

ADVANCED DEVOPS LAB

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Experiment No : 08

Aim: Perform static analysis using sonarqube and show the analysis

1. [Download](#) the SonarQube Community Edition zip file.


The screenshot shows the SonarQube download page. The browser address bar displays <https://www.sonarqube.org/downloads/>. The page header includes the SonarQube logo and navigation links: Product, What's New, Documentation, and Community. Below the header, a banner states "The leading product for Code Quality and Security" and "HELPING DEVS SINCE 2008". A version bar indicates "Version: 9.7.1 | Release: November 2022" and provides links for "Getting Started", "Release Notes", and "Upgrade Notes".

The main content area features three columns representing different editions:

- Community EDITION**: Described as "Used and loved by 200,000+ companies" and "FREE & OPEN SOURCE". It includes a "Download for free" button. Features listed include static code analysis for 17 languages (Java, C#, JavaScript, TypeScript, CloudFormation, Terraform, Kotlin, Ruby, Go, Scala, Flex, Python, PHP, HTML, CSS, XML, and VB.NET), detecting bugs and vulnerabilities, reviewing security hotspots, and tracking code smells.
- Developer EDITION**: Described as "Built for developers by developers". It includes a "Download" button. Features listed include C, C++, Obj-C, Swift, ABAP, T-SQL, PL/SQL support; detection of injection flaws; analysis of feature and maintenance branches; and pull request decoration.
- Enterprise EDITION**: Described as "Designed to meet Enterprise Requirements". It includes a "Download" button. Features listed include portfolio management & PDF executive reports, project PDF reports, security reports, project transfer, parallel processing of analysis reports, and support for Apex, COBOL, and more.

2. [Download](#) and install Java 11 on your system.

https://adoptium.net/temurin/releases/?version=11



TEMURIN
by ADOPTIUM

The latest releases recommended for use in production are listed below, and are regularly [updated and supported](#) by the Adoptium community. Migration help, container images and package installation guides are available in the [documentation section](#). You can read the [Release Notes](#) for each version thanks to our friends at Foojay.io!

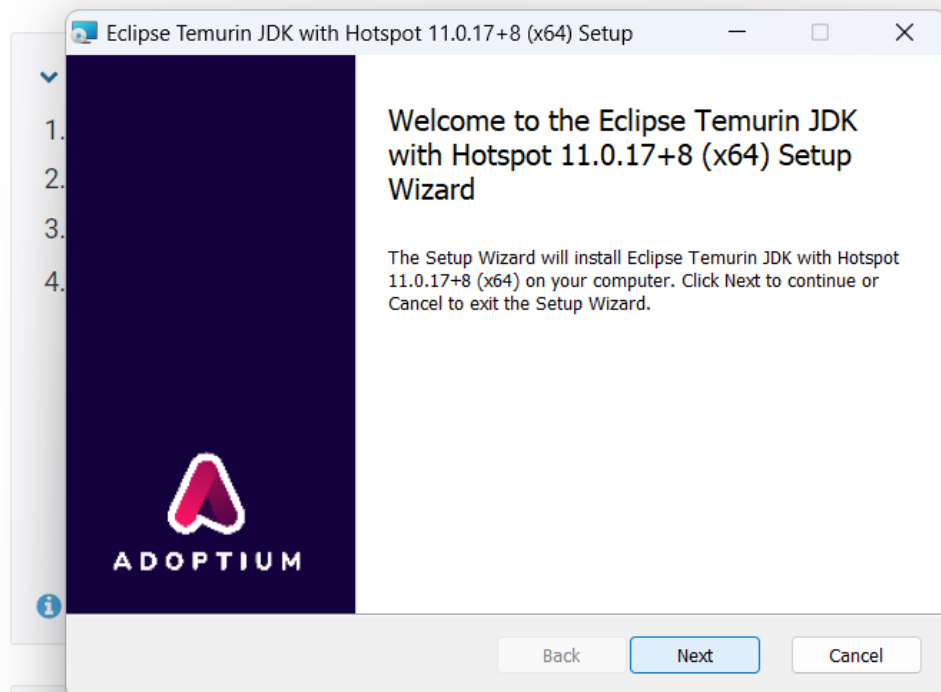
Use the drop-down boxes below to filter the list of current releases.

Operating System	Architecture	Package Type	Version
Windows	x64	JDK	11

jdk-11.0.17+8 Temurin   October 25, 2022	Windows	x64	JDK - 174 MB Checksum	 .msi
			JDK - 197 MB Checksum	 .zip

Previous releases are available in the Temurin archive.

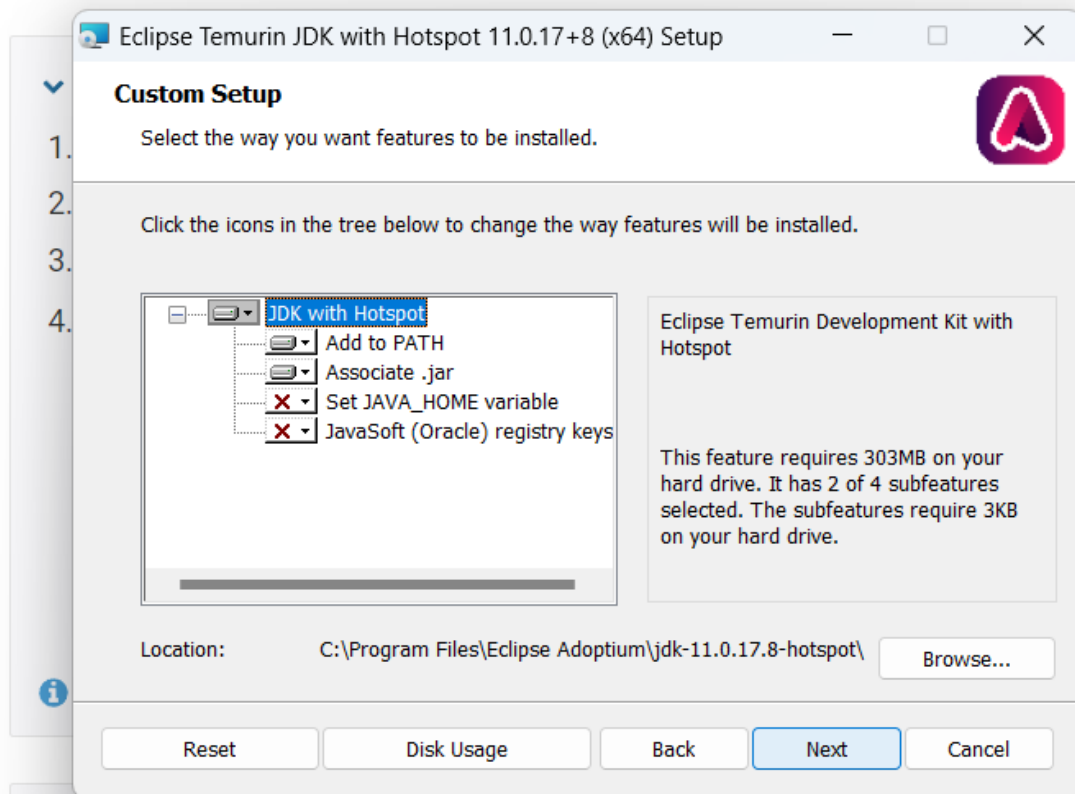
you can evaluate SonarQube using a traditional installation with the [zip file](#) or you can spin up a Docker container using one of our [Docker images](#). Click the method you prefer below to see the installation instructions:



> [From the Docker image](#)

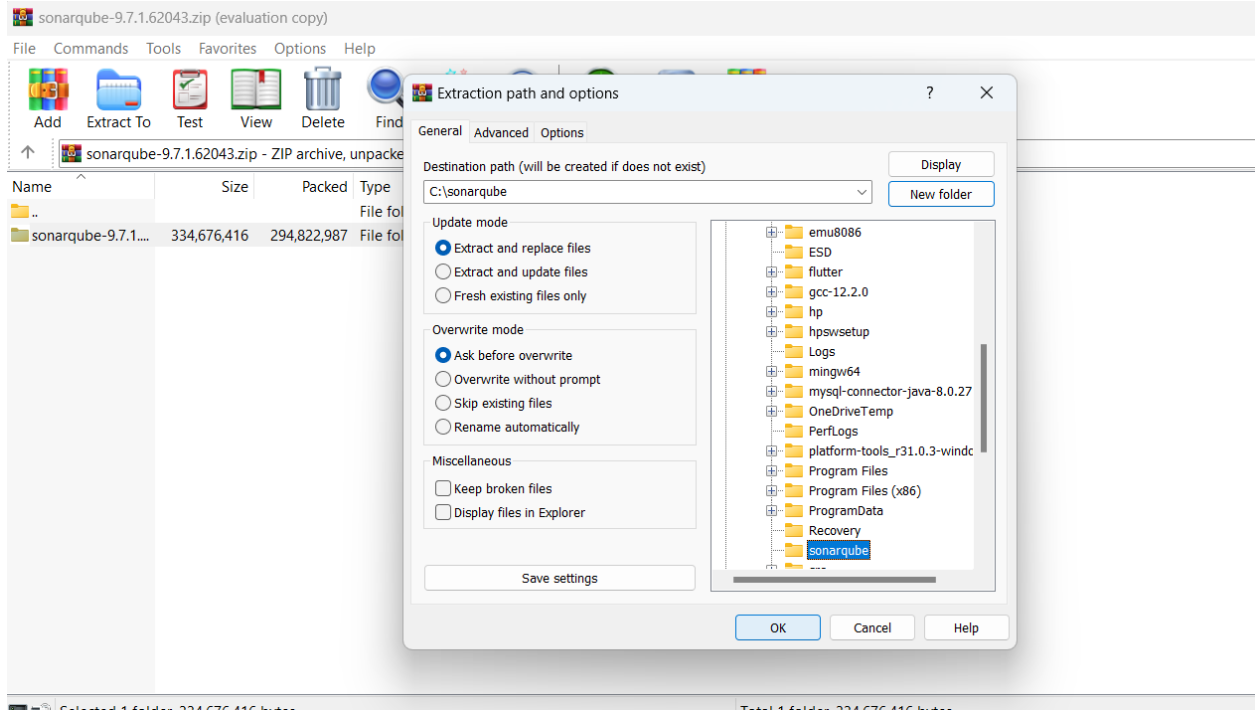
Once your instance is up and running, Log in to <http://localhost:9000> using System Administrator

you can evaluate SonarQube using a traditional installation with the [zip file](#) or you can spin up a Docker container using one of our [Docker images](#). Click the method you prefer below to see the installation instructions:

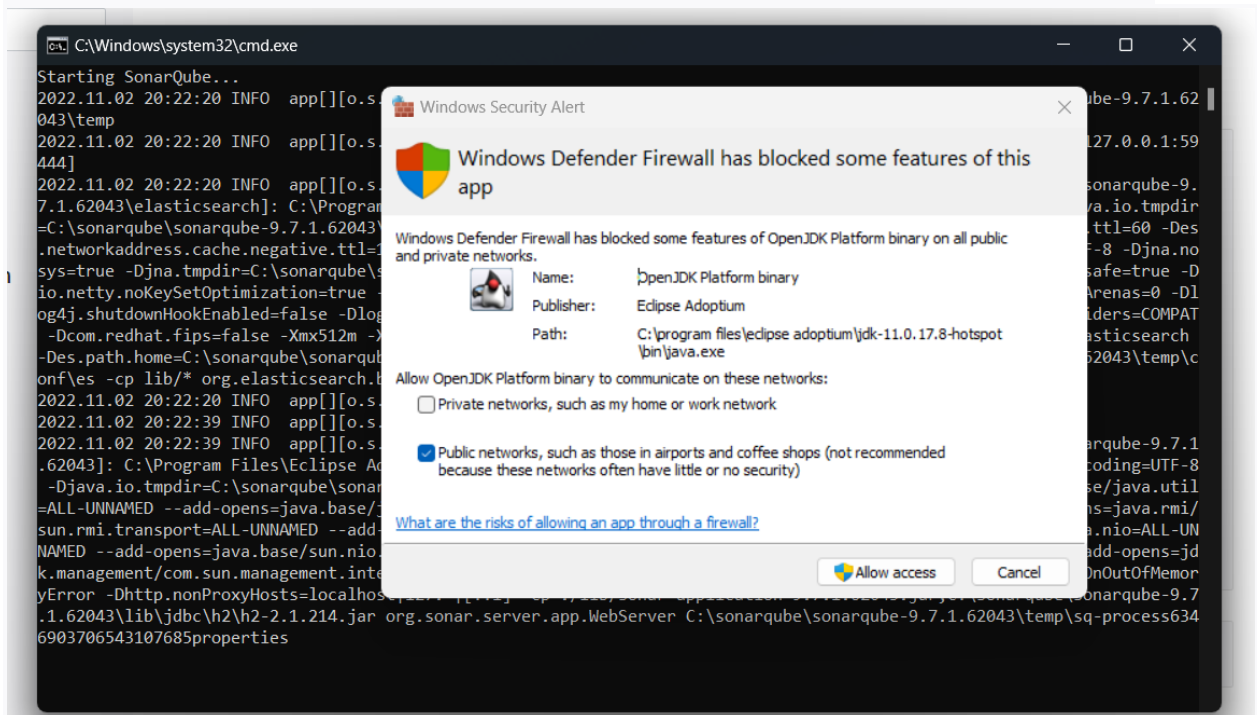


> [From the Docker image](#)

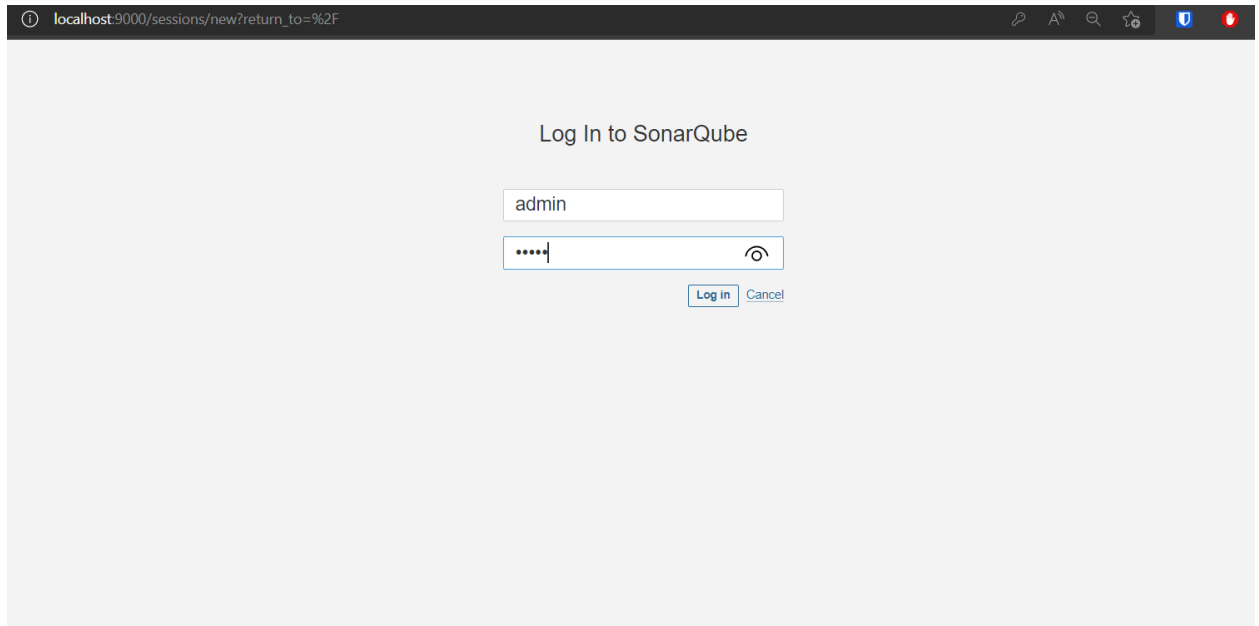
3. As a **non-root user**, unzip it, let's say in *C:\sonarqube* or */opt/sonarqube*.



4. As a **non-root** user, start the SonarQube Server:

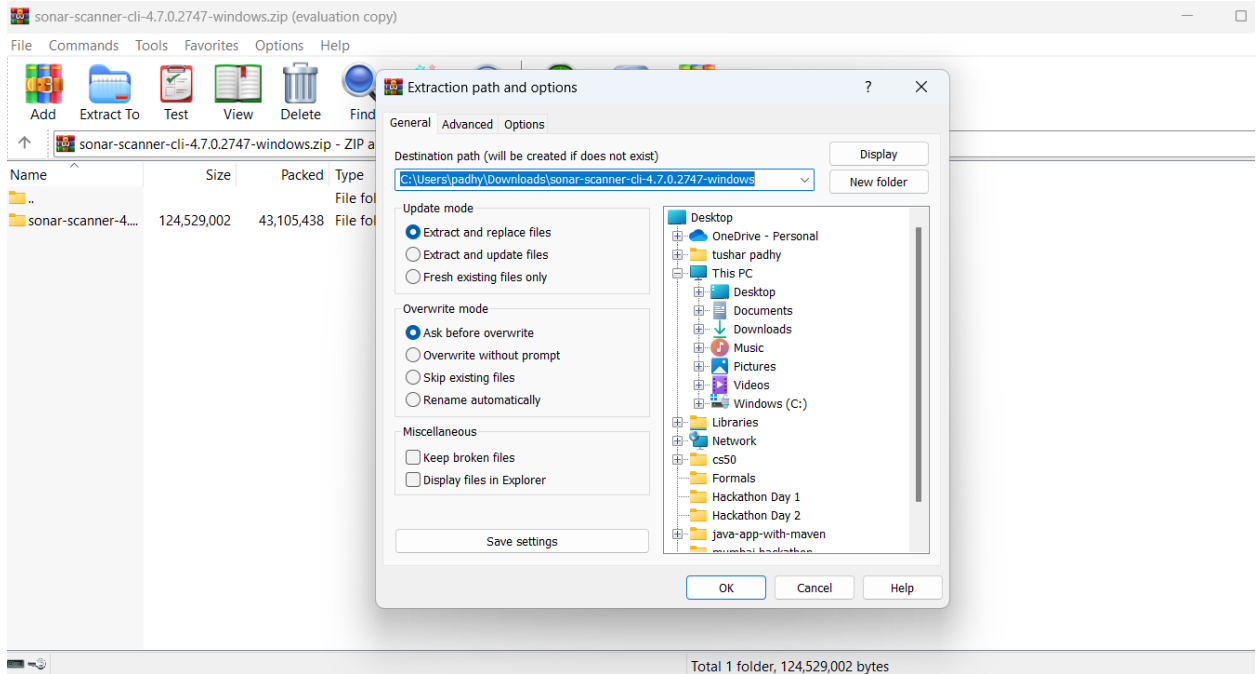


5. Once your instance is up and running, Log in to <http://localhost:9000> using System Administrator credentials:

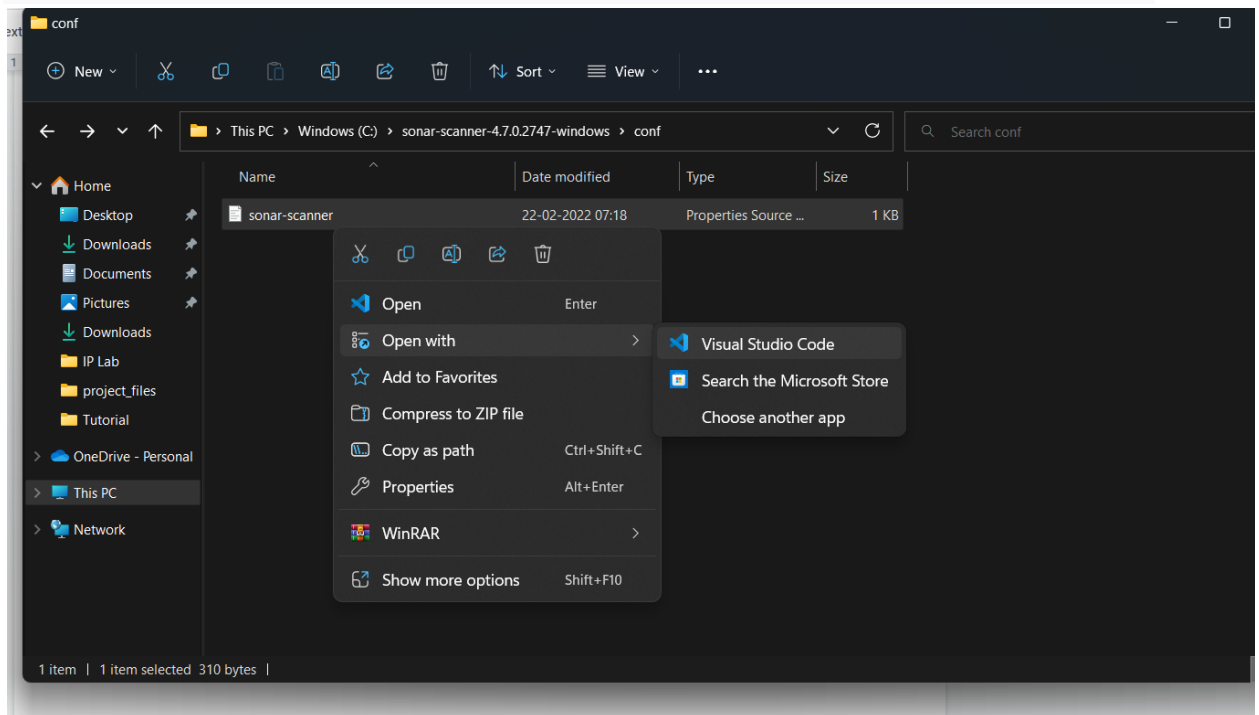


6. Install sonar scanner from the official link and extract it to the same folder where sonarqube has been installed

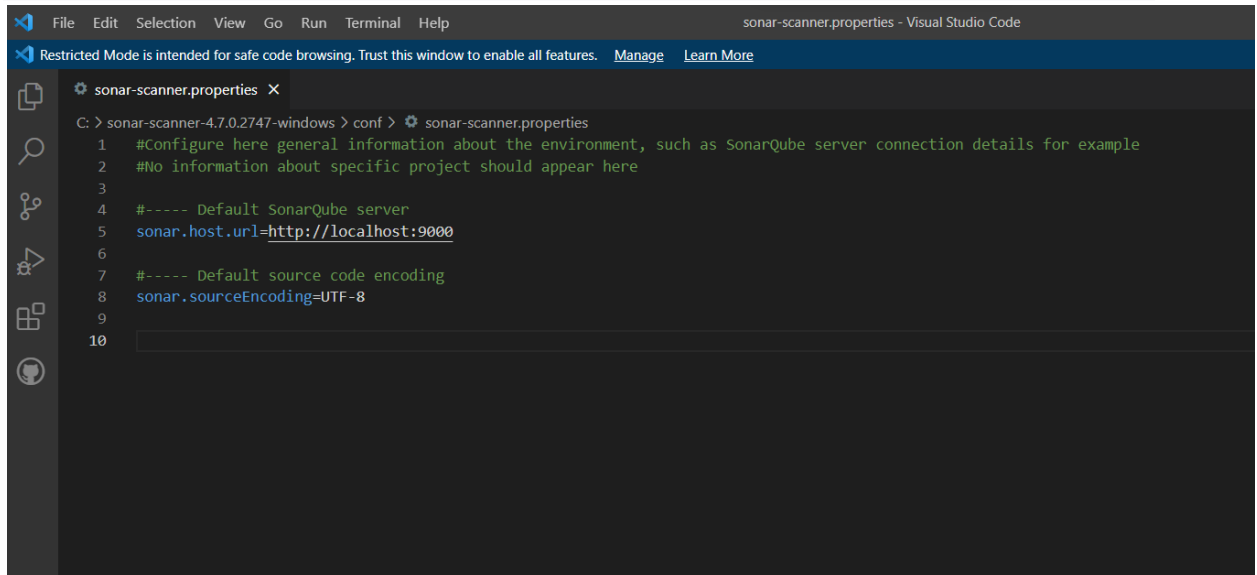
<https://docs.sonarqube.org/latest/analysis/scan/sonarscanner>



7. Go into the sonar-scanner directory and open the sonar-scanner.properties file



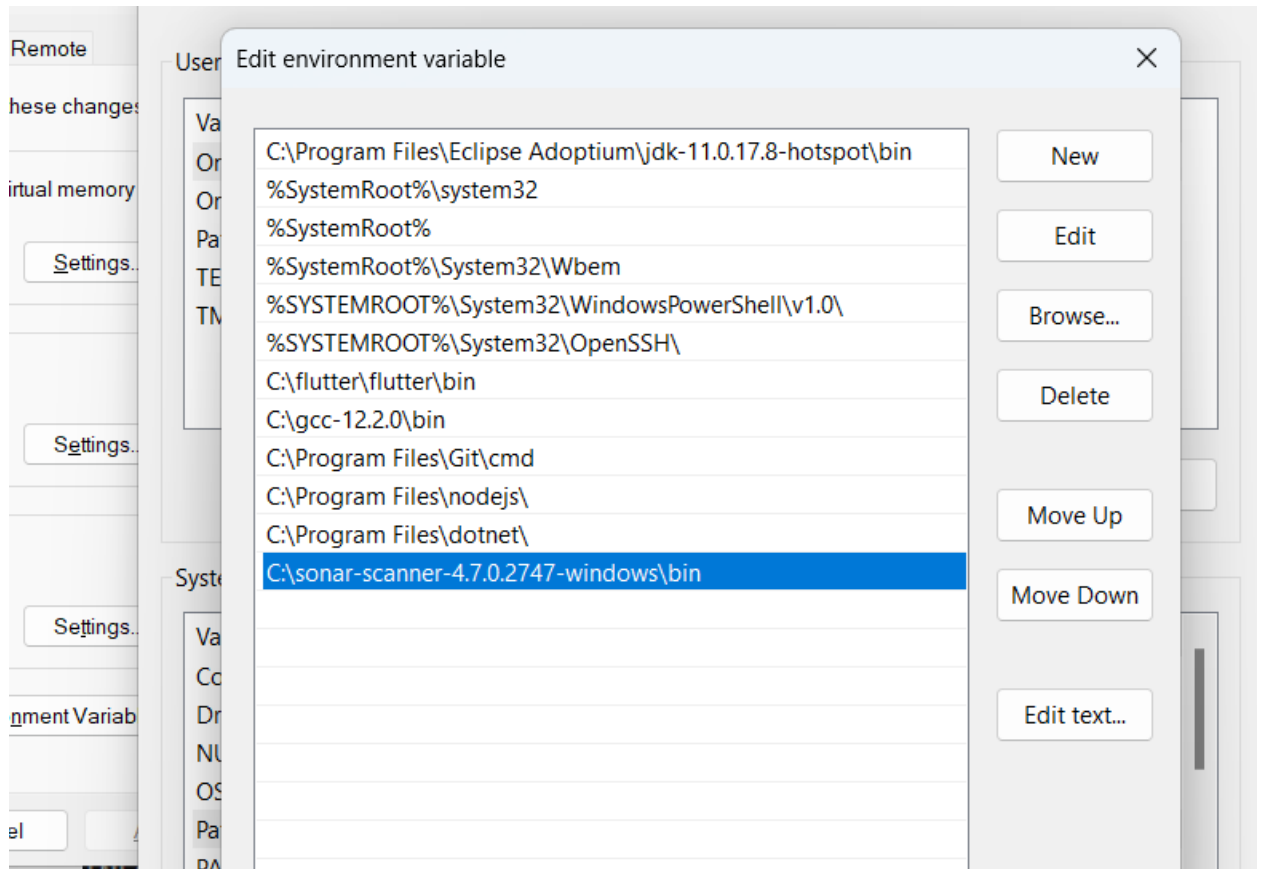
8. Update the global settings to point to your SonarQube server by editing



The screenshot shows the Visual Studio Code editor with the file `sonar-scanner.properties` open. The editor's title bar indicates the file path is `sonar-scanner.properties - Visual Studio Code`. A blue banner at the top of the editor area states: "Restricted Mode is intended for safe code browsing. Trust this window to enable all features. [Manage](#) [Learn More](#)". The file content is as follows:

```
sonar-scanner.properties X
C: > sonar-scanner-4.7.0.2747-windows > conf > sonar-scanner.properties
1 #Configure here general information about the environment, such as SonarQube server connection details for example
2 #No information about specific project should appear here
3
4 #----- Default SonarQube server
5 sonar.host.url=http://localhost:9000
6
7 #----- Default source code encoding
8 sonar.sourceEncoding=UTF-8
9
10
```

9. Add the bin path of sonarscanner into the environment variables of your system

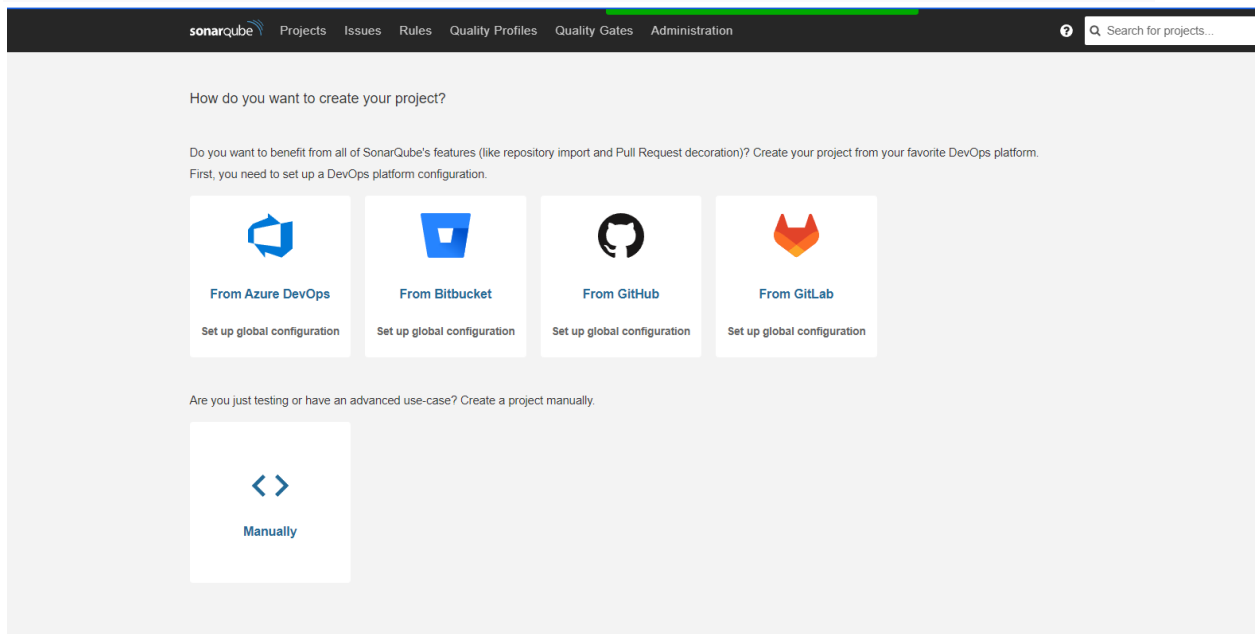


10. Verify your installation by opening a new shell and executing the command `sonar-scanner -h`

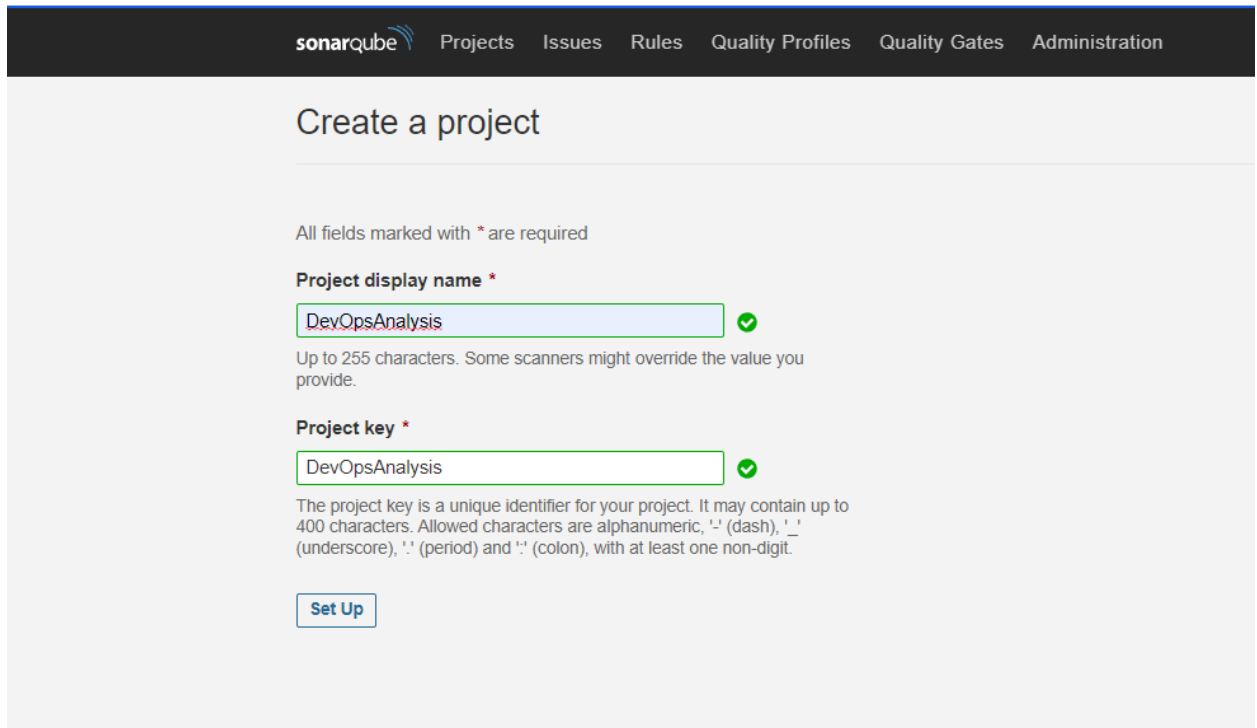

```
C:\Users\padhy>sonar-scanner -h
INFO:
INFO: usage: sonar-scanner [options]
INFO:
INFO: Options:
INFO:  -D,--define <arg>      Define property
INFO:  -h,--help               Display help information
INFO:  -v,--version            Display version information
INFO:  -X,--debug              Produce execution debug output

C:\Users\padhy>
```

11. Now that our sonar-scanner is installed, we will create a project in our sonarqube that is logged in through <http://localhost:9000/projects/create>



12. Click on manually and create the project by giving in the values for the asked fields



The screenshot shows the SonarQube web interface for creating a new project. The top navigation bar includes the SonarQube logo and links to Projects, Issues, Rules, Quality Profiles, Quality Gates, and Administration. The main heading is 'Create a project'. Below this, a note states 'All fields marked with * are required'. The first field is 'Project display name *', which contains the text 'DevOpsAnalysis' and has a green checkmark icon to its right. Below this field, a note specifies 'Up to 255 characters. Some scanners might override the value you provide.' The second field is 'Project key *', which also contains 'DevOpsAnalysis' and has a green checkmark icon to its right. Below this field, a note explains that the project key is a unique identifier, up to 400 characters, and lists allowed characters: alphanumeric, dash, underscore, period, and colon, with at least one non-digit. At the bottom of the form is a 'Set Up' button.

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

Create a project

All fields marked with * are required

Project display name *

DevOpsAnalysis ✓

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

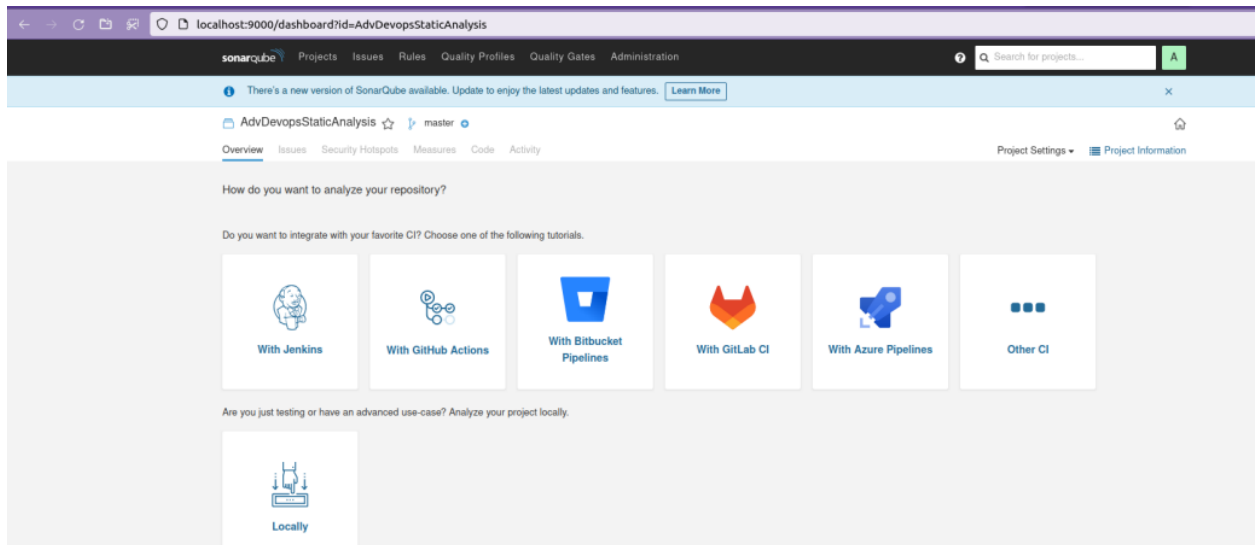
Project key *

DevOpsAnalysis ✓

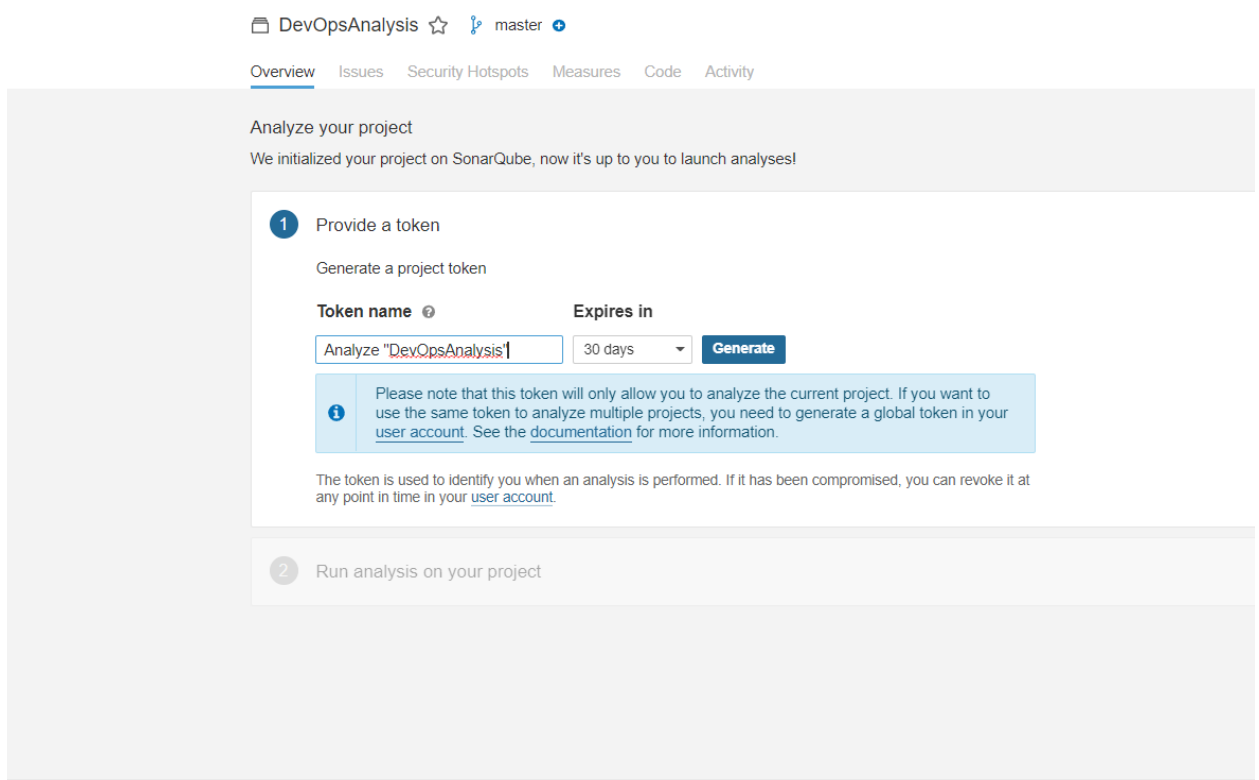
The project key is a unique identifier for your project. It may contain up to 400 characters. Allowed characters are alphanumeric, '-' (dash), '_' (underscore), '.' (period) and ':' (colon), with at least one non-digit.

Set Up

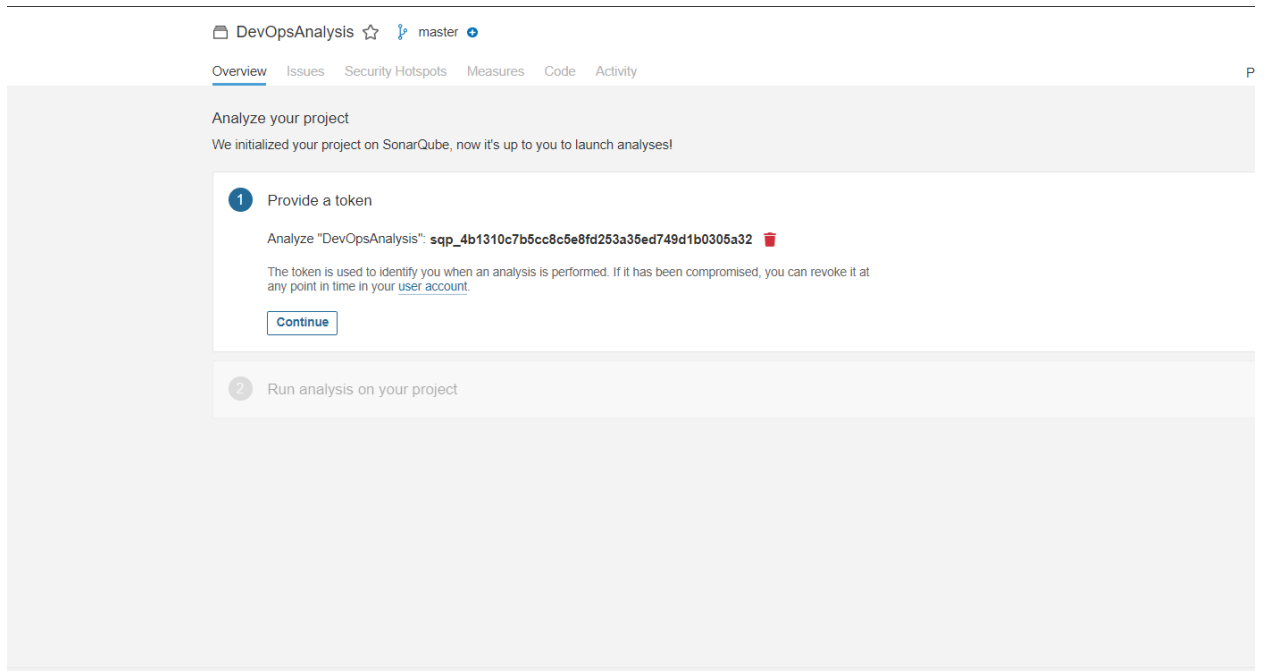
13. It will look something like this after clicking set up, now in order to analyze the code, click on locally



14. Click on generate a token

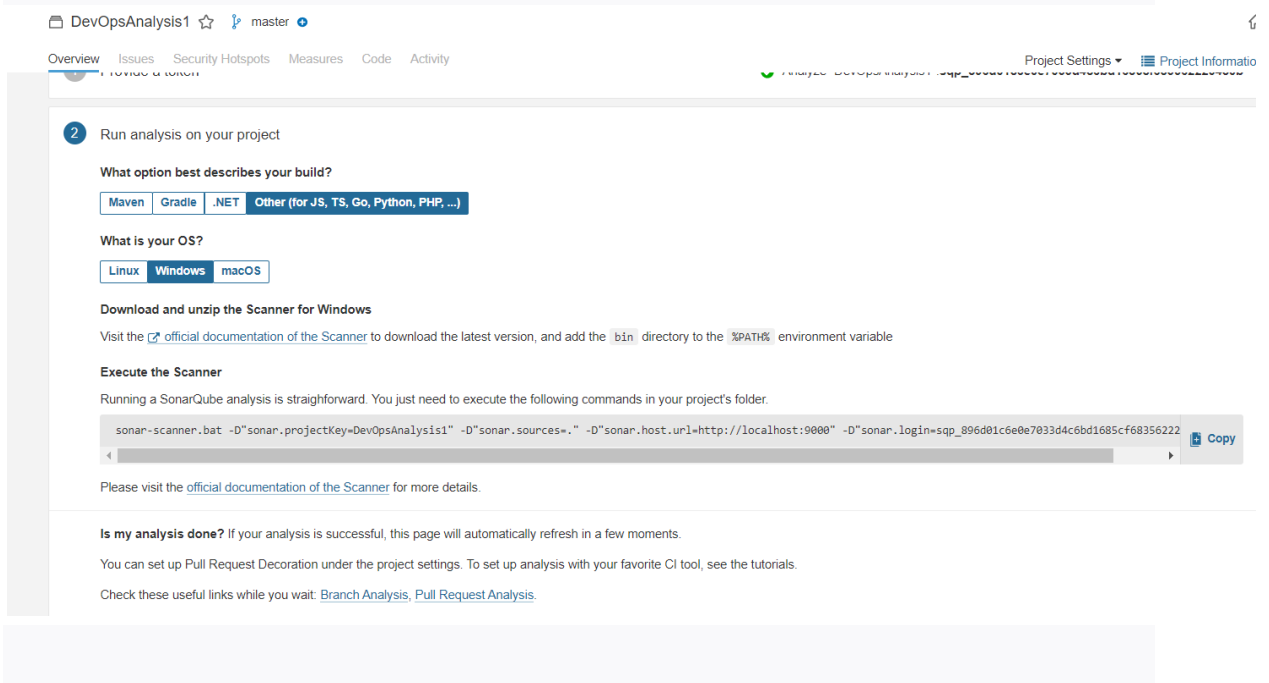


The following output will be received



15. After the token is copied and clicked on continue, then choose your project type

In this case it falls under others



16. Now go the root of your project directory and run the command given by the sonar scanner

```
PS C:\Users\padhy\OneDrive\Documents\vs_code\CluedIn_web> sonar-scanner.bat -D"sonar.pr
objectKey=DevOpsAnalysis" -D"sonar.sources=." -D"sonar.host.url=http://localhost:9000" -
D"sonar.login=sqp_e98edb03ecfb6203979e61db4ba07e15c3830e0a"
INFO: Scanner configuration file: C:\sonar-scanner-4.7.0.2747-windows\bin\..\conf\sonar
-scanner.properties
INFO: Project root configuration file: NONE
INFO: SonarScanner 4.7.0.2747
INFO: Java 11.0.14.1 Eclipse Adoptium (64-bit)
INFO: Windows 11 10.0 amd64
INFO: User cache: C:\Users\padhy\.sonar\cache
```

Once the scanning process is done, you'll see the following output

```
INFO: Note that you will be able to access the updated dashboard once the server has pr
ocessed the submitted analysis report
INFO: More about the report processing at http://localhost:9000/api/ce/task?id=AYQ5Jz5ZAcz65iYn77xT
INFO: Analysis total time: 13:12.190 s
INFO: -----
INFO: EXECUTION SUCCESS
INFO: -----
INFO: Total time: 13:20.389s
INFO: Final Memory: 17M/67M
INFO: -----
PS C:\Users\padhy\OneDrive\Documents\vs_code\CluedIn_web>
```

Now we can see the results in our sonarqube dashboard under our project

QUALITY GATE STATUS

Passed

All conditions passed.

MEASURES

New Code

Overall Code

899

Bugs

Reliability E

0

Vulnerabilities

Security A

290

Security Hotspots

0.0% Reviewed

Security Review E

947d

Debt

40k

Code Smells

Maintainability A

0.0%

Coverage on 158k Lines to cover

Unit Tests

30.8%

Duplications on 491k Lines

3.7k

Duplicated Blocks