

CI/CD - A better way to build and deploy our products

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

Continuous Integration

- ★ *The practice of merging all developers' working copies to a shared mainline several times a day.*
- ★ *It's the first step of making and ensuring that we have a high quality and deployable artifact .*
- ★ *Some common CI-related steps might include:*
 - *Compile*
 - *Unit Test*
 - *Static Analysis*
 - *Dependency vulnerability testing*
 - *Store artifact*

Continuous Deployment

- ★ *A software engineering approach in which the value is delivered frequently through automated deployments.*
- ★ *It is the process of deploying the verified changes to productions as soon as possible without any human involvement .*
- ★ *Some common CD-related steps might include:*
 - *Creating infrastructure*
 - *Provisioning servers*
 - *Copying files*
 - *Promoting to production*
 - *Smoke Testing (aka Verify)*
 - *Rollbacks if it doesn't work right*

Benefits of CI/CD to our systems

Catch Compile Errors After Merge : it would reduce the cost as it will need Less developer time on issues from new developer code.

Catch Unit Test Failures : Having less bugs in our production application will lead to avoiding spending cost in testing .

Faster and More Frequent Production Deployments : We can develop faster as there's no need to pause development for releases. And that will help to get more revenue and build more trust by delivering New value-generating features released more quickly as Deployments pipelines are triggered automatically for every change.

Benefits of CI/CD to our systems cond.

Deploy to Production Without Manual Checks : Less time to market will decrease the cost and increase the revenue.

Automated Smoke Tests : it would help reduced downtime from a deploy-related crash or major bug and protect our revenue.

Detect Security Vulnerabilities : it would help avoid cost as we can detect embarrassing or costly security holes.