



All About Jenkins



● Jenkins

- Jenkins is an open-source project written in Java, that runs on Windows, macOS, and other Unix-like OS. It is a free community supported and might be your first choice tool for CI (Continuous Integration).
- Jenkins automates the entire software development life cycle.
- Jenkins was originally developed by Sun Microsystem in 2004 under the name Hudson.
- The project was later named Jenkins when oracle bought Microsystems.
- It can run on any major platform without any compatibility issues.

- Wherever developers write code, we integrate all that code and then build, test, and deliver/deploy to the client. This process is called CI/CD.
- Because of CI, bugs will be reported fast and get rectified fast. So the entire software development happens fast.

● Workflow of Jenkins

- We can attach Git, Maven, Selenium, and Artifactory plugins to Jenkins.
- Once developers put code in GitHub, Jenkins pulls that code and sends it to Maven for Build or other build tools.
- Once the build is done, Jenkins pulls that code and sends it to Selenium for testing.
- Once testing is done, Jenkins will pull that code and send it to Artifactory as per requirement.
- We can also deploy with Jenkins.

● Advantages of Jenkins

- It has a lot of plugins available.
- You can write your plugin.
- You can use community plugins.
- Jenkins is not just a tool. It is a framework, i.e. you can do whatever you want. All you need is just plugins.
- We can attach slaves (nodes) to Jenkins's master. It instructs others (slaves) to do Jobs. If slaves are not available, Jenkins itself does the Job.
- Jenkins also behaves as a Cron Server replacement, i.e- can do the scheduled task.
- It can create Labels.

● What is Node

- A machine that is part of the Jenkins environment and capable of executing Pipelines or jobs. Both the Controller and Agents are considered to be Nodes.

● What is an Agent in Jenkins

- An agent is typically a machine, or container, which connects to a Jenkins controller and executes tasks when directed by the controller

● What is Pipeline - A pipeline is a collection of steps or jobs which are interlinked with one another in a sequence.

Declarative: Declarative is a more recent and advanced implementation of a pipeline as a code.

Scripted: Scripted was the first and most traditional implementation of the pipeline as a code in Jenkins. It was designed as a general-purpose DSL (Domain Specific Language) built with Groovy.

Install Jenkins

Best site: <https://www.jenkins.io/doc/book/installing/linux/>

Update Your Ubuntu

```
sudo apt update
```

Install java

```
sudo apt install openjdk-11-jre
```

Add keys

```
wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key |sudo gpg --dearmor -o /usr/share/keyrings/jenkins.gpg  
sudo sh -c 'echo deb [signed-by=/usr/share/keyrings/jenkins.gpg] http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenk
```

Update packages again

```
sudo apt update
```

Install Jenkins

```
sudo apt install jenkins
```

Check Jenkins status

```
sudo systemctl status jenkins
```