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/redhatstable/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

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

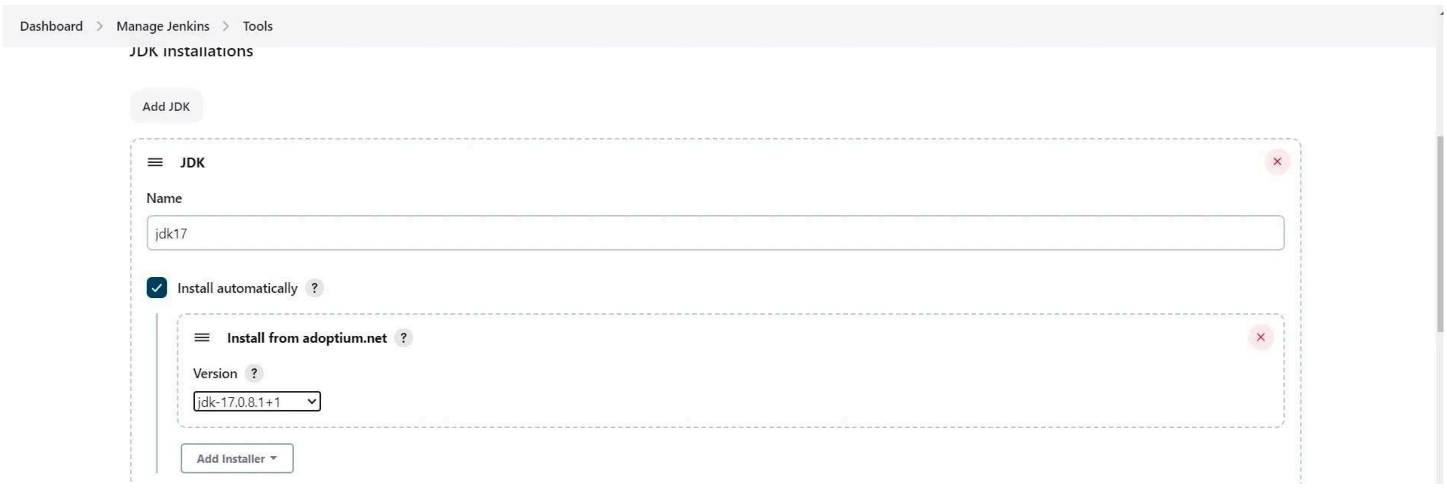
Administration → Configuration →Webhooks

Click on Create

Name: Jenkins

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

Now configure NodeJs, Java & DP-Check


Dashboard > Manage Jenkins > Tools

JDK installations

Add JDK

JDK

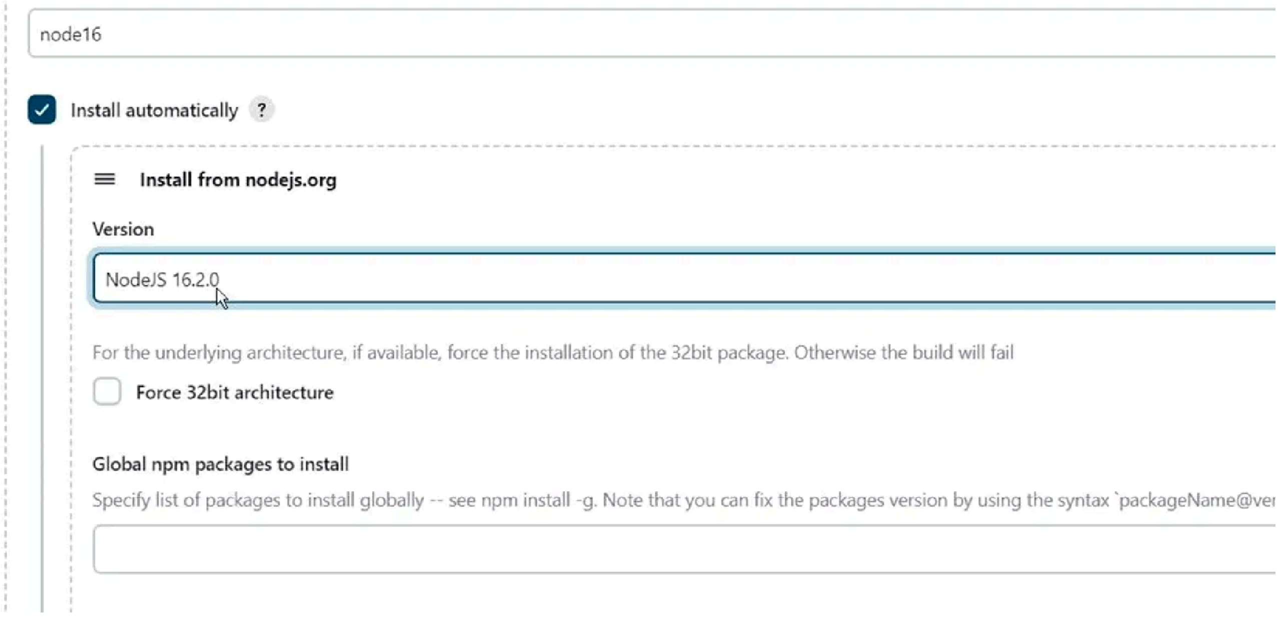
Name: jdk17

Install automatically ✓

Install from adoptium.net

Version: jdk-17.0.8.1+1

Add Installer


node16

Install automatically ✓

Install from nodejs.org

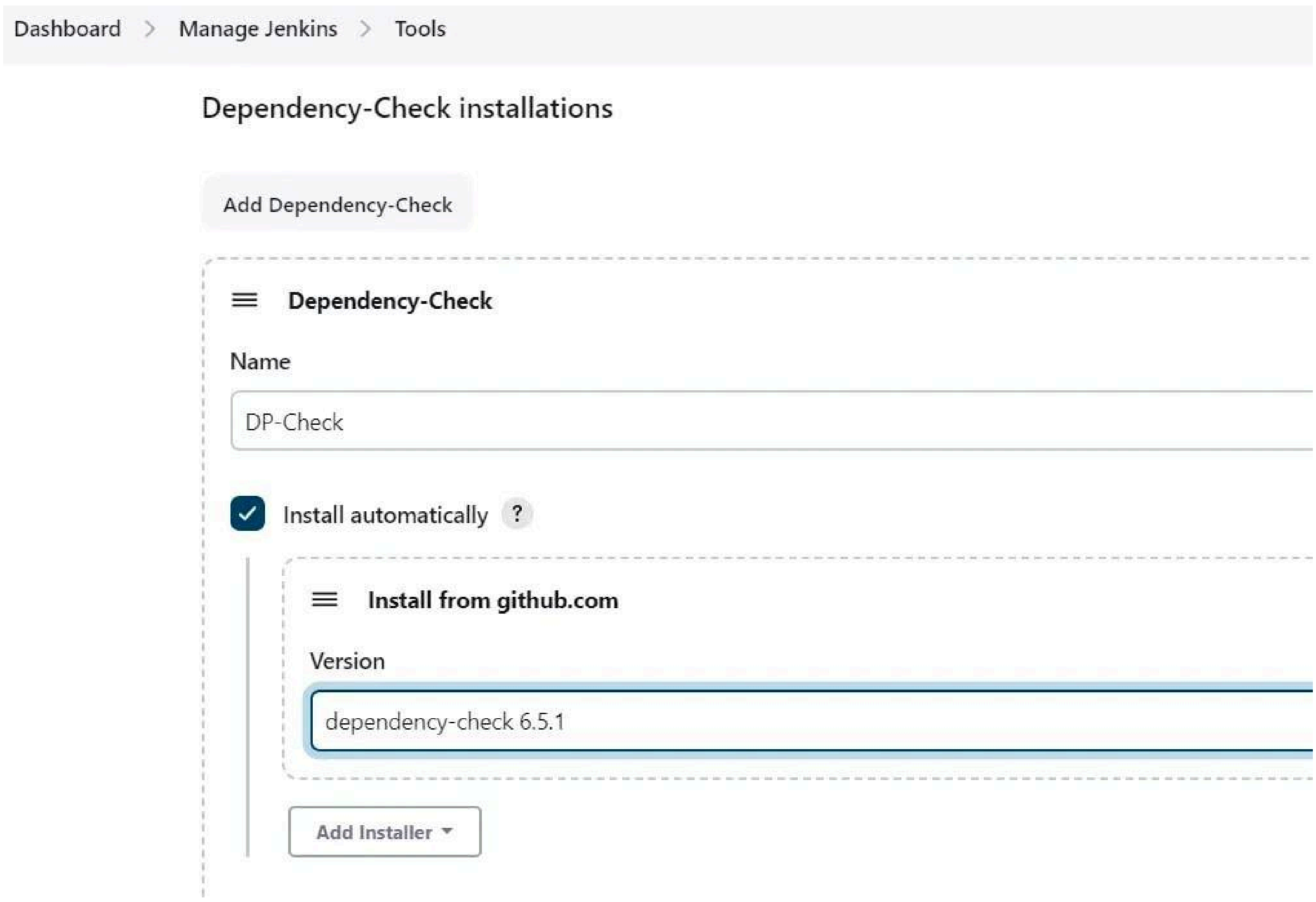
Version: NodeJS 16.2.0

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

Add Dependency-Check

Dependency-Check

Name: DP-Check

Install automatically: ✓

Install from github.com

Version: dependency-check 6.5.1

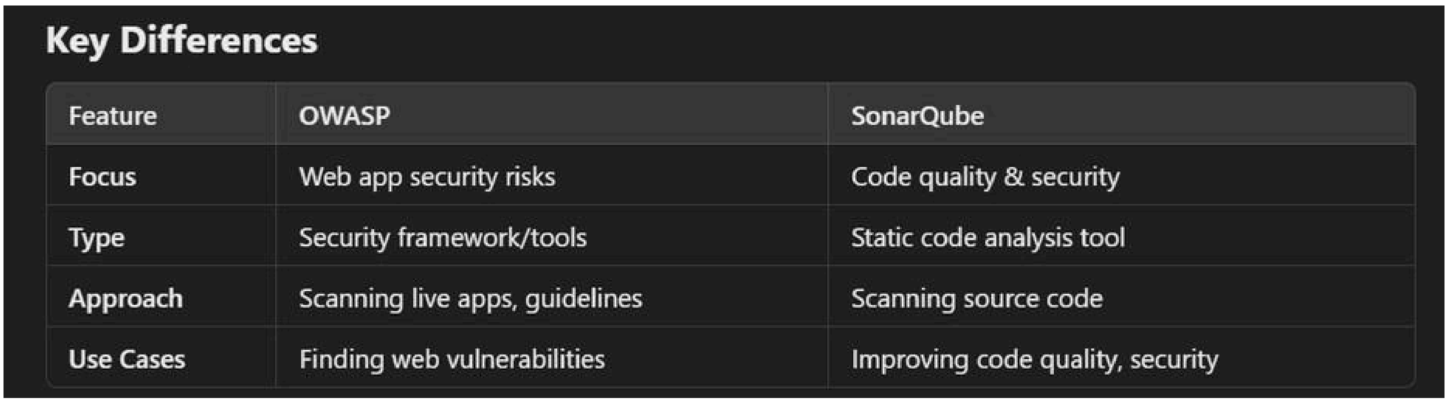
Add Installer

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