**The cost of VMs in the cloud**

**By**

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In the recent years cloud services have become a sought-after service by many startups and establish companies; so much so that we can consider naming it the “Cloud Wars.” Tech companies such as Amazon, Microsoft and VMware are but a few of the major companies that are competing with one another to capitalize on this virtual gold rush. After, all virtual machines offer companies storage, computing power, infrastructure and security. Therefore, it is often the first option and most logical option for any company that wishes to keep growing. It’s a win-win scenario by both the providers and consumer. However, what is the real cost of using a virtual machine?

This document will explore two of the major players in the virtual machine space, Amazon and Microsoft. There will be a total of eight virtual machines being configure. First let’s look at Amazon. The following eight virtual machines will be located in US EAST (N. VIRGINIA) region with the following configurations:

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-Three virtual machines will run Linux Red Hat Enterprise with 36 vCPU and 60 GB of Memory. The three virtual machines will in essence have a I/O of 10 Gigabit and is a great set up for a high performance/secure virtual machine.

-Three virtual machines will run Linux with 2 vCPU and 4 GB of Memory. The three virtual machines will have up to 10 Gigabit I/O. These machines would be great for saving data and internal Linux automation where time and performance are not a major variable.

-Two virtual machines will run Windows with 8 vCPU and 15 GB of Memory. The two virtual machines will have a high I/O which according to AWS website is ideal for media streaming, gaming, mobile, and social networking.

(https://aws.amazon.com/about-aws/whats-new/2012/07/18/announcing-high-io-instances-for-amazon-ec2/)

-All eight virtual machines will have 500GB General Purpose SSD storage

-All eight virtual machines will have an On Demand. (no contract) billing option

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As seen on the image above the major contribution to the cost is the computational power and based on the set up postulated previously, it is in fact the main purpose for these virtual machines.

Utilizing the same configuration and number of virtual machines, let us then explore how would changing the location to US West (Oregon) region would impact the cost of the service.

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The results surprisingly show no change in cost for running the same eight virtual machines from coast to coast. Therefore, in theory AWS can virtually provide services at a same rate to consumers in any part of the USA. The flat rate itself can be appealing for companies that may consider relocating to a much affordable location or looking to expand its office space.

Now, let us observe how would running a similar configuration with Microsoft’s Azure would differentiate in price. The images below will represent eight virtual machines that will operate for 730 hours a month (which covers all 24 hrs. in a 31-day month). Below are the biggest differences:

-Three virtual machines will run Linux with 2 vCPU and 3.5 GB of Memory. 135 GB Temporary Storage.

-Two virtual machines will run Windows with 8 vCPU and 16 GB of Memory. 80 GB Temporary Storage.

-Three virtual machines will run Linux with 32 vCPU and 800 GB of Memory. 80 GB Temporary Storage.

-All eight virtual machines will have 512GiB Standard SSD storage

-All eight virtual machines will have an On Demand. (no contract) billing option

-Unfortunately, Azure is not fore coming with I/O bandwidth performance and rather offers Memory optimizers as an add-on.

-Price can change by 15% based on the region of the virtual machines

(https://azure.microsoft.com/en-us/pricing/details/virtual-machines/linux/)

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East US Region

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West US Region

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Based on the information above we can ascertain that relatively speaking both AWS and Azure have similar prices for the same virtual machine. Additionally, prices may change only slightly depending on the region. By visiting Azure’s website and further researching the prices, certain virtual machines configurations are only available in certain regions. That is to say our high performing Red Hat Linux machine may cost more in a different region because of its unique components.

Therefore, the only true variable that will change the overall cost of these virtual machines is none other than setting up a contract. For instance, Microsoft’s Azure gives an estimated 57% savings by reserving the virtual machine for at least three years as it can be seen in the image below. At this point it really comes to the level of commitment and expected growth the company could be facing. A well calibrated forecast could potentially save a company hundred and if not thousands per virtual machine.

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**References**

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