Perbandingan Alat CI/CD: Studi Kasus Implementasi Jenkins dan GitLab CI/CD untuk Meningkatkan Delivery Time Website Admin Peternakan Basu Dairy Farm

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Abstrak

Website **admin peternakan Basu Dairy Farm merupakan sistem informasi berbasis web yang dikembangkan menggunakan arsitektur** *monolithic*. **Proses pengiriman** *(delivery)* **perubahan** *source code* **dari** *repository* **GitLab pada** *branch* **"main"** *(development)* **ke server main** *(production)* **membutuhkan waktu yang lama karena proses** *build* **dan** *deploy* **dilakukan manual. Hal ini menyebabkan waktu pengiriman** *(delivery time)* **menjadi lama. Untuk mengatasinya, penelitian ini menerapkan** *Continuous Integration/Continuous Deployment* **(CI/CD) sebagai solusi. Alat CI/CD yang digunakan adalah Jenkins dan GitLab CI/CD dikarenakan alat tersebut** *open source* **dan paling populer. Dalam penelitian ini dilakukan perbandingan** *delivery time* **dari kedua alat tersebut.** *Delivery time* **didapat ketika proses** *build* **mulai dijalankan sampai proses** *deploy* **selesai dijalankan. Analisis mencakup waktu yang dibutuhkan untuk menjalankan proses** *build* **dan** *deploy* **dari alat CI/CD. Hasil penelitian ini menunjukkan Jenkins dan GitLab CI/CD berhasil diimplemantasikan dan dapat mengotomatisasi proses** *build* **dan** *deploy*. **Dalam hal implementasi, Jenkins membutuhkan konfigurasi yang mendalam sehingga terlihat rumit, sedangkan GitLab CI/CD menawarkan konfigurasi yang sederhana dan mudah. Dalam tiga percobaan yang dilakukan, Jenkins menunjukkan rata-rata waktu lebih cepat dalam menyelesaikan proses** *build* **dan** *deploy,* **sehingga Jenkins memiliki** *delivery time* **lebih baik daripada GitLab CI/CD dalam konteks proses pengembangan** *website* **admin Basu Dairy Farm.**

Kata kunci : CI/CD, jenkins, gitlab ci/cd, *delivery time, build, deploy*

Abstract

The Basu Dairy Farm admin website is a web-based information system developed using a monolithic architecture. The delivery process of source code changes from the GitLab repository on the "main" branch (development) to the main server (production) takes a long time because the build and deploy processes are done manually. This causes the delivery time to be long. To overcome this, this study applies Continuous Integration/Continuous Deployment (CI/CD) as a solution. The CI/CD tools used are Jenkins and GitLab CI/CD because these tools are open source and most popular. In this study, a comparison of delivery time from both tools was conducted. Delivery time is obtained when the build process starts to run until the deploy process is completed. The analysis includes the time required to run the build and deploy processes from the CI/CD tool. The results of this study show that Jenkins and GitLab CI/CD were successfully implemented and can automate the build and deploy processes. In terms of implementation, Jenkins requires in-depth configuration, making it look complicated, while GitLab CI/CD offers a simple and easy configuration. In the three experiments conducted, Jenkins showed an average time faster in completing the build and deploy processes, so Jenkins has a better delivery time than GitLab CI/CD in the context of the development process of the Basu Dairy Farm admin website.

Keywords: CI/CD, jenkins, gitlab ci/cd, delivery time, build, deploy