

CI/CD

CI

Is the practice of integrating all your code changes into the branch of a shared source code repository early and often, automatically with benefits

- 1- Automatically kicking off a build. With continuous integration, errors and security issues can be identified and fixed more easily, and much earlier in the development process.
- 2- Testing each change when you commit or merge them
- 3- By merging changes frequently and triggering automatic testing and validation processes, you minimize the possibility of code conflict
- 4- Static code analysis that verifies the quality of the code.

CD

Continuous delivery is a software development practice that works in conjunction with CI to automate the infrastructure provisioning and application release process.

After CI is done, The CD takes over during the final stages to ensure it's packaged with everything it needs to deploy to any environment at any time.

CD can cover everything from provisioning the infrastructure to deploying the application to the testing or production environment.

With CD, the software is built so that it can be deployed to production at any time. Then you can trigger the deployments manually or move to continuous deployment, where deployments are automated as well.

The benefits of CI/CD implementation

Happier users and customers

Fewer bugs and errors make it into production, so your users and customers have a better experience. This leads to improved levels of customer satisfaction, improved customer confidence, and a better reputation for your organization

Accelerated time-to-value

When you can deploy any time, you can bring products and new features to market faster

Less fire fighting

Testing code more often, in smaller batches, and earlier in the development cycle can seriously cut down on fire drills.

The benefits of CI/CD implementation

Hit dates more reliably

Removing deployment bottlenecks and making deployments predictable can remove a lot of the uncertainty around hitting key dates. Breaking work into smaller, manageable bites means it's easier to complete each stage on time and track progress.

Reduce burnout

CD measurably reduces deployment pain and team burnout. Developers experience less frustration and strain when working with CI/CD processes.

Recover faster

CI/CD makes it easier to fix issues and recover from incidents, reducing mean time to resolution

Continuous deployment practices mean frequent small software updates so when bugs appear, it's easier to pin them down.