

SONARQUBE SERVER DOCUMENTATION

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Mithun Technologies

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Document History

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Introduction

- SonarQube (previously called Sonar) is an open source software quality management tool.
- ➤ It will continuously analyse and measures quality of the source code.
- ➤ I will generate the report if any issues in html format/PDF format.
- ➤ It is a web based tool supports multiple languages (Java, C#, JS ...)
- ➤ It will support multi OS platform (Windows. MAC, Linux...).
- ➤ It will support multiple databases (MySQL, Oracle, Microsoft SQL Server, PostgreSQL ...)
- > Supports multiple browsers (IE, Microsoft Edge, FF, Chrome, Safari)
- ➤ It will identify the below category of issues.
 - Duplicated code
 - Coding standards
 - Unit tests
 - Complex code
 - Comments
 - Potential Bugs
 - Architecture & Design
- > Initially it is developed only for Java projects.
- ➤ Today it is supporting over twenty languages.
- Commercial: ABAP, Cfamily(C, C++, and Objective-C), COBOL, PL/SQL, Visual Basic, Natural, VB.Net, RPG, Swift ..
- ➤ Open source: Java, Java Script, C#, Web(HTML, JSP, JSF, ..) XML, Python, Groovy, PHP, Puppet, Lua, Groovy, FxCop, Flex, Erlang ...

Pre-requisites

- The only prerequisite for running SonarQube is to have Java installed on your machine.
- Iava
- ➤ MySQL Optional
- > Oracle Optional

SonarQube Details			
Туре	Source Continuous Code Quality		
Vendor	SonarQube		
Is Open Source?	Yes		
Version	8.x		
Operating system	Cross Platform		
Software Download URL	Software Download URL http://www.sonarqube.org/downloads/		
Is executable software?	No, download as zip, extract and use it.		
Reference Websites	1) https://docs.sonarqube.org/		

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Installation of Sonar Scanner

Linux

cd/opt

wget https://binaries.sonarsource.com/Distribution/sonar-scanner-cli/sonar-scanner-cli-3.3.0.1492-linux.zip

unzip sonar-scanner-cli-3.3.0.1492-linux.zip

/opt/sonar-scanner-cli-3.3.0.1492-linux/bin

echo "export SONAR_SCANNER_HOME=/opt/sonar-scanner-3.3.0.1492-linux" >> /etc/environment

echo 'export PATH=\$PATH:\$SONAR_SCANNER_HOME/bin' >> /etc/environment source /etc/environment

sonar-scanner -v

How to change the default port number from 9000 to custom port in SonarQube server?

Go to the conf directory and open the sonar.properties and search for Sonar.web.port=9000 and Replace 9000 with 9001

SonarQube Server Installation

#Login as a root user.

sudo su -

#Download the SonarqQube Server software.

cd /opt

yum install wget unzip -y

wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-7.8.zip unzip sonarqube-7.8.zip

#As a good security practice, SonarQuber Server is not advised to run sonar service as a root user, so create a new user called nexus and grant sudo access to manage nexus services as follows

useradd sonar

#Give the sudo access to sonar user visudo

sonar ALL=(ALL) NOPASSWD: ALL

#Change the owner and group permissions to /opt/sonarqube-7.8/ directory.

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chown -R sonar:sonar /opt/sonarqube-7.8/ chmod -R 775 /opt/sonarqube-7.8/ su - sonar cd /opt/sonarqube-7.8/bin/linux-x86-64/

./sonar.sh start

Troubleshooting

sonar service is not starting?

- a)make sure you need to change the ownership and group to /opt/sonarqube-7.6/ directory for sonar user.
- b)make sure you are trying to start sonar service with sonar user.
- c)check java is installed and version compatibility or not using java -version command.

Unable to access SonarQube server URL in browser?

a)make sure port 9000 is opened in security group in AWS ec2 instance.

Starting Sonar as a service

#Create SonarQube server as a sonar service

ln/opt/sonarqube-7.8/bin/linux-x86-64/sonar.sh/etc/init.d/sonar

sudo vi /etc/init.d/sonar

#add below lines in /etc/init.d/sonar

SONAR_HOME=/opt/sonarqube-7.8 PLATFORM=linux-x86-64

WRAPPER_CMD="\${SONAR_HOME}/bin/\${PLATFORM}/wrapper" WRAPPER_CONF="\${SONAR_HOME}/conf/wrapper.conf" PIDDIR="/opt/sonarqube-7.8/"

#Enable the sonar service systemctl enable sonar

#Start the sonar service systemetl start sonar

#Check the status of the sonar service systemctl status sonar

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How to execute the SonarQube report for ant java projects.

Ans) create a file called sonar-project.properties file in the project root directory for which project need to execute the report with below properties.

sonar.projectName=MithunTechnologies sonar.projectKey=com.mt sonar.projectversion=1.0 sonar.sources=src

Where will give the SonarQube Server details for Maven Project? Ans) pom.xml

<sonar.host.url>http://13.233.225.243:9000/</sonar.host.url>

<sonar.login>f452576949599315a73e51ceb5840f8230a8d1c5</sonar.login>

<sonar.profile>mithuntechno-qp</sonar.profile>

How to execute the SonarQube report for maven java projects.

Ans) mvn sonar:sonar

(OR)

mvn clean install sonar:sonar

If you don't mention SonarQube Server details in pom.xml, you can use below commands. mvn clean sonar:sonar package -Dsonar.host.url=http://localhost:9000 (OR)

mvn clean package sonar:sonar -Dsonar.host.url=http://13.234.113.46:9000/ -Dsonar.login=admin -Dsonar.password=admin (OR)

mvn clean package sonar:sonar -Dsonar.host.url=http://13.234.113.46:9000/ -Dsonar.login=f452576949599315a73e51ceb5840f8230a8d1c5

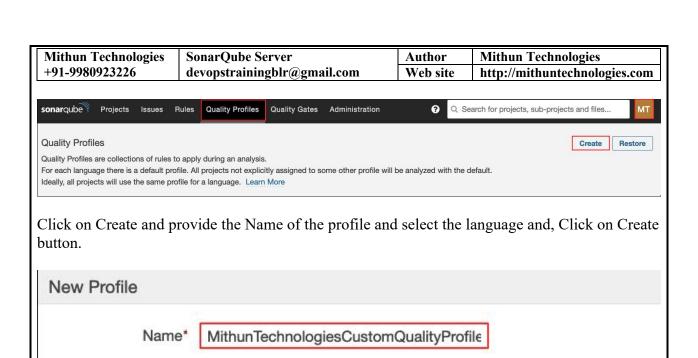
Note: As a best practice create token and use the for authentication.

SonarQube Server Administration

Creating the Custom Quality Profiles

Login into SonarQube with admin credentials (default credentials admin/admin).

As soon as login into SonarQube dashboard, click on Quality Profiles, You will see all the language profiles.



Click on Active More

Language*

Java

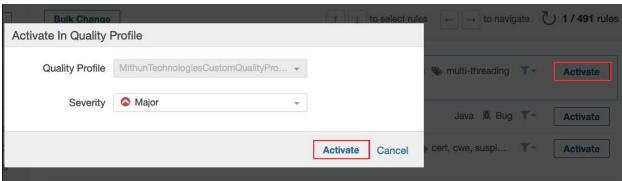


Select the rule and click on **Active**, you will get the one popup and again you can click on **Activate** as follows.

Create

Cancel

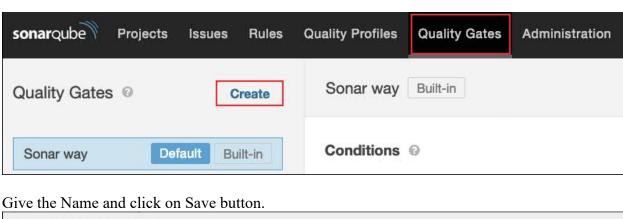


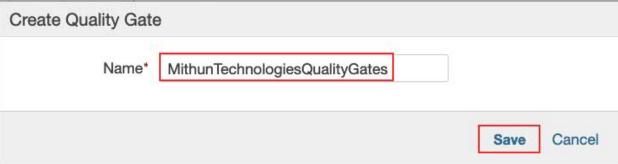


Creating the Custom Quality Gates

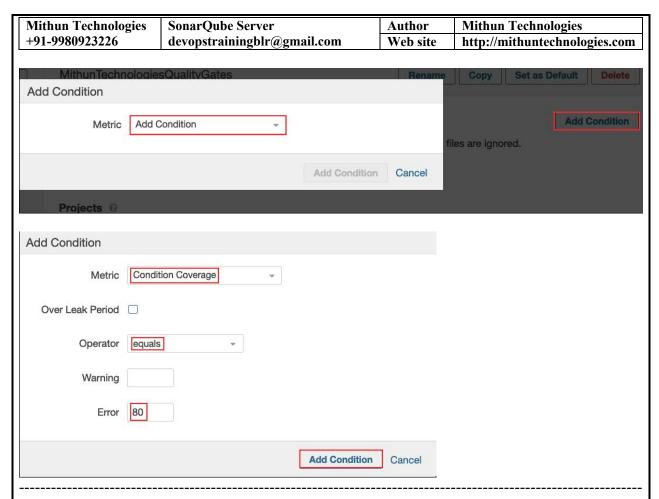
Login into SonarQube with admin credentials (default credentials admin/admin).

As soon as login into SonarQube dashboard, click on Quality Gates, and click on Quality Gates, and click on Create.





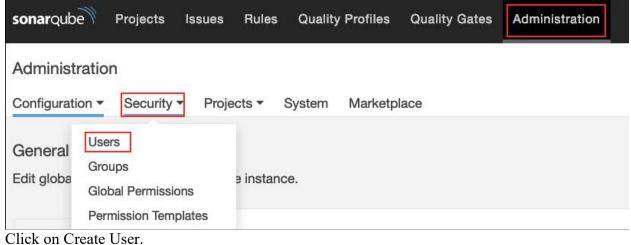
Click on Add Condition and select the condition as follows.

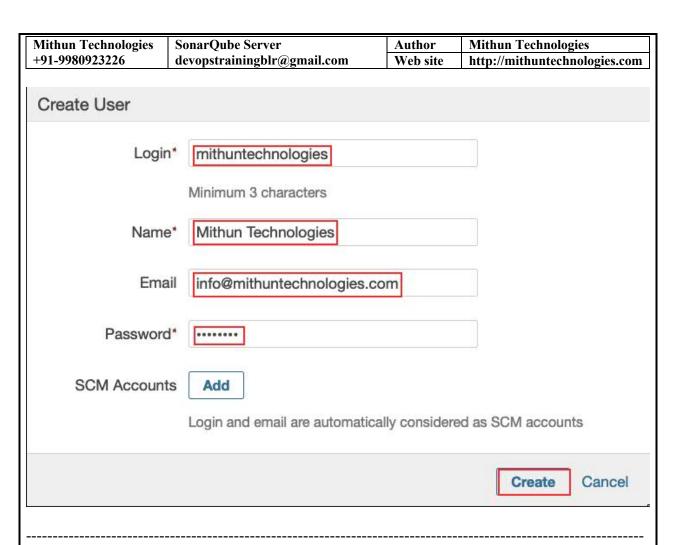


To Create the Users

Login into SonarQube with admin credentials (default credentials admin/admin).

As soon as login into SonarQube dashboard, click on Administration, and click on Security, and click on Users.





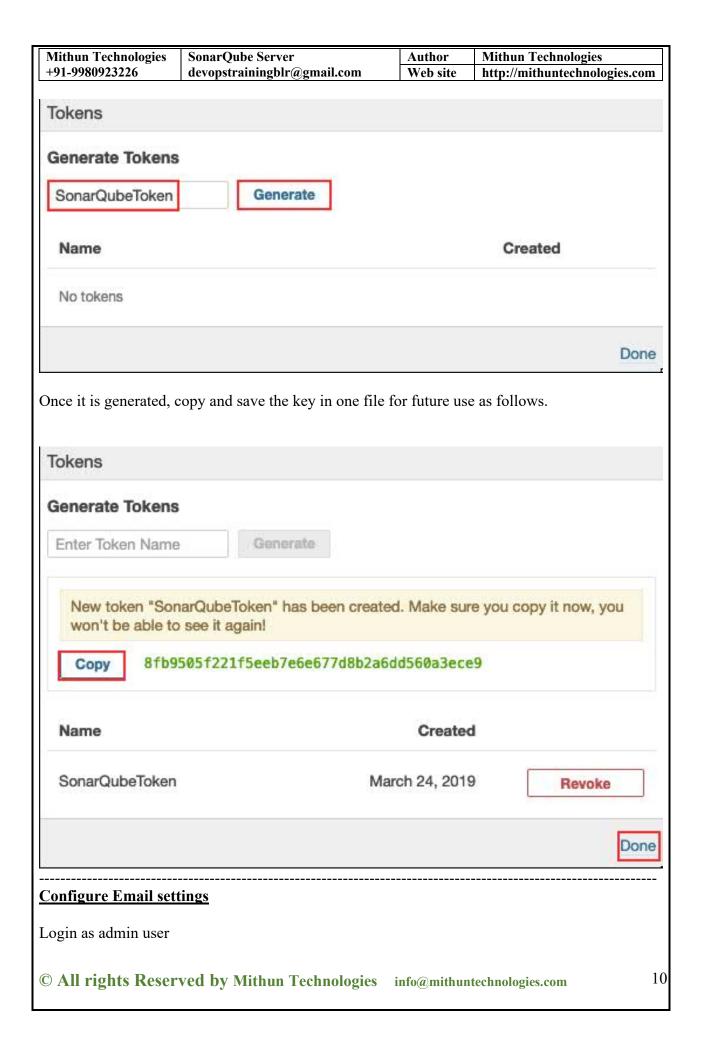
To Generate a Token

Login as a admin user and select to which user we need to generate the token and click on barcode symbol () as follows.



Give the name of Token and click on Generate button as follows.

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Go to the Administration button ---> Configuration ---> General Settings

Errors and Solution

If you see above error,

For maven Project: Need to update the settings.xml add below lines in profiles element.

```
profile>
       <id>sonar</id>
       <activation>
         <activeByDefault>true</activeByDefault>
       </activation>
       properties>
         <sonar.host.url>http://localhost:9000/</sonar.host.url>
         <sonar-maven-plugin.version>3.3.0.603</sonar-maven-plugin.version>
        <sonar.login>admin</sonar.login>
        <sonar.password>admin</sonar.password>
       </properties>
       <build>
        <plugins>
         <plugin>
           <groupId>org.sonarsource.scanner.maven</groupId>
           <artifactId>sonar-maven-plugin</artifactId>
           <version>${sonar-maven-plugin.version}</version>
         </plugin>
        </plugins>
       </build>
</profile>
```

For Ant Project:

add below line in sonar-project.propertiesfiles

```
sonar.login=admin
sonar.password=admin
```

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Error

[ec2-user@ip-172-31-19-113 logs]\$ cat sonar.log
--> Wrapper Started as Daemon
Launching a JVM...
Jnable to start JVM: No such file or directory (2)
JVM exited while loading the application.
JVM Restarts disabled. Shutting down.

<-- Wrapper Stopped

Solution

Install the Java.

Error

2019.02.28 02:23:27 INFO app[][o.s.a.p.ProcessLauncherImpl] Launch process[[key='web', ipcIndex=2, logFilenamePrefix=web]] from [/home/ec2-user/sonarqube/sonarqube-7.6]: /usr/java/jdk1.8.0_201-amd64/jre/bin/java -Djava.awt.headless=true -Dfile.encoding=UTF-8 -Djava.io.tmpdir=/home/ec2-user/sonarqube/sonarqube-7.6/temp -Xmx512m -Xxi:HeapDumpOnOutOfMemoryError -pc ./lib/common/*:/home/ec2-user/sonarqube/sonarqube-7.6/lib/jdbc/h2/h2-1.3.176.jar org.sonar.server.app.WebServer /home/ec2-user/sonarqube/sona

```
# There is insufficient memory for the Java Runtime Environment to continue.

Native memory allocation (mmap) failed to map 44695552 bytes for committing reserved memory.

An error report file with more information is saved as:

| home/ec2-user/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/sonarqube/s
```

Solution:

Increase the RAM size. After increasing RAM size, check the ram size using free -h command in the Linux OS.

SonarQube Cloud

http://sonarcloud.io/

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http://docs.sonargube	<u>ce.com/</u> org/display/SONARQUBE45/In	stalling+and-	+Configuring+SonarOube+R
unner	org/urspray/SOTVARQ OBL#3/III	starring rand	+Configuring +Sonar Quoc+K
https://docs.sonarqube	e.org/display/SONAR/Analysis+	<u>Parameters</u>	