

CI/CD Pipelines

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Agenda

- ❖ What is CI
- ❖ What is CD
- ❖ Benefit

What is CI

- Continuous integration is all about the source code.
- New changes to the code need to be validated, verified, exercised, worked over, massaged and squeezed to see if there are leaks. We do this by compiling, transpiling, linting, running unit tests, performing static analysis, checking dependencies for security vulnerabilities and other things.

- Example:

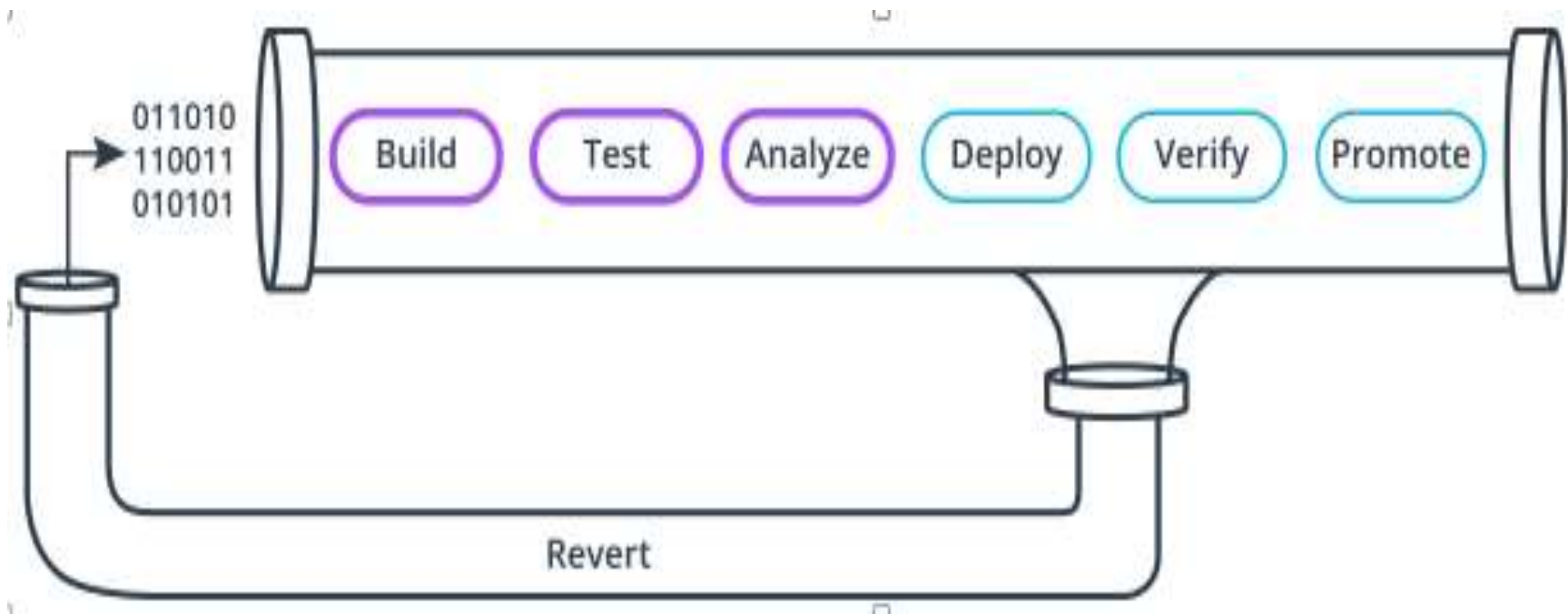
When multiple developers are working on same project we would end up multiple working copies. All these copies of the code are integrated into a single mainline. This process is called Continuous Integration.

Some command CI-related might include

- Compile
- Unit Test
- Static Analysis
 - Dependency vulnerability testing
 - Store artifact

What is CD

- Continuous deployment is all about built code and deployment.
- Once the source code has been built in CI, we're ready to ship it to servers and devices either in the same network or elsewhere. Depending on your team's delivery process and deployment strategy, you might deploy to a staging or pre-production server for final testing or you might deploy to production right away.
- Before doing so, CD can run scripts to prepare the infrastructure, run smoke tests, and handle rollbacks and reverts if something doesn't go as planned.



CI/CD Phases/Flow

- **Benefits:**

Highest Priority When the Build is Broken

Trusted Members of the Team

Have the Same Abilities as any Member of the Team

Enforce Team Quality Rules

Communicate Useful Information

Shorten Feedback Loops

Don't Require Stacks of Documentation

We no longer need to rely on humans to perform the job of gatekeeper.

Reduce the gaps between different teams and avoid any miscommunication between them

(developers and operations teams)

- We would have transparency on tools and versions of the code.

- We would know the if the tests has passed.

- We would know the current state of production.

- Control to define the process in the production.

Clarity on above items provides the confidence to move into production with confidence.