**JENKINS**

=> Open source Software & free of cost

=> Developed by using Java Language

=> It is called as CI CD Server

CI : Continuous Integration

CD : Continuos Delivery

=> CI CD is one appraoch to automate project Build & Deployment process.

=> Using Jenkins we can deploy any type of project (ex: java, python, dot net, react, angular).

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What is Build & Deployment

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=> Take latest code from Git Hub Repo

=> Build Source code using Maven

=> Perform Code Review Using Sonar

=> Upload Project Artifact into Nexus

=> Deploy code into server.

=> In single day multipe times code will be committed to git hub repository from Development team so multiple times we have to perform build and deployment process.

Note: If we do build and deployment process manually then it is time taking process and error prone.

=> To overcome above problems, we need to automate Project Build and Deployment process.

=> To automate project build and deployment process we will use JENKINS.

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**Jenkins Setup on AWS Cloud**

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1.Update the system

sudo apt update

sudo apt upgrade -y

2.install jdk

**sudo apt install openjdk-17-jdk**

3.repo

Java 11

curl -fsSL <https://pkg.jenkins.io/debian-stable/jenkins.io.key> | sudo tee \

/usr/share/keyrings/jenkins-keyring.asc > /dev/null

echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \

[https://pkg.jenkins.io/debian-stable binary/](https://pkg.jenkins.io/debian-stable%20binary/) | sudo tee \

/etc/apt/sources.list.d/jenkins.list > /dev/null

Java 17

curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee \

/usr/share/keyrings/jenkins-keyring.asc **>** /dev/null

echo deb **[**signed-by**=**/usr/share/keyrings/jenkins-keyring.asc] \

https://pkg.jenkins.io/debian-stable binary/ | sudo tee \

/etc/apt/sources.list.d/jenkins.list **>** /dev/null

4.install jenkins

sudo apt update

sudo apt install jenkins -y

5.start and enable

sudo systemctl start jenkins

sudo systemctl enable jenkins

6.to start jenkins

http://<your-ec2-public-ip>:8080

7. sudo cat /var/lib/jenkins/secrets/initialAdminPassword

1) Tomcat Server Setup in Linux VM

2) Install "Deploy To Container Plugin" in Jenkins

Go to Jenkins Dashboard -> Manage Jenkins --> Manage Plugins -> Goto Available Tab -> Search For "Deploy To Container" Plugin -> Install without restart.

3) Create Jenkins Job (Free Style Project)

-> New Item

-> Enter Item Name (Job Name)

-> Select Free Style Project & Click OK

-> Enter some description

-> Go to "Source Code Management" Tab and Select "Git"

-> Enter Project "Git Repo URL"

-> Go to "Build tab"

-> Click on Add Build Step and Select 'Inovke Top Level Maven Targets'

-> Select Maven and enter goals 'clean package'

-> Click on 'Post Build Action' and Select 'Deploy war/ear to container' option

-> Give path of war file (You can give like this also : \*\*/\*.war )

-> Enter Context Path (give project name Ex: java\_web\_app)

-> Click on 'Add Container' and select Tomcat version 9.x

-> Add Tomcat server credentials

(give the username & pwd which is having manager-script role)

-> Enter Tomact Server URL (http://ec2-vm-ip:tomcat-server-port)

-> Click on Apply and Save

4) Run the job now using 'Build Now' option and see see 'Console Output' of job

5) Once Job Executed successfully, go to tomcat server dashboard and see application should be displayed.

6) Click on the applicaton name (it should display our application)