

Traditional versus cloud computing environments

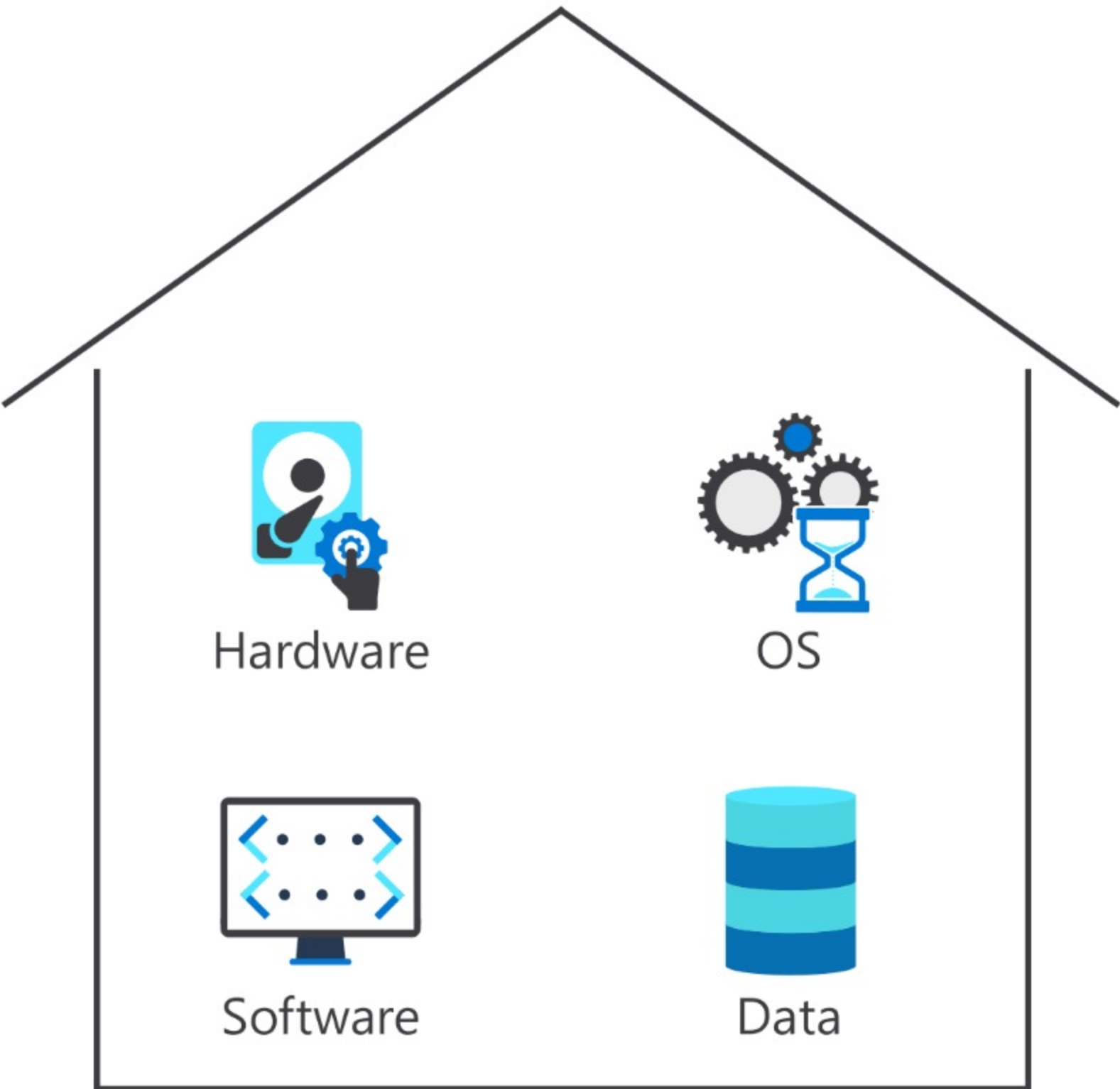
Introduction

Recent computer developments have led to a gradual shift from traditional on-premises computing to digital cloud computing. This is largely because cloud computing offers greater flexibility and cost savings over on-premises models. However, this does not automatically make it the best solution for everyone, as the traditional on-premises approach does retain advantages, such as more control over one's data. In this reading, these two approaches will be compared and contrasted to help you better understand the optimal business uses for each one.

On-premises computing

On-premises computing refers to the traditional approach of hosting everything on-site. This includes the hardware, operating systems, applications, and all associated infrastructure. This would include the data that is required for the business need. Typically, this would require an in-house IT department to oversee the network configuration and troubleshoot any hardware or software issues.

On-premises computing



Cloud computing

Cloud computing refers to the newer practice of hosting the data, software platforms, applications, operating systems, and all associated infrastructure online. An enterprise would pay for what they require in the same way a contractor would pay for the services of each tradesman they employed in a house build.

Cloud computing



Similarities

Both of these approaches aim to try to reduce cost while providing the highest level of service in executing the business need. Cloud computing provides unlimited memory space, on-demand services, regular upgrades, and dedicated companies providing various services. The on-premises approach has some limitations regarding storage and the applications that it can host. Still, with sufficient planning and implementation, a well-run traditional business can provide as much storage **as is required** and every application necessary for executing the business needs. Having a traditional model does not mean that cloud services cannot be temporarily utilized in place of acquiring additional hardware, should the need arise.

Both business models work under the same principles. An on-premises set-up will have firewalls, authentication, and all necessary security to protect the client's information. Different machines will function on-premises in a client-server model, data server, and, if required, application server. An online model will provide the same service, except that the machines providing the storage, computation, and services are dispersed worldwide and organized on a much larger scale.



Differences

A notable difference between both approaches lies in the upfront costs. Purchasing hardware that is sufficiently powerful to cater to all business needs can be a steep initial cost. There are additional licensing, maintenance, and power needs to run the service. In contrast, with cloud services, one pays by the units of use.

You can think of it like paying for electricity; rather than paying a large initial sum for a predetermined amount (which you may not even use in full!), you only pay for what you actually use. In addition, some services include the licensing required to access some services. As with paying the electricity, you depend on others to maintain and host your information. A significant drawback is that you lose access to your information if the provider has technical or internet connection issues.

Another difference between the two models is the distance traveled by the data. On-premises deployment means data can be housed, processed, and deployed without going off-site. The nature of cloud computing is that data and applications are housed at different locations, which requires sending information over the network. This reduces the safety of the data as it opens more possible points of attack for a potential hacker. In addition, some geographic locations have different laws regarding handling and dealing with data and might require additional processing steps.

Scaling is a measure issue with the traditional on-premises model. Scaling relates to growing and shrinking to accommodate demand. This becomes tricky when the business model requires purchasing all the hardware used. There is a slower response to greater and lesser needs. Inversely, cloud computing is highly scalable. The pay-as-you-go model means you can grow the processing power required to conduct business during peak times and relinquish this during the quieter hours. Thus, the cloud computing approach offers greater flexibility and scalability.

 On-premises	 Cloud
Pros: <ul style="list-style-type: none"> • Full control over hardware, software, data • Less vulnerable to cyberattacks 	Pros: <ul style="list-style-type: none"> • Lower upfront cost • Pay for what you need • Easier scaling
Cons: <ul style="list-style-type: none"> • Higher initial cost • Requires more careful planning • Less flexible for scaling 	Cons: <ul style="list-style-type: none"> • At risk for a wider range of threats • Needs consistent connection • Bound to laws of data storage locations

Conclusion

In this reading, you've compared on-premises and cloud computing and become familiar with their similarities and differences. You've learned that a cloud approach outsources storage and processing tasks to internet-based companies, while traditional approaches rely more on in-house solutions.

This means there are differences in cost, flexibility, control over resources, and vulnerability to cyber threats. However, ultimately one cannot say that one approach is better than the other, as there are aspects of both approaches that are best suited to different business needs.

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