

ABSTRACT

To meet the increasing need for internet services, convenience, resource savings, and server reliability are the main concerns, so that a service that has been launched does not experience problems, and has High Availability. This research uses docker technology, which is a virtualization technology that uses containerization technology, so that applications or services that are launched are isolated and not disturbed by other services. Meanwhile, to achieve high availability, docker swarm is applied as a server clustering method, so that services can always be accessed even though there are failures on several servers, as long as they are within the threshold range. This study aims to analyze the parameters of the availability, throughput, resource utilization, and delay values of the high availability cluster server testing experiment using docker swarm which is applied to the raspberry pi 3 cluster server. This study uses an experimental method by conducting research on causality through a trial process by isolating the experimental parameters so that they are not disturbed by other variables. Then use an objective quantitative approach which is represented by statistics and numerical data which is carried out by applying analytical and deductive patterns. The best availability value of 100% was achieved in the experiment with variations of 500 concurrent users and the worst value was shown in 1000 concurrent users of 99.4021%. A similar decrease was also recorded in the throughput and delay values, the highest throughput value was recorded at 42.5 Mb/s with the worst throughput at 32.5 Mb/s, while the lowest delay was at 399.93 ms and the longest delay was at 539.68 ms. While the CPU utilization obtained an average value of 34% and an average ram utilization of 305.645 MB.

Keywords: *High Availability, Docker, Docker Swarm, Raspberry Pi, Server*