

Abstract

The process of building a platform is a process that consists of various stages, there is a focus of work and requires different preparation, but until now there has been no awareness in utilizing data and information sources that have been available to be used as a basis for developing or creating a platform that is able to improve quality a system of integrity. For this reason, a Platform as a Service (PaaS) architecture was built which provides application development and deployment services to process data and information obtained from practicum activities during the lecture period based on cloud computing using the Service Oriented Architectural (SOA) method. This platform is built in the form of a microservice-based web application so that the services provided can be used by all students to develop applications without having to think about what programming language they want to use. The services provided on the platform are able to help students. to be able to see the data from each practicum activity that is followed, as well as the stored data can be processed according to their wants and needs. Each service that is available is loose coupling where a service can be called by another program / service without the calling program needing to pay attention to where the location of the service being called is and what platform / technology is used by that service. In making this platform architecture, the API gateway is a good middleware system to be used on a microservice-based platform. The results of the implementation and analysis carried out prove that the architecture using the API gateway as a built-in middleware can be considered to develop the Telkom University lab service system. Although there are adjustments to resources and needs, but the purpose of this architectural development has generally been realized. From the results of tests performed on a platform architecture that uses a gateway API, it produces RTT 2.081 seconds, 45 MB memory, and 8% CPU for each user in 100 users.

Keywords: Platform as a Service, Architectural Oriented Service, Platforms, cloud computing, loose coupling