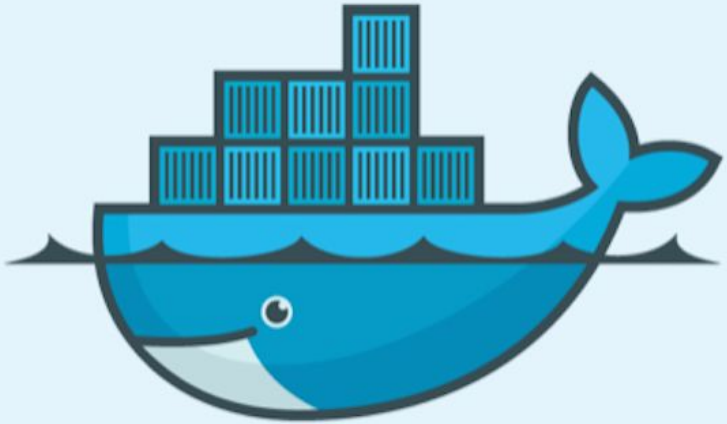


docker

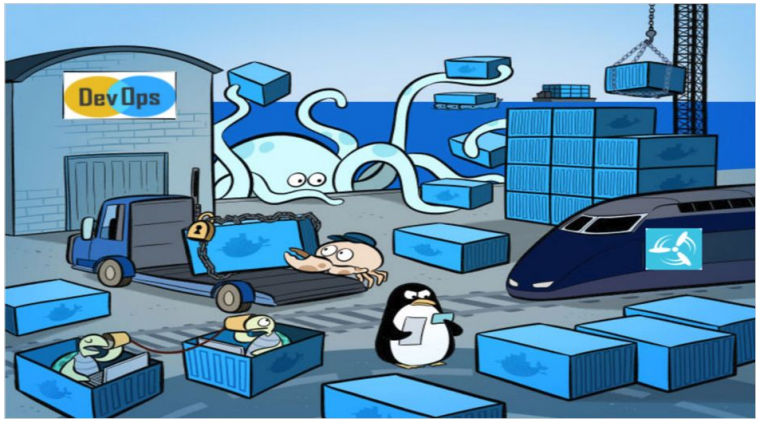
It’s all about shipping!

Docker Tutorial

- What's it all about?
- Terminology & Eco-system
- Assignments: Requirements and Tips
- Example

It’s all about shipping!

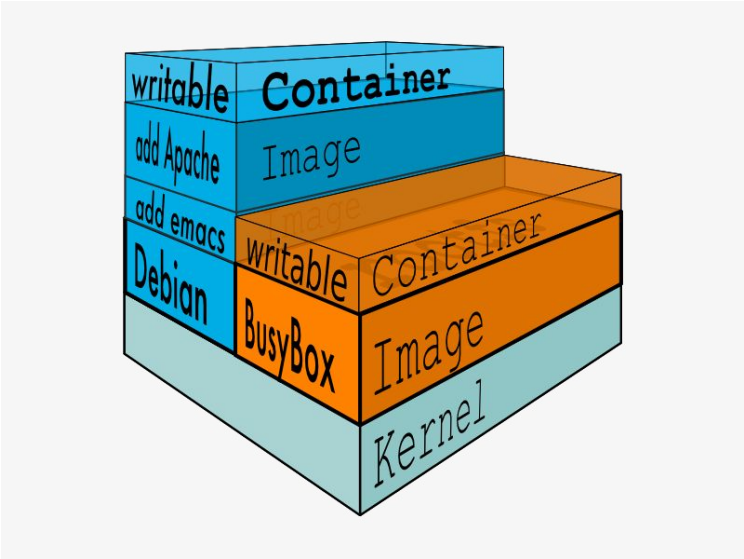
Docker is a platform for developers and sysadmins to **develop, deploy, and run** applications with containers.



The use of Linux containers to deploy applications is called *containerization*. Containers are not new, but their use for easily deploying applications is.

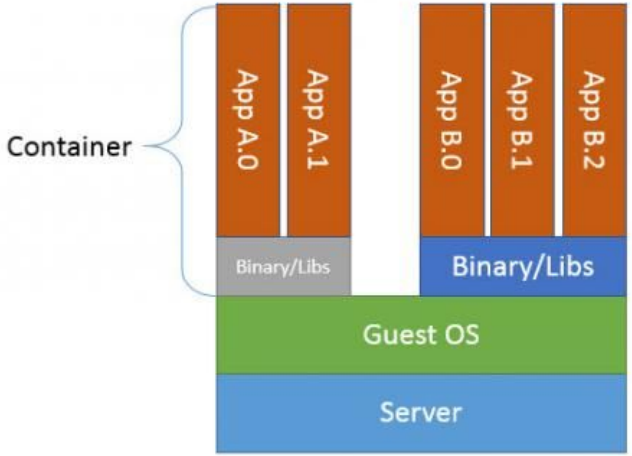
What are containers?

Containers leverage the low-level mechanics of the host operating system, to provide most of the isolation of virtual machines at a fraction of the computing power.



How do container compare to VMs?

Traditional Virtualization

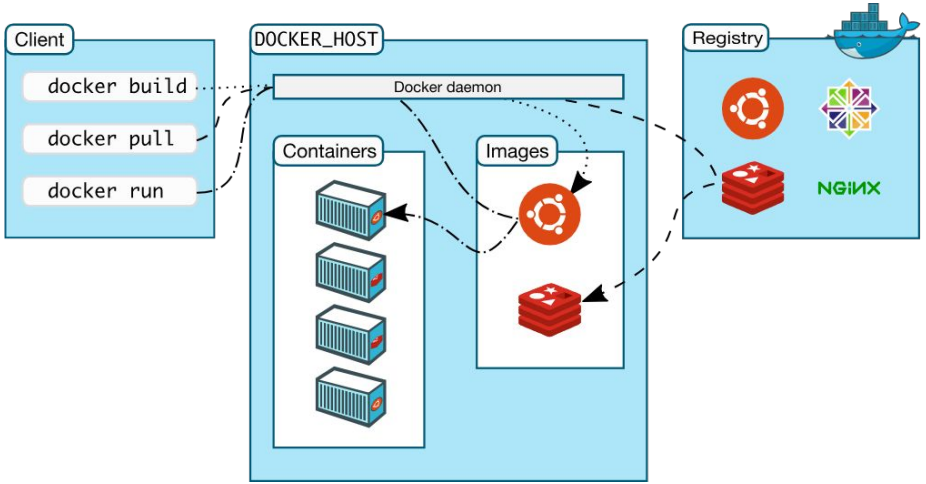


Docker

Terminology

- The **Docker daemon** is the background service running on the host managing building, running and distributing Docker containers. (*systemctl status docker.service*)

- The **Docker client** is the command line Tool that allows the user to interact with the Docker daemon. (*docker ps, ...*)

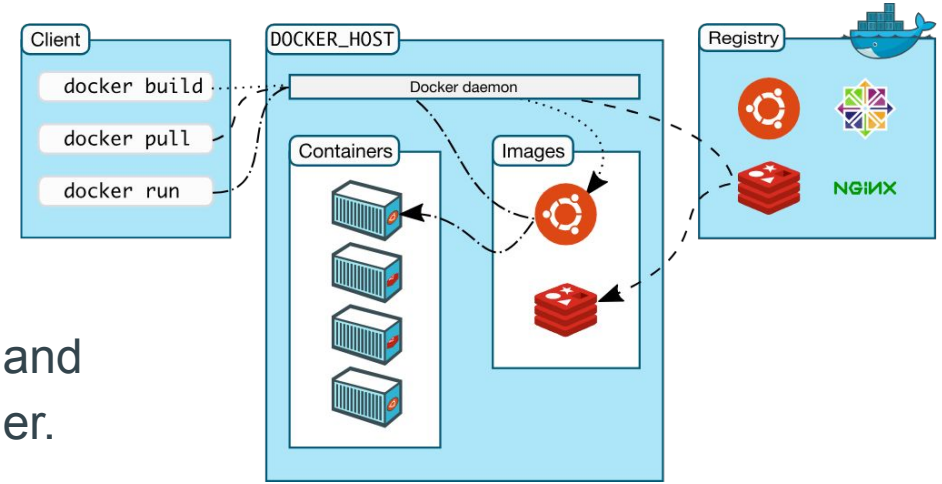


Terminology

- **Docker images** are the blueprints of the application which is used as the basis of containers. *(docker pull/docker build)*

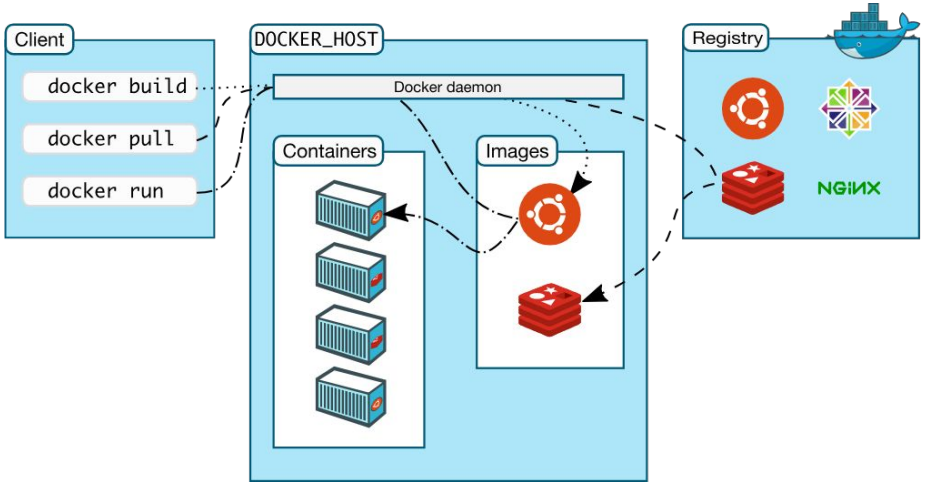
- **Docker container** are created from Docker images and run the actual application. (*docker run/docker create*)

- A **stack** is a group of interrelated services that share dependencies, and are orchestrated and scaled together.



Terminology

- The **DockerHub** a public registry of Docker images. (*https://hub.docker.com/*)
- **docker-compose** is a tool for defining and running multi-container Docker applications.
- **docker swarm** is a clustering and scheduling tool for Docker containers.



Assignment Requirements

- The docker-compose command **must be sufficient** to run your application:
  - Use the “build” instruction to build your image
  - Keep your network tight - expose only necessary ports
  - Use Makefiles to document usage (optional)

- Your work will only be graded if it is properly containerized.

- Support is provided for Linux and Docker machine. Every other installation is your business.

Resources

- Have your docker machine up and running
  https://docs.docker.com/machine/
- Download tutorial examples from GitHub:
  https://github.com/vigne/docker-tutorial
- Example application (M2 and M3) from GitHub (work in progress):
  https://github.com/vigne/imse-example

FIN.

This tutorial is based on the Docker documentation available at: https://docs.docker.com/