

# Docker for Developers



## Getting Started with Docker

# Course Map

1. Developers, Containers, the Cloud
- 2. Getting Started with Docker**
3. Exercise: Installing and using Docker
4. Working with Dockerfiles and ASP.NET Core apps
5. Exercise: Dockerfiles, ASP.NET Core apps



# Course Map

- 6. Exercise: Mapping to Source Code
- 7. Exercise: Mapping to Shared Data
- 8. Multi-Container Applications with Docker Compose
- 9. Exercise: Linking vs networked Containers, using Docker Compose



# Agenda



- Introduction to Docker
- Installing Docker and HyperKit
- Docker CLI client
- Working with Docker images
- Working with Docker containers

# Get the Bits

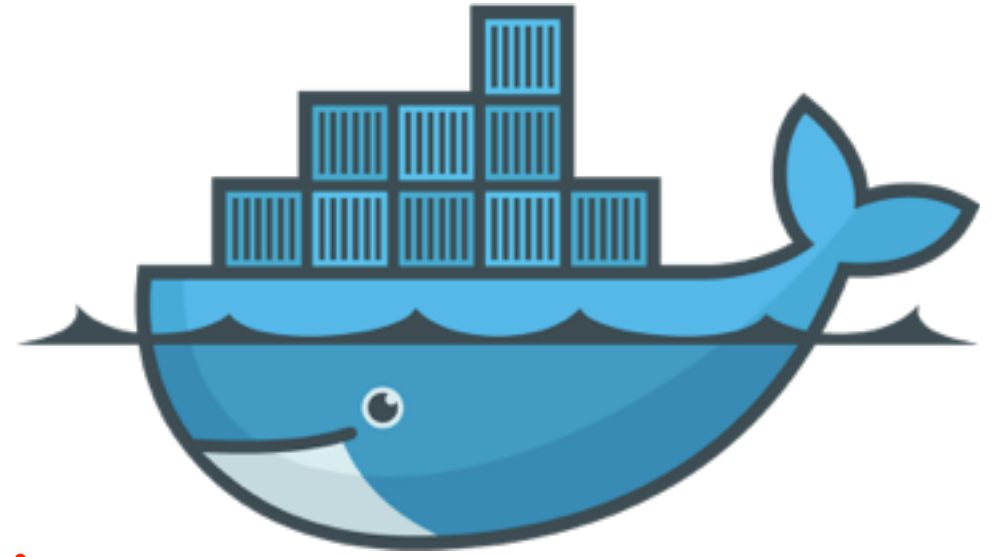


[github.com](https://github.com/tonysneed) / tonysneed /

**Kliant.DockerForDevs**

# What is Docker?

- Isolated like a **virtual machine**
- But more **lightweight**
- Easily deploy and scale **microservices**



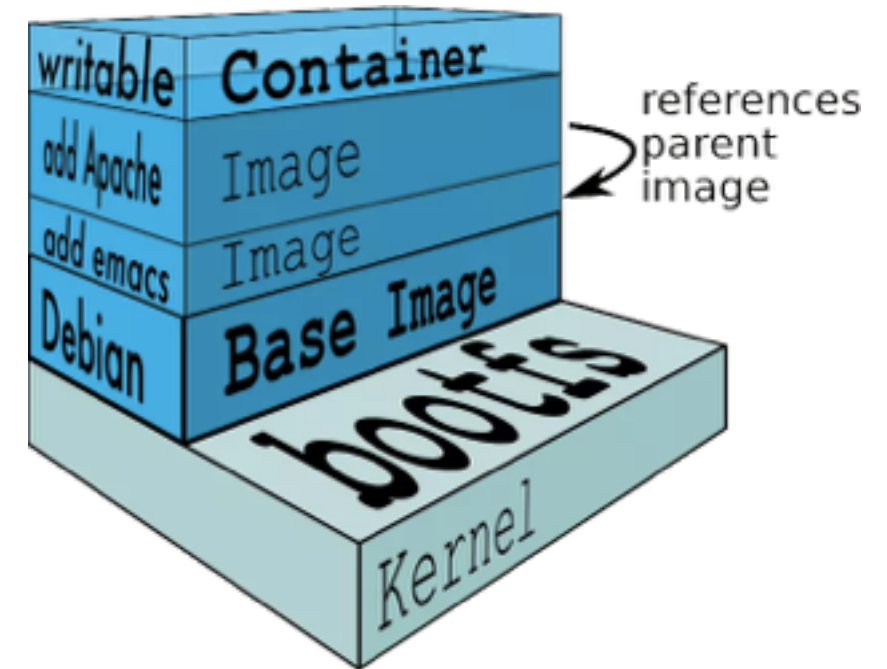
# What's in it for developers?



- Containers **isolated** from dev machine
- Dev environment **matches** production
- Link containers together with **docker compose**

# Docker concepts

- Images
  - Read-only: *environment + app*
  - Layered on top of **other images**
- Containers
  - Read-write: *instance* of an image
  - **Isolated** from other containers





# Getting started with Docker



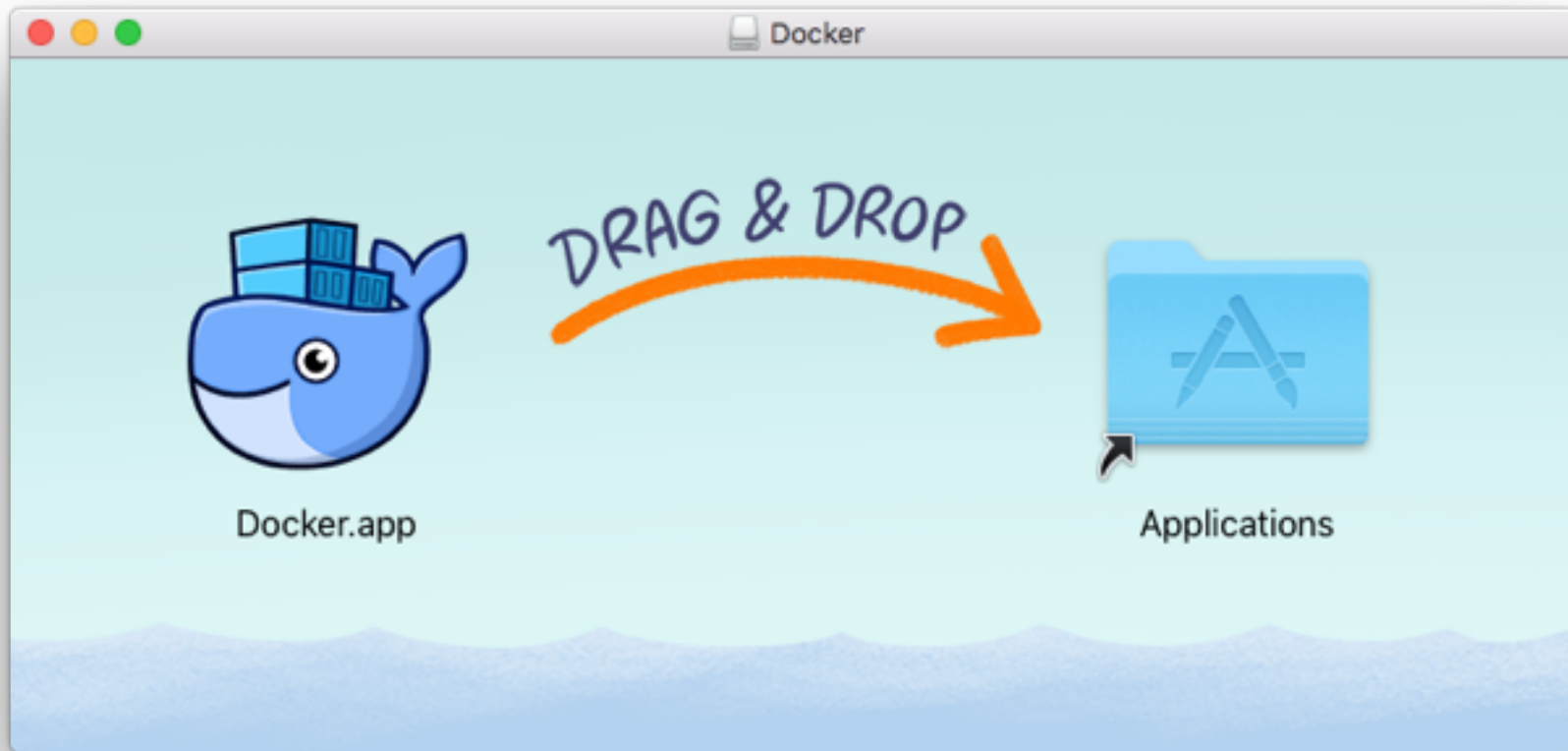
## Native clients for various platforms:

- Linux
- Mac OS X Yosemite 10.10.3 or higher
- Windows 10 Pro or higher

## Docker Toolbox for other platforms:

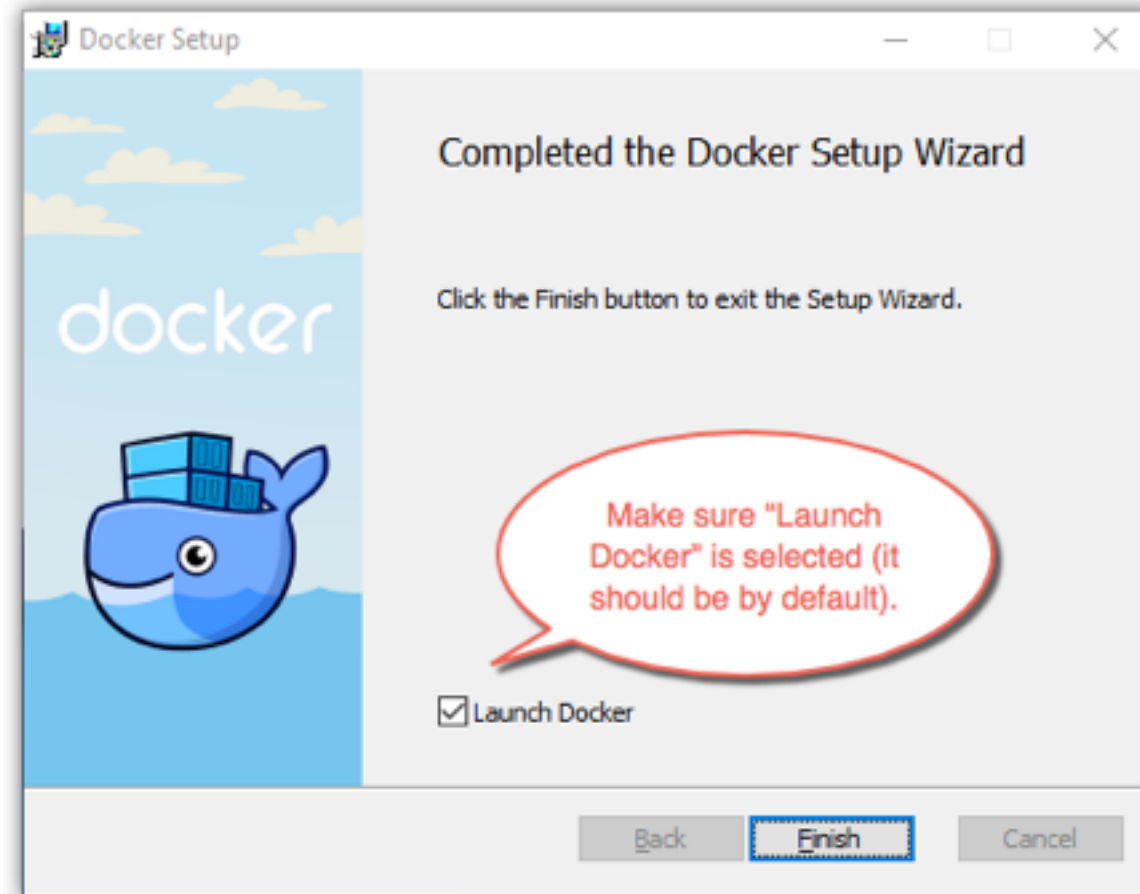
- Older versions of Mac OS X or Windows

# Installing Docker on Mac OS X



**Min Req:**  
Mac 2010  
OS X 10.10.3  
4 GB RAM

# Installing Docker on Windows 10



**Min Req:**  
Pro or higher  
64-bit  
1511 Nov  
Hyper-V  
4 GB RAM

# Verify Docker installation

```
~ $ docker version
```

Client:

Version: 1.12.0

API version: 1.24

Go version: go1.6.3

Git commit: 8eab29e

Built: Thu Jul 28 21:15:28 2016

OS/Arch: darwin/amd64

Server:

Version: 1.12.0

API version: 1.24

Go version: go1.6.3

Git commit: 8eab29e

Built: Thu Jul 28 21:15:28 2016

OS/Arch: linux/amd64

# Verify Docker installation

```
~ $ docker run hello-world
```

```
Unable to find image 'hello-world:latest' locally
```

```
latest: Pulling from library/hello-world
```

```
c04b14da8d14: Pull complete
```

```
Digest: sha256:0256e8a36e2070f7bf2d0b0763dbabdd67798512411de4cdcf9431a1feb60fd9
```

```
Status: Downloaded newer image for hello-world:latest
```

```
Hello from Docker!
```

# Demo: Installing Docker



# Docker Image Commands

`docker pull [image name]`

`docker build [dir with Dockerfile]`

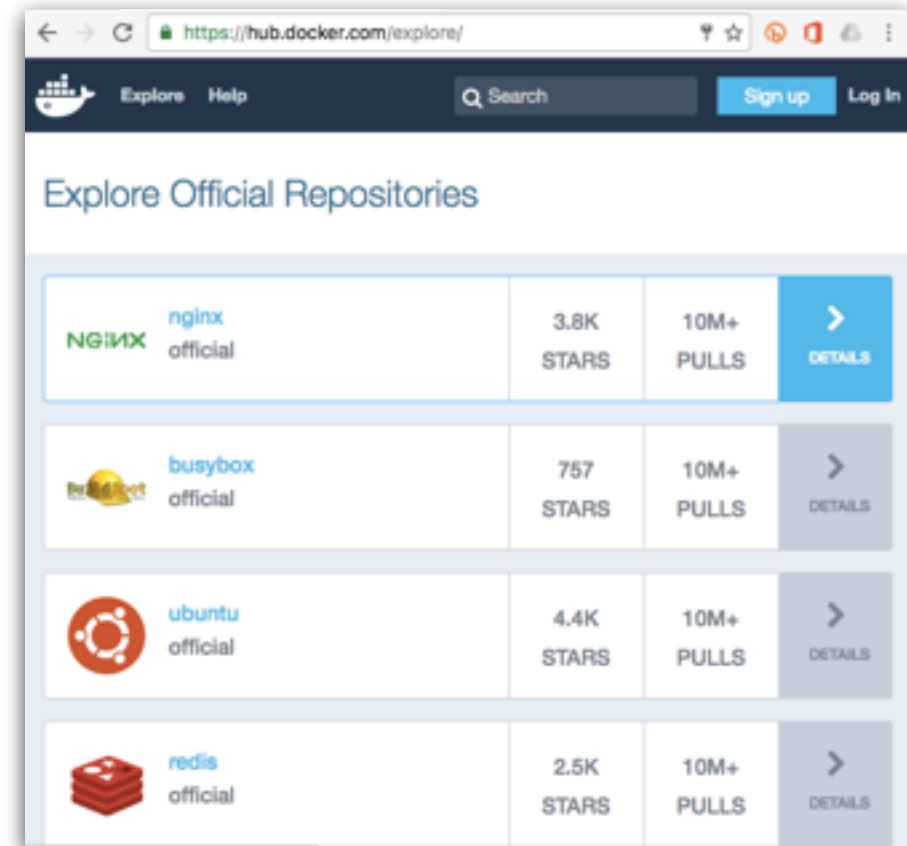
`docker images`

`docker rmi [image ID]`



# Image repositories: Docker Hub

- Images can be stored in **repositories**
- Docker Hub is the default: <http://hub.docker.com>
- Search for images
- Sign up for free
- Post your own images

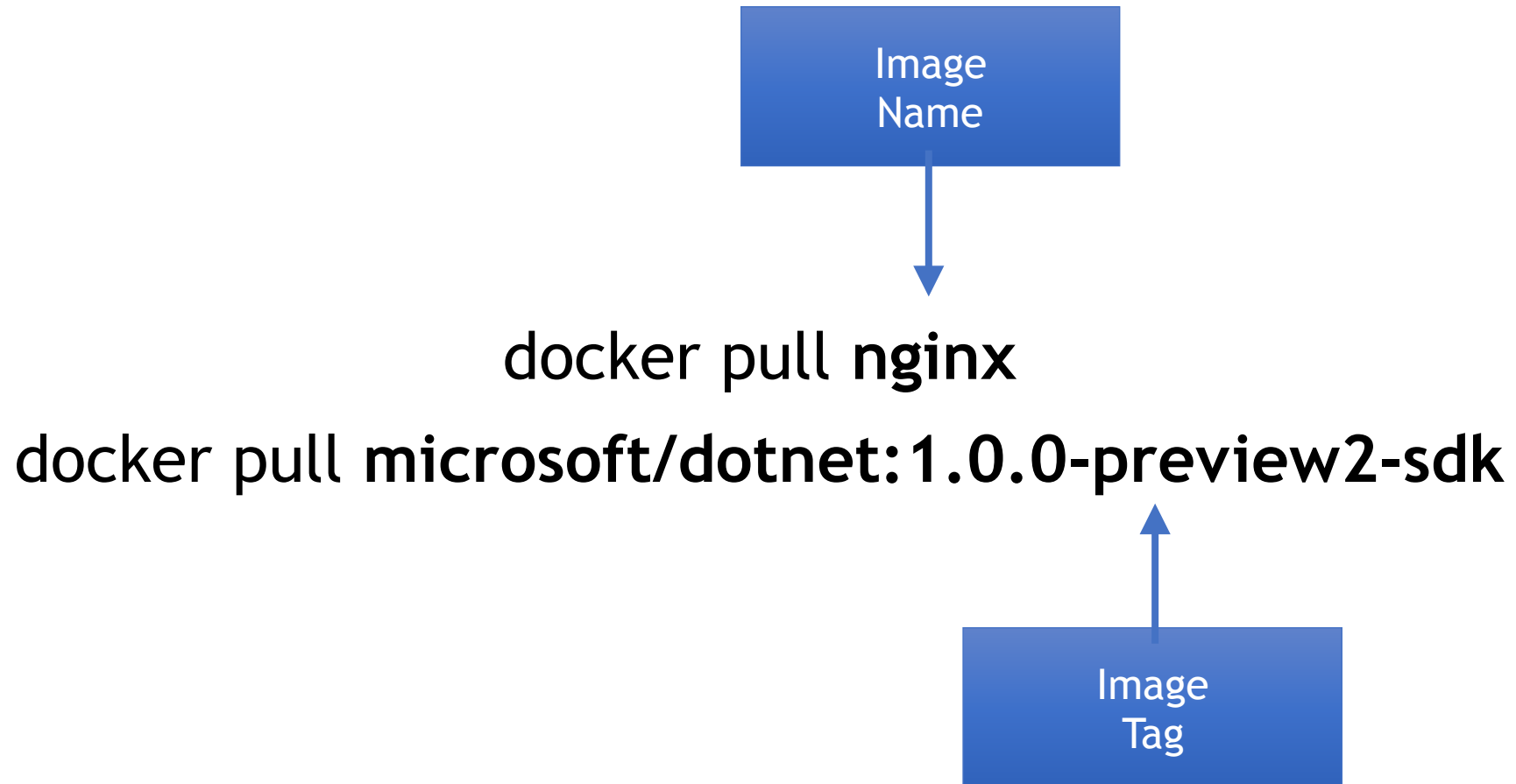




# Image Names

- Image names are optionally *prefixed* by a registry **hostname**
  - Separate by a **slash**
- Names suffixed by a version **tag**
  - Separated by a **colon**
  - Omitting tag defaults to **:latest**

# Example: Docker image commands



# Docker Container Commands



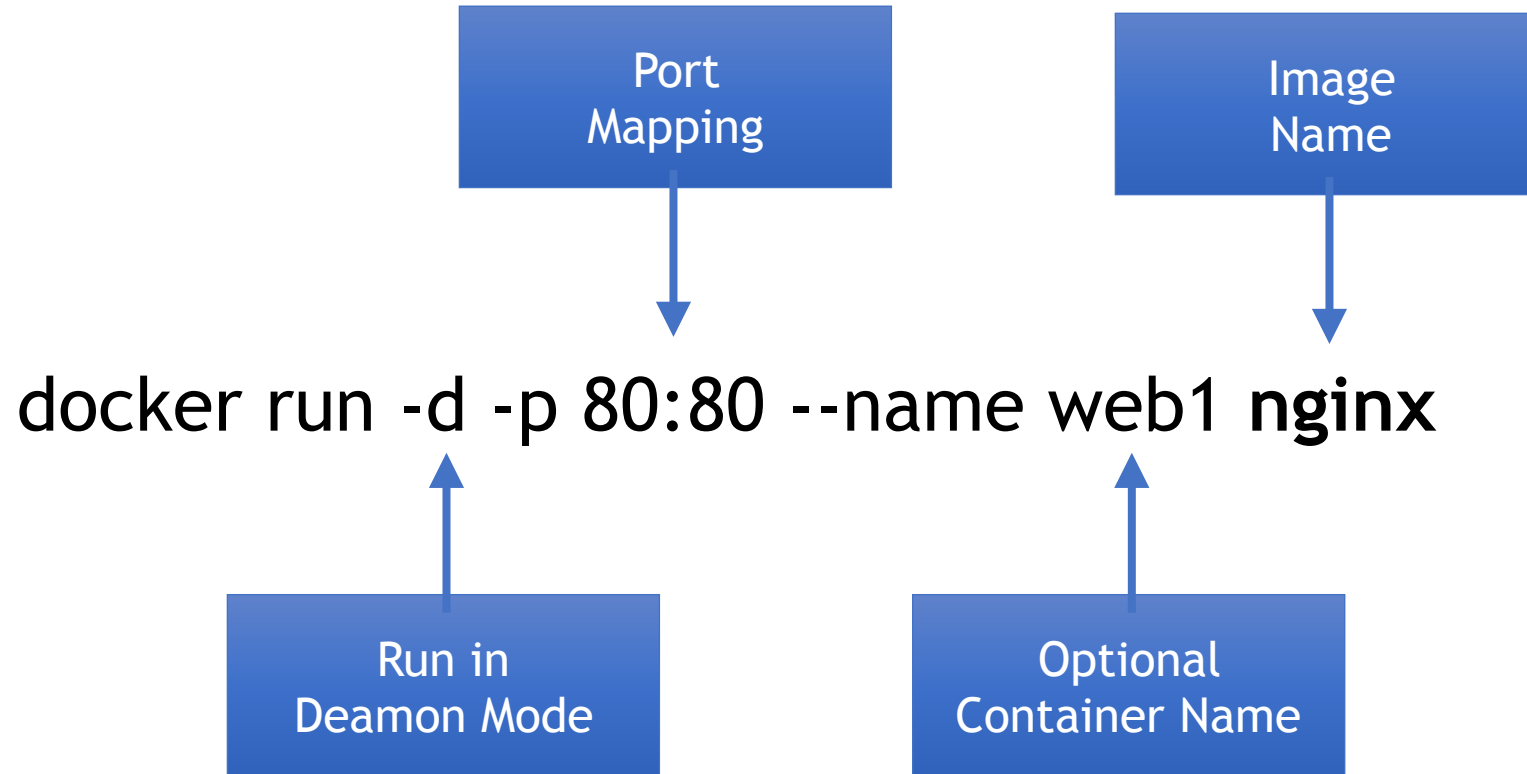
`docker run [image name]`

`docker ps -a [list containers]`

`docker inspect [container id / name]`

`docker rm [container id / name]`

# Example: Docker container commands



# Demo: Docker commands



# Questions?

