Continuous Assessment – 3

CSE -427

VIRTUALIZATION AND CLOUD COMPUTING LABORATORY

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Installing a Dockers in the UBUNTU Operating system and running hello-world.

Step 1:

Open the terminal in the UBUNTU and start with the command "**sudo -s**" to create the root in the terminal.

Step 2:

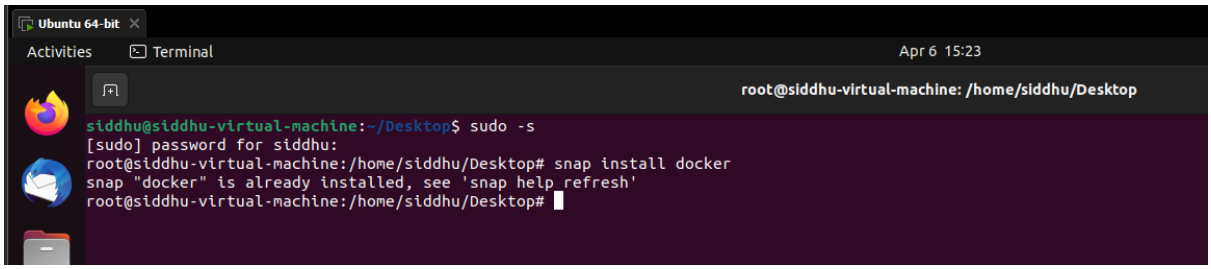
Entering the password to enter the account.

Step 3:

Now, to install the docker use the command "**snap install docker**"

It will install the environment of docker in our operating system with latest version.

If docker already exists it will trigger that docker is already installed

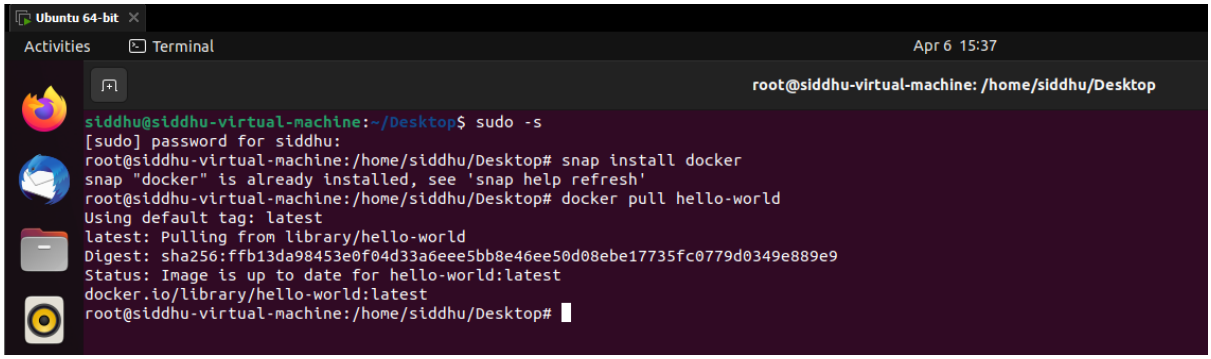


Running Hello-World

Step 1:

We need to pull the image of the particular executing by the command
so, for pull the image of hello-world , entering the command "**docker pull hello-world**"

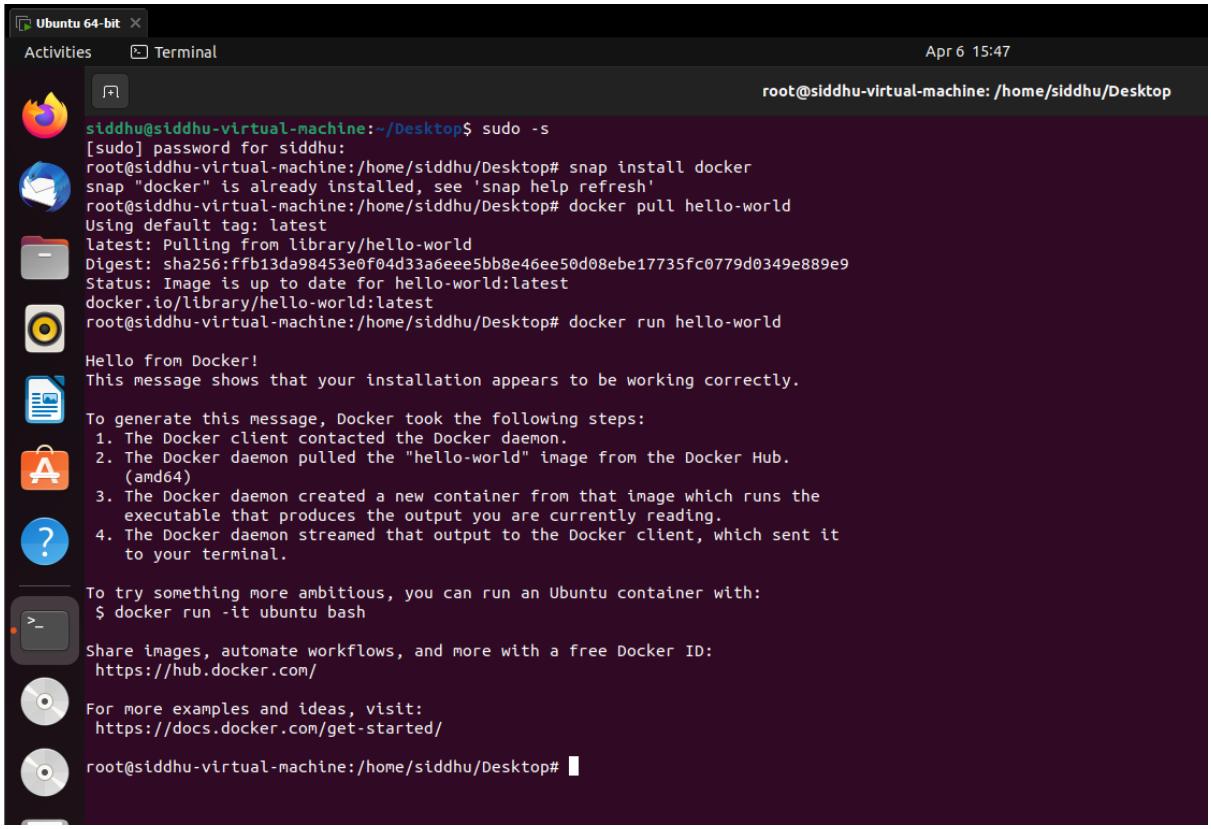
It will install the certain requirements of that image.



Step 2:

Now, Need to run the image which we pulled.

We use "**docker run hello-world**" command to run the image file and give the output.



Task 2:

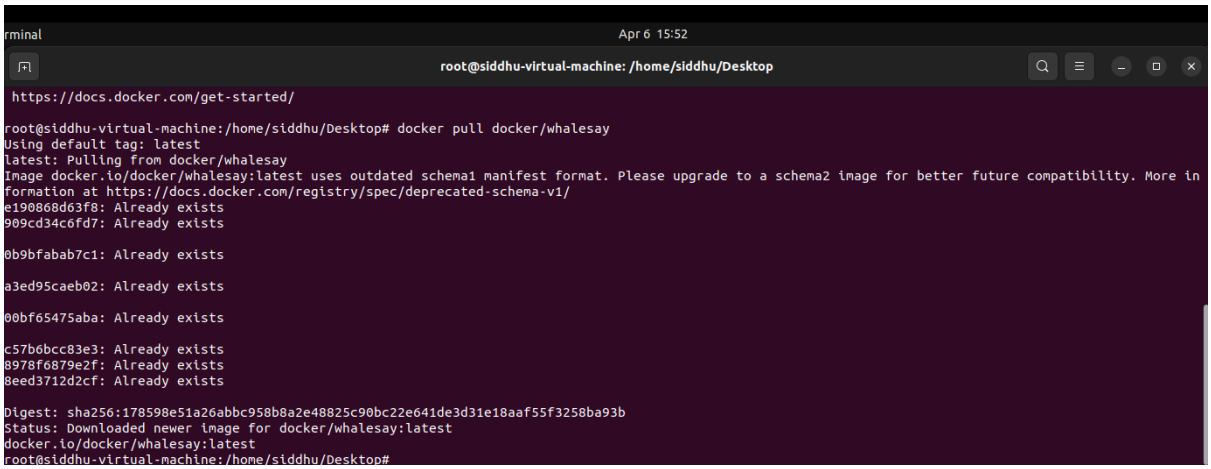
Pulling the images of the whales-say and minesweeper game

Part 1:

- Whales-say game

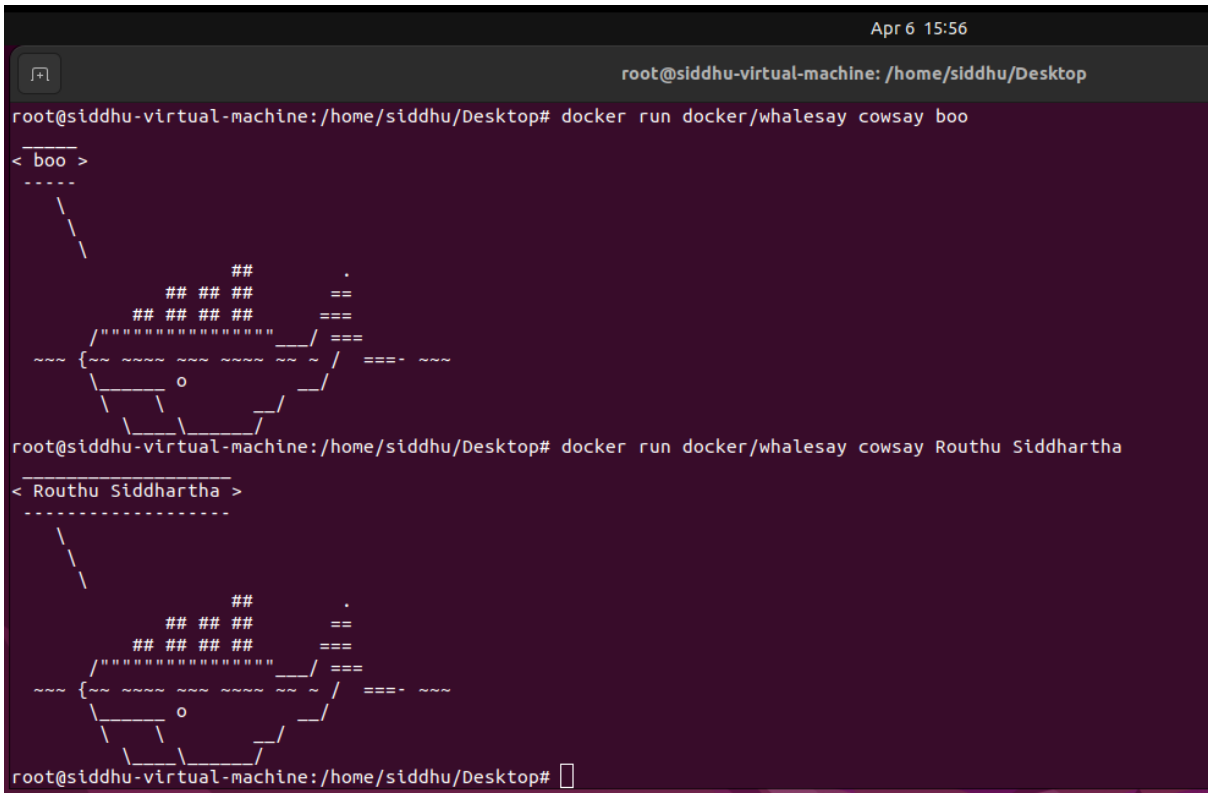
To pull this game in a new container we use the command "**docker pull docker/whalesay**"

It will install all the related packages.



To run the game we need to use the following the command "**docker run docker/whalesay cowsay boo**"

This will give the following output. And accordingly we can change the command with our customized output command in place of **BOO (**example is provided in the output figure below**)**

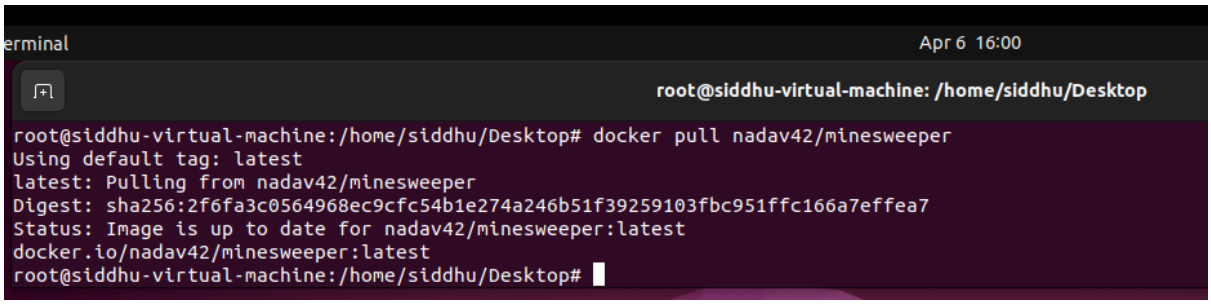


<u>Part 2:</u>

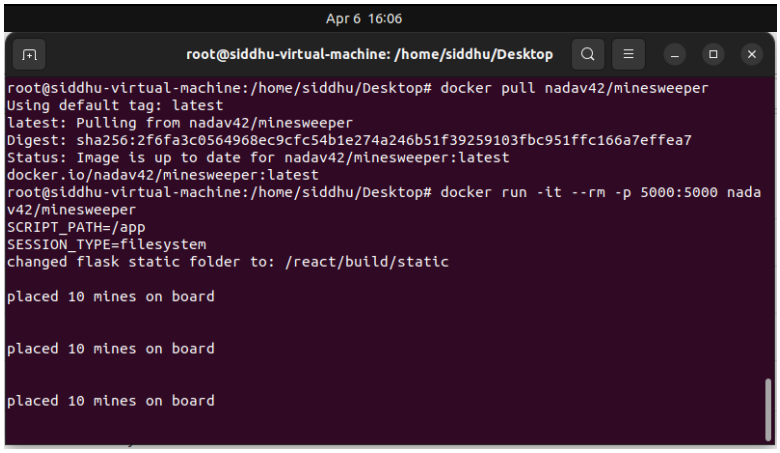
- Minesweeper

Pulling the image by the command by "**docker pull nadav42/minesweeper**"

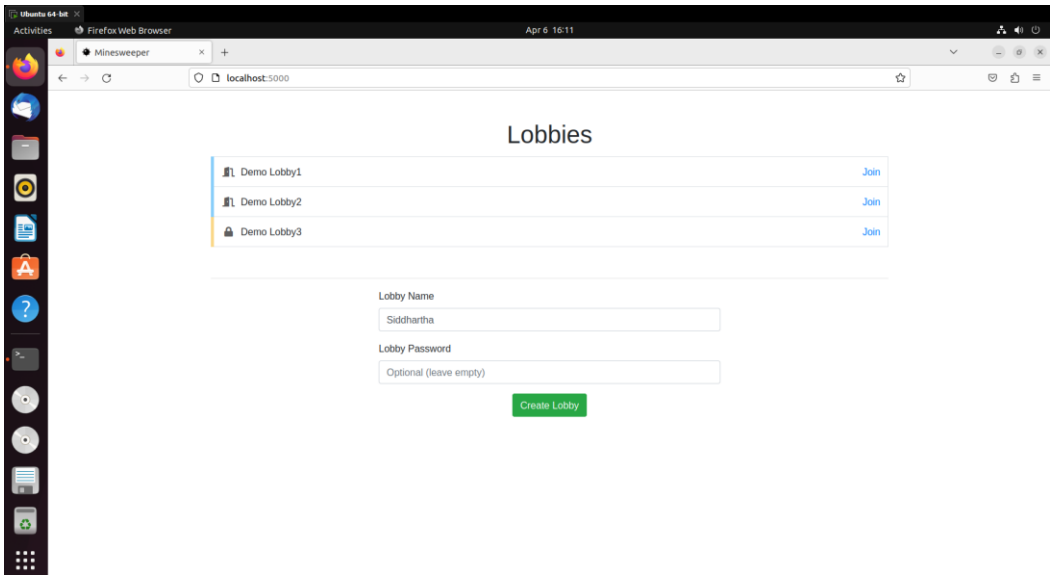
It will install all the related packages accordingly.



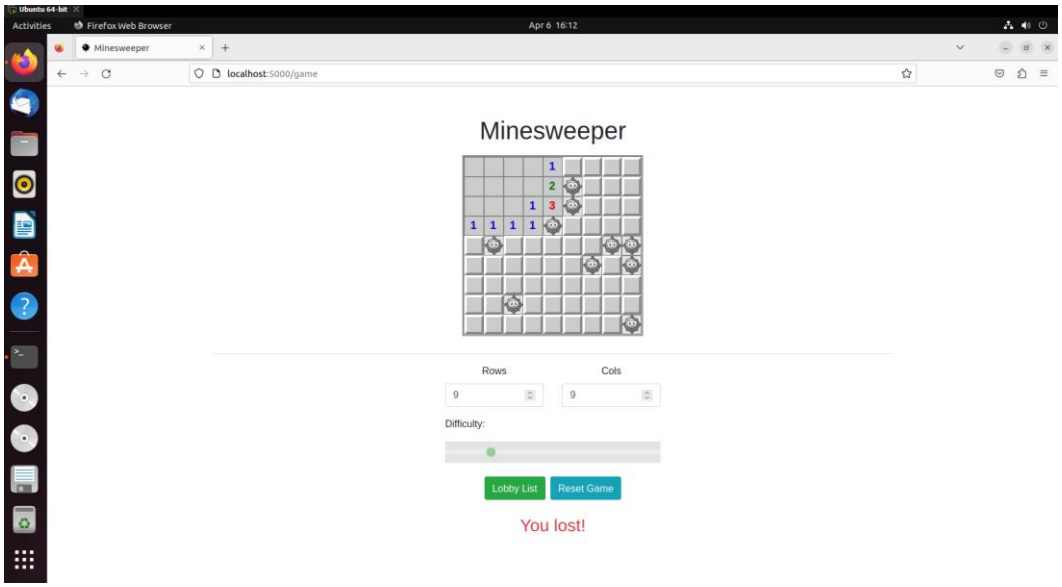
→To run the game we need to use the following the command "**docker run -it --rm -p 5000:5000 nadav42/minesweeper**"



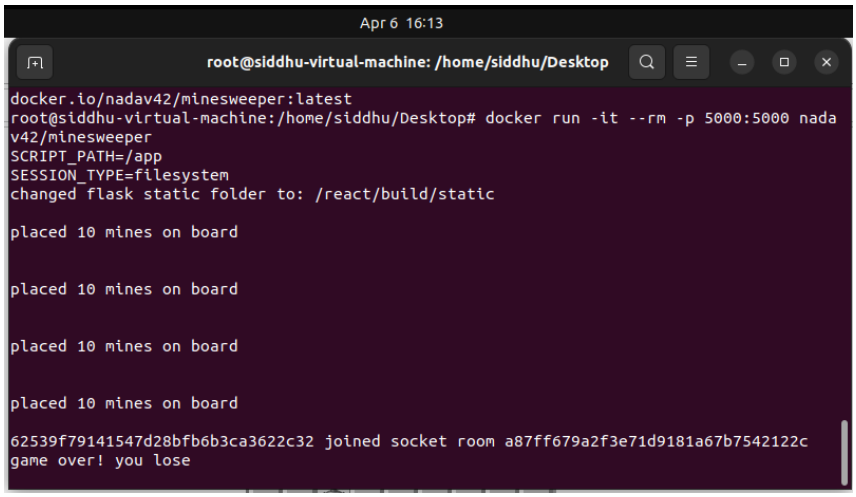
➔ Open any browser and go with the particular host number given to the game. Here, in this game the localhost number is 5000. So, enter http://localhost:5000/ in the browser to get the game loaded in the interface of the browser.



Here is the game we lost.



It show the result in the terminal as well



Task 3

Terminal Commands on Docker in Ubuntu

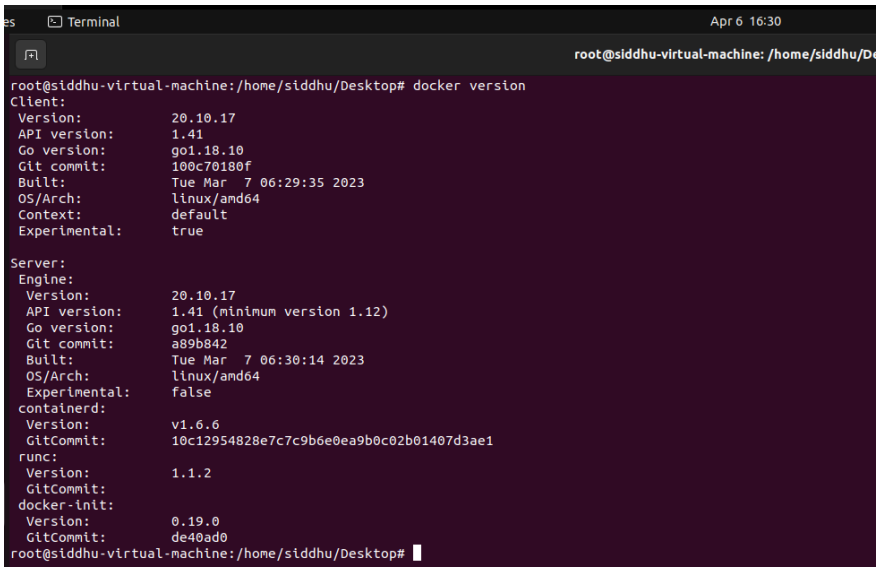
Docker is a containerization platform that simplifies the process of building, deploying, and managing applications. It provides a command-line interface that allows users to interact with the Docker platform and manage containers, images, networks, and volumes. Common Docker commands include docker run, docker build, and docker push/pull, which are used to create, deploy, and share Docker images. Learning Docker's command-line interface is essential for efficiently working with containerized applications. Overall, Docker is a powerful tool for improving application portability, scalability, and deployment efficiency.

Some of the most useful 50 commands in docker'

1. docker version: it will displays Docker version information

Syntax: docker version [OPTIONS]

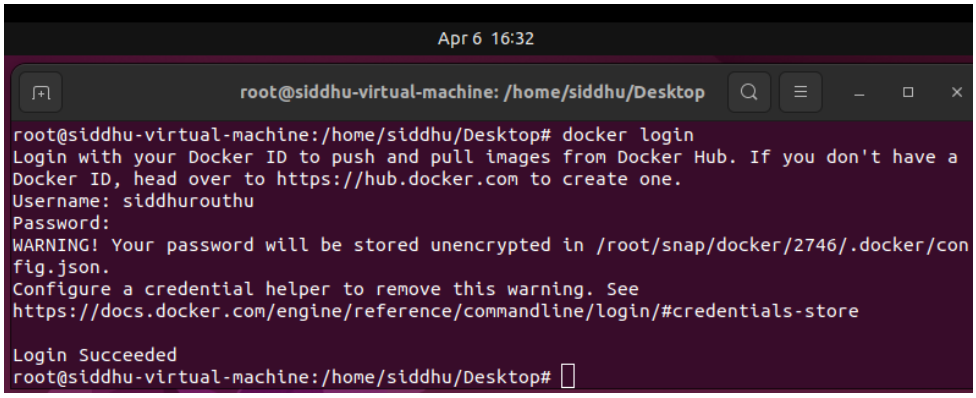
Command: docker version



2. docker login: Logs in to a Docker registry.

Syntax: docker login [OPTIONS] [SERVER]

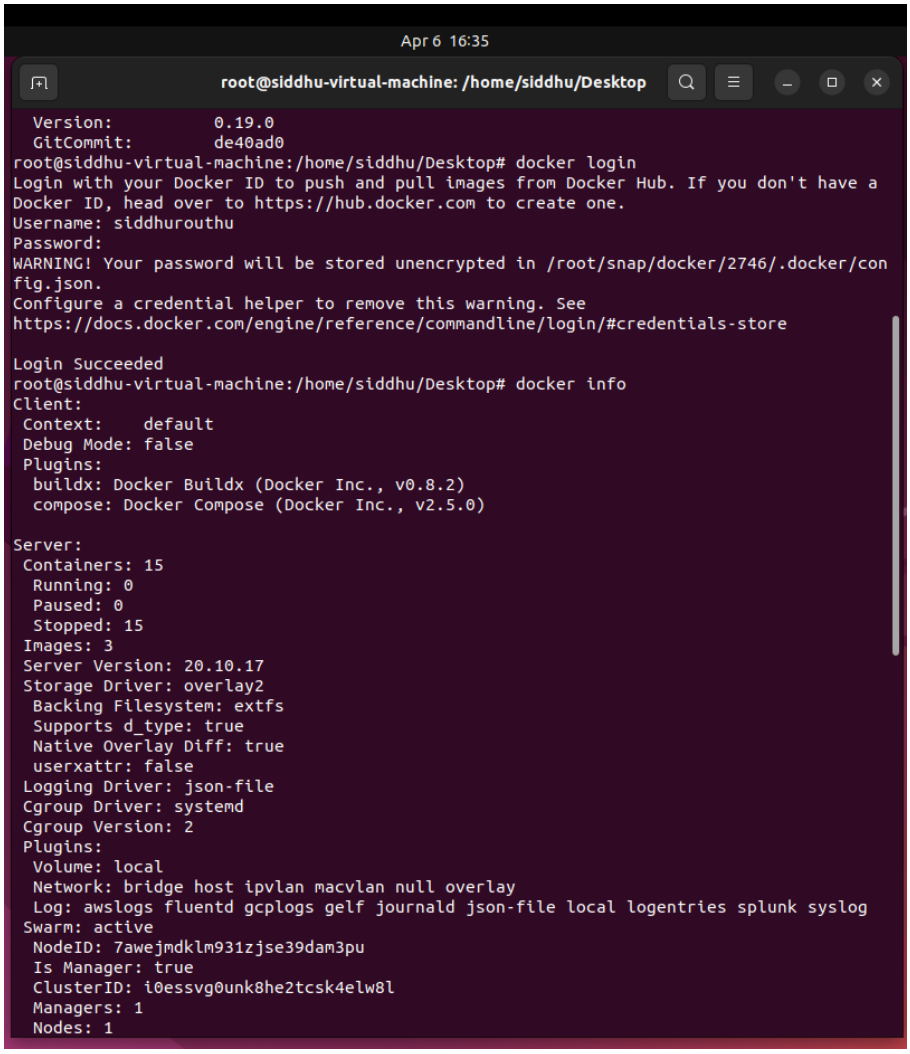
Command: docker login



3. docker info: Shows the system-wide information about the Docker installation, including the number of containers, images, and more.

Syntax: docker info [OPTIONS]

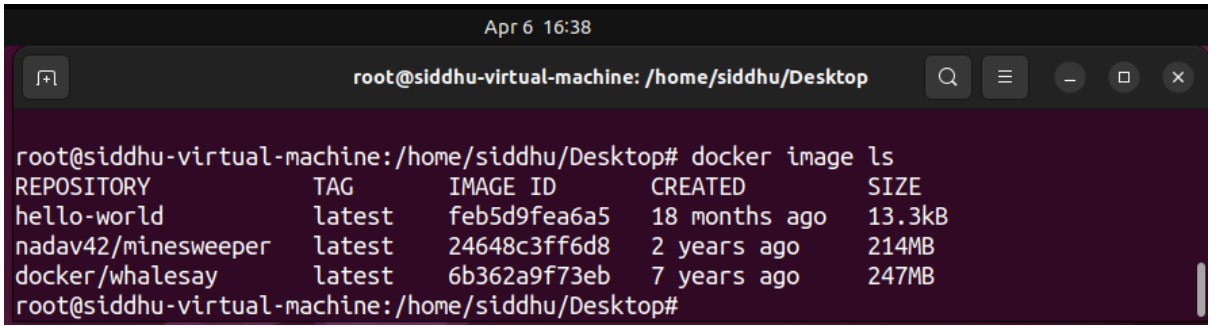
Command: docker info



4. docker image list: Lists all available images on the local machine (same as docker images).

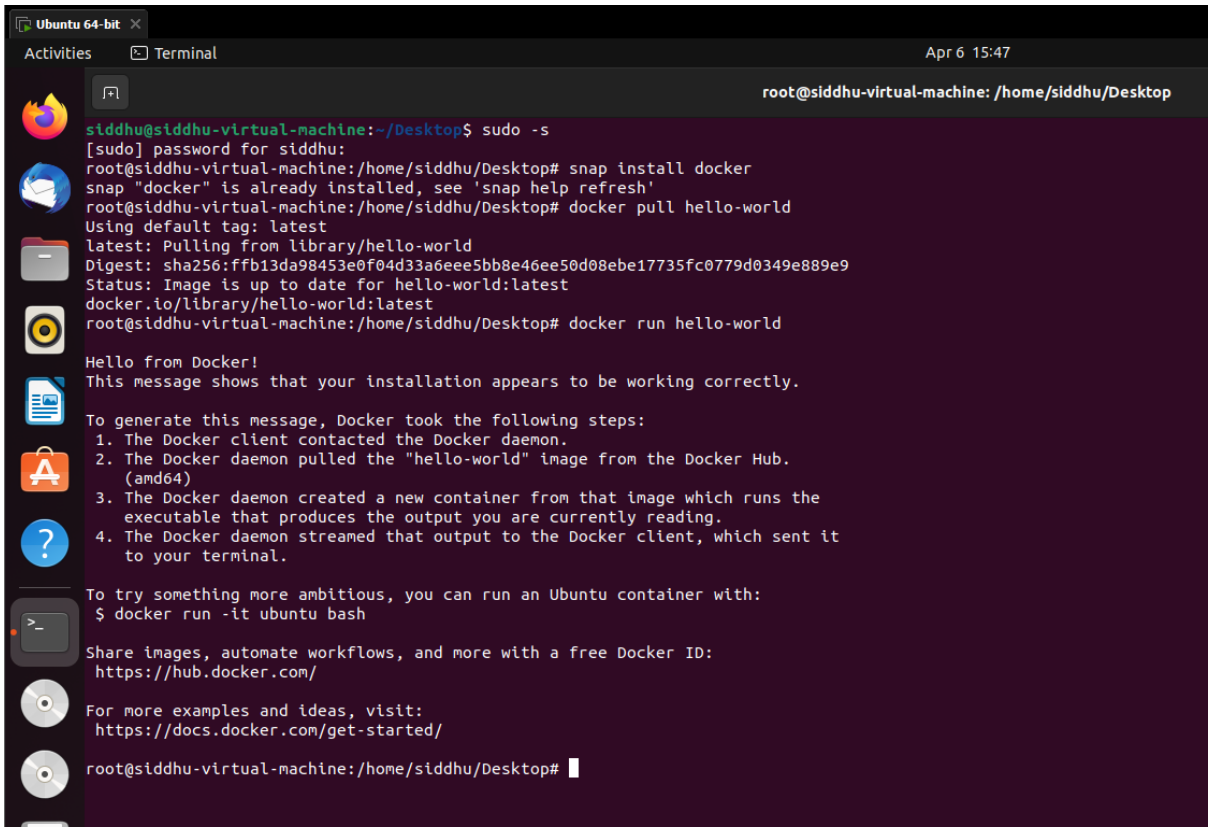
Syntax: docker image ls [OPTIONS] [REPOSITORY[:TAG]]

Command: docker image ls



5. docker run: runs a command in a new container

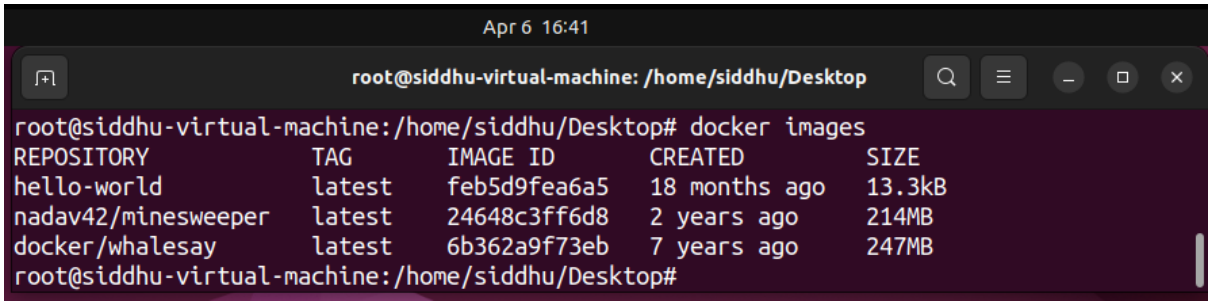
Command: runs a command in a new container



6. docker images : Lists all available images on the local machine.

Syntax: docker images [OPTIONS] [REPOSITORY[:TAG]]

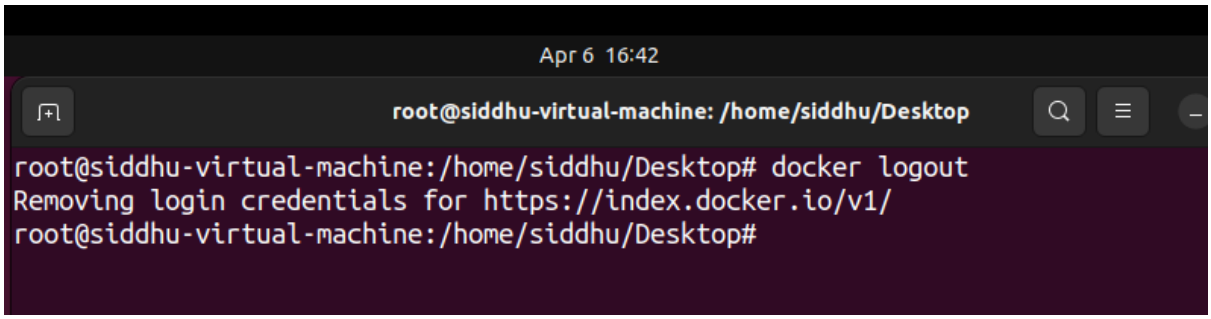
Command: docker images



7. docker logout: Logs out of a Docker registry.

Syntax: docker logout [SERVER]

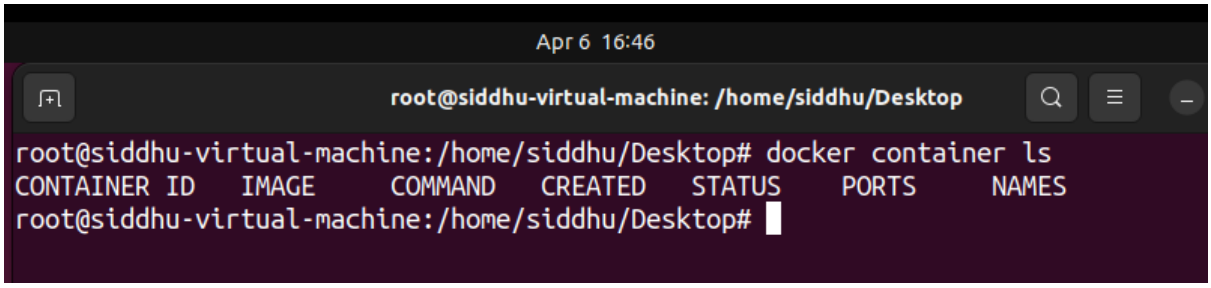
Command: docker logout



8. Docker container list: Lists all running containers (same as docker ps).

Syntax: docker container ls [OPTIONS]

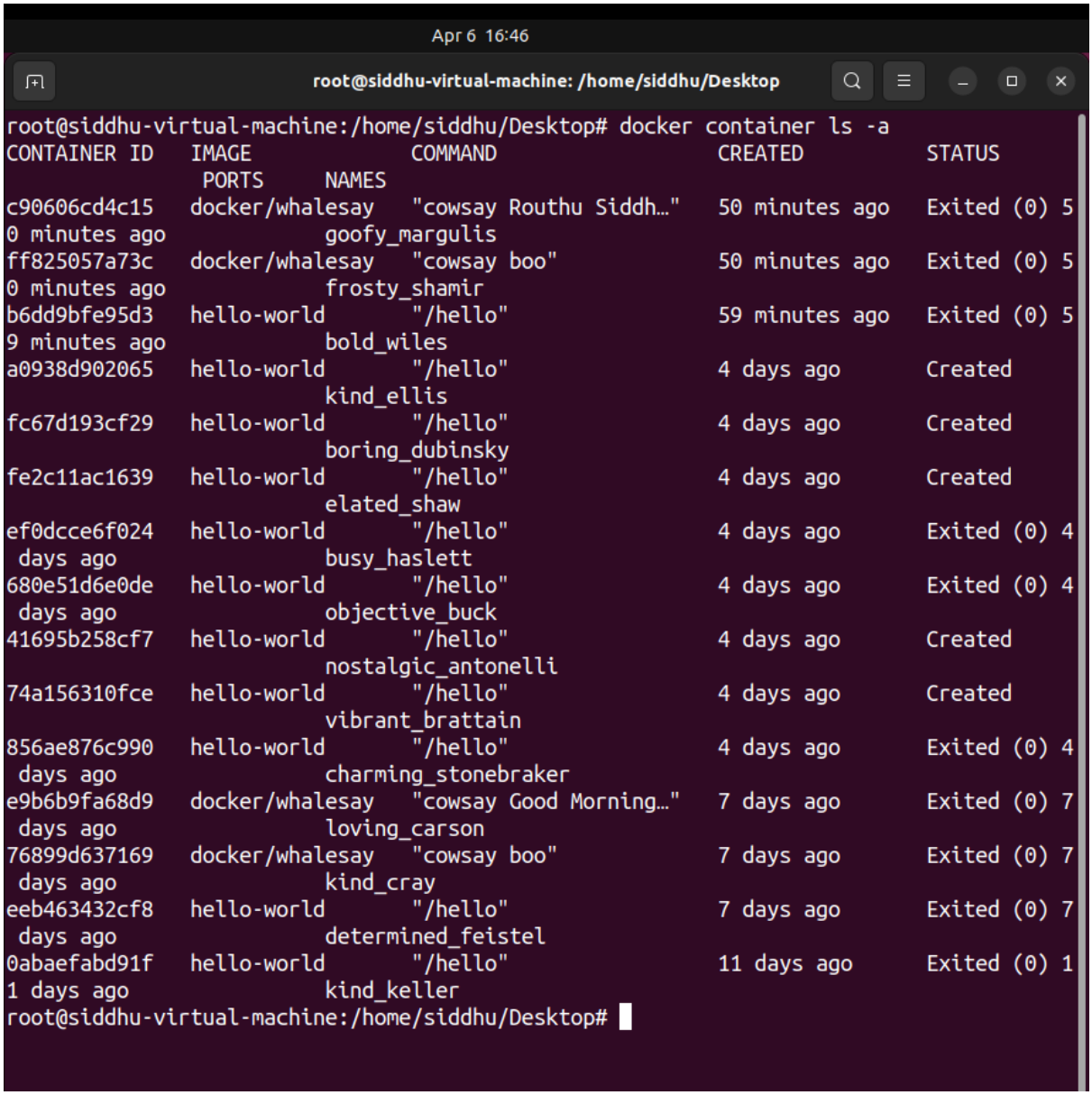
Command: docker container ls



9. Docker container total list: Lists all containers, including those that are not running.

Syntax: docker container ls [OPTIONS]

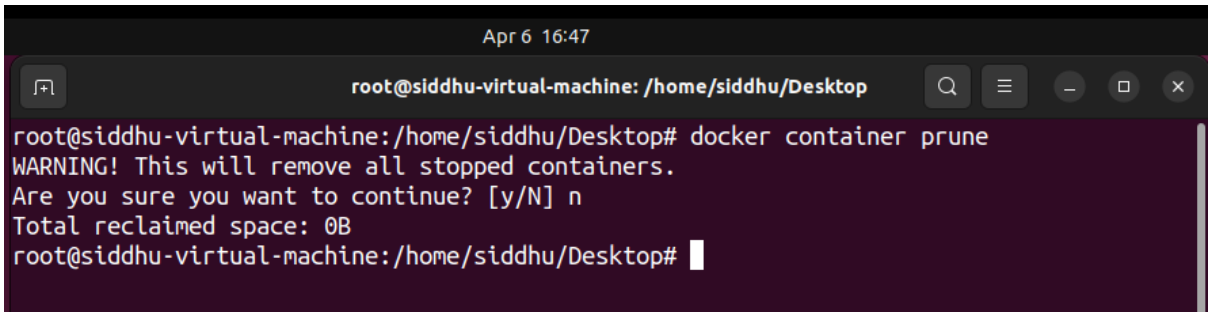
Command: docker container ls -a



10. Docker container prune: Removes all stopped containers.

Syntax: docker container prune [OPTIONS]

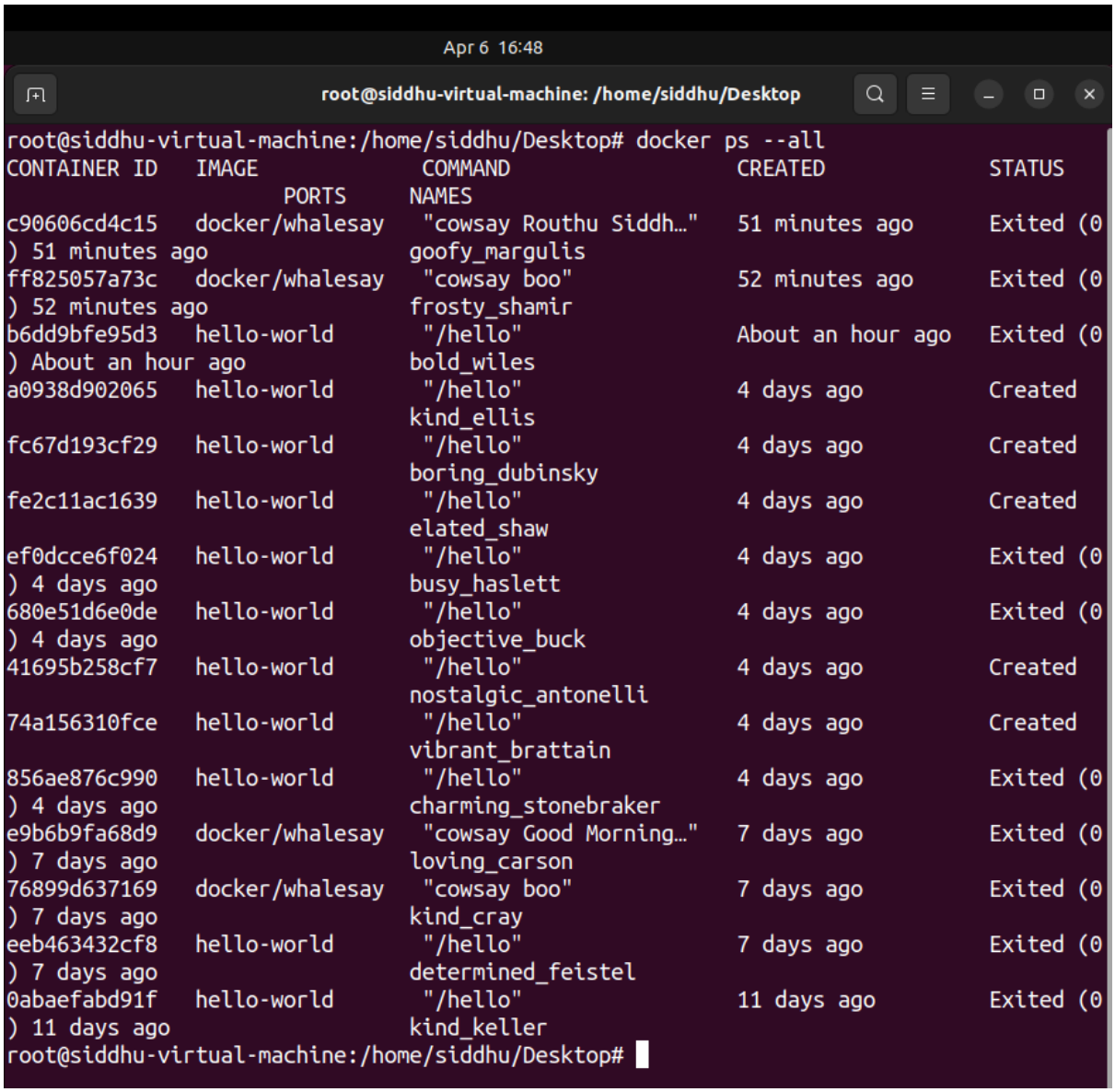
Command: docker container prune



11. docker ps: Lists all running containers.

Syntax: docker ps [OPTIONS]

Command: docker ps --all



12. Creating new docker network: Creates a new network.

Syntax: docker network create [OPTIONS] NETWORK

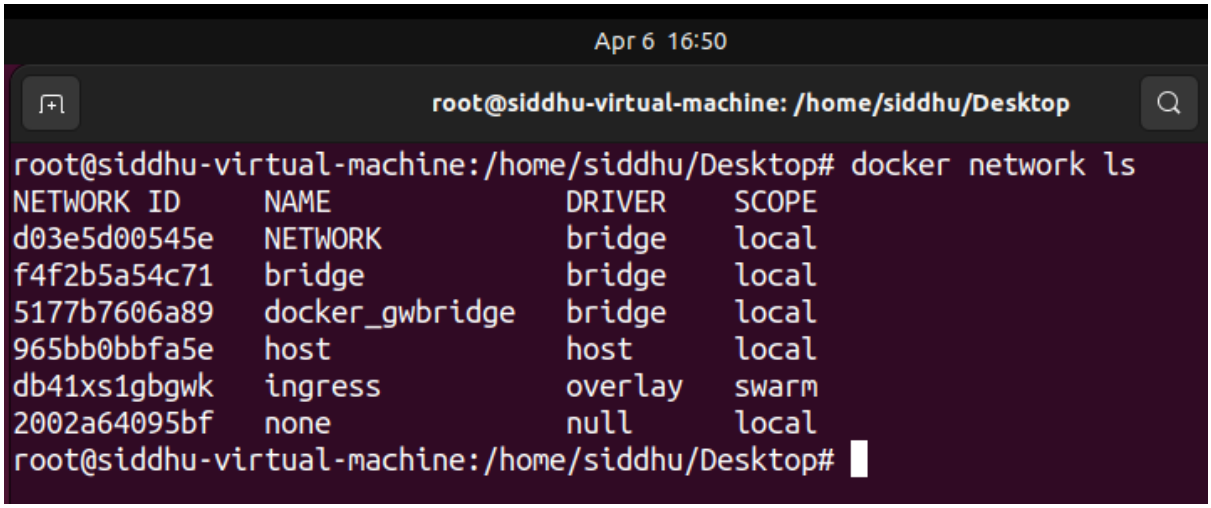
Command: docker network create –attachachable NETWORK

```
root@siddhu-virtual-machine:/home/siddhu# docker network create --attachable NETWORK
d03e5d00545e94965812b2c40e81f26e53bb82786339fcff65d6e3d829d99a4f
```

13. Lists of docker network: Shows the list of the docker network

Syntax: docker network ls [OPTIONS]

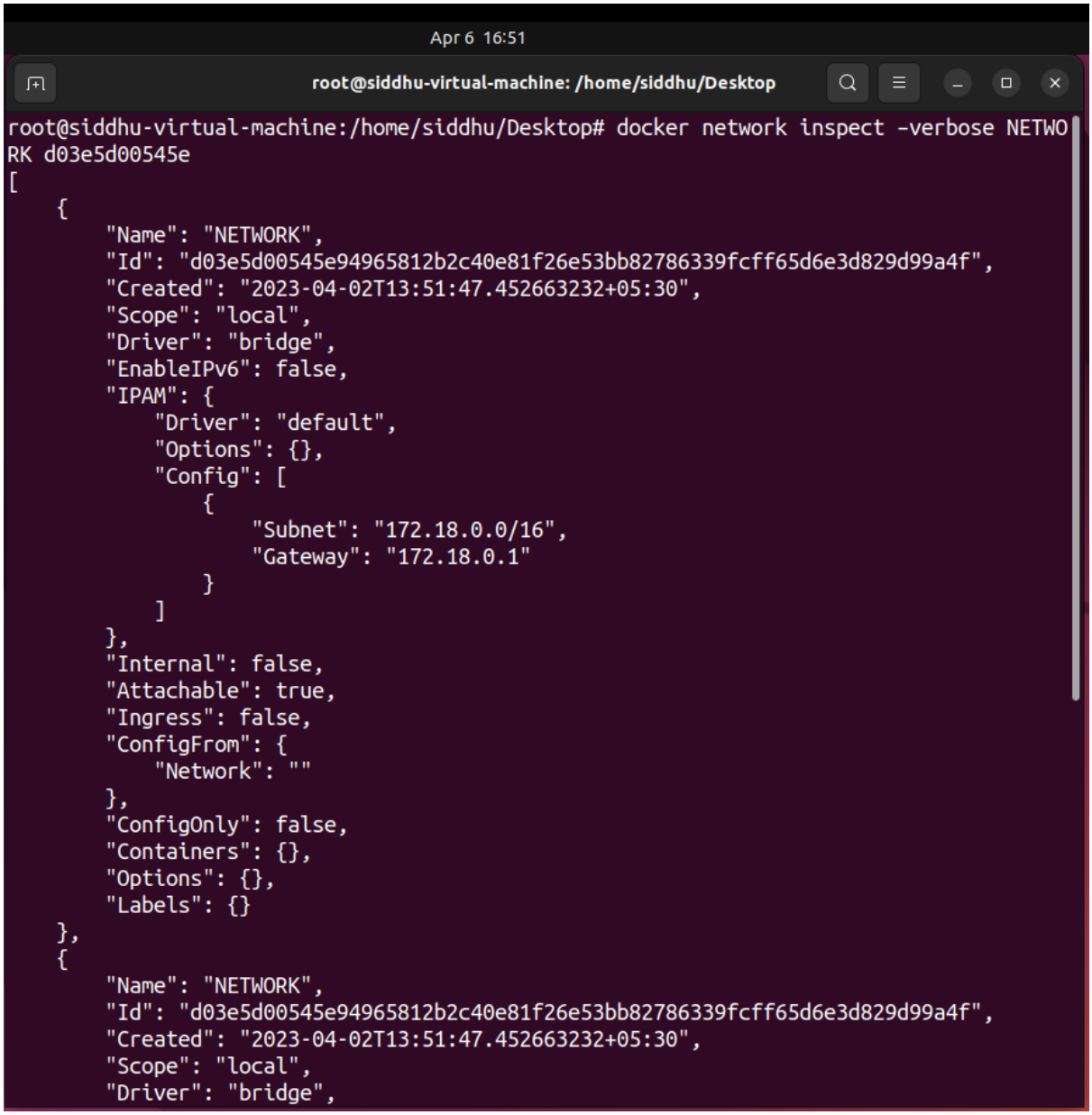
Command: docker network ls



14. Inspect the docker network: displays detailed information on one or more networks

Syntax: docker network inspect [OPTIONS] NETWORK [NETWORK...]

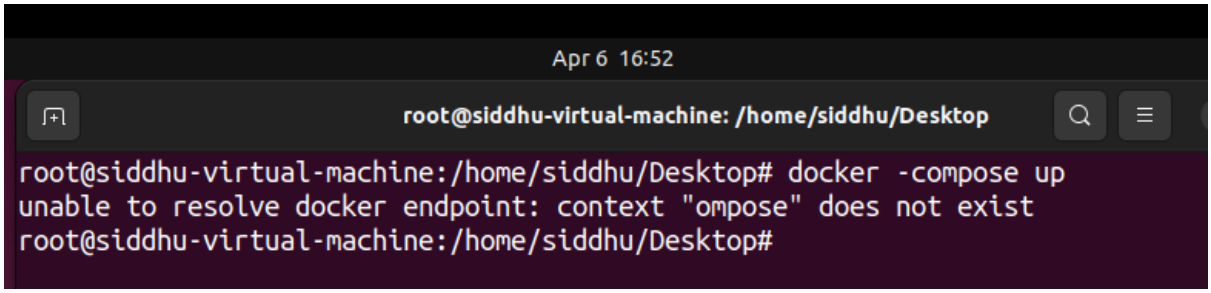
Command: docker network inspect –verbose NETWORK d03e5d00545e



15. Docker-compose up: Starts all services defined in a docker-compose.yml file.

Syntax: docker [OPTIONS] COMMAND

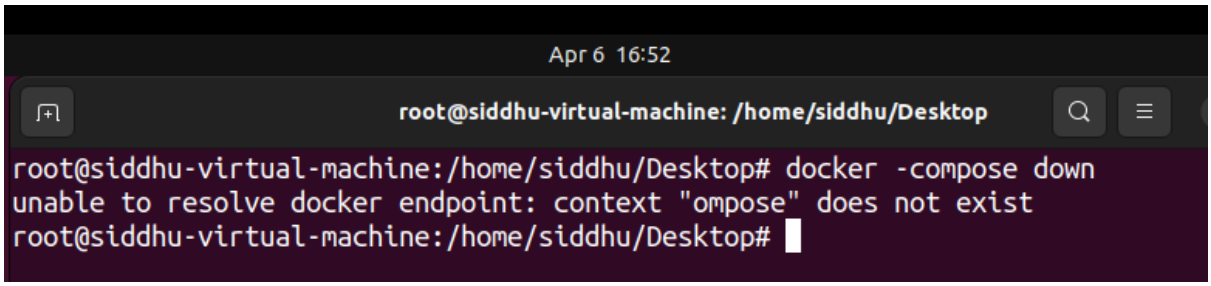
Command: docker -compose up



16. Docker-compose down: Stops all services defined in a docker-compose.yml file

Syntax: docker [OPTIONS] COMMAND

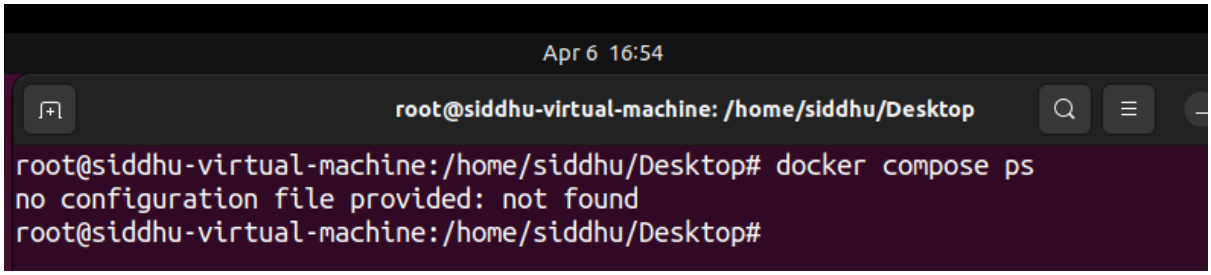
Command: docker -compose down



17. Docker-compose ps: lists the running containers in a docker-compose.yml file

Syntax: docker compose ps [SERVICE...]

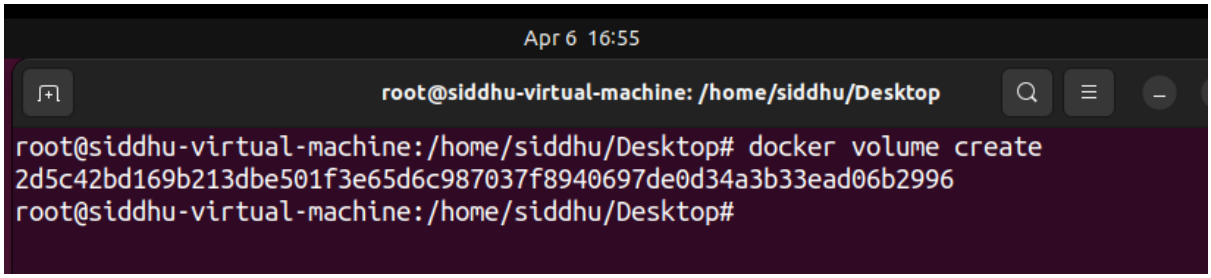
Command: docker compose ps



18. Docker volume create: creates a new volume

Syntax: docker volume create [OPTIONS] [VOLUME]

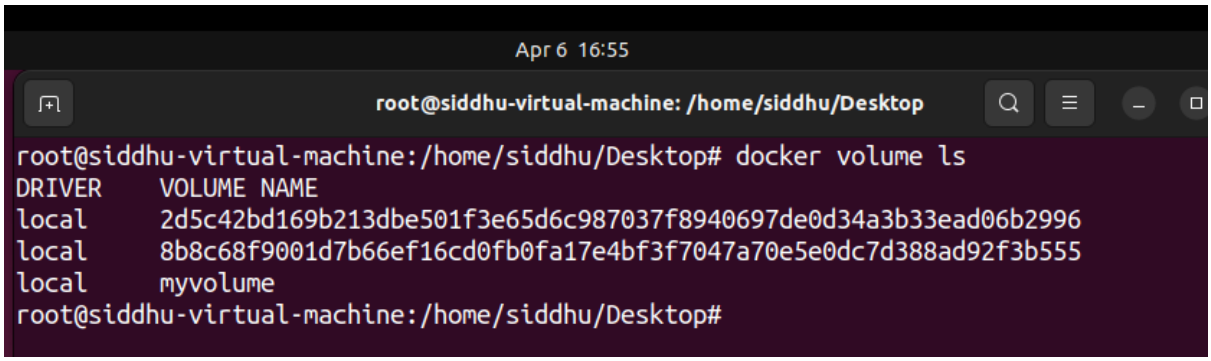
Command: docker volume create



19. Docker volume ls: To show list of volumes

Syntax: docker volume ls [OPTIONS]

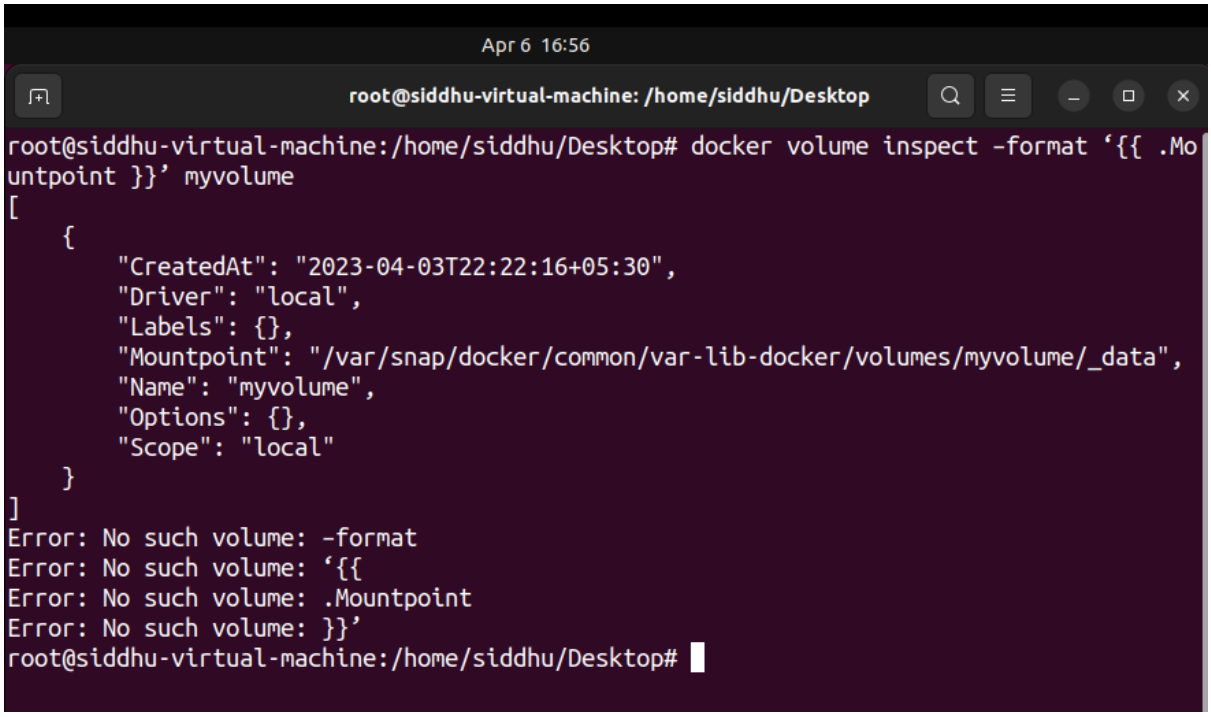
Command: docker volume ls



20. Docker volume inspect: displays detailed information on one or more volumes

Syntax: docker volume inspect [OPTIONS] VOLUME [VOLUME...]

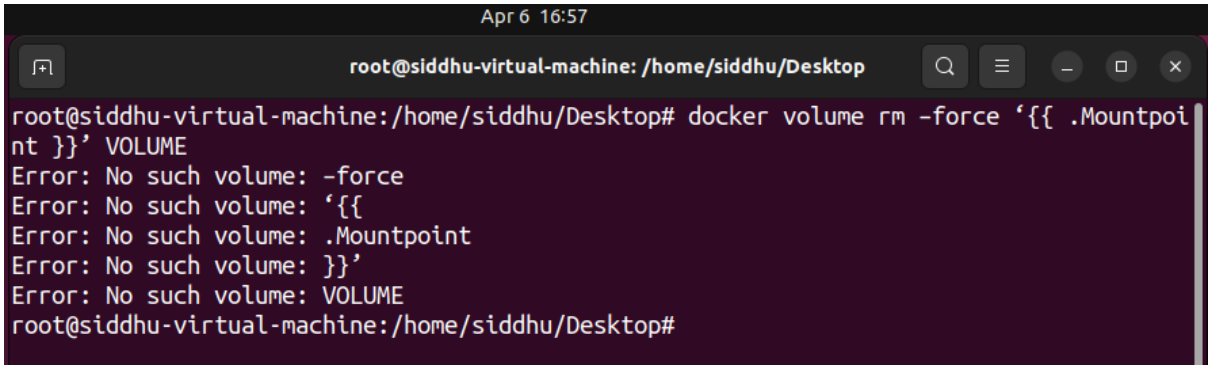
Command: docker volume inspect –format ‘{{ .Mountpoint }}’ myvolume



21. Docker volume rm: removes one or more volumes

Syntax: docker volume rm [OPTIONS] VOLUME [VOLUME...]

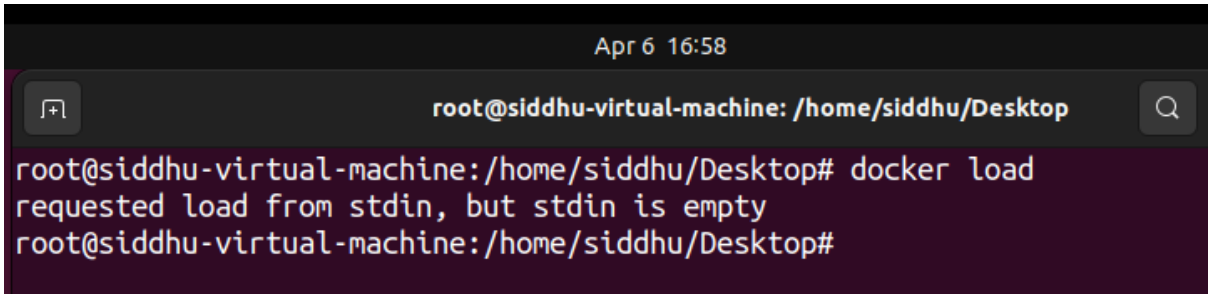
Command: docker volume rm –force ‘{{ .Mountpoint }}’ VOLUME



22. Docker load: loads an image from a tar archive

Syntax: docker load [OPTIONS]

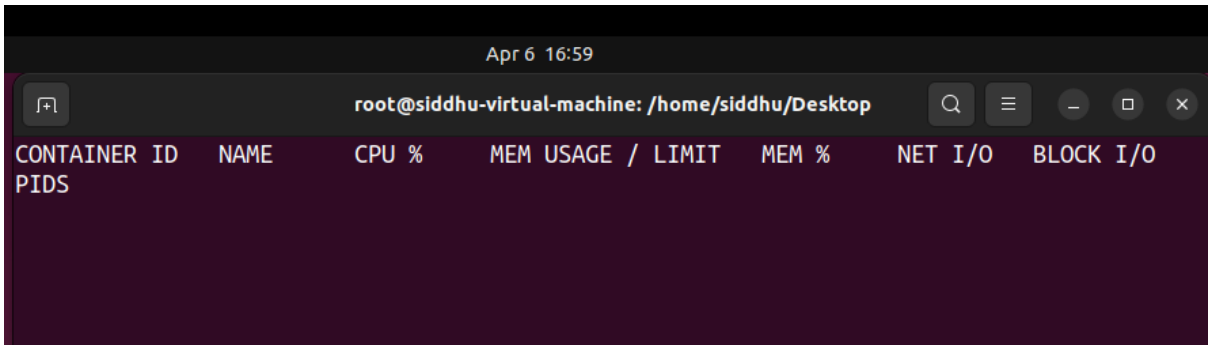
Command: docker load



23. Docker stats: displays a live stream of container(s) resource usage statistics

Syntax: docker stats [OPTIONS] [CONTAINER...]

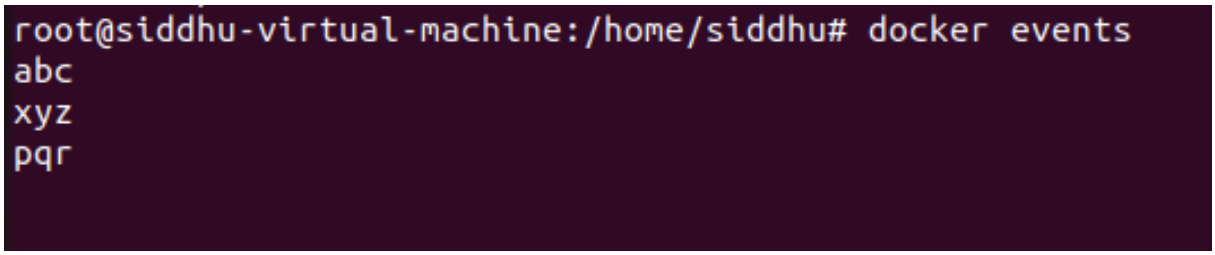
Command: docker stats



24. Docker events: displays a live stream of real-time events from the server

Syntax: docker events [OPTIONS]

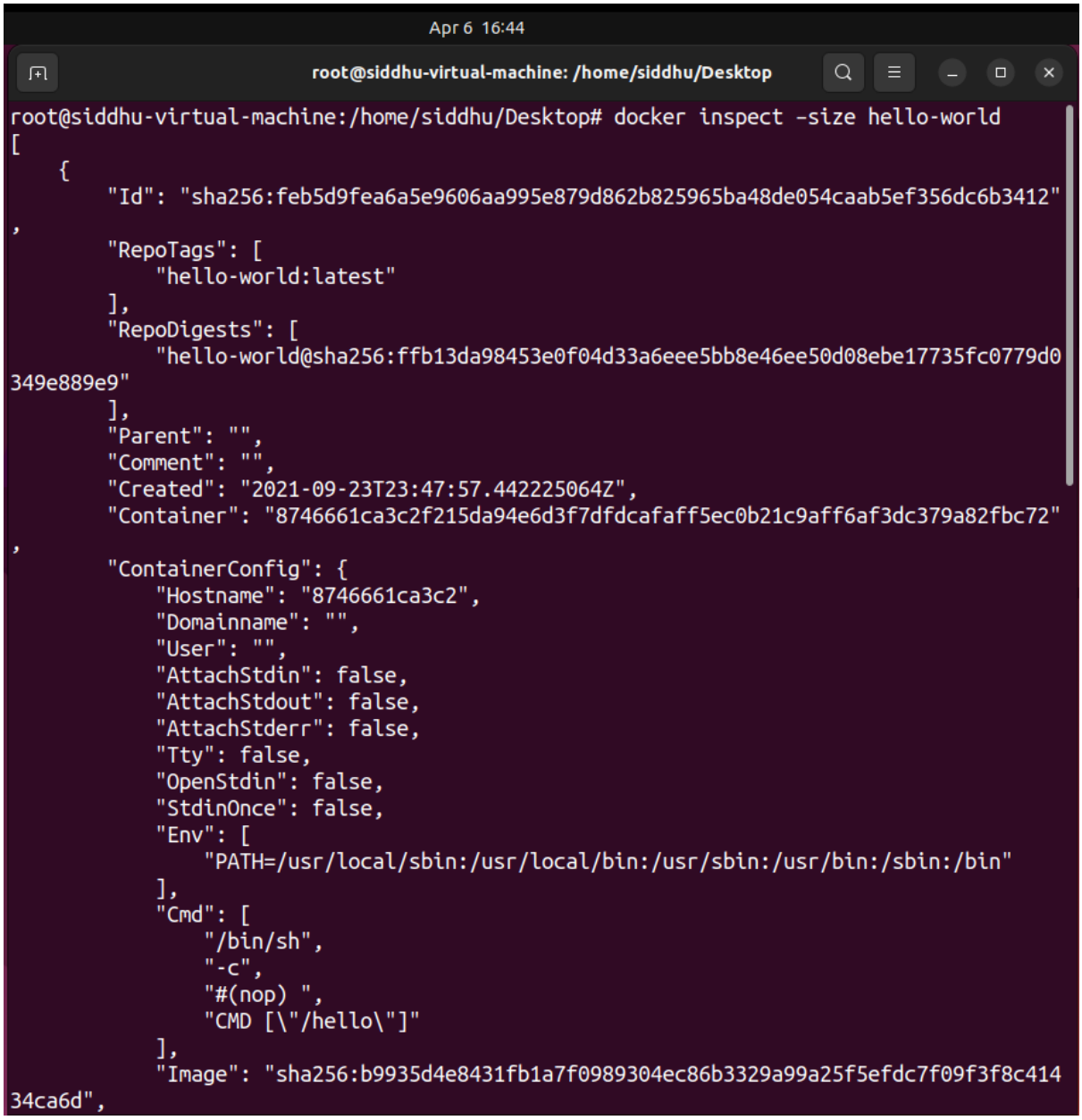
Command: docker events



25. Docker inspect: displays detailed information on one or more containers

Syntax: docker inspect [OPTIONS] NAME|ID [NAME|ID...]

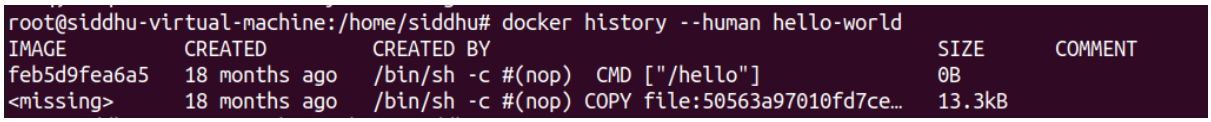
Command: docker inspect –size hello-world



26. Docker history: displays the history of an image

Syntax: docker history [OPTIONS] IMAGE

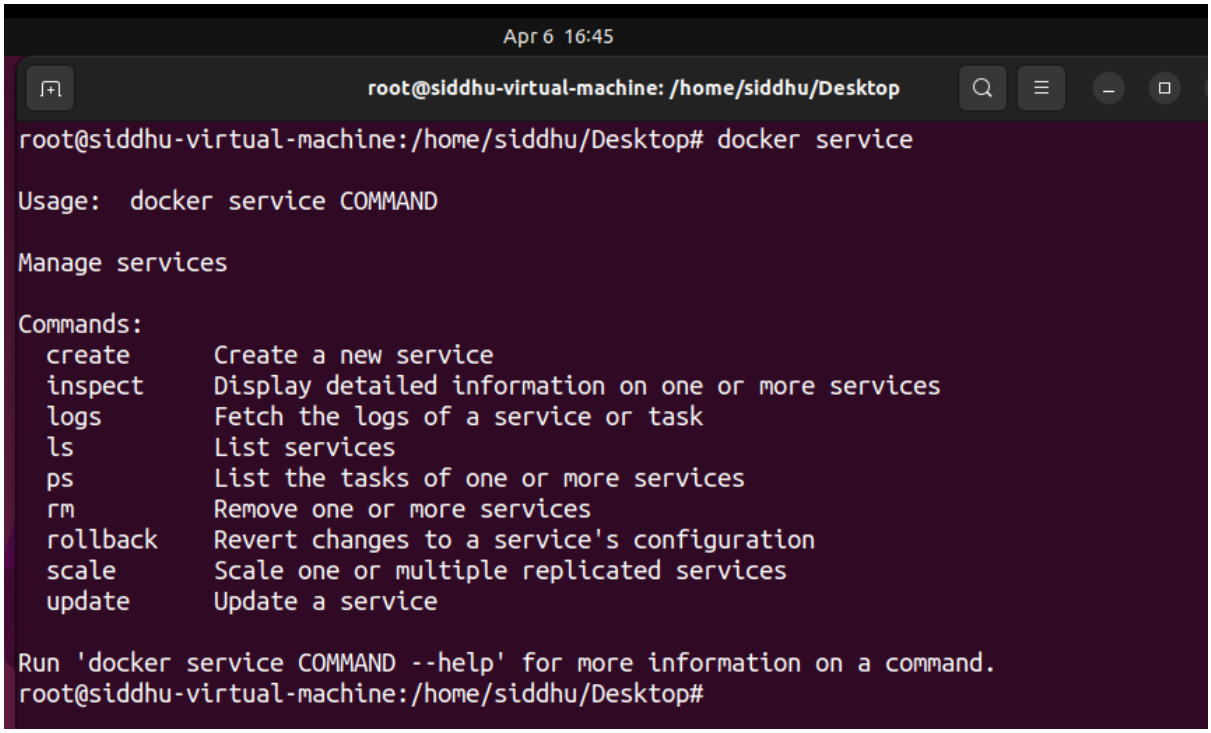
Command: docker history –human hello-world



27. Docker service: To manage Docker services in a swarm use “docker service” command.

Syntax: docker service COMMAND

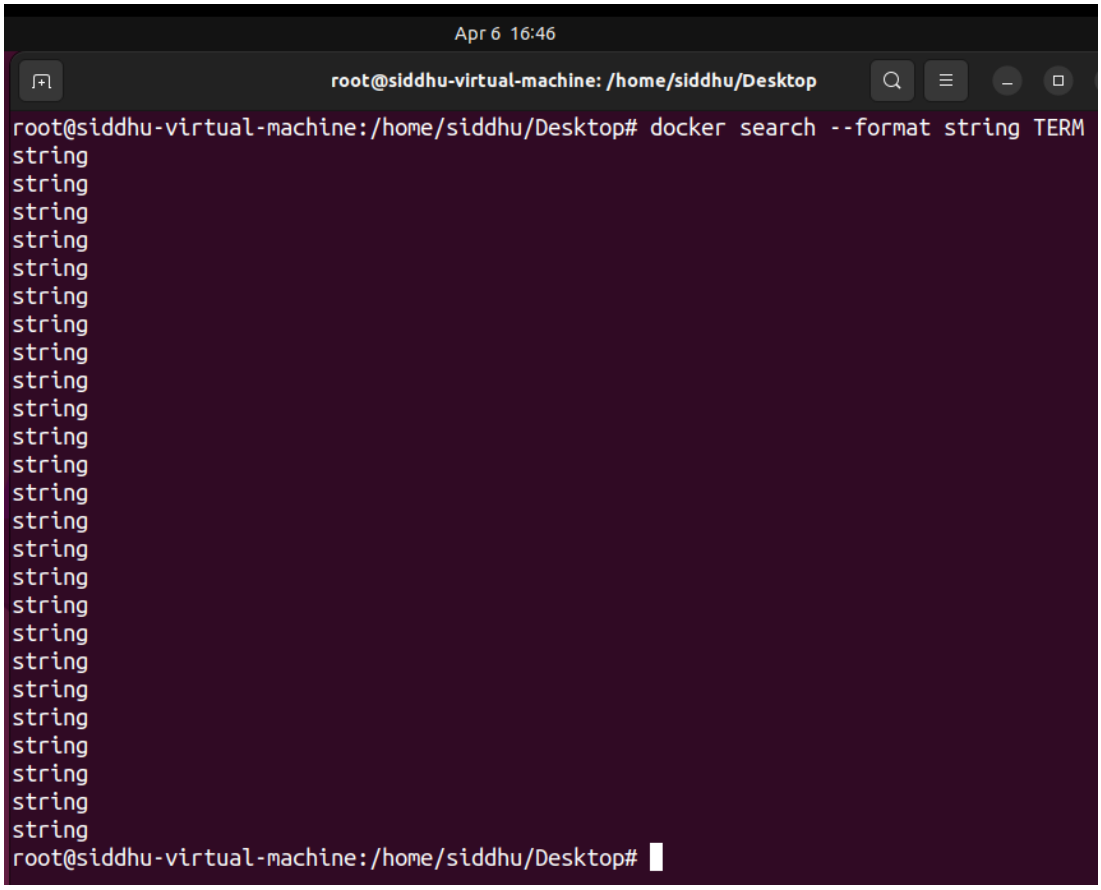
Command: docker service



28. Docker search: To search the Docker Hub for images use “docker search” command.

Syntax: docker search [OPTIONS] TERM

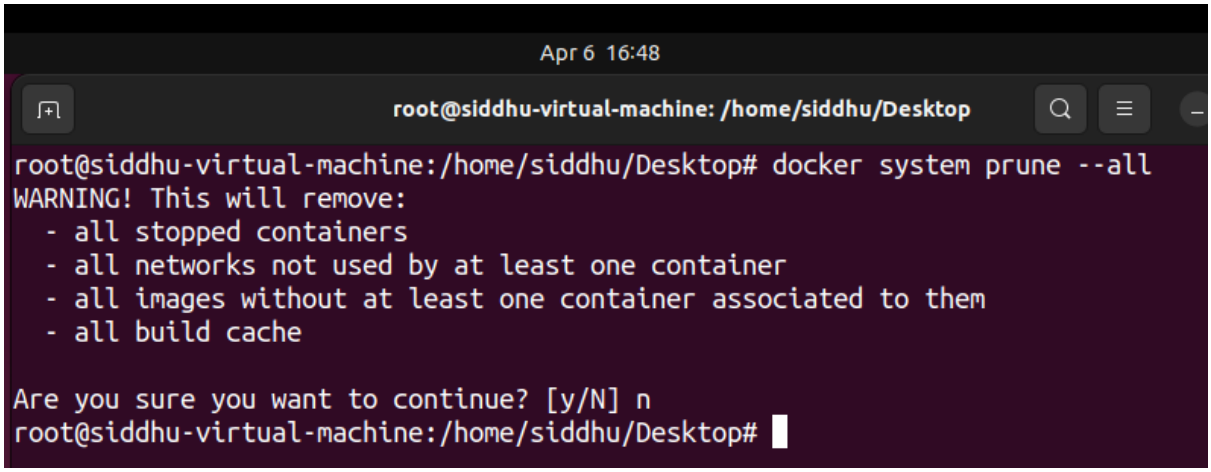
Command: docker search --format string TERM



29. docker system prune --all: Removes all unused images, containers, networks, and volumes, including dangling ones.

Syntax: docker system prune [OPTIONS]

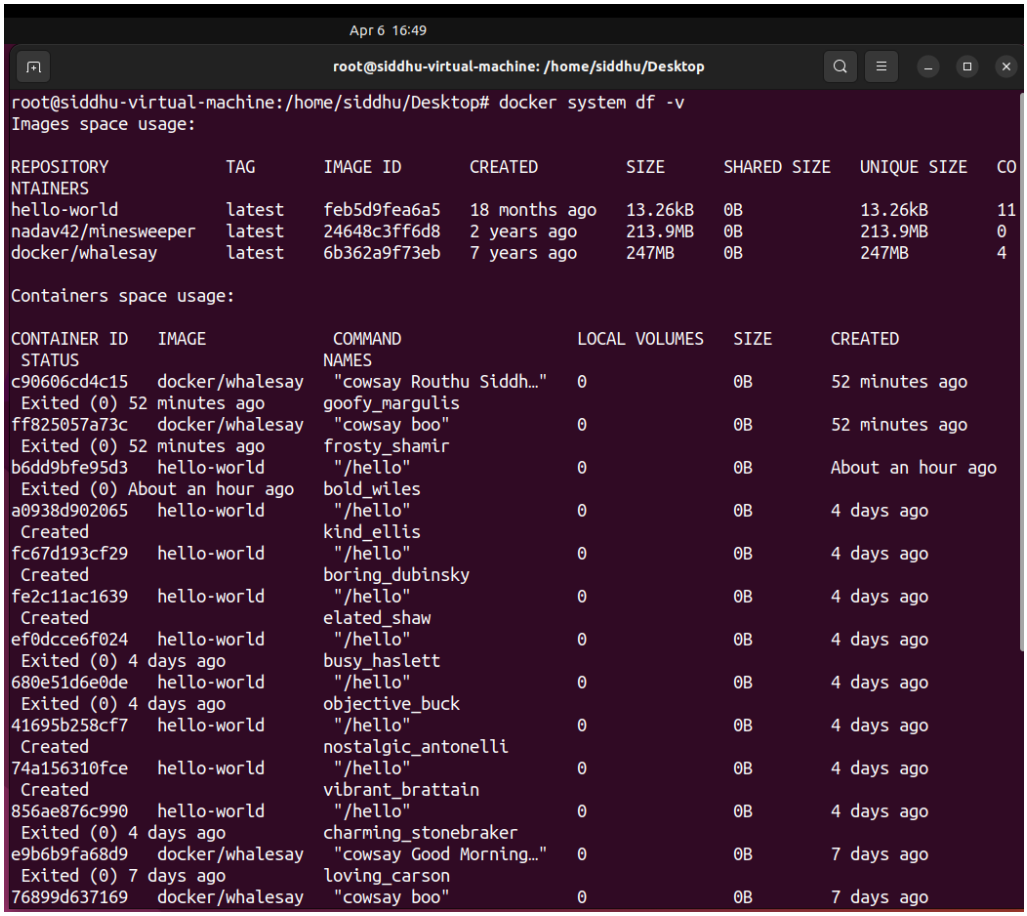
Command: docker system prune --all



30. docker system df -v: Shows detailed information about the disk usage of Docker on the host machine, including volumes.

Syntax: docker system df [OPTIONS]

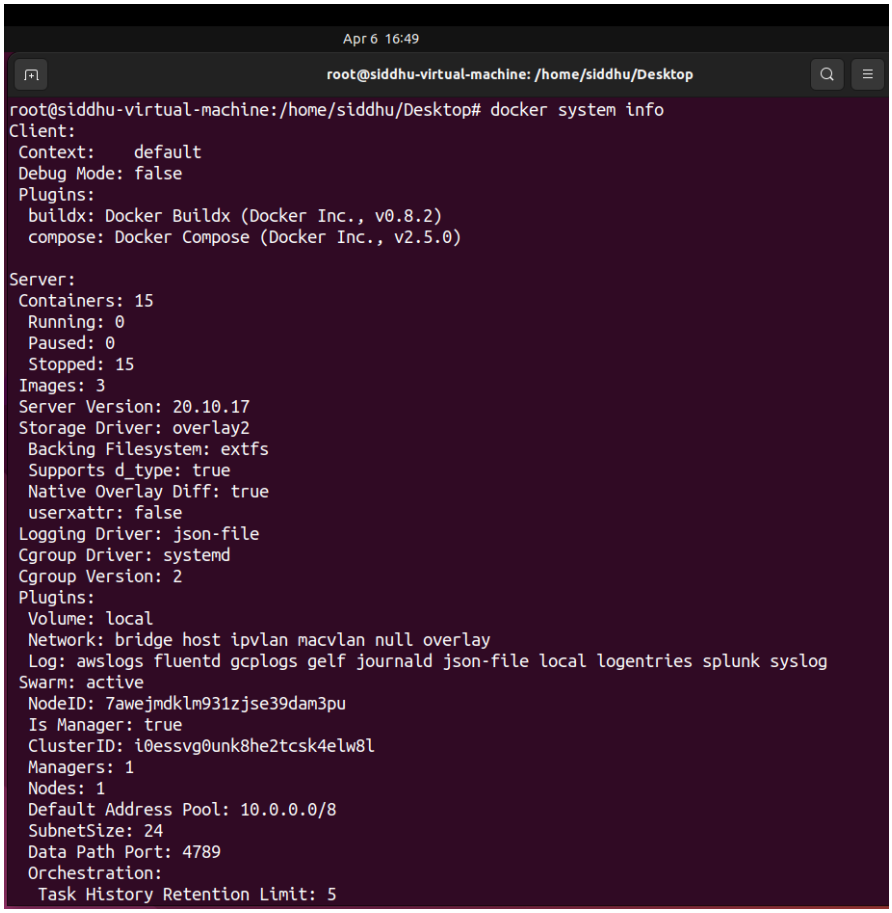
Command: docker system df -v



31. docker system info: Shows detailed system-wide information about Docker.

Syntax: docker system info [OPTIONS]

Command: docker system info



32. docker system prune --volumes: Removes all unused volumes.

Syntax: docker system COMMAND

Command: docker system prune --volumes