Docker

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Introduction

- an open-source project that automates the deployment of software applications inside **containers** by providing an additional layer of abstraction and automation of **OS-level virtualization** on Linux.

  wikipedia

- Docker is an **open platform for developing, shipping, and running applications**. Docker enables you to **separate your applications from your infrastructure** so you can deliver software quickly.

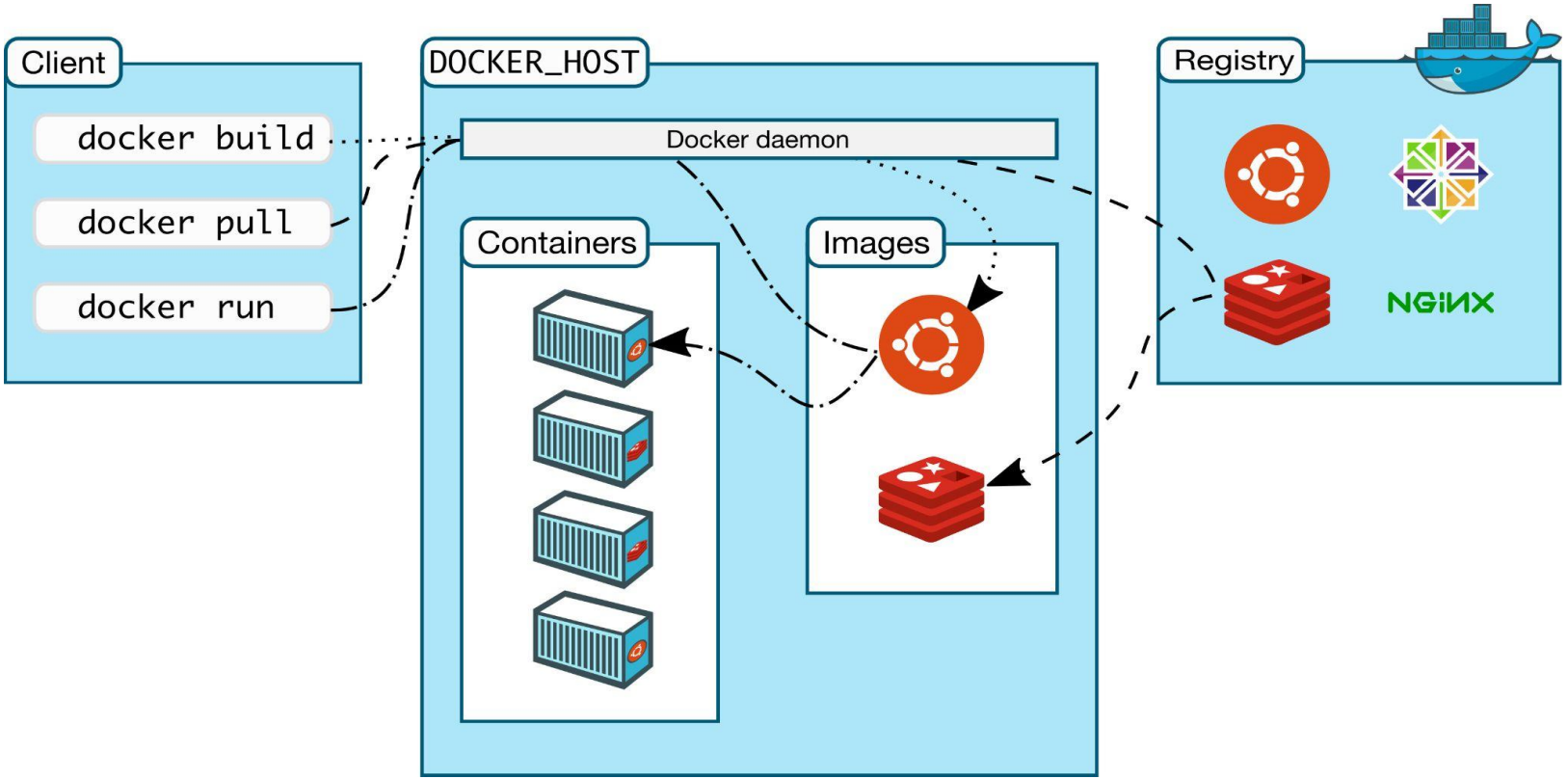
  https://docs.docker.com/

What can I use Docker for?

- Fast, consistent delivery of your application
- Responsive Deployment and Scaling
- Running more workloads on same hardware

Source:docs.docker.com

Architecture

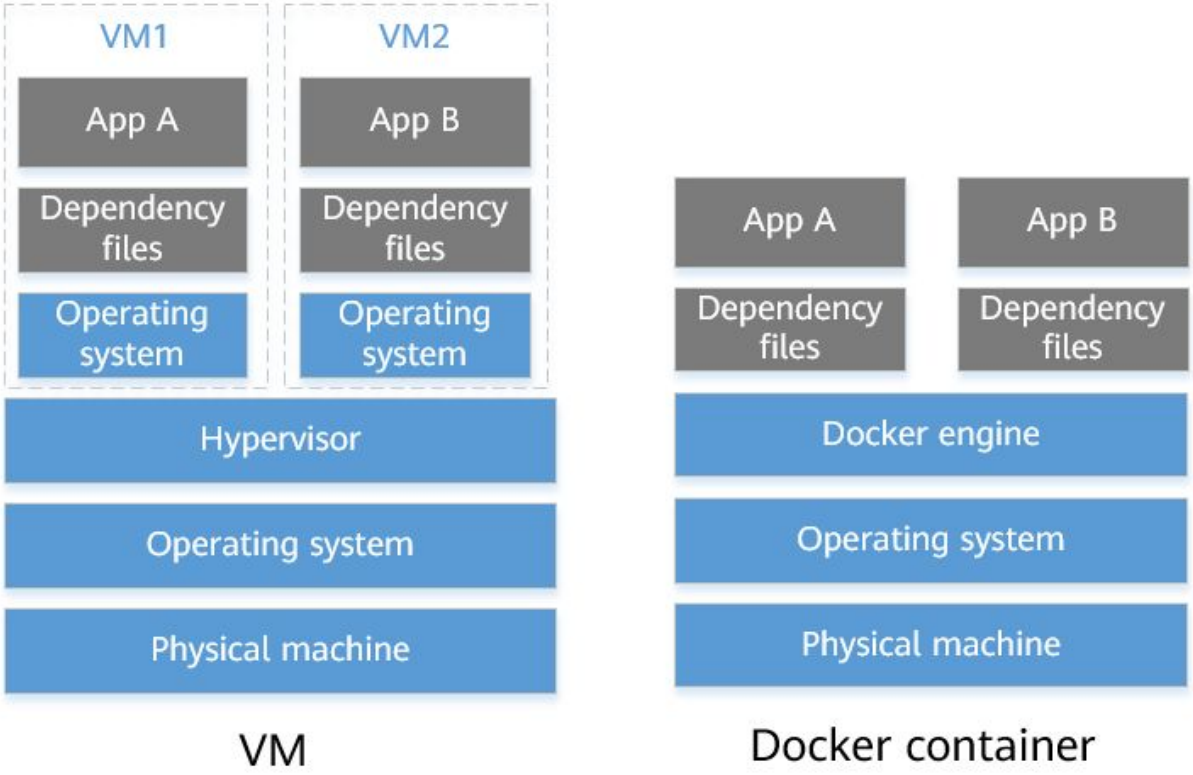


Working Mechanism

DockerFile

```
FROM ubuntu:16.04

MAINTAINER Abhishek

RUN apt-get update
RUN apt-get install -y python3 python3-pip
COPY . /app

WORKDIR /app

EXPOSE 5000

ENTRYPOINT echo "Hello World !"
```

Containers


VM1
VM2
App A
App B
Dependency files
Dependency files
Operating system
Operating system
Hypervisor
Operating system
Physical machine
VM
App A
App B
Dependency files
Dependency files
Docker engine
Operating system
Physical machine
Docker container

Get Started with Linux

- To install latest/specific version go to the docker website and install using the repository
  - Set up the repository
  - Install the docker Engine
- Check the version of the docker Engine using

```
$ docker version
```

- Run Hello-World Image

```
$ sudo docker run hello-world
```

Reference: https://docs.docker.com/engine/install/ubuntu/#install-using-the-repository

Deploy static website in Nginx server

- Create Dockerfile
- Build image from Dockerfile
- Run image as container

Next: Docker Compose

- Compose is a tool for defining and running multi-container Docker applications. With Compose, you use a YAML file to configure your application’s services. Then, with a single command, you create and start all the services from your configuration
- Compose works in all environments: production, staging, development, testing, as well as CI workflows
- Install from https://docs.docker.com/compose/install/compose-plugin/#install-using-the-repository