Fundamentals of CI/CD

- CI/CD is an acronym for Continuous Integration and Continuous Deployment.

- CI - Continuous Integration is the practice of merging all developers' working copies to a shared mainline several times a day. CI is the process of "Making". The Ultimate goal of Continuous Integration is - a high quality, deployable artifact(product). CI basically deals with everything about code.

Some CI-related phase include:

- Compile
- Unit Test
- Static Analysis
- Dependency Vulnerability Testing
- Store artifact

Fundamentals of CI/CD

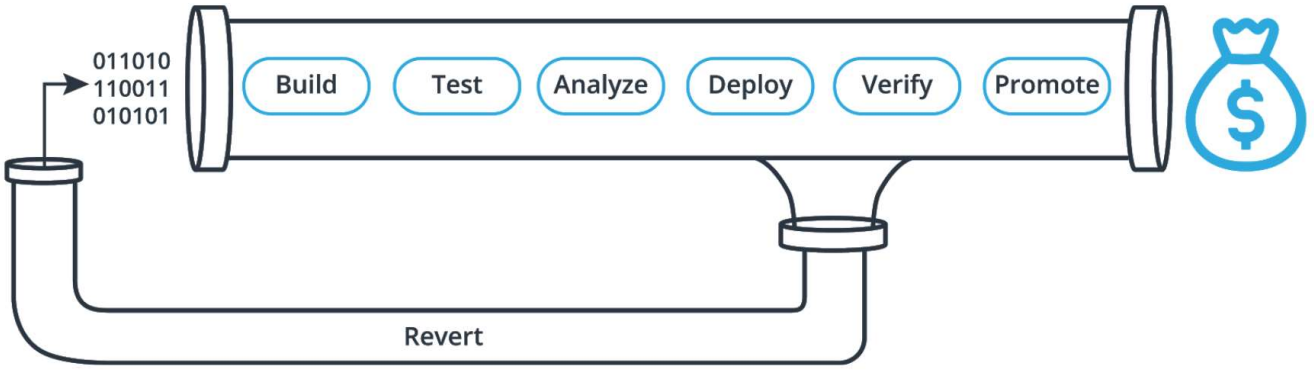
Continuous Deployment (CD) on the other hand is a software engineering approach in which the value is delivered frequently through automated deployment. It is the process of “Moving” the artifact from shelf to the spotlight. Some CD-related phases might include:

- Creating Infrastructure
- Provisioning Servers
- Copying Files
- Promoting to Production
- Smoke Testing
- Rollback

Fundamentals of CI/CD

- Another Important part of CI/CD is Continuous Delivery. Continuous Delivery is an Engineering paradigm in which teams produce and release value in short cycles.

The CI/CD Pipeline



BENEFITS OF CI/CD

- According to the Black Swan Farming's "Value Framework", business value does one of four things namely:

- Increase Revenue
- Reduce Revenue
- Protect Revenue
- Avoid Cost

So, CI/CD basically does the above four things.

BENEFITS OF CI/CD

- Catch compile errors after merge - Reduce Cost
- Catch unit test after failures - Avoid Cost
- Detect security vulnerabilities - Avoid Cost
- Automate infrastructure creation - Avoid Cost
- Automate infrastructure cleanup - Reduce Cost
- Faster and more frequent production deployment - Increase Revenue
- Deploy to production without manual check - Increase Revenue
- Automated smoke tests - Protect Revenue
- Automated rollback triggered by job failure - Protect Revenue