ABSTRACT

The increase in the amount of traffic to the web server results in increased server performance. The use of a single server is considered to be less effective because it can cause the server to go down when it gets an excessive amount of traffic load (overload). Load balancing is the answer by distributing traffic loads across multiple servers and can be applied to virtualization technology to minimize hardware usage. This study aims to determine the load balancing performance of the web server using a weighted round robin algorithm that is implemented in the Proxmox VE virtualization environment. Network quality measurement is done by sending HTTP request traffic in several weighted round robin load sharing scenarios, namely WRR 2:1, 3:1, 4:1, and 5:1, and in each scenario three different traffic loads are given, namely 5000, 10000, and 15000. The analysis process is carried out by measuring the value of Quality of Service (QoS) parameters, such as throughput, delay, packet loss, and CPU usage. The results of this study indicate that the load balancing system can be implemented well in a virtualization environment. By using a 2:1 weighted round robin scheduling algorithm, load balancing can share the load equally between the two servers. This is indicated by having the highest average throughput value of 6.717 Mbit / s, the lowest average delay value of 0.505 ms, and no packet loss. This is because the two web servers have a balanced workload. This is indicated by the difference in CPU usage on the number of 5000 connections of 2.244%, the number of connections of 10000 by 4.528%, and the number of connections of 15 000 3.111%.

Keywords : *Server, load balancing, weighted round robin, virtualization.*