

Docker-TIO-v1.0

- A. Hands-on: Launch an Instance
- B. Hands-on: Installation of docker
- C. This will land you to the EC2 Instance Connect browser terminal.

```
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1036-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Sun May 21 11:32:56 UTC 2023

System load:  0.01          Processes:           98
Usage of /:   20.8% of 7.57GB Users logged in:       0
Memory usage: 10%          IPv4 address for eth0: 172.31.16.29
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
```

CloudShell Feedback Language © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Type here to search 38°C Sunny 5:14 PM 5/21/2023

sudo apt update

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

```
ubuntu@ip-172-31-16-29:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8628 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe Translation-en [5124 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f Metadata [265 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [144 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse Translation-en [104 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f Metadata [9136 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2550 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [432 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [16.5 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1855 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [261 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1062 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [252 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [24.3 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [25.2 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse Translation-en [7408 B]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [612 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [45.7 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main Translation-en [16.3 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [1420 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [24.9 kB]
```

CloudShell

Feedback

Language

© 2023, Amazon Web Services, Inc. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Windows

Type here to search

Live 5:18 PM 5/21/2023

```
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [24.9 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [16.3 kB]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [880 B]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports/multiverse amd64 c-n-f Metadata [116 B]
Get:30 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [2170 kB]
Get:31 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [351 kB]
Get:32 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [1749 kB]
Get:33 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [245 kB]
Get:34 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [837 kB]
Get:35 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [171 kB]
Get:36 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [17.7 kB]
Get:37 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [22.9 kB]
Get:38 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-en [5488 B]
Get:39 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f Metadata [540 B]
Fetched 26.8 MB in 5s (5067 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
```

sudo apt install docker.io

```
ubuntu@ip-172-31-16-29:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base libidn11 pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debbootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io libidn11 pigz runc ubuntu-fan
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 66.1 MB of archives.
After this operation, 293 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 bridge-utils amd64 1.6-2ubuntu1 [30.5 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 runc amd64 1.1.4-0ubuntu1~20.04.3 [3819 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 containerd amd64 1.6.12-0ubuntu1~20.04.1 [31.4 MB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 dns-root-data all 2019052802 [5300 B]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal/main amd64 libidn11 amd64 1.33-2.2ubuntu2 [46.2 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 dnsmasq-base amd64 2.80-1.1ubuntu1.7 [315 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/universe amd64 docker.io amd64 20.10.21-0ubuntu1~20.04.2 [30.3 MB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 ubuntu-fan all 0.12.13ubuntu0.1 [34.4 kB]
Fetched 66.1 MB in 1s (45.7 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 61929 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...
```

CloudShell

Feedback

Language

© 2023, Amazon Web Services, Inc. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Windows

Type here to search

38°C Mostly sunny 5:23 PM 5/21/2023

```

Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.6-2ubuntu1_amd64.deb ...
Unpacking bridge-utils (1.6-2ubuntu1) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.4-0ubuntu1~20.04.3_amd64.deb ...
Unpacking runc (1.1.4-0ubuntu1~20.04.3) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.6.12-0ubuntu1~20.04.1_amd64.deb ...
Unpacking containerd (1.6.12-0ubuntu1~20.04.1) ...
Selecting previously unselected package dns-root-data.
Preparing to unpack .../4-dns-root-data_2019052802_all.deb ...
Unpacking dns-root-data (2019052802) ...
Selecting previously unselected package libidn11:amd64.
Preparing to unpack .../5-libidn11_1.33-2.2ubuntu2_amd64.deb ...
Unpacking libidn11:amd64 (1.33-2.2ubuntu2) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../6-dnsmasq-base_2.80-1.1ubuntu1.7_amd64.deb ...
Unpacking dnsmasq-base (2.80-1.1ubuntu1.7) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../7-docker.io_20.10.21-0ubuntu1~20.04.2_amd64.deb ...
Unpacking docker.io (20.10.21-0ubuntu1~20.04.2) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../8-ubuntu-fan_0.12.13ubuntu0.1_all.deb ...
Unpacking ubuntu-fan (0.12.13ubuntu0.1) ...
Setting up runc (1.1.4-0ubuntu1~20.04.3) ...
Setting up dns-root-data (2019052802) ...
Setting up libidn11:amd64 (1.33-2.2ubuntu2) ...
Setting up bridge-utils (1.6-2ubuntu1) ...
Setting up pigz (2.4-1) ...

```

```

Setting up docker.io (20.10.21-0ubuntu1~20.04.2) ...
Adding group 'docker' (GID 120) ...
Done.
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.
Setting up dnsmasq-base (2.80-1.1ubuntu1.7) ...
Setting up ubuntu-fan (0.12.13ubuntu0.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Processing triggers for systemd (245.4-4ubuntu3.21) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for dbus (1.12.16-2ubuntu2.3) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...

```

sudo docker version

```

ubuntu@ip-172-31-16-29:~$ sudo docker version
Client:
 Version:      20.10.21
 API version:  1.41
 Go version:   go1.18.1
 Git commit:   20.10.21-0ubuntu1~20.04.2
 Built:        Thu Apr 27 05:56:19 2023
 OS/Arch:     linux/amd64
 Context:      default
 Experimental: true

Server:
 Engine:
  Version:      20.10.21
  API version:  1.41 (minimum version 1.12)
  Go version:   go1.18.1
  Git commit:   20.10.21-0ubuntu1~20.04.2
  Built:        Thu Apr 27 05:37:01 2023
  OS/Arch:     linux/amd64
  Experimental: false
 containerd:
  Version:      1.6.12-0ubuntu1~20.04.1
  GitCommit:
 runc:
  Version:      1.1.4-0ubuntu1~20.04.3

```

sudo usermod -a -G docker ubuntu

exit

```

ubuntu@ip-172-31-16-29:~$ sudo usermod -a -G docker ubuntu
ubuntu@ip-172-31-16-29:~$ exit
logout

```



docker version

```
ubuntu@ip-172-31-16-29:~$ docker version
Client:
 Version:           20.10.21
 API version:       1.41
 Go version:        go1.18.1
 Git commit:        20.10.21-0ubuntu1~20.04.2
 Built:             Thu Apr 27 05:56:19 2023
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server:
 Engine:
  Version:          20.10.21
  API version:      1.41 (minimum version 1.12)
  Go version:        go1.18.1
  Git commit:        20.10.21-0ubuntu1~20.04.2
  Built:             Thu Apr 27 05:37:01 2023
  OS/Arch:           linux/amd64
  Experimental:      false
 containerd:
  Version:          1.6.12-0ubuntu1~20.04.1
  GitCommit:
 runc:
  Version:          1.1.4-0ubuntu1~20.04.3
  GitCommit:
 docker-init:
  Version:          0.19.0
  GitCommit:
```

```
ubuntu@ip-172-31-16-29:~$
```

CloudShell Feedback Language

- 1) `sudo chown ubuntu:ubuntu -R /opt`
- 2) `cd /opt`
- 3) docker images
- 4) `docker run --rm busybox:latest /bin/echo "Hello world"`
- 5) `wget https://d6opu47qoi4ee.cloudfront.net/project-container/Dockerfile`

```

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Mon May 22 11:09:39 2023 from 18.206.107.27
ubuntu@ip-172-31-16-29:~$ 1. Type out the below commands in the terminal windowsudo chown ubuntu:ubuntu -R /opt
1.: command not found
ubuntu@ip-172-31-16-29:~$ cd /opt
ubuntu@ip-172-31-16-29:/opt$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
helloworld    latest    5245060c1136   11 minutes ago 710MB
busybox       latest    8135583d97fe   2 days ago     4.86MB
openjdk       11        47a932d998b7   9 months ago   654MB
ubuntu@ip-172-31-16-29:/opt$ docker run --rm busybox:latest /bin/echo "Hello world"
Hello world
ubuntu@ip-172-31-16-29:/opt$ wget https://d6opu47qoi4ee.cloudfront.net/project-container/Dockerfile
--2023-05-22 11:37:23-- https://d6opu47qoi4ee.cloudfront.net/project-container/Dockerfile
Resolving d6opu47qoi4ee.cloudfront.net (d6opu47qoi4ee.cloudfront.net)... 108.138.61.60, 108.138.61.189, 108.138.61.214, ...
Connecting to d6opu47qoi4ee.cloudfront.net (d6opu47qoi4ee.cloudfront.net)|108.138.61.60|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 813 [binary/octet-stream]
Saving to: 'Dockerfile.1'

Dockerfile.1          100%[=====>] 813 --.-KB/s  in 0s

2023-05-22 11:37:23 (42.1 MB/s) - 'Dockerfile.1' saved [813/813]

ubuntu@ip-172-31-16-29:/opt$

```

docker build -t helloworld .

```

ubuntu@ip-172-31-16-29:/opt$ docker build -t helloworld .
Sending build context to Docker daemon 5.632kB
Step 1/7 : FROM openjdk:11
--> 47a932d998b7
Step 2/7 : MAINTAINER Greatlearning
--> Using cache
--> 99d992e09a0f
Step 3/7 : RUN apt update && apt install -y wget && mkdir /opt/tomcat/
--> Using cache
--> 5b8f281bf0a0
Step 4/7 : RUN wget https://d6opu47qoi4ee.cloudfront.net/tomcat/apache-tomcat-9.0.53.tar.gz && tar xvfz apache*.tar.gz && mv apache-tomcat-9.0.53/* /opt/tomcat/. && cd /opt/tomcat/webapps && wget https://d6opu47qoi4ee.cloudfront.net/HelloWorld.war && java -version
--> Using cache
--> d1f75aach345
Step 5/7 : WORKDIR /opt/tomcat/webapps
--> Using cache
--> 58fc8c76ab23
Step 6/7 : EXPOSE 8080
--> Using cache
--> aca9f503f516
Step 7/7 : CMD ["/opt/tomcat/bin/catalina.sh", "run"]
--> Using cache
--> 5245060c1136
Successfully built 5245060c1136
Successfully tagged helloworld:latest
ubuntu@ip-172-31-16-29:/opt$

```

docker run -d -p 80:8080 helloworld

docker ps -a

```
2023-05-22 11:22:20 (68.9 MB/s) -- 'HelloWorld.war' saved [9852807/9852807]

openjdk version "11.0.16" 2022-07-19
OpenJDK Runtime Environment 18.9 (build 11.0.16+8)
OpenJDK 64-Bit Server VM 18.9 (build 11.0.16+8, mixed mode, sharing)
Removing intermediate container bc6bb01208ca
----> d1f75aacb345
Step 5/7 : WORKDIR /opt/tomcat/webapps
----> Running in d8364032cc0a
Removing intermediate container d8364032cc0a
----> 58fc8c76ab23
Step 6/7 : EXPOSE 8080
----> Running in e2abfa5cc3e1
Removing intermediate container e2abfa5cc3e1
----> aca9f503f516
Step 7/7 : CMD ["opt/tomcat/bin/catalina.sh", "run"]
----> Running in 1cb1cce8ea16
Removing intermediate container 1cb1cce8ea16
----> 5245060c1136
Successfully built 5245060c1136
Successfully tagged helloworld:latest
ubuntu@ip-172-31-16-29:/opt$ docker run -d -p 80:8080 helloworld
cb5fdb7cfeaa13992372adeaadcc879131ebb8c1efadd00286ea53348d89474c
ubuntu@ip-172-31-16-29:/opt$ docker ps -a


| CONTAINER ID                  | IMAGE      | COMMAND                  | CREATED        | STATUS        | PORTS                                 | NAMES            |
|-------------------------------|------------|--------------------------|----------------|---------------|---------------------------------------|------------------|
| cb5fdb7cfeaa                  | helloworld | "/opt/tomcat/bin/cat..." | 15 seconds ago | Up 14 seconds | 0.0.0.0:80->8080/tcp, :::80->8080/tcp | infallible_bassi |
| ubuntu@ip-172-31-16-29:/opt\$ |            |                          |                |               |                                       |                  |


```

docker stop cb5fdb7cfeaa

docker rmi cb5fdb7cfeaa

```
ubuntu@ip-172-31-16-29:/opt$ docker stop cb5fdb7cfeaa
cb5fdb7cfeaa
ubuntu@ip-172-31-16-29:/opt$ docker rm cb5fdb7cfeaa
cb5fdb7cfeaa
```

D. Hands-on: Shell In A Box (Advanced)

sudo apt update

```
ubuntu@ip-172-31-16-29:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2567 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [433 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1879 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [264 kB]
Fetched 5479 kB in 2s (2919 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
ubuntu@ip-172-31-16-29:~$
```

```
sudo mkdir /opt/siab
```

```
cd /opt/siab
```

```
sudo wget https://d6opu47qoi4ee.cloudfront.net/SIABDockerfile
```

```
ubuntu@ip-172-31-16-29:~$ sudo mkdir /opt/siab
ubuntu@ip-172-31-16-29:~$ cd /opt/siab
ubuntu@ip-172-31-16-29:/opt/siab$ cd /opt/siab
ubuntu@ip-172-31-16-29:/opt/siab$ sudo wget https://d6opu47qoi4ee.cloudfront.net/SIABDockerfile
--2023-05-22 12:46:04-- https://d6opu47qoi4ee.cloudfront.net/SIABDockerfile
Resolving d6opu47qoi4ee.cloudfront.net (d6opu47qoi4ee.cloudfront.net)... 108.138.61.189, 108.138.61.214, 108.138.61.18, ...
Connecting to d6opu47qoi4ee.cloudfront.net (d6opu47qoi4ee.cloudfront.net)|108.138.61.189|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1564 (1.5K) [binary/octet-stream]
Saving to: 'SIABDockerfile'

SIABDockerfile      100%[=====>]  1.53K  --.-KB/s   in 0s

2023-05-22 12:46:04 (42.0 MB/s) - 'SIABDockerfile' saved [1564/1564]

ubuntu@ip-172-31-16-29:/opt/siab$
```

```
docker pull debian
```

```
docker images
```

```
ubuntu@ip-172-31-16-29:/opt/siab$ docker pull debian
Using default tag: latest
latest: Pulling from library/debian
918547b94326: Pull complete
Digest: sha256:63d62ae233b588d6b426b7b072d79d1306bfd02a72bfff1fc045b8511cc89ee09
Status: Downloaded newer image for debian:latest
docker.io/library/debian:latest
ubuntu@ip-172-31-16-29:/opt/siab$ docker images
REPOSITORY          TAG          IMAGE ID          CREATED           SIZE
helloworld           latest       5245060c1136     About an hour ago 710MB
busybox              latest       8135583d97fe     2 days ago       4.86MB
debian               latest       34b4fa67dc04     2 weeks ago      124MB
openjdk              11          47a932d998b7     9 months ago     654MB
ubuntu@ip-172-31-16-29:/opt/siab$
```

```
docker run --name siabdebian -d -it debian tail -f /dev/null
```

```
docker ps -a
```

```
docker exec -it siabdebian bash
```

```
ubuntu@ip-172-31-16-29:/opt/siab$ docker run --name siabdebian -d -it debian tail -f /dev/null
19563e727871a91ebd08888301158716820e0138712f0454b287d066132002e
ubuntu@ip-172-31-16-29:/opt/siab$ docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
19563e727871   debian   "tail -f /dev/null"     13 seconds ago Up 12 seconds          siabdebian
ubuntu@ip-172-31-16-29:/opt/siab$ docker exec -it siabdebian bash
root@19563e727871:/#
```

apt update

apt upgrade -y

```
root@19563e727871:/# apt update
Get:1 http://deb.debian.org/debian bullseye InRelease [116 kB]
Get:2 http://deb.debian.org/debian-security bullseye-security InRelease [48.4 kB]
Get:3 http://deb.debian.org/debian bullseye-updates InRelease [44.1 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 Packages [8183 kB]
Get:5 http://deb.debian.org/debian-security bullseye-security/main amd64 Packages [243 kB]
Get:6 http://deb.debian.org/debian bullseye-updates/main amd64 Packages [14.6 kB]
Fetched 8649 kB in 2s (5501 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
root@19563e727871:/# apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

apt install -y apt-utils procs sudo wget curl

```
root@19563e727871:/# apt install -y apt-utils procs sudo wget curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ca-certificates libbrotli1 libcurl4 libgpm2 libldap-2.4-2 libldap-common libncurses6 libncursesw6 libnghttp2-14 libprocps8 libpsl5 librtmp1
  libsasl2-2 libsasl2-modules libsasl2-modules-db libssh2-1 openssl psmisc publicsuffix
Suggested packages:
  gpm libsasl2-modules-gssapi-mit | libsasl2-modules-gssapi-heimdal libsasl2-modules-ldap libsasl2-modules-otp libsasl2-modules-sql
The following NEW packages will be installed:
  apt-utils ca-certificates curl libbrotli1 libcurl4 libgpm2 libldap-2.4-2 libldap-common libncurses6 libncursesw6 libnghttp2-14 libprocps8 libpsl5
  librtmp1 libsasl2-2 libsasl2-modules libsasl2-modules-db libssh2-1 openssl procs psmisc publicsuffix sudo wget
0 upgraded, 24 newly installed, 0 to remove and 0 not upgraded.
Need to get 6490 kB of archives.
After this operation, 19.2 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bullseye/main amd64 apt-utils amd64 2.2.4 [439 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 libncurses6 amd64 6.2+20201114-2+deb11u1 [102 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 libncursesw6 amd64 6.2+20201114-2+deb11u1 [132 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 libprocps8 amd64 2:3.3.17-5 [63.9 kB]
Get:5 http://deb.debian.org/debian bullseye/main amd64 procs amd64 2:3.3.17-5 [502 kB]
Get:6 http://deb.debian.org/debian bullseye/main amd64 openssl amd64 1.1.1n-0+deb11u4 [853 kB]
Get:7 http://deb.debian.org/debian bullseye/main amd64 ca-certificates all 20210119 [158 kB]
Get:8 http://deb.debian.org/debian bullseye/main amd64 libpsl5 amd64 0.21.0-1.2 [57.3 kB]
Get:9 http://deb.debian.org/debian bullseye/main amd64 wget amd64 1.21-1+deb11u1 [964 kB]
Get:10 http://deb.debian.org/debian bullseye/main amd64 libbrotli1 amd64 1.0.9-2+b2 [279 kB]
Get:11 http://deb.debian.org/debian bullseye/main amd64 libsasl2-modules-db amd64 2.1.27+dfsg-2.1+deb11u1 [69.1 kB]
Get:12 http://deb.debian.org/debian bullseye/main amd64 libsasl2-2 amd64 2.1.27+dfsg-2.1+deb11u1 [106 kB]
Get:13 http://deb.debian.org/debian bullseye/main amd64 libldap-2.4-2 amd64 2.4.57+dfsg-3+deb11u1 [232 kB]
```

adduser guest

passwd guest -> set to welcome [Optional step]

New password

Retype new password:

Changing the username information for guest

Enter the new value , or press ENTER for the default

Enter full name []: [Optional step]

skip Room Number []: [Optional step]

Work Phone []: [Optional step]

Home Phone []: [Optional step]

Other []: [Optional step]

adduser guest sudo

```
root@19563e727871:/# adduser guest
Adding user `guest' ...
Adding new group `guest' (1000) ...
Adding new user `guest' (1000) with group `guest' ...
Creating home directory `/home/guest' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for guest
Enter the new value, or press ENTER for the default
    Full Name []: taukir attar
    Room Number []: 07
    Work Phone []: 9665136849
    Home Phone []: 9975937996
    Other []: na
```

```
root@19563e727871:/# adduser guest sudo
Adding user `guest' to group `sudo' ...
Adding user guest to group sudo
Done.
root@19563e727871:/# exit
exit
ubuntu@ip-172-31-16-29:/opt/siab$
```

docker stop siabdebian

docker commit -m "Debian with guest user" -a "[Author]" siabdebian debian-siab-base:v1

docker images

```

ubuntu@ip-172-31-16-29:/opt/siab$ docker stop siabdebian
siabdebian
ubuntu@ip-172-31-16-29:/opt/siab$
ubuntu@ip-172-31-16-29:/opt/siab$ docker commit -m "Debian with guest user" -a "[Author]" siabdebian debian-siab-base:v1
sha256:6e2e37edb45afdf3636eb09f3237a6c1a3d802e7ec2d81f53a879cc801ba204f
ubuntu@ip-172-31-16-29:/opt/siab$
ubuntu@ip-172-31-16-29:/opt/siab$ docker commit -m "Debian with guest user" -a "taukir" siabdebian debian-siab-base:v1
sha256:c320fcddd28aaa0afe06c34b1dcfde57b138ea3e0a2cee53b369677c48945206
ubuntu@ip-172-31-16-29:/opt/siab$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
debian-siab-base     v1                 c320fcddd28a       2 minutes ago      163MB
<none>              <none>            6e2e37edb45a       3 minutes ago      163MB
helloworld          latest            5245060c1136       2 hours ago        710MB
busybox             latest            8135583d97fe       2 days ago         4.86MB
debian              latest            34b4fa67dc04       2 weeks ago        124MB
openjdk             11                47a932d998b7       9 months ago       654MB
ubuntu@ip-172-31-16-29:/opt/siab$

```

10. Create a security group and open port 443 for the https protocol set to Anywhere . Attach the security group to the ec2 instance . To perform this, follow the below instructions .

✔ Security group (sg-065db8094c9b15294 | greatlearning) was created successfully
✕

▶ Details

EC2 > Security Groups > sg-065db8094c9b15294 - greatlearning

Actions ▼

sg-065db8094c9b15294 - greatlearning

Details

Security group name greatlearning	Security group ID sg-065db8094c9b15294	Description port 443	VPC ID vpc-0ca2ee4b6488076a7 🔗
Owner 059076428015	Inbound rules count 0 Permission entries	Outbound rules count 1 Permission entry	

docker build -f SIABDockerfile -t siab .

```
ubuntu@ip-172-31-16-29:/opt/siab$ docker build -f SIABDockerfile -t siab .
Sending build context to Docker daemon  3.584kB
Step 1/4 : FROM debian-siab-base:v1
--> c320fcddd28a
Step 2/4 : MAINTAINER Nirmallya Mukherjee @ Pointer-Next.com
--> Running in 74c215121d4c
Removing intermediate container 74c215121d4c
--> 125820e62d10
Step 3/4 : RUN apt install -y curl vim && apt install -y openssl shellinabox
--> Running in 43db01625d5d
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
curl is already the newest version (7.74.0-1.3+deb11u7).
The following additional packages will be installed:
  vim-common vim-runtime xxd
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-common vim-runtime xxd
0 upgraded, 4 newly installed, 0 to remove and 0 not upgraded.
Need to get 8138 kB of archives.
After this operation, 36.9 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bullseye/main amd64 xxd amd64 2:8.2.2434-3+deb11u1 [192 kB]
Get:2 http://deb.debian.org/debian bullseye/main amd64 vim-common all 2:8.2.2434-3+deb11u1 [226 kB]
Get:3 http://deb.debian.org/debian bullseye/main amd64 vim-runtime all 2:8.2.2434-3+deb11u1 [6226 kB]
Get:4 http://deb.debian.org/debian bullseye/main amd64 vim amd64 2:8.2.2434-3+deb11u1 [1494 kB]
```

docker run -d -p 443:4200 --name siab -i siab

```
ubuntu@ip-172-31-16-29:/opt/siab$ docker run -d -p 443:4200 --name siab -i siab
5a145a9b6a3358b54eb6541b479a2eed6394ace3a595c09d70779bd2a0c94828
ubuntu@ip-172-31-16-29:/opt/siab$ https://<public Ip of ec2 instance>
-bash: syntax error near unexpected token `newline'
ubuntu@ip-172-31-16-29:/opt/siab$ TOKEN=`curl -X PUT "http://169.254.169.254/latest/api/token" -H "X-aws-ec2-metadata-token-ttl-seconds=
> && curl -H "X-aws-ec2-metadata-token: $TOKEN" -v http://169.254.169.254/latest/meta-data/local-ipv4
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload    Total   Spent    Left   Speed
100    56  100    56    0     0  8000      0 --:--:-- --:--:-- --:--:--  8000
* Trying 169.254.169.254:80...
* TCP_NODELAY set
* Connected to 169.254.169.254 (169.254.169.254) port 80 (#0)
> GET /latest/meta-data/local-ipv4 HTTP/1.1
> Host: 169.254.169.254
> User-Agent: curl/7.68.0
> Accept: */*
> X-aws-ec2-metadata-token: AQAAAP6kIvGtMeN9dhwnkvDbwer_VpWDNSUUigiWJ0L1D203Cdt-5A==
>
* Mark bundle as not supporting multiuse
* HTTP 1.0, assume close after body
< HTTP/1.0 200 OK
< Accept-Ranges: bytes
< Content-Length: 12
< Content-Type: text/plain
< Date: Mon, 22 May 2023 14:17:32 GMT
< Last-Modified: Mon, 22 May 2023 13:44:28 GMT
< X-Aws-Ec2-Metadata-Token-Ttl-Seconds: 21600
< Connection: close
< Server: EC2ws
<
```

The instance will show in Shutting down status and a few moments later will show as Terminated

Terminated the ec2.

Wordle-TIO-v1.0

▼ Security group rule 2 (TCP, 80, 0.0.0.0/0) Remove

Type [Info](#)

Protocol [Info](#)

Port range [Info](#)

HTTP

TCP

80

Source type [Info](#)

Source [Info](#)

Description - optional [Info](#)

Anywhere

Q Add CIDR, prefix list or security

0.0.0.0/0 X

e.g. SSH for admin desktop

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Add security group rule

▼ Configure storage [Info](#)

Advanced

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...[read more](#)

ami-053b0d53c279acc90

Virtual server type (instance type)

t2.small

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

[Review commands](#)

sudo apt update

sudo apt install docker.io unzip

```
ubuntu@ip-172-31-92-242:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Fetched 226 kB in 1s (343 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
5 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-92-242:~$ sudo apt install docker.io unzip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
unzip is already the newest version (6.0-26ubuntu3.1).
docker.io is already the newest version (20.10.21-0ubuntu1~22.04.3).
0 upgraded, 0 newly installed, 0 to remove and 5 not upgraded.
ubuntu@ip-172-31-92-242:~$ sudo docker version
Client:
 Version:           20.10.21
 API version:       1.41
 Go version:        go1.18.1
 Git commit:        20.10.21-0ubuntu1~22.04.3
 Built:             Thu Apr 27 05:57:17 2023
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server:
 Engine:
```

sudo docker version

```
ubuntu@ip-172-31-92-242:~$ sudo docker version
Client:
 Version:           20.10.21
 API version:       1.41
 Go version:        go1.18.1
 Git commit:        20.10.21-0ubuntu1~22.04.3
 Built:             Thu Apr 27 05:57:17 2023
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server:
 Engine:
  Version:          20.10.21
  API version:      1.41 (minimum version 1.12)
  Go version:       go1.18.1
  Git commit:       20.10.21-0ubuntu1~22.04.3
  Built:            Thu Apr 27 05:37:25 2023
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          1.6.12-0ubuntu1~22.04.1
  GitCommit:
 runc:
  Version:          1.1.4-0ubuntu1~22.04.3
  GitCommit:
 docker-init:
  Version:          0.19.0
  GitCommit:
```

sudo usermod -a -G docker Ubuntu

exit

```
ubuntu@ip-172-31-92-242:~$ sudo usermod -a -G docker ubuntu
ubuntu@ip-172-31-92-242:~$
ubuntu@ip-172-31-92-242:~$
ubuntu@ip-172-31-92-242:~$ exit
logout
```

docker version

```
ubuntu@ip-172-31-92-242:~$ docker version
Client:
 Version:           20.10.21
 API version:       1.41
 Go version:        go1.18.1
 Git commit:        20.10.21-0ubuntu1~22.04.3
 Built:             Thu Apr 27 05:57:17 2023
 OS/Arch:           linux/amd64
 Context:           default
 Experimental:      true

Server:
 Engine:
  Version:          20.10.21
  API version:      1.41 (minimum version 1.12)
  Go version:       go1.18.1
  Git commit:       20.10.21-0ubuntu1~22.04.3
  Built:            Thu Apr 27 05:37:25 2023
  OS/Arch:          linux/amd64
  Experimental:     false
 containerd:
  Version:          1.6.12-0ubuntu1~22.04.1
  GitCommit:
 runc:
  Version:          1.1.4-0ubuntu1~22.04.3
  GitCommit:
 docker-init:
  Version:          0.19.0
  GitCommit:
```

sudo chown ubuntu:ubuntu -R /opt

cd /opt

docker images

wget <https://github.com/modem7/react-wordle/archive/refs/heads/master.zip>

unzip master.zip

```
ubuntu@ip-172-31-92-242:~$ sudo chown ubuntu:ubuntu -R /opt
ubuntu@ip-172-31-92-242:~$ cd /opt
ubuntu@ip-172-31-92-242:/opt$ docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ubuntu@ip-172-31-92-242:/opt$ wget https://github.com/modem7/react-wordle/archive/refs/heads/master.zip
--2023-05-22 15:27:23-- https://github.com/modem7/react-wordle/archive/refs/heads/master.zip
Resolving github.com (github.com)... 140.82.112.3
Connecting to github.com (github.com)|140.82.112.3|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/modem7/react-wordle/zip/refs/heads/master [following]
--2023-05-22 15:27:23-- https://codeload.github.com/modem7/react-wordle/zip/refs/heads/master
Resolving codeload.github.com (codeload.github.com)... 140.82.114.10
Connecting to codeload.github.com (codeload.github.com)|140.82.114.10|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/zip]
Saving to: 'master.zip'

master.zip [ <=>

2023-05-22 15:27:23 (6.65 MB/s) - 'master.zip' saved [489951]

ubuntu@ip-172-31-92-242:/opt$ unzip master.zip
Archive: master.zip
a396d19dcc31c1a18cdf5494aa0b4d3eaa15432
  creating: react-wordle-master/
  inflating: react-wordle-master/.dockerignore
  inflating: react-wordle-master/.drone.yml
  inflating: react-wordle-master/.env
  inflating: react-wordle-master/.gitattributes
  creating: react-wordle-master/.github/
```

```
cd react-wordle-master
```

```
docker build -t wordle:latest -f docker/Dockerfile .
```

```
Initiating. react-wordle-master/ebc0nng.json
ubuntu@ip-172-31-92-242:/opt$ cd react-wordle-master
ubuntu@ip-172-31-92-242:/opt/react-wordle-master$ docker build -t wordle:latest -f docker/Dockerfile .
Sending build context to Docker daemon  1.793MB
Step 1/16 : FROM node:18.12.1-alpine3.15 AS node_modules
18.12.1-alpine3.15: Pulling from library/node
9621f1afde84: Pull complete
b2ff27170c03: Pull complete
857f24243633: Pull complete
f5234ba59f34: Pull complete
Digest: sha256:cd3a7004267e419477bbfc50e0502df8607a0b9b4465092f6e2c2ce4092faa45
Status: Downloaded newer image for node:18.12.1-alpine3.15
--> e685ae170a55
Step 2/16 : WORKDIR /app
--> Running in e0f0eb773585
Removing intermediate container e0f0eb773585
--> 27219b398853
Step 3/16 : COPY package-lock.json package.json ./
--> 44e17d0e59f5
Step 4/16 : RUN npm install
--> Running in 72800146550d
npm WARN deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.
docker build -t wordle:latest -f docker/Dockerfile .

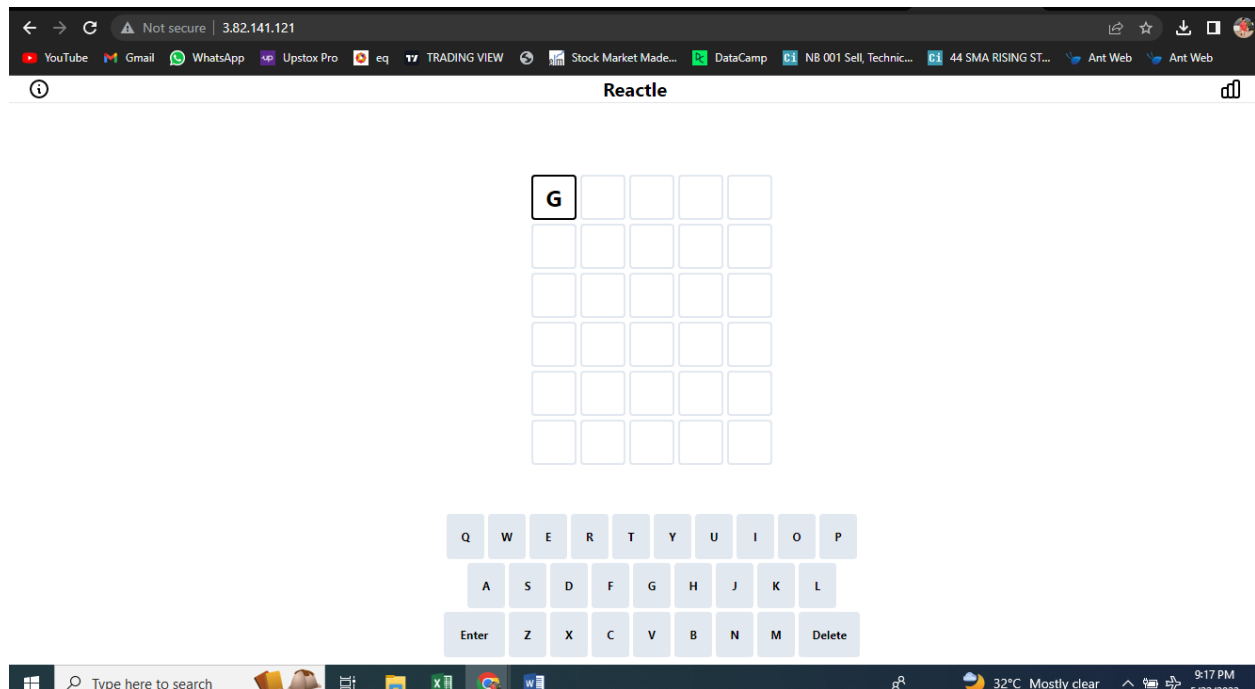
> game@0.1.0 prepare
> husky install

added 1483 packages, and audited 1484 packages in 56s
```

```
docker run -d -p 80:8080 --name wordle wordle:latest
```

```
Successfully built 240b1daae7a0
Successfully tagged wordle:latest
ubuntu@ip-172-31-92-242:/opt/react-wordle-master$ docker run -d -p 80:8080 --name wordle wordle:latest
9b74b58ee579426e170bde212bfb1e7358a5ca2c47651f6d65e77ca270f84d2
ubuntu@ip-172-31-92-242:/opt/react-wordle-master$
```


2. Navigate to the public IP address of the running instance on a new web browser tab to see the application using the following format



The instance will show in Shutting down status and a few moments later will show as Terminated
Terminated the ec2