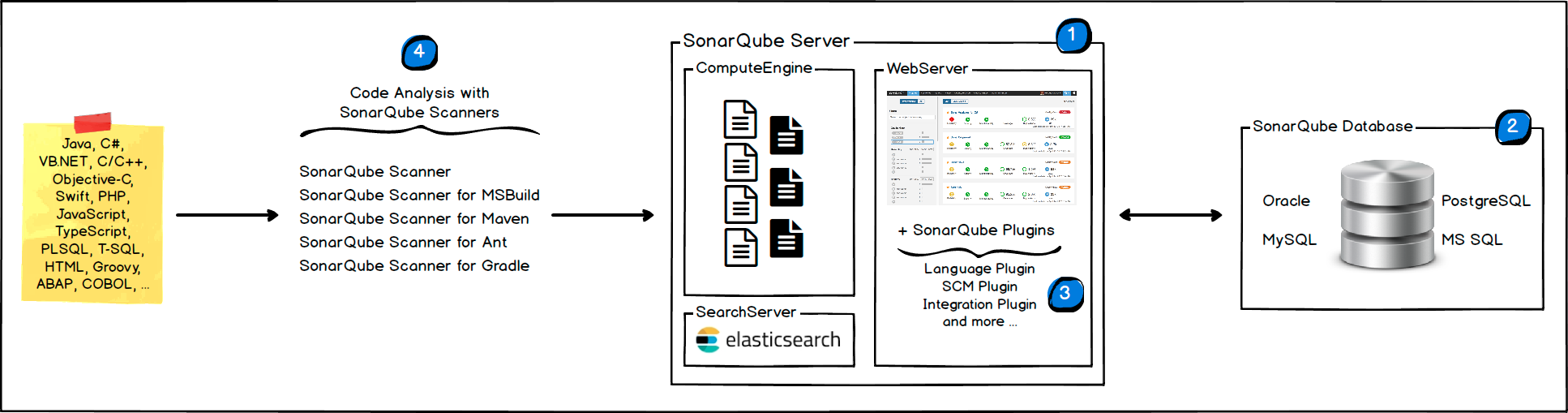
## **SonarQube**

## **Overview**

SonarQube is an automatic code review tool to detect bugs, vulnerabilities and code smells in your code. It can integrate with your existing workflow to enable continuous code inspection across your project branches and pull requests.

The SonarQube Platform is made of 4 components:

1. One SonarQube Server starting 3 main processes:
   * Web Server for developers, managers to browse quality snapshots and configure the SonarQube instance
   * Search Server based on Elasticsearch to back searches from the UI
   * Compute Engine Server in charge of processing code analysis reports and saving them in the SonarQube Database
2. One SonarQube Database to store:
   * the configuration of the SonarQube instance (security, plugins settings, etc.)
   * the quality snapshots of projects, views, etc.
3. Multiple SonarQube Plugins installed on the server, possibly including language, SCM, integration, authentication, and governance plugins
4. One or more SonarScanners running on your Build / Continuous Integration Servers to analyze projects

**SonarQube SetUp for Crowsoft**

**Installation**

Follow the below commands to install sonarqube on the given OS (ubuntu 16.04).

### **Step 1: Perform a system update**

Before installing any packages on the Ubuntu server instance, it is recommended to update the system. Log in using the sudo user and run the following commands to update the system.

sudo apt-get update

sudo apt-get -y upgrade

### **Step 2: Install JDK**

Add the Oracle Java repository on the server by running.

sudo add-apt-repository ppa:webupd8team/java

sudo apt-get update

Install Oracle JDK by typing:

sudo apt install oracle-java8-installer

You can now check the version of Java by typing:

java -version

### **Step 3: Install and configure PostgreSQL**

Install 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'

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

Install the PostgreSQL database server by running:

sudo apt-get -y install postgresql postgresql-contrib

Start PostgreSQL server and enable it to start automatically at boot time by running:

sudo systemctl start postgresql

sudo systemctl enable postgresql

Change the password for the default PostgreSQL user.

sudo passwd postgres

Switch to the postgres user.

su - postgres

Enter password for the user postgres (used password : csoftsonar)

Create a new user by typing:

createuser sonar

password for sonar used: sonarcsoft

Switch to the PostgreSQL shell.

psql

Set a password for the newly created user for SonarQube database.

ALTER USER sonar WITH ENCRYPTED password 'sonarcsoft';

Create a new database for PostgreSQL database by running:

CREATE DATABASE sonar OWNER sonar;

Exit from the psql shell:

\q

Switch back to the sudo user by running the exit command.

### **Step 4: Download and configure SonarQube**

Download the SonarQube installer files archive.

wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-7.7.zip

You can always look for the link to the latest version of the application on the SonarQube [download page](https://www.sonarqube.org/downloads/).

Install unzip by running:

apt-get -y install unzip

Unzip the archive using the following command.

sudo unzip sonarqube-7.7.zip -d /opt

Rename the directory:

sudo mv /opt/sonarqube-7.7 /opt/sonarqube

Open the SonarQube configuration file using your favorite text editor.

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

Find the following lines.

#sonar.jdbc.username=

#sonar.jdbc.password=

Uncomment and provide the PostgreSQL username and password of the database that we have created earlier. It should look like:

sonar.jdbc.username=sonar

sonar.jdbc.password= sonarcsoft

Next, find:

#sonar.jdbc.url=jdbc:postgresql://localhost/sonar

Uncomment the line, save the file and exit from the editor.

### **Step 5: Configure Systemd service**

SonarQube can be started directly using the startup script provided in the installer package. As a matter of convenience, you should setup a Systemd unit file for SonarQube.

nano /etc/systemd/system/sonar.service

Populate the file with:

[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

[Install]

WantedBy=multi-user.target

Start the application by running:

sudo systemctl start sonar

Enable the SonarQube service to automatically start at boot time.

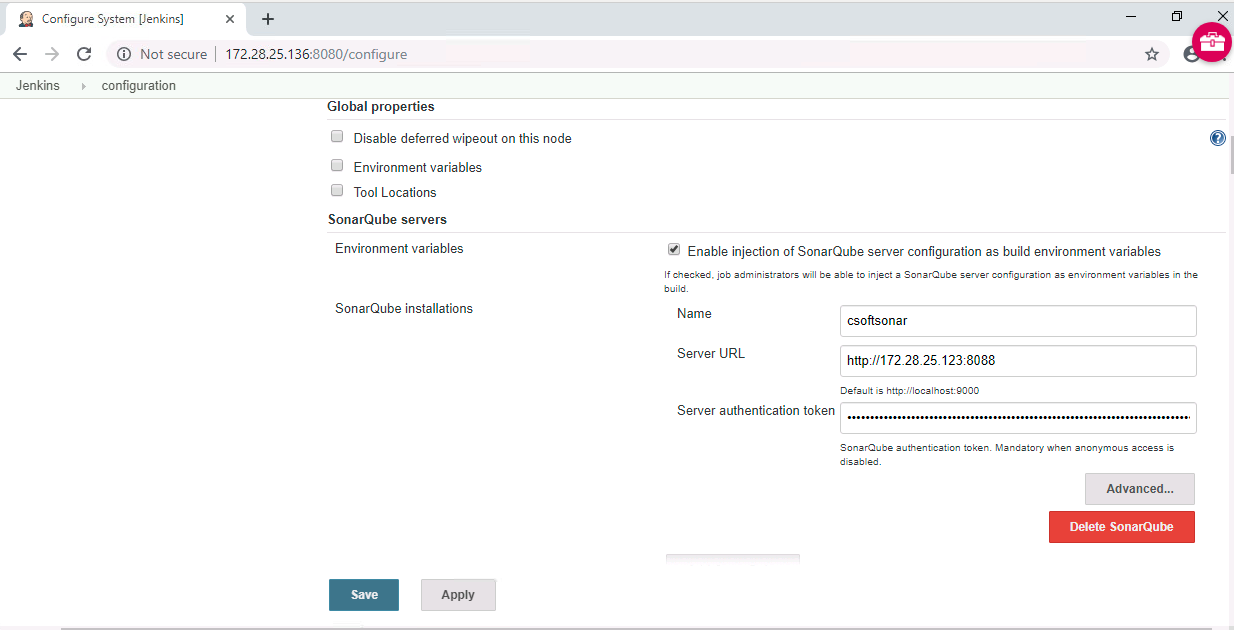
sudo systemctl enable sonar

To check if the service is running, run:

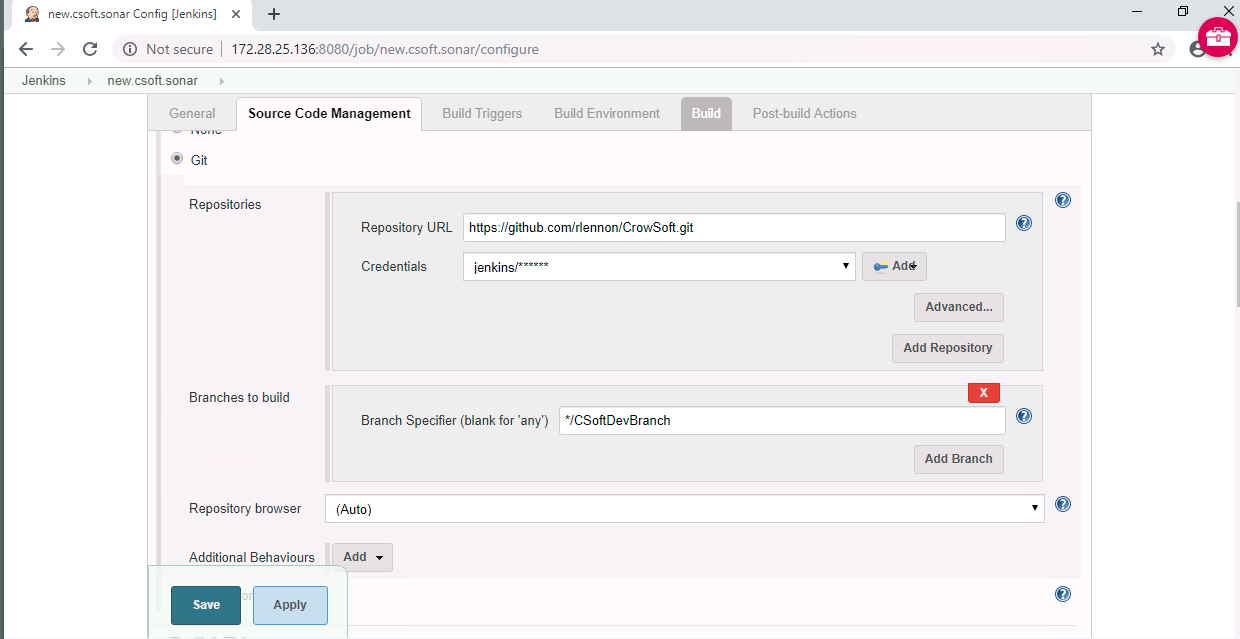
sudo systemctl status sonar

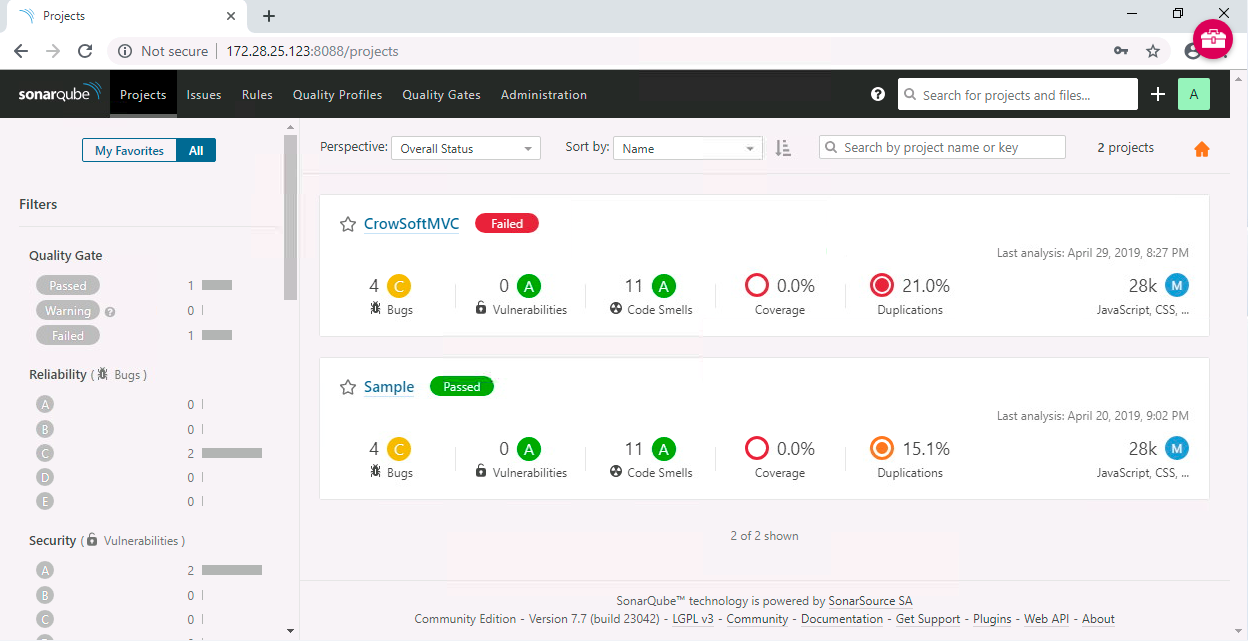
**SonarQube with Jenkins Integration**

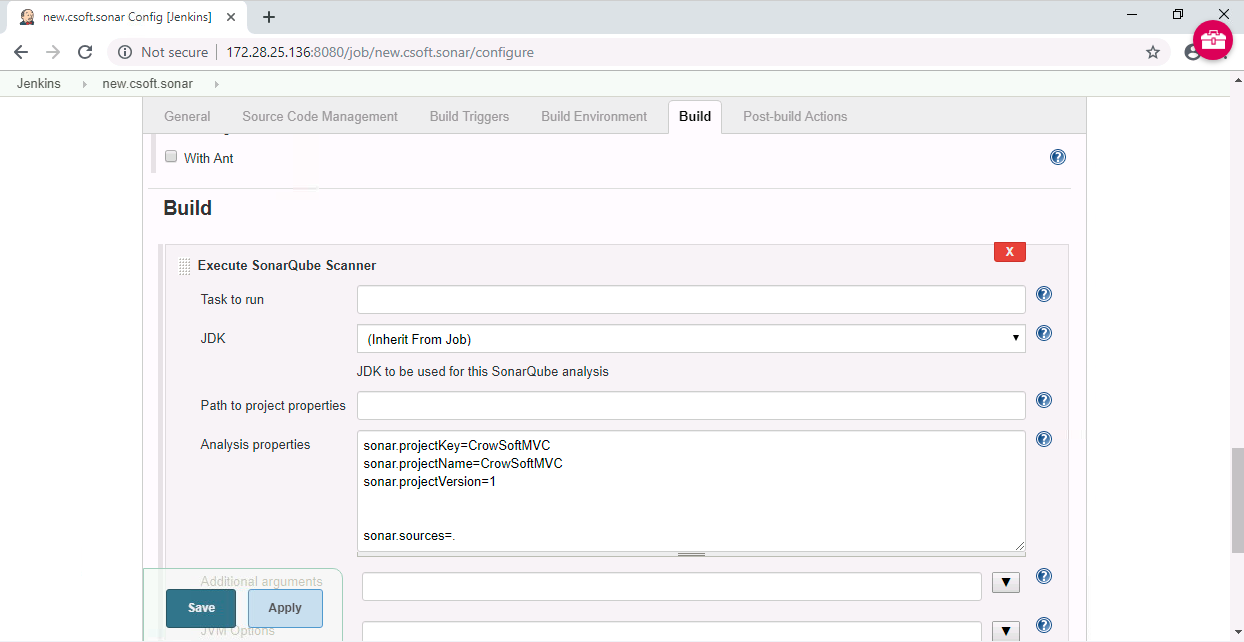
Under Configure System add sonar server details as shown in the screenshot



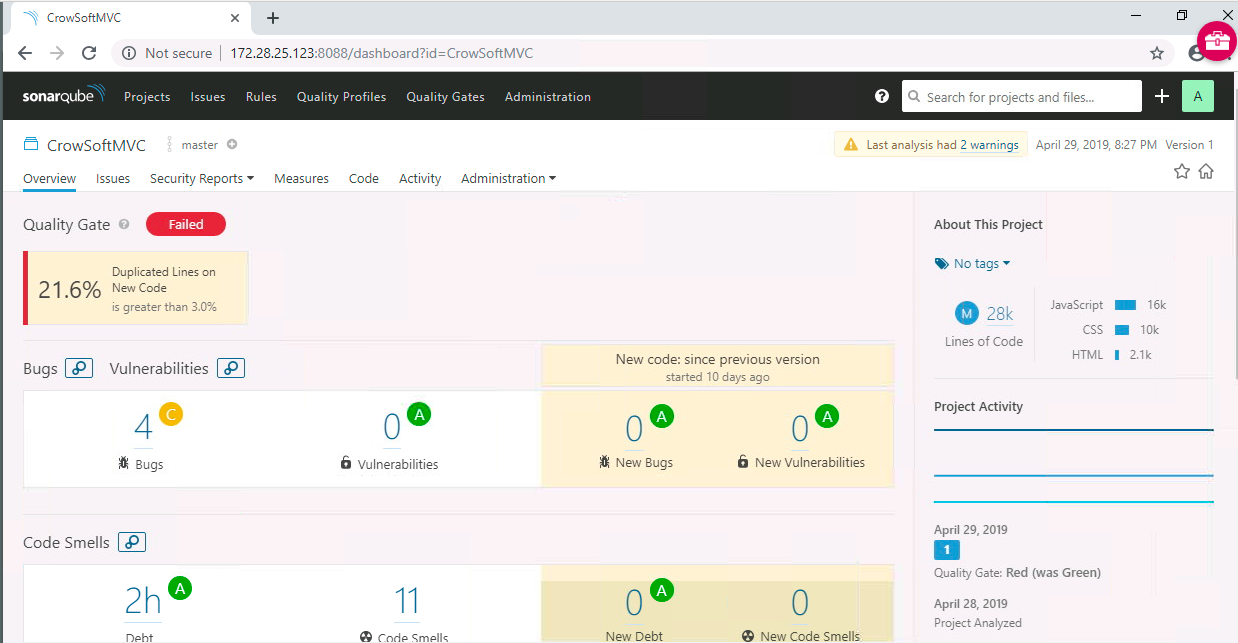
create a new job and add the properties as shown in the screenshots







After doing build now from the job , we can see the analysis results at sonarqube as below



------------------------------------------------------ End ----------------------------------------------------------------------