CI CD

Importance and benefits

What is CI and CD

- Continuous Integration
  - An approach to be continually validating the state of a code base through automated testing.
  - Best achieved through integration with version control

- Continuous Delivery/Deployment
  - An approach to regularly deploying artifacts that successfully pass the CI phase to ensure confidence around the deployment.

Delivery vs Deployment

- Continuous Delivery
  - Automatically prepare and track a release to production.
  - The desired outcome is that anyone with sufficient privileges to deploy a new release can do so at any time in one or a few clicks. By eliminating nearly all manual tasks, developers become more productive.

- Continuous Deployment
  - Every change in the source code is deployed to production automatically, without explicit approval from a developer.
  - As long as it passes the quality controls.

Why do this?

- Reduction of delivery risk
  - No longer do we need to rely on humans with specific knowledge as gate-keepers of quality
  - Reduce chance of human not following the process
  - Reduced chance of mis-communication on executing the change

Why do this?

- Better visibility on change
    - As our system and tools are version controlled
    - And we know what the current status of production is
    - And we can describe the process by which it will be changed
    - We can diff the system states with confidence

- Open up more avenues for review and increased audit compliance

Why do this?

- Increased efficiency and delivery options
    - Enables us to deliver things with reduced effort
    - This leads us to deploy change more frequently
    - Which leads to getting feedback faster
    - That enables us to experiment easier
    - This leads to smaller batch sizes
    - Which leads to and increased flow of the entire system

Why do this?

- Enhanced learning from failure
    - When we have an issue or failure, we write a test to cover it
    - This test gets added to our suite and executed every time
    - Decreases our risk of this issue occurring again