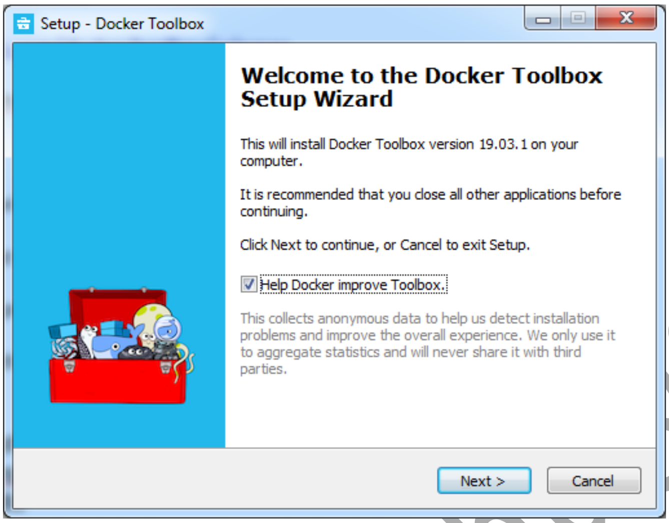
DOCKER REFERENCE DOCUMENT

- by RAGHU

STEP#1 DOCKER DOWNLOAD AND INSTALL

https://github.com/docker/toolbox/releases

→ Download Docker → double click on setup file → Next



Welcome to the Docker Toolbox Setup Wizard

This will install Docker Toolbox version 19.03.1 on your computer.

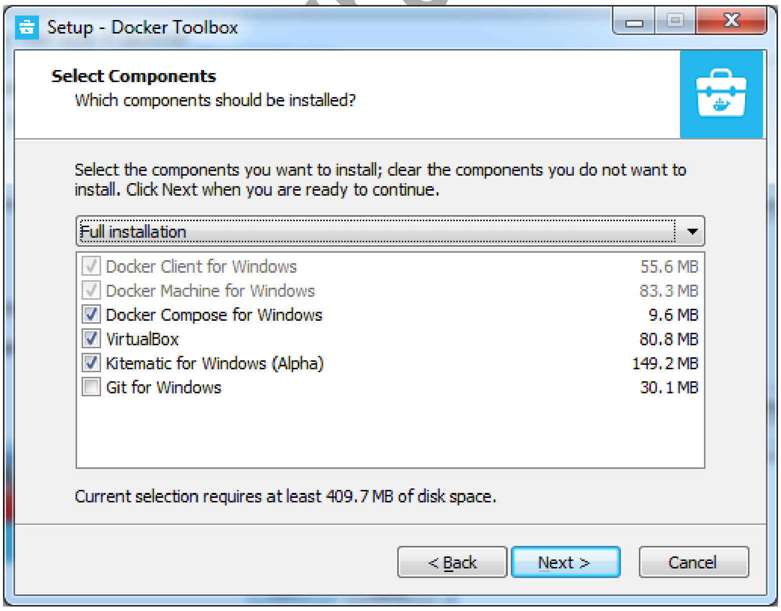
It is recommended that you close all other applications before continuing.

Click Next to continue, or Cancel to exit Setup.

☑ Help Docker improve Toolbox.

This collects anonymous data to help us detect installation problems and improve the overall experience. We only use it to aggregate statistics and will never share it with third parties.

→ Choose Full Installation



Select Components

Which components should be installed?

Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.

Full installation

☑ Docker Client for Windows	55.6 MB
☑ Docker Machine for Windows	83.3 MB
☑ Docker Compose for Windows	9.6 MB
☑ VirtualBox	80.8 MB
☑ Kitematic for Windows (Alpha)	149.2 MB
□ Git for Windows	30.1 MB

Current selection requires at least 409.7 MB of disk space.

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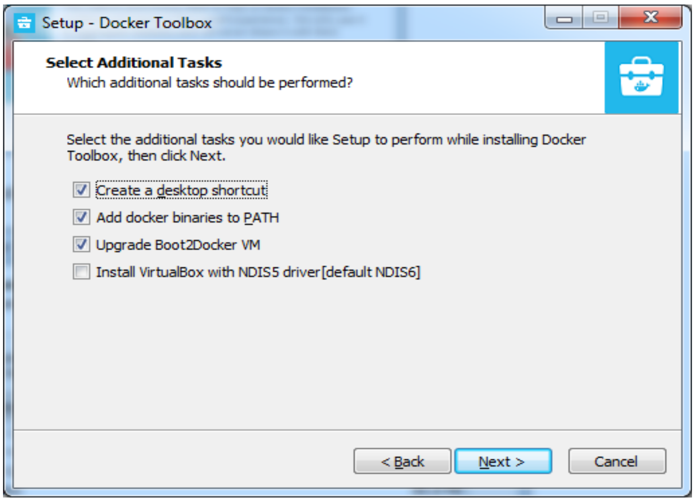
→ Click on Next



Setup - Docker Toolbox

Select Additional Tasks
Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing Docker Toolbox, then click Next.

☑ Create a desktop shortcut
☑ Add docker binaries to PATH
☑ Upgrade Boot2Docker VM
□ Install VirtualBox with NDIS5 driver[default NDIS6]

→ Next → Install

STEP#2 CREATE ONE SPRING BOOT PROJECT WITH ONE REST CONTROLLER

```
package com.app.rest;

import org.springframework.web.bind.annotation.GetMapping;
import
org.springframework.web.bind.annotation.RestController;

@RestController
public class HomeController {

    @GetMapping("/reg")
    public String show() {
        return "Home";
    }
}
```

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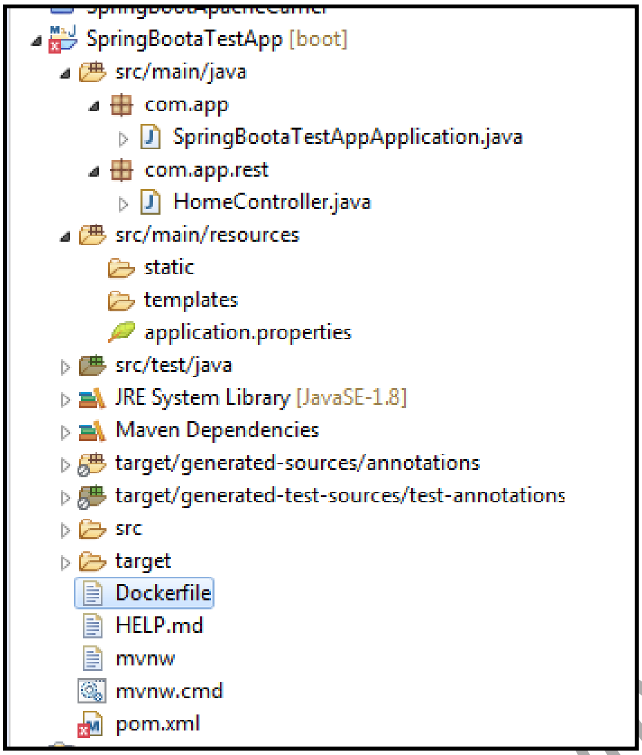
→ **Create File with name : Dockerfile Under Project folder**



```
SpringBootaTestApp [boot]
  src/main/java
    com.app
      SpringBootaTestAppApplication.java
    com.app.rest
      HomeController.java
  src/main/resources
    static
    templates
    application.properties
  src/test/java
  JRE System Library [JavaSE-1.8]
  Maven Dependencies
  target/generated-sources/annotations
  target/generated-test-sources/test-annotations
  src
  target
  Dockerfile
  HELP.md
  mvnw
  mvnw.cmd
  pom.xml
```

→ **Right click on project**

→ **Run As → Maven Install (it generates Jar file under target folder)**

→ **add content to docker file (example given below)**

Dockerfile

```
FROM openjdk:8
VOLUME /tmp
EXPOSE 8080
ADD target/springboot-dockerapp.jar springboot-dockerapp.jar
ENTRYPOINT ["java","-jar","/springboot-dockerapp.jar"]
```

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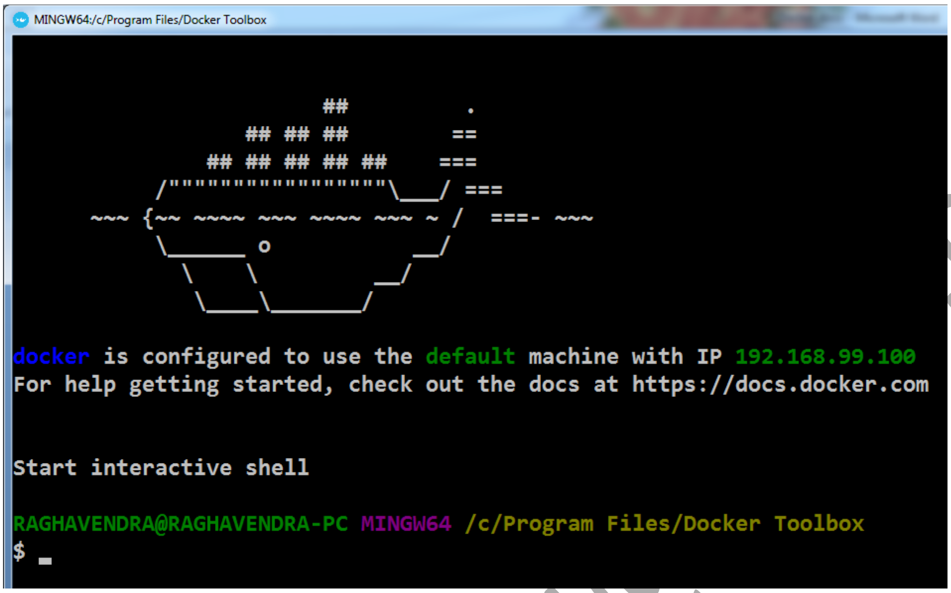
STEP#3 START DOCKER

→ Click on Docker Docker Quickstart Terminal Icon

→ wait for few minutes (first time takes time 10-20 mins)

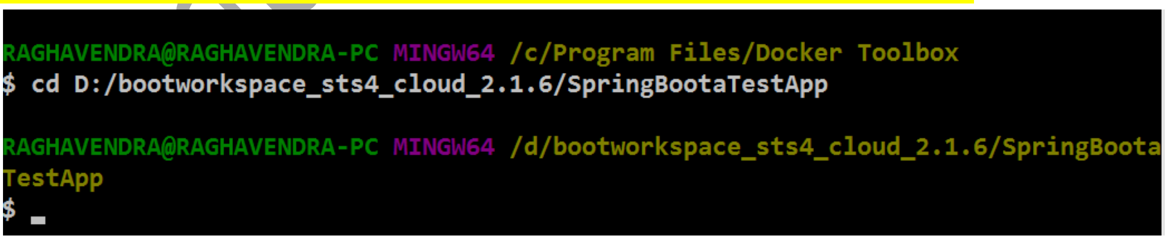


```
                        ##         .
                  ## ## ##        ==
               ## ## ## ## ##    ===
           /"""""""""""""""""\___/ ===
      ~~~ {~~ ~~~~ ~~~ ~~~~ ~~~ ~ /  ===- ~~~
           \______ o           __/
             \    \         __/
              \____\_______/

docker is configured to use the default machine with IP 192.168.99.100
For help getting started, check out the docs at https://docs.docker.com


Start interactive shell

RAGHAVENDRA@RAGHAVENDRA-PC MINGW64 /c/Program Files/Docker Toolbox
$
```

→ move to Project root folder in docker.

Ex: if Project is created in STS under "D:\bootworkspace_sts4_cloud_2.1.6\SpringBootaTestApp" then type command as:

$ cd D:/bootworkspace_sts4_cloud_2.1.6/SpringBootaTestApp



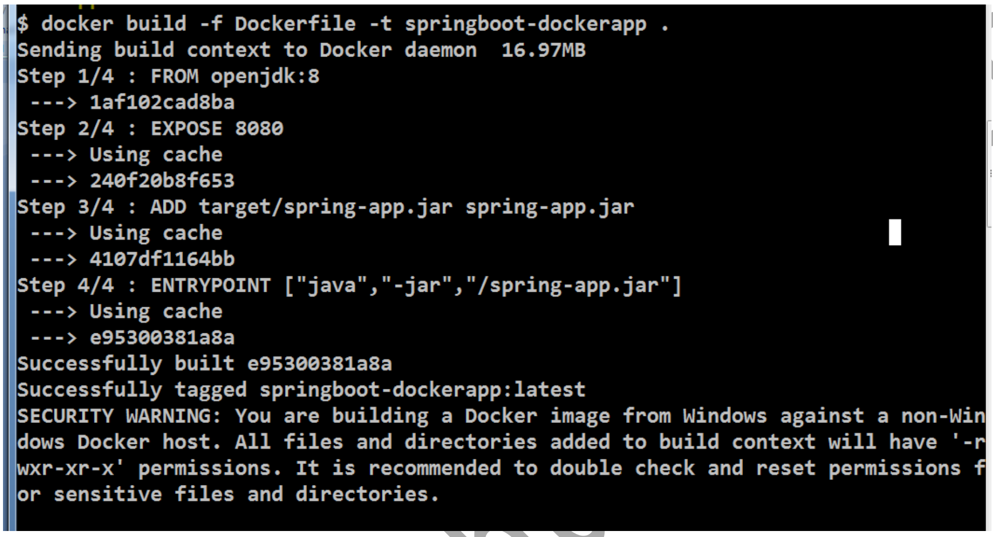
```
RAGHAVENDRA@RAGHAVENDRA-PC MINGW64 /c/Program Files/Docker Toolbox
$ cd D:/bootworkspace_sts4_cloud_2.1.6/SpringBootaTestApp

RAGHAVENDRA@RAGHAVENDRA-PC MINGW64 /d/bootworkspace_sts4_cloud_2.1.6/SpringBoota
TestApp
$
```

STEP#4 CREATE DOCKER CONTAINER IMAGE

docker build -f Dockerfile -t <AnyImageName> .

Here dot(.) indicates current location

$ docker build -f Dockerfile -t springboot-dockerapp .



```
$ docker build -f Dockerfile -t springboot-dockerapp .
Sending build context to Docker daemon  16.97MB
Step 1/4 : FROM openjdk:8
 ---> 1af102cad8ba
Step 2/4 : EXPOSE 8080
 ---> Using cache
 ---> 240f20b8f653
Step 3/4 : ADD target/spring-app.jar spring-app.jar
 ---> Using cache
 ---> 4107df1164bb
Step 4/4 : ENTRYPOINT ["java","-jar","/spring-app.jar"]
 ---> Using cache
 ---> e95300381a8a
Successfully built e95300381a8a
Successfully tagged springboot-dockerapp:latest
SECURITY WARNING: You are building a Docker image from Windows against a non-Win
dows Docker host. All files and directories added to build context will have '-r
wxr-xr-x' permissions. It is recommended to double check and reset permissions f
or sensitive files and directories.
```

→ **Check for list of images created in docker**

$ docker image ls

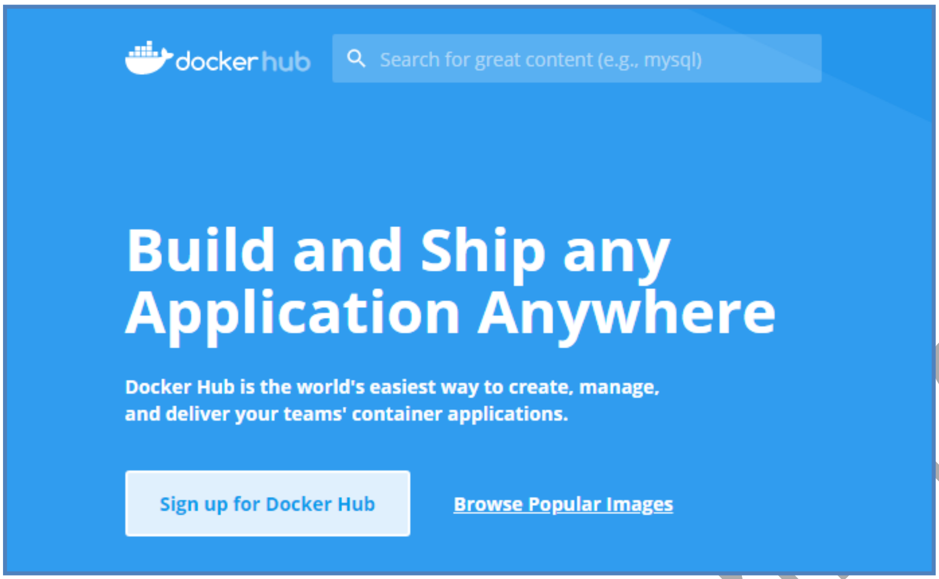
→ **Run Docker Image**

$ docker run -p 9090:8080 springboot-dockerapp

> Goto browser and enter URL:
Example URL: http://192.168.99.100:9090/show

STEP#5 CREATE ACCOUNT IN DOCKER HUB

→ URL : https://hub.docker.com/ → **Choose sing up option and register once**

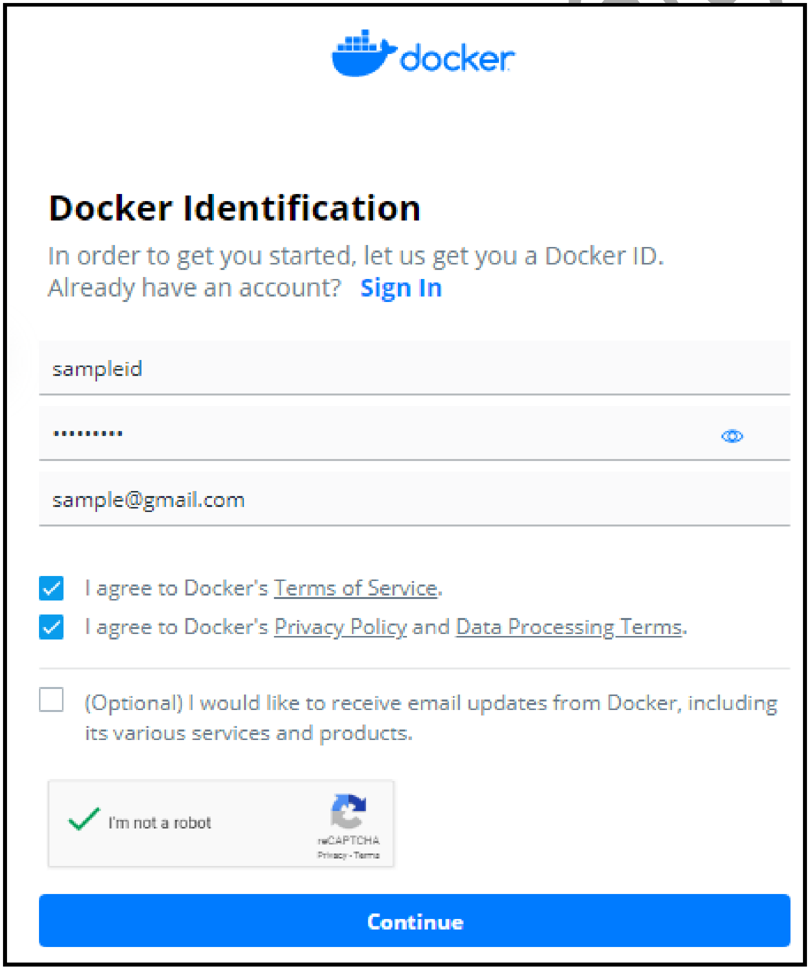


Search for great content (e.g., mysql)

Build and Ship any Application Anywhere

Docker Hub is the world's easiest way to create, manage, and deliver your teams' container applications.

→ Enter details here



Docker Identification

In order to get you started, let us get you a Docker ID. Already have an account? Sign In

sampleid

•••••••••

sample@gmail.com

☑ I agree to Docker's Terms of Service.

☑ I agree to Docker's Privacy Policy and Data Processing Terms.

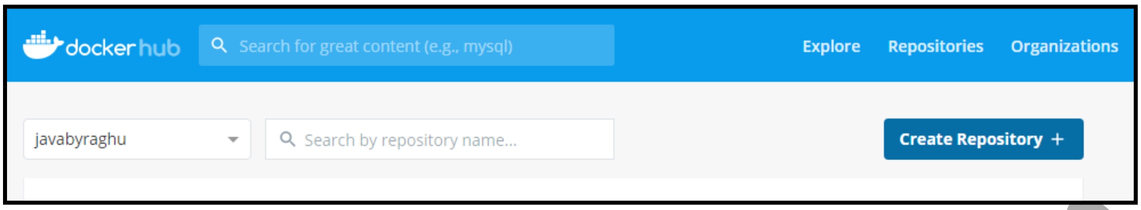
□ (Optional) I would like to receive email updates from Docker, including its various services and products.

✓ I'm not a robot

→ Verify Email id at your inbox

STEP#6 CREATE REPOSITORY HERE

→ Click on Button Create Repository



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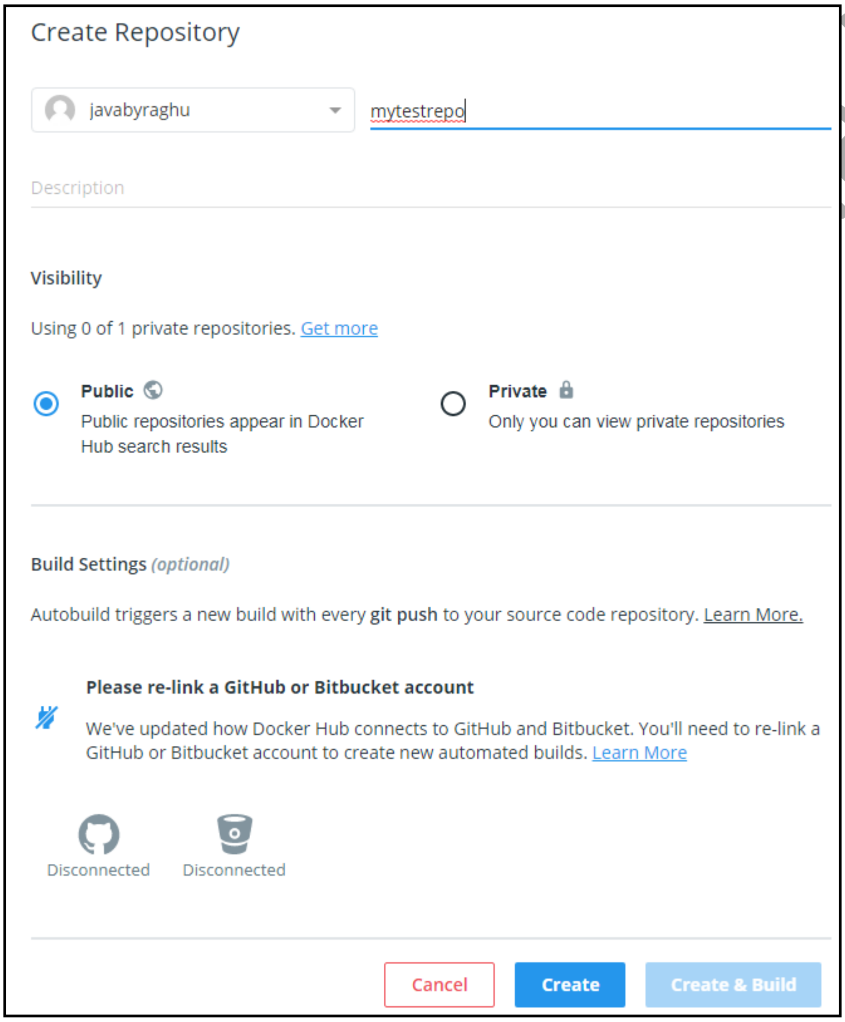
→ Enter repository name (Ex : mytestrepo) and click on create button



Create Repository

javabyraghu mytestrepo

Description

Visibility

Using 0 of 1 private repositories. Get more

● Public
Public repositories appear in Docker Hub search results

○ Private
Only you can view private repositories

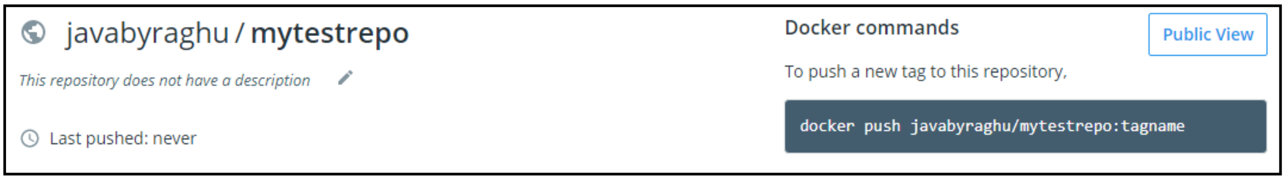
Build Settings *(optional)*

Autobuild triggers a new build with every **git push** to your source code repository. Learn More.

Please re-link a GitHub or Bitbucket account

We've updated how Docker Hub connects to GitHub and Bitbucket. You'll need to re-link a GitHub or Bitbucket account to create new automated builds. Learn More

→ See confirmation screen with sample push command



javabyraghu / mytestrepo

This repository does not have a description

Last pushed: never

Docker commands

To push a new tag to this repository,

```
docker push javabyraghu/mytestrepo:tagname
```

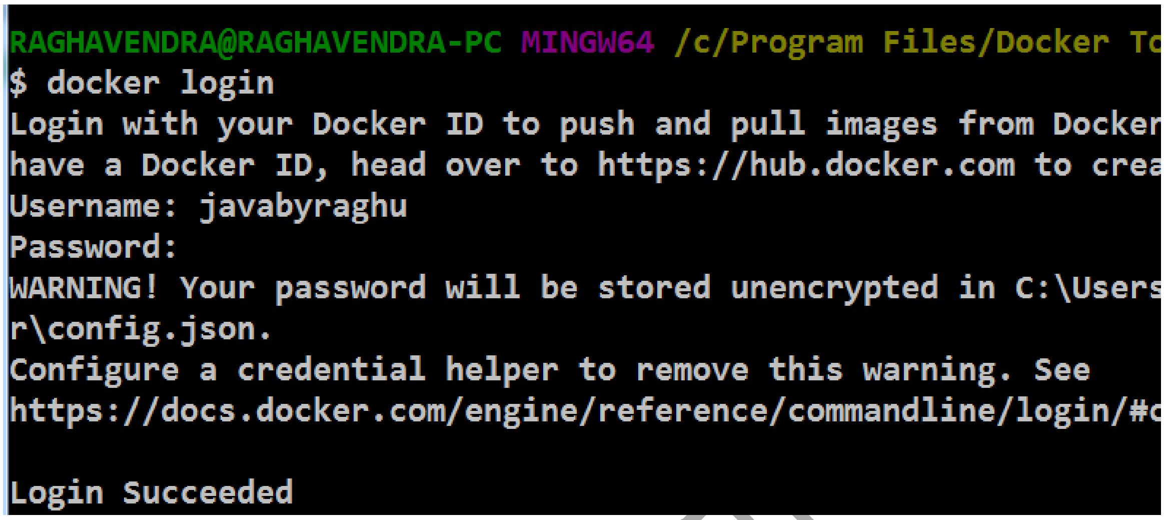
STEP#7 LOGIN IN DOCKER TERMINAL

→ come back to docker terminal → login here

$docker login

UserName : docker account username

password: docker password



```
RAGHAVENDRA@RAGHAVENDRA-PC MINGW64 /c/Program Files/Docker To
$ docker login
Login with your Docker ID to push and pull images from Docker
have a Docker ID, head over to https://hub.docker.com to crea
Username: javabyraghu
Password:
WARNING! Your password will be stored unencrypted in C:\Users
r\config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#c

Login Succeeded
```

javabyraghu@gm

STEP#8 CREATE NEW TAG

→ Format to create tag name is

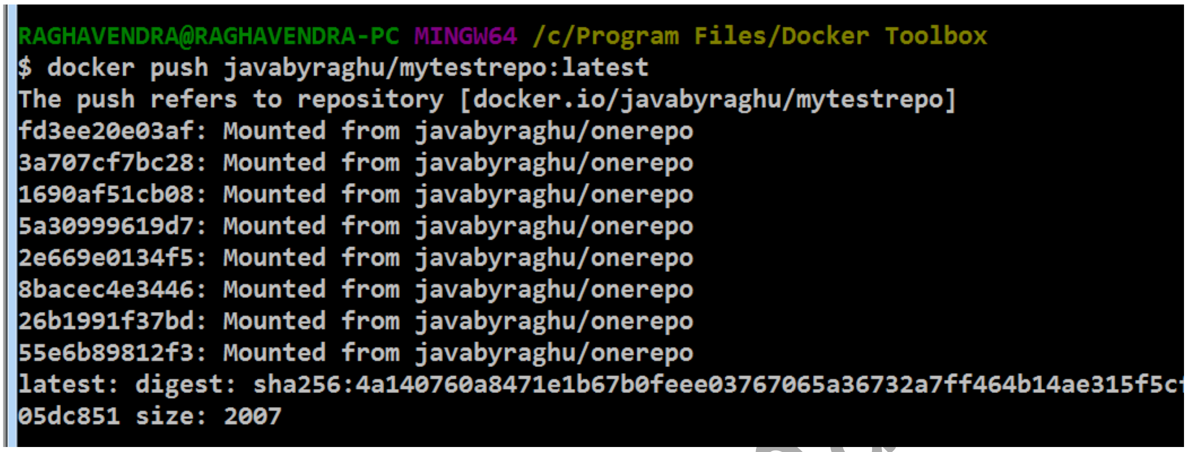
docker tag <imageName> <username>/<repoName>:<tagname>

$ docker tag springboot-dockerapp javabyraghu/mytestrepo:latest

STEP#9 PUSH IMAGE INTO DOCKER HUB

$ docker push <username>/<repoName>:<tagname>

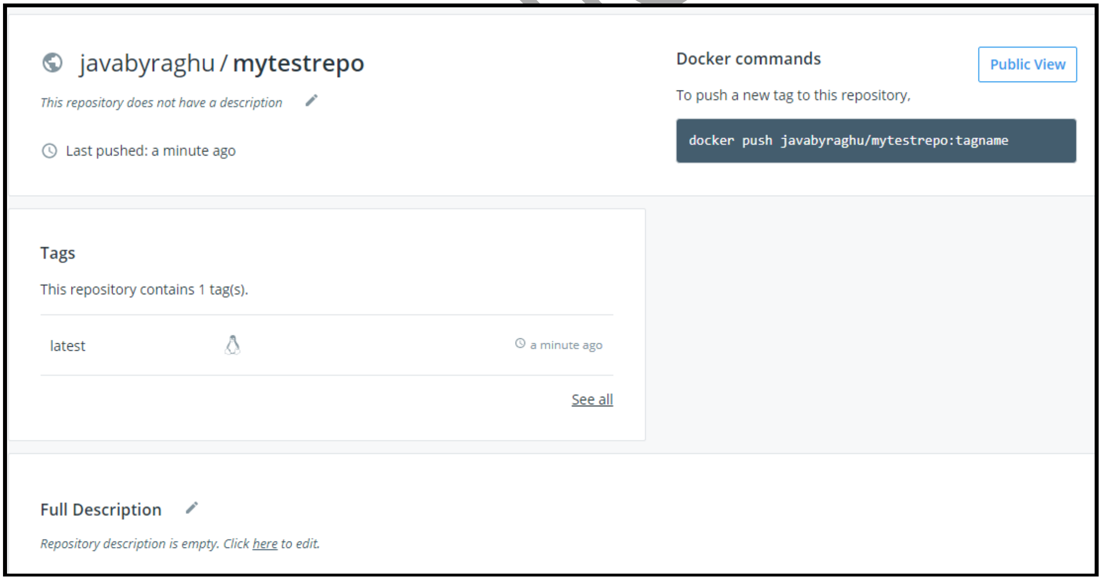
$ docker push javabyraghu/mytestrepo:latest



```
RAGHAVENDRA@RAGHAVENDRA-PC MINGW64 /c/Program Files/Docker Toolbox
$ docker push javabyraghu/mytestrepo:latest
The push refers to repository [docker.io/javabyraghu/mytestrepo]
fd3ee20e03af: Mounted from javabyraghu/onerepo
3a707cf7bc28: Mounted from javabyraghu/onerepo
1690af51cb08: Mounted from javabyraghu/onerepo
5a30999619d7: Mounted from javabyraghu/onerepo
2e669e0134f5: Mounted from javabyraghu/onerepo
8bacec4e3446: Mounted from javabyraghu/onerepo
26b1991f37bd: Mounted from javabyraghu/onerepo
55e6b89812f3: Mounted from javabyraghu/onerepo
latest: digest: sha256:4a140760a8471e1b67b0feee03767065a36732a7ff464b14ae315f5c
05dc851 size: 2007
```

STEP#10 CONFIRM PUSH AT DOCKERHUB

→ Refresh page to see update at repository



javabyraghu / mytestrepo

This repository does not have a description

Last pushed: a minute ago

Docker commands

To push a new tag to this repository,

```
docker push javabyraghu/mytestrepo:tagname
```

Tags

This repository contains 1 tag(s).

latest a minute ago

Full Description

Repository description is empty. Click here to edit.

FB: **https://www.facebook.com/groups/thejavatemple/**