ABSTRACT

Containers are one of the ways that are now popularly used to build or design an application that is made, by using containers all the needs for creating applications are made inside and put together in a container, so that everything becomes easy, light and fast. and behind the advantages of using a container system there are drawbacks, namely if there are already many containers created and it becomes difficult to operate these containers, the solution is to use container orchestration tools, one of which is popular is Kubernetes. Kubernetes is a container orchestration tool that is often used, Kubernetes is open source based, which is free and can be used by anyone, Kubernetes was developed by Google, everything that runs on Kubernetes, you can save it in a YML file, and after that it will become the name pod, this pod is a collection of containers that have been created in a cluster and managed by kubernetes, behind the convenience of kubernetes there are problems when connecting networks between pods in a cluster, and kubernetes does not provide network solutions between pods, but there is a container network interface (cni) plugin which is the solution to network problems in the Kubernetes cluster. There are lots of container network interface (CNI) plugins, in this study we will use the Calico container network interface (CNI) plugin, Calico itself is an open source project that can be used for free and anyone can use it. Kubernetes cluster that uses the calico container interface (cni) in the Kubernetes cluster, and network performance testing will be carried out in the Kubernetes cluster using the Kubernetes iperf application. The test results show that the throughput values obtained are in the range of 0.205 to Mbytes to 87.0 Mbytes (very good category according to THIPON standards). And the delay value obtained is also in a very good category, namely the value range of 0.034 ms to 1.535 ms, while the packet loss value The results obtained are within 0.0% (very good category).

Keywords: Cloud, Container, Kubernetes, CNI, Calico, Iperf.