**1.How to create ssh key?**

**2.How to clone ,add,commit and push?**

**3.How to create branch in local repository?**

**4.How to merge,rebase,revert,checkout in github?**

**5.How to install jenkins in ubuntu 18?**

**6.How to connect jenkins and github by creating ssh key?**

**7.How to create slave machine?**

**8.How to configure slave machines in jenkins?**

**9.How to connect SSH agent to master node?**

**10.How to do pipeline job in jenkins?**

**11.MAVEN build tool**

**12.ANT build tool**

**13.GRADLE build tool**

**14.How to update the jenkins port number?**

**15.what is Poll scm?**

**16.How to create webhook?**

**17.How to do Test case publish?**

**18.what is sonarqube analysis?**

**19.How to publish sonarqube report using pipeline?**

**20.How to publish sonarqube report in build setup window batch command?**

-------------------------------------------------------------------------------------------------------

**1.How to create ssh key?**

**2.How to clone ,add,commit and push?**

Inside this path C:\Users\Sandeep\.ssh (windows) & /home/ubuntu/.ssh (linux)

ssh-keygen -t rsa -b 4096 -C "sangey"

eval "$(ssh-agent -s)"

ssh-add ~/.ssh/id\_rsa

Copy public key and add it in github->settings->ssh keys->add ssh key

**clone**

git clone "github/bitbucket repository url"

**add**

git add filename

git add . or -A --to add all new files

**commit**

git commit -m "message"

git commit -a -m "message" -----to commit all new files which is added.

--------------------------------------------------------------------------------------------------------

**3.How to create branch in local repository**

**4.How to merge,rebase,revert,checkout?**

git checkout -b <branchname> ----To create branch with existing file.

git branch <branchname> -----To create empty branch

**merge**

in main branch path

git merge <branch name>

**rebase**

It is the way of combining the work between different branches.

git rebase <branch name /main/master>

**revert**

git log

git checkout 802d....(commit id using git log) file name

--------------------------------------------------------------------------------------------------------

**5.How to install jenkins in ubuntu 18?**

Install jenkins in ubuntu

https://www.jenkins.io/doc/book/installing/linux/

prequisite-Java

sudo apt update

sudo apt install default-jre

-Start Jenkins

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/ | sudo tee \

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

sudo apt-get update

sudo apt-get install jenkins

**You can enable the Jenkins service to start at boot with the command:**

sudo systemctl enable jenkins

**You can start the Jenkins service with the command:**

sudo systemctl start jenkins

**You can check the status of the Jenkins service using the command:**

sudo systemctl status jenkins

Note:

Command Start: Syntax: sudo systemctl start jenkins

Command Stop: Syntax: sudo systemctl stop jenkins

Command Status: Syntax: sudo systemctl status jenkins

Command Restart: Syntax: sudo systemctl restart jenkins

Command Enable: ...

Command Disable:

-----------------------------------------------------------------------------------------------------------------------------------------------------------------------

**6.How to connect/integrate jenkins with github using ssh key?**

steps

\* Generate SSH key (ssh-keygen -t rsa -b 4096 -C "sangey")

\* Copy the public key and paste in githhub.

\* Configure in jenkin credentials

\* Configure a sample job in jenkins using ssh credentials.

Handshake has been done.

--------------------------------------------------------------------------------------------------------**7.How to create slave machine?**

**8.How to configure slave machines in jenkins?**

**9.How to connect SSH agent to master node?**

https://devopscube.com/setup-slaves-on-jenkins-2

-- Create user (jenkins)

-- Create ssh key inside above user

-- Add private key in jenkins credentials

-- Add node/slave in jenkins

--------------------------------------------------------------------------------------------------------

1. **How to create pipeline job in jenkins?**

choose pipeline in jenkins

add new file as jenkinsfile in github repository

add pipeline script

Pipeline script

pipeline {

agent { label 'ubuntuslave1' }

stages {

stage('maven built'){

steps{

sh 'mvn clean install package'

}

}

stage('print'){

steps{

echo "welcome "

}

}

stage('compile'){

steps{

sh 'pwd'

}

}

}

}

--------------------------------------------------------------------------------------------------------

**11.MAVEN build tool**

install maven in ubuntu 18

prequisite =java

**install command** =>sudo apt install maven

**build command**=> clean install package

jar file will be created in target folder after build

pom.xml (metadata and dependency details are given)

--------------------------------------------------------------------------------------------------------**12.ANT build tool**

install ant in ubuntu 18

prerequisite =java

https://geekrewind.com/how-to-install-apache-ant-on-ubuntu-18-04-16-04/

**Install ant using command**=> sudo apt install ant

**build command** => ant clean build

provide sudo privilege to user(ant,jenkins)=>usermod -a -G sudo ant

build.xml

--------------------------------------------------------------------------------------------------------**-13.GRADLE build tool**

install gradle in ubuntu18

prerequisite java

refer => https://www.howtoforge.com/how-to-install-gradle-on-ubuntu-1804/

**build command**=>gradle build

build.gradle

--------------------------------------------------------------------------------------------------------**14.How to update the jenkins port nu**mber

First open the /etc/default/jenkins file.

Then under JENKINS\_ARGS section, you can change the port like this HTTP\_PORT=9999.

Then you should restart Jenkins with sudo service jenkins restart.

Then to check the status use this command sudo systemctl status jenkins

--------------------------------------------------------------------------------------------------------

**15.what is Poll scm?**

**16.How to create webhook?**

Crontab/schedular

poll scm-poll scm will trigger the job as per fixed intervals.

https://crontab.guru/#50\_2\_10\_9\_\*

\* \* \* \* \*

minutes hour day/month month day/week

-----------

webhook-

webhook is to trigger the job based on the events eg. push, PR creation.

https://www.blazemeter.com/blog/how-to-integrate-your-github-repository-to-your-jenkins-project

--------------------------------------------------------------------------------------------------------

**17.How to do Test case publish?**

Test case will run manually in mvn clean install command.

to skip test run

cmd>mvn -DskipTests clean install

j-unit pluggin required to publish the surfire report in xml format

.....

To publish the report

>Click on the "Add post-build action" dropdown.

>Select option "Publish JUnit test result report" option.

>In Test report XMLs textbox, copy the same path following by . xml so complete path would be \*\*/target/surefire-reports/\*.xml

>Click on the Save button.

--------------------------------------------------------------------------------------------------------

**18.what is sonarqube analysis?**

**19.How to publish sonarqube report in pipeline?**

SonarQube is a Code Quality Assurance tool that collects and analyzes source code, and provides reports for the code quality of your project. It combines static and dynamic analysis tools and enables quality to be measured continually over time.

https://docs.sonarqube.org/latest/analysis/scan/sonarscanner-for-jenkins/

https://www.jenkins.io/doc/pipeline/steps/sonar/

>Jacoco pluggin requires to publish sonarqube report

sonarqube publish using pipeline

pipeline {

agent any

stages {

stage('SonarQube analysis') {

steps {

withSonarQubeEnv('local-sonar1') {

bat 'mvn clean org.jacoco:jacoco-maven-plugin:prepare-agent install org.jacoco:jacoco-maven-plugin:report'

bat 'mvn sonar:sonar'

}

}

}

stage("Quality Gate") {

steps {

sleep(60)

timeout(time: 5, unit: 'MINUTES') {

// Parameter indicates whether to set pipeline to UNSTABLE if Quality Gate fails

// true = set pipeline to UNSTABLE, false = don't

waitForQualityGate abortPipeline: true

}

}

}

stage('maven build'){

steps{

bat 'mvn clean install '

}

}

}

post {

always {

junit '\*\*/target/surefire-reports/\*.xml'

}

}

}

--------------------------------------------------------------------------------------------------------

**20.How to publish sonarqube report in build setup**?

In build setup->execute window batch command

bat 'mvn clean org.jacoco:jacoco-maven-plugin:prepare-agent install org.jacoco:jacoco-maven-plugin:report'

bat 'mvn sonar:sonar'

--------------------------------------------------------------------------------------------------------