

Name: Siddhesh Avinash Dhinge
Roll No: 33310
Class, Batch: TE-11 K-11

Assignment No: 2-B

Create Docker Container Environment (NVIDIA Docker or any other).

blab-04@blab04-OptiPlex-5060:~\$ sudo apt-get update

[sudo] password for blab-04:

Get:1 <http://security.ubuntu.com/ubuntu> focal-security

InRelease [114 kB] Hit:2

<https://dl.google.com/linux/chrome/deb> stable InRelease

Hit:3 <http://in.archive.ubuntu.com/ubuntu> focal

InRelease

Hit:4 <https://packages.microsoft.com/repos/vscode> stable

InRelease Get:5 <http://in.archive.ubuntu.com/ubuntu> focal-

updates InRelease [114 kB] Get:6

<http://in.archive.ubuntu.com/ubuntu> focal-backports

InRelease [108 kB]

Get:7 <http://in.archive.ubuntu.com/ubuntu> focal-updates/main amd64 Packages [2,386 kB]

Get:8 <http://in.archive.ubuntu.com/ubuntu> focal-updates/main i386 Packages [788 kB]

Get:9 <http://in.archive.ubuntu.com/ubuntu> focal-updates/universe amd64 Packages [1,031 kB]

Get:10 <http://in.archive.ubuntu.com/ubuntu> focal-updates/universe i386 Packages [713 kB]

Fetch 5,254 kB in 5s (1,148 kB/s)

Reading package lists... Done

**blab-04@blab04-OptiPlex-5060:~\$ sudo apt-get install **

**> ca-certificates **

**> curl **

**> gnupg **

> lsb-release

Reading package lists... Done

Building dependency tree

Reading state information... Done

lsb-release is already the newest version (11.1.0ubuntu2).

lsb-release set to manually installed.

ca-certificates is already the newest version (20211016ubuntu0.20.04.1).

ca-certificates set to manually installed.

gnupg is already the newest version (2.2.19-3ubuntu2.2).

gnupg set to manually installed.

The following packages were automatically installed and are no longer required:

gir1.2-goa-1.0 libfwupdplugin1 libxmlb1

Use 'sudo apt autoremove' to remove them.

The following NEW packages will be installed:

curl

0 upgraded, 1 newly installed, 0 to remove and 14 not upgraded.

Need to get 161 kB of archives.

After this operation, 413 kB of additional disk space will be used.

Do you want to continue? [Y/n] Y

Get:1 <http://in.archive.ubuntu.com/ubuntu> focal-updates/main amd64 curl amd64

7.68.0-1ubuntu2.16 [161 kB] Fetched 161 kB in 1s (257 kB/s)

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Selecting previously unselected package curl.
(Reading database ... 201019 files and directories currently installed.)
Preparing to unpack .../curl_7.68.0-1ubuntu2.16_amd64.deb ...
Unpacking curl (7.68.0-1ubuntu2.16) ...
Setting up curl (7.68.0-1ubuntu2.16) ...
Processing triggers for man-db (2.9.1-1) ...

blab-04@blab04-OptiPlex-5060:~\$ sudo mkdir -m 0755 -p /etc/apt/keyrings

blab-04@blab04-OptiPlex-5060:~\$ curl -fsSL
https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o
/etc/apt/keyrings/docker.gpg
**blab-04@blab04-OptiPlex-5060:~\$ echo **
> "deb [arch=\$(dpkg --print-architecture) signed-
by=/etc/apt/keyrings/docker.gpg]
**https://download.docker.com/linux/ubuntu **
> \$(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
blab-04@blab04-OptiPlex-5060:~\$ sudo apt-get update
Get:1 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Get:2 https://download.docker.com/linux/ubuntu focal/stable amd64
Packages [24.7 kB] Hit:3 http://in.archive.ubuntu.com/ubuntu focal
InRelease
Hit:4 https://packages.microsoft.com/repos/vscode
stable InRelease Hit:5
https://dl.google.com/linux/chrome/deb stable
InRelease Hit:6 http://in.archive.ubuntu.com/ubuntu
focal-updates InRelease
Get:7 http://in.archive.ubuntu.com/ubuntu focal-backports
InRelease [108 kB] Get:8 http://security.ubuntu.com/ubuntu
focal-security InRelease [114 kB] Fetched 305 kB in 2s
(163 kB/s)

blab-04@blab04-OptiPlex-5060:~\$ 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 packages were automatically installed and are no longer required:
gir1.2-goa-1.0 libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
The following additional packages will be
installed: docker-ce-rootless-extras docker-scan-
plugin 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
docker-scan-plugin pigz slirp4netns
0 upgraded, 9 newly installed, 0 to remove and 14 not upgraded.
Need to get 112 MB of archives.

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After this operation, 401 MB of additional disk space will be used.

Do you want to continue? [Y/n] Y

Get:1 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io
amd64 1.6.18-1 [28.2 MB] Get:2 http://in.archive.ubuntu.com/ubuntu focal/universe
amd64 pigz amd64 2.4-1 [57.4 kB]

Get:3 http://in.archive.ubuntu.com/ubuntu focal/universe amd64 slirp4netns
amd64 0.4.3-1 [74.3 kB] Get:4 https://download.docker.com/linux/ubuntu
focal/stable amd64 docker-buildx-plugin amd64 0.10.2-1~ubuntu.20.04~focal
[25.9 MB]

Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64
docker-ce-cli amd64 5:23.0.1-1~ubuntu.20.04~focal [13.2 MB]

Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64
5:23.0.1-1~ubuntu.20.04~focal
[22.0 MB]

Get:7 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-rootless-
extras amd64
5:23.0.1-1~ubuntu.20.04~focal [8,765 kB]

Get:8 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-compose-plugin
amd64
2.16.0-1~ubuntu.20.04~focal [10.2 MB]

Get:9 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-scan-plugin
amd64 0.23.0~ubuntu-focal
[3,622 kB]

Fetches 112 MB in 1min 5s (1,712 kB/s)

Selecting previously unselected package pigz.

(Reading database ... 201026 files and directories currently installed.)

Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...

Unpacking pigz (2.4-1) ...

Selecting previously unselected package containerd.io.

Preparing to unpack .../1-containerd.io_1.6.18-1_amd64.deb ...

Unpacking containerd.io (1.6.18-1) ...

Selecting previously unselected package docker-buildx-plugin.

Preparing to unpack .../2-docker-buildx-plugin_0.10.2-1~ubuntu.20.04~focal_amd64.deb ...

Unpacking docker-buildx-plugin (0.10.2-1~ubuntu.20.04~focal) ...

Selecting previously unselected package docker-ce-cli.

Preparing to unpack .../3-docker-ce-cli_5%3a23.0.1-1~ubuntu.20.04~focal_amd64.deb ...

Unpacking docker-ce-cli (5:23.0.1-1~ubuntu.20.04~focal) ...

Selecting previously unselected package docker-ce.

Preparing to unpack .../4-docker-ce_5%3a23.0.1-1~ubuntu.20.04~focal_amd64.deb ...

Unpacking docker-ce (5:23.0.1-1~ubuntu.20.04~focal) ...

Selecting previously unselected package docker-ce-rootless-extras.

Preparing to unpack .../5-docker-ce-rootless-extras_5%3a23.0.1-

1~ubuntu.20.04~focal_amd64.deb ...

Unpacking docker-ce-rootless-extras (5:23.0.1-1~ubuntu.20.04~focal) ...

Selecting previously unselected package docker-compose-plugin.

Preparing to unpack .../6-docker-compose-plugin_2.16.0-1~ubuntu.20.04~focal_amd64.deb

...

Unpacking docker-compose-plugin (2.16.0-1~ubuntu.20.04~focal) ...

Selecting previously unselected package docker-scan-plugin.

Preparing to unpack .../7-docker-scan-plugin_0.23.0~ubuntu-focal_amd64.deb ...

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```
Unpacking docker-scan-plugin (0.23.0~ubuntu-focal) ...
Selecting previously unselected package slirp4netns.
Preparing to unpack .../8-slirp4netns_0.4.3-1_amd64.deb ...
Unpacking slirp4netns (0.4.3-1) ...
Setting up slirp4netns (0.4.3-1) ...
Setting up docker-scan-plugin (0.23.0~ubuntu-focal) ...
Setting up docker-buildx-plugin (0.10.2-1~ubuntu.20.04~focal) ...
Setting up containerd.io (1.6.18-1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service →
/lib/systemd/system/containerd.service.
Setting up docker-compose-plugin (2.16.0-1~ubuntu.20.04~focal) ...
Setting up docker-ce-cli (5:23.0.1-1~ubuntu.20.04~focal) ...
Setting up pigz (2.4-1) ...
Setting up docker-ce-rootless-extras (5:23.0.1-1~ubuntu.20.04~focal) ...
Setting up docker-ce (5:23.0.1-1~ubuntu.20.04~focal) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service →
/lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket →
/lib/systemd/system/docker.socket.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.19) ...
```

blab-04@blab04-OptiPlex-5060:~\$ sudo docker

run hello-world Unable to find image 'hello-

world:latest' locally latest: Pulling from

library/hello-world

2db29710123e: Pull complete

Digest: sha256:6e8b6f026e0b9c419ea0fd02d3905dd0952ad1fee67543f525c73a0a790fefb

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/>

blab-04@blab04-OptiPlex-5060:~\$ git clone https://github.com/docker/getting-started.git

Cloning into 'getting-started'...

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remote: Enumerating objects: 952, done.
remote: Total 952 (delta 0), reused 0 (delta 0), pack-reused 952
Receiving objects: 100% (952/952), 5.18 MiB | 1.52 MiB/s, done.
Resolving deltas: 100% (541/541), done.
blab-04@blab04-OptiPlex-5060:~\$ sudo usermod -aG docker \$USER

blab-04@blab04-OptiPlex-5060:~\$ newgrp docker

blab-04@blab04-OptiPlex-5060:~\$ docker run hello-world

Hello from Docker!

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- 5.to your terminal.

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blab-04@blab04-OptiPlex

5060:~\$ ls

	installation.t	
33123 Desktop	xt	Templates
33158 Documents	Music	Videos
33181 Downloads	Pictures	'VirtualBox VMs'
getting-		
33208 started	Public	
ideaIC-	sample.ht	
33342 2022.2.1	ml	
33379 ideaIC-2022.2.1.tar.gz	snap	

blab-04@blab04-OptiPlex-5060:~\$ cd getting-started/

blab-04@blab04-OptiPlex-5060:~/getting-started\$ ls

	docker-compose.yml	docs	mkdocs.yml
app	requirements.txt		
	LICENSE		
build.sh	Dockerfile	README.md	

blab-04@blab04-OptiPlex-5060:~/getting-started\$ cd app

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blab-04@blab04-OptiPlex-5060:~/getting-started/app\$ ls package.json spec src yarn.lock

blab-04@blab04-OptiPlex-5060:~/getting-started/app\$ touch Dockerfile blab-04@blab04-OptiPlex-5060:~/getting-started/app\$ gedit Dockerfile

blab-04@blab04-OptiPlex-5060:~/getting-started/app\$ docker build -t getting-started .
[+] Building 77.4s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.4s
=> => transferring dockerfile: 185B 0.0s
=> [internal] load .dockerignore 0.6s
=> => transferring context: 2B 0.0s
=> resolve image config for docker.io/docker/dockerfile:1 4.1s
=> docker-image://docker.io/docker/dockerfile:1@sha256:39b85bbfa7536a5fa5f 9.0s
=> => resolve 0.7
docker.io/docker/dockerfile:1@sha256:39b85bbfa7536a5feceb s
=> => sha256:966d40f9ba8366e74c2fa353fc0bc7bbc167d2a0f3ad24 482B / 482B 0.0s => => sha256:39b85bbfa7536a5feceb7372a0817649ecb2724562 8.40kB / 8.40kB 0.0s => => sha256:dbdd11720762ad504260c66161c964e59eba06b95a 2.90kB / 2.90kB 0.0s => => sha256:a47ff7046597eea0123ea02817165350e3680f75 11.55MB / 11.55MB 7.1s => => extracting sha256:a47ff7046597eea0123ea02817165350e3680f75000dc5d 0.1s
=> [internal] load metadata for docker.io/library/node:18-alpine 3.5s
=> [internal] load build context 0.8s
=> => transferring context: 4.59MB 0.0s
=> [1/4] FROM docker.io/library/node:18-alpine@sha256:f8a51c36b0be7434 35.2s
=> => resolve docker.io/library/node:18-alpine@sha256:f8a51c36b0be7434b 0.4s
=> => sha256:f8a51c36b0be7434bbf867d4a08decf0100e656203 1.43kB / 1.43kB 0.0s => => sha256:fd8d2737cb94e25cae3db9fc5d7dc073c9675dad34 1.16kB / 1.16kB 0.0s => => sha256:9423415aa47ab401c3f202dd56fdf379f6161a620c 6.44kB / 6.44kB 0.0s => => sha256:63b65145d645c1250c391b2d16ebe53b3747c295ca 3.37MB / 3.37MB 5.5s => => sha256:061765f30124ad9dd30397cf60c64741d3fb3b3 47.51MB / 47.51MB 30.8s => => sha256:478140d591162fa9113c5ba76c16afafe2aa04bccd 2.35MB / 2.35MB 5.3s => => sha256:00ca3aba45c3a9811387d943d26291284ca6f938036760 450B /

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```
450B 5.8s => => extracting
sha256:63b65145d645c1250c391b2d16ebe53b3747c295ca8ba2f 0.2s
=> => extracting
sha256:061765f30124ad9dd30397cf60c64741d3fb3b34c36f956 0.7s
=> => extracting
sha256:478140d591162fa9113c5ba76c16afafe2aa04bccd8ec45 0.1s
=> => extracting
sha256:00ca3aba45c3a9811387d943d26291284ca6f938036760f 0.0s
=> [2/4] WORKDIR /app                2.7s
=> [3/4] COPY . .                    1.5s
=> [4/4] RUN yarn install --          15.5
production                          s
=> exporting to image                3.2s
=> => exporting layers                3.1s
=> => writing image sha256:807c655fa416f3f8a2560c5cd446420f041cdfa13f5c 0.1s
=> => naming to docker.io/library/getting- 0.0
started                             s
```

blab-04@blab04-OptiPlex-5060:~/getting-started/app\$ docker run -dp 3000:3000 getting-started

Cf75f5f2b512ed2c23b80e1507897ac0584818e773055cc423ee03ea4700adc9

On Chrome open => localhost:3000/

