

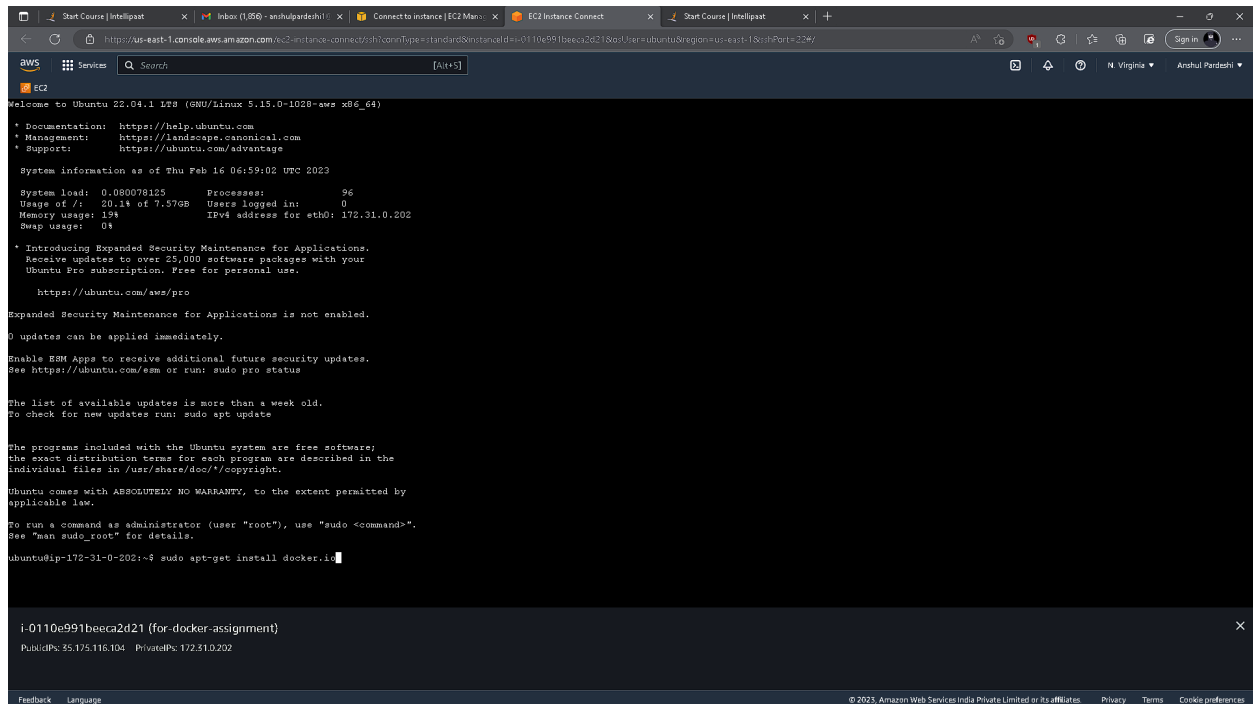
Docker –1

You have been asked to:

- Pull ubuntu image
- Run this container, and map port 80 on the local
- Install apache2 on this container
- Check if you are able to access the apache page on your browser

Let us install docker first. Use this command to install on ubuntu:

Sudo apt-get install docker.io -y



```
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1028-aws x86_64)

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

System information as of Thu Feb 16 06:59:02 UTC 2023

System load:  0.080078125      Processes:    96
Usage of /:   20.1% of 7.57GB   Users logged in: 0
Memory usage: 19%             IPv4 address for eth0: 172.31.0.202
Swap usage:   0%

+ Introducing Expanded Security Maintenance for Applications.
  Receive updates to over 25,000 software packages with your
  Ubuntu Pro subscription. Free for personal use.
  https://ubuntu.com/pro

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 list of available updates is more than a week old.
To check for new updates run: sudo apt update

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.

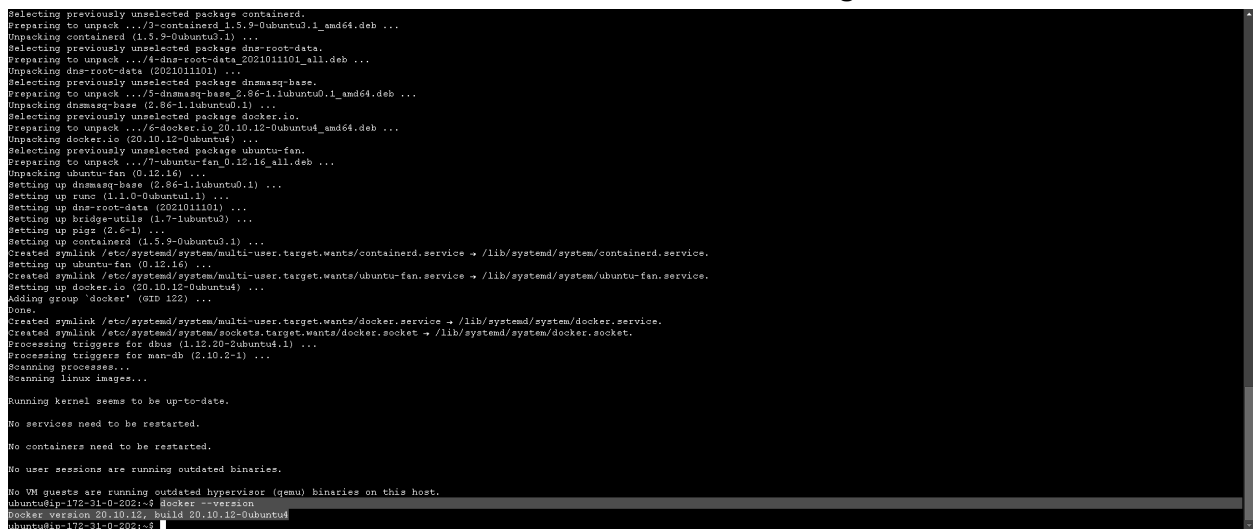
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

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

ubuntu@ip-172-31-0-202:~$ sudo apt-get install docker.io

+ 0110e991beeca2d21 (for docker-assignment)
PublicIP: 35.175.116.104 PrivateIP: 172.31.0.202
```

Check the version to confirm the installation using: **Docker - -version**



```
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.5.9-0ubuntu0.1_amd64.deb ...
Unpacking containerd (1.5.9-0ubuntu0.1) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../4-dnsmasq-base_2.86-1.1ubuntu0.1_all.deb ...
Unpacking dnsmasq-base (2.86-1.1ubuntu0.1) ...
Selecting previously unselected package dnsmasq.
Preparing to unpack .../5-dnsmasq_2.86-1.1ubuntu0.1_amd64.deb ...
Unpacking dnsmasq (2.86-1.1ubuntu0.1) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io_20.10.12-0ubuntu4_amd64.deb ...
Unpacking docker.io (20.10.12-0ubuntu4) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../7-ubuntu-fan_0.12-16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up dnsmasq-base (2.86-1.1ubuntu0.1) ...
Setting up runc (1.1.0-0ubuntu1) ...
Setting up dnsmasq (2.86-1.1ubuntu0.1) ...
Setting up bridge-utils (1.7-1ubuntu3) ...
Setting up pipx (2.6.4) ...
Setting up containerd (1.5.9-0ubuntu0.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (20.10.12-0ubuntu4) ...
Adding group 'docker' (GID 122) ...
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.
Processing triggers for dbus (1.12.20-2ubuntu1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

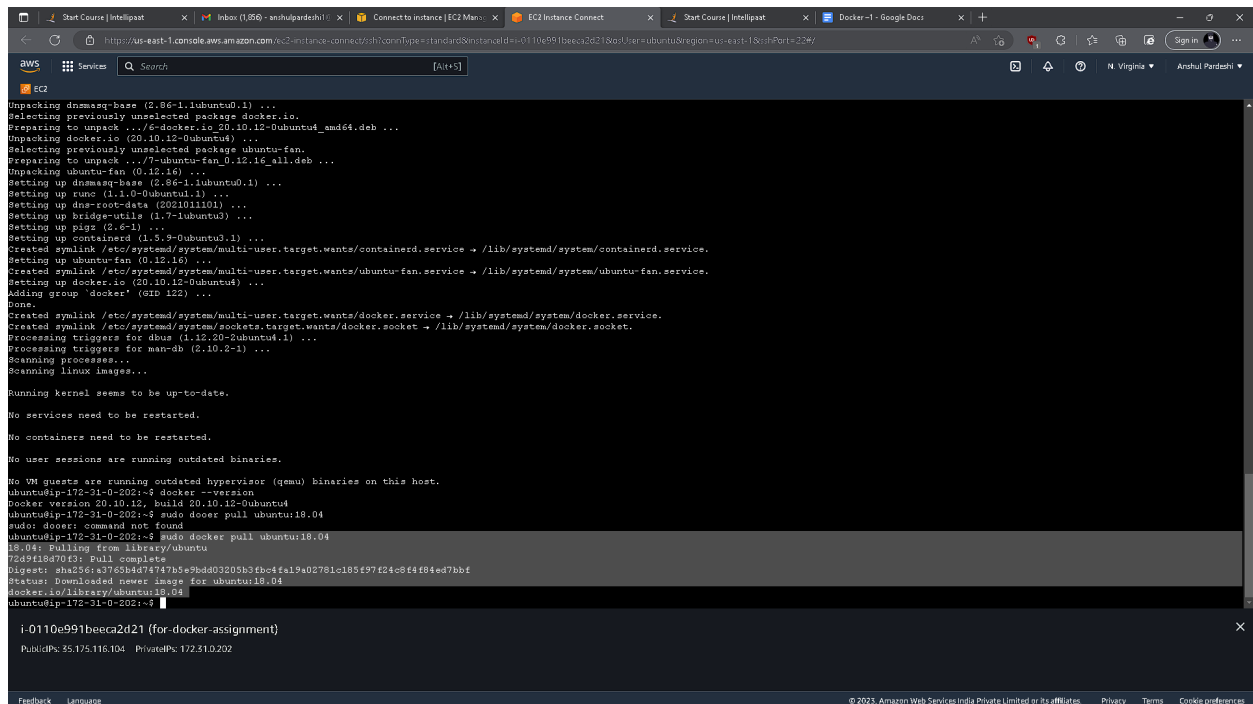
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-202:~$ docker --version
Docker version 20.10.12-0ubuntu4, build 20.10.12-0ubuntu4
ubuntu@ip-172-31-0-202:~$
```

Now pull the Ubuntu image. For this use command: `sudo docker pull ubuntu`

Using this it may pull any ubuntu image. If you want to pull specifically say 18.04 ubuntu image use this command: `sudo docker pull ubuntu:18.04`



```
Unpacking dnsmasq-base (2.86-1.1ubuntu0.1) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io_20.10.12-0ubuntu4_amd64.deb ...
Unpacking docker.io (20.10.12-0ubuntu4) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../7-ubuntu-fan_0.12.16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up dnsmasq-base (2.86-1.1ubuntu0.1) ...
Setting up runit (1.1.0-0ubuntu1.1) ...
Setting up dnsmasq (2.86-1.1ubuntu0.1) ...
Setting up bridge-utils (1.7-1ubuntu3) ...
Setting up pigz (2.6-1) ...
Setting up containerd (1.3.9-0ubuntu3.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (20.10.12-0ubuntu4) ...
Adding group 'docker' (GID 122) ...
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.
Processing triggers for dbus (1.12.20-2ubuntu1.1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

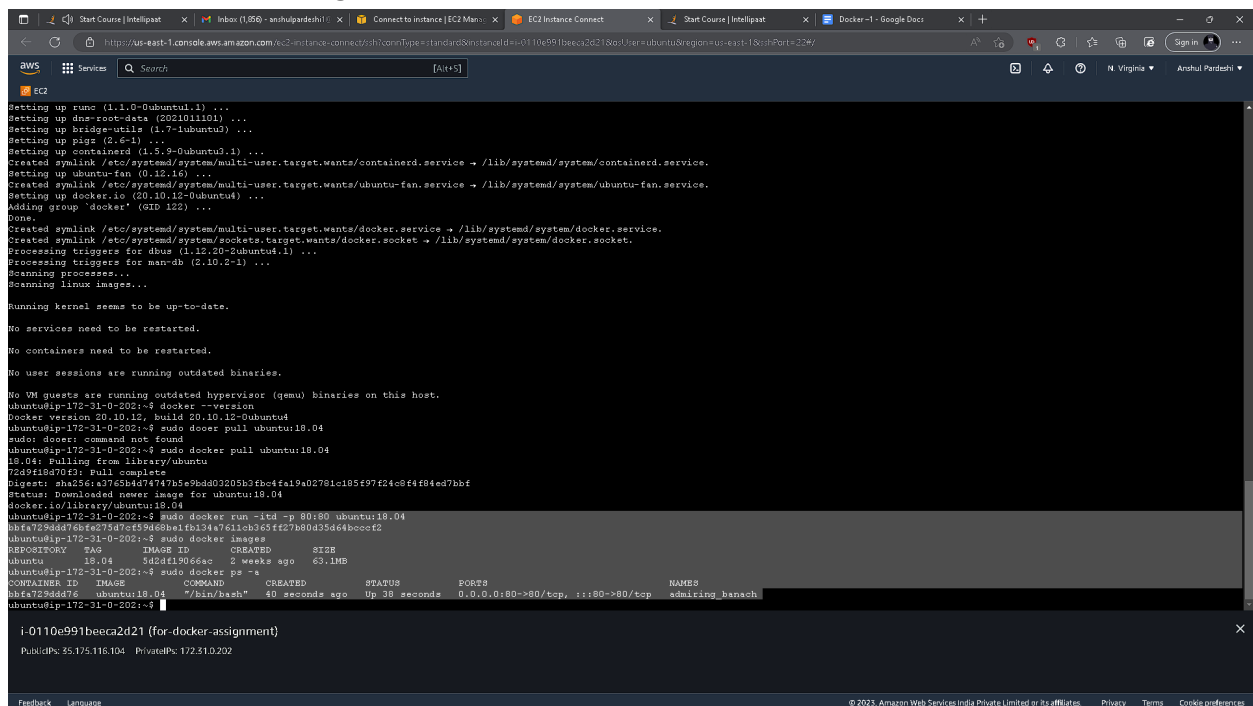
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-2021:~$ docker --version
Docker version 20.10.12, build 20.10.12-0ubuntu4
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
sudo: docker: command not found
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
72d9f18d7023: Pull complete
Digest: sha256:43765b4d74747b5e9bda03205b3fb04fal9a02781c185f97f24c8f4f84ed7bbf
Status: Downloaded newer image for ubuntu:18.04
docker.io/library/ubuntu:18.04
ubuntu@ip-172-31-0-2021:~$
```

Check pulled images using: `sudo docker images`

Now, let us run this image on port 80: `sudo docker run -itd -p 80:80 ubuntu:18.04`



```
Setting up runit (1.1.0-0ubuntu1.1) ...
Setting up dnsmasq-base (2.86-1.1ubuntu0.1) ...
Setting up bridge-utils (1.7-1ubuntu3) ...
Setting up pigz (2.6-1) ...
Setting up containerd (1.3.9-0ubuntu3.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (20.10.12-0ubuntu4) ...
Adding group 'docker' (GID 122) ...
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.
Processing triggers for dbus (1.12.20-2ubuntu1.1) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-2021:~$ docker --version
Docker version 20.10.12, build 20.10.12-0ubuntu4
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
sudo: docker: command not found
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
72d9f18d7023: Pull complete
Digest: sha256:43765b4d74747b5e9bda03205b3fb04fal9a02781c185f97f24c8f4f84ed7bbf
Status: Downloaded newer image for ubuntu:18.04
ubuntu@ip-172-31-0-2021:~$ sudo docker run -itd -p 80:80 ubuntu:18.04
b8fa729d6d76f6e75d7c759d68ba1fb134e7611cb365ff27b80d35d64b0e0cf2
ubuntu@ip-172-31-0-2021:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu               18.04              582d419066ac        2 weeks ago        63.1MB
ubuntu@ip-172-31-0-2021:~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
b8fa729d6d76       ubuntu:18.04       "/bin/bash"        40 seconds ago     Up 38 seconds      0.0.0.0:80->80/tcp, :::80->80/tcp   admiring_hanach
```

To install apache 2 in container we need to enter in container first,
To execute container use this command: `sudo docker exec -it <container id> bash`
Update container using `apt-get update`

```
Start Course | IntelliJ | x | Inbox (1,050 - anshulpardehi1) | x | Connect to instance [EC2 Man... | x | EC2 Instance Connect | x | Start Course | IntelliJ | x | Docker - 1 - Google Docs | x | + |
https://us-east-1.console.aws.amazon.com/ec2-instance-connect:sh?connType=standard&instanceId=i-0110e991beeca2d21&os=ubuntu/Region=us-east-1&shPort=22#/?
AWS Services [AHS]
EC2
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-0-2021:~$ docker --version
Docker version 20.10.12, build 20.10.15-ubuntu4
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
sudo: docker: command not found
ubuntu@ip-172-31-0-2021:~$ sudo docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
72d9f18470f3: Pull complete
Digest: sha256:c5765946f1747b5e9bda03205b3fb4ef49a02781c0185f97424c0cf4f8ed7bbf
Status: Downloaded newer image for ubuntu:18.04
docker.io/library/ubuntu:18.04
ubuntu@ip-172-31-0-2021:~$ sudo docker run -it --p 80:80 ubuntu:18.04
b6fa7294dd76bfe275d7c659d6b8be1fb134a7611cb365f427b80d35d64b0ccf2
ubuntu@ip-172-31-0-2021:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        18.04     5d2d419066ac   3 weeks ago   62.1MB
ubuntu@ip-172-31-0-2021:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS          NAMES
b6fa7294dd76   ubuntu:18.04   "/bin/bash"            40 seconds ago   Up 38 seconds   0.0.0.0:80->80/top, :::80->80/top   admiring_banach
ubuntu@ip-172-31-0-2021:~$ sudo docker exec -it b6fa7294dd76 bash
root@b6fa7294dd76:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:3 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [23.6 kB]
Get:4 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [3250 kB]
Get:5 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1583 kB]
Get:6 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [1426 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic InRelease [80.7 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [82.3 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1374 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.2 MB]
Get:12 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [196 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [30.8 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [3210 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [1466 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [2358 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [20.5 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [64.0 kB]
Fetched 27.0 MB in 4s (7747 kB/s)
Reading package lists... Done
root@b6fa7294dd76:/#

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```

Now install apache2 init: `apt-get install apache2`
Check if it is running using: `service apache2 status`
To start it: `service apache2 start`

```
Start Course | IntelliJ | x | Inbox (1,050 - anshulpardehi1) | x | Connect to instance [EC2 Man... | x | EC2 Instance Connect | x | Start Course | IntelliJ | x | Docker - 1 - Google Docs | x | + |
https://us-east-1.console.aws.amazon.com/ec2-instance-connect:sh?connType=standard&instanceId=i-0110e991beeca2d21&os=ubuntu/Region=us-east-1&shPort=22#/?
AWS Services [AHS]
EC2
Enabling module deflate.
Enabling module status.
Enabling module ssl.
Enabling module ssl.engine.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
invoke-rc.d: could not determine current runlevel
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for libc-bin (2.27-3ubuntu1.6) ...
root@b6fa7294dd76:/# service apache2 status
Usage: apache2 [-D name] [-d directory] [-f file]
               [-C "directive"] [-c "directive"]
               [-k start|restart|graceful|graceful-stop|stop]
               [-v] [-V] [-h] [-t] [-x] [-T] [-S] [-D]
Options:
  -D name           : define a name for use in "Define name" directives
  -d directory      : specify an alternate initial ServerRoot
  -f file           : specify an alternate ServerConfigFile
  -C "directive"    : process directive before reading config files
  -c "directive"    : process directive after reading config files
  -e level          : show startup errors of level (see LogLevel)
  -E file           : log startup errors to file
  -v               : show version number
  -V               : show compile settings
  -h               : list available command line options (this page)
  -l               : list compiled in modules
  -D               : list available configuration directives
  -t -D DUMP_VHOSTS : show parsed vhost settings
  -t -D DUMP_RUN_CFG : show parsed run settings
  -D               : a synonym for -t -D DUMP_VHOSTS -D DUMP_RUN_CFG
  -t -D DUMP_MODULES : show all loaded modules
  -M               : a synonym for -t -D DUMP_MODULES
  -t -D DUMP_INCLUDES : show all included configuration files
  -t               : run syntax check for config files
  -T               : start without DocumentRoot(s) check
  -X               : debug mode (only one worker, do not detach)
root@b6fa7294dd76:/# service apache2 status
apache2 is not running
root@b6fa7294dd76:/# service apache2 start
 * Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the "ServerName" directive globally to suppress this message
root@b6fa7294dd76:/#

i-0110e991beeca2d21 (for-docker-assignment)
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```

Copy paste the public ip of instance with port 80 to check if apache is running.

