

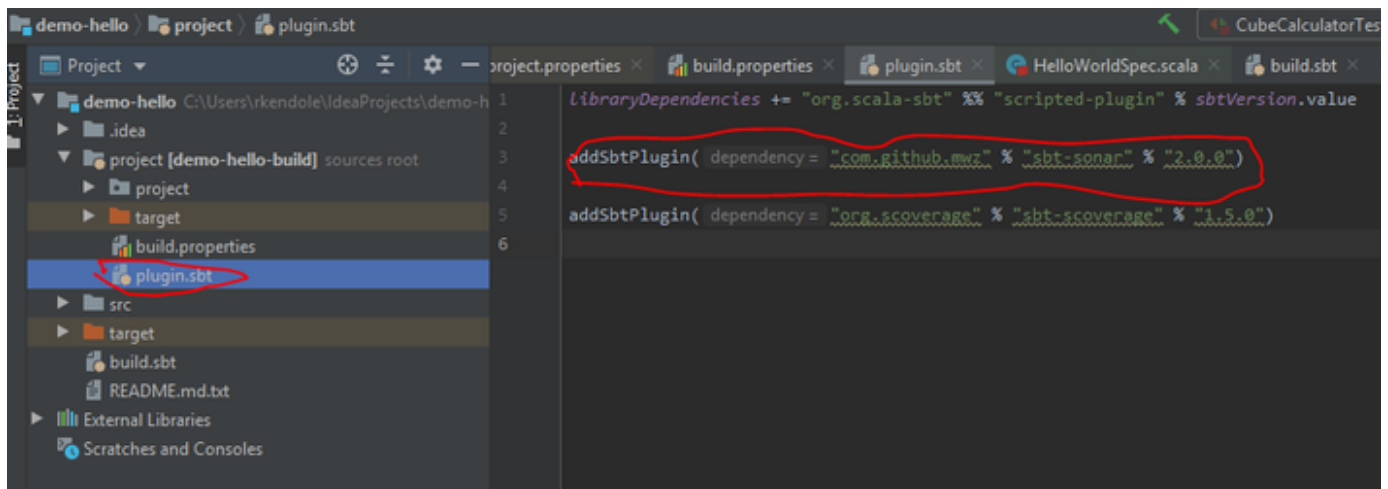
How To - jenkins -Sonar integration for Scala

sbt-sonar:

An sbt plugin which provides an easy way to integrate Scala projects with SonarQuabe.

To install this plugin in your project, add the following to your `./project/plugins.sbt` file:

```
addSbtPlugin("com.github.mwz" % "sbt-sonar" % "2.0.0")
```

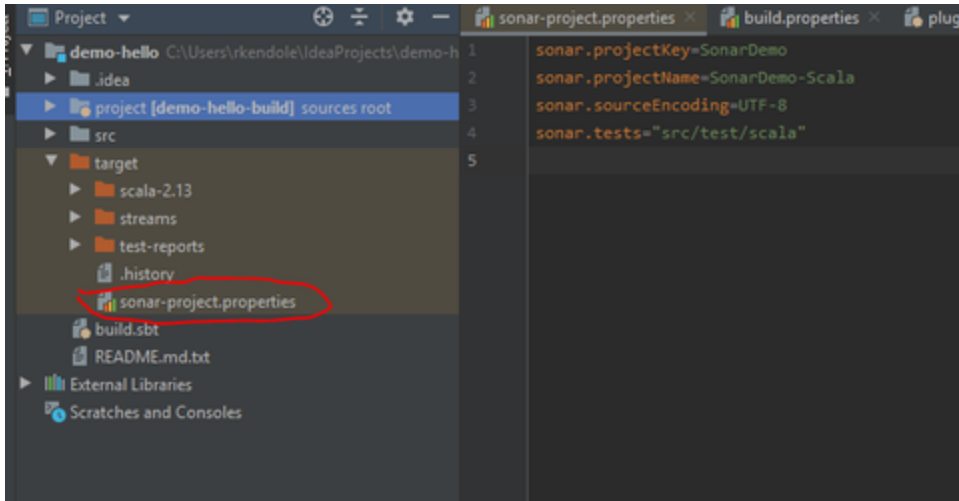


You can define your project properties either in the external config file `sonar-project.properties`, which should be located in the root directory of your project.

`sonar-project.properties` will look like:

```
#sonar-project.properties

sonar.projectName
sonar.projectKey
sonar.sourceEncoding
sonar.tests
```



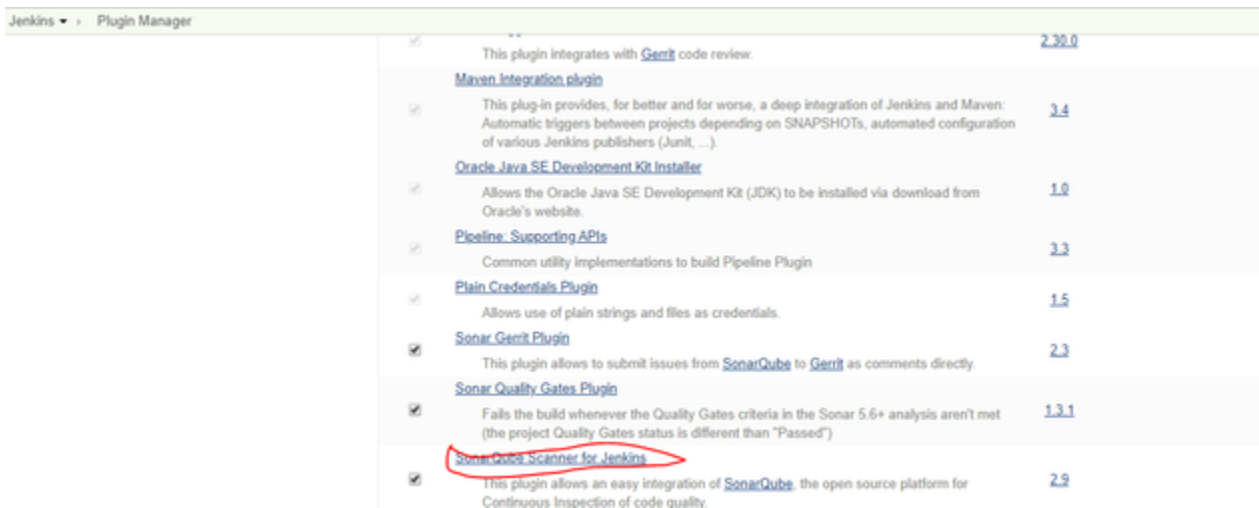
Now run the below commands to publish code analysis and code coverage reports in your sonarQube server.

```
sbt coverage test
sbt coverageReport
sbt sonarScan
```

Jenkins integration to sonar

1.Install *SonarQube plugin* to Jenkins

Manage Jenkins >> Manage Plugins >> Available Tab and select “SonarQube Scanner for Jenkins” plugin and install.



And install Sbt for scala program

<input checked="" type="checkbox"/>	Matrix	1.27	Uninstall
	This plugin allows you to configure email notifications for build results		
<input checked="" type="checkbox"/>	Matrix Authorization Strategy	1.1	Uninstall
	Offers matrix-based security authorization strategies (global and per-project).		
<input checked="" type="checkbox"/>	Matrix Project Plugin	1.14	Uninstall
	Multi-configuration (matrix) project type.		
<input checked="" type="checkbox"/>	Oracle Java SE Development Kit Installer	1.0	Uninstall
	Allows the Oracle Java SE Development Kit (JDK) to be installed via download from Oracle's website.		
<input checked="" type="checkbox"/>	OWASP Markup Formatter	1.1	Uninstall
	Uses the OWASP Java HTML Sanitizer to allow safe-seeming HTML markup to be entered in project descriptions and the like.		
<input checked="" type="checkbox"/>	PAM Authentication	1.1	Uninstall
	Adds Unix Pluggable Authentication Module (PAM) support to Jenkins		
<input checked="" type="checkbox"/>	sbt plugin	1.5	Uninstall
	This plugin allows running SBT empowered scala projects in Hudson.		
<input checked="" type="checkbox"/>	WMI Windows Agents	1.0	Uninstall
	Allows you to connect to Windows machines and start slave agents on them.		

Go to Manage Jenkins >>configuring the system, Search SonarQube servers section,

Jenkins > configuration

[Add](#)

☐ Tool Locations

SonarQube servers

Environment variables

SonarQube installations

☐ Enable injection of SonarQube server configuration as build environment variables

If checked, job administrators will be able to inject a SonarQube server configuration as environment variables in the build.

Name

Server URL

Default is http://localhost:9000

Server authentication token [Add](#)

SonarQube authentication token. Mandatory when anonymous access is disabled.

[Advanced](#)

[Delete SonarQube](#)

[Add SonarQube](#)

List of SonarQube installations

Configure sonarquabe scanner in jenkins


manageJenkins > Global Tool Configuration


Jenkins > [ENABLE AUTO-UPDATE](#)


[Improper user account validation](#)


[Bitbucket Approve Plugin 1.0.3](#)


[Bitbucket Approve Plugin stores credentials in plain text](#)


 **Configure System**
Configure global settings and paths.


 **Configure Global Security**
Secure Jenkins; define who is allowed to access/use the system.

 **Configure Credentials**
Configure the credential providers and types

 **Global Tool Configuration**
Configure tools, their locations and automatic installers.

 **Reload Configuration from Disk**
Discard all the loaded data in memory and reload everything from file system. Useful when you modified config files directly on disk.

 **Manage Plugins**
Add, remove, disable or enable plugins that can extend the functionality of Jenkins.
▲ There are updates available

 **System Information**

inovartis.devops.altimetrik.io:9000

SonarQube Scanner

SonarQube Scanner installations

Add SonarQube Scanner

SonarQube Scanner

Name sonar

☒ Install automatically

Install from Maven Central

Version SonarQube Scanner 4.1.0.1829

Sbt

Sbt installations

Add Sbt

Sbt

name

sbt

sbt launch arguments

Save

Apply

Save it.

Run sonar with sonar.properties

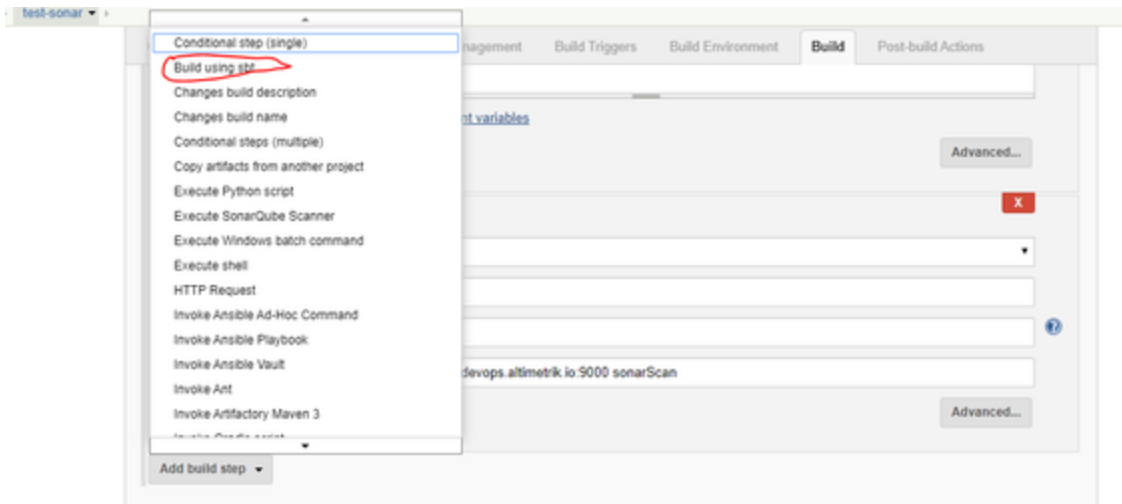
Create a Job- *New Item*

The screenshot shows the 'New Item' configuration page in SonarQube, specifically for a Git repository. The page is divided into several sections:

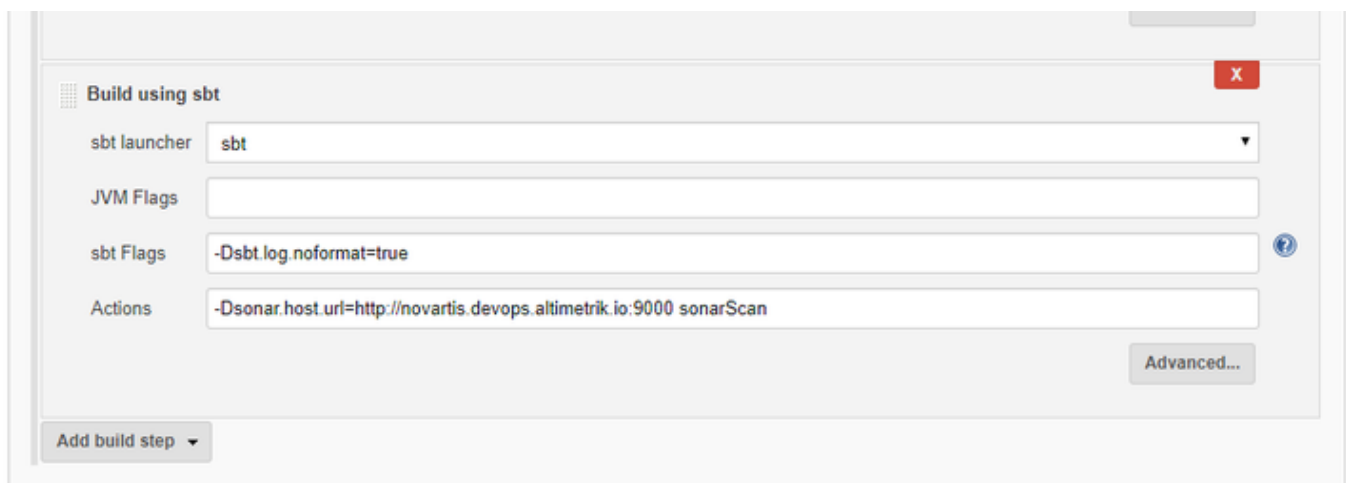
- Git**: The selected repository type.
- Repositories**: Contains the 'Repository URL' field with the value 'http://novartis.devops.atlmetrik.io:7990/scm/novs/nov-scale-demo.git' and a 'Credentials' dropdown menu set to 'admin*****'. There are 'Add' and 'Advanced...' buttons next to the credentials.
- Branches to build**: Contains a 'Branch Specifier (blank for 'any')' field with the value '*/develop' and an 'Add Branch' button.
- Repository browser**: A dropdown menu set to '(Auto)'.
- Additional Behaviours**: An 'Add' button.

At the bottom of the page, there is a 'Manual' link.

Click on Add build step build using sbt



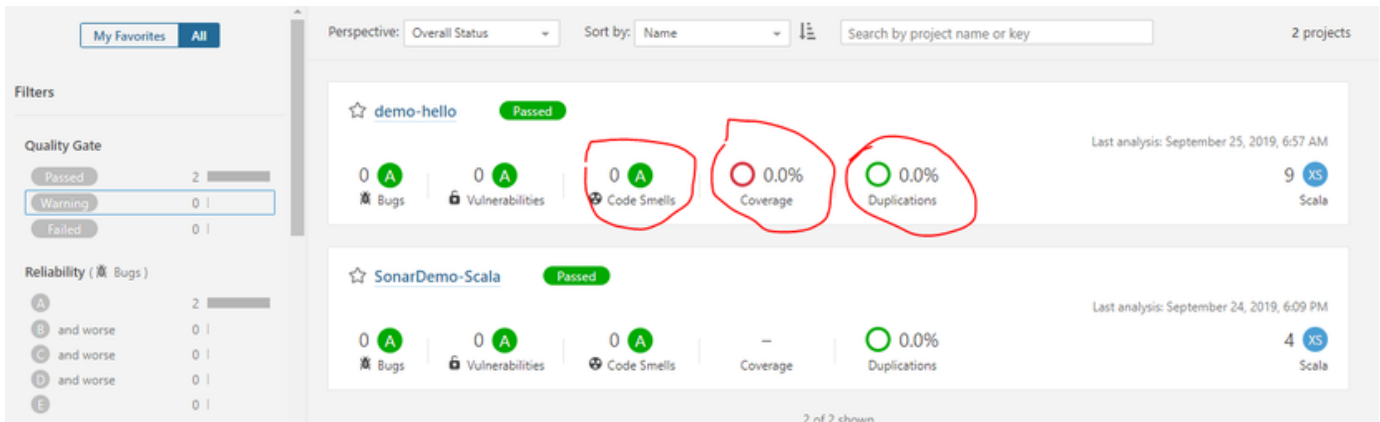
And the add sbtlauncher name & actions



Run the build

```
[info] CPU calculation finished
[info] Analysis report generated in 96ms, dir size=25 KB
[info] Analysis reports compressed in 14ms, zip size=9 KB
[info] Analysis report uploaded in 324ms
[info] ANALYSIS SUCCESSFUL, you can browse http://novartis.devops.altimetrik.io:9000/dashboard/index/demo-hello
[info] Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
[info] More about the report processing at http://novartis.devops.altimetrik.io:9000/api/ce/task?id=AW1mB\_fk1zrs5x8rhE3
[info] Task total time: 5.867 s
[success] Total time: 7 s, completed Sep 25, 2019 1:27:41 AM
Build step 'Build using sbt' changed build result to SUCCESS
Finished: SUCCESS
```

Go to Sonar dashboard



Run sonar with build.sbt

Now add the `sbt-sonar` plugin dependency to your scala project .

```
addSbtPlugin("com.github.mwz" % "sbt-sonar" % "2.0.0")
```

This sbt plugin can be used to run sonar-scanner launcher to analyze a Scala project with SonarQube.

Add dependencies libraries

Source	Description
..	
project/target/config-classes	
target	
build.properties	sonar
Dependencies.scala	dependency added
plugin.sbt	plugin.sbt edited online with Bitbucket

```
import sbt._

object Dependencies {
  lazy val scalaTest = "org.scalatest" %% "scalatest" % "3.0.5"
}
```

Configuration

Now, configure the sonar-properties in your project. This can be done in 2 ways

1. Use sonar-project.properties file This file has to be placed in your root directory
2. Configure Sonar-properties in build.sbt file

By default, the plugin expects the properties to be defined in the sonarProperties setting key in sbt.

```

import sbtsonar.SonarPlugin.autoImport.sonarProperties

import Dependencies._

ThisBuild / scalaVersion      := "2.12.8"
ThisBuild / version           := "0.1.0-SNAPSHOT"

lazy val root = (project in file("."))
  .settings(
    name := "demo-hello",
    libraryDependencies += scalaTest % Test
  )

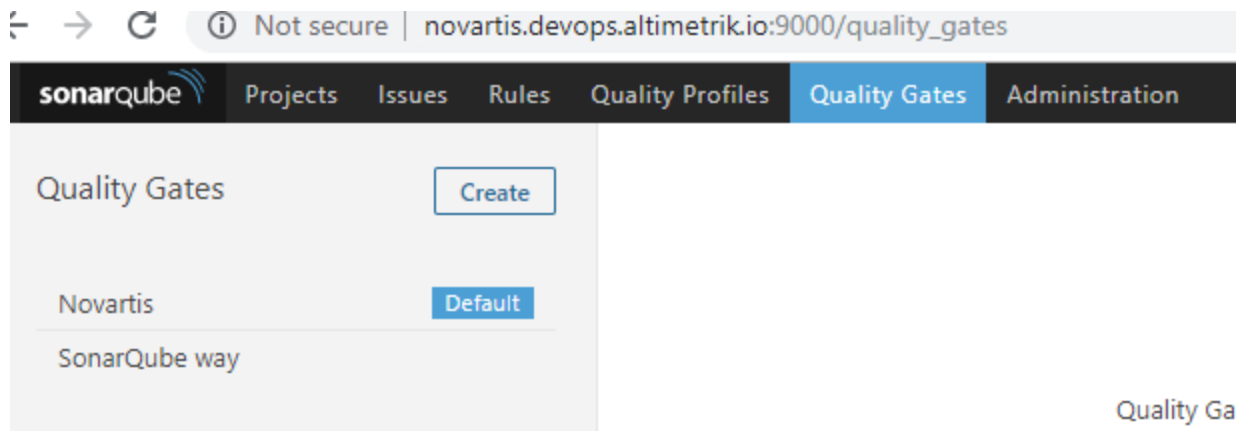
sonarProperties ++= Map(
  "sonar.host.url" -> "http://novartis.devops.altimetrik.io:9000/",
  "sonar.projectName" -> "demo-hello",
  "sonar.projectKey" -> "demo-hello",
  "sonar.sourceEncoding" -> "UTF-8",
  "sonar.java.source" -> "1.8",
  "sonar.sources" -> "src/main/scala",
  "sonar.tests" -> "src/test/scala",
)

```

Run the build and go to sonar dashboard.

Create quality gates

1. Go to sonar dashboard >Quality gates



Click on create option give the name

Create Quality Gate

Name *

Add conditions and save it.

Quality Gates

Create

Novartis

Default

SonarQube way

Novartis

Rename

Copy

Unset as Default

Delete

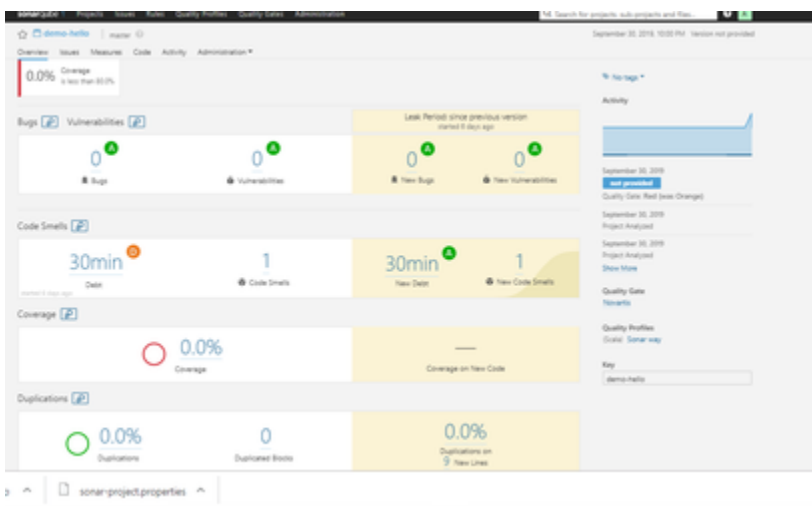
Conditions

Only project measures are checked against thresholds. Sub-projects, directories and files are ignored. [More](#)

Metric	Over Leak Period	Operator	Warning	Error		
Conditions to Cover on New Code	Always	equals	<input type="text"/>	<input type="text" value="5"/>	<input type="button" value="Update"/>	<input type="button" value="Delete"/>
Coverage	<input type="checkbox"/>	is less than	<input type="text"/>	<input type="text" value="80"/>	<input type="button" value="Update"/>	<input type="button" value="Delete"/>
Skipped Unit Tests	<input type="checkbox"/>	is not	<input type="text"/>	<input type="text" value="0"/>	<input type="button" value="Update"/>	<input type="button" value="Delete"/>

Add Condition

Projects



NOTE: Unit test cases count not publishing on sonar dashboard. There is bug in sonar scala plugin. Once bug fix is done will implement this .