# Fundamentals of CI/CD

Continuous Integration

- *The practice of merging all developers' working copies to a shared mainline several times a day. It's the process of "**Making**". Some common CI-related phases 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. Everything related to deploying the artifact fits here. Some common CD-related phases might include:*
  - Creating infrastructure
  - Provisioning servers
  - Copying files
  - Promoting to production
  - Smoke Testing (aka Verify)
  - Rollbacks

The CI/CD Pipeline
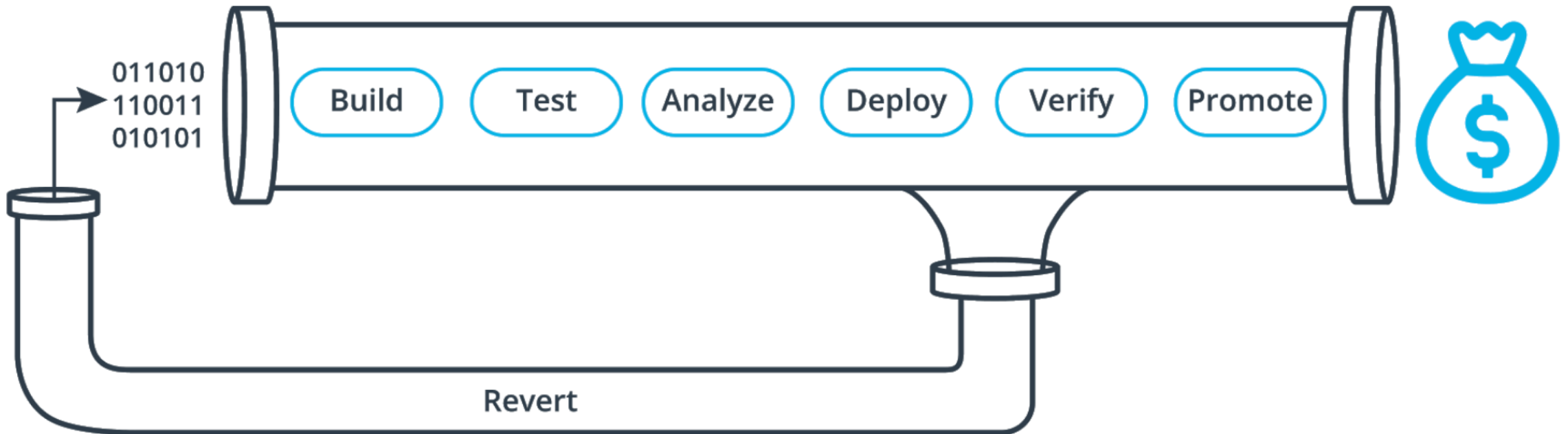
Benefits of CI/CD

Smaller code changes

Error Isolation

Reduced deploy errors

More reliable tests

Faster release rate

Increase accountability and transparency

Smaller backlog

Faster error resolution time

Customer satisfaction

Team satisfaction

Easy maintenance and updates