

```

student@mcacc113:~$ sudo apt-get update
E: Failed to fetch http://archive.ubuntu.com/ubuntu/pool/universe/u/ubuntu-fan/ubuntu-fan_0.12.16_all.deb 403 Forbidden [IP: 185.125.190.81 80]
E: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?
student@mcacc113:~$ sudo apt install -y docker.io
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [208 B]
Get:6 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 c-n-f Metadata [112 B]
Get:7 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [14.2 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [12.1 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [20.0 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1256 B]
Get:10 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1256 B]
Get:10 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1256 B]
Get:10 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1256 B]
Get:14 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 128 kB in 4s (29.7 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
56 packages can be upgraded. Run 'apt list --upgradable' to see them.
student@mcacc113:~$ sudo apt install -y docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base iptables libip4tc2 libip6tc2 libnetfilter-conntrack3 libnftnl0 libnftables1 libnftnl1 nftables pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap docker-buildx docker-compose-v2 docker-doc runc zfs-fuse | zfsutils firewallld
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io iptables libip4tc2 libip6tc2 libnetfilter-conntrack3 libnftnl0 libnftables1 libnftnl1 nftables pigz runc ubuntu-fan
0 upgraded, 16 newly installed, 0 to remove and 56 not upgraded.
Need to get 79.0 MB/79.6 MB of archives.
After this operation, 306 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 libnetfilter-conntrack3 amd64 1.0.9-6build1 [45.2 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 iptables amd64 1.8.10-3ubuntu2 [381 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 nftables amd64 1.0.9-1build1 [69.8 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 runc amd64 1.1.12-0ubuntu3.1 [8599 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 containerd amd64 1.7.24-0ubuntu1-24.04.1 [37.0 MB]
Get:6 http://archive.ubuntu.com/ubuntu noble/main amd64 dnsmasq-base amd64 2.90-2build2 [375 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 docker.io amd64 26.1.3-0ubuntu1-24.04.1 [32.4 MB]
Get:8 http://archive.ubuntu.com/ubuntu noble/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Get:9 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 runc amd64 1.1.12-0ubuntu3.1 [8599 kB]
Fetched 73.4 MB in 5min 11s (236 kB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 40768 files and directories currently installed.)
Preparing to unpack .../00-pigz_2.8-1_amd64.deb ...
Unpacking pigz (2.8-1) ...

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student@mcacc113:~$ sudo apt install -y docker.io
Selecting previously unselected package dns-root-data.
Preparing to unpack .../12-dns-root-data_2024071801-ubuntu0.24.04.1_all.deb ...
Unpacking dns-root-data (2024071801-ubuntu0.24.04.1) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../13-dnsmasq-base_2.90-2build2_amd64.deb ...
Unpacking dnsmasq-base (2.90-2build2) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../14-docker.io_26.1.3-0ubuntu1-24.04.1_amd64.deb ...
Unpacking docker.io (26.1.3-0ubuntu1-24.04.1) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../15-ubuntu-fan_0.12.16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up libip4tc2:amd64 (1.8.10-3ubuntu2) ...
Setting up libip6tc2:amd64 (1.8.10-3ubuntu2) ...
Setting up libnftnl1:amd64 (1.2.6-2build1) ...
Setting up runc (1.1.12-0ubuntu3.1) ...
Setting up dns-root-data (2024071801-ubuntu0.24.04.1) ...
Setting up bridge-utils (1.7.1-1ubuntu2) ...
Setting up pigz (2.8-1) ...
Setting up libnftnl0:amd64 (1.0.2-2build1) ...
Setting up containerd (1.7.24-0ubuntu1-24.04.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /usr/lib/systemd/system/containerd.service.
Setting up libnftables1:amd64 (1.0.9-1build1) ...
Setting up nftables (1.0.9-2build1) ...
Setting up libnetfilter-conntrack3:amd64 (1.0.9-6build1) ...
Setting up iptables (1.8.10-3ubuntu2) ...
update-alternatives: using /usr/sbin/iptables-legacy to provide /usr/sbin/iptables (iptables) in auto mode
update-alternatives: using /usr/sbin/ip6tables-legacy to provide /usr/sbin/ip6tables (ip6tables) in auto mode
update-alternatives: using /usr/sbin/iptables-nft to provide /usr/sbin/iptables (iptables) in auto mode
update-alternatives: using /usr/sbin/ip6tables-nft to provide /usr/sbin/ip6tables (ip6tables) in auto mode
update-alternatives: using /usr/sbin/arptables-nft to provide /usr/sbin/arptables (arptables) in auto mode
update-alternatives: using /usr/sbin/ebtables-nft to provide /usr/sbin/ebtables (ebtables) in auto mode
Setting up docker.io (26.1.3-0ubuntu1-24.04.1) ...
Info: Selecting GID from range 100 to 999 ...
Info: Adding group 'docker' (GID 188) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.
Setting up dnsmasq-base (2.90-2build2) ...
Setting up ubuntu-fan (0.12.16) ...
Processing triggers for man-db (2.12.0-4ubuntu4.1) ...
Processing triggers for libc-bin (2.39-0ubuntu8.4) ...
student@mcacc113:~$ sudo systemctl enable docker
student@mcacc113:~$ sudo systemctl start docker
student@mcacc113:~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1-24.04.1
student@mcacc113:~$

```

```

root@student@mac113: ~/docker-python-app
docker version 26.1.3, build 26.1.3-0ubuntu1-24.04.1
student@mac113:~$ sudo curl -L "https://github.com/docker/compose/releases/latest/download/docker-compose-${uname -s}-${uname -m}" -o /usr/local/bin/docker-compose
% Total % Received % Xferd Average Speed Time Time Current
                               Dload Upload Total Spent Left Speed
  0     0    0     0    0     0      0  0 0 --:--:-- 0:00:14 --:--:--    0
  0     0    0     0    0     0      0  0 0 --:--:-- 0:00:15 --:--:--    0
56 71.4M 56 48.2M  0    168k    0 0:07:13 0:04:04 0:03:09 133k q[3~^([3~^([3~
56 71.4M 56 48.5M  0    169k    0 0:07:12 0:04:05 0:03:07 138k
57 71.4M 57 48.8M  0    169k    0 0:07:10 0:04:06 0:03:04 477k

57 71.4M 57 48.9M  0    169k    0 0:07:11 0:04:07 0:03:04 248k
57 71.4M 57 48.9M  0    168k    0 0:07:13 0:04:08 0:03:05 285k

100 71.4M 100 71.4M  0    259k    0 0:04:41 0:04:41 --:--:-- 1124k
student@mac113:~$ sudo chmod +x /usr/local/bin/docker-compose
student@mac113:~$ docker-compose --version
Docker Compose version v2.34.0
student@mac113:~$
student@mac113:~$ mkdir ~/docker-python-app
student@mac113:~$ cd ~/docker-python-app
student@mac113:~/docker-python-app$ nano main.py
student@mac113:~/docker-python-app$ from flask import flask
Command 'from' not found, but can be installed with:
sudo apt install mailutils
student@mac113:~/docker-python-app$ nano main.py
student@mac113:~/docker-python-app$ nano main.py
student@mac113:~/docker-python-app$ nano requirements.txt
student@mac113:~/docker-python-app$ nano main.py
student@mac113:~/docker-python-app$ nano dockerfile
student@mac113:~/docker-python-app$ nano dockerfile
student@mac113:~/docker-python-app$ nano docker-compose.yml
student@mac113:~/docker-python-app$ sudo docker-compose build
[sudo] password for student:
yaml: line 1: did not find expected key
student@mac113:~/docker-python-app$ sudo docker-compose build
\\yaml: line 1: did not find expected key
student@mac113:~/docker-python-app$ sudo docker-compose build
yaml: line 1: did not find expected key
student@mac113:~/docker-python-app$ nano dockerfile
student@mac113:~/docker-python-app$ sudo docker-compose build
yaml: line 1: did not find expected key
student@mac113:~/docker-python-app$ nano docker-compose.yml
student@mac113:~/docker-python-app$ sudo docker-compose build
yaml: line 3: did not find expected key
student@mac113:~/docker-python-app$ nano docker-compose.yml
student@mac113:~/docker-python-app$ sudo docker-compose build
[MARIN] [0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
You can now delete below lines to bake for better performance.

```

```

student@mac113:~/docker-python-app
To do so, set COMPOSE_BAKE=true.
# Building 0.2s (1/1) FINISHED
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 186B
failed to solve dockerfile parse error on line 5: COPY requires at least two arguments, but only one was provided. Destination could not be determined
student@mac113:~/docker-python-app$ sudo docker-compose build
[ARN[0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
# Building 0.1s (1/1) FINISHED
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 186B
failed to solve dockerfile parse error on line 5: COPY requires at least two arguments, but only one was provided. Destination could not be determined
student@mac113:~/docker-python-app$ nano docker-compose.yml
student@mac113:~/docker-python-app$ sudo docker-compose build
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
# Building 0.1s (1/1) FINISHED
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 186B
failed to solve dockerfile parse error on line 5: COPY requires at least two arguments, but only one was provided. Destination could not be determined
student@mac113:~/docker-python-app$ nano docker-compose.yml
student@mac113:~/docker-python-app$ sudo docker-compose build
[ARN[0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
# Building 0.1s (1/1) FINISHED
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 186B
failed to solve dockerfile parse error on line 5: COPY requires at least two arguments, but only one was provided. Destination could not be determined
student@mac113:~/docker-python-app$ nano dockerfile
student@mac113:~/docker-python-app$ sudo docker-compose build
[ARN[0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
# Building 0.1s (1/1) FINISHED
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 193B
failed to solve dockerfile parse error on line 5: unknown instruction: COPY. (did you mean COPY?)
student@mac113:~/docker-python-app$ nano dockerfile
student@mac113:~/docker-python-app$ sudo docker-compose build
[ARN[0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
# Building 81s.7s (4/9)
[web internal] load build definition from dockerfile
#-> transferring dockerfile: 194B
[web internal] load metadata for docker.io/library/python:3.11
[web internal] load .dockerignore
#-> transferring context: 2B
# [web 1/5] FROM docker.io/library/python:3.11@sha256:8bc8b5bee556c53b94f7ddf9134fb0e96c91bdf113d1ec44df5a465d2b3
811.10s

```

```
student@mcacc113: ~/docker-python-app
-> [web internal] load build definition from dockerfile
-> -- transferring dockerfile: 19kB
failed to solve dockerfile parse error on line 5: unknown instruction: COPY. (did you mean COPY?)
student@mcacc113:~/docker-python-app$ nano dockerfile
student@mcacc113:~/docker-python-app$ sudo docker-compose build
[0000] /home/student/docker-python-app/docker-compose.yml: the attribute 'version' is obsolete, it will be ignored, please remove it to avoid potential confusion
compose can now delegate builds to bake for better performance.
To do so, set COMPOSE_BAKE=true.
[*] Building 829.7s (4/9)
-> [web internal] load build definition from dockerfile
-> -- transferring dockerfile: 19kB
-> [web internal] load metadata for docker.io/library/python:3.11
-> [web internal] load .dockerignore
-> -- transferring context: 28
-> [web 1/5] FROM docker.io/library/python:3.11@sha256:88c38e5b5ee556c53b94f7ddf9134fb0e96c91bdfd113d1ecd4df5af465d2b3
-> resolve docker.io/library/python:3.11@sha256:88c38e5b5ee556c53b94f7ddf9134fb0e96c91bdfd113d1ecd4df5af465d2b3
-> sha256:88c38e5b5ee556c53b94f7ddf9134fb0e96c91bdfd113d1ecd4df5af465d2b3 9.08kB / 9.08kB
-> sha256:255774e0027b72d2327719e78dbad5ad8c9cf446d055e45b7fc149418470bae 64.40MB / 64.40MB
-> sha256:522183aee9d20aee9f0f402c9354486265ee00b1e3803715daa014add22f4 2.23kB / 2.23kB
-> sha256:18c0f2265f94d4d17a0a65d0853f18d19fcd89a93041eeb67c832e07d915a 6.18kB / 6.18kB
-> sha256:7cd785773db44407e20a679ce5439222e505475eed5b99f1910eb2cda51729ab 48.47MB / 48.47MB
-> sha256:091eb0240475742de217265c01e0106f0aee7430e7f51458c3bd01f03ac 24.01MB / 24.01MB
-> sha256:353e14e5cc476d4fb714a7da88001d90427c705494847ac773f5cc08199451 103.82MB / 211.35MB
-> extracting sha256:7cd785773db44407e20a679ce5439222e505475eed5b99f1910eb2cda51729ab
-> sha256:963091970bc2ac7e8b231ef98df8c29a8cb44ac28a267c1cbe1b98a63ca131c7 6.16MB / 6.16MB
-> extracting sha256:091eb0240475742de217265c01e0106f0aee7430e7f51458c3bd01f03ac
-> sha256:e723c43f7e3118e2e528092e6b7935d99979a261704f6d82b49d0a2f55dd 16.78MB / 24.31MB
-> extracting sha256:255774e0027b72d2327719e78dbad5ad8c9cf446d055e45b7fc149418470bae
-> sha256:7f221c50e407e12492524c329850e1495973634af6da33bd64892cf3c288169b 2508 / 2508
-> [web internal] load build context
-> -- transferring context: 643B
```

student@mcacc113:~/docker-python-app\$

Nano dockerfile

```
from flask import Flask
app = Flask(__name_)
```

```
@app.route("/")
def hello():
    return "Hello, World! Running inside Docker!"
if __name__ == "__main__":
    app.run(host="0.0.0.0", port=5000)
```

dockerfile

```
student@mcacc113:~/docker-python-app$
```

```
sudo docker-compose build
```

```
version: '3.8'
```

```
services:
```

```
  web:
```

```
    build: .
```

```
    ports:
```

```
      - "5000:5000"
```

```
    volumes:
```

```
      - ./app
```

```
    restart: always
```