

Lab: 下載映像檔並觀察

觀察現有的映像檔

```
# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	VIRTUAL SIZE
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下載 busybox 映像檔

```
# docker pull busybox
```

Using default tag: latest

latest: Pulling from library/busybox

a5d4c53980c6: Pull complete

b41c5284db84: Pull complete

Digest: sha256:65ce39ce3eb0997074a460adfb568d0b9f0f6a4392d97b6035630c9d7bf92402

Status: Downloaded newer image for busybox:latest

再次觀察現有的映像檔

```
# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	VIRTUAL SIZE
busybox	latest	b41c5284db84	7 weeks ago	1.093 MB

Lab: 映像檔查詢與取得

方式 1 上網搜尋

<https://hub.docker.com/>

例如 搜尋 opensuse

The screenshot shows the Docker Hub interface with a search bar containing 'opensuse'. Below the search bar, there are two repository entries:

Repository	Stars	Pulls	Details
opensuse official	49	35976	>
boombatower/opensuse public   automated build	0	1676	>

點進想抓的 Repositories

這邊可以看到 docker pull 指令還有 Dockerfile 相關資訊

OFFICIAL REPOSITORY

opensuse ☆

Last pushed: 7 days ago

Repo info Tags

Supported tags and respective Dockerfile links

- 13.2, harlequin, latest ([docker/Dockerfile](#))
- tumbleweed ([docker/Dockerfile](#))

DOCKER PULL COMMAND

```
docker pull opensuse
```

## 方式 2 使用指令

使用 docker search 來搜尋

```
# docker search opensuse
```

NAME	DESCRIPTION	STARS	OFFICIAL	AUTOMATED
opensuse	This project contains the stable releases ...	124	[OK]	
opensuse/portus	Production ready Docker image of Portus.	6		[OK]
novacoast/opensuse-apache		2	[OK]	

取得映像檔到本機

使用 指令還有 Web 方式的差異是

在 Web 上面, 我們可以看到 images 的 TAG, 但是使用指令沒有看到

取得 opensuse image

```
# docker pull opensuse
```

Using default tag: latest

latest: Pulling from library/opensuse

da0e7dee81d7: Pull complete

80bd0f661aef: Pull complete

Digest: sha256:4d13118f99b33de9e3daea45a010c744d2f0c80eade081577606fecf349db3e9

Status: Downloaded newer image for opensuse:latest

如果不下 Tag, 預設是 latest

指定 image and tag

```
# docker pull opensuse:42.1
```

42.1: Pulling from library/opensuse

Digest: sha256:7434fa406aef46e238951a82159693ed02793483f1a2511186b794ec82fc9ff4

Status: Downloaded newer image for opensuse:42.1

利用 docker images 來比對, 比對 IMAGE ID 就會知道 latest 與 42.1 是相同的

```
# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	VIRTUAL SIZE
opensuse	latest	80bd0f661aef	5 weeks ago	97.74 MB
opensuse	42.1	80bd0f661aef	5 weeks ago	97.74 MB
busybox	latest	b41c5284db84	7 weeks ago	1.093 MB

Lab: 建立 docker 映像檔-修改現有映像檔

## 方式 1 修改現有的映像檔

觀察 container

```
# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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```
# docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

首先對之前下的指令進行解釋

```
# docker run --rm -i -t opensuse /bin/bash
```

- run 執行 docker
- --rm Automatically remove the container when it exits
- -i Keep STDIN open even if not attached
- -t Allocate a pseudo-TTY

在 container 內

```
bash-4.2# echo $HOSTNAME  
272dfd16c792
```

在 container 內

```
bash-4.2# exit
```

觀察 container

```
# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

```
# docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

接下來嘗試 沒有 --rm 的差異 ( 這次不加上 --rm, 也就是說 exit 之後不刪除 )

```
# docker run -i -t opensuse /bin/bash
```

在 container 內

```
bash-4.2# exit
```

觀察 container

```
# docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
--------------	-------	---------	---------	--------	-------	-------

```
# docker ps -a
```

1dd047e1ec6b	opensuse	"/bin/bash"	36 seconds ago	Exited (0) 29 seconds ago		thirsty_archimedes
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再次執行一個新的 container

```
# docker run -i -t opensuse /bin/bash
```

```
bash-4.2# rpm -qa | grep ssh
libssh2-1-1.4.3-15.1.x86_64
```

```
bash-4.2# zypper -n install openssh
```

```
Retrieving repository 'NON-OSS' metadata .....[done]
Building repository 'NON-OSS' cache .....[done]
Retrieving repository 'OSS' metadata .....[done]
Building repository 'OSS' cache .....[done]
Retrieving repository 'OSS Update' metadata .....[done]
Building repository 'OSS Update' cache .....[done]
Retrieving repository 'Update Non-Oss' metadata .....[done]
Building repository 'Update Non-Oss' cache .....[done]
Loading repository data...
Reading installed packages...
Resolving package dependencies...
```

The following 3 NEW packages are going to be installed:  
libedit0 libncurses6 openssh

The following 3 packages are recommended, but will not be installed (only required packages will be installed):  
audit openssh-helpers xauth

```
3 new packages to install.
Overall download size: 1.2 MiB. Already cached: 0 B. After the operation, additional 5.7 MiB will be used.
Continue? [y/n/? shows all options] (y): y
Retrieving package libncurses6-5.9-53.4.x86_64 (1/3), 349.5 KiB (1020.7 KiB unpacked)
Retrieving: libncurses6-5.9-53.4.x86_64.rpm .....[done]
Retrieving package libedit0-3.1.snap20140620-3.2.x86_64 (2/3), 94.9 KiB (247.1 KiB unpacked)
Retrieving: libedit0-3.1.snap20140620-3.2.x86_64.rpm .....[done]
Retrieving package openssh-6.6p1-11.1.x86_64 (3/3), 830.7 KiB ( 4.5 MiB unpacked)
Retrieving: openssh-6.6p1-11.1.x86_64.rpm .....[done]
Checking for file conflicts: .....[done]
(1/3) Installing: libncurses6-5.9-53.4.x86_64 .....[done]
(2/3) Installing: libedit0-3.1.snap20140620-3.2.x86_64 .....[done]
(3/3) Installing: openssh-6.6p1-11.1.x86_64 .....[done]
Additional rpm output:
Updating /etc/sysconfig/ssh...
```

```
bash-4.2# rpm -qa | grep ssh
libssh2-1-1.4.3-15.1.x86_64
openssh-6.6p1-11.1.x86_64
```

在 container 內

```
bash-4.2# exit
```

這樣這個映像檔就跟之前不一樣了

觀察 container

```
# docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
f4b981edb1e5	opensuse	"/bin/bash"	5 minutes ago	Up 5 minutes		sleepy_bhabha

接下來透過 docker commit 來建立新的

```
# docker commit -m "Add openssh" -a "sakana" f4b981edb1e5 testrepo/testimage:vTEST
c840a5f6ade64751dc26036af4ff6bd79dc42738f7cb3cd32385dc3d8aaee55a
```

- commit 提交一個新的 image
- m 訊息 Commit message
- a 作者 Author

- f4b981edb1e5 是 container ID
- testrepo/testimage:vTEST 是 Repository 名稱/映像檔名稱:TAG

觀察映像檔

# docker images

REPOSITORY	TAG	IMAGE ID	CREATED	VIRTUAL SIZE
testrepo/testimage	vTEST	c840a5f6ade6	56 seconds ago	168.9 MB
opensuse	42.1	80bd0f661aef	5 weeks ago	97.74 MB
opensuse	latest	80bd0f661aef	5 weeks ago	97.74 MB
busybox	latest	b41c5284db84	7 weeks ago	1.093 MB