

**DevOps Shack**

**Setting Up SonarQube On Ubuntu**

**Machine Through Linux Commands**

To install SonarQube on Ubuntu 22.04, you can follow this detailed guide step by step. Here’s a summary of the process, including the installation and configuration of SonarQube, PostgreSQL, and Nginx, as well as setting up security measures like firewall rules and SSL.

**Prerequisites**

* **Ubuntu 22.04 server** with sudo privileges.
* Minimum **2GB RAM**, **1 CPU core**, and **30GB free space**.
* **Java 11 or 17 installed** (this guide uses Java 17).

**Step 1: Update the System**

1. Update package lists:

sudo apt update

1. Upgrade installed packages:

sudo apt upgrade -y

**Step 2: Install Java**

1. Install OpenJDK 17:

sudo apt install openjdk-17-jdk -y

1. Verify the Java installation:

java -version

**Step 3: Install PostgreSQL**

SonarQube requires PostgreSQL as its database.

**1. Install Dependencies**

sudo apt install curl ca-certificates -y

sudo install -d /usr/share/postgresql-common/pgdg

sudo curl -o /usr/share/postgresql-common/pgdg/apt.postgresql.org.asc --fail https://www.postgresql.org/media/keys/ACCC4CF8.asc

**2. Add PostgreSQL Repository**

sudo sh -c 'echo "deb [signed-by=/usr/share/postgresql-common/pgdg/apt.postgresql.org.asc] https://apt.postgresql.org/pub/repos/apt $(lsb\_release -cs)-pgdg main" > /etc/apt/sources.list.d/pgdg.list'

sudo apt update

**3. Install PostgreSQL 15**

sudo apt install postgresql-15 -y

**4. Configure PostgreSQL**

1. Switch to the postgres user:

sudo -i -u postgres

1. Create the database and user for SonarQube:

createuser sonar

createdb sonar -O sonar

1. Set a password for the sonar user:

psql

ALTER USER sonar WITH ENCRYPTED PASSWORD 'your\_password';

\q

1. Exit the postgres user:

exit

**Step 4: Install SonarQube**

1. Download SonarQube:

wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-10.5.1.90531.zip

1. Extract and move SonarQube:

unzip sonarqube-10.5.1.90531.zip

sudo mv sonarqube-10.5.1.90531 /opt/sonarqube

1. Create a dedicated SonarQube user:

sudo adduser --system --no-create-home --group --disabled-login sonarqube

sudo chown -R sonarqube:sonarqube /opt/sonarqube

1. Configure SonarQube:

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

Add/Uncomment:

sonar.jdbc.username=sonar

sonar.jdbc.password=your\_password

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

**Step 5: Create a Systemd Service File**

1. Create the service file:

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

Add the following content:

[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=sonarqube

Group=sonarqube

Restart=always

LimitNOFILE=65536

LimitNPROC=4096

[Install]

WantedBy=multi-user.target

1. Start and enable the service

sudo systemctl daemon-reload

sudo systemctl start sonarqube

sudo systemctl enable sonarqube

**Step 6: Configure System Limits**

1. Edit the limits configuration file:

sudo vi /etc/security/limits.conf

Add:

sonarqube - nofile 65536

sonarqube - nproc 4096

1. Set virtual memory limits:

sudo sysctl -w vm.max\_map\_count=262144

sudo vi /etc/sysctl.conf

Add:

vm.max\_map\_count=262144

Apply changes:

sudo sysctl -p

**Step 7: Install and Configure Nginx**

1. Install Nginx:

sudo apt install nginx -y

sudo mkdir -p /var/www/html/.well-known/acme-challenge/

echo "test" | sudo tee /var/www/html/.well-known/acme-challenge/test-file

1. Create Nginx configuration:

sudo vi /etc/nginx/sites-available/sonarqube

Add:

server {

listen 80;

server\_name adityatesting.in www.adityatesting.in;

location /.well-known/acme-challenge/ {

root /var/www/html;

try\_files $uri =404;

}

location / {

proxy\_pass http://127.0.0.1:9000;

proxy\_set\_header Host $host;

proxy\_set\_header X-Real-IP $remote\_addr;

proxy\_set\_header X-Forwarded-For $proxy\_add\_x\_forwarded\_for;

proxy\_set\_header X-Forwarded-Proto $scheme;

proxy\_redirect off;

}

}

1. Enable the new configuration:

sudo ln -s /etc/nginx/sites-available/sonarqube /etc/nginx/sites-enabled/

sudo nginx -t

sudo systemctl restart nginx

**Step 8: Configure HTTPS**

1. Install Certbot:

sudo apt install certbot python3-certbot-nginx -y

1. Obtain an SSL certificate:

sudo certbot --nginx -d adityatesting.in -d www.adityatesting.in

1. Verify and reload Nginx:

sudo nginx -t

sudo systemctl reload nginx

**Final Step: Access SonarQube**

Open your browser and navigate to:

http://adityatesting.in

Login with the default credentials:

* Username: admin
* Password: admin

Change the default password on first login.