

Monolithic vs Microservices

Monolithic App

All features inside one big program.

e.g.: Old Twitter

Login, posting, messaging, all packed together.

Microservices App

Split into small independent services.

Eg:- Netflix - login, movie recommendation, video streaming are separate services.

Monolithic

- 1) One big box
- 2) Deploy all at once
- 3) Hard to scale
- 4) Single tech.
- 5) If one part fails, all fail

Microservices

- many small boxes
- Deploy only what changed
- Easy to scale small parts
- mix of tech possible
- Only that service fails

2) Containers vs Virtual Machines

Virtual Machine (VM)

- = full computer inside your computer,
- = Has its own OS, Heavy, slow.

Container

- = Just a lightweight app with its dependencies.
- = Uses host OS. Fast, light.

VM

need

GBs of memory, containers use MBs

Containers use MBs,

(virtual machine about 6x)

- take minutes to start
- in seconds

- run different OS (Win/Linux)
- Containers share same OS kernel

Runs Windows & Linux

together on one PC.

Run multiple small

web apps on one server.

Docker Architecture

1] Docker Client :-

- Where you type commands like docker run, docker ps, etc

/ • Analogy : You placing an order in a restaurant

2] Docker Daemon (dockerd)

28. • Runs in the background, does the real work
↳ builds images, runs containers, manages them

/ • Analogy : The chef in the kitchen who cooks your order

3] Docker Engine

- Combination of Client + Daemon

/ • Analogy :

The entire restaurant system

(Customers + chefs + Kitchen)

4) Docker Registry

A central place where Docker images are stored.

- Public one = Docker Hub,
Private registries are also possible,

1. Analogy:

A supermarket where the chef gets ingredients

5) Docker Image

A blueprint/template of your application
(contains instructions + dependencies).

- Analogy: A recipe book with exact steps to cook a dish.

6) Docker Container

A running instance of an image.

1. Analogy:

The actual dish cooked and served from recipe.

one defined

Client = You ordering food

Daemon = Chef cooking.

Registry = Supermarket

Image = Recipe book

Container = Actual dish

Engine = whole restaurant system

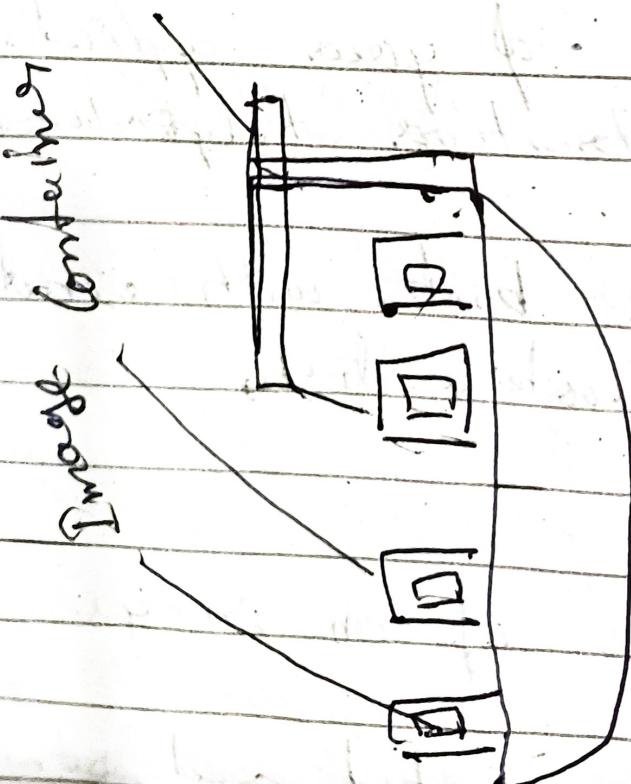
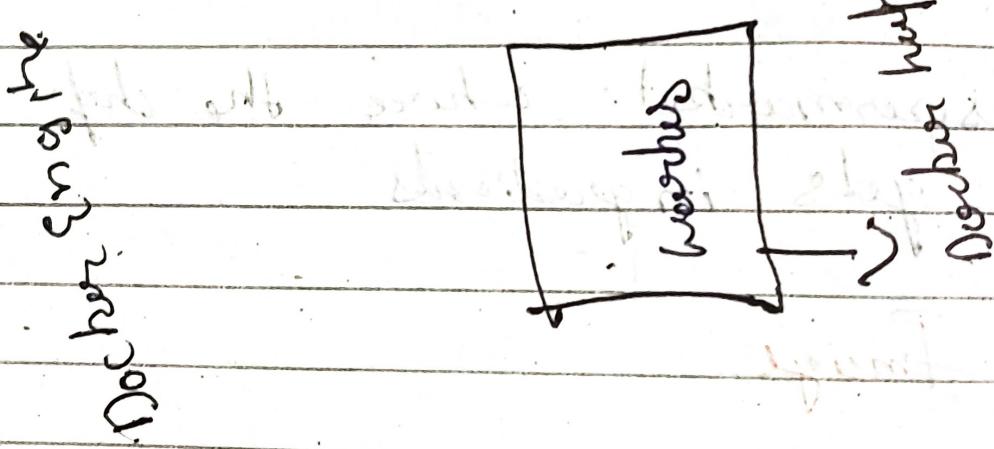
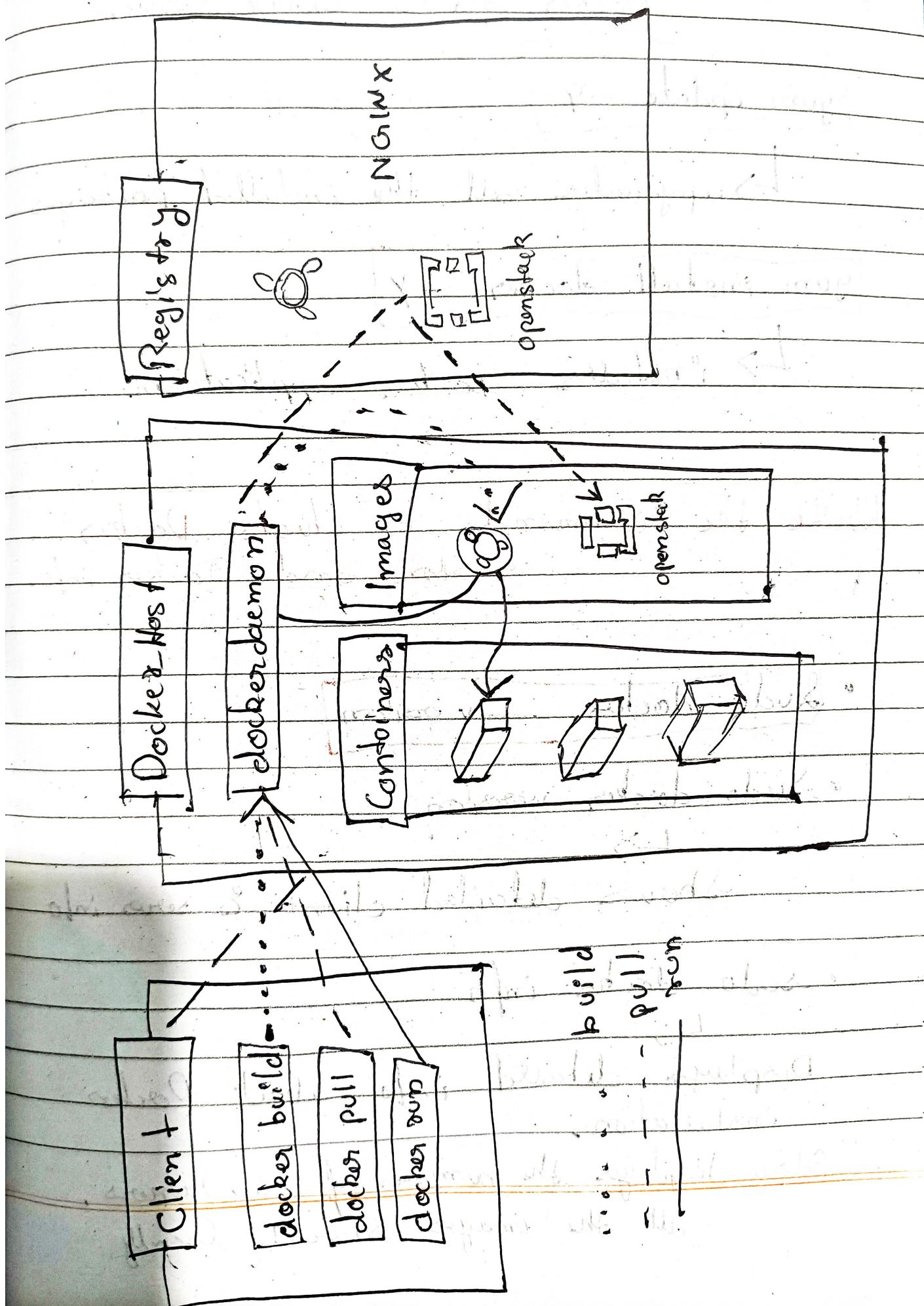


Diagram of Docker architecture.



List the commands required to install Docker on a Linux server

yum update -y

↳ upgrades all the installed packages

yum install docker -Y

↳ installs Docker application.

Write the command to check Docker version and Docker info.

• sudo docker --version

• sudo docker version

↳

Shows detailed client & server info

• sudo docker info

↳

Displays detailed info about Docker installation.

Also displays the number of containers, all the images stored locally

UBUNTU INSTALLATION

apt update -y

apt install docker -y