ABSTRACT

The development of computation and wireless technology has led to increasing in number of devices connected to the internet network. All data contained on these devices will be processed using cloud computing. With so much data that must be processed in the cloud, the computation service provider companies must build the infrastructure to meet needs. To solve this problem, they have to add fog computing between users and the cloud. However, fog has limited service coverage. As a consequence, fog has to do handover from one fog to another.

In this final project, MySQL and Busybox running on Docker containers will become fog services. When handover start, the checkpoint file will be created by freezing the container. The method used to create a checkpoint file is checkpoint-restore and snapshot. Transfer of services that stored in memory or volume is called Checkpoint-restore, and snapshot on the other hand will move all files in container. As for sending the files, it is done by using the secure shell protocol (SSH) or file transfer protocol (FTP), then the session will continue at the destination fog.

The results of experiment is snapshot makes an additional delay in service-handover because snapshot makes checkpoint file from all files in container. The snapshot process in MySQL experiment produced the biggest delay of 21.838 seconds, while the MySQL checkpoint-restore process resulted in a delay of 11.342 seconds.

Keywords : Fog computing, Cloud computing, Handover