

01) What is Jenkins used for?

Jenkins is an open source CICD automation software DevOps tool written in java  
It is used to implement CICD workflow, called pipeline

02) What is Jenkins agent? What is Jenkins executor (Build Executor)?

- Jenkins agent is the worker node that actually executes all steps mentioned in a job

Every agent has a label as a unique identifier to can assign a job to it

- It is a designation in the Jenkins master server's settings that governs resource allocation on any Jenkins nodes and the master server itself. When a server (either the master or a node) is designated as having two or more executors, the server can process as many jobs simultaneously as the number of executors for which it has been designated.

03) Explain Jenkins master-slave architecture?

- Master has all plugins, jobs, users and credentials

- Master can be pod, container or server

- Slave is the worker that excute all commands in the pipeline and send the response to the master

- It's not a necessary that the master and the slave be in the same cluster as long as the

network connections is configured and port 50000 is opened to the master can make a

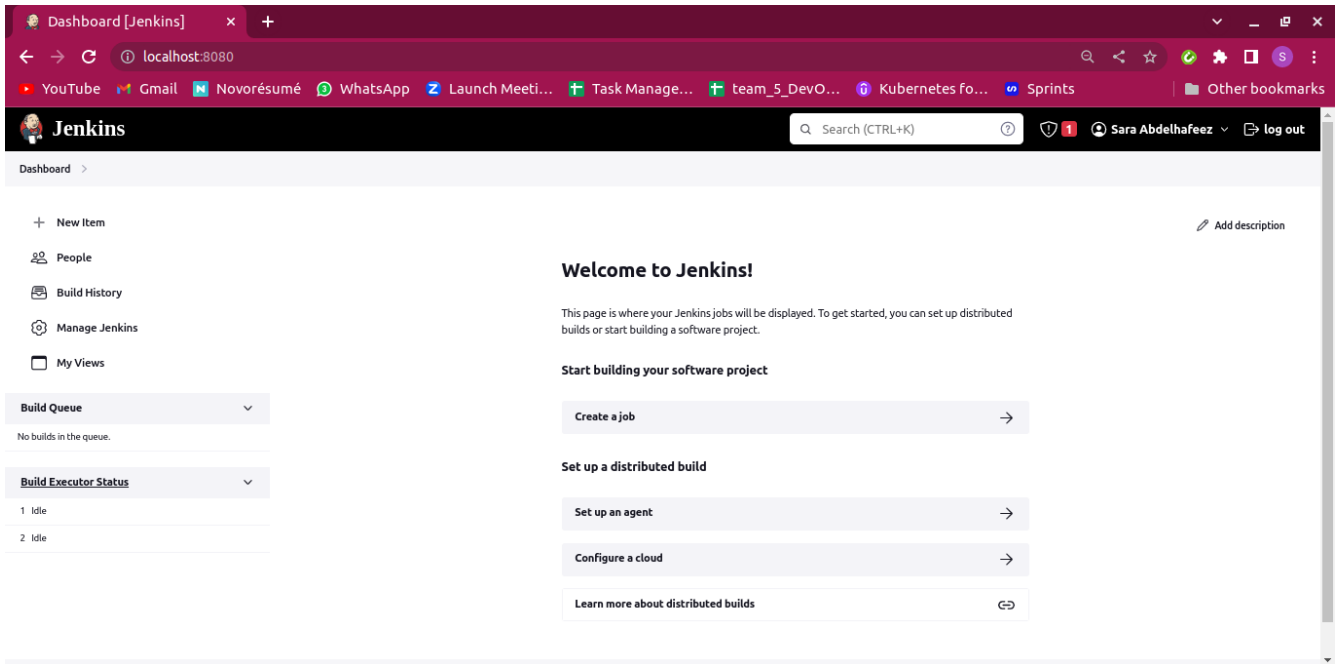
ssh connection on the slave

- If there isn't a slave, the master can do all the work but this will be a load on the master

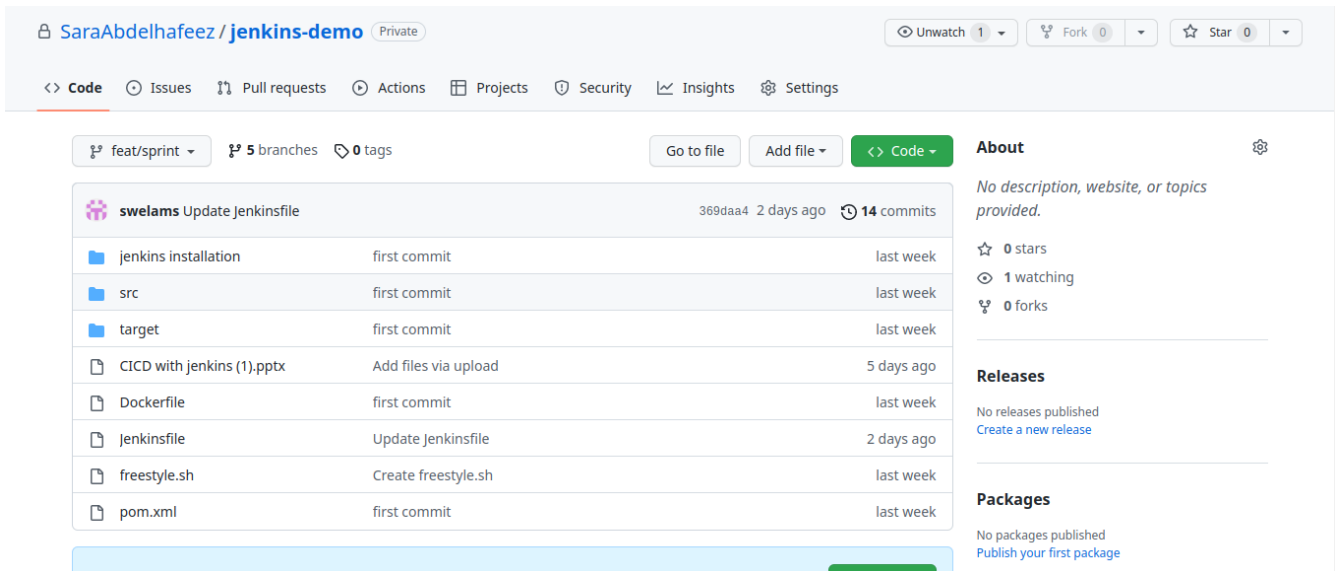
04) Install jenkins with docker image.


```
sara@home:~$ sudo docker run -p 8080:8080 -p 50000:50000 -d -v jenkins_home:/var/jenkins_home jenkins/jenkins:lts
[sudo] password for sara:
Unable to find image 'jenkins/jenkins:lts' locally
lts: Pulling from jenkins/jenkins
bbef03cda1f: Pull complete
9ae50a35cd66: Pull complete
cead272e2dd2: Pull complete
a4b7a018a0ee: Pull complete
3897c1dfaca6: Pull complete
e727109ce34a: Pull complete
14b08ac2c5e7: Pull complete
a8c878a8e553: Pull complete
ee11cf20e167: Pull complete
060e7a4a49c0: Pull complete
53db61ef02de: Pull complete
2340e3796320: Pull complete
d951b54d207b: Pull complete
Digest: sha256:675a7c53ee901f80d662f1a646ac12be2be0a59a65390eeb536dc99c5d33f5b7
Status: Downloaded newer image for jenkins/jenkins:lts
39126a0db97f3e9bc79c1cfce951e6d4f1cfb387a0e9480dbf699e445e4577d
```

```
sara@home:~$ docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS
39126a0db97f   jenkins/jenkins:lts   "/usr/bin/tini -- /u..." 9 minutes ago   Up 9 minutes   0.0.0.0:8080->8080/tcp, :::8080->8080/tcp, 0.0.0.0:50000->50000/tcp, :::50000->50000/tcp, quirk
sara@home:~$ docker exec -it 39126a0db97f bash
jenkins@39126a0db97f:/$ cat /var/jenkins_home/secrets/initialAdminPassword
6d5b87911f5848cc8a491fc6090a267c
jenkins@39126a0db97f:/$ exit
exit
sara@home:~$
```







05) Create free style project and link it to private git repo containing any dockerfile then build an image from this dockerfile and push it to private docker repo



**Jenkins**

Search (CTRL+K) ?





 1  Sara Abdelhafeez   log out

[Dashboard](#) > [Manage Jenkins](#) > [Credentials](#) > [System](#) > [Global credentials \(unrestricted\)](#) >

## Global credentials (unrestricted)

+ Add Credentials

Credentials that should be available irrespective of domain specification to requirements matching.


ID	Name	Kind	Description
 <a href="#">git-token</a>	SaraAbdelhafeez/*****	Username with password	
 <a href="#">docker-hub</a>	saraabdelhafeez/*****	Username with password	


Icon: S M L


[REST API](#) [Jenkins 2.375.2](#)


[Dashboard](#) > [my-freestyle-project](#) > [Configuration](#)


## Configure


 General

 Source Code Management

 Build Triggers

 **Build Environment**

 Build Steps

 Post-build Actions

### Build Environment

☐ Delete workspace before build starts

☒ Use secret text(s) or file(s) ?

#### Bindings

Username and password (separated) ?

Username Variable ?

USER

Password Variable ?

PASS

Credentials ?


☒ Specific credentials ☐ Parameter expression


saraabdelhafeez/\*\*\*\*\*


Save


Apply


## Configure


 General

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☒ Git ?

#### Repositories ?

Repository URL ?

https://github.com/SaraAbdelhafeez/jenkins-demo.git

Credentials ?

SaraAbdelhafeez/\*\*\*\*\*

+ Add

Advanced...

Add Repository

Branches to build ?

Save

Apply

Files

Login Succeeded

+ docker push saraabdelhafeez/jenkins-images:v1

The push refers to repository [docker.io/saraabdelhafeez/jenkins-images]

b66f67a42291: Preparing

6b5aaff44254: Preparing

53a0b163e995: Preparing

b626401ef603: Preparing

9b55156abf26: Preparing

293d5db30c9f: Preparing

03127cdb479b: Preparing

9c742cd6c7a5: Preparing

293d5db30c9f: Waiting

03127cdb479b: Waiting

9c742cd6c7a5: Waiting

b626401ef603: Mounted from library/openjdk

6b5aaff44254: Mounted from library/openjdk

9b55156abf26: Mounted from library/openjdk

53a0b163e995: Mounted from library/openjdk

b66f67a42291: Pushed

293d5db30c9f: Mounted from library/openjdk

9c742cd6c7a5: Mounted from library/openjdk


03127cdb479b: Mounted from library/openjdk


v1: digest: sha256:64f09028c8acb3b768d1d8d589adf39d877ca98f8a648aeaf0e3219bbb81af48 size: 2003

Finished: SUCCESS


## saraabdelhafeez / jenkins-images

### Description


This repository does not have a description 

 Last pushed: 3 minutes ago

### Tags

 VULNERABILITY SCANNING - DISABLED  
[Enable](#)

This repository contains 1 tag(s).

Tag	OS	Type	Pulled	Pushed
 v1		Image	---	3 minutes ago

[See all](#)

[Go to Advanced Image Management](#)