

소프트웨어 테스트

실습 10#: SonarQube

CSE4061
2023

설계 목표

- SonarQube 설치
- SonarQube 실행
- SonarScanner 설치 및 실행



SonarQube 설치

- SonarQube 설치 방법 사이트 참조
- SonarQube 설치 및 업그레이드 (한글)
<https://sonarqubekr.atlassian.net/wiki/spaces/SON/pages/268104/SonarQube>
- SonarQube 설치 및 업그레이드 (영문)
<https://docs.sonarqube.org/latest/setup/get-started-2-minutes/>



SonarQube 설치

- SonarQube 설치 방법
- SonarQube는 **Java 17**_(version)에 최적화 되어있습니다.

Supported platforms

Java

The SonarQube server requires Java version 17 and the SonarQube scanners require Java version 11 or 17.

SonarQube is able to analyze any kind of Java source files regardless of the version of Java they comply with.

We recommend using the *critical patch update* (CPU) releases.

| Java | Server | Scanners |
|------------|---------|----------|
| Oracle JRE | ✓ 17 | ✓ 17 |
| | ✗ 11 | ✓ 11 |
| OpenJDK | ✓ 17 | ✓ 17 |
| | ✗ 11 | ✓ 11 |



SonarQube 설치

- SonarQube 설치 방법

- 링크로 들어가 JDK 17버전 다운 및 설치

<https://www.azul.com/downloads/?package=jdk#zulu>

Azul Zulu Azul Platform Prime Package Managers / API Platform Components

Java Version: Java 17 (LTS) × Operating System: Windows × Architecture: Any Java Package: Any Include older versions: ☐ Reset Filters

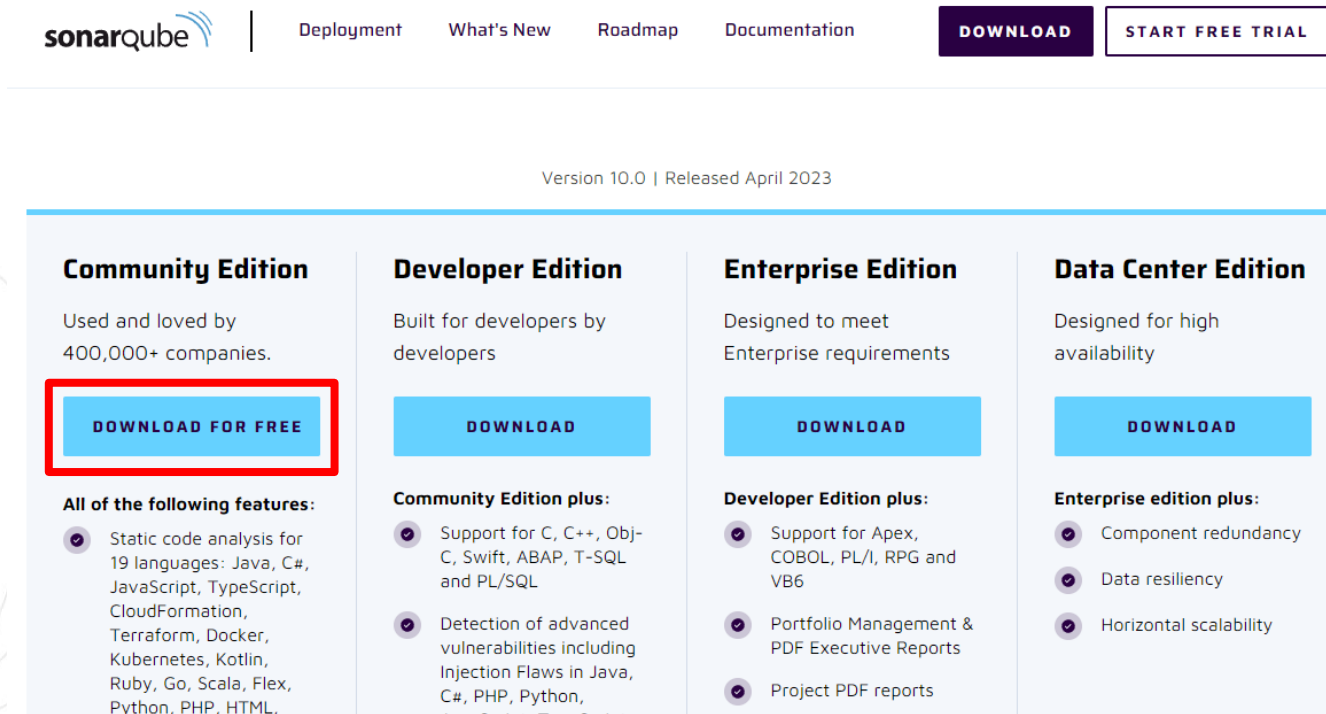
Java 17 (LTS)

| | | | | |
|---------------------------------|---------|------------|--------|------------|
| 17.0.7+7 Azul Zulu: 17.42.19 | Windows | x86 64-bit | JDK | Download ▾ |
| 17.0.7+7 Azul Zulu: 17.42.19 | Windows | x86 64-bit | JRE | Download ▾ |
| 17.0.7+7 Azul Zulu: 17.42.19 | Windows | x86 64-bit | JDK FX | Download ▾ |
| 17.0.7+7 Azul Zulu: 17.42.19 | Windows | x86 64-bit | JRE FX | Download ▾ |

SonarQube 설치

- SonarQube 설치 방법

- 링크로 들어가 SonarQube Community Edition을 다운로드
<https://www.sonarsource.com/products/sonarqube/downloads/>



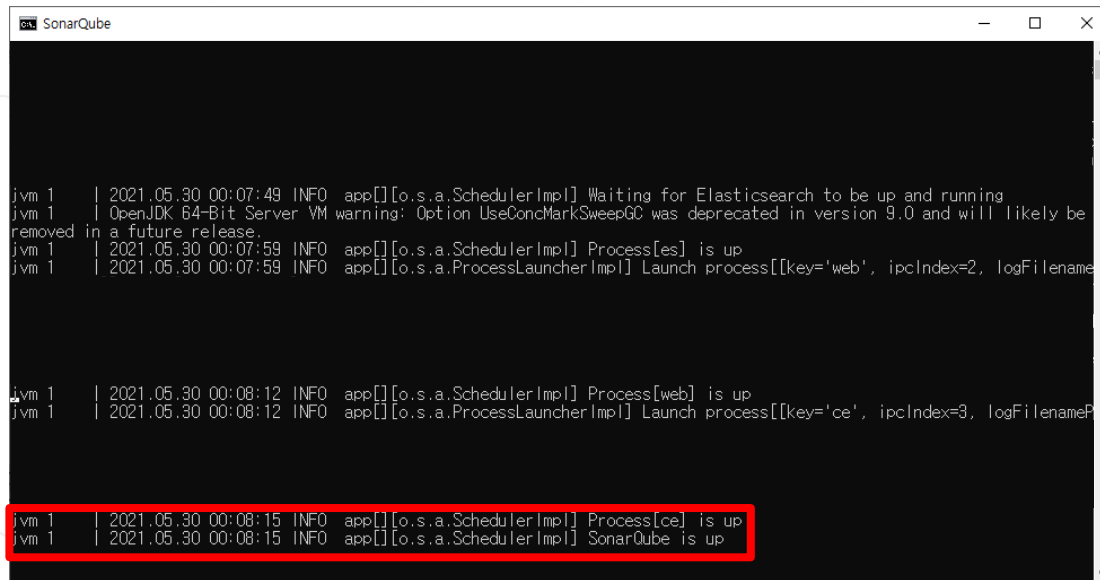
The screenshot shows the SonarQube website's download page. At the top, there is a navigation bar with the SonarQube logo, links for Deployment, What's New, Roadmap, and Documentation, and two buttons: 'DOWNLOAD' and 'START FREE TRIAL'. Below the navigation bar, the text 'Version 10.0 | Released April 2023' is displayed. The main content area is divided into four columns, each representing a different edition of SonarQube:

- Community Edition**: Used and loved by 400,000+ companies. It features a 'DOWNLOAD FOR FREE' button, which is highlighted with a red rectangle. Below the button, it lists 'All of the following features:' including static code analysis for 19 languages (Java, C#, JavaScript, TypeScript, CloudFormation, Terraform, Docker, Kubernetes, Kotlin, Ruby, Go, Scala, Flex, Python, PHP, HTML).
- Developer Edition**: Built for developers by developers. It features a 'DOWNLOAD' button. Below the button, it lists 'Community Edition plus:' features, including support for C, C++, Obj-C, Swift, ABAP, T-SQL and PL/SQL, and detection of advanced vulnerabilities including Injection Flaws in Java, C#, PHP, Python.
- Enterprise Edition**: Designed to meet Enterprise requirements. It features a 'DOWNLOAD' button. Below the button, it lists 'Developer Edition plus:' features, including support for Apex, COBOL, PL/I, RPG and VB6, Portfolio Management & PDF Executive Reports, and Project PDF reports.
- Data Center Edition**: Designed for high availability. It features a 'DOWNLOAD' button. Below the button, it lists 'Enterprise edition plus:' features, including component redundancy, data resiliency, and horizontal scalability.

SonarQube 설치

- SonarQube 설치 방법
- 다운로드 받은 파일을 압축을 푼 뒤 sonaubeWbinWwindows-x86-64(윈도우 기준) 들어가서 StartSonar.bat 파일을 실행

StartSonar Windows 배치 파일 2KB



```

jvm 1 | 2021.05.30 00:07:49 INFO app[][o.s.a.SchedulerImpl] Waiting for Elasticsearch to be up and running
jvm 1 | OpenJDK 64-Bit Server VM warning: Option UseConcMarkSweepGC was deprecated in version 9.0 and will likely be
removed in a future release.
jvm 1 | 2021.05.30 00:07:59 INFO app[][o.s.a.SchedulerImpl] Process[es] is up
jvm 1 | 2021.05.30 00:07:59 INFO app[][o.s.a.ProcessLauncherImpl] Launch process[[key='web', ipcIndex=2, logFilenameP

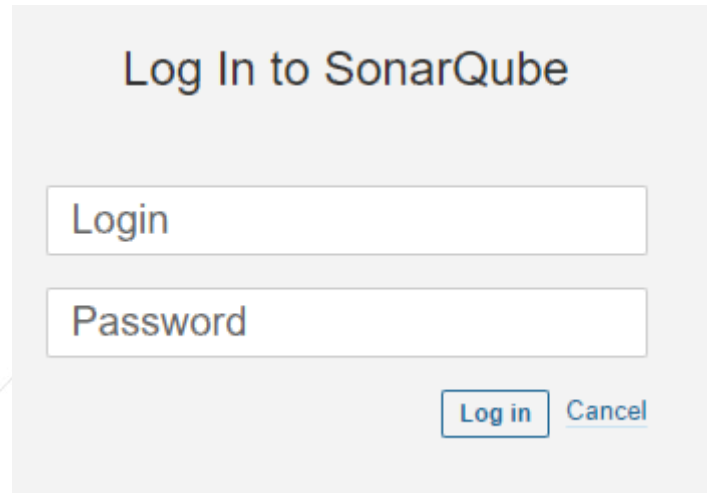
jvm 1 | 2021.05.30 00:08:12 INFO app[][o.s.a.SchedulerImpl] Process[web] is up
jvm 1 | 2021.05.30 00:08:12 INFO app[][o.s.a.ProcessLauncherImpl] Launch process[[key='ce', ipcIndex=3, logFilenameP

jvm 1 | 2021.05.30 00:08:15 INFO app[][o.s.a.SchedulerImpl] Process[ce] is up
jvm 1 | 2021.05.30 00:08:15 INFO app[][o.s.a.SchedulerImpl] SonarQube is up

```

SonarQube 설치

- SonarQube 설치 방법
- <http://localhost:9000>으로 들어가서 SonarQube가 실행 되면 설치 완료

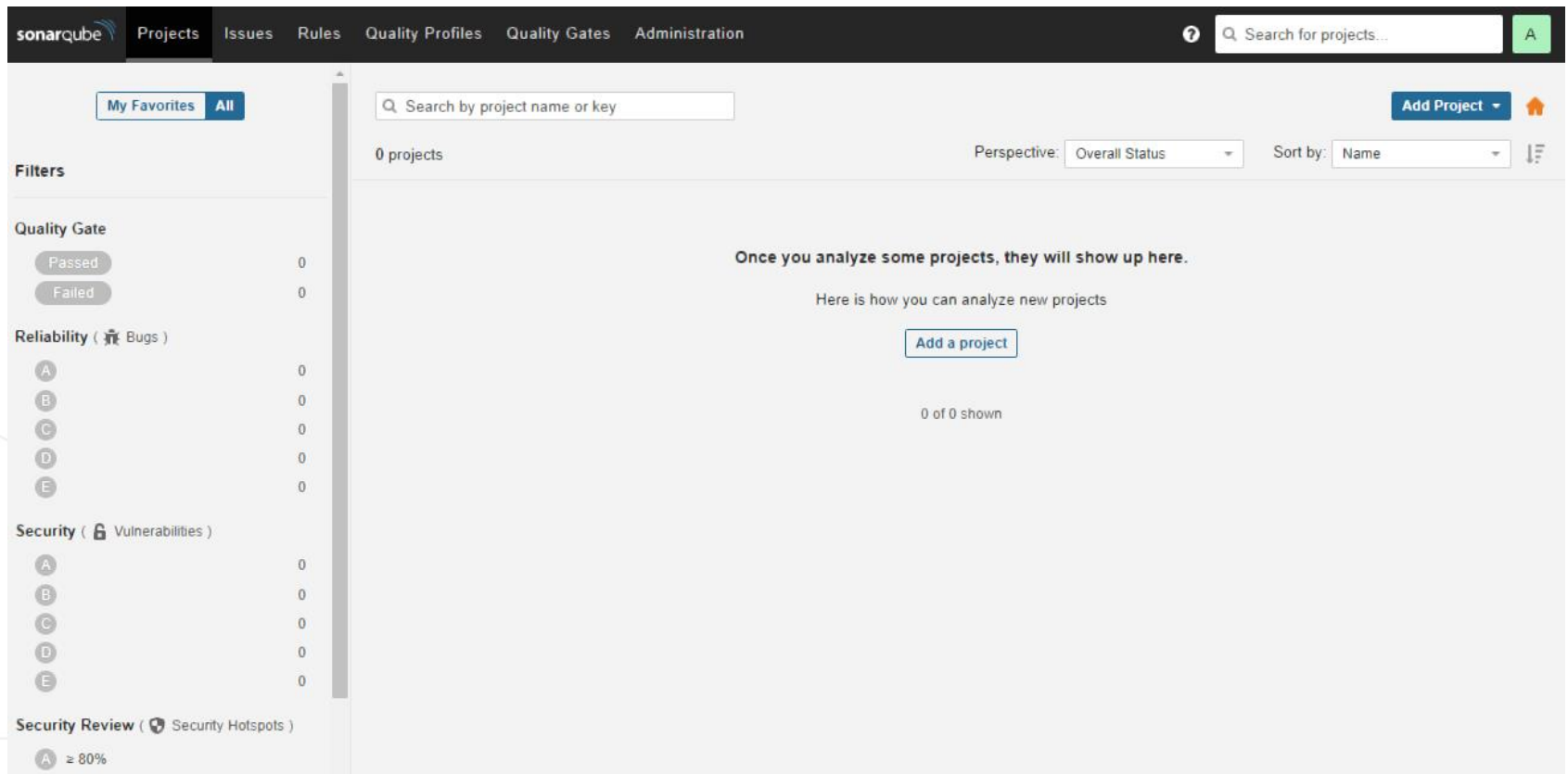


A screenshot of the SonarQube login dialog box. It has a light gray background and a white border. The title "Log In to SonarQube" is centered at the top. Below the title are two input fields: "Login" and "Password". At the bottom right, there are two buttons: "Log in" and "Cancel".

- 최초 로그인은 ID : admin / PW : admin으로 접속

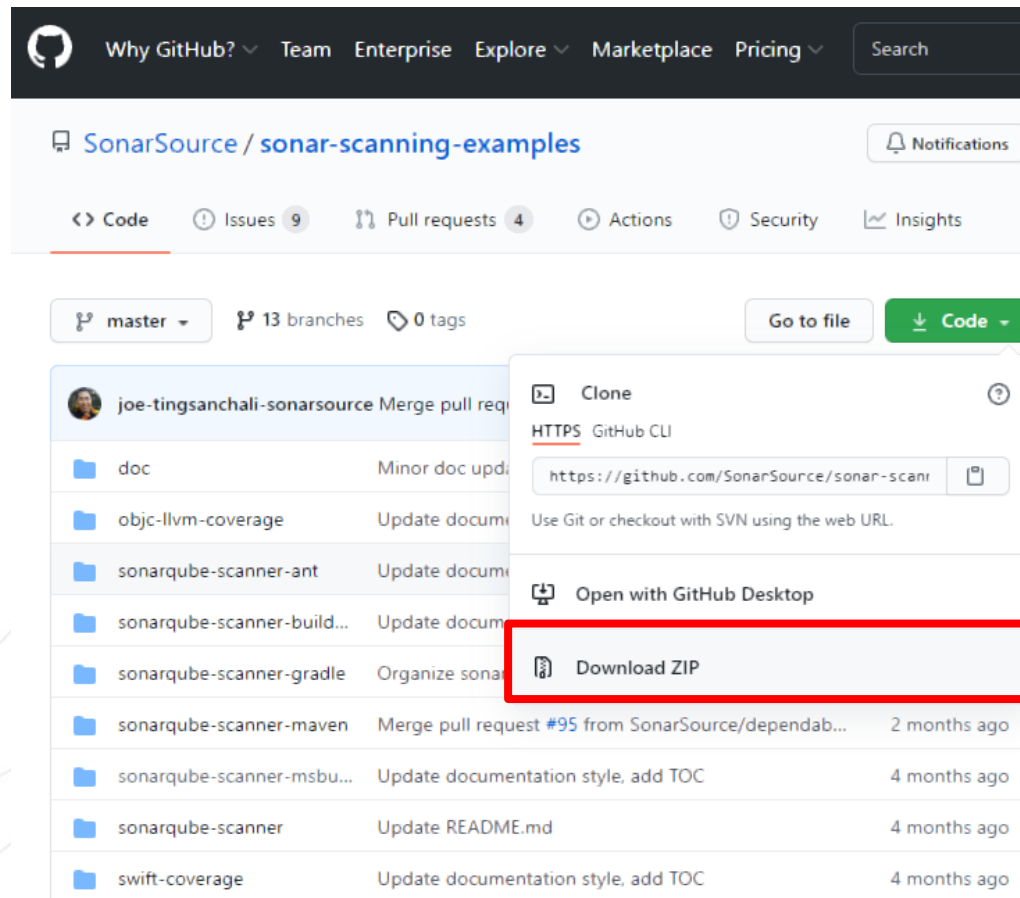
SonarQube 설치

- SonarQube 설치 방법
- 로그인 완료 시 화면



SonarQube 실행

- SonarQube를 진행하기 위해 예제 코드 설치
<https://github.com/SonarSource/sonar-scanning-examples>



SonarQube 실행

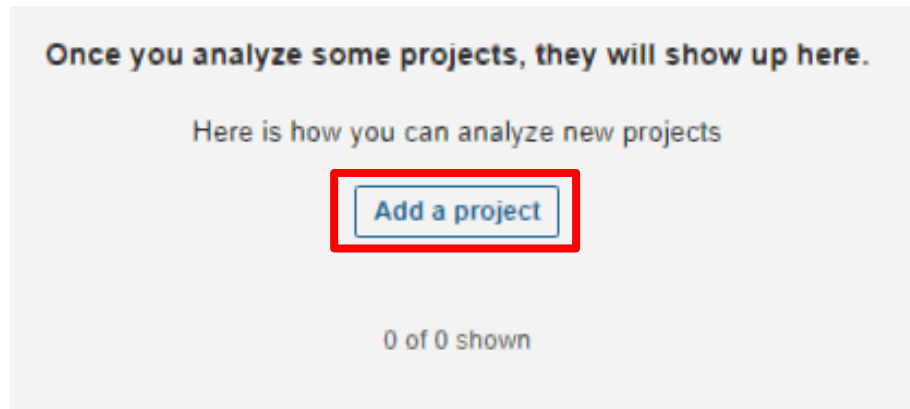
- 설치 폴더 확인 (gradle-basic)

ex) sonar-scanning-examples-master\sonarqube-scanner-gradle\gradle-basic

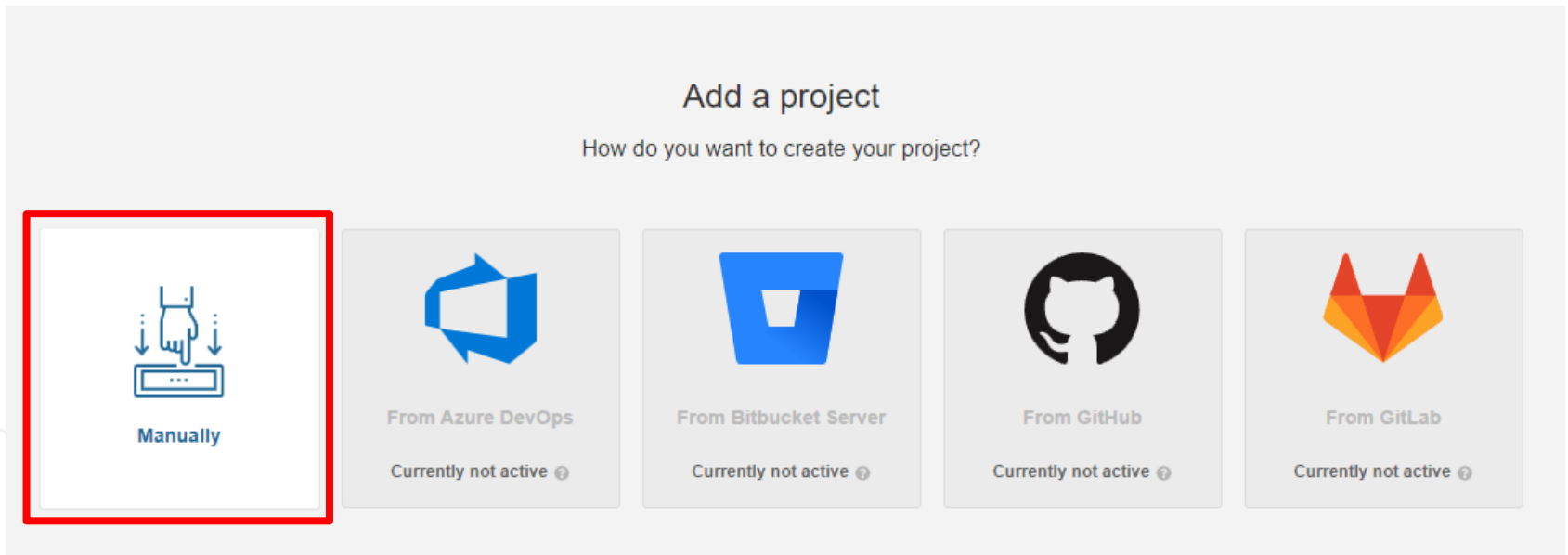


| << sonar-scanning-examples-master > sonarqube-scanner-gradle > gradle-basic | | | | | gradle-b |
|---|--------|---------------|-----|--|----------|
| 이름 | 수정한 날짜 | 유형 | 크기 | | |
| .gradle | | 파일 폴더 | | | |
| build | | 파일 폴더 | | | |
| gradle | | 파일 폴더 | | | |
| src | | 파일 폴더 | | | |
| build.gradle | | GRADLE 파일 | 1KB | | |
| gradle.properties | | PROPERTIES 파일 | 1KB | | |
| gradlew | | 파일 | 6KB | | |
| gradlew | | Windows 배치 파일 | 3KB | | |
| README.md | | MD 파일 | 1KB | | |
| settings.gradle | | GRADLE 파일 | 1KB | | |

- Token 생성을 위해 SonarQube 튜토리얼 진행



- Token 생성을 위해 SonarQube 튜토리얼 진행



- Token 생성을 위해 SonarQube 튜토리얼 진행

Create a project

All fields marked with * are required

Project key * ?

Demo ✓

Up to 400 characters. Allowed characters are alphanumeric, '-' (dash), '_' (underscore), '.' (period) and ':' (colon), with at least one non-digit.

Display name * ?

Demo ✓

Up to 255 characters

Set Up

- Token 생성을 위해 SonarQube 튜토리얼 진행

1 Provide a token

Generate a token

test

Generate

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

1 Provide a token

test:

토큰 키



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

Continue

2 Run analysis on your project

What option best describes your build?

Maven

Gradle

.NET

Other (for JS, TS, Go, Python, PHP, ...)

● Token 생성을 위해 SonarQube 튜토리얼 진행

2 Run analysis on your project

What option best describes your build?

Maven **Gradle** .NET Other (for JS, TS, Go, Python, PHP, ...)

Execute the Scanner for Gradle from your computer

Running an analysis with Gradle is straightforward. You just need to declare the `org.sonarqube` plugin in your `build.gradle` file:

```
plugins {  
    id "org.sonarqube" version "3.0"  
}
```

Copy

You can find the latest version of the Gradle plugin [here](#).

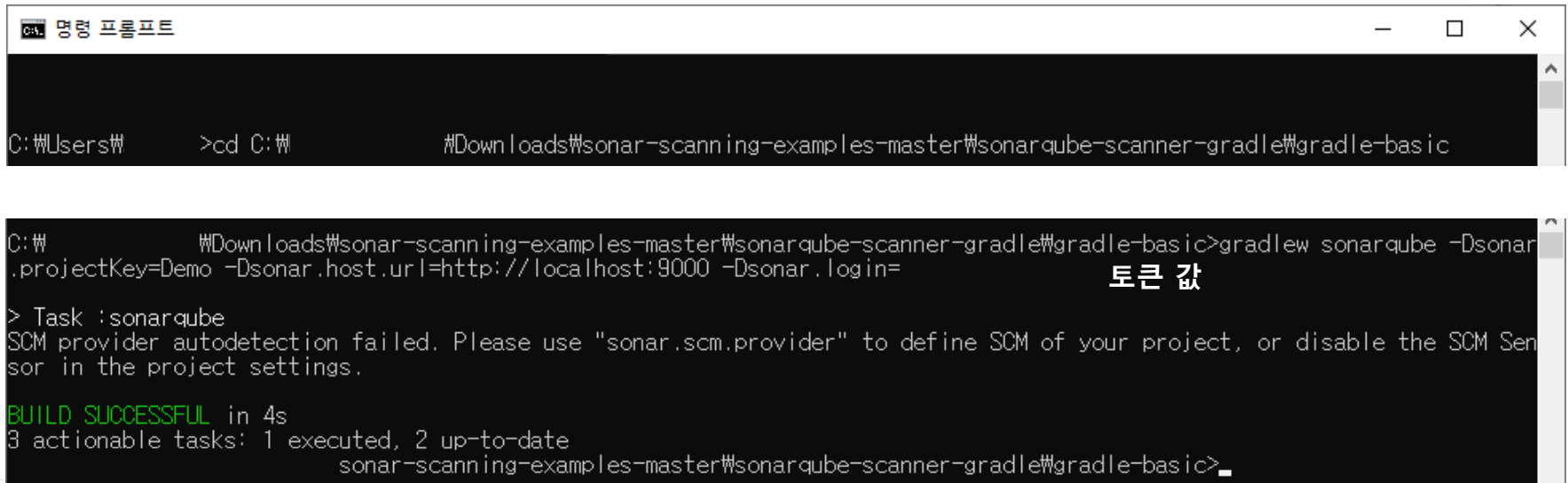
and run the following command:

```
./gradlew sonarqube \  
-Dsonar.projectKey=Demo \  
-Dsonar.host.url=http://localhost:9000 \  
-Dsonar.login=토큰 키
```

Copy

SonarQube 실행

- 명령 프롬프트(cmd)를 이용하여 sonarqube에 빌드



```
cmd 명령 프롬프트

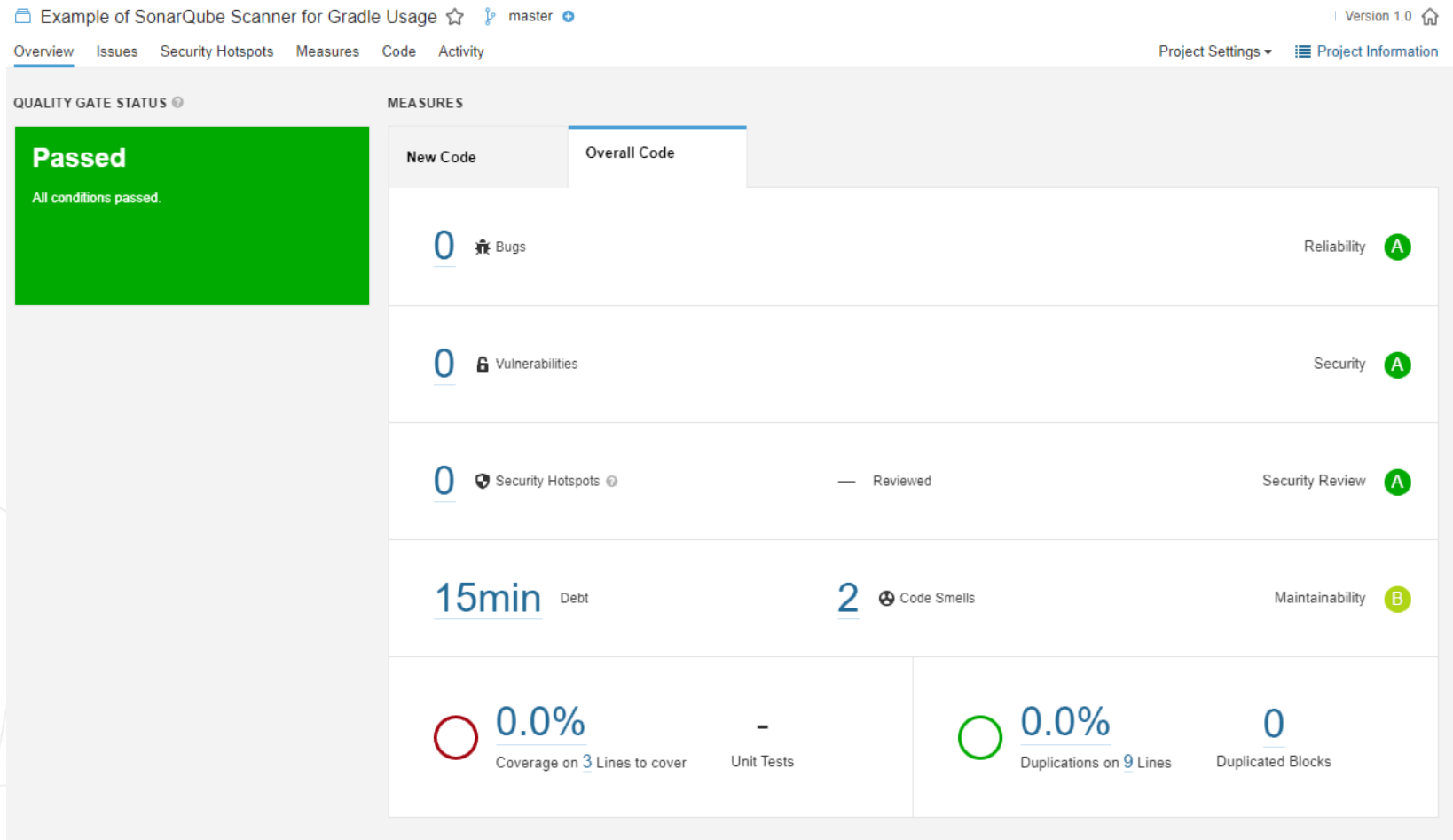
C:\Users\₩ >cd C:\₩₩₩Downloads\sonar-scanning-examples-master\sonarqube-scanner-gradle\gradle-basic

C:\₩₩₩Downloads\sonar-scanning-examples-master\sonarqube-scanner-gradle\gradle-basic>gradlew sonarqube -Dsonar.projectKey=Demo -Dsonar.host.url=http://localhost:9000 -Dsonar.login=토큰 값

> Task :sonarqube
SCM provider autodetection failed. Please use "sonar.scm.provider" to define SCM of your project, or disable the SCM Sensor in the project settings.

BUILD SUCCESSFUL in 4s
3 actionable tasks: 1 executed, 2 up-to-date
sonar-scanning-examples-master\sonarqube-scanner-gradle\gradle-basic>_
```

- localhost:9000에 빌드 완료



SonarScanner 설치 및 실행

- SonarScanner 설치 방법

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

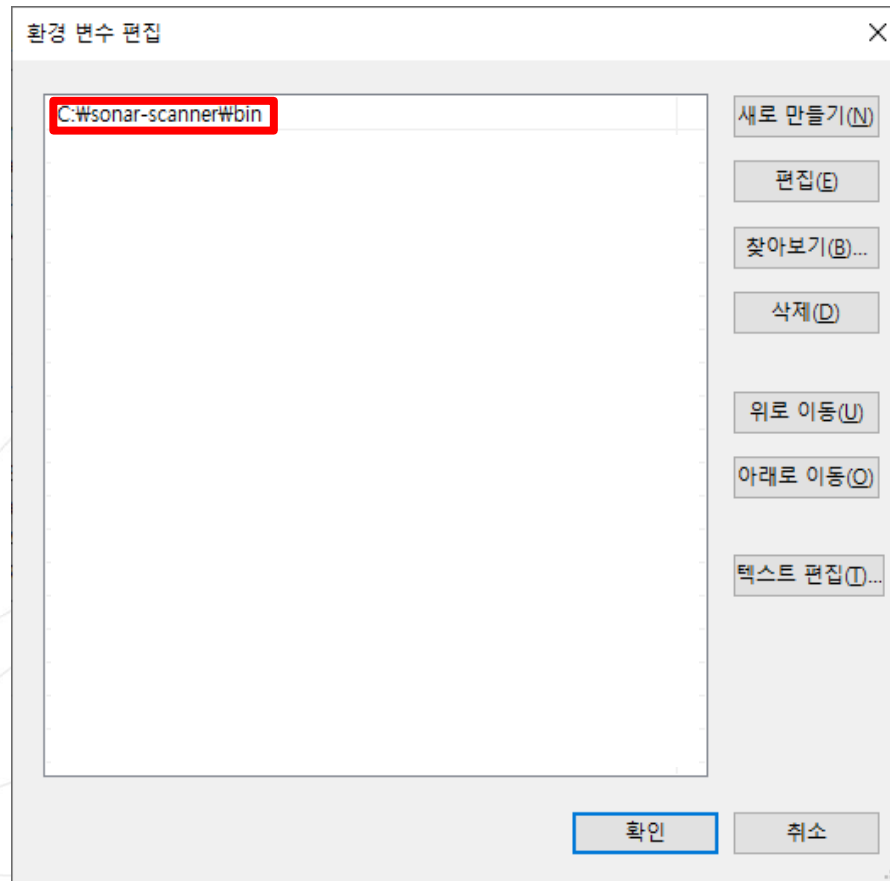
[Linux 64-bit](#) [Windows 64-bit](#) [Mac OS X 64-bit](#) [Docker](#)

[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.

SonarScanner 설치 및 실행

- SonarScanner 설치 방법
- 다운로드 받은 파일을 압축을 푼 뒤
SonarScanner 경로를 환경 변수 설정



SonarScanner 설치 및 실행

● SonarScanner 실행 방법

Analyze your project

We initialized your project on SonarQube, now it's up to you to launch analyses!

- 1 Provide a token test 토큰 키
- 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=Test1" -D"sonar.sources=." -D"sonar.host.url=http://localhost:9000" -D"sonar.login=토큰 키" 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](#).

SonarScanner 설치 및 실행

- SonarScanner 실행 방법
- -D"sonar.java.binaries=."

```
관리자: 명령 프롬프트

C:\WINDOWS\system32>cd C:\sonarqube_scanner_test

C:\sonarqube_scanner_test>sonar-scanner.bat -D"sonar.projectKey=Test1" -D"sonar.sources=." -D"sonar.host.url=http://127.0.0.1:9000" -D"sonar.login=
토큰 값" -D"sonar.java.binaries=."
```

```
INFO: ANALYSIS SUCCESSFUL, you can find the results at: http://127.0.0.1:9000/dashboard?id=Test1
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://127.0.0.1:9000/api/ce/task?id=AYD113218LSALu7SMjL-
INFO: Analysis total time: 7.424 s
INFO: -----
INFO: EXECUTION SUCCESS
INFO: -----
INFO: Total time: 8.965s
INFO: Final Memory: 23M/77M
INFO: -----
```

SonarScanner 설치 및 실행

● SonarScanner 실행 결과

