

AIM- CONCEPT OF DOCKER HOW TO MAKE DOCKER IN UBUNTU

STEPS-

CREATE AN EC2 INSTANCE WHICH IS UBUNTU

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name
 [Add additional tags](#)

Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Summary

Number of instances [Info](#)

Software Image (AMI)
-

Virtual server type (instance type)
-

Firewall (security group)
-

Storage (volumes)
-

Free tier: In your first year

[Cancel](#) [Launch instance](#)

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name
 [Add additional tags](#)

Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Summary

Number of instances [Info](#)

Software Image (AMI)
Amazon Linux 2023 AMI 2023.4.2...read more
ami-05295b6e6c790593e

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year

[Cancel](#) [Launch instance](#)
[Review commands](#)

aws

Services

Search

[Alt+S]

Mumbai

Vicky Omprakash S

EC2

VPC

S3

AWS Auto Scaling

Simple Queue Service

Simple Notification Service

Key Management Service

CloudTrail

Amazon EventBridge

RDS

IAM

Lambda

DynamoDB

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

BIKKI21

Create new key pair

▼ Network settings

Info

VPC - required

Info

vpc-047a6142d07f8704a

(default)

172.31.0.0/16

Subnet

Info

subnet-0137d0bbdffc2e1

sub2

VPC: vpc-047a6142d07f8704a

Owner: 905418179079

Availability Zone: ap-south-1a

IP addresses available: 251

CIDR: 172.31.1.0/24

Create new subnet

Auto-assign public IP

Info

Enable

launch-wizard-2 created 2024-03-28T18:14:34.224Z

Inbound Security Group Rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

Remove

Type

Info

ssh

Protocol

Info

TCP

Port range

Info

22

Source type

Info

Anywhere

Source

Info

Add CIDR, prefix list or security

0.0.0.0/0

Description - optional

Info

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

► Advanced network configuration

▼ Summary

Number of instances

Info

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-007020fd9c84e18c7

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

► See how to connect to your instance

Cancel

Launch instance

Review commands

EC2

Instances

Launch an instance

Success

Successfully initiated launch of instance (i-002aaa04d48ba9887)

► Launch log

Next Steps

Q What would you like to do next with this instance, for example "create alarm" or "create backup"

< 1 2 3 4 5 6 >

Create billing and free tier usage alerts

To manage costs and avoid surprise bills, set up email notifications for billing and usage.

Connect to your instance

Once your instance is running, log into it from your local computer.

Connect an RDS database

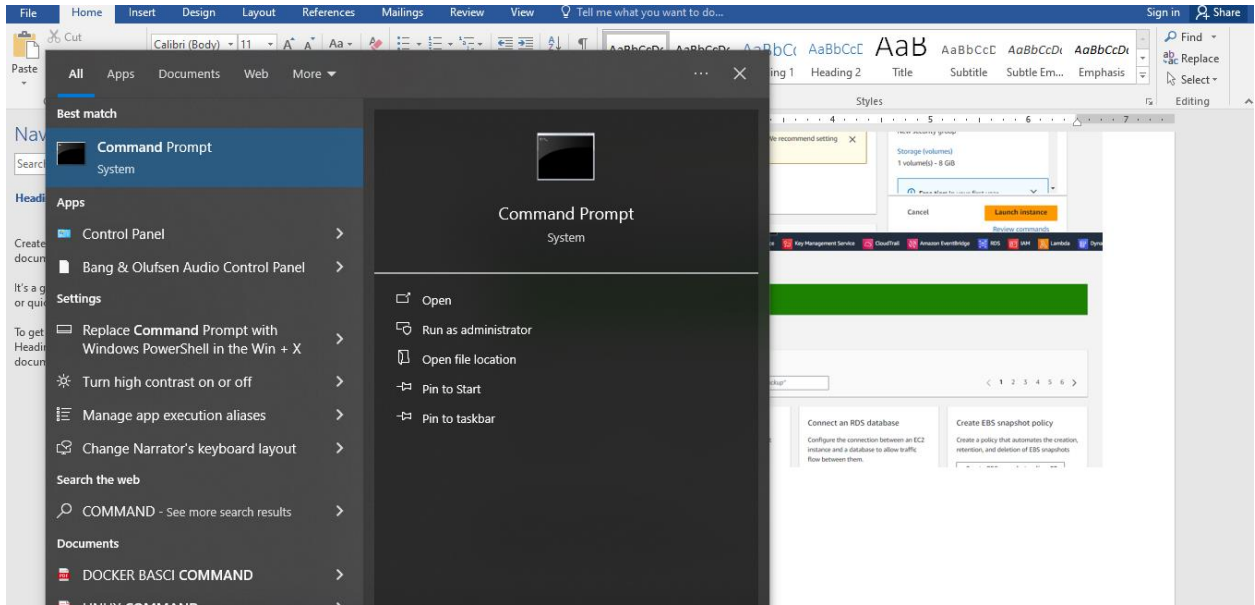
Configure the connection between an EC2 instance and a database to allow traffic flow between them.

Create EBS snapshot policy

Create a policy that automates the creation, retention, and deletion of EBS snapshots.

NOW CONNECT COMMAND PROMPT

AND ENTER INTO YOUR MACHINE THROUGH SSH



```

S C:\Users\sam>cd download
The system cannot find the path specified.
P C:\Users\sam>cd downloads
P C:\Users\sam\Downloads>ssh -i "BIKKI21.pem" ubuntu@15.206.124.26
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1014-aws x86_64)

S * Documentation:  https://help.ubuntu.com
B * Management:    https://landscape.canonical.com
  * Support:       https://ubuntu.com/pro

System information as of Thu Mar 28 18:30:24 UTC 2024

P System load:  0.0      Processes:           96

```

Real Estate Listings Content Calen

```

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.

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

ubuntu@ip-172-31-1-150:~$

```

Now install docker here

Cmd –

sudo apt update

sudo apt install apt-transport-https ca-certificates curl software-properties-common

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add –

sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu
\$(lsb_release -cs) stable"

sudo apt update

sudo apt install docker-ce

docker --version

```
Setting up pigz (2.6-1) ...
Setting up docker-ce-rootless-extras (5:26.0.0-1~ubuntu.22.04~jammy) ...
Setting up slirp4netns (1.0.1-2) ...
Setting up docker-ce (5:26.0.0-1~ubuntu.22.04~jammy) ...
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 man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.6) ...
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-172-31-1-150:~$ docker --version
Docker version 26.0.0, build 2ae903e
ubuntu@ip-172-31-1-150:~$
```

STEP 4—

NOW THE NEXT STEP IS TO CRTEATE IMAGE SO CMD –

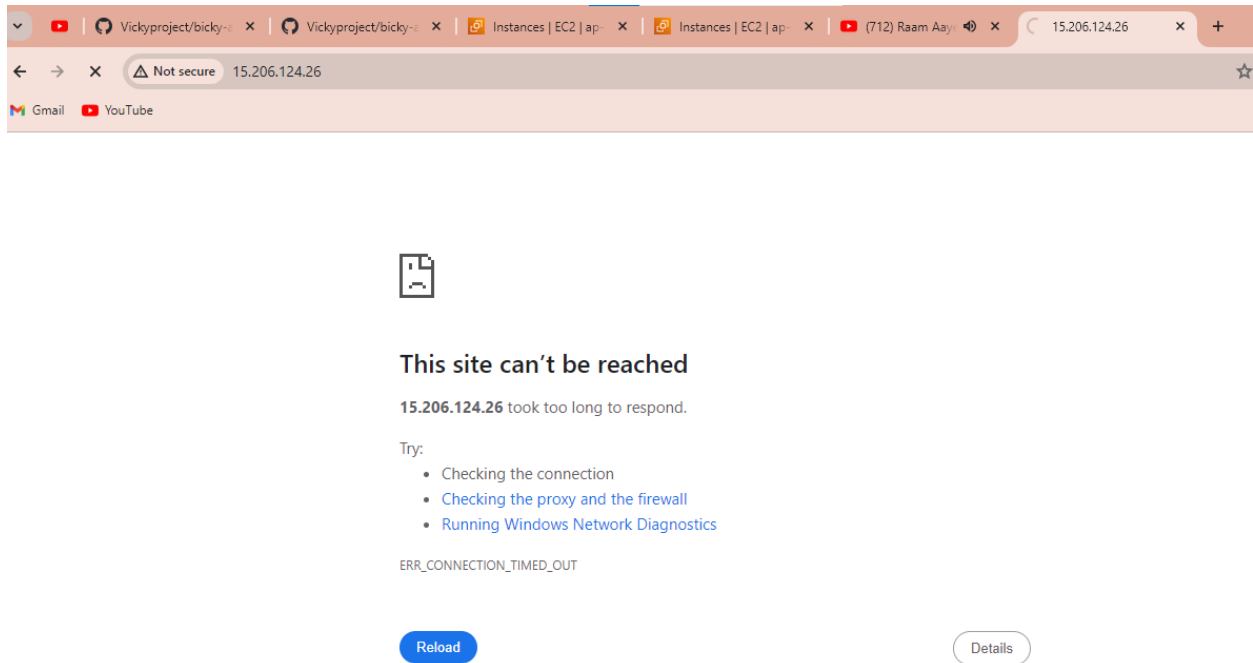
Docker run nginx

So here I decide to install nginx server

```
ubuntu@ip-172-31-1-150:~$ sudo docker run ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
bccd10f490ab: Pull complete
Digest: sha256:77906da86b60585ce12215807090eb327e7386c8fafb5402369e421f44eff17e
Status: Downloaded newer image for ubuntu:latest
ubuntu@ip-172-31-1-150:~$
```

Now suppose I want to acces these nginx server so for these copy the public ip of ec2

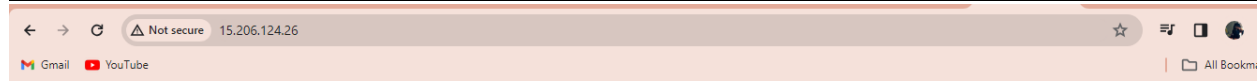
And check



Now I m getting NO RESPONSE SO FOR GETTING REPONSE FIRST WE NEED TO SET THE INBOUND RULE OF CONTAINER TO 80 HTTP

Docker run -p 80:80 (IMAGE NAME)

```
ubuntu@ip-172-31-1-150:~$ sudo docker run -p 80:80 nginx
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2024/03/28 19:05:16 [notice] 1#1: using the "epoll" event method
2024/03/28 19:05:16 [notice] 1#1: nginx/1.25.4
2024/03/28 19:05:16 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2024/03/28 19:05:16 [notice] 1#1: OS: Linux 6.5.0-1014-aws
2024/03/28 19:05:16 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2024/03/28 19:05:16 [notice] 1#1: start worker processes
2024/03/28 19:05:16 [notice] 1#1: start worker process 29
103.26.226.54 - - [28/Mar/2024:19:05:29 +0000] "GET / HTTP/1.1" 200 615 "-" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36" "-"
103.26.226.54 - - [28/Mar/2024:19:05:29 +0000] "GET /favicon.ico HTTP/1.1" 404 555 "http://15.206.124.26/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36" "-"
(KHTML, like Gecko) Chrome/123.0.0.0 Safari/537.36" "-"
```



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.


Thank you for using nginx.

Step 5- now create a image

```
Username: vs72385@gmail.com
Password:
WARNING! Your password will be stored unencrypted in /home/ubuntu/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ubuntu@ip-172-31-1-150:~$
```

GO TO DOCKER HUB AND PUSH THE IMAGE USING THEIR GIVEN COMMAND



ubuntu
Docker Official Image · 1B+ · 10K+

Ubuntu is a Debian-based Linux operating system based on free software.

docker pull ubuntu

Copy

Overview

Tags

Quick reference

- Maintained by: Canonical
- Where to get help: the Docker Community Slack, Server Fault, Unix & Linux, or Stack Overflow

Recent Tags

rolling

noble-20240225

noble

mantic-20240216

mantic

latest

jammy-20240227

jammy

focal-20240216

focal

About Official Images

```
ubuntu@ip-172-31-1-150:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:77906da86b60585ce12215807090eb327e7386c8fafb5402369e421f44eff1
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest
ubuntu@ip-172-31-1-150:~$
```

NOW THE NEXT STEP IS TO CREATE CONTAINER FROM IMAGE

CMD- docker run ubuntu

Step 7

NOW GO TO INSIDE THE IMAGE BY USING CMD –

Docker run –it image name path

Docker run –it Ubuntu /bin/bash

```
root@ip-172-31-1-150:/home/ubuntu# docker run ubuntu
root@ip-172-31-1-150:/home/ubuntu# docker container ls -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS              PORTS          NAMES
1dbf790a3c92   ubuntu    "/bin/bash"             About a minute ago    Exited (0) About a minute ago    sad_gates
34456b6c78c4   ubuntu    "/bin/bash"             3 minutes ago        Exited (0) 3 minutes ago        stoic_colden
ace2a4fb21e7   ubuntu    "/bin/bash"             9 minutes ago        Exited (127) 7 minutes ago        suspicious_bart
44836344f906   ubuntu    "/bin/bash"             17 minutes ago       Exited (0) 17 minutes ago        jovial_ptolemy
6cd6e36e4ec4   ubuntu    "/bin/bash"             18 minutes ago       Exited (0) 18 minutes ago        infallible_paste
aa6b2eb8ba23   nginx    "/docker-entrypoint. ..." 42 minutes ago       Exited (0) 35 minutes ago        admiring_shtern
eaa65c7e903a   nginx    "/docker-entrypoint. ..." 46 minutes ago       Exited (0) 43 minutes ago        lucid_johnson
6392071fe042   ubuntu    "/bin/bash"             50 minutes ago       Exited (0) 50 minutes ago        confident_johnson
3c1286a94db8   ubuntu    "/bin/bash"             53 minutes ago       Exited (0) 53 minutes ago        relaxed_liskov
797c7eed8017   ubuntu    "/bin/bash"             56 minutes ago       Exited (0) 56 minutes ago        trusting_woznial
0fee362cd29f   ubuntu    "/bin/bash"             57 minutes ago       Exited (0) 57 minutes ago        blissful_beaver
d661112dcf6a   ubuntu    "/bin/bash"             58 minutes ago       Exited (0) 58 minutes ago        upbeat_pasteur
a0dcd003c242   ubuntu    "/bin/bash"             About an hour ago     Exited (0) About an hour ago        ecstatic_austin
root@ip-172-31-1-150:/home/ubuntu# docker run -it ubuntu /bin/bash
root@f8181420aeed:/# apt update
```


NOW UPDATE YOUR FILE INSIDE IMNAGE SINCE YOU ENTER INTO YOUR IMAGE

```
root@f8181420aeed:/# apt update
Get:1 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2067 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:8 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [61.2 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2104 kB]
Get:12 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1357 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [44.6 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1920 kB]
Get:15 http://archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [80.9 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [1081 kB]
```

```
to packages can be upgraded: run 'apt list --upgradable' to see them.
root@f8181420aeed:/# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libbrotli1 libcurl4 libexpat1
  libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc libmagic1 libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsas12-2
  libsas12-modules libsas12-modules-db libsqlite3-0 libssh-4 libxml2 mailcap media-types mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert
  xz-utils
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser ufw bzip2-doc gdbm-l10n libsas12-modules-gssapi-mit | libsas12-modules-gssapi-heimdal
  libsas12-modules-ldap libsas12-modules-otp libsas12-modules-sql perl-doc libterm-readline-gnu-perl | libterm-readline-perl-perl make libtap-harness-archive-perl
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 ca-certificates file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libbrotli1 libcurl4 libexpat1
  libgdbm-compat4 libgdbm6 libicu70 libjansson4 libldap-2.5-0 libldap-common liblua5.3-0 libmagic-mgc libmagic1 libnghttp2-14 libperl5.34 libpsl5 librtmp1 libsas12-2
  libsas12-modules libsas12-modules-db libsqlite3-0 libssh-4 libxml2 mailcap media-types mime-support netbase openssl perl perl-modules-5.34 publicsuffix ssl-cert
  xz-utils
0 upgraded, 37 newly installed, 0 to remove and 0 not upgraded.
Need to get 27.5 MB of archives.
After this operation, 110 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

Now go to index.html and write hello world in these image

```
root@f8181420aeed:/# cd /var/www/html
root@f8181420aeed:/var/www/html# echo hello vicky > index.html
root@f8181420aeed:/var/www/html# cat index.html
hello vicky
root@f8181420aeed:/var/www/html#
```

Now login to your ec2 instance and check the container which we had made in command prompt

```

Last login: Thu Mar 28 18:30:24 2024 from 103.26.226.54
ubuntu@ip-172-31-1-150:~$ sudo su
root@ip-172-31-1-150:/home/ubuntu# apt update
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 https://download.docker.com/linux/ubuntu jammy InRelease
Hit:5 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
35 packages can be upgraded. Run 'apt list --upgradable' to see them.
W: https://download.docker.com/linux/ubuntu/dists/jammy/InRelease: Key is stored in legacy trusted.gpg
ction in apt-key(8) for details.
root@ip-172-31-1-150:/home/ubuntu#

```

i-002aaa04d48ba9887 (UBUNTU VICKYa)

RUN COMMAND DOCKER CONTAINER LS -A

```

root@ip-172-31-1-150:/home/ubuntu# docker container ls -a
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS
f8181420aeed   ubuntu    "/bin/bash"             16 minutes ago Up 16 minutes
l8dbf790a3c92   ubuntu    "/bin/bash"             19 minutes ago Exited (0) 19 minutes ago
34456b6c78c4   ubuntu    "/bin/bash"             22 minutes ago Exited (0) 22 minutes ago
ace2a4fb21e7   ubuntu    "/bin/bash"             28 minutes ago Exited (127) 26 minutes ago
44836344f906   ubuntu    "/bin/bash"             36 minutes ago Exited (0) 36 minutes ago
6cd6e36e4ec4   ubuntu    "/bin/bash"             36 minutes ago Exited (0) 36 minutes ago
aa6b2eb8ba23   nginx     "/docker-entrypoint. ...." About an hour ago Exited (0) 54 minutes ago
eaa65c7e903a   nginx     "/docker-entrypoint. ...." About an hour ago Exited (0) About an hour ago
6392071fe042   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
8c1286a94db8   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
797c7eed8017   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
0fee362cd29f   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
d661112dcf6a   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
a0dcd003c242   ubuntu    "/bin/bash"             About an hour ago Exited (0) About an hour ago
root@ip-172-31-1-150:/home/ubuntu#

```

i-002aaa04d48ba9887 (UBUNTU VICKYa)

Now again go to cmd run docker container inspect id which is up mean runing so f818

These could be done in command prompt only

COPY IP AND GO BACK TO CMD AND TYPE SERICE APACHE2 START

AND LASDT GO TO EC2 INSTANXCE AND WRITE

CURL [HTTP:// "IP ADDRESS"](http://IP ADDRESS)

```
    "Networks": {
      "bridge": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": null,
        "MacAddress": "02:42:ac:11:00:02",
        "NetworkID": "f6bd6621705802aa7366e910851f751c4daad",
        "EndpointID": "a7c18434fff923c947a7e1d6ef80f160d611",
        "Gateway": "172.17.0.1",
        "IPAddress": "172.17.0.2",
        "IPPrefixLen": 16,
        "IPv6Gateway": "",
        "GlobalIPv6Address": "",
        "GlobalIPv6PrefixLen": 0,
        "DriverOpts": null,
        "DNSNames": null
      }
    }
  }
}
]
root@ip-172-31-1-150:/home/ubuntu#
```

i-002aaa04d48ba9887 (UBUNTU VICKY)

Copy the ip address now