1- Configure Jenkins image to run docker commands on your host docker daemon.

```
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$ docker ps
CONTAINER ID    IMAGE                   COMMAND                 CREATED        STATUS          PORTS
                                        NAMES
78b64f461f78    cec2651c412d            "/sbin/tini -- /usr/…"  31 hours ago   Up 26 minutes   50000/tcp, 0.0.0.0:900
0->8080/tcp, :::9000->8080/tcp    pedantic_wing
47472a1a1b2a    jenkins/jenkins:lts     "/sbin/tini -- /usr/…"  2 days ago     Up 24 minutes   50000/tcp, 0.0.0.0:90-
>8080/tcp, :::90->8080/tcp        infallible_meitner
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$ docker exec -it 78b64f461f78 bash
root@78b64f461f78:/# docker --version
Docker version 20.10.10, build b485636
root@78b64f461f78:/#
```

2- Create CI/CD for this repo https://github.com/mahmoud254/jenkins_nodejs_example.git

```
6f7f3f280040: Preparing
d6e0d602719c: Preparing
73c3e7ef7bc6: Preparing
f1486e967e48: Waiting
5750262417ad: Waiting
9ed3c35b4335: Waiting
6f7f3f280040: Waiting
d6e0d602719c: Waiting
73c3e7ef7bc6: Waiting
bb1bb031ad58: Mounted from library/node
f9f80a3f0f8f: Mounted from library/node
b8890c63f8f5: Mounted from library/node
2301f40c12fa: Pushed
5750262417ad: Mounted from library/node
f1486e967e48: Mounted from library/node
9ed3c35b4335: Mounted from library/node
6f7f3f280040: Mounted from library/node
d6e0d602719c: Mounted from library/node
73c3e7ef7bc6: Mounted from library/node
95b175045883: Pushed
latest: digest: sha256:f68ee0d1abcc6e05c2243b9209259acc720904d592424783e8b21132feecd7a6 size: 2633
[Pipeline] }
[Pipeline] // withCredentials
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

abdelrahmanzaki179 Edit profile

👤 Community User   🕐 Joined September 12, 2021

Repositories   Starred   Contributed

Displaying 2 of 2 repositories

abdelrahmanzaki179/docker_with_jenkins_ex
By abdelrahmanzaki179 • Updated a minute ago

Container
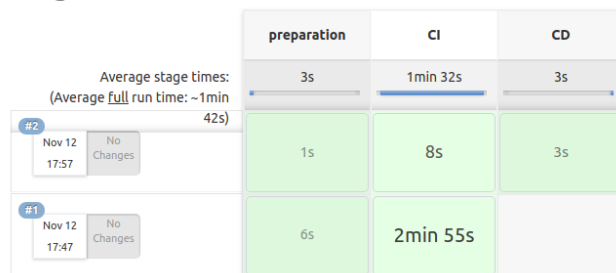
4   **0**
Downloads   Stars

🔺 Back to Dashboard

🔍 Status

📝 Changes

⚙ Build Now

⚙ Configure

🚫 Delete Pipeline

🔍 Full Stage View

📝 Rename

❓ Pipeline Syntax

Pipeline docker-pipeline

📝add descriptio

Disable Project

📝 **Recent Changes**

Stage View

	preparation	CI	CD
Average stage times: (Average full run time: ~1min 42s)	3s	1min 32s	3s
#2 Nov 12 17:57 / No Changes	1s	8s	3s
#1 Nov 12 17:47 / No Changes	6s	2min 55s	

Permalinks

⚙ **Build History**   trend ⌃

`find` ✕

✅ #2   Nov 12, 2021, 3:57 PM
✅ #1   Nov 12, 2021, 3:47 PM

Hello World from ITI!
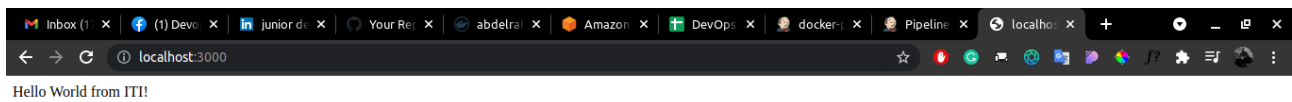
3- Create docker file to build image for Jenkins slave.

Sol : https://github.com/abdelrahman179/DevOps/blob/Jenkins/JKS/Dockerfile

4- Create container from this image and configure ssh.


```
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$ docker images
REPOSITORY                                TAG        IMAGE ID       CREATED         SIZE
<none>                                    <none>     0ee0fecc9891   6 minutes ago   633MB
abdelrahmanzaki179/docker_with_jenkins_ex latest     b348349d8715   2 hours ago     921MB
<none>                                    <none>     cec2651c412d   32 hours ago    1.02GB
jenkins/jenkins                           lts        2219cea3096b   8 days ago      441MB
node                                      12         9f5f1136afe0   2 weeks ago     918MB
ubuntu                                    latest     ba6acccedd29   3 weeks ago     72.8MB
gcr.io/k8s-minikube/kicbase               v0.0.27    9fa1cc16ad6d   8 weeks ago     1.08GB
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$
```



```
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$ docker ps -a
CONTAINER ID   IMAGE                                             COMMAND                CREATED         STATUS                     PORTS
                                                   NAMES
9d5478e4c01c   0ee0fecc9891                                      "bash"                 3 minutes ago   Exited (0) 52 seconds ago
                                                   focused_goodall
1f1043321c86   abdelrahmanzaki179/docker_with_jenkins_ex:latest "docker-entrypoint.s…" 2 hours ago     Up 2 hours                 0.0.0.0:3000->3000/tcp, ::
:3000->3000/tcp                                    goofy_lewin
78b64f461f78   cec2651c412d                                      "/sbin/tini -- /usr/…" 32 hours ago    Up 2 hours                 50000/tcp, 0.0.0.0:9000->8
080/tcp, :::9000->8080/tcp   pedantic_wing
47472a1a1b2a   jenkins/jenkins:lts                               "/sbin/tini -- /usr/…" 2 days ago      Up 2 hours                 50000/tcp, 0.0.0.0:90->808
0/tcp, :::90->8080/tcp         infallible_meitner
abdelrahman@abdelrahman-HP-EliteBook-745-G3:~$
```



```
root@f51c311bbb73:/# apt install openjdk-8-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installe
```



```
root@f51c311bbb73:/# service ssh start
 * Starting OpenBSD Secure Shell server sshd
root@f51c311bbb73:/# service ssh status
 * sshd is running
root@f51c311bbb73:/# mkdir ~/.ssh
root@f51c311bbb73:/# cd ~/.ssh/
root@f51c311bbb73:~/.ssh# apt install vim
```

5- From Jenkins master create new node with the slave container.
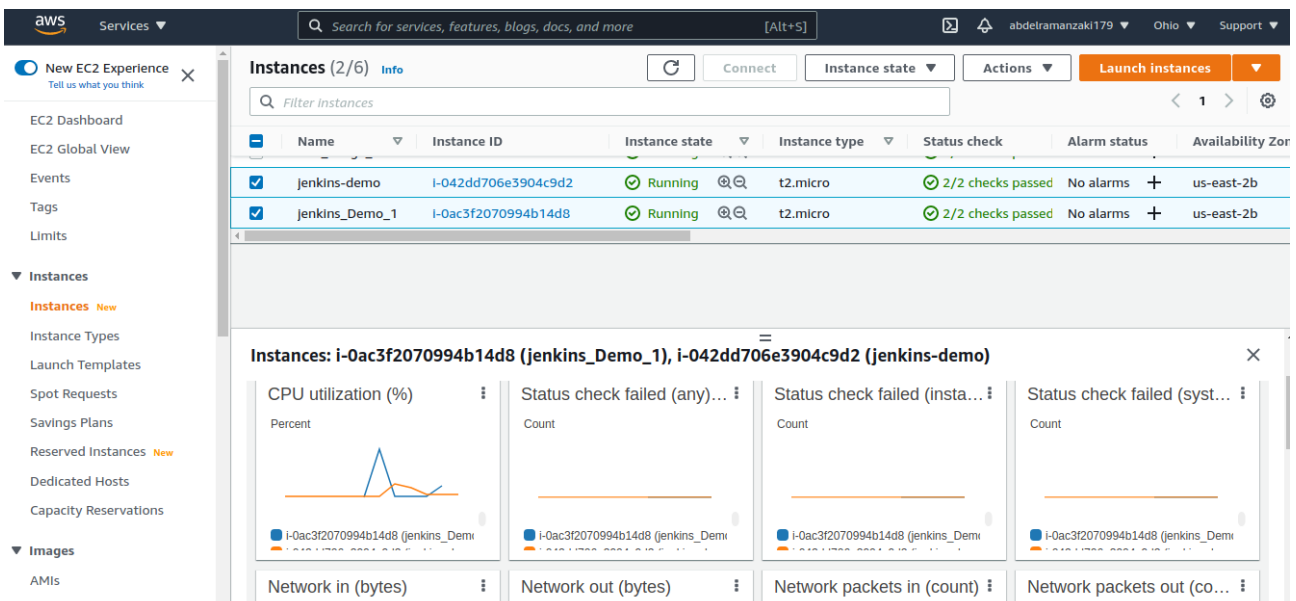
```
[10/17/21 23:23:34] [SSH] Checking java version of java
[10/17/21 23:23:35] [SSH] java -version returned 1.8.0_292.
[10/17/21 23:23:35] [SSH] Starting sftp client.
[10/17/21 23:23:35] [SSH] Copying latest remoting.jar...
[10/17/21 23:23:35] [SSH] Copied 1,507,326 bytes.
Expanded the channel window size to 4MB
[10/17/21 23:23:35] [SSH] Starting agent process: cd "/jenkins_home" && java  -jar
remoting.jar -workDir /jenkins_home -jar-cache /jenkins_home/remoting/jarCache
Oct 17, 2021 11:23:39 PM org.jenkinsci.remoting.engine.WorkDirManager initializeWorkDir
INFO: Using /jenkins_home/remoting as a remoting work directory
Oct 17, 2021 11:23:39 PM org.jenkinsci.remoting.engine.WorkDirManager setupLogging
INFO: Both error and output logs will be printed to /jenkins_home/remoting
<===[JENKINS REMOTING CAPACITY]===>channel started
Remoting version: 4.10
This is a Unix agent
Evacuated stdout
Agent successfully connected and online
```

🖥️	docker_slave	Linux (amd64)	In sync	76.98 GB	1.43
🖥️	master	Linux (amd64)	In sync	76.98 GB	1.43
	Data obtained	1 min 21 sec	1 min 21 sec	1 min 22 sec	1 min 21 s

Refresh status

6- Create 2 AWS ec2's

7- Configure them to work as Jenkins slaves

search   (?)   admin   log out

🔼 Back to Dashboard

⚙ Manage Jenkins

🖥 New Node

☁ Configure Clouds

⚙ Node Monitoring

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
🖥	AWS	Linux (amd64)	In sync	3.90 GB	⛔ 0 B	3.90 GB	2656ms
🖥	AWS_2	Linux (amd64)	1.7 sec ahead	5.73 GB	⛔ 0 B	5.73 GB	7450ms
🖥	master	Linux (amd64)	In sync	28.69 GB	1.36 GB	28.69 GB	0ms
	Data obtained	10 min	10 min	10 min	10 min	10 min	10 min

Refresh status

Build Queue   ⌃

No builds in the queue.

Build Executor Status   ⌃

🖥 master

1 Idle

2 Idle

🖥 AWS

🚫 Delete Agent

🔧 Configure

📝 Build History

📊 Load Statistics

🖥 Script Console

📋 Log

🖥 System Information

🚫 Disconnect

Build Executor Status   ⌃

1 Idle

[   ]

Number of executors   (?)

[1   ]

Remote root directory   (?)

[/home/ubuntu/jenkins   ]

Labels   (?)

[AWS_2   ]

Usage   (?)

[Only build jobs with label expressions matching this node   ▾]

Launch method   (?)

[Launch agents via SSH   ▾]

> **Host**   (?)
>
> [3.131.35.107   ]
>
> **Credentials**   (?)

Save

Build Executor Status   ⌃

1 Idle

Launch method   (?)

[Launch agents via SSH   ▾]

> **Host**   (?)
>
> [3.131.35.107   ]
>
> **Credentials**   (?)
>
> [ubuntu   ▾]   [🔑 Add ▾]
>
> **Host Key Verification Strategy**   (?)
>
> [Non verifying Verification Strategy   ▾]
>
> 📝 [Advanced...]   (?)

Availability   (?)

[Keep this agent online as much as possible   ▾]

Node Properties

☐ Disable deferred wipeout on this node   (?)

☐ Environment variables

☐ Tool Locations

Save

8- Configure them in nodes section in Jenkins

Dashboard ▾ › docker-pipeline › #9

- Back to Project
- Status
- Changes
- **Console Output**
  - View as plain text
- Edit Build Information
- Delete build '#9'
- Git Build Data
- Restart from Stage
- Replay
- Pipeline Steps
- Workspaces

✅ Console Output

```
Started by user admin
[Pipeline] Start of Pipeline
[Pipeline] node
Running on AWS_2 in /home/ubuntu/jenkins/workspace/docker-pipeline
[Pipeline] {
[Pipeline] stage
[Pipeline] { (preparation)
[Pipeline] git
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/mahmoud254/jenkins_nodejs_example.git
 > git init /home/ubuntu/jenkins/workspace/docker-pipeline # timeout=10
Fetching upstream changes from https://github.com/mahmoud254/jenkins_nodejs_example.git
 > git --version # timeout=10
 > git --version # 'git version 2.25.1'
 > git fetch --tags --force --progress -- https://github.com/mahmoud254/jenkins_nodejs_example.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
Checking out Revision 8b23b90d16627ba5bea48bfa8d920121ea75ff87 (refs/remotes/origin/master)
 > git config remote.origin.url https://github.com/mahmoud254/jenkins_nodejs_example.git # timeout=10
 > git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
 > git rev-parse refs/remotes/origin/master^{commit} # timeout=10
 > git config core.sparsecheckout # timeout=10
 > git checkout -f 8b23b90d16627ba5bea48bfa8d920121ea75ff87 # timeout=10
```

Dashboard ▾ › docker-pipeline › #9

```
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (CD)
[Pipeline] withCredentials
Masking supported pattern matches of $password
[Pipeline] {
[Pipeline] sh
Warning: A secret was passed to "sh" using Groovy String interpolation, which is insecure.
               Affected argument(s) used the following variable(s): [password]
               See https://jenkins.io/redirect/groovy-string-interpolation for details.
+ sudo docker login -u abdelrahmanzaki179 -p ****
WARNING! Using --password via the CLI is insecure. Use --password-stdin.
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
+ sudo docker run -p 3000:3000 -d abdelrahmanzaki179/docker_with_jenkins_ex:latest
0cf47af3fe5b57d913dd36128c430b8df3e791bcd581cea279467c2e7de085c7
[Pipeline] }
[Pipeline] // withCredentials
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```