

# Fundamentals and Benefits of CI/CD

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# What is CI/CD?

CI/CD stands for Continuous Integration & Continuous Deployment.

Continuous integration is the practice of merging all developers work branches to the main branch as often as possible in order to create a single deployable artifact. CI might include; Compilation, Testing, Code analysis.

Continuous deployment is a software engineering approach by which software features are delivered frequently through automated deployments. This is achieved by making use of certain automation tools like CircleCI, Jenkins, Ansible, etc.

# Benefits of CI/CD

- Reduced cost by quickly catching compile errors after merge
- Avoidance of Cost of downtime by catching bugs from unit tests
- Reduced human error by automating Infrastructure creation, deployment and infrastructure cleanup.
- Faster and more frequent production deployments since the process is automated.