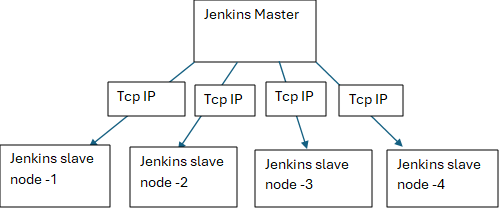
**DevOps: CI/CD with Jenkins pipelines, Maven, Gradle**

**Video-3**

* **Meaning of Continuous Integration:**
* The practice of automatically building a code periodically is called continuous integration.
* **Meaning of Continuous delivery:**
* After building the code can also be deployed are immediately called continuous delivery.
* Code that passes functional and system tests is deployed to production.
* It aims at building, testing, and releasing software faster and more frequently.
* **What are the benefits and why it becomes more popular:**
* Reduced risk
* Increased confidence
* Better quality code
* Ready to ship
* Systematic versioning
* Code quality trend analysis
* Time to market
* Reduced cost
* **Jenkins features:**
* Opensource platform for implementing devops pipelines
* Cross platform
* Cost savings
* Plugin ecosystem-Jenkins supports thousands of plugins
* Increased productivity
* **Jenkins Architecture:**
* Jenkins uses the master and slave architecture to manage distributed builds.
* Master node distribute load to slave nodes



* **Jenkins installation:(Using centos)**
* Jenkins official website(wiki.jenkins-ci.org)
* First we need to install java
* Click on installing jenkins on redhat distributions
* Yum install java-1.7.0-openjdk
* To check the version of java and java installed or not (java –version)
* Next step is configuring java home directory and set environment variables:
* Cd/usr/lib/jvm java version path
* Pwd
* U wuill be get the path
* Vi ~/.bash\_profile
* Execute two commands
* Export JAVA\_HOME(paste the java installed path already copied in the above)
* After bin:$JAVA\_HOME/bin
* Set completed java environment variables
* To see the set up properly or not
* Echo $JAVA\_HOME
* Install jenkins:
* sudo wget -O /etc/yum.repos.d/jenkins.repo \  
   https://pkg.jenkins.io/redhat-stable/jenkins.repo
* sudo rpm --import <https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key>
* sudo yum install jenkins
* **Configure jenkins:**
* sudo systemctl start jenkins
* sudo systemctl enable jenkins
* sudo systemctl status Jenkins
* Chkconfig Jenkins on(Jenkins started automatically in any time)
* Ip a(It gives the IP address of server)
* Hostname
* Copy publicip with hostname:8080
* Enter administrator password
* Continue
* Select installed plugins.
* **Get started with Jenkins:**
* Click start using Jenkins
* Jenkins home page will be displayed
* Click on new item
* Enter job name
* Click freestyle project
* Click ok
* **Setup jenkins job:**
* Under build section click execute shell
* Enter script (echo $JAVA\_HOME) (echo $BUILD\_NUMBER)
* Apply and save.
* Click on buildnow.
* **Jenkins pipelines:**
* Jenkins pipeline a speedup plugins which report implementing and integrating continuous delivery pipelines in the jenkins.
* Pipeline provides an extensive setup of tools for modeling simple to complex delivery pipelines.

* **Jenkins pipeline plugins:**
* Go to Jenkins
* Manage Jenkins
* Plugins
* Available
* In search bar enter pipeline plugin (build pipeline plugin)
* Install without restart
* Save.
* **Jenkins pipeline view:**
* Click “+” icon (created job above left side and after all)
* Enter view name
* Select pipeline view
* Click ok
* Enter build pipeline view Title (Title 1)
* Under select initial job (enter job name-for example-test)
* Apply ok
* We need to edit the job
* Click configure and modify.
* **Install artifactory:**
* Artifactory is an open-source repository manager which is published and maintained by company called Jfrog.
* Prerequisites:
* Java
* Go to browser and install java
* To check the version of java and java installed or not (java –version)
* Next step is configuring java home directory and set environment variables:
* Cd/usr/lib/jvm java version path
* Pwd
* U wuill be get the path
* Vi ~/.bash\_profile
* Execute two commands
* Export JAVA\_HOME(paste the java installed path already copied in the above)
* After bin:$JAVA\_HOME/bin
* Set completed java environment variables
* To see the set up properly or not
* Echo $JAVA\_HOME
* Install Jfrog
* Go to browser
* Enter artifactory installation
* Click open source (OSS)
* Copy 3 links and paste in Linux server
* Too start the artifactory service (service artifactory start)
* Significance:
* It means after installation of artifactory you have full installation of Apache tomcat on your server. Install all tomcat webapps also.
* Sudo yum install tomcat-webapps tomcat-admin-webapps
* **BitBucket:**
* Bitbucket is a web-based source control hosting service.
* The projects the use git revision control system.
* Bitbucket offers both commercial plans and free plans.
* **Gradle:**
* For build system we will use Gradle.
* Gradle is an open-source build automation system