

Documentation of Build a Docker Jenkins Pipeline to Implement CI/CD Workflow project

**Done by
Harini B R**

Introduction to the Project

- To Demonstrate the continuous integration and delivery by building a Docker Jenkins Pipeline
- Required tools to achieve the project goals are :
 - ✓ Docker: To build the application from a Docker file and push it to Docker Hub
 - ✓ Docker Hub: To store the Docker image
 - ✓ GitHub: To store the application code and track its revisions
 - ✓ Git: To connect and push files from the local system to GitHub
 - ✓ Linux (Ubuntu): As a base operating system to start and execute the project
 - ✓ Jenkins: To automate the deployment process during continuous integration

Installation of pre-requisites/tools

- Installed the latest version of git and Jenkins
- Created the GitHub and docker account

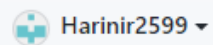
```
hariniravi25hrg@ip-172-31-18-155:~/project/Helloworld-CI$ git --version
git version 2.37.3
hariniravi25hrg@ip-172-31-18-155:~/project/Helloworld-CI$ java --version
openjdk 11.0.16 2022-07-19
OpenJDK Runtime Environment (build 11.0.16+8-post-Ubuntu-0ubuntu120.04)
OpenJDK 64-Bit Server VM (build 11.0.16+8-post-Ubuntu-0ubuntu120.04, mixed mode, sharing)
hariniravi25hrg@ip-172-31-18-155:~/project/Helloworld-CI$ mvn --version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 11.0.16, vendor: Ubuntu, runtime: /usr/lib/jvm/java-11-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "5.11.0-1027-aws", arch: "amd64", family: "unix"
```

Created GitHub account

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *



Repository name *

Helloworld_CI



Great repository names are short and memorable. Need inspiration? How about [bug-free-adventure?](#)

Description (optional)

☒  **Public**

Anyone on the internet can see this repository. You choose who can commit.

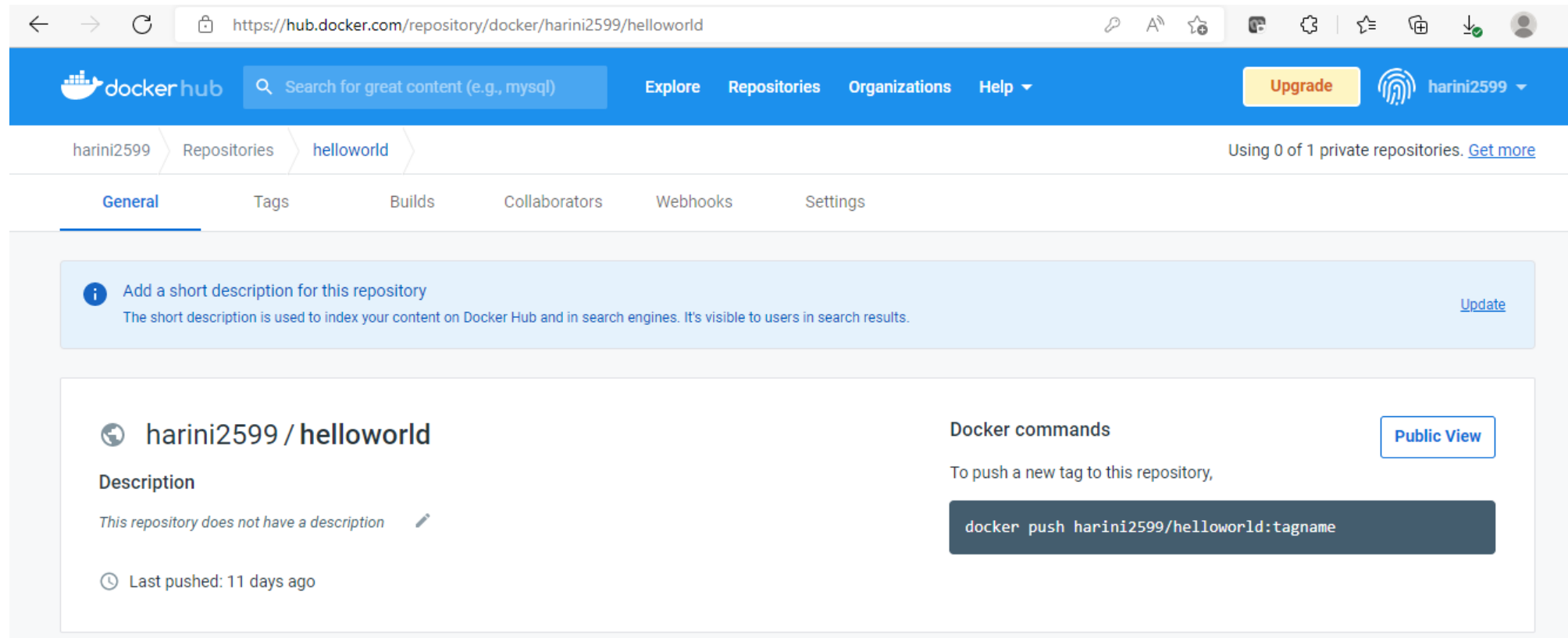
☐  **Private**

You choose who can see and commit to this repository.

<https://github.com/Harinir2599/Helloworld-Cl>



Created Docker Hub account

- [Docker Hub](#)



The screenshot shows a web browser window with the URL <https://hub.docker.com/repository/docker/harini2599/helloworld>. The Docker Hub header is blue with the logo, a search bar, and navigation links: Explore, Repositories, Organizations, and Help. An 'Upgrade' button and the user profile 'harini2599' are on the right. The breadcrumb trail is 'harini2599 > Repositories > helloworld'. Below the header, tabs for 'General', 'Tags', 'Builds', 'Collaborators', 'Webhooks', and 'Settings' are visible, with 'General' selected. A light blue banner at the top of the main content area prompts the user to 'Add a short description for this repository' with an 'Update' link. The repository name 'harini2599 / helloworld' is displayed with a globe icon. Under the 'Description' section, it states 'This repository does not have a description' with an edit icon. A clock icon indicates 'Last pushed: 11 days ago'. On the right, the 'Docker commands' section shows a 'Public View' button and a code block with the command: `docker push harini2599/helloworld:tagname`.


← → ↻ 🔒 <https://hub.docker.com/repository/docker/harini2599/helloworld> 🔑 🔊 ⭐ 📁 ⚙️ | ⭐ 📁 ⬇️ 👤

 **docker hub** 🔍 Search for great content (e.g., mysql) Explore Repositories Organizations Help ▾ Upgrade  harini2599 ▾

harini2599 > Repositories > helloworld Using 0 of 1 private repositories. [Get more](#)

General Tags Builds Collaborators Webhooks Settings

i Add a short description for this repository
The short description is used to index your content on Docker Hub and in search engines. It's visible to users in search results. [Update](#)


 **harini2599 / helloworld**





Description
This repository does not have a description ✎

🕒 Last pushed: 11 days ago


Docker commands [Public View](#)
To push a new tag to this repository,
`docker push harini2599/helloworld:tagname`


Created Docker file


 **Harinir2599 / Helloworld-CI** Public

 Pin  Unwatch **1**  Fork **0**  Star **0**




[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Wiki](#) [Security](#) [Insights](#) [Settings](#)

 main **Helloworld-CI / Dockerfile** [Go to file](#) [...](#)

 **Harinir2599** Update Dockerfile Latest commit 9b7b1d3 11 days ago [History](#)

 1 contributor

7 lines (5 sloc) | 138 Bytes

[Raw](#) [Blame](#)   

```
1 FROM openjdk:8-jdk-alpine
2 VOLUME /tmp
3 ADD target/devOpsDemo-0.0.1-SNAPSHOT.jar app.jar
4
5 ENTRYPOINT ["java","-jar","app.jar"]
6
7 EXPOSE 2222
```

Created Jenkins File

 main ▾ [Helloworld-CI / Jenkinsfile](#)

[Go to file](#) [...](#)

 **Harinir2599** Update Jenkinsfile Latest commit a3a0e92 11 days ago [History](#)

 1 contributor

62 lines (48 sloc) | 2.22 KB [Raw](#) [Blame](#)    

```
1  node {
2
3      def application = "helloworld"
4
5      //Its mandatory to change the Docker Hub Account ID after this Repo is forked by an other person
6      def dockerhubaccountid = "harini2599"
7
8      // reference to maven
9      // ** NOTE: This 'maven-3.5.2' Maven tool must be configured in the Jenkins Global Configuration.
10     def mvnHome = tool '3.5.2'
11 }
```

Created Helloworld code

 main ▾ [Helloworld-Cl](#) / [src](#) / [main](#) / [java](#) / [hello](#) / [HelloWorld.java](#) / <> Jump to ▾



Harinir2599 Added the codes

 **1** contributor

12 lines (10 sloc) | 319 Bytes

```
1  package hello;
2
3  import org.joda.time.LocalDateTime;
4
5  public class HelloWorld {
6      public static void main(String[] args) {
7          LocalDateTime currentTime = new LocalDateTime();
8          System.out.println("The current local time is: " + currentTime);
9          Greeter greeter = new Greeter();
10         System.out.println(greeter.sayHello());
11     }
12 }
```


Jenkins setup

- Installed required plugins
- Setup Global tools configuration
- Created a Jenkins pipeline from repo

Results

Dashboard > Docker-Jenkins-Pipeline-test >


 Full Stage View

 GitHub

 Rename

 Pipeline Syntax

 GitHub Hook Log

 Build History trend ^

✓ #14 [Sep 26, 2022, 12:17 PM](#)

✓ #13 [Sep 26, 2022, 12:03 PM](#)

Stage View

Average stage times:
(Average full run time: ~11s)

	Clone Repo	Build Project	Build Docker Image with new code	Push Image to Remote Repo	Remove running container with old code	Deploy Docker Image with new changes	Remove old images
	313ms	5s	1s	4s	294ms	543ms	295ms
#14 Sep 26 12:17 1 commit	277ms	3s	1s	4s	292ms	544ms	295ms
#13 Sep 26 12:03 1 commit	298ms	3s	1s	4s	297ms	543ms	296ms


Results


Dashboard ▸ Docker-Jenkins-Pipeline-test ▸ #14

 Back to Project

 Status

 Changes

 Console Output

 View as plain text

 Edit Build Information

 Delete build '#14'

 Git Build Data

 Replay



















 Pipeline Steps

 Workspaces

















Console Output

```
Started by user admin
Obtained Jenkinsfile from git https://github.com/Harinir2599/Helloworld-CI.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/Docker-Jenkins-Pipeline-test
[Pipeline] {
[Pipeline] tool
[Pipeline] stage
[Pipeline] { (Clone Repo)
[Pipeline] git
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/Docker-Jenkins-Pipeline-test/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Harinir2599/Helloworld-CI.git # timeout=10
Fetching upstream changes from https://github.com/Harinir2599/Helloworld-CI.git
> git --version # timeout=10
> git --version # 'git version 2.37.3'
> git fetch --tags --force --progress -- https://github.com/Harinir2599/Helloworld-CI.git
+refs/heads/*:refs/remotes/origin/* # timeout=10
```



















Results

Update Dockerfile Harinir2599 committed 4 hours ago	Verified		f8e6ed5	
Update pom.xml Harinir2599 committed 4 hours ago	Verified		5df93d8	
Delete GreeterTest.java Harinir2599 committed 4 hours ago	Verified		4a61a77	
Update Jenkinsfile Harinir2599 committed 4 hours ago	Verified		0d11135	
Update Jenkinsfile Harinir2599 committed 4 hours ago	Verified		a1c066a	
Update Dockerfile Harinir2599 committed 4 hours ago	Verified		e4fb331	
addes pom Harinir2599 committed 4 hours ago			798305a	
Added the codes Harinir2599 committed 4 hours ago			d04a8df	
first commit Harinir2599 committed 5 hours ago			f089fbb	

















Commits on Sep 26, 2022

added index.html Harinir2599 committed 3 hours ago			92581fd	
Update Dockerfile Harinir2599 committed 3 hours ago	Verified		9b7b1d3	
Update pom.xml Harinir2599 committed 3 hours ago	Verified		03f4f73	
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Update Jenkinsfile Harinir2599 committed 4 hours ago	Verified		a3a0e92	
Update Dockerfile Harinir2599 committed 4 hours ago	Verified		7b469a5	
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Results

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Results

←

→

↺

hub.docker.com/repository/docker/harini2599/helloworld

➤

☆

☐

👤

Update

🌐

harini2599 / helloworld

Description

This repository does not have a description

✎

🕒

Last pushed: 11 days ago

Docker commands

Public View

To push a new tag to this repository,

```
docker push harini2599/helloworld:tagname
```

Tags and scans

🛡️

VULNERABILITY SCANNING - DISABLED

[Enable](#)

This repository contains 3 tag(s).

Tag	OS	Pulled	Pushed
🟢 latest	🐧	---	11 days ago
🟢 14	🐧	---	11 days ago

Automated Builds

Manually pushing images to Hub? Connect your account to GitHub or Bitbucket to automatically build and tag new images whenever your code is updated, so you can focus your time on creating.

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Conclusion

- Thus, Docker Jenkins Pipeline is implemented, enabling the CI/CD workflow