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31 January 2020

ITT-306

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Measuring Risk

Research cost estimates for the following questions regarding the company’s upcoming decision.  In a Word document, answer each question by providing a source (URL) that justifies your answers.

1. How much does a small company pay to maintain a server in its own data center?
   1. In the context of a small company, there are some advantages and some disadvantages to maintaining a private server. For example, there is just one payment to own the server and all of the information is stored offline. Unfortunately, there are some disadvantages as well. One of the largest downsides of owning a server is that all maintenance on the server must be done by the owner. To own a small server, it costs $1537, according to servermania.com.
   2. https://www.servermania.com/kb/articles/how-much-does-a-server-cost-for-a-small-business/
2. How much does a similar server cost to maintain inside of Amazon Web Services (AWS)?
   1. Thankfully, for those business owners that do not want to maintain their own servers and want the convenience of cloud services, there are remote services available for this type of need. Amazon provides Amazon Web Services. AWS is a service that allows for companies and individuals to set up a remote server at one of many of amazon’s data centers. The cost to run one of these servers is $0.0058 per hour. This adds up to about $4.234 per month. Many companies are switching to this type of service because it’s inexpensive and there’s little required maintenance on the server.
   2. https://aws.amazon.com/ec2/instance-types/t2/
3. How much money does a one-day outage cost a small company?
   1. According to a IT research firm, Gartner, when a server goes down it can cost, on average, $5600 per minute. This is only an average and it depends on the type of business/volume a business does, but it’s safe to assume that this type of down time can be very costly to a company. This is why it’s important to have good and reliable server maintenance.
   2. https://www.the20.com/blog/the-cost-of-it-downtime/
4. Can you justify the extra cost of one system over the other?
   1. The cost of a personal server over an AWS server is not justifiable. In this case, the AWS server costs much less to purchase and maintain. Also, the AWS server has its own maintenance, so when there are problems, they will be fixed quickly. As these servers are well-run, the company that invests in AWS rather than a privately owned server is much less likely to lose money on a server failure.

Research risk estimates for the following questions. Consider the likelihood of the following events occurring using each solution (host at the company versus host on Amazon).

1. Unauthorized access of an account
   1. Depending on the security requirements and measures of a database, risk can differ greatly. If a company maintains a highly secured and well-encrypted system, the risk of a data breach is much less likely. Therefore, if a server owner is hosting client data on a server, the information is much less likely to be properly encrypted. For this type of risk, a AWS server is much safer for the customers of the company.
2. Hardware failure
   1. In the context of the privately owned server, the hardware may not have the proper maintenance it requires. If the hardware is not maintained in a way that benefits longevity, the data will constantly be at risk. Thankfully, AWS is in constant management of their servers. As there are many servers involved in AWS, the maintenance is sound and well-organized. In the case of any hardware failure, the AWS team would have the issue resolved in much less time than an owner of a private server would.
3. Modification or corrupted data
   1. Modification or corrupted data surrounds the idea of the data being unwillingly changed. If there is a system error and some of the data is lost or broken, this data will stay on the servers. From what I can find, there are no resources that Amazon provides for maintaining lost data. This means that Amazon does not frequently experience lost data. However, in the context of a private server, the corrupted data is difficult to return to normal. Unless there is a backup of the data on the server, the data may not be able to be recovered.
4. Denial of access
   1. Amazon Web Services offers many different teirs of access. Some examples include list, read, write, and there are other permissions management levels of access. In this case, the user of the server can offer different levels of access to different employees. However, with the use of a privately owned server, the access permissions must be written into user log ins or be managed by a third party software. Although is possible to do, it is not as easy as using the built-in permissions that AWS offers.
5. Are there other factors to consider?
   1. There are other factors to consider when deciding between a private server and cloud service. For example, internet connection is a great consideration to make. In the cases of some companies, they may not be able to access internet whenever it’s necessary. For these types of companies, they will need a satellite connection or a privately owned server. Another factor to consider when making this decision is server location. When using AWS, there is no telling where the data is actually stored. Due to this, if there is extremely sensitive information being stored, it may be wise to keep this information on a private server with a secondary regular backup.

List the possible risk factors. Provide relevant sources of data (URLs) and cite statistics to support your risk estimates. For example:

1. According to Statista, the failure of a private server depends on how old it is. If the server is one year old, there is a 5% chance that the server will fail in the first year. Going up to 7 years old, there is an 18% chance that the server will fail. Therefore, it is important that the server hardware is maintained regularly and replaced when necessary.
   1. https://www.statista.com/statistics/430769/annual-failure-rates-of-servers/
2. According to Varonis, in 2020, the probability of an unauthorized data breach on a server was 1.7%. Although this number is small, with the amount of servers in the world, it is actually a large sum. In order to keep data safe, there must be many countermeasures in order.
   1. <https://www.varonis.com/blog/data-breach-statistics/>

Summary

In conclusion, it is clear that there are many benefits and drawbacks to both a privately owned server and an AWS server. In the case of T-Shirt Hut, the benefits of AWS outweigh the benefits of a privately owned server. As this company is relatively small, the employment does not have enough room for a server staff. Therefore, it would be best to choose AWS as a server host. As there is far too much maintenance involved with a private server, and too many risks involved with operating a private server, AWS remedies each of these shortcomings.