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Lab 13

CPE 435

4/12/21

Observations and Answers

1. The OS name is Ubuntu with codename xenial, and the version is 16.04.3 LTS.

```
odroid@odroid:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:   Ubuntu 16.04.3 LTS
Release:      16.04
Codename:     xenial
odroid@odroid:~$
```

- 2.

The kernel version is 4.9.61+

```
odroid@odroid:~$ hostnamectl
  Static hostname: odroid
        Icon name: computer
        Machine ID: dc87f36fc06c441a85ff7269ba4d50fb
        Boot ID: c59e1d0e544649d095ef2e1ece9b2b73
  Operating System: Ubuntu 16.04.3 LTS
        Kernel: Linux 4.9.61+
  Architecture: arm
```

3. There are 8 processors in the machine, and the model names are all ARMv7 Processor rev 3 (v7l).

```
odroid@odroid:~$ cat /proc/cpuinfo
processor       : 0
model name     : ARMv7 Processor rev 3 (v7l)
BogoMIPS      : 84.00
Features       : half thumb fastmult vfp edsp neon vfpv3 tls vfpv4 idiva idivt vfpd32 lpae evtstrm
CPU implementer : 0x41
CPU architecture: 7
CPU variant    : 0x0
CPU part       : 0xc07
CPU revision   : 3

processor       : 1
model name     : ARMv7 Processor rev 3 (v7l)
BogoMIPS      : 84.00
Features       : half thumb fastmult vfp edsp neon vfpv3 tls vfpv4 idiva idivt vfpd32 lpae evtstrm
CPU implementer : 0x41
CPU architecture: 7
CPU variant    : 0x0
CPU part       : 0xc07
CPU revision   : 3

processor       : 7
model name     : ARMv7 Processor rev 3 (v7l)
BogoMIPS      : 120.00
Features       : half thumb fastmult vfp edsp neon vfpv3 tls vfpv4 idiva idivt vfpd32 lpae evtstrm
CPU implementer : 0x41
CPU architecture: 7
CPU variant    : 0x2
CPU part       : 0xc0f
CPU revision   : 3

Hardware       : ODR0ID-XU3
Revision      : 0100
Serial        : 0000000000000000
odroid@odroid:~$
```

Assignment 2

Sudo docker run hello-world

```
odroid@odroid:~$ sudo docker run hello-world
[sudo] password for odroid:

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (arm32v7)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/

odroid@odroid:~$
```

Running myPython2.py with python2

```
odroid@odroid:~/lab13$ python myPython2.py
This will only work with python version 2
Yeah!!! This is function called only by python2
This is an important function
odroid@odroid:~/lab13$
```

After uninstall python

```
odroid@odroid:~/lab13$ python myPython2.py
-bash: /usr/bin/python: No such file or directory
odroid@odroid:~/lab13$
```

Assignment 3

```
odroid@odroid:~/lab13$ python myPython2.py
-bash: /usr/bin/python: No such file or directory
odroid@odroid:~/lab13$ sudo^C
odroid@odroid:~/lab13$ docker run prawar/lab14_demo:public_student
Unable to find image 'prawar/lab14_demo:public_student' locally
public_student: Pulling from prawar/lab14_demo
fac132c5d16f: Pull complete
c63d1875326e: Pull complete
4a17cc4f3bc6: Pull complete
95ad755dcfcc: Pull complete
e0e98022f122: Pull complete
3c388b10d309: Pull complete
Digest: sha256:f8e259195af98a1939ee873f7a779064848cc40f827bd1d51a43fe3202a74cad
Status: Downloaded newer image for prawar/lab14_demo:public_student
This will only work with python version 2.x
Yeah!!! This is function called only by python2.x
This is an important function
odroid@odroid:~/lab13$
```

```
odroid@odroid:~/lab13$ docker run prawar/lab14_demo:public_student
This will only work with python version 2.x
Yeah!!! This is function called only by python2.x
This is an important function
odroid@odroid:~/lab13$
```

Assignment 4

Dockerfile

```
1 FROM python:2.7-slim
2 WORKDIR /app
3 COPY . /app
4 CMD ["python", "myPython2.py"]
```

```

odroid@odroid:~/lab13/myDocker$ docker build --tag=mylab14_am0165 .
Sending build context to Docker daemon 3.072kB
Step 1/4 : FROM python:2.7-slim
2.7-slim: Pulling from library/python
838dc71644c1: Pull complete
6d3a2bd251b9: Pull complete
a2da0ab9c4b0: Pull complete
9b7d8020f876: Pull complete
Digest: sha256:6c1ffdf499e29ea663e6e67c9b6b9a3b401d554d2c9f061f9a45344e3992363
Status: Downloaded newer image for python:2.7-slim
--> b532061a7f5b
Step 2/4 : WORKDIR /app
--> Running in 182f0ed88683
Removing intermediate container 182f0ed88683
--> d10f8171aa5d
Step 3/4 : COPY . /app
--> 63a71e13d4d3
Step 4/4 : CMD ["python", "myPython2.py"]
--> Running in ded2565aec99
Removing intermediate container ded2565aec99
--> bdbc7bae9712
Successfully built bdbc7bae9712
Successfully tagged mylab14_am0165:latest
odroid@odroid:~/lab13/myDocker$

```

Docker image ls

```

odroid@odroid:~/lab13/myDocker$ docker image ls

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
mylab14_am0165	latest	bdbc7bae9712	About a minute ago	107MB
python	2.7-slim	b532061a7f5b	11 months ago	107MB
hello-world	latest	851163c78e4a	15 months ago	4.85kB
pravar/lab14_demo	public_student	3574271cb42b	2 years ago	93.5MB

```

odroid@odroid:~/lab13/myDocker$

```

Sudo docker login

```

odroid@odroid:~/lab13/myDocker$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over
o https://hub.docker.com to create one.
Username: andrewma
Password:
WARNING! Your password will be stored unencrypted in /home/odroid/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
odroid@odroid:~/lab13/myDocker$

```

```

odroid@odroid:~/lab13/myDocker$ sudo docker tag mylab14_am0165 andrewma/lab14_public:am0165

```

```
odroid@odroid:~/lab13/myDocker$ docker image ls
WARNING: Error loading config file: /home/odroid/.docker/config.json: open /home/odroid/.docker/config.json:
permission denied
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
mylab14_am0165      latest             bdbc7bae9712       3 minutes ago      107MB
andrewma/lab14_public am0165             bdbc7bae9712       3 minutes ago      107MB
python              2.7-slim           b532061a7f5b       11 months ago      107MB
hello-world         latest             851163c78e4a       15 months ago      4.85kB
prawar/lab14_demo   public_student     3574271cb42b       2 years ago        93.5MB
odroid@odroid:~/lab13/myDocker$
```

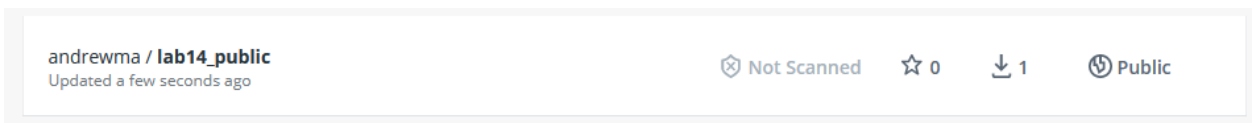
Image name: andrewma/lab14_public

Tag: am0165

Image id: bdbc7bae9712

Size: 107MB

```
odroid@odroid:~/lab13/myDocker$ sudo docker push andrewma/lab14_public:am0165
The push refers to repository [docker.io/andrewma/lab14_public]
78f4cd394055: Pushed
85e6f2bcbe4f: Pushed
ce6efa381dfa: Mounted from library/python
ac4ca466d0da: Mounted from library/python
1ca64abfb30b: Mounted from library/python
4e534c010dc1: Mounted from library/python
am0165: digest: sha256:7f15b45222b82e4a9b85f1a8d6826262986b272e34c3bc2d9cfe0034bd110d82 size: 1576
odroid@odroid:~/lab13/myDocker$
```



Assignment 5

Friend running my image

```
odroid@odroid:~$ sudo docker run andrewma/lab14_public:am0165
[sudo] password for odroid:
Unable to find image 'andrewma/lab14_public:am0165' locally
am0165: Pulling from andrewma/lab14_public
838dc71644c1: Already exists
6d3a2bd251b9: Already exists
a2da0ab9c4b0: Already exists
9b7d8020f876: Already exists
2f514affdce4: Pull complete
e6badc6cdb08: Pull complete
Digest: sha256:7f15b45222b82e4a9b85f1a8d6826262986b272e34c3bc2d9cfe0034bd110d82
Status: Downloaded newer image for andrewma/lab14_public:am0165
This will only work with python version 2
Yeah!!! This is function called only by python2
This is an important function
odroid@odroid:~$
```

Source Code

Dockerfile

```
FROM python:2.7-slim
WORKDIR /app
COPY . /app
CMD ["python", "myPython2.py"]
```

myPython2.py

```
import sys

def python2_stuff():
    print("Yeah!!! This is function called only by python2")
    print("This is an important function")

if sys.version_info[0] < 3:
    print("This will only work with python version 2")
    python2_stuff()
else:
    print("Error!!! You are not supposed to run it like this")
```