Local Laptop Git:

Download the project in local directory and unzipped.

Initiate Git in the ABC Technology Directory and ran following comment to upload files to GitHub.

>>Microsoft Windows [Version 10.0.19045.4651]

>> git init

>> git status

>> git add .
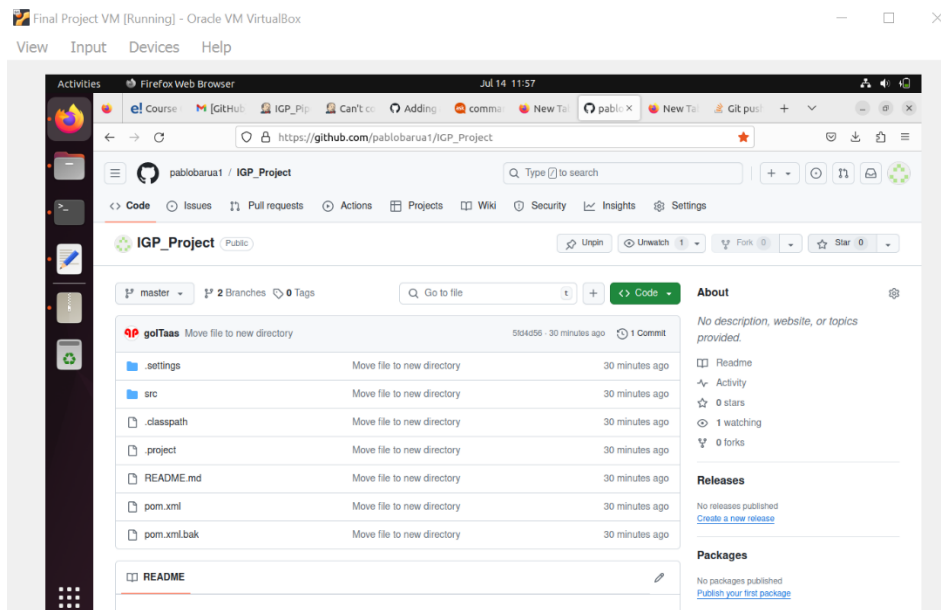
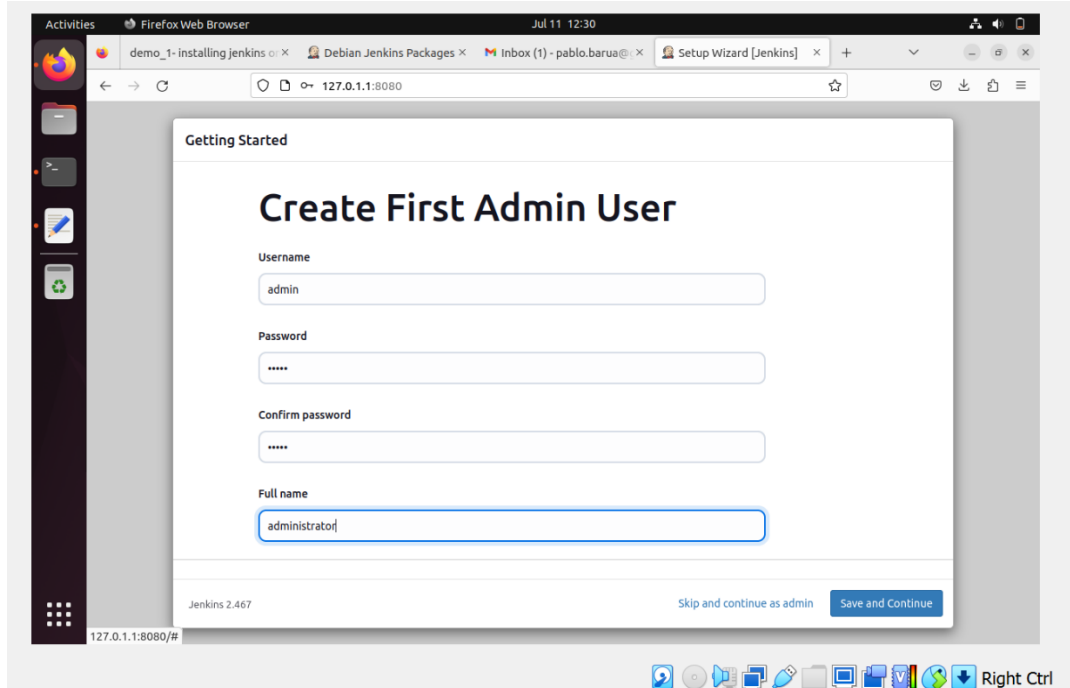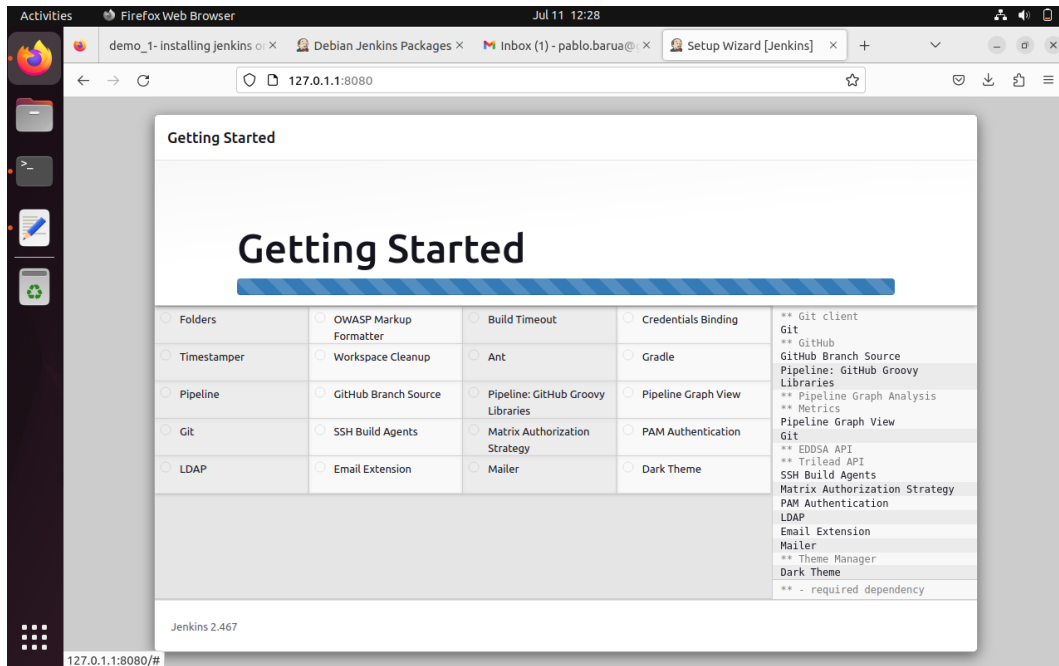>> git commit -m "Move file to new directory"

>> git branch -M master

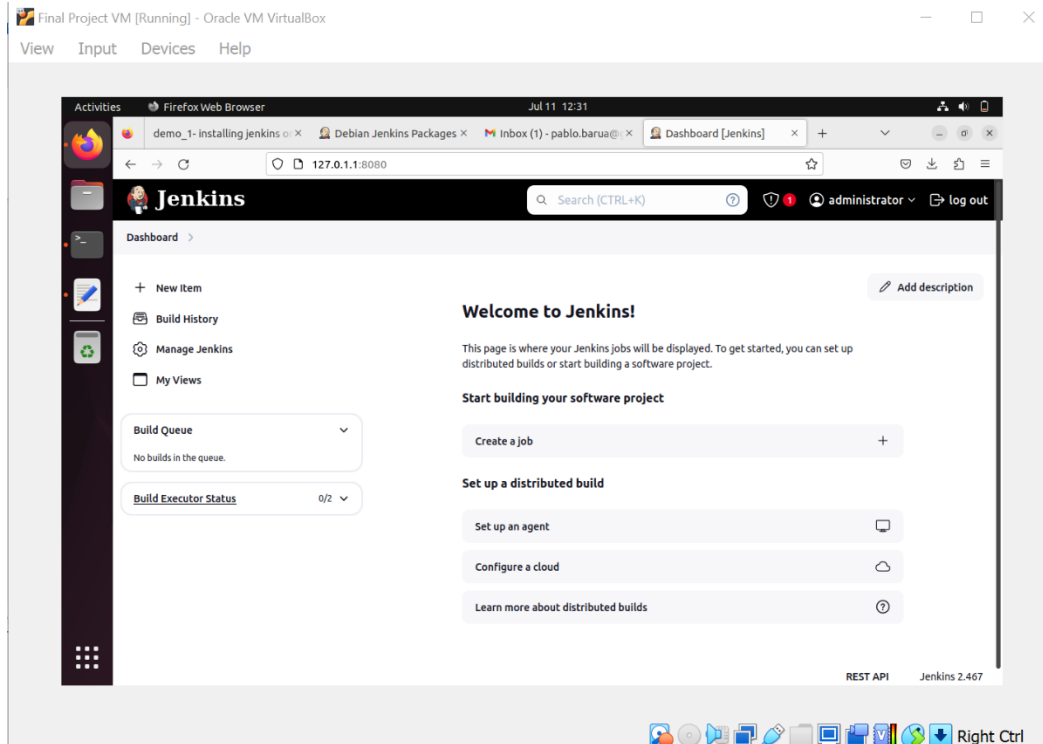>> git remote add origin https://github.com/pablobarua1/IGP_Project.git

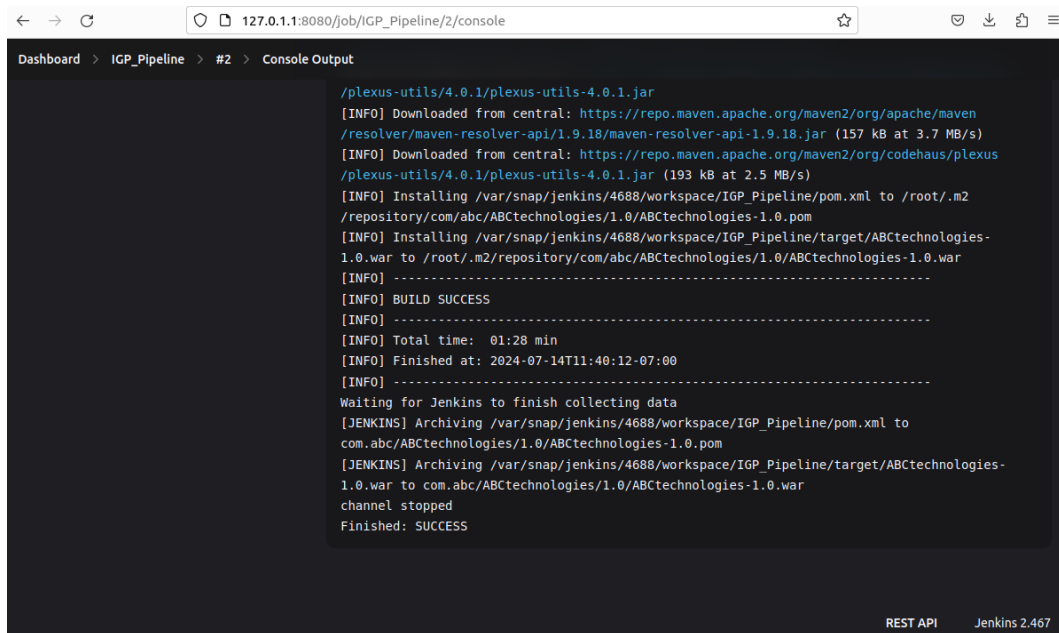>> git push -u origin master

GitHub:

Setting Up Jenkins in Oracle VM:

# Buinlding the IGP Project from Master Branch – Sucessful

Creating Jenkins file in local and push to GitHub.

```
C:\Users\Pablo\Downloads\IGP Project\Industry Grade Project I - Java Project\ABC Technologies>git status
        On branch master
        Your branch is up to date with 'origin/master'.
        Untracked files:
          (use "git add <file>..." to include in what will be committed)
                jenkinsfile.txt
        nothing added to commit but untracked files present (use "git add" to track)
C:\Users\Pablo\Downloads\IGP Project\Industry Grade Project I - Java Project\ABC Technologies>git add .

C:\Users\Pablo\Downloads\IGP Project\Industry Grade Project I - Java Project\ABC Technologies>git commit -m "adding Jenkinsfile"
        [master e670ba6] adding Jenkinsfile
         1 file changed, 38 insertions(+)
         create mode 100644 jenkinsfile.txt
C:\Users\Pablo\Downloads\IGP Project\Industry Grade Project I - Java Project\ABC Technologies>git push origin master
        Enumerating objects: 4, done.
        Counting objects: 100% (4/4), done.
        Delta compression using up to 4 threads
        Compressing objects: 100% (3/3), done.
        Writing objects: 100% (3/3), 478 bytes | 478.00 KiB/s, done.
        Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
        remote: Resolving deltas: 100% (1/1), completed with 1 local object.
        To https://github.com/pablobarua1/IGP_Project.git
          5fd4d56..e670ba6  master -> master

C:\Users\Pablo\Downloads\IGP Project\Industry Grade Project I - Java Project\ABC Technologies>
```

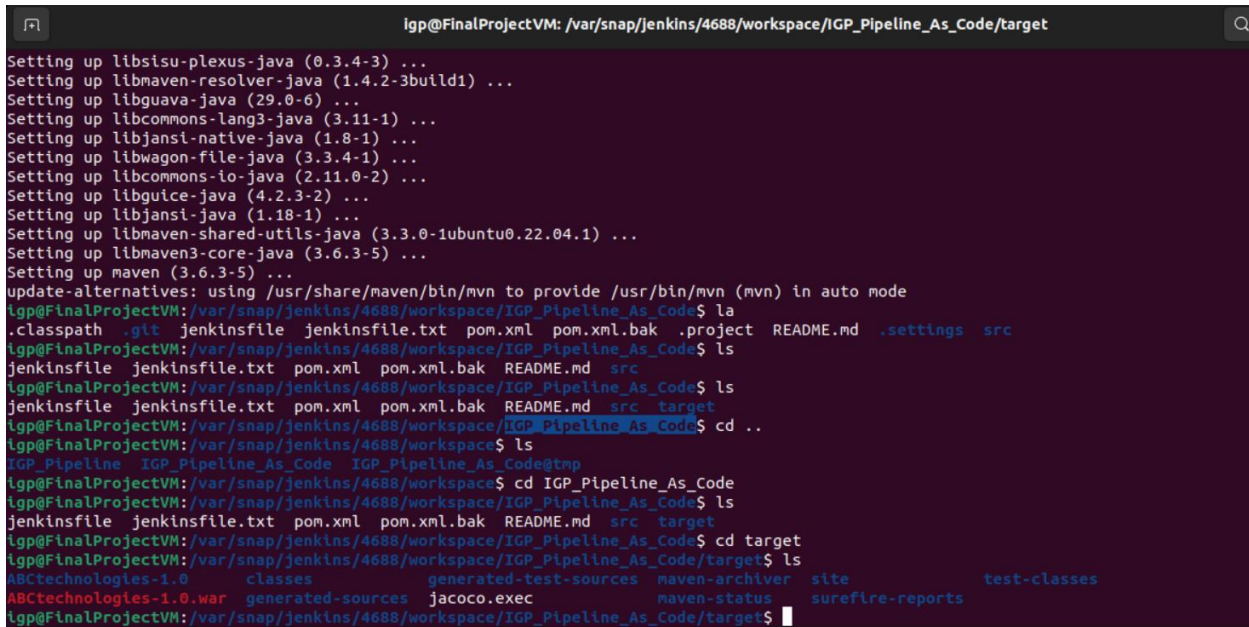Created a Jenkins Pipeline as Code using Jenkins Pipeline Project:

Jenkinsfile can be found under https://github.com/pablobarua1/IGP_Project.git
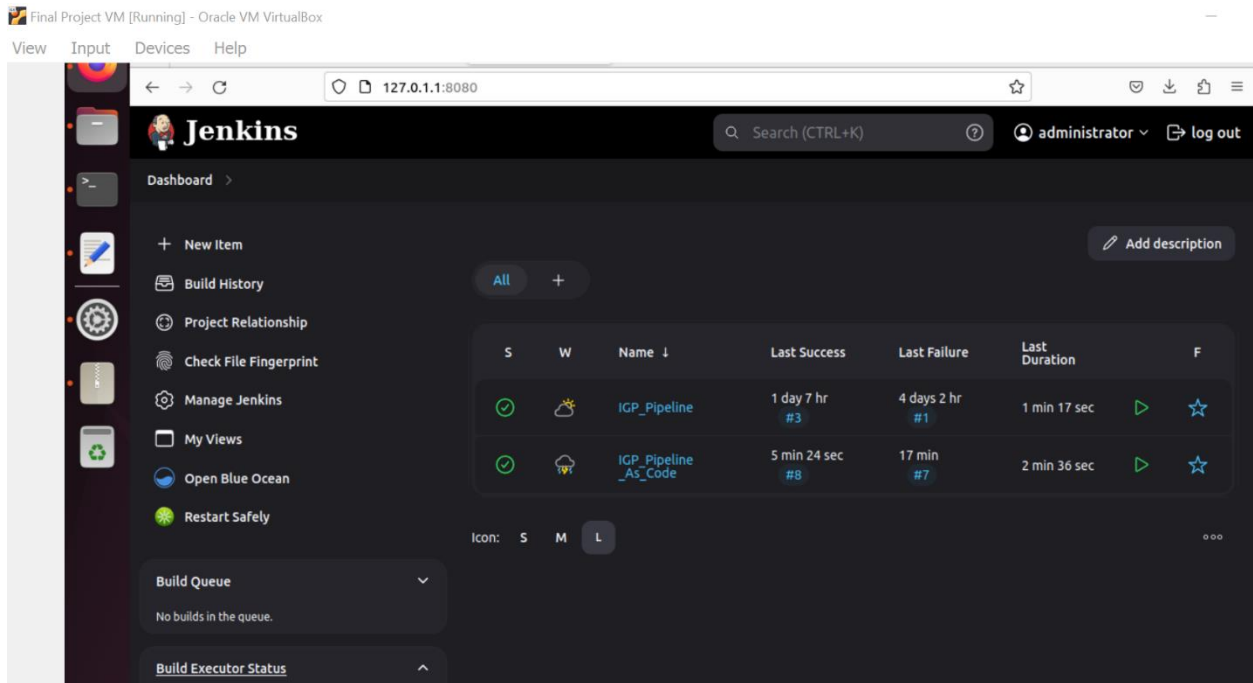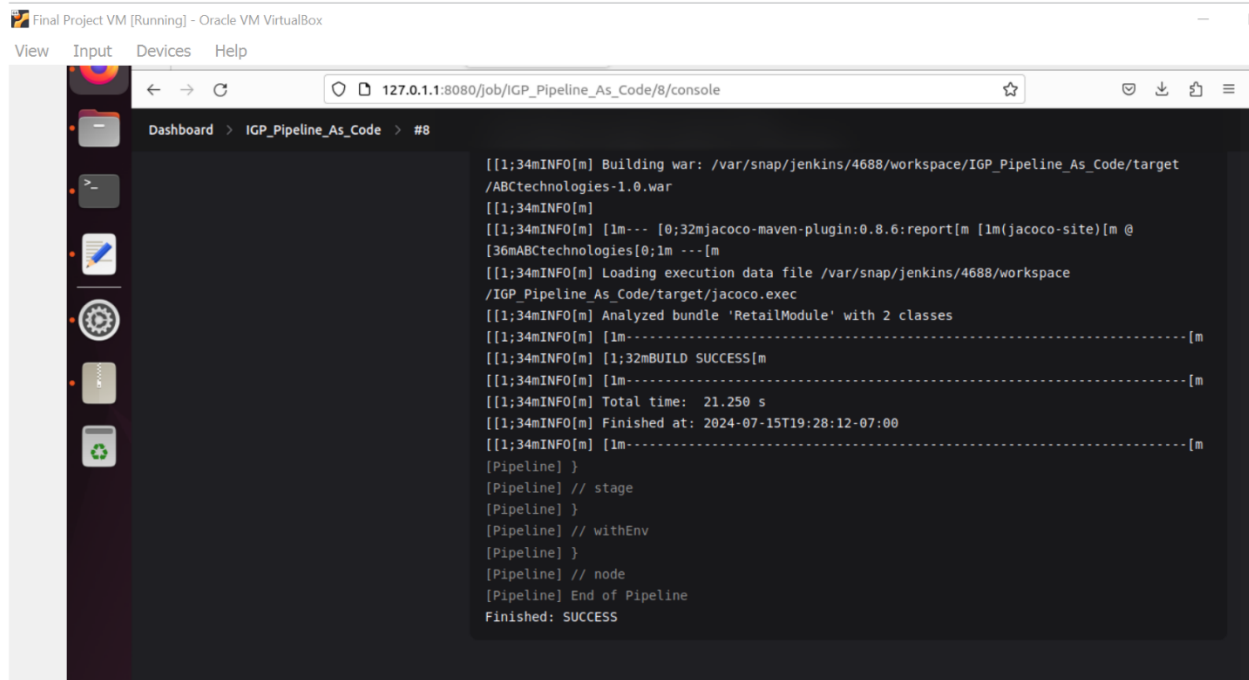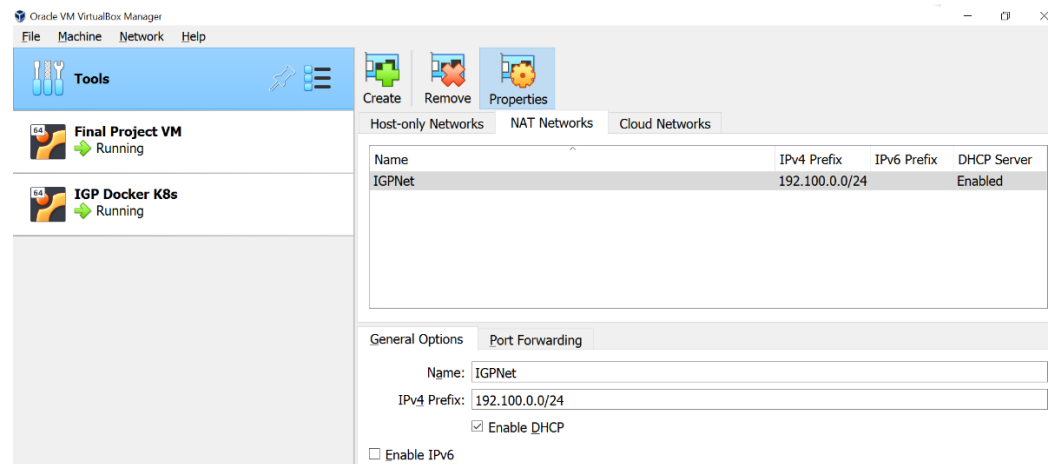
The War file path:

igp@FinalProjectVM:/var/snap/jenkins/4688/workspace/IGP_Pipeline_As_Code/target/ABCtechnologies-1.0.war

Create 2nd VirtualBox VM named "IPG Docker K8S" to deploy Docker and K8s:
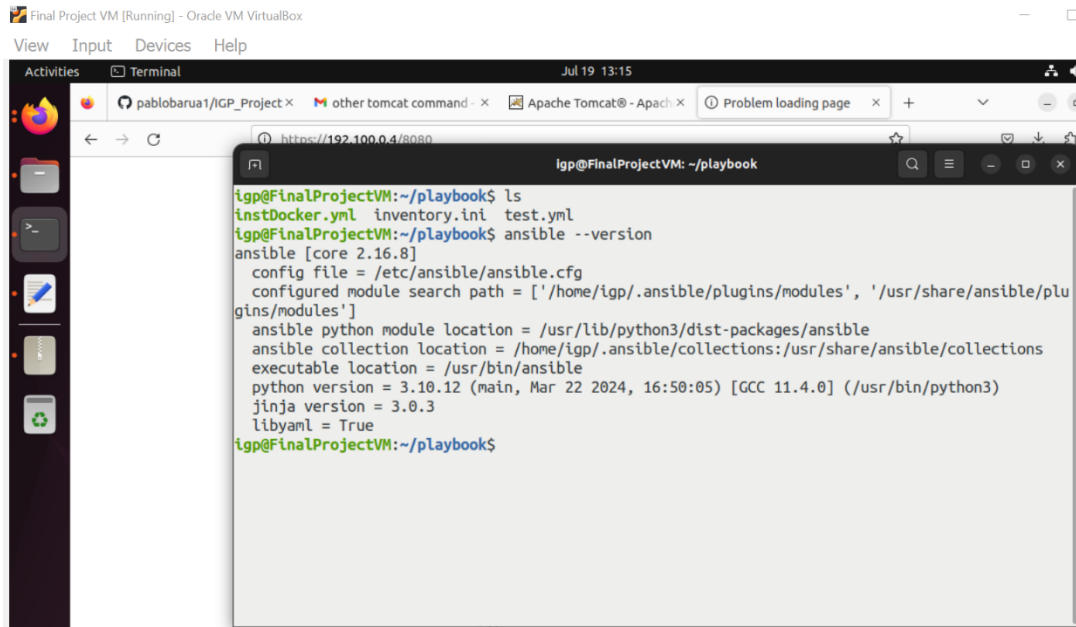
First Installed all pre-req:

1. Setup the network using NAT Network so each VM has two unique IP addresses.
   a. Final Project VM: 192.100.0.4
   b. IPG Docker K8S: 192.100.0.5

2. Install Python PIP: sudo apt–get install –y python3–pip
3. Use Jenkins Pipeline to Installed Docker, create docker image and container

https://github.com/pablobarua1/IGP_Project/blob/master/install_docker.yml
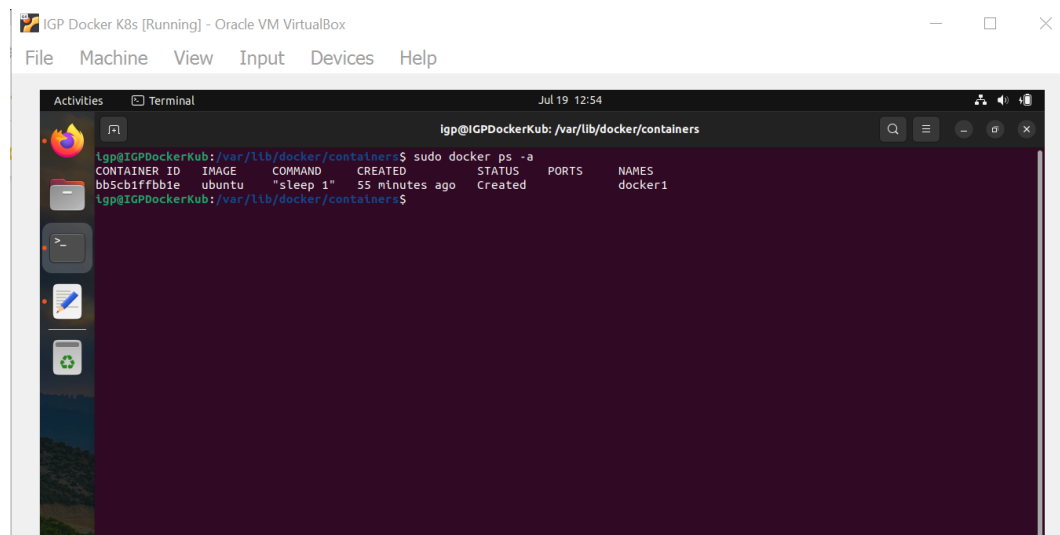
Prerequisites

1. Jenkins installed and running.
2. Docker installed on the Jenkins server.
3. Git repository containing the source code and Dockerfile.
4. Jenkins Docker plugin installed.
5. Jenkins Git plugin installed.

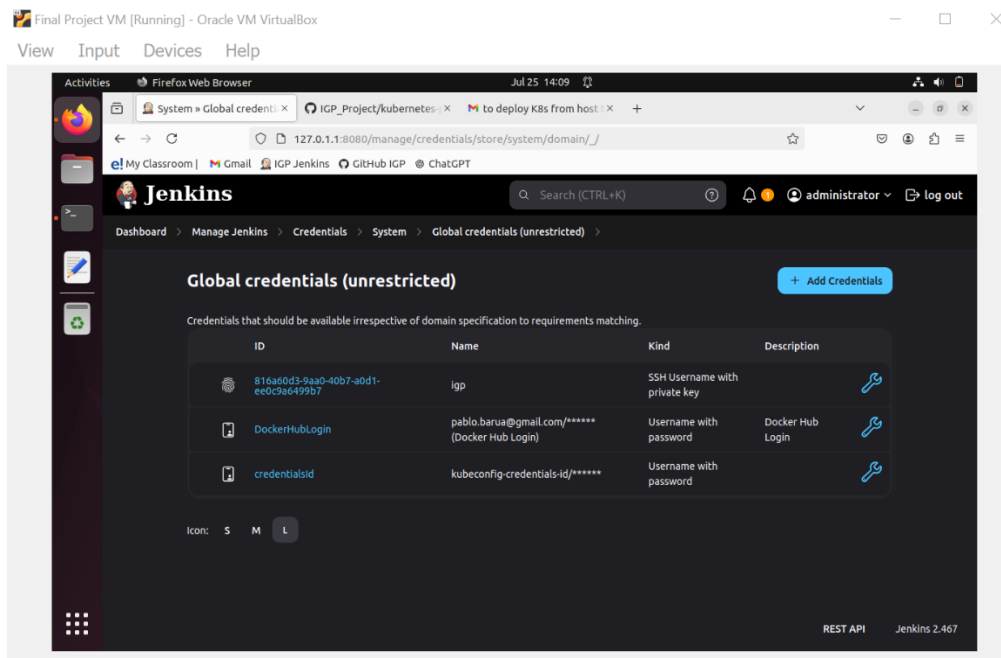POM File - https://github.com/pablobarua1/IGP_Project/blob/master/pom.xml

Dockerfile: https://github.com/pablobarua1/IGP_Project/blob/master/Dockerfile

Jenkinsfile: https://github.com/pablobarua1/IGP_Project/blob/master/jenkinsfile

Jenkins Docker container deployment and image upload to Docker Hub:
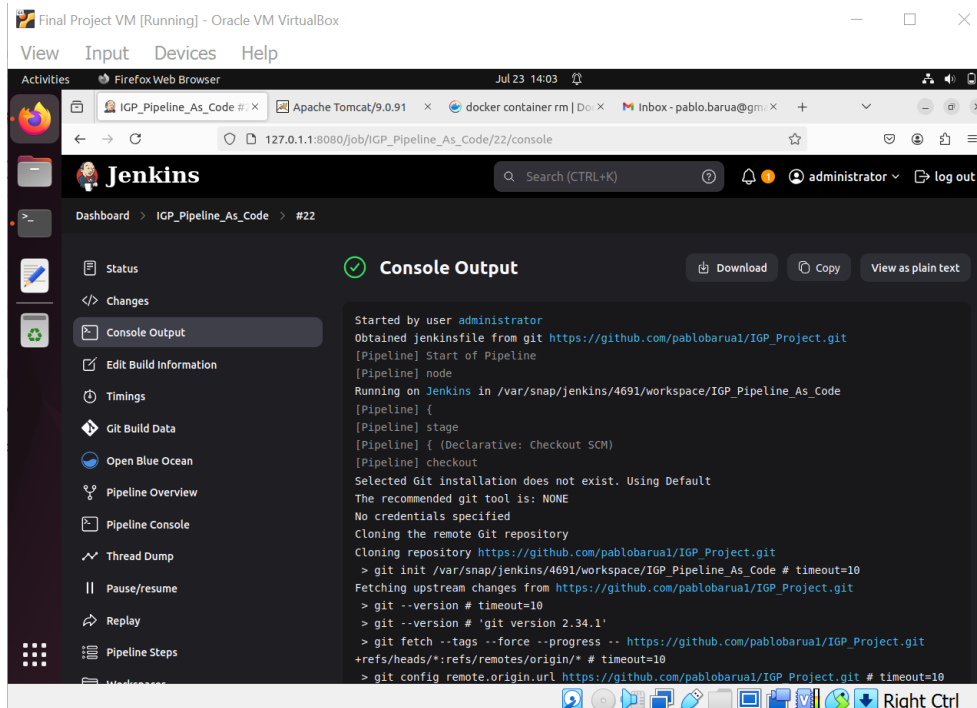
Jenkins Credentials

Integrate Docker host with Ansible. Write ansible playbook to create Image and create continuer. Integrate Ansible with Jenkins. Deploy ansible-playbook. CI/CD job to build code on ansible and deploy it on docker container
1. Deploy Artifacts on Kubernetes
2. Write pod, service, and deployment manifest file
3. Integrate Kubernetes with ansible
4. Ansible playbook to create deployment and service

pod.yml:

https://github.com/pablobarua1/IGP_Project/blob/master/pod.yml

service.yml:

https://github.com/pablobarua1/IGP_Project/blob/master/service.yml

deployment.yml

https://github.com/pablobarua1/IGP_Project/blob/master/deployment.yml

Ansible K8s playbook for deployment:

https://github.com/pablobarua1/IGP_Project/blob/master/kubernetes-playbook.yml

Jenkins Pipeline to take the image from Docker Hub image and deploy to K8s:

https://github.com/pablobarua1/IGP_Project/blob/master/jenkinsfile_k8s