

ABSTRACT

The number of internet users is increasing, it cannot be denied that this increase results in a high number of users and an increasing workload. With the number of users increasing, users also want maximum speed in accessing either the internet or something else. This causes the occurrence of overload of a data caused by the number of users or users who access and request to get their respective needs. There are many techniques that can be used to prevent this from happening, one of which is by adding additional servers or hard disks, which of course are inefficient because they require a large amount of money, and not all providers can continue to do this.

To overcome these problems, a load balancing technique is used because it can regulate the load on a network so that there is no overload, as well as using a weighted round robin algorithm by managing large loads with a scheduling system, and using an ONOS controller, applying load balancing techniques using a weighted round robin algorithm.

At this project level, load balancing has been designed on conventional and SDN networks using web server services. The highest throughput value is 123.74 KB/s on SDN and 118.16 KB/s for conventional networks. The response time value generated when dividing the ratio of 1:1 on a conventional network is 0.06 seconds and for SDN when the ratio is 1:2 is 0.06 seconds. Memory usage and cpu utilization show that at a ratio of 1:1, SDN is more stable in leveling the load according to the specified ratio. And the value of request loss generated by conventional networks is greater in the number of failures compared to SDN.

Keywords: software defined network, overload, load balancing, weighted round robin, web server