

## Lab 4 Notebook

### 4.1

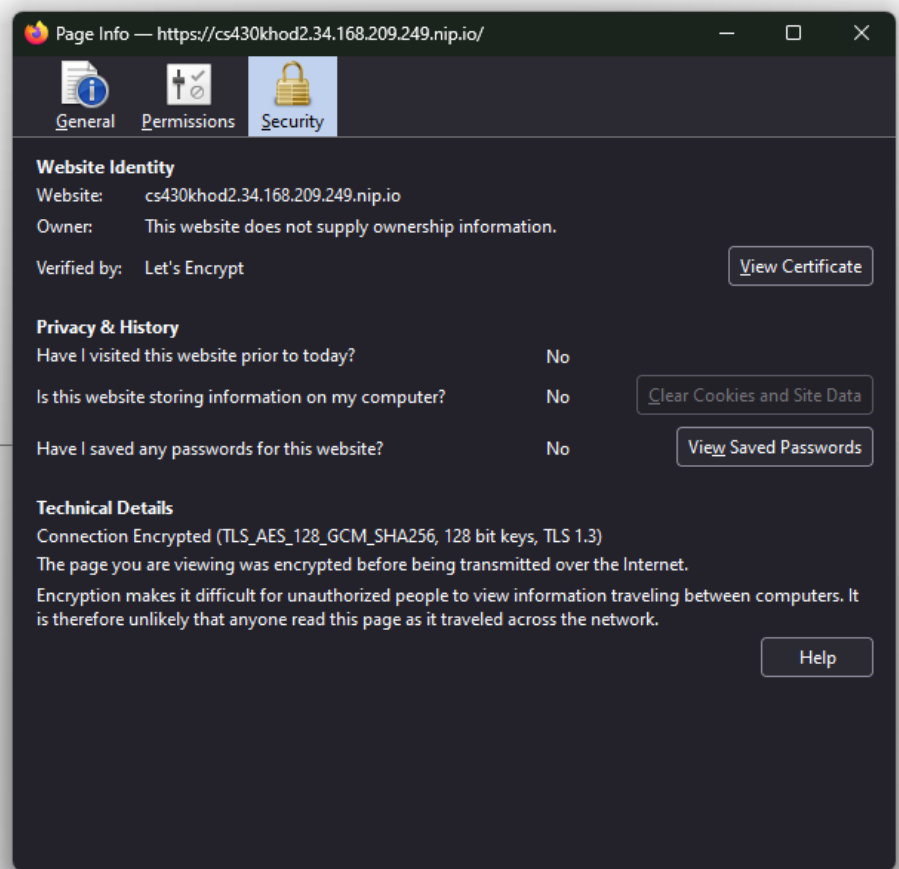
6. Take a screenshot of the site along with its Let's Encrypt certificate and include it in your lab notebook

## Guestbook

[Sign here](#)

### Entries

Sam <khod2@pdx.edu>  
signed on 2023-10-19  
Hi There!



## 4.2

## 3. Take a screenshot of the results for your lab notebook

```
● khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$ docker images
REPOSITORY      TAG          IMAGE ID      CREATED        SIZE
helloubuntu     latest      06ad9604a406  52 seconds ago 446MB
ubuntu          20.04       bf40b7bc7a11  2 weeks ago   72.8MB
○ khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$
```

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

```
● khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$ docker run -di -p 8000:5000 --name hellou khod2/helloubuntu
Unable to find image 'khod2/helloubuntu:latest' locally
latest: Pulling from khod2/helloubuntu
96d54c3075c9: Already exists
af5f987e37a7: Pull complete
922508d1212f: Pull complete
d2b3647766ee: Pull complete
3fc63182a913: Pull complete
Digest: sha256:ea1bac3d2a003c7ca85ba3a4e166bf6c6df47754c3e333b852dbb35d44600a5d
Status: Downloaded newer image for khod2/helloubuntu:latest
f4174cfc9d6a68fe5ee5711732f961c2d1cb26d1c89f75ee241505e00223a676
○ khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$
```

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



## khod2/helloubuntu:latest

DIGEST: sha256:ea1bac3d2a003c7ca85ba3a4e166bf6c6df47754c3e333b852dbb35d44600a5d

OS/ARCH  
linux/amd64

COMPRESSED SIZE ⓘ  
156.96 MB

LAST PUSHED  
6 minutes ago by [khod2](#)

TYPE  
Image

Image Layers

Vulnerabilities

### IMAGE LAYERS ⓘ

1	ARG RELEASE	0 B
2	ARG LAUNCHPAD_BUILD_ARCH	0 B
3	LABEL org.opencontainers.image.ref.name=ubuntu	0 B
4	LABEL org.opencontainers.image.version=20.04	0 B
5	ADD file ... in /	26.23 MB
6	CMD ["/bin/bash"]	0 B
7	LABEL maintainer=khod2@pdx.edu	0 B
8	/bin/sh -c apt-get update -y	31.15 MB
9	/bin/sh -c apt-get install -y	97.64 MB
10	COPY dir:f72aa467096da2e13777d41098a985a2a2480987...	3 KB
11	WORKDIR /app	0 B
12	/bin/sh -c pip install -r	1.93 MB
13	ENTRYPOINT ["python3"]	0 B
14	CMD ["app.py"]	0 B

Command

ARG RELEASE

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

Layer 8 adds the most memory usage to the image, with 97.64 MB added from adding and installing the linux shell.

8. Take a screenshot of the image generated and its size for your lab notebook. How much smaller is the image than the Ubuntu one?

```
● khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
helloalpine   latest    18ccb7bf5b99   34 seconds ago 66MB
python        alpine    a4c7645b18dc   5 days ago    51.8MB
ubuntu        20.04     bf40b7bc7a11   2 weeks ago   72.8MB
○ khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$
```

The alpine image is approximately 400MB smaller than the ubuntu image.

Show the output of this command in a screenshot for your lab notebook. What might have happened?


```
⊗ khod2@SamPC:~/repositories/430/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
○ khod2@SamPC:~/repositories/430/cs430-src/04_container_dockerhub$
```

My guess is that Docker is not able to run an interactive shell because the folder that contains the /bash shell code is not available in alpine.

Take a screenshot of the output of each.

```
● / # cat etc/alpine-release
3.18.4
/ # ps -ef
PID    USER      TIME  COMMAND
   1   root          0:00 python3 app.py
   7   root          0:00 /usr/local/bin/python3 app.py
   9   root          0:00 /bin/sh
  18   root          0:00 ps -ef
/ # khod2
```

## 9. Take a screenshot of the container image and its size.



## khod2/helloalpine:latest

DIGEST: sha256:02b234bf592cb3f05e908394959ea009998b68bd77220a35917e7e874ef403a8

OS/ARCH	COMPRESSED SIZE	LAST PUSHED	TYPE
linux/amd64	22.93 MB	a few seconds ago by <a href="#">khod2</a>	Image

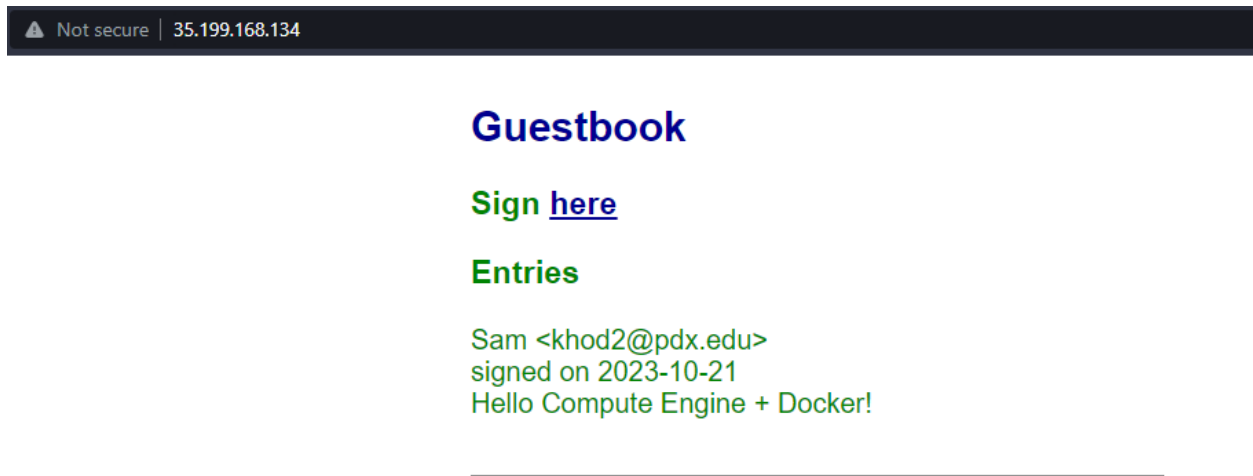
Image Layers

Vulnerabilities

IMAGE LAYERS ?

1	ADD file ... in /	3.24 MB	<div>Command</div> <div>ADD file:756183bba9c7f4593c2b2</div>
2	CMD ["/bin/sh"]	0 B	
3	ENV PATH=/usr/local/bin:/usr/local/sbin:/usr/local/...	0 B	
4	ENV LANG=C.UTF-8	0 B	
5	RUN /bin/sh -c set -eux;	607.74 KB	
6	ENV GPG_KEY=7169605F62C751356D054A26A821E680E5FA6305	0 B	
7	ENV PYTHON_VERSION=3.12.0	0 B	
8	RUN /bin/sh -c set -eux;	11.39 MB	
9	RUN /bin/sh -c set -eux;	240 B	
10	ENV PYTHON_PIP_VERSION=23.2.1	0 B	
11	ENV PYTHON_GET_PIP_URL=https://github.com/pypa/get-...	0 B	
12	ENV PYTHON_GET_PIP_SHA256=22b849a10f86f5ddf7ce148ca...	0 B	
13	RUN /bin/sh -c set -eux;	2.54 MB	
14	CMD ["python3"]	0 B	
15	LABEL maintainer=khod2@pdx.edu	0 B	
16	COPY dir:f162765ed5c184037ae47d51b79d3c2e0119f73ed...	3 KB	
17	WORKDIR /app	0 B	
18	/bin/sh -c pip install --no-cache	5.16 MB	
19	ENTRYPOINT ["python3"]	0 B	
20	CMD ["app.py"]	0 B	

10. Take a screenshot of the entry that includes the VM's external IP address for your lab notebook



13. Take a screenshot of the entry that includes the VM's external IP address for your lab notebook.

