



Hope Foundation's
Finolex Academy of Management and Technology, Ratnagiri
Information Technology Department

Subject name: DevOps Lab			Subject Code: ITL803
Class	BE IT	Semester – VIII (CBCGS)	Academic year: 2019-20
Name of Student	Kazi Jawwad A Rahim		QUIZ Score : 10 / 10
Roll No	28	Assignment/Experiment No.	02
Title: Install and configure Jenkins with necessary plugin			

1. Course objectives applicable

LOB1: To be familiarized with Jenkins, which is used to build & test software Applications & Continuous integration in DevOps environment.

2. Course outcomes applicable:

LO2: Students understood the installations of Jenkins and its uses

3. Learning Objectives:

1. To understand the CI/CD tool called Jenkins
2. To know the installations of Jenkins on Fedora 30 os.

4. Practical applications of the assignment/experiment: To automate the several tasks such as automatic building the code ,deploying the code and notifying the developer about build status via sms/email etc

5. Prerequisites:

1. Familiar with Linux os
2. Internet Access
3. Knowledge of CI/CD

6. Hardware Requirements:

1. Internet Access with Browser
2. Access to root privileges

7. Software Requirements:

Browser like Chrome, Internet Explorer Edge

8. Quiz Questions (if any): (Online Exam will be taken separately batchwise, attach the certificate/ Marks obtained)

1. What is CI/CD?
2. What are the different CI/CD tools ?
3. What is the Jenkins?

9. Experiment/Assignment Evaluation:

Sr. No.	Parameters	Marks obtained	Out of
1	Technical Understanding (Assessment may be done based on Q & A or any other relevant method.) Teacher should mention the other method used -		6
2	Neatness/presentation		2
3	Punctuality		2
Date of performance (DOP)		Total marks obtained	10
Date of checking (DOC)		Signature of teacher	



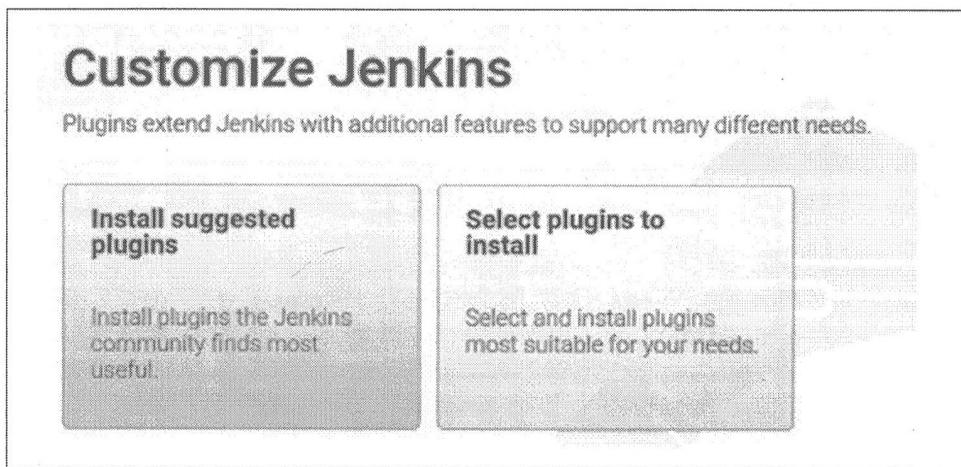
Theory:

Jenkins is the open source automation server. With Jenkins, organizations can accelerate the software development process by automating it. Jenkins manages and controls software delivery process through the entire lifecycle, including building, document, ~~test~~ test, package, stage, deployment, static code analysis and much more.

11. Installation Steps / Performance Steps –

java -jar jenkins.war

1. The initial screen page will ask about the plugin options:



2. Plugins will be installed as per the selected configuration in the preceding option:

The image shows the 'Getting Started' screen of Jenkins. It displays a table of installed plugins. The columns include 'Folders Plugin', 'Formatter Plugin', 'Ant Plugin', 'Gradle Plugin', 'GitHub Branch Source Plugin', 'Pipeline: GitHub Groovy Libraries', 'Pipeline: Stage View Plugin', 'Subversion Plug-in', 'SSH Slaves plugin', 'Matrix Authorization Strategy Plugin', 'LDAP Plugin', 'LDAP Plugin', 'PAM Authentication plugin', 'LDAP Plugin', 'Email Extension Plugin', 'Mailer Plugin', and a long list of dependencies on the right side.

Folders Plugin	Formatter Plugin	Ant Plugin	Gradle Plugin	Github Branch Source Plugin	Pipeline: GitHub Groovy Libraries	Pipeline: Stage View Plugin	Subversion Plug-in	SSH Slaves plugin	Matrix Authorization Strategy Plugin	LDAP Plugin	LDAP Plugin	PAM Authentication plugin	LDAP Plugin	Email Extension Plugin	Mailer Plugin	Plugin
✓ Folders Plugin	✓ OMASP Markup Formatter Plugin	✓ Ant Plugin	✓ Gradle Plugin	✓ GitHub Branch Source Plugin	✓ Pipeline: GitHub Groovy Libraries	✓ Pipeline: Stage View Plugin	✓ Subversion Plug-in	✓ SSH Slaves plugin	✓ Matrix Authorization Strategy Plugin	✓ LDAP Plugin	✓ LDAP Plugin	✓ PAM Authentication plugin	✓ LDAP Plugin	✓ Email Extension Plugin	✓ Mailer Plugin	Folders Plugin ** Structs Plugin ** JUnit Plugin OMASP Markup Formatter Plugin PAM Authentication plugin ** Windows Slaves Plugin ** Display URL API Jenkins Mailer Plugin LDAP Plugin ** Pipeline: Step API ** Script Security Plugin ** SCM API Plugin ** Pipeline: API ** Pipeline: Supporting APIs ** Pipeline: Job ** Token Macro Plugin ** External Monitor Job Twoe ** - required dependency
✓ Timestamper	✓ Workspace Cleanup Plugin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓ Pipeline	✓ GitHub Branch Source Plugin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓ Git plugin	✓ Subversion Plug-in	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
✓ PAM Authentication plugin	✓ LDAP Plugin	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Jenkins 2.60.3

3. After successful installation, the following admin credential creation page will pop up:

Getting Started

Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Jenkins 2.60.3

Continue as admin

Save and Finish

4. Accessing Jenkins: After successful installation, Jenkins can be accessed through a web browser from your local machine as follows:<http://localhost:8080>

The screenshot shows the Jenkins dashboard at <http://localhost:8080>. The top navigation bar includes links for 'Jenkins', 'admin', 'log out', and 'ENABLE AUTO REFRESH'. On the left, there's a sidebar with icons for 'New Item', 'People', 'Build History', 'Manage Jenkins', 'My Views', and 'Credentials'. The main content area features a large 'Welcome to Jenkins!' message with a button to 'Please create new jobs to get started.' Below this, the 'Build Queue' section indicates 'No builds in the queue.' The 'Build Executor Status' section shows '1 Idle' and '2 Idle'. At the bottom, a footer bar displays the page generation time 'Page generated: Sep 13, 2017 3:25:09 PM IST', a 'REST API' link, and the Jenkins version 'Jenkins ver. 2.60.3'.

5. The Manage Jenkins option in the dashboard will provide various options to configure various parameters

The screenshot shows the Jenkins Manage Jenkins interface. On the left, there's a sidebar with links like 'New Item', 'People', 'Build History', 'Manage Jenkins' (which is selected), 'My Views', and 'Credentials'. Below these are sections for 'Build Queue' (empty) and 'Build Executor Status' (two idle executors). The main content area is titled 'Manage Jenkins' and lists several configuration options with icons and descriptions:

- Configure System**: Configure global settings and paths.
- Configure Global Security**: Secure Jenkins; define who is allowed to access/use the system.
- Configure Credentials**: Configure the credential providers and types.
- Global Tool Configuration**: Configure tools, their locations and automatic installers.
- Reload Configuration from Disk**: Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.
- Manage Plugins**: Add, remove, disable or enable plugins that can extend the functionality of Jenkins.
- System Information**: Displays various environmental information to assist trouble-shooting.
- System Log**: System log captures output from java.util.logging output related to Jenkins.
- Load Statistics**: Check your resource utilization and see if you need more computers for your builds.

At the bottom right of the main content area, there's a link 'Activate Windows'.

14. References:

- 1.<https://linuxconfig.org/how-to-install-jenkins-on-redhat-8>
- 2.<https://www.ibm.com/cloud/learn/devops-a-complete-guide#toc-what-is-de-pMY50L7C>



Learning Outcomes Achieved:

- 1) Student understood the installation process of jenkins on Fedora 30.
- 2) Students understood the installation of jenkins plugins.
- 3) Students understood the creating a simple project on Jenkins.
- 4) Students understood the removal of admin password in the event of forgot password.

Conclusion:

1. Applications of the studied technique in industry-
 - a. Jenkins are used to automate the task in the industry.
 - b. To send notifications about to the developer about the build status.

2. Engineering relevance -

- a. Connecting jenkins to the Github.
- b. To automate continuous processing of various modules.

3. Skills Developed -

- a. Installation of Jenkins
- b. Installations of required plugins and enabling them.