CI/CD

Continuous Integration Continuous Deployment

The fundamentals and benefits of CI/CD to achieve, build, and deploy automation for cloud-based software products

Overview

Continuous Integration

The practice of merging all developers' working copies to a shared mainline several times a day. All code related activity fits here, from compiling to testing and checking for vulnerabilities.

Continuous Deployment

A software engineering approach in which the value is delivered frequently through automated deployments. This is all deployment related activity including infrastructure set up, smoke testing and promoting to production.

Continuous Delivery

The over arching term for CI/CD - An engineering practice in which teams produce and release value in short cycles.

Principles of CI/CD

- All processes are repeatable and reliable

- The entire process is automated

- Version controlling every single change

- Fail quickly to learn quickly

- Able to measure and improve the quality of delivery

- Completion means a fully delivered product

- Equal responsibility by all those involved

- Steps taken towards continuously improving

Benefits of CI/CD

CI/CD ultimately reduces cost and increase revenue in the following ways:

- Get To Production Faster: Generating more features, more quickly provides delivery to our customers much quicker, generating new value more frequently

- Frequent Testing: Catch test failures quicker with frequent testing to fail, learn and develop quickly, creating greater efficiency

- Reduce Security Vulnerabilities: By detecting security vulnerabilities much more easily and frequently with regular testing we can make our applications more secure and safe

BENEFITS OF CI/CD

- Automated smoke testing: Protect our revenue by automated rollbacks in case of failures with our services, reducing any cases of downtime and saving cost on customer outages

- Reduced Human Error: Automating infrastructure creation and clean up means less human interaction, allowing faster deployments. Automated testing means less room for human errors and greater repeatability and reliability

- No manual checks required: Automation allows us to access the market quicker, delivering services quicker for customers and staying ahead of our competitors