**Jenkins**

**Continuous Integration &**

**Continuous Delivery/Deploy**

 Whenever developers write code, we integrate all that code of all

developers at that point of time and we build, test and

deliver/deploy to the client. This process is called CI & CD.

 Jenkins helps in achieving this.

 So instead of doing night builds, build as and when commit occurs

by integrating all code in SCM tool, build, test and checking the

quality of that code is what Continuous Integration.

 So in a day, there will be so many integrations, builds, tests &

deliveries/deployments.

 So bugs will be reported fast and get rectified fast. So

development happens fast.

**Key Terminology**

 **Integrate**: Combine all code written by developers till some point

of time.

 **Build**: Compile the code and make a small executable package.

 **Test**: Test in all environments whether application is working

properly or not.

 **Archived**: Stored in an artifactory so that in future we may

use/deliver again.

 **Deliver** : Handing the product to Client **Deploy**: Installing product in client's machines.

**Jenkins work flow**

 We attach Git, Maven, Selenium & Artifactory plug-in's to Jenkins.

 Once Developers put code in Git, Jenkins pull that code & send to

Maven for build.

 Once build is done, Jenkins pull that built code and send to

selenium for testing

 Once testing is done, then Jenkins will pull that code and send to

artifactory as per requirement and so on....

 We can also deploy with Jenkins

**Ways of Continuous Integration**

 Can do manually

 Can write scripts

 Can use tool like Jenkins

 Benefits of CI

 Detect bugs as soon as possible

 If you want you can stop the SDLC process at any stage

 Eg: You can stop at test stage only or you can continue till

deployment.

 Maintains history (Logs) for reference**Why only Jenkins?**

 It has so many plug-ins.

 You can write your own plug-in

 You can use community plug-ins

 Jenkins is not just a tool. It is a framework. i.e. You can do what

ever

 You want. All you need is plug-ins.

 We can attach slaves (nodes) to Jenkins master. It instructs others

(slaves) to do Job. If slaves are not available, Jenkins itself does

the job.

 Jenkins also acts as crone server replacement. i.e. can do

repeated tasks automatically

 Running some scripts regularly

o Eg: Automatic daily alarm.

 Can create Labels (Can restrict where the project has to run)

**Jenkins**

 Jenkins Architecture

 Client-Server model

 When you install Jenkins it acts as master.

 Jenkins invoke clients to perform jobs.

**Supported OS**

 Can install in any OS

 You will be accessing Jenkins through web only. Choose Long Term Support release (to get support)

 Install Java

 Install web server

**Jenkins**

 Enterprise edition - Hudson

 Open source – Jenkins

**Three types of configurations**

 Global Configuration

 Node Configuration

 Job Configuration

**Jenkins**

 Get familiar with Jenkins dashboard

 Jenkins services on windows

 localhost:8080/restart

 localhost:8080/stop

 localhost:8080/start

 Create sample job & familiar with all options & build.

 Job/Project/Item: Projects are sometimes referred to as jobs or

items. Jenkins appears to use these terms interchangeably.

 Workspace: The workspace is the location in your computer

where Jenkins places all files related to the Jenkins project. By

default each project or job is assigned a workspace location and it contains Jenkins-specific project metadata, temporary files like

logs and any build artifacts, including transient build files.

**Plugin**

 With Jenkins, nearly everything is a plugin and that nearly all

functionality is provided by plugins. You can think of Jenkins as

little more than an executor of plugins.

 Plugins are small libraries that add new abilities to Jenkins and can

provide integration points to other tools.

 Since nearly everything Jenkins does is because of a plugin,

Jenkins ships with a small set of default plugins -- some of which

can be upgraded independently of Jenkins