

ABSTRACT

Container is a virtualization technology that makes it easy for system administrators to manage applications on servers. Docker Swarm can be used to build, provision, and run container-based applications. Docker Swarm uses Container Network Model (CNM) as a bridge to communicate between containers. But the use of CNM in Docker Swarm can cause a problem, namely a decrease in web server performance caused by the use of inappropriate CNM. So a reference is needed in using CNM for every web server application that will be made to run optimally. This study tests the Container Network Model (CNM) on Docker Swarm for web server traffic by assigning request loads to each CNM and comparing their performance. The CNMs to be tested are Overlay Network, Bridge Network, and Weave Net using intra-host and inter-host communication scenarios. The benchmark parameters analyzed were requests per second, transfer rate, time per request, and CPU usage. The results of the CNM performance comparison obtained in this research were that CNM overlay had good performance on all parameters compared to CNM bridge and CNM weave net, namely requests per second of 3200,40 requests/s, transfer rate of 903,24 KBps, time per request of 0,31 ms, and CPU usage of 89,87% when testing inter-host communication.

Keywords: *Container, Container Network Model, Docker Swarm, Web Server.*