Fundamentals and Benefits of CI/CD

1- Definition of CI
2- Definition of CD
3- Benefits of CI/CD

SUMMARY

What is Continuous integration (CI)

The practice of merging all developers' working copies to a shared mainline several times a day. It's the process of **Making**. *Everything related to the code fits here, and it all culminates in the ultimate goal of CI: a high quality, deployable artifact! Some common CI-related phases might include:*

- Compile

- Unit Test

- Static Analysis

- Dependency vulnerability testing

- Store artifact

- **is intended to produce benefits such as <u>bugs</u> are detected early and are easy to track down due to small change sets. This saves both time and money over the lifespan of a project**

What is Continuous Development (CD)

A software engineering approach in which the value is delivered frequently through automated deployments. Everything related to deploying the artifact fits here. It's the process of "Moving" the artifact from the shelf to the spotlight. Some common CD-related phases might include:

• Creating infrastructure

• Provisioning servers

• Copying files

• Promoting to production

• Smoke Testing (aka Verify)

• Rollbacks

• **is intended to** Accelerated Time to Market: CD lets an organization deliver the business value inherent in new software releases to customers more quickly. This capability helps the company stay a step ahead of the competition.

The CI/CD Pipeline
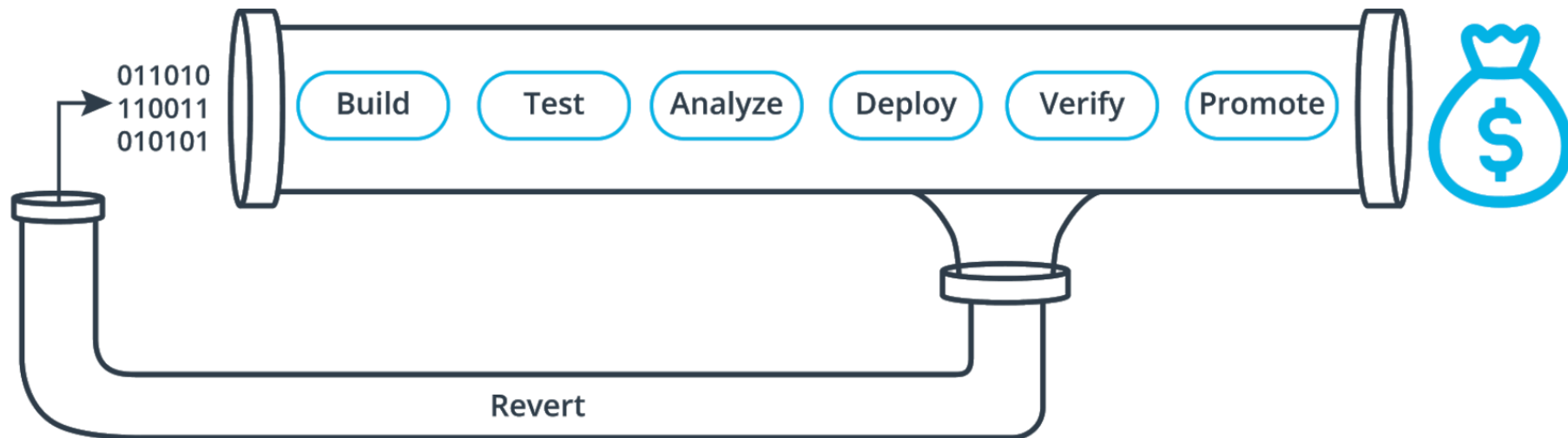
What are the benefits of CI/CD?

1.   Smaller code changes

2.   Error Isolation

3.   Reduced deploy errors

4.   More reliable tests

5.   Faster release rate

6.   Increase accountability and transparency

7.   Smaller backlog

8.   Faster error resolution time

9.   Customer satisfaction

10.   Team satisfaction

11.   Easy maintenance and updates