

CI/CD as a Better Way to Build Valuable Apps

The benefits of CI/CD to building, deploying and monitoring the UdaPeople product in order to provide value and reduce cost.

Continuous Integration (CI)

- ❑ Continuous Integration can be described as a practice in software development where the developers combine all their code and changes to a shared main branch as often as needed.
- ❑ Basically, instead of having each developer submit their code bit by bit, which can lead to conflicting code, merge errors and a slower work rate, all of them can simply merge their code in real time.
- ❑ This practice involves the actual writing of code and other steps like Unit Testing, Integration Tests and Static Analysis.

Continuous Deployment(CD)

- ❑ Continuous deployment is the **automated** release of the changes made by the developers straight into production once it passes the test phase.
- ❑ This approach is more concerned with delivering the software(artifact) to the market, as human error-free as possible.
- ❑ It involves provisioning necessary infrastructure (like servers, databases, firewalls), verifying the software, deploying to operations/production and reverts incase of a software failure.

Benefits of CI/CD: Avoiding and Reducing Costs

The numerous benefits of CI/CD include:

Avoiding Costs

- ❑ Quick detection of security lapses to prevent costly failures.
- ❑ Infrastructure is automatically created and as such human error is reduced or completely removed.

Reducing Costs

- ❑ CI/CD reduces costs by automatically cleaning up unused resources, thus giving room for scalability.
- ❑ Compilation errors are quickly caught after merge on the main line, thus reducing the amount of time spent by developers on issues arising from these errors.

Benefits of CI/CD: Increasing and Protecting Revenue

CI/CD is also beneficial in:

Increasing Revenue

- ❑ Through continuous deployment, production deployments are quicker and more frequent, leading to faster release of value to customers.
- ❑ The manual checking process before deployment is removed, thus leading to faster deployment.

Protecting Revenue

- ❑ Rollbacks are automated, preventing the release of defective software to production.
- ❑ The downtime from crashes or bugs is reduced with automated smoke