

Fundamentals and Benefits of

CI/CD

What is CI/CD

CI/CD is a combination of two important components of software development

- Continuous Integration (CI)
- Continuous Deployment (CD)

Continuous Integration

This has to do with code, combining multiple code from different sources into one (merging) for deployment, as developers add code, these codes are been compile, tested, analyzed, merged to create an artifact

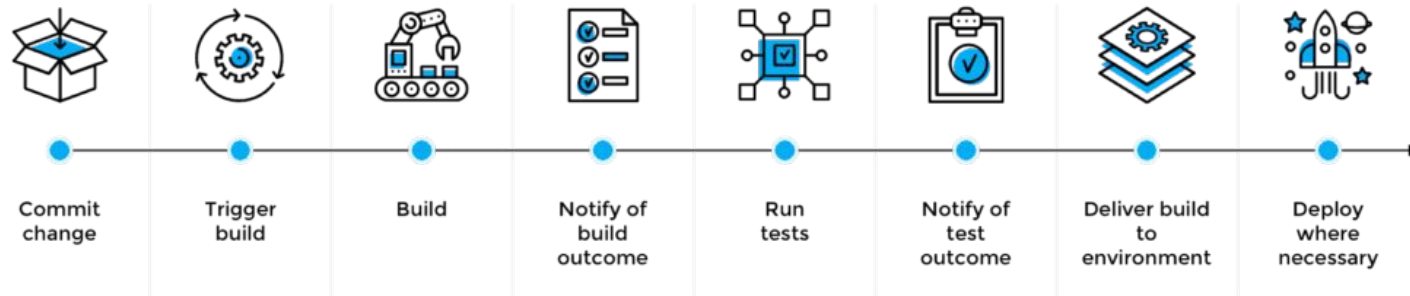
Continuous Deployment

This is a software development methodology in which value is delivered with frequent deployment, this component includes infrastructure creation, provisioning of servers, rollbacks, and promoting to production

CI/CD Components

The diagram below shows a CI/CD pipeline, depicting different points from code integration to deployment

CI/CD Pipeline



Business Benefits of CI/CD

With CI/CD in place you get the following benefits

Reduction in Application Down Time

Introducing CI/CD in our development workflow can drastically reduce application downtime, since code integration and infrastructure are automated, this greatly increases revenue as the application would always provide value at all time, making users happy with the product.

Faster Time to Market

With CI/CD, which offers automated deployment/delivery, new features can be delivered to the users faster, in as little as days a feature can move from development to production, this greatly improves product development as feedback iterations are quick and agile, and more valuable features means more money.

Saves Time Testing/Debugging

Manual tests can be automated, code analysis can also be automated, this reduces time spent on testing, while enabling the development team spend more time developing new features, and reduces the amount spent on hiring.

Less Human Error Due to Less Manual Processes

With CI/CD errors caused due to human mistakes are greatly reduced, since CI/CD makes use of automation tools, manual processed are reduced thereby reducing human mistakes while protecting cost.

Lower Cost Spent on Unused Resources

Instead of reclaiming unused resources manually which can be prone to errors or forgotten, CI/CD can automate the process by destroying unused resources after every run, with unused resources removed, money spent on those resource is reduced, making the business more profitable.

Prevent Vulnerability

CI/CD can run code vulnerability checks on each new deployment, this protects cost by preventing any malicious code from getting to the user which might be harmful to the business.