Integration of Devops tools with Jenkins

You have been Hired as a Devops Engineer in xyz software company. They want to implement CI/CD pipeline in their company. You have been asked to implement this lifecycle as fast as possible. As this is a product-based company, their product is available on this GitHub link.

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

Following are the specifications of the Continuous integration:

1. Git Workflow has to be implemented

2. Code Build should automatically be triggered once commit is made to master branch or develop branch.

If commit is made to master branch, build and publish website on

port 82. If commit is made to develop branch, just build the

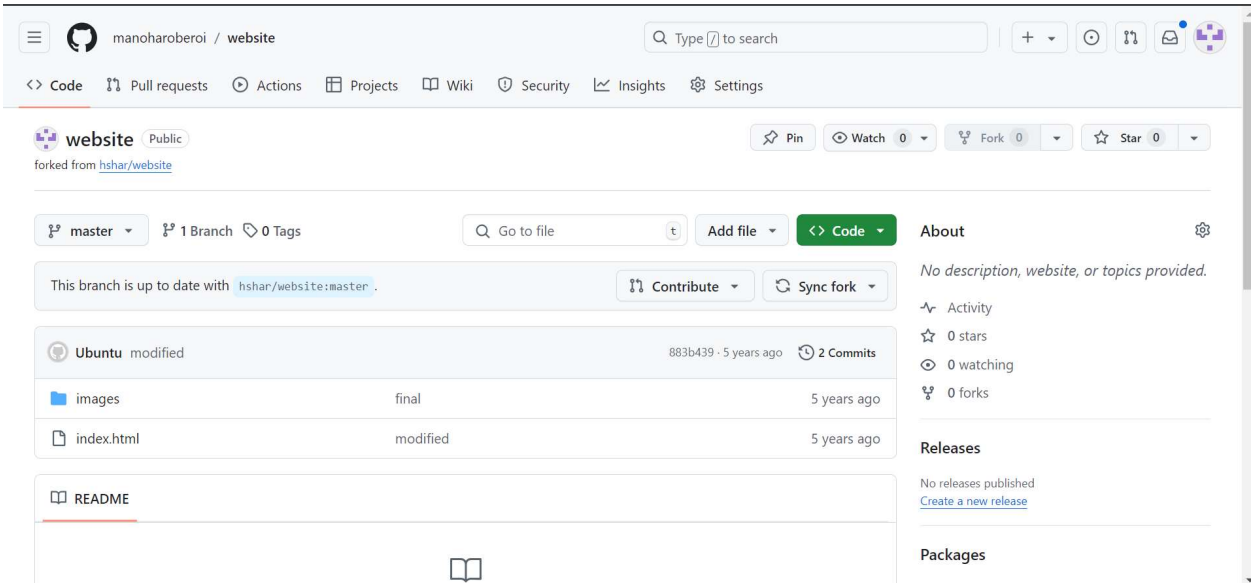
product, do not publish.

3. Create a pipeline for the above tasks.

4. Create a container with Ubuntu and apache installed in it and use that container to build the code and the code should be on '/var/www/html'.

Solution:

Fork the repository.

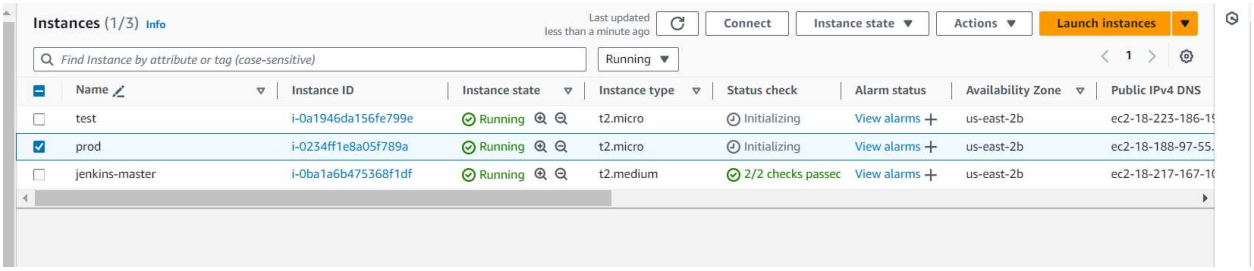


Create 3 ec2 servers

1)Jenkins-master

2)Prod

3)test



Connect to the ec2 servers and update them

```
ubuntu@ip-172-31-23-121:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.8 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2386 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [410 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [616 B]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1123 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [261 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.2 kB]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.3 kB]
Get:21 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.8 kB]
Get:22 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]
Get:23 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.8 kB]
Get:24 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

```
ubuntu@ip-172-31-18-197:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1771 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [291 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2327 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [400 kB]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:18 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [584 B]
```

i-0a1946da156fe799e (test)

PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

```
ubuntu@ip-172-31-25-55:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.8 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2386 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [410 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [616 B]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1123 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [261 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.2 kB]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.3 kB]
Get:21 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.8 kB]
Get:22 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]
Get:23 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.8 kB]
Get:24 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
```

i-0234ff1e8a05f789a (prod)

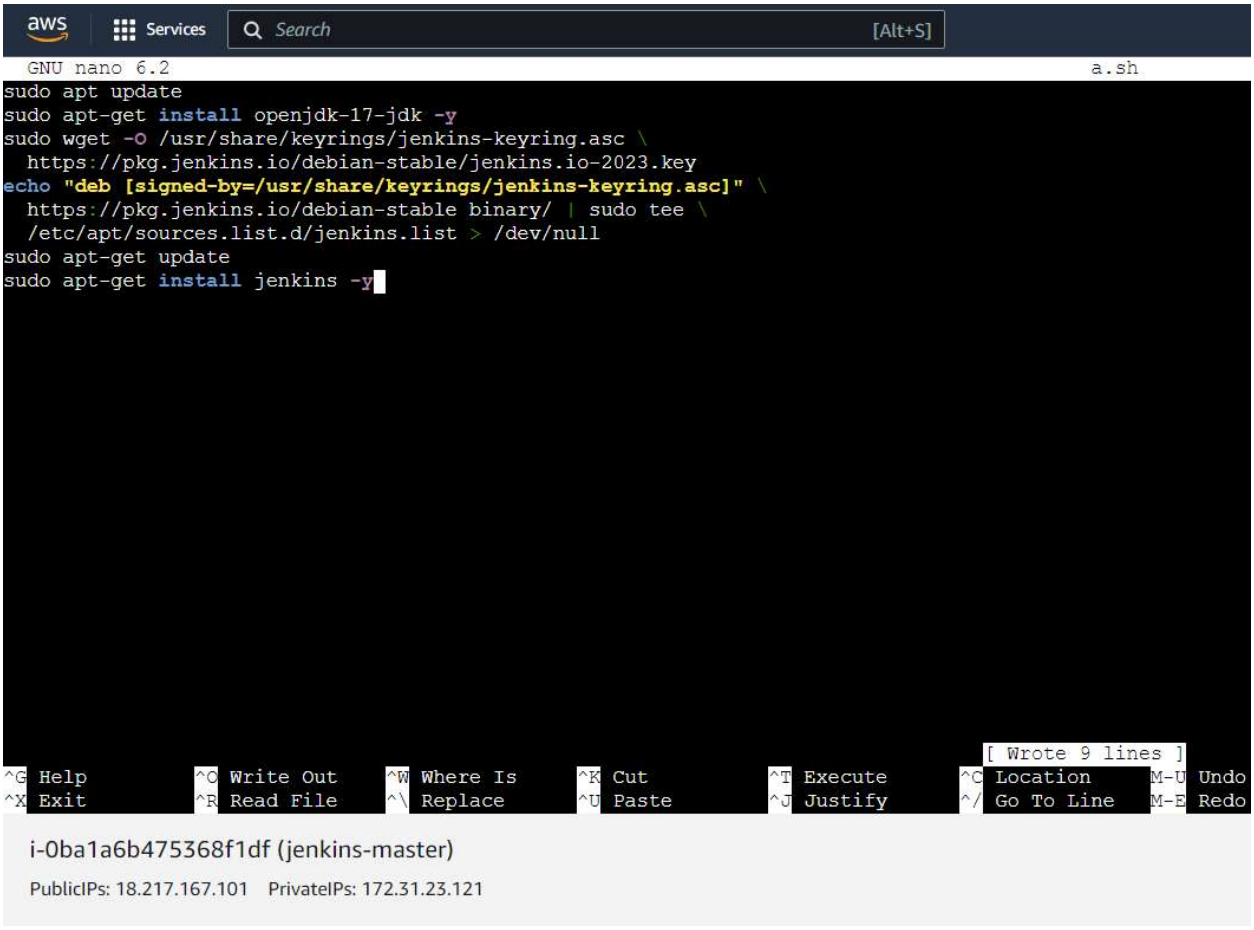
PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

Install java & jenkins on master server

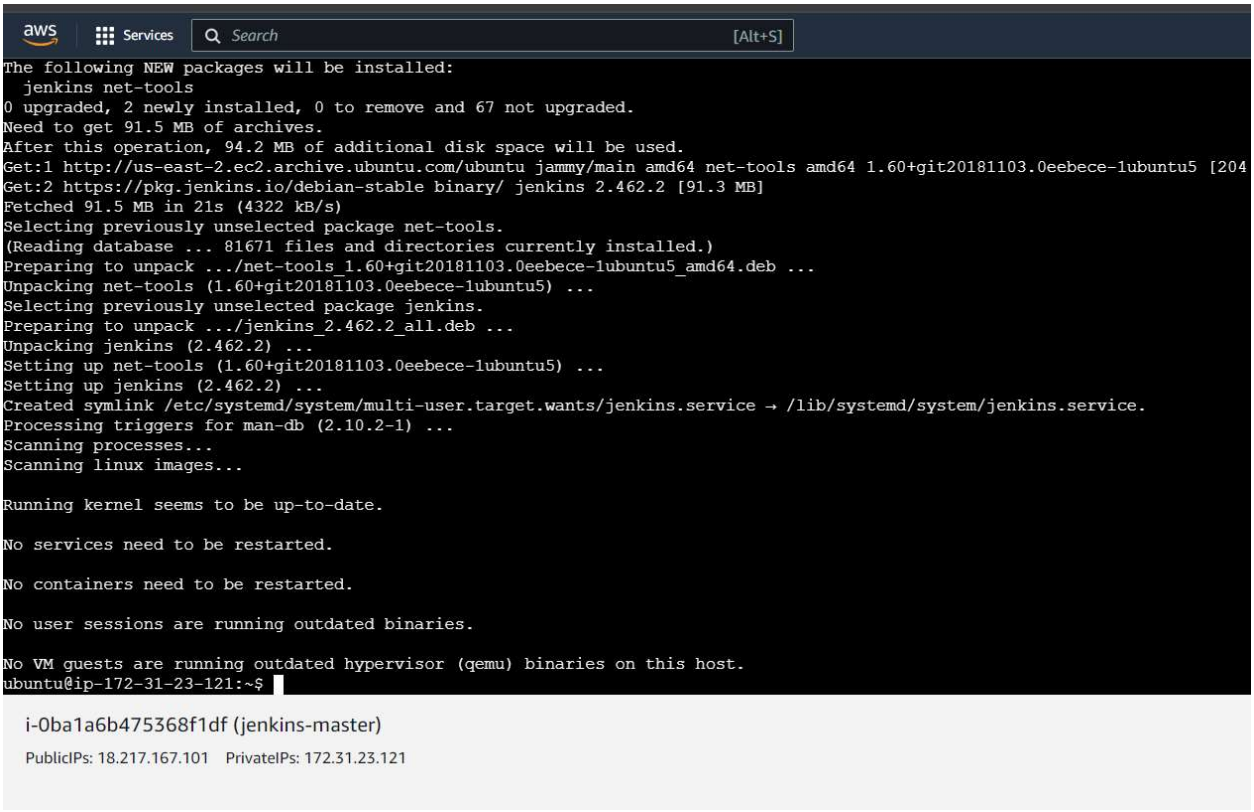
```
ubuntu@ip-172-31-23-121:~$ sudo nano a.sh
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121


aws
Services
Search
[Alt+S]
GNU nano 6.2
a.sh
sudo apt update
sudo apt-get install openjdk-17-jdk -y
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins -y
[Wrote 9 lines]
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo
i-0ba1a6b475368f1df (jenkins-master)
PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121


ubuntu@ip-172-31-23-121:~$ bash a.sh
i-0ba1a6b475368f1df (jenkins-master)
PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121



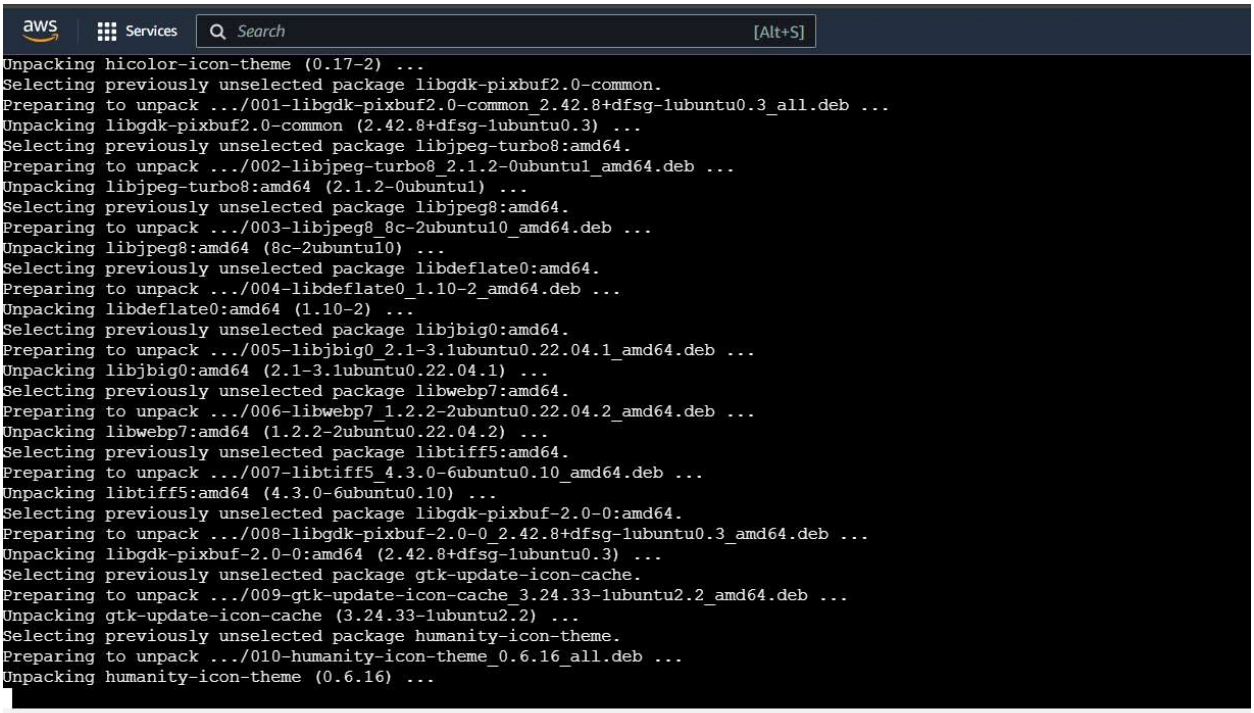
Install docker on jenkins master

sudo apt-get install docker.io -y

Install java & docker on prod and test server

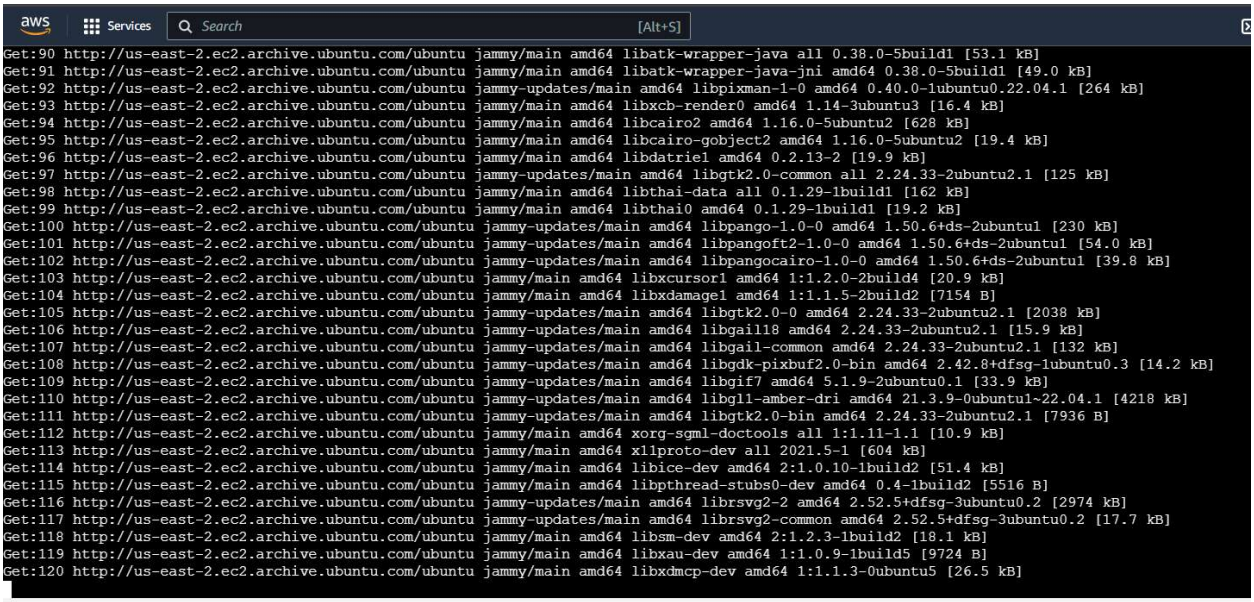
sudo apt-get install openjdk-17-jdk -y

sudo apt-get install docker.io -y



i-0a1946da156fe799e (test)

PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197



i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

```
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-25-55:~$ sudo apt-get install docker.io -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 67 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2~22.04.1 [8405 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2~22.04.1 [37.8 MB]
```

i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

```
ubuntu@ip-172-31-18-197:~$ sudo apt-get install docker.io -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 67 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2~22.04.1 [8405 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2~22.04.1 [37.8 MB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702~ubuntu0.22.04.1 [5136 B]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.7-0ubuntu2~22.04.1 [28.8 MB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 75.5 MB in 1s (73.5 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 81671 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.12-0ubuntu2~22.04.1_amd64.deb ...
```

i-0a1946da156fe799e (test)

PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

Check docker & java version

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-23-121:~$ java --version
openjdk 17.0.12 2024-07-16
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)
ubuntu@ip-172-31-23-121:~$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1
ubuntu@ip-172-31-23-121:~$
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-18-197:~$ java --version
openjdk 17.0.12 2024-07-16
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)
ubuntu@ip-172-31-18-197:~$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1
ubuntu@ip-172-31-18-197:~$
```

i-0a1946da156fe799e (test)

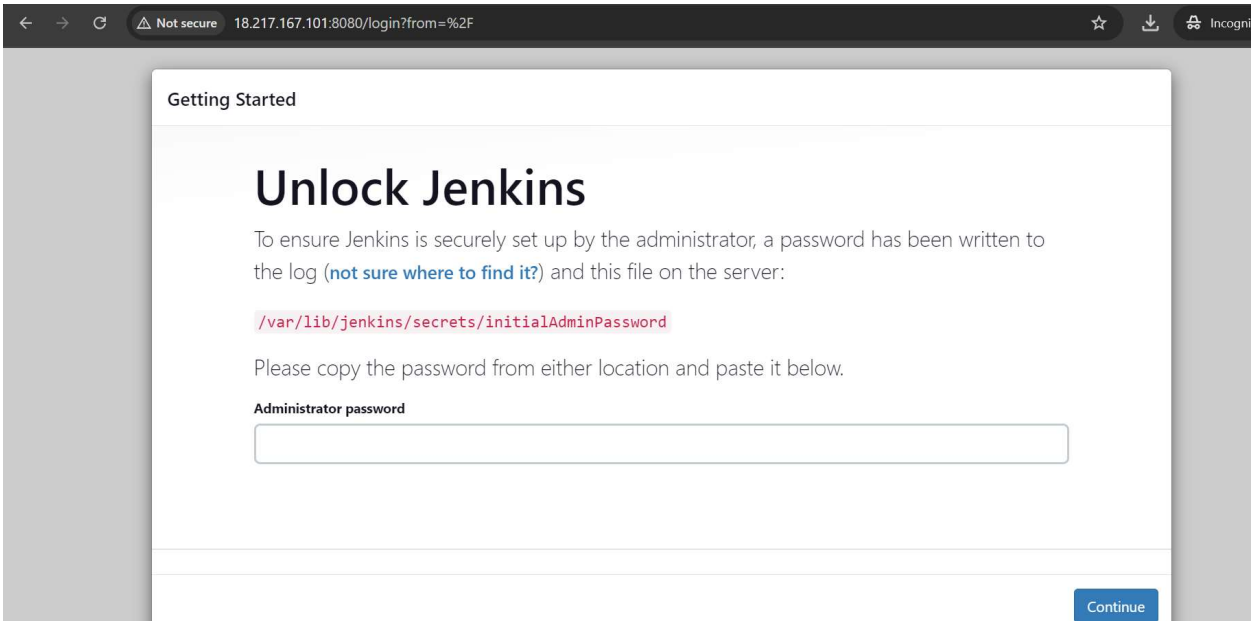
PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-25-55:~$ java --version
openjdk 17.0.12 2024-07-16
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)
ubuntu@ip-172-31-25-55:~$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1
ubuntu@ip-172-31-25-55:~$
```

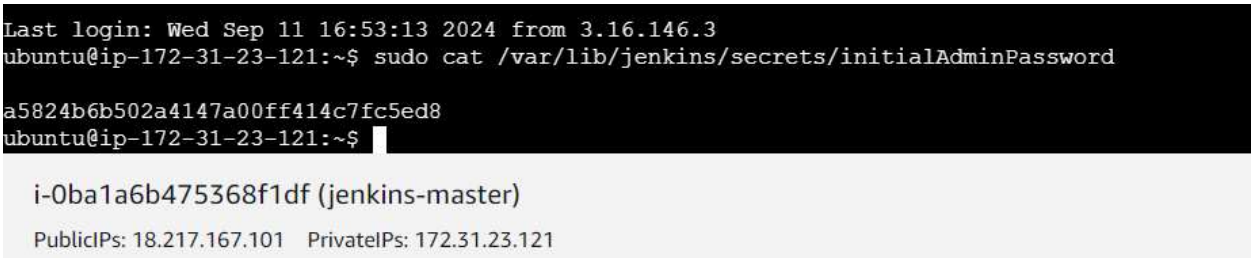
i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

Setup jenkins dashboard

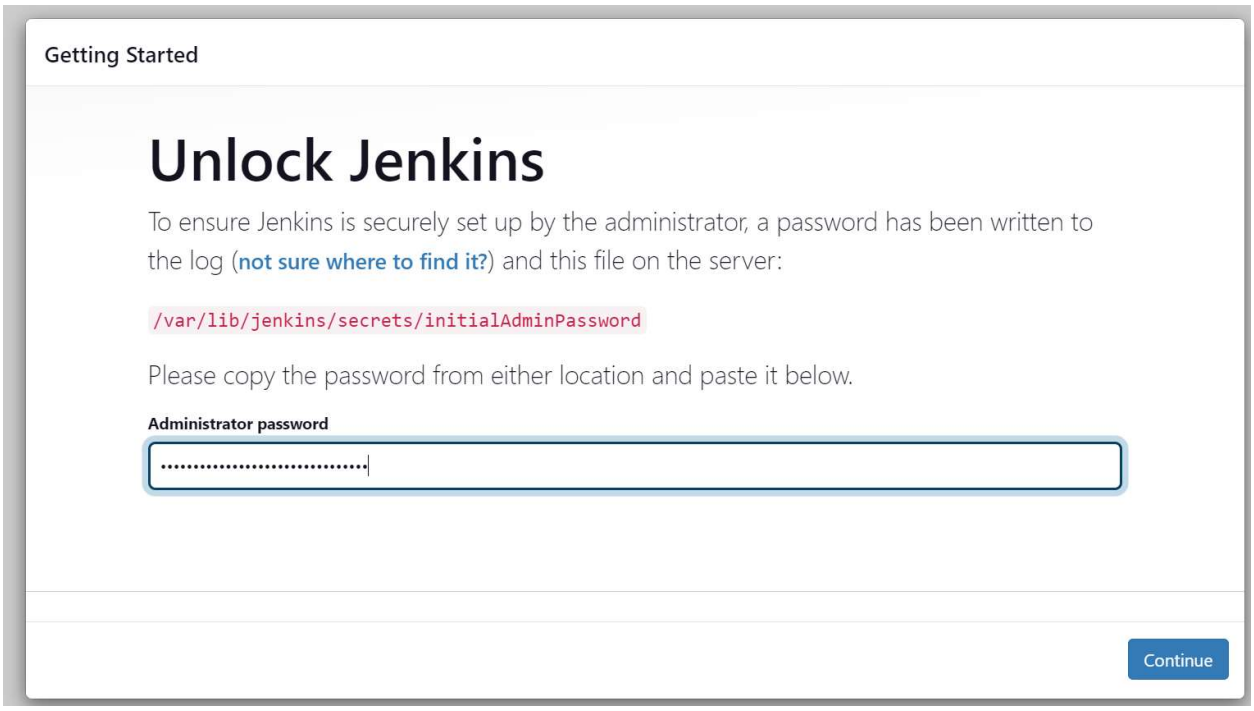


ubuntu@ip-172-31-23-121:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword

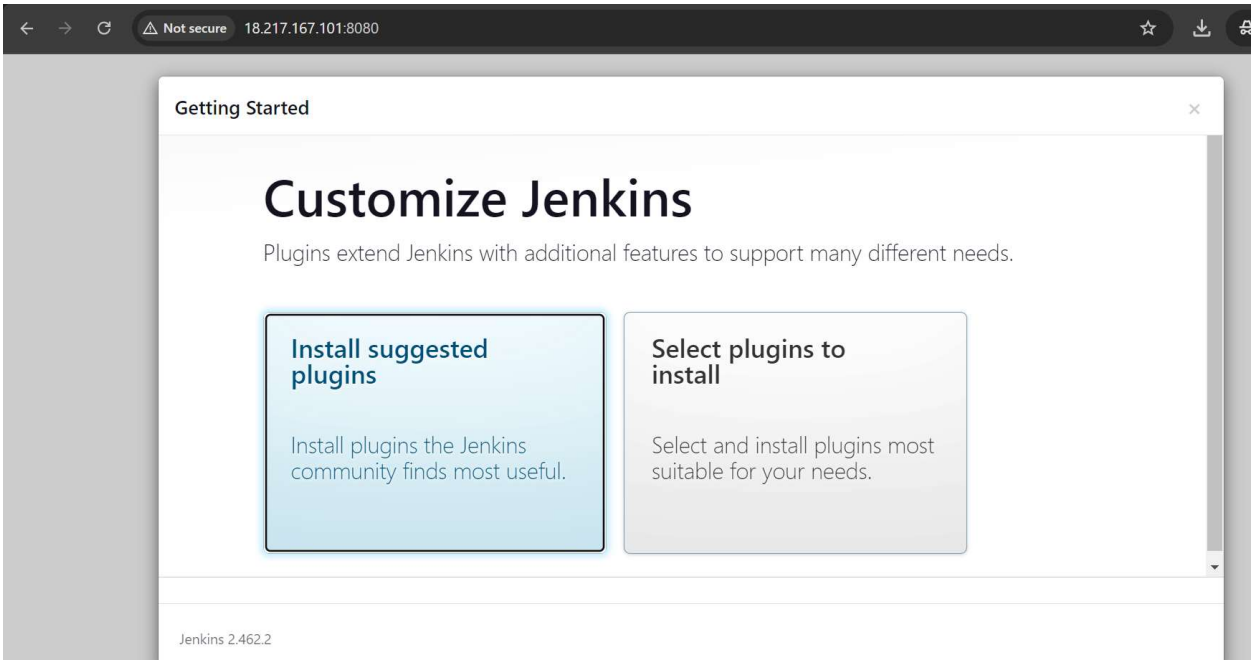


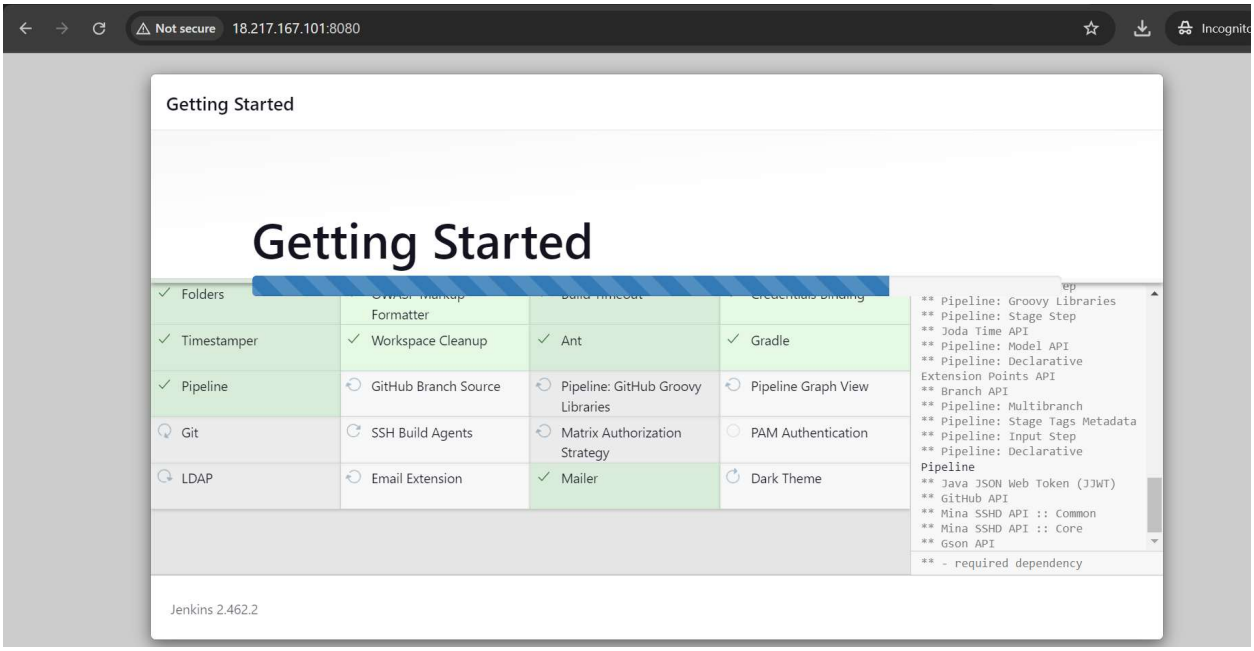
i-0ba1a6b475368f1df (jenkins-master)

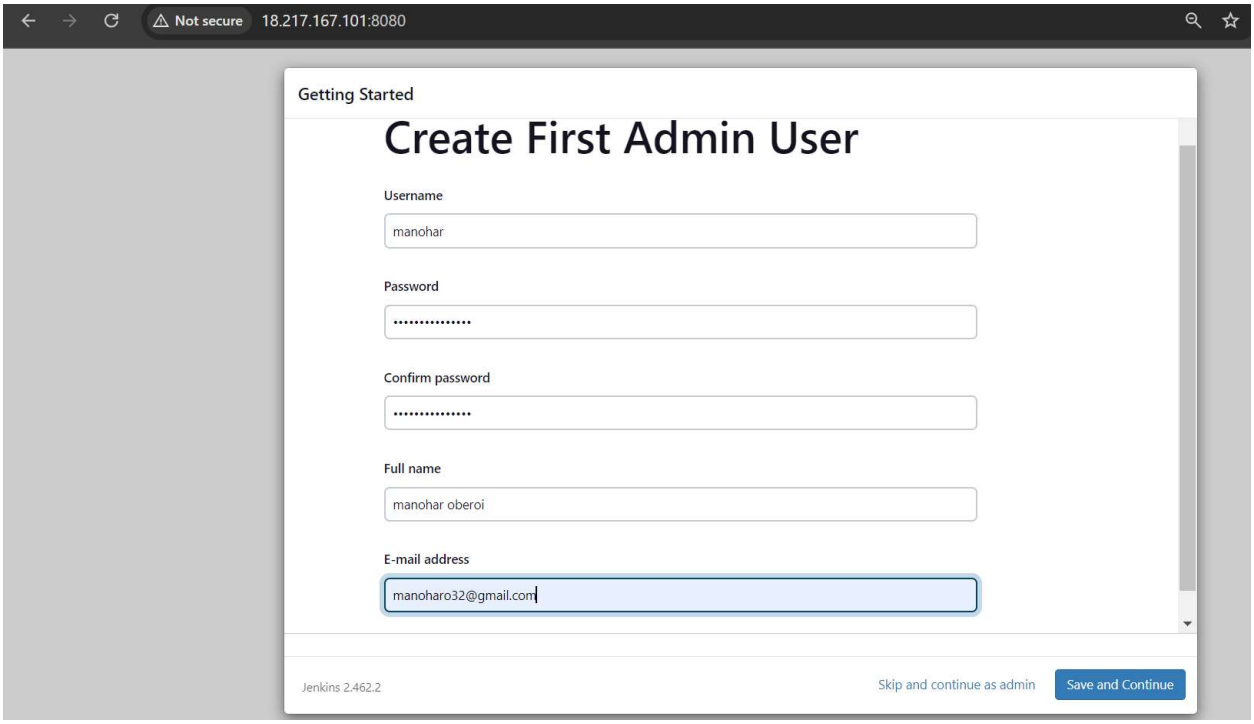
PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

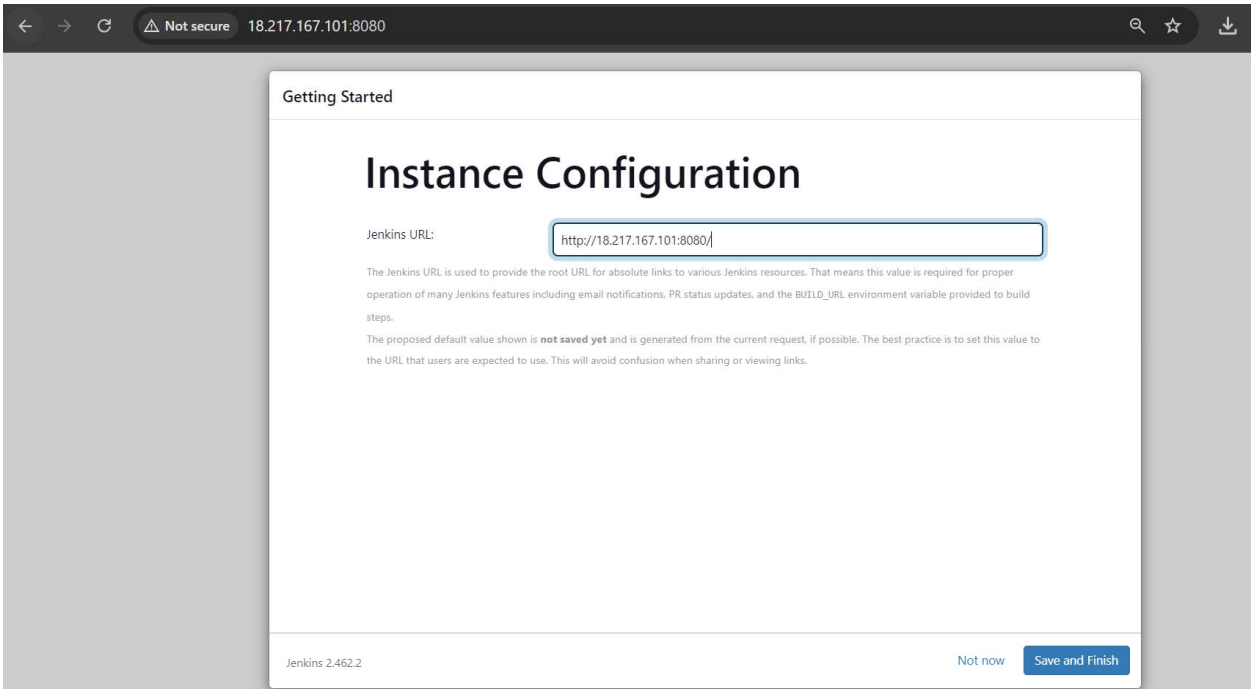


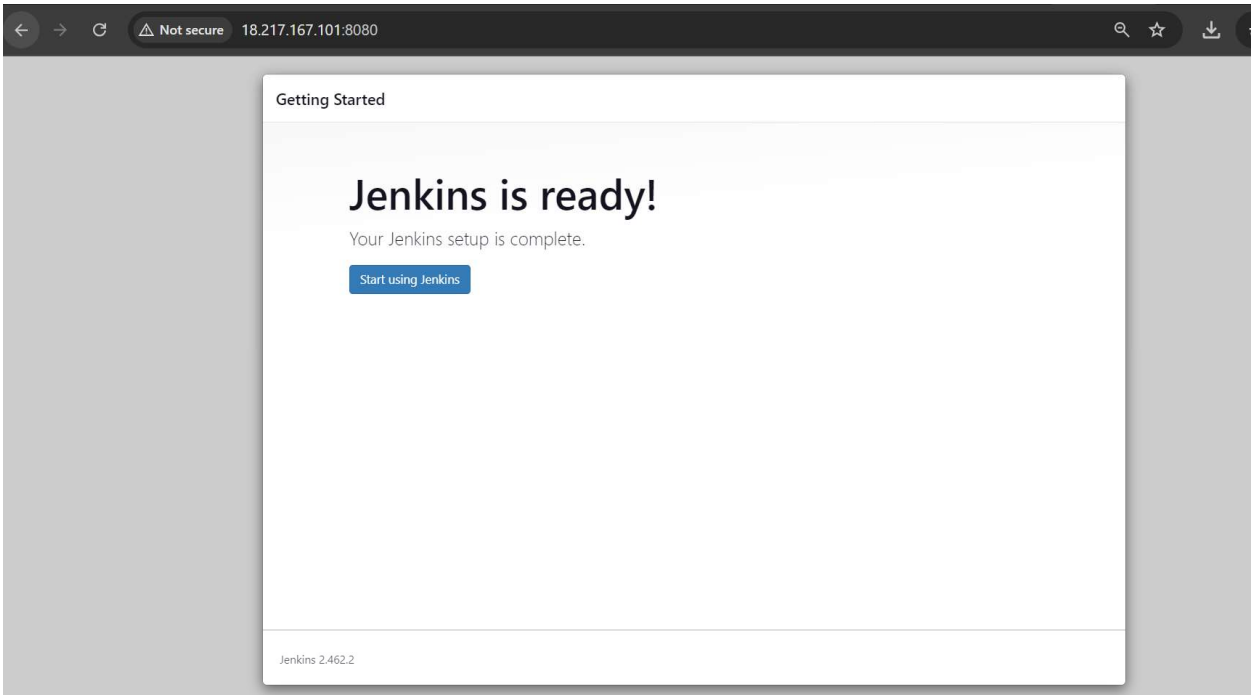
Install suggested plugins

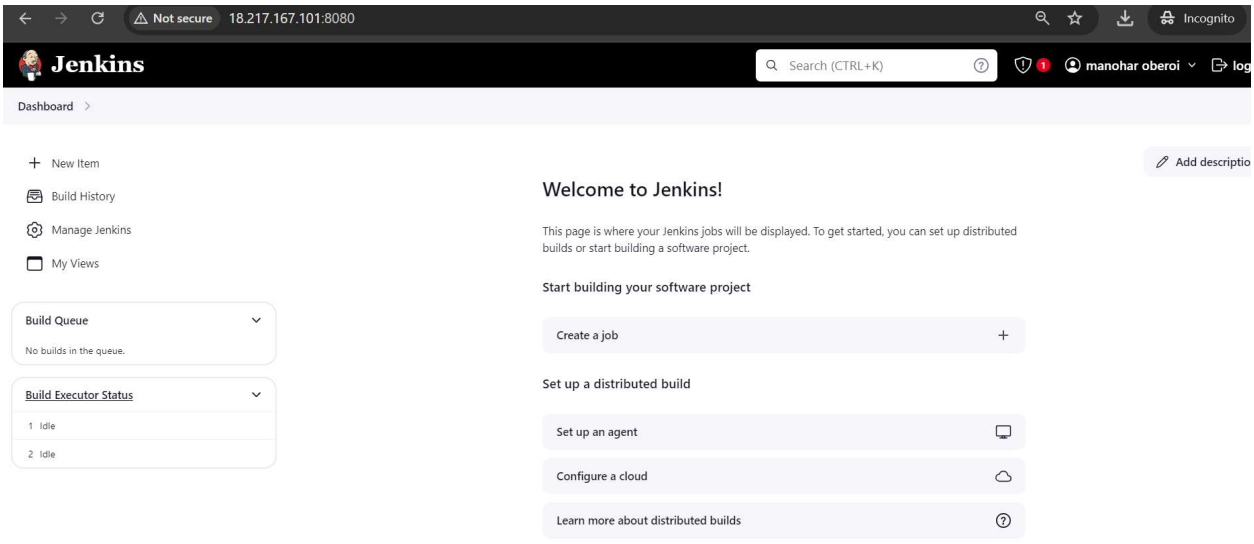



Not secure
18.217.167.101:8080
Getting Started
Getting Started
Folders
Formatter
Timestamper
Workspace Cleanup
Ant
Gradle
Pipeline
GitHub Branch Source
Pipeline: GitHub Groovy Libraries
Pipeline Graph View
Git
SSH Build Agents
Matrix Authorization Strategy
PAM Authentication
LDAP
Email Extension
Mailer
Dark Theme
** Pipeline: Groovy Libraries
** Pipeline: Stage Step
** Joda Time API
** Pipeline: Model API
** Pipeline: Declarative Extension Points API
** Branch API
** Pipeline: Multibranch
** Pipeline: Stage Tags Metadata
** Pipeline: Input Step
** Pipeline: Declarative Pipeline
** Java JSON Web Token (JJWT)
** GitHub API
** Mina SSHD API :: Common
** Mina SSHD API :: Core
** Gson API
** - required dependency
Jenkins 2.462.2

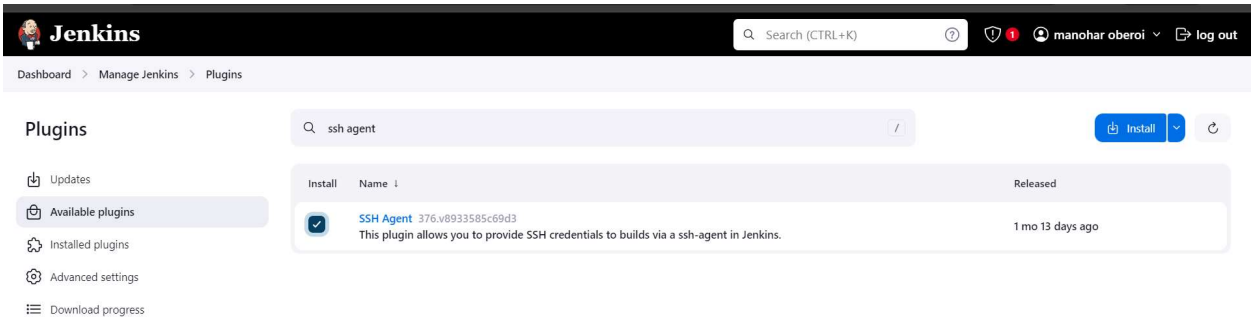

Not secure
18.217.167.101:8080
Getting Started
Create First Admin User
Username
manohar
Password
Confirm password
Full name
manohar oberoi
E-mail address
manoharo32@gmail.com
Jenkins 2.462.2
Skip and continue as admin
Save and Continue

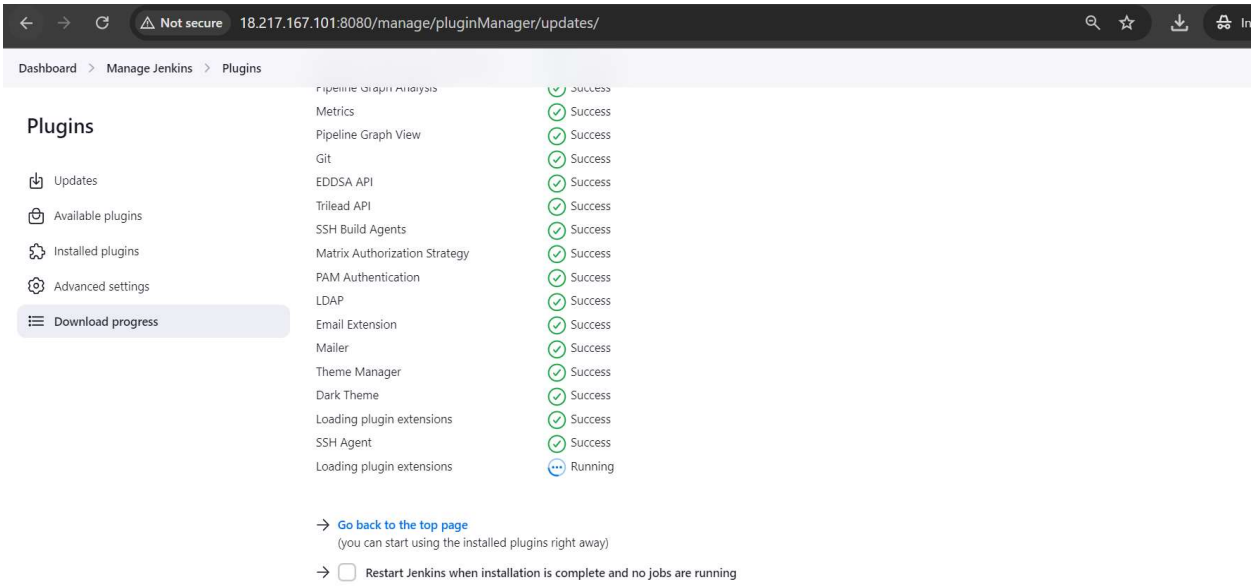

Not secure
18.217.167.101:8080
Getting Started
Instance Configuration
Jenkins URL:
http://18.217.167.101:8080/
The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.
The proposed default value shown is not saved yet and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.
Jenkins 2.462.2
Not now
Save and Finish


Not secure
18.217.167.101:8080
Getting Started
Jenkins is ready!
Your Jenkins setup is complete.
Start using Jenkins
Jenkins 2.462.2

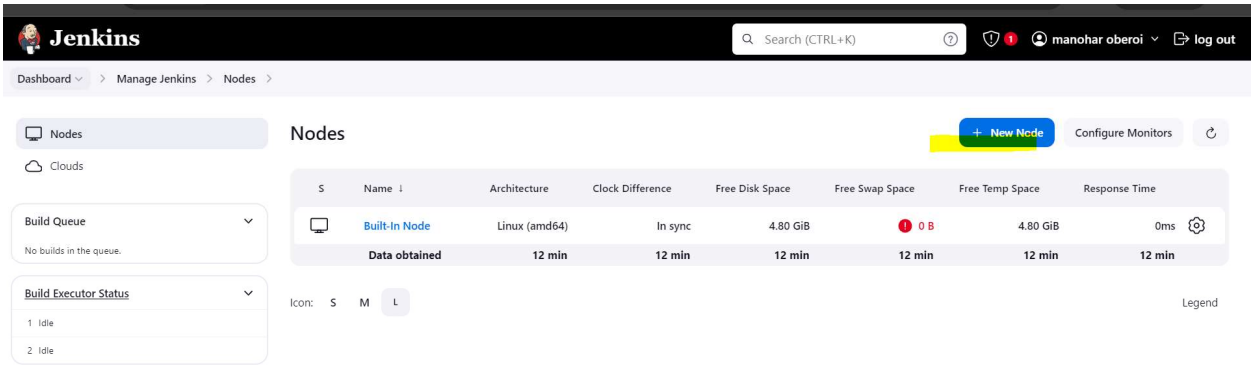


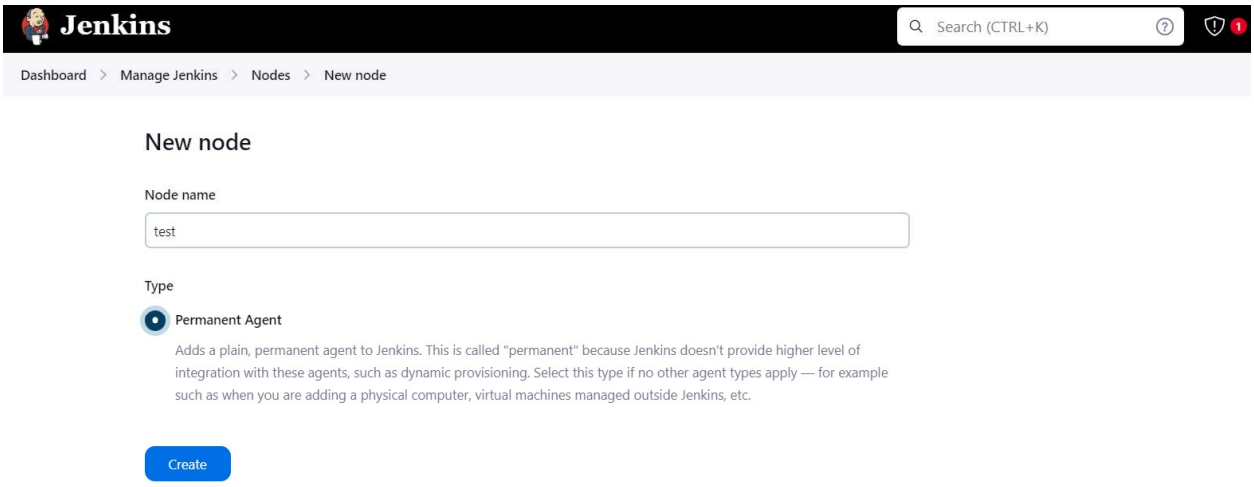
Install ssh agent from plugins



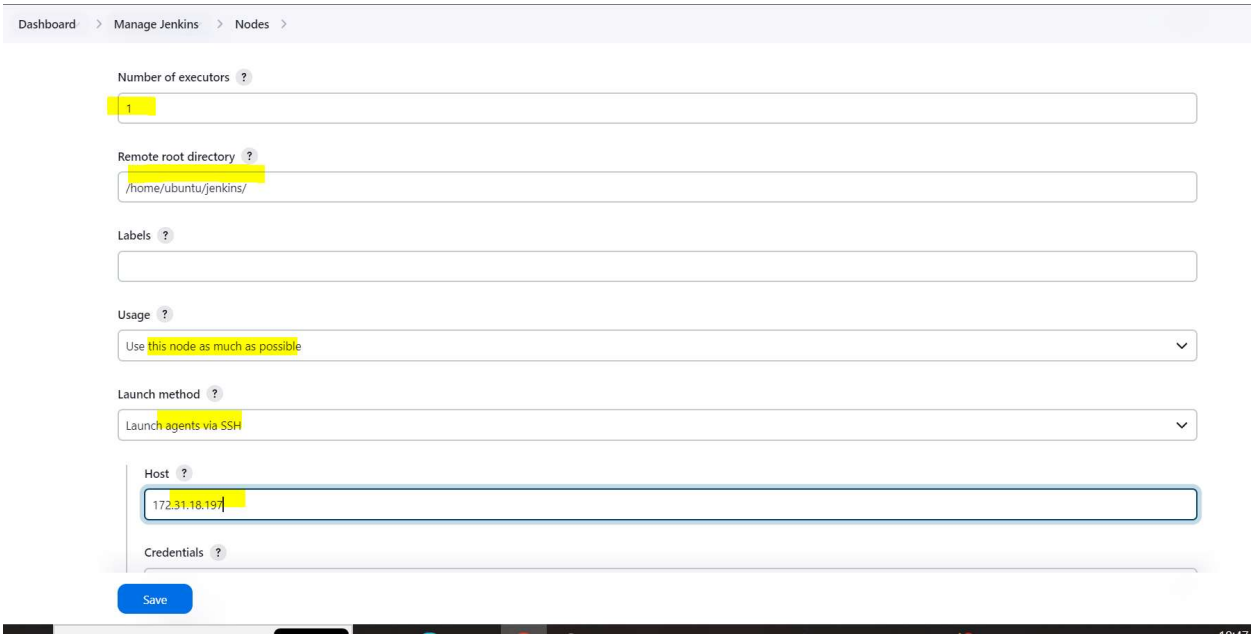


Setup prod & test nodes

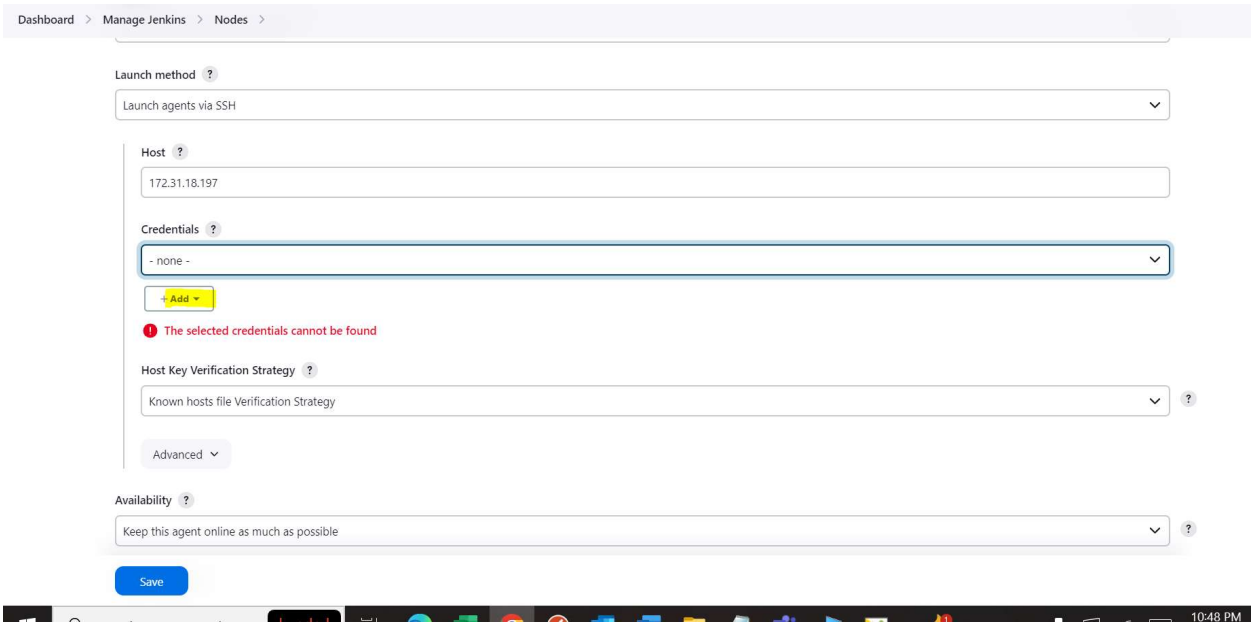




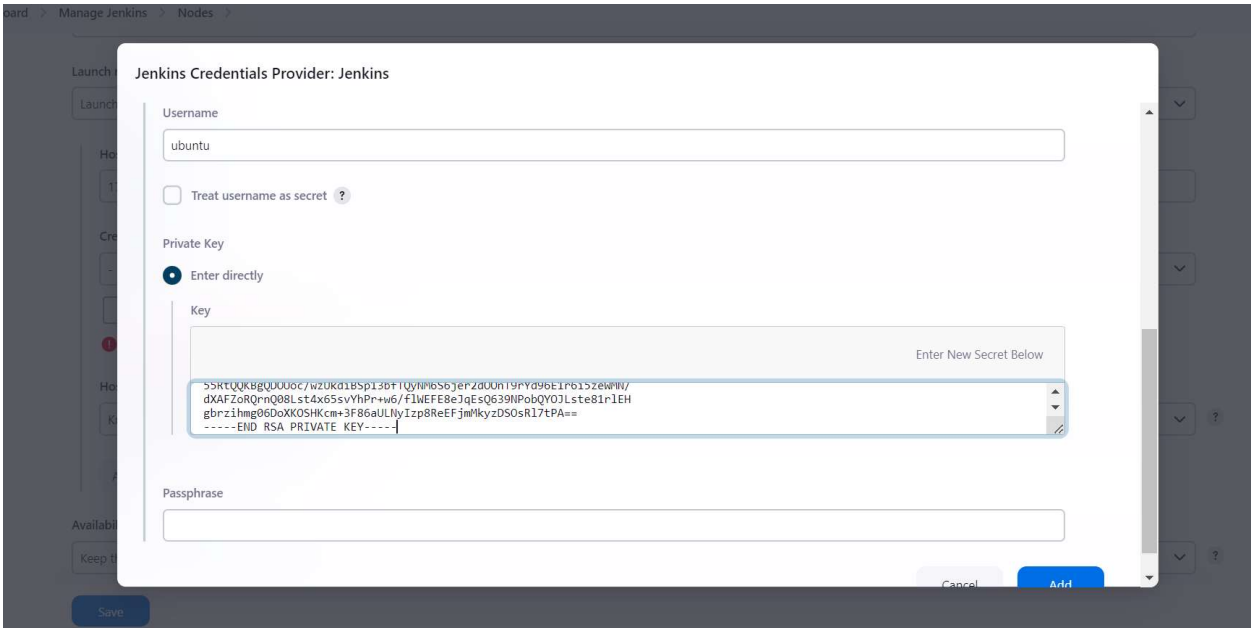
In host I updated private ip of the test server

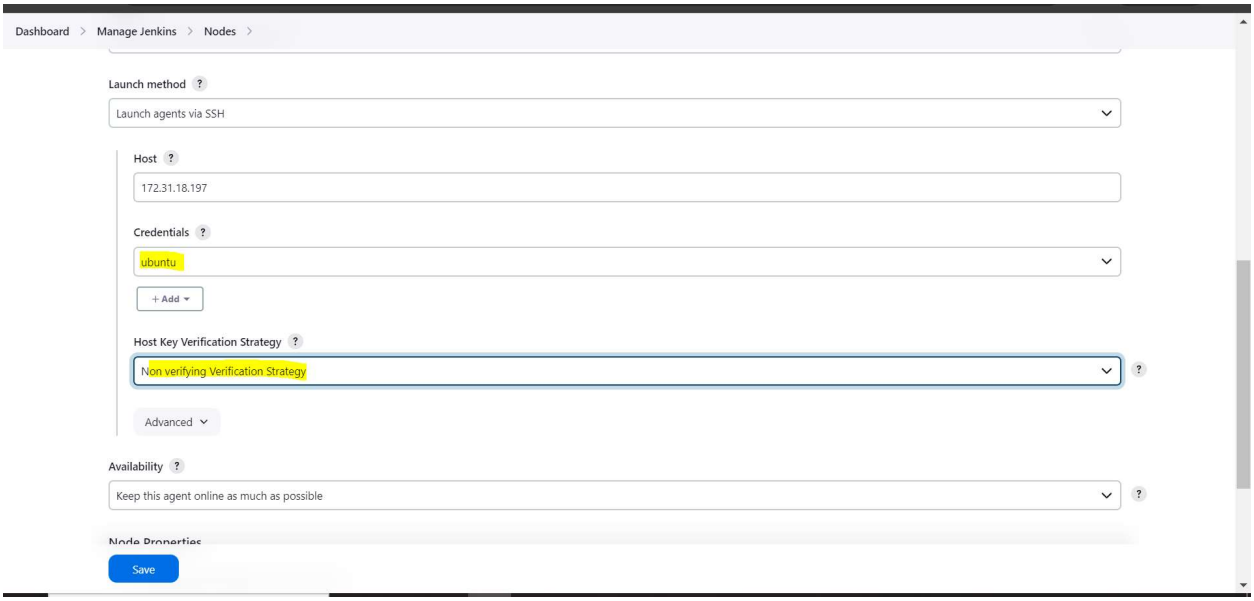


Add credentials

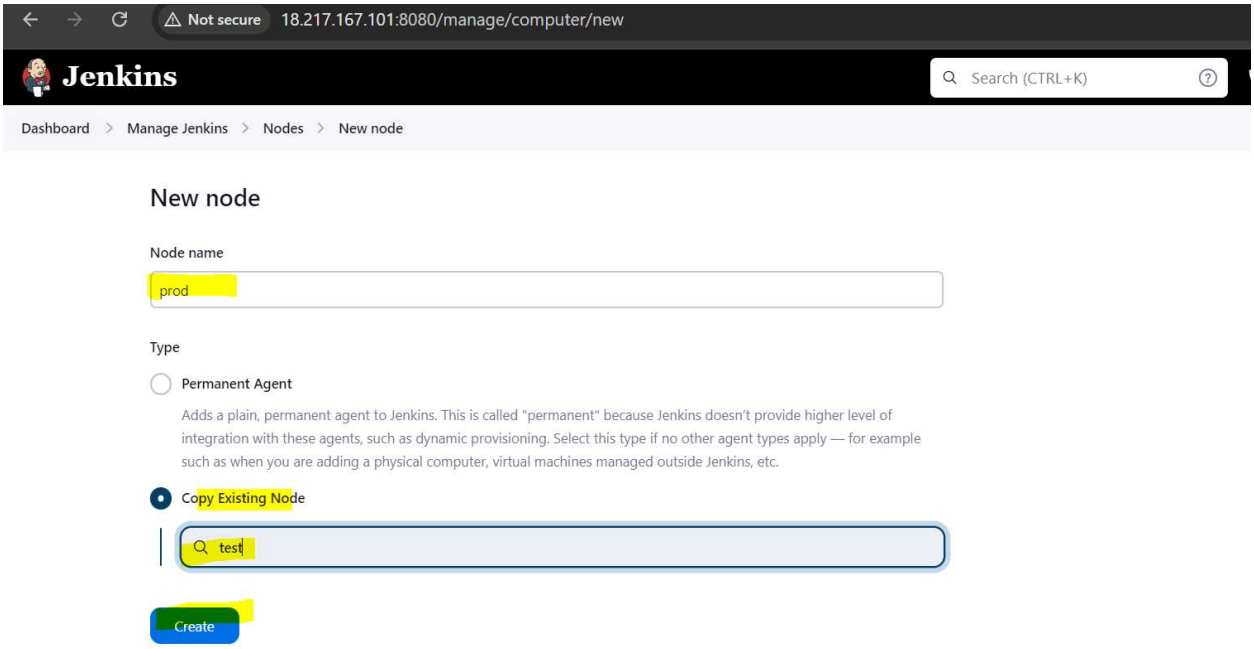


Paste the private key

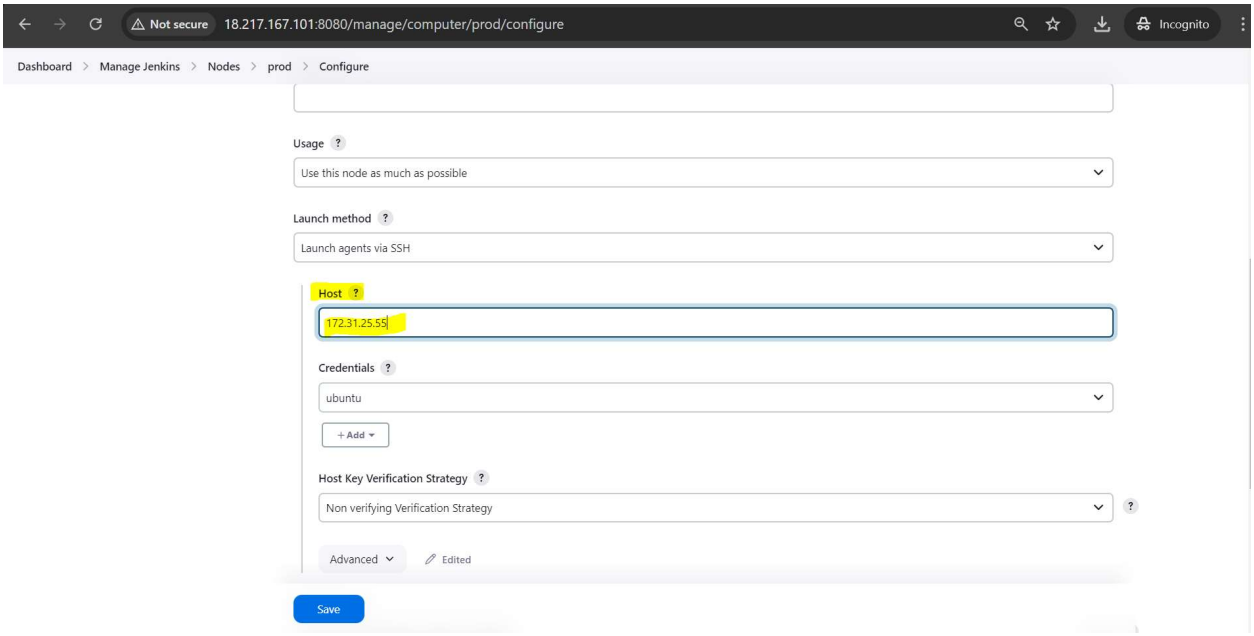




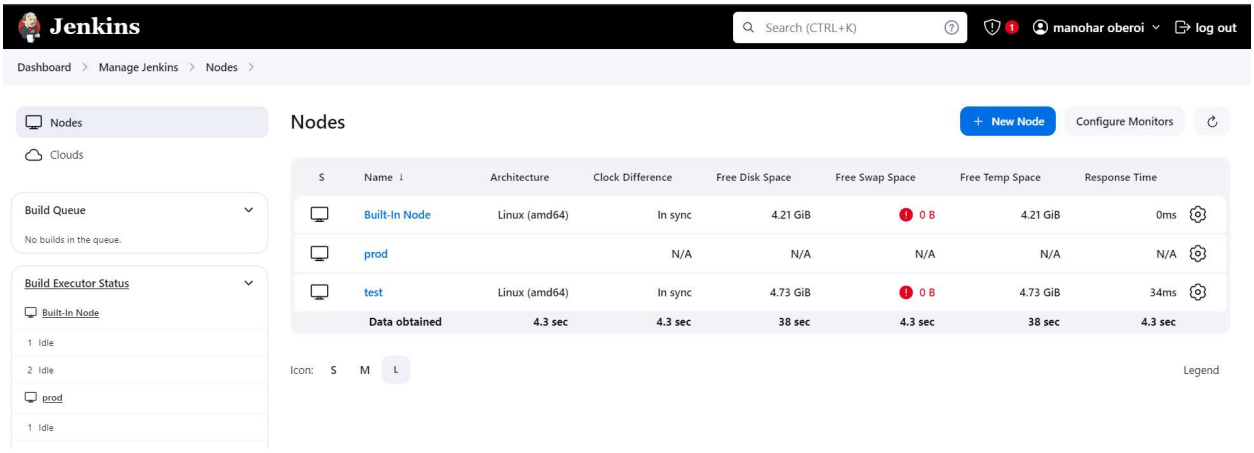
Setup prod node and copy all the configuration from the test node



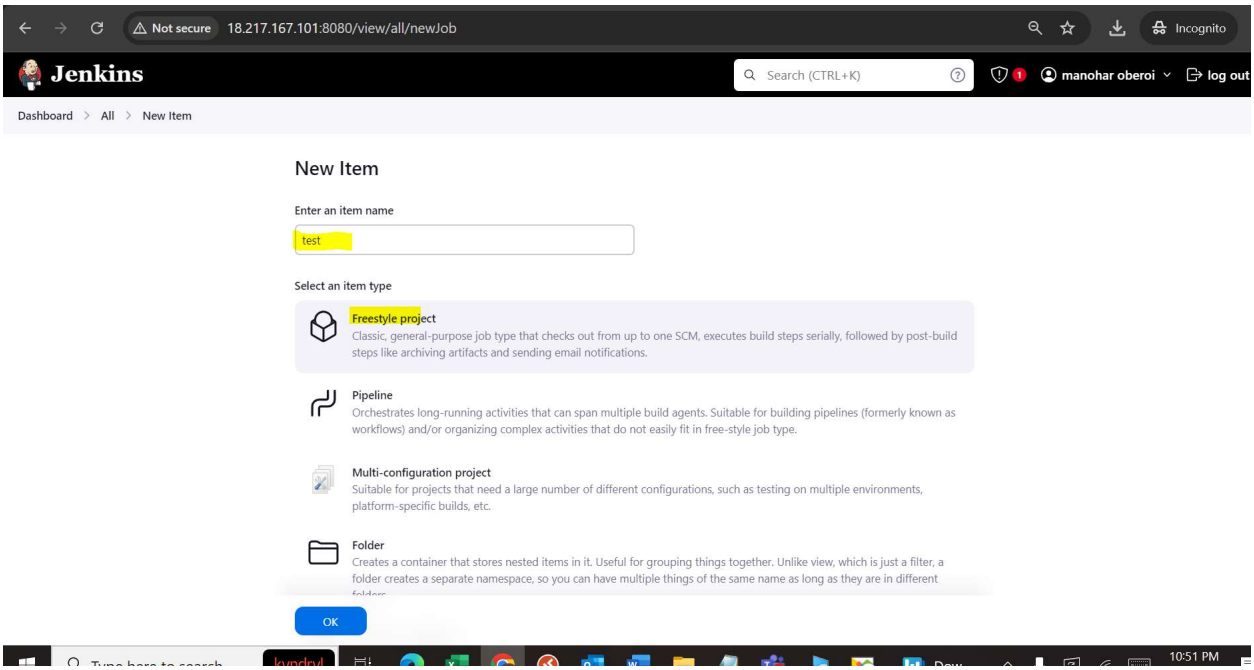
In host I only updated the private ip of the prod server



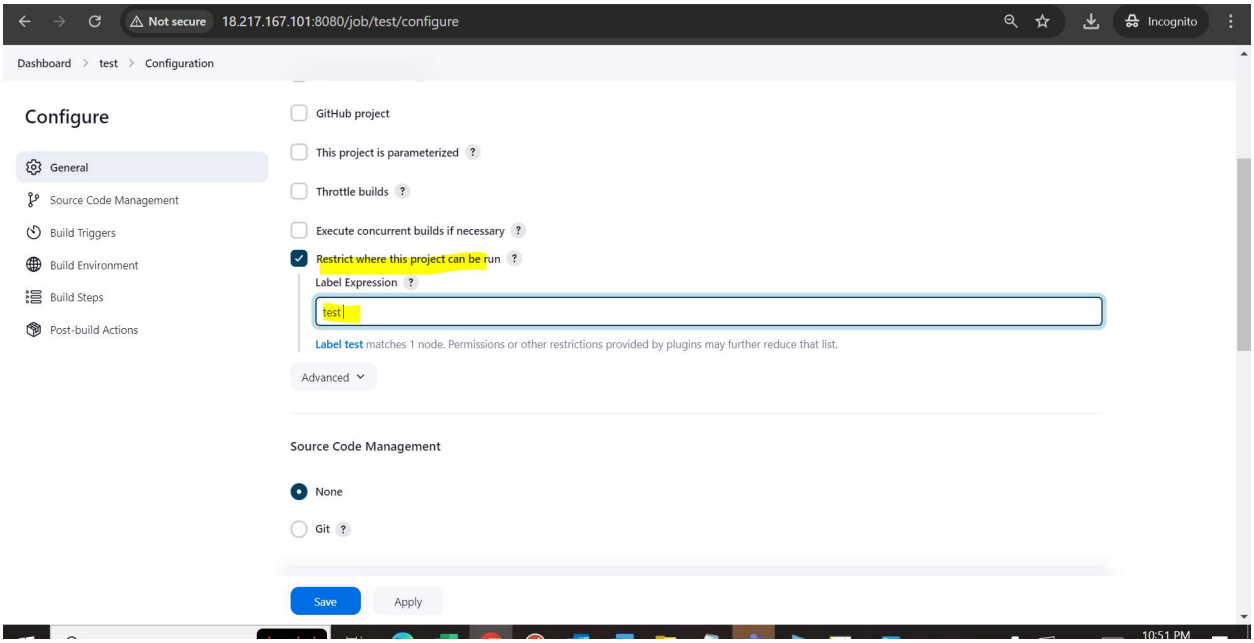
All the nodes are connected



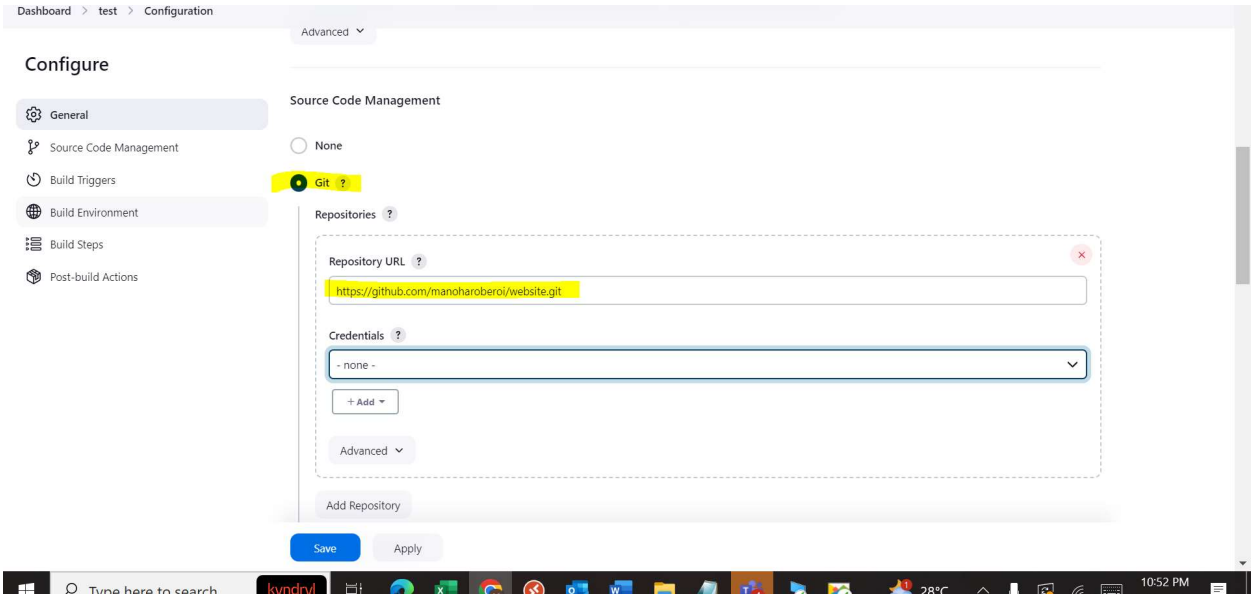
Now I am creating a test job



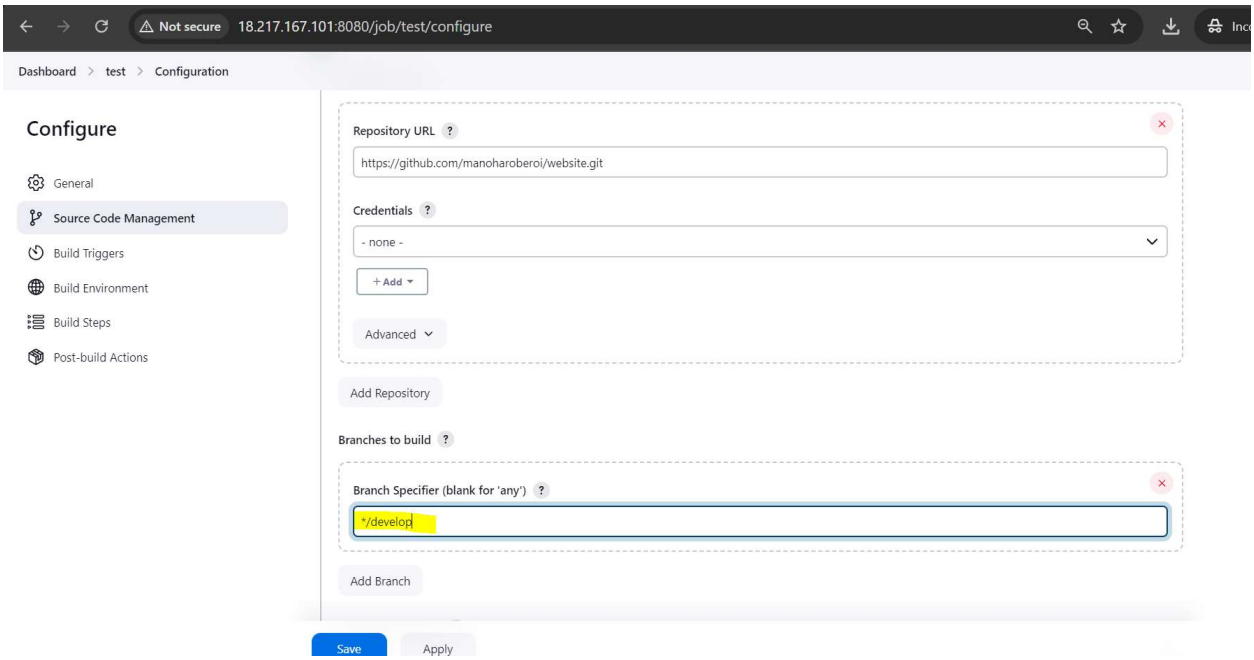
I am going to run this job in test server

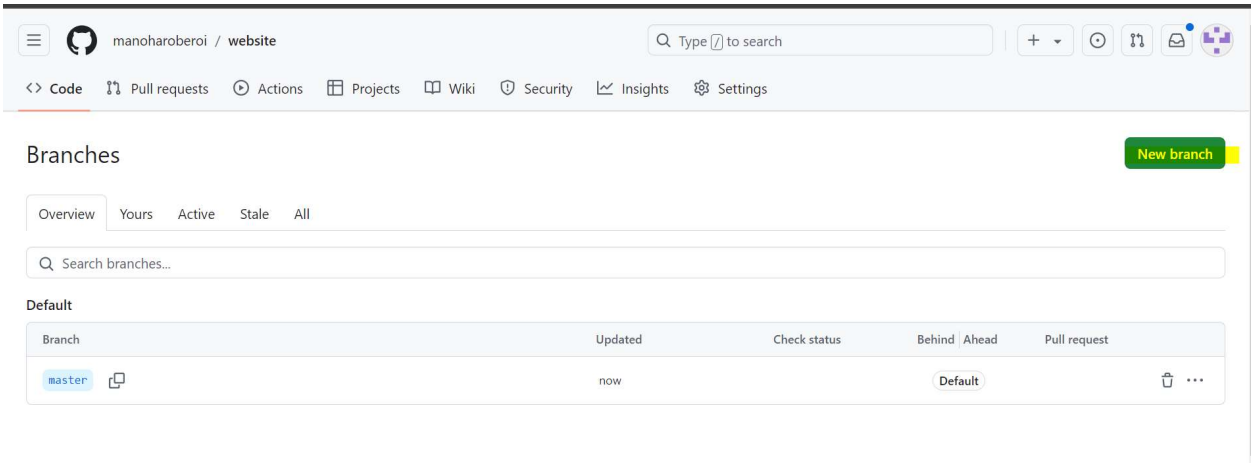


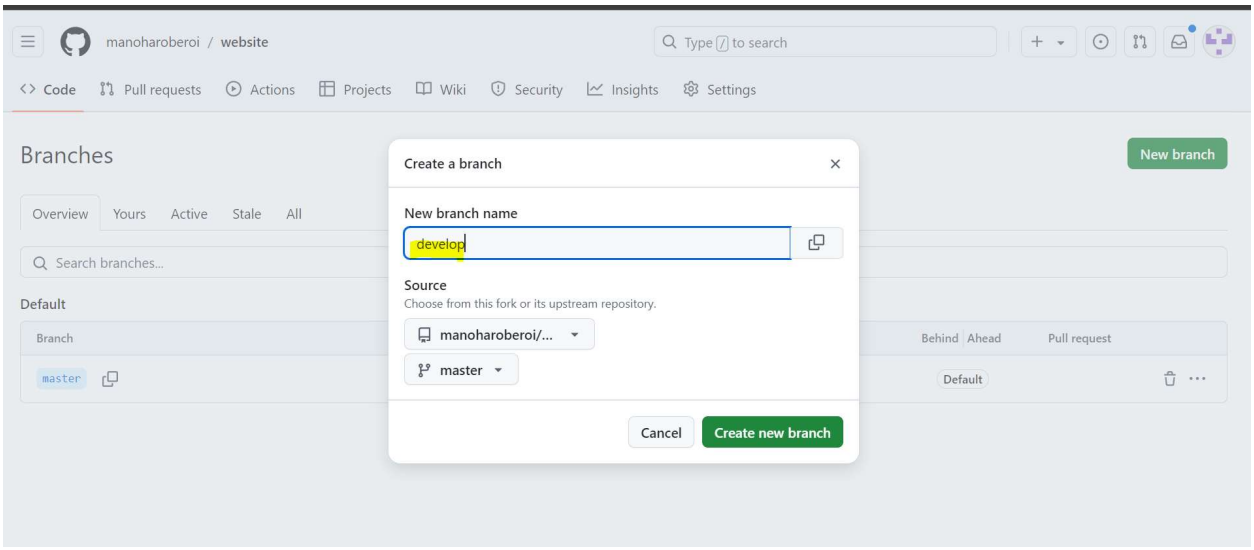
Updated the github repository URL and I am not creating any credentials for it because it's a public repository but if it's a private repository then we can create personal access tokens

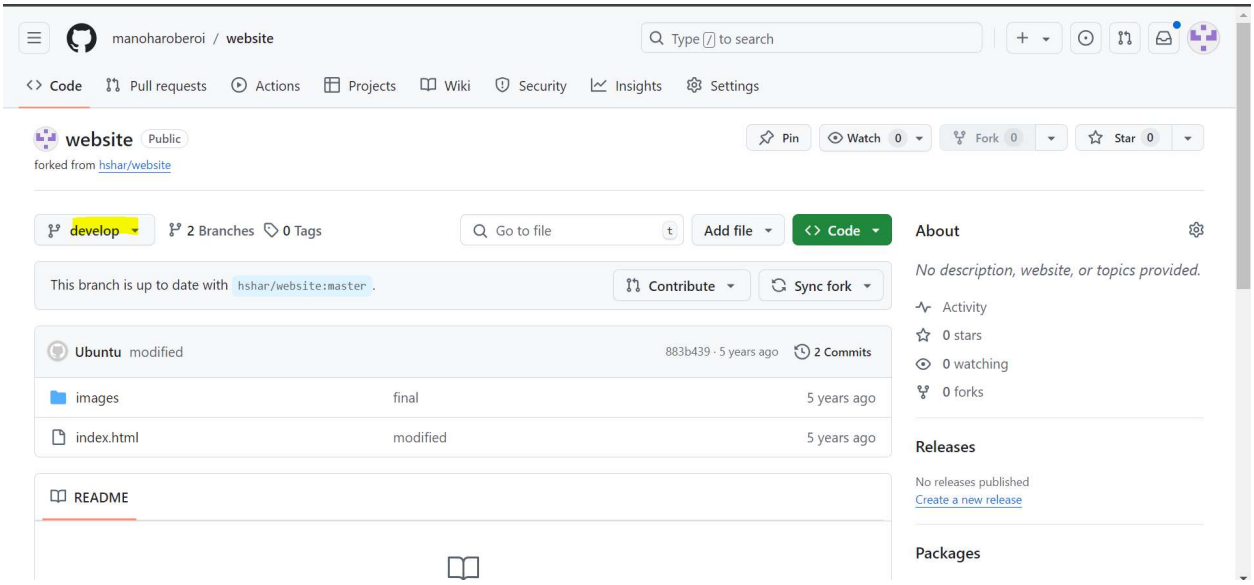


In branch I updated develop branch and also created the develop branch in github

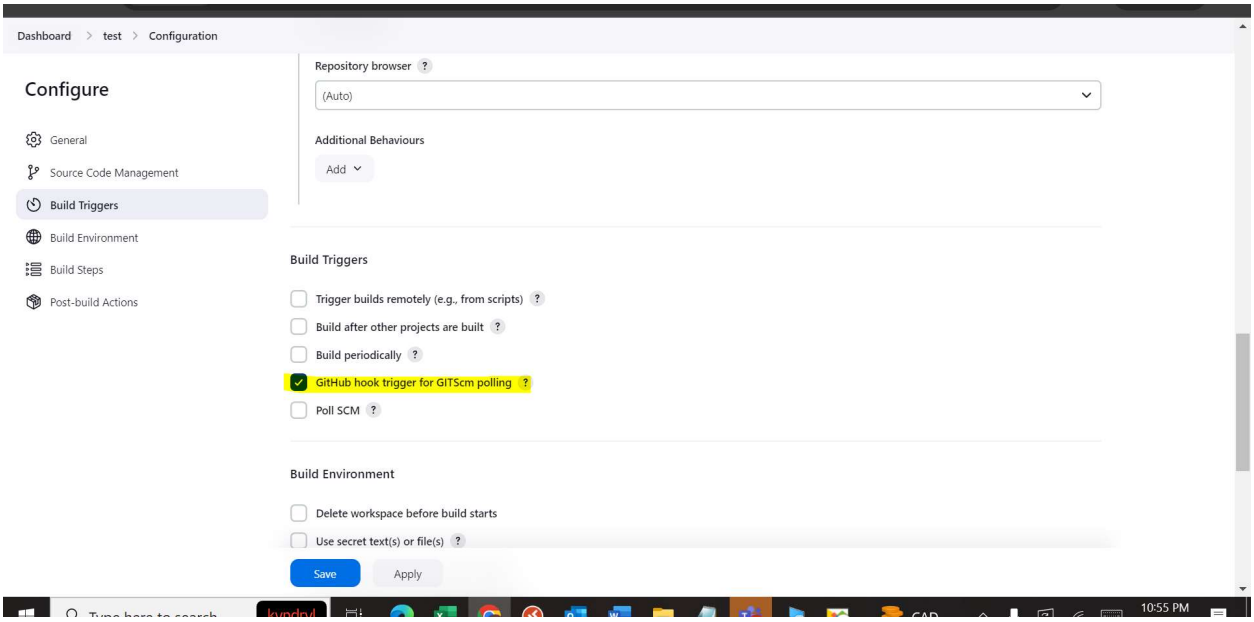

Not secure
18.217.167.101:8080/job/test/configure
Dashboard > test > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Repository URL
https://github.com/manoharoberoi/website.git
Credentials
- none -
+ Add
Advanced
Add Repository
Branches to build
Branch Specifier (blank for 'any')
*/develop
Add Branch
Save
Apply


manoharoberoi / website
Type / to search
Code
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Branches
New branch
Overview
Yours
Active
Stale
All
Search branches...
Default
Branch
Updated
Check status
Behind
Ahead
Pull request
master
now
Default

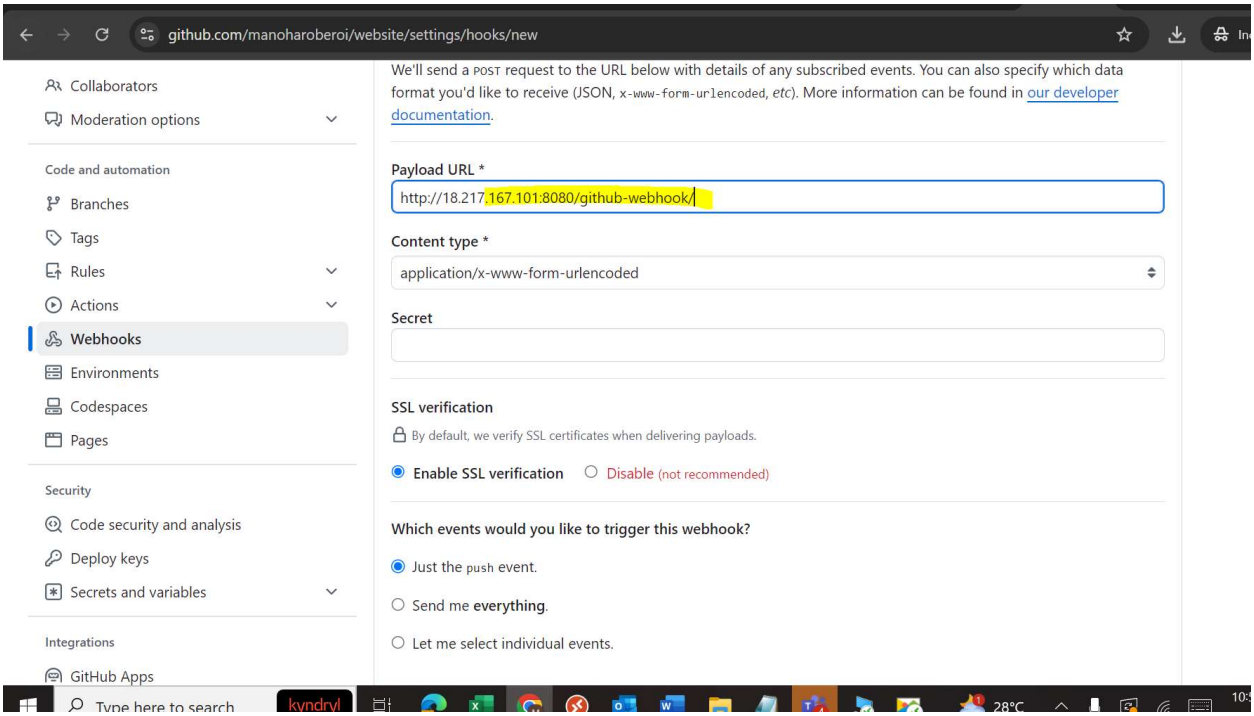


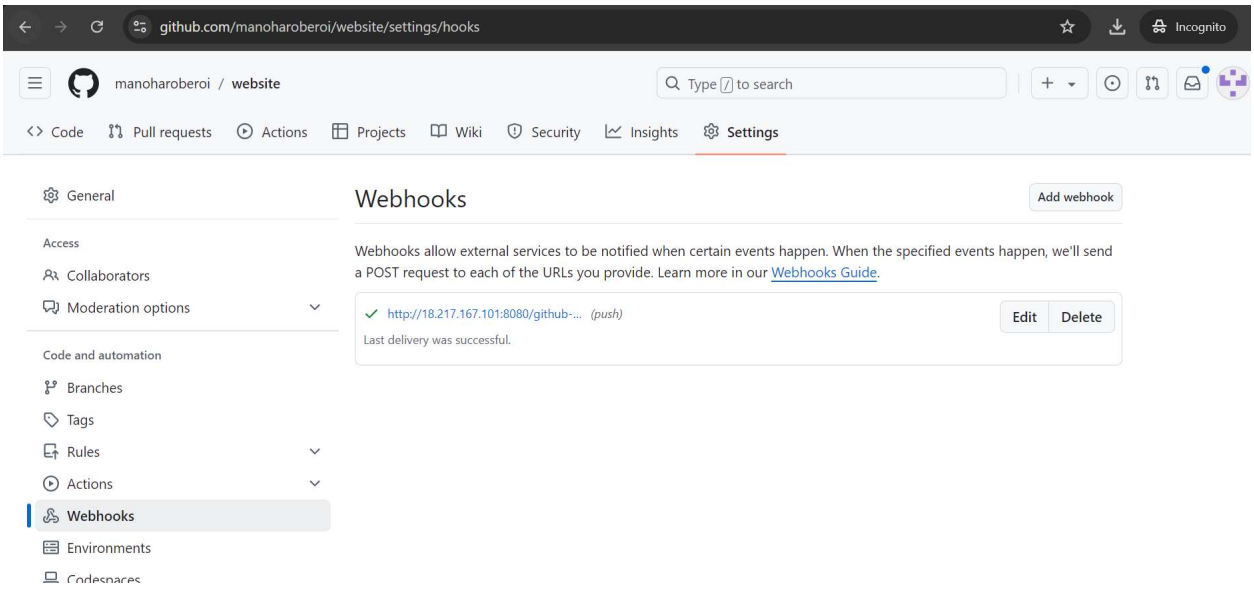


I choose the option github hook trigger for gitscm polling

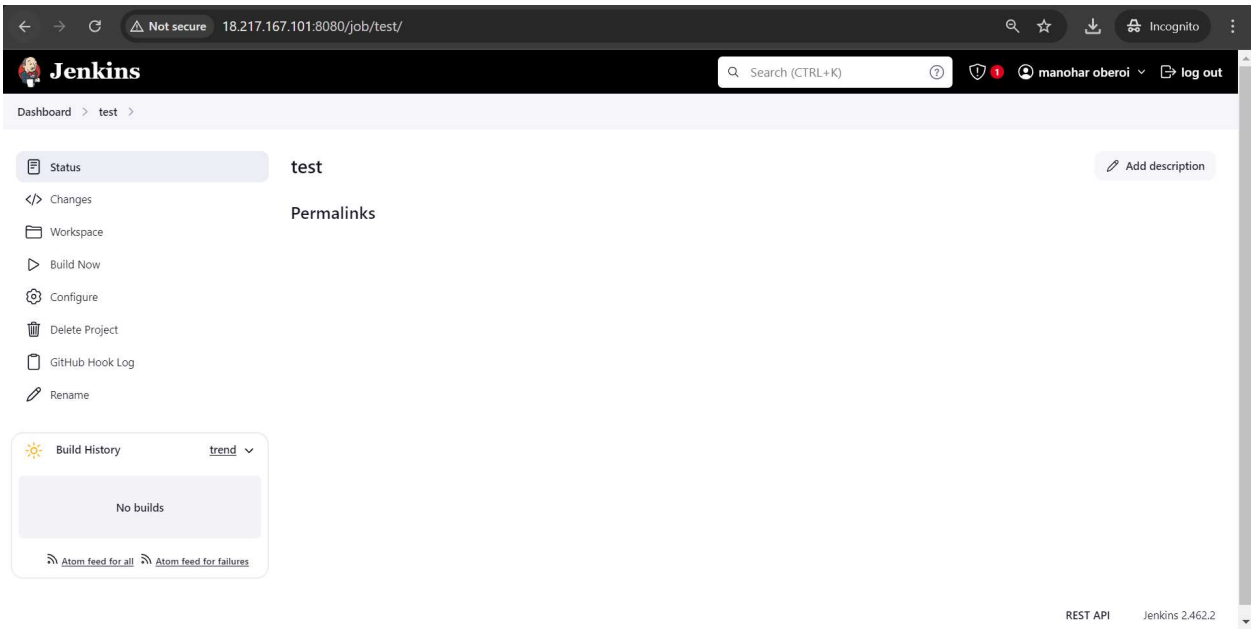


I will now create a github webhook in github so whenever if anyone update changes in the develop branch the job build will happen automatically.

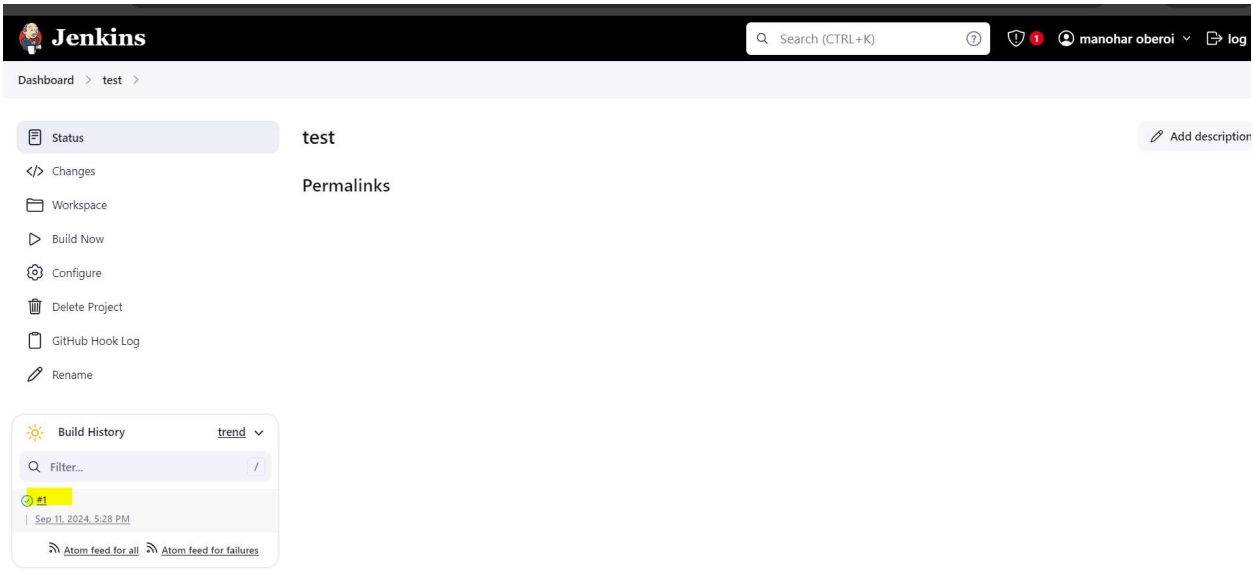




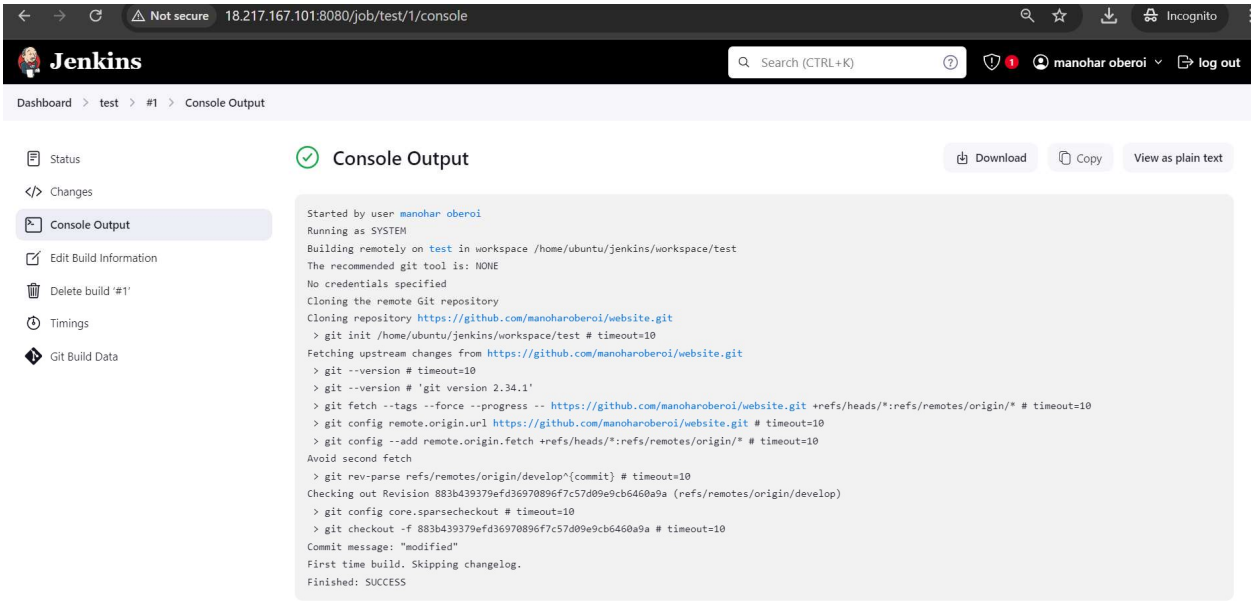
Test job created successfully



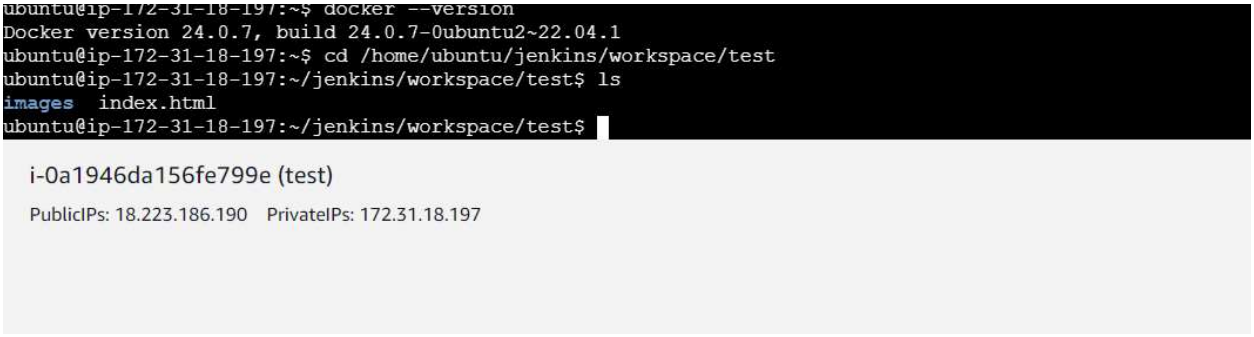
I will click on build now



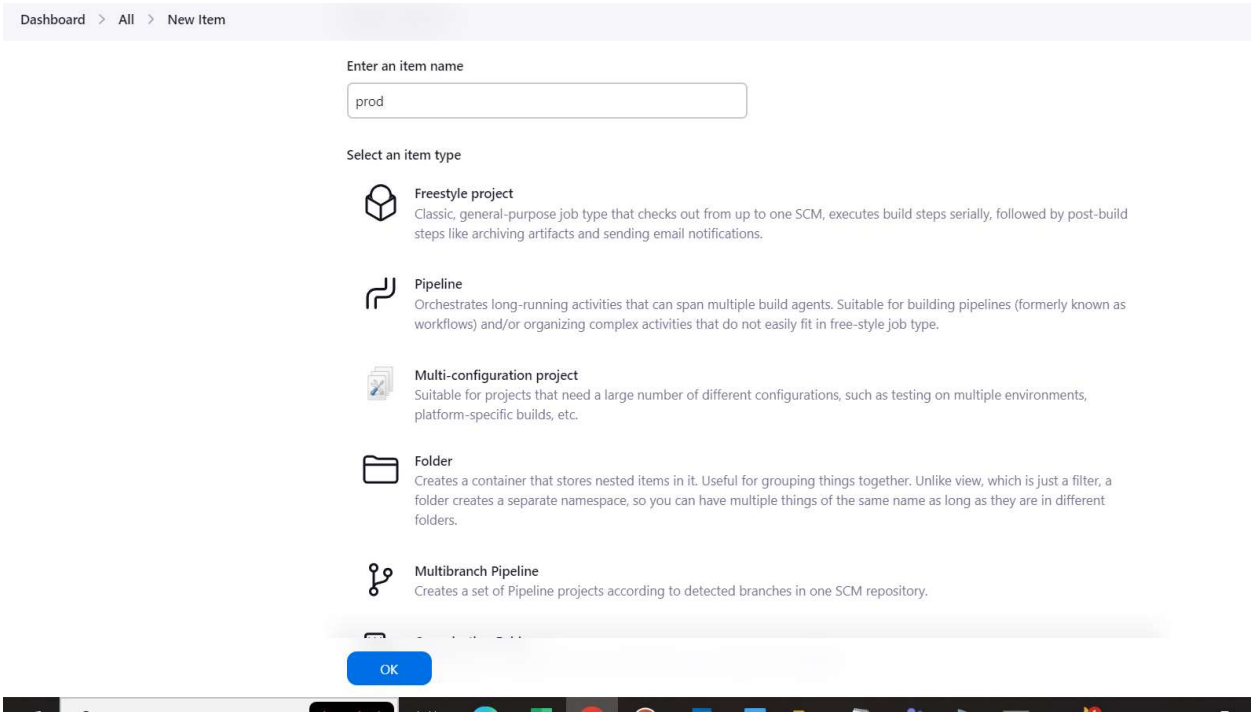
As you can see the build is successfully & will go to console output to check the logs. We can see all the files in the develop branch copied to the test server in this path /home/ubuntu/jenkins/workspace/test



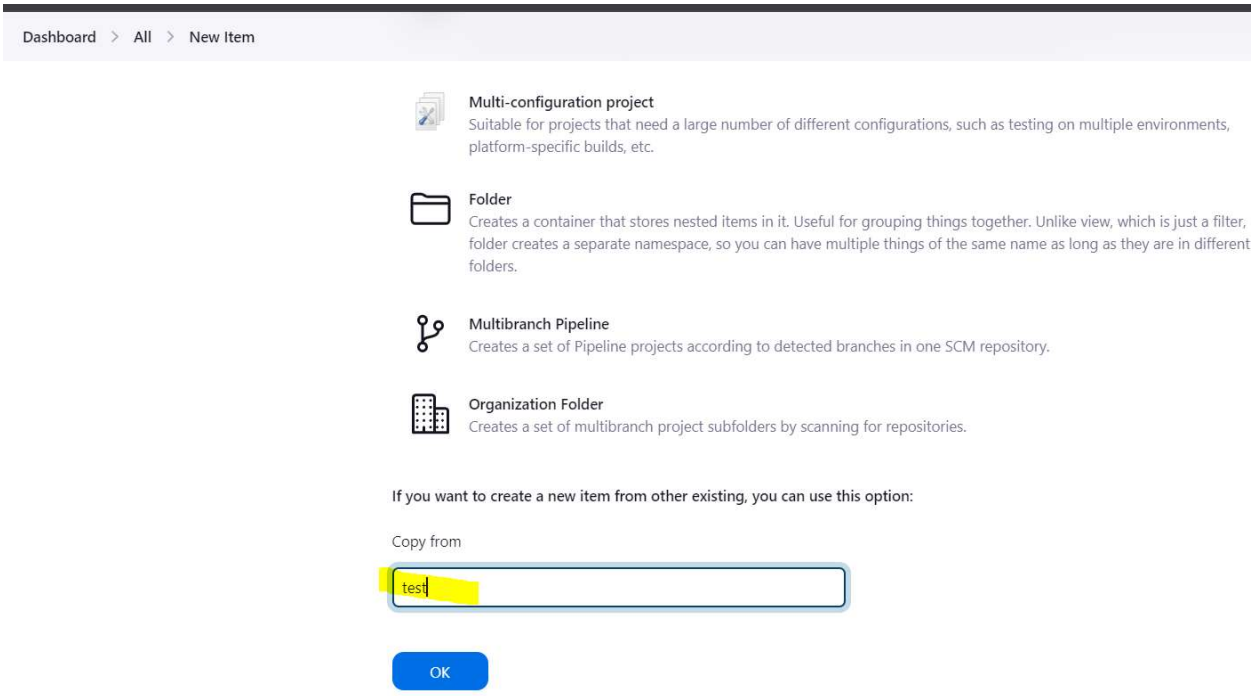
I will go to below path in the test server to check if the files are copied or not & below screenshot prove that the files copied successfully.

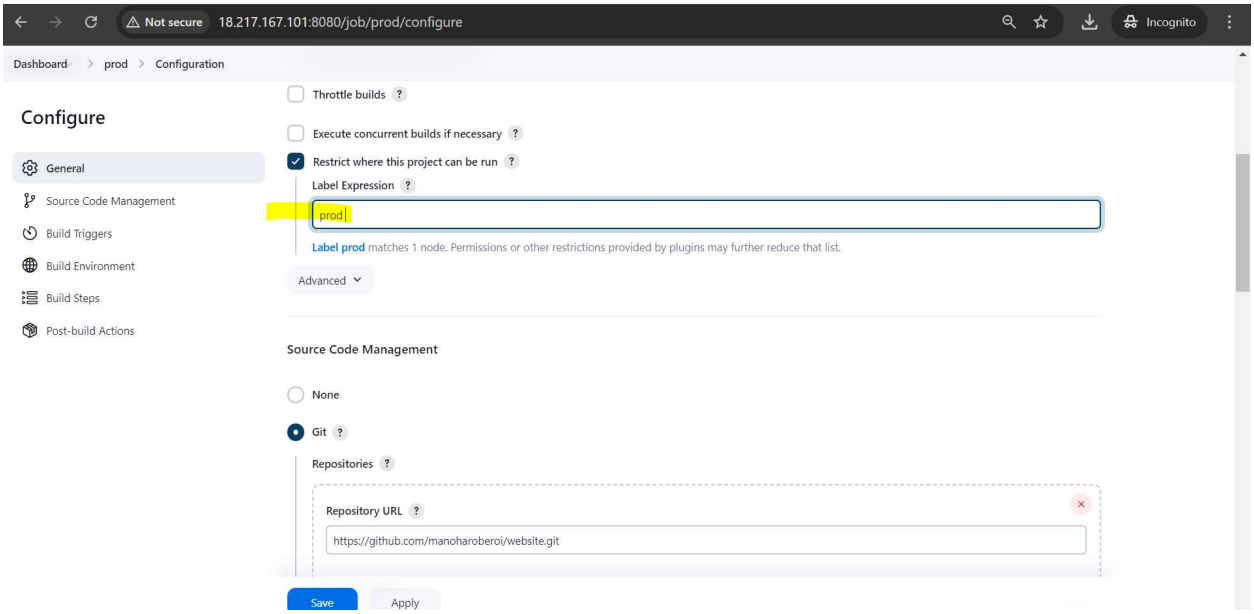


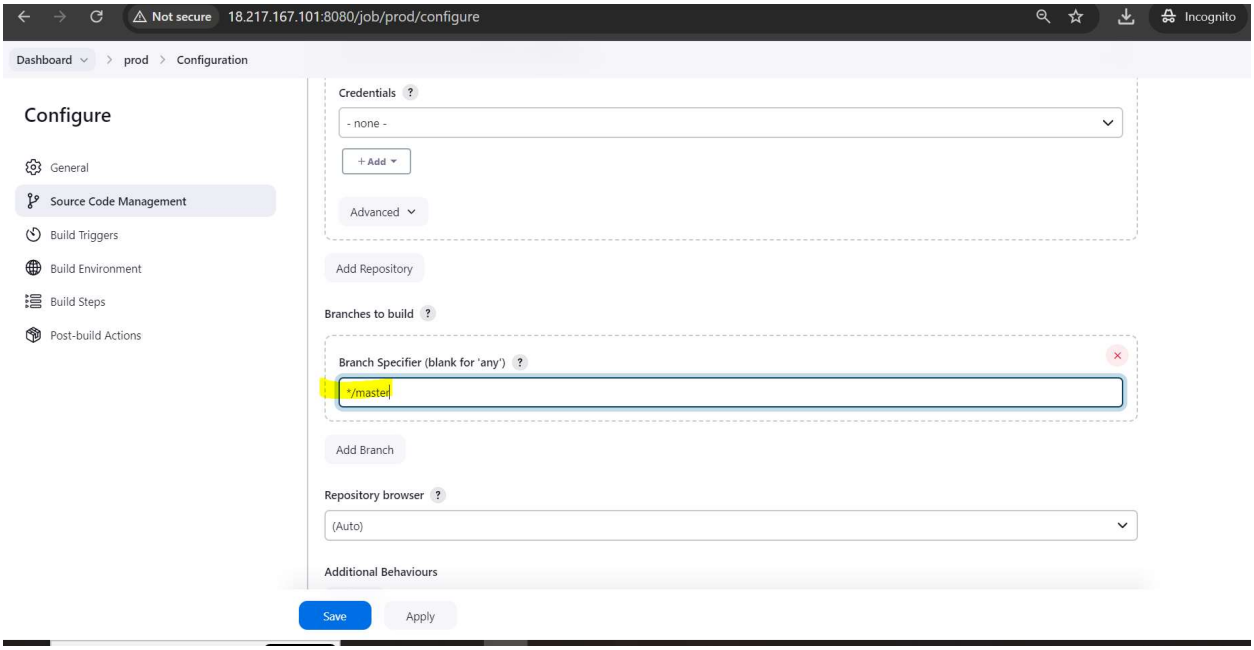
Similar way I will create a prod job for the prod server



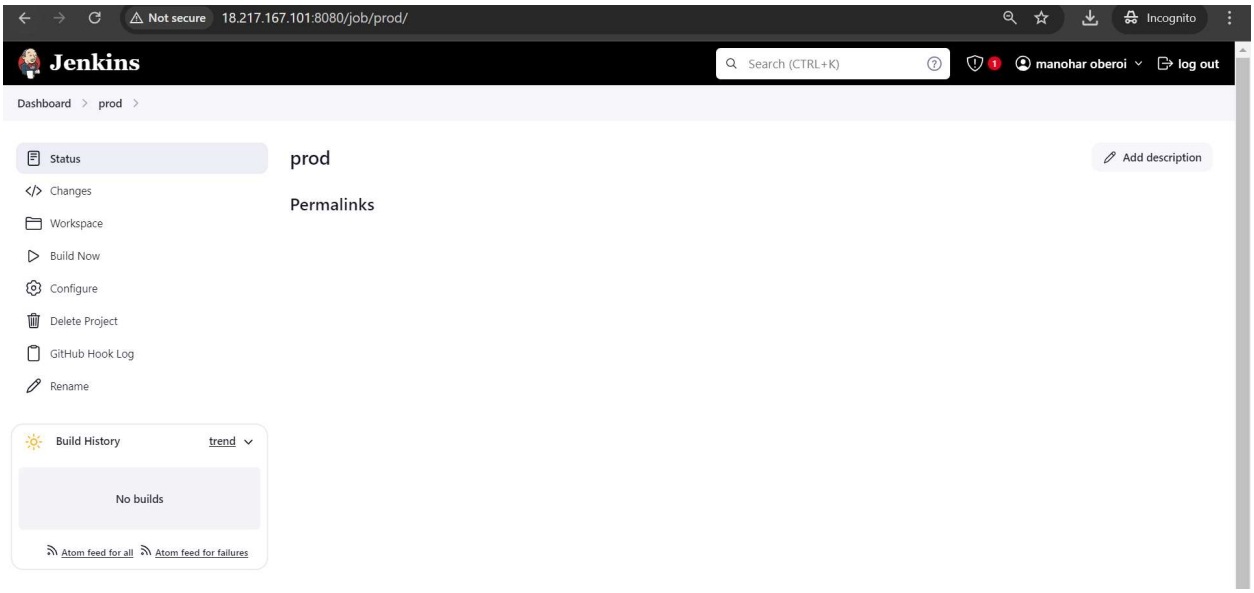
Copying all the configuration settings from the test job but in restrict where this project can be run I will update prod server and in branch we will update master branch


Dashboard > All > New Item
Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.
Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.
Multibranch Pipeline
Creates a set of Pipeline projects according to detected branches in one SCM repository.
Organization Folder
Creates a set of multibranch project subfolders by scanning for repositories.
If you want to create a new item from other existing, you can use this option:
Copy from
test
OK

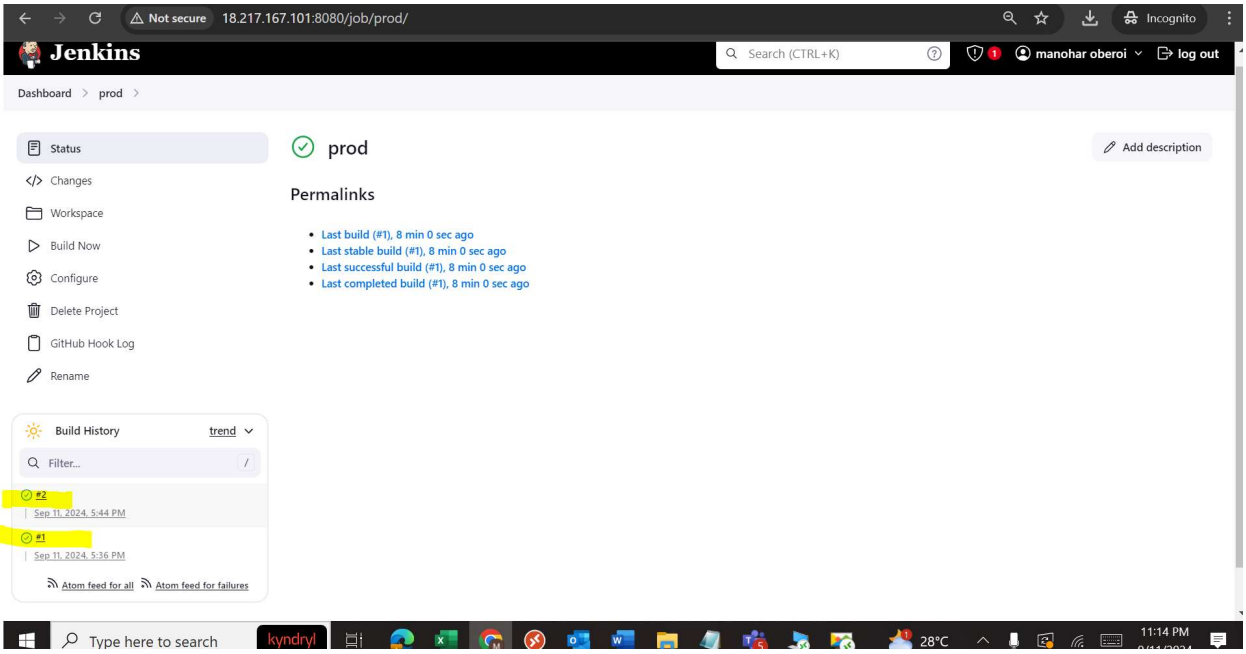

Not secure
18.217.167.101:8080/job/prod/configure
Incognito
Dashboard > prod > Configuration
Configure
General
Source Code Management
Build Triggers
Build Environment
Build Steps
Post-build Actions
Throttle builds
Execute concurrent builds if necessary
Restrict where this project can be run
Label Expression
prod
Label prod matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.
Advanced
Source Code Management
None
Git
Repositories
Repository URL
https://github.com/manoharoberoi/website.git
Save
Apply



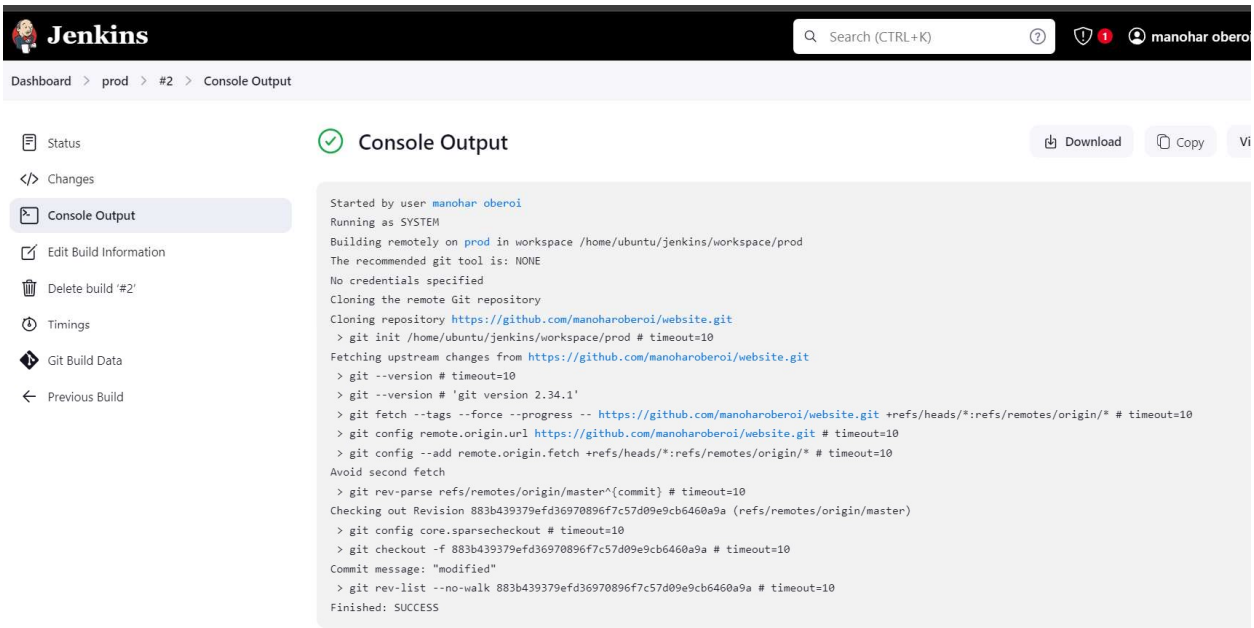
I click on save and job got successfully created



I will click on build now & as you can see the build is successfull



I will go to console output to check the logs



As you can see all the files in the master branch copied to the prod server in this path

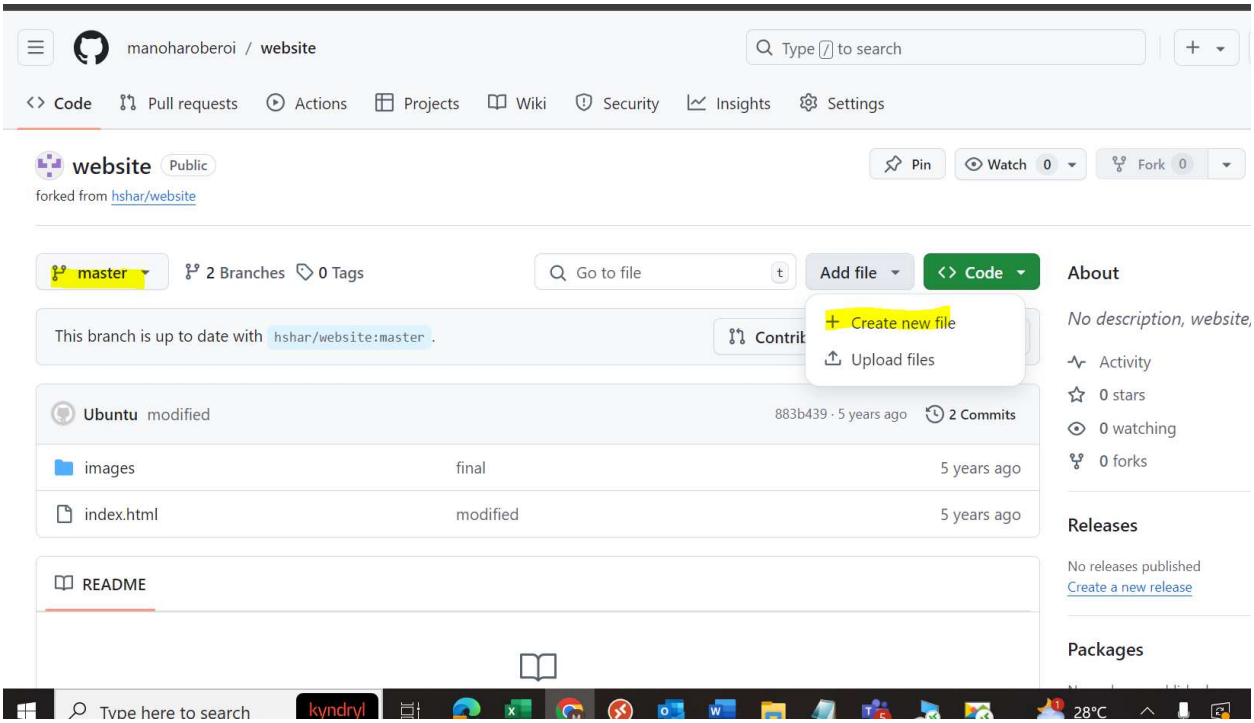
/home/ubuntu/jenkins/workspace/prod

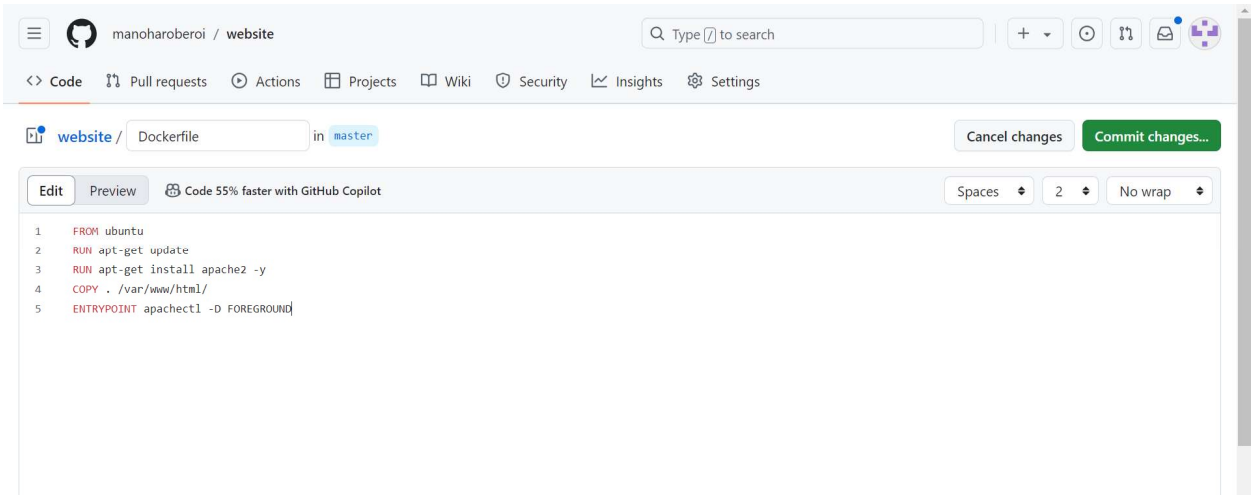
```
Last login: Wed Sep 11 16:53:43 2024 from 3.16.146.4
ubuntu@ip-172-31-25-55:~$ cd /home/ubuntu/jenkins/workspace/prod
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$ ls
images  index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$
```

i-0234ff1e8a05f789a (prod)

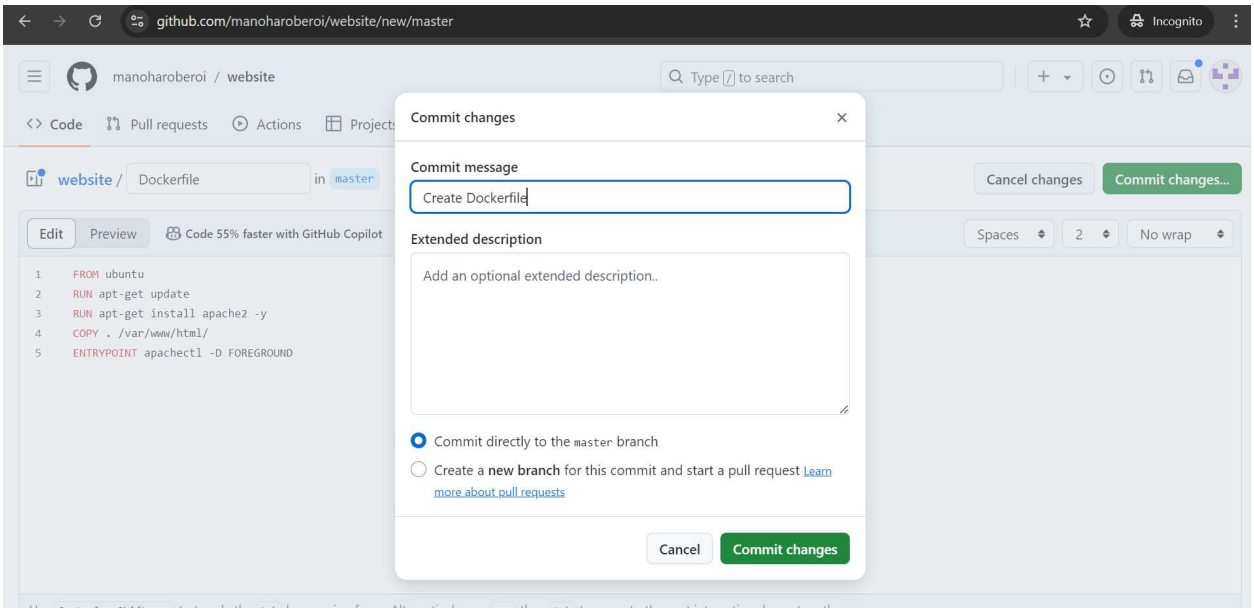
PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

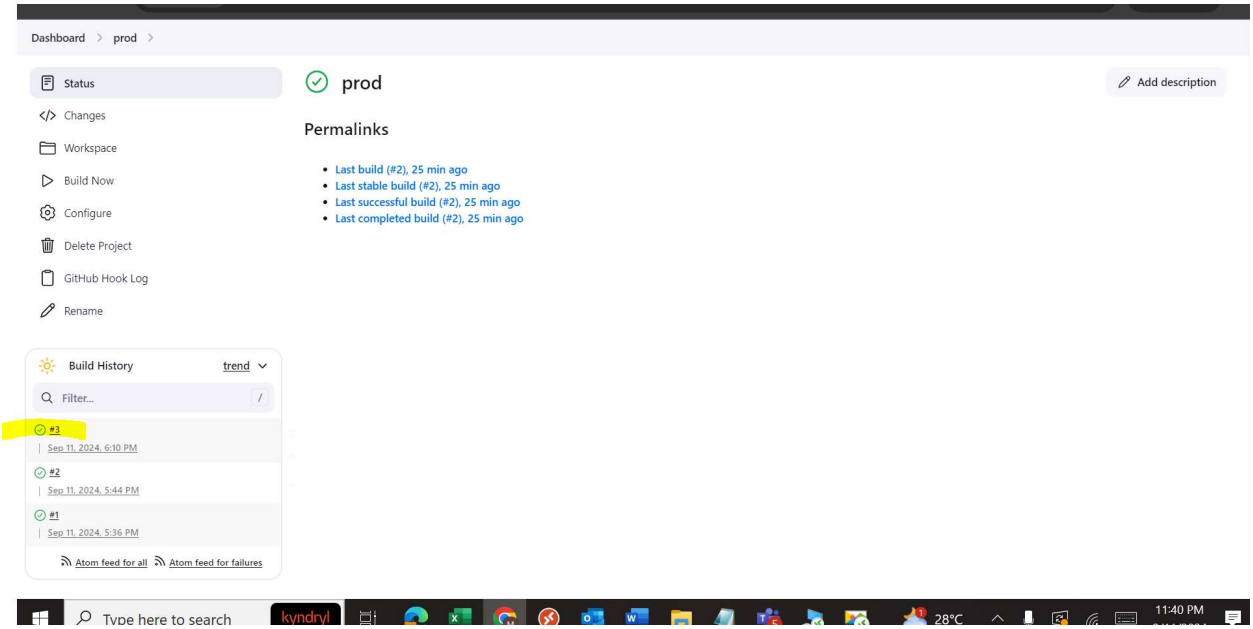
Now I am creating a docker file in master banch



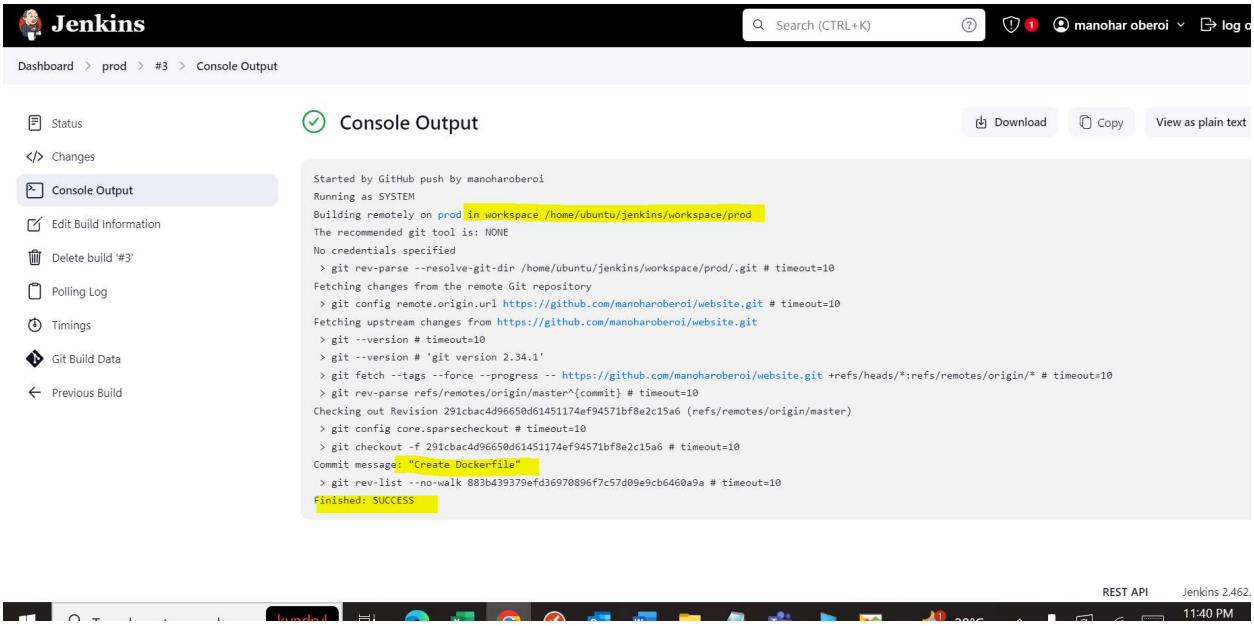


When I commit the changes in the master branch the prod job build automatically





I will go to console output to check the logs



The docker file successfully copied in the prod server in this path:

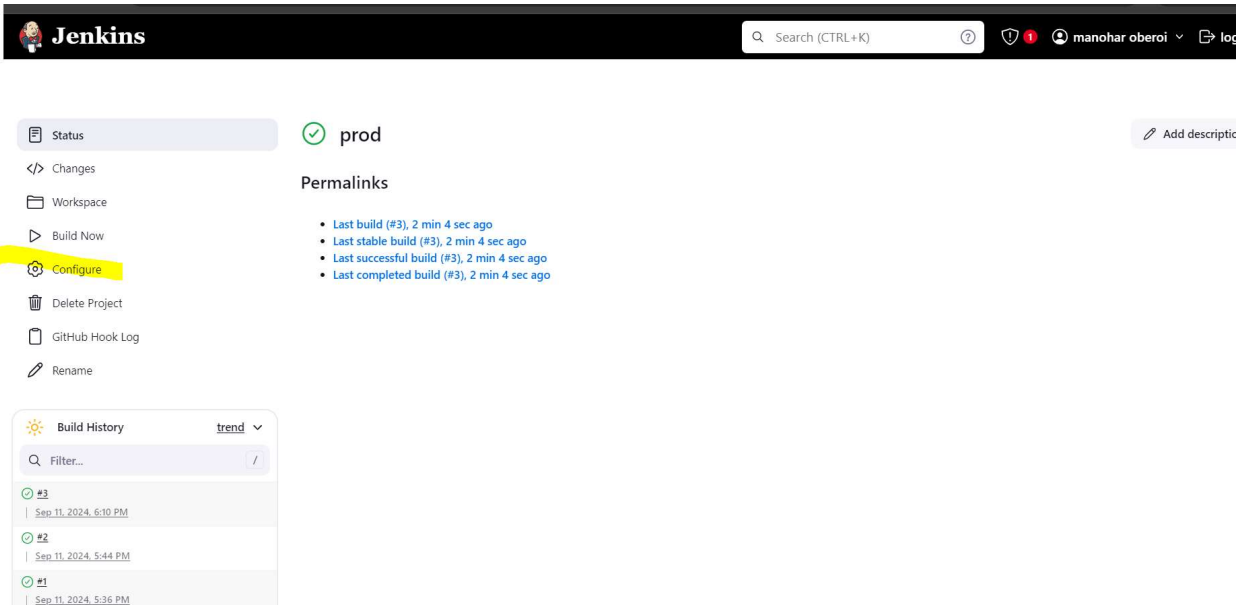
/home/ubuntu/jenkins/workspace/prod

```
images  index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$ ls
Dockerfile  images  index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$
```

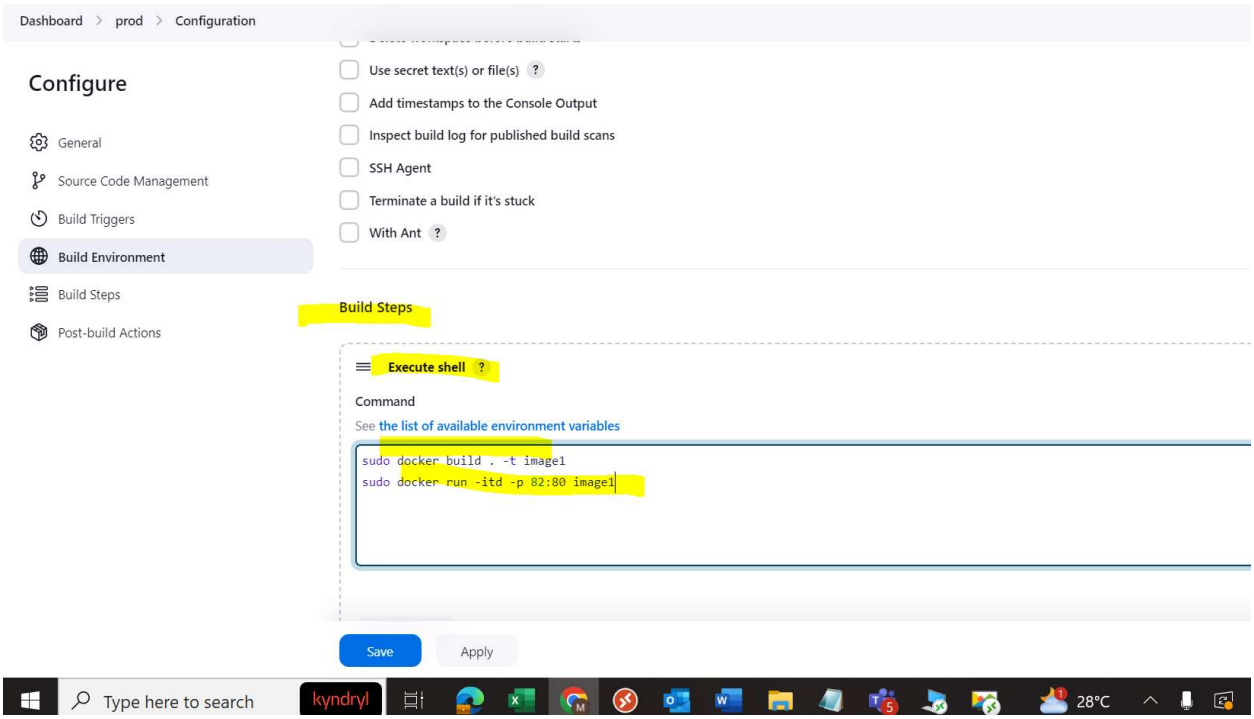
i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

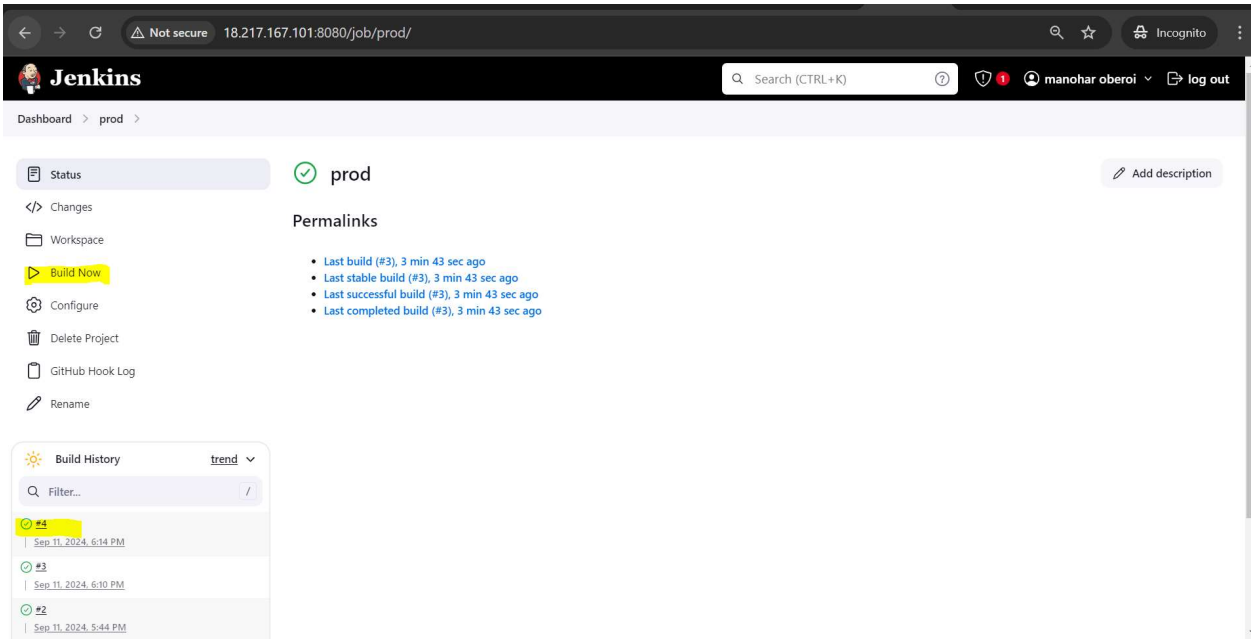
Now I am going to build the docker file so I will go to the prod job and click on configure



In build step I will choose execute shell and update the below commands to build the dockerfile and save the changes

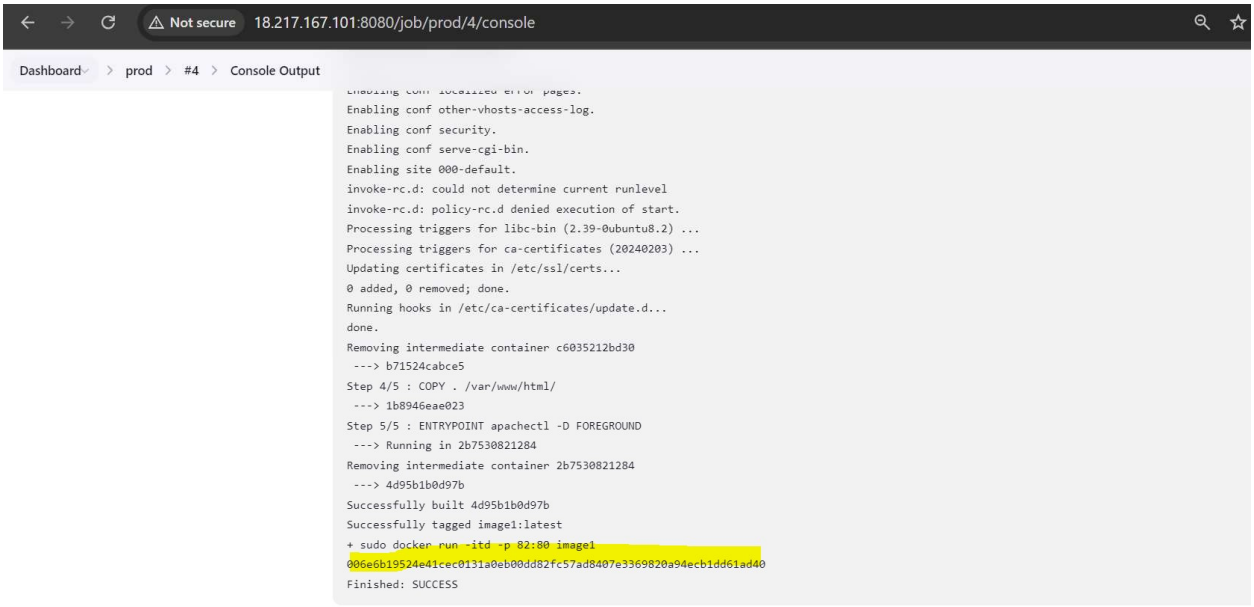


I will click on build now & as you can see the build is successful.

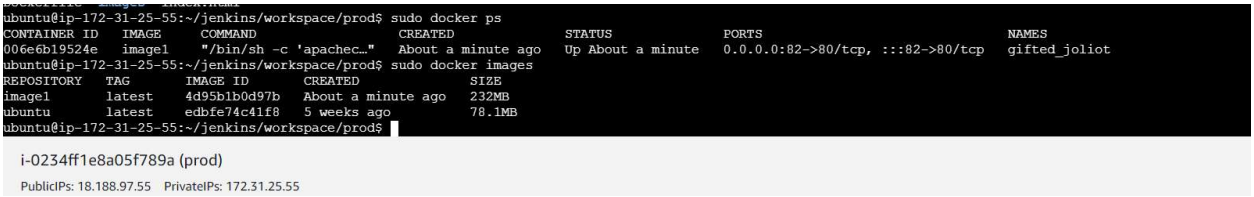


we can go to the console output to check the logs

docker image build successfully and container is running.

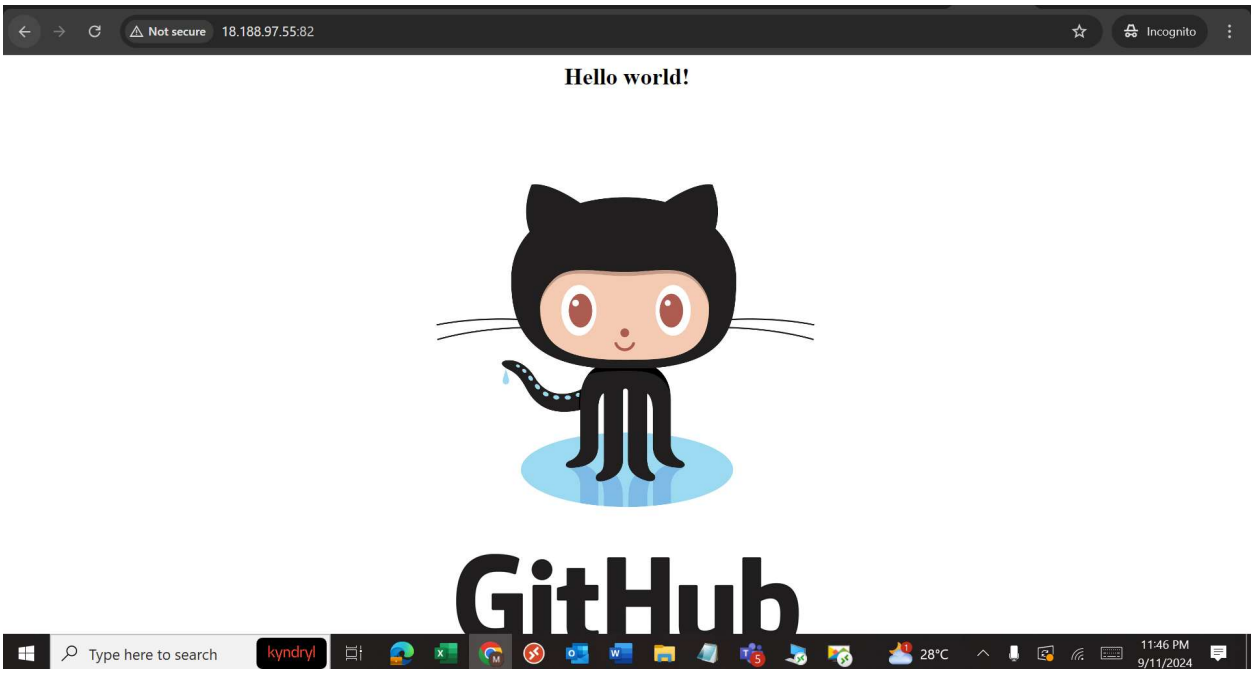


REST

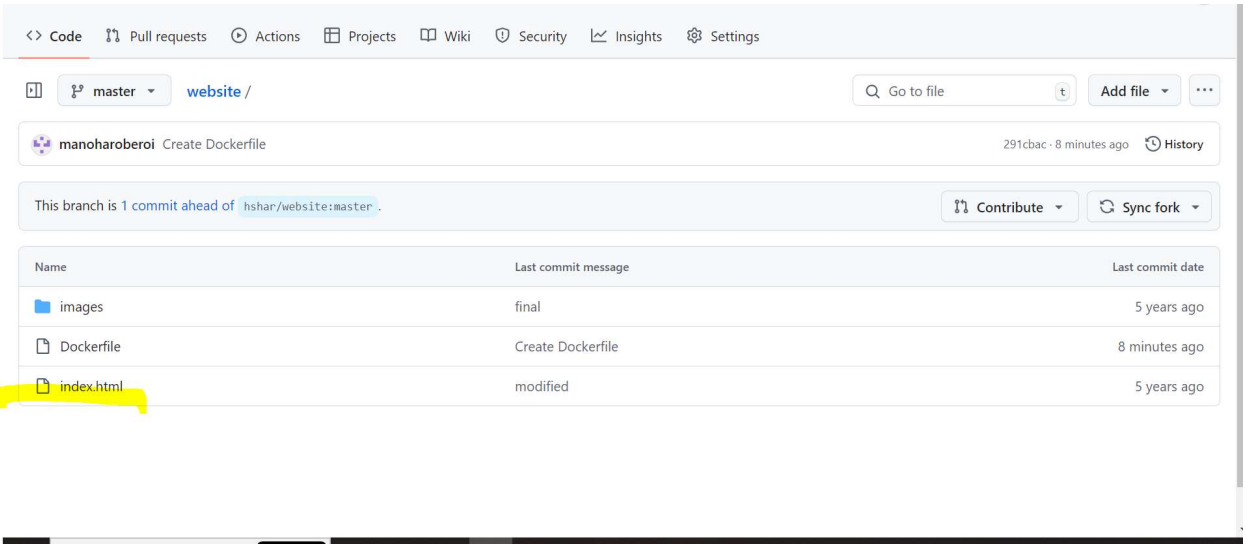


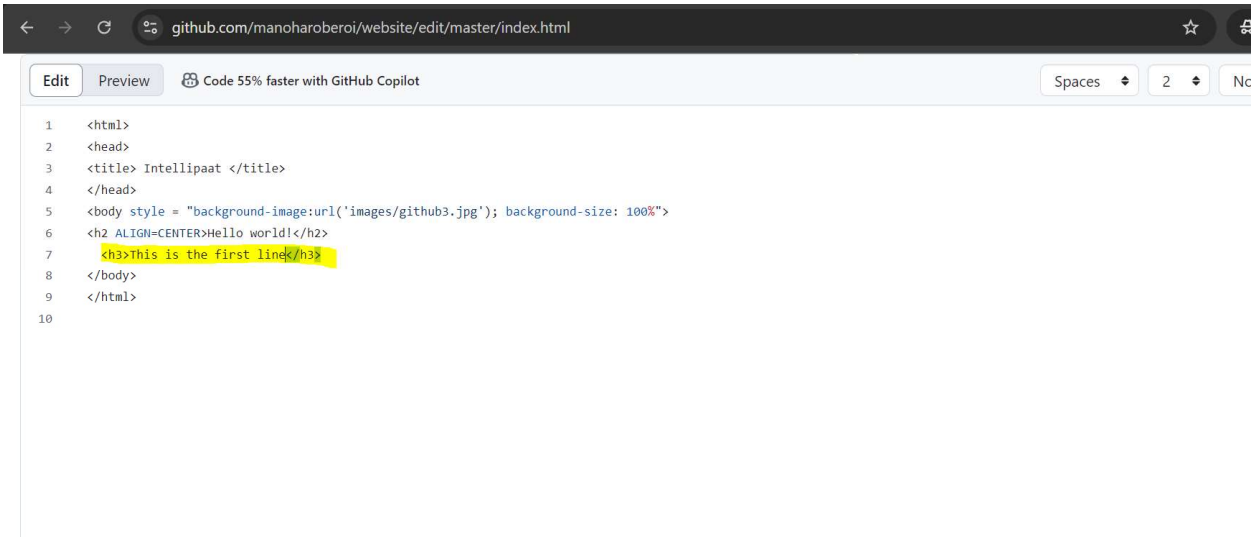
I will copy the public ip of the prod server and paste on the browser followed by the port 82

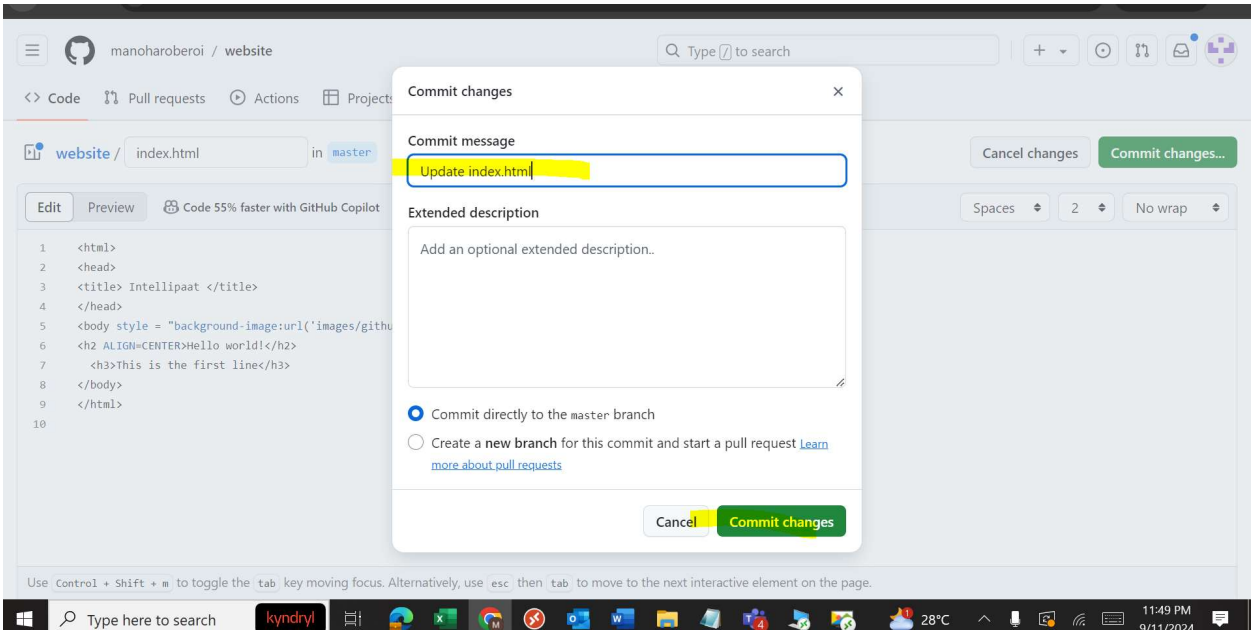
http://18.188.97.55:82/



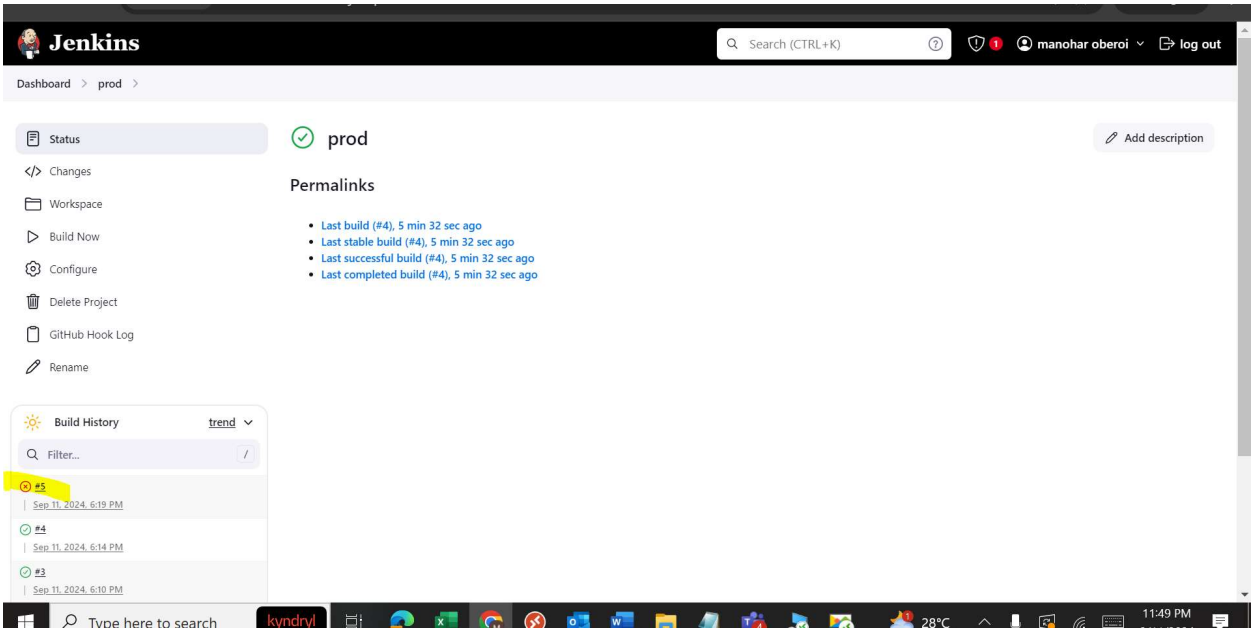
Now in the github repo masterbranch I will edit the index.html file and update the below html code and commit the changes



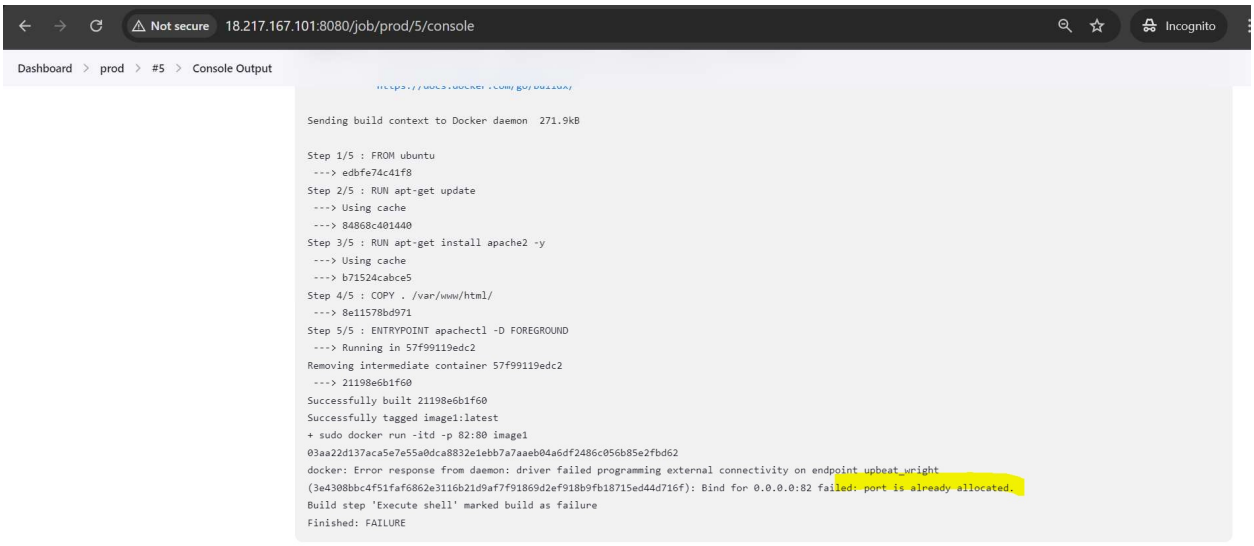




Prod job run automatically but this time it failed

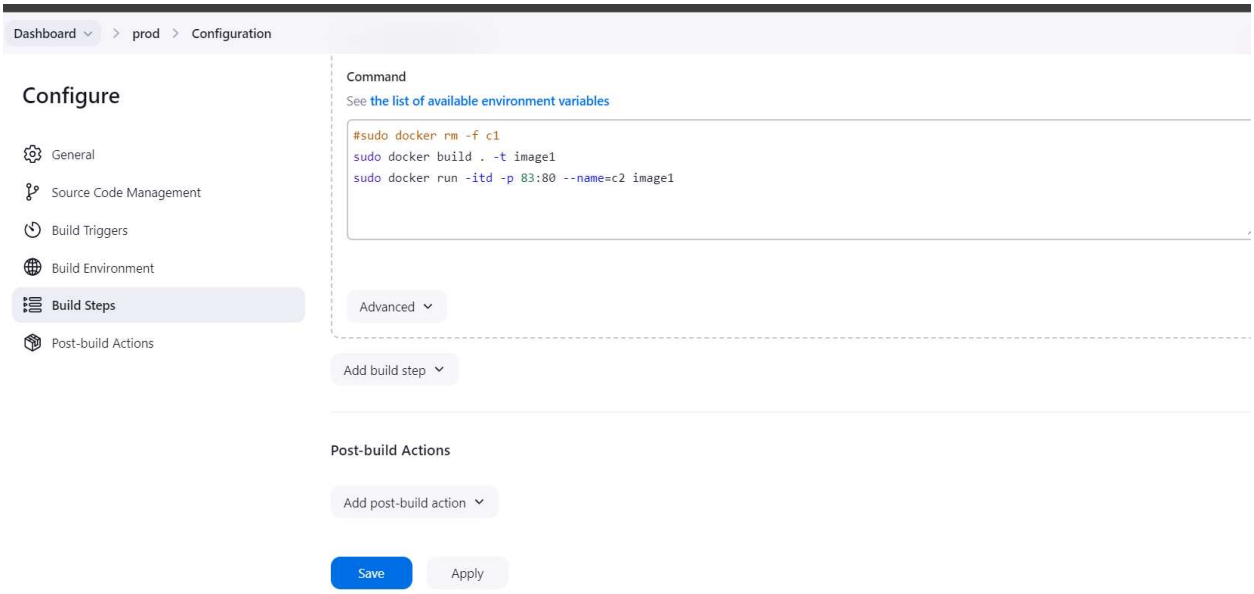


I will go to console output to check the logs and as you can see I am getting the error port is already allocated

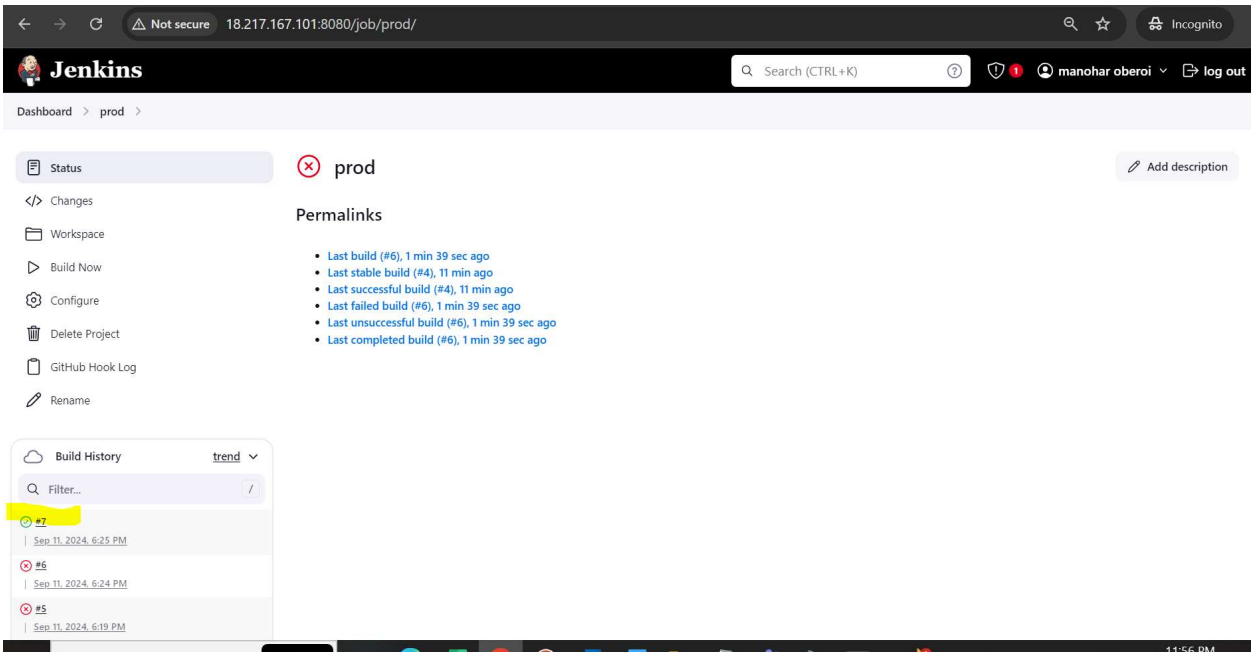


To resolve this issue I need to update the commands in execute shell in such a way that whenever any software developer make any changes in the index.html file then our job should be successful and when we try to access our application we can see the required changes

I will name the container as c2 and change the port to 83 & also in the starting we will write a command to remove the container but for now I will comment the command so it will not execute but in my second build I will uncomment it.



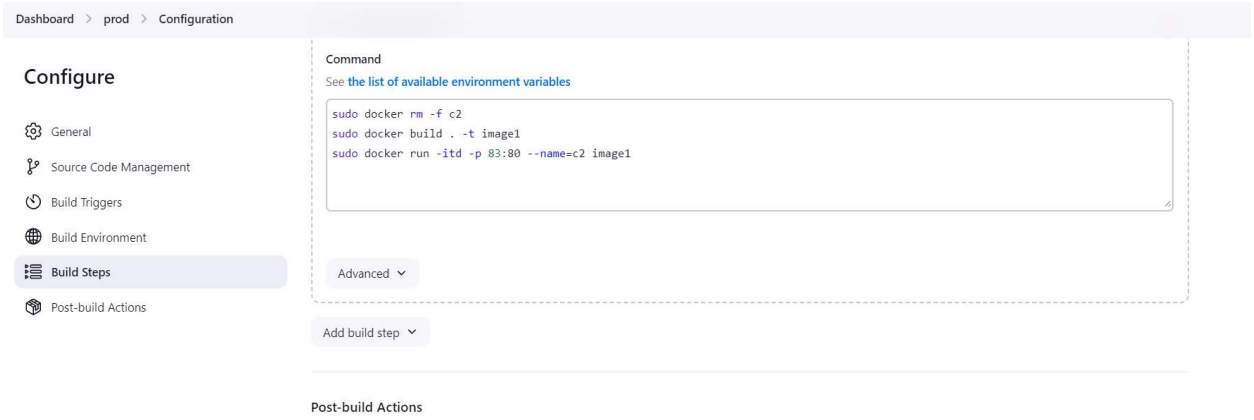
I will build the job again and this time my build was successful.



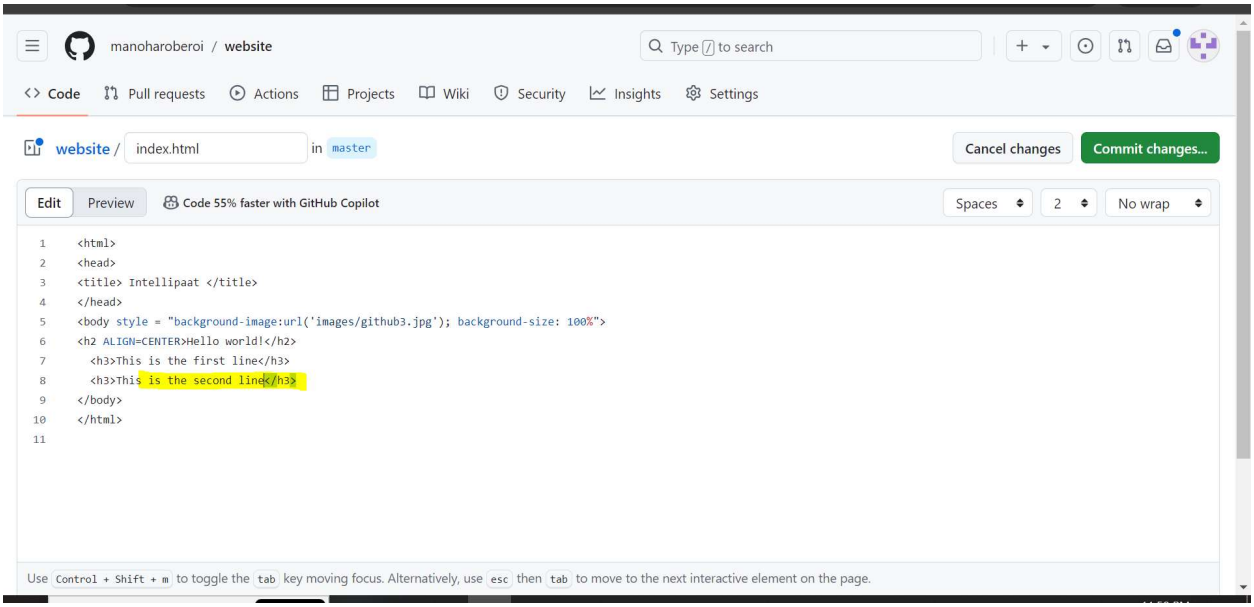
And if I copy the public ip and paste on the browser followed by port 83 I can see the required changes

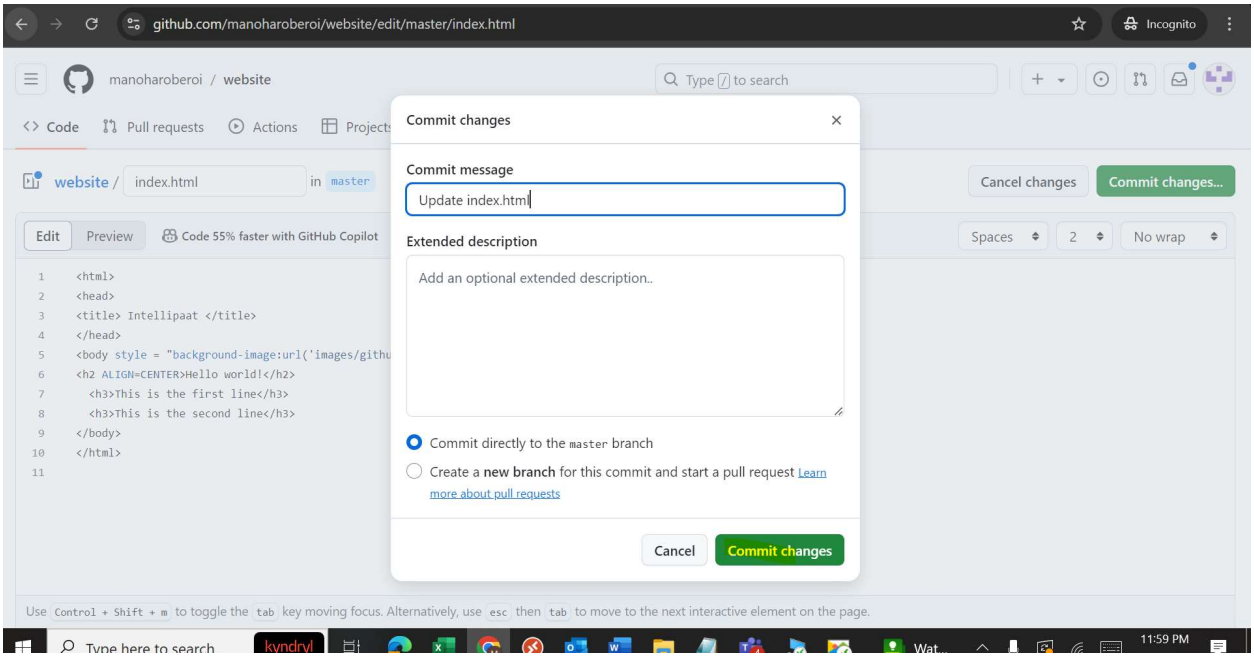
http://18.188.97.55:83/

Now I will uncomment the command and save it

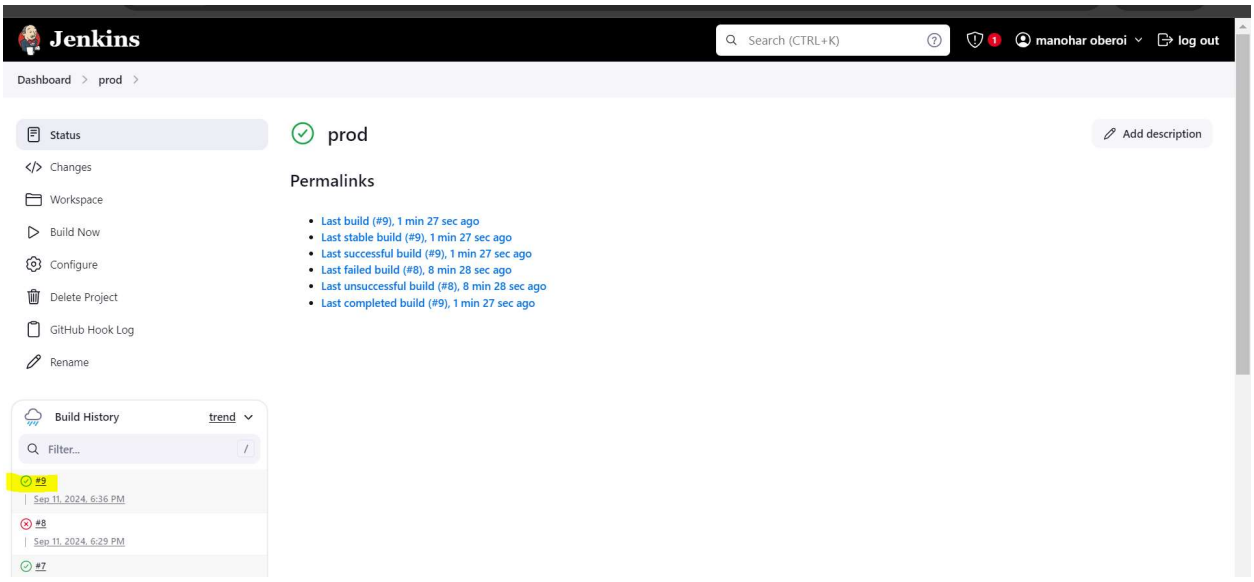


Now I will edit the index.html file again and commit the changes

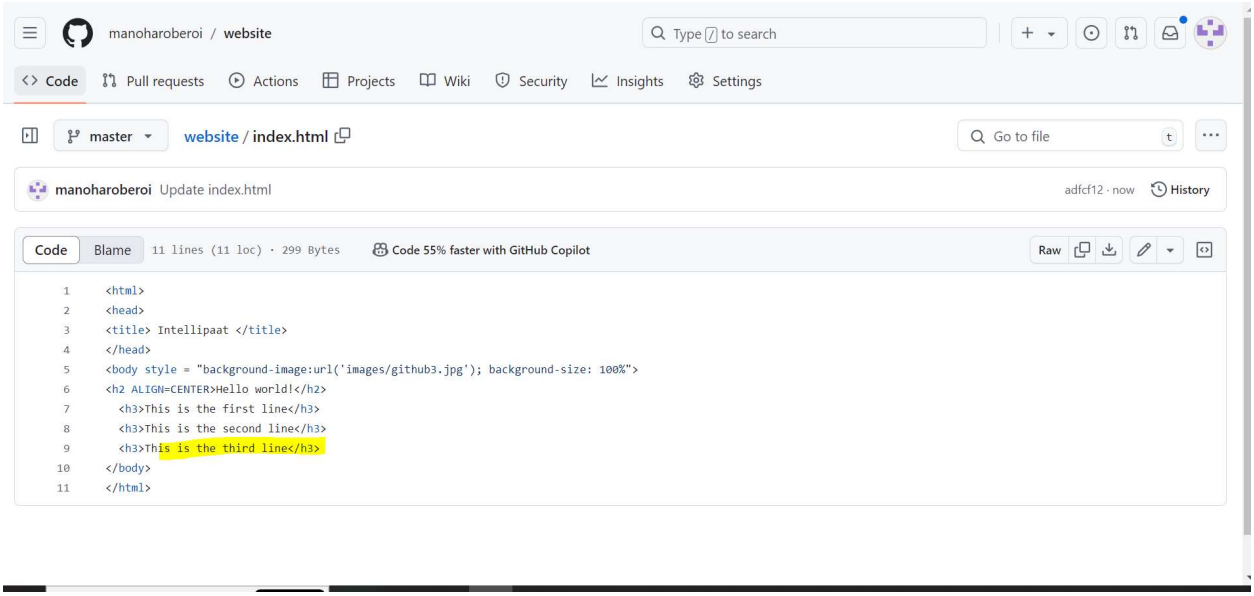




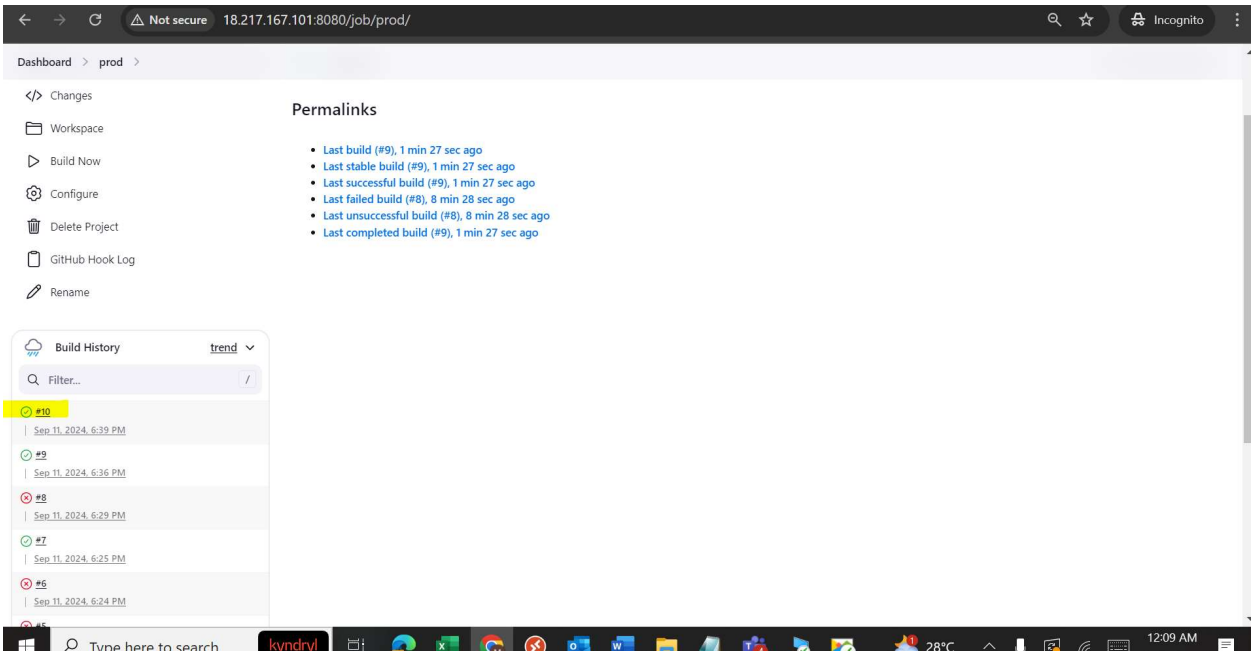
My prod jub run successfully after committing the changes



I am again editing the index.html file



This time job run successfully



The required changes also present when we access application.

This complete jenkins case study.