# Jenkins Slave setup on Ubuntu | Create Jenkins Slave Node | Integrate Jenkins Master and Slave Node

Diagram

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Jenkins has powerful feature of master slave architecture which enables distributed builds. This article we will learn how to establish slave nodes on Ubuntu machines and integrate with Jenkins Master.

**Let us learn more about Jenkins master and slave:**

**Jenkins Master**

Your main Jenkins server is the Master. The Master’s job is to handle:

* Scheduling build jobs.
* Dispatching builds to the slaves for the actual execution.
* Monitor the slaves (possibly taking them online and offline as required).
* Recording and presenting the build results.
* A Master instance of Jenkins can also execute build jobs directly.

**Jenkins Slave**

A Slave is a Java executable that runs on a remote machine. Following are the characteristics of Jenkins Slaves:

* It hears requests from the Jenkins Master instance.
* Slaves can run on a variety of operating systems.
* The job of a Slave is to do as they are told to, which involves executing build jobs dispatched by the Master.
* You can configure a project to always run on a particular Slave machine, or a particular type of Slave machine, or simply let Jenkins pick the next available Slave.

Let us see how to configure slave nodes on Ubuntu EC2. If you like to learn [how to setup Jenkins Master](https://www.coachdevops.com/2020/04/install-jenkins-ubuntu-1804-setup.html) on Ubuntu EC2 instance, click [here](https://www.coachdevops.com/2020/04/install-jenkins-ubuntu-1804-setup.html).

Jenkins Master uses SSH keys to communicate with slave. You need to create ssh keys in Jenkins master by executing below command.  
  
**Pre-requisites:**

* [Jenkins Master is already setup and running](https://www.coachdevops.com/2020/04/install-jenkins-ubuntu-1804-setup.html)
* Create a new EC2 instance for Slave

Steps involved:

1. Setup new EC2 instance for slave

AWS -EC2- T2 MICRO-UBUNTU 20.4/UBUNTO 18.04- TAG SLAVE-EC2- SG SSH – KP NEW-LAUNCH

GIT BASH SSH CLIENT

2. Create jenkins user and Install Java, Maven in Slave node

3. upload public keys from master to slave node.

4. verify ssh connection from master to slave

5. Register slave node in Jenkins master

6. Run build jobs in Jenkins slave

### Slave node configuration

(You need to t2.small Ubuntu instance for this slave)  
**only port 22 needs to be open**

**Change Host Name to Slave**  
sudo hostnamectl set-host1name Slave

**Install Java**

sudo apt-get update  
sudo apt-get install default-jdk -y

**Install Maven**  
sudo apt-get install maven -y  
  
**Create User as Jenkins**

sudo useradd -m jenkins

sudo -u jenkins mkdir /home/jenkins/.ssh

[](https://4.bp.blogspot.com/-PQnb5PVZRRM/W8uWUpjeSMI/AAAAAAAAAiE/g7oSRjPeBK4G5UHRqhVr-FX7AOFE-OpqwCLcBGAs/s1600/Screen%2BShot%2B2018-10-20%2Bat%2B3.55.18%2BPM.png)

MASTER JENKINS $ ssh-keygen

No (already exit)  
  
**Add SSH Keys from Master to Slave**  
Execute the below command in Jenkins master EC2.  
sudo cat ~/.ssh/id\_rsa.pub  
  
Copy the output of the above command:

[](https://1.bp.blogspot.com/-CD3Ub0L1V_8/XDavoX_VHOI/AAAAAAAAAtA/dykVY-o9fJAAzMHCknyW65X3fPeiZ5C9wCLcBGAs/s1600/Screen%2BShot%2B2019-01-09%2Bat%2B8.35.52%2BPM.png)

**Now Login to Slave node and execute the below command**  
sudo -u jenkins vi /home/jenkins/.ssh/authorized\_keys

This will be empty file, now copy the public keys from master into above file.

Once you pasted the public keys in the above file in Slave, come out of the file by entering :wq!

### Now go into master node

ssh jenkins@***slave\_node\_ip***

[](https://3.bp.blogspot.com/-llz-y_A9Ib4/W8uXf4rD3gI/AAAAAAAAAiQ/AOJx6oEbR70wXLSb5i5954W8gQT-sdl-gCLcBGAs/s1600/Screen%2BShot%2B2018-10-20%2Bat%2B4.00.18%2BPM.png)

this is to make sure master is able to connect slave node. once you are successfully logged into slave, type exit to come out of slave.

$hostname

exit

[](https://2.bp.blogspot.com/-vQKiBE8reeI/W8uXwvD7sOI/AAAAAAAAAiY/Kmik1zMVG6YIeWchNYN3vnvrsK5gZnggQCLcBGAs/s1600/Screen%2BShot%2B2018-10-20%2Bat%2B4.01.31%2BPM.png)



$sudo cp ~/.ssh/known\_hosts /var/lib/Jenkins/.ssh

### Register slave node in Jenkins:

Now to go Jenkins Master, manage jenkins, manage nodes- new node

Node name – my-slave ok click

No of execution 1

Remote root directory /home/Jenkins

Lable my-slave

Usage- use this node as much as possible

Lunch method: launch agent via ssh

Host- ip address pf slave node

Credential – add-SSH username with private key (choose option)

Username – Jenkins( we have created user Jenkins)

Private key – select enter directly=add key

Slave node run this cmd -- sudo cat ~/.ssh/id\_rsa

Copy key and paste above in Jenkins privatekey

Description: my Jenkins privatekey added-- click on add

Credentials select from dropdown as u created “my Jenkins privatekey added”

Host key verification strategy---- manually trusted key verification strategy (select)

Save

Click on my-slave -logs

Configured slave node to master

Run job on slave node

Pick a existing job freestyle project run on slave node now

Jenkins-configure-general tab up- select restrict where this project can be run-my-slave

Save – build now

Pipeline- select existing pipeline or create new pipeline

Build now- check console output it runs on slave node

[Graphical user interface, text, application, chat or text message

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Click on new node. give name and check permanent agent.  
give name and no of executors as 1. enter /home/jenkins as remote directory.  
select launch method as Launch slaves nodes via SSH.  
enter Slave node ip address as Host.

[Table

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click on credentials. Enter user name as jenkins. Make jenkins as lowercase as it is shown.  
 Kind as SSH username with private key. enter private key of master node directly by executing below command:

[Graphical user interface, text, application, email

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sudo cat ~/.ssh/id\_rsa  
(Make sure you copy the whole key including the below without missing anything)  
-----BEGIN RSA PRIVATE KEY-----  
-----  
-----END RSA PRIVATE KEY-----  
  
click Save.  
select Host key verification strategy as "manually trusted key verification strategy".  
  
Click Save.  
Click on launch agent..make sure it connects to agent node.

[Graphical user interface, application, Teams

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Now you can kick start building the jobs, you will see Jenkins master runs jobs in slave nodes.