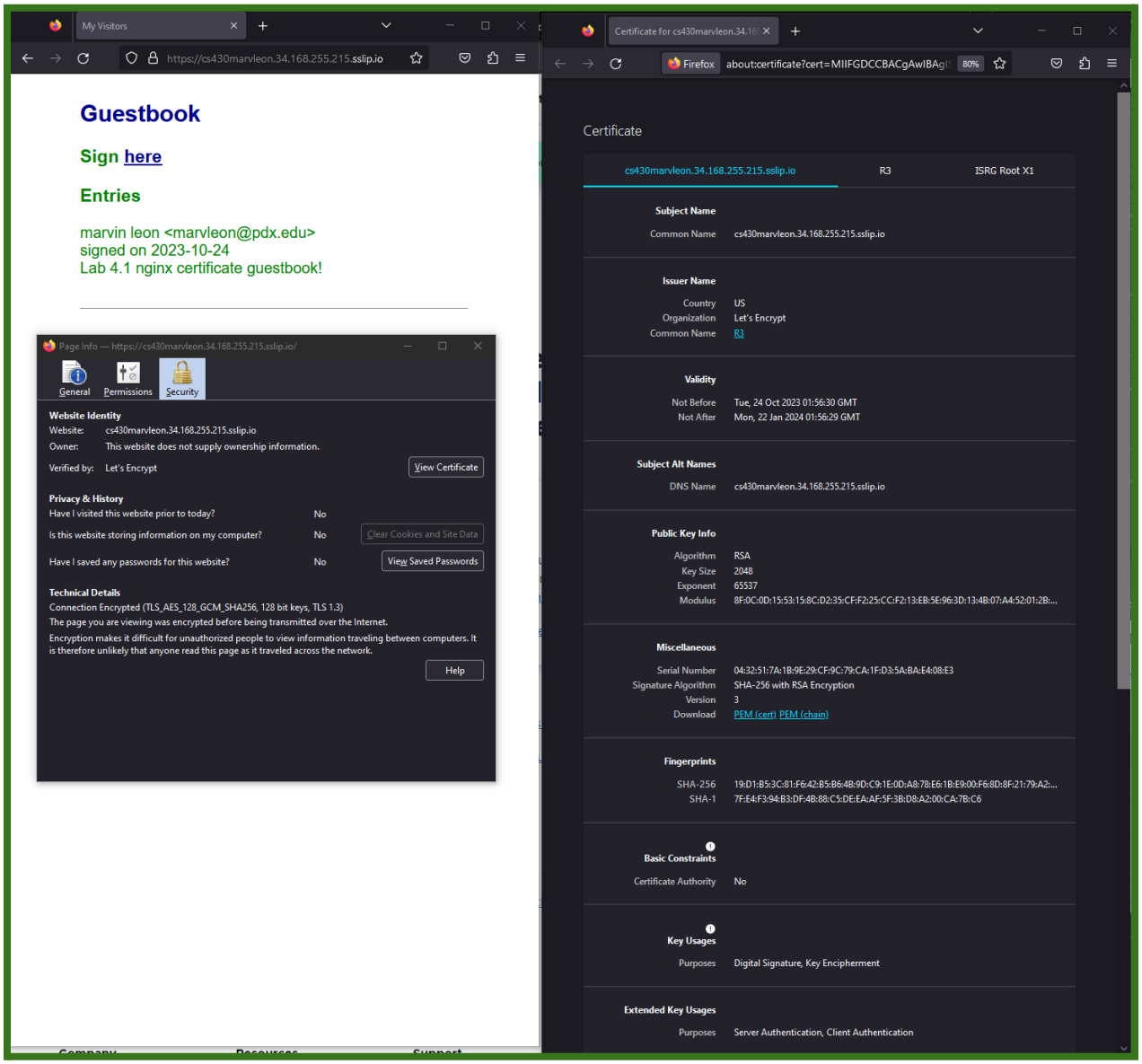
Lab Notebook 4 — marvleon

4.1 nginx Compute Engine Guestbook

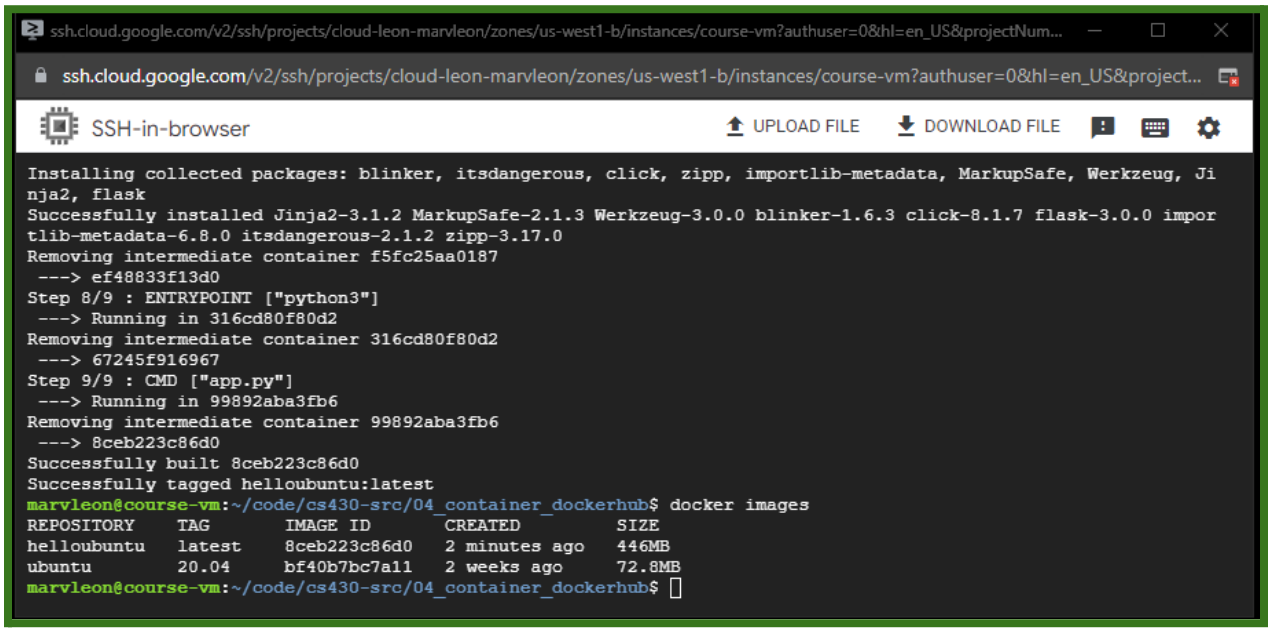
4.1.6 Install the application

Take a screenshot of the site along with its Lets Encrypt certificate and include it…



4.2 Docker Guestbook

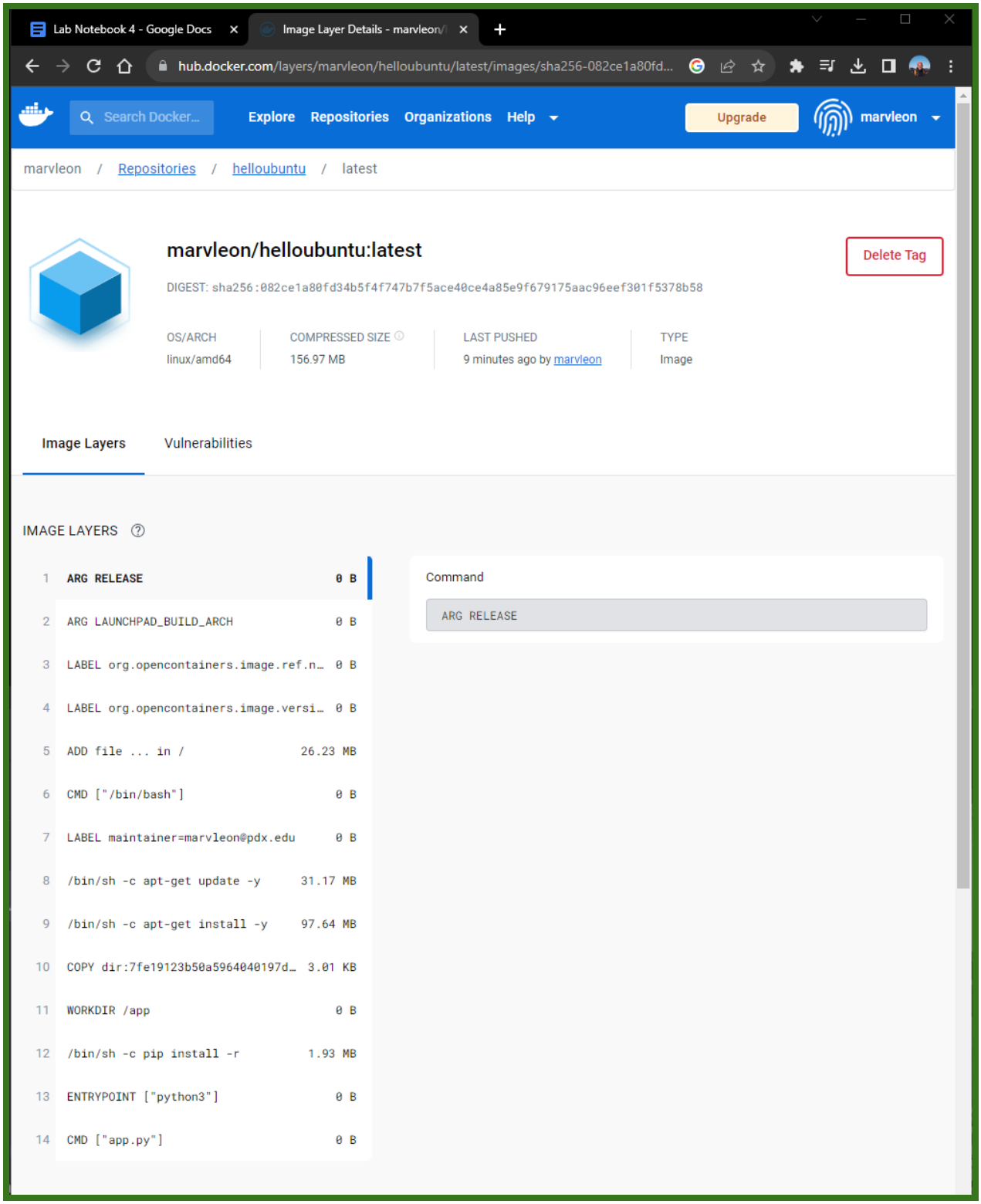
Build and run the Ubuntu-based container



4.2.6 Running from Docker Hub

Run the image directly from Docker Hub and show a screenshot of the output of the command in your lab notebook.

```
marvleon@course-vm:~/code/cs430-src/04_container_dockerhub$ docker run -di -p 8000:5000 --name hellou marvleon/helloubuntu
Unable to find image 'marvleon/helloubuntu:latest' locally
latest: Pulling from marvleon/helloubuntu
96d54c3075c9: Already exists
ecd9af180d55: Pull complete
493251c80a5c: Pull complete
0a38039cc1eb: Pull complete
4c6ace6b3725: Pull complete
Digest: sha256:082ce1a80fd34b5f4f747b7f5ace40ce4a85e9f679175aac96eef301f5378b58
Status: Downloaded newer image for marvleon/helloubuntu:latest
db69f5d9b261f816b470fbdcbf0dec0732fe146826a130b3c5b18023283b7093
```



What layer adds the most of the container image? How much does it add?

Layer 8 (/bin/sh -c apt-get install -y python3-pip)

97.64 MB

4.2.8 Build and run the Alpine-based container

Take a screenshot of the image generated and its size for your lab notebook.

```
marvleon@course-vm:~/code/cs430-src/04_container_dockerhub$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED          SIZE
helloalpine   latest    74cc06d08b64   45 seconds ago   66MB
python        alpine    a4c7645b18dc   8 days ago       51.8MB
ubuntu        20.04     bf40b7bc7a11   2 weeks ago      72.8MB
```

How much smaller is the image than the Ubuntu one?

6.8 MB

Show output of this command. What might have happened?

```
marvleon@course-vm:~/code/cs430-src/04_container_dockerhub$ docker exec -it helloa /bin/bash
OCI runtime exec failed: exec failed: unable to start container process: exec: "/bin/bash": stat /bin/bash: no such file or directory: unknown
```

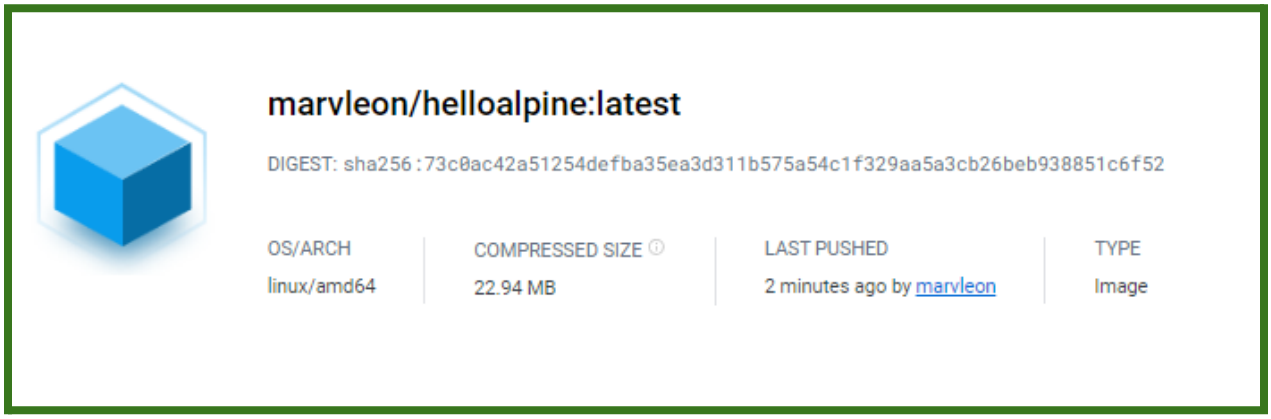
/bin/bash does not exist!

Take a screenshot of the output of each

```
marvleon@course-vm:~/code/cs430-src/04_container_dockerhub$ docker exec -it helloa /bin/sh
/app # cat /etc/alpine-release
3.18.4
/app # ps -ef
PID   USER     TIME  COMMAND
    1 root      0:00 python3 app.py
    8 root      0:00 /usr/local/bin/python3 app.py
   34 root      0:00 /bin/sh
   41 root      0:00 ps -ef
/app #
```

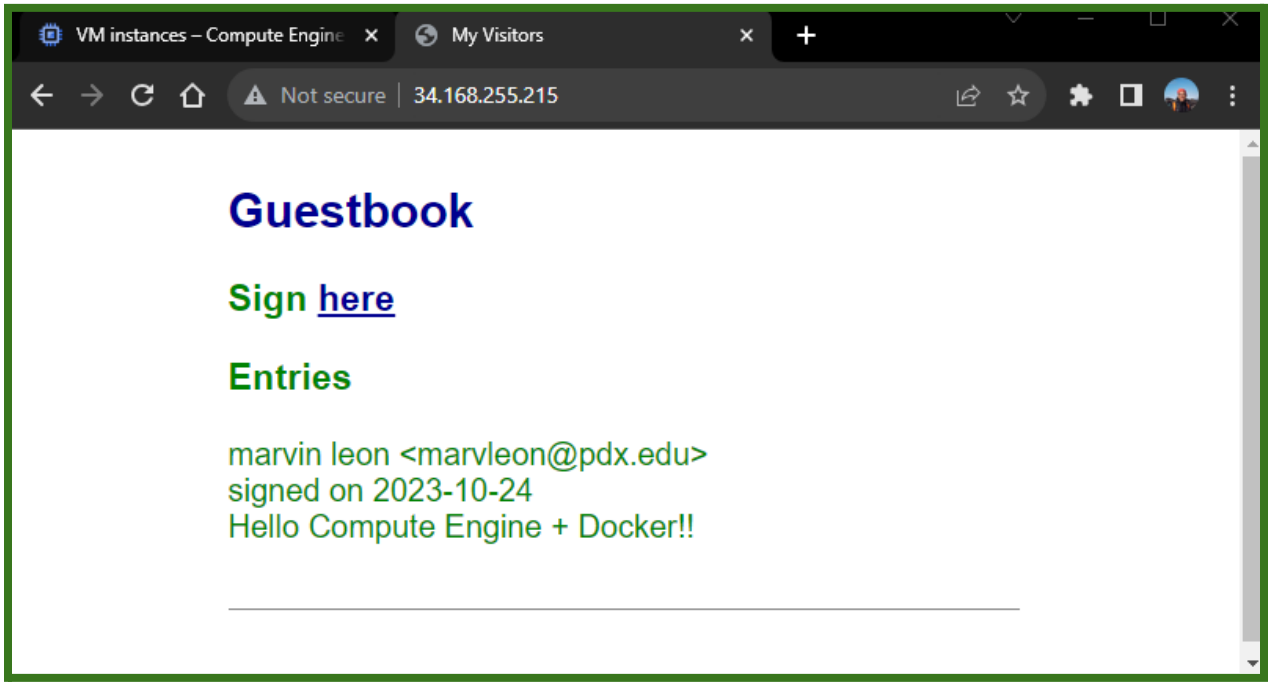
4.2.9 Docker Hub Alpine

Take a screenshot of the container image and its size



4.2.10 Compute Engine Ubuntu VM deployment

Take a screenshot of the entry that includes the VM's external IP address



4.2.11 Compute Engine ContainerOS VM deployment

Take a screenshot of the entry that includes the VM's external IP address