

# docker学习相关笔记

核心思路：在本地创建一个容器后，可以依据这个容器创建本地镜像，并可把这个镜像推送到Docker hub中，以便在网络上下下载使用。

## 镜像

### 获取一个新的镜像

当我们在本地主机上使用一个不存在的镜像时 Docker 就会自动下载这个镜像。如果我们想预先下载这个镜像，我们可以使用 docker pull 命令来下载它。

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker pull hello-world
Using default tag: latest
latest: Pulling from library/hello-world
0e03bdcc26d7: Pull complete
Digest: sha256:1a523af650137b8acddaed439c17d684df61ee4d74feac151b5b337bd29e7eec
Status: Downloaded newer image for hello-world:latest
docker.io/library/hello-world:latest
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
27718842/weather	v3	d555e29bc047	2 hours ago	5.94GB
weather	v3	d555e29bc047	2 hours ago	5.94GB
hello-world	latest	bf756fb1ae65	11 months ago	13.3kB

查看镜像:使用 docker images 来列出本地主机上的镜像。

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
weather	v3	d555e29bc047	About an hour ago	5.94GB

REPOSITORY: 表示镜像的仓库源

TAG: 镜像的标签

IMAGE ID: 镜像ID

CREATED: 镜像创建时间

SIZE: 镜像大小

同一仓库源可以有多个 TAG，代表这个仓库源的不同个版本，如 ubuntu 仓库源里，有 15.10、14.04 等多个不同的版本。

### 删除镜像

镜像删除使用 docker rmi 命令，比如我们删除 hello-world 镜像：

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker rmi hello-world
Untagged: hello-world:latest
Untagged: hello-world@sha256:1a523af650137b8acddaed439c17d684df61ee4d74feac151b5b337bd29e7eec
Deleted: sha256:bf756fb1ae65adf866bd8c456593cd24beb6a0a061dedf42b26a993176745f6b
Deleted: sha256:9c27e219663c25e0f28493790cc0b88bc973ba3b1686355f221c38a36978ac63
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
weather	v3	d555e29bc047	2 hours ago	5.94GB
27718842/weather	v3	d555e29bc047	2 hours ago	5.94GB
silverlogic/python3.6	latest	c782c85e7a19	21 months ago	1.6GB

# 容器

## 通过镜像创建一个容器

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
REPOSITORY          TAG         IMAGE ID      CREATED        SIZE
weather             v3          d555e29bc047  About an hour ago  5.94GB
27718842/weather    v3          d555e29bc047  About an hour ago  5.94GB
silverlogic/python3.6 latest      c782c85e7a19  21 months ago   1.6GB
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker run -it d555e29bc047 bin/bash
```

-i: 交互式操作

-t: 终端

d55...或27718842/weather:v3: 这是指明用哪个镜像来启动容器

/bin/bash: 放在镜像名后的是命令，这里我们希望有个交互式 Shell，因此用的是 /bin/bash

如果你不指定一个镜像的版本标签，例如你只使用 ubuntu，docker 将默认使用 ubuntu:latest 镜像

要退出终端，直接输入 `exit`

## 查看已开启的容器（查看所有容器使用 `docker ps -a`）

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS   NAMES
c4d3afeb00db   d555e29bc047  "bin/bash"              4 minutes ago Up 4 minutes             sad_lalande
```

## 停止一个容器

停止容器的命令如下： `$ docker stop <容器 ID>`

## 启动已停止运行的容器

使用 `docker start` 启动一个已停止的容器： `$ docker start <容器 ID>`

## 重启容器

停止的容器可以通过 `docker restart` 重启： `$ docker restart <容器 ID>`

## 删除容器

删除容器使用 `docker rm` 命令： `docker rm <容器 ID>`

## 进入容器

想要进入容器，可以通过以下指令进入：

`docker attach`

`docker exec`: 建议使用 `docker exec` 命令，因为使用该指令后再退出容器终端，不会导致容器的停止。

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker ps
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
c4d3afeb00db   d555e29bc047  "bin/bash"     30 minutes ago Up 30 minutes          sad_lalande
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker exec -it c4d3afeb00db /bin/bash
root@c4d3afeb00db:/# ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
```

## 容器和宿主机之间的文件复制

docker cp 文件 container id:目标位置 (反之亦然)

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker ps
CONTAINER ID   IMAGE          COMMAND         CREATED        STATUS        PORTS          NAMES
c4d3afeb00db   d555e29bc047  "bin/bash"     37 minutes ago Up 37 minutes          sad_lalande
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker cp model/ c4d3afeb00db:/home/
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker exec -it c4d3afeb00db /bin/bash
root@c4d3afeb00db:/# cd /home/
root@c4d3afeb00db:/home# ls
model
root@c4d3afeb00db:/home#
```

## 推送镜像

### 1. docker commit :从容器创建一个新的镜像。

docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

- a :提交的镜像作者
- c :使用Dockerfile指令来创建镜像
- m :提交时的说明文字
- p :在commit时, 将容器暂停

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker commit -a "ulen" c4d3afeb00db weather:v22
sha256:f526fcbe13617359487bc91f0f8352960abb30b9330414bd22214553ebdca1ef
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
REPOSITORY      TAG          IMAGE ID       CREATED        SIZE
weather         v22         f526fcbe1361  12 seconds ago 6.02GB
27718842/weather v3          d555e29bc047  2 hours ago   5.94GB
weather         v3          d555e29bc047  2 hours ago   5.94GB
silverlogic/python3.6 latest      c782c85e7a19  21 months ago 1.6GB
```

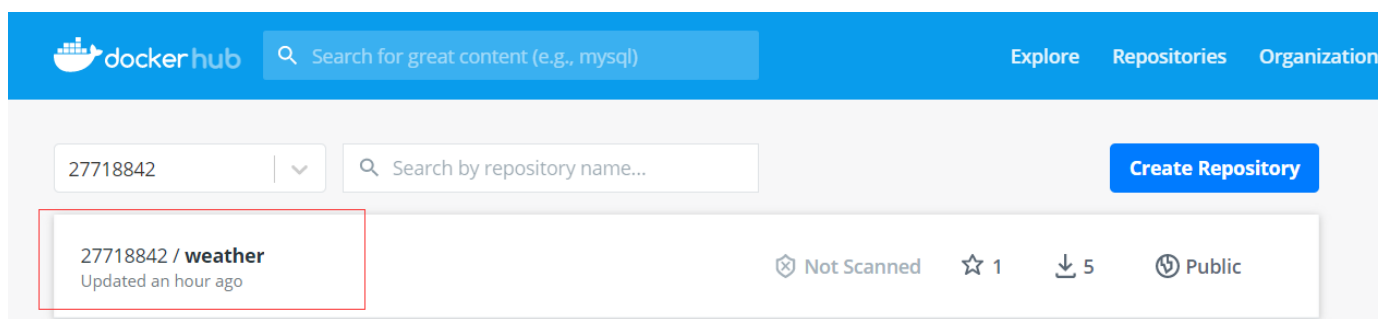
### 2.登录docker hub

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker login
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
```

### 3. 在docker hub 上创建相应的仓库

docker push [OPTIONS] NAME[:TAG]



#### 4. 将镜像改名,改成与仓库名字一样

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
weather              v22                f526fcbe1361       7 minutes ago      6.02GB
27718842/weather     v3                 d555e29bc047       2 hours ago        5.94GB
weather              v3                 d555e29bc047       2 hours ago        5.94GB
silverlogic/python3.6 latest             c782c85e7a19       21 months ago      1.6GB
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker tag f526fcbe1361 27718842/weather:v22
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
27718842/weather     v22                f526fcbe1361       8 minutes ago      6.02GB
weather              v22                f526fcbe1361       8 minutes ago      6.02GB
27718842/weather     v3                 d555e29bc047       2 hours ago        5.94GB
weather              v3                 d555e29bc047       2 hours ago        5.94GB
silverlogic/python3.6 latest             c782c85e7a19       21 months ago      1.6GB
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]#
```

#### 5. 把创建的镜像推送到docker hub仓库中去

```
(base) [root@iZuf62moqb5w2xvopd74h7Z ~]# docker push 27718842/weather:v22
The push refers to repository [docker.io/27718842/weather]
da775f583603: Preparing
5aaf6de2cff6: Preparing
f9a83af52856: Preparing
b144ded62c5a: Preparing
f41af8e9f106: Preparing
519be386296e: Waiting
a04bf733d02a: Waiting
526dede64623: Waiting
7de462056991: Waiting
3443d6cf0f1f: Waiting
f3a38968d075: Waiting
a327787b3c73: Waiting
5bb0785f2eee: Waiting
```

#### 6. 随后就可以在docker hub上看到自己上传的镜像了

**27718842 / weather**

This repository does not have a description

Last pushed: an hour ago

**Docker commands**

To push a new tag to this repository,

```
docker push 27718842/weather:tagname
```

**Tags and Scans**

 VULNERABILITY SCANNING - DISABLED [Enable](#)

This repository contains 2 tag(s).

TAG	OS	PULLED	PUSHED
v3		an hour ago	an hour ago
v2		3 days ago	3 days ago

[See all](#)
**Recent builds**
[Link a source provider and run a build to see build results here](#)