Agenda

Why Docker?
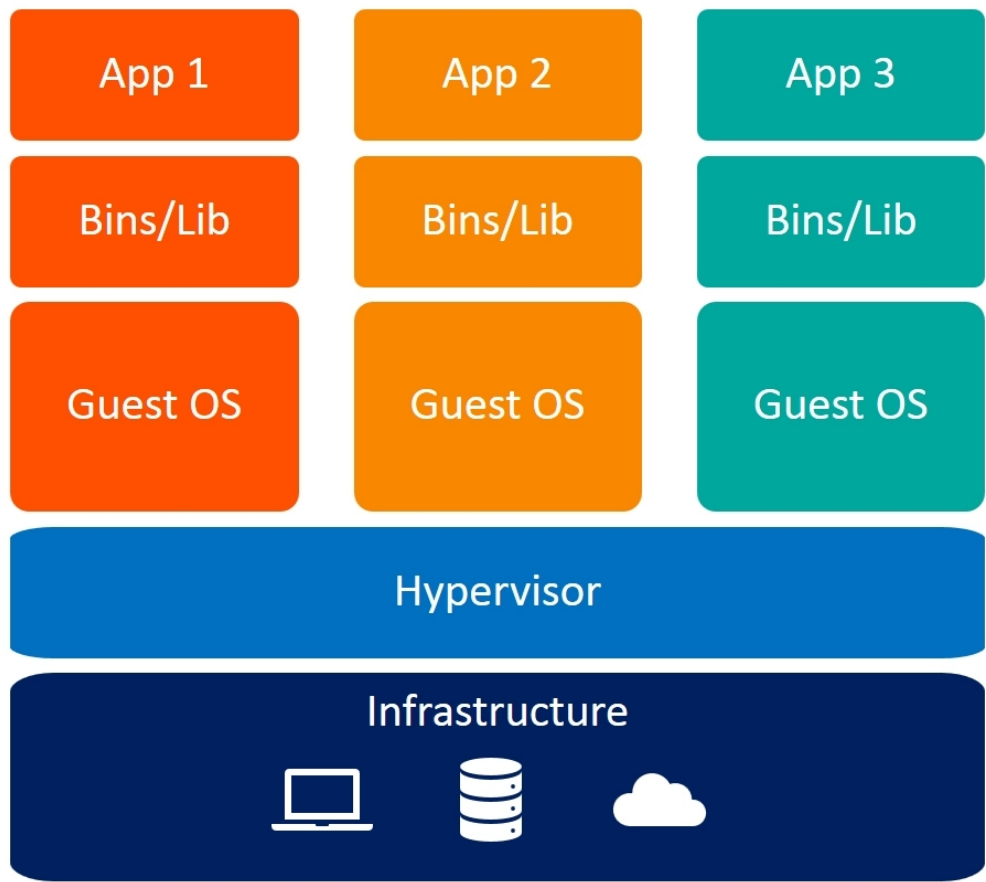
Docker as a platform

Docker Installation

Demo

What is Docker?

👉 **A tool for running application in an isolated environment**

👉 **The Docker environment is platform independent**

👉 **A standard for team collaboration.**

App 1	App 2	App 3
Bins/Lib	Bins/Lib	Bins/Lib
Guest OS	Guest OS	Guest OS

Hypervisor

Infrastructure

Virtual Machines

App 1	App 2	App 3
Bins/Lib	Bins/Lib	Bins/Lib

Container Engine

Operating System

Infrastructure
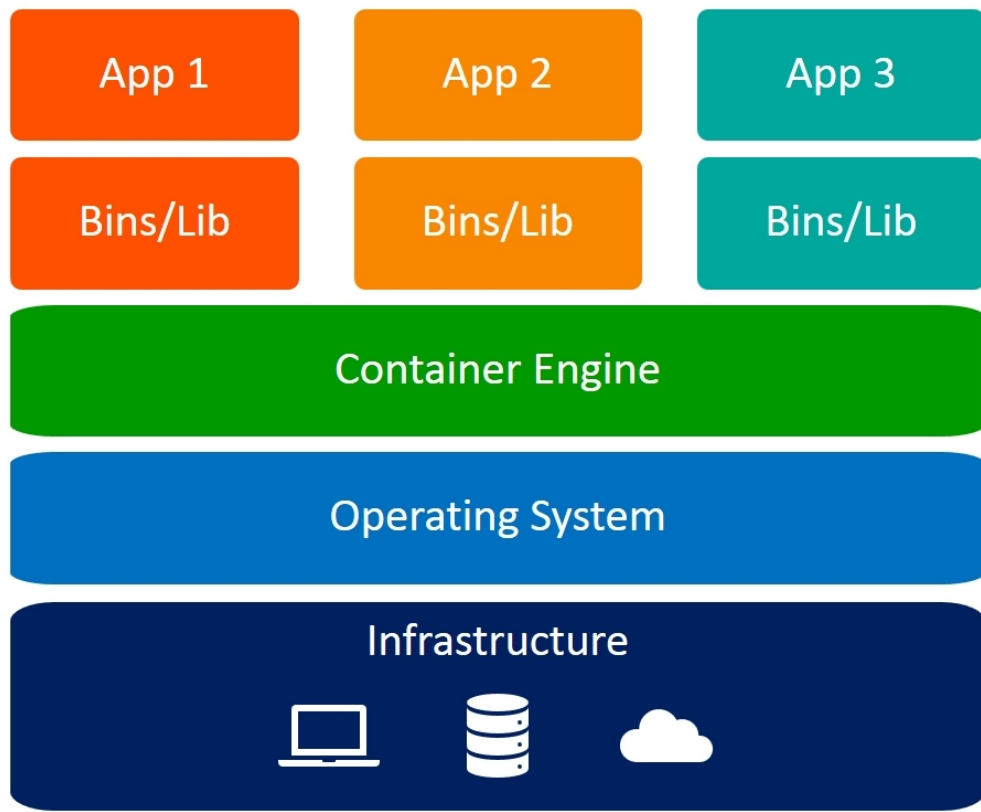
Containers

Docker Community

242B
Total Pulls on Hub

11B
Pulls in the past month*

7M
Repositories on Hub

7M
Hub Users

2.9M
Desktop Installations

Source: **https://www.docker.com/blog/docker-index-dramatic-growth-in-docker-usage-affirms-the-continued-rising-power-of-developers/**
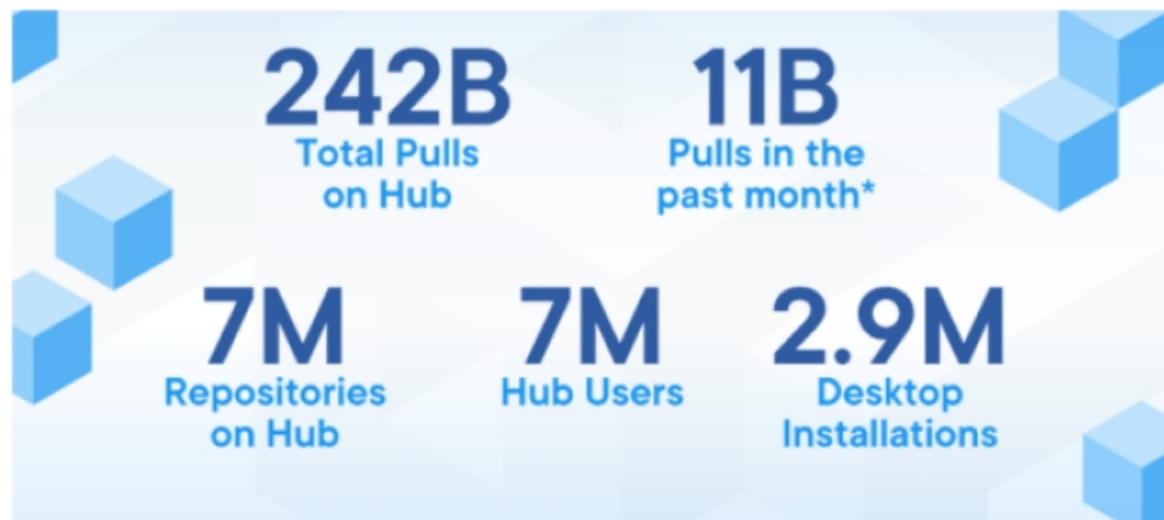
Why Docker?

- **Isolated**

- **Lightweight**

- **Cost effectiveness with efficiency.**
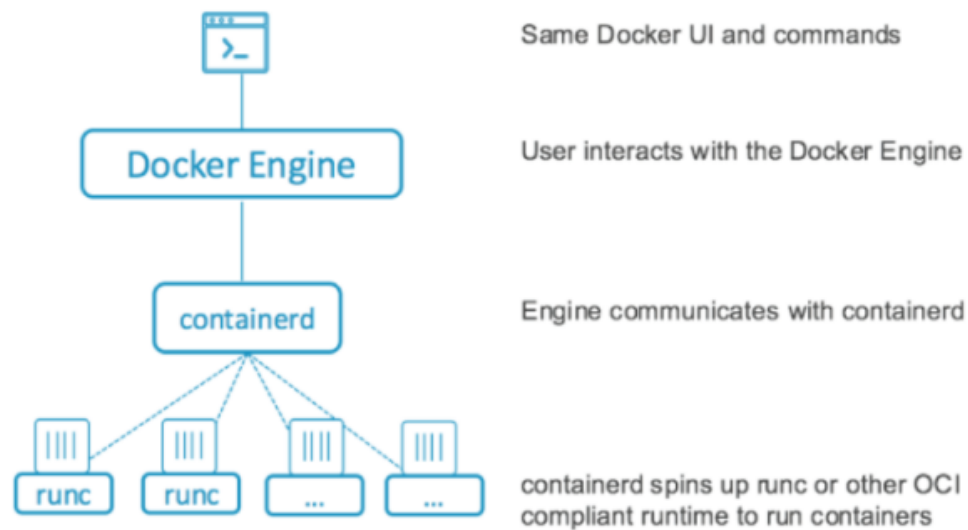
- **Collaboration**

- **Flexibility**

- **Time saving**

Components of the Docker Platform

Docker Engine

+

Docker Hub + Docker CLI

Docker Engine

Same Docker UI and commands

Docker Engine

User interacts with the Docker Engine

containerd

Engine communicates with containerd

runc   runc   ...   ...

containerd spins up runc or other OCI compliant runtime to run containers

Source: **https://dev.to/pratik6217/docker-engine-deep-dive-into-docker-4hig**

Docker CLI

- **docker build**   # Build an image from a Dockerfile

- **docker run**   # Run the image

- **docker images**   # List all images on the machine

- **docker ps**   # List running and stopped containers

- **docker stop**   # Stop a running instance of an image

- **docker rm**   # Remove an instance of an image

- **docker rmi**   # Remove an images

- **docker -f rm**   # Force remove an instance of an image

Docker Hub

- **Share images with team**

- **Storage for images (private or public)**

- **Webhooks for integration with other services**

- **Manage access to repositories with code for an image**

- **User verified images from other official vendors**

- **Re-use images by other people**

Docker Installation

My Case:

Using Windows 10 Build 1379

Docker Installation

Install Docker

Follow these steps to install Docker

1. Download Docker from **https://docs.docker.com/get-docker/**

2. Double-click InstallDocker.msi to run the installer.

3. Follow the Install Wizard: accept the license, authorize the installer, and proceed with the install.

4. Click Finish to launch Docker.

Docker Workflow

- **Find a desired image on Docker Hub**

- **Pull the image from Docker Hub to local machine**

- **Run the image as a container**

- **Stop the container**

- **Remove an instance of the image**

- **Force remove the container that is currently running**

- **Remove an image**

Demo

Step One

Create a Dockerfile

and a .dockerignore

Create a Docker File

```
USER@LUIGI-WORK  MINGW64  /e/Open Source Projects/devc-demo (mas
$ docker build
"docker build" requires exactly 1 argument.
 => => sha256:a6eef60145526d7bbe3217b7cb706f2dbe167d19c25a026
2.21kB / 2.21kB        0.0s
 => => sha256:ab773999a02271b25a9f3bce46018fc3ad46a7f922a5e3e
7.60kB / 7.60kB        0.0s
 => => sha256:8f04e8168e3873638397ca4beb7d8484b150eca0d10fe1b
0.44MB / 50.44MB    4094.0s
 => => sha256:82e5f66f5d0e1c97622f33d44fb04efb42bd3562bdc3482
7.83MB / 7.83MB     103.8s
 => => sha256:c1c8f1c77d66740746d7deb41be1ca07f25cb43fd67f87e8
1eb6365923ccbc11 0B / 192.39MB        4445.1s
 => => sha256:9000ed6ad54103b2ede6fec607e8b3f7cb6a2610158eb76
6091eecd65961179 4.20kB / 4.20kB     4036.7s
 => => sha256:3f665b328b14fce323d10462ba5b3a5eaa7996ce5059e3c
da21a11b7c0cab2 34.16MB / 34.16MB    4445.1s
 => => sha256:a5d69baf58c56c4be0da4956758218d0660d965c612ab4
d8aa610d038b3884 2.26MB / 2.26MB     4232.3s
 => => extracting sha256:8f04e8168e3873638397ca4beb7d8484b150
ca0d10fe1b033a125202ba57692                 6.7s
 => => extracting sha256:82e5f66f5d0e1c97622f33d44fb04efb42bd
562bdc3482537d121040c789f9a                 0.5s
 => => extracting sha256:c1c8f1c77d66740746d7deb41be1ca07f25cb
3fd67f87e879ee79cc6586087f0                 0.4s
```

Step Two

Add a base image

Build the image for our app

Step Three

Expose ports for application access on local machine

Step Four

Run the app on local machine

Step Five

Push the image to the registry

The End;

Questions