## 1) Install Docker on local machine. For OS X or Windows, please use a linux VM (Vagrant can easily provision a linux VM).

561 uname -a

562 apt-get install docker-engine

563 apt-key adv --keyserver hkp://p80.pool.sks-keyservers.net:80 --recv-keys 58118E89F3A912897C070ADBF76221572C52609D

564 vi /etc/apt/sources.list.d/docker.list

565 apt-get update

566 apt-get purge lxc-docker

567 apt-get install linux-image-generic-lts-trusty

568 reboot

569 apt-get update

570 apt-get install docker-engine

571 service docker start

## 2) What is DockerHub?

Là dịch vụ cloud để chia sẻ ứng dụng và tự động hóa chuỗi các công việc liên tục, có thể thao tác pull/push với các images

## 3) Explore and find an official Ubuntu image on DockerHub.

Command: docker search ubuntu

| NAME | DESCRIPTION | STARS | OFFICIAL | AUTOMATED |
|---|---|---|---|---|
| ubuntu | Ubuntu is a Debian-based Linux operating s... | 2926 | [OK] | |

and see OFFICIAL column

## 4) Pull the official Ubuntu image to your local machine.

command: docker pull ubuntu

check image by command:

docker images

root@apiserver1:/home/api# docker images

| REPOSITORY | TAG | IMAGE ID | CREATED | VIRTUAL SIZE |
|---|---|---|---|---|
| ubuntu | latest | c4bea91afef3 | 2 days ago | 187.9 MB |

**5. Run a container from the official Ubuntu image to print out "Hello World!".**

step 1: create ubuntu container from ubuntu images

command: docker create ubuntu

step 2: run a ubuntu container and echo hello world

command: docker run -i -t ubuntu /bin/sh -c "echo hello world;" ---> not running daemon

**6. Show the command you use to complete the previous task.**

583 docker create ubuntu

584 docker ps

585 docker run -i -t ubuntu /bin/sh -c "echo hello world;"

**7.Run a container from the official Ubuntu image interactively, and install Java on that container.**

step 1: create container from the official Ubuntu image daemon

docker run -i -t -d ubuntu /bin/bash

docker ps

| CONTAINER ID | IMAGE | COMMAND | CREATED | STATUS | PORTS | NAMES |
|---|---|---|---|---|---|---|
| e1057569eda6 | ubuntu | "/bin/bash" | 6 seconds ago | Up 4 seconds | | hopeful_allen |

step 2: Now, access the shell of  that container and install java

docker exec -i -t  e1057569eda6 "/bin/bash"

apt-get update

apt-get install default-jre

**8. Create a new image based on the previous container.**

step1: command exit to exit e1057569eda6 container

step2: docker stop e1057569eda6

step3: create new images ubuntu/java:v1 based on the  e1057569eda6  container

docker commit `docker ps -l -q` ubuntu/java:v1

docker ps -l -q opition : show only container stop

step4: check new images on list

command: docker images

| REPOSITORY | TAG | IMAGE ID | CREATED | VIRTUAL SIZE |
|---|---|---|---|---|
| ubuntu/java | v1 | 563a452dff65 | 46 seconds ago | 533.1 MB |

**9. Show the command you use to complete the previous task.**

633  docker stop e1057569eda6

634  docker commit `docker ps -l -q` ubuntu/java:v1

635  docker images

**10. Run a container from the newly created image to print out Java version.**

command: docker run -i -t ubuntu/java:v1 /bin/sh -c "java -version;"

java version "1.7.0_91"

OpenJDK Runtime Environment (IcedTea 2.6.3) (7u91-2.6.3-0ubuntu0.14.04.1)

OpenJDK 64-Bit Server VM (build 24.91-b01, mixed mode)

## 11. What is a Dockerfile?

– Dockerfile : là một file chứa tập hợp các lệnh để Docker có thể đọc và thực hiện để đóng gói một image theo yêu cầu người dùng

## 12. Create an image based on the official Ubuntu image, with Java installed, by using a Dockerfile.

step 1: create a  Dockerfile

```
#Pull base image.
FROM ubuntu
MAINTAINER dien
# Install Java.
RUN \
  apt-get update && \
  apt-get install -y default-jre && \
  rm -rf /var/lib/apt/lists/*

USER root
# Define working directory.
WORKDIR /data
```

# Define default command.

RUN echo "Success"

run command to create new images dientruong/first

docker build –t dientruong/first  .

**13. Publish your Dockerfile to GitHub.**

git clone https://github.com/dockerdientruong/docs.git

and push it to https://github.com/dockerdientruong/docs

browser web: https://github.com/dockerdientruong/docs/blob/master/Dockerfile

**14. Publish the image you create in the previous task to Dockerhub.**

step1: command

docker login --username=dientruong --email=dientruong1980@gmail.com

step2: docker push dientruong/first

docker search dientruong/first

NAME DESCRIPTION STARS OFFICIAL AUTOMATED

dientruong/first first 0

**15. What is Docker Compose?**

Docker Compose để quản lý và liên kết các containers

**16. Compose a Wordpress service (or any other service you like that involves a web server and a database)**

Step1: install docker-compose

693 curl -L https://github.com/docker/compose/releases/download/1.5.2/docker-compose-`uname -s`-`uname -m` > /usr/local/bin/docker-compose

694 chmod +x /usr/local/bin/docker-compose

Step2: set up Dockerfile

683 mkdir wordpress

684 cd wordpress/

685 curl https://wordpress.org/latest.tar.gz | tar -xvzf -

685 cd wordpress/

727 vi Dockerfile

728 vi docker-compose.yml

729 docker-compose build

733 docker-compose up

## 17. Share the volume of the database container with a volume on host machine to persist data.

docker run -it -d --name mysql01 -v /data/mysql/mysql01:/var/lib/mysql -e MYSQL_ROOT_PASSWORD= mysql:latest

Trong này thì thư mục "/data/mysql/mysql01" là thư mục trên máy của mình và "/var/lib/mysql" là chuỗi cố định được cài đặt sẵn trong image.

## 18. Publish your Docker Compose file to GitHub.

https://github.com/dockerdientruong/docs/tree/master/docker-compose

Xin cảm ơn!!!