

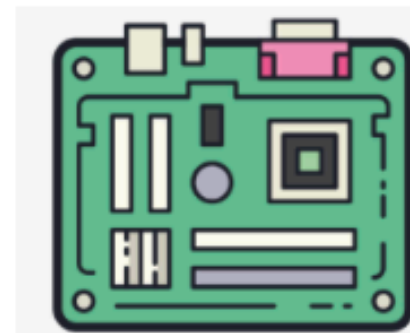
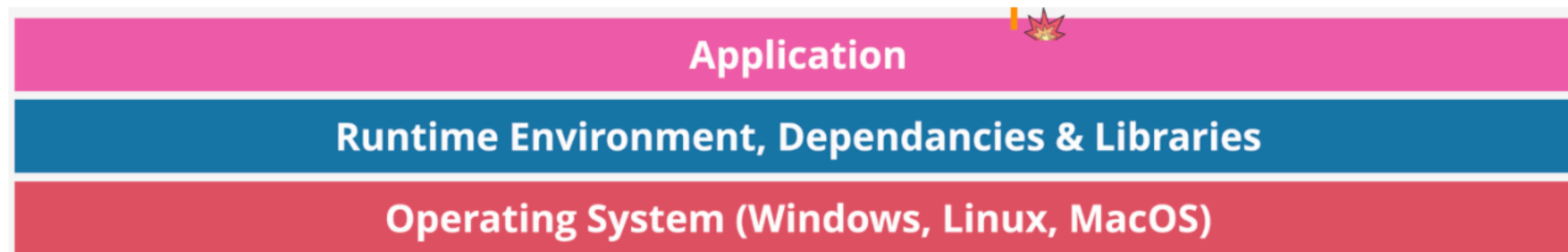
Containers and Docker

Today's Agenda

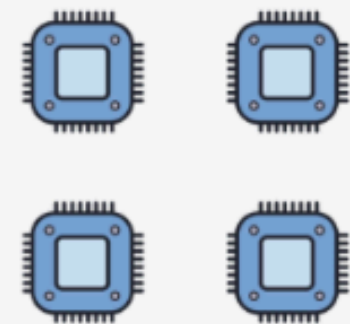
- Recap of Physical Servers and VM
- What are containers
- Introduction to Docker
- Download Docker
- Docker Image and Architecture
- Docker commands
- Build and run a simple containerised application

Container Basics - Physical Machines

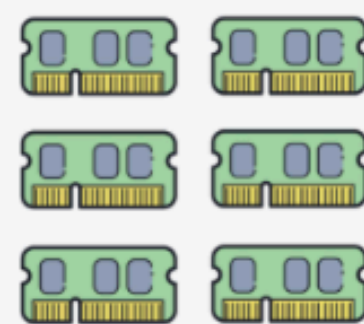
The single application uses the entire Server resources, even if you use it or not.



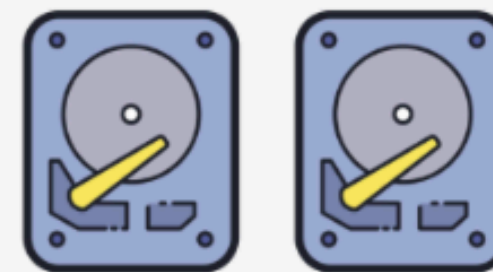
Motherboard



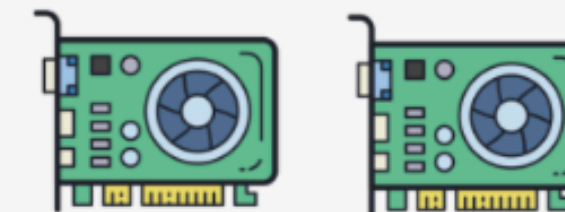
CPUs



Memory

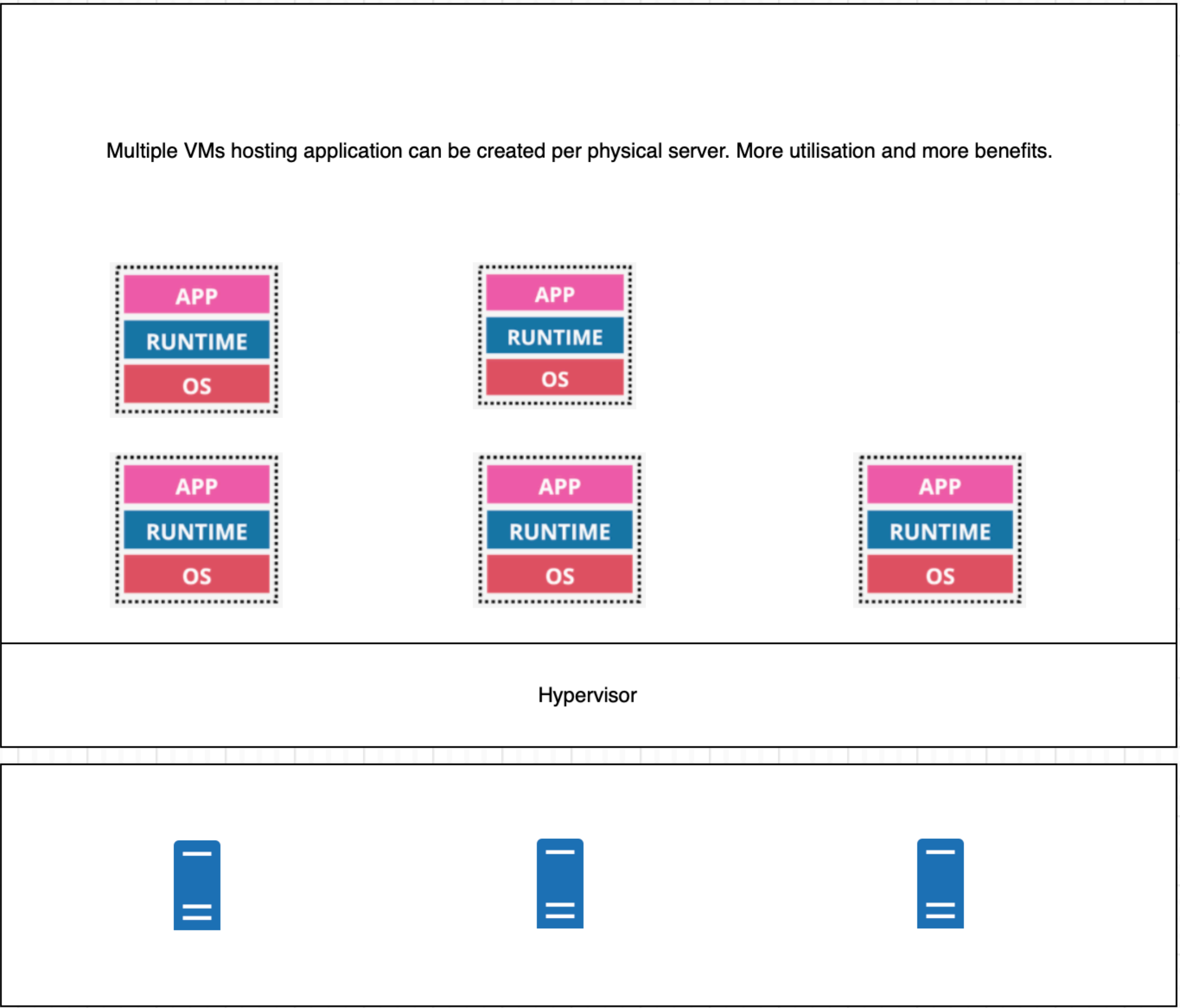


Storage

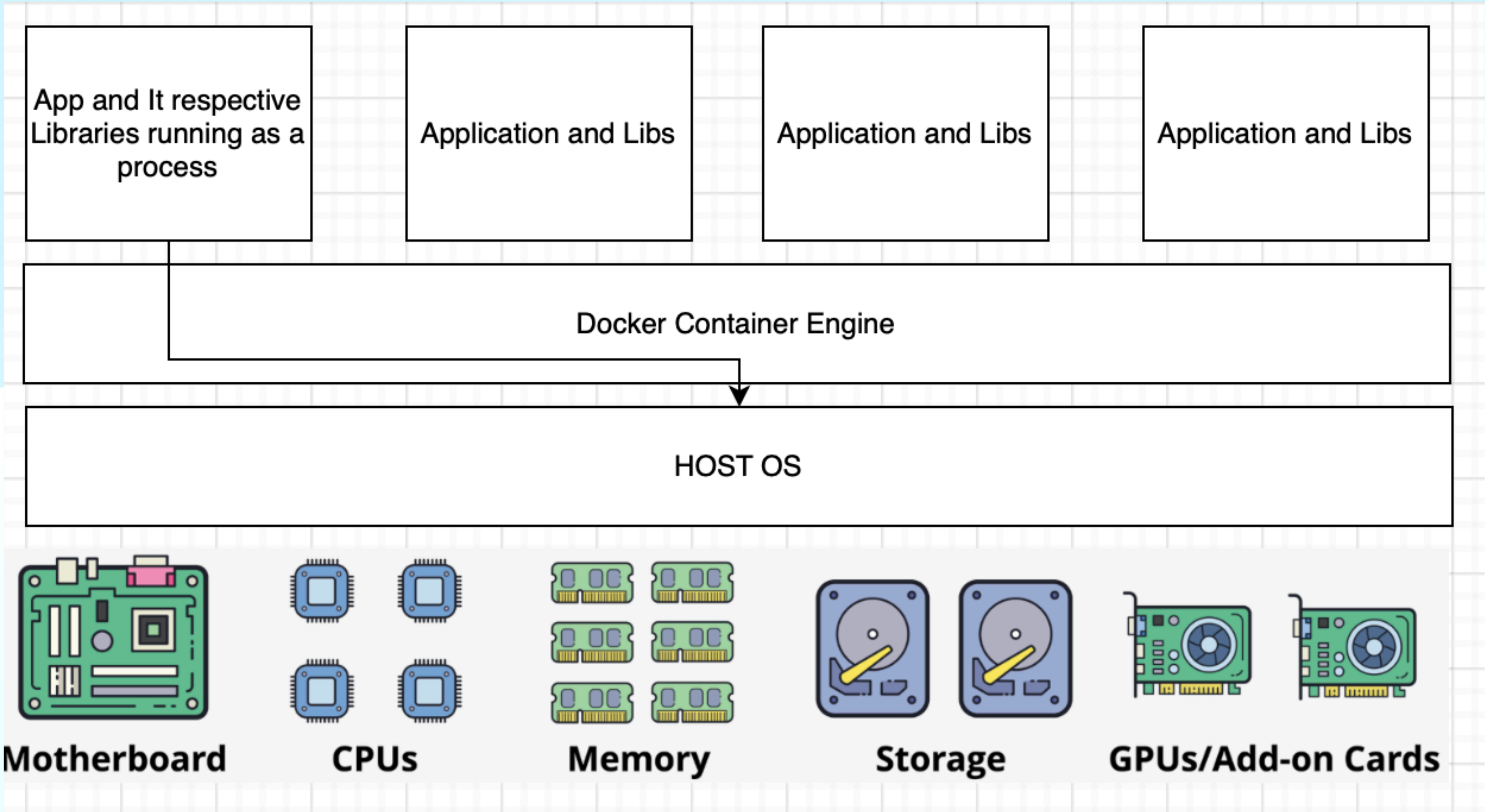


GPUs/Add-on Cards

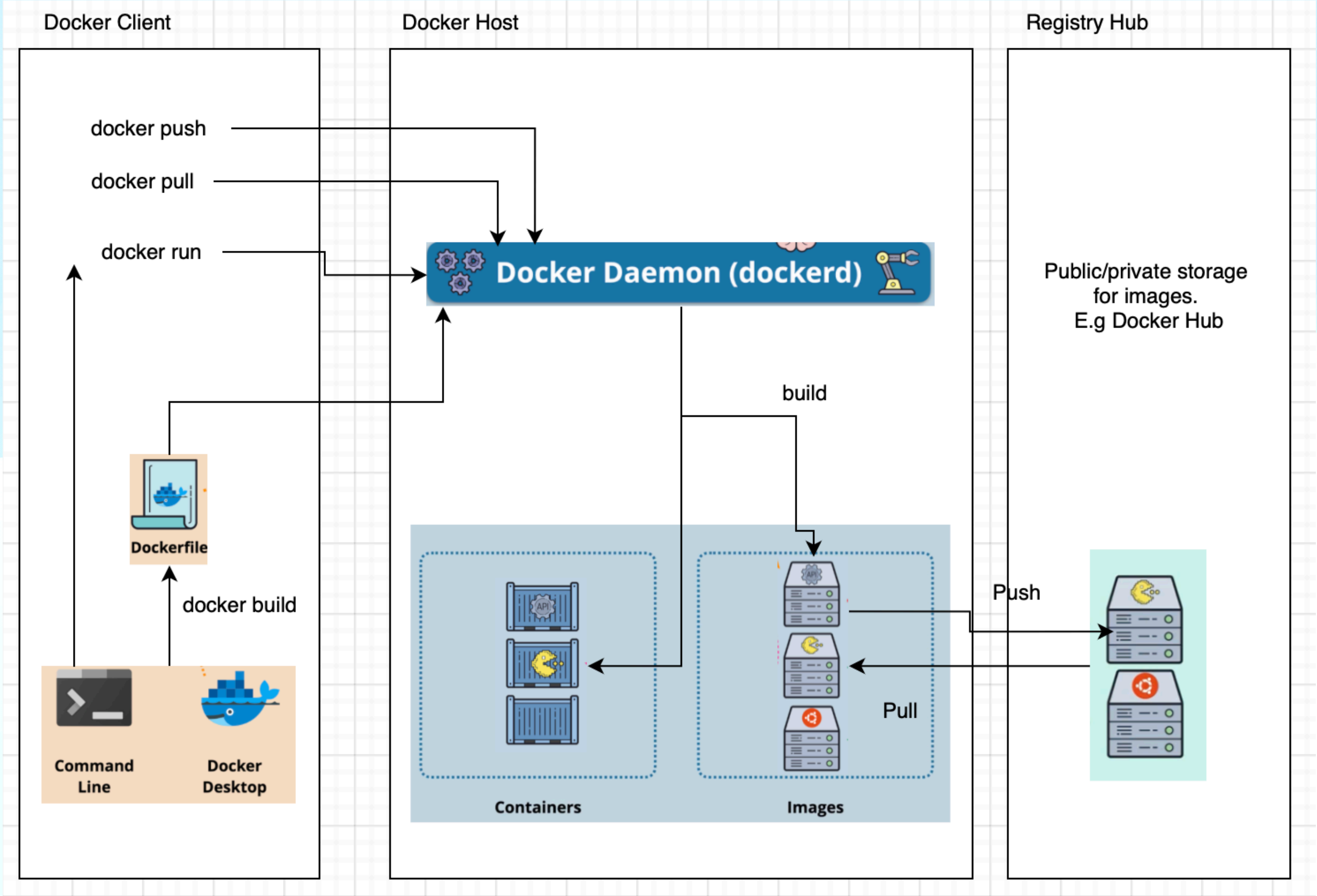
Container Basics - Virtual Machines



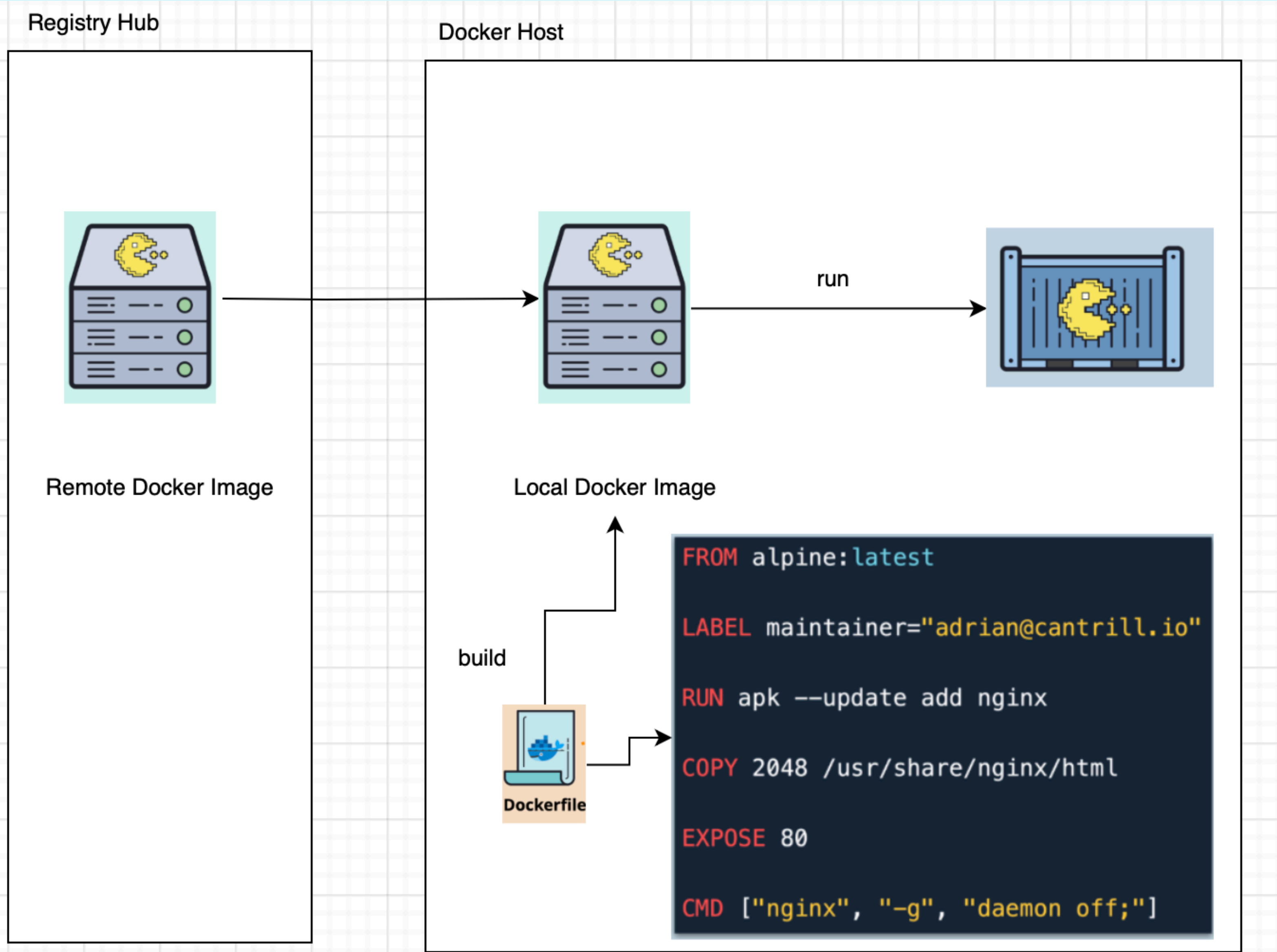
Container Basics - Containers



Docker Architecture



Docker Images and Dockerfile

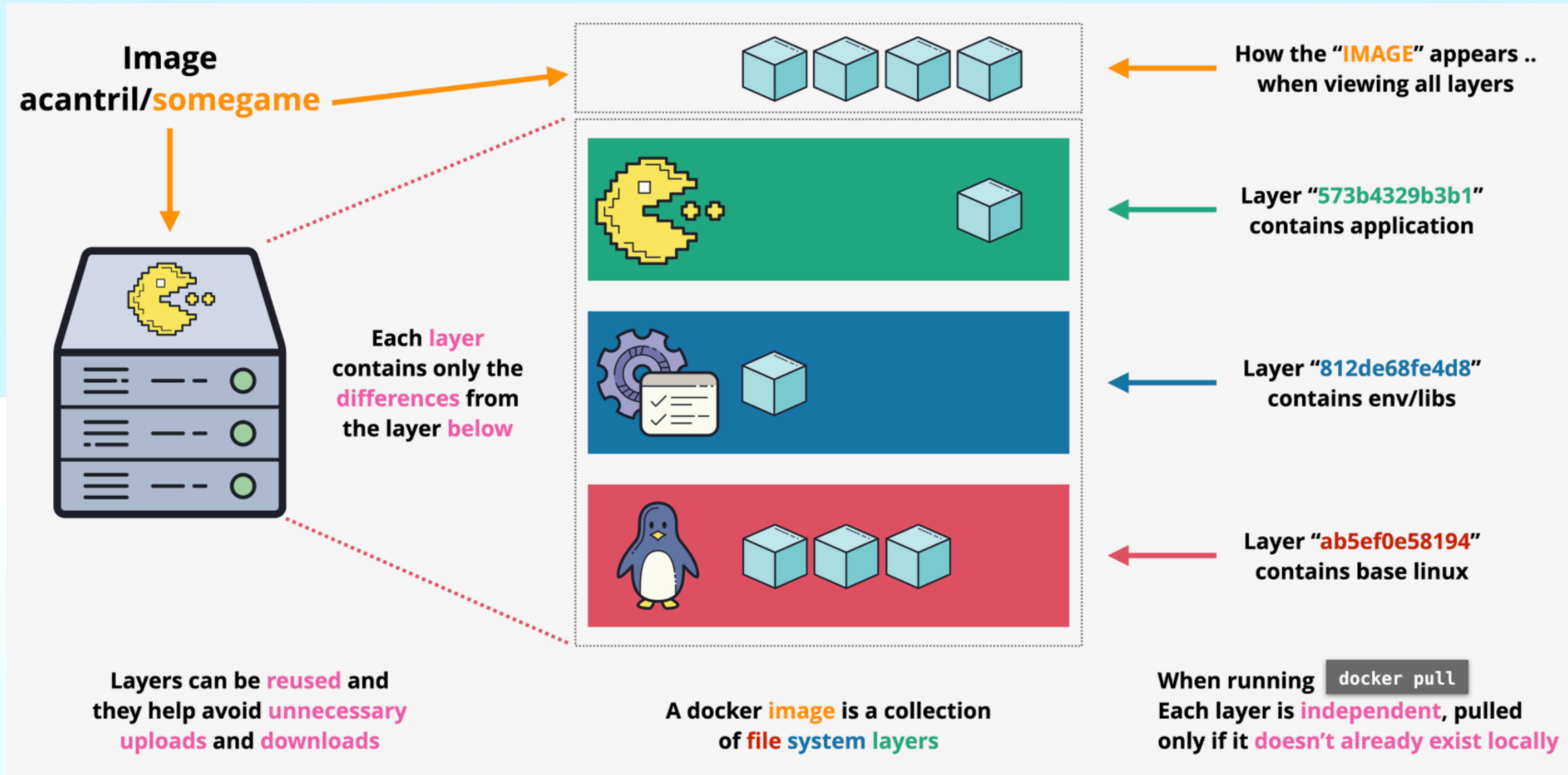


FROM

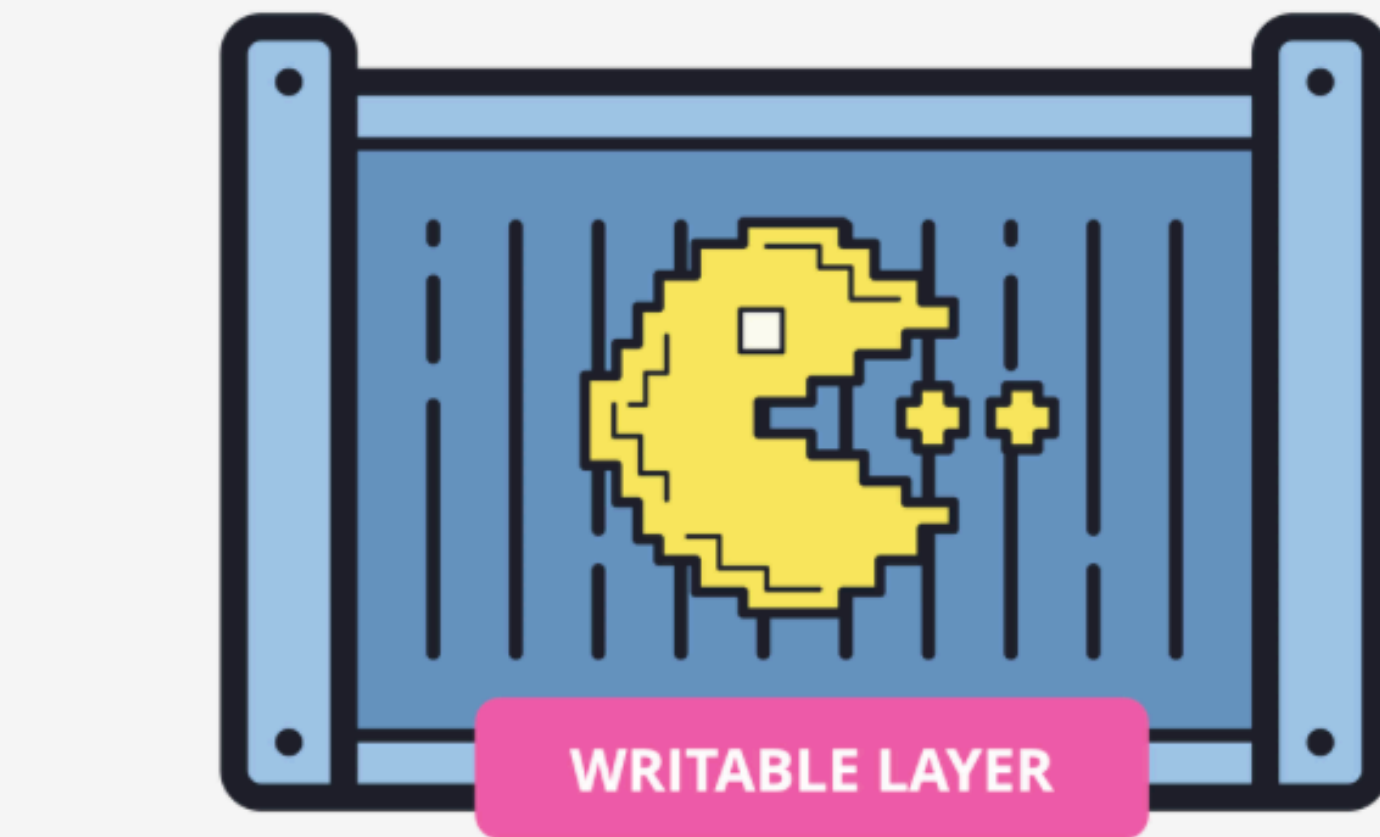
Docker Commands

- Docker run
- Docker ps
- Docker port
- Docker inspect
- Docker exec
- Docker logs
- Docker stop
- Docker rm
- Docker rmi

Docker File Layers



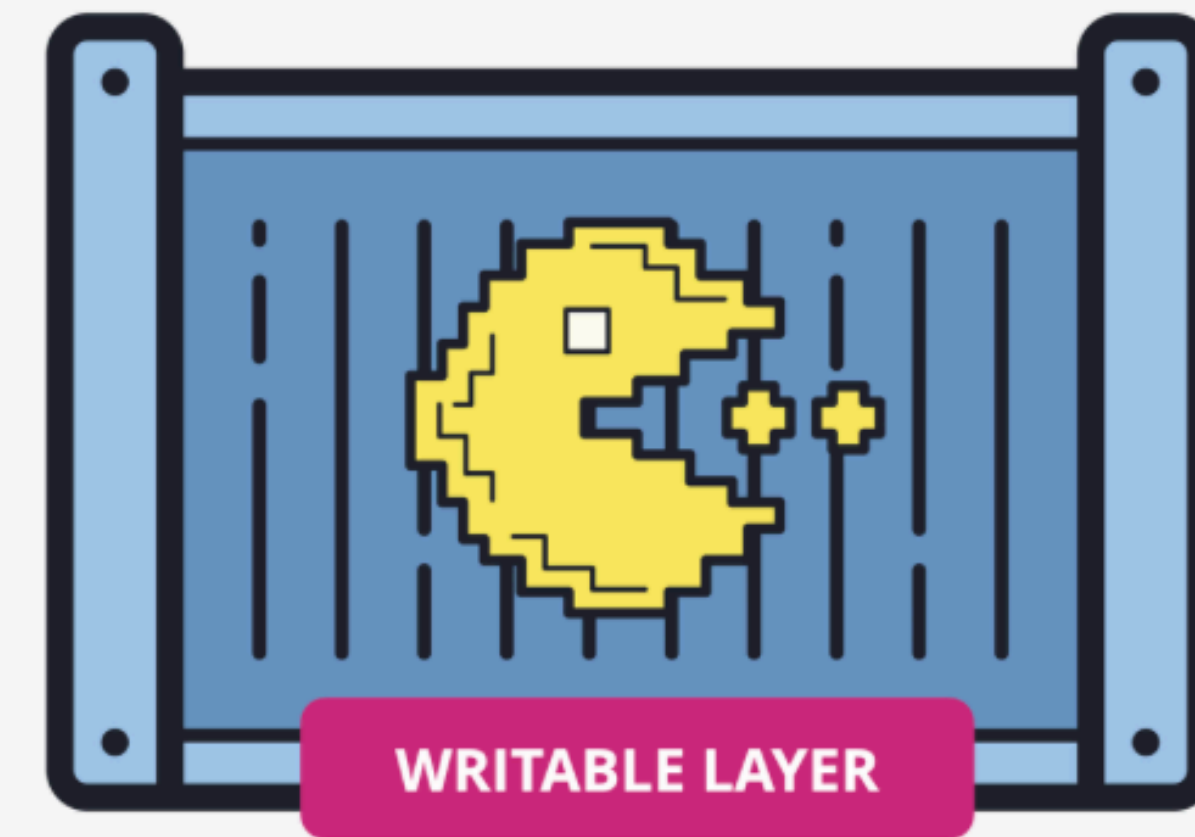
Docker File Layers



A **Writable** layer allows 'container storage' i.e local storage in the container

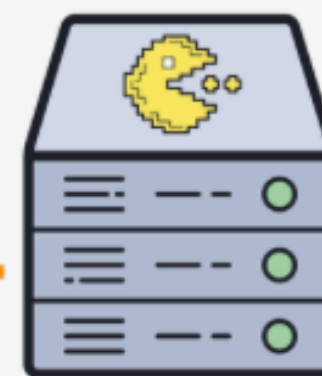
Writable layers use the '**union filesystem**' which does have a **performance "hit"** & they are tightly coupled to the **HOST**.

Writable layers are linked to the **lifecycle of the container**.
They don't persist.



Each container has a **unique Writable layer**. This keeps containers **isolated** while using **the same image**

Docker Images
Read only
immutable
templates



Dockerfile Sytax

- FROM - Sets the base image for a build.
- LABEL - Adds metadata to an image
- RUN - Runs a command in a new layer
- COPY - copies new files/folders from src (client machine) to destination (new image layer)
- ADD - as above, but can add from a remote URL & do the extraction etc.
- CMD - sets the default executable of a container & arguments
- ENTRYPOINT - same like CMD.
- EXPOSE - Informs docker what port container app is running on

QUIZ TIME

Q & A