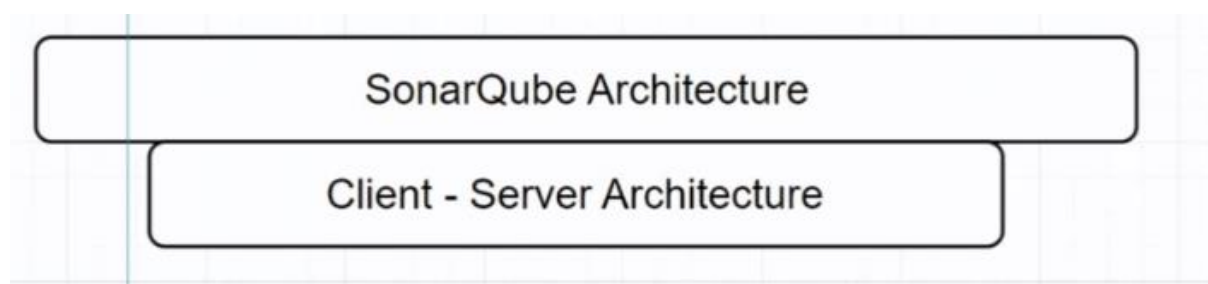
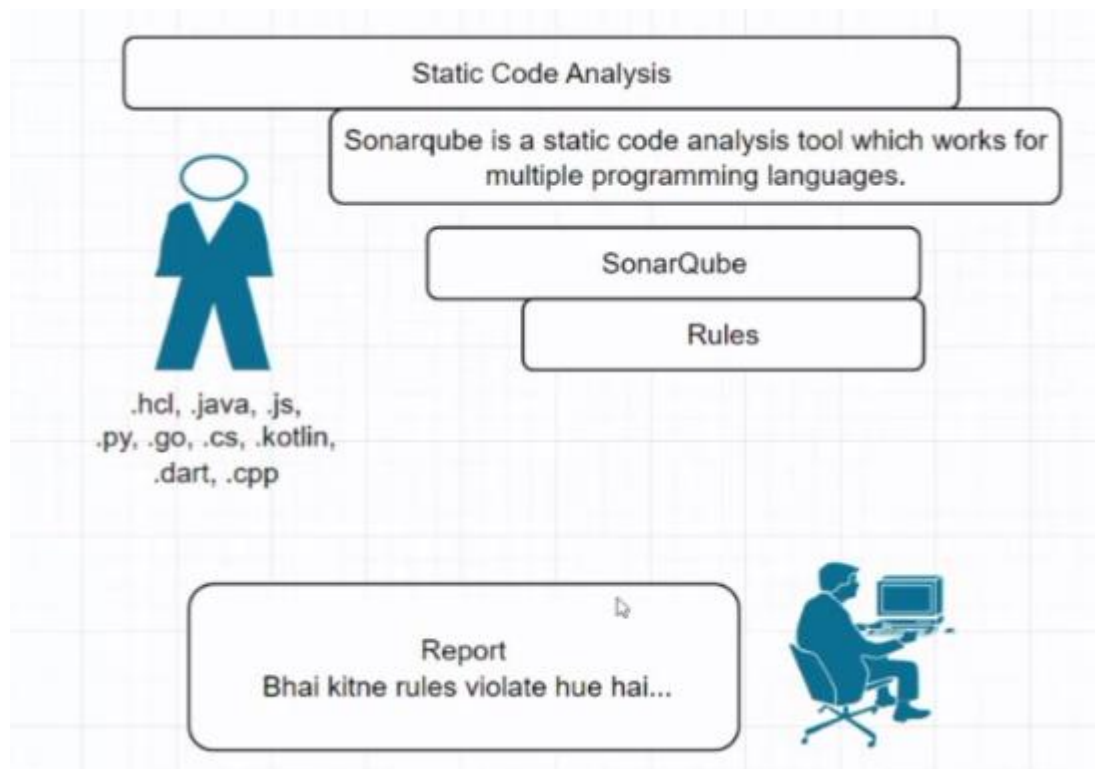
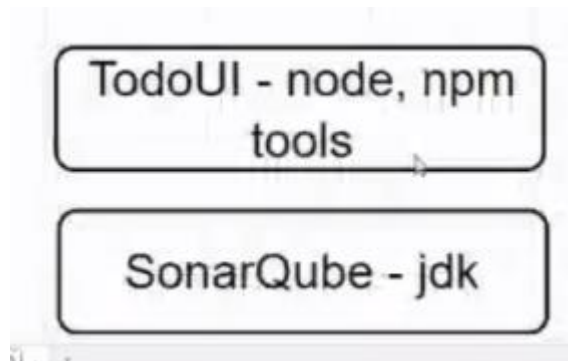


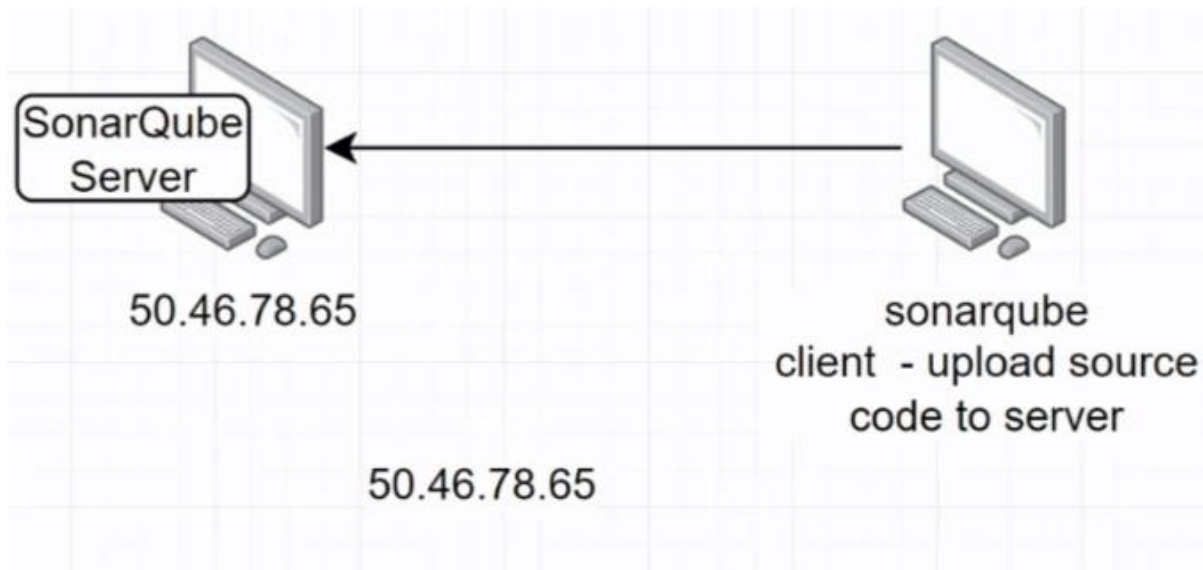
### 31 August 2024 – Environments, Deployment Groups and Sonarcube

1) Sonar Cube is a static code analysis tool that works for multiple programming languages. It has predefined rules inside it and when we write our code then we can validate our code with those predefined rules set of sonar cube and it will give a violation report to us.

1a) SonarQube is an open source platform for continuous inspection of code quality

1b) It is java based application





2) As per above diagram sonarcube is running on server. We have sonarqube client that on which we will make zip of the code that we have to make i.e. .js, .py etc. Then this zip file will go to server then sonar qube will scan the code. And will provide a validated report

3) We should have ip of server computer to send and receive report

4) Now our client should run inside pipeline i.e. inside the agent (vm) on which pipeline is running i.e. code uploading part from client to server will be done by pipeline.

+++++

## **AGENDA – CREATE VM ON WHICH SONAR CUBE SERVER WILL RUN USING DOCKER**

1) Sonar cube default port – 9000

2) Create vm and install docker on it.

3) SEARCH – sonarqube docker image

[https://hub.docker.com/\\_/sonarqube](https://hub.docker.com/_/sonarqube)

4) Run below command from docker hub

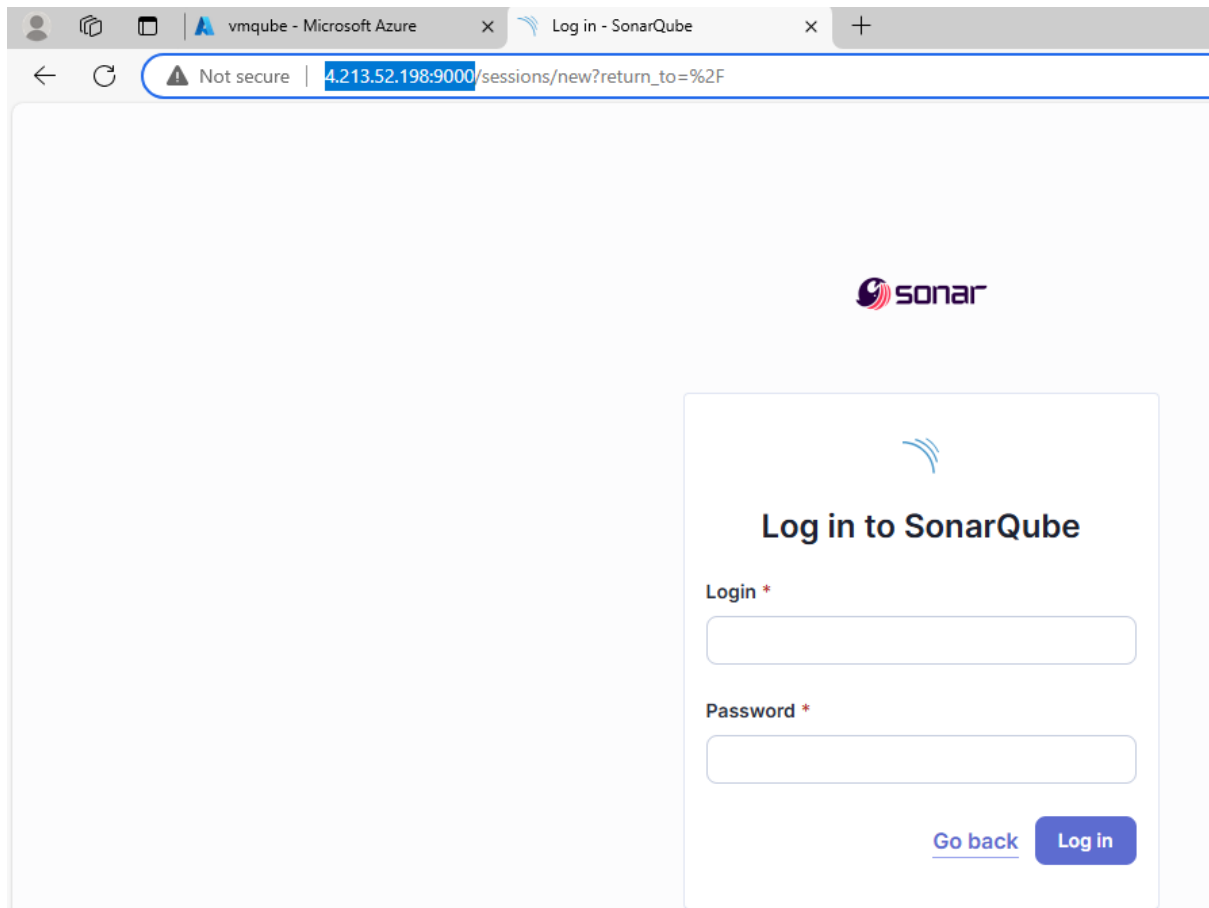
```
docker run --name sonarqube-custom -p 9000:9000 sonarqube:10.6-community
```

Copy

**docker run --name sonarqube-custom -p 9000:9000 sonarqube:10.6-community**

5) Open port 9000 in network settings of vm

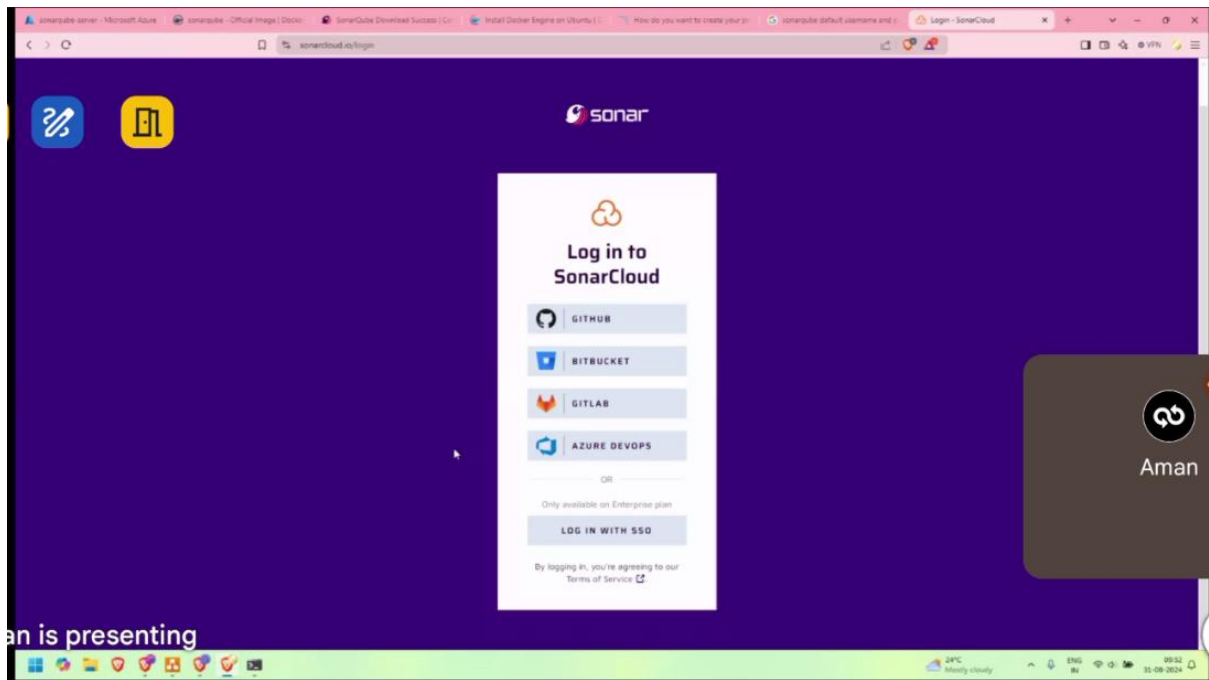
6) Run in browser - <http://4.213.52.198:9000/>



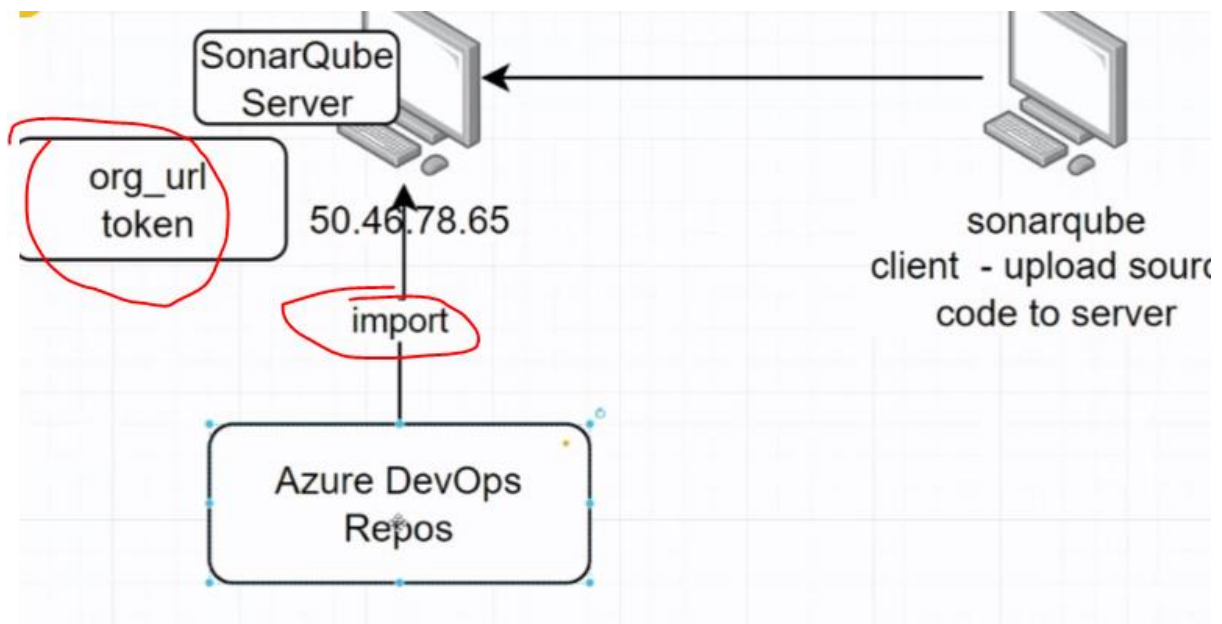
7) SEARCH – Default username and password of sonarcube is admin and admin

When installing SonarQube, a default user with Administer System permission is created automatically: Login: admin. Password: admin.

8) SEARCH – Sonar cloud



9) Now to create connectivity with sonar qube, we will give organization url and personal access tokens



## Create a configuration

Configuration name \*

Give your configuration a clear and succinct name. This name will be used at project level to identify the correct configured Azure instance for a project.


Azure DevOps URL \*

For Azure DevOps Server, provide the full collection URL:  
`https://ado.your-company.com/your_collection`

For Azure DevOps Services, provide the full organization URL:  
`https://dev.azure.com/your_organization`

For security reasons, please make sure to provide the Personal Access Token to update the URL.

Personal Access Token \*

 You can encrypt this value. [Learn More](#)

SonarQube needs a [Personal Access Token](#) to report the Quality Gate status on Pull Requests in Azure DevOps. To create this token, we recommend using a dedicated Azure DevOps account with administration permissions. The token itself needs **Code > Read & Write** permission. [Learn More](#)

Save configuration

Cancel



Projects

Issues

Rules

Quality Profiles

Quality Gates

Administration


More



## Azure project onboarding

Import projects from one of your Azure projects

Todoapp

 azure-todo-app-terraform.git

Import

 ReactTodoUIMonolith.git

Import

 Todoapp

Import

onarqube

ProjectsIssuesRulesQuality ProfilesQuality GatesAdministrationMore

Q

2 of 2

Set up project for Clean as You Code

The new code definition sets which part of your code will be considered new code. This helps you focus attention on the most recent changes to your code methodology. Learn more: [Defining New Code](#)

Choose the baseline for new code for this project

☒ Use the global setting

☐ Previous version

☐ Define a specific setting for this project

☐ Previous version

☐ Number of days

☐ Reference branch

Back

Create project

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. [Learn More](#)

sonarqube

ProjectsIssuesRulesQuality ProfilesQuality GatesAdministrationMore

Q

My FavoritesAll

Filters

Quality Gate

Reliability

Security

Search for projects...

Perspective

Overall Status

Sort by

Name

1 project(s)

ReactTodoUIMonolith.git PUBLIC

Project's Main Branch is not analyzed yet. [Configure analysis](#)

1 of 1 shown

10) Create local project

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. [Learn More](#)

**sonarqube** Projects Issues Rules Quality Profiles Quality Gates Administration More Q

My Favorites All

Filters

Quality Gate

Passed 0

Failed 0

Reliability

A 0

B 0

C 0

D 0

E 0

Security

A 0

Search for projects... Perspective Overall Status Sort by Name 1 of 1 shown

**Create Project**

From Azure DevOps

**Local project**

Import from other DevOps Platforms

ReactTodoUIMonolith.git PUBLIC

Project's Main Branch is not analyzed yet. [Configure analysis](#)

1 of 2

## Create a local project

**Project display name \***

terraform project ✓

**Project key \***

terraform-project ✓

**Main branch name \***

main

The name of your project's default branch [Learn More](#)

Cancel **Next**

11) Then create project

Not secure | 4.213.52.198:9000/tutorials?id=terraform-project

There's a new version of SonarQube available. Upgrade to the latest active version to access new updates and features. [Learn More](#)

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More Q

terraform project / main

Overview Issues Security Hotspots Measures Code Activity Project Settings

## Analysis Method

Use this page to manage and set-up the way your analyses are performed.

### How do you want to analyze your repository?

With Jenkins

With GitHub Actions

With Bitbucket Pipelines

With GitLab CI

With Azure Pipelines

Other CI  
SonarQube integrates with your workflow no matter what you're using.

Locally  
Use this for testing or advanced use-case. Other modes are recommended to help you set up your CI environment.

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.

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration More Q

terraform project / main

Overview Issues Security Hotspots Measures Code Activity Project Settings Project Info

Analysis Method > Locally

## Analyze your project

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

1 Provide a token

Analyze "terraform project": **sqp\_0f2cb81f5d1323f6b14c8300bf47174d20484746**

2 Run analysis on your project

What option best describes your project?

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

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.

SonarQube™ technology is powered by SonarSource SA

Community Edition v10.6 (2021-05-14) LTS | [LTS](#) | [LTS](#) | [Community](#) | [Documentation](#) | [Support](#)

## 12) Now we need sonar scanner

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

What is your OS?

Linux Windows macOS

### Download and unzip the Scanner for Linux

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 \
-Dsonar.projectKey=terraform-project \
-Dsonar.sources=. \
-Dsonar.host.url=http://4.213.52.198:9000 \
-Dsonar.token=sqp_0f2cb81f5d1323f6b14c8300bf47174d20484746
```

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

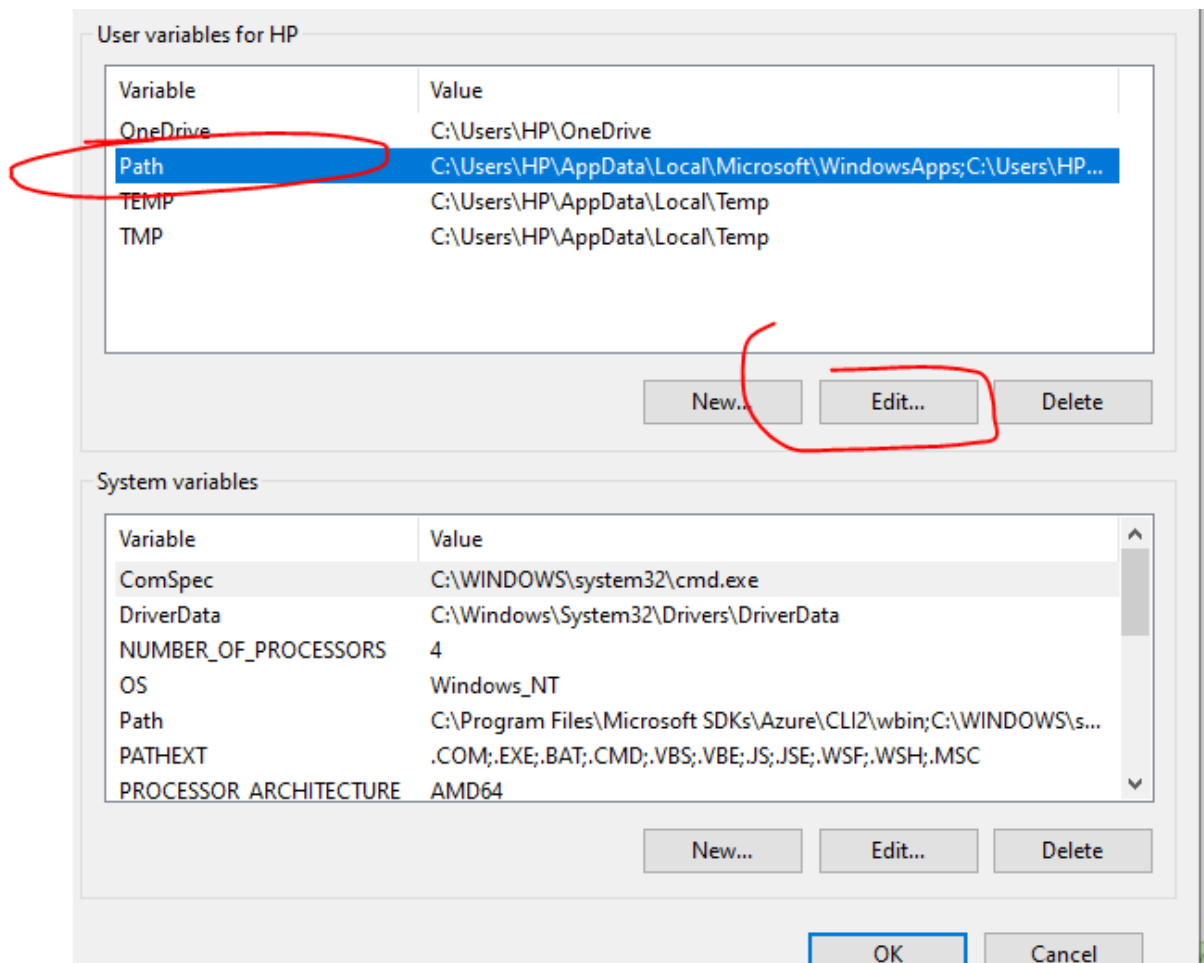


### 13) Download sonar qube

The screenshot shows a web browser with three tabs: 'vmqube - Microsoft Azure', 'SonarQube', and 'SonarScanner CLI'. The address bar shows the URL 'https://docs.sonarsource.com/sonarqube/10.6/analyzing-source-code/scanners/sonarscanner/'. The page content includes a sidebar with 'Docs 10.6' and a list of links. The main content area is titled 'SonarScanner CLI' and features a '6.2.1' release section dated '2024-10-01'. This section describes 'FIPS support and improved SSL configuration' and provides download links for various operating systems: 'Linux x64', 'Linux AArch64', 'Windows x64' (circled in red), 'macOS x64', 'macOS AArch64', and 'Docker'. It also includes a note 'Any (Requires a pre-installed JVM)' and a link to 'Release notes'. Below this, a paragraph states: 'The SonarScanner CLI is the scanner to use when there is no specific scanner for your build system.'

### 14) Extract files and Copy bin folder path and add into environment variable folder

The screenshot shows a Windows File Explorer window. The address bar path is 'This PC > Downloads > sonar-scanner-cli-6.2.1.4610-windows-x64 > sonar-scanner-6.2.1.4610-windows-x64 > bin', which is circled in red. The left sidebar shows 'Quick access' with links to Desktop, Downloads, Documents, Pictures, and OneDrive. The main area displays two folders: 'sonar-scanner' and 'sonar-scanner-debug'.



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\HP> sonar-scanner
16:24:38.686 INFO Scanner configuration file: C:\Users\HP\Downloads\sonar-scanner-cli-6.2.1.4610-windows-x64\sonar-scanner-6.2.1.4610-windows-x64\bin\...conf\sonar-scanner.properties
16:24:38.697 INFO Project root configuration file: NONE
16:24:38.747 INFO SonarScanner CLI 6.2.1.4610
16:24:38.758 INFO Java 17.0.12 Eclipse Adoptium (64-bit)
16:24:38.753 INFO Windows 10 10.0 amd64
16:24:38.800 INFO User cache: C:\Users\HP\.sonar\cache
16:24:40.581 INFO JRE provisioning: os[windows], arch[amd64]
16:24:42.051 INFO EXECUTION FAILURE
16:24:42.055 INFO Total time: 3.376s
16:24:42.056 ERROR Error during SonarScanner CLI execution
java.lang.IllegalStateException: Error status returned by url [https://api.sonarcloud.io/analysis/jres?os=windows&arch=amd64]: 401
    at org.sonarsource.scanner.lib.internal.http.ScannerHttpClient.callUrl(ScannerHttpClient.java:163)
    at org.sonarsource.scanner.lib.internal.http.ScannerHttpClient.callApi(ScannerHttpClient.java:126)
    at org.sonarsource.scanner.lib.internal.http.ScannerHttpClient.callRestApi(ScannerHttpClient.java:104)
    at org.sonarsource.scanner.lib.internal.JavaRunnerFactory.getJreMetadata(JavaRunnerFactory.java:159)
    at org.sonarsource.scanner.lib.internal.JavaRunnerFactory.getJreFromServer(JavaRunnerFactory.java:138)
    at org.sonarsource.scanner.lib.internal.JavaRunnerFactory.createRunner(JavaRunnerFactory.java:85)
    at org.sonarsource.scanner.lib.internal.ScannerEngineLauncherFactory.createLauncher(ScannerEngineLauncherFactory.java:53)
    at org.sonarsource.scanner.lib.ScannerEngineBootstrapper.bootstrap(ScannerEngineBootstrapper.java:123)
    at org.sonarsource.scanner.cli.Main.analyze(Main.java:75)
    at org.sonarsource.scanner.cli.Main.main(Main.java:63)
16:24:42.063 ERROR
16:24:42.063 ERROR Re-run SonarScanner CLI using the -X switch to enable full debug logging.
PS C:\Users\HP>
```

## 2 Run analysis on your project

What option best describes your project?

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

What is your OS?

Linux Windows macOS

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=terraform-project" -D"sonar.sources=." -D"sonar.host.url=http://4.213.52.198:9000" -D"sonar.token=sqp_0427938016756f0b63231c74b390a13e04bc05e5"
```

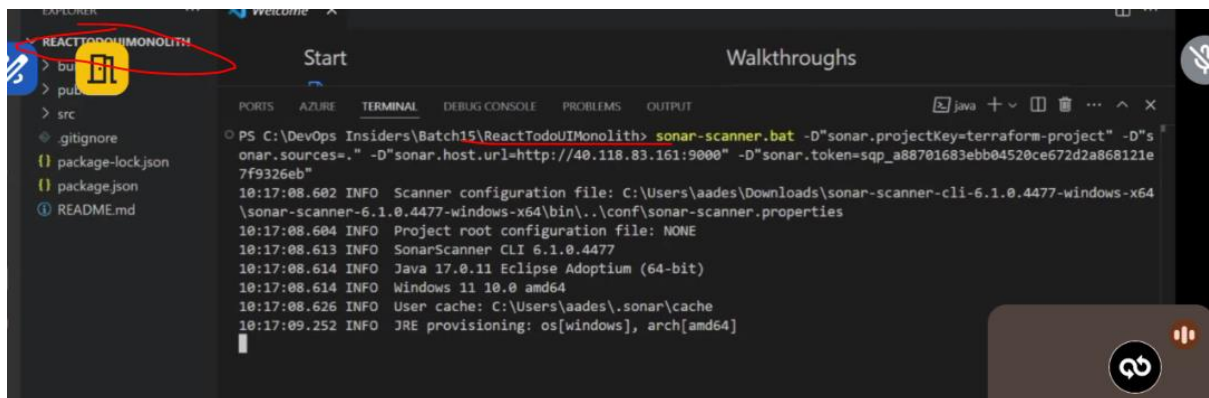
Please visit the [official documentation of the Scanner](#) for more details.

**sonar-scanner.bat -D"sonar.projectKey=terraform-project" -D"sonar.sources=." -  
D"sonar.host.url=http://4.213.52.198:9000" -  
D"sonar.token=sqp\_0427938016756f0b63231c74b390a13e04bc05e5"**

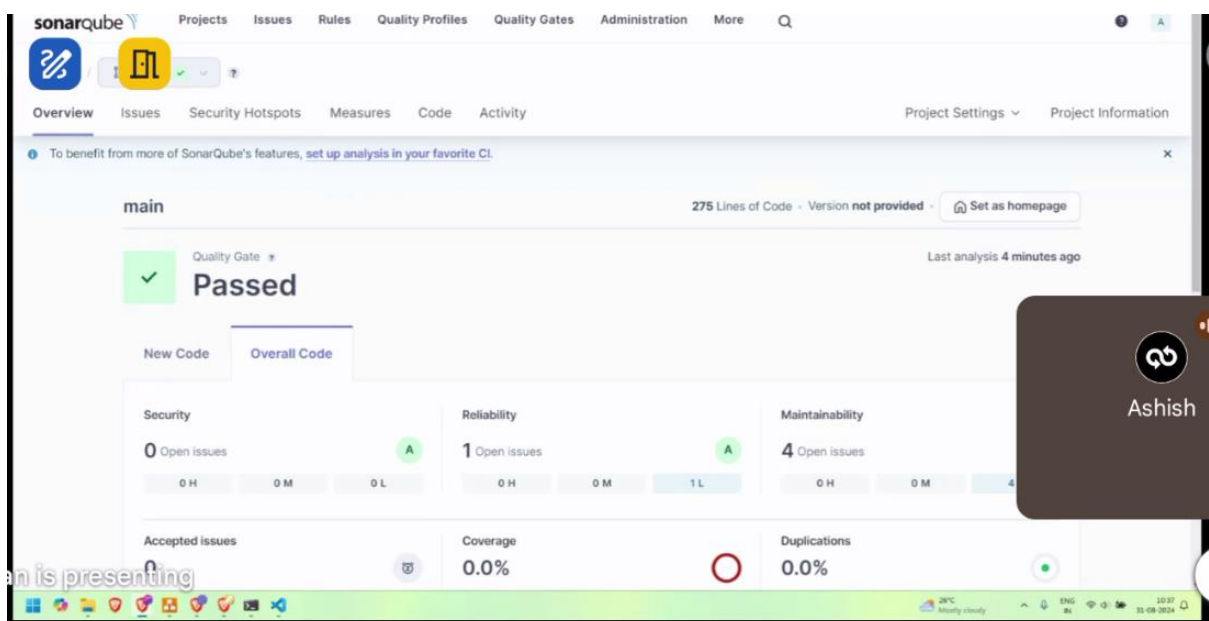
15) Now run this command in reactuimonoolithic folder in vs code which will provide the report

On sonarcube server page

The work of scanner is actually to upload the code and work of server is to generate the report.



```
PS C:\DevOps\Insiders\Batch15\ReactTodoUIMonolith> sonar-scanner.bat -D"sonar.projectKey=terraform-project" -D"sonar.sources=." -D"sonar.host.url=http://40.118.83.161:9000" -D"sonar.token=sqp_a88701683ebb04520ce672d2a868121e7f9326eb"
10:17:08.602 INFO Scanner configuration file: C:\Users\aaes\Downloads\sonar-scanner-cli-6.1.0.4477-windows-x64\sonar-scanner-6.1.0.4477-windows-x64\bin\..\conf\sonar-scanner.properties
10:17:08.604 INFO Project root configuration file: NONE
10:17:08.613 INFO SonarScanner CLI 6.1.0.4477
10:17:08.614 INFO Java 17.0.11 Eclipse Adoptium (64-bit)
10:17:08.614 INFO Windows 11 10.0 amd64
10:17:08.626 INFO User cache: C:\Users\aaes\.sonar\cache
10:17:09.252 INFO JRE provisioning: os[windows], arch[amd64]
```



16)

Step 1 - Setup SonarQube Server

Step 2 - Login using admin:admin

Step 3 - Create a Project in SonarQube

Project - Khali dabba  
jisme code scan hoga

Locally Project

Azure Repo Based  
Empty Projects

Step 4 - Start analyzing

Step 4 - Start analyzing

Step 4.1 - Create SonarQube Server Token

Step 4.2 - Run analysis on your project

Step 4.2.1 - Download and unzip and set path for the Scanner for Windows

Step 4.4 - Execute the Scanner

```
sonar-scanner.bat -D"sonar.projectKey=test" -  
D"sonar.sources=." -  
D"sonar.host.url=http://40.118.83.161:9000" -  
D"sonar.token=sqp_78a3d0b8a09b67f1109b350a008ea42b07f57091"
```

Step 4.2 - Check the Report on SonarQube Server



+++++

### **AGENDA – SONARQUBE IN PIPELINE**

- 1) Now making another project and using in pipeline
- 2) Go to market place and install sonarqube
- 3) Make service connection of sonarqube

## New SonarQube service connection ×

Server Url

http://4.213.52.198:9000

Url for the SonarQube Server to connect to.

Authentication

Token

.....

Authentication Token generated through SonarQube (go to My Account > Security > Generate Tokens)

Details

Service connection name

SonarqubeSC

Service Management Reference (optional)

Description (optional)

Security

☒ Grant access permission to all pipelines

[Learn more](#)

Back Save

4) Now follow sonarqube doc to make tasks in pipeline

5) **SEARCH** – PREPARE ANALYSIS CONFIGURATION or SONAR

```

steps:
  - task: SonarQubePrepare@6
    inputs:
      SonarQube: 'SonarqubeSC'
      scannerMode: 'CLI'
      configMode: 'manual'
      cliProjectKey: 'azure'
      cliSources: '.'
  
```

## 6) SEARCH – PREPARE ANALYSIS CONFIGURATION or SONAR

```
18 |·····cliSources: '.'
    |·····Settings
19 |·····- task: SonarQubeAnalyze@6
20 |·····inputs:
21 |·····jdkversion: 'JAVA_HOME_17_X64'
22 |
23 |- stage: BuildStage
24 |  displayName: BuildStage
25 |  jobs:
```

7) Before running pipeline the version of sonar qube should match the version of java that we have to install in agent machine or vm i.e. java 17 version

8) Now run pipeline

The screenshot displays the Azure DevOps web interface for a pipeline named 'ReactToDoUIMonolith.git'. The left sidebar shows the navigation menu with 'Pipelines' selected. The main area is divided into two panels. The left panel, titled 'Jobs in run #20241011.10', lists the pipeline stages and jobs. The 'BuildStage' is expanded, showing the 'BuildJobs' job with a duration of 2m 9s. Below this, a list of tasks for 'BuildJobs' is shown, including 'Initialize job', 'Checkout ReactToDoUI...', 'NodeTool', 'Npm', 'PublishPipelineArtifact', 'Post-job: Checkout Re...', and 'Finalize Job'. The right panel, titled 'BuildJobs', shows the job's execution details, including the pool 'Agentpool21', agent 'Testagent21', start time 'Today at 7:24 PM', and duration '2m 9s'. It also displays the job preparation parameters and the job live console data, which includes the starting and finishing times of the job.

Job	Duration
SonarQubejob	49s
BuildStage	
BuildJobs	2m 9s
Initialize job	4s
Checkout ReactToDoUI...	3s
NodeTool	4s
Npm	37s
Npm	1m 13s
PublishPipelineArtifact	5s
Post-job: Checkout Re...	<1s
Finalize Job	<1s

9) Now sonar qube will give its report

## main

273 Lines of Code - Version 1.0

[Set as homepage](#)



Quality Gate

# Passed

Last analysis 10 minutes ago



The last analysis has warnings. [See details](#)

New Code

Overall Code

### Security

0 Open issues

A

0 H

0 M

0 L

### Reliability

1 Open issues

A

0 H

0 M

1 L

### Maintainability

4 Open issues

A

0 H

0 M

4 L

### Accepted issues

0

B

Valid issues that were not fixed

### Coverage

0.0%

On 40 lines to cover.

C

### Duplications

0.0%

On 336 lines.

D

### Security Hotspot