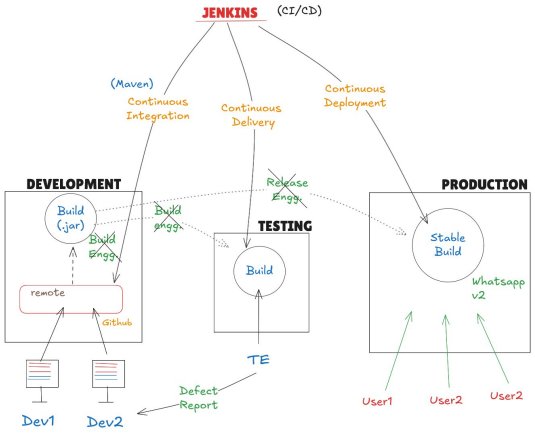

Drawbacks:

1. The whole process was time consuming.
2. It is less efficient.
3. Everything was done manually.
4. Repetitive task.
5. Involve manual errors.
6. Speed of software delivery was very less.

→ To overcome these drawbacks, we automate the build & release process with the help of CI/CD.

CONTINUOUS INTEGRATION

>> It is a fully automated process of collecting the source code from the development server/code-base & generating the build with the help of build tools on continuous basis.

CONTINUOUS DELIVERY

>> It is a semi-automated process of preparing the build ready to be installed in the testing server.

↘ because the build can be tested either manually or testing van be automated and since manual intervention is there, we can not conclude that it is a fully automated process.

CONTINUOUS DEPLOYMENT

>> It is a fully automated process of deploying the stable/final build into the production server on continuous basis.

INTRODUCTION TO JENKINS

>> Jenkins is a free & an open-source CI/CD tool that helps us to automate the process of generating the build, testing and deploying it.

>> CI/CD helps us to regularly update & release our source code without any manual intervention & helps us automating the process of managing the application.

>> Since it was developed using JAVA language, the pre-requisite of using Jenkins is 'jdk'

-- Only JDK-17 or JDK-21 should be available.
-- Open Command Prompt -> java --version

>> Jenkins will be accessed directly through the browser, because it is a web-based application and is accessed on 'localhost:8080'.

>> Default port for Jenkins is '8080', because port 80 often required admin rights, to resolve this issue, Jenkins uses port 8080.

HISTORY OF JENKINS

1. 2004: Kohusuke Kawaguchi was developing a project called as 'Hudson' to automate the process of build generation & testing.
2. 2010: Oracle acquired Sun Microsystems & there was a conflict between the Hudson community & the Oracle due to acquisition.
3. 2011: Hudson community forked their own project & renamed it as 'Jenkins' & released it as a free & open-source software.

FEATURES OF JENKINS

1. Free & open-source.
2. User-friendly.
3. We have many plugins available which can be used to extend the functionality of Jenkins.
4. Supports authentication & authorization, hence making our pipelines more secure.
5. It can easily integrated with any type of software- git, maven, gradle, java ,etc.
6. Master-slave architecture that provides scalability.
7. Supports pipeline as a code.

↘ define the pipeline/the work using a code-file.

MASTER -> Controller- manages the resources, assigns & co-ordinated the task.

SLAVE -> executes the tasks, and task are assigned by the MASTER.