D Y PATIL INTERNATIONAL UNIVERSITY
AKURDI PUNE

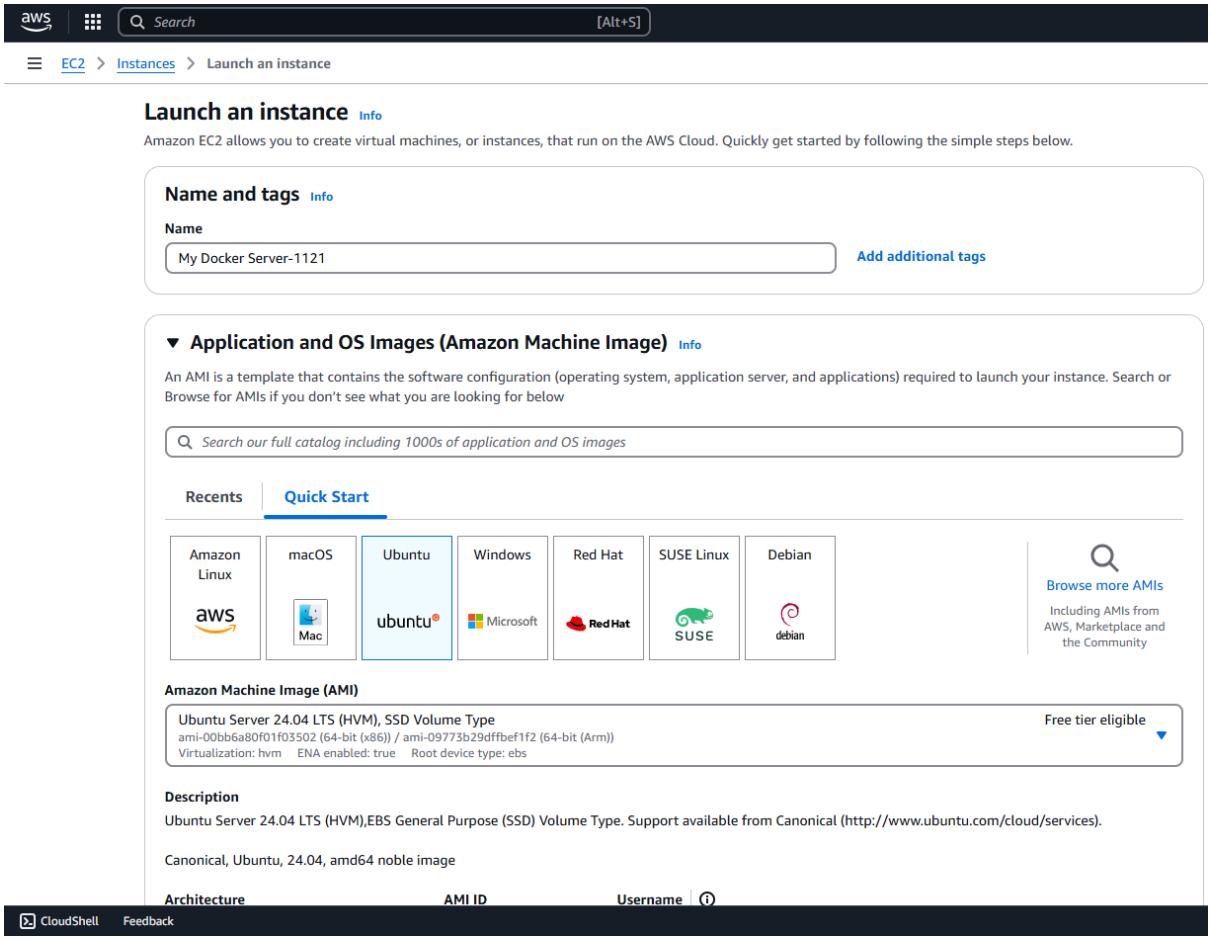
School of Computer Science, Engineering and Applications(SCSEA)
B.C.A. TY (CCSA)
Subject : Containers and Orchestration (P)

Name of the Student: **Prakhar Anil Sharma** **PRN: 20220801121**

Title of Practical : **Deploying and Securing Docker Community Edition on AWS Linux EC2 Instance**

Step 1] Create an EC2 instance :

- Name your instance- My Docker Server-1121 .
- Select AMI- Ubuntu .



- Select instance type– t2.small .
- Create a key pair- My Key 007 .

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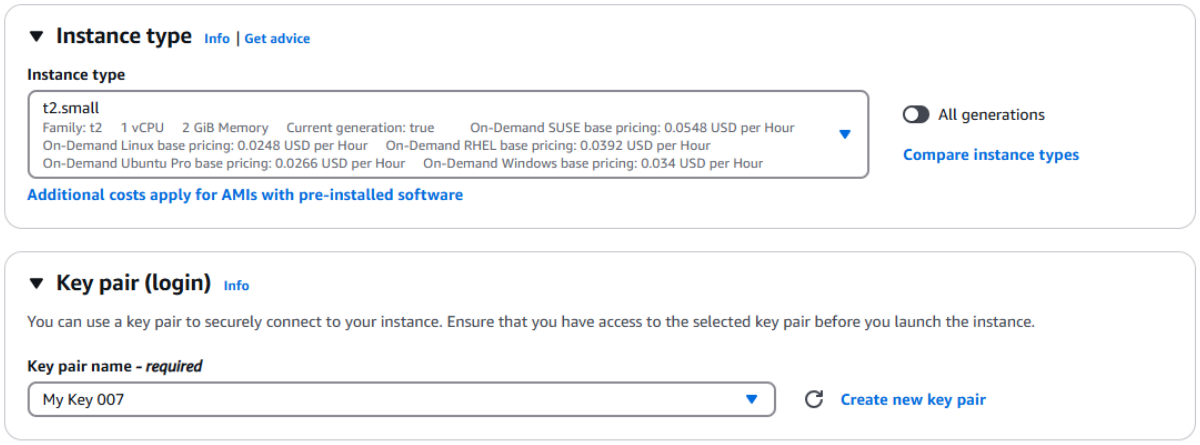

- Click on launch instance .

Step 2] Connect instance :

- Select the instance and click on connect .

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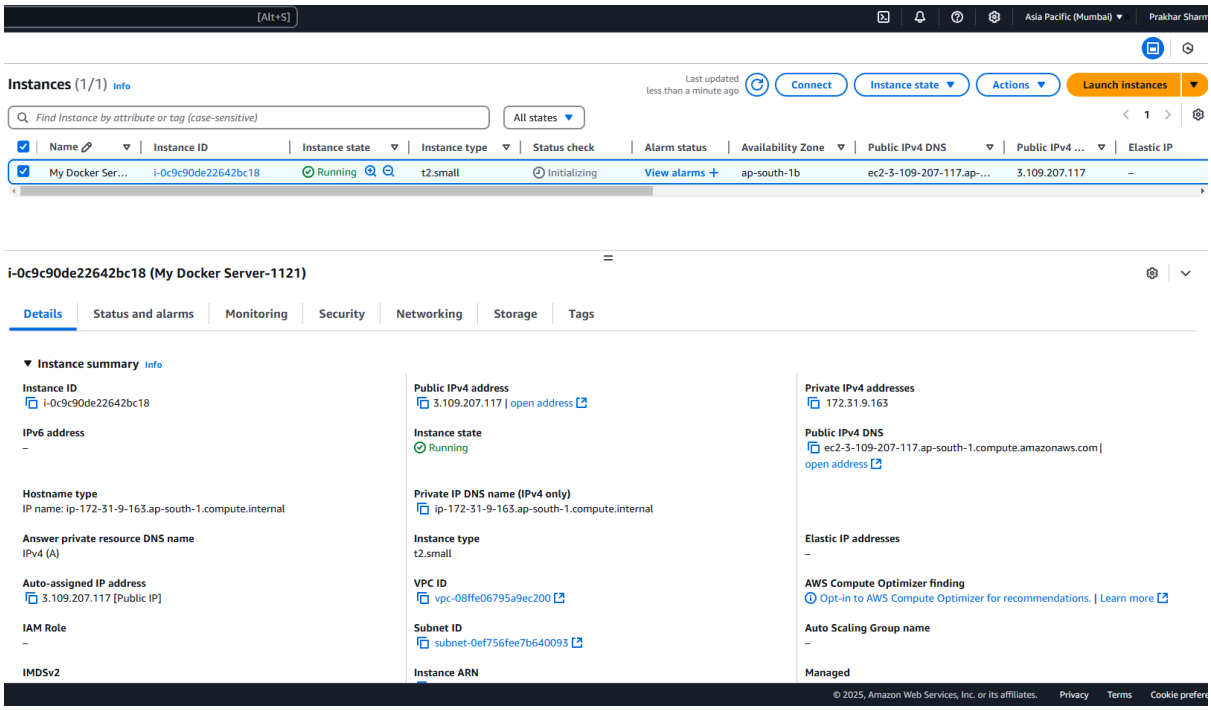
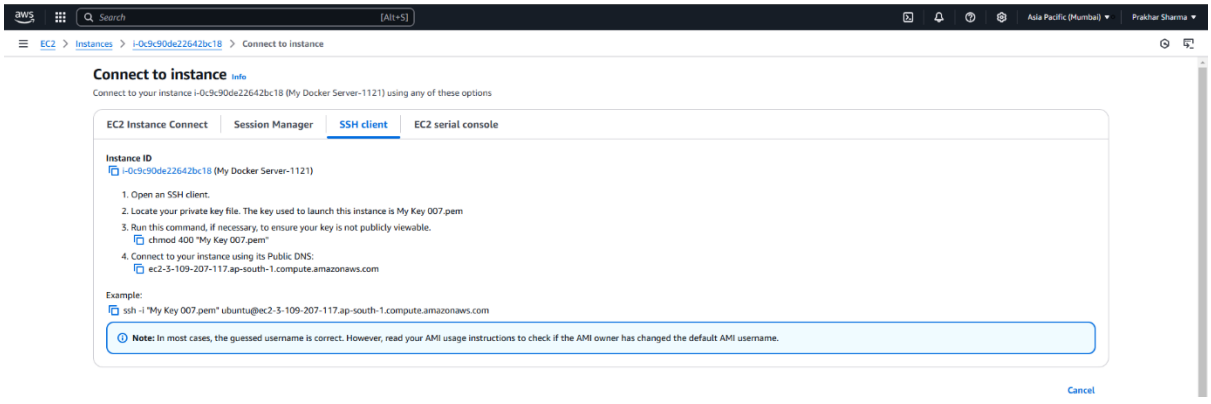


- Connect the instance using SSH .
- Copy the example .



Step 3] Installing Docker :

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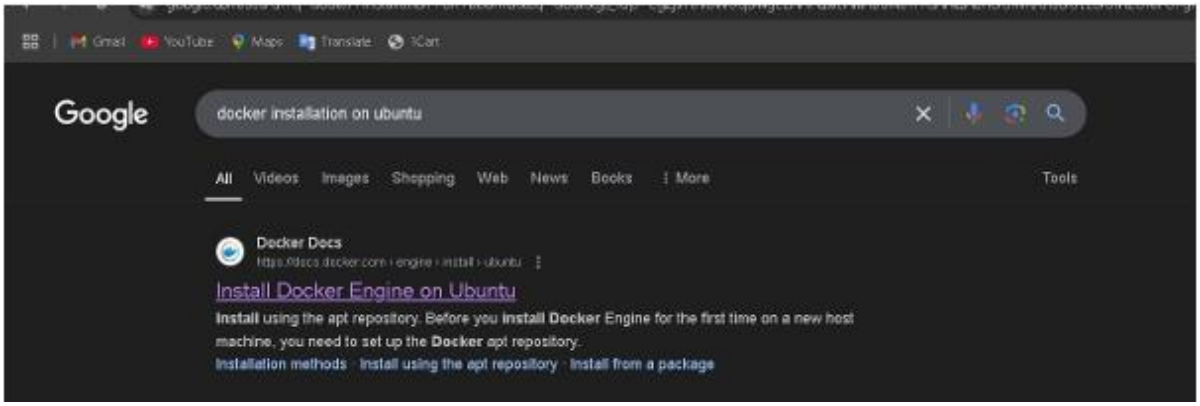
- Search docker installation on ubuntu on google .
- Click on the first link .



Step 4] Open the Command Prompt :

- Go to the destination folder where the key is downloaded, using cd command following the destination folder name

Then,

Enter the following commands:

i) sudo-i .

ii)sudo apt-get update-y .

Name of the Student: Prakhar Anil Sharma **PRN:** 20220801121

Title of Practical : Deploying and Securing Docker Community Edition on AWS Linux EC2 Instance

```
root@ip-172-31-9-163: ~

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-172-31-9-163:~$
ubuntu@ip-172-31-9-163:~$ sudo -i
root@ip-172-31-9-163:~# sudo apt-get update -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
```

iii)sudo apt-get install ca-certificates curl-y .

iv)sudo install-m 0755-d /etc/apt/keyrings .

v)sudo curl-fsSL https://download.docker.com/linux/ubuntu/gpg-o /etc/apt/keyrings/docker.asc .

vi)sudo chmod a+r /etc/apt/keyrings/docker.asc .

vii)echo \ "deb [arch=$(dpkg--print-architecture) signed by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu \ $(. /etc/os-release &&

echo "$VERSION_CODENAME") stable" | \ sudo tee /etc/apt/sources.list.d/docker.list > /dev/null .

viii)sudo apt-get install docker-ce docker-ce-cli containerd.io docker buildx-plugin docker-compose-plugin .

```
root@ip-172-31-9-163:~
Get:45 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [111 kB]
Get:46 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:47 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [12.4 kB]
Get:48 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [2940 B]
Get:49 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:50 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [356 B]
Fetched 31.9 MB in 10s (3065 kB/s)
Reading package lists... Done
root@ip-172-31-9-163:~# sudo apt-get install ca-certificates curl -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
curl is already the newest version (8.5.0-2ubuntu10.6).
curl set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 27 not upgraded.
root@ip-172-31-9-163:~# sudo install -m 0755 -d /etc/apt/keyrings
root@ip-172-31-9-163:~# sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docke
r.asc
root@ip-172-31-9-163:~# sudo chmod a+r /etc/apt/keyrings/docker.asc
root@ip-172-31-9-163:~# echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/l
inux/ubuntu \
  $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
root@ip-172-31-9-163:~# sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-
compose-plugin
```

Step 4] Verify the docker version :

To verify the docker version enter the following command:

- docker-v or docker —version

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```
Setting up docker-ce-cli (5:27.5.1-1~ubuntu.24.04~noble) ...
Setting up libslirp0:amd64 (4.7.0-1ubuntu3) ...
Setting up pigz (2.8-1) ...
Setting up docker-ce-rootless-extras (5:27.5.1-1~ubuntu.24.04~noble) ...
Setting up slirp4netns (1.2.1-1build2) ...
Setting up docker-ce (5:27.5.1-1~ubuntu.24.04~noble) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.ser
vice.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.3) ...
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.
root@ip-172-31-9-163:~# docker -v
Docker version 27.5.1, build 9f9e405
root@ip-172-31-9-163:~# docker --version
Docker version 27.5.1, build 9f9e405
root@ip-172-31-9-163:~#
```