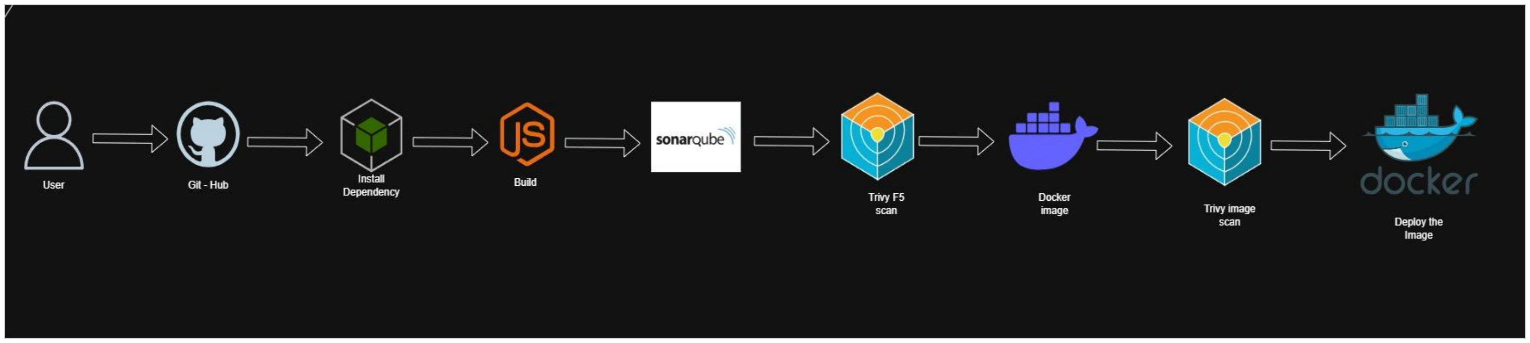
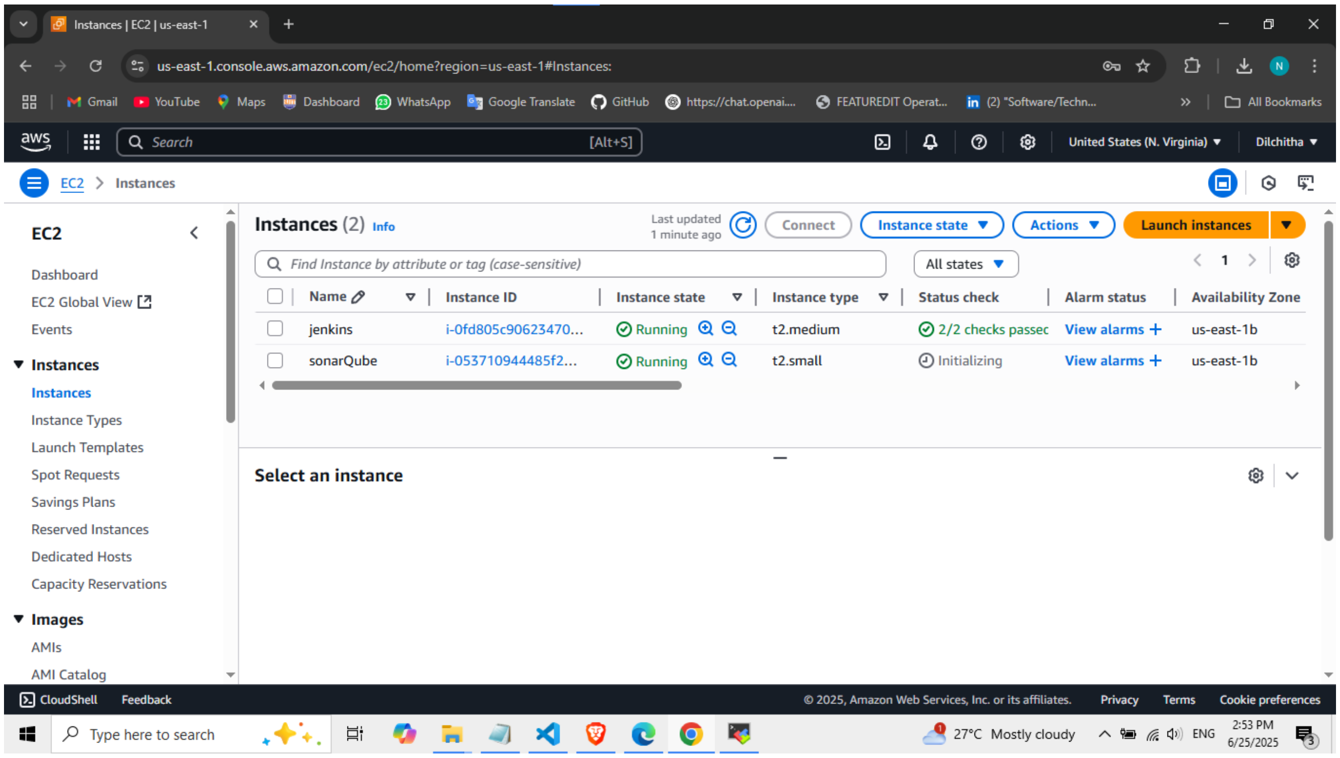
Simple Dev CI/CD Pipeline

Architecture



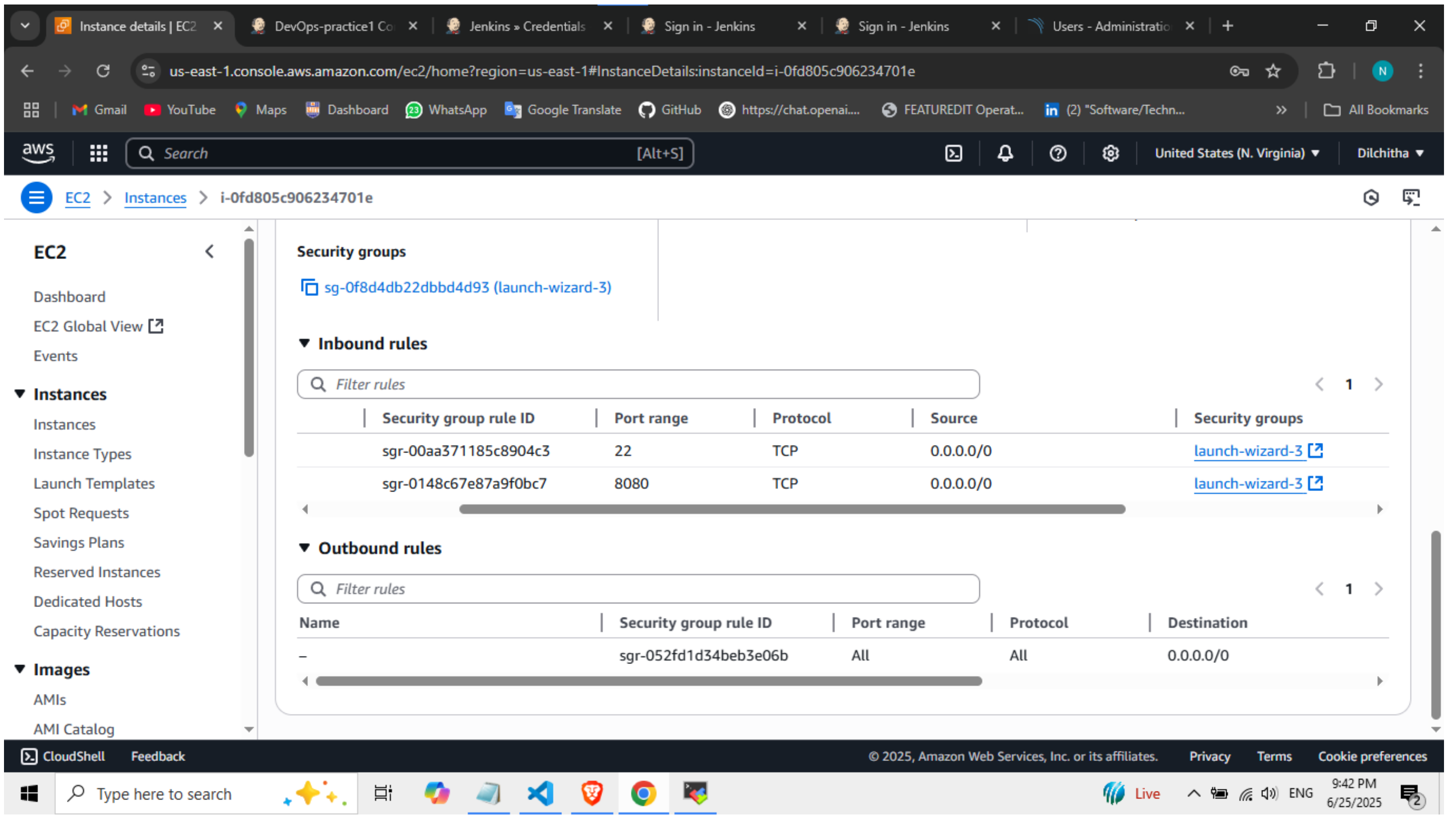
- Created 2 virtual machine using AWS for run jenkins and sonarkube, also edit inbound rules access port 8080, 9000.

2 virtual machines


Instances | EC2 | us-east-1
us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:
EC2 > Instances
Instances (2) Info
Last updated 1 minute ago
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Select an instance

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
jenkins	i-0fd805c90623470...	Running	t2.medium	2/2 checks passec	View alarms +	us-east-1b
sonarQube	i-053710944485f2...	Running	t2.small	Initializing	View alarms +	us-east-1b

inbound rule for jenkins



Security groups

sg-0f8d4db22dbbd4d93 (launch-wizard-3)

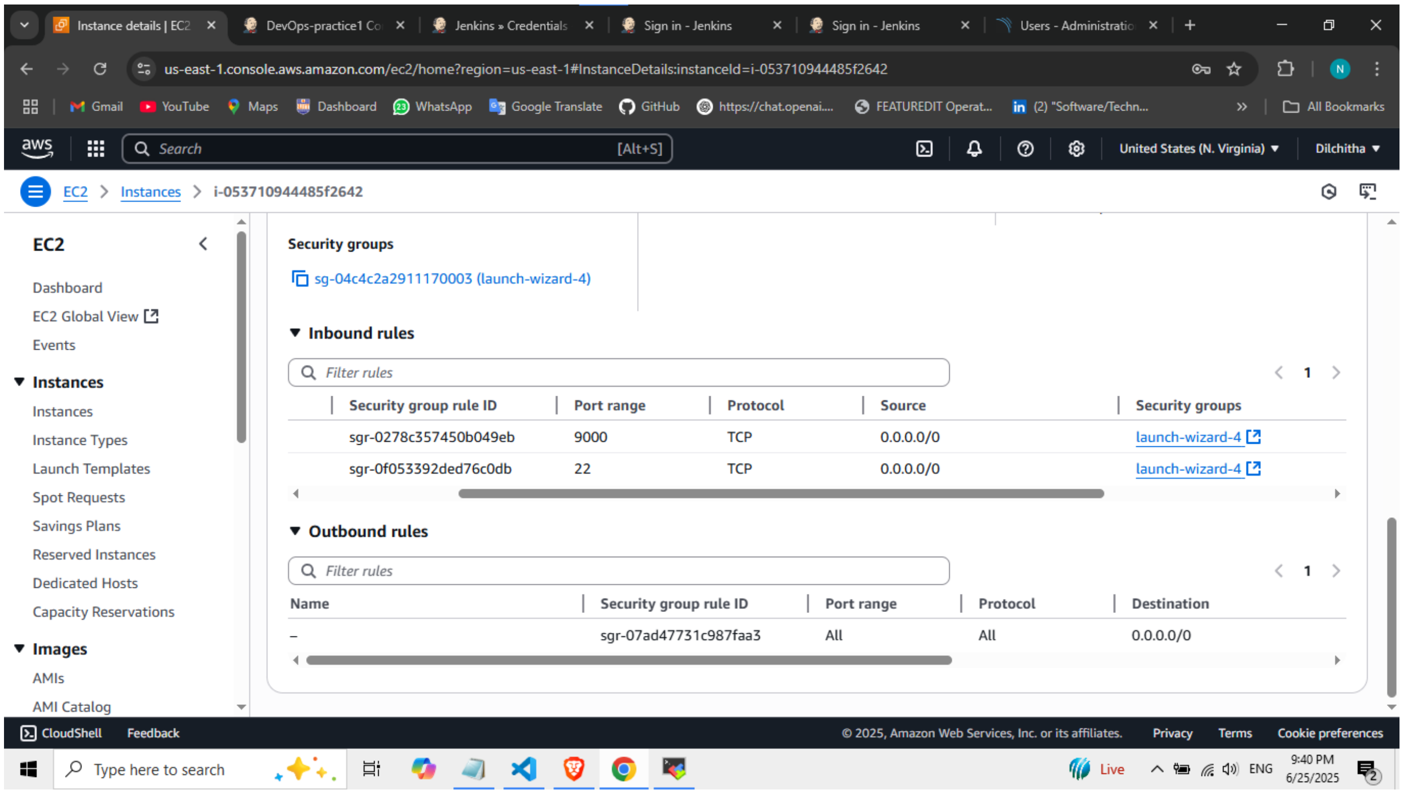
Inbound rules

Security group rule ID	Port range	Protocol	Source	Security groups
sgr-00aa371185c8904c3	22	TCP	0.0.0.0/0	launch-wizard-3
sgr-0148c67e87a9f0bc7	8080	TCP	0.0.0.0/0	launch-wizard-3

Outbound rules

Name	Security group rule ID	Port range	Protocol	Destination
–	sgr-052fd1d34beb3e06b	All	All	0.0.0.0/0

Inbound rule for SonarQube



Security groups

sg-04c4c2a2911170003 (launch-wizard-4)

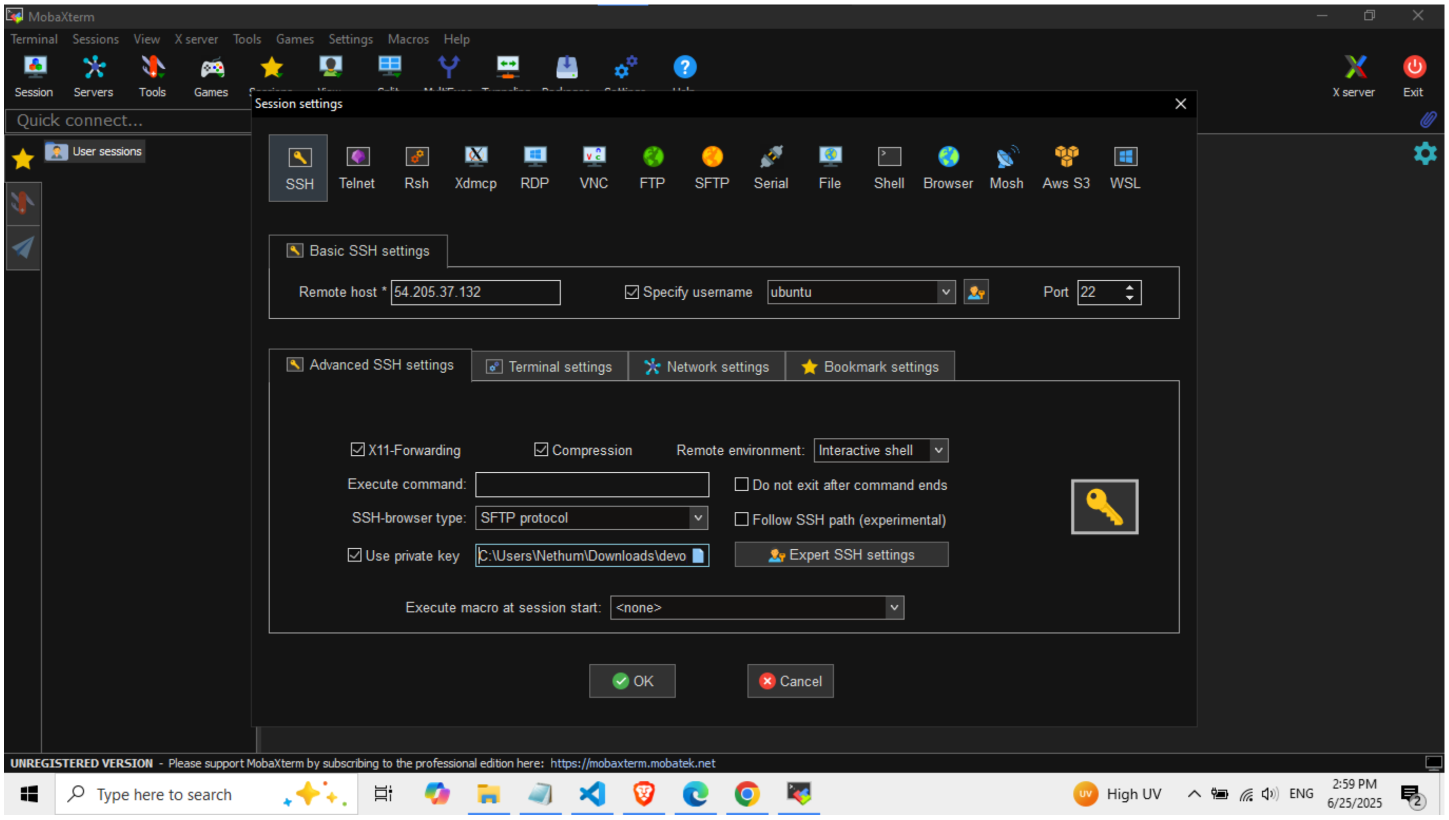
Inbound rules

Security group rule ID	Port range	Protocol	Source	Security groups
sgr-0278c357450b049eb	9000	TCP	0.0.0.0/0	launch-wizard-4
sgr-0f053392ded76c0db	22	TCP	0.0.0.0/0	launch-wizard-4

Outbound rules

Name	Security group rule ID	Port range	Protocol	Destination
–	sgr-07ad47731c987faa3	All	All	0.0.0.0/0

- Ec2 machine Connected ssh port via mobaxterm


MobaXterm
Terminal Sessions View X server Tools Games Settings Macros Help
Session Servers Tools Games
X server Exit
Quick connect...
User sessions
SSH Telnet Rsh Xdmcp RDP VNC FTP SFTP Serial File Shell Browser Mosh Aws S3 WSL
OK Cancel

Session settings

Basic SSH settings

Remote host * 54.205.37.132 ☑ Specify username ubuntu Port 22

Advanced SSH settings | Terminal settings | Network settings | Bookmark settings

☑ X11-Forwarding ☑ Compression Remote environment: Interactive shell

Execute command: ☐ Do not exit after command ends

SSH-browser type: SFTP protocol ☐ Follow SSH path (experimental)

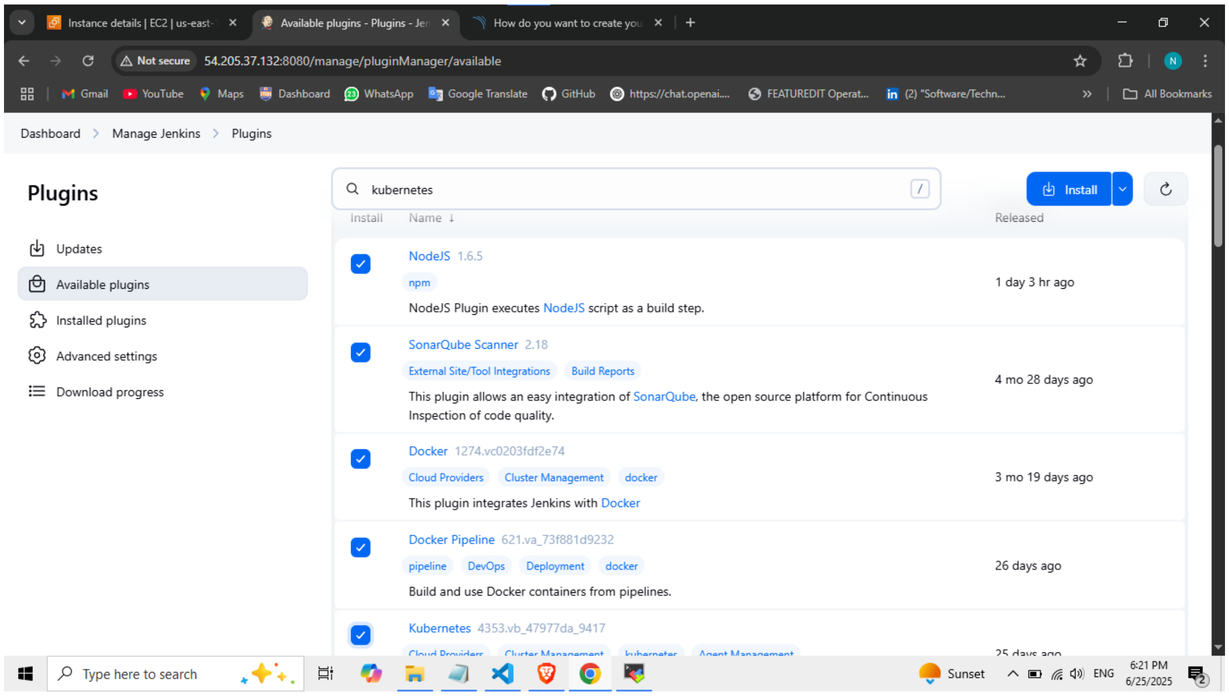
☑ Use private key C:\Users\Nethum\Downloads\devo

Expert SSH settings

Execute macro at session start: <none>

UNREGISTERED VERSION - Please support MobaXterm by subscribing to the professional edition here: https://mobaxterm.mobatek.net

- After connecting and lounge the Jenkins, also Install suggested plugins .(Node Js, Docker, Docker pipelines, Sonaqube analysis).


Instance details | EC2 | us-east-
Available plugins - Plugins - Jen
How do you want to create you
Not secure
Gmail YouTube Maps Dashboard WhatsApp Google Translate GitHub https://chat.openai... FEATUREDIT Operat... (2) "Software/Techn... All Bookmarks
Install

54.205.37.132:8080/manage/pluginManager/available

Dashboard > Manage Jenkins > Plugins

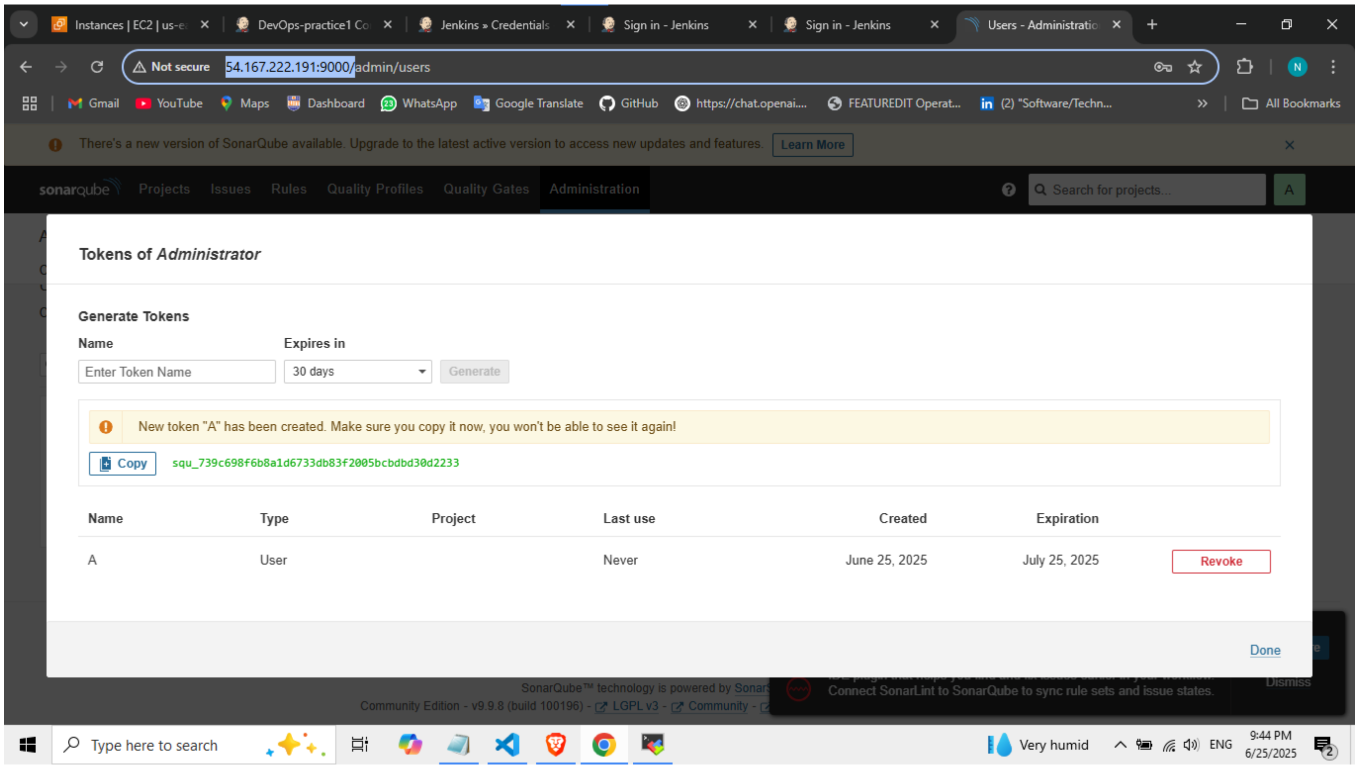
Plugins

- Updates
- Available plugins
- Installed plugins
- Advanced settings
- Download progress

Search: kubernetes

Install	Name ↓	Released
☑	NodeJS 1.6.5 — npm — NodeJS Plugin executes NodeJS script as a build step.	1 day 3 hr ago
☑	SonarQube Scanner 2.18 — External Site/Tool Integrations, Build Reports — This plugin allows an easy integration of SonarQube, the open source platform for Continuous Inspection of code quality.	4 mo 28 days ago
☑	Docker 1274.vc0203fdf2e74 — Cloud Providers, Cluster Management, docker — This plugin integrates Jenkins with Docker	3 mo 19 days ago
☑	Docker Pipeline 621.va_73f881d9232 — pipeline, DevOps, Deployment, docker — Build and use Docker containers from pipelines.	26 days ago
☑	Kubernetes 4353.vb_47977da_9417 — Cloud Providers, Cluster Management, kubernetes, Agent Management	25 days ago

- Access to the Sonarqube websites and generate the access token



54.167.222.191:9000/admin/users

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. Learn More

Tokens of *Administrator*

Generate Tokens

Name	Expires in
Enter Token Name	30 days

New token "A" has been created. Make sure you copy it now, you won't be able to see it again!

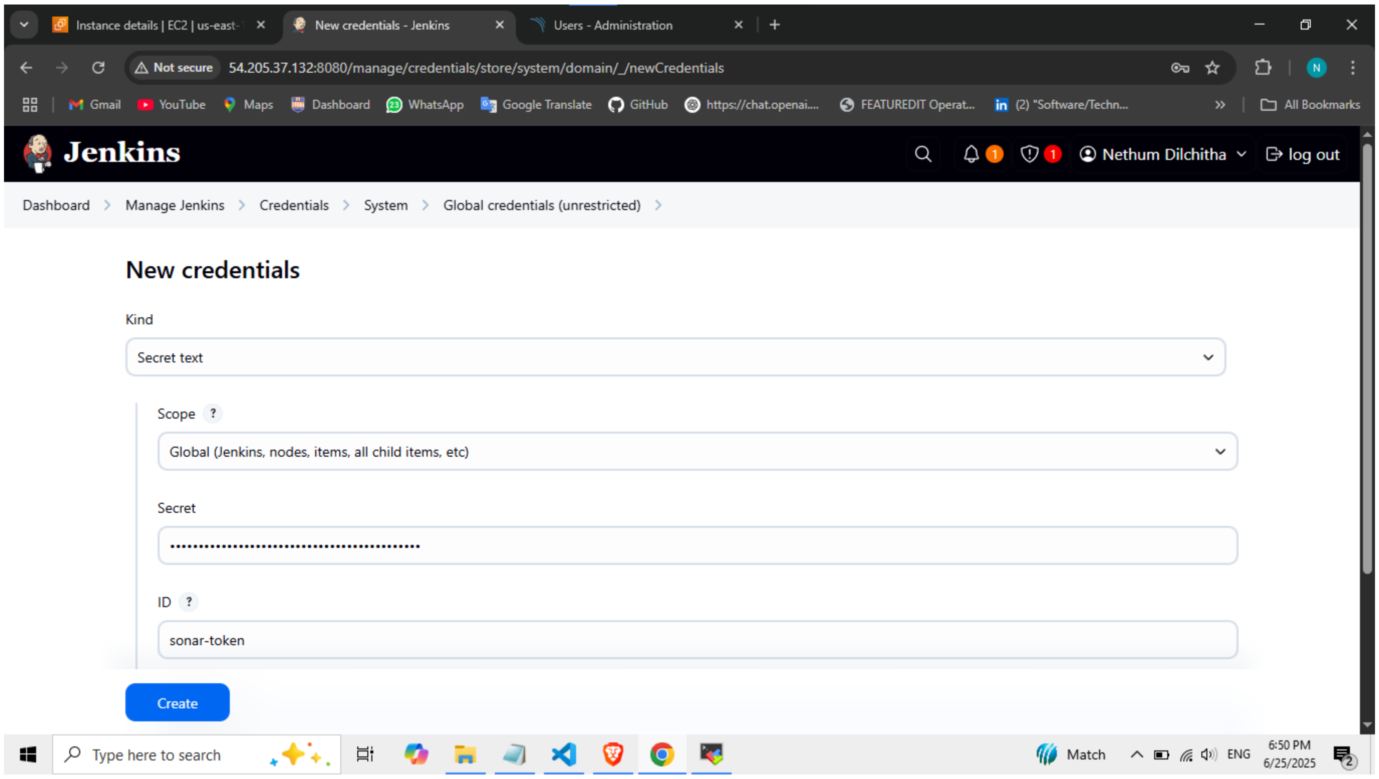
```
squ_739c698f6b8a1d6733db83f2005bcbdbd30d2233
```

Name	Type	Project	Last use	Created	Expiration	
A	User		Never	June 25, 2025	July 25, 2025	Revoke

SonarQube™ technology is powered by SonarSource SA
Community Edition - v9.9.8 (build 100196) - LGPL v3 - Community

Connect SonarLint to SonarQube to sync rule sets and issue states.

- Adding all related credential in Jenkins. (git, node js, sonar qube, trivy)



54.205.37.132:8080/manage/credentials/store/system/domain/_/newCredentials

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) >

New credentials

Kind: Secret text

Scope: Global (Jenkins, nodes, items, all child items, etc)

Secret: ••

ID: sonar-token

Step Summary

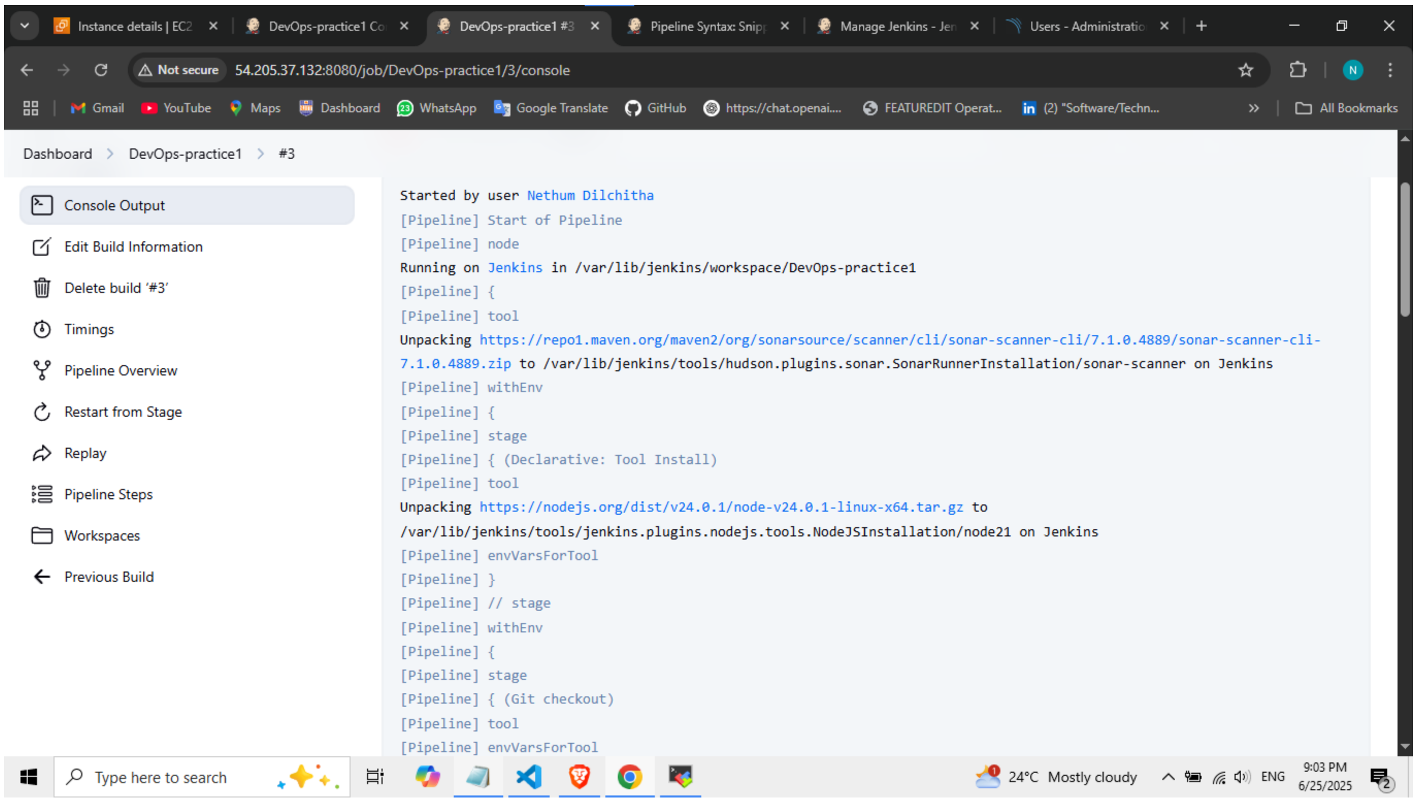
- Git Checkout: Pulls your resume website code from GitHub
- Install Dependencies: Installs Node.js dependencies if your resume uses a framework
- Security Scan: Runs Trivy to scan for vulnerabilities in your file system
- Code Quality: Uses SonarQube to analyze code quality
- Docker Build: Builds a Docker image of your resume website
- Image Scan: Scans the Docker image for vulnerabilities
- Docker Push: Pushes the image to Docker Hub (or another registry)

CI/CD pipeline

```
pipeline {
  agent any

  tools {
    nodejs 'node21'
  }

  environment {
    SCANNER_HOME = tool 'sonar-scanner'
  }

  stages {
    stage('Git checkout') {
      steps {
        git credentialsId: 'git-cred', url: 'https://github.com/DIlchitha/CI-CD-basic1.git'
      }
    }

    stage('Install Package dependency') {
      steps {
        sh 'npm install'
      }
    }

    stage('Trivy FS scan') {
      steps {
        sh 'trivy fs --format table -o fs-report.html .'
      }
    }

    stage('SonarQube') {
      steps {
        withSonarQubeEnv('sonar') {
          sh '$SCANNER_HOME/bin/sonar-scanner -Dsonar.projectKey=Campground -
Dsonar.projectName=Campground'
        }
      }
    }

    stage('Docker build') {
      steps {
        script {
          withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
            sh 'docker build -t Dilchitha1111/camp:latest .'
          }
        }
      }
    }

    stage('Trivy image scan') {
      steps {
        sh 'trivy image --format table -o image-report.html Dilchitha1111/camp:latest'
```

```
            }
        }

        stage('Docker push image') {
            steps {
                script {
                    withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
                        sh 'docker push Dilchitha1111/camp:latest'
                    }
                }
            }
        }

        stage('Docker Deploy') {
            steps {
                script {
                    withDockerRegistry(credentialsId: 'docker-cred', toolName: 'docker') {
                        sh 'docker run -d -p 3000:3000 Dilchitha1111/camp:latest'
                    }
                }
            }
        }
    }
}
```

- Pipeline build output



```
Started by user Nethum Dilchitha
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/DevOps-practice1
[Pipeline] {
[Pipeline] tool
Unpacking https://repo1.maven.org/maven2/org/sonarsource/scanner/cli/sonar-scanner-cli/7.1.0.4889/sonar-scanner-cli-
7.1.0.4889.zip to /var/lib/jenkins/tools/hudson.plugins.sonar.SonarRunnerInstallation/sonar-scanner on Jenkins
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Tool Install)
[Pipeline] tool
Unpacking https://nodejs.org/dist/v24.0.1/node-v24.0.1-linux-x64.tar.gz to
/var/lib/jenkins/tools/jenkins.plugins.nodejs.tools.NodeJSInstallation/node21 on Jenkins
[Pipeline] envVarsForTool
[Pipeline] }
[Pipeline] // stage
[Pipeline] withEnv
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Git checkout)
[Pipeline] tool
[Pipeline] envVarsForTool
```