

Installation of Jenkins with Docker on Ubuntu

Requirement:-

- A server running on Ubuntu 18.0 with 2 GB of RAM.
- A root password is set up on the server.

Getting Started:-

Steps to follow to install jenkins with docker

Step 1: Update server's repository

For update the server's repository with the latest version

```
sudo apt-get update -y
```

Once the repository has been updated, restart server to apply all these changes.

Step 2: Installation of Docker

a) Download and add Docker CE GPG key:

```
Sudo Wget https://download.docker.com/linux/ubuntu/gpg  
Sudo apt-key add gpg
```

b) Add the Docker CE repository to APT:

```
sudo nano /etc/apt/sources.list.d/docker.list
```

And add this line:

```
deb [arch=amd64] https://download.docker.com/linux/ubuntu  
xenial stable
```

Save and close the file . then update the repository

```
sudo apt-get update -y
```

c) Install Docker CE using following command:

```
sudo apt-get install docker-ce -y
```

d) Verify the Docker installation using following command :

```
sudo systemctl status docker
```

Step 3: Creation of Docker Volume for Data and Log

To create a data and log volumes to backup Jenkins data and configurations including, logs, plugins, plugin configuration and job config use the following command:

```
sudo docker volume create jenkins-data  
sudo docker volume create jenkins-log
```

For list the volume use the following command:

```
sudo docker volume ls
```

Step4: Install Jenkins with Docker

- a) For create a docker file to pull and build Jenkins images with required settings.

First Make one directory named “docker” and create a docker file in it using following command:

```
mkdir docker  
nano docker/dockerfile
```

And add following lines:

```
FROM jenkins/jenkins
LABEL
maintainer="your_email@example.com"
USER root
RUN mkdir /var/log/jenkins
RUN mkdir /var/cache/jenkins
RUN chown -R jenkins:jenkins
/var/log/jenkins
RUN chown -R jenkins:jenkins
/var/cache/jenkins
USER jenkins

ENV JAVA_OPTS="-Xmx8192m"
ENV JENKINS_OPTS="--handlerCountMax=300
--logfile=/var/log/jenkins/jenkins.log
--webroot=/var/cache/jenkins/war
```

Save and close the file. Then, build the Jenkins image with the following command:

```
cd docker
sudo docker build -t <image_name> .
```

Step 5: Run Jenkins Container with Data and Log Volume

For running Jenkins container by specifying data and log volumes as a mount point use following command:

```
sudo docker run -p 8080:8080 -p 50000:50000  
--name=jenkins-master --mount source=jenkins-log,  
target=/var/log/jenkins --mount  
source=jenkins-data,target=/var/jenkins_home -d  
<Image_name>
```

Verify the running container with the following command:

```
sudo docker ps
```

Check the jenkins log file whether everything is working fine or not with following command:

```
sudo docker exec jenkins-master tail -f  
/var/log/jenkins/jenkins.log
```

It will show the following output:

```
b437ba21655a44cda66a75b8fbddf5b8
```

```
This may also be found at:
```

```
/var/jenkins_home/secrets/initialAdminPassword
```

```
*****  
*****  
*****
```

```
2021-03-16 06:42:50.393+0000 [id=38] INFO  
jenkins.InitReactorRunner$1#onAttained: Completed  
initialization  
2021-03-16 06:42:50.400+0000 [id=22] INFO  
hudson.WebAppMain$3#run: Jenkins is fully up and running  
2021-03-16 06:42:50.577+0000 [id=56] INFO  
h.m.DownloadService$Downloadable#load: Obtained the updated  
data file for hudson.tasks.Maven.MavenInstaller  
2021-03-16 06:42:50.577+0000 [id=56] INFO  
hudson.util.Retrier#start: Performed the action check  
updates server successfully at the attempt #1  
2021-03-16 06:42:50.578+0000 [id=56] INFO  
hudson.model.AsyncPeriodicWork#lambda$doRun$0: Finished  
Download metadata. 7,187 ms
```

Note:- if output is look like following:

```
*****
*****
*****


2021-03-16 06:42:50.393+0000 [id=38] INFO
jenkins.InitReactorRunner$1#onAttained: Completed initialization
2021-03-16 06:42:50.400+0000 [id=22] INFO hudson.WebAppMain$3#run:
Jenkins is fully up and running
2021-03-16 06:42:50.577+0000 [id=56] INFO
h.m.DownloadService$Downloadable#load: Obtained the updated data file
for hudson.tasks.Maven.MavenInstaller
2021-03-16 06:42:50.577+0000 [id=56] INFO hudson.util.Retrier#start:
Performed the action check updates server successfully at the attempt
#1
2021-03-16 06:42:50.578+0000 [id=56] INFO
hudson.model.AsyncPeriodicWork#lambda$doRun$0: Finished Download
metadata. 7,187 ms
```

Then initial password can be find at the following location:

```
sudo docker exec -it <Container_id>
bash
cd var/log/jenkins
cat jenkins.log
```

Step 6: Access Jenkins Web Interface

Open web browser and type the URL **http://your-server-ip:8080**.
It will redirected to the Jenkins setup screen as shown below:

The image shows the Jenkins 'Getting Started' screen. At the top, it says 'Getting Started'. Below that is the heading 'Unlock Jenkins'. A paragraph explains that a password has been written to the log (with a link 'not sure where to find it?') and this file on the server: `/var/jenkins_home/secrets/initialAdminPassword`. It then asks the user to copy the password from either location and paste it below. There is a text input field labeled 'Administrator password' with a masked password '.....'. A 'Continue' button is in the bottom right corner. A faint background image of a person in a hard hat is visible on the right side of the page.

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

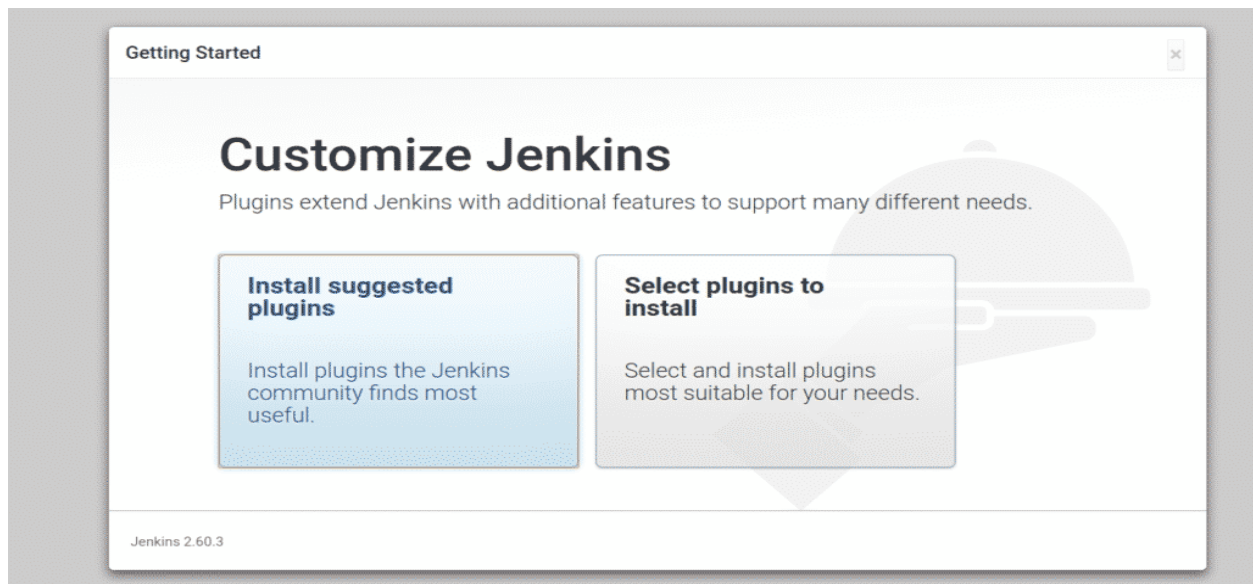
```
/var/jenkins_home/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

Administrator password

Continue

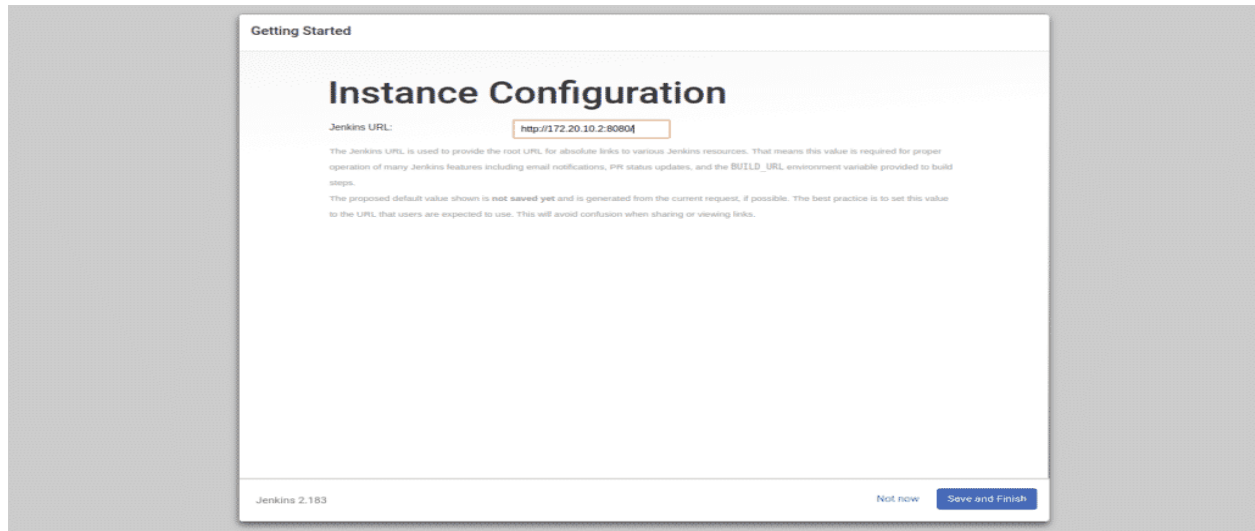
Provide administrator password and click on the **Continue** button. it should show the following page:



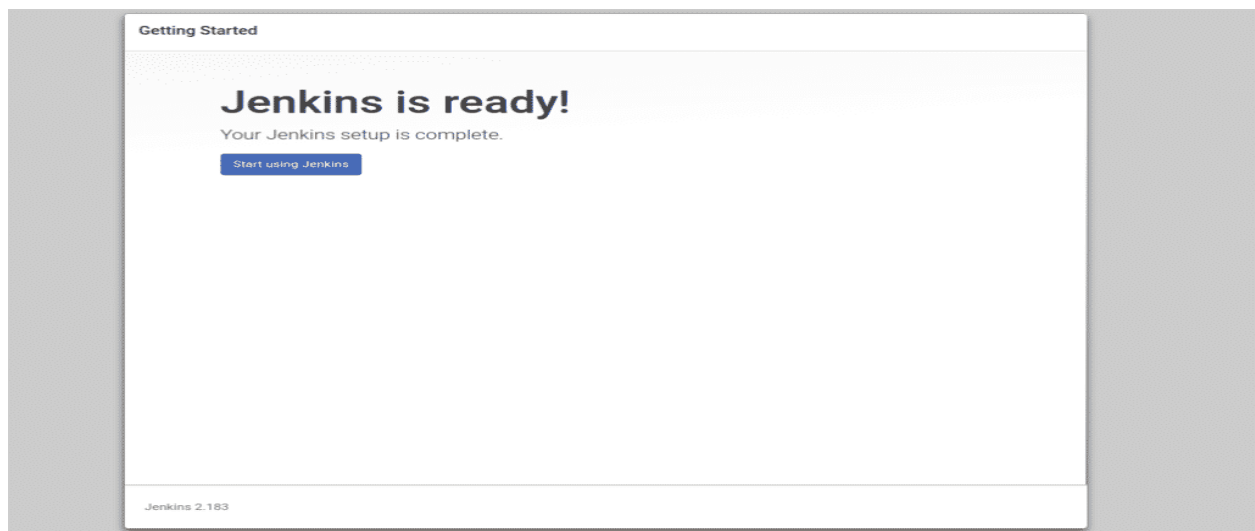
Now, click on the “**Install suggested plugins**” to install the required plugins. Once the installation has been finished. following page will appear:

This screenshot shows the 'Create First Admin User' screen in the Jenkins installation wizard. The window title is 'Getting Started'. The main heading is 'Create First Admin User'. Below the heading are four input fields: 'Username:' with the value 'admin', 'Password:' with masked characters '*****', 'Confirm password:' with masked characters '*****', and 'Full name:' with the value 'Hitesh Jethva'. At the bottom left, it says 'Jenkins 2.60.3'. At the bottom right, there are two buttons: 'Continue as admin' and 'Save and Finish'.

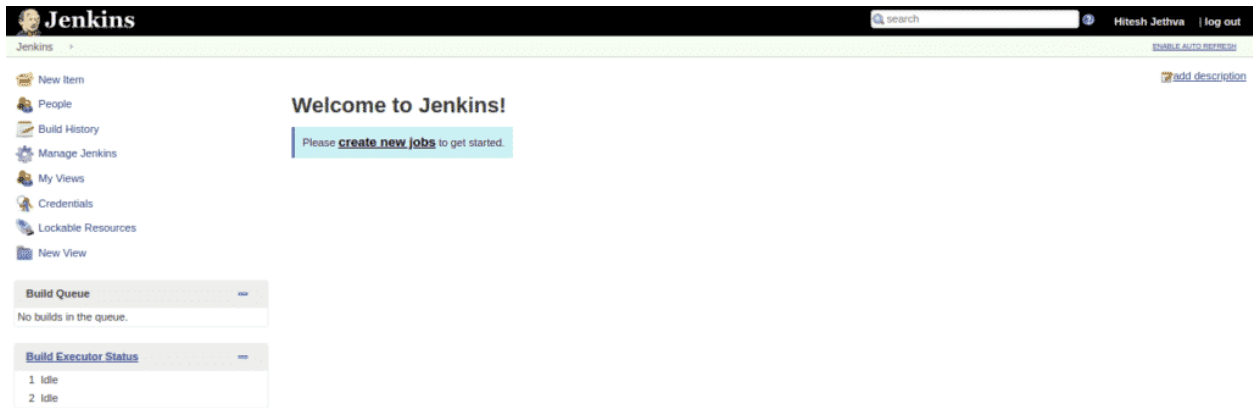
Now, provide admin username, password and full name , password then click on the **Save and Finish** button. You should see the following page:



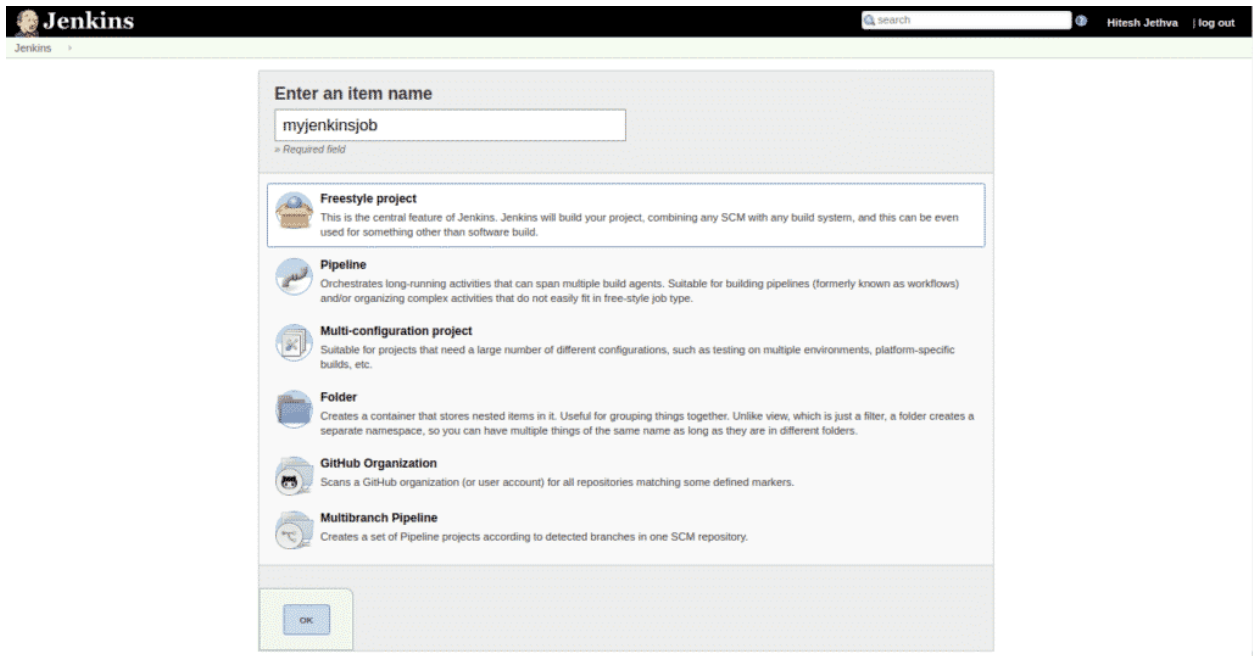
Now, just click on the **Save and Finish** button. Once the setup completed successfully, you should see the following page:



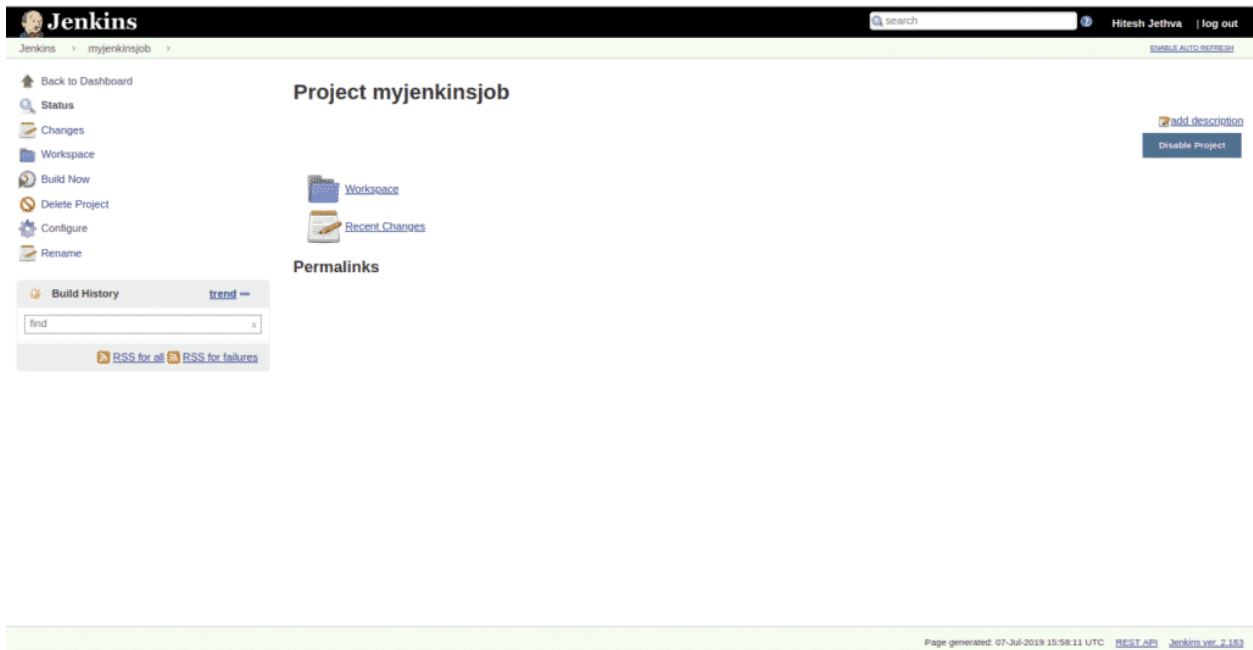
Now, click on the “**Start using Jenkins**“. it will redirected to the Jenkins dashboard as shown in the following page:



Now, click on the “**create new jobs**” button, it should show the following page::



Now, provide your job name and click on the **OK** button. You should see the following page:



Step 7: Test Jenkins Persistent Data

For testing whether Jenkins data and log are still persisting after removing the Jenkins container.

First stop and delete the Jenkins container with the following command:

```
sudo docker stop jenkins-master  
sudo docker rm jenkins-master
```

Now, start the Jenkins container again with the following command:

```
sudo docker run -p 8080:8080 -p 50000:50000
--name=jenkins-master --mount source=jenkins-log,
target=/var/log/jenkins
--mount source=jenkins-data,target=/var/jenkins_home -d
<image_name>
```

Once the Jenkins container has been started, open your web browser and type the URL **http://your-server-ip:8080**. You will be redirected to the following page:



Welcome to Jenkins!

admin

Sign in

☐ Keep me signed in

Now, provide admin user name and password then click on the **Sign in** button. You should see the Jenkins dashboard in the following page:

Jenkins

Hitesh Jethva | log out

Jenkins

New Item

People

Build History

Manage Jenkins

My Views

Lockable Resources

Credentials

New View

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

All

+

S	W	Name	Last Success	Last Failure	Last Duration
		myjenkinsjob	N/A	N/A	N/A

Icon: S M L

Legend

RSS for all

RSS for failures

RSS for just latest builds

add description

Page generated: 07-Jul-2019 16:02:00 UTC [REST API](#) [Jenkins ver. 2.183](#)

That means it preserved all the data, logs, setup configuration and plugin installs. Already created job is still there.

