ABSTRACT

Construction of network infrastructure in the database system for the observation of volcano is necessary because Indonesia is a ring of fire country which has 127 volcanoes. Based on observation in Badan Geologi especialy PVMBG (Centre of Volcanology and Geological Hazard Mitigation), Volcano observation is divided into two methods visually and instrumentation using analog and digital sensors. The visual and instrumentation result data uses analog sensors in input using web applications. The data result of intrumentation method of digital sensor entered automatically into database server. All the observed data using these two methods into the database server simultaneously causing down (down) on the web application data input. It can make the performance of the database server less than the maximum.

The mechanism of the queuing system by distributing the data traffic load to the server with Load Balancing technology can be a solution. In this research is done Load Balancing implementation on web server to distribute data traffic of observation result into database server. Infrastructure database system network using cloud computing platform is OpenStack with Load Balancing as a Service implementation. This study compares two Load Balancing algorithms namely Round Robin and Least Connection.

Least Connection has a better performance than Round Robin for the test aspects of Response Time, Throughput, Transaction Rate and Failed Transaction parameters on the web server. Least Connection algorithm test result compared to test scenario has average value of Response Time more smaller 8,49% and 71,37%, Throughput more greater 5,07% and 93,72%, Transaction Rate more greater 5,26% and 50,16% and then for Failed Transaction 0%. Least Connection algorithm that is implemented on web server application data input of observation of volcano can support database server performance less than maximum. The performance of volcano database server can speed up the process of deciding the status of the volcano level before a disaster occurs.