

4 코드품질을 위한 Sonarqube 활용

01 코드품질을 위한 Sonarqube 활용 소개

Chapter 소개

01

코드품질을 위한
Sonarqube 활용
소개

코드품질을 위한 Sonarqube 활용 소개

- 코드품질을 위한 Sonarqube 활용 소개
- Sonarqube 설치
- Sonarqube 코드품질 설정 및 Docker 빌드 스캔 수행

정적 분석 vs 동적 분석

01
코드 품질을 위한
Sonarqube 활용
소개

구분	정적 분석 (Static analysis)	동적 분석 (Dynamic analysis)
분석 대상	소스코드 또는 컴파일된 바이너리	프로그램 실행 환경
테스트 범위	소스코드의 모든 부분	실행가능한 경로
활용	코드 상의 문제나 실수를 찾음	테스트, 모니터링

Sonarqube 소개

01

코드품질을 위한
Sonarqube 활용
소개

Project 코드 품질 측정

프로젝트 코드의 품질 정보 측정
빌드 및 통합 후 품질 변화 측정

폴리그랏 언어별 Rule 지원

Java, Go 등 언어별 Rule 지원
Jacoco 등 분석 플러그인 지원

Quality Profiles 관리

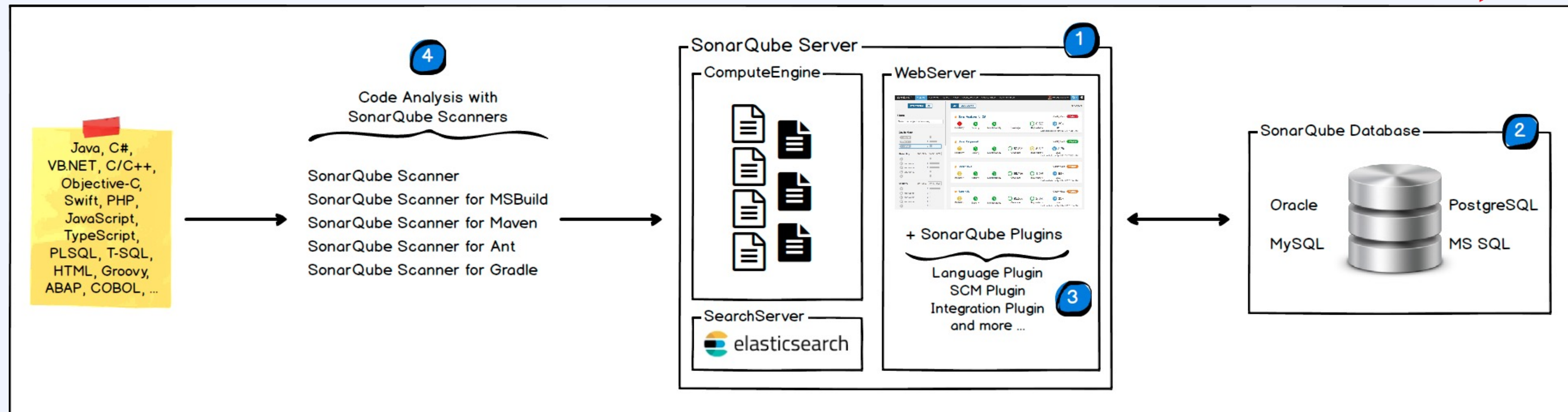
분석 Ruleset 정의 및 적용
Ruleset 기반 Profile 구성

Quality Gates 설정

다수 그룹의 품질 요구사항 설정
다수 항목별 품질 요구사항 설정

Sonarqube 구성 방식

01 코드 품질을 위한 Sonarqube 활용 소개



출처 : <https://docs.sonarqube.org/7.1/ArchitectureandIntegration.html>

Project

01
코드품질을 위한
Sonarqube 활용
소개

sonarqube

Projects

Issues

Rules

Quality Profiles

Quality Gates

Administration

?

Search for projects...

A

My Favorites

All

Filters

Quality Gate

Passed1

Failed0

Reliability (Bugs)

A1

B0

C0

D0

E0

Security (Vulnerabilities)

A1

B0

C0

D0

E0

Security Review (Security Hotspots)

A ≥ 80%1

B 70% - 80%0

C 50% - 70%0

D 30% - 50%0

E < 30%0

Maintainability (Code Smells)

A1

B0

C0

D0

Search by project name or key

Create Project

Home

1 projects

Perspective: Overall Status

Sort by: Name

☆ test-docker-spring-boot

Passed

Last analysis: 5 hours ago

Bugs0A

Vulnerabilities0A

Hotspots Reviewed-A

Code Smells0A

Coverage0.0%

Duplications0.0%

Lines47XSHTML, Java,...

1 of 1 shown

Embedded database should be used for evaluation purposes only

The embedded database will not scale, it will not support upgrading to newer versions of SonarQube, and there is no support for migrating your data out of it into a different database engine.

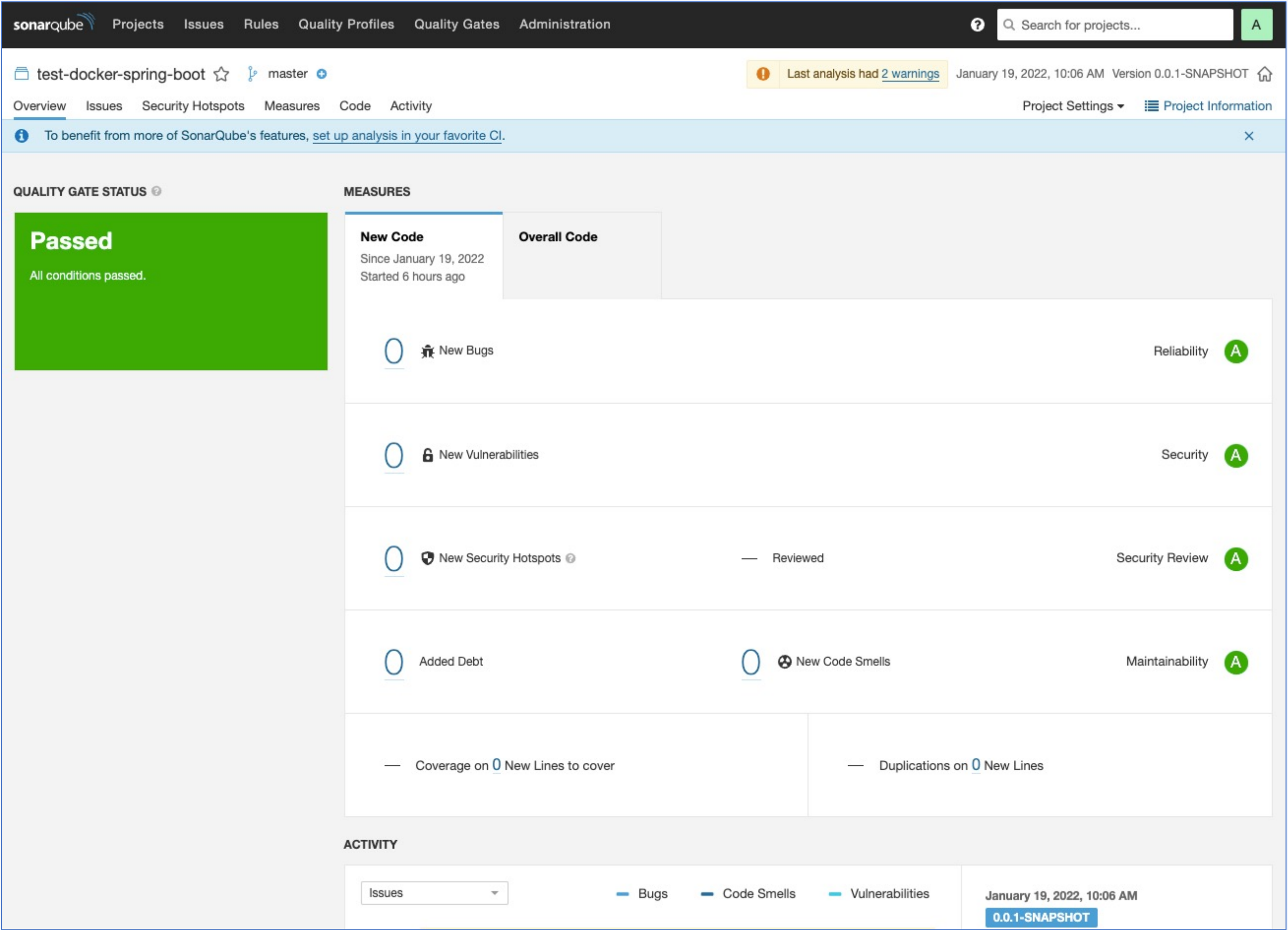
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6

Issue

01
코드품질을 위한
Sonarqube 활용
소개



Rules

01

코드 품질을 위한 Sonarqube 활용 소개

sonarqube
Projects Issues Rules Quality Profiles Quality Gates Administration
Search for projects...
A

Filters

Search for rules...

▼ Language

Search for languages...

Java	620
C#	396
JavaScript	275
TypeScript	269
PHP	248
Python	185
VB.NET	168
Kotlin	104
Flex	82
HTML	71
Ruby	48
Scala	47
Go	44
CloudFormation	33
Terraform	32

15 shown Show More

▼ Type

Bug	580
Vulnerability	144
Code Smell	1.7k
Security Hotspot	299

> Tag

> Repository

> Default Severity

> Status

Bulk Change

1 / 2,699 rules

"!important" should not be used on "keyframes"	CSS Bug
"\$this" should not be used in a static context	PHP Bug
"&&" and " " should be used	PHP Code Smell suspicious
".equals()" should not be used to test the values of "Atomic" classes	Java Bug multi-threading
"<!DOCTYPE>" declarations should appear before "<html>" tags	HTML Bug user-experience
"<>" should not be used to test inequality	Python Code Smell obsolete
"<?php" and "<?=" tags should be used	PHP Code Smell convention, psr1
"<fieldset>" tags should contain a "<legend>"	HTML Bug accessibility
"<frames>" should have a "title" attribute	HTML Bug accessibility
"<html>" element should have a language attribute	HTML Bug accessibility, wcag2-a
"" and "<dt>" item tags should be in "", "" or "<dl>" container tags	HTML Bug
"<object>" tags should provide an alternative content	HTML Code Smell accessibility, wcag2-a
"" and "" tags should be used	HTML Bug accessibility
"<table>" tags should have a description	HTML Bug accessibility, wcag2-a
"<th>" tags should have "id" or "scope" attributes	HTML Bug accessibility, wcag2-a
"<title>" should be present in all pages	HTML Bug user-experience
"=+" should not be used instead of "+="	C# Bug
"=+" should not be used instead of "+="	VB.NET Bug
"=+" should not be used instead of "+="	Go Bug
"=+" should not be used instead of "+="	Java Bug

Quality Profiles

01

코드 품질을 위한 Sonarqube 활용 소개

Sonarqube
[Projects](#)
[Issues](#)
[Rules](#)
[**Quality Profiles**](#)
[Quality Gates](#)
[Administration](#)

Search for projects...

Quality Profiles

Quality Profiles are collections of rules to apply during an analysis.
For each language there is a default profile. All projects not explicitly assigned to some other profile will be analyzed with the default.
Ideally, all projects will use the same profile for a language. [Learn More](#)

Filter profiles by:

C#, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	255	6 hours ago	Never

CSS, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	23	6 hours ago	5 hours ago

CloudFormation, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	26	6 hours ago	Never

Flex, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	47	6 hours ago	Never

Go, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	25	6 hours ago	Never

HTML, 1 profile(s)	Projects ?	Rules	Updated	Used
Sonar way BUILT-IN	DEFAULT	25	6 hours ago	Never

Deprecated Rules

Deprecated rules are still activated on 1 Quality Profile(s):
[Sonar way](#)
Python, 2 rule(s)

Recently Added Rules

- [Lines should have sufficient coverage by tests](#)
C#, not yet activated
- [Source files should have a sufficient density of co...](#)
C#, not yet activated
- [Failed unit tests should be fixed](#)
C#, not yet activated
- [Source files should not have any duplicated blocks](#)
C#, not yet activated
- [Skipped unit tests should be either removed or fix...](#)
C#, not yet activated
- [Branches should have sufficient coverage by tests](#)
C#, not yet activated
- [Branches should have sufficient coverage by tests](#)
HTML, not yet activated
- [Lines should have sufficient coverage by tests](#)
HTML, not yet activated
- [Source files should not have any duplicated blocks](#)
HTML, not yet activated
- [Failed unit tests should be fixed](#)
HTML, not yet activated

[See all 2.7k](#)

Quality Gates

01
코드품질을 위한
Sonarqube 활용
소개

sonarqube

ProjectsIssuesRulesQuality ProfilesQuality GatesAdministration

Search for projects...A

Quality Gates ⓘ

Create

Sonar wayDEFAULTBUILT-IN

Sonar wayBUILT-INCopy

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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Administration

01

코드품질을 위한
Sonarqube 활용
소개

sonarqube

ProjectsIssuesRulesQuality ProfilesQuality GatesAdministration

?

Search for projects...

A

Administration

Configuration▼Security▼Projects▼SystemMarketplace

Projects Management

Default visibility of new projects: Public [Create Project](#)

Use this page to delete multiple projects at once, or to provision projects if you would like to configure them before the first analysis. Note that once a project is provisioned, you have access to perform all project configurations on it.

☐ Last analysis before

Public, Pr... ▼

☐ Only Provisioned [Bulk Apply Permission Template](#) [Delete](#)

Name	Key	Last Analysis
<input type="checkbox"/> test-docker-spring-boot	com.test:test-docker-spring-boot	Jan 19, 2022

1 of 1 shown

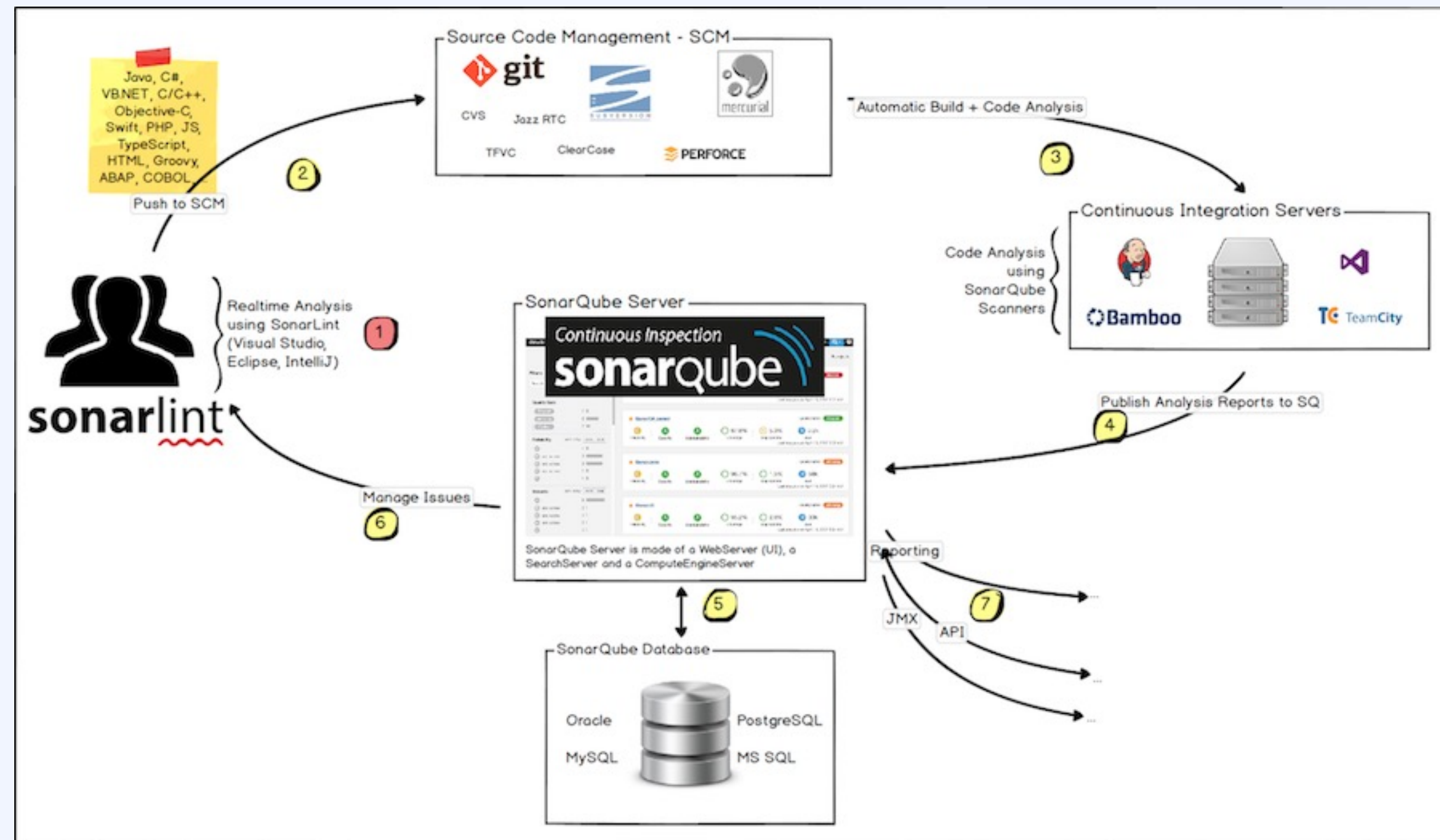
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SonarQube & Jenkins CI 연동

01

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소개



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