Application Autodeploy with Monitoring

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Github: https://github.com/Tekhunt/cdond-c3-projectstarter

What is CICD?

The acronym CICD stands for Continuous Integration and Continuous Deployment/Delivery, both are methods used to frequently deliver applications to customers by automating the processes from when a developer checks in a code to a repository and code reviews, to building the code and running all sorts of tests such as unit, functional and integration test, to validating those codes are good production candidates and standing up infrastructures for the deployment. These processes are carried in an automated and repeated fashion, with less human intervention.

The ultimate aim is to get bug free applications into the hands of customers, as well as updates.

Benefits

- Smaller code changes and hence fewer bugs thus reducing cost associated
- Fault isolation and faster mean time to resolution thus improving developer productivity and avoiding costs.
- More testable and reliable codes which reduced costs due to bad codes, and also guarantees customer retention, thus sustain or increase revenue
- Faster release rates leading to high operation efficiency and reduced cost
- Easy maintenance and updates.
- Good customer satisfaction and improved customer experience which improve or secure revenue

CI/CD Tools that Could be Adopted

Jenkins: This tool works on Windows, Linux and Mac servers and has a handy installer to make setup very easy. One of Jenkins biggest strengths is its list of over 1,700 utility plug-ins that make customization and integration very straightforward. It also gives Jenkins the ability to adapt to almost any requirement.

Gitlab: This is an open source but freemium-based CI/CD management tool that offers complete DevOps support including important built-in features such as issue tracking and version control.GitLab only runs on Linux based servers, although it can be run on some Windows systems with extended work-arounds. GitLab also has slightly higher prerequisites than Jenkins and a suitable server will need to have node.js, Git, Ruby and Redis instead of simply JRE.

Microsoft Azure: This is a platform to build serverless applications on Azure functions. Azure Pipeline is used for testing, building, managing, and deploying applications. It is a cloud service that is readily available for you to build and test your code project.

Benefits Udapeople will enjoy if CI/CD is adopted

➢ **Reduced expensive downtime.** Long-term downtime does not only influence your revenue negatively but also undermines your company's credibility which Udapeople do not want.

➢ **Troubleshooting costs**. With CI/CD pipeline properly automated, the process of the product deployment and release is more reliable and developers are not wasting hours on bug-fixing.

➢ **Switching/onboarding costs**. Automated CI/CD let new members of the team get down to business right away without having to deal with an exhausting learning curve.

➢ **Staff turnover costs**. Happy employees — more successful company! When Udapeople developers are freed from manual, repetitive tasks, they focus on creating new features and code and continuous quality improvement, isn't that right? Sure, it is. With them knowing they can rely on their system, Udapeople employees become more relaxed and satisfied and, as a result, they stay with you, work harder and become more and more in love with the company.

Thank you