Cloud Systems Vs Traditionally Hosted Systems

CourseWork-1

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# 1.Introduction

Cloud computing is a model for providing on-demand access to IT services via the internet. Whether it is called cloud computing or on-demand computing, software as a service, or the Internet as a platform the common element is the geographic location of the severs. When a client creates a word document in Google Docs, major components of that word processing software run on computers that are possibly located in different continents. The transfer mechanism between the client and the server is most often the internet.

The shift from traditional on-premises to cloud computing is happening fast. Although the IT industry is still dominated by on-premises solutions substantial fraction of activity is migrating away from traditional solutions. Thus, affecting the computational ecosystems and performance. Hence, we need to consider the possible advantages and disadvantages of cloud base solutions compared to traditional solutions.

In this report, we are going to discuss how the cloud systems evaluate against traditional server-based computing. We are going to have a detailed discussion about the functionality, security, cost, and reliability and discuss advantages and disadvantages compared to each other.

# 2.Functionality

Functionality is one of the aspects that cloud solutions surpass traditional systems. On traditional systems, a user needs to manually upgrade or downgrade hardware and software to meet their needs. Furthermore, most of the time capital expense is larger to make these changes. Thus, making it hard to make modifications in traditional systems.

Although cloud systems are much more superior in terms of functionality its performance is limited by the internet connection. This makes cloud systems less viable in underdeveloped areas. In this scenario, traditional on-premises systems may provide better functionality than cloud services. (Kim, et al., 2009)

On a server-based solution, businesses need to maintain servers and infrastructure, on a cloud solution service provider maintain the servers and infrastructure.

On a cloud solution, a user has access to a variety of services including computing power, database, storage on an as-needed basis from a cloud service provider. This makes cloud solutions much more flexible and gives the users to combine different services to make one product. (Mousa, 2013)

Cloud solutions provide more rapid access to state-of-the-art technology and these solutions are highly responsive and scalable according to need. This gives the ability to scale as-needed bases to provide access to applications running on the cloud.

Cloud systems are flexible and customizable according to the needs. Using virtualization businesses can run legacy software on newer systems and vice versa. Furthermore, cloud providers give the ability to run multiple operating systems on a given platform. This allows developers to test their applications on multiple platforms easily.

# 3.Security

The scope of cloud security is larger compared to traditional systems. On traditional systems in terms of security one need to consider authentication, accountability, and end-to-end trust. (Katzan, 2010). But when considering cloud systems there are more aspects to consider. cloud service providers need to consider the broader context of data protection, for example, the need to think about disaster recovery and a wider range of data backup options. Storing sensitive data about customers might be helpful for research and workload but they also need to consider the fact that the data can be used for malignant tasks. Furthermore, there are specific rules implemented by governments and regional bodies that cloud service providers need to adhere to. For an example consider the General Data Protection Regulation (EU) 2016/679 (GDPR) and ISO/IEC 27001:2005 certification and SAS 70 Type I and II attestations. (Shinder, 2009)

oppositely a security breach in a cloud system service provider may lead to data leaks of thousands of potential customers. This vulnerability also exists in the on-premises services.

Considering these facts looking externally cloud systems appear to be more secure and have more measures to improve security. But when looking thoroughly we can see there are flows in both systems that can be exploited.

# 4.Cost

Cloud systems allow the business to reduce their upfront capital investments for IT services and allows them to pay for their IT services on a pay-as-you-go basis. With cloud computing businesses can pay for the configuration that is suited for their business and if need they can pay more and increase their capacity. This process is instant in most scenarios. (Kim, et al., 2009)

Furthermore, cloud systems allow the business to use software packages on a subscription based on usage metrics instead of a perpetual license. This will reduce the upfront cost of software licenses.

Using a cloud solution will help businesses to predict their IT cost over time. On traditional solutions, businesses might have to spend a large amount of money in a short amount of time to upscale their servers. This makes it hard to plan.

With maintenance and upgrading carried out by the service providers upkeep cost of IT services will be less significant compared to traditional methods. Furthermore, businesses do not need to spend money on IT support as most of the time cloud service providers will provide IT support by themselves.

Although cloud solutions are cost-effective most of the time there are instances that on-premises solutions are still more cost-effective. For example

# 5.Reliability

The scope of reliability covers two different areas. While some aspects overlap in traditional solutions when we talk about reliability of traditional systems, we need to consider the hardware and their chance to fail. But in most cloud solutions we do not need to consider the hardware of the servers. cloud systems solely rely on the internet as their delivery method reliability of cloud solutions depends on the ISP and infrastructure.

When talking about data and their reliability cloud systems rank far more superior than traditional systems. While the business can choose to back up these data manually most of the cloud solutions also includes backup locations across the world, thus makes them far more reliable at holding important data.

Furthermore, cloud systems provide reliable access to data any time anywhere this allows employees of the business to work from home and access data and software on demand. Although traditional systems can be modified achieve this it takes extra steps to facilitate these features.

Cloud solutions providers can provide uninterrupted services continuously. Even when they are working on software or hardware upgrade. Most of the time on premises servers need to shut down completely or restart to make any updates to software or hardware.

# 6.Conclusion

As stated previously, traditional server-based solutions are declining in popularity and cloud solutions have been rising in popularity in the past decade. This asks the question, is there a clear advantage in using cloud solutions compared to traditional server-based solutions.

When considering functionality, security, cost, and reliability this is a clear advantage to cloud solutions. reliance on the internet makes cloud solutions unviable in underdeveloped and remote locations.

With all these advantages from cloud computing, it only makes sense to use cloud computing whenever internet connectivity is not a problem.

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