ABSTRACT

Nowadays, streaming video such as Video On Demand on internet become one of the highest consumptions in cyber world. Education and even entertainment is provided. Because of massive demand on video streaming, provider must prepare relliable server to resolve overcome the increase in traffic and workload on the server. Then in these conditions the role of load balacer is needed to distribute traffic load to several cluster servers in a balanced manner so that the server does not experience excess traffic (overload) or even down.

The application of container-based virtualization technology is used in implementing this load balancer. Container is a virtualization technology at the operating system level that allows each process or application to run on each container by sharing the same operating system kernel. It's different between container and Virtual Machine. Virtual Machine (VM) which is a virtualization technology at the hardware level, so it requires the whole operating system to build a VM. This is what makes containers known as lightweight virtualization technology.

This Final Assignment will implement load balancers that run on container technology. The container used is the docker. This study aims to determine the performance of load balancers on VOD services. From the results of the research conducted, it is known that server performance using load balancing is better than a single server, because the workload and traffic load are no longer served by one server but rather the burden is divided into three servers. In this study it is also known, the best algorithm for load balancing is least connection because there can be a decrease in CPU Utilization of 5.17%.

Keywords **:** *Load Balancer, Video On Demand, Container, Lightweight Virtualization, Kubernetes*