INSTALLING DOCKER IN AWS INSTANCE UBUNTU MACHINE

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1) Setup Docket's apt repository:

- Before we install Docker Engine for the first time on a new host machine, weneed to set up the Docker repository. Afterward, we can install and update Docker from the repository.

```
# Add Docker's official GPG key:
sudo apt-get update
sudo apt-get install ca-certificates curl
sudo install -m 0755 -d /etc/apt/keyrings
sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o
/etc/apt/keyrings/docker.asc
sudo chmod a+r /etc/apt/keyrings/docker.asc

# Add the repository to Apt sources:
echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc]
https://download.docker.com/linux/ubuntu \
  $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
```

```
ubuntu@ip-172-31-41-225:~$ sudo apt-get update
Hit:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Hit:3 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Ign:5 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Get:8 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [3107 kB]
Get:9 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [498 kB]
Get:10 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [2686 kB]
Get:11 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [374 kB]
Get:12 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1164 kB]
Get:13 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [26.1 kB]
Hit:14 https://ngrok-agent.s3.amazonaws.com buster InRelease
Get:15 https://pkg.jenkins.io/debian-stable binary/ Packages [26.4 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [2728 kB]
Get:17 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [415 kB]
Get:18 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [2569 kB]
Get:19 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [358 kB]
Get:20 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [938 kB]
Fetched 15.1 MB in 3s (4508 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-41-225:~$ sudo apt-get install ca-certificates curl
Reading package lists... Done
```

2) Install the Docker packages

```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
```

```
ubuntu@ip-172-31-41-225:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  docker-ce-rootless-extras pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli docker-ce-rootless-extras docker-compose-plugin pigz slirp4netns
0 upgraded, 8 newly installed, 0 to remove and 87 not upgraded.
Need to get 117 MB of archives.
After this operation, 420 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 http://eu-north-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 slirp4netns amd64 0.4.3-1 [74.3 kB]
Get:3 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io amd64 1.6.28-1 [29.6 MB]
Get:4 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-buildx-plugin amd64 0.12.1-1~ubuntu.20.04~focal [28.2 MB]
Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-cli amd64 5:25.0.3-1~ubuntu.20.04~focal [13.7 MB]
Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64 5:25.0.3-1~ubuntu.20.04~focal [24.3 MB]
Get:7 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-rootless-extras amd64 5:25.0.3-1~ubuntu.20.04~focal [9324 kB]
Get:8 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-compose-plugin amd64 2.24.5-1~ubuntu.20.04~focal [12.1 MB]
Fetched 117 MB in 2s (68.4 MB/s)
Selecting previously unselected package pigz.
(Reading database ... 76962 files and directories currently installed.)
```

3) Verify that the Docker Engine installation is successful by running the hellow-world image.

sudo docker run hello-world

```
ubuntu@ip-172-31-41-225:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
c1ec31eb5944: Pull complete
Digest: sha256:d000bc569937abbe195e20322a0bde6b2922d805332fd6d8a68b19f524b7d21d
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/
```

- This command downloads a test image and runs it in a container.
- When the container runs, it prints a confirmation message and exits.

We have now successfully installed and started Docker Engine.