

Jenkins

*Installation

Ubuntu:-

Java Installation:

- `sudo apt update`
- `sudo apt install openjdk-8-jdk`

Jenkins Repo:

- `wget -q -O - https://pkg.jenkins.io/debian/jenkins.io.key | sudo apt-key add -`

Add repo to system :

- `sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'`

Install Jenkins:

- `sudo apt update`
- `sudo apt install Jenkins`

Verify:

- `sudo apt install Jenkins`

Access:

- `http://localhost:8080`

*Different Types of Jenkins Jobs:-

1. Freestyle

Freestyle build jobs are general-purpose build jobs, which provides maximum flexibility. It can be used for any type of project.

2. Pipeline

This project runs the entire software development workflow as code. Instead of creating several jobs for each stage of software development, you can now run the entire workflow as one code.

3. Multiconfiguration

The multiconfiguration project allows you to run the same build job on different environments. It is used for testing an application in different environments.

4. Folder

This project allows users to create folders to organize and categorize similar jobs in one folder or sub folder.

5. GitHub Organization

This project scans your entire GitHub organization and creates Pipeline jobs for each repository containing a Jenkinsfile

6. Multibranch pipeline

This project type lets you implement different Jenkinsfiles for different branches of the same project.

***Jenkins Pipeline**

Jenkins pipeline is a single platform that runs the entire pipeline as code. Instead of building several jobs for each phase, you can now code the entire workflow and put it in a Jenkins file.

Scripted Pipeline :-

```
node {  
    scripted pipeline code  
}
```

Declarative Pipeline :-

```
pipeline {  
    declarative pipeline code  
}
```

***Start, stop and restart Jenkins**

- `sudo service jenkins restart`
- `sudo service jenkins stop`
- `sudo service jenkins start`

***Pipeline Concepts**

1. **Pipeline**: A user defined block which contains all the stages. It is a key part of declarative pipeline syntax.
2. **Node**: A node is a machine that executes an entire workflow. It is a key part of the scripted pipeline syntax.
3. **Agent**: instructs Jenkins to allocate an executor for the builds. It is defined for an entire pipeline or a specific stage.
4. **Stages**: It contains all the work; each stage performs a specific task.
5. **Steps**: steps are carried out in sequence to execute a stage

***Jenkins Pipeline Example**

```
node {  
    stage('SCM checkout') {  
        //Checkout from your SCM(Source Control Management)  
        //For eg: Git Checkout  
    }  
    stage('Build') {  
        //Compile code  
        //Install dependencies  
        //Perform Unit Test, Integration Test  
    }  
    stage('Test') {  
        //Resolve test server dependencies  
        //Perform UAT  
    }  
    stage('Deploy') {  
        //Deploy code to prod server  
        //Solve dependency issues  
    }  
}
```