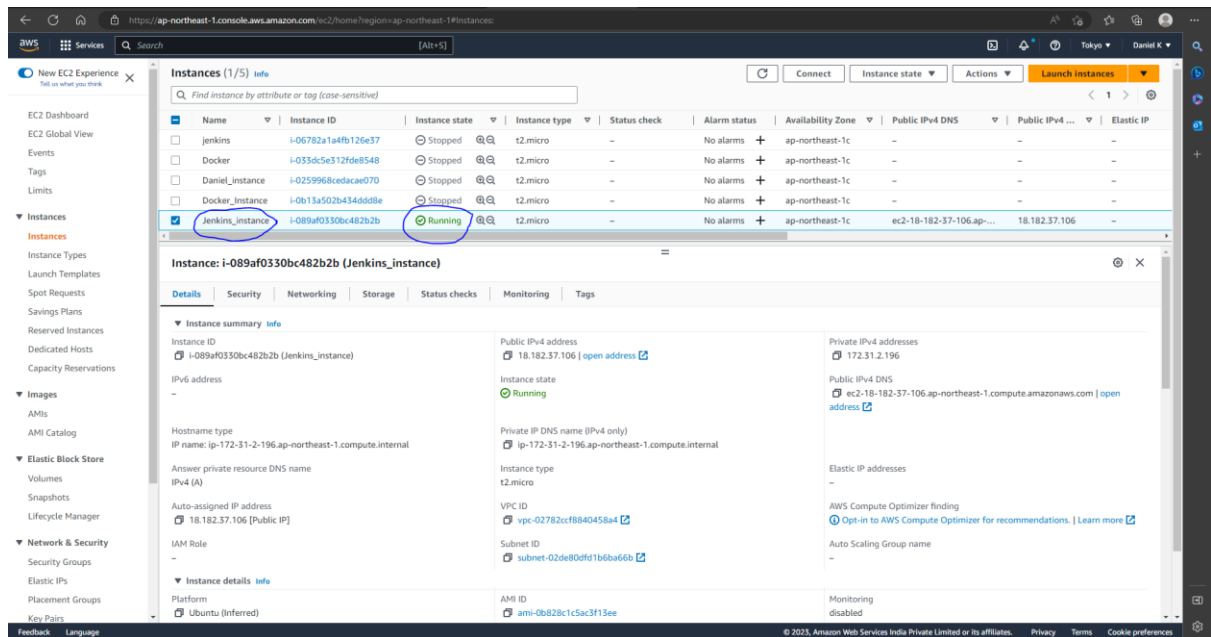


## Devops Assignments - Module 4 - CI/CD using Jenkins

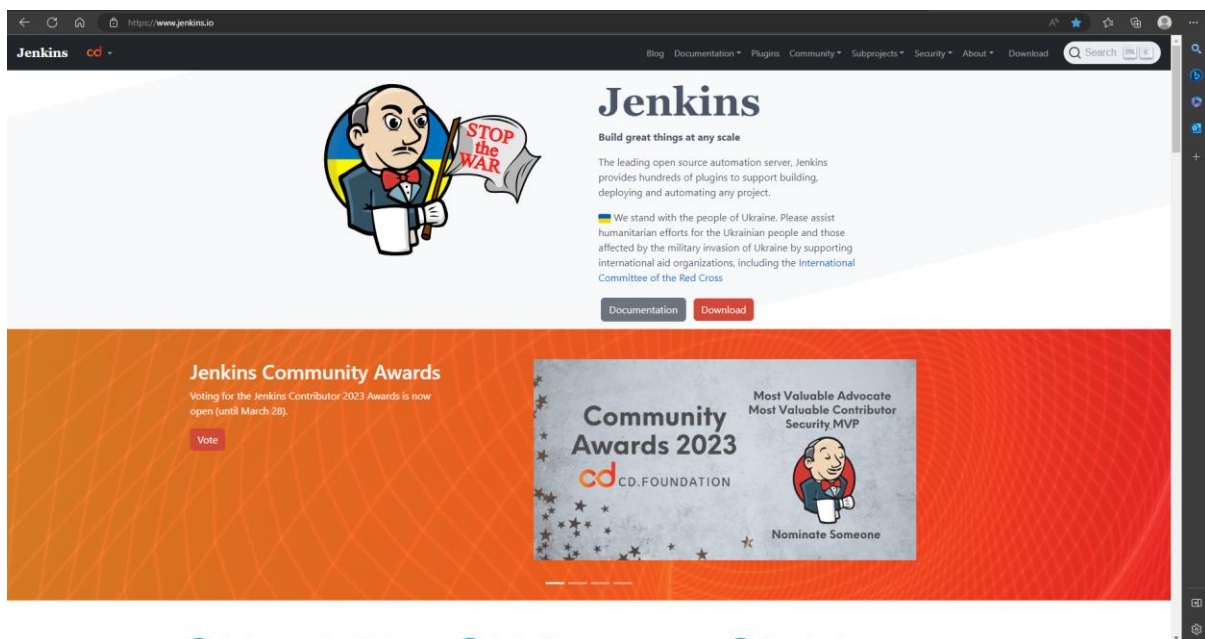
### Assignment 1 -Installing Jenkins on EC2 host.docx.txt

Here is the official website of AWS Amazon web services: - <https://aws.amazon.com/>

1. Sign into to your Account
2. In search box search for EC2 and select EC2.
3. Click on Launch Instance
4. Provide the Required Information such as name, operating system, key pair, etc and click on Launch Instance
5. Amazon EC2 Instance is Created Successfully and Running.
6. To connect to Instance use Puttygen or SSH into cmd



Here is the official website Of Jenkins:- <https://www.jenkins.io/>



## 1. Jenkins is Developed using java, in order to use Jenkins, Java needs to be Installed.

- Command to Install Java:  
→ `sudo apt install openjdk-11-jre`

```
C:\ ubuntu@ip-172-31-2-196: ~  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-2-196:~$ java -version  
openjdk version "11.0.18" 2023-01-17  
OpenJDK Runtime Environment (build 11.0.18+10-post-Ubuntu-0ubuntu122.04)  
OpenJDK 64-Bit Server VM (build 11.0.18+10-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)  
ubuntu@ip-172-31-2-196:~$
```

## 2. Installing Jenkins:

- Commands to Add required dependencies for the Jenkins package

```
→ curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee \  
/usr/share/keyrings/jenkins-keyring.asc > /dev/null  
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
```

- Command to Install Jenkins:  
→ `sudo apt-get install jenkins`

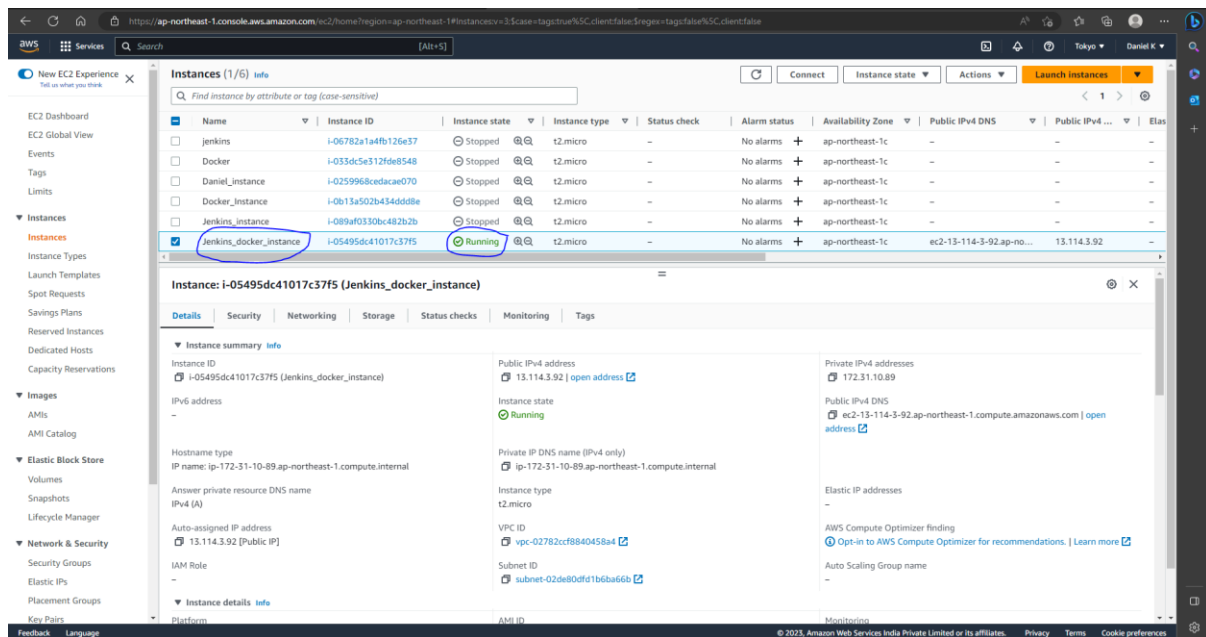
### Jenkins has been Installed Successfully:

```
ubuntu@ip-172-31-2-196:~$ sudo apt-get install jenkins  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  net-tools  
The following NEW packages will be installed:  
  jenkins net-tools  
0 upgraded, 2 newly installed, 0 to remove and 49 not upgraded.  
Need to get 96.3 MB of archives.  
After this operation, 99.2 MB of additional disk space will be used.  
Do you want to continue? [Y/n] Y  
Get:1 http://ap-northeast-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-1ubuntu5 [204 kB]  
Get:2 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.387.1 [96.1 MB]  
Fetched 96.3 MB in 3s (28.2 MB/s)  
Selecting previously unselected package net-tools.  
(Reading database ... 6592 files and directories currently installed.)  
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-1ubuntu5_amd64.deb ...  
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5) ...  
Selecting previously unselected package jenkins.  
Preparing to unpack .../jenkins_2.387.1_all.deb ...  
Unpacking jenkins (2.387.1) ...  
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5) ...  
Setting up jenkins (2.387.1) ...  
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /lib/systemd/system/jenkins.service.  
Processing triggers for man-db (2.10.2-1) ...  
Scanning processes...  
Scanning linux images...  
  
Running kernel seems to be up-to-date.  
  
No services need to be restarted.  
  
No containers need to be restarted.  
  
No user sessions are running outdated binaries.  
  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-2-196:~$ sudo systemctl status jenkins  
* jenkins.service - Jenkins Continuous Integration Server  
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)  
   Active: active (running) since Tue 2023-03-14 11:51:22 UTC; 1min 9s ago  
     Main PID: 4774 (java)  
       Tasks: 36 (limit: 1143)  
      Memory: 306.0M  
         CPU: 42.311s  
    CGroup: /system.slice/jenkins.service  
            └─4774 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080  
  
Mar 14 11:50:50 ip-172-31-2-196 jenkins[4774]: d8d6ef080594e4ca28e3181fab62f9  
Mar 14 11:50:50 ip-172-31-2-196 jenkins[4774]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword  
Mar 14 11:50:50 ip-172-31-2-196 jenkins[4774]: *****  
Mar 14 11:50:50 ip-172-31-2-196 jenkins[4774]: *****  
Mar 14 11:51:22 ip-172-31-2-196 jenkins[4774]: 2023-03-14 11:51:22.501+0000 [id=28] INFO Jenkins.InitReactorRunner$1.onAttained: Completed initialization  
Mar 14 11:51:22 ip-172-31-2-196 jenkins[4774]: 2023-03-14 11:51:22.539+0000 [id=22] INFO hudson.lifecycle.Lifecycle.onReady: Jenkins is fully up and running  
Mar 14 11:51:22 ip-172-31-2-196 system[1]: Started Jenkins Continuous Integration Server.  
Mar 14 11:51:26 ip-172-31-2-196 jenkins[4774]: 2023-03-14 11:51:26.676+0000 [id=41] INFO h.n.DownloadService$DownloadableLoad: Obtained the updated data file for hudson.tasks.Maven.MavenInstaller  
Mar 14 11:51:26 ip-172-31-2-196 jenkins[4774]: 2023-03-14 11:51:26.677+0000 [id=44] INFO hudson.util.Retrier$Start: Performed the action check updates server successfully at the attempt #1  
ubuntu@ip-172-31-2-196:~$
```

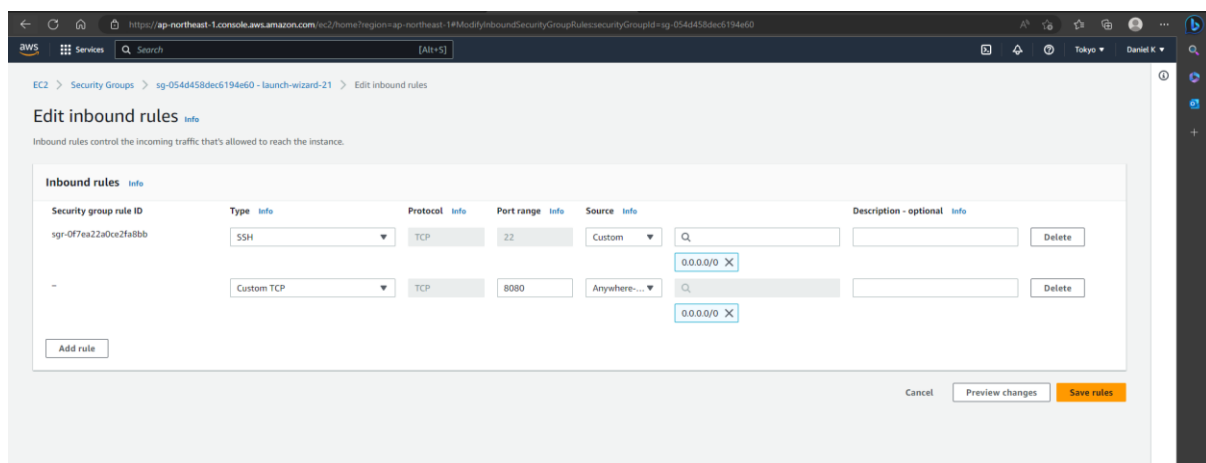
## Assignment 2 - Installing & Configuring Jenkins using Containers.docx.txt

Here is the official website of AWS Amazon web services: - <https://aws.amazon.com/>

1. Sign into to your Account
2. In search box search for EC2 and select EC2.
3. Click on Launch Instance
4. Provide the Required Information such as name, operating system, key pair, etc and click on Launch Instance
5. Amazon EC2 Instance is Created Successfully and Running.
6. To connect to Instance use Puttygen or SSH into cmd



1. Jenkins Work on 8080 Port, so Enabling 8080 port on Security Inbound Rules:



2. After launching, SSH to that EC2 instance. And Install Docker by running the following commands:
  - **sudo apt update** → To Update all the packages
  - **sudo apt install apt-transport-https ca-certificates curl software-properties-common** → install a few prerequisite packages

- **sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"** → Adding the Docker repository
- **sudo apt install docker-ce** → To Install Docker
- **sudo systemctl status docker** → To Check Docker Status

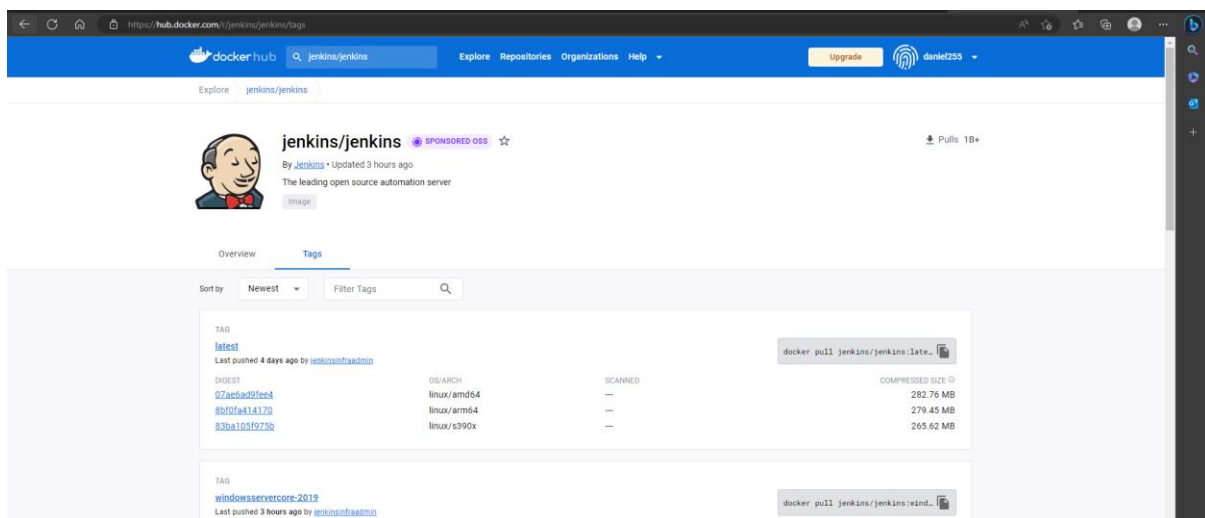
```

ubuntu@ip-172-31-10-89:~$ sudo systemctl status docker
No VM guests are running outdated hypervisor (qemu) binaries on this host.
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2023-03-10 11:32:16 UTC; 9s ago
     TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
        Main PID: 3592 (dockerd)
          Tasks: 7
         Memory: 70.0M
            CPU: 315ms
       CGroup: /system.slice/docker.service
              └─3592 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Mar 10 11:32:15 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:15.715167971Z" level=info msg="[core] [Channel #4 Subchannel #3] Subchannel Connectivity change to READY" module=grpc
Mar 10 11:32:15 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:15.71520124Z" level=info msg="[core] [Channel #4] Channel Connectivity change to READY" module=grpc
Mar 10 11:32:15 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:15.772537510Z" level=info msg="loading containers: start."
Mar 10 11:32:15 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:15.908529762Z" level=info msg="Default bridge (docker0) is assigned with an IP address 172.17.0.0/16. Daemon option --bip can be used to set a preferred IP address"
Mar 10 11:32:16 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:16.057044613Z" level=info msg="loading containers: done."
Mar 10 11:32:16 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:16.117914080Z" level=info msg="Docker daemon" commit=bc3885a graphdriver=overlay2 version=23.0.1
Mar 10 11:32:16 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:16.11821977Z" level=info msg="Daemon has completed initialization"
Mar 10 11:32:16 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:16.158776310Z" level=info msg="[core] [Server #7] Server created" module=grpc
Mar 10 11:32:16 ip-172-31-10-89 system[1]: Started Docker Application Container Engine.
Mar 10 11:32:16 ip-172-31-10-89 dockerd[3592]: time="2023-03-10T11:32:16.158607472Z" level=info msg="API listen on /run/docker.sock"
ubuntu@ip-172-31-10-89:~$ docker -v
Docker version 23.0.1, build a5ee5b1
ubuntu@ip-172-31-10-89:~$

```

3. Now we will pull the Jenkins image using docker from the docker hub:



```

root@ip-172-31-10-89: /home/ubuntu
root@ip-172-31-10-89:/home/ubuntu#
root@ip-172-31-10-89:/home/ubuntu# docker pull jenkins
Using default tag: latest
Error response from daemon: manifest for jenkins:latest not found: manifest unknown: manifest unknown
root@ip-172-31-10-89:/home/ubuntu# docker pull jenkins/jenkins
Using default tag: latest
latest: Pulling from jenkins/jenkins
32fb02163b6b: Pull complete
ec380afce516: Pull complete
58dcc7a1d290: Pull complete
8c579e962568: Pull complete
920a83c60bcc: Pull complete
117cec3c9ef2: Pull complete
db73ec3fa163: Pull complete
3eff2053d7f1: Pull complete
d242598110a3: Pull complete
04aecda1dcfb: Pull complete
b25c7d97412c: Pull complete
a8a0b44de543: Pull complete
2f9c74b2b0fc: Pull complete
Digest: sha256:bae58f9685aecbe390e98ce475a9355c8b4e611025e7882d9553877d8b48bf0b
Status: Downloaded newer image for jenkins/jenkins:latest
docker.io/jenkins/jenkins:latest
root@ip-172-31-10-89:/home/ubuntu# docker images
REPOSITORY          TAG             IMAGE ID        CREATED        SIZE
jenkins/jenkins     latest         e2999693421d   3 days ago    471MB
root@ip-172-31-10-89:/home/ubuntu#

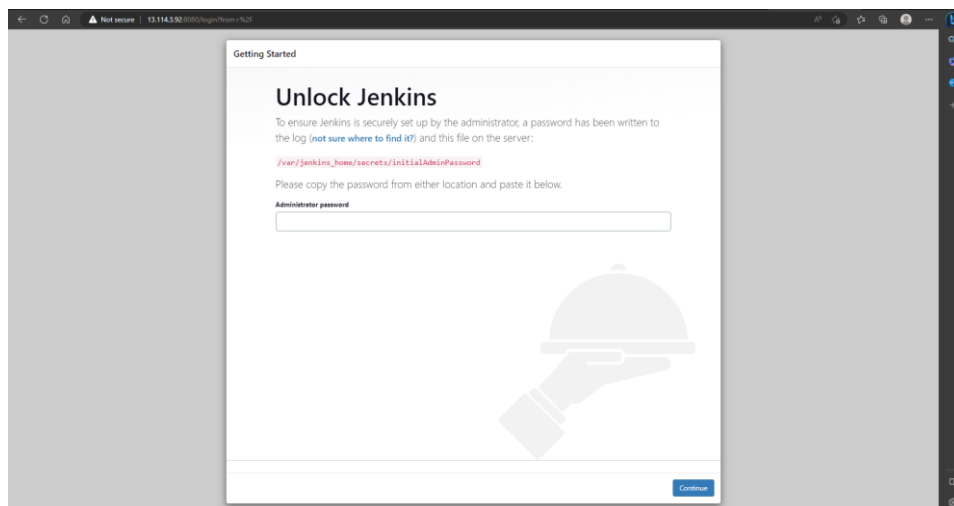
```

- **mkdir Jenkins** → To make directory name Jenkins
- **docker run -d --name jenkins -p 8080:8080 -v \$PWD/jenkins/jenkins/Jenkins** → To run a container name Jenkins using Jenkins image
- **docker ps** → # To see if container is running or not

```

root@ip-172-31-10-89: /home/ubuntu
b25c7d97412c: Pull complete
a8a0b44de543: Pull complete
2f9c74b2b0fc: Pull complete
Digest: sha256:bae58f9685aebc390e98ce475a9355c8b4e611025e7882d9553877d8b48bf0b
Status: Downloaded newer image for jenkins/jenkins:latest
docker.io/jenkins/jenkins:latest
root@ip-172-31-10-89:/home/ubuntu# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
jenkins/jenkins     latest             e2999693421d       3 days ago         471MB
root@ip-172-31-10-89:/home/ubuntu# mkdir jenkins
root@ip-172-31-10-89:/home/ubuntu# docker run -d --name jenkins -p 8080:8080 -v $PWD/jenkins:/var/jenkins
ba70474b2f90b43f189c1918ea7a7c9da3de3fc4006c6be6fa7e79d036246940
root@ip-172-31-10-89:/home/ubuntu# docker ps
CONTAINER ID        IMAGE               COMMAND
ba70474b2f90       jenkins/jenkins    "/usr/bin/tini -- -u..."
root@ip-172-31-10-89:/home/ubuntu#
```

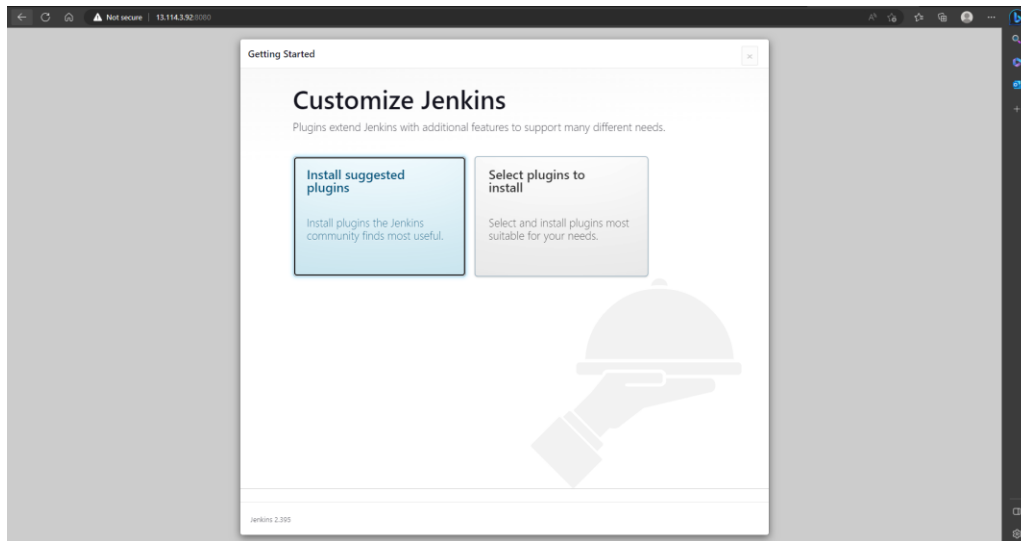
- Now, copy the Public IPv4 address of the EC2 instance After copying it. Paste it into a new tab with port 8080:



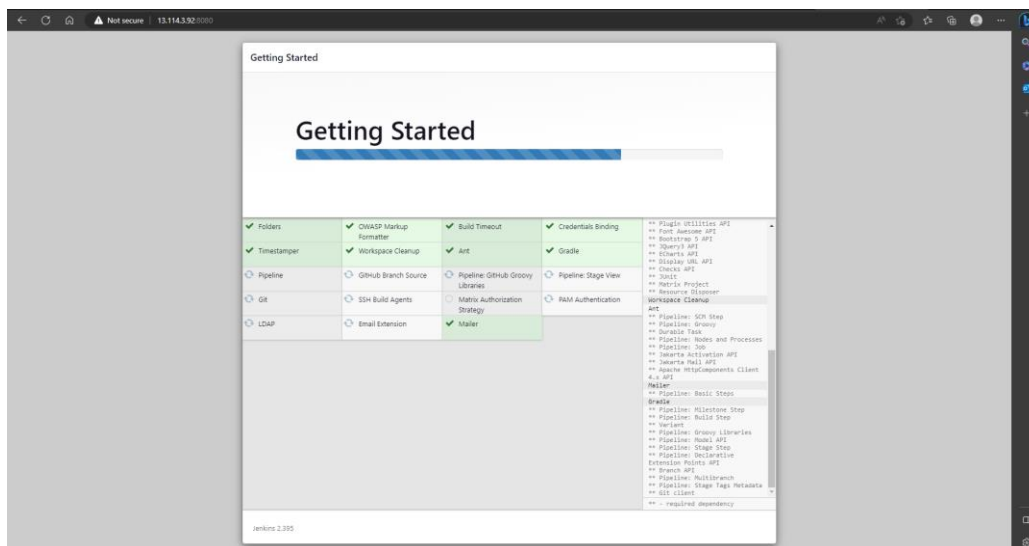
- **Docker logs Jenkins** → To see logs of the container name Jenkins

[illegible]

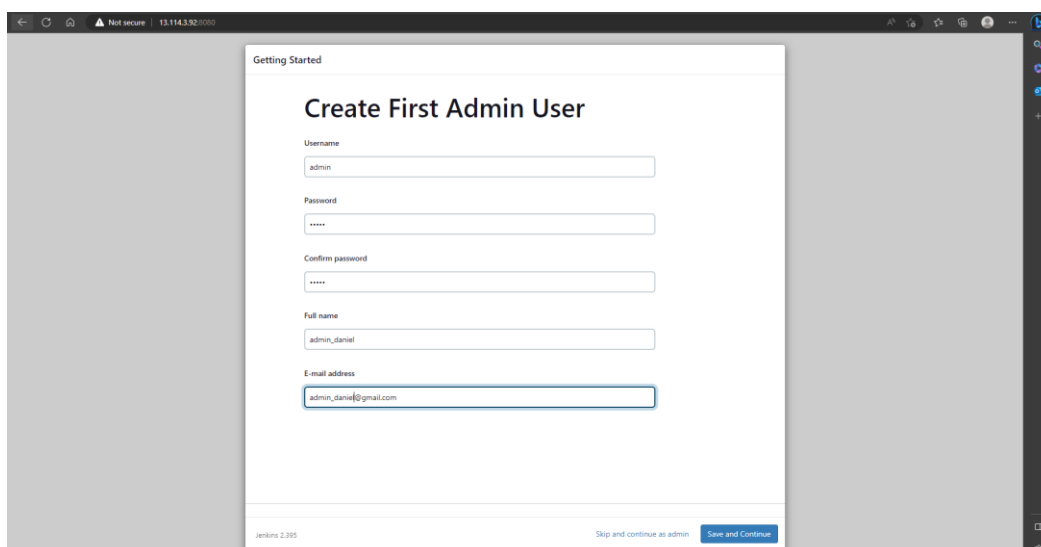
7. Here Jenkins can be customized through selecting or installing suggested plugins:



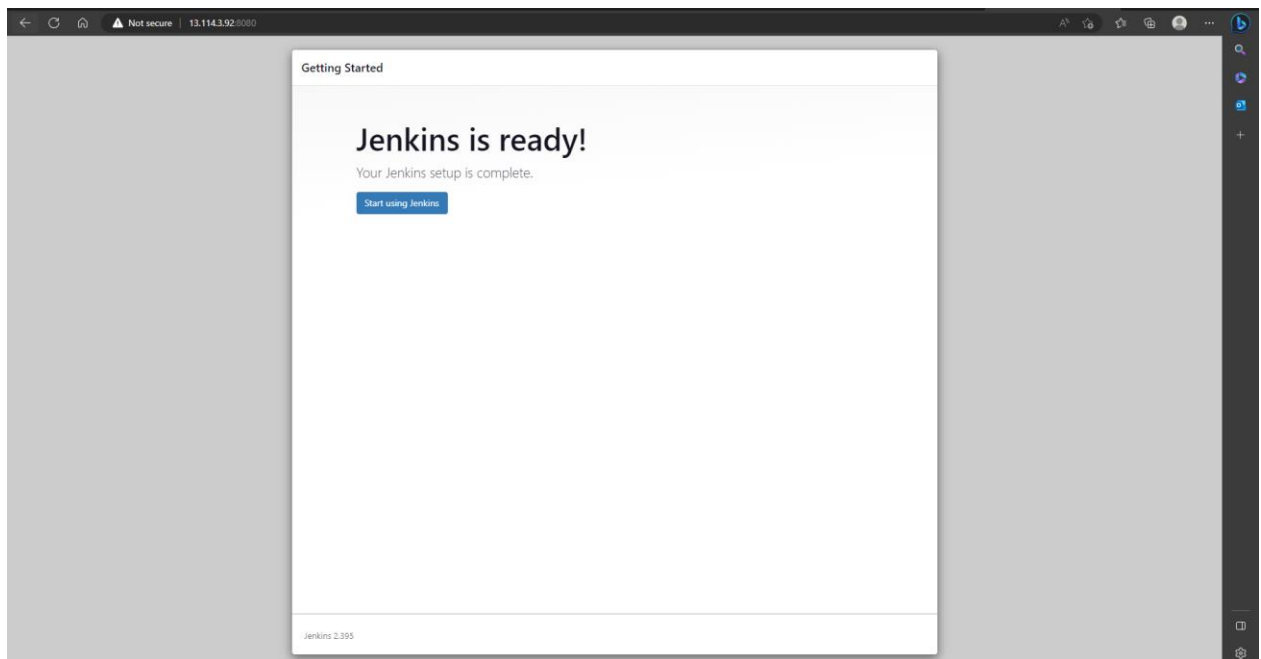
## 8. Installing Plugins:



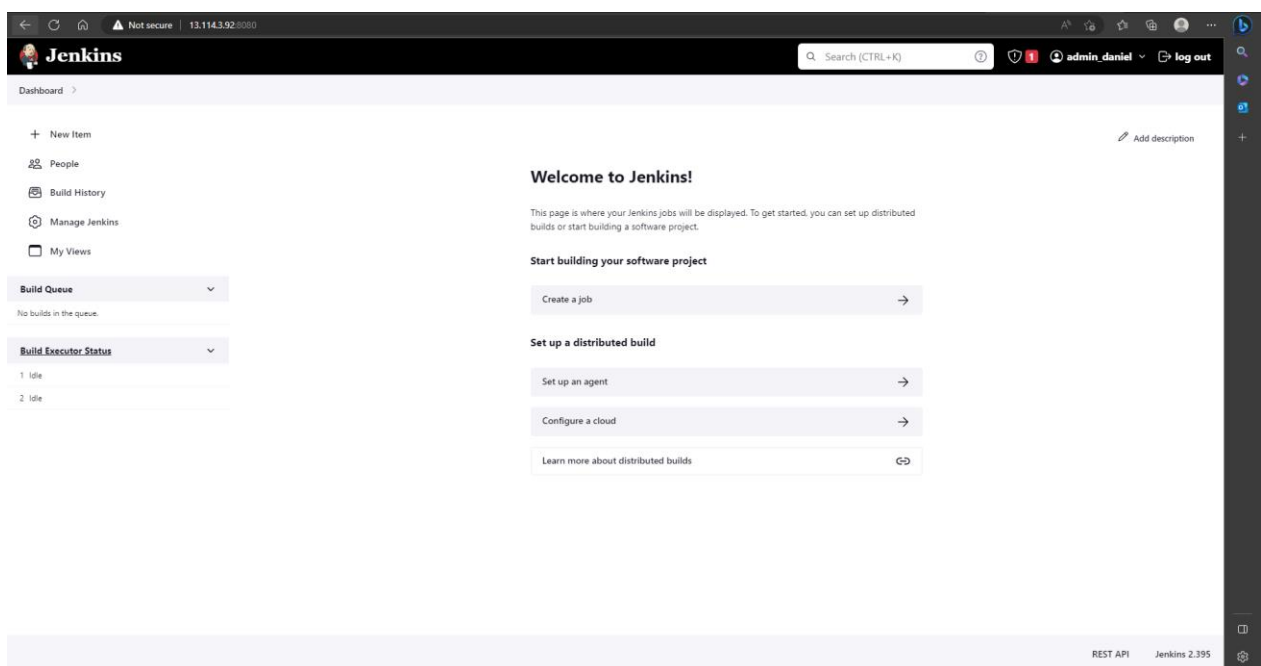
9. Here create your administration user id and password:



10. Jenkins is now ready to use:



11. Jenkins has been installed and configured using container successfully:

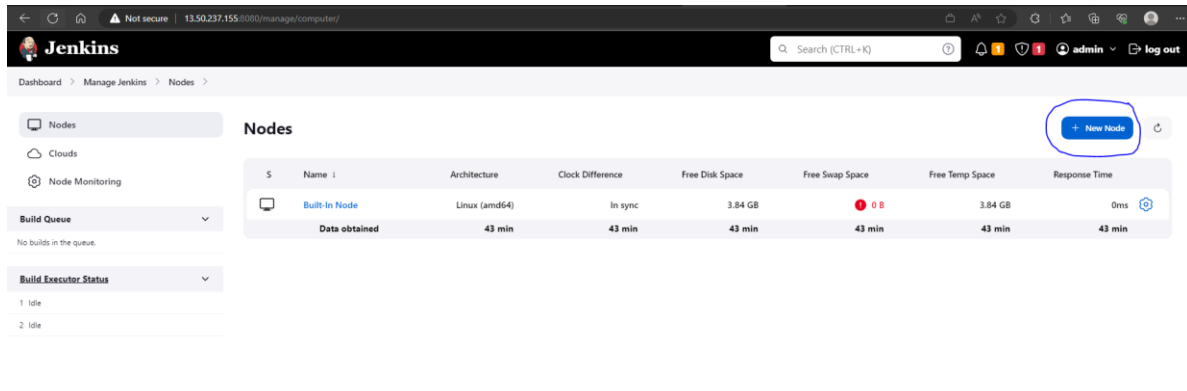
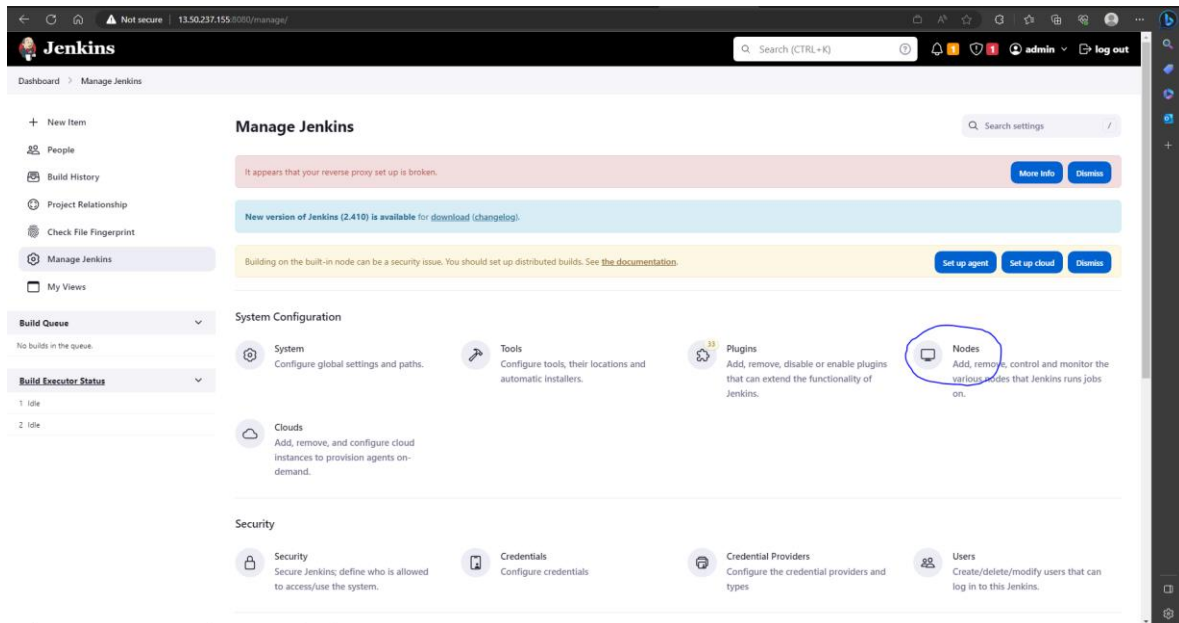




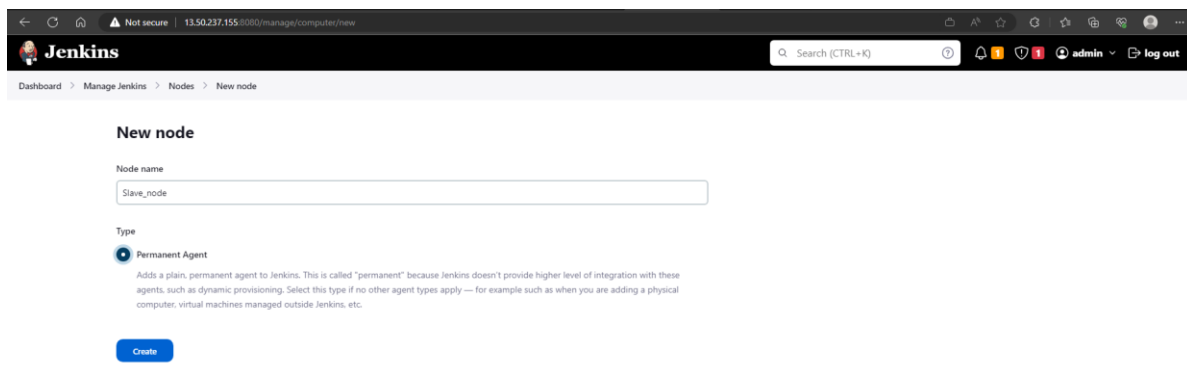
## Assignment 3- MASTER SLAVE SETUP (Using Containers).docx.txt

Configure to add a new node in Jenkins Master and copy the agent URL to be run on the Jenkins Slave using containers:

1. Open the Jenkins web console and navigate to 'Manage Jenkins' -> 'Manage Nodes & Clouds' -> 'New Node' to add a new node to the Jenkins Master



2. Give the node a name, select 'Permanent Agent' and click 'OK'





- Fill in the details for the new node, including the remote file system root, number of executors and other configuration options

← ↻ 🔒

Not secure13.50.237.155:6000/manage/computer/createItem

Dashboard > Manage Jenkins > Nodes >

Name ⓘ

Slave\_node

Description ⓘ

slave node to execute builds

Plain text Preview

Number of executors ⓘ

2

Remote root directory ⓘ

/home/ubuntu/users

Labels ⓘ

dev

Usage ⓘ

Use this node as much as possible

Launch method ⓘ

Launch agents via SSH

Host ⓘ

Save

4. Scroll down to the 'Launch Method' section and select 'Launch agent via SSH'

[illegible]

- Pasting public key in authorized\_keys

```
root@172-172-8-52:~# ssh -o port-forwarding=no-agent-forwarding-no-X11-forwarding command="echo 'Please login as the user \"ubuntu\" rather than the user \"root\"'.>echo;sleep 10;exit 142" ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D
2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk32g/F6Zp9Y53p/Rb5/JSqew1BhWqZ3c0cMldtstbV
K095Y1U5p6cYid3g30qpCrtAUh/s0BfK/q082rH36ked7jF/cxk0pUd1U0 key
ssh-key AAAAB3NzaC1yc2EAAAADAQABAAQBSHh07WpVn9wJ4u16wU10Zw0 RPZ9D2/cyy8bDLeegrcCP8DjyYtYsrp0pN4d5srHEK7f4/q1fHE9bFC11uakn0dSM4r3Rlq6S3QZk8fM0b4/1B4d8Zf2Ac1grP6h01JdCvdId/xyt7W635C8D/LPXF3X8c29Z9P44tWmVW41dCKZjDd7jgrASzA774L1uWb/Fqobk3
```

- Click on Save

Dashboard > Manage Jenkins > Nodes >

Launch method (?)

Launch agents via SSH

Host (?)

13.50.237.155

Credentials (?)

root (testing-slave)

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

REST API Jenkins 2.405

- Slave Node has been Created successfully and it is in online:

Dashboard > Manage Jenkins > Nodes >

Nodes

S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Build-In Node	Linux (amd64)	In sync	5.16 GB	0 B	5.16 GB	0ms
	slave_node	N/A	N/A	N/A	N/A	N/A	N/A
	Data obtained	44 ms	23 ms	28 ms	44 ms	9 min 48 sec	9 min 48 sec

Build Queue

No builds in the queue.

Build Executor Status

Build-In Node

1 Idle

2 Idle

slave\_node

1 Idle

2 Idle

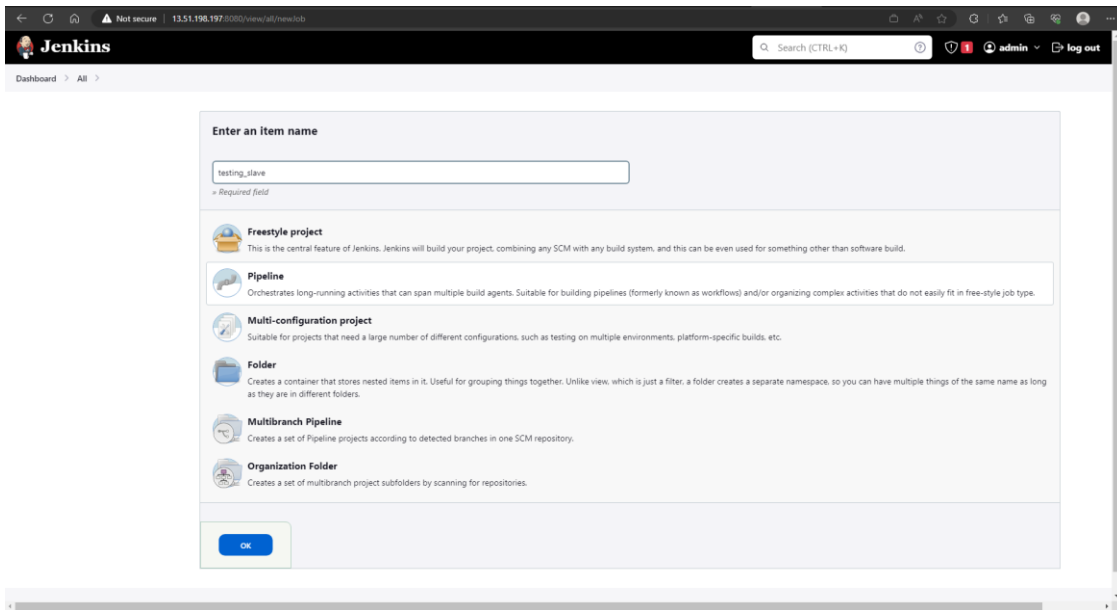
5. Create the below sample Pipeline job on Jenkins Master container and check if the job is getting created on Jenkins Slave container:

- Here is sample pipeline

```
pipeline {
  agent {label 'slave_node'}

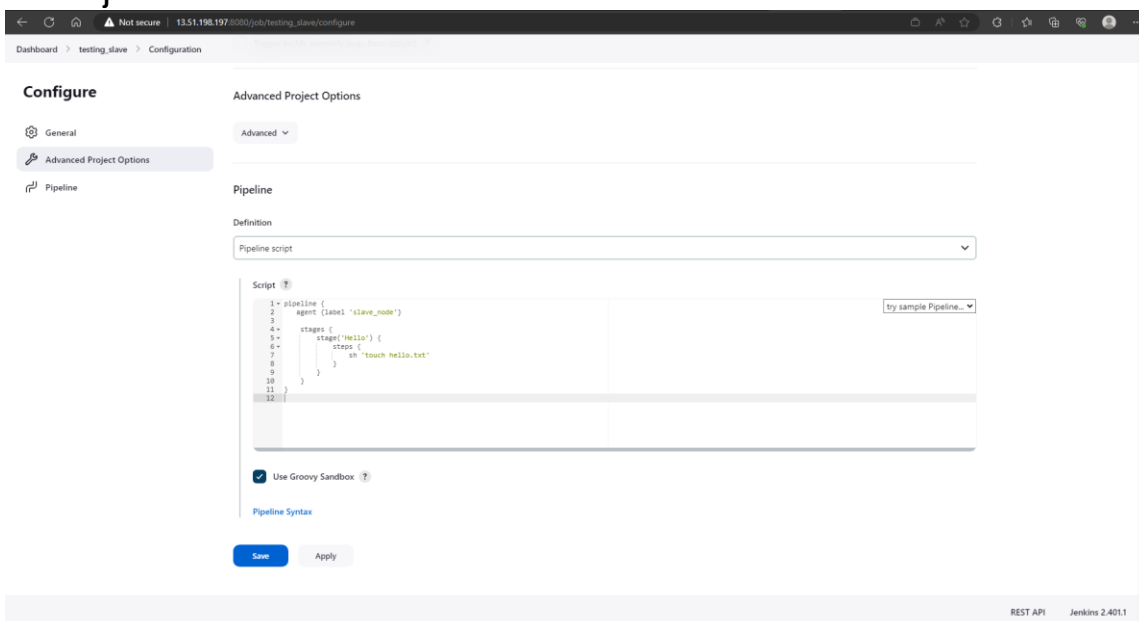
  stages {
    stage('Hello') {
      steps {
        sh 'touch hello.txt'
      }
    }
  }
}
```

## ➤ Creating a pipeline project



- Pasting the Given Pipeline script:
- Here my agent slave name is slave\_node

```
pipeline {  
  agent {label 'slave_node'}  
  
  stages {  
    stage('Hello') {  
      steps {  
        sh 'touch hello.txt'  
      }  
    }  
  }  
}
```



## ➤ Build Now:

The screenshot shows the Jenkins web interface for a pipeline named 'testing\_slave'. The top navigation bar includes the Jenkins logo and the breadcrumb 'Dashboard > testing\_slave >'. On the left sidebar, the 'Build Now' button is highlighted. The main content area is titled 'Pipeline testing\_slave' and shows a 'Stage View' for a stage named 'Hello'. The stage view displays a bar chart with a single bar representing a duration of 432ms. Above the bar, it states 'Average stage times: (Average full run time: ~1s)'. Below the bar chart, there is a table with columns for build number, date, and status. The first row shows build #1 on Jun 14, 2023, at 19:22, with a status of 'No Changes'. The 'Build History' section on the left shows a list of builds, with the first build (#1) selected. The 'Permalinks' section is also visible.

Dashboard > testing\_slave >

**Build Now**

**Stage View**

Average stage times:  
(Average full run time: ~1s)

#	Date	Status
#1	Jun 14, 2023, 19:22	No Changes

**Permalinks**

## ➤ Build has been executed successfully:

The screenshot shows the Jenkins web interface for the 'testing\_slave' pipeline, specifically the 'Console Output' view. The top navigation bar includes the Jenkins logo and the breadcrumb 'Dashboard > testing\_slave > #1'. The left sidebar shows the 'Console Output' button selected. The main content area is titled 'Console Output' and displays the following text:

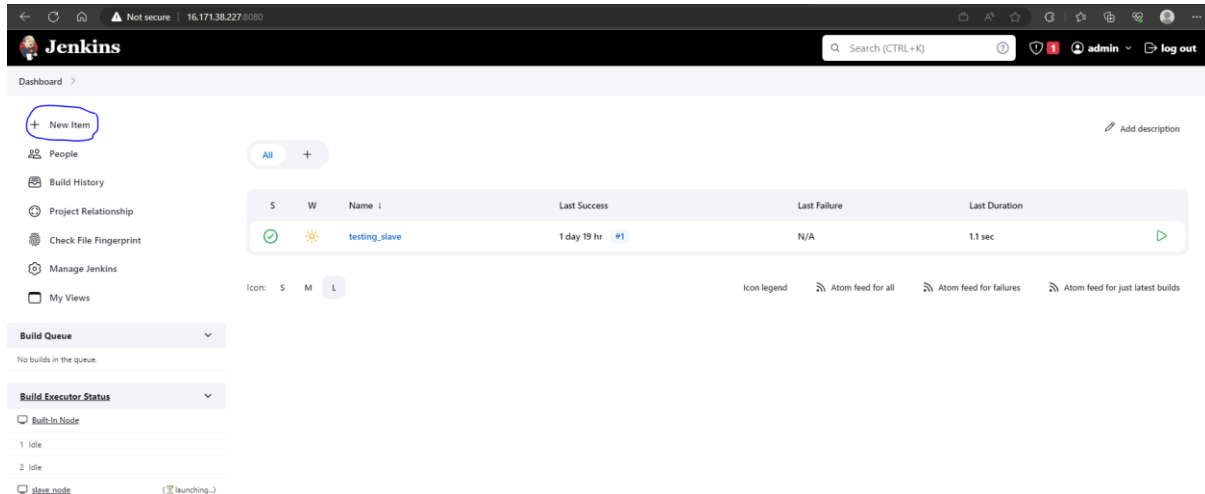
```
Started by user admin
[Pipeline] Start of Pipeline
[Pipeline] node
Running on slave_node in /home/users/workspace/testing_slave
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Hello)
[Pipeline] sh
+ touch hello.txt
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

The console output shows the pipeline starting, running on a slave node, and successfully completing the 'Hello' stage by creating a file named 'hello.txt'. The final status is 'Finished: SUCCESS'.

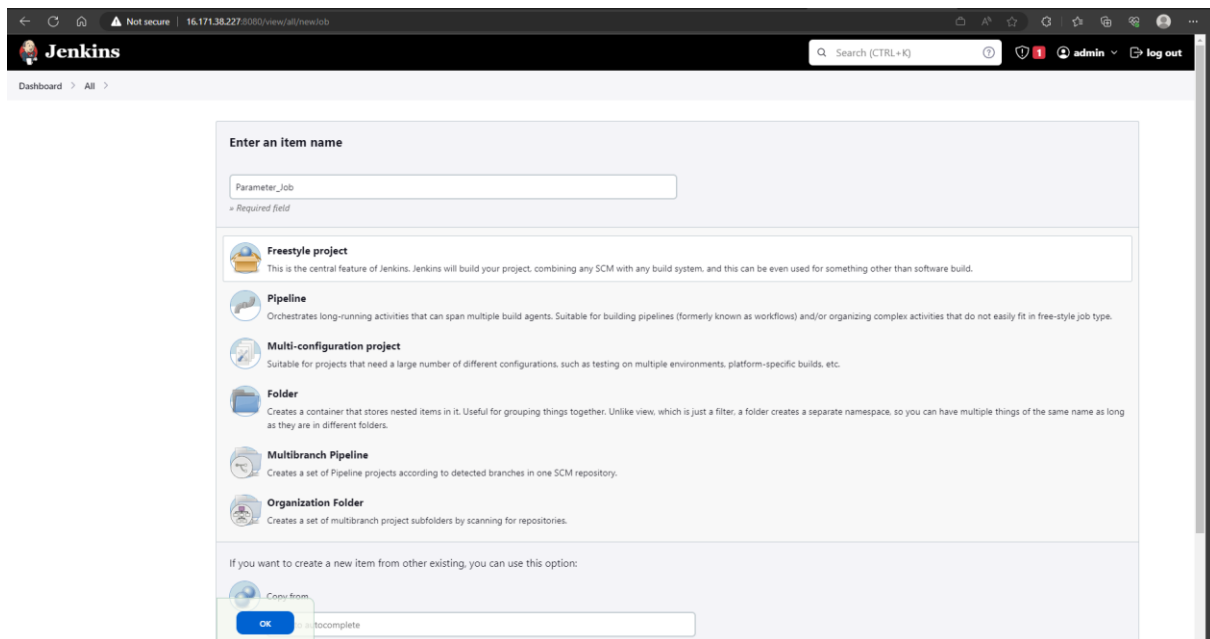
## Assignment 4 - Working with Parameterized Jobs & Triggers.docx.txt

Setting up parameterized jobs and triggers in Jenkins Master

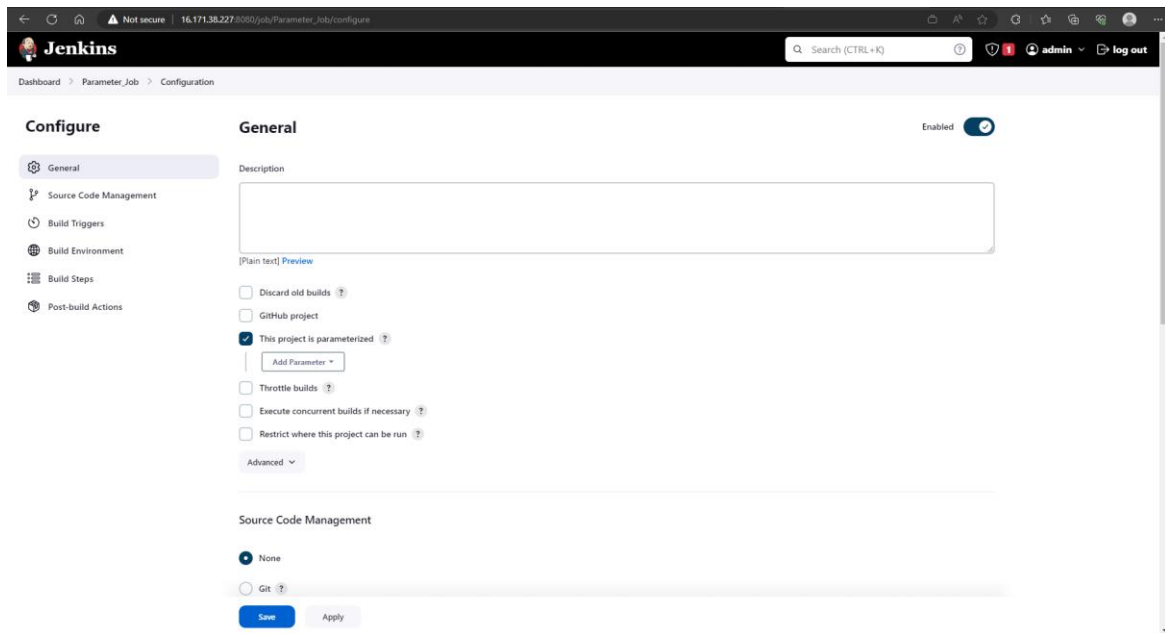
1. Create a new free style project in which you choose the option "The project is Parameterized"
- Open the Jenkins web console and navigate to 'New Item' to create a new job



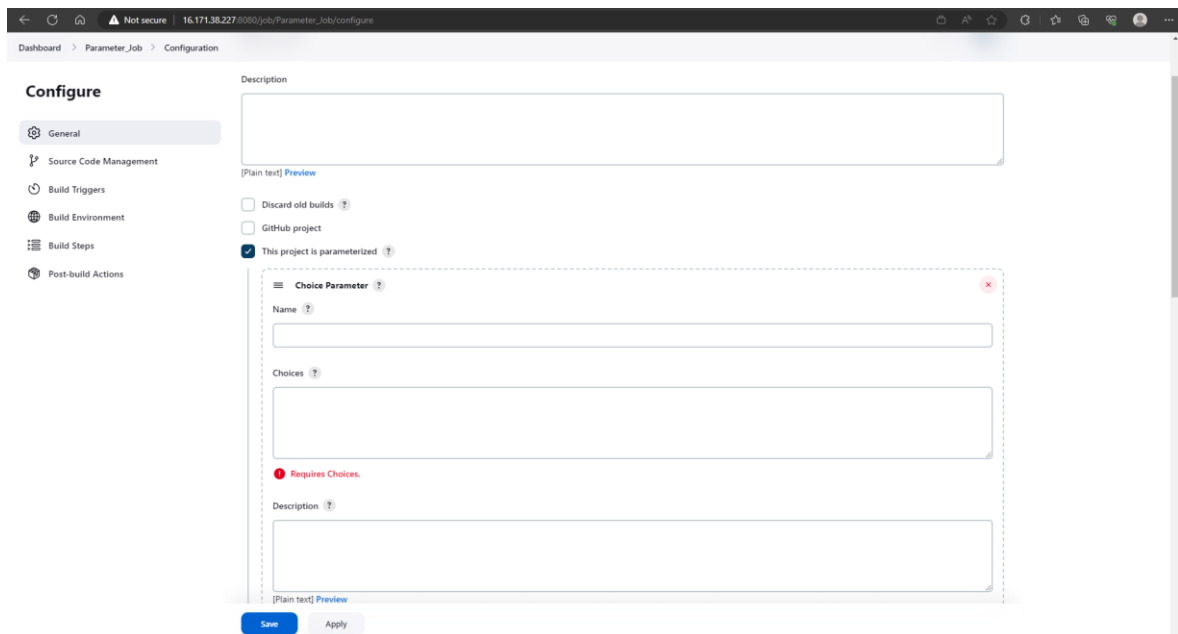
- Give the job a name and select the 'Freestyle project' type.



- In the 'General' section, enable the 'This project is parameterized' checkbox



2. Choose "Choice Parameters" and update the options of OS -Linux, windows, MacOS under choices
- Click the 'Add Parameter' button and select 'Choice Parameter'



- Enter 'OS' as the parameter name
- Under 'Choices', enter the three OS options as follows:  
Linux  
Windows  
MacOS
- Click 'Save' to save the job configuration

Dashboard > Parameter\_Job > Configuration

### Configure

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

☒ This project is parameterized

**Choice Parameter**

Name: OS

Choices: linux, windows, macOS

Description: [Plain text] [Preview](#)

[Add Parameter](#)

☐ Throttle builds  
☐ Execute concurrent builds if necessary  
☐ Restrict where this project can be run

Advanced

Source Code Management

[Save](#) [Apply](#)

### 3. Build a job using these parameters

- Click the 'Build with Parameters' button to start the job
- Select the 'OS' parameter that you created earlier and choose a value for the parameter.

Dashboard > Parameter\_Job >

### Project Parameter\_Job

This build requires parameters:

OS: linux

[Build](#) [Cancel](#)

**Build History** [trend](#)

Filter builds... /

No builds

[Atom feed for all](#) [Atom feed for failures](#)

- Click the 'Build' button to start the job.

Dashboard > Parameter\_Job > #1 > Console Output

### Console Output

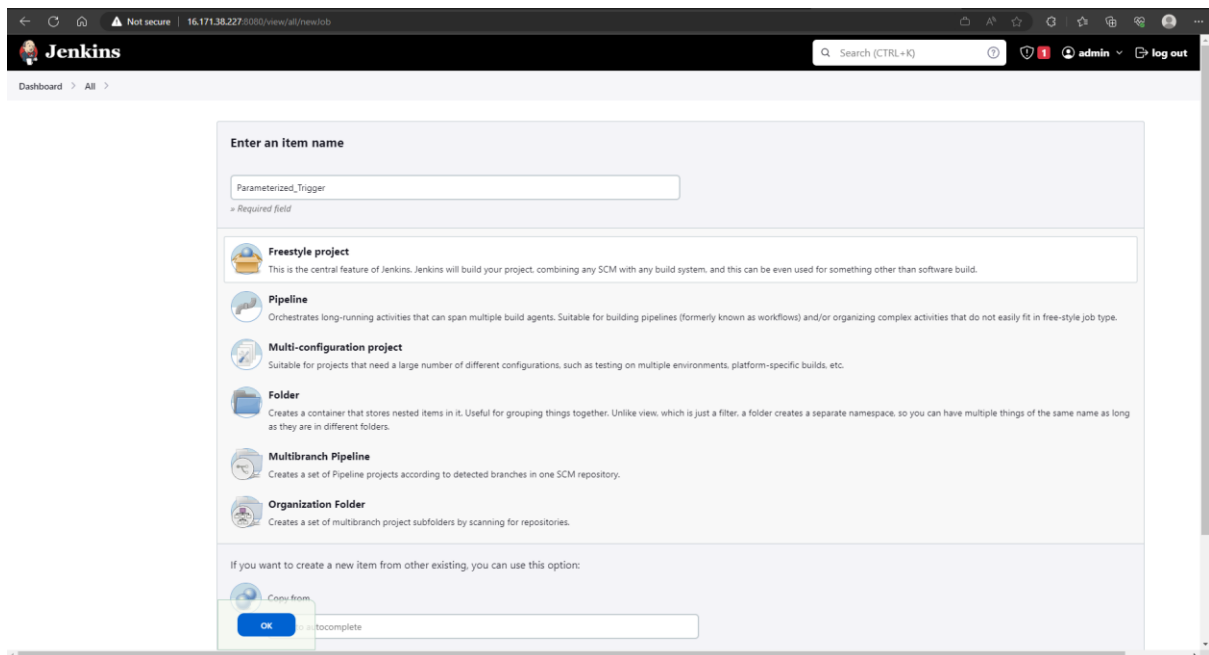
Started by user [admin](#)  
 Running as SYSTEM  
 Building on the built-in node in workspace /var/lib/jenkins/workspace/Parameter\_Job  
 Finished: SUCCESS

[View as plain text](#)  
[Edit Build Information](#)  
[Delete build #1](#)  
[Parameters](#)

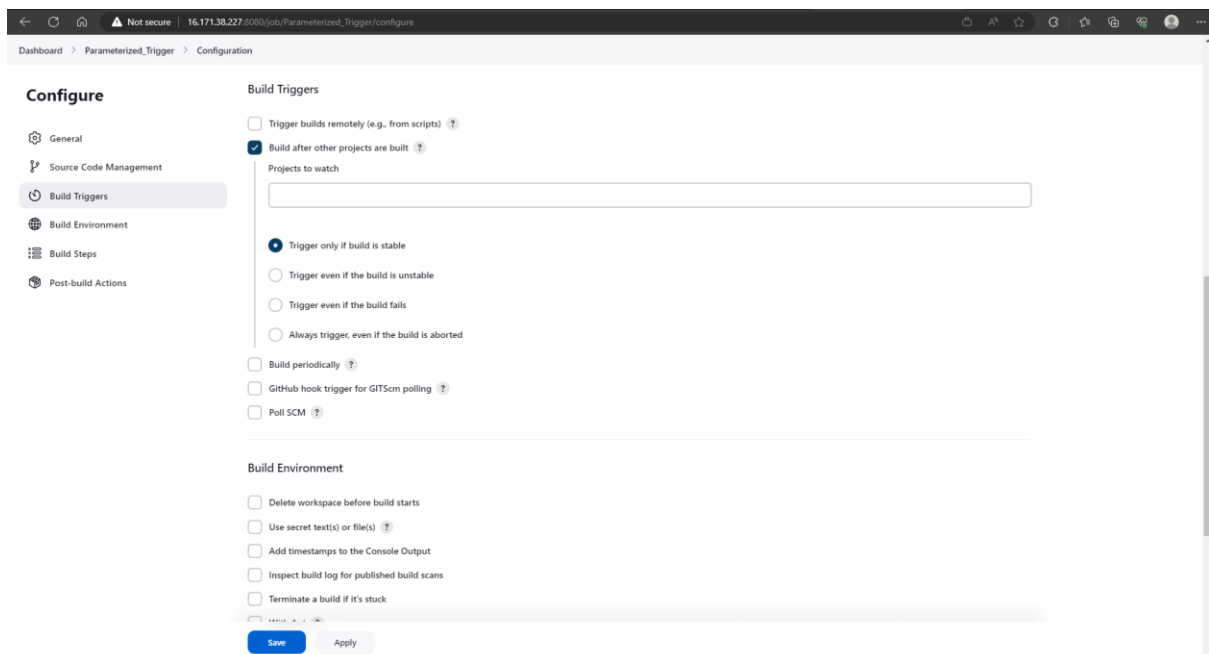


4. Create a new job called as Parameterized trigger which will be triggered once Parameterized build is completed

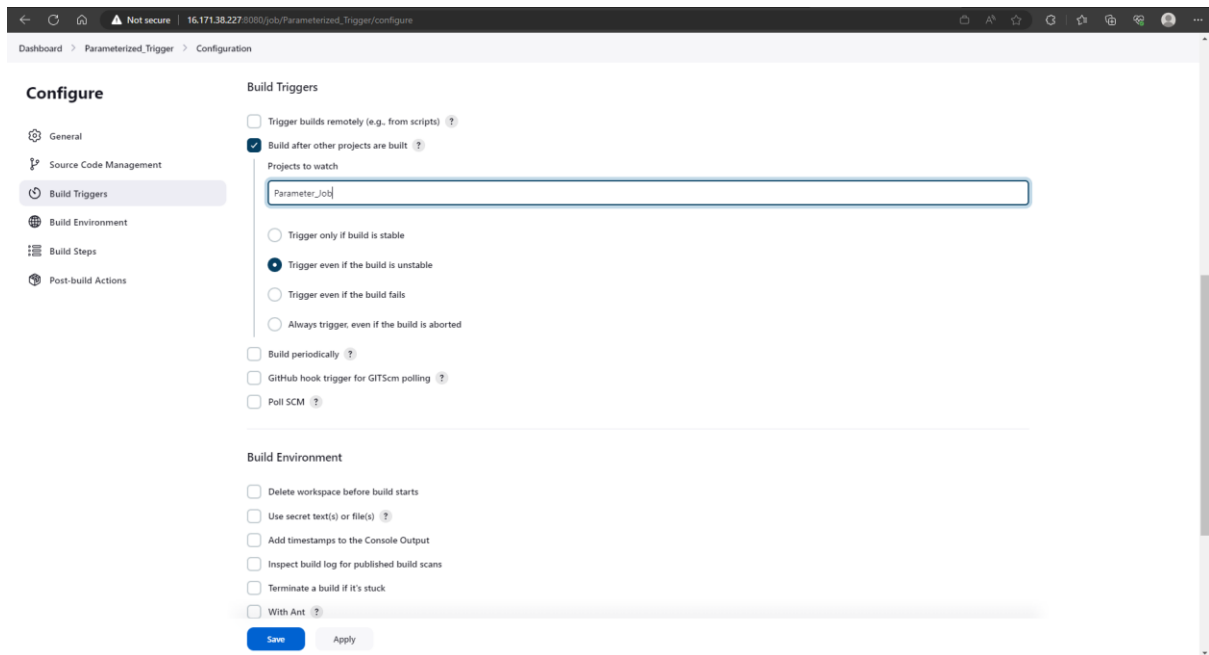
➤ create a new job called 'Parameterized Trigger'.



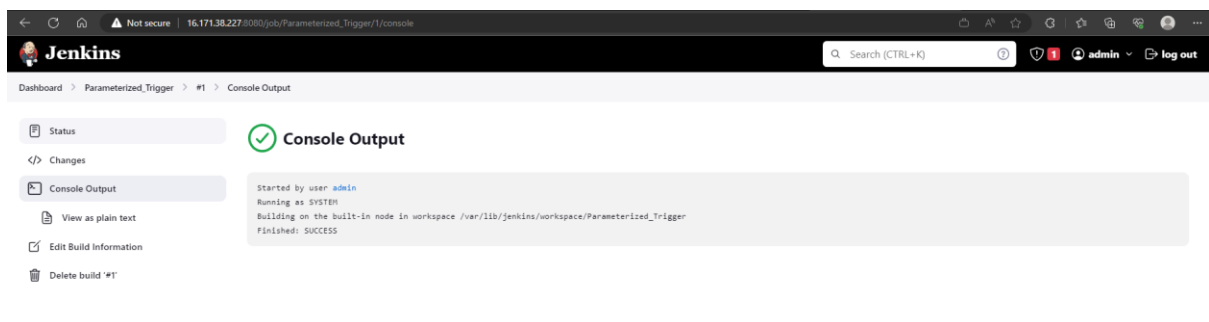
➤ In the 'Build Triggers' section of the job configuration, enable the 'Build after other projects are built' checkbox.



- In the 'Projects to watch' field, enter the name of the parameterized job that you created earlier
- In the 'Trigger only if build is stable' field, select the 'Trigger even if the build is unstable' checkbox



- Save the job configuration.



- Now when the parameterized job completes running, the 'Parameterized Trigger' job will automatically be triggered.

