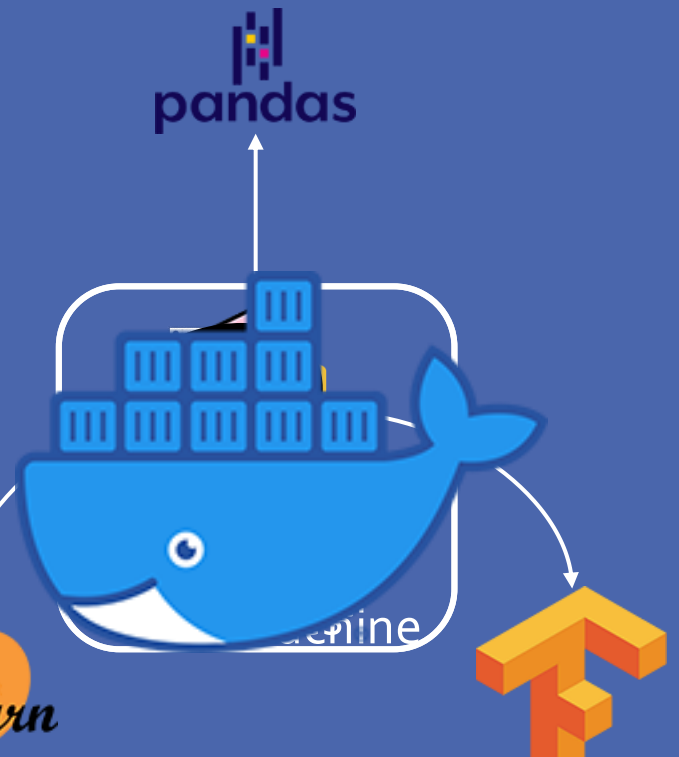
DOCKER






MySQL


pandas
scikit
learn







DevOps Toolchain

Plan

Planning
Requirement Gathering
Project Management

Develop

Issue Tracking
Source Control
Dev Env
CD

Test

Docker



Continuous
Testing

Release

Docker



Deployment
Config Management
Containers
Scripting

Operate

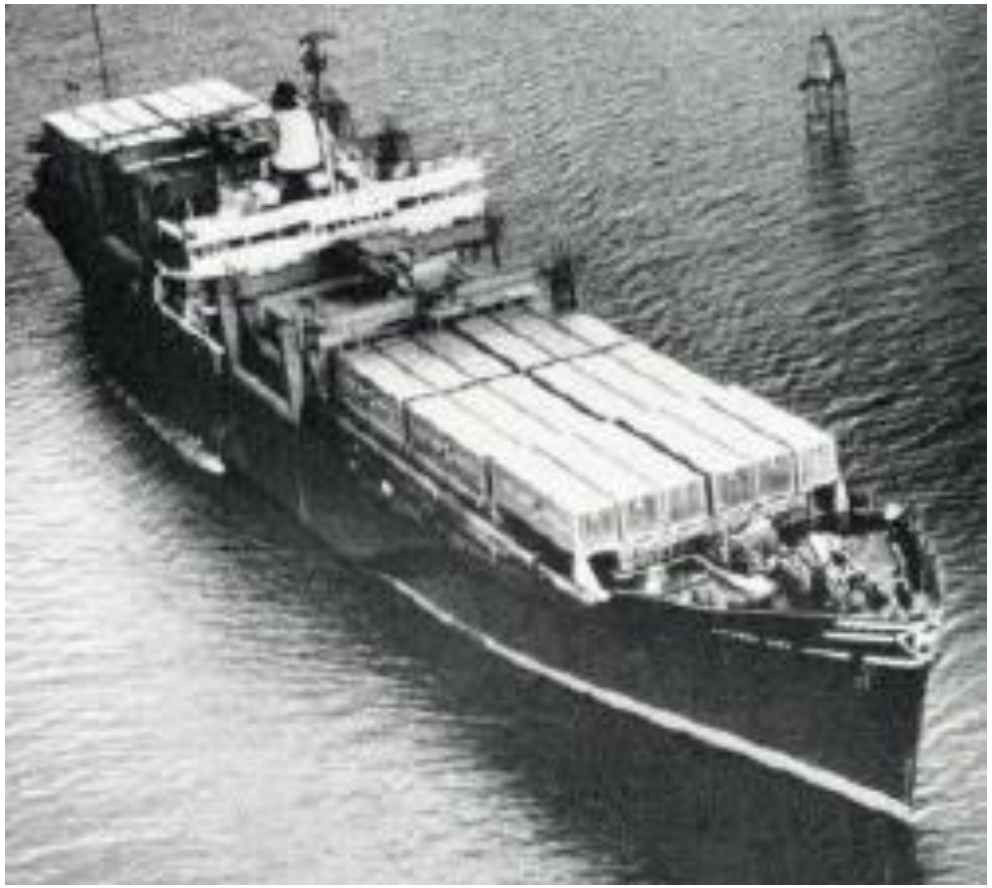
Monitoring
Issue Discovery

What is Docker

- Docker is a tool designed to make it easier to create, deploy, and run applications by using containers.
- Containers allow a developer to package up an application with all the parts it needs, such as libraries and other dependencies, and deploy it as one package.
- Through containers, developers don’t have to worry about their application not running on other devices; Everything the application needs to run is bundled with it.

The Invention of Containers





The Invention of Containers





The Invention of Containers

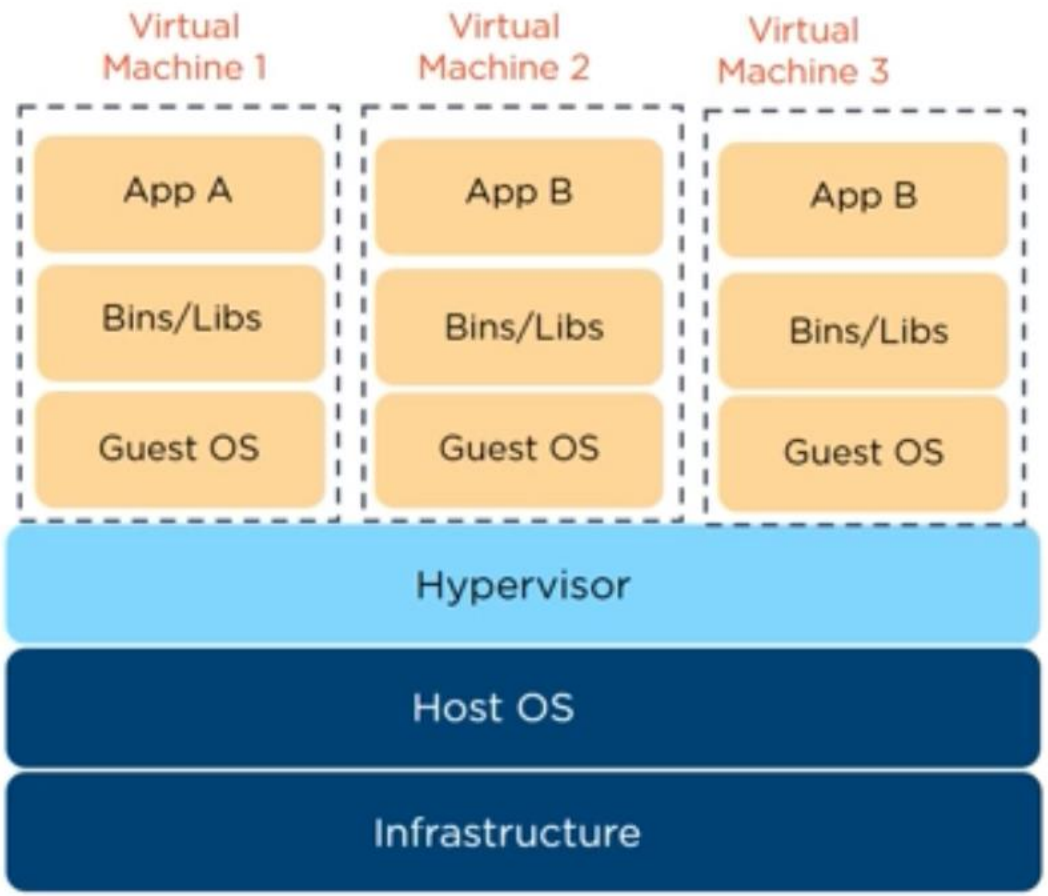


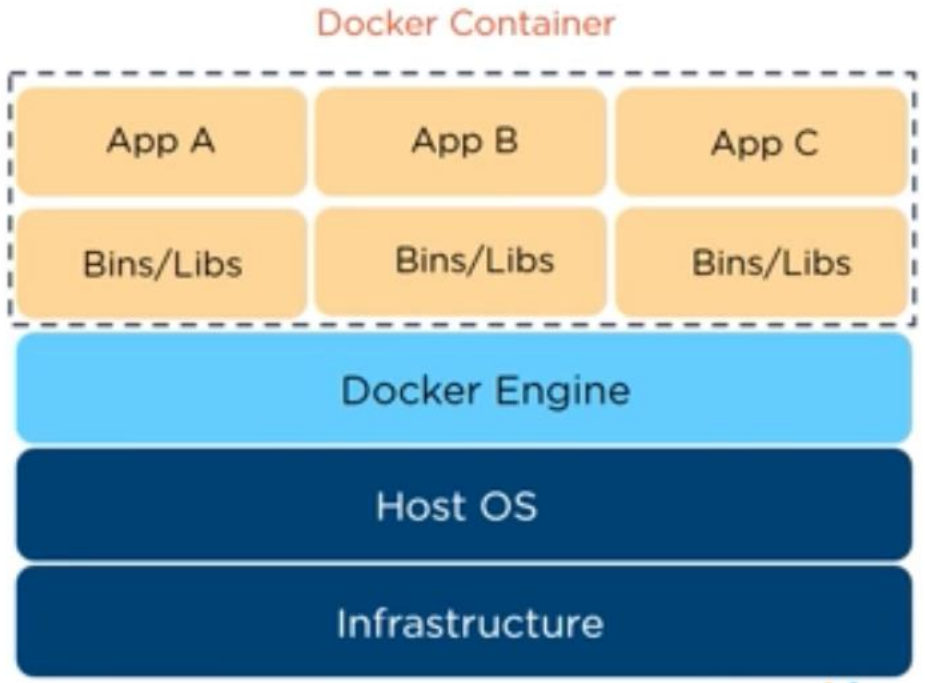
Docker vs Virtual Machines

Docker Containers are similar to virtual machines, but unlike a virtual machine:

1. Containers don't create a whole operating system
2. Only what is needed for the application to run is packaged inside the container.
3. Containers are much more light weight in terms of processing power and overhead computation.
4. Docker is **open source.**

Docker vs Virtual Machines





Installation

- On Windows:
  - Docker Desktop for Windows:

    https://hub.docker.com/editions/community/docker-ce-desktop-windows
  - Uses windows virtualization technology (Hyper-V)
  - Under the hood, it creates a linux virtual system to run a Docker image on your system.
  - Requires windows 10 Enterprise / Professional OR Windows Server 2016

Installation

- On Mac:
  - Docker Desktop for Mac:

    https://hub.docker.com/editions/community/docker-ce-desktop-mac
  - Under the hood, it creates a linux virtual system to run a Docker image on your mac.
  - Requires macOS Sierra 10.12 or newer

Installation

- On Linux:
  - Docker Engine:

    https://docs.docker.com/engine/install/
  - Select your operating system, and follow the commands on screen.

References

- Documentation: https://docs.docker.com/
- Book:
  - The Docker Book: Containerization is the new virtualization (2018)

    https://dockerbook.com/
- The docker blog: https://www.docker.com/blog/