ABSTRACT

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Comparative Analysis of Private Cloud Performance Using Traditional Infrastructure and Hyper-Converged Infrastructure in IT Company.

Cloud Computing is growing in almost all types of business fields, one of which is a business field engaged in IT (Information Technology). This includes the company where the author works, which uses two models of infrastructure technology, namely Traditional Infrastructure technology and Hyper-Converged Infrastructure. Based on these conditions, a way is needed to determine the appropriate infrastructure technology model for the company. The goal is that IT services in the company can run well and stable. To determine the appropriate infrastructure technology model for the company, a comparative analysis method can be used, namely by comparing the Traditional Infrastructure technology model with Hyper-Converged Infrastructure. Meanwhile, the measurement method can use the Web Application Performance Testing measurement method. In this measurement method, what is measured is the value of Response Time, Throughput and Resource-utilization (CPU, Memory and Harddisk). Then the measuring tools used are Httperf, Iperf3, 7zip and DiskSpd. Based on the research results, the Hyper-Converged Infrastructure technology model has significantly better Response Time, Throughput and Resource-utilization (CPU, Memory and Harddisk) values with an average Response Time of 31.16 ms, Throughput of 7.558 Gbitss/sec, Resource-utilization CPU 15.2%, Resource-utilization Memory 2.9%, IOPS Sequential Reads 17,186.05 per second, IOPS Sequential Writes 5,732.69 per second, IOPS Random Reads 11,159.51 per second and IOPS Random Writes 3,714.84 per second, which means that performance is better when compared to Traditional Infrastructure which has an average Response Time of 412.25 ms, Throughput of 1.05 Gbitss/sec, Resource-utilization CPU 63.9%, Resource-utilization Memory 4.4%, IOPS Sequential Reads 4024.77 per second, IOPS Sequential Writes 1345.59 per second, IOPS Random Reads 344.09 per second and IOPS Random Writes 114.91 per second.

Keywords: Cloud Computing, Traditional Infrastructure, Hyper-Converged Infrastructure, comparative analysis, Response Time, Throughput and Resource-utilization.