Jenkins

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Jenkins Intro

- One of the most popular DevOps tools
- Key DevOps CI/CD tool
- Automate builds and deployments
- Open source with 1400 plugins

What is Jenkins?

- Jenkins is an opensource continuous integration (CI) and Continuous delivery (CD) tool written Java

- It is a automation server used to build and delivery software projects

- Jenkins was forked from other project called Hudson

- A major benefit using Jenkins, that it has lot of plugins

- Other Alternate solution for CI is also available, since Jenkins is opensource and widely accepted product in the industry.

What is CI/CD?

- Continuous Integration(CI) is a DevOps software development practice where developers regularly merge their code changes in the central repository, after which automated build and run test. CI most often refers to build or integration stage of software and run the unit tests on the new code changes immediately surface any errors

- Continuous Delivery (CD) is a software engineering approach in which teams produce software in short cycles, ensuring that the software can be reliably released at any time
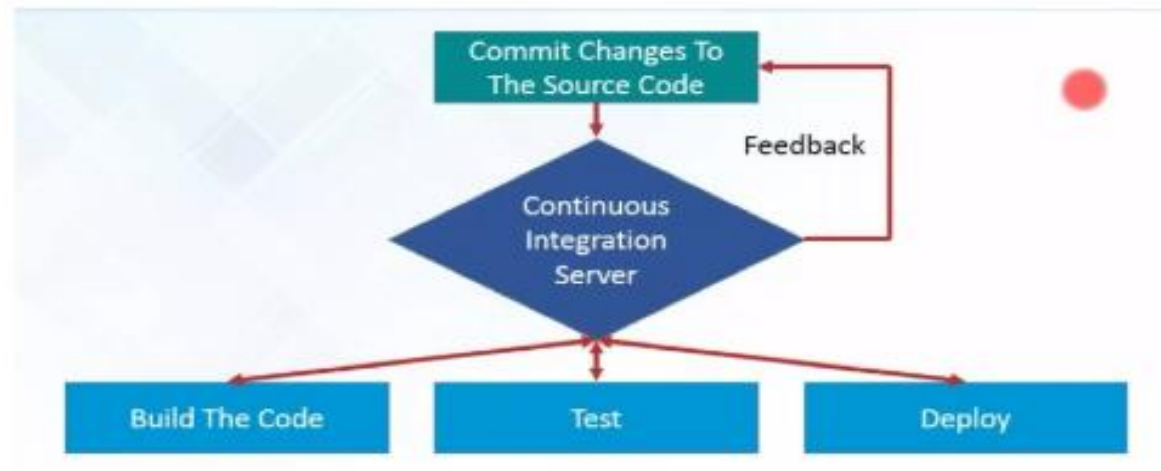
SDLC
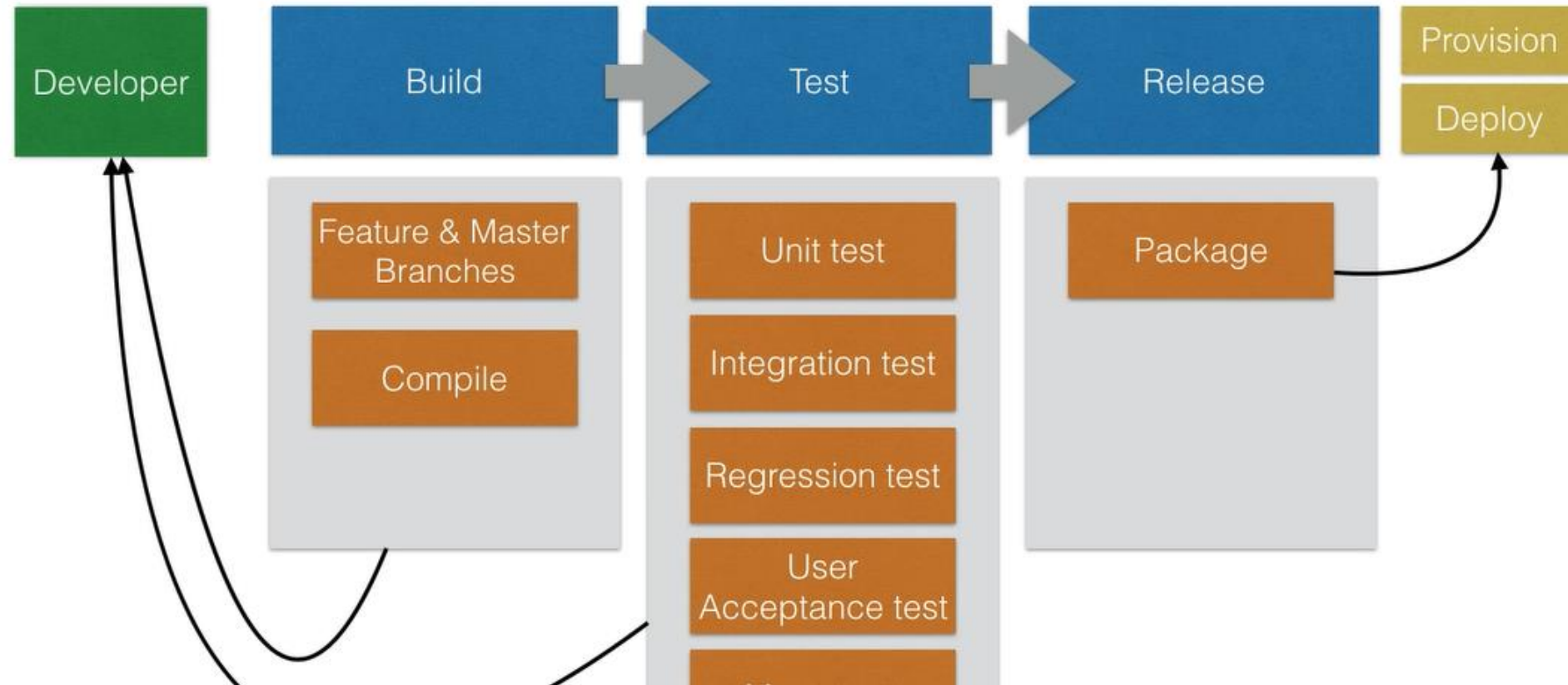
CI
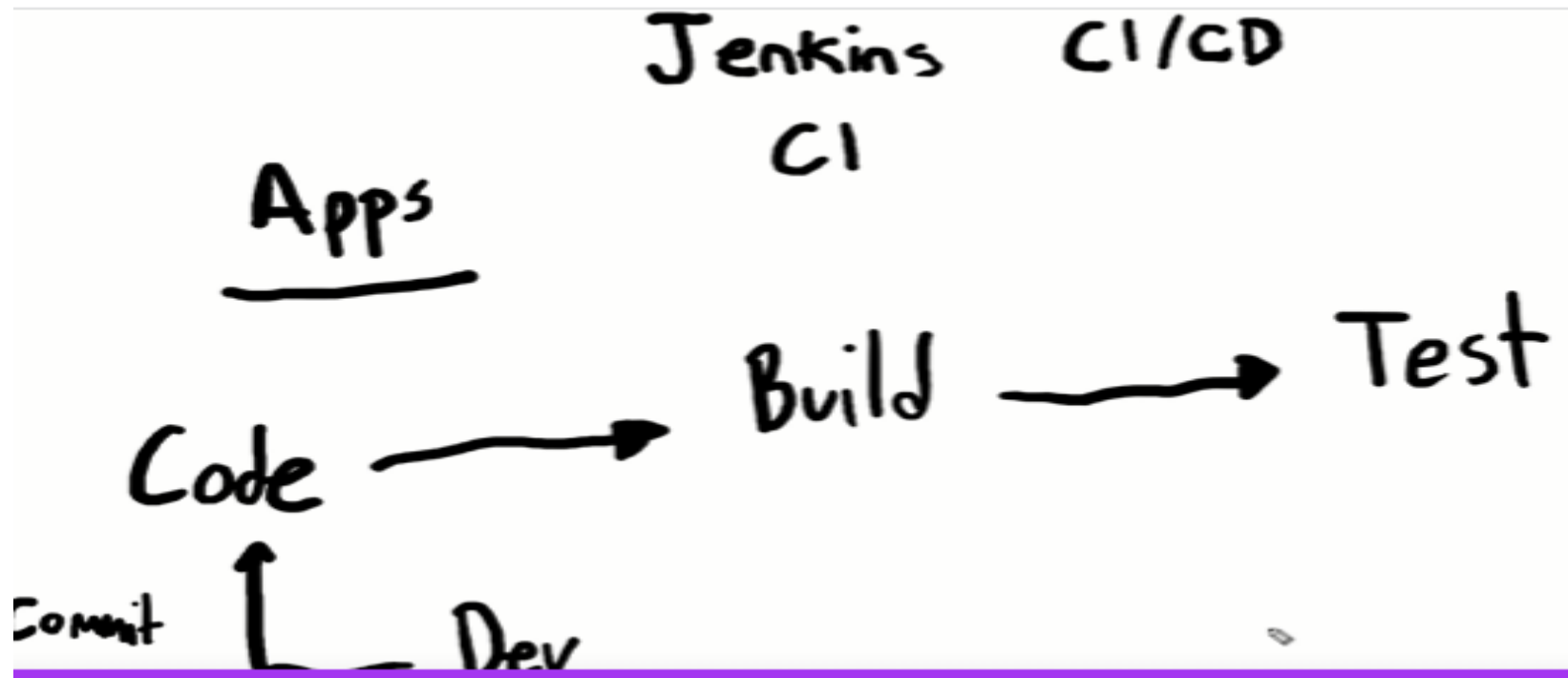
What is Continuous Integration

- Continuous Integration is a development practice in which developers are required to commit changes to source code in a shared repository several times a day. Every commit is then build and this allows the teams to detect problems early.

- It then bring following benefits to software development:

1) Catch issues fast and nip them in the bud.

2) Everyone can see what's happening.

3) Automate the build.

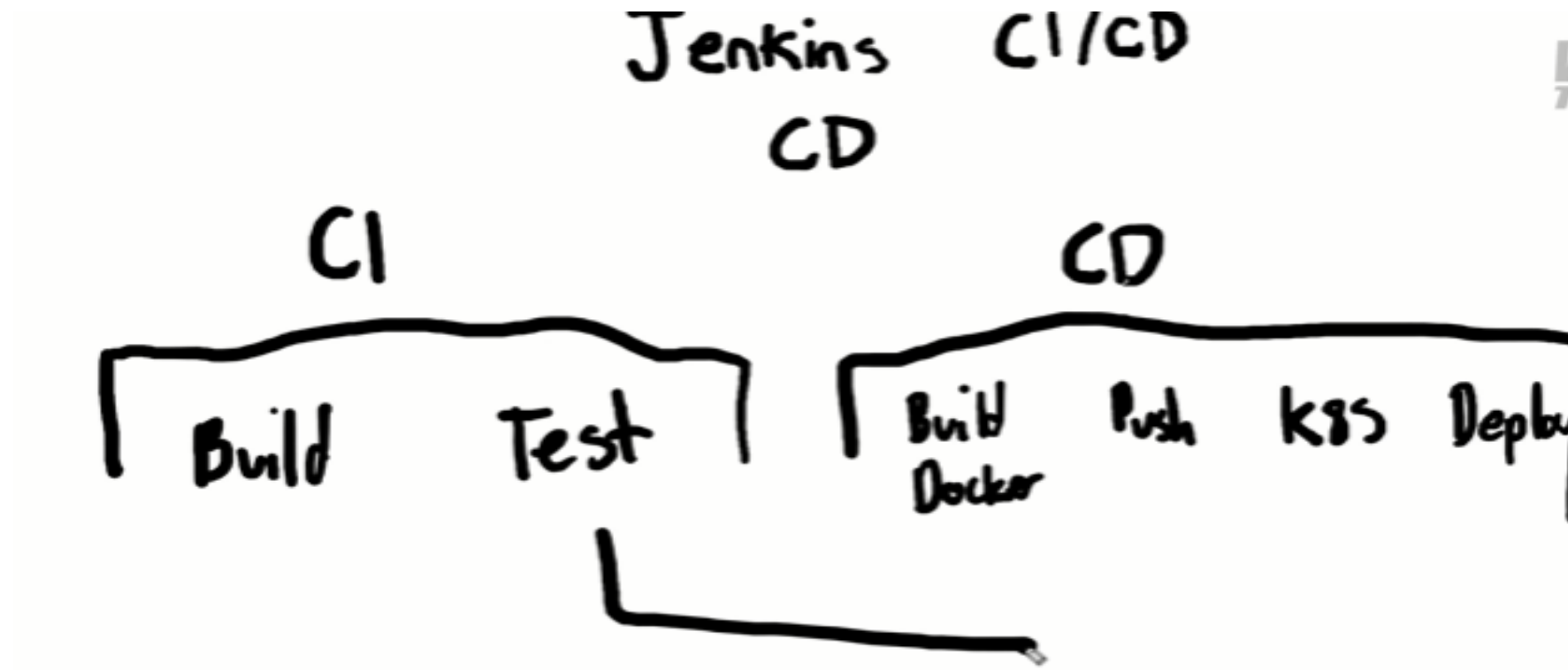4) Continuous Integration leads to Continuous Deployment allowing us to deliver software more rapidly.

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What is Continuous Integration...

CD

Prerequities

Installing and Configuring Jenkins

JDK	JDK 1.7 or above
Memory	2 GB RAM (recommended)
Disk Space	No minimum requirement. However, all builds will be stored on the Jenkins machines, it has to be ensured that sufficient disk space is available for build storage.
Operating System Version	Jenkins can be installed on Windows, Ubuntu/Debian, Red Hat/Fedora/CentOS, Mac OS X, openSUSE, FReeBSD, OpenBSD, Gentoo.
Java Container	The WAR file can be run in any container that supports Servlet 2.4/JSP 2.0 or later.(An example is Tomcat 5).

Install Jenkins

- On ubuntu/Debian

```
curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee \
  /usr/share/keyrings/jenkins-keyring.asc > /dev/null
echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
  https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install Jenkins
```

- Using docker https://www.jenkins.io/doc/book/installing/docker/

Unlocking Jenkins

- When you first access a new instance, you asked to unlock it using an automatically-generated password

- Browse to http://<ip address of Jenkins vm>:8080 and wait until Unlock Jenkins page appear

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log (not sure where to find it?) and this file on the server:

/var/jenkins_home/secrets/initialAdminPassword

Please copy the password from either location and paste it below.

Administrator password

Unlock Jenkins

- The command: sudo cat /var/lib/jenkins/secrets/initialAdminPassword will print the password at console.

- If you are running Jenkins in Docker using the official jenkins/jenkins image you can use sudo docker exec ${CONTAINER_ID or CONTAINER_NAME} cat /var/jenkins_home/secrets/initialAdminPassword to print the password in the console without having to exec into the container.

- On the Unlock Jenkins page, paste this password into the Administrator password field and click Continue.