

Code quality

Quantifier la qualité du code



Compétence demandée :
**Savoir quantifier automatiquement
la qualité du code d'une application**

Bugs	Un problème qui représente quelque chose de mal dans le code. Si ce n'est pas encore cassé, ça le fera, et probablement au pire moment possible.
Vulnerabilities	Un problème lié à la sécurité qui représente une porte dérobée pour les attaquants
Security Hotspots	Morceaux de code sensibles à la sécurité qui doivent être examinés manuellement. Après examen, vous constaterez soit qu'il n'y a pas de menace, soit qu'il existe un code vulnérable qui doit être corrigé.
Debt	Le temps estimé nécessaire pour résoudre tous les problèmes de maintenabilité / odeurs de code
Code smells	Un problème lié à la maintenabilité dans le code. Le laisser tel quel signifie qu'au mieux les mainteneurs auront plus de mal qu'ils ne le devraient à apporter des modifications au code. Au pire, ils seront tellement confus par l'état du code qu'ils introduiront des erreurs supplémentaires à mesure qu'ils apporteront des modifications.
Coverage	Pourcentage des lignes couvert par des tests
Duplications	Code dupliqué

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2. Créer le projet
3. Créer un token
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5. Lancer une analyse
6. Consulter le rapport
7. Intégrez dans Jenkins

<https://www.sonarqube.org/downloads/>

Filters

Clear All Filters

Search for rules...

Language JAVA

Clear

Search for languages...

Java 627

C# 404

JavaScript 292

TypeScript 287

PHP 257

Python 229

VB.NET 175

Kotlin 104

Flex 82

HTML 65

Terraform 50

Ruby 48

Scala 47

Go 44

XML 36

15 shown [Show More](#)

Press Ctrl to add to selection

Type

Bug

150

[Return to list](#)

2 / 627 rules

"=+" should not be used instead of "+="

java:S2757

Bug Major No tags Available Since Nov 24, 2022 SonarQube (Java) Constant/issue: 2min

The use of operators pairs (`=+` , `=-` or `=!`) where the reversed, single operator was meant (`+=` , `-=` or `!=`) will compile and run, but not produce the expected results.

This rule raises an issue when `=+` , `=-` , or `=!` is used without any spacing between the two operators and when there is at least one whitespace character after.

Noncompliant Code Example

```
int target = -5;
int num = 3;

target -= num; // Noncompliant; target = -3. Is that really what's meant?
target += num; // Noncompliant; target = 3
```

Compliant Solution

```
int target = -5;
int num = 3;

target = -num; // Compliant; intent to assign inverse value of num is clear
target += num;
```

[Extend Description](#)

Quality Gates ?

Create

Sonar way

DEFAULT

BUILT-IN

Sonar way BUILT-IN

Conditions ?

Conditions on New Code

Metric	Operator	Value
Coverage	is less than	80.0%
Duplicated Lines (%)	is greater than	3.0%
Maintainability Rating	is worse than	A
Reliability Rating	is worse than	A
Security Hotspots Reviewed	is less than	100%
Security Rating	is worse than	A

Projects ?

Every project not specifically associated to a quality gate will be associated to this one by default.

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Manually

Create a project

All fields marked with * are required

Project display name *



Up to 255 characters. Some scanners might override the value you provide.

Project key *



The project key is a unique identifier for your project. It may contain up to 400 characters. Allowed characters are alphanumeric, '-' (dash), '_' (underscore), '.' (period) and ':' (colon), with at least one non-digit.

Set Up

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Locally

1


Provide a token

Generate a project token


Token name 

Expires in

Analyze "erphrense"

No expira... 


Generate



Please note that this token will only allow you to analyze the current project. If you want to use the same token to analyze multiple projects, you need to generate a global token in your [user account](#). See the [documentation](#) for more information.

The token is used to identify you when an analysis is performed. If it has been compromised, you can revoke it at any point in time in your [user account](#).

1 Provide a token

Analyze "erphrense": `sqp_4d85ada2c17d4a5901897244e46336c4be59c1ab` 

The token is used to identify you when an analysis is performed. If it has been compromised, you can revoke it at any point in time in your [user account](#).

Continue

2 Run analysis on your project

What option best describes your build?

What is your OS?


Download and unzip the Scanner for Windows

Visit the [official documentation of the Scanner](#) to download the latest version, and add the `bin` directory to the `%PATH%` environment variable

Execute the Scanner

Running a SonarQube analysis is straightforward. You just need to execute the following commands in your project's folder.

```
sonar-scanner.bat -D"sonar.projectKey=erphrense" -D"sonar.sources=." -D"sonar.host.url=http://localhost:9000" -D"sonar.login=sqp_4d85ada2c17d4a5901897244e46336c4be59c1ab"
```

 Copy

Please visit the [official documentation of the Scanner](#) for more details.

Is my analysis done? If your analysis is successful, this page will automatically refresh in a few moments.

You can set up Pull Request Decoration under the project settings. To set up analysis with your favorite CI tool, see the tutorials.

Check these useful links while you wait: [Branch Analysis](#), [Pull Request Analysis](#).

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SonarScanner

By [SonarSource](#) | [GNU LGPL 3](#) | [Issue Tracker](#)

4.7

[Show more versions](#)

2022-02-22

Ease import of custom certificates with the Docker image, update embedded JRE 11

[Linux 64-bit](#) | [Windows 64-bit](#) | [Mac OS X 64-bit](#) | [Docker](#)

[Any \(Requires a pre-installed JVM\)](#) | [Release notes](#)

The SonarScanner is the scanner to use when there is no specific scanner for your build system.

<https://docs.sonarqube.org/8.9/analysis/analysis-parameters/>

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sonar-scanner.bat

```
-D"sonar.projectKey=erphrense"  
-D"sonar.sources=."  
-D"sonar.host.url=http://localhost:9000"  
-D"sonar.login=sqp_4d85ada2c17d4a5901897244e46336c4be59c1ab"  
-D"sonar.java.binaries=target/classes"
```

```
INFO: Sensor Zero Coverage Sensor (done) | time=65ms
INFO: Sensor Java CPD Block Indexer
INFO: Sensor Java CPD Block Indexer (done) | time=106ms
INFO: SCM Publisher SCM provider for this project is: git
INFO: SCM Publisher 15/15 source files have been analyzed (done) | time=4886ms
INFO: CPD Executor 8 files had no CPD blocks
INFO: CPD Executor Calculating CPD for 6 files
INFO: CPD Executor CPD calculation finished (done) | time=39ms
INFO: Analysis report generated in 271ms, dir size=152.1 kB
INFO: Analysis report compressed in 1311ms, zip size=44.8 kB
INFO: Analysis report uploaded in 119ms
INFO: ANALYSIS SUCCESSFUL, you can find the results at: http://localhost:9000/dashboard?id=erphrense
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://localhost:9000/api/ce/task?id=AYStJBRT8yrs\_u6jGIGi
INFO: Analysis total time: 24.894 s
INFO: -----
INFO: EXECUTION SUCCESS
INFO: -----
INFO: Total time: 28.366s
INFO: Final Memory: 21M/77M
INFO: -----
```

Background Tasks

This page allows monitoring of the queue of tasks running asynchronously on the server. It also gives access to the history of finished tasks and their status. Analysis report processing is the most common kind of background task. [Learn More](#)

0 pending

Status

All Except Pending

Type

All

Start Date





Start Date

End Date

to End Date

Reload

Reset

Status	Task	ID	Submitter	Submitted	Started	Finished	Duration	
SUCCESS	 erphrense [Project Analysis]	AYSIN3Vu9_GiX7_nVdDo	admin	November 25, 2022 6:16:43 AM	6:16:44 AM	6:17:01 AM	17s	
FAILED	 erphrense [Project Analysis]	AYSINBRT8yrs_u6jGIGi	admin	5:55:33 AM	5:55:34 AM	5:55:58 AM	23s	

2 of 2 shown

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QUALITY GATE STATUS ?

Passed

All conditions passed.

MEASURES

New Code

Since November 25, ...
Started 23 minutes ago

Overall Code

0

New Bugs

Reliability

A

0

New Vulnerabilities

Security

A

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<https://www.jenkins.io/doc/pipeline/steps/sonar/>

1. Créer un user token pour accéder à SonarQube
2. Enregistrer ces identifiants dans Jenkins
3. Installer le plugin SonarQube
4. Enregistrer le webhook Jenkins dans SonarQube
5. Ajouter un step dans le build

Administration

Configuration ▾

Security ▾

Projects ▾

System

Marketplace

Users

[Create User](#)

Create and administer individual users.

Search by login or name...

SCM Accounts

Last connection

Groups

Tokens

A

Administrator admin

< 1 hour ago

sonar-administrators

sonar-users

1



1 of 1 shown

Tokens of Administrator

Generate Tokens

Name

Expires in



New token "Jenkins" has been created. Make sure you copy it now, you won't be able to see it again!



Copy

`squ_3520e7bce265ff9d860a491c6e9c89089b661dab`

Name	Type	Project	Last use	Created	Expiration	
Analyze "erphrense"	Project	erphrense	3 hours ago	November 25, 2022	–	<input type="button" value="Revoke"/>
Jenkins	User		Never	November 25, 2022	–	<input type="button" value="Revoke"/>

1. Créer un user token pour accéder à SonarQube
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5. Ajouter un step dans le build

Type

Secret text



Portée ?

Global (Jenkins, agents, items, etc...)



Secret

.....

ID ?

sonar

Description ?

SonarQube servers

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

☐

Environment variables Enable injection of SonarQube server configuration as build environment variables

Installations de SonarQube

Liste des installations de SonarQube

Ajouter une installation SonarQube

Nom

sonar-srv-1

URL du serveur

Par défaut à <http://localhost:9000>

<http://localhost:9000>

Server authentication token

SonarQube authentication token. Mandatory when anonymous access is disabled.

sonar

+ Ajouter

Avancé...

Create Webhook

All fields marked with * are required

Name *



URL *



Server endpoint that will receive the webhook payload, for example:
"http://my_server/foo". If HTTP Basic authentication is used, HTTPS is
recommended to avoid man in the middle attacks. Example:
"https://myLogin:myPassword@my_server/foo"

Secret



If provided, secret will be used as the key to generate the HMAC hex
(lowercase) digest value in the 'X-Sonar-Webhook-HMAC-SHA256'
header

Create

Cancel

Administration

[Configuration](#) ▾ [Security](#) ▾ [Projects](#) ▾ [System](#) [Marketplace](#)

General Settings

Edit global settings for this SonarQube instance.

Q local X

Analysis Scope

Authentication

DevOps Platform
Integrations

External Analyzers

Enable local webhooks validation

Forcing local webhooks validation prevents the creation and triggering of local webhooks

Disabling this setting can expose the instance to security risks.

Key: sonar.validateWebhooks



Save

Cancel

```
stage('quality') {
  steps {
    withSonarQubeEnv('sonar-srv-1') {
      dir('projects/erphrense') {
        bat 'sonar-scanner.bat -D"sonar.projectKey=erphrense" -D"sonar.sources=." -D"sonar.host.url=http://localhost:9000" -'
      }
    }
  }
}

stage("gate") {
  steps {
    waitForQualityGate abortPipeline: true
  }
}
```