

Why CI/CD

What is CI/CD

- CI/CD is shorthand for Continuous Integration/Continuous Delivery
- What is CI?
 - Continuous Integration is process of merging developers' work to a single mainline several times a day. Meaning each developer works on their version then we merge all their versions and build this final version several times.
- What is CD?
 - Continuous Deployment is a software engineering approach in which software functionalities are delivered frequently and through automated deployments. That means we build the environment and bake in the dependencies automatically through code.
- CI/CD enables Continuous Delivery: The delivery of value in very short periods of time and frequently. Value is Software and new features.

We can decrease human errors

- Use Infrastructure as Code to make sure that testing and deployment environments are consistent across iterations.
- We include testing to code quality and security so that if it fails it doesn't get to be produced.
- The tests are written once, hence consistent for every build.

Better visibility

- When there is an error or failure, stakeholders are notified promptly.
- This can ensure timely fixing and product quality.
- We can proactively monitor services to prevent failures by sending alerts for would-be problems.

It costs less

- Adding all the previous points we can save money through:
 - Decreasing costs of fixing as they would be caught earlier.
 - Decreasing costs of roll-backs in case of failures as the software and environment are based on Software.
 - Decreasing Down-time as errors are caught right away.
 - Unused infrastructure is done with promptly therefore there is no undue OpEx

It increases revenue

- Automating builds allows developers to push features faster and with better quality.
- Decreasing time-to-market.
- Decreasing operating costs due to economies of scale.