

NETWORKING & SYSTEM ADMINISTRATION LAB**Experiment No.: 24****Aim:**

Installation of Docker on Ubuntu.

Procedure:

Step 1: Open the terminal on Ubuntu.

Step 2: Remove any Docker files that are running in the system, using the following command:

Syntax: **\$ sudo apt-get remove docker docker-engine docker.io**

```
mca@S66:~$ 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
  libfile-stripnondeterminism-perl libmail-sendmail-perl libpcre16-3
  libpcre3-dev libpcre32-3 libpcrecpp0v5 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 shtool
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
mca@S66:~$
```

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

Syntax: `$ sudo apt-get update`

```
mca@S66:~$ 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]
Ign:4 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 InRelease
Get:5 https://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,103 B]
Get:6 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease [15.4 kB]
Get:7 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release [2,495 B]
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>
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 not 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.
E: Repository 'http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease' changed its 'Label' value from 'Oracle Java (JDK) 8 / 9 Installer 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.
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>
mca@S66:~$
```

Step 4: Install Docker using the following command:

Syntax: `$ sudo apt install docker.io`

```
mca@S66:~$ 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 libfile-stripnondeterminism-perl libmail-sendmail-perl libpcre16-3
  libpcre3-dev libpcre32-3 libpcrecpp0v5 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 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 1 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 (25.2 MB/s)
Preconfiguring packages ...
Selecting previously unselected package bridge-utils.
(Reading database ... 173727 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) ...
```

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

Syntax: **\$ sudo snap install docker**

```
mca@S66:~$ sudo snap install docker
snap "docker" is already installed, see 'snap help refresh'
```

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

Syntax: **\$ docker --version**

```
mca@S66:~$ docker --version
Docker version 17.12.1-ce, build 7390fc6
```

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

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

```
mca@S66:~$ 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/
```

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

Syntax: **\$ sudo docker images**

```
mca@S66:~$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
hello-world	latest	feb5d9fea6a5	8 months ago	13.3kB

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

Syntax: **\$ sudo docker ps -a**

```
mca@S66:~$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
caf96eb1efa1	hello-world	"/hello"	6 minutes ago	Exited (0) 6 minutes ago		quirky_wiles

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

Syntax: **\$ sudo docker ps**

```
mca@S66:~$ sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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Step 11: **\$sudo docker run -dit --name tecmint-web -p 8080:80 -v /home/user/website/:/usr/local/apache2/htdocs/ httpd:2.4**

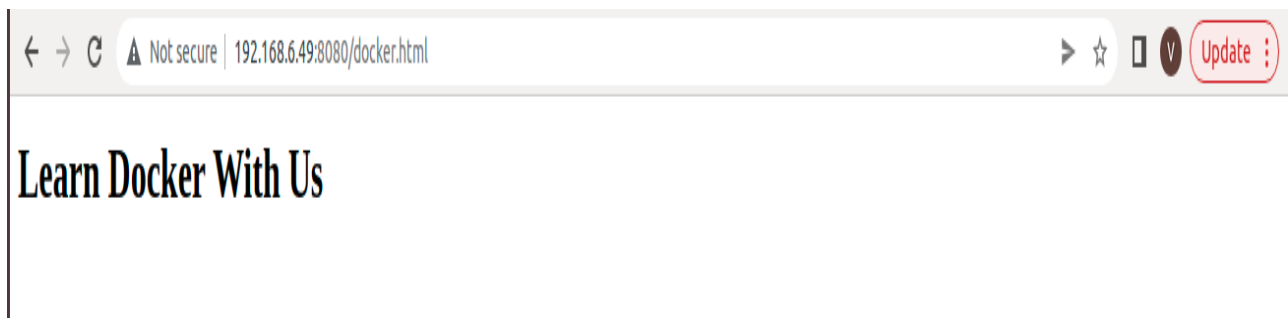
```
mca@T70:~$ sudo docker run -dit --name tecmint-web -p 8080:80 -v /home/user/website/:/usr/local/apache2/htdocs/ httpd:2.4
Unable to find image 'httpd:2.4' locally
2.4: Pulling from library/httpd
214ca5fb9032: Pull complete
7cf31a2eeec6: Pull complete
bf666e57b9f2: Pull complete
c15a4e94ae6b: Pull complete
dc25474c7f97: Pull complete
Digest: sha256:2d1f8839d6127e400ac5f65481d8a0f17ac46a3b91de40b01e649c9a0324dea0
Status: Downloaded newer image for httpd:2.4
044e5fb945bf052ca05398fcad9e5b47ad46de63d78a1318faf4d2ca633df622
```

Step 12: \$ sudo docker ps

```
mca@T70:~$ sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
044e5fb945bf	httpd:2.4	"httpd-foreground"	2 minutes ago	Up 2 minutes	0.0.0.0:8080->80/tcp, :::8080->80/tcp

ecmint-web

Step 13 : \$ sudo gedit /home/user/website/docker.html**Step 14 : \$ sudo docker stop tecmint-web**

```
mca@T70:~$ sudo docker rm tecmint-web
```

tecmint-web

Step 15: \$ sudo docker rm tecmint-web

```
mca@T70:~$ sudo docker rm tecmint-web
```

tecmint-web

Step 16: \$ sudo docker image remove httpd:2.4

```
mca@T70:~$ sudo docker image remove httpd:2.4
```

Untagged: httpd:2.4
 Untagged: httpd@sha256:2d1f8839d6127e400ac5f65481d8a0f17ac46a3b91de40b01e649c9a0324dea0
 Deleted: sha256:c58ef9bfb5789a9882cee610ba778b1368d21b513d6caf32e3075542e13fe81
 Deleted: sha256:312672a18b7ce4fbbba736a0e87a4a1cef47e3341b50cb3a0c5a865457347c10
 Deleted: sha256:d67e67a5fbad035b2603029110722ed2af07c5ae52e741663c2d09cf6cc90e2c
 Deleted: sha256:eb38b82c45692bc0a2e14adece681e2673d35f9ee5d047f498d0077d17a3bf68
 Deleted: sha256:c21e2c36645f68249254b6d72c2ae0af5c1ba110a92d7b7b05c67ee4705cea49
 Deleted: sha256:fd95118eade99a75b949f634a0994e0f0732ff18c2573fabdfc8d4f95b092f0e

mca@T70:~\$