STEP1: **INSTALL JENKINS ON EC2 MACHINE**

1 sudo amazon-linux-extras install epel -y

2 sudo amazon-linux-extras install java-openjdk11 -y

3 java -version

4 sudo wget -O /etc/yum.repos.d/jenkins.repo https://pkg.jenkins.io/redhat-stable/jenkins.repo

5 sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key

6 sudo yum install jenkins -y

7 systemctl restart jenkins

8 systemctl status jenkins

STEP2**: INSTALL SONARQUBE ON EC2**

**1. Install OpenJDK 11**

**SSH to your Ubuntu server as a non-root user with sudo access.**

**Install OpenJDK 11.**

**$ sudo apt-get install openjdk-11-jdk -y**

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**2. Install and Configure PostgreSQL**

**Add the PostgreSQL repository.**

**$ sudo sh -c 'echo "deb http://apt.postgresql.org/pub/repos/apt/ `lsb\_release -cs`-pgdg main" /etc/apt/sources.list.d/pgdg.list'**

**Add the PostgreSQL signing key.**

**$ wget -q https://www.postgresql.org/media/keys/ACCC4CF8.asc -O - | sudo apt-key add -**

**Install PostgreSQL.**

**$ sudo apt install postgresql postgresql-contrib -y**

**Enable the database server to start automatically on reboot.**

**$ sudo systemctl enable postgresql**

**Start the database server.**

**$ sudo systemctl start postgresql**

**Change the default PostgreSQL password.**

**$ sudo passwd postgres**

**Switch to the postgres user.**

**$ su - postgres**

**Create a user named sonar.**

**$ createuser sonar**

**Log in to PostgreSQL.**

**$ psql**

**Set a password for the sonar user. Use a strong password in place of my\_strong\_password.**

**ALTER USER sonar WITH ENCRYPTED password 'my\_strong\_password';**

**Create a sonarqube database and set the owner to sonar.**

**CREATE DATABASE sonarqube OWNER sonar;**

**Grant all the privileges on the sonarqube database to the sonar user.**

**GRANT ALL PRIVILEGES ON DATABASE sonarqube to sonar;**

**Exit PostgreSQL.**

**\q**

**Return to your non-root sudo user account.**

**$ exit**

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**3. Download and Install SonarQube**

**Install the zip utility, which is needed to unzip the SonarQube files.**

**$ sudo apt-get install zip -y**

**Locate the latest download URL from the SonarQube official download page.**

**Download the SonarQube distribution files.**

**$ sudo wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-9.6.1.59531.zip**

**Unzip the downloaded file.**

**sudo unzip sonarqube-9.6.1.59531.zip**

**Move the unzipped files to /opt/sonarqube directory**

**sudo mv sonarqube-9.6.1.59531 sonarqube**

**sudo mv sonarqube /opt/**

**4. Add SonarQube Group and User**

**Create a dedicated user and group for SonarQube, which can not run as the root user.**

**Create a sonar group.**

**$ sudo groupadd sonar**

**Create a sonar user and set /opt/sonarqube as the home directory.**

**$ sudo useradd -d /opt/sonarqube -g sonar sonar**

**Grant the sonar user access to the /opt/sonarqube directory.**

**$ sudo chown sonar:sonar /opt/sonarqube -R**

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**5. Configure SonarQube**

**Edit the SonarQube configuration file.**

**$ sudo nano /opt/sonarqube/conf/sonar.properties**

**Find the following lines:**

**#sonar.jdbc.username=**

**#sonar.jdbc.password=**

**Uncomment the lines, and add the database user and password you created in Step 2.**

**sonar.jdbc.username=sonar**

**sonar.jdbc.password=my\_strong\_password**

**Below those two lines, add the sonar.jdbc.url.**

**sonar.jdbc.url=jdbc:postgresql://localhost:5432/sonarqube**

**Save and exit the file.**

**Edit the sonar script file.**

**$ sudo nano /opt/sonarqube/bin/linux-x86-64/sonar.sh**

**About 50 lines down, locate this line:**

**#RUN\_AS\_USER=**

**Uncomment the line and change it to:**

**Save and exit the file.**

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**6. Setup Systemd service**

**Create a systemd service file to start SonarQube at system boot.**

**$ sudo nano /etc/systemd/system/sonar.service**

**Paste the following lines to the file.**

**[Unit]**

**Description=SonarQube service**

**After=syslog.target network.target**

**[Service]**

**Type=forking**

**ExecStart=/opt/sonarqube/bin/linux-x86-64/sonar.sh start**

**ExecStop=/opt/sonarqube/bin/linux-x86-64/sonar.sh stop**

**User=sonar**

**Group=sonar**

**Restart=always**

**LimitNOFILE=65536**

**LimitNPROC=4096**

**[Install]**

**WantedBy=multi-user.target**

**Save and exit the file.**

**Enable the SonarQube service to run at system startup.**

**$ sudo systemctl enable sonar**

**Start the SonarQube service.**

**$ sudo systemctl start sonar**

**Check the service status.**

**$ sudo systemctl status sonar**

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**7. Modify Kernel System Limits**

**SonarQube uses Elasticsearch to store its indices in an MMap FS directory. It requires some changes to the system defaults.**

**Edit the sysctl configuration file.**

**$ sudo nano /etc/sysctl.conf**

**Add the following lines.**

**vm.max\_map\_count=262144**

**fs.file-max=65536**

**ulimit -n 65536**

**ulimit -u 4096**

**Save and exit the file.**

**Reboot the system to apply the changes.**

**$ sudo reboot**

**$ sudo systemctl stop ufw**

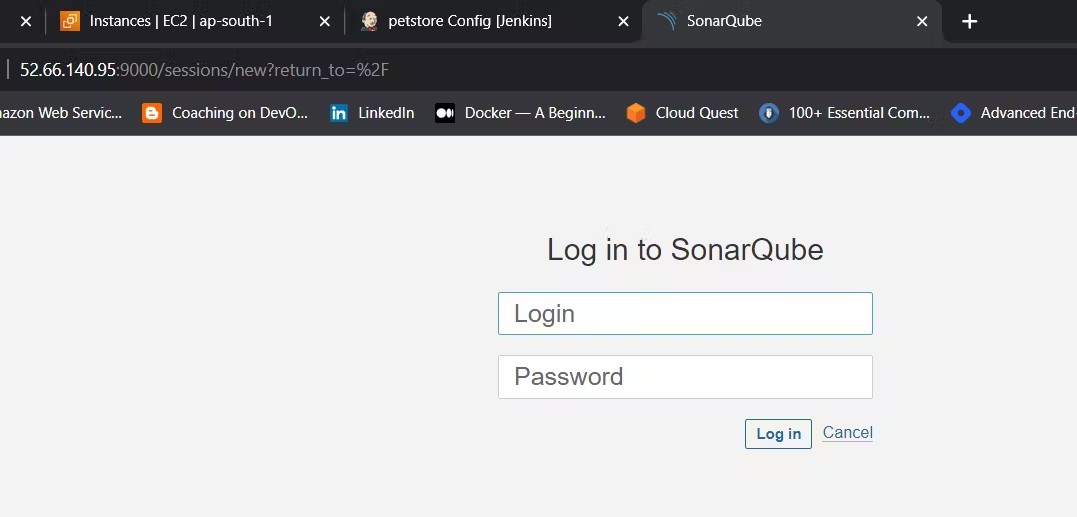
**---------------------------------------------------------------------------------------**

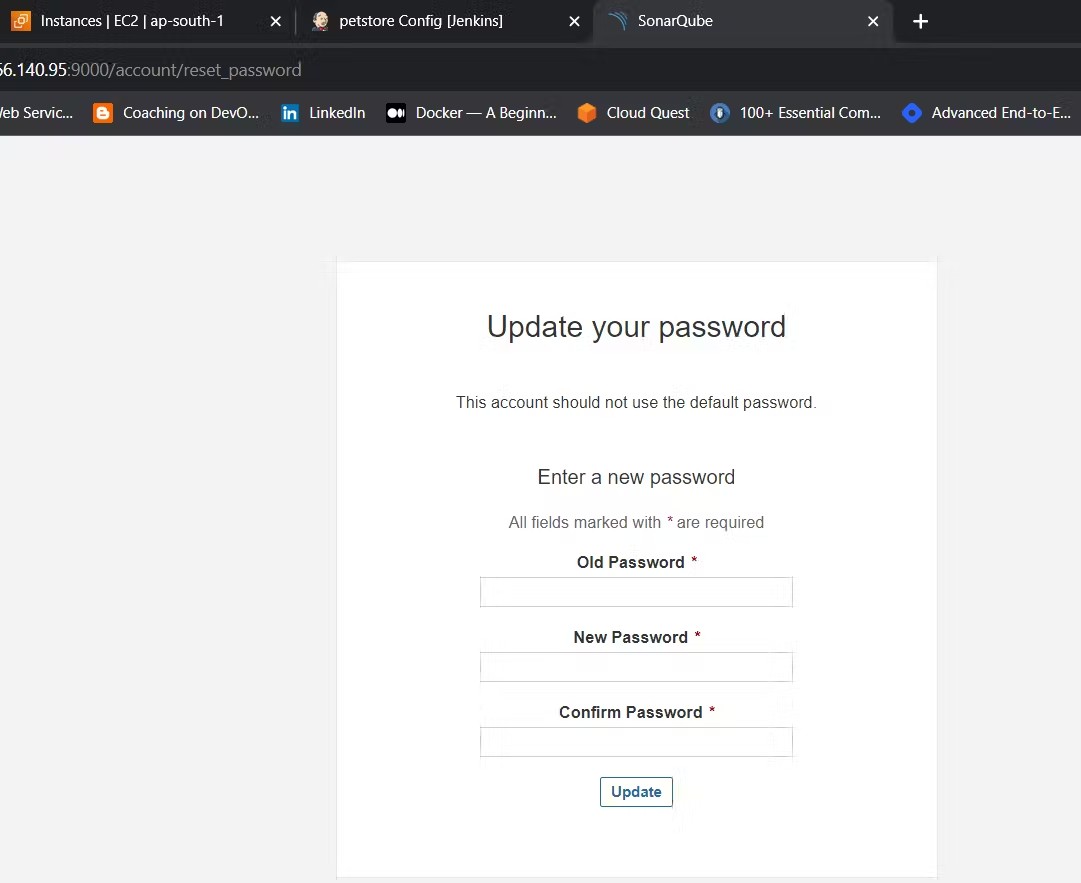
**8. Access SonarQube Web Interface**

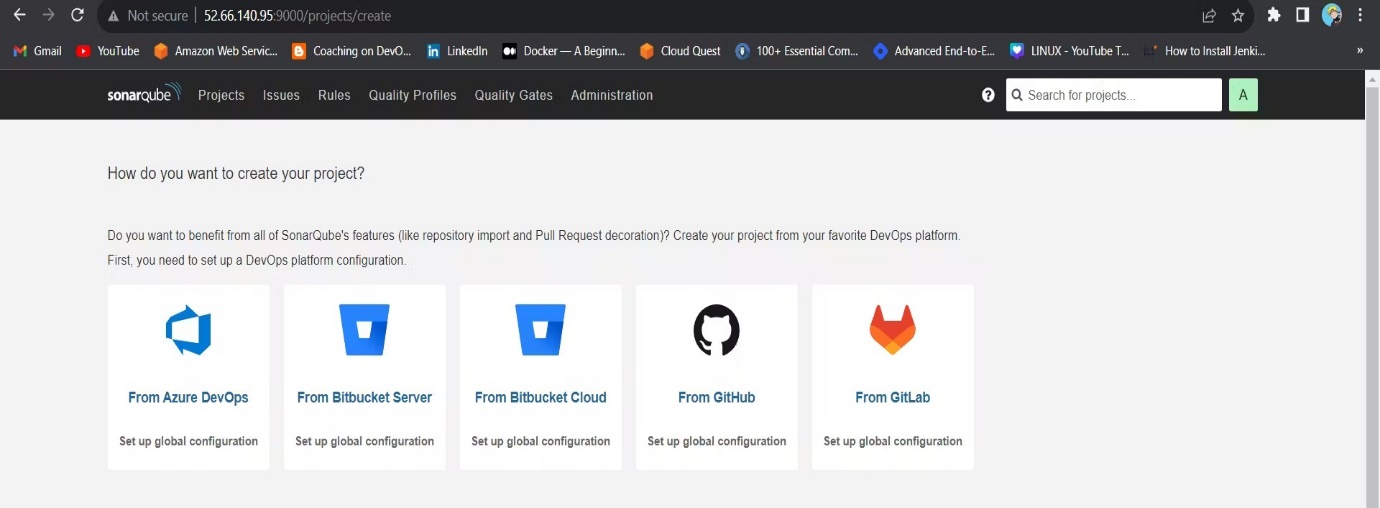
**Access SonarQube in a web browser at your server's IP address on port 9000. For example:**

**http://IP:9000**

**Log in with username admin and password admin. SonarQube will prompt you to change your password.**







IN JENKINS SERVER--🡪 INSTALL PLUGINS LIKE SONAR QUBE SCANNER AND SSH2 EASY

AND ALSO CONFIGURE THE SONAR QUBE SCANNER

