future of cloud services is serverless computing, which despite its name is not actually serverless, but refers to a type of cloud service where the user never has to log on to or access the server themselves. Using serverless computing the buyer wouldn’t have to manage their own cloud servers as it would be done automatically, the service would automatically scale based on usage and bill based on that. There are some examples of serverless computing already, such as AWS Lambda which lets the user put in a small piece of code which will only run when called, and they will be charged based on how many times the code is run. There are many reasons why serverless computing platforms aren’t widespread yet, the main one being that they just don’t have the capabilities of a normal cloud service yet. Serverless clouds rely on event-driven architecture and API calls and design to function, and as these technologies are further developed serverless clouds will become more widespread.

**What is the likely impact?**

Cloud services and servers are very versatile in what they can do and what they’re used for will vary greatly between everyone who uses them. Some common uses include; private and public cloud storage, data backup, creating and using apps with just an internet connection, and social media. The cloud has provided an easy way for new businesses to start an online database without the large upfront cost of buying and maintaining servers. It also makes it easier for workers to communicate with each other on projects remotely, meaning not everyone needs to be in the same place to work together. It’s safe to say the just about everyone will use cloud services at some point in their lives, with a lot of people using them multiple times a day. It’s opened up a lot of new opportunities for many people to learn or work and has provided people with many new ways to communicate with family and friends, or even meet new people online. With Covid-19 going around many schools and workplaces have unfortunately had to shut down, but thanks to a variety of different cloud services several of these places have been able to continue what they were doing online. Thanks to online education apps such as Blackboard or Canvas most schools have been able to continue teaching their students online, and some businesses have been able to continue working thanks to apps like Microsoft Teams.

With more and more businesses moving their databases to the cloud, it will affect the people who work these companies. They’ll need to learn how to work with the new system, and some may even lose their jobs due to the company no longer needing someone to manage their servers. However, more businesses moving to the cloud means that there will be a bigger market for cloud server providers, which means that more jobs will open up in that field and hopefully create job opportunities for these people.

**How will this affect you?**

Cloud services becoming more common has already affected me quite a bit in a good way. Online education is becoming more common which means it’s easier to find a course I want with a good school, not only that but it makes it easier when doing schoolwork in a group. Until recently I never realised how good applications like Microsoft Teams and Github are for working with a group, it’s easy to stay connected and keep up with the work they’re doing. I recently started online schooling with two different schools and in those courses, I’ve had to use two different online education tools, Canvas and Blackboard. Both are easy to use and it’s easy to find what needs to be done online and get feedback from teachers.

It’s hard to say how it will affect people who don’t use technology a lot, like my family. Most people use cloud services like Netflix or Facebook on a day to day basis, and I’m sure with the virus keeping people at home more services like Netflix will be more popular then ever. Like a lot of people my friend in America recently had to start taking classes online, and if that wasn’t an option, she would have had to miss out on a lot of school like a lot of others would have. In the future there will probably be many more jobs that are based online and will be able to be done from home, which will mean that it will be easier to get a job in a rural area like where I live. On the contrary with more businesses moving to the cloud it might be hard to get a job in certain fields. I think it would be interesting to learn more about cloud services and how to run them in case I want to go into a career in this field in the future.

**References:**

Amazon Web Services 2020, *What is AWS,* Amazon Web Services, viewed 12 April 2020,  
<<https://aws.amazon.com/what-is-aws/>>

Bernazzani. S, *IaaS vs. PaaS vs. SaaS: Here’s What You Need to Know About Each,* blog post, 12 September, viewed 11April 2020,  
<<https://blog.hubspot.com/service/iaas-paas-saas>>

Castro, P, Ishakian, V, Muthusamy, V, Slominski, A 2019, ‘The rise of serverless computing’, *Communications of the ACM,* vol. 62, pp. 44-54,  
<<https://dl.acm.org/doi/pdf/10.1145/3368454>>

Dave Anderson 2020, *Serverless computing: An ‘exciting space for engineers to play in’*, Silicone Republic, viewed 12 April 2020,  
<<https://www.siliconrepublic.com/people/serverless-liberty-it-dave-anderson>>

Fastmetrics n.d, *What Is Cloud Computing & How Does ‘The Cloud’ Work?*, Fastmetrics, viewed 11April 2020,   
<<https://www.fastmetrics.com/blog/tech/what-is-cloud-computing/>>

Google Cloud n.d, *Cloud Computing Services | Google Cloud,* Google Cloud, viewed 12 April 2020, <<https://cloud.google.com/>>

IBM n.d, *IaaS PaaS SaaS Cloud Service Models*, IBM, viewed 11 April2020, <<https://www.ibm.com/cloud/learn/iaas-paas-saas>>

IBM Cloud Education 2019, *What is a Cloud Server?,* IBM Cloud Education , viewed 11 April 2020, <<https://www.ibm.com/cloud/learn/cloud-server>>

Microsoft 2020, *Cloud Computing Services | Microsoft Azure,* Microsoft, viewed 12 April 2020 <<https://azure.microsoft.com/en-au/>>

Steve Ranger 2018, *What is Cloud Computing? Everything you need to know about the cloud explained,* ZDNet, viewed 11 April 2020,   
<<https://www.zdnet.com/article/what-is-cloud-computing-everything-you-need-to-know-from-public-and-private-cloud-to-software-as-a/>>

Techquickie 2014, *What is “The Cloud” as Fast as Possible,* Youtube, 26 Febuary, Techquickie, viewed 12 April 2020  
<<https://www.youtube.com/watch?v=dsKIpLKo8AE>>