AIM- CONCEPT OF DOCKER HOW TO MAKE DOCKER IN UBUNTU

STEPS-

CREATE AN EC2 INSTANCE WHICH IS UBUNTU

aws | Services | Q 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 | Dyn

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-0137d0bbddffcb2e1   sub2
VPC: vpc-047a6142d07f8704a   Owner: 905418179079   ↻ Create new subnet ↗
Availability Zone: ap-south-1a   IP addresses available: 251   CIDR: 172.31.1.0/24

Auto-assign public IP   Info

Enable ▾

▼ 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

---

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

Description - *optional*   Info
e.g. SSH for admin desktop

0.0.0.0/0 ✕

⚠ 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)
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Cancel   [Launch instance]
Review commands

EC2 > Instances > Launch an instance

✓ **Success**
Successfully initiated launch of instance (i-002aaa04d48ba9887)

▶ Launch log

Next Steps

🔍 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

Connect to your instance

Once your instance is running, log into it from your local computer.
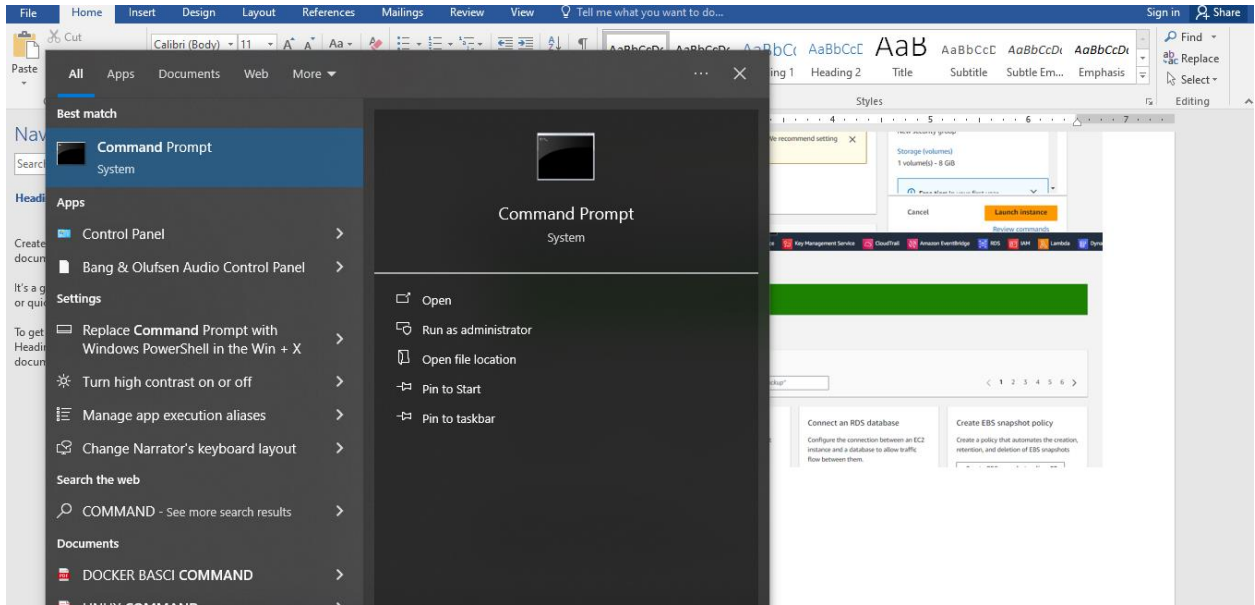
Connect an RDS database

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
  * Management:     https://landscape.canonical.com
B|* 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   < 1/2 >

```
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-172-31-1-150:~$ _
```

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

```
N: Setting up pigz (2.6-1) ...
   Setting up docker-ce-rootless-extras (5:26.0.0-1~ubuntu.22.04~jammy) ...
Se Setting up slirp4netns (1.0.1-2) ...
   Setting up docker-ce (5:26.0.0-1~ubuntu.22.04~jammy) ...
He Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /lib/systemd/system/docker.s
   Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.socke
   Processing triggers for man-db (2.10.2-1) ...
Cre Processing triggers for libc-bin (2.35-0ubuntu3.6) ...
doc Scanning processes...
   Scanning linux images...
It's
or c Running kernel seems to be up-to-date.

To g No services need to be restarted.
Hea
doc 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—

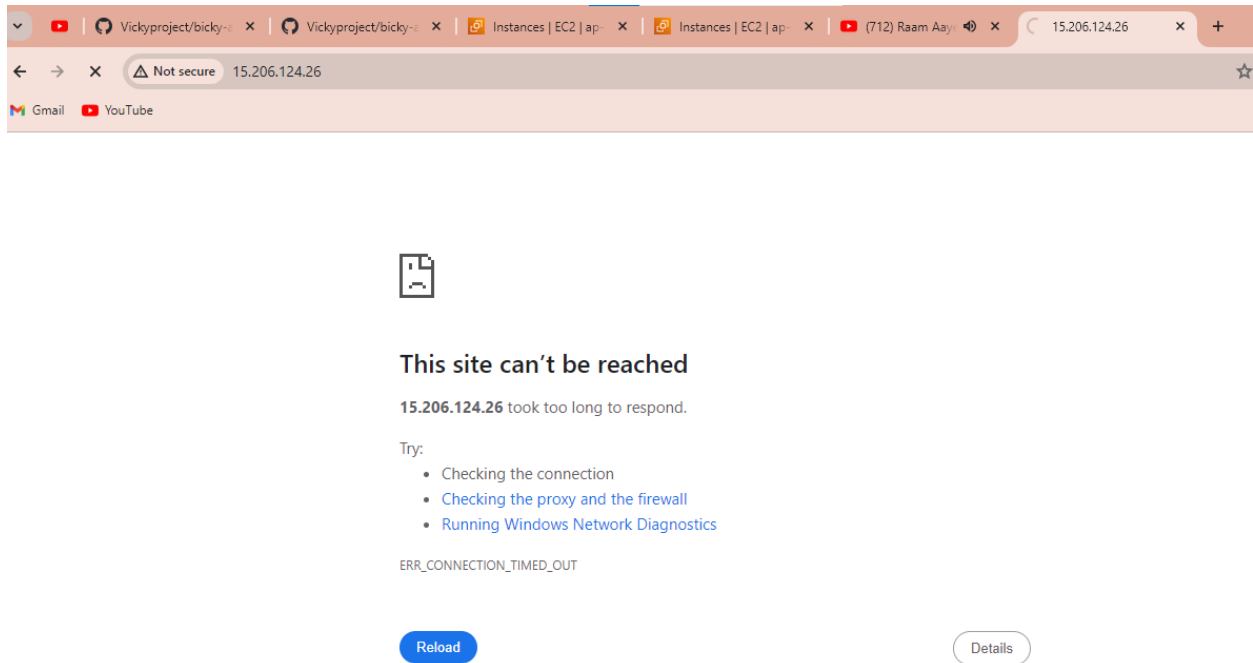NOW THE NEXT STEP IS TO CRTEATE IMAGE SO CMD –

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:~$ _
```

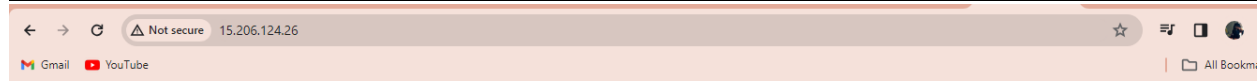Now suppose I want to acces these nginx server so for these copy the public ip of ec2

And check

This site can't be reached

15.206.124.26 took too long to respond.

Try:
- Checking the connection
- Checking the proxy and the firewall
- Running Windows Network Diagnostics

ERR_CONNECTION_TIMED_OUT

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)

Step 5- now create a image

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

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

Dcoker run –it Ubuntu /bin/bash

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]
```

```
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 libsasl2-2
  libsasl2-modules libsasl2-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 libsasl2-modules-gssapi-mit | libsasl2-modules-gssapi-heimdal
  libsasl2-modules-ldap libsasl2-modules-otp libsasl2-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 libsasl2-2
```

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

```
ction in apt key(o) for details.
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
1dbf790a3c92    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"

```
            "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 VICKYa)

Copy the ip address now