

Fundamentals and Benefits of CI/CD to Achieve, Build, and Deploy Automation for Cloud-Based Software Products

Continuous integration and continuous deployment is a paradigm that is focused on the processes involved in developing to deployment of a software. When both are combined together we get **continuous delivery**. Although CI/CD are entirely independent, the concept helps software developers, operation teams and business managers make decisions.

Continuous Integration (CI) is the practice of merging copies of developers code to a shared mainline several times a day while Continuous Deployment (CD) is a software engineering approach in which value is delivered frequently through automated deployments. Meanwhile in CI/CD, our True North is Continuous Delivery.

Benefits of CI/CD

- Less bugs in production, less time, Less developer time on issues in testing which helps avoid cost
- Prevent embarrassing or costly security holes
- Less human error, Faster deployments
- Less infrastructure costs from unused resources
- Less time to market
- Reduced downtime from a deploy-related crash or major bug

In CI/CD, we have Pipeline. A pipeline is a set of instructions to run a group of jobs in parallel or sequentially and according to a predetermined dependency tree.