

Let's increase business in our company using CI/CD

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

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What is Continuous Integration and Continuous Deployment (CI/CD)?

- ▶ **Continuous Integration:** “The practice of merging all developers' working copies to a shared mainline several times a day”. *Some common CI-related phases might include:[1]*

- 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”. *Some common CD-related phases might include:[1]*

- Creating infrastructure
- Provisioning servers
- Copying files
- Promoting to production
- Smoke Testing (aka Verify)
- Rollbacks

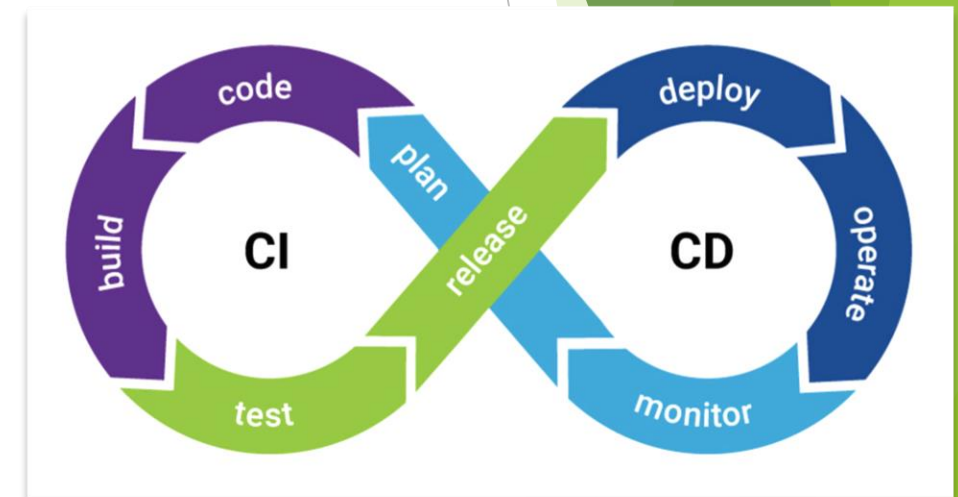


Figure 1: CI/CD [2]

CI/CD Pipeline

The CI/CD Pipeline

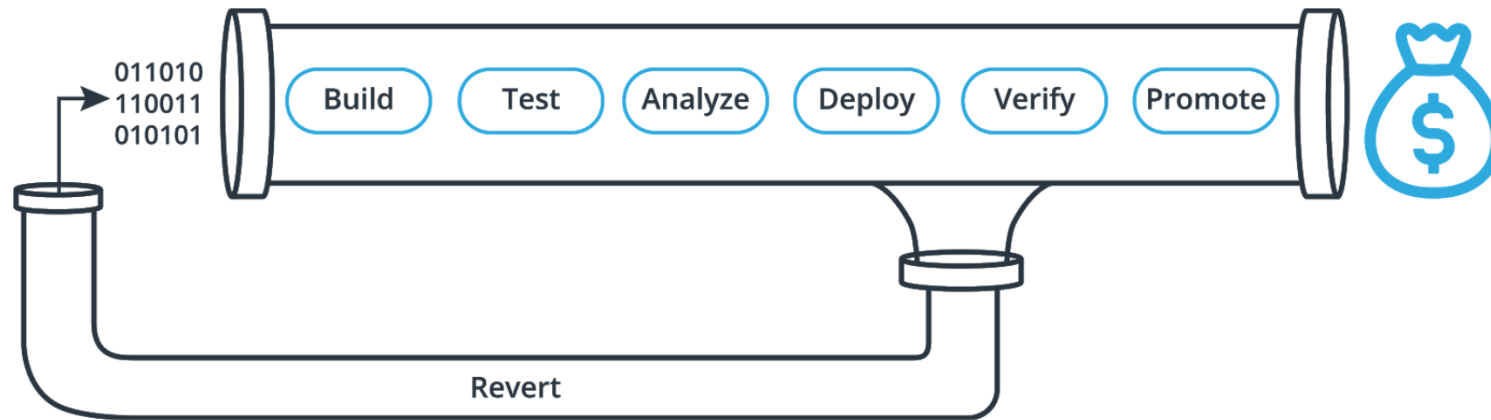


Figure 2: The Phases of CI/CD Pipeline [1]

- **Pipeline:** “A set of data processing elements connected in series, where the output of one element is the input of the next one.” [1]

Benefits can CI/CD add to our company

The following table from **Udacity** shows the mapping of technical benefits to business benefits.

Technical Language	Value	Translation (business Language)
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

Resources

- ▶ [Cloud DevOps Engineer - Udacity](#)
- ▶ [What Is CI/CD and How Does It Work? | Synopsys](#)