ABSTRACT

The use of a Learning Management System (LMS) web application such as Moodle has become a necessity for the online learning process. In every web application, the performance of a server is something that must be considered. Because of its importance in the teaching and learning process, a reliable web application is needed in handling and processing requests from users. To measure the level of performance of a web application, it is necessary to perform performance testing. Performance testing can be done by using several testing tools, such as Apache JMeter. The obtained results are analyzed and compared to determine the performance of each of these servers so that the test results can be used as a reference in implementing Moodle as needed. Tests were carried out on baremetal servers and servers with Docker containers. Test results show Docker server performance is better than baremetal. Especially for loads of 100, 200, and 300 for example in the event module with values of 1.28, 6.37, and 8.41 seconds respectively, while baremetal has values of 1.48, 6.92, and 8.95 seconds. After the configuration is changed, baremetal's performance is getting better with lower response times and errors. In the event module with configuration changes on the Apache web server and PHP-FPM the response time is 1.56 seconds, which is lower than Docker which has a value of 1.83 seconds.

Keywords: *Baremetal, Docker, Moodle, Performance Testing.*