ABSTRACT

Often there are disruptions in CMS services such as system failures, errors when doing maintenance, and the occurrence of inevitable disasters. To secure CMS services from these disturbances, backup and restore mechanism are performed. In this research, the problem focuses on the design of containerization and Kubernetes to support CMS services, as well as the implementation and analysis of backup and restore mechanism on CMS objects in the VMware cluster, and Google Cloud Platform (GCP).

By utilizing backup and restore mechanism, downtime during the maintenance process of a CMS service can be reduced, besides this mechanism can be used as an effort to overcome disaster. To be able to become a solution, it is necessary to measure the value of QoS both in the backup and restore mechanism, the QoS value like the delay, packet loss, throughput, and jitter is measured based on the TIPHON (Telecommunications and Internet Protocol Harmonization Over Networks) standard.

From the results of data analysis shows that the total average QoS on the GCP platform backup mechanism gets an index value of 2,5 with the "unsatisfactory" category, while on the VMware platform the index value obtained is 2,5 with the "unsatisfactory" category. Then in the restore mechanism, the GCP platform gets an index value of 3 with the "satisfactory" category and the VMware platform gets an index value of 2,75 with the "unsatisfactory" category. Although the GCP platform backup and restore mechanism gets better QoS values than the VMware platform, the VMware platform can still perform backup and restore mechanism properly and smoothly.

Keyword: CMS, Containerization, Kubernetes, Backup dan Restore, QoS