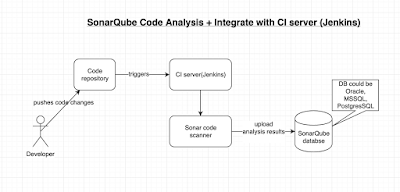
**Install Sonarqube on Ubuntu - How to install SonarQube on Ubuntu 16.0.4 - How to setup Sonar on Ubuntu?**

Please find steps for installing SonarQube on Ubuntu EC2. Make sure port 9000 is opened in security group(firewall rule).

SonarQube is java based tool along with back end - back end can be MySQL, Oracle or PostgreSQL. We will use Postgres for set up on Ubuntu.

[](https://1.bp.blogspot.com/-RSwlxgdvxQ0/XZFR8hOsA_I/AAAAAAAABPc/H5jk3U-4tkke9gTJy99jmzZYAGgv2cLcACLcBGAsYHQ/s1600/Screen%2BShot%2B2019-09-29%2Bat%2B7.52.29%2BPM.png)

Let us start with java install (skip java install if you already have it installed)

**1. Java steps**

sudo apt-get update  
sudo apt-get install default-jdk -y  
  
**Verify Java Version**

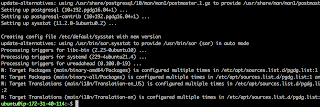
java -version

openjdk version "1.8.0\_191"  
OpenJDK Runtime Environment (build 1.8.0\_191-8u191-b12-2ubuntu0.16.04.1-b12)  
OpenJDK 64-Bit Server VM (build 25.191-b12, mixed mode)

**2. Postgres Installation**

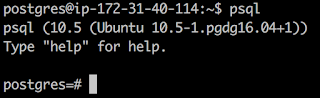
1. sudo sh -c 'echo "deb <http://apt.postgresql.org/pub/repos/apt/> `lsb\_release -cs`-pgdg main" >> /etc/apt/sources.list.d/pgdg.list'

[](https://2.bp.blogspot.com/-reyBs7nWmTU/W53UHfXDjtI/AAAAAAAAAaI/ggauiY4yAvolhAxtnp5N-YBPZsw6EOJBwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B10.52.40%2BPM.png)

   
2. sudo wget -q <https://www.postgresql.org/media/keys/ACCC4CF8.asc> -O - | sudo apt-key add -  
[](https://3.bp.blogspot.com/--dt6QOobsoI/W53UHafpNaI/AAAAAAAAAaM/VcWMrVAOb3cOVmRKvAfGRDPUTXEzdwpqACLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B10.53.09%2BPM.png)  
  
  
3. sudo apt-get -y install postgresql postgresql-contrib  
[](https://1.bp.blogspot.com/-gIut8g4UBIw/W53UHsNvHHI/AAAAAAAAAaQ/0t8BWRqI_TcnjdU3xLfSH79YcQR_pjsgwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B10.54.10%2BPM.png)  
  
  
  
  
  
  
  
4. sudo systemctl start postgresql  
5. sudo systemctl enable postgresql

**Login as postgres user now**  
7. sudo su - postgres  
  
8. Now create a user below

createuser sonar  
  
**9. Switch to sql shell by entering**  
psql

[](https://4.bp.blogspot.com/-k2ck3bikoTY/W53VeG8kuwI/AAAAAAAAAa4/zj8MzQxgEe0ccCubLibbuORbTWnXNoeSwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.00.38%2BPM.png)

**Execute the below three lines (one by one)**  
  
ALTER USER sonar WITH ENCRYPTED password 'password';  
CREATE DATABASE sonar OWNER sonar;

\q

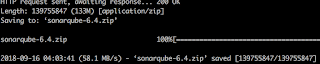
[](https://2.bp.blogspot.com/-52tMNHgfuD0/W53Vu1GmDBI/AAAAAAAAAbA/TUClUMZLEE8djEpstjkV2Op8g7TXvJpRgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.01.43%2BPM.png)

type exit to come out of postgres user.

[](https://3.bp.blogspot.com/-_Y3_tZQ-ACs/W53V72gTtKI/AAAAAAAAAbE/gR65bNcoalIXyzKA_2P7gJiH8YI63uinwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.02.38%2BPM.png)

**3. Now install SonarQube Web App**

sudo wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-6.4.zip

[](https://1.bp.blogspot.com/-nwo6XGGDAPY/W53WNqYJUwI/AAAAAAAAAbQ/dfR8frK-jFEp8-OxjA9FeLdEG-0MJDsPgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.03.44%2BPM.png)

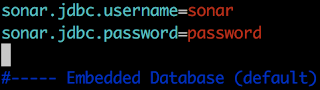
sudo apt-get -y install unzip  
sudo unzip sonarqube-6.4.zip -d /opt

[](https://2.bp.blogspot.com/-u1ih14Rc7UQ/W53WaqAOg0I/AAAAAAAAAbU/MD8ts1OtlWQAhOULv3s2SCV1UEHG0Vx0wCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.04.38%2BPM.png)

sudo mv /opt/sonarqube-6.4 /opt/sonarqube -v

[](https://1.bp.blogspot.com/-p7NEQuXV_ck/W53Wn-G4pWI/AAAAAAAAAbc/o3n81nD-adcQEqrFnDwJUv3l5sjKtMkVwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.05.28%2BPM.png)

**Modify sonar.properties file**  
sudo vi /opt/sonarqube/conf/sonar.properties  
uncomment the below lines by removing # and add values highlighted yellow  
sonar.jdbc.username=sonar  
sonar.jdbc.password=password

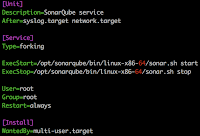
[](https://1.bp.blogspot.com/-1C3EYljJscc/W53W3J6jssI/AAAAAAAAAbk/wnL67BIe2fkn546B_o5C9TwmAyLot3_aQCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.06.24%2BPM.png)

Next, uncomment the below line, removing #  
sonar.jdbc.url=jdbc:postgresql://localhost/sonar

[](https://1.bp.blogspot.com/-3NF2yoxil0k/W53XLT3Kf9I/AAAAAAAAAbw/feUzb2HSF0QMDCCphjM6-29dEZwbvjJEQCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.07.49%2BPM.png)

Press escape, and enter :wq! to come out of the above screen.

**Create Sonar as a service**  
  
Execute the below command:  
sudo vi /etc/systemd/system/sonar.service

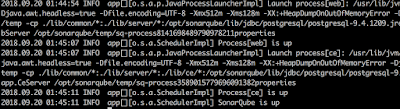
[](https://2.bp.blogspot.com/-LWRno1Q6flQ/W53XlR201eI/AAAAAAAAAb4/Ry2GQ-w_Nj0-07R_xt2OsBQUsFaUT9_GgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.09.20%2BPM.png)

add the below code in green color:  
[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=root  
Group=root  
Restart=always  
  
[Install]  
WantedBy=multi-user.target

sudo systemctl enable sonar  
sudo systemctl start sonar  
sudo systemctl status sonar

[](https://3.bp.blogspot.com/-ZOSIqPpqRD4/W53Xz4ZQCzI/AAAAAAAAAb8/nAEAqTXIkiIIYQHr0IZ4oL7YbCemgz9HACLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.10.35%2BPM.png)

type q now to come out of this mode.  
Now execute the below command to see if Sonarqube is up and running. This may take a few minutes.  
  
tail -f /opt/sonarqube/logs/sonar.log  
  
Make sure you get the below message that says sonarqube is up..

[](https://1.bp.blogspot.com/-fw6zhjOq4zE/W6L74YVT_zI/AAAAAAAAAc8/ohJ3BuzGIkwOrzoqb-Ilb8_XslnhtsdxgCLcBGAs/s1600/Screen%2BShot%2B2018-09-19%2Bat%2B9.45.32%2BPM.png)

Now access sonarQube UI by going to browser and enter public dns name with port 9000

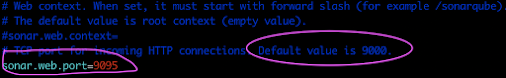
Now to go to browser --> [http://your\_SonarQube\_publicdns\_name:9000/](http://publicdns_name:9000/)

Click [here](https://www.coachdevops.com/2020/04/how-to-integrate-sonarqube-with-jenkins.html) to learn how to integrate SonarQube with Jenkins.  
  
Please watch above steps in myYouTube video as well:

<https://www.youtube.com/watch?v=QowFogfVqdw&list=PLJwvtUqYDmA74INji3X0CDg457CYynHHk&index=3>

**How to change default port number for SonarQube? | Change default port number in Sonarqube | SonarQube default port number change**

The default port number for SonarQube is 9000. It can be changed though by modifying the below properties file.  
  
$sonar\_install-dir/conf/sonar.properties

[](https://1.bp.blogspot.com/-YsMFl1q-eXU/X01tAWFtH5I/AAAAAAAAC9I/58yAcDGFsDYSpbjLfmY5GJ811kSP6mF_ACLcBGAsYHQ/s1160/sonar%2Bport.png)

Let's say you want to change from default port 9000 to 9095. you need to make changes in the above file and restart the service.

once you modify, you need to restart SonarQube service to take effect.

sudo systemctl stop sonar

sudo systemctl start sonar

sudo systemctl status sonar

Now you can access SonarQube in the new port 9095.

Note: Make sure you open the new port no in security firewall rules.  
Please watch how to do this YouTube as well:

<https://www.youtube.com/watch?v=On63plPHSLw&list=PLJwvtUqYDmA74INji3X0CDg457CYynHHk&index=4>

### Install SonarQube using Docker | Install SonarQube using Docker on Ubuntu 18.0.4 | Install SonarQube using Docker-Compose

**How to setup Sonarqube using Docker and Docker compose?**

SonarQube is static code analyis tool. It can be installed quickly using Docker with less manual steps.

**Pre-requistes:**

* Ubuntu EC2 up and running with at least t2.small
* Port 9000 is opened in security firewall rule

**Install Docker**

sudo apt-get install docker -y

**Install Docker-Compose**

sudo apt-get install docker-compose -y

**What is Docker Compose?**

Compose is a tool for defining and running multi-container Docker applications. With Compose, you use a YAML file to configure your application’s services. Then, with a single command, you create and start all the services from your configuration.

The purpose of **docker**-**compose** is to function as **docker** cli but to issue multiple commands much more quickly. To make use of **docker**-**compose**, you **need** to encode the commands you were running before into a **docker**-**compose**.**yml** file

Run **docker**-**compose** up and **Compose** starts and runs your entire app.

**Create docker-compose.yml**

this yml has all configuration for installing both SonarQube and Postgresql:

sudo vi docker-compose.yml

(Copy the below code high-lighted in yellow color)

*version: "3"*

*services:*

*sonarqube:*

*image: sonarqube:6.7.1*

*container\_name: sonarqube*

*restart: unless-stopped*

*environment:*

*- SONARQUBE\_JDBC\_USERNAME=sonar*

*- SONARQUBE\_JDBC\_PASSWORD=password123*

*- SONARQUBE\_JDBC\_URL=jdbc:postgresql://db:5432/sonarqube*

*ports:*

*- "9000:9000"*

*- "9092:9092"*

*volumes:*

*- sonarqube\_conf:/opt/sonarqube/conf*

*- sonarqube\_data:/opt/sonarqube/data*

*- sonarqube\_extensions:/opt/sonarqube/extensions*

*- sonarqube\_bundled-plugins:/opt/sonarqube/lib/bundled-plugins*

*db:*

*image: postgres:10.1*

*container\_name: db*

*restart: unless-stopped*

*environment:*

*- POSTGRES\_USER=sonar*

*- POSTGRES\_PASSWORD=password123*

*- POSTGRES\_DB=sonarqube*

*volumes:*

*- sonarqube\_db:/var/lib/postgresql10*

*- postgresql\_data:/var/lib/postgresql10/data*

*volumes:*

*postgresql\_data:*

*sonarqube\_bundled-plugins:*

*sonarqube\_conf:*

*sonarqube\_data:*

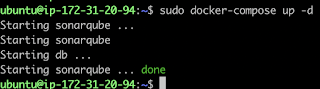
*sonarqube\_db:*

*sonarqube\_extensions:*

Save the file by entering :wq!

**Now execute the compose file using Docker compose command:**

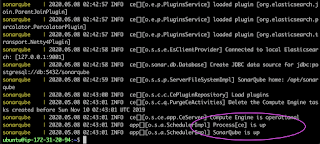
sudo docker-compose up -d

[](https://1.bp.blogspot.com/-F7imyuOEScM/XrTHeJTZU2I/AAAAAAAACJg/EEkOIgH6XEotXZKtVXGm0K9pVsrgBykJgCK4BGAsYHg/docker%2Bcompose.png)

If you are getting any errors like this, make sure you exit below commands to adding Docker group to current user.  
[](https://1.bp.blogspot.com/-K3f3zyw0C1Y/XrXqTGvoHBI/AAAAAAAACKg/jUDiNXeHa-sqwge_CutP1I_RAdTlX55DwCK4BGAsYHg/docker%2Berror.png)  
sudo usermod -aG docker $USER

**Make sure SonarQube is up and running**

sudo docker-compose logs --follow

[](https://1.bp.blogspot.com/-75-rDQQrZCY/XrTIM8vkiKI/AAAAAAAACJ0/m1wiySX6ZsY790uPWcrkMgCssrg5wniLgCK4BGAsYHg/sonar%2Bup.png)

Once you see the message, that's it. SonarQube is been installed successfully. press control C and enter.

Now access sonarQube UI by going to browser and enter public dns name with port 9000

Now to go to browser --> [http://your\_SonarQube\_publicdns\_name:9000/](http://publicdns_name:9000/)

Watch here on YouTube channel:

https://www.youtube.com/watch?v=TrlU2kw1ms4&list=PLJwvtUqYDmA74INji3X0CDg457CYynHHk&index=5

**Please follow steps for integrating SonarQube with Jenkins**<https://www.coachdevops.com/2020/04/how-to-integrate-sonarqube-with-jenkins.html>

### How to setup Quality gates in SonarQube | Add SonarQube quality gates to your Jenkins build pipeline

SonarQube is one of the popular static code analysis tools. SonarQube is open-source, Java based tool It also needs database as well - Database can be MySQL, Oracle or PostgreSQL.  We will use PostgreSQL as it is open source as well.

SonarQube allows you to create quality gate to force the build to fail if some conditions are not met during code analysis.

**Please see how to create quality gates in SonarQube:**

**What we will learn in this lab?**

1. Learn how to setup a quality gate in SonarQube

2. How to force the build to fail in Jenkins when quality gate conditions are met?

#### Quality gates

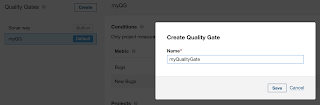
In SonarQube a **quality gate** is a set of conditions that must be met in order for a project to be marked as *passed*.

Let us learn how to create quality gates in SonarQube and integrate with Jenkins during code scan.

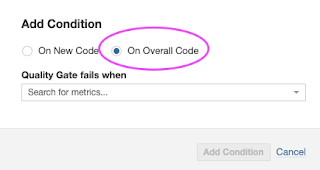
**Pre-requistes**

* Jenkins is up and running
* SonarQube is up and running
* [Jenkins and Sonarqube already integrated](https://www.coachdevops.com/2020/04/how-to-integrate-sonarqube-with-jenkins.html)

Login to SonarQube, Click on Quality gate, enter some name

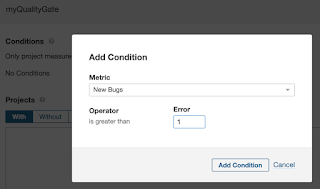
[](https://1.bp.blogspot.com/-jFm8yJ77W6k/YAH7dRUP38I/AAAAAAAADNY/YE67ug2BmxkpNcR_XZFIxVV05G7_oby6gCLcBGAsYHQ/s1802/QC1.png)

Once you create the quality gate. Click on Add condition.

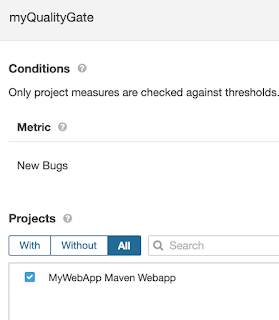
[](https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEghooDYi9dwOe_r4q5ZBwkPstMLLO5Sf9bdqi9nCjFW8iuDWqsgpZeGzdxZiaAm_5jyqKgWjWkxdpsjlzw2Xr-Fex6hHRMUFPYPcBc5-jm64RAjbxUbTyuOg53-iV9XTJZ-xYEBAAZbBKaADE6P5qPUGjs7T6bKw_oZ_dgHh2-6dtWL13qexp2uKXD-/s434/Screen%20Shot%202022-11-06%20at%2011.04.45%20AM.png)

Select new bugs from the drop down and enter 1 as error

[](https://1.bp.blogspot.com/-l_oKmna1ivM/YAH72SFZPaI/AAAAAAAADNg/-8Z7FxRmAFMOCKQDrH2B2lKnD8683YAywCLcBGAsYHQ/s2040/QC2.png)

[](https://1.bp.blogspot.com/-FQgUkzNA19w/YAH8ZoamzeI/AAAAAAAADNs/FhB2RGVv0XEMJoY_H51_XlC7GTpN07VZQCLcBGAsYHQ/s1200/QC4.png)

 Choose your Web App, by clicking on App. and select My WebApp

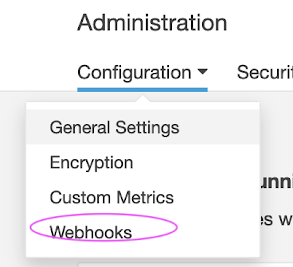
[](https://1.bp.blogspot.com/-7rCyD3zR1MM/YAH8ZtEbTuI/AAAAAAAADNw/TC3dCqQUgGExlynI7GuDMvye2m4BgkXKwCLcBGAsYHQ/s752/QC3.png)

**Setup a Default Gate**

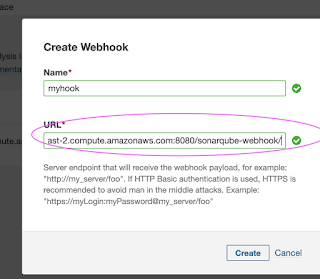
[](https://1.bp.blogspot.com/-0zbX1bhR13M/YAH9ADDzeQI/AAAAAAAADN8/ha0TfRH1b3A7zcEzfHVpvRT5QSvez7g7ACLcBGAsYHQ/s1846/set%2Bas%2Bdefault.png)

**Configure webhooks in SonarQube**

Click on Administration --> Configuration --> Webhooks

[](https://1.bp.blogspot.com/-dGlpZI8vEwg/YAH-ZFvHqsI/AAAAAAAADOQ/VaLRa6GUwtYW1FEK7XsEFXT13rfExYLiQCLcBGAsYHQ/s402/QG5.png)

Enter Jenkins URL

[](https://1.bp.blogspot.com/-P57WJiciK7k/YAH-99eUKnI/AAAAAAAADOc/1m5U3fnRUuEaCzUKOk9v8xmO89vg7pWTACLcBGAsYHQ/s956/QC1.png)

**Now to go Jenkins, create a pipeline job:**

node {  
  
    def mvnHome = tool 'Maven3'  
    stage ("checkout")  {  
     //enter your repo info  
    }  
  
     stage ('Build')  {  
        sh "${mvnHome}/bin/mvn -f MyWebApp/pom.xml clean install"  
   }  
     stage ('Code Quality scan')  {  
       withSonarQubeEnv('SonarQube') {  
        sh "${mvnHome}/bin/mvn -f MyWebApp/pom.xml sonar:sonar"  
        }  
   }  
     
     stage("Quality Gate") {  
        timeout(time: 1, unit: 'HOURS') {  
            waitForQualityGate abortPipeline: true  
        }  
  }         
}

Now you should see the Jenkins console output like this:

[](https://1.bp.blogspot.com/-ADRd7du5YRs/YAIAtywMtpI/AAAAAAAADOo/6NWV8w3N4hY0t76pPCEdhodnOXlUcMysQCLcBGAsYHQ/s1274/QC7.png)

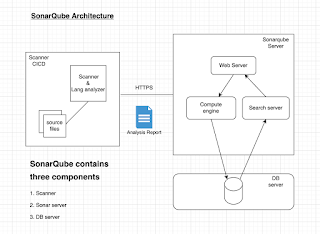
### Install Sonarqube 8 on Ubuntu | How to setup SonarQube 8 on Ubuntu 18.0.4?

SonarQube is one of the popular static code analysis tools. SonarQube enables developers to write cleaner, safer code. SonarQube is open-source, Java based tool. SonarQube uses database for storing analysis results. Database can be MS SQL, Oracle or PostgreSQL.  We will use PostgreSQL as it is open source as well.

Please find steps for installing SonarQube on Ubuntu 18.0.4 in AWS Cloud. Make sure port 9000 is opened in firewall rules.

**Pre-requistes:**  
Instance should have at least 2 GB RAM. For AWS or Azure cloud, instance should be atleast 2 GB RAM

**SonarQube Architecture**

[](https://1.bp.blogspot.com/-DvyRCckg204/YAoD7TxGQhI/AAAAAAAADPI/zvsGTue-VsgQ9F9f_KrllazV1umZDgjpgCLcBGAsYHQ/s1432/SQ%2Barch.png)

SonarQube have three components namely

1. Scanner - This contains scanner and analyser to scan application code.

2. SonarQube server - contains Webserver(UI) and search server

3. DB server - used for storing the analysis reports.

Let us start with java install (skip java install if you already have it installed)

### Install Open JDK 11

sudo apt-get update && sudo apt-get install default-jdk -y

### Postgres DB Setup

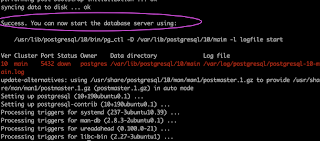
sudo sh -c 'echo "deb <http://apt.postgresql.org/pub/repos/apt/> `lsb\_release -cs`-pgdg main" >> /etc/apt/sources.list.d/pgdg.list'

[](https://2.bp.blogspot.com/-reyBs7nWmTU/W53UHfXDjtI/AAAAAAAAAaI/ggauiY4yAvolhAxtnp5N-YBPZsw6EOJBwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B10.52.40%2BPM.png)

sudo wget -q <https://www.postgresql.org/media/keys/ACCC4CF8.asc> -O - | sudo apt-key add -  
[](https://3.bp.blogspot.com/--dt6QOobsoI/W53UHafpNaI/AAAAAAAAAaM/VcWMrVAOb3cOVmRKvAfGRDPUTXEzdwpqACLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B10.53.09%2BPM.png)

sudo apt-get -y install postgresql postgresql-contrib

Ignore the message in red color below:

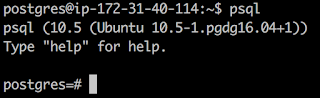
[](https://1.bp.blogspot.com/-5o3JxoNhy9M/XrGcmQhinWI/AAAAAAAACIY/cx1_n4P0I9Q-33YSwjQg37UrK2NzlWIRACLcBGAsYHQ/s1600/success.png)

sudo systemctl start postgresql  
sudo systemctl enable postgresql

**Login as postgres user**  
sudo su - postgres

**Now create a user below by executing below command**

createuser sonar  
  
**9. Switch to sql shell by entering**  
psql

[](https://4.bp.blogspot.com/-k2ck3bikoTY/W53VeG8kuwI/AAAAAAAAAa4/zj8MzQxgEe0ccCubLibbuORbTWnXNoeSwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.00.38%2BPM.png)

**Execute the below three lines (one by one)**

ALTER USER sonar WITH ENCRYPTED password 'password';

CREATE DATABASE sonarqube OWNER sonar;

 GRANT ALL PRIVILEGES ON DATABASE sonarqube to sonar;

**Now to come out of Postgres by below command and press enter**

\q

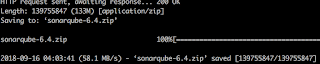
[](https://2.bp.blogspot.com/-52tMNHgfuD0/W53Vu1GmDBI/AAAAAAAAAbA/TUClUMZLEE8djEpstjkV2Op8g7TXvJpRgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.01.43%2BPM.png)

and then type exit to come out of postgres user.

[](https://3.bp.blogspot.com/-_Y3_tZQ-ACs/W53V72gTtKI/AAAAAAAAAbE/gR65bNcoalIXyzKA_2P7gJiH8YI63uinwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.02.38%2BPM.png)

**3. Download SonarQube and Install**

sudo wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-8.6.0.39681.zip

[](https://1.bp.blogspot.com/-nwo6XGGDAPY/W53WNqYJUwI/AAAAAAAAAbQ/dfR8frK-jFEp8-OxjA9FeLdEG-0MJDsPgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.03.44%2BPM.png)

sudo apt-get -y install unzip

sudo unzip sonarqube\*.zip -d /opt

[](https://2.bp.blogspot.com/-u1ih14Rc7UQ/W53WaqAOg0I/AAAAAAAAAbU/MD8ts1OtlWQAhOULv3s2SCV1UEHG0Vx0wCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.04.38%2BPM.png)

sudo mv /opt/sonarqube-8.6.0.39681 /opt/sonarqube -v

[](https://1.bp.blogspot.com/-p7NEQuXV_ck/W53Wn-G4pWI/AAAAAAAAAbc/o3n81nD-adcQEqrFnDwJUv3l5sjKtMkVwCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.05.28%2BPM.png)

**Create Group and User:**

sudo groupadd sonarGroup

**Now add the user with directory access**

sudo useradd -c "user to run SonarQube" -d /opt/sonarqube -g sonarGroup sonar

sudo chown sonar:sonarGroup /opt/sonarqube -R

**Modify sonar.properties file**  
sudo vi /opt/sonarqube/conf/sonar.properties  
uncomment the below lines by removing # and add values highlighted yellow  
sonar.jdbc.username=sonar  
sonar.jdbc.password=password

[](https://1.bp.blogspot.com/-1C3EYljJscc/W53W3J6jssI/AAAAAAAAAbk/wnL67BIe2fkn546B_o5C9TwmAyLot3_aQCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.06.24%2BPM.png)

Next, add the below line:  
sonar.jdbc.url=jdbc:postgresql://localhost/sonarqube

[](https://1.bp.blogspot.com/-5quyxLgWAb0/XqWw9NREuqI/AAAAAAAACAI/ZqmkaTixd4YI4LwrEhv3qCxtwl6x5HvjwCLcBGAsYHQ/s1600/sq.png)

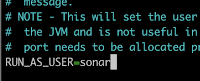
Now press escape button, and enter :wq! to come out of the above screen.

**Edit the sonar script file and set RUN\_AS\_USER**

sudo vi /opt/sonarqube/bin/linux-x86-64/sonar.sh

Add enable the below line

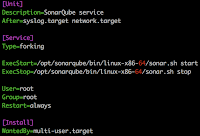
RUN\_AS\_USER=sonar

[](https://1.bp.blogspot.com/-sIM2KKjb7u8/XpKa-Xq9p7I/AAAAAAAABzs/Oq9Vu-EGwK8C-eqy0Gmsl5sV4FPG4oELwCLcBGAsYHQ/s1600/run%2Bas%2Bsonar.png)

**Setup SonarQube as a service(this will enable to start automatically when you restart the server)**

Execute the below command:

sudo vi /etc/systemd/system/sonar.service

[](https://2.bp.blogspot.com/-LWRno1Q6flQ/W53XlR201eI/AAAAAAAAAb4/Ry2GQ-w_Nj0-07R_xt2OsBQUsFaUT9_GgCLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.09.20%2BPM.png)

add the below code in green color:  
[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  
LimitNOFILE=131072  
LimitNPROC=8192  
User=sonar  
Group=sonarGroup  
Restart=always  
  
[Install]  
WantedBy=multi-user.target

Save the file by entering :wq!

**Kernel System changes**

we must make a few modifications to a couple of kernel system limits files for sonarqube to work.

sudo vi /etc/sysctl.conf

Add the following lines to the bottom of that file:

vm.max\_map\_count=262144  
fs.file-max=65536

Next, we're going to edit limits.conf. Open that file with the command:

sudo vi /etc/security/limits.conf

At the end of this file, add the following:

sonar   -   nofile   65536  
sonar   -   nproc    4096

**Reload system level changes without server boot**

sudo sysctl -p

**Start SonarQube Now**

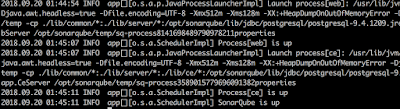
sudo systemctl start sonar

sudo systemctl enable sonar  
  
sudo systemctl status sonar

Wait for SonarQube to come up after you executed above commands, It will take a few mins to come up.

[](https://3.bp.blogspot.com/-ZOSIqPpqRD4/W53Xz4ZQCzI/AAAAAAAAAb8/nAEAqTXIkiIIYQHr0IZ4oL7YbCemgz9HACLcBGAs/s1600/Screen%2BShot%2B2018-09-15%2Bat%2B11.10.35%2BPM.png)

type q now to come out of this mode.  
Now execute the below command to see if Sonarqube is up and running. This may take a few minutes.  
  
tail -f /opt/sonarqube/logs/sonar\*.log  
  
Make sure you get the below message that says sonarqube is up..

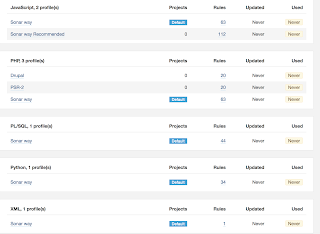
[](https://1.bp.blogspot.com/-fw6zhjOq4zE/W6L74YVT_zI/AAAAAAAAAc8/ohJ3BuzGIkwOrzoqb-Ilb8_XslnhtsdxgCLcBGAs/s1600/Screen%2BShot%2B2018-09-19%2Bat%2B9.45.32%2BPM.png)

Now access sonarQube UI by going to browser and enter public dns name with port 9000

Now to go to browser --> [http://your\_SonarQube\_publicdns\_name:9000/](http://publicdns_name:9000/)

**How to integrate SonarQube with Jenkins?**  
<https://www.coachdevops.com/2020/04/how-to-integrate-sonarqube-with-jenkins.html>

### How to scan sql code using sonar | How to perform code analysis on PL/SQL files in SonarQube? SQL plug-ins for SonarQube

If you would like to enable scanning for PL/SQL files in SonarQube, there are both commercial and open source plug-ins available. Lets see how to enable open source plug-in for SonarQube. Useful information is below:  
  
<https://github.com/felipebz/sonar-plsql>  
  
**Pre-requisites:**  
SonarQube is already set up and running.  
  
Steps:  
1. navigate to ${Sonar\_Home}/extensions/plugins folder where you installed SonarQube.  
${Sonar\_Home} could be /opt/sonarqube  
cd /opt/sonarqube/extensions/plugins  
2. Download the plsql opensource plug-in from the above websites by executing below command:  
sudo wget https://github.com/felipebz/sonar-plsql/releases/download/2.0.0/sonar-plsql-open-plugin-2.0.0.jar  
3. Stop the Sonarqube scanner.  
sudo systemctl stop sonar  
4. Start the Sonarqube scanner.  
 sudo systemctl start sonar  
5. Make sure Sonarqube is up and running  
[](https://2.bp.blogspot.com/-ioJYykA6ink/WoTqTNwuJVI/AAAAAAAAAJo/AOwGddyS2CUpLHR0Os0Yx709-MLvc1MYACLcBGAs/s1600/Screen%2BShot%2B2018-02-14%2Bat%2B7.59.48%2BPM.png)sudo systemctl status sonar  
  
once started, you should see below message  
sonar.service - SonarQube service  
Loaded: loaded (/etc/systemd/system/sonar.service; enabled; vendor preset: enabled)  
Active: active (running) since Thu 2018-02-15 01:36:23 UTC;  
6. If you don't see server is not starting, you might want to check the logs by executing:  
cat /opt/sonarqube/logs/web.log   
7. Now login to SonarQube, Navigate to Quality Profiles section, you should see PL/SQL rules added.

You can watch the above steps in my TouYube video as well: