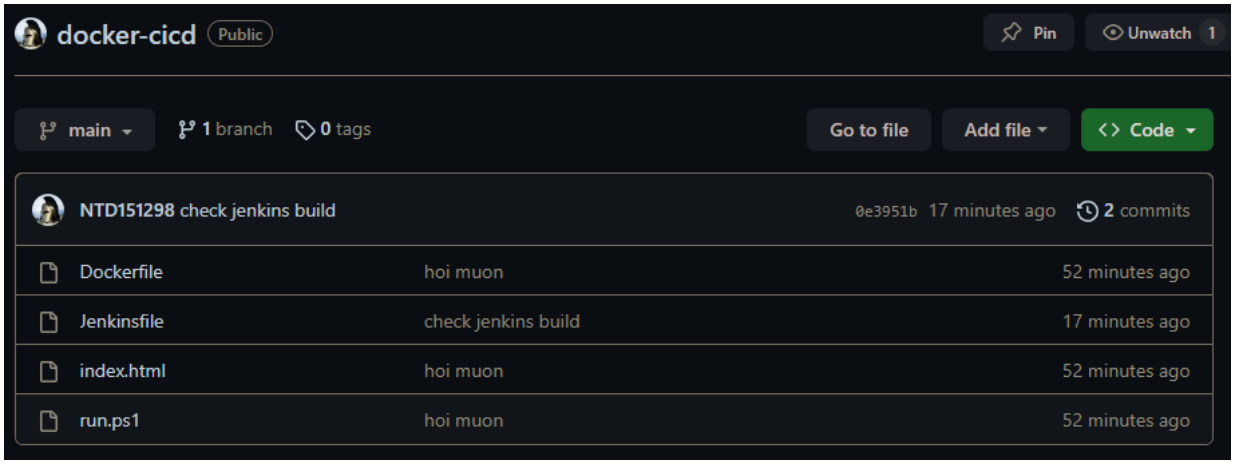
Nguyễn Thái Dương

Exerise Jenkins day 5 CICD: lấy source code trong module docker -> build docker file thành image -> push docker hub

- Git hub repo chứa docker file



- Sử dụng terraform để tạo ec2 instance có cấu hình cài docker và jenkins trong user data

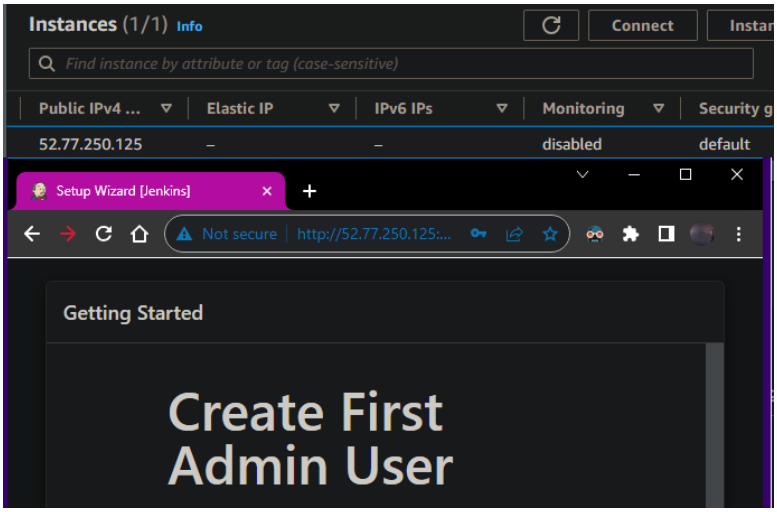
```
# Cài đặt Container Engine
sudo apt-get update  # Cập nhật danh sách gói phần mềm
sudo apt-get install -y ca-certificates curl gnupg lsb-release  #

# Tải và cài đặt khóa GPG của Docker
curl -fsSL https://download.docker.com/linux/debian/gpg | sudo gp

# Thêm kho lưu trữ Docker vào danh sách các kho lưu trữ ứng dụng
echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/ke
  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/d

# Cài đặt Docker
sudo apt-get install docker.io -y  # Cài đặt Docker
systemctl enable docker.service  # Kích hoạt Docker để khởi động
systemctl start docker.service  # Khởi động dịch vụ Docker
sudo apt-get install docker-compose -y # Cài đặt Docker compose

# Cấu hình Docker daemon
cat <<EOF | sudo tee /etc/docker/daemon.json
{
  "exec-opts": ["native.cgroupdriver=systemd"],
  "log-driver": "json-file",
  "log-opts": {
    "max-size": "100m"
```

```
# Install jenkins Long Term Support
curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io-202
echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] h
sudo apt-get update
sudo apt-get install jenkins -y

# Installation of Java (jenkins nees java to run)
sudo apt update
sudo apt install fontconfig openjdk-17-jre
java -version
sudo snap install openjdk
openjdk version "17.0.8" 2023-07-18
# OpenJDK Runtime Environment (build 17.0.8+7-Debian-1deb12u1)
# OpenJDK 64-Bit Server VM (build 17.0.8+7-Debian-1deb12u1, mi

# Start jenkins
sudo systemctl enable jenkins
# sudo systemctl start jenkins

# Viết file docker compose cài và deploy jenkins
# cd
# echo "version: '3'" > compose.yaml
# echo "" >> compose.yaml
# echo "services:" >> compose.yaml
```

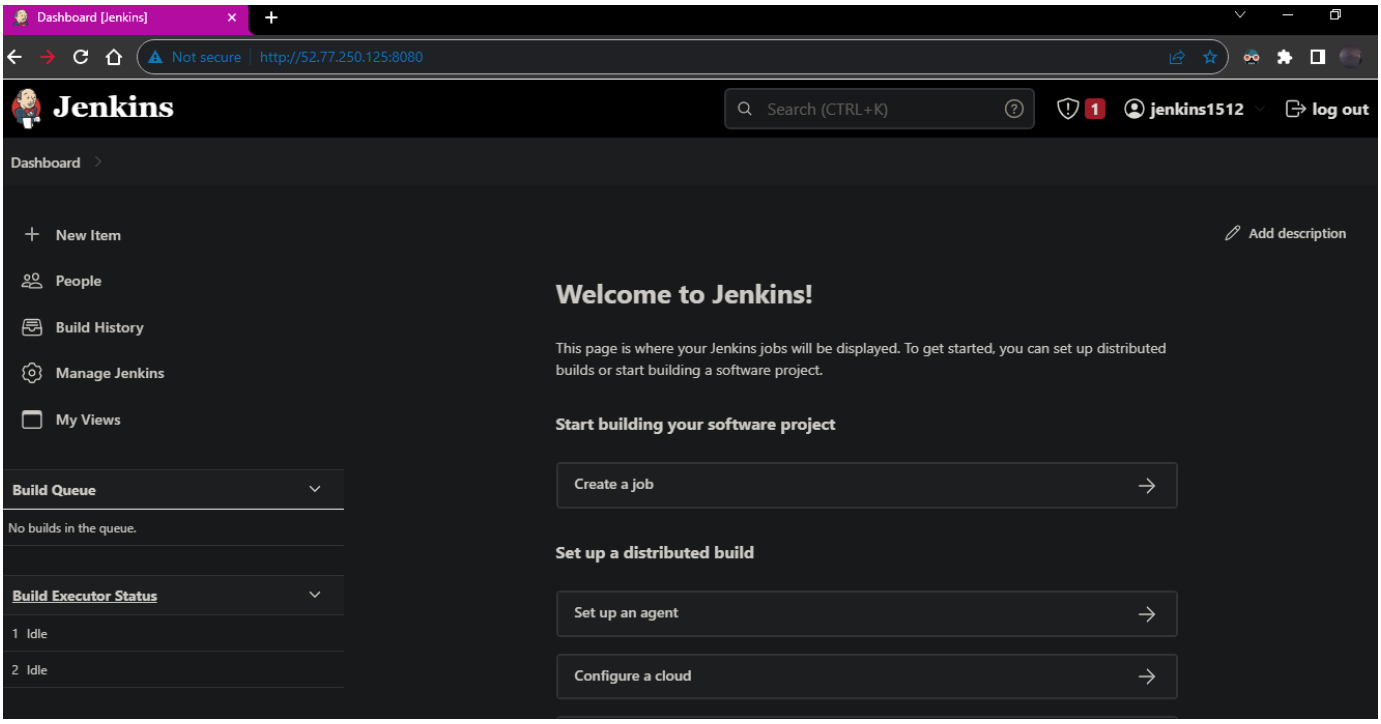
- Tham khỏa cài docker, jenkins và JDK trên web
- Bắt đầu start jenkins và check status, ta thấy jenkins chạy trên cổng 8080

```
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
     Active: active (running) since Sun 2023-10-01 20:51:11 UTC; 35min ago
   Main PID: 14502 (java)
      Tasks: 38 (limit: 1141)
     Memory: 257.6M
        CPU: 23.064s
     CGroup: /system.slice/jenkins.service
             └─14502 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: Jenkins initial setup is required. An admin user has been created and a password generated.
Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: Please use the following password to proceed to installation:
Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: 592430e0b6014c7885522699edc85a3a
Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: ************************************************************
Oct 01 20:50:55 ip-172-31-38-11 jenkins[14502]: ************************************************************
Oct 01 20:51:11 ip-172-31-38-11 jenkins[14502]: 2023-10-01 20:51:11.036+0000 [id=31]       INFO       jenkins.InitReactorRunner$1#onAttained:
Oct 01 20:51:11 ip-172-31-38-11 jenkins[14502]: 2023-10-01 20:51:11.066+0000 [id=24]       INFO       hudson.lifecycle.Lifecycle#onReady: Jen
Oct 01 20:51:11 ip-172-31-38-11 systemd[1]: Started Jenkins Continuous Integration Server.
```

- Đăng nhập Jenkins chạy trên aws ec2 (ubuntu) instnace, cổng 8080



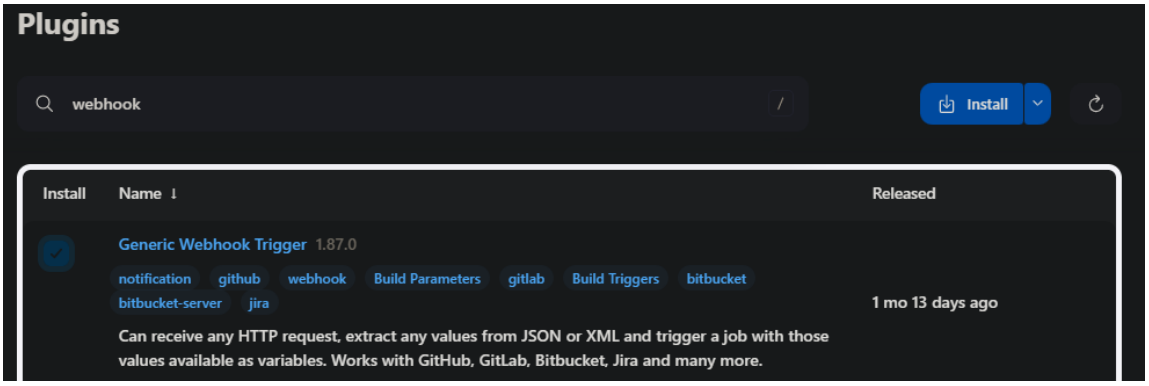
- Màn hình chính của jenkins



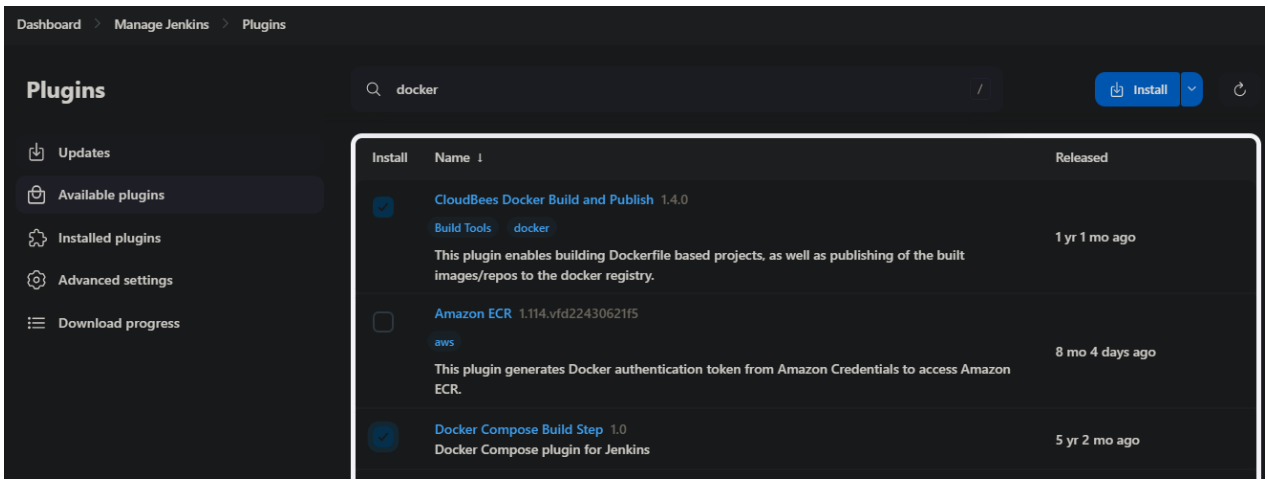
- Add người dùng ubuntu và jenkins được sử dụng docker

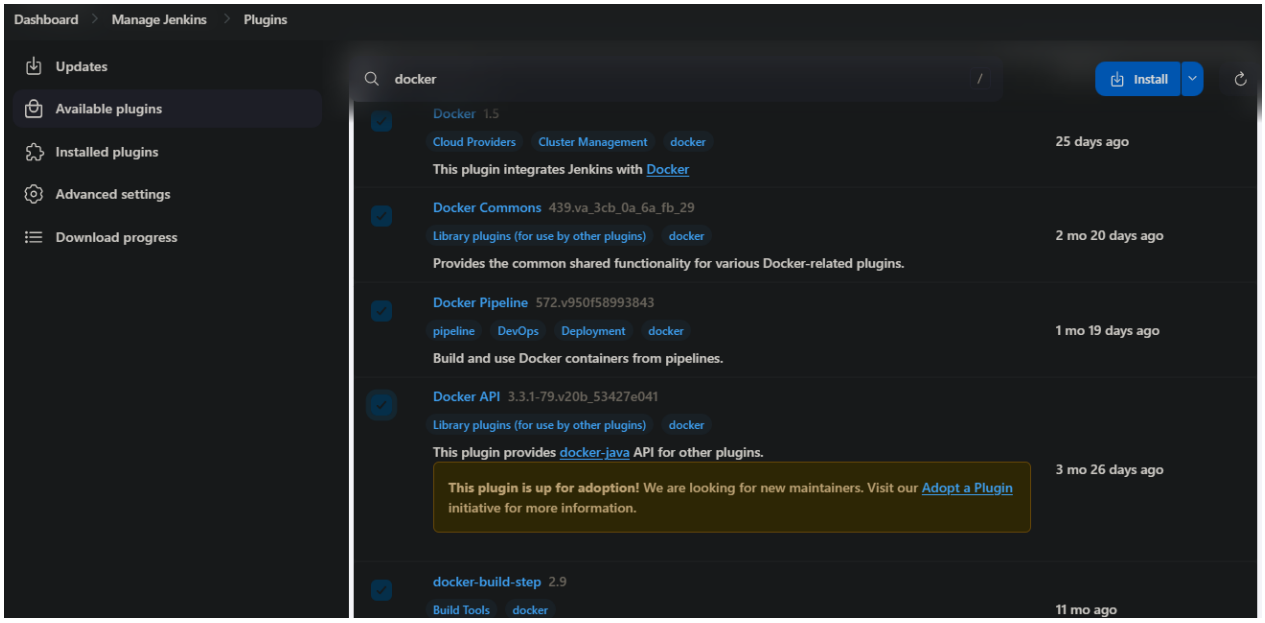
```
sudo usermod -aG docker $USER
sudo usermod -aG docker jenkins
sudo systemctl restart jenkins
newgrp docker
```

- Thêm webhook plugin để auto build khi code được push lên github

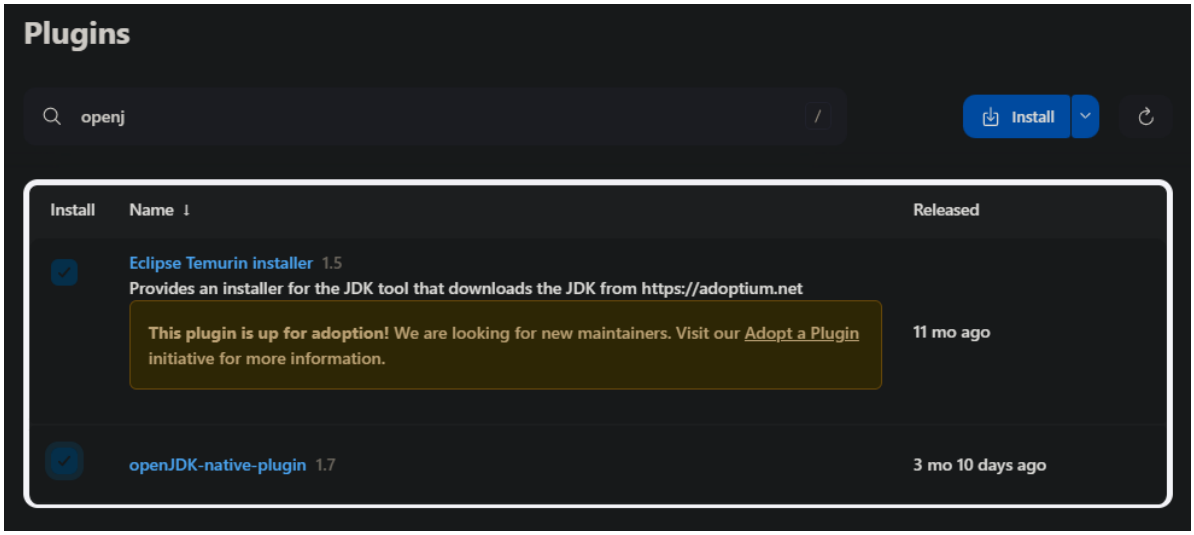


- Cài Docker plugin

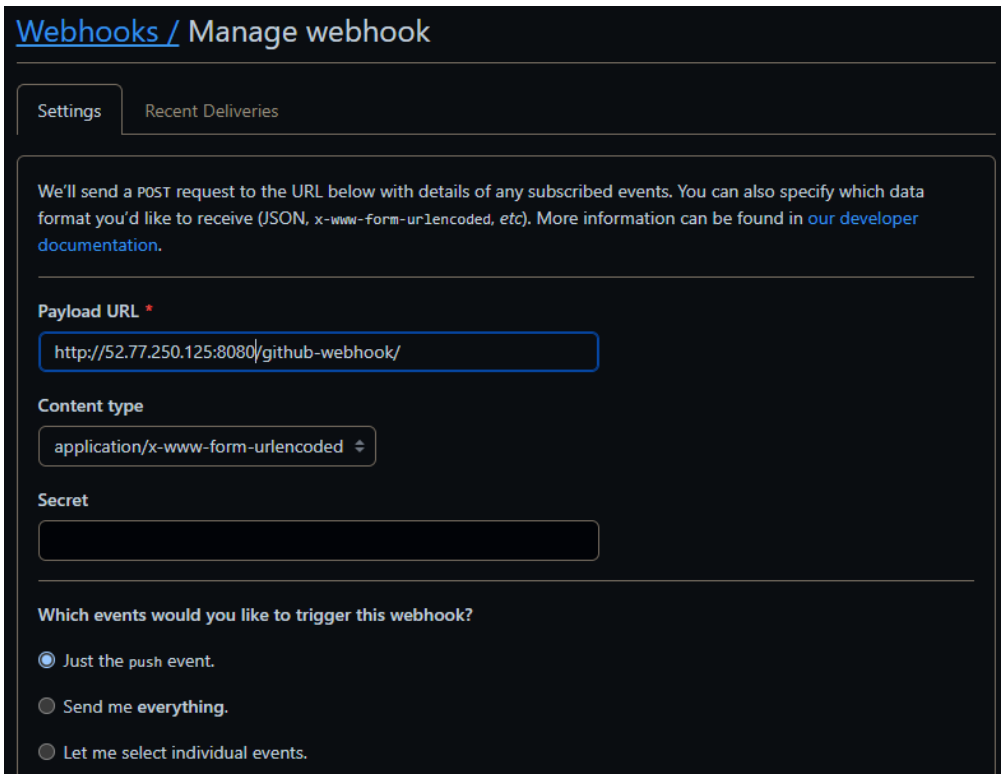




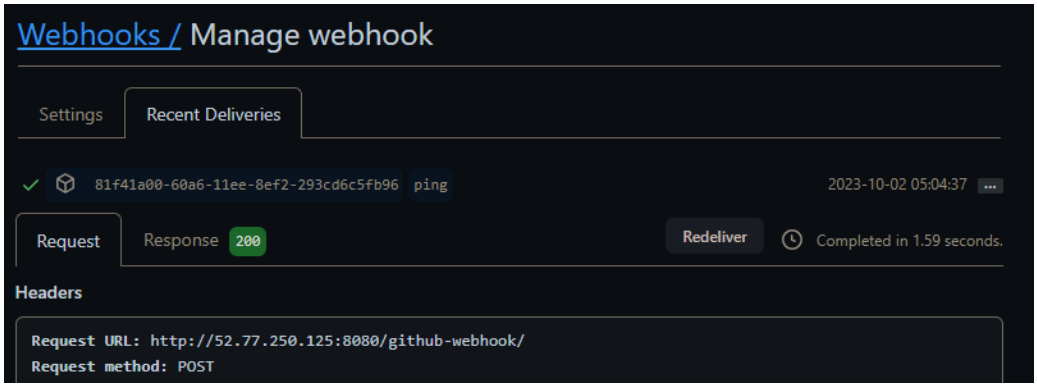
- Cài OpenJDK



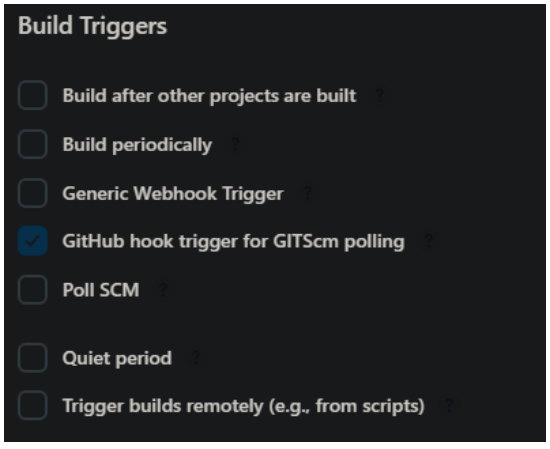
- Cấu hình webhook trên Github



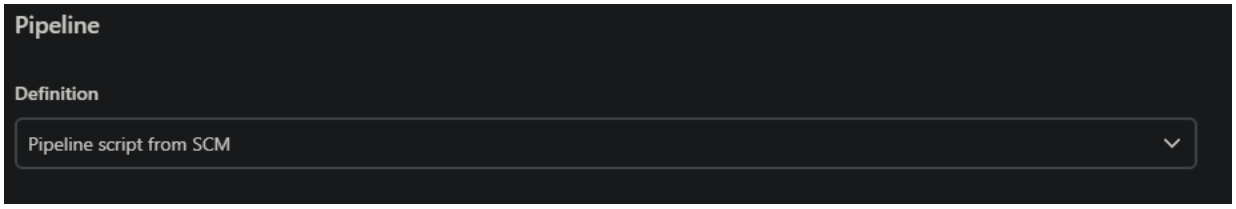
- Webhook kết nối thành công



- Ta quay lại jenkin và tạo một pipeline project
- Cấu hình build trigger



- Cấu hình lấy jenkins file từ repo



- File jenkins

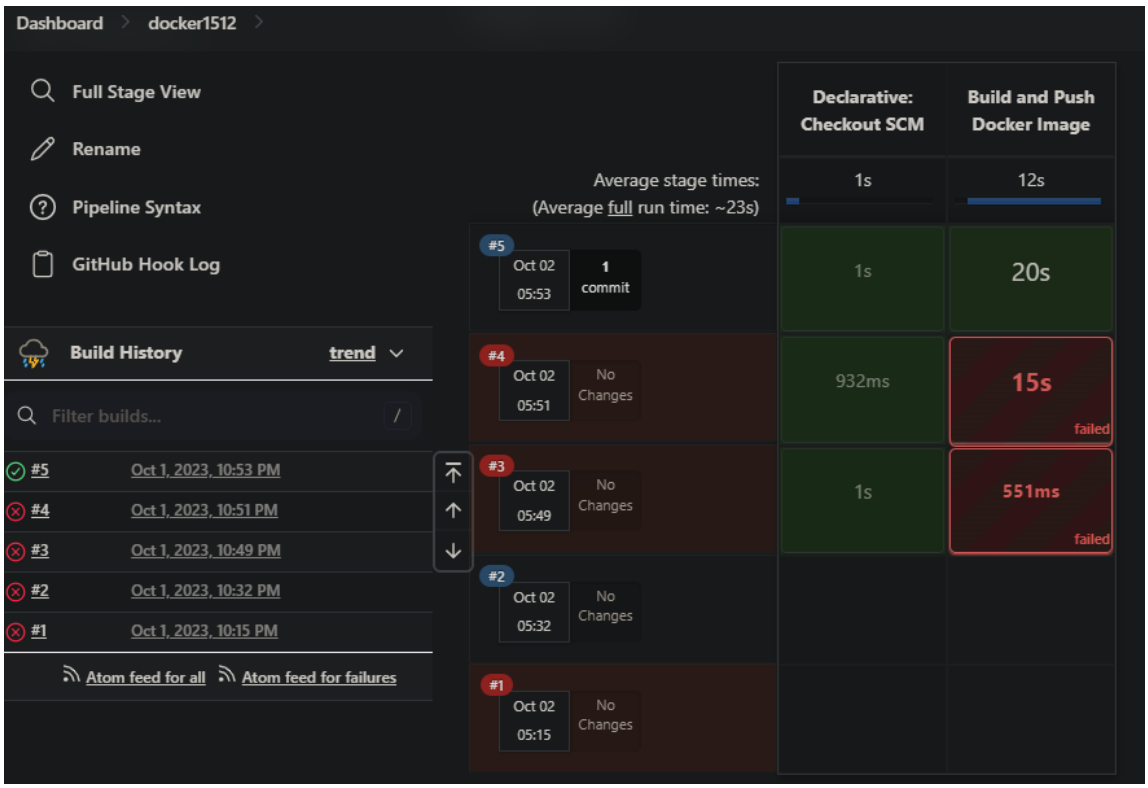
```
CICD > day5-jenkins2 > docker-cicd > Jenkinsfile
pipeline {
    agent any
    stages {
        stage('Build and Push Docker Image') {
        steps {
            withDockerRegistry(credentialsId: 'dockerhub', url: 'https://index.docker.io/v1/') {
            sh 'docker build -t duongtn1512/random_game:pingpong2 .'
            sh 'docker push -t duongtn1512/random_game:pingpong2 '
        }
        }
    }
    }
}
```

- Cấu hình git repo branch và credentials

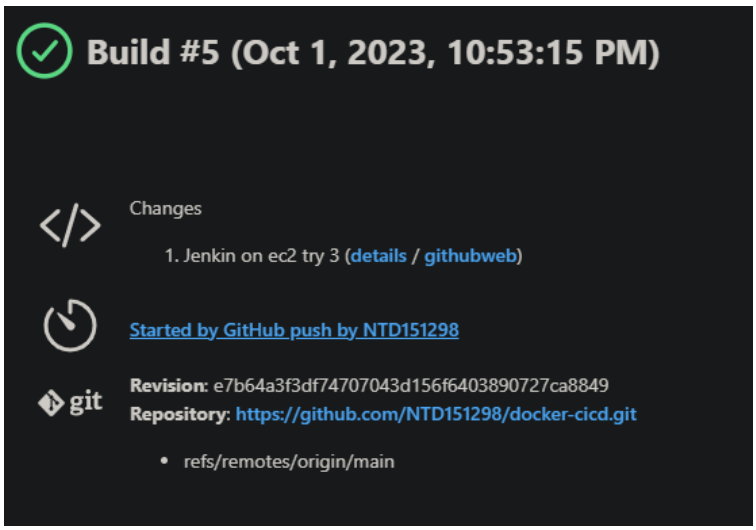
- Sau khi chuẩn bị đầy đủ jenkinsfile dockerfile .. đẩy lên repo

```
PS D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd> ls


    Directory: D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         8/9/2023   7:18 PM             89 Dockerfile
-a----        7/23/2023   6:58 PM           6609 index.html
-a----        10/2/2023   5:06 AM            360 Jenkinsfile
-a----         8/9/2023   7:17 PM             99 run.ps1


PS D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd> git add .
warning: in the working copy of 'Jenkinsfile', LF will be replaced by CRLF the next time Git touches it
PS D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd> git commit -m "Jenkin on ec2"
[main 037f9ca] Jenkin on ec2
 1 file changed, 4 insertions(+), 33 deletions(-)
PS D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd> git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 328 bytes | 328.00 KiB/s, done.
Total 3 (delta 2), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/NTD151298/docker-cicd.git
   0ae7561..037f9ca  main -> main
PS D:\Devops_FPT_Foudations\CICD\day5-jenkins2\docker-cicd>
```

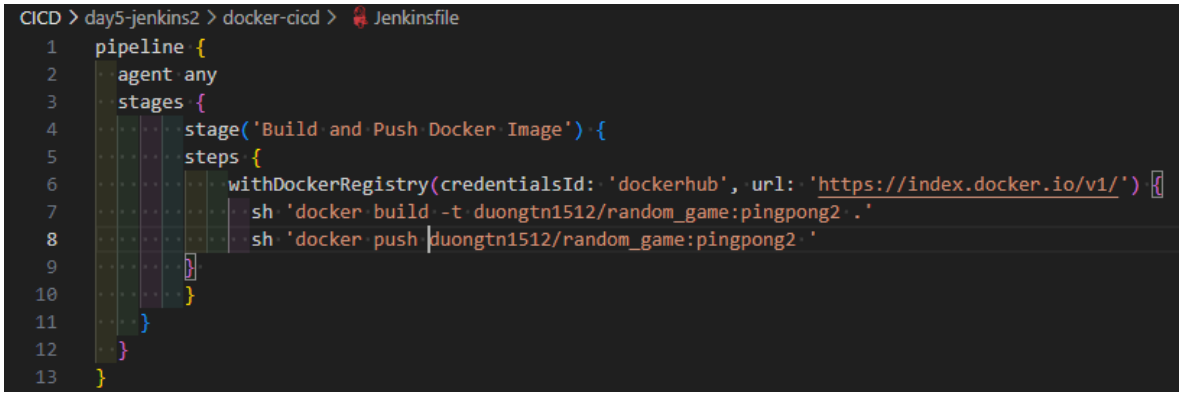
- Sau lần đầu tiên tự ấn nút build now những lần push code sau jenkins sẽ tự động build



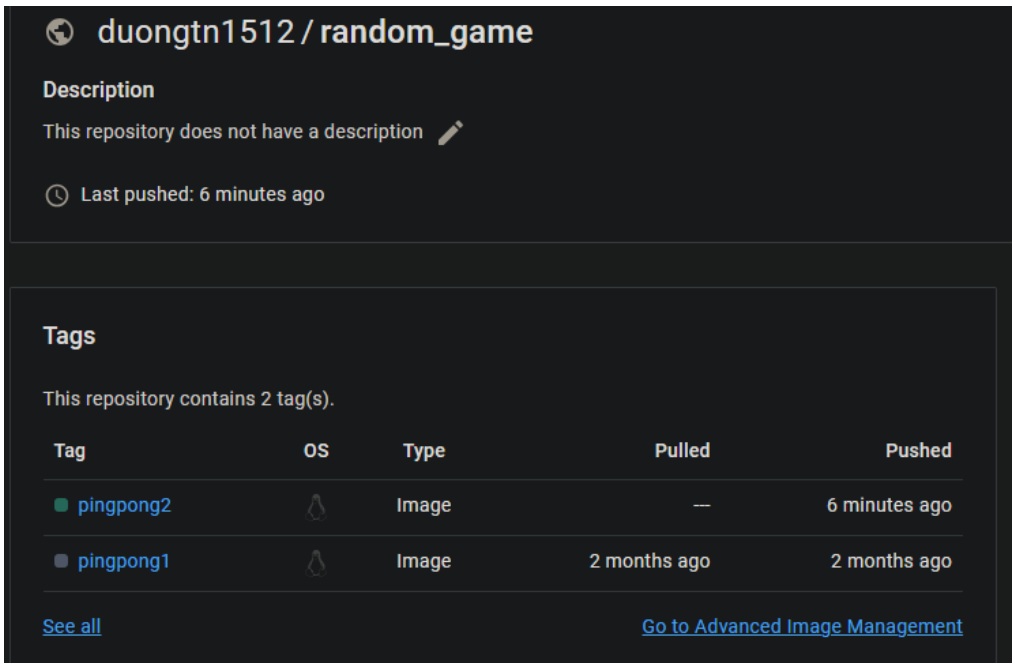
- Lần build thứ 5 được trigger bởi github push



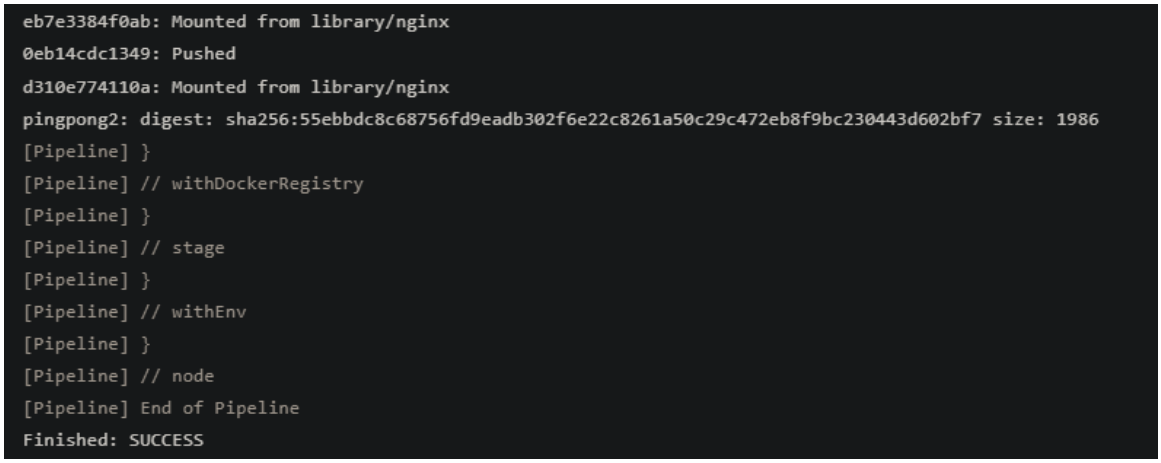
- File jenkins đã sửa để build lần 5



- Trên dockerhub repo



- Jenkins logs



- File jenkins mới

CICD > day5-jenkins2 > docker-cicd > Jenkinsfile

```
pipeline {
    agent any
    environment {
        DOCKERHUB_CREDENTIALS = credentials('dockerhub')
    }
    stages {
        stage('Build') {
            steps {
                sh 'docker build -t duongtn1512/random_game:pingpong4 .'
            }
        }
        stage('Login') {
            steps {
                sh 'echo $DOCKERHUB_CREDENTIALS_PSW | docker login -u $DOCKERHUB_CREDENTIALS_USR --password-stdin'
            }
        }
        stage('Push') {
            steps {
                sh 'docker push duongtn1512/random_game:pingpong4'
            }
        }
    }
    post {
        always {
            sh 'docker logout'
        }
    }
}
```

- 5 bước jenkins build