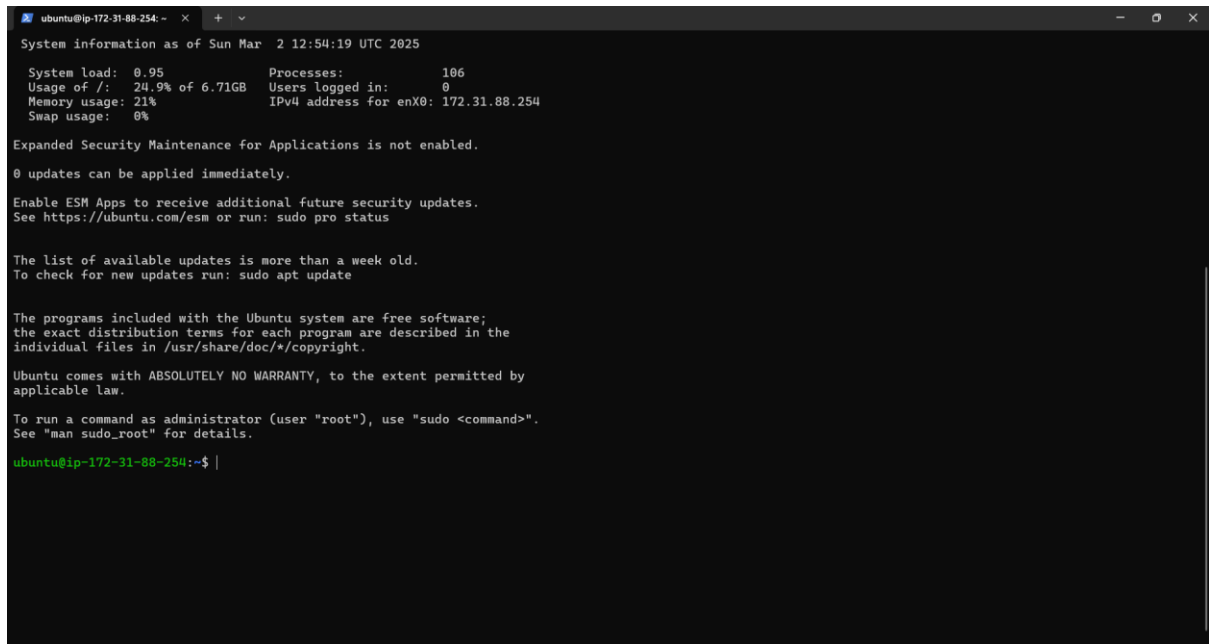
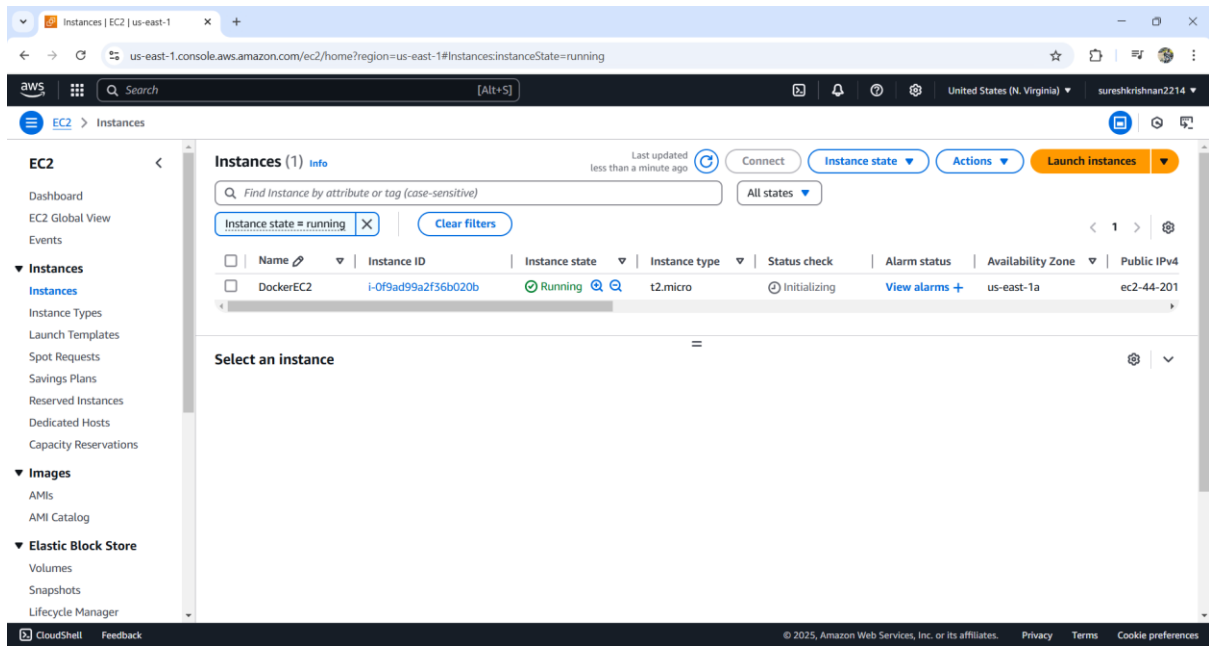


Docker Task -2

Creating EC2 Instance:



Installing Docker:

```
ubuntu@ip-172-31-88-254: ~$ sudo apt-get install docker.io
Selecting previously unselected package dns-root-data.
Preparing to unpack .../4-dns-root-data.2024071801-ubuntu0.24.04.1_all.deb ...
Unpacking dns-root-data (2024071801-ubuntu0.24.04.1) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../5-dnsmasq-base.2.90-2build2_amd64.deb ...
Unpacking dnsmasq-base (2.90-2build2) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io.26.1.3-0ubuntu1-24.04.1_amd64.deb ...
Unpacking docker.io (26.1.3-0ubuntu1-24.04.1) ...
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 (2.90-2build2) ...
Setting up runc (1.1.12-0ubuntu3.1) ...
Setting up dns-root-data (2024071801-ubuntu0.24.04.1) ...
Setting up bridge-utils (1.7.1-1ubuntu2) ...
Setting up pigz (2.8-1) ...
Setting up containerd (1.7.24-0ubuntu1-24.04.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /usr/lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /usr/lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (26.1.3-0ubuntu1-24.04.1) ...
info: Selecting GID from range 100 to 999 ...
info: Adding group 'docker' (GID 113) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.
Processing triggers for dbus (1.14.10-4ubuntu4.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
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No user sessions are running outdated binaries.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-172-31-88-254:~$
```

```
ubuntu@ip-172-31-88-254: ~$ sudo apt-get install docker.io
Unpacking dns-root-data (2024071801-ubuntu0.24.04.1) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../5-dnsmasq-base.2.90-2build2_amd64.deb ...
Unpacking dnsmasq-base (2.90-2build2) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io.26.1.3-0ubuntu1-24.04.1_amd64.deb ...
Unpacking docker.io (26.1.3-0ubuntu1-24.04.1) ...
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 (2.90-2build2) ...
Setting up runc (1.1.12-0ubuntu3.1) ...
Setting up dns-root-data (2024071801-ubuntu0.24.04.1) ...
Setting up bridge-utils (1.7.1-1ubuntu2) ...
Setting up pigz (2.8-1) ...
Setting up containerd (1.7.24-0ubuntu1-24.04.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/containerd.service → /usr/lib/systemd/system/containerd.service.
Setting up ubuntu-fan (0.12.16) ...
Created symlink /etc/systemd/system/multi-user.target.wants/ubuntu-fan.service → /usr/lib/systemd/system/ubuntu-fan.service.
Setting up docker.io (26.1.3-0ubuntu1-24.04.1) ...
info: Selecting GID from range 100 to 999 ...
info: Adding group 'docker' (GID 113) ...
Created symlink /etc/systemd/system/multi-user.target.wants/docker.service → /usr/lib/systemd/system/docker.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /usr/lib/systemd/system/docker.socket.
Processing triggers for dbus (1.14.10-4ubuntu4.1) ...
Processing triggers for man-db (2.12.0-4build2) ...
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-172-31-88-254:~$ sudo systemctl start docker
ubuntu@ip-172-31-88-254:~$ sudo systemctl enable docker
ubuntu@ip-172-31-88-254:~$
```

Installing Docker Compose File:

```
ubuntu@ip-172-31-88-254: ~$ sudo apt-get install docker-compose
Unpacking python3-docker (5.0.3-1ubuntu1.1) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../2-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../3-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../4-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../5-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../6-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Selecting previously unselected package python3-dockerpty.
Preparing to unpack .../7-python3-dockerpty_0.4.1-5_all.deb ...
Unpacking python3-dockerpty (0.4.1-5) ...
Setting up python3-docker (5.0.3-1ubuntu1.1) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Setting up python3-dockerpty (0.4.1-5) ...
Processing triggers for man-db (2.12.0-4build2) ...
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-172-31-88-254:~$
```

```
ubuntu@ip-172-31-88-254:~$ docker --version
Docker version 26.1.3, build 26.1.3-0ubuntu1-24.04.1
ubuntu@ip-172-31-88-254:~$ docker-compose --version
Docker Compose version v2.33.1
ubuntu@ip-172-31-88-254:~$
```

Creating Project:

```
ubuntu@ip-172-31-88-254: ~/$ mkdir myproject
ubuntu@ip-172-31-88-254: ~/$ cd myproject
ubuntu@ip-172-31-88-254: ~/myproject$
```

Creating Docker File:

```
ubuntu@ip-172-31-88-254: ~/ × + v
ubuntu@ip-172-31-88-254:~$ mkdir myproject
ubuntu@ip-172-31-88-254:~$ cd myproject
ubuntu@ip-172-31-88-254:~/myproject$ vi Dockerfile
ubuntu@ip-172-31-88-254:~/myproject$ cat Dockerfile
# Use the official Python image
FROM python:3.9

# Set the working directory
WORKDIR /app

# Copy the application files
COPY app /app

# Install dependencies
RUN pip install -r requirements.txt

# Expose the port Flask will run on
EXPOSE 5000

# Run the application
CMD ["python", "server.py"]

ubuntu@ip-172-31-88-254:~/myproject$ |
```

Creating Docker-Compose.yml:

```
ubuntu@ip-172-31-88-254: ~/ × + v
ubuntu@ip-172-31-88-254:~/myproject$ cat docker-compose.yml
version: '3.8'

services:
  web:
    build: .
    ports:
      - "80:5000"
    restart: always

ubuntu@ip-172-31-88-254:~/myproject$ |
```

Build & Running Docker Container:

```
ubuntu@ip-172-31-88-254: ~ | x + v
Just set COMPOSE_BAKE=true
[*] Building 26.8s (10/10) FINISHED
[+] Building 26.8s (10/10) FINISHED
=> [web internal] load build definition from Dockerfile
=> => transferring dockerfile: 33kB
=> [web internal] load metadata for docker.io/library/python:3.9
=> [web internal] load .dockerignore
=> => transferring context: 2B
=> [web 1/4] FROM docker.io/library/python:3.9@sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9
=> => resolve docker.io/library/python:3.9@sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9
=> => sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9 10.35kB / 10.35kB
=> => sha256:8ac93886625a9be9abc0be226220146fba70fd7aa0c2ae85ea52b0fa73d5c7 2.32kB / 2.32kB
=> => sha256:9f98746e2833b7c45b22bf0b4f3bed6ede1b9a108c215c346a6070589a2f9ab 6.17kB / 6.17kB
=> => sha256:155ad54a8b2812a0ec559ff82c8c6f0f0dddb337a226b11879f09e15f67b69fc 48.48MB / 48.48MB
=> => sha256:8831188f3cda87bb32f090262d0109c8a0db99168858967becfad502e9a681b 24.06MB / 24.06MB
=> => sha256:1d281e58d3e435595c266df06531a7e8c2ebb0c185622c8ab2eed8d760e6576b 64.39MB / 64.39MB
=> => sha256:447713e77b4fc3658cfa0c1e816b70ff6d9bf06563dc8cfc0459406aed33b4 211.34MB / 211.34MB
=> => sha256:93bee3686f319cf7bd4fcc659256d85121430628478ba3d026b5a96967b35cbe 6.16MB / 6.16MB
=> => extracting sha256:155ad54a8b2812a0ec559ff82c8c6f0f0dddb337a226b11879f09e15f67b69fc
=> => sha256:95b7226c62e1a47199408920ae7fffd1ea4915befd3139d7020b84da24182ffd9 19.85MB / 19.85MB
=> => sha256:521cad6ddc5302ec8b1d426cdf6d64316fd18ddf3cb0924d24dae81b661501 2508 / 2508
=> => extracting sha256:8831188f3cda87bb32f090262d0109c8a0db99168858967becfad502e9a681b 2.65
=> => extracting sha256:1d281e58d3e435595c266df06531a7e8c2ebb0c185622c8ab2eed8d760e6576b 3.15
=> => extracting sha256:447713e77b4fc3658cfa0c1e816b70ff6d9bf06563dc8cfc0459406aed33b4 8.95
=> => extracting sha256:93bee3686f319cf7bd4fcc659256d85121430628478ba3d026b5a96967b35cbe 0.35
=> => extracting sha256:95b7226c62e1a47199408920ae7fffd1ea4915befd3139d7020b84da24182ffd9 1.05
=> => extracting sha256:521cad6ddc5302ec8b1d426cdf6d64316fd18ddf3cb0924d24dae81b661501 0.85
[+] Building 26.8s (10/10) FINISHED
=> [web internal] load build context
=> => transferring context: 756B
=> [web 2/4] WORKDIR /app
=> [web 3/4] COPY app /app
=> [web 4/4] RUN pip install -r requirements.txt
=> [web] exporting to image
=> => exporting layers
=> => writing image sha256:99ea4718d8ddb6754475661d93841c9c16d05a022ef890be7697e86e04f1bf60
=> => naming to docker.io/library/myproject-web
=> [web] resolving provenance for metadata file
[*] Running 3/3
  ✓web Built 0.8s
  ✓Network myproject_default Created 0.2s
  ✓Container myproject-web-1 Started 0.7s
ubuntu@ip-172-31-88-254: ~/myproject$ |

=> => transferring dockerfile: 33kB
=> [web internal] load metadata for docker.io/library/python:3.9
=> [web internal] load .dockerignore
=> => transferring context: 2B
=> [web 1/4] FROM docker.io/library/python:3.9@sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9
=> => resolve docker.io/library/python:3.9@sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9
=> => sha256:5ea663alc6ba266fdcac5949d1d2ea364ce38a2da92a3df95bb3c81437633ad9 10.35kB / 10.35kB
=> => sha256:8ac93886625a9be9abc0be226220146fba70fd7aa0c2ae85ea52b0fa73d5c7 2.32kB / 2.32kB
=> => sha256:9f98746e2833b7c45b22bf0b4f3bed6ede1b9a108c215c346a6070589a2f9ab 6.17kB / 6.17kB
=> => sha256:155ad54a8b2812a0ec559ff82c8c6f0f0dddb337a226b11879f09e15f67b69fc 48.48MB / 48.48MB
=> => sha256:8831188f3cda87bb32f090262d0109c8a0db99168858967becfad502e9a681b 24.06MB / 24.06MB
=> => sha256:1d281e58d3e435595c266df06531a7e8c2ebb0c185622c8ab2eed8d760e6576b 64.39MB / 64.39MB
=> => sha256:447713e77b4fc3658cfa0c1e816b70ff6d9bf06563dc8cfc0459406aed33b4 211.34MB / 211.34MB
=> => sha256:93bee3686f319cf7bd4fcc659256d85121430628478ba3d026b5a96967b35cbe 6.16MB / 6.16MB
=> => extracting sha256:155ad54a8b2812a0ec559ff82c8c6f0f0dddb337a226b11879f09e15f67b69fc
=> => sha256:95b7226c62e1a47199408920ae7fffd1ea4915befd3139d7020b84da24182ffd9 19.85MB / 19.85MB
=> => sha256:521cad6ddc5302ec8b1d426cdf6d64316fd18ddf3cb0924d24dae81b661501 2508 / 2508
=> => extracting sha256:8831188f3cda87bb32f090262d0109c8a0db99168858967becfad502e9a681b 0.85
=> => extracting sha256:1d281e58d3e435595c266df06531a7e8c2ebb0c185622c8ab2eed8d760e6576b 3.15
=> => extracting sha256:447713e77b4fc3658cfa0c1e816b70ff6d9bf06563dc8cfc0459406aed33b4 8.95
=> => extracting sha256:93bee3686f319cf7bd4fcc659256d85121430628478ba3d026b5a96967b35cbe 0.35
=> => extracting sha256:95b7226c62e1a47199408920ae7fffd1ea4915befd3139d7020b84da24182ffd9 1.05
=> => extracting sha256:521cad6ddc5302ec8b1d426cdf6d64316fd18ddf3cb0924d24dae81b661501 0.85
[+] Building 26.8s (10/10) FINISHED
=> [web internal] load build context
=> => transferring context: 756B
=> [web 2/4] WORKDIR /app
=> [web 3/4] COPY app /app
=> [web 4/4] RUN pip install -r requirements.txt
=> [web] exporting to image
=> => exporting layers
=> => writing image sha256:99ea4718d8ddb6754475661d93841c9c16d05a022ef890be7697e86e04f1bf60
=> => naming to docker.io/library/myproject-web
=> [web] resolving provenance for metadata file
[*] Running 3/3
  ✓web Built 0.8s
  ✓Network myproject_default Created 0.2s
  ✓Container myproject-web-1 Started 0.7s
ubuntu@ip-172-31-88-254: ~/myproject$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED              STATUS              PORTS              NAMES
10ce4b4b8666   myproject-web "python server.py"      About a minute ago   Restarting (1) 9 seconds ago   8080/tcp           myproject-web-1
ubuntu@ip-172-31-88-254: ~/myproject$ |
```

Accessing the Website:

