

## Experiment 7

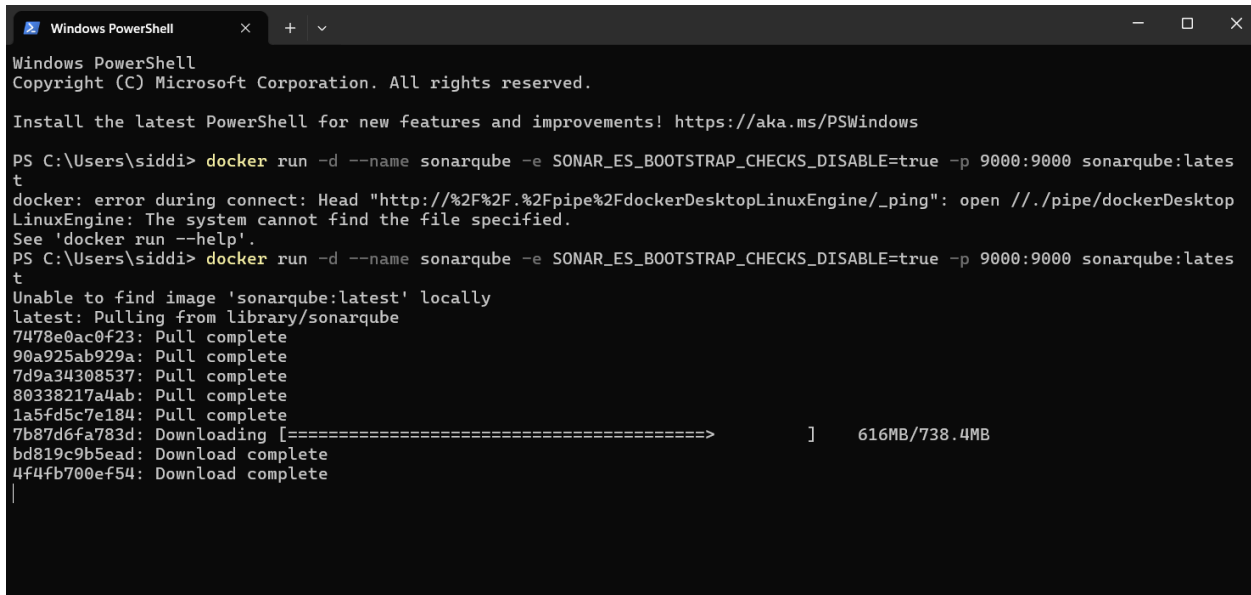
**Aim:** To understand Static Analysis SAST process and learn to integrate Jenkins SAST to SonarQube/GitLab. Step-1: Open up Jenkins Dashboard on localhost, port 8080 or whichever port it is at for you.

Step 1:

First start docker desktop

Then run the command in windows powershell -

```
docker run -d --name sonarqube -e SONAR_ES_BOOTSTRAP_CHECKS_DISABLE=true -p 9000:9000 sonarqube:latest
```

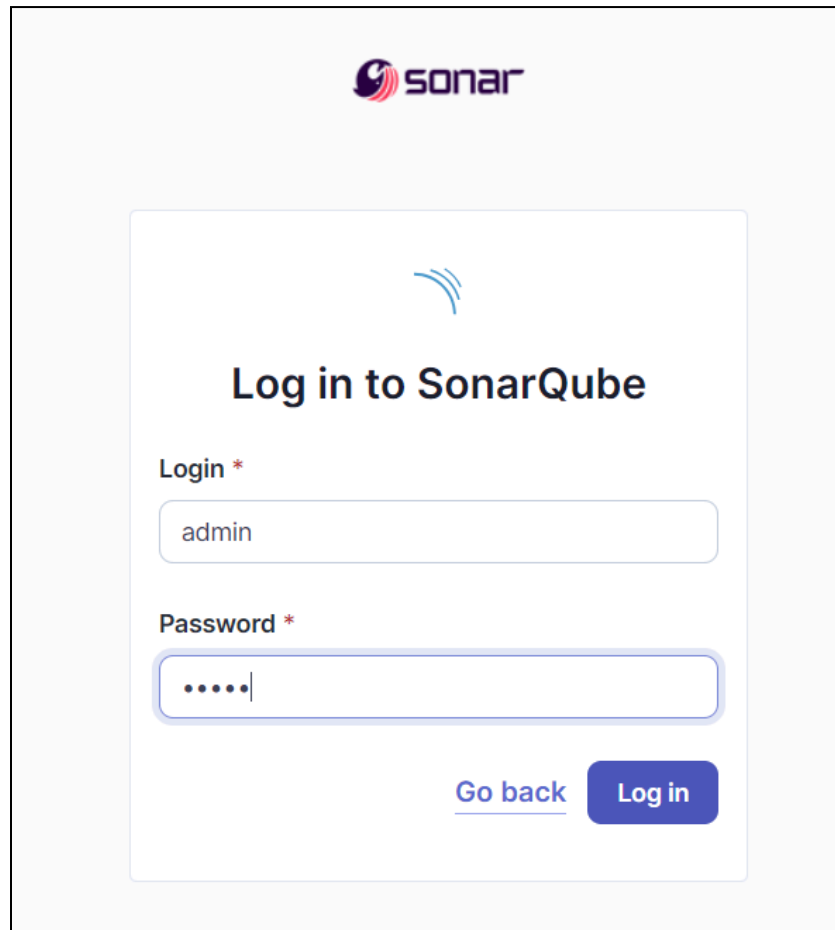
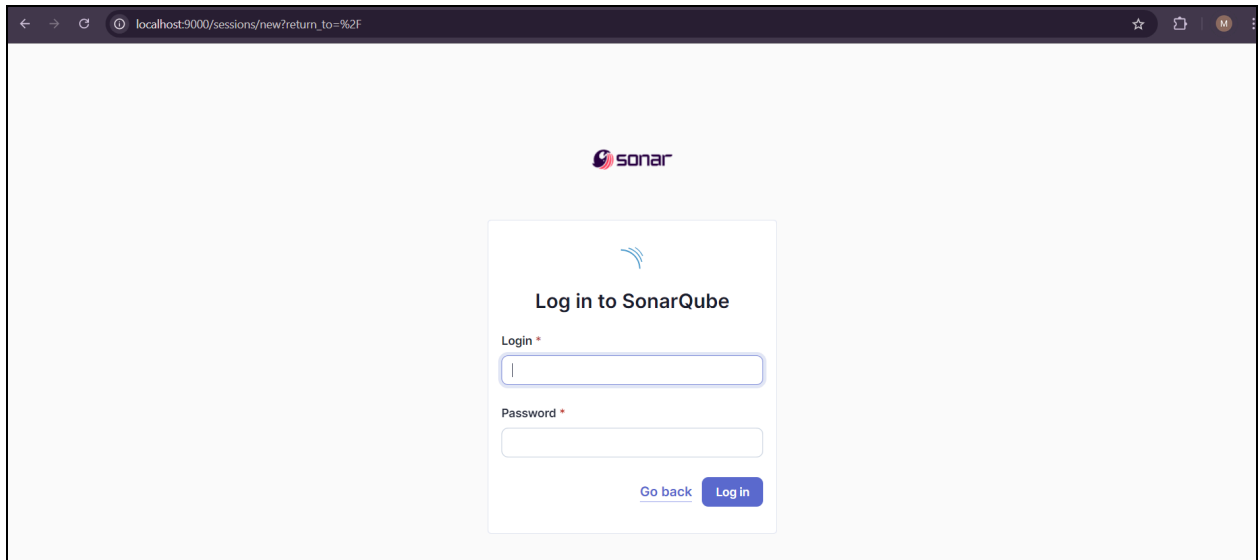


```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\siddi> docker run -d --name sonarqube -e SONAR_ES_BOOTSTRAP_CHECKS_DISABLE=true -p 9000:9000 sonarqube:lates
t
docker: error during connect: Head "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/_ping": open //./pipe/dockerDesktop
LinuxEngine: The system cannot find the file specified.
See 'docker run --help'.
PS C:\Users\siddi> docker run -d --name sonarqube -e SONAR_ES_BOOTSTRAP_CHECKS_DISABLE=true -p 9000:9000 sonarqube:lates
t
Unable to find image 'sonarqube:latest' locally
latest: Pulling from library/sonarqube
7478e0ac0f23: Pull complete
90a925ab929a: Pull complete
7d9a34308537: Pull complete
80338217a4ab: Pull complete
1a5fd5c7e184: Pull complete
7b87d6fa783d: Downloading [=====] 616MB/738.4MB
bd819c9b5ead: Download complete
4f4fb700ef54: Download complete
```

Go to localhost:9000/ in your browser



Go to local project and create new

sonarqube

ProjectsIssuesRulesQuality ProfilesQuality GatesAdministrationMore

1 of 2

Create a local project

Project display name \*  
sonarqube-test

Project key \*  
sonarqube-test

Main branch name \*  
main

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

CancelNext

Jenkins

Search (CTRL+K)

Mahvish Siddiqui

log out

Dashboard > Manage Jenkins > Plugins

Updates

Available plugins

Installed plugins

Advanced settings

Download progress

Download progress

Download progress

Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

SonarQube Scanner

- Installing

Loading plugin extensions

- Pending

Go back to the top page

(you can start using the installed plugins right away)

☐ Restart Jenkins when installation is complete and no jobs are running

Go to jenkins and then manage jenkins, scroll down

Dashboard > Manage Jenkins > System >

### SonarQube servers

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

☒ Environment variables

### SonarQube installations

List of SonarQube installations

**Name**

**Server URL**  
Default is http://localhost:9000

**Server authentication token**  
SonarQube authentication token. Mandatory when anonymous access is disabled.

- none -

+ Add

Save

Apply

Go to jenkins and then tools

Dashboard > Manage Jenkins > Tools

SonarQube Scanner installations Edited

Add SonarQube Scanner

**SonarQube Scanner**

**Name**

☒ Install automatically

**Install from Maven Central**

**Version**

SonarQube Scanner 6.2.0.4584

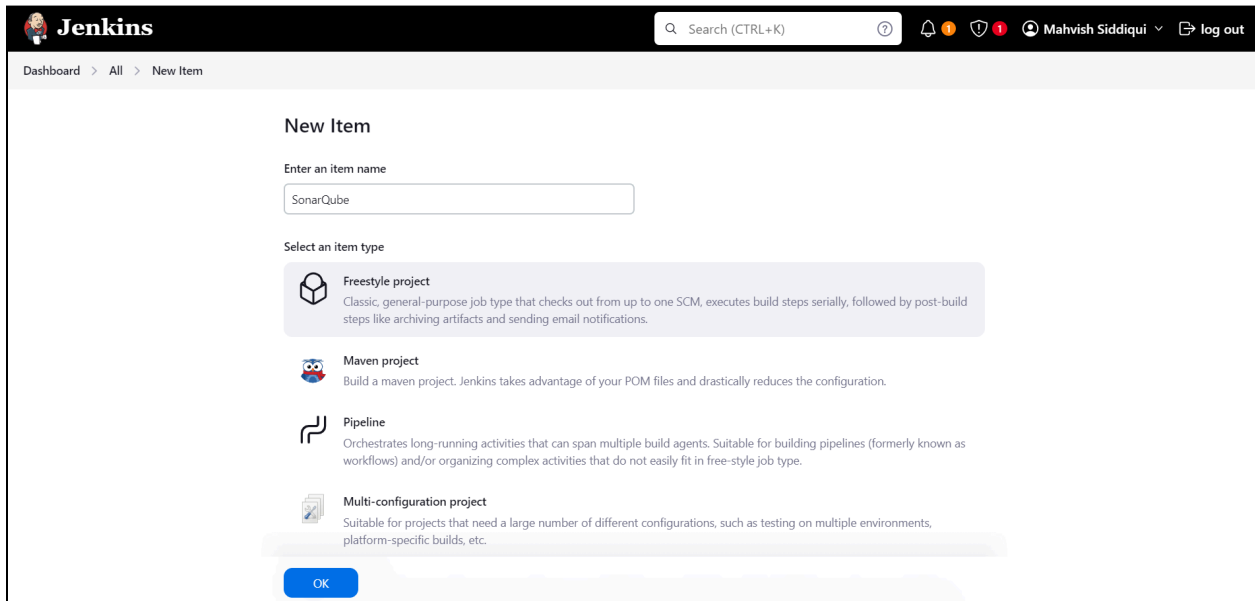
Add Installer

Add SonarQube Scanner

Save

Apply

## Create a new Freestyle project



The Jenkins 'New Item' page is shown. The header includes the Jenkins logo, a search bar, and user information. The breadcrumb trail is 'Dashboard > All > New Item'. The main heading is 'New Item'. Below it, there is a text input field for 'Enter an item name' with the value 'SonarQube'. Under 'Select an item type', four options are listed: 'Freestyle project' (selected), 'Maven project', 'Pipeline', and 'Multi-configuration project'. Each option has a brief description. An 'OK' button is at the bottom.

**Jenkins** Search (CTRL+K) Mahvish Siddiqui log out

Dashboard > All > New Item

### New Item

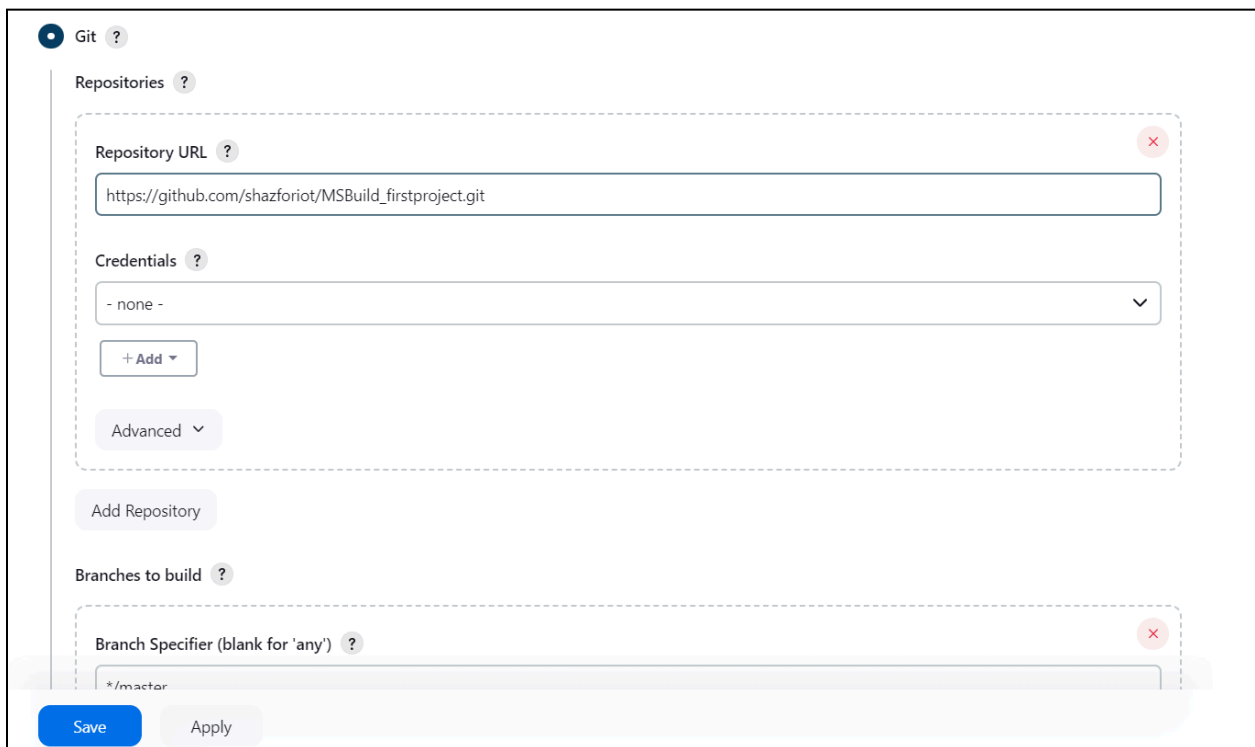
Enter an item name

SonarQube

Select an item type

- Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.
- Maven project**  
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.
- Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.
- Multi-configuration project**  
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

OK



The Jenkins configuration page for a Git repository is shown. It includes sections for 'Repositories' and 'Branches to build'. The 'Repositories' section has a 'Repository URL' field with the value 'https://github.com/shazforiot/MSBuild\_firstproject.git', a 'Credentials' dropdown set to '- none -', and an 'Add Repository' button. The 'Branches to build' section has a 'Branch Specifier (blank for 'any')' field with the value '\*/macter'. At the bottom, there are 'Save' and 'Apply' buttons.

Git ?

#### Repositories ?

Repository URL ?

https://github.com/shazforiot/MSBuild\_firstproject.git

Credentials ?

- none -

+ Add

Advanced

Add Repository

#### Branches to build ?

Branch Specifier (blank for 'any') ?

\*/macter

Save Apply

Go to 'add build steps' and select SonarQube Scanner

### Build Steps

≡

Execute SonarQube Scanner

×

JDK ?

JDK to be used for this SonarQube analysis

(Inherit From Job) ▾

Path to project properties ?

Analysis properties ?


sonar.projectKey=sonarqube-test  
sonar.login=admin  
sonar.password=Mahvish  
sonar.sources=.  
sonar.host.url=http://localhost:9000

Additional arguments ?





▾

Save

Apply

 **Jenkins**

Search (CTRL+K) ⓘ

    Mahvish Siddiqui ▾ log out

Dashboard > SonarQube >

Status

Changes

Workspace

Build Now


Configure

Delete Project

SonarQube

Rename

## SonarQube

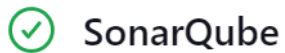
 SonarQube

Permalinks

Add description

Go to <http://localhost:9000/admin/permissions>

sonarqube					
Administration					
Configuration ▾ Security ▾ Projects ▾ System Marketplace					
		Administer System ?	Administer ?	Execute Analysis ?	Create ?
R	<b>sonar-administrators</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Quality Gates <input checked="" type="checkbox"/> Quality Profiles	<input type="checkbox"/>	<input checked="" type="checkbox"/> Projects
	System administrators				
R	<b>sonar-users</b>	<input type="checkbox"/>	<input type="checkbox"/> Quality Gates <input type="checkbox"/> Quality Profiles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Projects
	Every authenticated user automatically belongs to this group				
A	<b>Administrator</b> admin	<input checked="" type="checkbox"/>	<input type="checkbox"/> Quality Gates <input type="checkbox"/> Quality Profiles	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Projects
R	<b>Anyone</b> <b>DEPRECATED</b>	<input type="checkbox"/>	<input type="checkbox"/> Quality Gates <input type="checkbox"/> Quality Profiles	<input type="checkbox"/>	<input type="checkbox"/> Projects
	Anybody who browses the application belongs to this group. If authentication is not enforced, assigned permissions also apply to non-authenticated users.				
4 of 4 shown					



## Permalinks

- [Last build \(#4\), 2 min 30 sec ago](#)
- [Last stable build \(#4\), 2 min 30 sec ago](#)
- [Last successful build \(#4\), 2 min 30 sec ago](#)
- [Last failed build \(#3\), 7 min 35 sec ago](#)
- [Last unsuccessful build \(#3\), 7 min 35 sec ago](#)
- [Last completed build \(#4\), 2 min 30 sec ago](#)



## Console Output

[Download](#)[Copy](#)[View as plain text](#)

```
Started by user Mahvish Siddiqui
Running as SYSTEM
Building on the built-in node in workspace C:\ProgramData\Jenkins\.jenkins\workspace\SonarQube
The recommended git tool is: NONE
No credentials specified
> git.exe rev-parse --resolve-git-dir C:\ProgramData\Jenkins\.jenkins\workspace\SonarQube\.git # timeout=10
Fetching changes from the remote Git repository
> git.exe config remote.origin.url https://github.com/shazforiot/MSBuild_firstproject # timeout=10
Fetching upstream changes from https://github.com/shazforiot/MSBuild_firstproject
> git.exe --version # timeout=10
> git --version # 'git version 2.45.2.windows.1'
> git.exe fetch --tags --force --progress -- https://github.com/shazforiot/MSBuild_firstproject +refs/heads/*:refs/remotes/origin/* # timeout=10
> git.exe rev-parse "refs/remotes/origin/master^{commit}" # timeout=10
Checking out Revision f2bc042c04c6e72427c380bcaee6d6fee7b49adf (refs/remotes/origin/master)
> git.exe config core.sparsecheckout # timeout=10
> git.exe checkout -f f2bc042c04c6e72427c380bcaee6d6fee7b49adf # timeout=10
Commit message: "updated"
> git.exe rev-list --no-walk f2bc042c04c6e72427c380bcaee6d6fee7b49adf # timeout=10
[SonarQube] $ C:\ProgramData\Jenkins\.jenkins\tools\udson.plugins.sonar.SonarRunnerInstallation\sonarqube\bin\sonar-scanner.bat -
Dsonar.host.url=http://localhost:9000 -Dsonar.projectKey=sonarqube-test -Dsonar.login=admin -Dsonar.host.url=http://localhost:9000 -Dsonar.sources=.
-Dsonar.password=Mahvish -Dsonar.projectBaseDir=C:\ProgramData\Jenkins\.jenkins\workspace\SonarQube
19:47:24.708 WARN Property 'sonar.host.url' with value 'http://localhost:9000' is overridden with value 'http://localhost:9000'
19:47:24.729 INFO Scanner configuration file:
```

```
19:48:07.341 INFO ANALYSIS SUCCESSFUL, you can find the results at: http://localhost:9000/dashboard?id=sonarqube-test
19:48:07.342 INFO Note that you will be able to access the updated dashboard once the server has processed the submitted analysis report
19:48:07.342 INFO More about the report processing at http://localhost:9000/api/ce/task?id=237871a0-9f43-4276-91c8-726bb25e780f
19:48:07.360 INFO Analysis total time: 27.979 s
19:48:07.361 INFO SonarScanner Engine completed successfully
19:48:07.448 INFO EXECUTION SUCCESS
19:48:07.450 INFO Total time: 42.725s
Finished: SUCCESS
```

Visit the following URL to see the result -

<http://localhost:9000/dashboard?id=sonarqubetest&codeScope=overall>