

## ABSTRACT

*PT Andal Rancang Multi Solusi is a company that operates in the field of IT Consultant technology and is working to improve its service products, namely from Coofis NDE (Collaboration Office Electronic Service Note) to Coofis Verse which uses microservices. Coofis NDE is a product created by PT ARM Solusi for managing electronic correspondence. In an effort to improve this product, PT Andal Rancang Multi Solusi uses microservice architecture and container technology. By using containers, each component in an application can be run in an isolated environment, making it easier to develop, test, and scale without disrupting the entire system. The aim of designing and implementing a container orchestration cluster is to design a container orchestration cluster architecture that suits the needs of the Coofis Verse product and PT ARM Solusi infrastructure as well as implementing a container orchestration cluster using the best container platform in containerization and orchestration, namely by using Kubernetes.*

*In this final project, a Coofis Verse product development has been designed at PT Andal Rancang Multi Solusi. The Coofis Verse product development was designed using several supporting tools such as Kubernetes, MinIO, MongoDB, and Keycloak. In this case, the author focuses on designing a container orchestration cluster, using the Kubernetes platform to automate the deployment, management and scaling of container applications, as well as using Ansible as an automation tool in the deployment and operations process and using Docker Hub as an image registry.*

*The results of the container orchestration design in this Final Project include the creation of several containers that were successfully deployed. The containers created are designed to run various components of the Coofis Verse application, such as MinIO, MongoDB, and Keycloak which will later be managed and monitored using Lens Kubernetes IDE software. All applications contained in containers can be accessed via a browser with a predetermined domain with the average time to access the application being 3-5 seconds. Apart from that, in the process of scaling pods, the time required is around 10-15 seconds.*

*Keywords: PT Andal Rancang Multi Solusi, IT Consultant, Coofis NDE, Container Orchestration, Coofis Verse, Kubernetes*