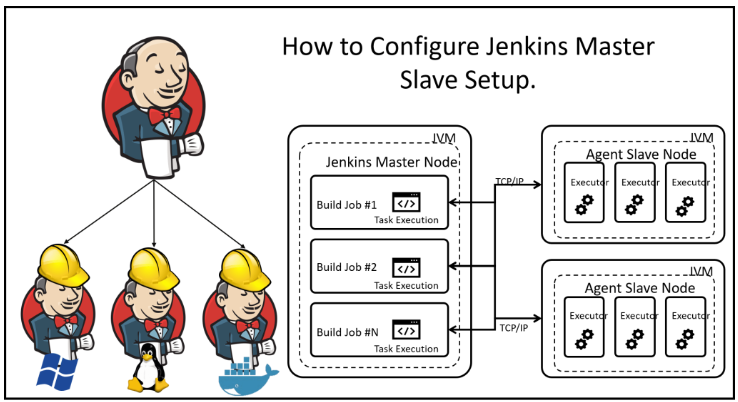
**JENKINS MASTER & SLAVE CONCEPT & LAB**

Follows the Video link [How to Setup Jenkins Master & Slave Agent in Ec2 Ubuntu with SSH-KEY AUTH | Theory & Easy lab Steps. (youtube.com)](https://www.youtube.com/watch?v=hD9TyAtfWlA&t=1563s)



In Jenkins, a popular open-source automation server, the master and slave node concept is used to distribute the workload and manage the execution of jobs across multiple machines. This allows Jenkins to scale and handle a larger number of builds and tasks.

Master Node:

The master node is the main Jenkins server that manages the entire Jenkins environment.

It is responsible for handling the web interface, scheduling jobs, monitoring agents (slave nodes), and managing the build environment.

The master node itself can also execute builds, but for larger workloads, additional slave nodes are often used to distribute the load.

**Slave Node:**

A slave node (also known as an agent or worker node) is a machine that is configured to offload build and deployment tasks from the master node.

Multiple slave nodes can be connected to a single master node, providing scalability and parallelism for handling multiple builds concurrently.

Slave nodes can be configured on different operating systems, enabling the execution of builds in diverse environments.

Each slave node runs a Jenkins agent, which communicates with the master node to receive instructions, report status, and transfer files.

**Machine in which code is execute /tasks etc**

User : jenkinsmaster

Password : 123456789

**Node**

**Configure systems   
-** to configure the server – publish over ssh ect

1. Install master Jenkins server & Install JDK , Jenkins LTS , configure Jenkins in master

hostnamectl set-hostname Jenkinsmaster

2. Install Jenkins Slave instance, install Java17 jdk –

\*\*\*\*\* Jenkins’s installation is not required on slave-node

**LAB Practical’s**

Steps :

Jenkins Slave Machine

Ip:

sudo su –

move to opt default directory

cd /opt/

Create Directory for Jenkins Workspace

mkdir jenkins-slavenode

Move to Directory

cd jenkins-slavenode

pwd

/opt/Jenkins-salvenode

**Permissions to directory**

The chmod 777 command is used to give full read, write, and execute permissions to a file or directory for the owner, group, and others

chmod 777 jenkins-slavenode # full read, write, and execute permissions to the directory

Change the directory

cd jenkins-slavenode

**creates a public key & private key**

The ssh-keygen command is used to generate a pair of cryptographic keys for secure communication over a network. This command creates a

ssh-keygen

public key, typically saved in the file ~/.ssh/id\_rsa.pub

private key, usually stored in ~/.ssh/id\_rsa.

Enter file saves in default path - /root/.ssh/id\_rsa

No passphrase chosen at

cd /root/.ssh

List the keys & files in the directory .ssh

ll

View the key created private key with command

cat id\_rsa

Copy the private key

Master & slave connections :

* Go to the Jenkins Home Page manage jenkins -> Credentials ->System -> Global credentials
* Click Add Credentials -> Select username with password or SSH Username with the private key then save
* If username with password option is chosen, Simply, Username and password of “Jenkins” are enough.
* If SSH Username with Private Key is an option, then follow the steps

1. Add credentials in Global Credentials for SSH auth:

To manage Jenkins Master & global credentials

Global click

ssh username with private key

Username – root

Private -key copy

Description will be private-key

Successfully add ssh key in

2. create Node   
Manage nodes & cloud

New node

Test-node

No of executer – 1

Label - dev

Remote root directory

/opt/ jenkins-slavenode

Lable : qa

Usage

Launch agents via SSH

Host : IP EC2

Credentials as root-add before

To the Master Jenkins as add public key created in authorized key

View the key created public key with command

cd /root/.ssh

cat id\_rsa.pub

copy in the notepad

Insert copied above notepad your public key below in authorized\_key

cd /root/.ssh

Open the file with vi editor

vi authorized\_key

press i to insert   
Pasted the key in the file end in authorized\_key

Ctrlx & save , exit

Go to Jenkins to , bring this node online, launch agent

Console

Test-node

3 idle executor

3 pipelines in same times

1. Freestyle job , Build test

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