

Creating a Docker Image and Pushing the Image to Docker Hub

DESCRIPTION

This is a simple project to show how to build Docker image and push it to docker Hub. development Docker image using a Dockerfile.

What we use :

- Docker CLI: To create the Docker image using a Dockerfile
- Docker Hub: To publish the image

Requirements:

- Installing Docker in the machine we work on it.
- An account on Docker Hub to push the Docker image.

Steps

1. Creating the project file including Dockerfile.
2. Building the image to the project.
3. Pushing the image to Docker Hub.

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Step1: Creating the project file including Dockerfile.

- a. First, make sure Docker is installed on the machine via command :
-sudo docker -- version

```
labsuser@ip-172-31-10-29:~$ sudo docker --version
Docker version 19.03.11, build 42e35e61f3
labsuser@ip-172-31-10-29:~$
```

- b. Create the **app** directory of the project

```
labsuser@ip-172-31-10-29:~$ mkdir app
labsuser@ip-172-31-10-29:~$ cd app
labsuser@ip-172-31-10-29:~/app$
```

- c. Create the **app** files

```
labsuser@ip-172-31-10-29:~/app$ touch app.py requirements.txt Dockerfile
labsuser@ip-172-31-10-29:~/app$ ls
Dockerfile app.py requirements.txt
labsuser@ip-172-31-10-29:~/app$
```

- d. Adding the content to Dockerfile and the others as well

```
labsuser@ip-172-31-10-29:~/app$ vi app.py
labsuser@ip-172-31-10-29:~/app$ vi requirements.txt
labsuser@ip-172-31-10-29:~/app$ vi Dockerfile
```

Dockerfile

```
FROM python
WORKDIR /pythonApp
ADD . /pythonApp
RUN pip install -r requirements.txt
EXPOSE 80
ENV NAME world
CMD ["python", "app.py"]
~
~
```

Step2: Building the Image to the project.

- a. Build the Docker image from the newly created Dockerfile

`-sudo docker build -t app_image .`

```
labsuser@ip-172-31-10-29:~/app$ sudo docker build -t app_image .
Sending build context to Docker daemon 4.096kB
Step 1/7 : FROM python
--> 4246fb19839f
Step 2/7 : WORKDIR /pythonApp
--> Running in f842e66566d1
Removing intermediate container f842e66566d1
--> b31876859641
Step 3/7 : ADD . /pythonApp
--> d259dce2b97c
Step 4/7 : RUN pip install -r requirements.txt
--> Running in 20bdaabf1f75
```

```
Step 5/7 : EXPOSE 80
--> Running in c8bd015a0abe
Removing intermediate container c8bd015a0abe
--> c987121435d0
Step 6/7 : ENV NAME world
--> Running in eba0a2058a7f
Removing intermediate container eba0a2058a7f
--> c0c5b7af2198
Step 7/7 : CMD ["python", "app.py"]
--> Running in 6b61260e7955
Removing intermediate container 6b61260e7955
--> 2709974c3dff
Successfully built 2709974c3dff
Successfully tagged app_image:latest
```

- b. List the images

```
labsuser@ip-172-31-10-29:~/app$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
app_image	latest	2709974c3dff	4 minutes ago	928MB
python	latest	4246fb19839f	2 weeks ago	917MB
ubuntu	latest	ba6accedd29	3 weeks ago	72.8MB
mysql	5.6	f3b364958c23	4 weeks ago	303MB

Step3: Pushing the Image to the Docker Hub.

- a. First, login to your Docker Hub account by the command :
`-sudo docker login -u <DockerHub_username> -p <DockerHub-password> docker.io`

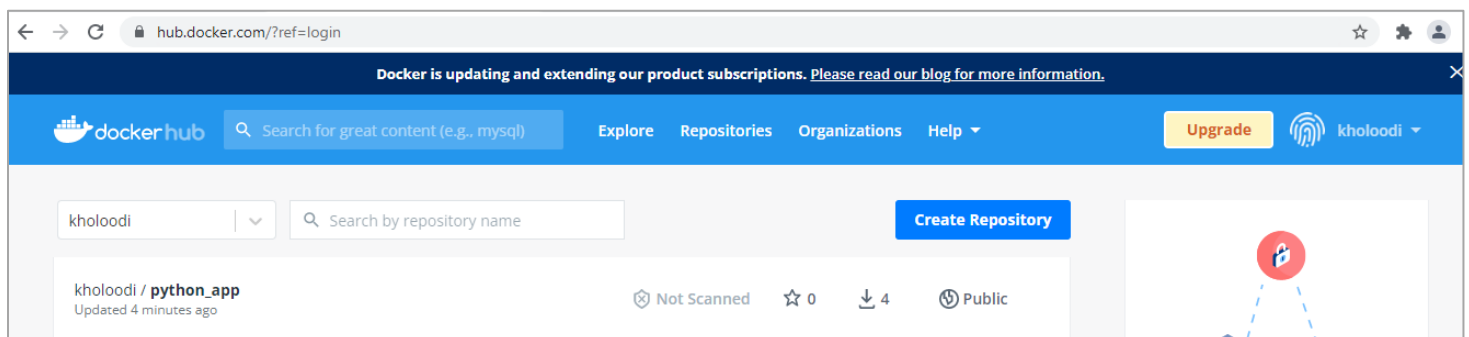
```
labsuser@ip-172-31-10-29:~/app$ sudo docker login -u kholoodi -p [REDACTED] docker.io
WARNING! Using --password via the CLI is insecure. Use --password-stdin.
WARNING! Your password will be stored unencrypted in /home/labsuser/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

- b. Second, tagging the image and push it via commands *tag & push*

```
labsuser@ip-172-31-10-29:~/app$ sudo docker tag app_image kholoodi/python_app:version1
labsuser@ip-172-31-10-29:~/app$ sudo docker push kholoodi/python_app:version1
The push refers to repository [docker.io/kholoodi/python_app]
81512cc9eec4: Pushed
978b39a36ab5: Pushed
06038410c1d0: Pushed
636159d907db: Mounted from library/python
485115e86f04: Mounted from library/python
30f3545290f2: Mounted from library/python
7fcd2600f5ad: Mounted from library/python
8f56c3340629: Mounted from library/python
ba6e5ff31f23: Mounted from library/python
9f9f651e9303: Mounted from library/python
0b3c02b5d746: Mounted from library/python
62a747bf1719: Mounted from library/python
version1: digest: sha256:c58ac3d7f3d8b35a0d9541758b5aa6faaa382007c5d515e1629b20295013fc2b size: 2843
labsuser@ip-172-31-10-29:~/app$
```

The ***python_app*** image on Docker Hub



**Advanced Image Management**

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[View preview](#)**kholoodi / python_app**

This repository does not have a description

🕒 Last pushed: 5 minutes ago

Docker commands[Public View](#)

To push a new tag to this repository,

```
docker push kholoodi/python_app:tagname
```

Tags and Scans

🛡️ VULNERABILITY SCANNING - DISABLED
[Enable](#)

This repository contains 1 tag(s).

TAG	OS	PULLED	PUSHED
version1		5 minutes ago	5 minutes ago

[See all](#)

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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