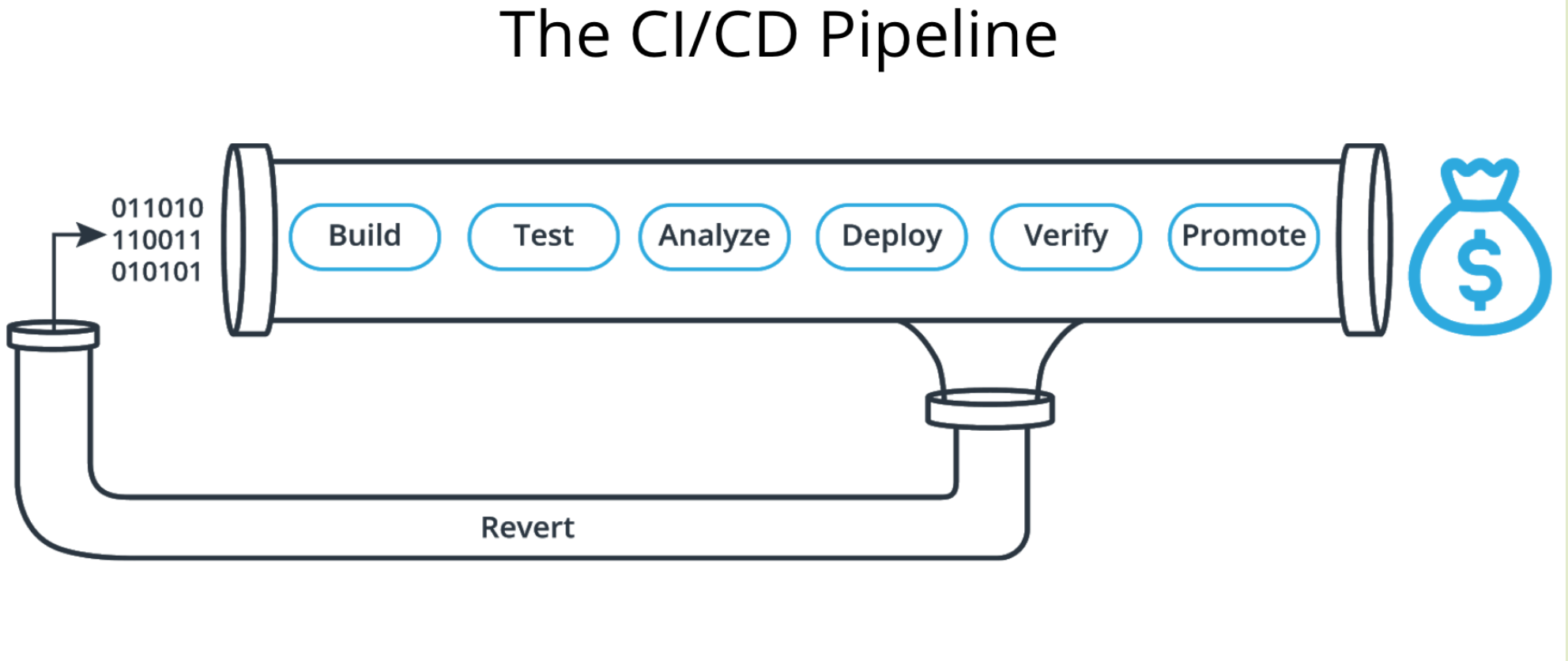
Fundamentals and Benefits of CI/CD in achieving, building and deploying automation of cloud-based software products.

Fundamentals of CI/CD

- CI/CD (Continuous Integration/Continuous Deployment) is a set of development practice aimed at automating the building, testing and deployment of applications.
- CI (Continuous Integration) is the practice of merging all developers' working copies to a shared mainline. This is where codes are made into highly deployable artifact. Phases in CI includes: compile, test, analyze etc.
- CD (Continuous Deployment) is a software engineering approach in which the value is delivered frequently through automated deployments. This process involves moving the artifact into spotlight. Common phases include: smoke tests, rollbacks, provisioning etc.
- Continuous Delivery: This is an engineering practice in which teams produce and release value in short cycles.



Continuous Integration + Continuous Deployment = Continuous Delivery

Benefits of CI/CD

Employing the usage of CI/CD in delivering our products not only helps protect and increase revenue but also reduces and avoid cost. Some the ways this can be achieved are:

- Catch compile errors after merge, reducing cost
- Detect securities vulnerabilities, preventing costly security holes
- Automate infrastructure creation i.e. less human errors, faster deployments
- Automate infrastructure cleanup i.e. less infrastructure costs from unused resources
- Increase revenue by deploying to production without manual checks
- New value-generating features released quickly, thereby increasing revenues