

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

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Continuous Delivery

An engineering practice in which teams produce and release value in short cycles.

- Repeatable Reliable Process
- Automate Everything
- Version Control Everything
- Bring the Pain Forward
- Build-in Quality
- "Done" Means Released
- Everyone is Responsible
- Continuous Improvement

Continuous integration CI

The practice of merging all developers' working copies to a shared mainline several times a day.

- Compile
- Unit Test
- Static Analysis
- Dependency vulnerability testing
- Store artifact

Continuous Deployment CD

A software engineering approach in which the value is delivered frequently through automated deployments.

- Creating infrastructure
- Provisioning servers
- Copying files
- Promoting to production
- Verify
- Rollbacks

Benefits of CI/CD

- **Reduce Cost**
 - Less developer time on issues from new developer code
 - Less infrastructure costs from unused resources
- **Avoid cost**
 - Less bugs in production and less time in testing
 - Prevent embarrassing or costly security holes
 - Less human error, Faster deployments
- **Increase Revenue**
 - New value-generating features released more quickly
 - Less time to market
- **Protect Revenue**
 - Reduced downtime from a deploy-related crash or major bug
 - Quick undo to return production to working state