Presented by Wing Chan

Containerization using Docker

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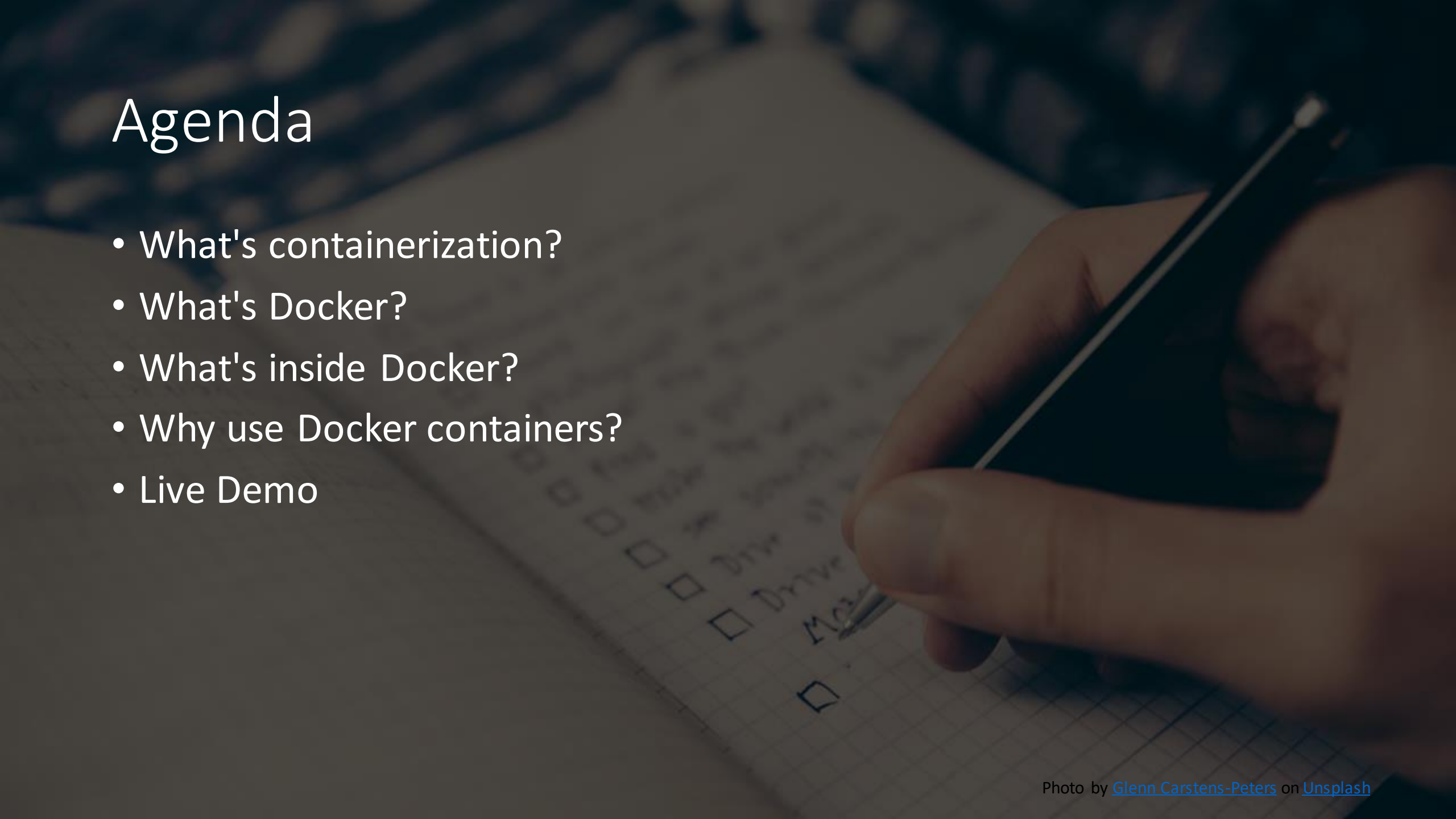
Agenda

- What's containerization?
- What's Docker?
- What's inside Docker?
- Why use Docker containers?
- Live Demo



What's containerization?

- Containerization is an OS-based virtualization which create multiple virtual units in isolated user space instances, known as Containers.
- Containers implement the isolation of processes at the OS level.
- Containers can run virtually anywhere, easy development and deployment.

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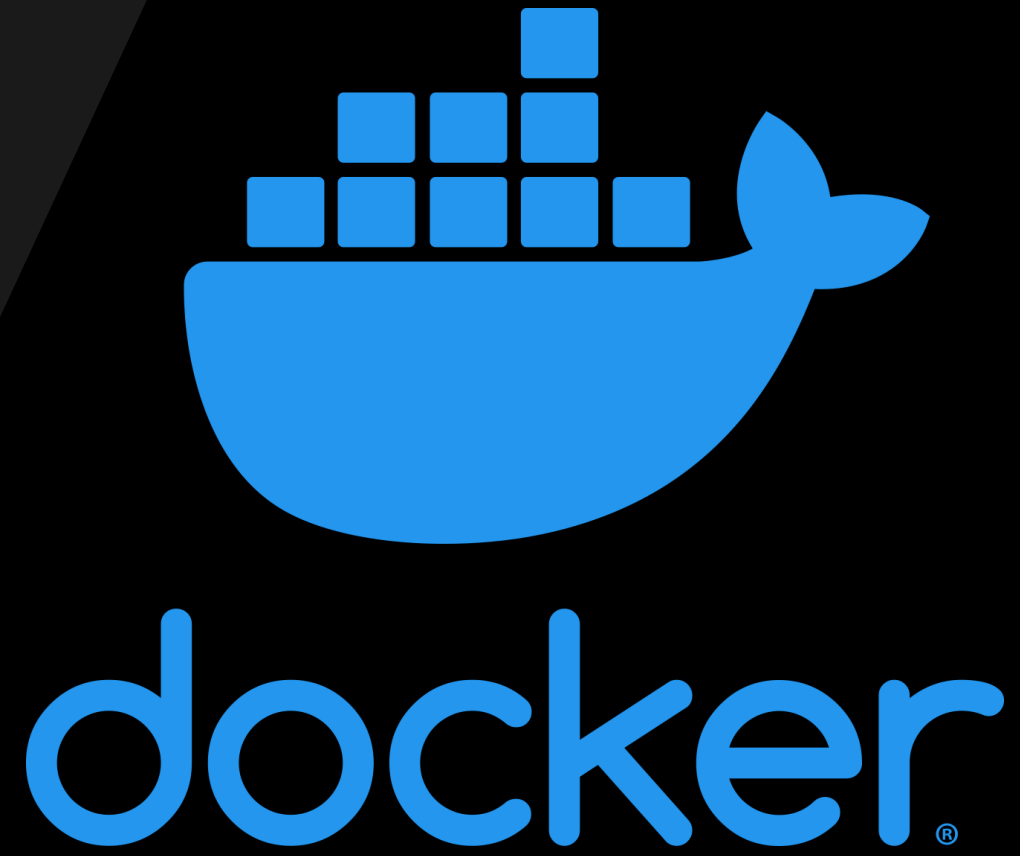
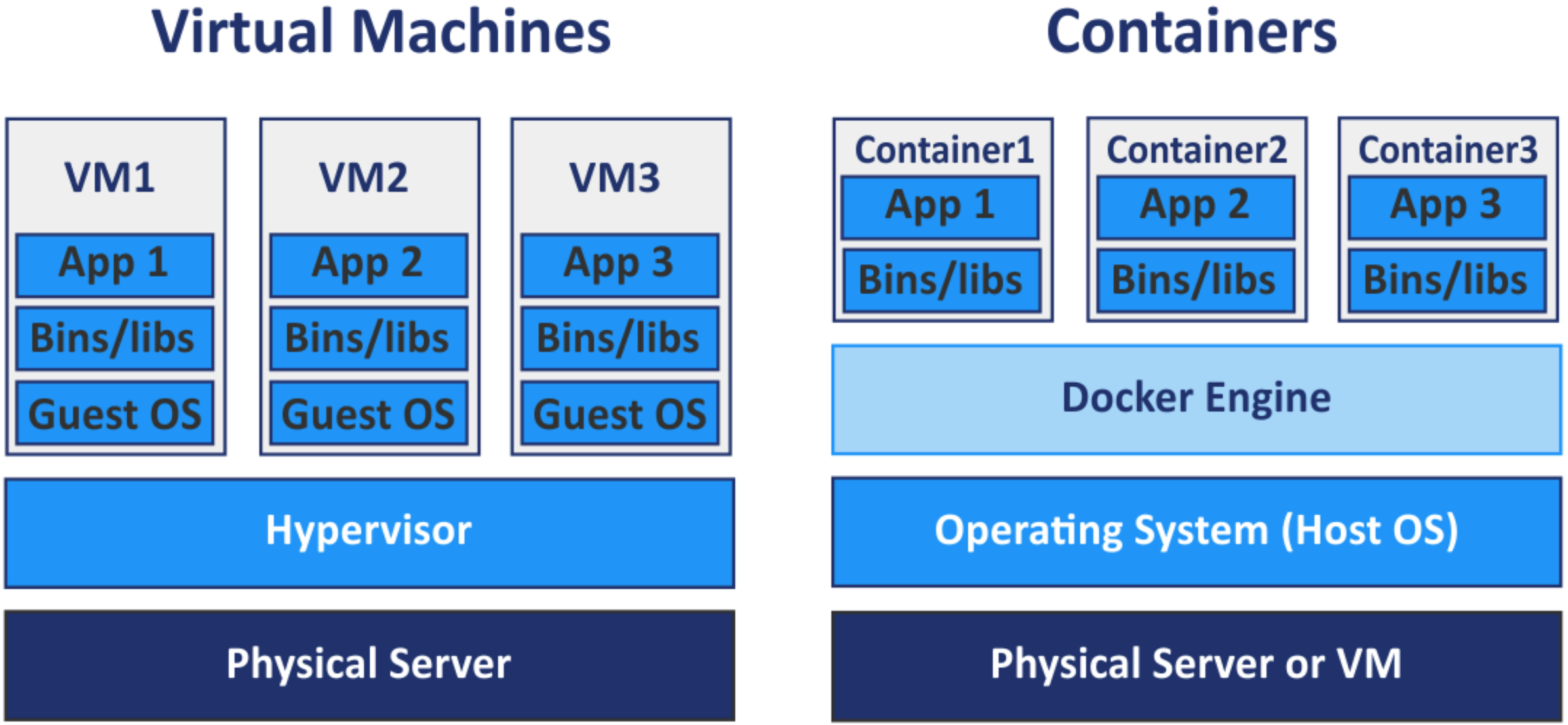
What's Docker?

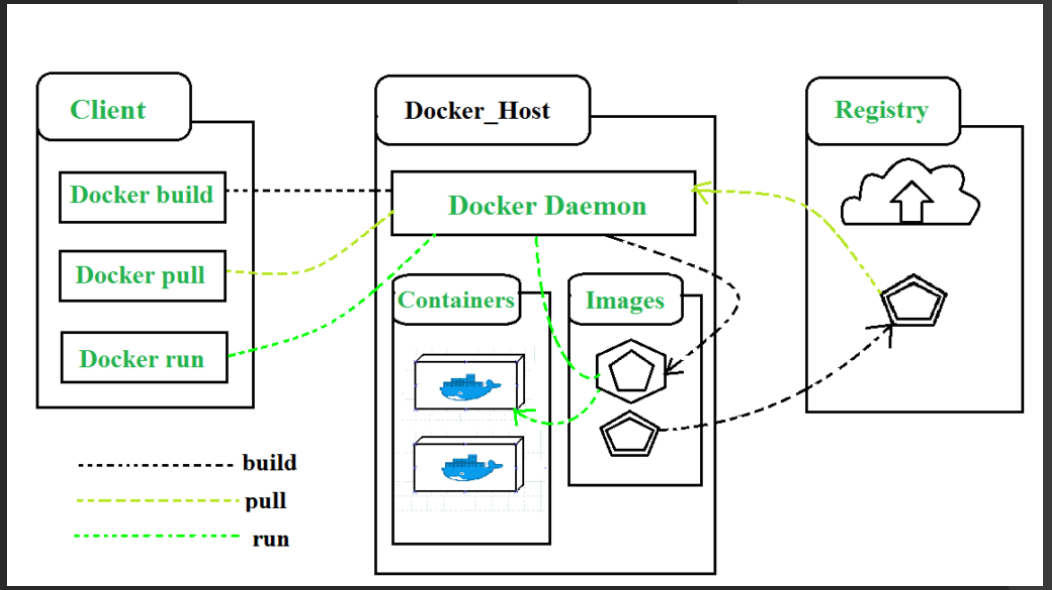
- Docker is the world's leading software container platform. It was launched in 2013 by a company called Docker, Inc.
- It is written in Go language.
- Docker uses the resource isolation features of Linux kernel to allows multiple containers running on a single Linux instance.
- Docker provides all necessary tools for create, deploy and run your applications by using containers.




Virtual Machines
VM1
App 1
Bins/libs
Guest OS
VM2
App 2
Bins/libs
Guest OS
VM3
App 3
Bins/libs
Guest OS
Hypervisor
Physical Server
Containers
Container1
App 1
Bins/libs
Container2
App 2
Bins/libs
Container3
App 3
Bins/libs
Docker Engine
Operating System (Host OS)
Physical Server or VM

What's inside Docker?

- Docker Clients and Servers – client/server architecture.
- Docker Images – build docker containers by using a read-only template.
- Docker Containers – a runtime instance of Docker image.
- Docker Registries – a storage component for Docker Images. Docker Hub is their public registry server.
- Docker File – a text file that contains a list of instructions on how to build your Docker Image.



Why use Docker containers?

- Speed – The time required to build a container is very fast because they are small and lightweight.
- Portability - by design containers are very portable and can be deploy to different machines and performance remain the same.
- Scalability - It can be deployed in multiple physical servers, data servers and cloud platforms easily.
- Density - Docker uses the resources more efficiently and more containers can be run on a single host machine compared to VMs which use a hypervisor.

Photo by Andy Li on Unsplash

Live Demo

- https://github.com/wingchanatibsa/LearningSessions/tree/master/Containerization%20using%20Docker

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