

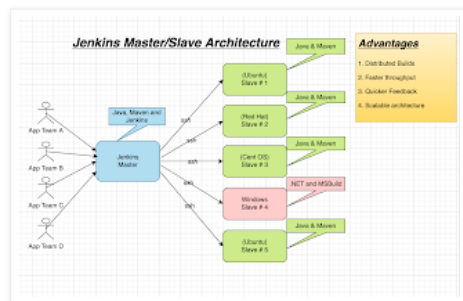
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Thursday, June 3, 2021

Jenkins Build Agent Setup | How to Setup Jenkins Slave on Ubuntu | Setup build agent and Integrate with Jenkins Master

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.



[Please watch the lab in YouTube](#)

Jenkins Slave setup on Ubuntu | Create Jenkins Slave Node...



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.

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Let us see how to configure slave nodes on Ubuntu EC2. If you like to learn how to setup Jenkins Master on Ubuntu EC2 instance, click here.

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
- Create a new EC2 instance for Slave

Steps involved:

1. Setup new EC2 instance for slave
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-hostname 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
```

```
ubuntu@ip-172-31-11-223:~$ sudo useradd -m jenkins
ubuntu@ip-172-31-11-223:~$ sudo -u jenkins mkdir /home/jenkins/.ssh
ubuntu@ip-172-31-11-223:~$
```

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:

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDAIStuCeYFP7DvkgZMfveo7KvG/yvsn2D/ZcSLK
1q3kmvE0kxMID/4d9gckAY6A/b1FS6MkxgYPRDZVackR3teGRD9j5u2+K6MkgMq2w1t5d9b5
XVNL8rpggyuedfj861ZJL+8mMyCzAT5vG6j8Vz7v0VcxnkuARzK11a5Xks1G7H9Zx0fmxegv3kt78
D0YRXXfC481z57800A84703uzvFF/ann70WHEDoU5gSkLzEGrIF/PWgH9 ubuntu@ip-172-31-11-223
```

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
```

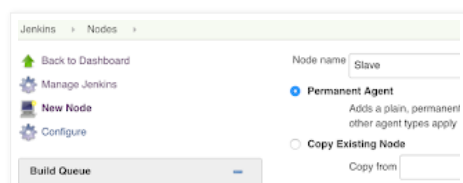
```
ubuntu@ip-172-31-44-149:~$ ssh jenkins@172.31.11.223
The authenticity of host '172.31.11.223 (172.31.11.223)' can't be established.
ECDSA key fingerprint is SHA256:x3tpstU791w7QNSbPxfKscDPL6j8S1vJ132w5o/k.
Are you sure you want to continue connecting (yes/no)? yes
```

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.

```
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
$ exit
```

Register slave node in Jenkins:

Now to go Jenkins Master, manage jenkins, manage nodes.



How to setup Jenkins in Ubuntu EC2 instance?

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Make sure SonarQube is up and running Make sure S...



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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.

Name

Slave

Description

of executors

1

Remote root directory

/home/jenkins

Labels

Usage

Use this node as much as possible

Launch method

Launch agent agents via SSH

Host

172.31.11.225

Credentials

jenkins (updated my private key)

Host Key Verification Strategy

Manually trusted key Verification Strategy

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:

Add Credentials

Domain: Global credentials (unrestricted)

Kind: SSH Username with private key

Scope: Global (Jenkins, nodes, Remos, all child items, etc)

Username: jenkins

Private Key:

Enter directly

Key: -----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEA...
-----END RSA PRIVATE KEY-----

```
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.

S	Name ↓	Architecture	C
	master	Linux (amd64)	
	Slave	Linux (amd64)	

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

at [June 03, 2021](#)
Labels: [Jenkins](#), [Jenkins integration](#), [Slave](#)

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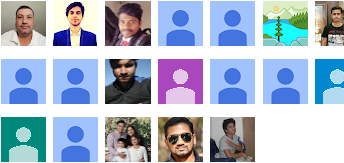
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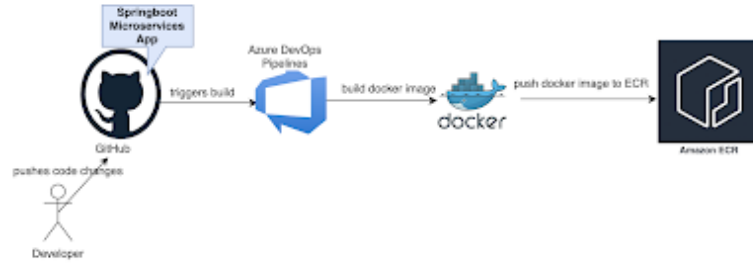
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