



UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM & ENERGY STUDIES

College of Engineering Studies Dehradun

LAB FILE

Experiment 3

Programme : B. Tech in Computer Science and Engineering with Specialization in DevOps

Course : Application Containerization Lab

No. of credits : 1

Semester : VI

Session : January – May 2021

Batch : 2018-2022

Faculty : Dr. Hitesh Kumar Sharma

Submitted By:

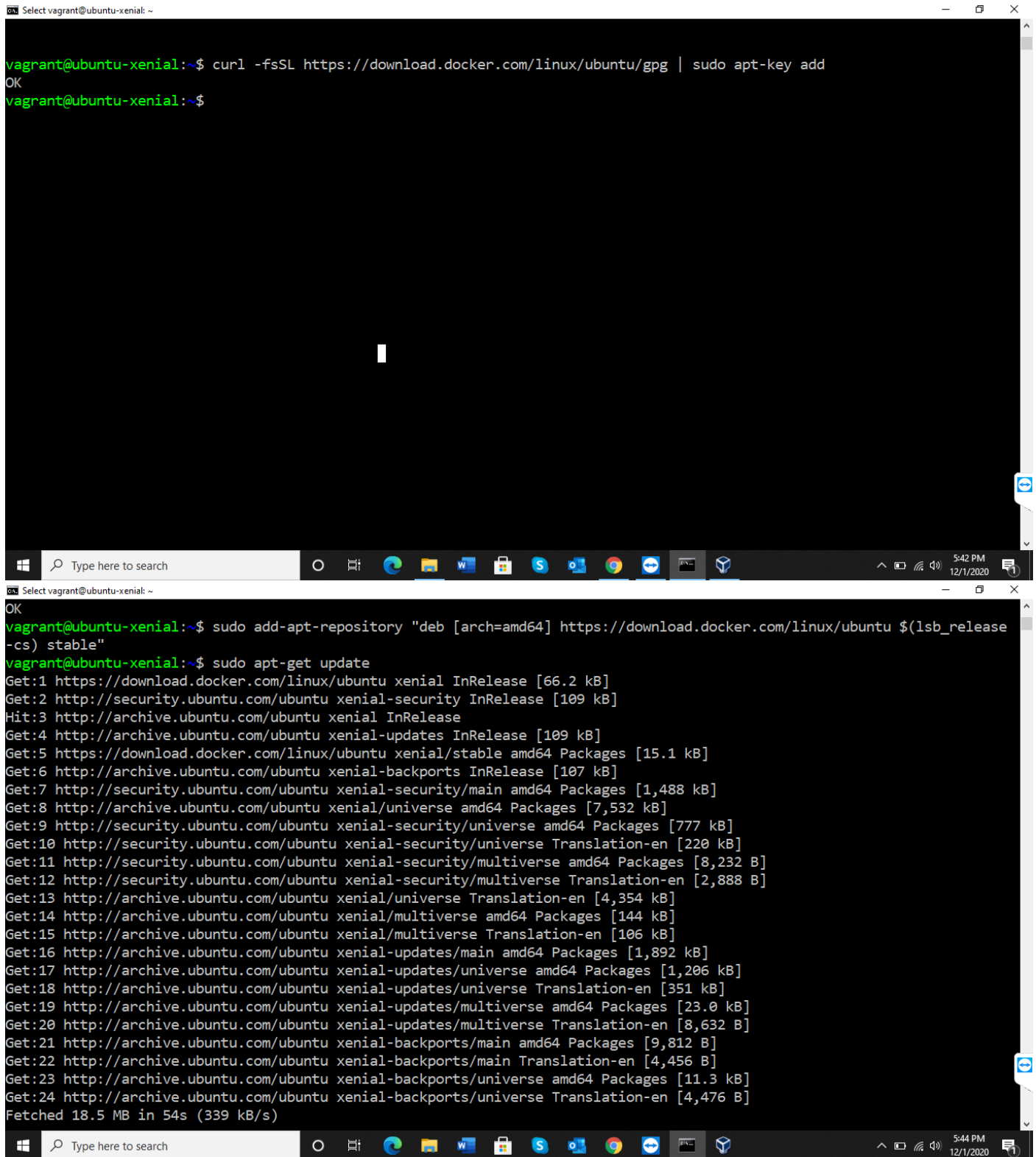
Ingit Singhal

Sap id: 500068426

Roll No : R171218048

Docker Machine - Installation , configuration, creating machines (on VirtualBox).

Screenshots



The image displays two screenshots of a terminal window running on a virtual machine named 'vagrant@ubuntu-xenial'. The window has a title bar that reads 'Select vagrant@ubuntu-xenial: ~'. The terminal output shows the following commands and their results:

```
vagrant@ubuntu-xenial:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add
OK
vagrant@ubuntu-xenial:~$
```

The first screenshot shows the successful execution of the command to add the Docker GPG key. The second screenshot shows the command to add the Docker repository and the subsequent update of the package list:

```
vagrant@ubuntu-xenial:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
vagrant@ubuntu-xenial:~$ sudo apt-get update
Get:1 https://download.docker.com/linux/ubuntu xenial InRelease [66.2 kB]
Get:2 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Hit:3 http://archive.ubuntu.com/ubuntu xenial InRelease
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:5 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages [15.1 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:7 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [1,488 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [7,532 kB]
Get:9 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [777 kB]
Get:10 http://security.ubuntu.com/ubuntu xenial-security/universe Translation-en [220 kB]
Get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8,232 B]
Get:12 http://security.ubuntu.com/ubuntu xenial-security/multiverse Translation-en [2,888 B]
Get:13 http://archive.ubuntu.com/ubuntu xenial/universe Translation-en [4,354 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [144 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial/multiverse Translation-en [106 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [1,892 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1,206 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-updates/universe Translation-en [351 kB]
Get:19 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [23.0 kB]
Get:20 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse Translation-en [8,632 B]
Get:21 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [9,812 B]
Get:22 http://archive.ubuntu.com/ubuntu xenial-backports/main Translation-en [4,456 B]
Get:23 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [11.3 kB]
Get:24 http://archive.ubuntu.com/ubuntu xenial-backports/universe Translation-en [4,476 B]
Fetched 18.5 MB in 54s (339 kB/s)
```

The terminal window includes a search bar at the top and a taskbar at the bottom with various application icons. The system clock in the bottom right corner indicates the time is 5:42 PM on 12/1/2020.

Select vagrant@ubuntu-xenial: ~

```

Fetched 18.5 MB in 54s (339 kB/s)
Reading package lists... Done
vagrant@ubuntu-xenial:~$ apt-cache policy docker-ce
docker-ce:
  Installed: (none)
  Candidate: 5:19.03.13~3-0~ubuntu-xenial
  Version table:
   5:19.03.13~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.12~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.11~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.10~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.9~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.8~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.7~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.6~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.5~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.4~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
   5:19.03.3~3-0~ubuntu-xenial 500
      500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages

```

Type here to search

vagrant@ubuntu-xenial: ~

```

500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
17.03.0~ce-0~ubuntu-xenial 500
500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
vagrant@ubuntu-xenial:~$ sudo apt-get install -y docker-ce
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  aufs-tools cgroupfs-mount containerd.io docker-ce-cli libltdl7 pigz
Suggested packages:
  mountall
The following NEW packages will be installed:
  aufs-tools cgroupfs-mount containerd.io docker-ce docker-ce-cli libltdl7 pigz
0 upgraded, 7 newly installed, 0 to remove and 2 not upgraded.
Need to get 90.5 MB of archives.
After this operation, 410 MB of additional disk space will be used.
Get:1 https://download.docker.com/linux/ubuntu xenial/stable amd64 containerd.io amd64 1.3.9-1 [23.7 MB]
Get:2 http://archive.ubuntu.com/ubuntu xenial/universe amd64 pigz amd64 2.3.1-2 [61.1 kB]
Get:3 http://archive.ubuntu.com/ubuntu xenial/universe amd64 aufs-tools amd64 1:3.2+20130722-1.1ubuntu1 [92.9 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial/universe amd64 cgroupfs-mount all 1.2 [4,970 B]
Get:5 http://archive.ubuntu.com/ubuntu xenial/main amd64 libltdl7 amd64 2.4.6-0.1 [38.3 kB]
Get:6 https://download.docker.com/linux/ubuntu xenial/stable amd64 docker-ce-cli amd64 5:19.03.13~3-0~ubuntu-xenial [44.2 MB]
Get:7 https://download.docker.com/linux/ubuntu xenial/stable amd64 docker-ce amd64 5:19.03.13~3-0~ubuntu-xenial [22.5 MB]
Fetched 90.5 MB in 18s (4,815 kB/s)
Selecting previously unselected package pigz.
(Reading database ... 54328 files and directories currently installed.)
Preparing to unpack .../pigz_2.3.1-2_amd64.deb ...
Unpacking pigz (2.3.1-2) ...

```

Type here to search

vagrant@ubuntu-xenial: ~

Setting up aufs-tools (1:3.2+20130722-1.1ubuntu1) ...

Setting up cgroupfs-mount (1.2) ...

Setting up containerd.io (1.3.9-1) ...

Setting up docker-ce-cli (5:19.03.13~3-0~ubuntu-xenial) ...

Setting up docker-ce (5:19.03.13~3-0~ubuntu-xenial) ...

Setting up libltdl7:amd64 (2.4.6-0.1) ...

Processing triggers for libc-bin (2.23-0ubuntu11.2) ...

Processing triggers for ureadahead (0.100.0-19.1) ...

Processing triggers for systemd (229-4ubuntu21.29) ...

vagrant@ubuntu-xenial:~\$ sudo systemctl status docker

● docker.service - Docker Application Container Engine

Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)

Active: active (running) since Tue 2020-12-01 12:17:03 UTC; 19s ago

Docs: <https://docs.docker.com>

Main PID: 3851 (dockerd)

CGroup: /system.slice/docker.service

└─3851 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Dec 01 12:17:01 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:01.891997807Z" level=warning msg="Your kernel does not

Dec 01 12:17:01 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:01.892071412Z" level=warning msg="Your kernel does not

Dec 01 12:17:01 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:01.892089294Z" level=warning msg="Your kernel does not

Dec 01 12:17:01 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:01.893134300Z" level=info msg="Loading containers: sta

Dec 01 12:17:02 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:02.906797396Z" level=info msg="Default bridge (docker0

Dec 01 12:17:03 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:03.106923474Z" level=info msg="Loading containers: don

Dec 01 12:17:03 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:03.560820073Z" level=info msg="Docker daemon" commit=4

Dec 01 12:17:03 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:03.562053242Z" level=info msg="Daemon has completed in

Dec 01 12:17:03 ubuntu-xenial systemd[1]: Started Docker Application Container Engine.

Dec 01 12:17:03 ubuntu-xenial dockerd[3851]: time="2020-12-01T12:17:03.649267204Z" level=info msg="API listen on /var/run/

vagrant@ubuntu-xenial:~\$

vagrant@ubuntu-xenial: ~

See 'docker run --help'.

vagrant@ubuntu-xenial:~\$ sudo docker run ubuntu

Unable to find image 'ubuntu:latest' locally

latest: Pulling from library/ubuntu

da7391352a9b: Pull complete

14428a6d4bcd: Pull complete

2c2d948710f2: Pull complete

Digest: sha256:c95a8e48bf88e9849f3e0f723d9f49fa12c5a00cfc6e60d2bc99d87555295e4c

Status: Downloaded newer image for ubuntu:latest

vagrant@ubuntu-xenial:~\$

```
vagrant@ubuntu-xenial: ~  
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://%2Fvar%2Frun%2Fdocker.sock/v1.40/containers/json?all=1: dial unix /var/run/docker.sock: connect: permission denied  
vagrant@ubuntu-xenial:~$ sudo docker ps -a  
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS  
4c46a86342b1       ubuntu             "/bin/bash"        30 seconds ago     Exited (0) 28 seconds ago  
happy_hellman  
vagrant@ubuntu-xenial:~$
```

```
root@0db1857c43a3: /  
p://%2Fvar%2Frun%2Fdocker.sock/v1.40/containers/create: dial unix /var/run/docker.sock: connect: permission denied.  
See 'docker run --help'.  
vagrant@ubuntu-xenial:~$ sudo docker run -it ubuntu  
root@0db1857c43a3:/# ls  
bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var  
root@0db1857c43a3:/# mkdir test  
root@0db1857c43a3:/# ls  
bin dev home lib32 libx32 mnt proc run srv test usr  
boot etc lib lib64 media opt root sbin sys tmp var  
root@0db1857c43a3:/#
```