SNS COLLEGE OF ENGINEERING

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING(IoT and Cybersecurity Including BCT)

COURSE NAME : Cloud Service Management /19OE219

IV YEAR / VII SEMESTER

Unit II-

Topic : Benchmarking of Cloud Services

Benchmarking of Cloud Services

Define the problem

- it is important to characterize the kind of computing you will be looking to undertake in the cloud; this will determine the relative importance of different performance metrics.
- You should determine what aspects are key and have a disproportionate impact on the real-world performance of your computing.
- Once you have a clear idea of this then you are in a position to start looking at benchmarking.

Computational Performance

- When we are looking at the raw computational performance we are talking about CPU and RAM. The differences in performance at a pure computational level between clouds are actually not that great. However, there are some factors that are causing the real differences.
- For example, if you have a 2GHz machine you can see how doubling the cores in use from two to four affects your benchmarking. By doing these applications running on that virtual machine will be able to execute tasks via four cores simultaneously.

Storage: the real cloud servers performance benchmark

- All performance is limited by the weakest link where a bottleneck develops. Currently, technology has advanced significantly in the field of virtualization with respect to the use of CPU and RAM.
- For example, a single physical machine can be virtualized and have multiple cloud servers with minimal loss to total aggregate performance. Sadly in the case of storage, there is still a great deal of progress to be made. The end result is that in most cases, the performance of virtual servers in the cloud is determined by the performance of that cloud's storage solution.

Benchmarks are often used to measure performance of computing resources and have previously been applied to cloud resources [2].

- Benchmarking is usually performed independently of an application and does not take into account any bespoke requirements an application might have.
- Many new customers when they start using CloudSigma want to test the performance; they are often looking to benchmark performance results between cloud servers and their own infrastructure and that makes sense.

Health Warnings

- To explain upfront, I'm quite skeptical about benchmarking in general. It rarely offers a true insight into real-world usage. In short, there is no real replacement for running the actual applications you intend to use on the platform. If you can achieve this at a reasonable cost in terms of time then there is no replacement for such an exercise
- Another factor is how busy the cloud vendor is. You may benchmark cloud servers and get excellent results. However, these may be largely due to the level of usage (or lack thereof) of that particular vendor.

Networking

- The performance of networking is significantly more straightforward to determine and measure than computational and disk performance. Networking performance has two key aspects, latency, and bandwidth.