EXPERIMENT - 12

Installing Docker

Steps:-

1. $ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add –
2. $ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
3. $ sudo apt-get update

```
vagrant@ubuntu-xenial:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
OK
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 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages [15.0 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [7,532 kB]
Get:8 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [772 kB]
Get:9 http://security.ubuntu.com/ubuntu xenial-security/universe Translation-en [218 kB]
Get:10 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8,236 B]
Get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse Translation-en [2,888 B]
Get:12 http://archive.ubuntu.com/ubuntu xenial/universe Translation-en [4,354 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [144 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial/multiverse Translation-en [106 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1,194 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/universe Translation-en [348 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [23.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse Translation-en [8,632 B]
Get:19 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [9,812 B]
Get:20 http://archive.ubuntu.com/ubuntu xenial-backports/main Translation-en [4,456 B]
Get:21 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [11.3 kB]
Get:22 http://archive.ubuntu.com/ubuntu xenial-backports/universe Translation-en [4,476 B]
Fetched 15.1 MB in 38s (398 kB/s)
Reading package lists... Done
```

4. $ apt-cache policy docker-ce

```
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
     5:19.03.2~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:19.03.1~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:19.03.0~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.9~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.8~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.7~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.6~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.5~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.4~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.3~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.2~3-0~ubuntu-xenial 500
        500 https://download.docker.com/linux/ubuntu xenial/stable amd64 Packages
     5:18.09.1~3-0~ubuntu-xenial 500
```

5. $ sudo apt-get install -y docker-ce

```
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 0 not upgraded.
Need to get 91.2 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 1.3.7-1 [24.3 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 91.2 MB in 8s (10.8 MB/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) ...
Selecting previously unselected package aufs-tools.
Preparing to unpack .../aufs-tools_1%3a3.2+20130722-1.1ubuntu1_amd64.deb ...
Unpacking aufs-tools (1:3.2+20130722-1.1ubuntu1) ...
Selecting previously unselected package cgroupfs-mount.
Preparing to unpack .../cgroupfs-mount_1.2_all.deb ...
Unpacking cgroupfs-mount (1.2) ...
Selecting previously unselected package containerd.io.
Preparing to unpack .../containerd.io_1.3.7-1_amd64.deb ...
Unpacking containerd.io (1.3.7-1) ...
Selecting previously unselected package docker-ce-cli.
Preparing to unpack .../docker-ce-cli_5%3a19.03.13~3-0~ubuntu-xenial_amd64.deb ...
Unpacking docker-ce-cli (5:19.03.13~3-0~ubuntu-xenial) ...
Selecting previously unselected package docker-ce.
Preparing to unpack .../docker-ce_5%3a19.03.13~3-0~ubuntu-xenial_amd64.deb ...
Unpacking docker-ce (5:19.03.13~3-0~ubuntu-xenial) ...
Selecting previously unselected package libltdl7:amd64.
Preparing to unpack .../libltdl7_2.4.6-0.1_amd64.deb ...
Unpacking libltdl7:amd64 (2.4.6-0.1) ...
Processing triggers for man-db (2.7.5-1) ...
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) ...
Setting up pigz (2.3.1-2) ...
Setting up aufs-tools (1:3.2+20130722-1.1ubuntu1) ...
Setting up cgroupfs-mount (1.2) ...
```

6. $ sudo systemctl status docker

```
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 2020-11-03 06:47:24 UTC; 31s ago
     Docs: https://docs.docker.com
 Main PID: 4184 (dockerd)
   CGroup: /system.slice/docker.service
           └─4184 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820651778Z" level=warning msg="Your kernel does nNov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820674508Z" level=wa
rning msg="Your kernel does nNov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820694932Z" level=warning msg="Your kernel does nNov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T
06:47:23.820895501Z" level=info msg="Loading containers: sNov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.924020204Z" level=info msg="Default bridge (dockeNov 03 06:47:23 ubuntu-xenial doc
kerd[4184]: time="2020-11-03T06:47:23.963539469Z" level=info msg="Loading containers: dNov 03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.019104623Z" level=info msg="Docker daemon" commitNov
03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.019456183Z" level=info msg="Daemon has completed
Nov 03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.045019003Z" level=info msg="API listen on /var/ruNov 03 06:47:24 ubuntu-xenial systemd[1]: Started Docker Application Container Engine.
lines 1-18/18 (END)...skipping...
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2020-11-03 06:47:24 UTC; 31s ago
     Docs: https://docs.docker.com
 Main PID: 4184 (dockerd)
   CGroup: /system.slice/docker.service
           └─4184 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820651778Z" level=warning msg="Your kernel does not support swap memory limit"
Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820674508Z" level=warning msg="Your kernel does not support cgroup rt period"
Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820694932Z" level=warning msg="Your kernel does not support cgroup rt runtime"
Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.820895501Z" level=info msg="Loading containers: start."
Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.924020204Z" level=info msg="Default bridge (docker0) is assigned with an IP address 172.17.0.0/16. Daemon option --bip can be used to set a
Nov 03 06:47:23 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:23.963539469Z" level=info msg="Loading containers: done."
Nov 03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.019104623Z" level=info msg="Docker daemon" commit=4484c46d9d graphdriver(s)=overlay2 version=19.03.13
Nov 03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.019456183Z" level=info msg="Daemon has completed initialization"
Nov 03 06:47:24 ubuntu-xenial dockerd[4184]: time="2020-11-03T06:47:24.045019003Z" level=info msg="API listen on /var/run/docker.sock"
Nov 03 06:47:24 ubuntu-xenial systemd[1]: Started Docker Application Container Engine.
```

7. $ docker --version

8. $ sudo usermod -aG docker ${USER}

9. $ su - ${USER}

10. $ sudo usermod -aG docker vagrant

11. $ docker run -it ubuntu

12. $ docker ps

13. $ docker ps -a

```
vagrant@ubuntu-xenial:~$ docker --version
Docker version 19.03.13, build 4484c46d9d
vagrant@ubuntu-xenial:~$ sudo usermod -aG docker ${USER}
vagrant@ubuntu-xenial:~$ su - ${USER}
Password:
vagrant@ubuntu-xenial:~$ sudo usermod -aG docker vagrant
vagrant@ubuntu-xenial:~$ docker run -it ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
6a5697faee43: Pull complete
ba13d3bc422b: Pull complete
a254829d9e55: Pull complete
Digest: sha256:fff16eea1a8ae92867721d90c59a75652ea66d29c05294e6e2f898704bdb8cf1
Status: Downloaded newer image for ubuntu:latest
root@6dd165979400:/# docker ps
bash: docker: command not found
root@6dd165979400:/# exit
exit
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS               NAMES
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS                      PORTS               NAMES
6dd165979400        ubuntu              "/bin/bash"         51 seconds ago      Exited (127) 17 seconds ago                     elastic_hoover
```