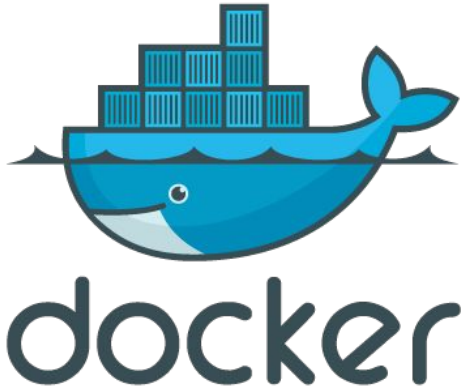
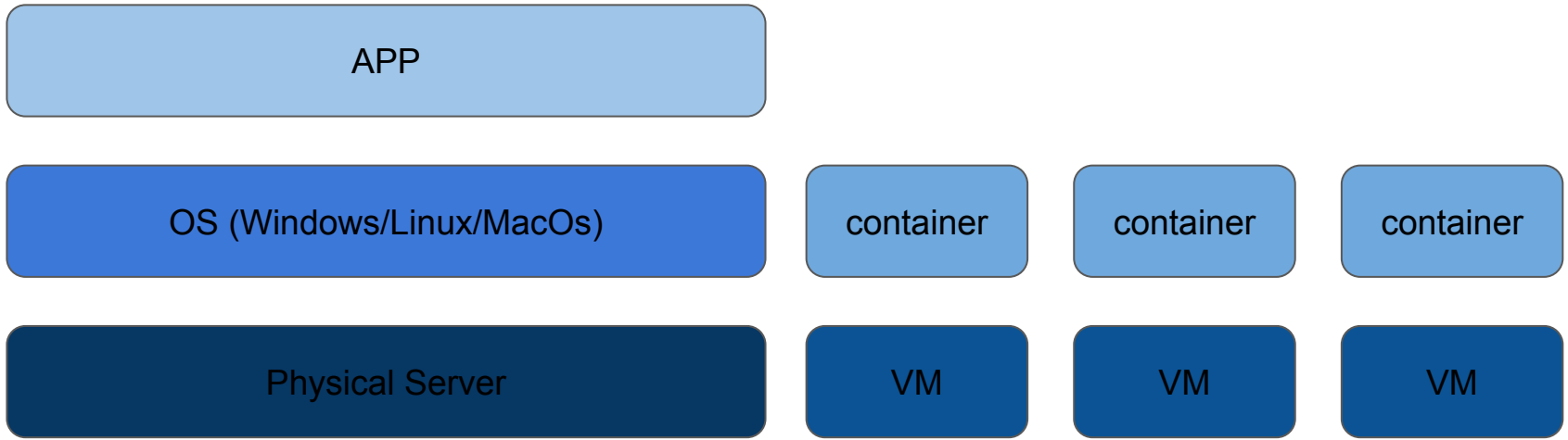
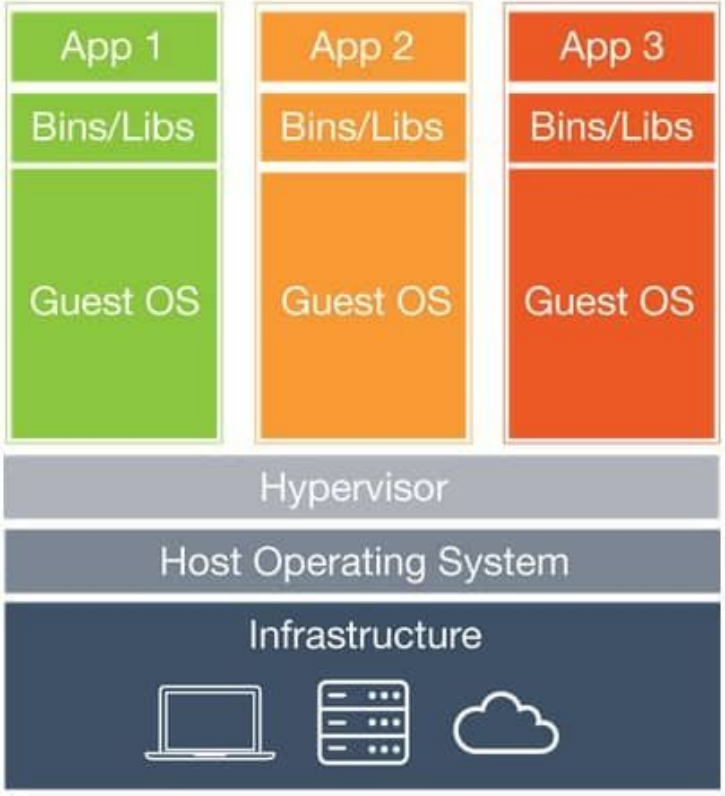
Docker

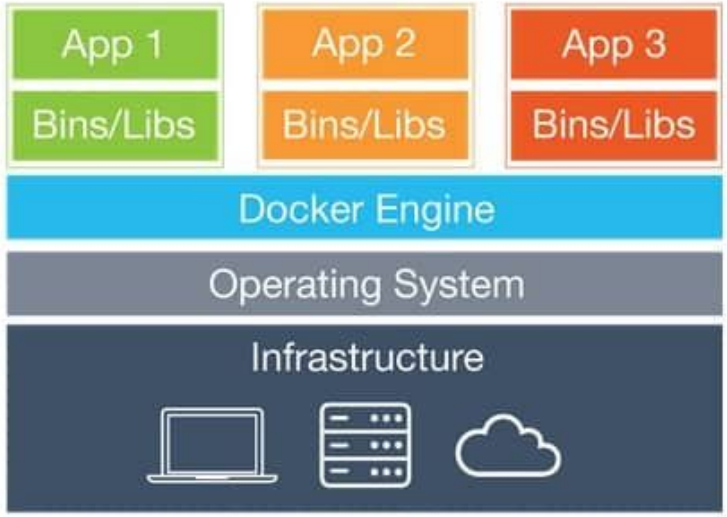

docker

Docker architecture



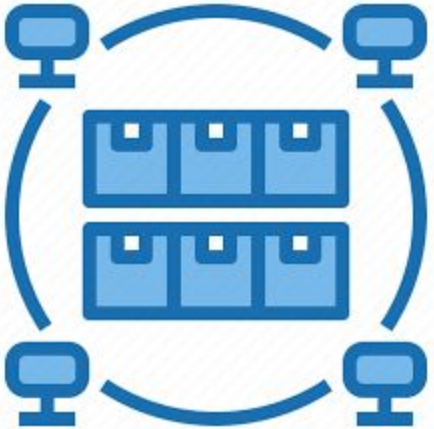


Virtual Machines



Containers

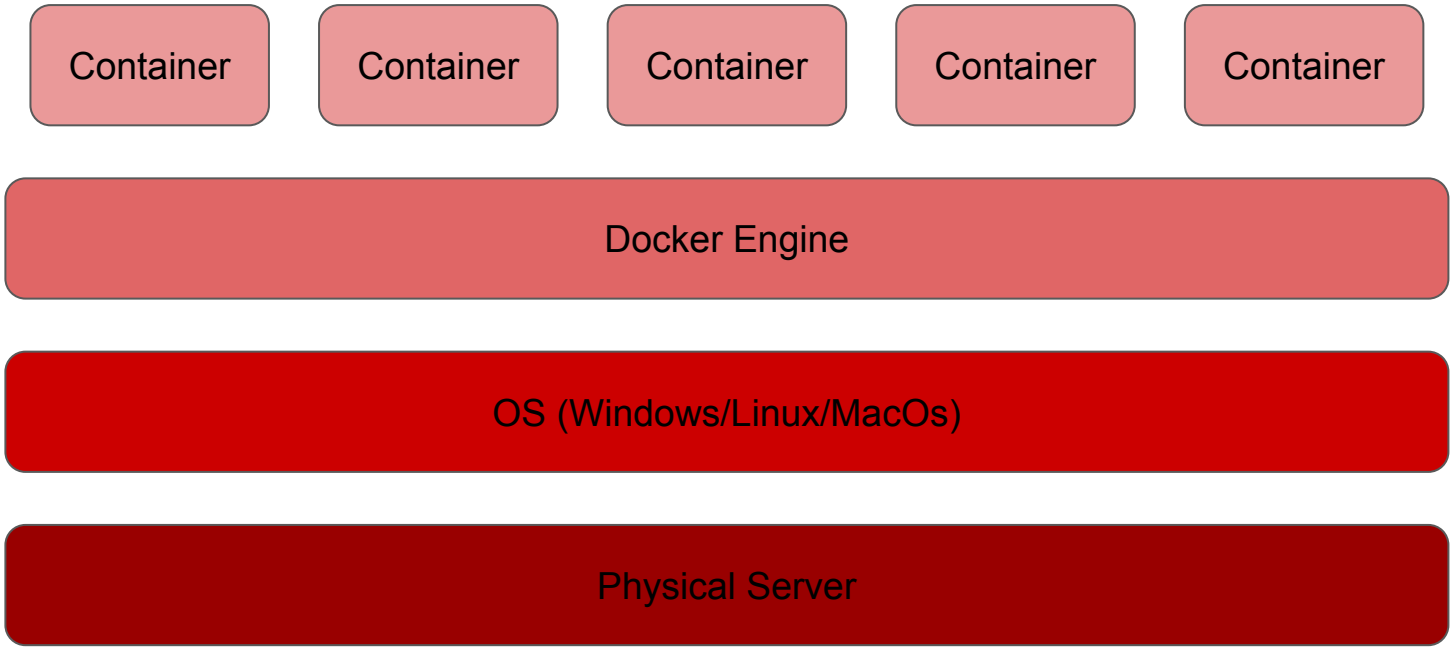
Work on your laptop, work on production



Docker Usage

- virtualisation
- simplify configuration
- huge repository of existing image
- easy to integrate in CI/CD
- simplify deployment

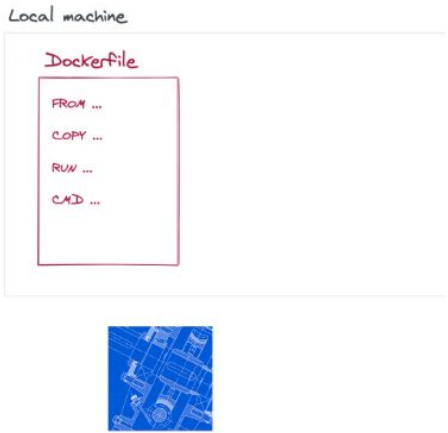
Docker architecture



Dockerfile

The Dockerfile is a document that lists all the commands that a user would run in order to build a Docker image.

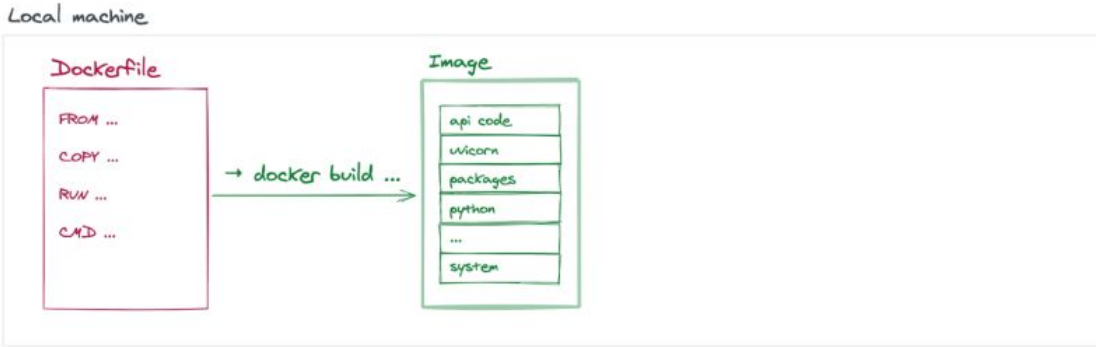
You can see the Dockerfile as a **blueprint** for a layer cake mold.



Docker image

The Docker image holds all the files required in order to instantiate a Docker container.

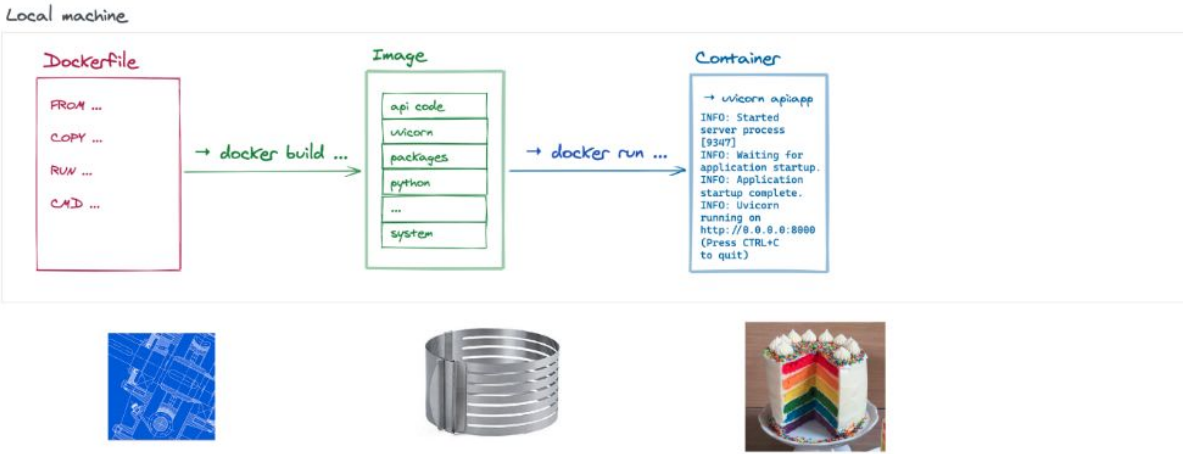
You can see the Docker image as a layer cake **mold**.



Container

The Docker container hosts a running instance of your code.

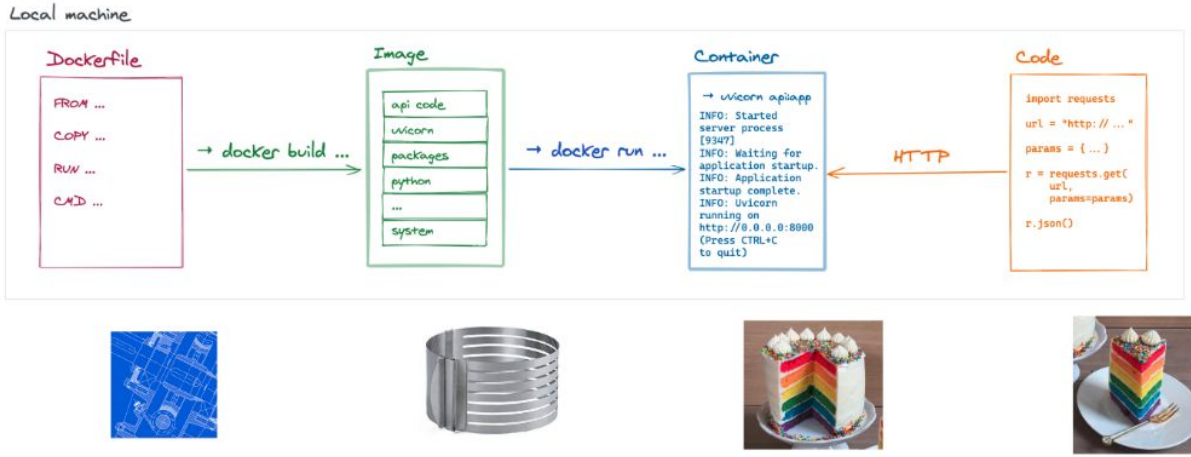
You can see the Docker container as a **layer cake**.



Consumer

Our application will be consumed in different ways depending on its nature. A website will be consumed through a browser. An API will be consumed through code.

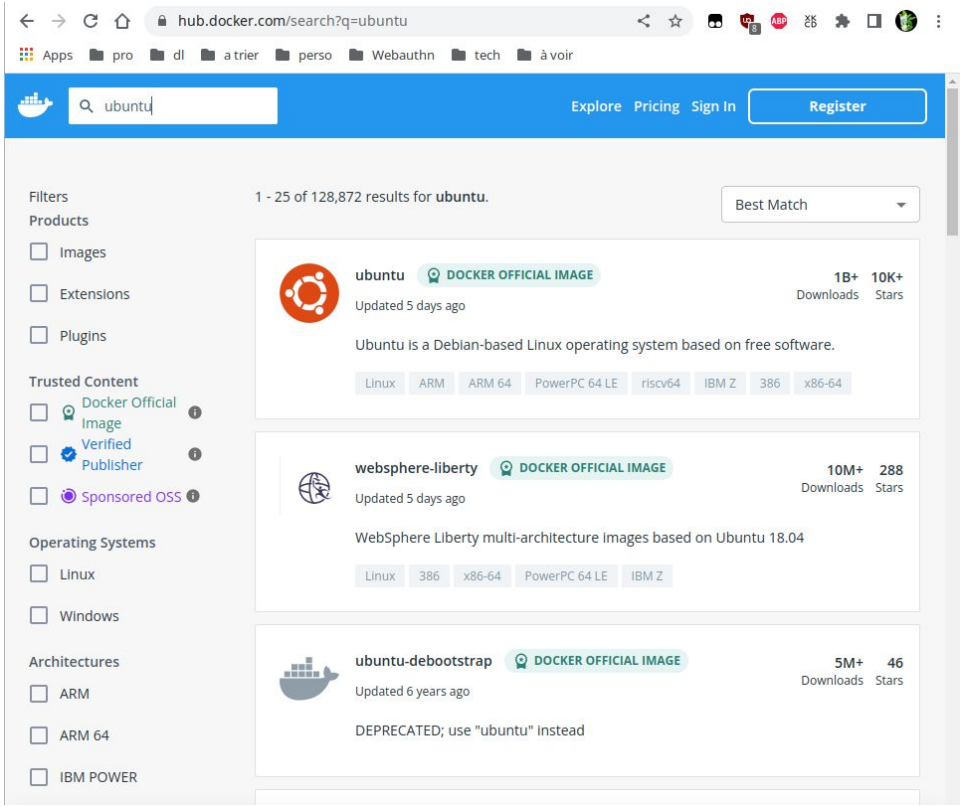
You can see the consumer of the application as receiving a **piece of the layer cake**.



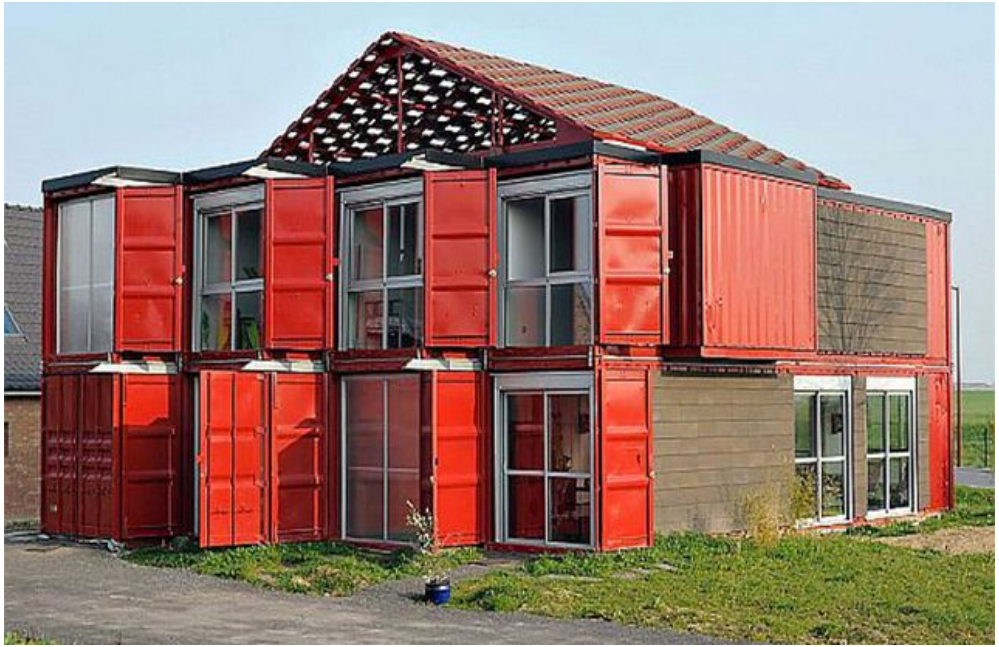
Dockerfile

```
FROM python:3

WORKDIR /usr/src/myapp

COPY requires.txt ./
RUN pip install --no-cache-dir -r requires.txt

COPY . .

CMD [ "python", "./myapp.py" ]
```

Docker Hub


hub.docker.com/search?q=ubuntu
Apps
pro
dl
a trier
perso
Webauthn
tech
à voir
ubuntu
Explore
Pricing
Sign In
Register
Filters
Products
Images
Extensions
Plugins
Trusted Content
Docker Official Image
Verified Publisher
Sponsored OSS
Operating Systems
Linux
Windows
Architectures
ARM
ARM 64
IBM POWER
1 - 25 of 128,872 results for ubuntu.
Best Match
ubuntu
DOCKER OFFICIAL IMAGE
Updated 5 days ago
1B+ Downloads
10K+ Stars
Ubuntu is a Debian-based Linux operating system based on free software.
Linux
ARM
ARM 64
PowerPC 64 LE
riscv64
IBM Z
386
x86-64
websphere-liberty
DOCKER OFFICIAL IMAGE
Updated 5 days ago
10M+ Downloads
288 Stars
WebSphere Liberty multi-architecture images based on Ubuntu 18.04
Linux
386
x86-64
PowerPC 64 LE
IBM Z
ubuntu-debootstrap
DOCKER OFFICIAL IMAGE
Updated 6 years ago
5M+ Downloads
46 Stars
DEPRECATED; use "ubuntu" instead

Docker Compose



Docker compose

- multiple isolated container
- data volume management
- interoperability between container

Docker-compose.yml

```yaml
version: '2.1'

services:
  mydb:
    image: mysql
    restart: always
    volumes:
      - db_data:/var/lib/mysql/data
    environment:
      MYSQL_PASSWORD: password
      MYSQL_USER: admin
      POSTGRES_DB: myDB
    healthcheck:
      test: mysql -u "$$POSTGRES_USER"
      interval: 10s
      timeout: 2s
      retries: 10
  myapp:
    depends_on:
      mydb:
        condition: service_healthy
    image: mynodeapp
    ports:
      - "3000:3000"
    restart: always
    volumes:
      - data:/usr/app/data
volumes:
  db_data: {}
  nc_data: {}
```

https://simongomezuniv.github.io/td_docker

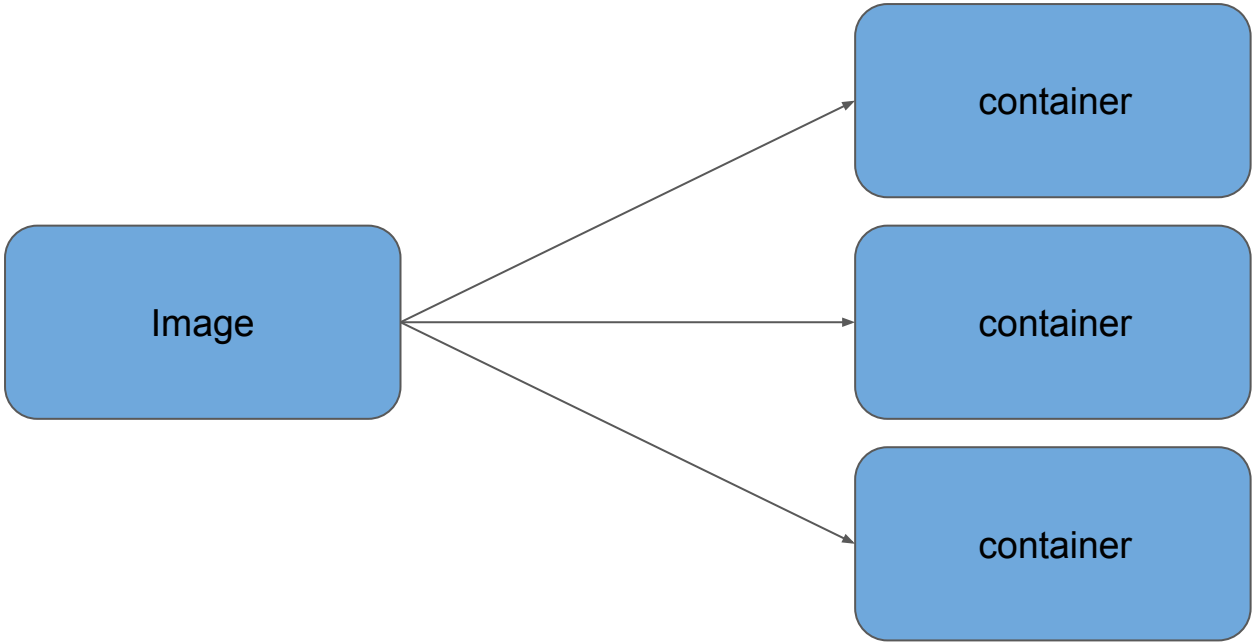



Image vs container