DOCKER PROJECT

STEP-1: LAUNCH AN INSTANCE WITH T2.LARGE AND EBS 30

STEP-2: INSTALL JENKINS, GIT, DOCKER & TRIVY

STEP-3: INSTALL THE FOLLOWING JENKINS PLUGINS

- SONAR SCANNER
- NODEJS
- OWASP DEPENDENCY CHECK
- DOCKER PIPELINE
- Eclipse Temurin installerVersion
- Pipeline stage view

STEP-4: CONFIGURE ALL THE PLUGINS INTO JENKINS

STEP-5: WRITE A PIPELINE

TRIVY INSTALLATION:

- wget https://github.com/aquasecurity/trivy/releases/download/v0.18.3/trivy_0.18.3_Linux-64bit.tar.gz
- tar zxvf trivy_0.18.3_Linux-64bit.tar.gz
- sudo mv trivy /usr/local/bin/
- vim .bashrc
- export PATH=$PATH:/usr/local/bin/
- source .bashrc

JENKINS INSTALLATION:

- amazon-linux-extras install java-openjdk11 -y
- sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo
- sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
- yum install jenkins -y
- systemctl start jenkins

GIT & DOCKER INSTALLATION:

- yum install git docker -y
- systemctl start docker
- chmod 777 ///var/run/docker.sock

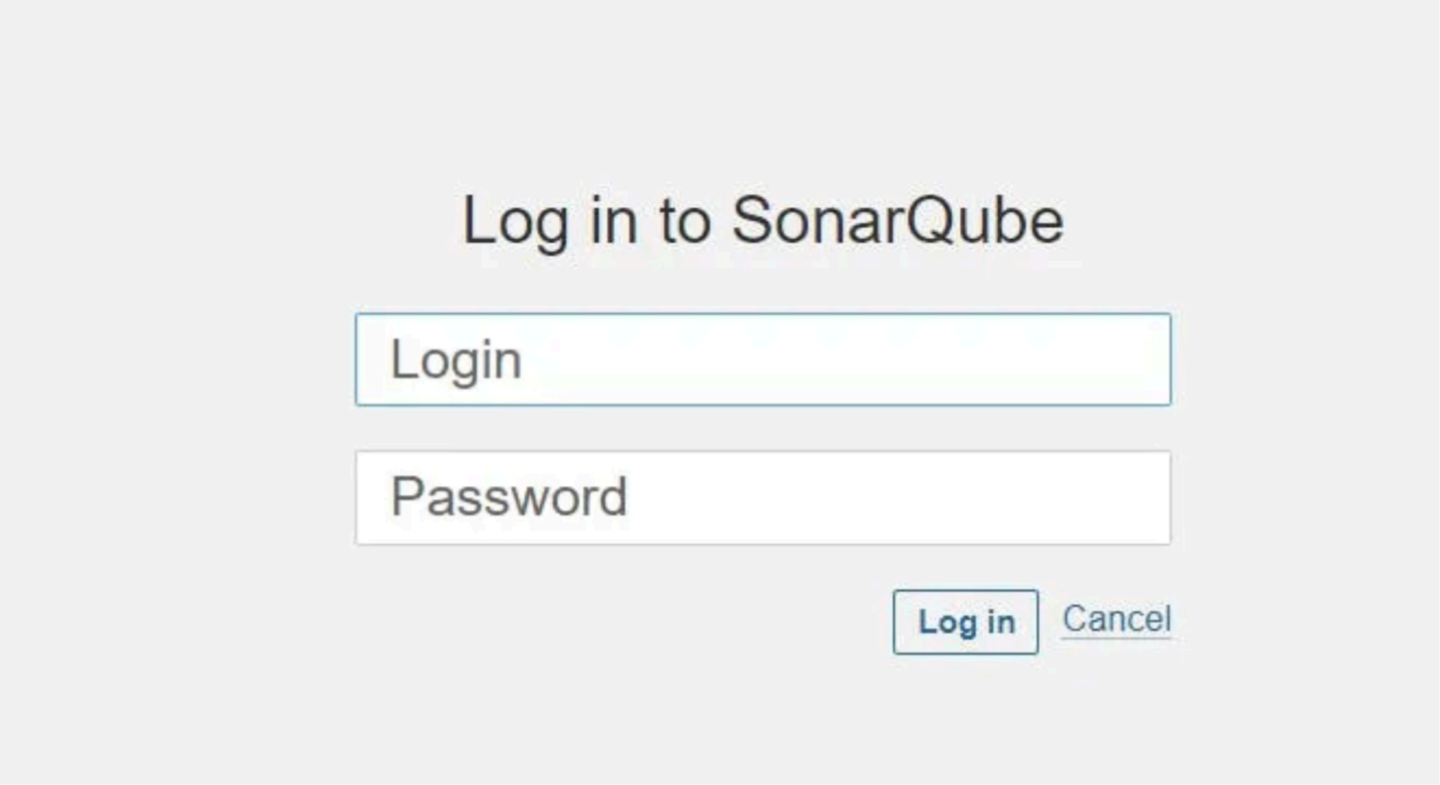
SETUP SONAR USING DOCKER:

```
docker run -d --name sonar -p 9000:9000 sonarqube:lts-community
```

After creating the sonar container, access the sonarqube with 9000 port number.

Login to the sonar dashboard with the following and credentials

- username: admin
- password: admin



Log in to SonarQube

After entering the credentials we have to set a new password.

CONFIGURE ALL THE PLUGINS INTO JENKINS:

Goto your Sonarqube Server. Click on Administration ---→ Security ---→ Users → Click on Tokens and Update Token ---→ Give it a name ---→ and click on Generate Token.

copy Token

Goto Jenkins Dashboard ---→ Manage Jenkins ---→ Credentials ---→ Add Secret Text with id

sonar-token.

Goto Jenkins Dashboard → Manage Jenkins → Credentials → Add Secret Text.

Add sonarqube.

Now, go to Dashboard --→ Manage Jenkins ----→ System and Add sonar servers with the name of **mysonar – > url: http://ip:9000/ – > token – save**

Click on Apply and Save

The Configure option is used in Jenkins to configure different server.

Click on add **SonarQube Scanner in TOOLS Section**

Name: mysonar

click on install automatically and proceed with default version.

In the Sonarqube Dashboard add a quality gate also

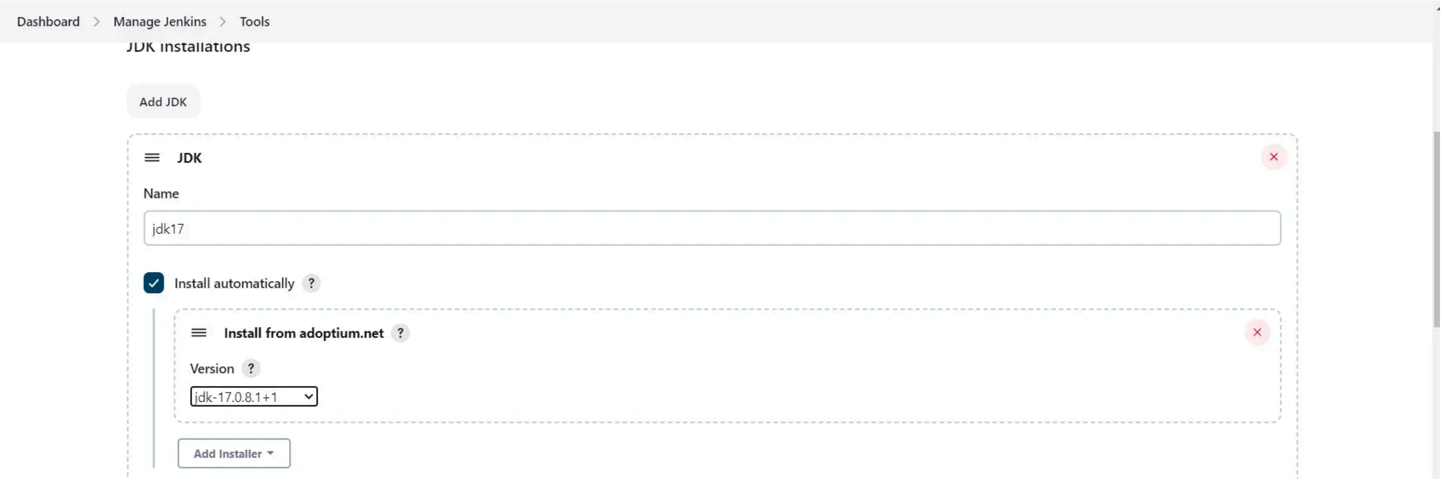
Administration → Configuration →Webhooks

Click on Create

Name: Jenkins

URL: <http://jenkins-public-ip:8080>/sonarqube-webhook/

Now configure NodeJs, Java & DP-Check

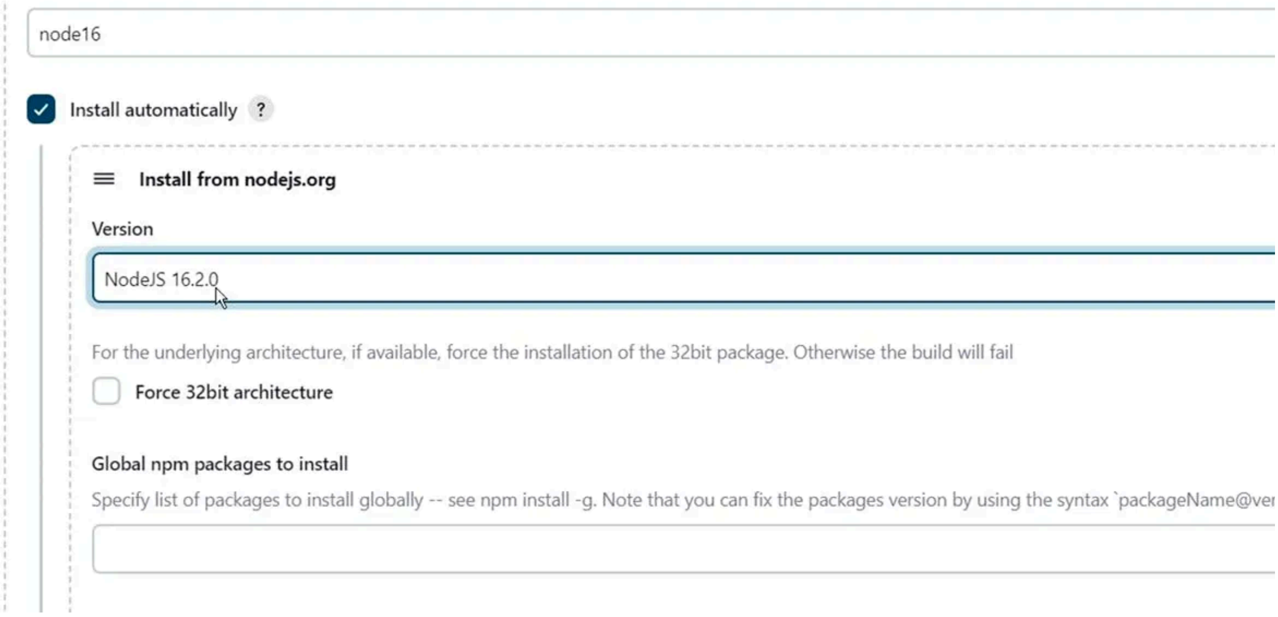


Name: jdk17

☑ Install automatically

Install from adoptium.net

Version: jdk-17.0.8.1+1



node16

☑ Install automatically ?

Install from nodejs.org

Version

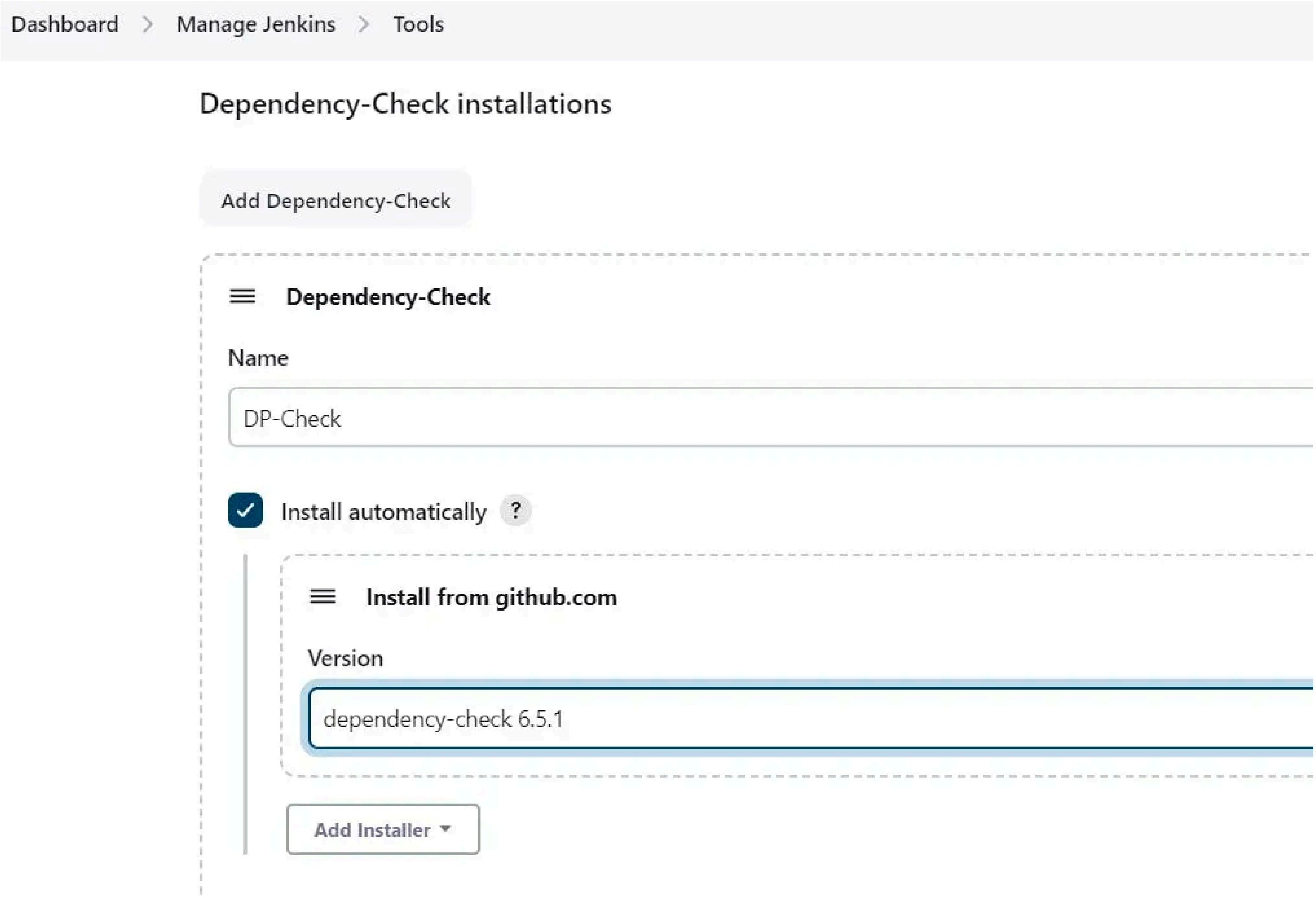
NodeJS 16.2.0

For the underlying architecture, if available, force the installation of the 32bit package. Otherwise the build will fail

□ Force 32bit architecture

Global npm packages to install

Specify list of packages to install globally -- see npm install -g. Note that you can fix the packages version by using the syntax `packageName@ver



Dashboard > Manage Jenkins > Tools

Dependency-Check installations

Dependency-Check

Name

DP-Check

☑ Install automatically ?

Install from github.com

Version

dependency-check 6.5.1

Click on Apply and Save here.

START WRITING DECLARATIVE PIPELINE:

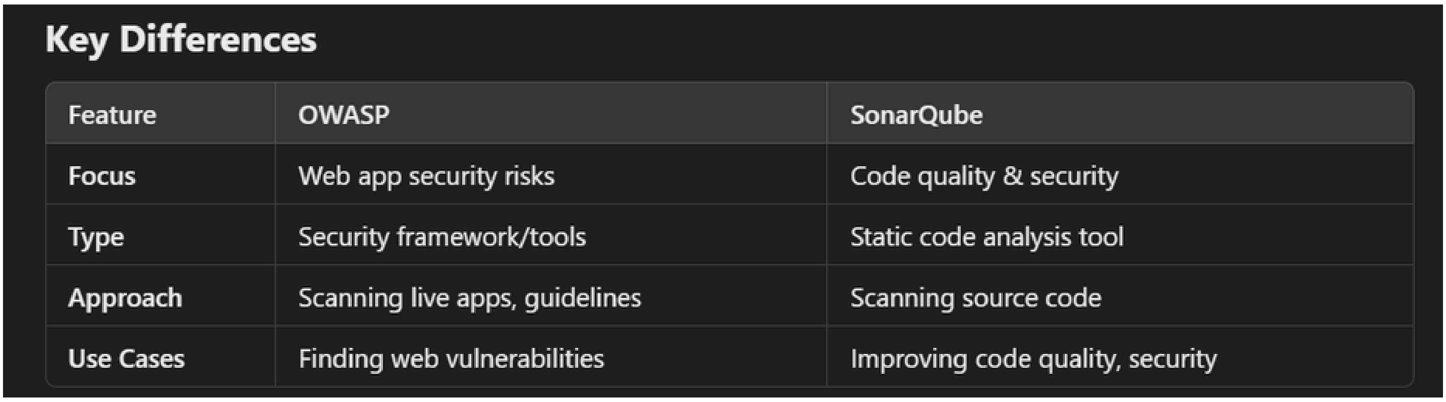
```
pipeline {
```

```
agent any
tools {
    jdk 'jdk17'
    nodejs 'node16'
}
environment {
    SCANNER_HOME = tool 'mysonar'
}
stages {
    stage("Clean WS") {
        steps {
            cleanWs()
        }
    }
    stage("Code") {
        steps {
            git “https://github.com/devops0014/Zomato-Project.git”
        }
    }
    stage("Sonarqube Analysis") {
        steps {
            withSonarQubeEnv('mysonar') {
                sh """$SCANNER_HOME/bin/sonar-scanner \
                    -Dsonar.projectName=zomato \
                    -Dsonar.projectKey=zomato"""
            }
        }
    }
    stage("Quality Gates") {
        steps {
            script {
                waitForQualityGate abortPipeline: false, credentialsId: 'sonar-token'
            }
        }
    }
    stage("Install Dependencies") {
        steps {
            sh 'npm install'
        }
    }
    stage("OWASP") {
        steps {
            dependencyCheck additionalArguments: '--scan ./ --disableYarnAudit --disableNodeAudit', odcInstallation: 'DP-Check'
            dependencyCheckPublisher pattern: '**/dependency-check-report.xml'
        }
    }
    stage("Trivy") {
        steps {
            sh 'trivy fs . > trivyfs.txt'
        }
    }
```

```
    stage("Build") {
      steps {
        sh 'docker build -t image1 .'
      }
    }
    stage("Tag & Push") {
      steps {
        script {
          withDockerRegistry(credentialsId: 'docker-password') {
            sh 'docker tag image1 shaikmustafa/mydockerproject:myzomatoimage'
            sh 'docker push shaikmustafa/mydockerproject:myzomatoimage'
          }
        }
      }
    }
    stage("Scan the Image") {
      steps {
        sh 'trivy image shaikmustafa/mydockerproject:myzomatoimage'
      }
    }
    stage("Container") {
      steps {
        sh 'docker run -d --name cont1 -p 3000:3000 shaikmustafa/mydockerproject:myzomatoimage'
      }
    }
```

```
  }

}
```



Key Differences

Feature	OWASP	SonarQube
Focus	Web app security risks	Code quality & security
Type	Security framework/tools	Static code analysis tool
Approach	Scanning live apps, guidelines	Scanning source code
Use Cases	Finding web vulnerabilities	Improving code quality, security