Sonarqube System Requirements

Following are the minimum server requirement for running the Sonarqube server.

Server with minimum 2GB RAM and 1 vCPU capacity
PostgreSQL version 9.3 or greater.
OpenJDK 11 or JRE 11
All Sonarquber processes should run as a non-root sonar user.

Redhat/Amazon Linux
If you are using Redhat, Centos, or Amazon Linux-based servers, execute the following commands one by one.

```
sudo yum update -y
sudo yum install wget unzip -y
sysctl vm.max_map_count
sysctl fs.file-max
ulimit -n
ulimit -u
```

For Ubuntu/Debian

If you are using Ubuntu or Debian-based server, execute the following commands one by one.

```
sudo apt update -y
sudo apt install wget unzip -y
sysctl vm.max_map_count
sysctl fs.file-max
ulimit -n
ulimit -u
```

Setup PostgreSQL 10 For SonarQube

Install PostgreSQL 10 repo.

```
sudo yum install https://download.postgresql.org/pub/repos/yum/10/redhat/rhel-7-x86_64/pgdg-centos10-10-2.noarch.rpm -y
```

Install PostgreSQL 10

```
sudo yum install postgresql10-server postgresql10-contrib -y
```

Initialize the database.
sudo /usr/pgsql-10/bin/postgresql-10-setup initdb

Open /var/lib/pgsql/data/pg_hba.conf file to change the authentication to md5.
sudo vi /var/lib/pgsql/10/data/pg_hba.conf

Find the following lines at the bottom of the file and change **peer** to **trust** and **idnet** to **md5**

```
# TYPE  DATABASE        USER            ADDRESS                 METHOD

# "local" is for Unix domain socket connections only
local   all             all                                     peer
# IPv4 local connections:
host    all             all             127.0.0.1/32            ident
# IPv6 local connections:
host    all             all             ::1/128                 ident
```

Once changed, it should look like the following.

```
# TYPE  DATABASE        USER            ADDRESS                 METHOD

# "local" is for Unix domain socket connections only
local   all             all                                     trust
# IPv4 local connections:
host    all             all             127.0.0.1/32            md5
# IPv6 local connections:
host    all             all             ::1/128                 md5
```

Start and enable PostgreSQL.

sudo systemctl start postgresql-10
sudo systemctl enable postgresql-10

You can verify the installation using the following version select query.
sudo -u postgres /usr/pgsql-10/bin/psql -c "SELECT version();"

Create Sonar User and Database

We need to have a sonar user and database for the sonar application.

Change the default password of the Postgres user. All Postgres commands have to be executed by this user.
sudo passwd postgres

Login as postgres user with the new password.
`su - postgres`

Log in to the PostgreSQL CLI.
Psql

Create a sonarqubedb database.
create database sonarqubedb;

Create the sonarqube DB user with a strongly encrypted password. Replace your-strong-password with a strong password.
create user sonarqube with encrypted password 'your-strong-password';

Next, grant all privileges to sonrqube user on sonarqubedb.
grant all privileges on database sonarqubedb to sonarqube

Exit the psql prompt using the following command.
\q

Switch to your sudo user using the exit command.
exit

Setup Sonarqube Web Server

Download the latest Sonarqube installation file to /opt folder:
cd /opt

sudo wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-7.6.zip

Unzip sonarqube source files and rename the folder.
sudo unzip sonarqube-7.6.zip

sudo mv sonarqube-7.6 sonarqube

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

Uncomment and edit the parameters as shown below. Change the password accordingly. You will find the JDBC parameter under the PostgreSQL section.
sonar.jdbc.username=sonar
sonar.jdbc.password=sonar-db-password
sonar.jdbc.url=jdbc:postgresql://localhost/onarqubedb

By default, sonar will run on 9000. If you want on port 80 or any other port, change the following parameters for accessing the web console on that specific port.
sonar.web.host=0.0.0.0

sonar.web.port=80

If you want to access Sonarqube some path like http://url:/sonar, change the following parameter.
sonar.web.context=/sonar

Add Sonar User and Privileges

Create a user named sonar and make it the owner of the /opt/sonarqube directory.
sudo useradd sonar

sudo chown -R sonar:sonar /opt/sonarqube

Start Sonarqube Service

To start sonar service, you need to use the script in sonarqube bin directory.

Login as sonar user
sudo su - sonar

Navigate to the start script directory.
cd /opt/sonarqube/bin/linux-x86-64

Start the sonarqube service.
./sonar.sh start

Now, you should be able to access sonarqube on the browser on port 9000

Check the application status. If it is in a running state, you can access the sonarqube dashboard using the DNS name or Ip address of your server.
sudo ./sonar.sh status

Install Nexus Repository Manager in Linux Centos7, Deploy and Use 'artifacts

Login to your Linux server and update the yum packages. Also install required utilities.

```
yum update -y
sudo yum install wget -y
java -version
sudo yum install java-1.8.0-openjdk.x86_64 -y
```

Download the latest nexus. You can get the latest download links fo for nexus from here.

```
cd /opt
sudo wget -O latest-unix.tar.gz https://download.sonatype.com/nexus/3/latest-unix.tar.gz
tar -xvzf latest-unix.tar.gz
sudo mv nexus-3* nexus
mv sonatype-work nexusdata
ls -lh
```

Set User/Permissions and Configurations.

```
useradd --system --no-create-home nexus
chown -R nexus:nexus /opt/nexus
chown -R nexus:nexus /opt/nexusdata
```

Edit /opt/nexus/bin/nexus.vmoptions file.

```
vi /opt/nexus/bin/nexus.vmoptions
```

```
-Xms2703m
-Xmx2703m
-XX:MaxDirectMemorySize=2703m
-XX:+UnlockDiagnosticVMOptions
-XX:+LogVMOutput
-XX:LogFile=../nexusdata/nexus3/log/jvm.log
-XX:-OmitStackTraceInFastThrow
-Djava.net.preferIPv4Stack=true
-Dkaraf.home=.
-Dkaraf.base=.
-Dkaraf.etc=etc/karaf
-Djava.util.logging.config.file=etc/karaf/java.util.logging.properties
-Dkaraf.data=../nexusdata/nexus3
-Dkaraf.log=../nexusdata/nexus3/log
-Djava.io.tmpdir=../nexusdata/nexus3/tmp
-Dkaraf.startLocalConsole=false
```

Edit nexus.rc file.
vi /opt/nexus/bin/nexus.rc

Uncomment run_as_user parameter and add new value.
run_as_user="nexus"

We need to modify the nexus-default.properties file.
vi /opt/nexus/etc/nexus-default.properties

Change application-host=0.0.0.0 and port application-host=9081
Configure the open file limit of the nexus user.
vi /etc/security/limits.conf

Add the below values to the file.
nexus - nofile 65536

Set Nexus as a System Service

Create the Systemd service file in /etc/systemd/system/.
sudo vi /etc/systemd/system/nexus.service

Add the following contents to the unit file.

```
[Unit]
Description=Nexus Service
After=syslog.target network.target

[Service]
Type=forking
LimitNOFILE=65536
ExecStart=/opt/nexus/bin/nexus start
ExecStop=/opt/nexus/bin/nexus stop
User=nexus
Group=nexus
Restart=on-failure
```

Manage Nexus Service, Execute the following command to add nexus service to boot.

systemctl daemon-reload
systemctl enable nexus.service
systemctl start nexus.service

Monitor the log file.
tail -f /opt/nexusdata/nexus3/log/nexus.log

Check the running service port.
netstat -tunlp | grep 9081

Show default login password.
cat /opt/nexusdata/nexus3/admin.password