1. **Installation of Java**

* Update package index:

sudo apt update

* Install the OpenJDK 11 Runtime Environment

sudo apt install openjdk-11-jre

* Verify the installation by checking the installed Java version

java –version

1. **Jenkins Installation:**

* Add Jenkins GPG key and repository:

sudo wget -O /usr/share/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key

echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/" | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null

* Update package index:

sudo apt-get update

* Install Jenkins:

sudo apt-get install Jenkins

* Start Jenkins:

sudo systemctl start Jenkins

* Enable Jenkins to start at boot:

sudo systemctl enable Jenkins

* Check Jenkins status:

sudo systemctl status Jenkins

1. **Configure GitHub and Jenkins:**

* Generate SSH keys on Jenkins server (if not already generated):

ssh-keygen -t rsa -b 4096 -C [your\_email@example.com](mailto:your_email@example.com)

* Add SSH Key to Github and Copy the SSH public key:

cat ~/.ssh/id\_rsa.pub

1. **SonarQube Installation:**

* Download and extract SonarQube:

Wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube.zip

unzip sonarqube.zip -d /opt

* Start SonarQube:

sudo useradd sonar

sudo chown -R sonar:sonar /opt/sonarqube

sudo su - sonar

cd /opt/sonarqube/bin/linux-x86-64

./sonar.sh start

* Check SonarQube status:

./sonar.sh status

1. **Configure Jenkins with SonarQube**

* Update hostname in SonarQube:

sudo hostnamectl set-hostname your-new-hostname