

## NETWORKING & SYSTEM ADMINISTRATION LAB

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### Experiment No: 23

#### Aim

Installation of Docker in ubuntu.

#### Procedure

1. Open the terminal on Ubuntu.
2. Remove any Docker files that are running in the system, using the following command:

```
$ sudo apt-get remove docker docker-engine docker.io
```

After entering the above command, you will need to enter the password of the root and press enter.

```
mca@S17:~$ sudo apt-get remove docker docker-engine docker.io
[sudo] password for mca:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Package 'docker-engine' is not installed, so not removed
Package 'docker' is not installed, so not removed
Package 'docker.io' is not installed, so not removed
The following packages were automatically installed and are no longer required:
 debhelper dh-autoreconf dh-strip-nondeterminism libarchive-cpio-perl
 libblas3 libfile-stripnondeterminism-perl libfluidsynth1 libgfortran4
 liblapack3 libmad0 libmail-sendmail-perl libmikmod3 libpcre16-3 libpcre3-dev
 libpcre32-3 libpcrecpp0v5 libportmidi0 libsdl-mixer1.2 libsdl-ttf2.0-0
 libsmpeg0 libssl-dev libssl-doc libsys-hostname-long-perl php-common
 php-pear php-xml php7.2-cli php7.2-common php7.2-json php7.2-opcache
 php7.2-readline php7.2-xml pkg-php-tools po-debconf python-numpy
 python-pygame shtool timgm6mb-soundfont
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
```

3. Check if the system is up-to-date using the following command:

```
$ sudo apt-get update
```

```
mca@S17:~$ sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Ign:2 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 InRelease
Err:3 http://ppa.launchpad.net/jonathonf/python-3.6/ubuntu bionic InRelease
 403 Forbidden [IP: 185.125.190.52 80]
Get:4 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release [2,495 B]
Get:5 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release.gpg [801 B]
Hit:6 http://ppa.launchpad.net/pasgui/ppa/ubuntu bionic InRelease
Err:7 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release.gpg
 The following signatures were invalid: EXPKEYSIG 58712A2291FA4AD5 MongoDB 3.6 Release Signing Key <packaging@mongodb.com>
Get:7 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease [15.4 kB]
Reading package lists... Done
E: Failed to fetch http://ppa.launchpad.net/jonathonf/python-3.6/ubuntu/dists/bionic/InRelease 403 Forbidden [IP: 185.125.190.52 80]
E: The repository 'http://ppa.launchpad.net/jonathonf/python-3.6/ubuntu bionic InRelease' is no longer signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
W: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: ht
tps://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release: The following signatures were invalid: EXPKEYSIG 58712A2291FA4AD5 MongoDB 3.
6 Release Signing Key <packaging@mongodb.com>
E: Repository 'http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease' changed its 'Label' value from 'Oracle Java (JDK) 8 / 9 Inst
aller PPA' to 'Oracle Java (JDK) 8 Installer PPA (DISCONTINUED)'
N: This must be accepted explicitly before updates for this repository can be applied. See apt-secure(8) manpage for details.
```

4. Install Docker using the following command:

**\$ sudo apt install docker.io**

You'll then get a prompt asking you to choose between y/n - choose y

```
mca@S17:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
debhelper dh-autoreconf dh-strip-nondeterminism libarchive-cpio-perl libblas3 libfile-stripnondeterminism-perl libfluidsynth1 libgfortran4
liblapack3 libmad0 libmail-sendmail-perl libmikmod3 libpcr16-3 libpcr3-dev libpcr32-3 libpcr32-3 libpcr32-3 libportmidi0 libSDL-mixer1.2
libSDL-ttf2.0-0 libsmpeg0 libssl-dev libssl-doc libsys-hostname-long-perl php-common php-pear php-xml php7.2-cli php7.2-common php7.2-json
php7.2-opcache php7.2-readline php7.2-xml pkg-php-tools po-debconf python-numpy python-pygame sh-tool timgm6mb-soundfont
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
bridge-utils cgroupfs-mount ubuntu-fan
Suggested packages:
aufs-tools btrfs-tools debotstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
bridge-utils cgroupfs-mount docker.io ubuntu-fan
0 upgraded, 4 newly installed, 0 to remove and 8 not upgraded.
Need to get 30.1 MB of archives.
After this operation, 137 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 bridge-utils amd64 1.5-15ubuntu1 [30.1 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 cgroupfs-mount all 1.4 [6,320 B]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 docker.io amd64 17.12.1-0ubuntu1 [30.1 MB]
Get:4 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 ubuntu-fan all 0.12.10 [34.7 kB]
Fetched 30.1 MB in 1s (23.5 MB/s)
Preconfiguring packages ...
Selecting previously unselected package bridge-utils.
(Reading database ... 180018 files and directories currently installed.)
Preparing to unpack .../bridge-utils_1.5-15ubuntu1_amd64.deb ...
Unpacking bridge-utils (1.5-15ubuntu1) ...
Selecting previously unselected package cgroupfs-mount.
Preparing to unpack .../cgroupfs-mount_1.4_all.deb ...
Unpacking cgroupfs-mount (1.4) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../docker.io_17.12.1-0ubuntu1_amd64.deb ...
Unpacking docker.io (17.12.1-0ubuntu1) ...
Progress: [ 33%] [#####.....]
```

5. Install all the dependency packages using the following command:

**\$ sudo snap install docker**

```
mca@S17:~$ sudo snap install docker
docker 20.10.14 from Canonical* installed
mca@S17:~$
```

6. Before testing Docker, check the version installed using the following command:

**\$ docker --version**

```
mca@S17:~$ docker --version
Docker version 17.12.1-ce, build 7390fc6
```

7. Pull an image from the Docker hub using the following command:

**\$ sudo docker run hello-world**

Here, *hello-world* is the docker image present on the Docker hub.

```
mca@S17:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:80f31da1ac7b312ba29d65080fddf797dd76acfb870e677f390d5acba9741b17
Status: Downloaded newer image for hello-world:latest

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.
   (amd64)
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/
```

8. Check if the docker image has been pulled and is present in your system using the following command:

**\$ sudo docker images**

```
mca@S17:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
hello-world         latest             feb5d9fea6a5       8 months ago       13.3kB
```

9. To display all the containers pulled, use the following command:

**\$ sudo docker ps -a**

```
mca@S17:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
ada6489113c7       hello-world        "/hello"           About a minute ago  Exited (0) About a minute ago                  admiring_
hodgkin
```

10. To check for containers in a running state, use the following command:

**\$ sudo docker ps**

```
mca@S17:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
```

Successfully installed Docker on Ubuntu!