CSC11004 – MẠNG MÁY TÍNH NÂNG CAO

ĐỒ ÁN 3

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I. Triển khai CI/CD sử dụng Git, Jenkins và Docker

Đăng ký account AWS và bắt đầu khởi tạo instances với Linux-OS

Bước 1: Khởi tạo Jenkins với AWS linux server

Cài đặt Git

sudo apt-get update

sudo apt install git

sudo git –version

```
ubuntu@ip-172-31-7-97:/$ git --version
git version 2.43.0
```

Cài đặt docker

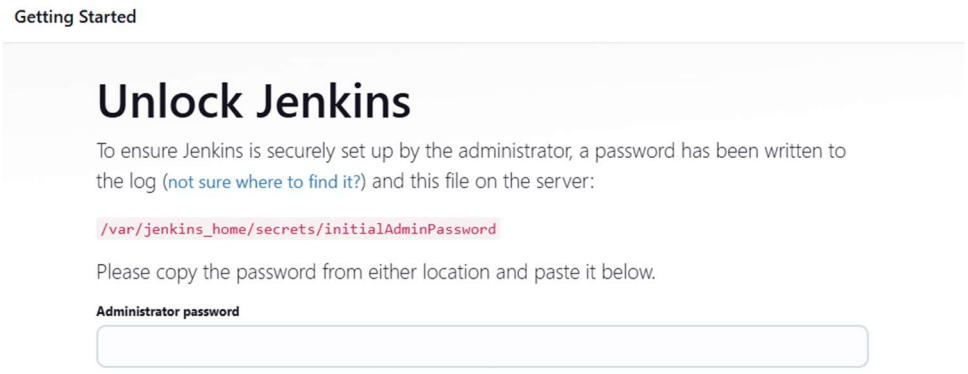
sudo apt-get update

sudo apt install -y docker.io

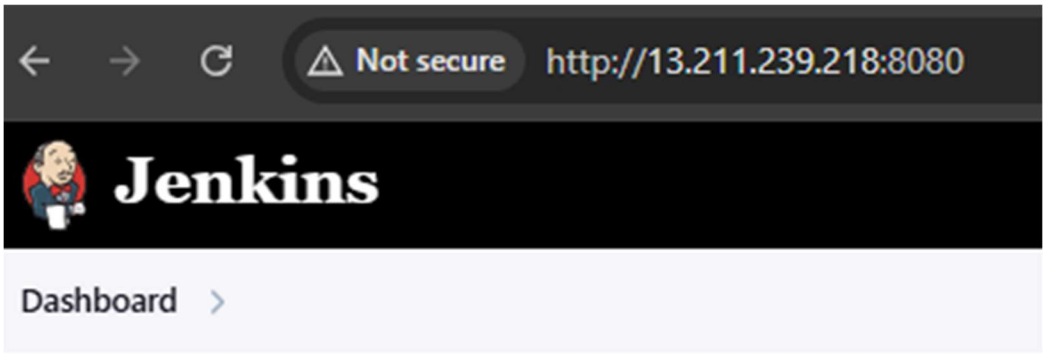
Bắt đầu Jenkins Docker container với name volume

docker run -p 8080:8080 -p 50000:50000 -d -v jenkins_home:/var/jenkins_home -v /var/run/docker.sock:/var/run/docker.sock -v $(which docker):/usr/bin/docker jenkins/jenkins:lts

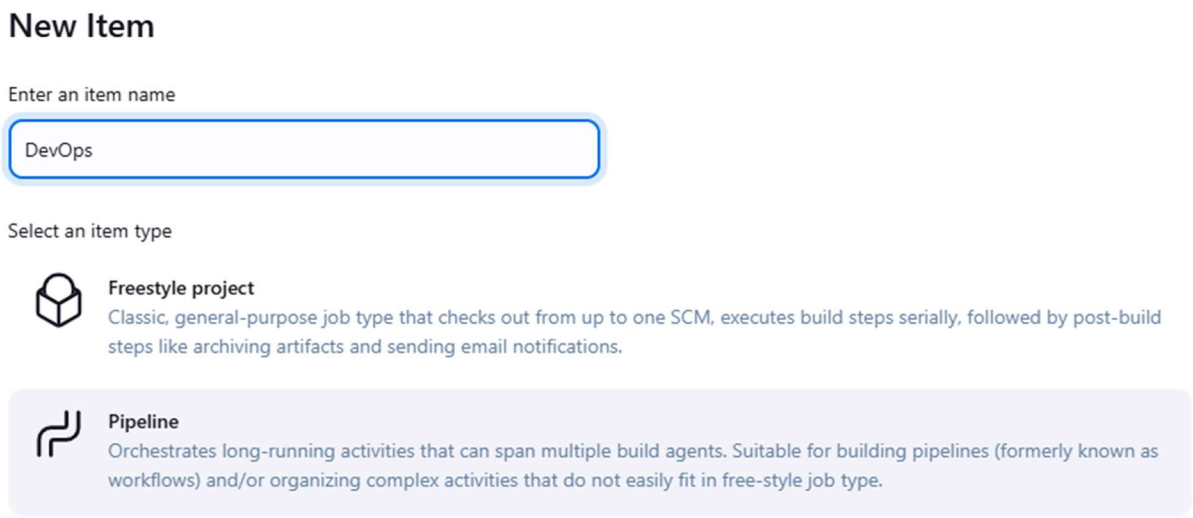
Sao chép password tại /var/lib/docker/volumes/jenkins_home/_data/secrets/initialAdminPassword và tiến hành đăng nhập



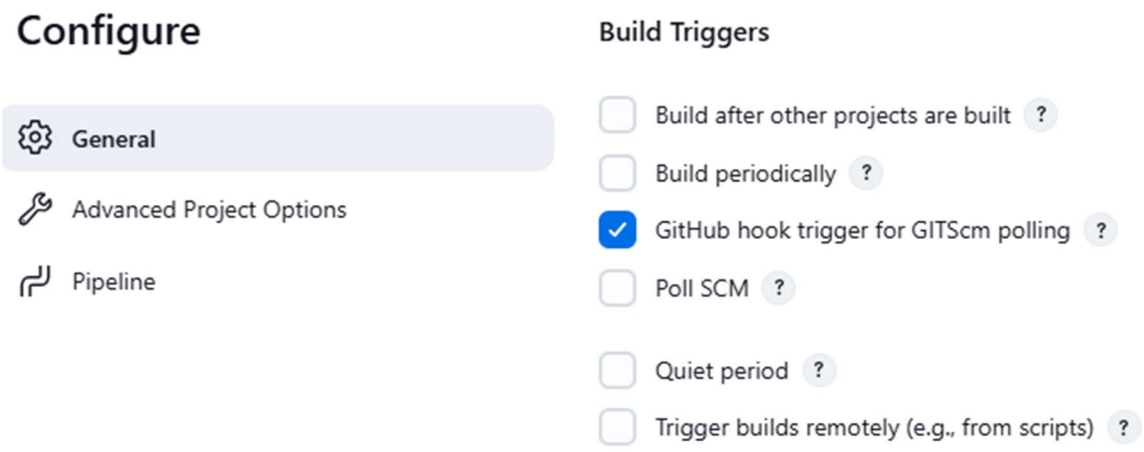
Thành công cài đặt Jenkins



Bước 2: Tạo pipeline job



Cho phép Github push events đến trigger pipeline

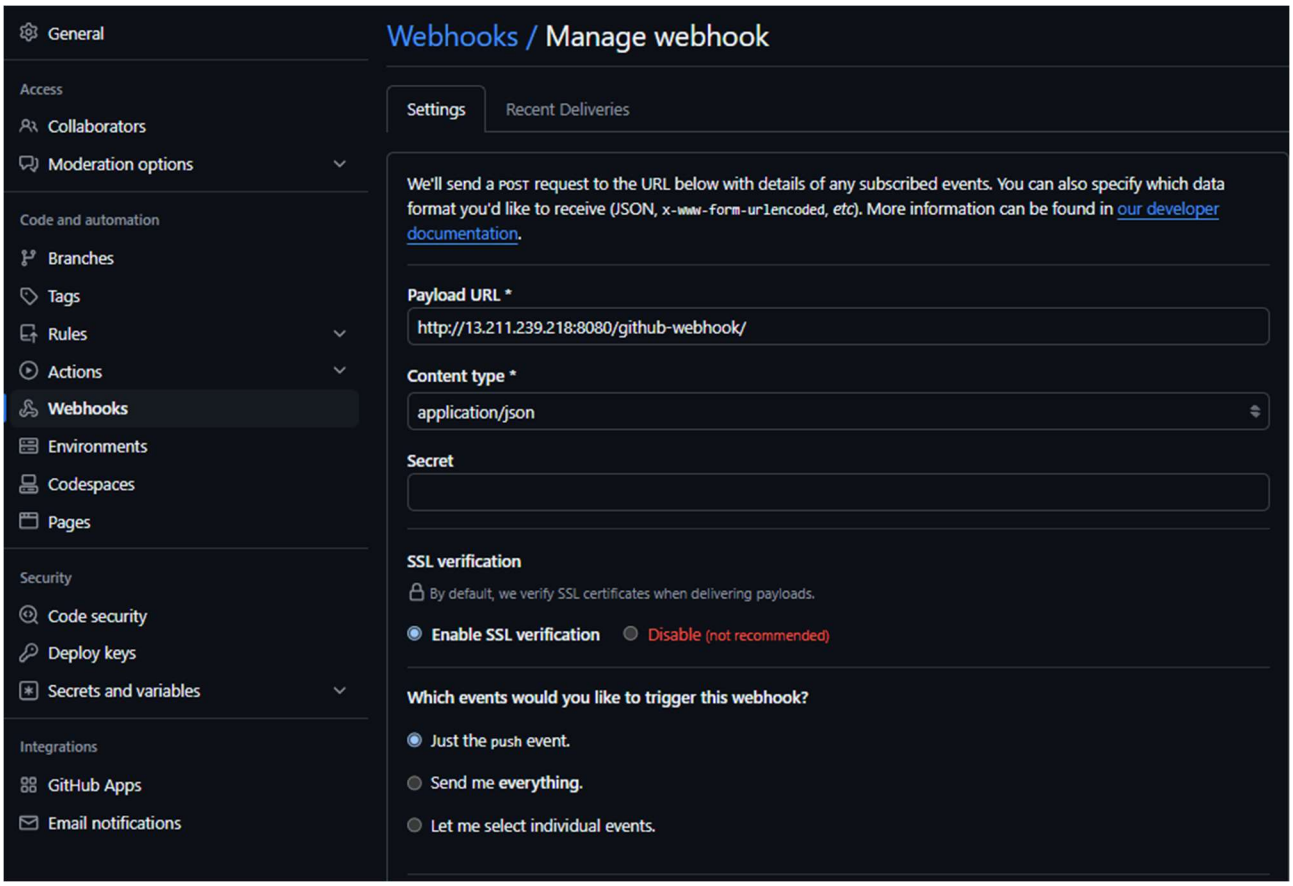


Cấu hình Pipeline

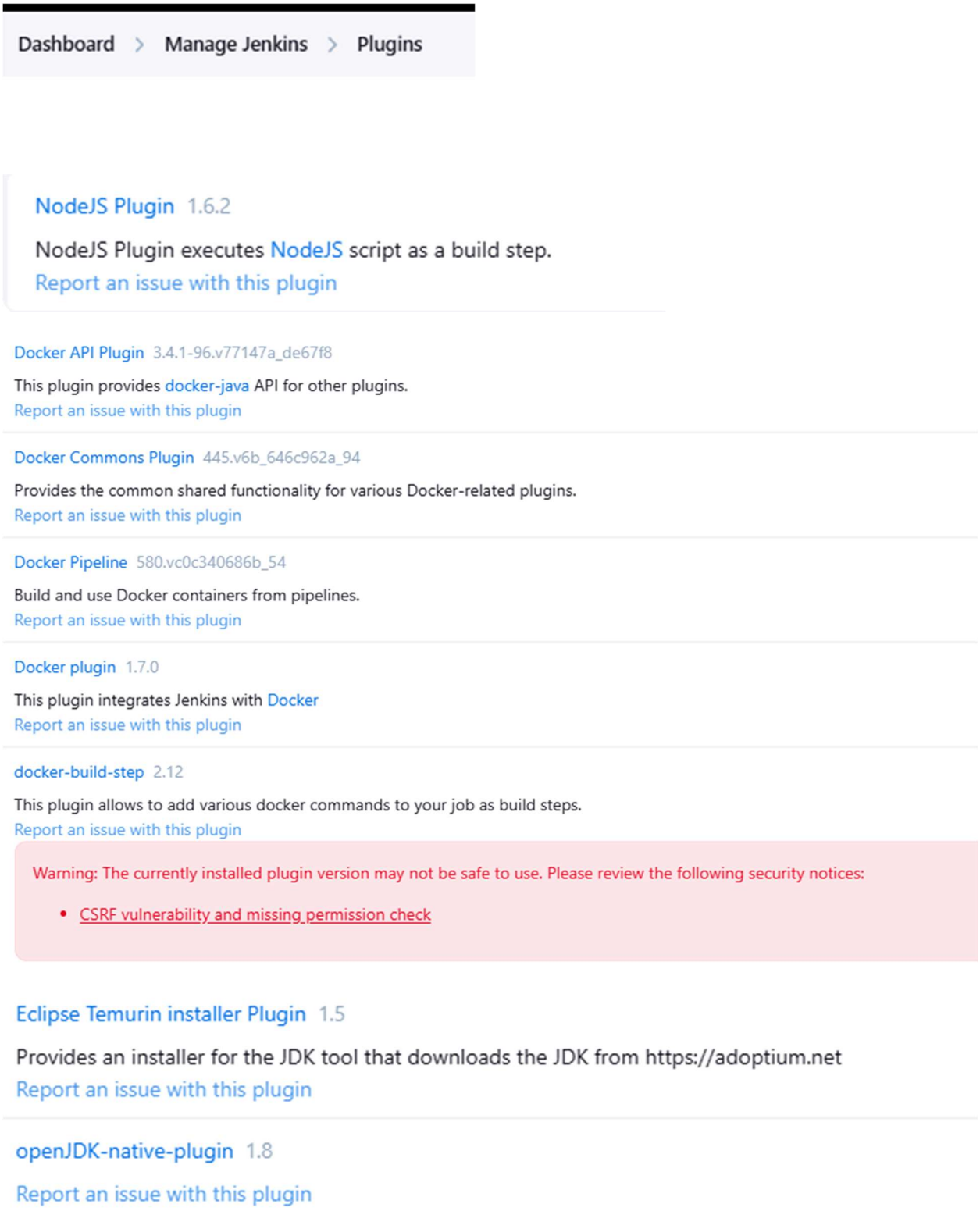
- Definition: Pipeline script from SCM
- SCM: Git
- Repositories:
- Credentials: click on the "Add" button to open jenkins Credentials provider modal:
- kind: username and password
- username: your github username
- password:your github password
- Id: a unique identifier for the credentials Click "Add" and select the created credentials
- Branches to build: */main
- Script Path: Jenkinsfile

Bước 3: Thêm Jenkins-Github-webhook trên github

Đăng nhập vào github bản thân và vào setting của project để cài đặt github webhook

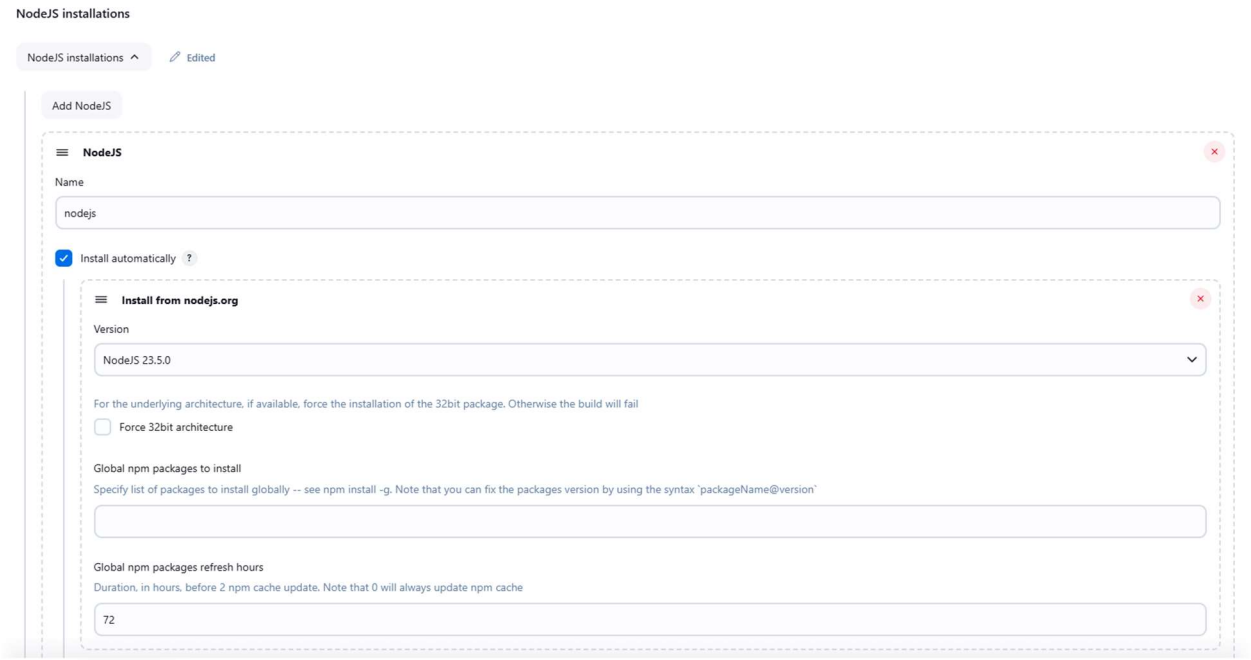


Bước 4: Cài đặt “Nodejs/npm”, “OpenJDK8”, “Docker” trong Jenkins server

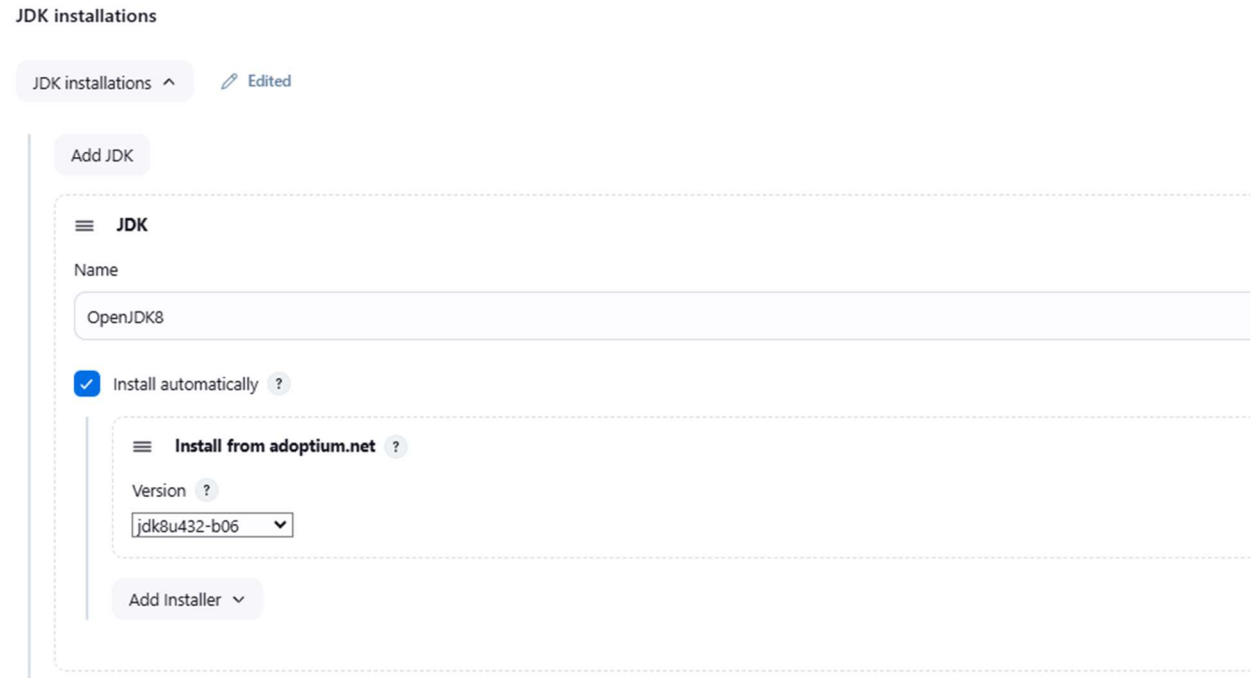


Thêm những plugin vừa cài đặt vào tool

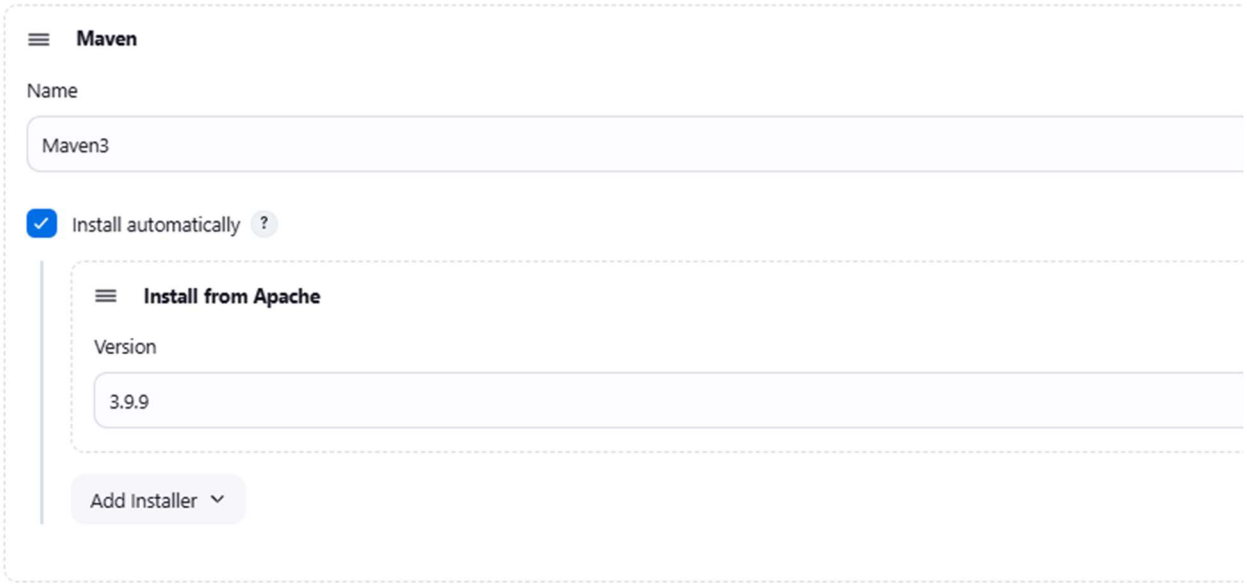
Nodejs



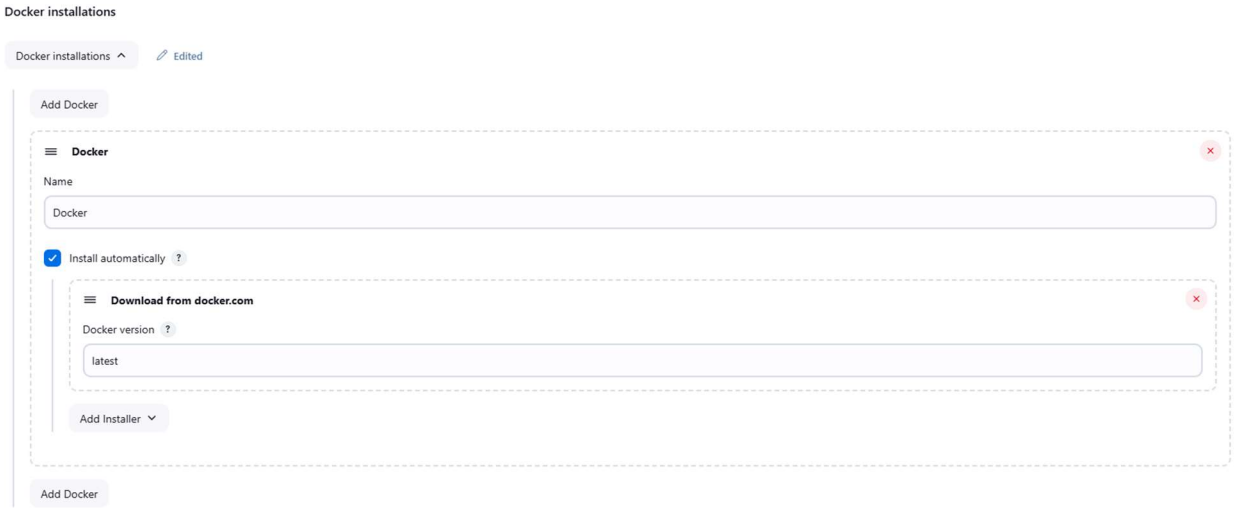
JDK



Maven



Docker



Thêm credentials docker hub với:

- Username: your docker username
- Password: your docker password

Global credentials (unrestricted)

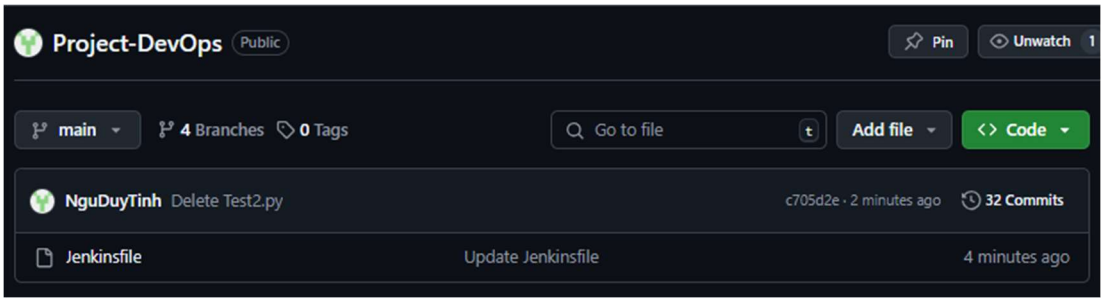
Credentials that should be available irrespective of domain specification to requirements matching.

	ID	Name
	docker-hub	21120572/****** (dockerhub)
	githubcredentials	21120572@student.hcmus.edu.vn/****** (github creds)

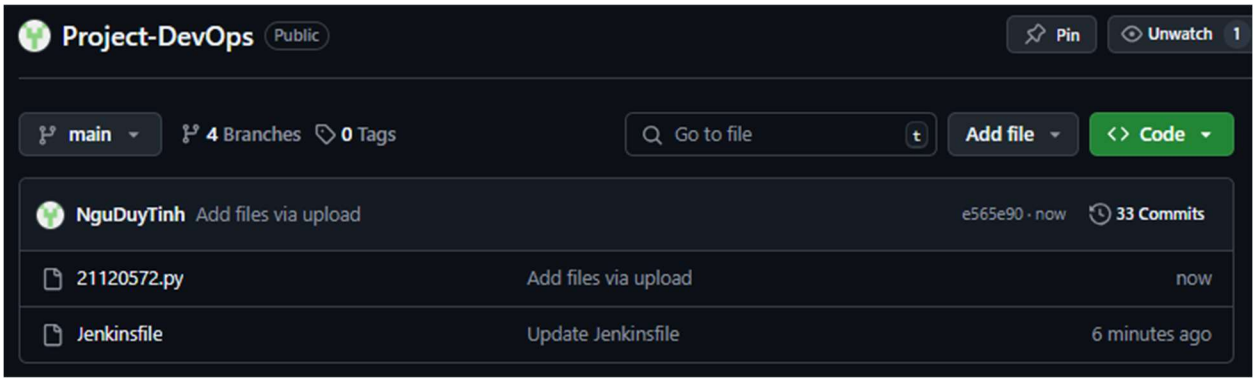
Bước 5: Tạo Jenkinsfile cho ứng dụng và push lên repo github

Nội dung file Jenskin (Mục đích test)

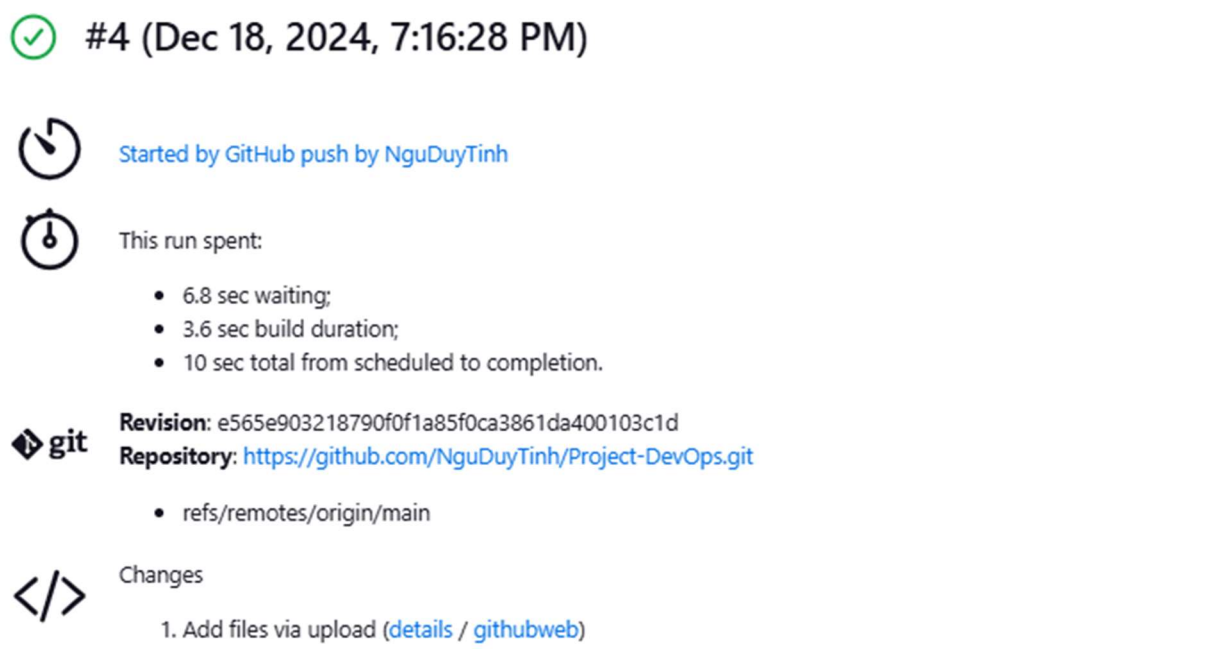
```
pipeline {
    agent any
    tools {
        nodejs 'nodejs'
    }
    stages {
        stage('Build') {
            steps {
                //sh 'npm install'
                // sh 'npm run build'
                echo 'Build'
            }
        }

        stage('Test') {
            steps {
                // sh 'npm install'
                // sh 'npm run build'
                echo 'Test1'
            }
        }
    }
}
```

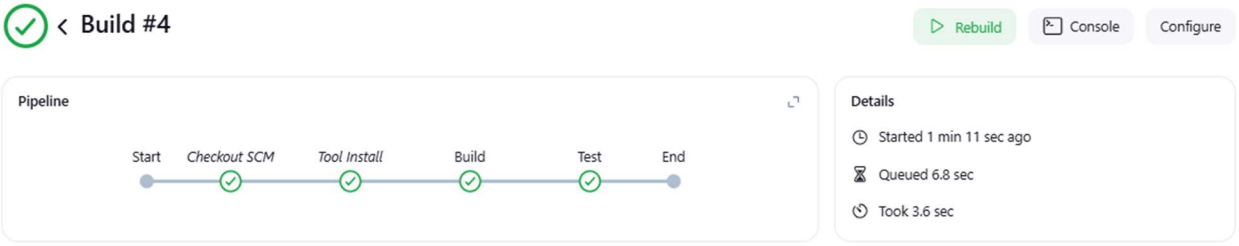


Test khi push code mới lên



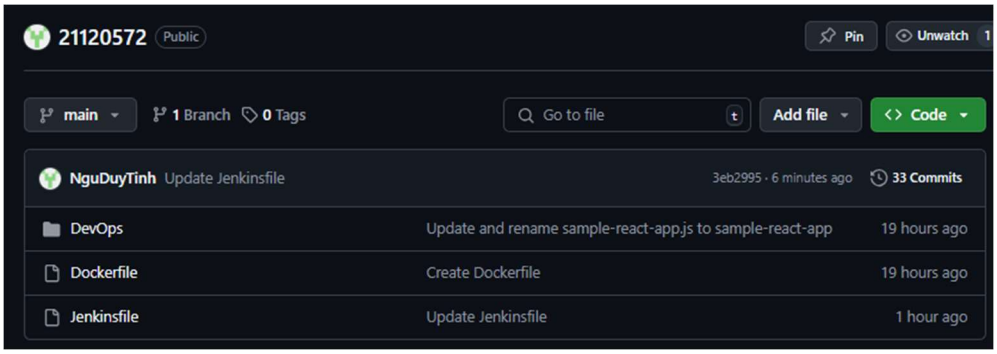
Build “DevOps” pipeline Jenskin



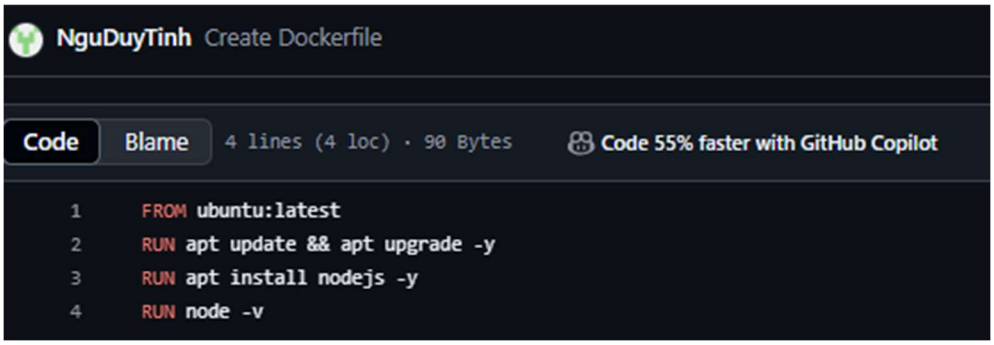


Bước 6: Docker Build và Push

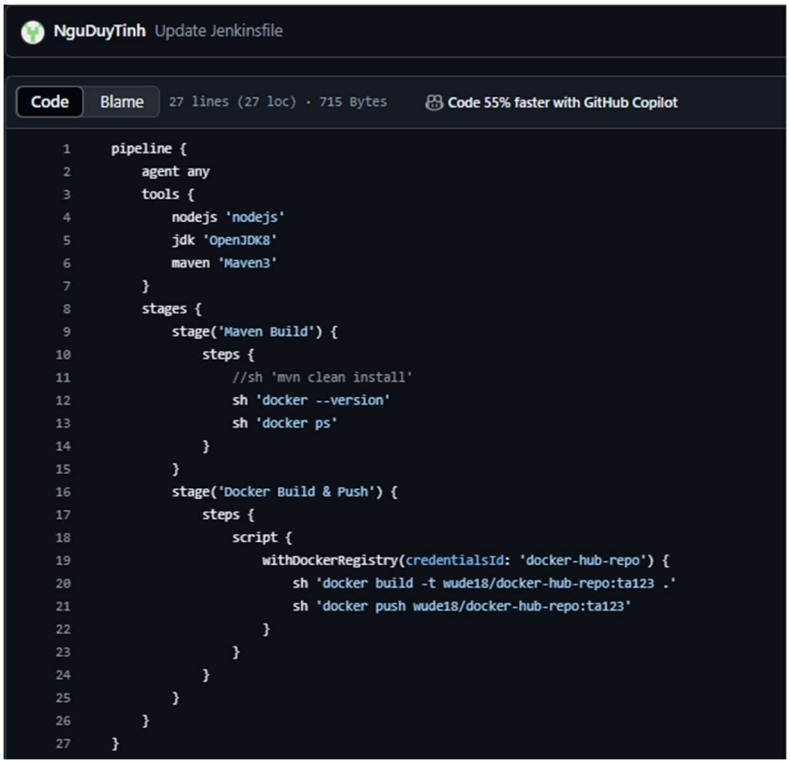
Chuẩn bị github: push Dockerfile và Jenkinsfile



Dockerfile



Jenkinsfile



Adduser docker groups

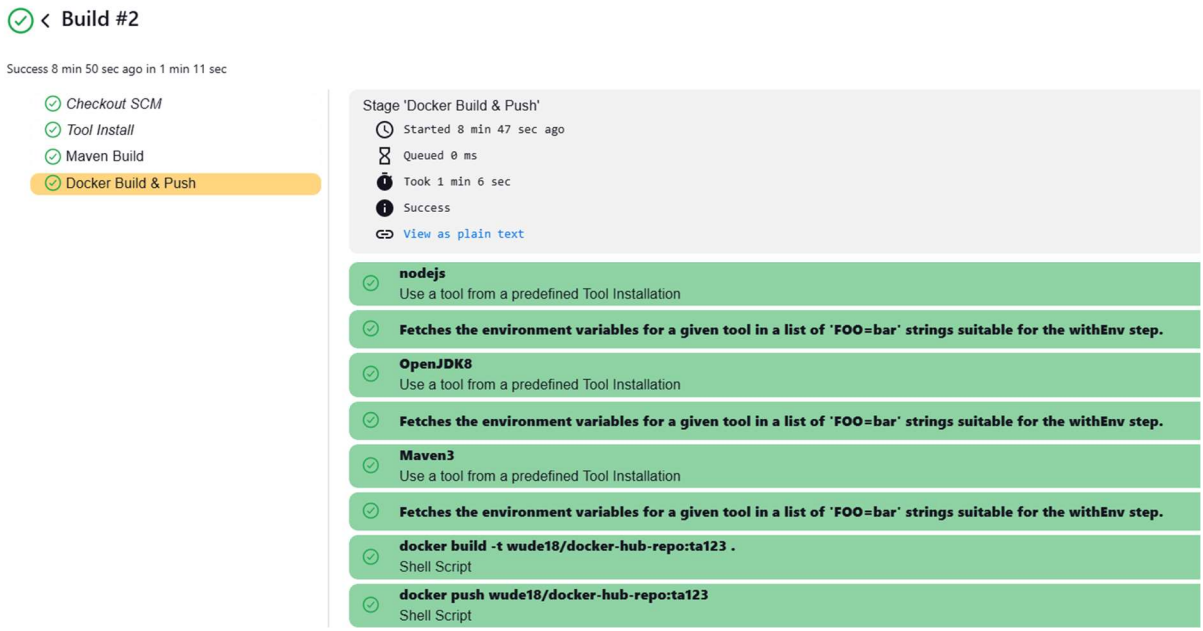
sudo usermod -aG docker $USER

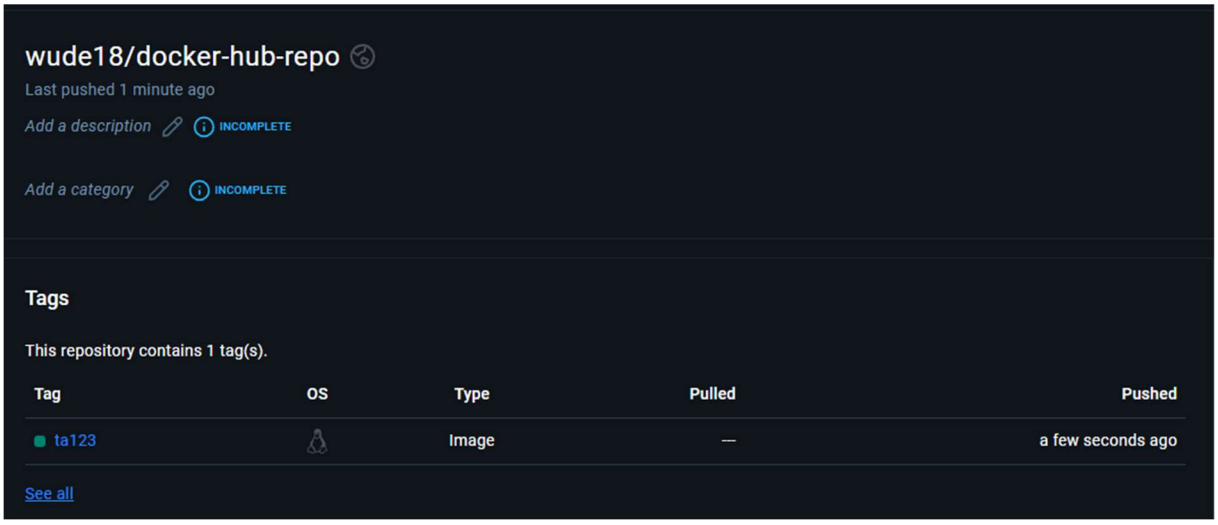
newgrp docker

Sửa quyền đọc ghi

sudo chmod 666 /var/run/docker.sock

Thành công Build và Push





II. Nguồn tham khảo

https://jennykibiri.hashnode.dev