

ABSTRACT

Very often various disturbances occur on CMS services such as websites when accessing which causes the website to be less than optimal until it fails. To secure the service before the loss or damage to data due to disruption, then the backup and restore mechanism can be performed on the service. In this study, a backup and restore mechanism was tested for CMS services on the Kubernetes cluster. Testing is done on two clusters with two different platforms, namely on cloud services and locally using virtualization. The testing mechanism is carried out in four different scenarios with the same number of cores in each cluster. Analysis is performed on CPU usage when the backup and restore mechanism is in progress. The results obtained from the analysis are the backup mechanism requires lower CPU usage, while the restore mechanism is higher. The average CPU usage is around 8.3% in the backup mechanism and 15.7% in the restore mechanism in both the GCP cluster and the local cluster. The reason is that the backup mechanism does not need to deploy services, whereas the restore mechanism must deploy services to be able to run these services. Implementation in the cloud, i.e., the Google Cloud Platform supports faster backup and restore mechanisms with lower CPU usage compared to local platforms on VMware Workstation. The average CPU usage obtained from the analysis is around 8.6% in the GCP cluster and 15.3% in the local cluster in both the backup and restore mechanism. The cause is the presence of several factors, such as differences in CPU specifications used, differences in memory usage that can affect CPU usage, as well as differences in how clusters communicate with Buckets during the mechanism, causing GCP clusters to be superior. Suggestions in this research are the use of cores and different file sizes to be able to find out their effects on CPU usage.

Keywords: Backup, Restore, CMS, Kubernetes, CPU Usage