

## **ABSTRACT**

*High web traffic challenges encourage the use of container technology in an efficient infrastructure. Kubernetes as an orchestration platform offers an optimal environment for organizing containers, making it relevant in improving web traffic performance. Choosing the right web server is critical to ensure optimal system performance and reliability. This research highlights that Openlitespeed provides a better response time of 0.162 s compared to Nginx's 0.176 s on 1000 connections. Openlitespeed also showed lower CPU usage of 9.116% vs. 9.567% and demonstrated consistent memory usage efficiency of 8.424% to 12.802% across different number of connections. Openlitespeed also dominated on throughput parameters with a significant value of 11.274 Mbps compared to Nginx's 6.033 Mbps on 1000 connections. In the packet loss parameter, Openlitespeed showed a result of 0%, indicating its ability to maintain data integrity during transmission. While Nginx shows a very low packet loss, which is around 0.03%, with these results, both web servers fall into the "Very Good" category. The delays of both webservers also show a "Very Good" category based on TIPHON standardization, which is less than 150 ms. Thus, the test results consistently confirmed Openlitespeed's dominance in performance and reliability on containerdriven Kubernetes clusters.*

**Keywords :** *Web server, Container, Kubernetes, Containerd, Openlitespeed, Nginx.*