



What's the Deal with Containers?

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Agenda

What are Containers?

Why we use Containers?

What is Docker?

Q&A

Hands-on Workshop

What are Containers?

What are Containers?

A unit of software that packages:

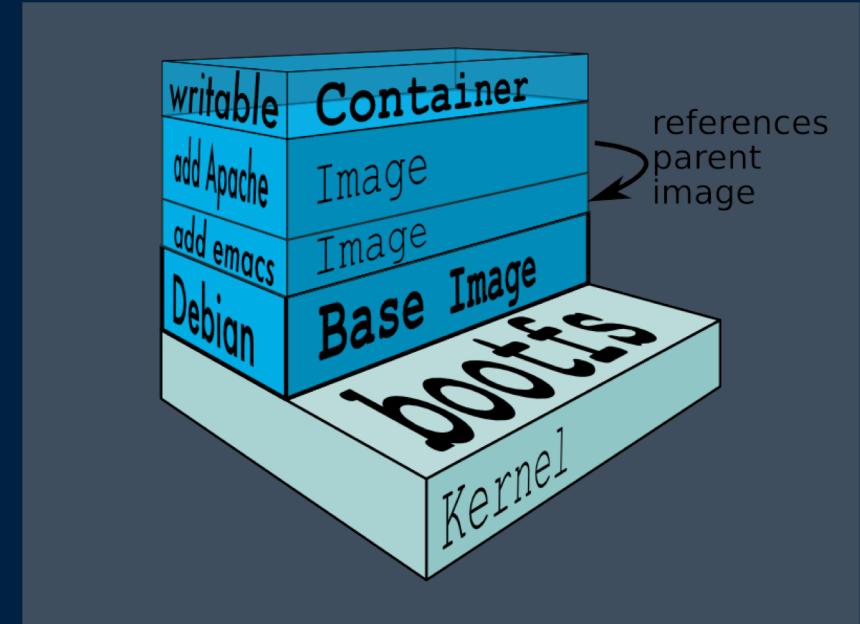
- Code (application)
- All it's dependencies
- Configuration required to run
- Run on shared resources in isolation



Containers Images

That package definition composes
a Container Image!

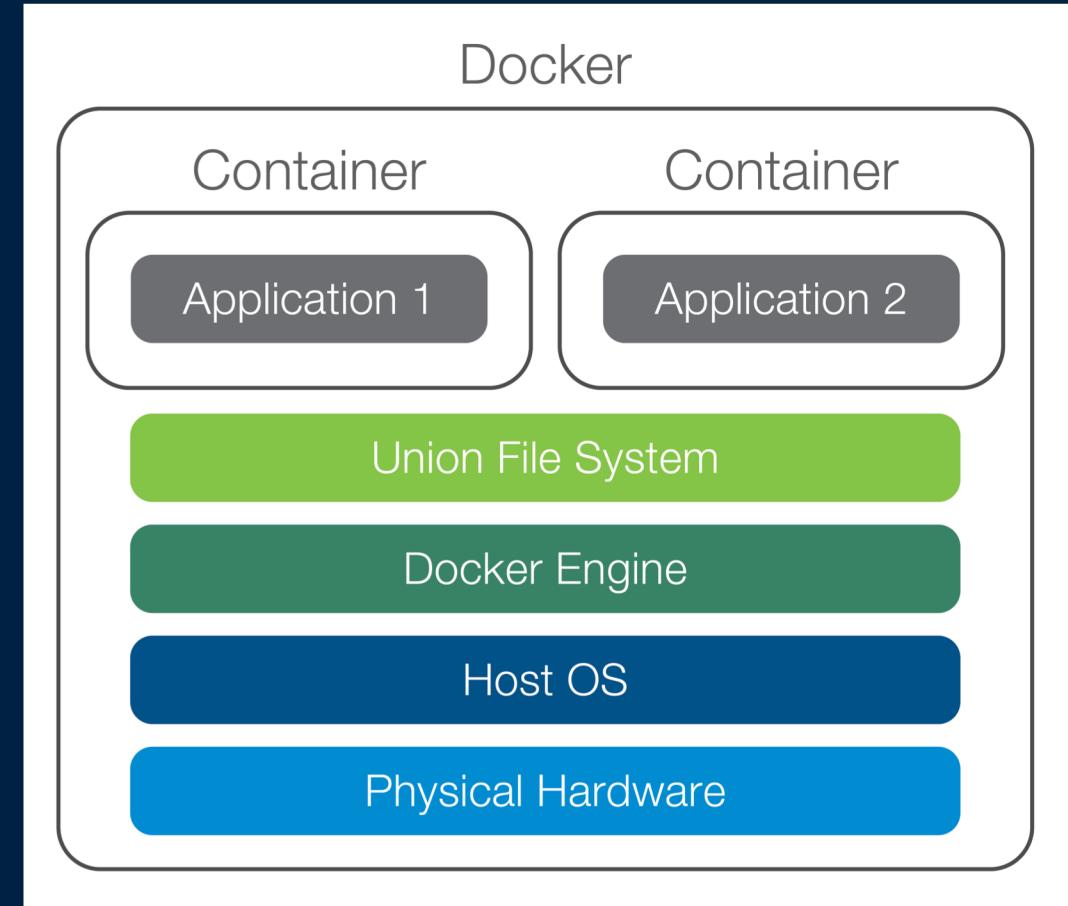
- Code - Application
- Dependencies - Libraries,
utilities, etc
- Configuration -
Username/Password, URL, etc



Containers

A Container...

- Is a running instance of a Container Image
- Sharing resources on a server
- Implies multiple instances could be running



Examples

- Java application
 - Java Run-Time Env (JRE)
 - Your Java App
- Python based webserver
 - Version of Python
 - Your Python WebApp
 - URL, port, etc



Why use Containers?

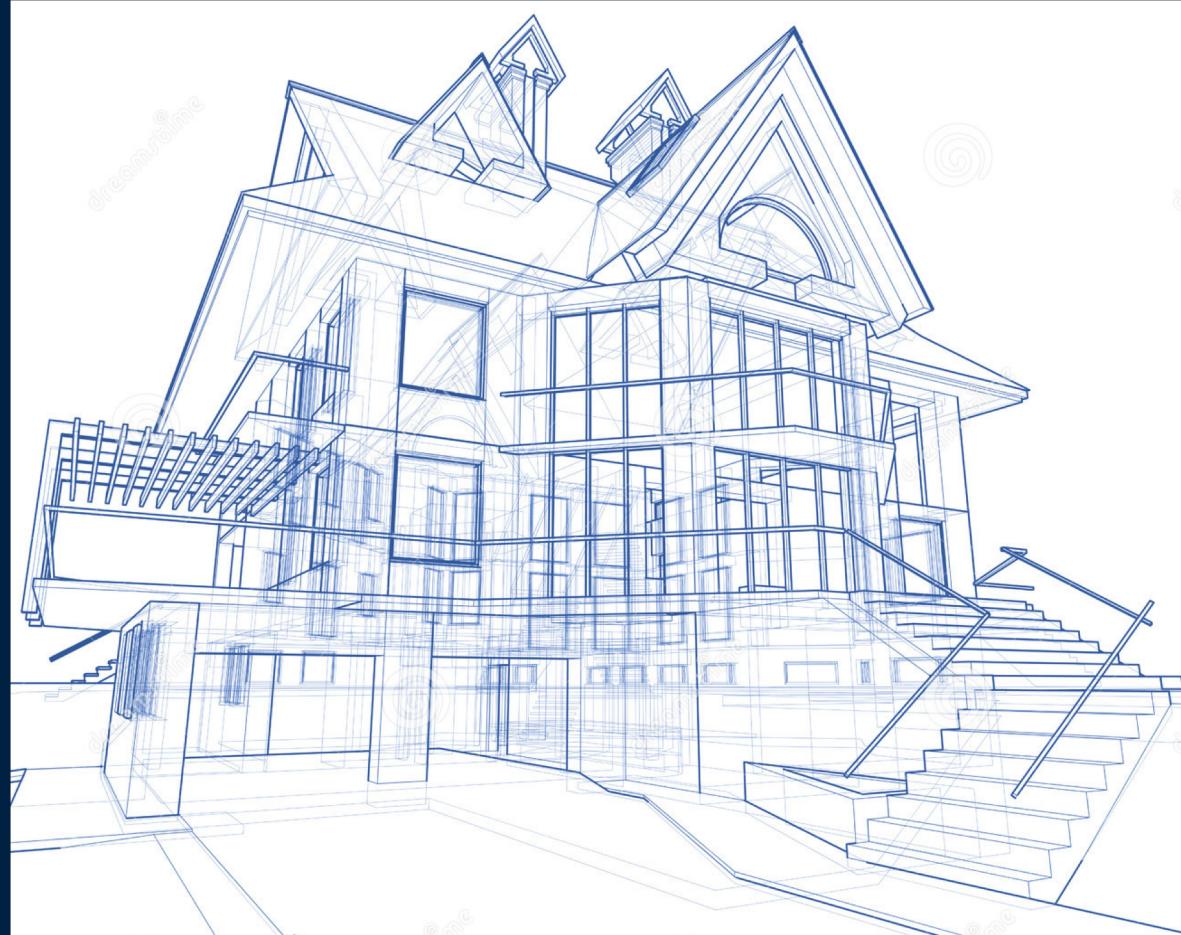
Benefits of Containers

Image-based via a blueprint

- Well-defined
- Simplistic

Resource Footprint

- Lightweight
- Quick
- Isolation



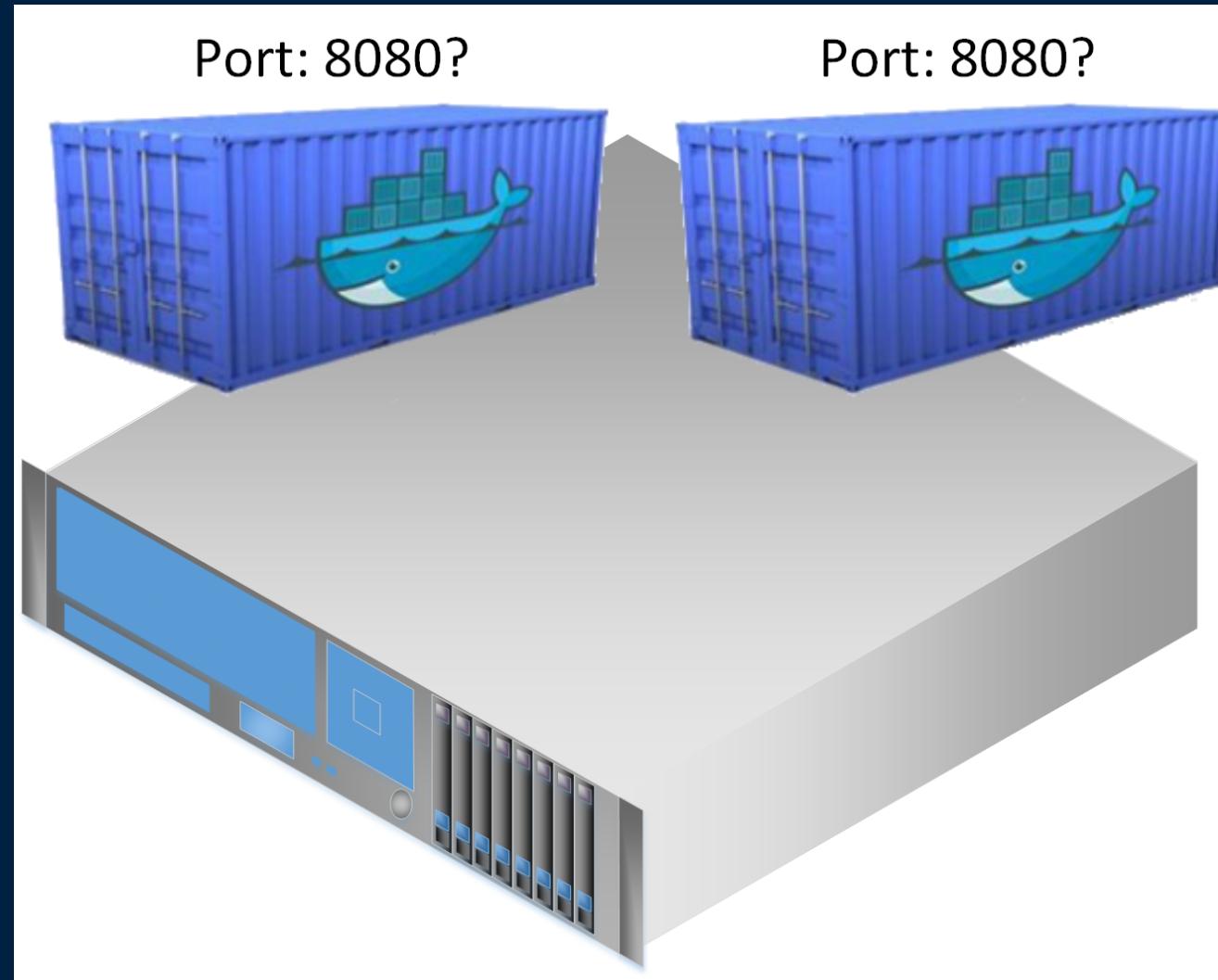
Is that it?

Containers...

- Runs in Isolation
- Share host resources
- By definition, supports multiple Instances
- Allows communication between Containers

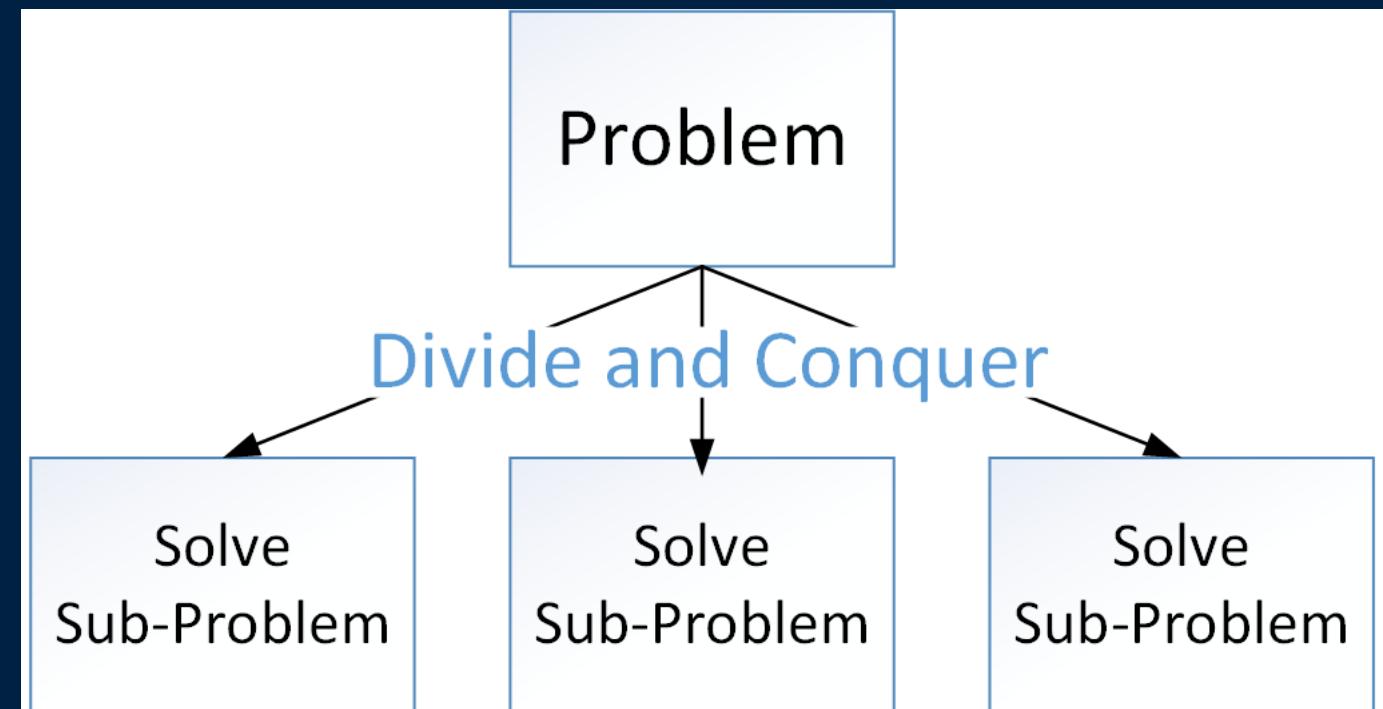


What if...



Scalable Applications

- Breakdown an App in functional components
- Launch many instances of the same component
- MICROSERVICES!

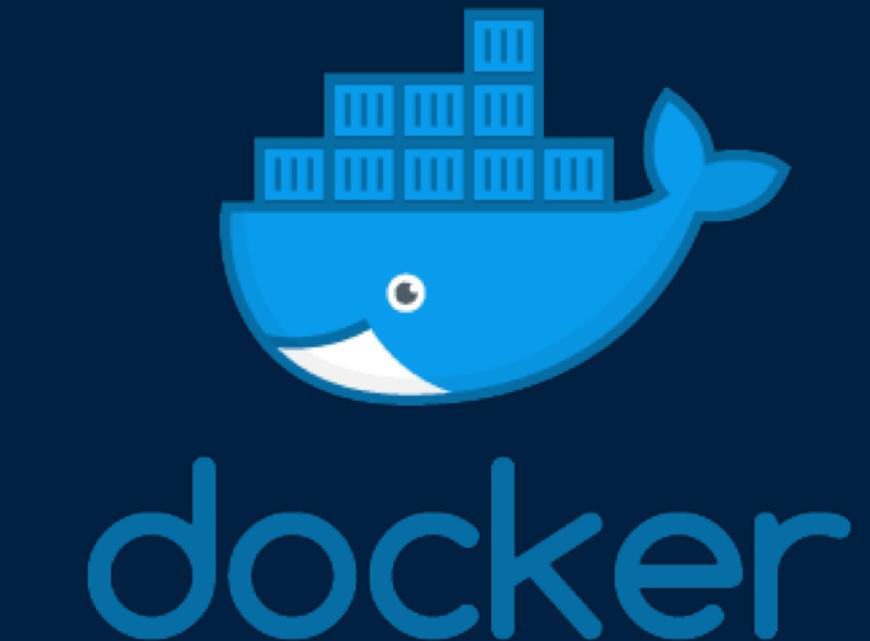


What is Docker?

Abstract to Concrete

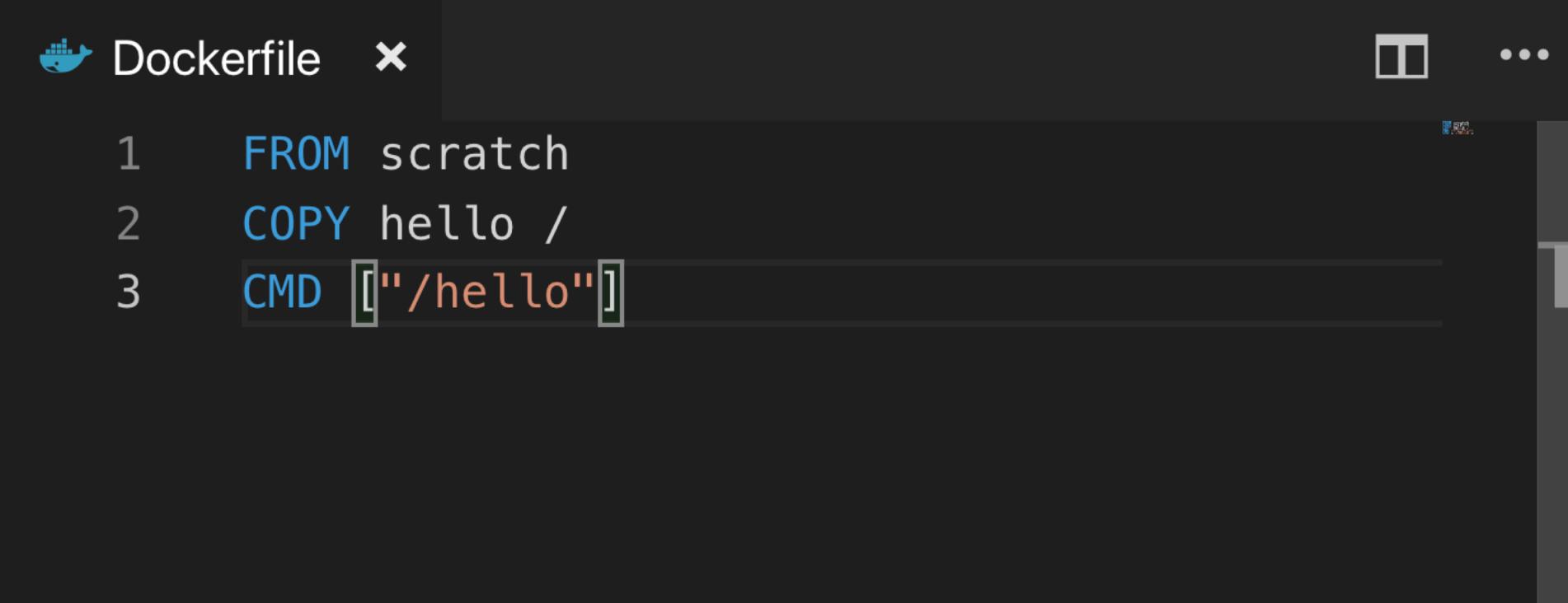
What is Docker?

- It's a Container run-time implementation
 - Dockerfile (the blueprint spec)
 - Dockerfile to Container Images
- Running Container Images
 - Docker run-time/engine
 - Command line/API interface



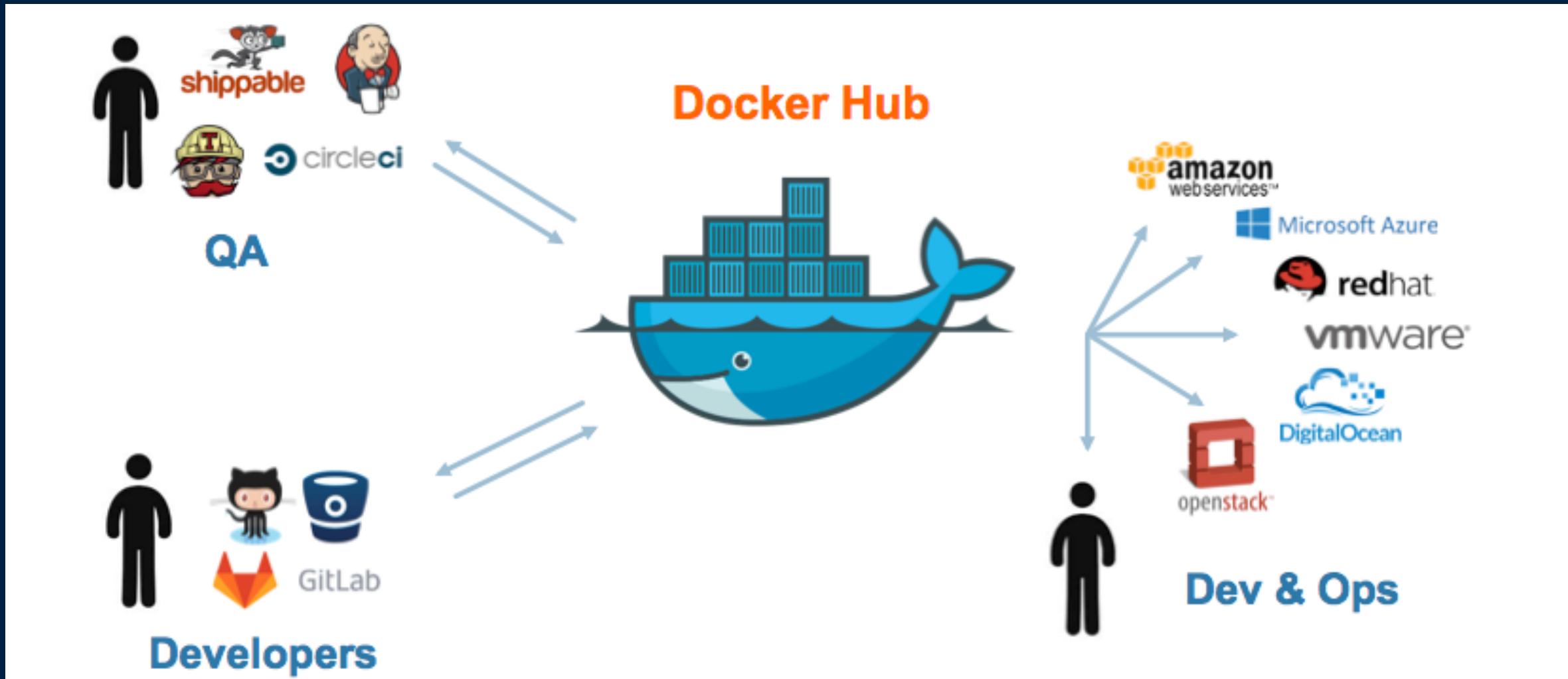
Dockerfile

- A text file consisting of Docker commands/syntax to build a Docker image

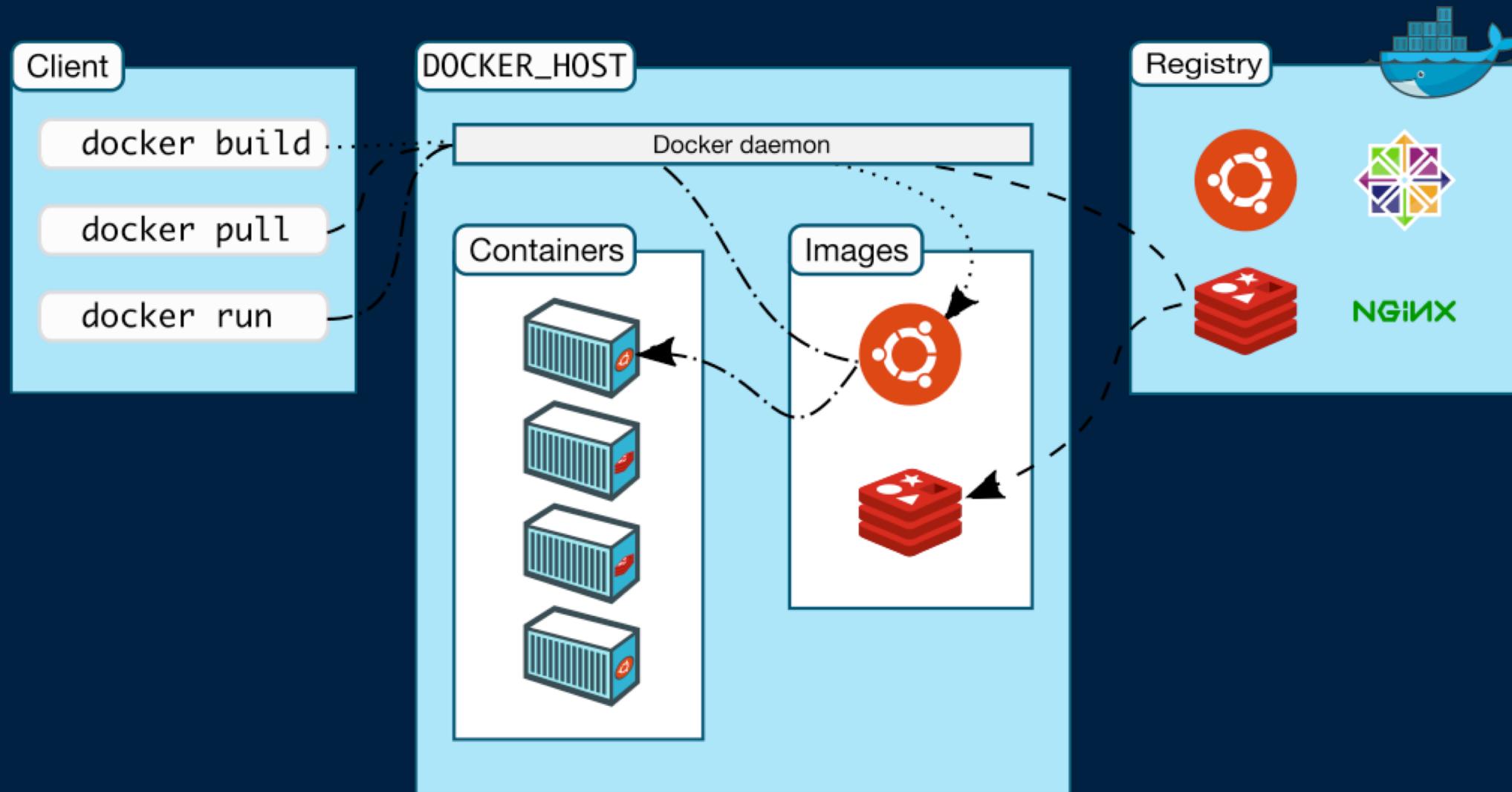


```
FROM scratch
COPY hello /
CMD ["/hello"]
```

Portability? Docker Hub



Docker



Links

- <https://www.docker.com/>
- Dockerfile Reference:
<https://docs.docker.com/engine/reference/builder/>
- Docker Container Registry: <https://hub.docker.com/>
- Containerd: <https://containerd.io/>
- Google Container Registry:
<https://cloud.google.com/container-registry/>

Q&A

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