

CI/CD Business Proposal

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Overview

- What is CI/CD
- CI/CD Technical Benefits
- CI/CD Business Benefits
- CI/CD Pipeline

What is CI/CD

- CI/CD is part of DevOps and refers to a set of practices for integrating and delivering code changes frequently in an automated and reliable way
- CI (which means Continuous Integration) refers to the practice of merging code changes frequently, building and testing them in an automated way. This involves different steps such as -
 - Compile/Build
 - Code validation and Unit tests
 - Static Analysis
 - Store Artifact

What is CI/CD

- CD (which means Continuous Deployment) refers to the approach that aims at delivering the application through frequent deployments. This involves steps such as –
 - Creating Infrastructure
 - Provisioning Infrastructure
 - Copying files (deploying application files/artifacts)
 - Smoke tests
 - Rollbacks
 - Promoting to Production

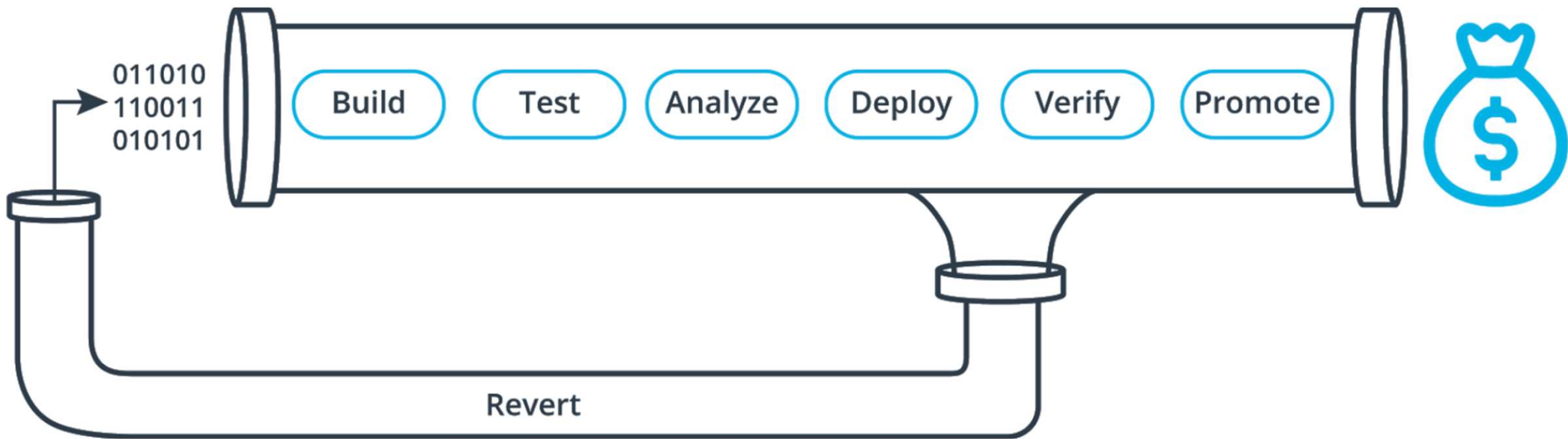
CI/CD Technical Benefits

- Catch Build errors early after merging which has the effect of reducing developer time on issues that arise from new code
- Catch unit test failures early which has the effect of reducing bugs in production
- Detect security vulnerabilities early on which can be very costly if caught in production
- Automate Infrastructure Creation and Provisioning which reduces the human errors and the cost
- Faster and more frequent deployments

CI/CD Business Benefits

- Reduces cost or avoids costs by eliminating human errors
- Increases revenue
- Helps protect business reputation

The CI/CD Pipeline



CI/CD Pipeline

Stage	Description
Build	Everything that has to do with making code executable in production (e.g. Compile). The goal is to produce an artifact.
Test	All automated tests that verify at the code level.
Analyze	Any static analysis on the code or checking of dependencies.
Deploy	Anything to do with creating server instances or copying pre-built application files to an instance.
Verify	Any tests that can be run against a running instance of the application, often against a pre-production instance.
Promote	Replacing the current production environment with the new version which was just built and deployed.
Revert	Rolling back or undoing changes in case any verification fails after deployment.