

CI/CD BENEFITS PROPOSAL



Udapeople App

What is CI/CD?

CI/CD is a method to frequently deliver applications to customers by introducing automation into the stages of application development.

The main concepts attributed to CI/CD are continuous integration, continuous delivery, and continuous deployment.

CI/CD is a solution to the problems integrating new code can cause for development and operations team.

Continuous Integration

CI is the practice of merging all developers' working copies to a shared mainline several times a day

It is a place where code related and deployable artifact fit.

Some common CI-related phases :

- Compile

- Unit Test

- Static Analysis

- Dependency vulnerability testing

- Store artifact

Continuous Delivery

CD is a software engineering approach in which the value is delivered frequently through automated deployments.

*It is a place where deploying artifact fits. It's the process of "**Moving**" the artifact from the shelf to the spotlight.*

Some common CD-related phases might include:

- Creating infrastructure

- Provisioning servers

- Copying files

- Promoting to production

- Smoke Testing (aka Verify)

- Rollbacks

Benefits of CI/CD

The implementation of CI/CD benefits can be translated as avoid or reduce cost or

1. Lesser developer time on issues from new code that catch compile errors which reduce cost
2. Less bugs in production and less time in testing from catching Unit Test Failures that avoid costs
3. Prevent costly security holes that detect security vulnerabilities which avoid cost
4. Less human error, Faster deployments that automate infrastructure creation which avoid cost
5. Less infrastructure costs from unused resources that automate infrastructure cleanup
6. Faster and More Frequent Production Deployments from new value-generating features.
7. Less time to market from deploy to production without manual checks which increase revenue
8. Reduced downtime from a deploy-related crash from automated smoke tests
9. Quick undo to return production to working state from using automated rollback