

NETWORKING & SYSTEM ADMINISTRATION LAB**Experiment No.: 19****Aim**

Docker Installation and Deployment.

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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

```
mca@S46:~$ 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:
  libpcre16-3 libpcre3-dev libpcre32-3 libpcrecpp0v5 libssl-dev libssl-doc
  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 shtool
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 12 not upgraded.
```

After entering the above command, enter the password of the root and press enter.

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

\$ sudo apt-get update

```
mca@S46:~$ sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 https://dl.google.com/linux/chrome/deb stable InRelease [1,811 B]
Err:3 http://ppa.launchpad.net/jonathonf/python-3.6/ubuntu bionic InRelease
403 Forbidden [IP: 185.125.190.52 80]
Get:4 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,103 B]
Ign:5 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 InRelease
Get:6 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release [2,495 B]
Get:7 http://ppa.launchpad.net/ubuntu-mozilla-security/ppa/ubuntu bionic InRelease [15.4 kB]
Get:8 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release.gpg [801 B]
Err:8 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>
Hit:9 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease
Get:10 http://ppa.launchpad.net/ubuntu-mozilla-security/ppa/ubuntu bionic/main i386 Packages [28.7 kB]
Get:11 http://ppa.launchpad.net/ubuntu-mozilla-security/ppa/ubuntu bionic/main amd64 Packages [28.6 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>
```

4. Install Docker using the following command :

\$ sudo apt install docker.io

```
mca@S46:~$ 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:
  libpcrc16-3 libpcrc3-dev libpcrc32-3 libpcrcpp0v5 libssl-dev libssl-doc 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 shtool
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 debootstrap 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 13 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 (21.0 MB/s)
Preconfiguring packages ...
Selecting previously unselected package bridge-utils.
(Reading database ... 224461 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) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../ubuntu-fan_0.12.10_all.deb ...
Unpacking ubuntu-fan (0.12.10) ...
Setting up docker.io (17.12.1-0ubuntu1) ...
Adding group 'docker' (GID 130) ...
Done.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socket.
Processing triggers for ureadahead (0.100.0-20) ...
ureadahead will be reprofiled on next reboot
Setting up cgroupfs-mount (1.4) ...
Setting up bridge-utils (1.5-15ubuntu1) ...
Setting up ubuntu-fan (0.12.10) ...
```

A prompt will appear asking you to choose between y/n - choose y

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

\$ sudo snap install docker

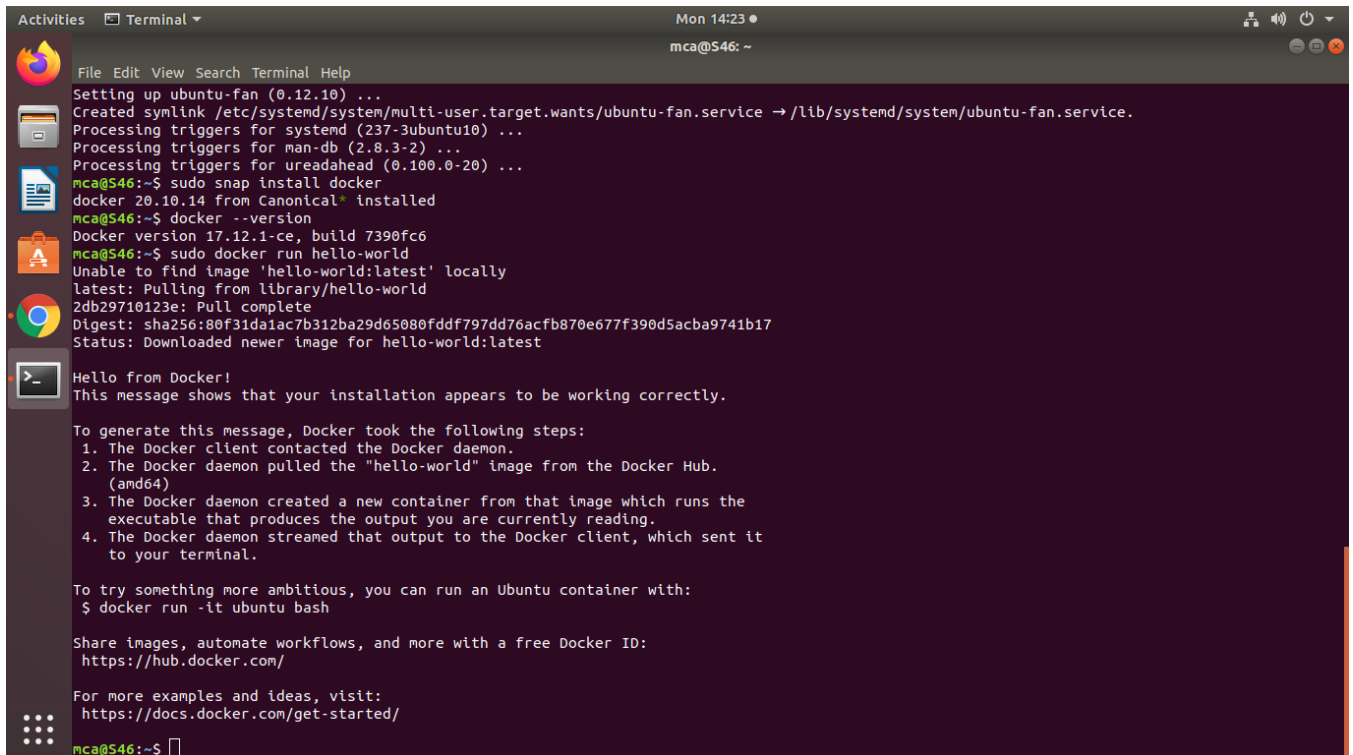
```
mca@S46:~$ sudo snap install docker
docker 20.10.14 from Canonical* installed
```

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

\$ docker --version

```
mca@S46:~$ 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

```
Activities  Terminal  Mon 14:23  mca@S46: ~
File Edit View Search Terminal Help
Setting up ubuntu-fan (0.12.10) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Processing triggers for systemd (237-3ubuntu10) ...
Processing triggers for man-db (2.8.3-2) ...
Processing triggers for ureadahead (0.100.0-20) ...
mca@S46:~$ sudo snap install docker
docker 20.10.14 from Canonical* installed
mca@S46:~$ docker --version
Docker version 17.12.1-ce, build 7390fc6
mca@S46:~$ 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/
mca@S46:~$
```

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

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

\$ sudo docker images

```
mca@S46:~$ 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

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```

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

\$ sudo docker ps -a

```
mca@S46:~$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
266a74bb9d81	hello-world	"/hello"	About a minute ago	Exited (0) About a minute ago		sweet_lea

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

\$ sudo docker ps

```
mca@S46:~$ sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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Ubuntu is successfully installed on docker.