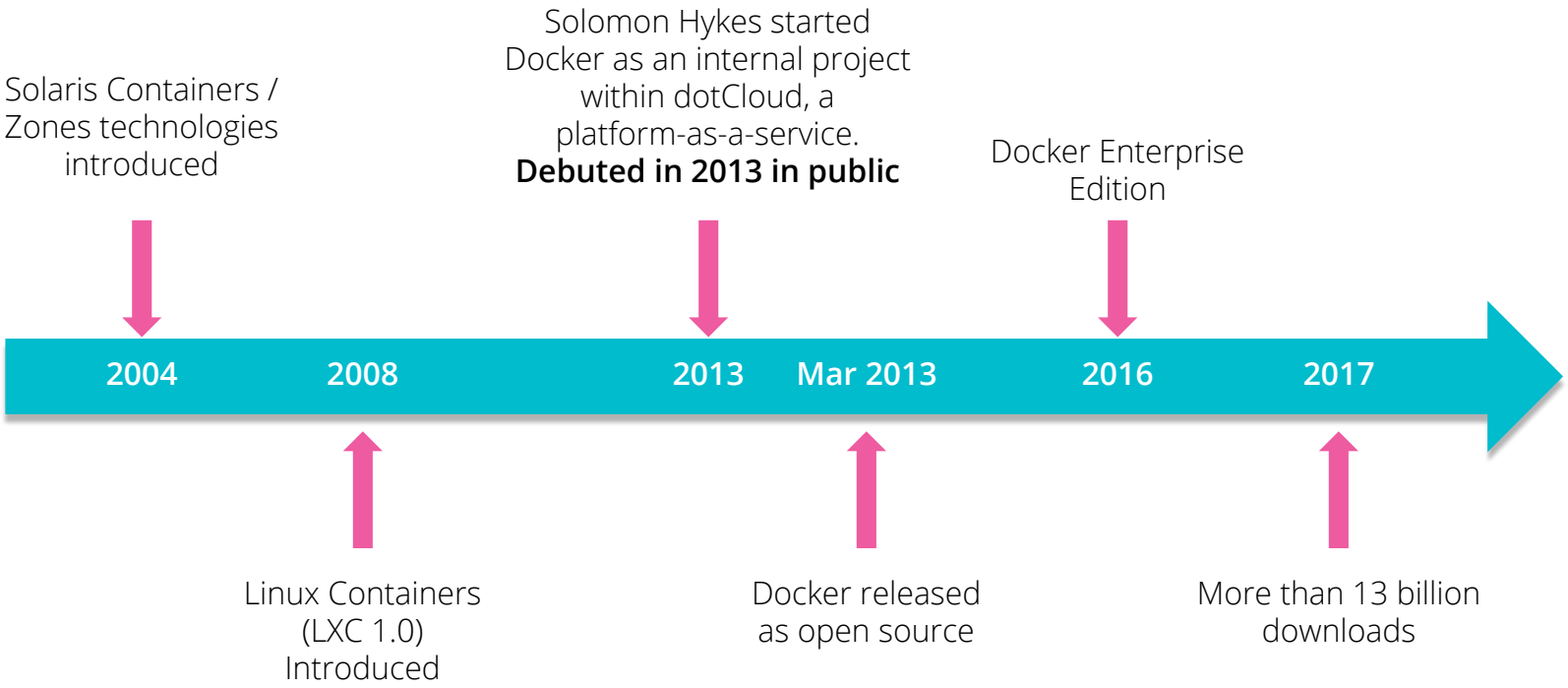
ThoughtWorks®

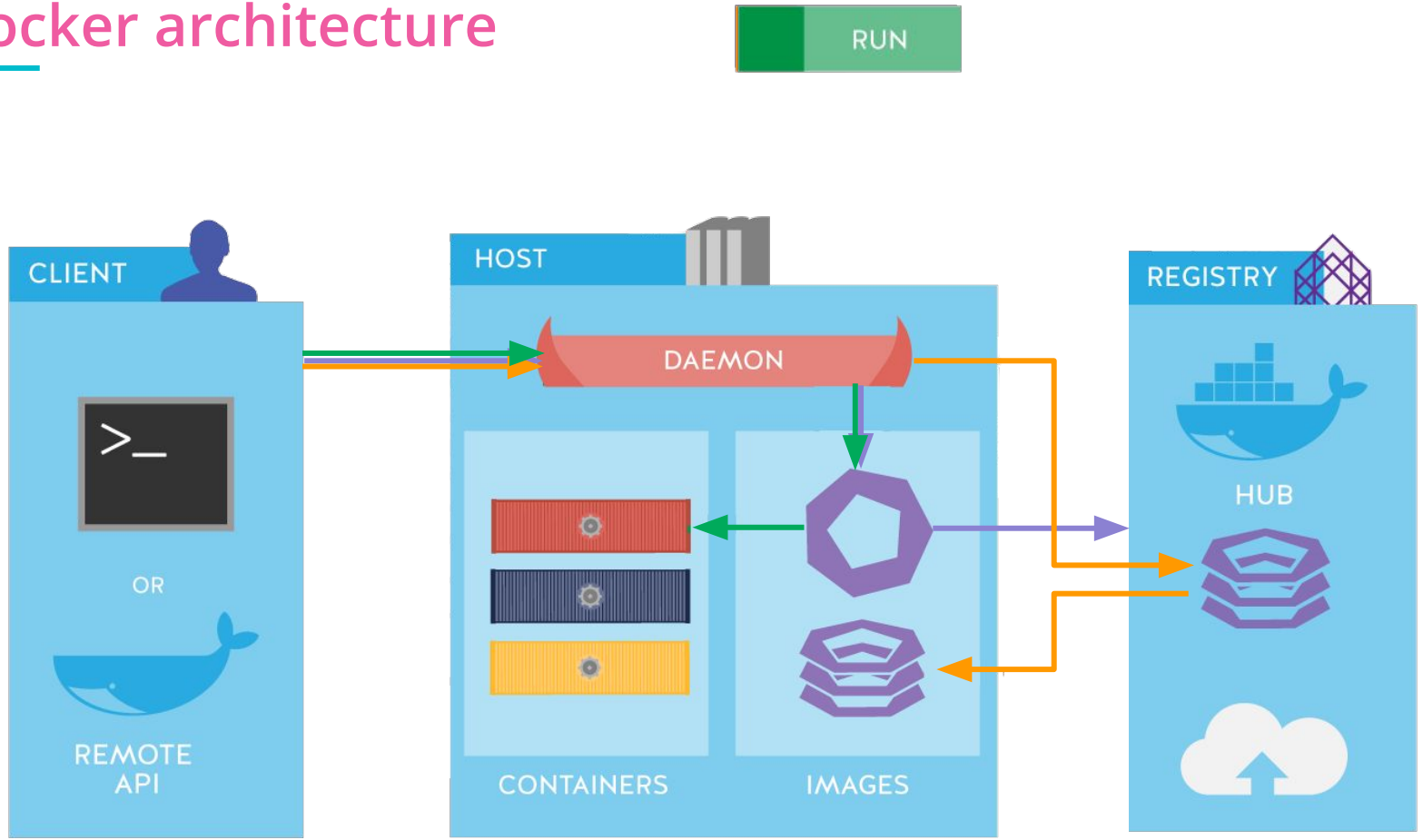
DOCKER

Rise of the Containers Workshop

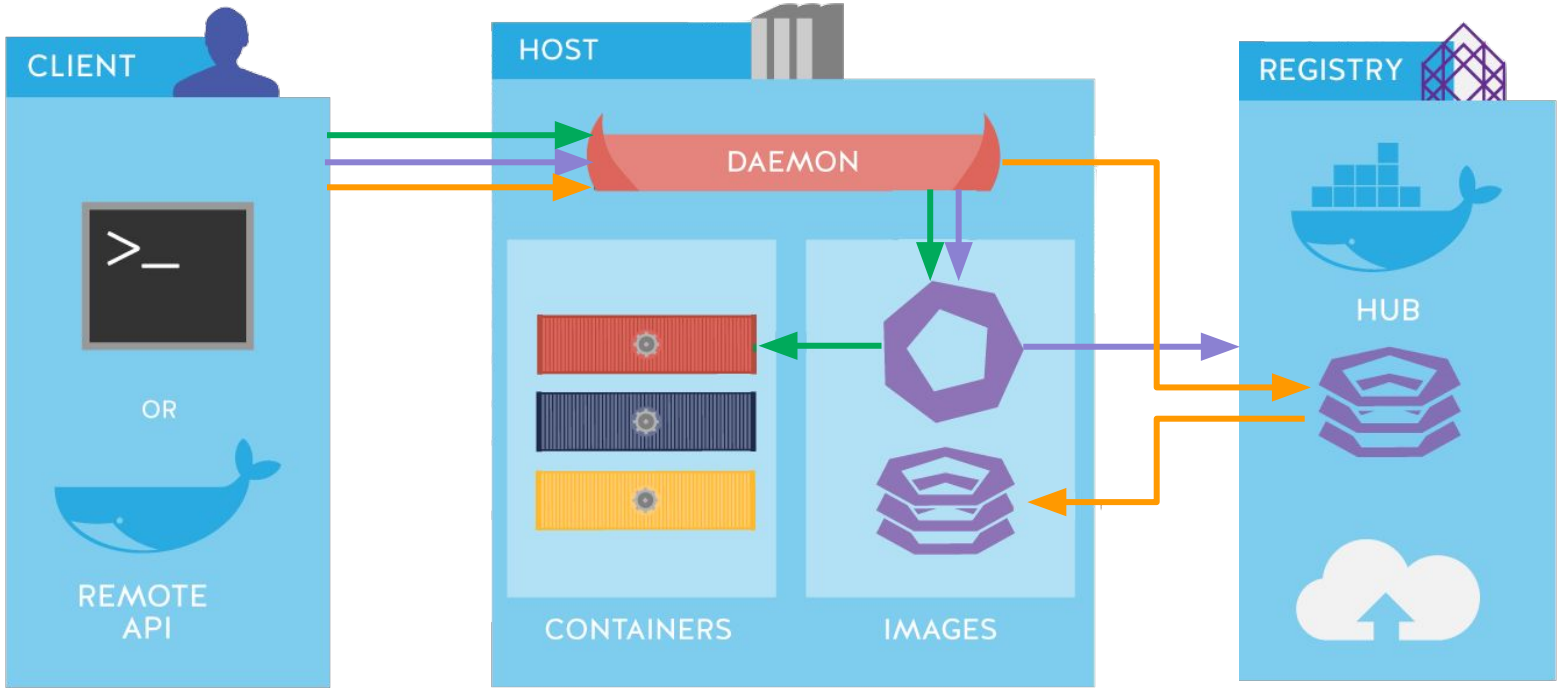
Docker history



Docker architecture



Docker architecture



Install Docker

https://store.docker.com/editions/community/docker-ce-desktop-mac

Docker Client

```
brew install docker
```

Basic Demo

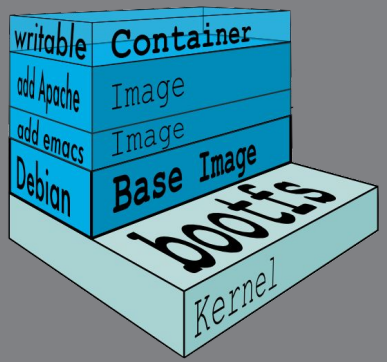
docker images

docker ps

docker pull

docker run

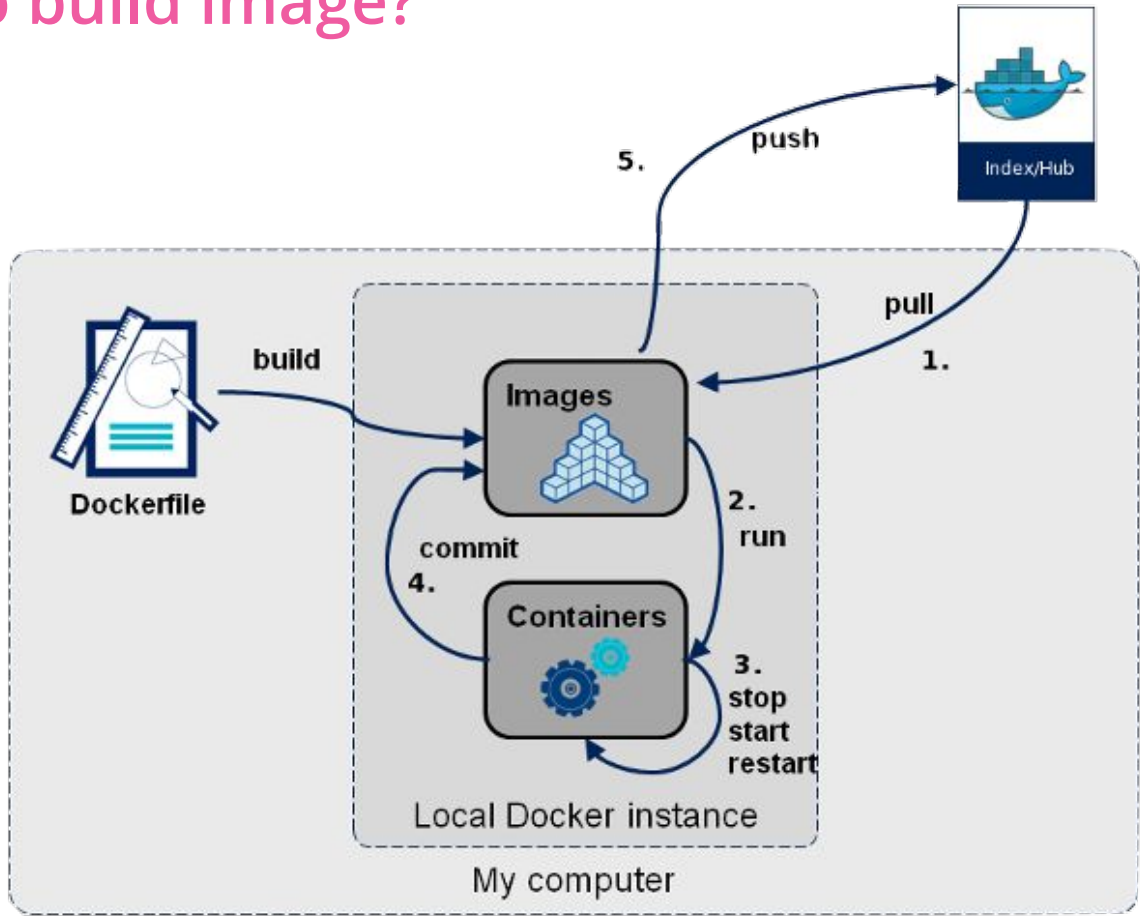
docker [start/stop]

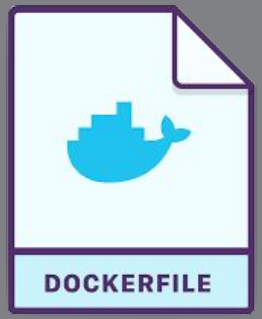


Docker Images

An image is an inert, immutable, file that's essentially a snapshot of a container. Images are stored in a Docker registry such as registry.hub.docker.com.

How to build image?





Dockerfile

A Dockerfile is a text document that contains all the commands a user could call on the command line to assemble an image.

Dockerfile

```
FROM openjdk:alpine   // image to build from

// copy file(s) from host to image
[ADD/COPY] /src/path/from/host /dest/path/to/image

// executes command(s) as new layer, used to install softwares
RUN apt-get install python3 \
    git

EXPOSE 8080 9009  // expose ports from container

// configures a container that runs as an executable, main process start
[CMD/ENTRYPOINT] ["executable", "param1", "param2", ...]
```

Dockerfile Demo

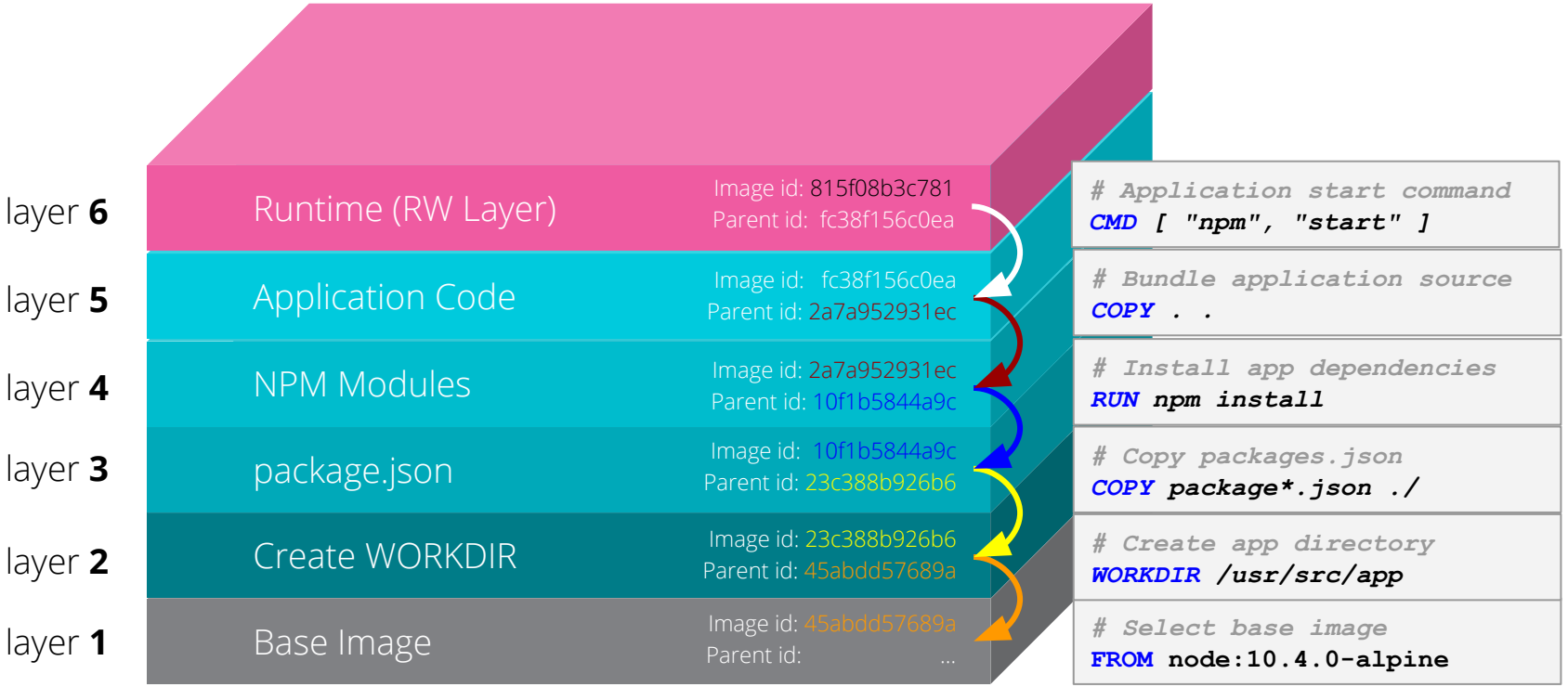
docker images

docker build

docker history

incl. image layers

Docker image layers

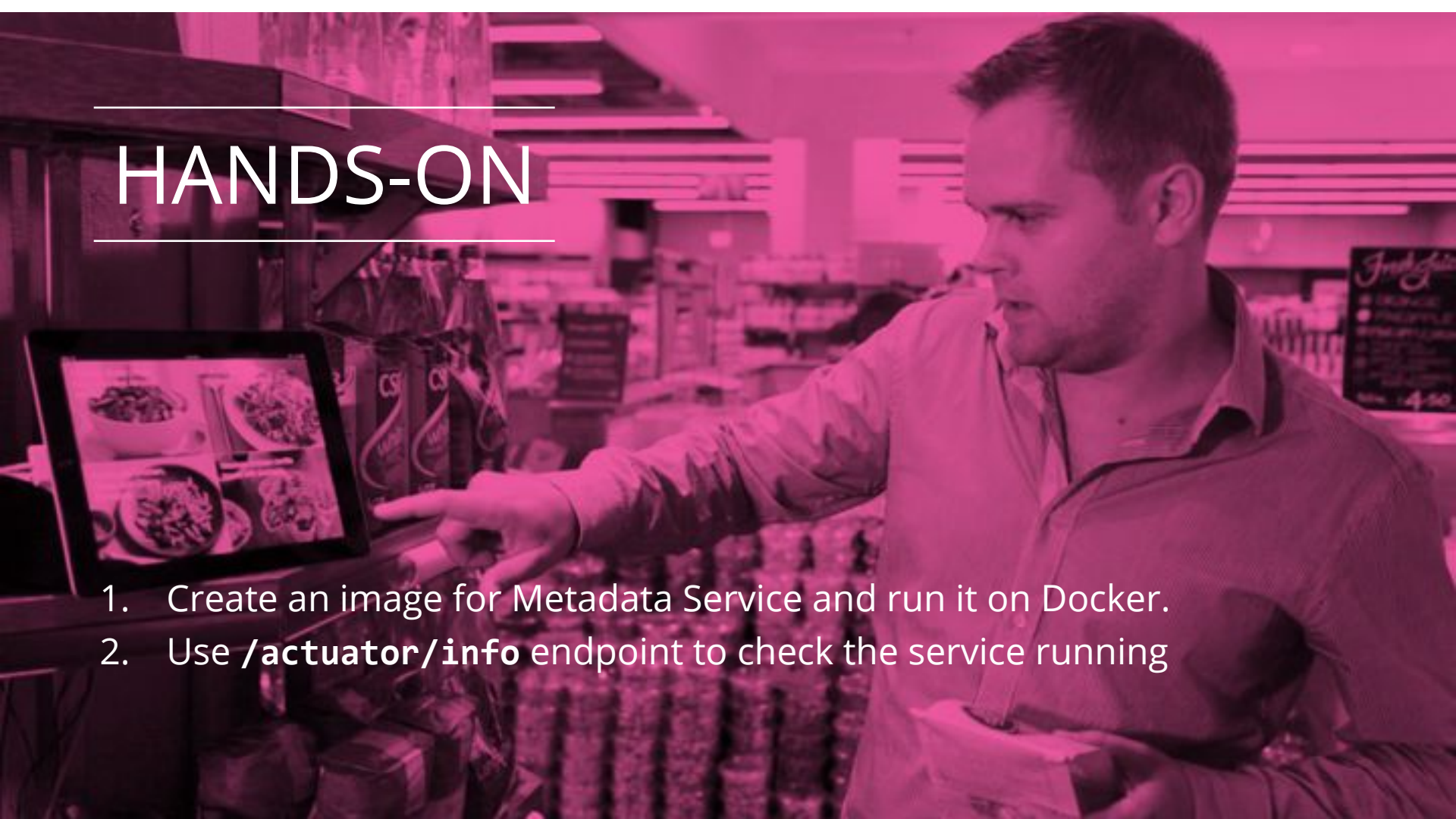


How to build images effectively?

Use **`.dockerignore`** to reduce context size for Docker runtime.

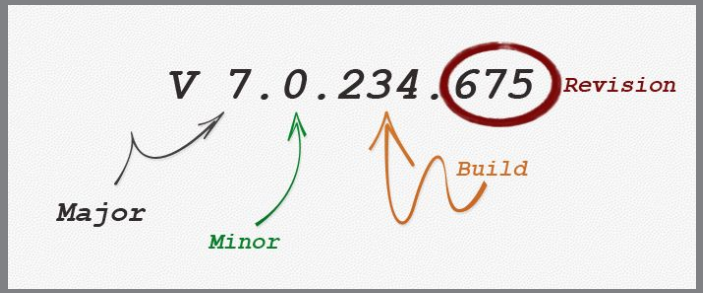
Breakup build into **`reusable layers`** to leverage caching during build.

Keep image **`size`** as small as possible. Do not add or remove unwanted files from image.



HANDS-ON

1. Create an image for Metadata Service and run it on Docker.
2. Use **`/actuator/info`** endpoint to check the service running



Versioning Docker Images

As you're iterating on your application, you'll need to push new Docker images to the registry. A natural questions that comes is how to version these images?

Docker image name & version

```
~/Projects/boot-services/metadata-servic  master  docker images
REPOSITORY                                TAG                 IMAGE ID            CREATED             SIZE
metadata-service                          1.0.0.7638113       6a5e8db6f6bb        25 seconds ago      126MB
metadata-service                          latest              6a5e8db6f6bb        25 seconds ago      126MB
k8s.gcr.io/kube-proxy-amd64               v1.10.0             bfc21aadc7d3        5 weeks ago         97MB
k8s.gcr.io/kube-scheduler-amd64           v1.10.0             704ba848e69a        5 weeks ago         50.4MB
k8s.gcr.io/kube-controller-manager-amd64  v1.10.0             ad86dbed1555        5 weeks ago         148MB
k8s.gcr.io/kube-apiserver-amd64           v1.10.0             af20925d51a3        5 weeks ago         225MB
k8s.gcr.io/etcd-amd64                     3.1.12              52920ad46f5b        7 weeks ago         193MB
k8s.gcr.io/kube-addon-manager             v8.6                9c16409588eb        2 months ago        78.4MB
openjdk                                   alpine              224765a6bdbe        3 months ago        102MB
```

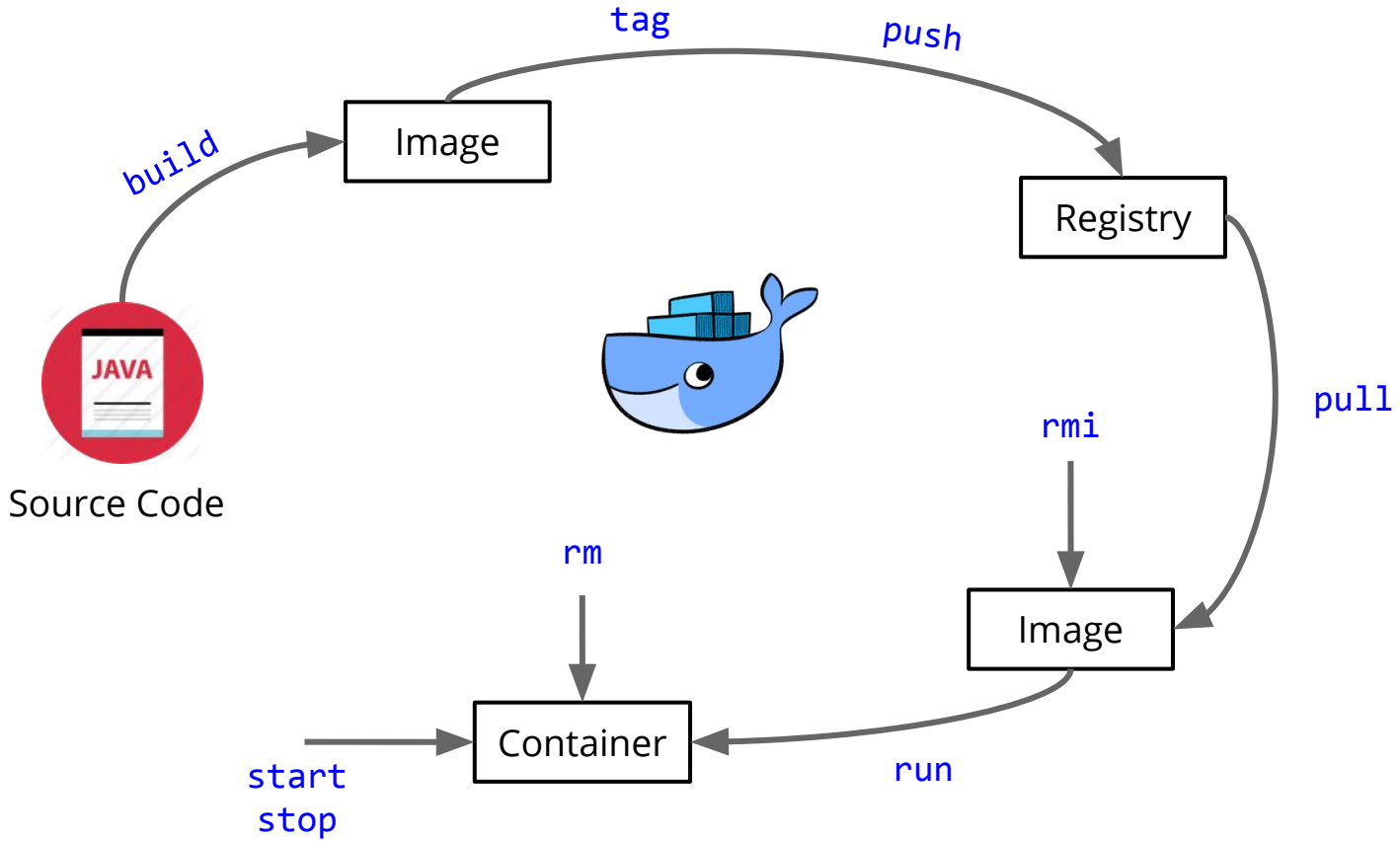
Image tagging Demo

docker tag

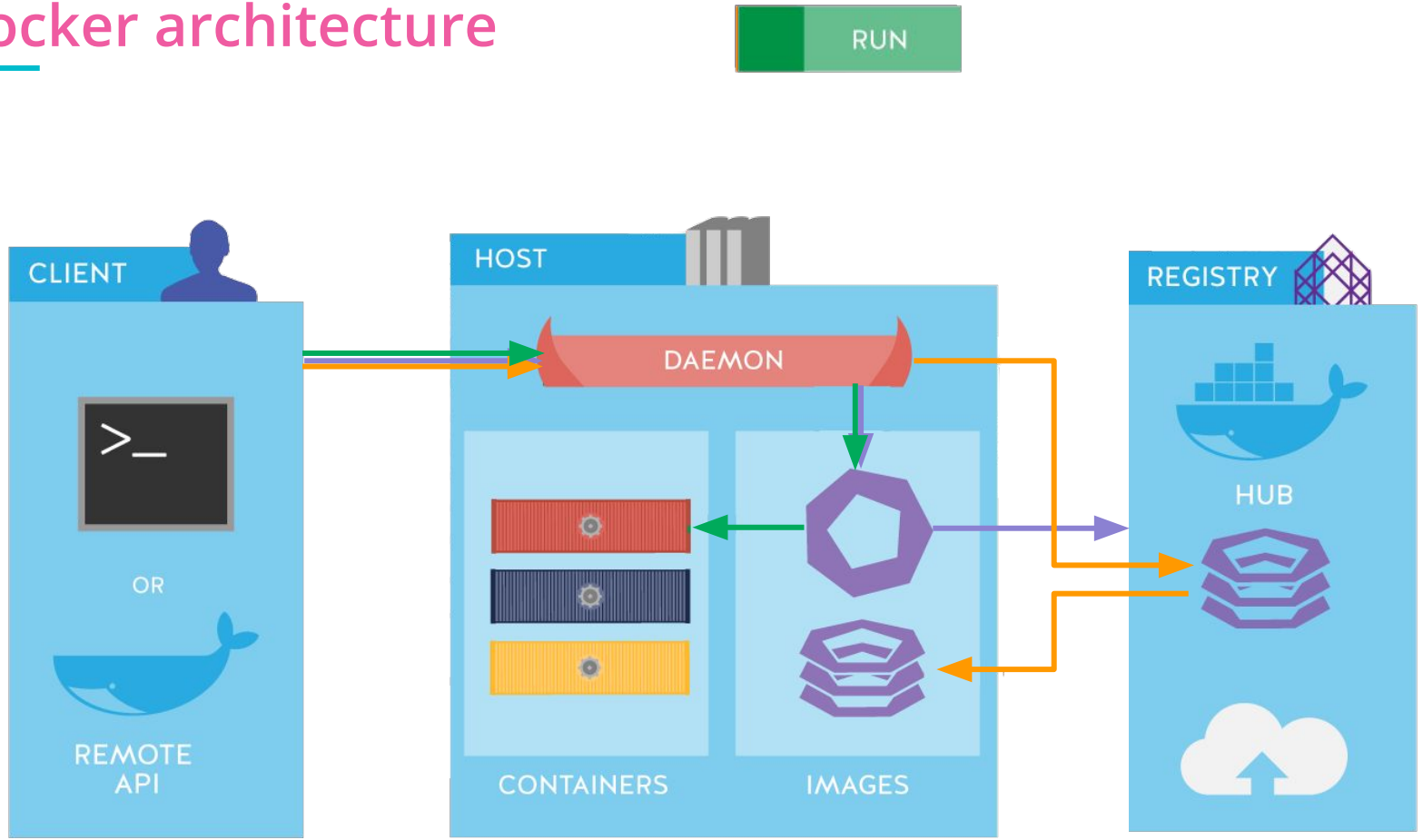
docker login

docker push

Docker workflow



Docker architecture



Docker for Developers

THANK YOU

For questions or suggestions:

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