

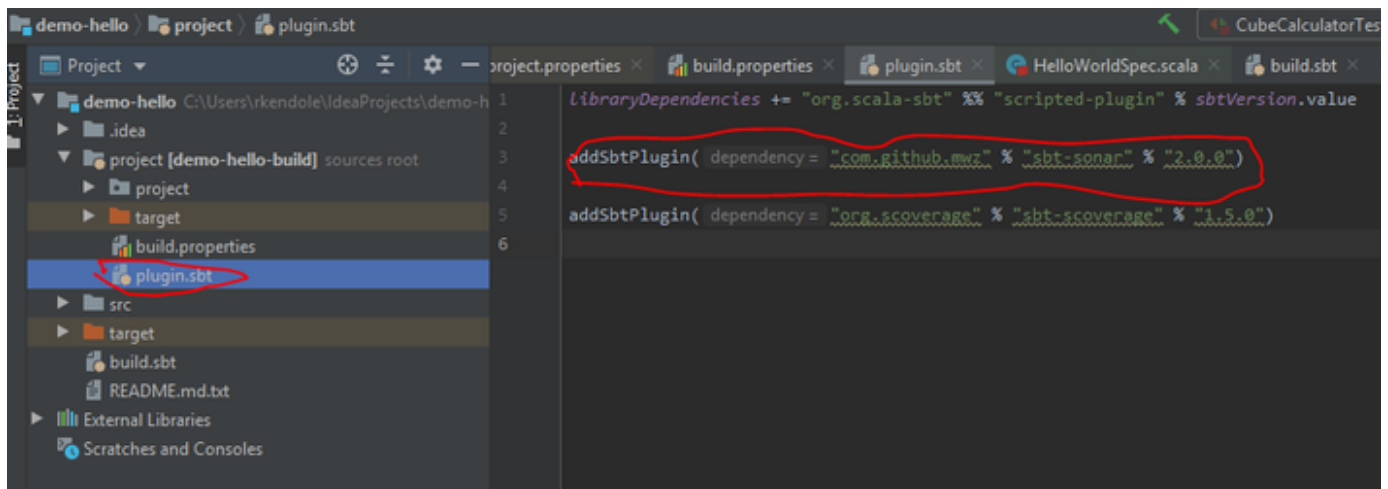
How To - jenkins -Sonar integration for Scala

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")
```

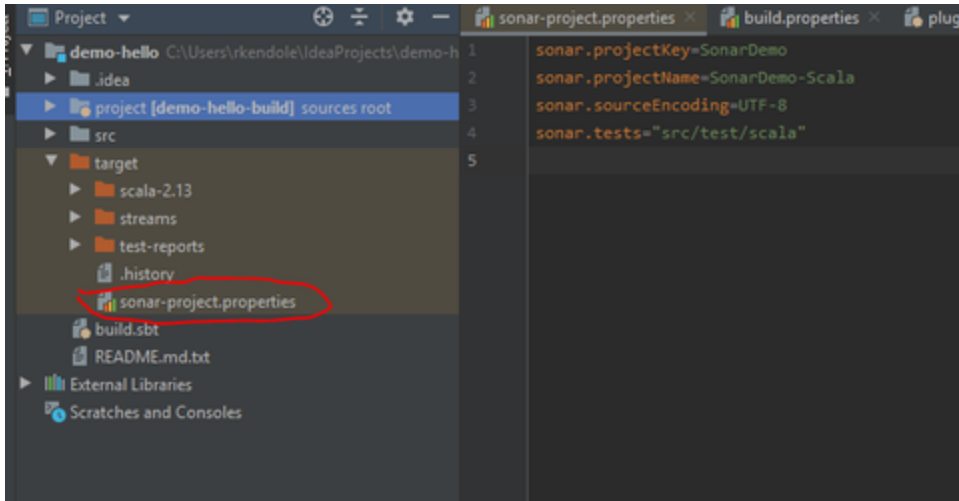


You can define your project properties either in the external config file `sonar-project.properties`, which should be located in the root directory of your project.

`sonar-project.properties` will look like:

```
#sonar-project.properties

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



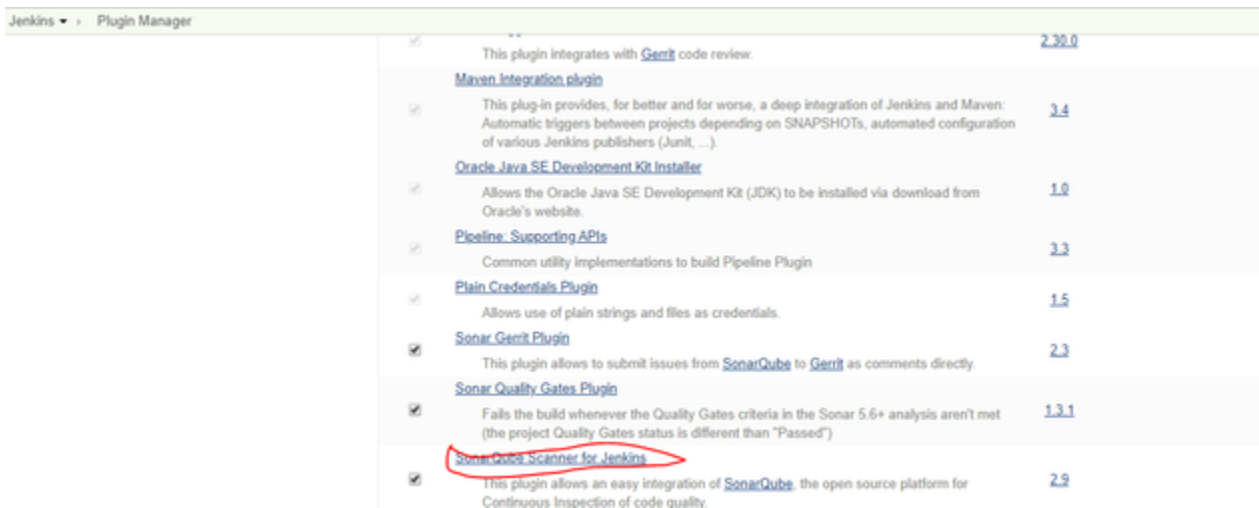
Now run the below commands to publish code analysis and code coverage reports in your sonarQube server.

```
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 sonarqube 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

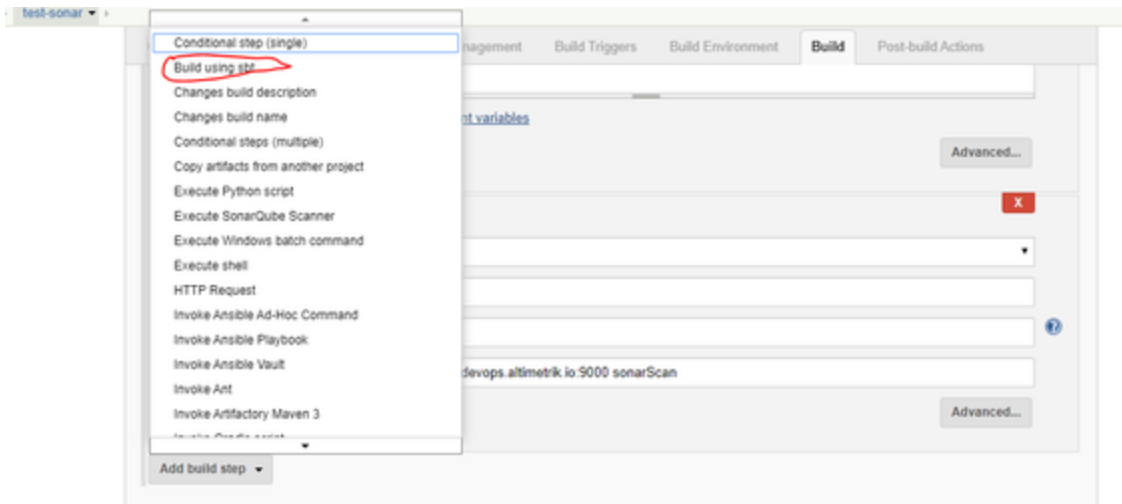
Create a Job- *New Item*

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

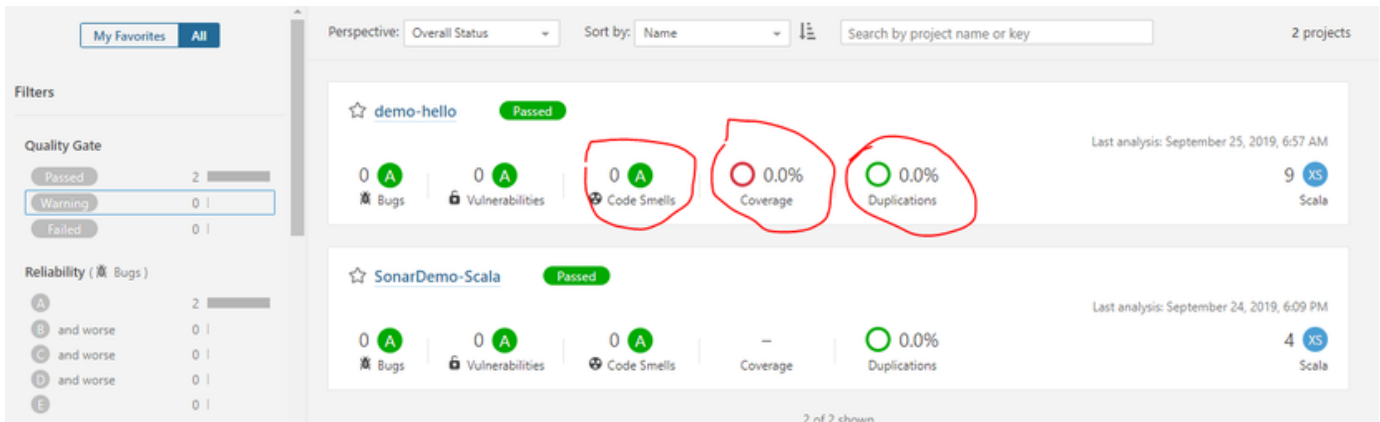


And the add sbtlauncher name & actions

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
  )

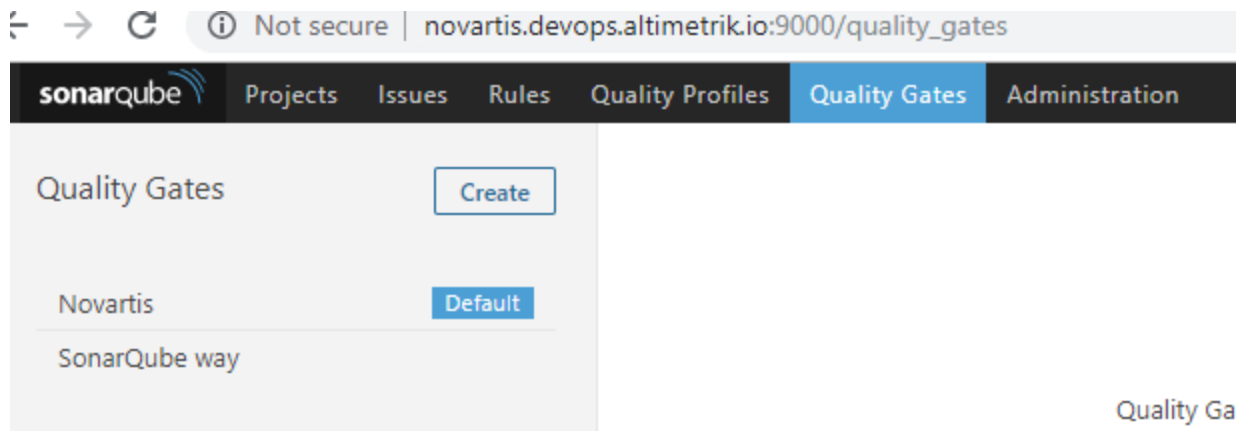
sonarProperties ++= Map(
  "sonar.host.url" -> "http://novartis.devops.altimetrik.io:9000/",
  "sonar.projectName" -> "demo-hello",
  "sonar.projectKey" -> "demo-hello",
  "sonar.sourceEncoding" -> "UTF-8",
  "sonar.java.source" -> "1.8",
  "sonar.sources" -> "src/main/scala",
  "sonar.tests" -> "src/test/scala",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

```

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

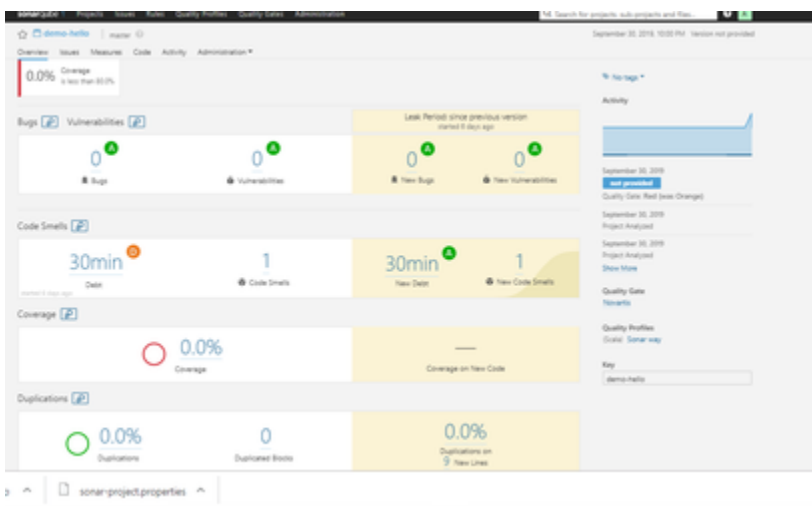
Conditions

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 .