**Jenkins**

**Add and Manage user role :**

[**https://www.youtube.com/watch?v=QvFungzXI5s**](https://www.youtube.com/watch?v=QvFungzXI5s)

**What is Jenkins?**

Jenkins is an open source automation tool written in Java with plugins built for Continuous Integration purpose.  Jenkins is used to build and test your software projects continuously making it easier for developers.

* First, a developer commits the code to the source code repository. Meanwhile, the Jenkins server checks the repository at regular intervals for changes.
* Soon after a commit occurs, the Jenkins server detects the changes that have occurred in the source code repository. Jenkins will pull those changes and will start preparing a new build.
* If the build fails, then the concerned team will be notified.
* If built is successful, then Jenkins deploys the built in the test server.
* After testing, Jenkins generates a feedback and then notifies the developers about the build and test results.
* It will continue to check the  source code repository for changes made in the source code and the whole process keeps on repeating.

### ****What are the benefits of using Jenkins?****

* At integration stage, build failures are cached.
* For each change in the source code an automatic build report notification is generated.
* To notify developers about build report success or failure, it is integrated with LDAP mail server.
* Easy tracking of bugs at early stage in development environment than production.

**LDAP** (Lightweight Directory Access Protocol)

### ****What are the pre-requisites for using Jenkins?****

Sorce code repository (Git) and working script (maven sript)

### ****Mention what are the commands you can use to start Jenkins manually?****

To start Jenkins manually open Console/Command line, then go to your Jenkins installation directory. Over there you can use the below commands:

To start Jenkins: **jenkins.exe start**

To stop Jenkins: **jenkins.exe stop**

To restart Jenkins: **jenkins.exe restart**

### ****Explain how you can set up Jenkins job?****

Explain how we create a jenkins job.

### ****Explain how to create a backup and copy files in Jenkins?****

To create a backup all you need to do is to periodically back up your JENKINS\_HOME directory. This contains all of your build jobs configurations.

-If you want to create a back-up of your Jenkins setup, just copy the directory that saves all the setting, build artifacts and logs of Jenkins in its home directory. You can also copy a job directory to clone or replicate a job or rename the directory.

### ****How will you secure Jenkins?****

* Ensure global security is on.
* Ensure that Jenkins is integrated with my company’s user directory with appropriate plugin.
* Ensure that matrix/Project matrix is enabled to fine tune access.
* Automate the process of setting rights/privileges in Jenkins with custom version controlled script.
* Limit physical access to Jenkins data/folders.
* Periodically run security audits on same.

**Explain how you can deploy a custom build of a core plugin?**

Below are the steps to deploy a custom build of a core plugin:

* Stop Jenkins.
* Copy the custom HPI to **$Jenkins\_Home/plugins**.
* Delete the previously expanded plugin directory.
* Make an empty file called **<plugin>.hpi.pinned**.
* Start Jenkins.

### ****What is the relation between Hudson and Jenkins?****

You can just say Hudson was the earlier name and version of current Jenkins.

### ****What you do when you see a broken build for your project in Jenkins?****

**There can be multiple answers to this question I will approach this task in the following way:**

**I will open the console output for the broken build and try to see if any file changes were missed. If I am unable to find the issue that way, then I will clean and update my local workspace to replicate the problem on my local and try to solve it.**

### ****Explain how you can move or copy Jenkins from one server to another?****

* Move a job from one installation of Jenkins to another by simply copying the corresponding job directory.
* Make a copy of an existing job by making a clone of a job directory by a different name.
* Rename an existing job by renaming a directory. Note that if you change a job name you will need to change any other job that tries to call the renamed job.

### ****What are the various ways in which build can be scheduled in Jenkins?****

You can schedule a build in Jenkins in the following ways:

* By source code management commits
* After completion of other builds
* Can be scheduled to run at specified time ( crontab )
* Manual Build

### ****What is the difference between Maven, Ant and Jenkins?****

Maven and Ant are Build Technologies whereas Jenkins is a continuous integration tool.

### ****What is Jenkinsfile and what it does?****

It is a text file which in turn checked into a project source control repo.

### ****Can you write a simple Jenkins Pipeline Code for Java?****

Jenkinsfile (Declarative Pipeline)  
pipeline {  
    agent { docker 'maven:3.3.3' }  
    stages {  
        stage('build') {  
            steps {  
                sh 'mvn --version'  
            }  
        }  
    }  
}

**What is the agent directive in Jenkins?**

The agent directive tells Jenkins where and how to execute the Pipeline, or subset thereof.

**What are CI Tools?**

Jenkins,TeamCity,Travis CI,Go CD,Bamboo,GitLab,CICircleCI,Codeship

**Projects :**

[**https://www.javaworld.com/article/3123117/development-tools/open-source-java-projects-jenkins-with-docker-part-1.html**](https://www.javaworld.com/article/3123117/development-tools/open-source-java-projects-jenkins-with-docker-part-1.html)

<https://jenkins.io/doc/tutorials/build-a-java-app-with-maven/>

[**https://codingcompiler.com/jenkins-interview-questions-answers/**](https://codingcompiler.com/jenkins-interview-questions-answers/)

[**https://www.wisdomjobs.com/e-university/jenkins-interview-questions.html**](https://www.wisdomjobs.com/e-university/jenkins-interview-questions.html)

[**https://www.javabykiran.com/interview/selenium-testing/jenkins-interview-questions.php**](https://www.javabykiran.com/interview/selenium-testing/jenkins-interview-questions.php)

[**https://www.javaworld.com/article/3123117/development-tools/open-source-java-projects-jenkins-with-docker-part-1.html**](https://www.javaworld.com/article/3123117/development-tools/open-source-java-projects-jenkins-with-docker-part-1.html)

[**https://jenkins.io/doc/tutorials/build-a-java-app-with-maven/**](https://jenkins.io/doc/tutorials/build-a-java-app-with-maven/)

[**https://jenkins.io/doc/book/pipeline/**](https://jenkins.io/doc/book/pipeline/)

**deploying java application with jenkins configuration**