Benefits of CI/CD

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CI/CD MEANING

- CI (Continuous Integration)
  - A software development practice of automating the integration of code changes from multiple contributors into a single software project

- CD (Continuous Deployment)
  - The value of delivering frequently through automated deployments
  - Includes (Creating infrastructure - Provisioning servers - Copying files - Promoting to production - Smoke Testing - Rollbacks)

Benefits of Continuous Integration

- What you need
  - Have to write automated tests for each new feature, improvement or bug fix.
  - Need monitor server for repository to monitor every commit.
  - Developers need to merge their changes as often as possible
- What you gain
  - Less bugs get shipped to production
  - Building the release become easier
  - Testing costs are reduced

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Benefits of Continuous Deployment

- What you need

  - Improve testing as the quality of your test suite will determine the quality of your releases.

  - Your documentation process will need to keep up with deployments

  - Feature flags become an inherent part of the process of releasing significant changes

- What you gain

  - You can develop faster as there's no need to pause development for releases

  - Releases are less risky and easier to fix in case of problem

  - Customers see a continuous stream of improvements, and quality increases every day

Benifits	Value	Results
Catch Compile Errors After Merge	Reduce Cost	Less developer time on issues from new developer code
Catch Unit Test Failures	Avoid Cost	Less bugs in production and less time in testing
Detect Security Vulnerabilities	Avoid Cost	Prevent embarrassing or costly security holes
Automate Infrastructure Creation	Avoid Cost	Less human error, Faster deployments
Automate Infrastructure Cleanup	Reduce Cost	Less infrastructure costs from unused resources
Faster and More Frequent Production Deployments	Increase Revenue	New value-generating features released more quickly
Deploy to Production Without Manual Checks	Increase Revenue	Less time to market
Automated Smoke Tests	Protect Revenue	Reduced downtime from a deploy-related crash or major bug
Automated Rollback Triggered by Job Failure	Protect Revenue	Quick undo to return production to working state