ABSTRACT

This final project book with a capstone design scheme proposes an e-commerce platform design using a microservices architecture and monitoring system applications based on service mesh. The main contribution of this work is maintaining the availability and reliability of the e-commerce platform called Happy using cloud computing services. The author also created a monitoring application system called Anbu to monitor metrics such as CPU, memory, and request duration. The method used is automation in designing e-commerce platforms, monitoring application systems, and cloud infrastructure on both. On the e-commerce platform, the author uses a microservices architecture by placing services into several service parts. Then, in the monitoring application system, the author uses Prometheus and Grafana, which can record metrics and visualize them in graphical form to maintain platform reliability in the cloud. The author also activates two alerts to detect configuration errors in the infrastructure section. Whereas in the infrastructure section, the authors combine two types of autoscale methods, namely HPA and VPA, to maintain platform availability. The end result of this capstone design is two products, namely the platform e-commerce Happy and the Anbu monitoring application system. Platform creation does not focus on UI/UX but prioritizes the back-end and architecture. Meanwhile, the development of a monitoring system application focuses on three metrics in the form of CPU, memory, and request duration, as well as two alerts on the alert manager on Prometheus.

Keywords : *Availability, Microservices, Monitoring, Reliability, Platform*