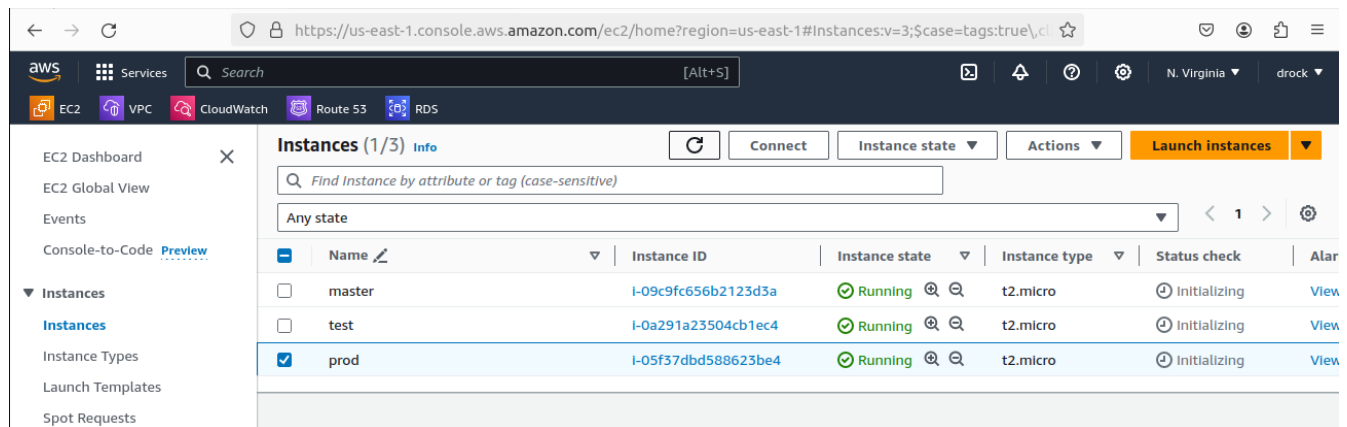


## STRUCTURE OF THE JOB

To be Performed on:      Branch  
Job1 :    slave1              Develop  
Job2 :    slave1              master  
Job3 :    slave2              master

Launch 3 instance:

1 instance as master  
2 instance as test  
3 instance as prod



Run the command on master  
sudo apt install software-properties-common  
sudo add-apt-repository --yes --update ppa:ansible/ansible  
sudo apt install ansible

```
ubuntu@ip-172-31-25-185:~$ ansible --version
ansible [core 2.15.9]
  config file = /etc/ansible/ansible.cfg
  configured module search path = ['/home/ubuntu/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  ansible collection location = /home/ubuntu/.ansible/collections:/usr/share/ansible/collections
  executable location = /usr/bin/ansible
  python version = 3.10.12 (main, Nov 20 2023, 15:14:05) [GCC 11.4.0] (/usr/bin/python3)
  jinja version = 3.0.3
  libyaml = True
ubuntu@ip-172-31-25-185:~$
```

## SSH key authentication

On master,

generate ssh-keygen

sudo cat ...‘the public key path’... /home/ubuntu/.ssh/id\_rsa.pub

sudo cat /home/ubuntu/.ssh/id\_rsa.pub

copy the public-key to paste in the slave machines

### On slave machines

cd .ssh

ls

sudo nano authorized\_keys

```
ubuntu@ip-172-31-26-16:~$ cd .ssh
ubuntu@ip-172-31-26-16:~/.ssh$ ls
authorized_keys
ubuntu@ip-172-31-26-16:~/.ssh$ sudo nano authorized_keys
ubuntu@ip-172-31-26-16:~/.ssh$
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQCAjbl3X8pNnVYrW3iFYdn2LSn1CG5t7LKLoWEe7xqtTQUzwJwES1QRNUo81vVcvctDxpbNmDe60dnCTuBRbd2QZ7NEcFm8gnvHFB
JrA25JdsCEE4aQZn0VmX/KYBpmiRLP8tKs= ubuntu@ip-172-31-25-185
```

### On master machine

cd /etc/ansible

ls

sudo nano hosts

```
[slave]
50.19.176.188
23.22.55.104
#
# It should live in /etc/ansible/hosts
```

ansible -m ping all

```
ubuntu@ip-172-31-25-185:/etc/ansible$ ansible -m ping all
50.19.176.188 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
23.22.55.104 | SUCCESS => {
  "ansible_facts": {
    "discovered_interpreter_python": "/usr/bin/python3"
  },
  "changed": false,
  "ping": "pong"
}
```

sudo nano playbook.yml

```
ubuntu@ip-172-31-25-185:/etc/ansible$ sudo nano playbook.yml
ubuntu@ip-172-31-25-185:/etc/ansible$
```

---

- name: Task for master  
hosts: localhost  
become: true  
tasks:
  - name: Executing script on master  
script: master.sh
- name: Task for slave  
hosts: all  
become: true  
tasks:
  - name: Executing script on slaves  
script: slave.sh

```
---
- name: Task for master
  hosts: localhost
  become: true
  tasks:
    - name: Executing script on master
      script: master.sh
- name: Task for slave
  hosts: all
  become: true
  tasks:
    - name: Executing script on slaves
      script: slave.sh
```

From yaml file above:

sudo nano master.sh

Install Java and Jenkins in master

```

sudo apt update
sudo apt install openjdk-11-jdk -y
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
https://pkg.jenkins.io/debian binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins -y

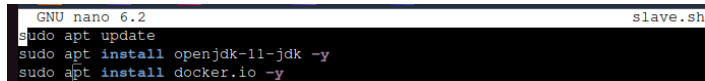
```

sudo nano slave.sh  
 Install Java and docker in slave machines

```

sudo apt update
sudo apt install openjdk-11-jdk -y
sudo apt install docker.io -y

```



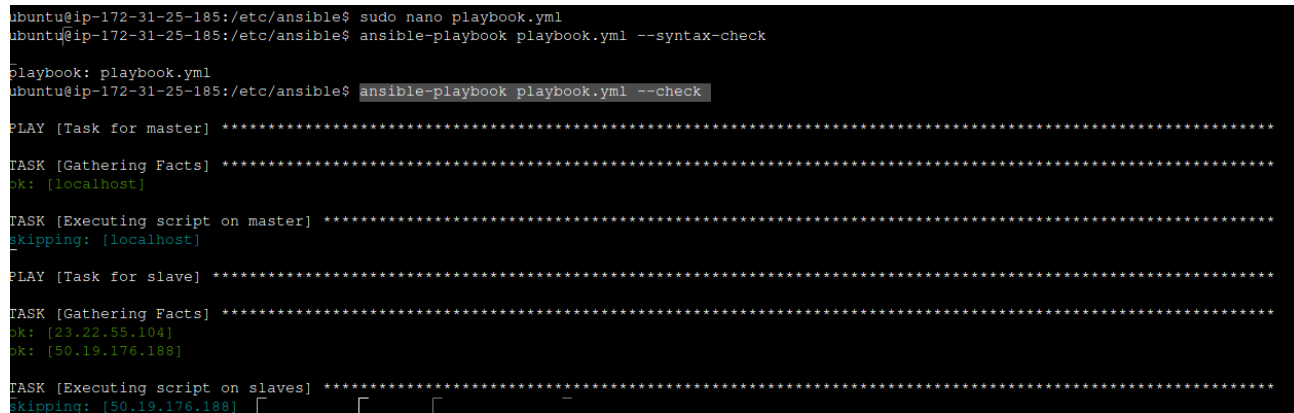
A terminal window titled 'slave.sh' showing the execution of the following commands:

```

GNU nano 6.2
sudo apt update
sudo apt install openjdk-11-jdk -y
sudo apt install docker.io -y

```

ansible-playbook playbook.yml --syntax-check  
 ansible-playbook playbook.yml --check



A terminal window showing the execution of Ansible commands and the output of a syntax check and a dry-run check:

```

ubuntu@ip-172-31-25-185:/etc/ansible$ sudo nano playbook.yml
ubuntu@ip-172-31-25-185:/etc/ansible$ ansible-playbook playbook.yml --syntax-check
Playbook: playbook.yml
ubuntu@ip-172-31-25-185:/etc/ansible$ ansible-playbook playbook.yml --check

PLAY [Task for master] *****
TASK [Gathering Facts] *****
ok: [localhost]

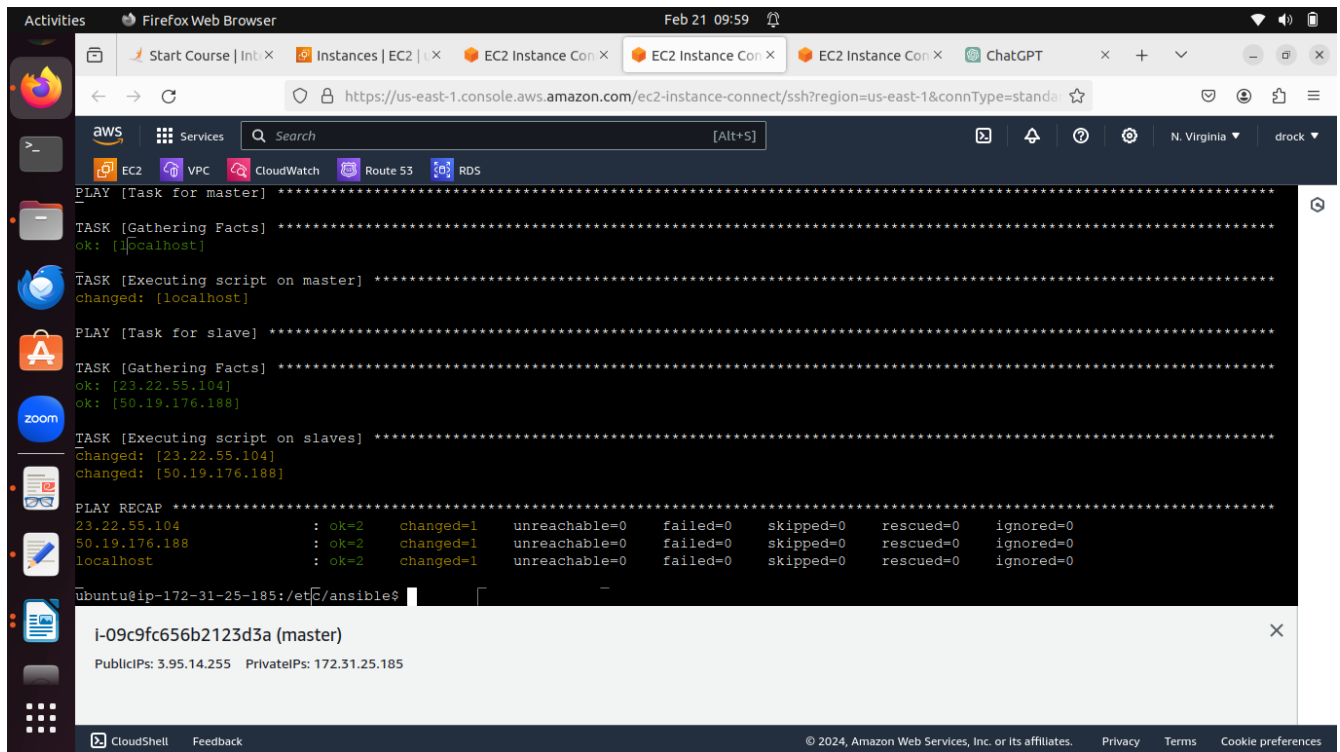
TASK [Executing script on master] *****
skipping: [localhost]

PLAY [Task for slave] *****
TASK [Gathering Facts] *****
ok: [23.22.55.104]
ok: [50.19.176.188]

TASK [Executing script on slaves] *****
skipping: [50.19.176.188]

```

ansible-playbook playbook.yml



## On Slaves:

docker --version

java --version

```
ubuntu@ip-172-31-23-244:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-23-244:~$ java --version
openjdk 11.0.21 2023-10-17
OpenJDK Runtime Environment (build 11.0.21+9-post-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.21+9-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)
ubuntu@ip-172-31-23-244:~$
```

i-05f37dbd588623be4 (prod)

PublicIPs: 50.19.176.188 PrivateIPs: 172.31.23.244

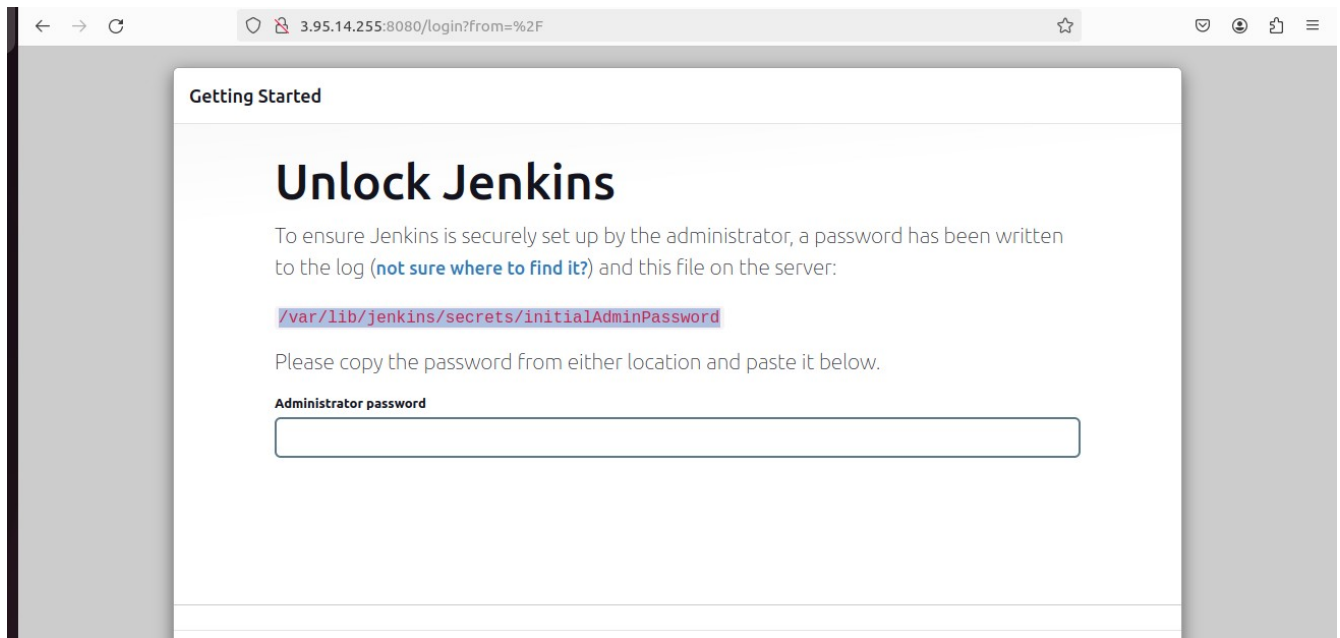
```
ubuntu@ip-172-31-26-16:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-26-16:~$ java --version
openjdk 11.0.21 2023-10-17
OpenJDK Runtime Environment (build 11.0.21+9-post-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.21+9-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)
ubuntu@ip-172-31-26-16:~$
```

i-0a291a23504cb1ec4 (test)

PublicIPs: 23.22.55.104 PrivateIPs: 172.31.26.16

JENKINS

PUBLIC IP :8080



```
sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

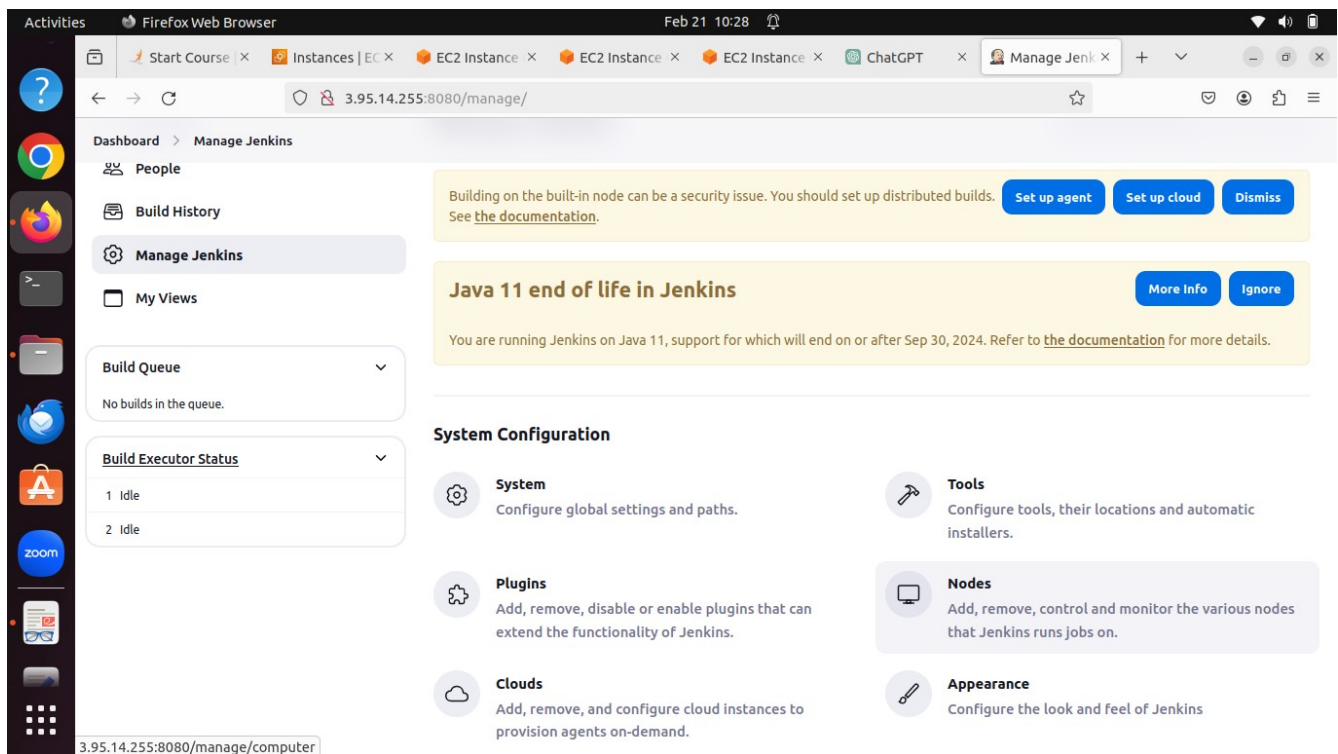
```
ubuntu@ip-172-31-25-185:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
736f2daae85c44ff9fecbba65f8a5cee
ubuntu@ip-172-31-25-185:~$
```

i-09c9fc656b2123d3a (master)

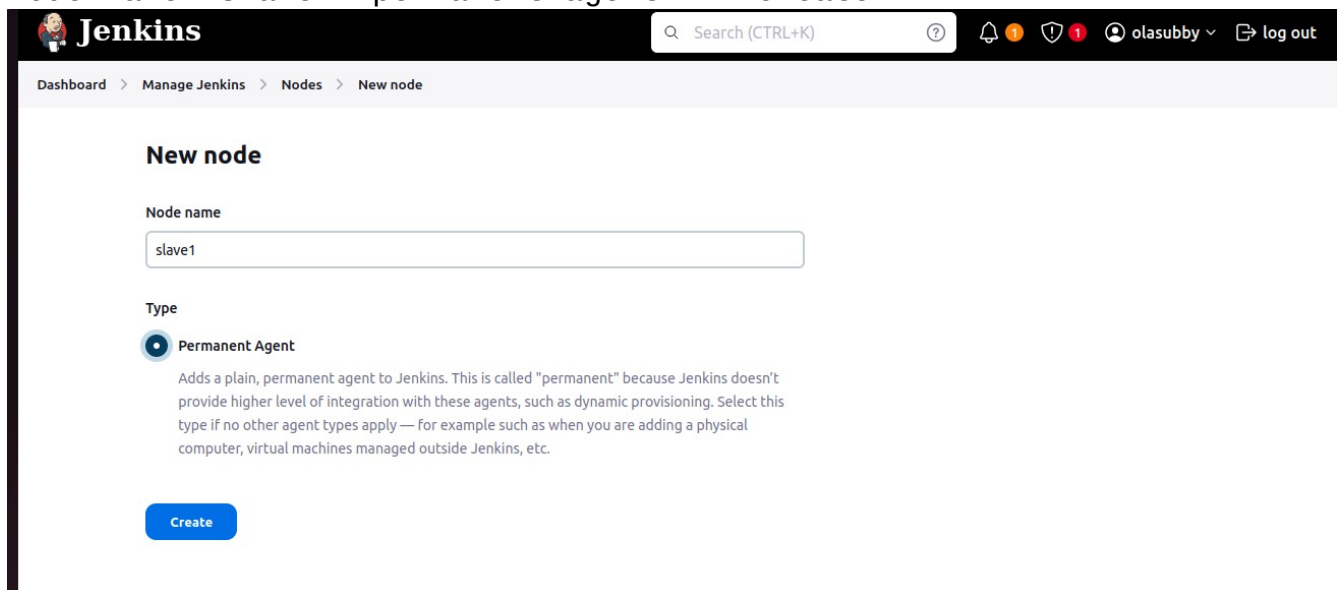
PublicIPs: 3.95.14.255 PrivateIPs: 172.31.25.185

copy password from here to jenkins page

Manage Jenkins – System Configure -- Nodes



Node Name: slave1> permanent agent ----create



Down scroll to:

Remote root directory:  
/home/ubuntu/jenkins

Remote root directory ?

/home/ubuntu/jenkins/

❗ Remote directory is mandatory

Labels ?

Launch Method

Launch Agent via ssh

Private ip of slave1

Credentials:

Add  
Jenkins

Jenkins Credentials Provider: Jenkins

Add Credentials

Domain

Global credentials (unrestricted)

Kind

Username with password

Username with password

GitHub App

SSH Username with private key

Secret file

Secret text

Certificate

username: ubuntu

click: Enter directory



12

Username  
ubuntu

☐ Treat username as secret ?

Private Key  
☒ Enter directly  
 Key  
 No Stored Value Add

Passphrase

Availability ?

put in the private key from the slave server and save

Private key>eneter directly:paste the pem file>add

Host key Verification: Non verifying strategy

Save

Nodes

Clouds

Build Queue

Build Executor Status

Built-In Node

slave1

slave2

Nodes

New Node

Configure Monitors

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-In Node	Linux (amd64)	In sync	4.35 GiB	1 0 B	4.35 GiB	0ms
	slave1	Linux (amd64)	In sync	5.08 GiB	1 0 B	5.08 GiB	71ms
	slave2	Linux (amd64)	In sync	5.08 GiB	1 0 B	5.08 GiB	72ms
Data obtained		1 min 34 sec	1 min 34 sec	1 min 34 sec	1 min 34 sec	1 min 34 sec	1 min 34 sec

Icon:

S

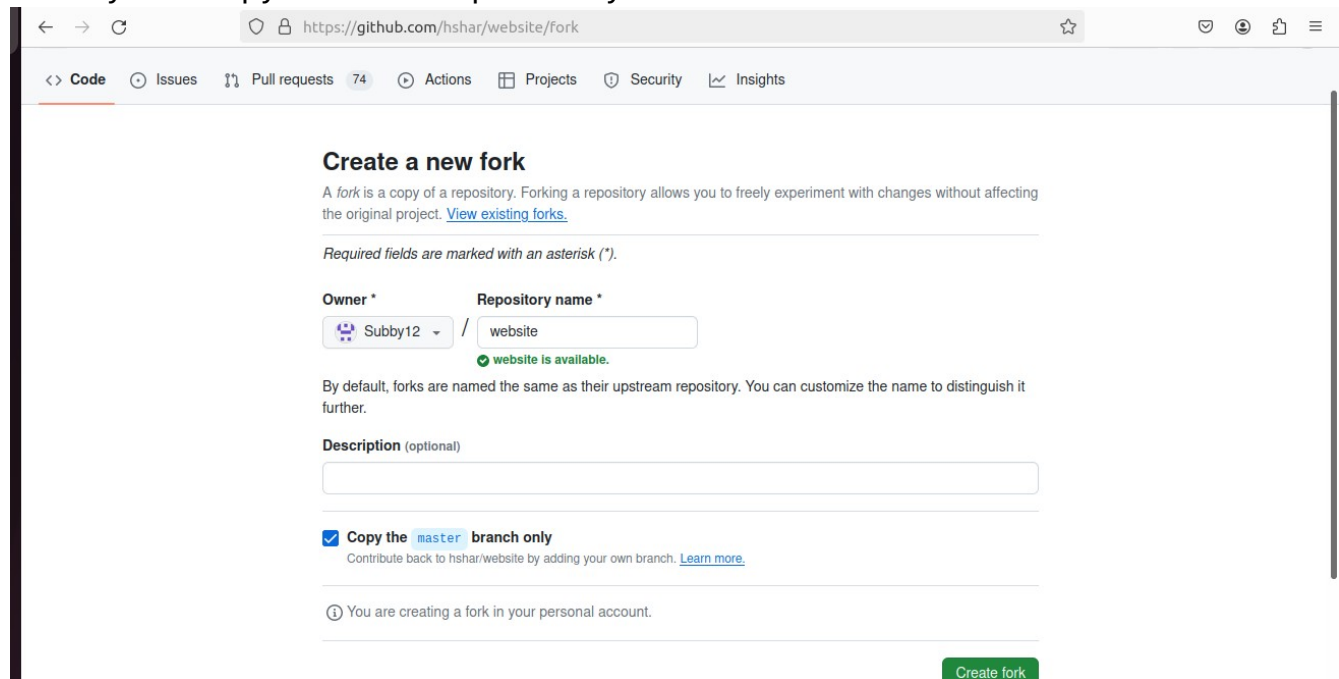
M

L

## Create a Dockerfile

From the github link: <https://github.com/hshar/website.git>

fork your copy of the repository



The screenshot shows the GitHub 'Create a new fork' page. The browser address bar displays 'https://github.com/hshar/website/fork'. The page has a navigation bar with links for Code, Issues, Pull requests (74), Actions, Projects, Security, and Insights. The main content area is titled 'Create a new fork' and includes a brief explanation of forking. Below this, there are input fields for 'Owner' (set to 'Subby12') and 'Repository name' (set to 'website'). A green checkmark indicates 'website is available.'. A 'Description' field is also present. A checkbox labeled 'Copy the master branch only' is checked. At the bottom right, there is a green 'Create fork' button.

Create a new fork

A fork is a copy of a repository. Forking a repository allows you to freely experiment with changes without affecting the original project. [View existing forks.](#)

Required fields are marked with an asterisk (\*).

Owner \* Repository name \*

Subby12 / website

website is available.

By default, forks are named the same as their upstream repository. You can customize the name to distinguish it further.

Description (optional)

☒ Copy the master branch only

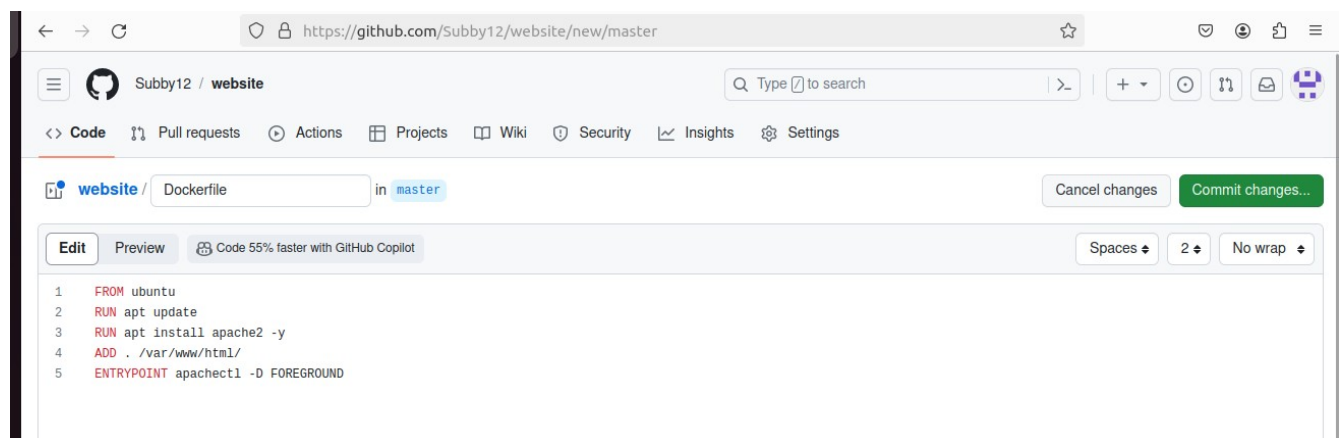
Contribute back to hshar/website by adding your own branch. [Learn more.](#)

*i* You are creating a fork in your personal account.

Create fork

content:

```
FROM ubuntu
RUN apt update
RUN apt install apache2 -y
ADD . /var/www/html/
ENTRYPOINT apachectl -D FOREGROUND
```



The screenshot shows the GitHub repository page for 'Subby12 / website'. The browser address bar displays 'https://github.com/Subby12/website/new/master'. The page has a navigation bar with links for Code, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The main content area shows the 'Dockerfile' file in the 'master' branch. The file content is displayed in a code editor with line numbers 1 through 5. The code is as follows:

```
1 FROM ubuntu
2 RUN apt update
3 RUN apt install apache2 -y
4 ADD . /var/www/html/
5 ENTRYPOINT apachectl -D FOREGROUND
```

Buttons for 'Edit', 'Preview', 'Code 55% faster with GitHub Copilot', 'Spaces', '2', and 'No wrap' are visible. At the top right, there are buttons for 'Cancel changes' and 'Commit changes...'.

Subby12 / website

Type to search

Code Pull requests Actions Projects Wiki Security Insights Settings

website / Dockerfile in master

Cancel changes Commit changes...

Edit Preview Code 55% faster with GitHub Copilot Spaces 2 No wrap

```
1 FROM ubuntu
2 RUN apt update
3 RUN apt install apache2 -y
4 ADD . /var/www/html/
5 ENTRYPOINT apachectl -D FOREGROUND
```

← → ↻ https://github.com/Subby12/website/tree/master

Subby12 / website

Code Pull requests Actions Projects Wiki Security Insights Settings

website Public

forked from hshar/website

Pin Watch 0 Fork 0 Star 0

master 1 Branch 0 Tags

Go to file Add file Code

This branch is 1 commit ahead of hshar/website:master.

Contribute Sync fork

Subby12 Create Dockerfile 61d68c6 · 6 minutes ago 3 Commits

images	final	5 years ago
Dockerfile	Create Dockerfile	6 minutes ago
index.html	modified	5 years ago

README

About

No description, website, or topics provided.

Activity

- 0 stars
- 0 watching
- 0 forks

Releases

No releases published

[Create a new release](#)

Create branch name =Develop IN THE GITHUB

← → ↻ https://github.com/Subby12/website/tree/Develop

Subby12 / website

Code Pull requests Actions Projects Wiki Security Insights Settings

website Public

forked from hshar/website

Pin Watch 0 Fork 0 Star 0

Develop 2 Branches 0 Tags

Go to file Add file Code

This branch is 1 commit ahead of hshar/website:master.

Contribute Sync fork

About

No description, website, or topics provided.

Go ahead and create the jobs in Jenkins  
Dashboard... New Items  
Give the job name: Job1  
Pick: Freestyle option

Enter an item name

Job1

» Required field

**Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

**Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

OK

Git hub project: add repo

Build Triggers

Build Environment

Build Steps

☒ GitHub project

Project url ?

https://github.com/Subby12/website.git

Click on Restrict where the project run: Slave1 Source Code  
Management: Git> paste URL

**Configure**

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

☐ Execute concurrent builds if necessary ?

☒ Restrict where this project can be run ?

Label Expression ?

Advanced

**Source Code Management**

☐ None


☒ Git ?

Repositories ?

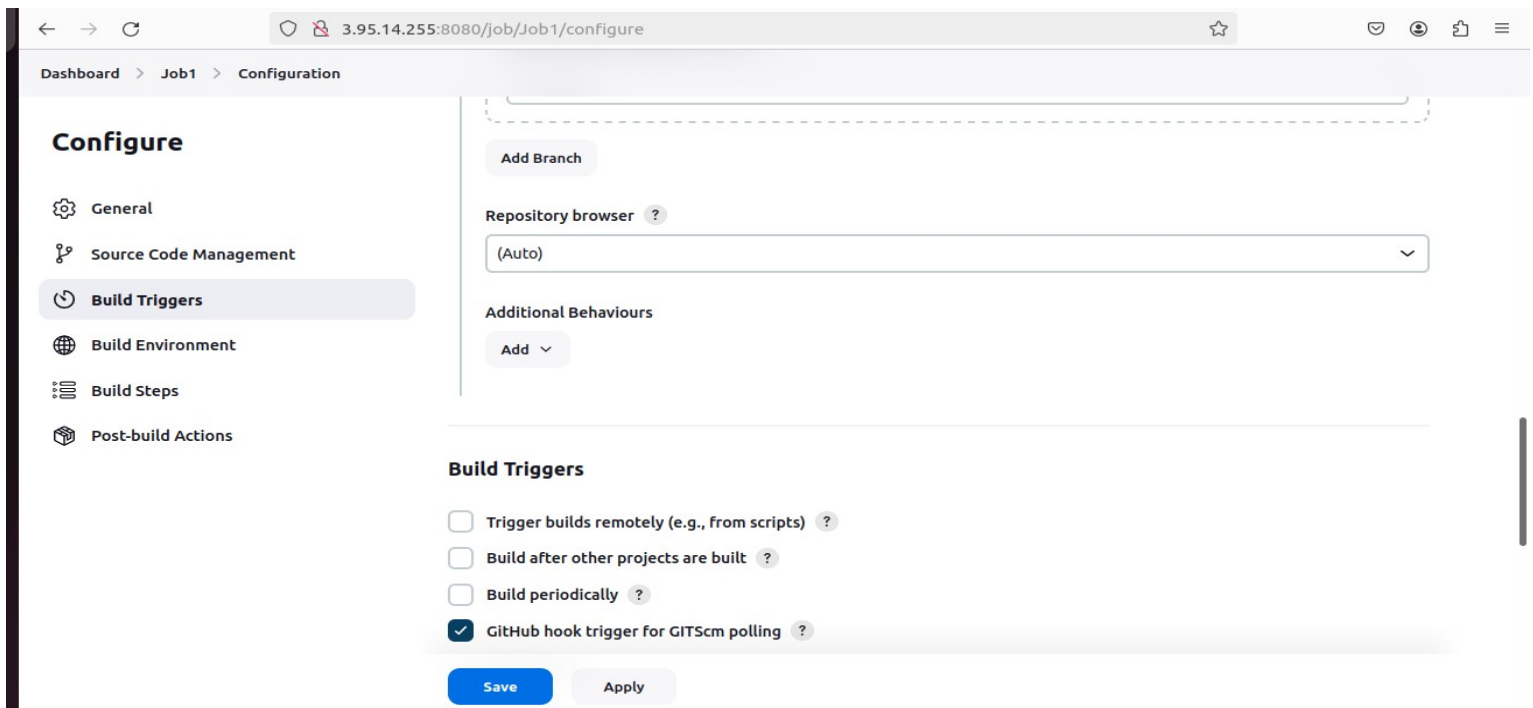
Repository URL ?

https://github.com/Subby12/website.git

## Specify branches: Develop



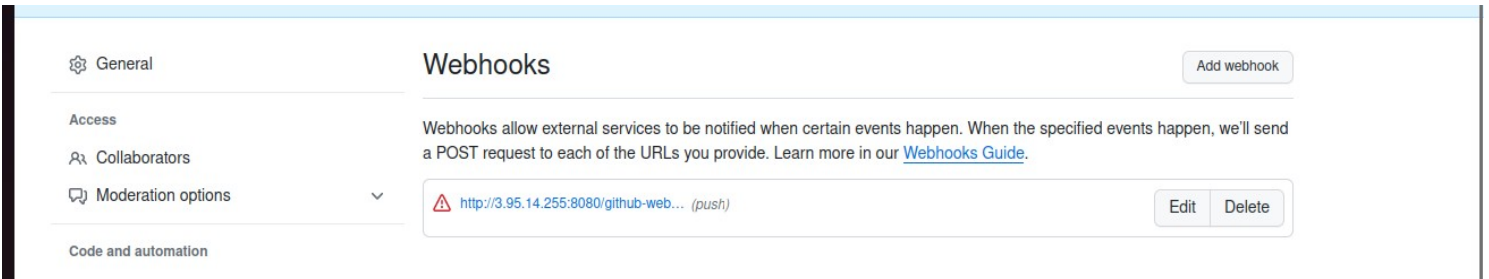
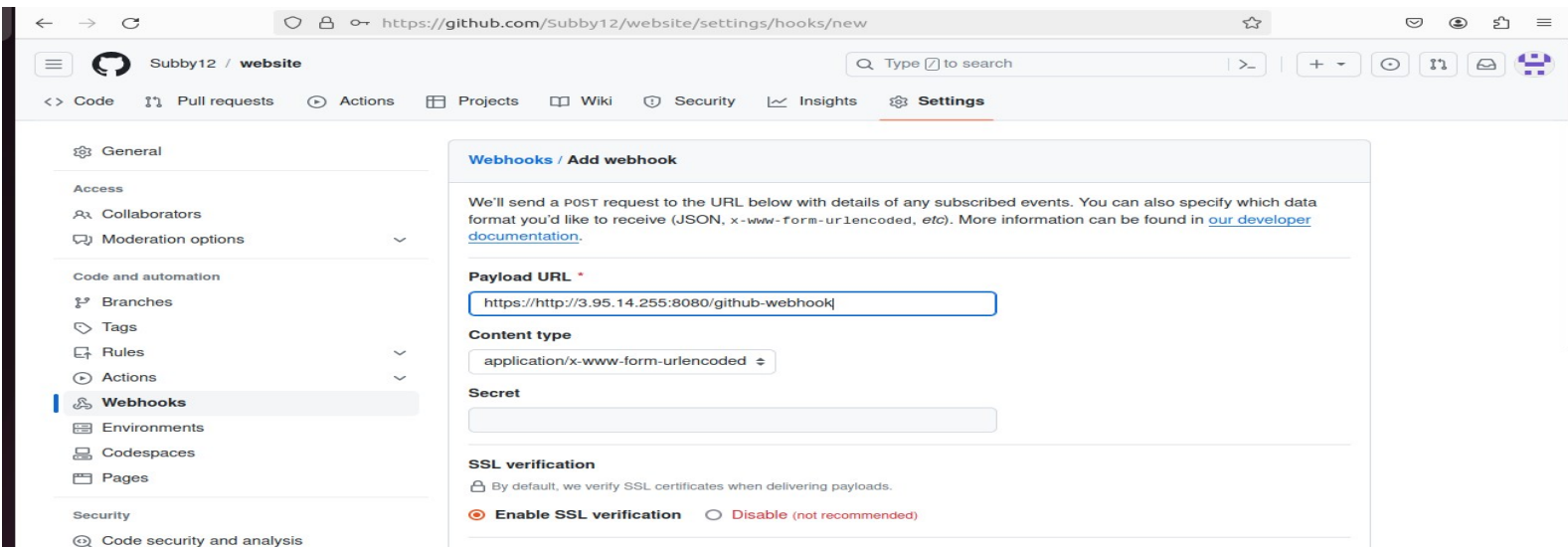
The screenshot shows the 'Build Triggers' configuration page in Jenkins. On the left sidebar, 'Build Triggers' is selected. The main content area has a section titled 'Branches to build' with a help icon. Below it is a 'Branch Specifier (blank for \'any\')' input field containing the text '\*/Develop'. A red 'X' icon is visible in the top right corner of the dashed box surrounding the input field.



The screenshot shows the Jenkins configuration page for 'Job1'. The browser address bar displays '3.95.14.255:8080/job/Job1/configure'. The left sidebar shows the 'Configure' section with 'Build Triggers' selected. The main content area has a section titled 'Build Triggers' with four options: 'Trigger builds remotely (e.g., from scripts)', 'Build after other projects are built', 'Build periodically', and 'GitHub hook trigger for GITScm polling'. The 'GitHub hook trigger for GITScm polling' option is checked. Below the options are 'Save' and 'Apply' buttons.

pick Git scm polling > Copy the jenkins Url i.e  
`http://2.426.23.42:8080`

go to github>settings>webhook>add webhook> paste the url(url/github-  
webhook/) > add > click the link> recent deliveries



Come back to dashboard>  
Save >Build job1



## Slave1 Server

Dockerfile created can be seen here

```
ubuntu@ip-172-31-26-16:~$ ls
jenkins
ubuntu@ip-172-31-26-16:~$ cd jenkins
ubuntu@ip-172-31-26-16:~/jenkins$ ls
remoting  remoting.jar  workspace
ubuntu@ip-172-31-26-16:~/jenkins$ cd workspace
ubuntu@ip-172-31-26-16:~/jenkins/workspace$ ls
Job1
ubuntu@ip-172-31-26-16:~/jenkins/workspace$ cd job1
-bash: cd: job1: No such file or directory
ubuntu@ip-172-31-26-16:~/jenkins/workspace$ cd job1
-bash: cd: job1: No such file or directory
ubuntu@ip-172-31-26-16:~/jenkins/workspace$ cd Job1
ubuntu@ip-172-31-26-16:~/jenkins/workspace/Job1$ ls
Dockerfile  images  index.html
ubuntu@ip-172-31-26-16:~/jenkins/workspace/Job1$
```

i-0a291a23504cb1ec4 (test)

PublicIPs: 23.22.55.104 PrivateIPs: 172.31.26.16

## We need to : CREATE AN IMAGE from the Dockerfile

Go back to dashboard

Job1> Configure> Build Step>Execute shell

```
sudo docker build /home/ubuntu/jenkins/workspace/Job1/ -t imagejob1
```

```
sudo docker run -itd -p 85:80 -name=c1 imagejob1
```

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps**
- Post-build Actions

#### Build Steps

##### Execute shell ?

###### Command

See [the list of available environment variables](#)

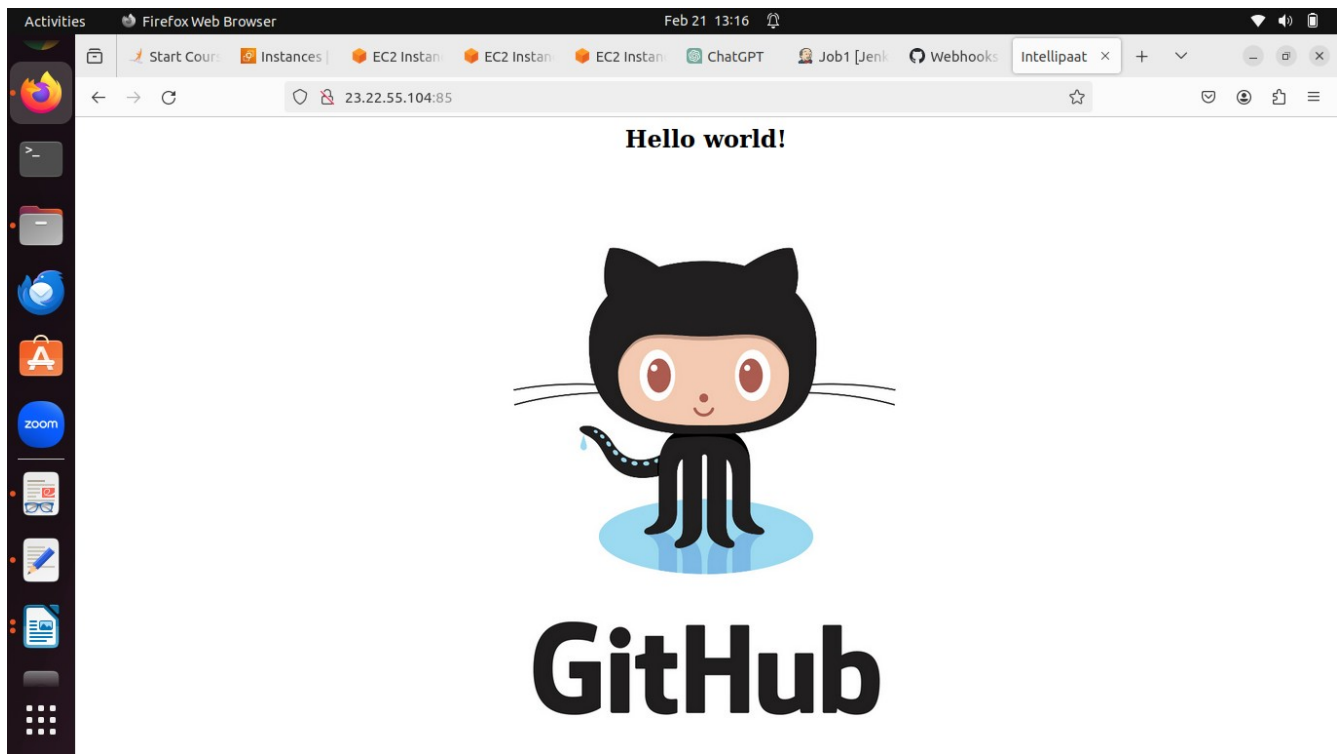
```
sudo docker build . -t job1
sudo docker run -itd -p 85:80 --name=c1 imagejob1
```

Advanced ▾

Add build step ▾

Add >Build now

Copy the public ip of test and run it with port 85



To build Again without fail: change the command to include:

```
sudo docker rm -f $(sudo docker ps -a -q)
sudo docker build . -t job1
sudo docker run -itd -p 85:80 --name=c1 job1
```



Activities

Firefox Web Browser

Feb 21 13:26

Start Course Instances EC2 Instance EC2 Instance EC2 Instance ChatGPT Job1 Configuration Webhooks Intellipaat

3.95.14.255:8080/job/Job1/configure

Dashboard > Job1 > Configuration

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Build Steps

Execute shell

Command

See the list of available environment variables

```
sudo docker rm -f $(sudo docker ps -a -q)
sudo docker build . -t job1
sudo docker run -itd -p 85:80 --name=c1 job1
```

Advanced

Add build step

Save Apply

Build History

trend

Filter...

#5Feb 21, 2024, 12:27 PM

#4Feb 21, 2024, 12:27 PM

#3Feb 21, 2024, 12:22 PM

#2Feb 21, 2024, 12:14 PM

## Create Job2

### Dashboard>New Item

Dashboard > All >

Enter an item name

» Required field

If you want to create a new item from other existing, you can use this option:

Copy from

OK

## Pick slave1

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

☐ Throttle builds ?

☐ Execute concurrent builds if necessary ?

☒ Restrict where this project can be run ?

Label Expression ?

Label slave1 matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Advanced ▾

## specify: \*/master

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Branch Specifier (blank for 'any') ?

Add Branch

Repository browser ?

## Command:

```
sudo docker build . -t job2
sudo docker run -itd -p 80:80 job2
```

### Configure

- General
- Source Code Management
- Build Triggers
- Build Environment
- Build Steps**

### Build Steps

Execute shell ?

Command

See [the list of available environment variables](#)

```
sudo docker build . -t job2
sudo docker run -itd -p 80:80 job2
```

apply & Save

Build Now

To rebuild after 1<sup>st</sup> build:  
use command:(change port... )

```
sudo docker rm -f $(sudo docker ps -a -q)
sudo docker build . -t job2
sudo docker run -itd -p 82:80 job2
```

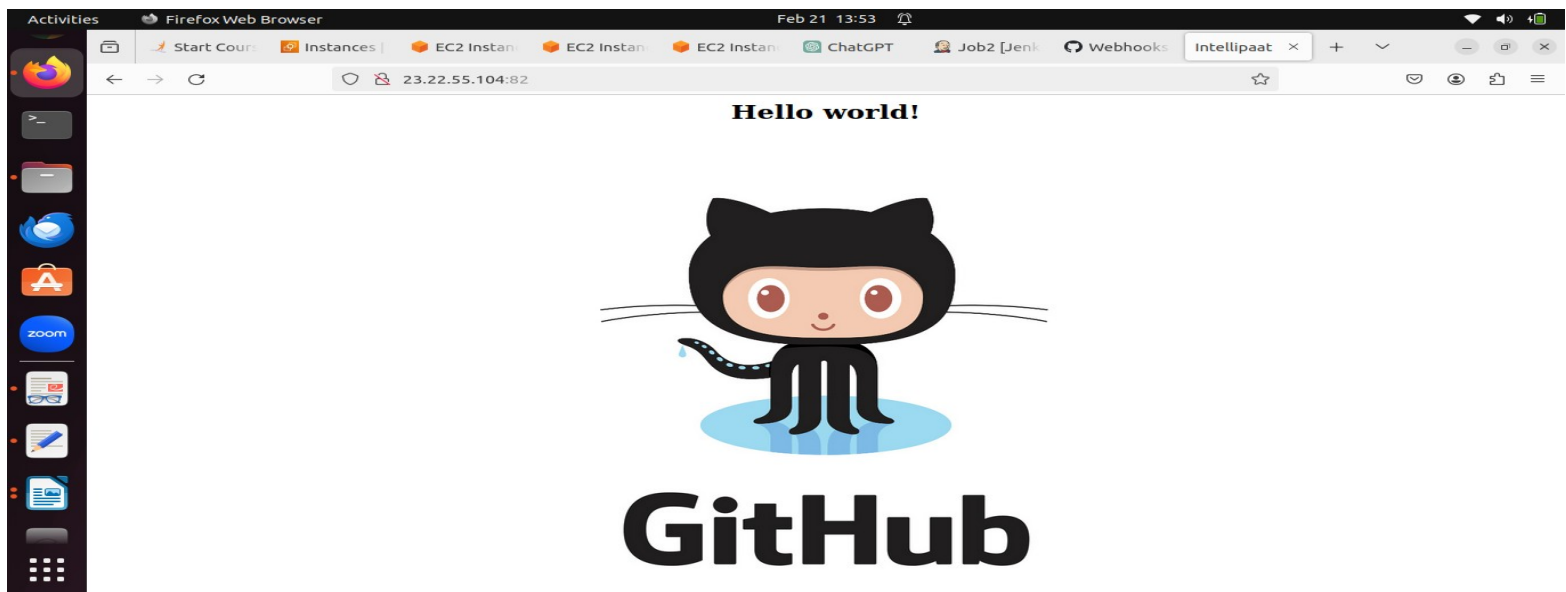
Rename

Build History trend

Filter...

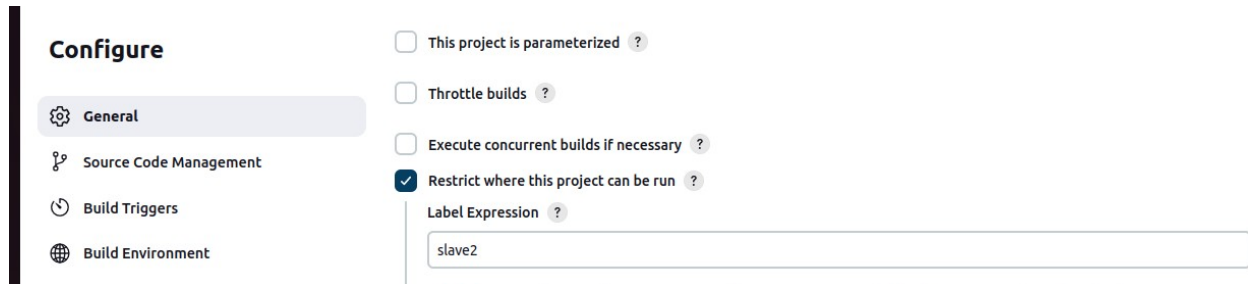
#4	Feb 21, 2024, 12:50 PM
#3	Feb 21, 2024, 12:50 PM
#2	Feb 21, 2024, 12:50 PM
#1	Feb 21, 2024, 12:41 PM

Public ip of slave1:port82



Job 3:  
Dashboard>New Item

Choose slave2



**Configure**

- General
- Source Code Management
- Build Triggers
- Build Environment

☐ This project is parameterized ?

☐ Throttle builds ?

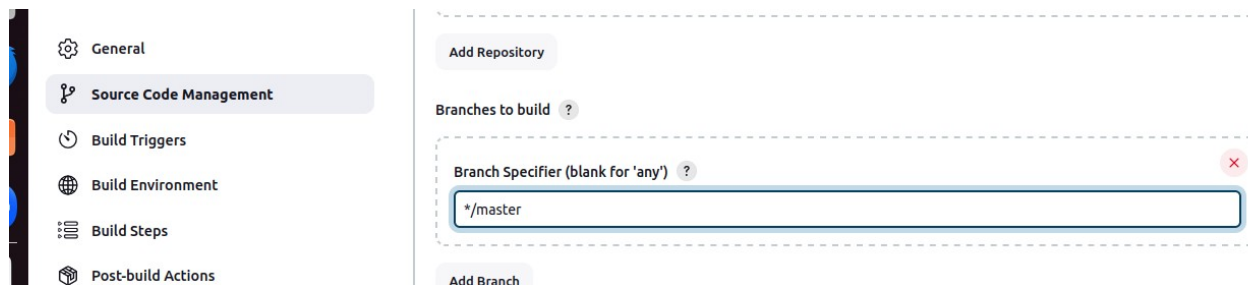
☐ Execute concurrent builds if necessary ?

☒ Restrict where this project can be run ?

Label Expression ?

slave2

Branch: Master



General

**Source Code Management**

Build Triggers

Build Environment

Build Steps

Post-build Actions

Add Repository

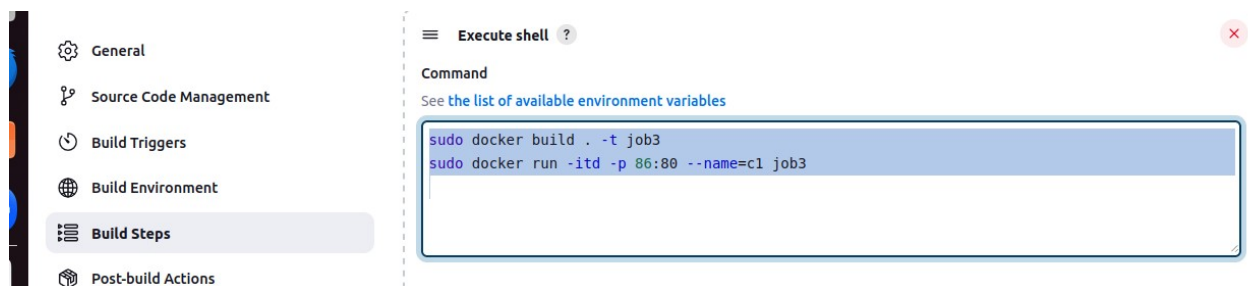
Branches to build ?

Branch Specifier (blank for 'any') ?

\*/master

Add Branch

Command:  
sudo docker build . -t job3  
sudo docker run -itd -p 86:80 --name=c1 job3



General

Source Code Management

Build Triggers

Build Environment

**Build Steps**

Post-build Actions

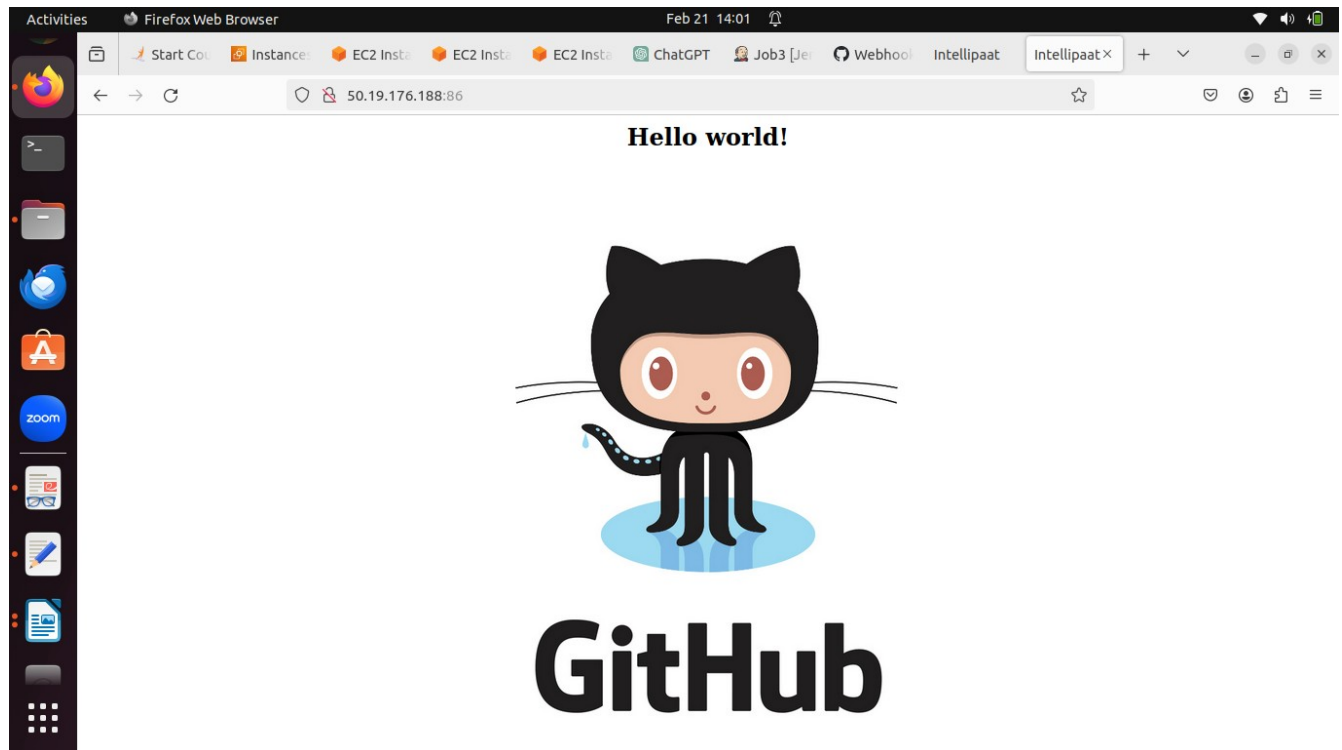
Execute shell ?

Command

See [the list of available environment variables](#)

```
sudo docker build . -t job3
sudo docker run -itd -p 86:80 --name=c1 job3
```

Public ip of slave2:86



If I proceed to make changes to html file in the github and commit it:


 **website** / index.html in **Develop**

Cancel changes

Commit changes...

Edit

Preview

 Code 55% faster with GitHub Copilot

Spaces ▾

2 ▾

No wrap ▾

```
1 <html>
2 <head>
3 <title> Intellipaat </title>
4 </head>
5 <body style = "background-image:url('images/github3.jpg'); background-size: 100%">
6 <!-- <h2 ALIGN=CENTER>How Are You All Doing</h2> -->
7 </body>
8 </html>
-
```