

**NETWORKING&SYSTEMADMINISTRATIONLAB****ExperimentNo.:24****Aim**

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**How to Install Docker on Ubuntu****Program**

1. Open Terminal in 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@S55:~$ 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 9 not upgraded.
mca@S55:~$ sudo apt-get update
```

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

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

```
mca@S55:~$ sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://dl.google.com/linux/chrome/deb stable InRelease [1,811 B]
Err:2 http://dl.google.com/linux/chrome/deb stable InRelease
  The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 78BD65473CB3BD13
Get:3 http://ppa.launchpad.net/j-4321-i/ppa/ubuntu bionic InRelease [15.9 kB]
Ign:4 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 InRelease
Get:5 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release [2,495 B]
Err:6 http://ppa.launchpad.net/jonathonf/python-3.6/ubuntu bionic InRelease
  403 Forbidden [IP: 185.125.190.52 80]
Get:7 https://repo.mongodb.org/apt/ubuntu trusty/mongodb-org/3.6 Release.gpg [801 B]
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:9 http://ppa.launchpad.net/j-4321-i/ppa/ubuntu bionic/main amd64 Packages [2,888 B]
Get:10 http://ppa.launchpad.net/j-4321-i/ppa/ubuntu bionic/main i386 Packages [2,888 B]
Get:11 http://ppa.launchpad.net/j-4321-i/ppa/ubuntu bionic/main Translation-en [2,452 B]
Get:8 http://ppa.launchpad.net/webupd8team/java/ubuntu bionic InRelease [15.4 kB]
Reading package lists... Done
W: GPG error: http://dl.google.com/linux/chrome/deb stable InRelease: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 78BD65473CB3BD13
E: The repository 'http://dl.google.com/linux/chrome/deb stable 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.
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: https://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 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.
```

#### 4. Install Docker using the following command:

`$ sudo apt install docker.io`

```
mca@S55:~$ 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 libpcrc16-3
  libpcrc3-dev libpcrc32-3 libpcrcpp0v5 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 sh-tool
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 9 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 (23.7 MB/s)
Preconfiguring packages ...
Selecting previously unselected package bridge-utils.
(Reading database ... 178251 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.
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) ...
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@S55:~$ sudo apt install docker.io
```

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

\$ sudo snap install docker

```
mca@S55:~$ sudo snap install docker
docker 20.10.14 from Canonical* installed
mca@S55:~$ docker --version
```

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

\$ docker --version

```
mca@S55:~$ 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

```
mca@S55:~$ 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@S55:~$ sudo docker images
```

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

- To display all the containers pulled, use the following command:

```
$ sudo docker ps -a
```

```
mca@S55:~$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
7e0db643854e	hello-world	"/hello"	46 seconds ago	Exited (0) 44 seconds ago		kind_tereshkov

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

```
$ sudo docker ps
```

```
mca@S55:~$ sudo docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
mca@S55:~\$ docker --version						
Docker version 17.12.1-ce, build 7390fc6						