

# Docker for Developers



## Working with Dockerfiles and ASP.NET Core apps

# 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 Dockerfiles
- Dockerfile commands
- Building images with Dockerfiles
- Dockerizing ASP.NET Core apps
- Mounting volumes

# Get the Bits



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

**Kliant.DockerForDevs**

# Dockerfile: Build process



Dockerfile



Build



Docker Image

# Dockerfile: Select Commands

**FROM** [base image]

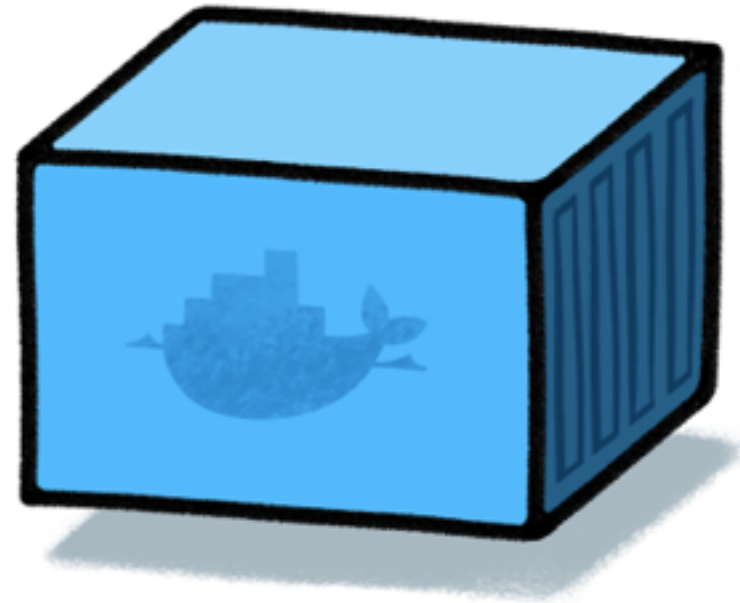
**MAINTAINER** [author]

**COPY**, **WORKDIR**

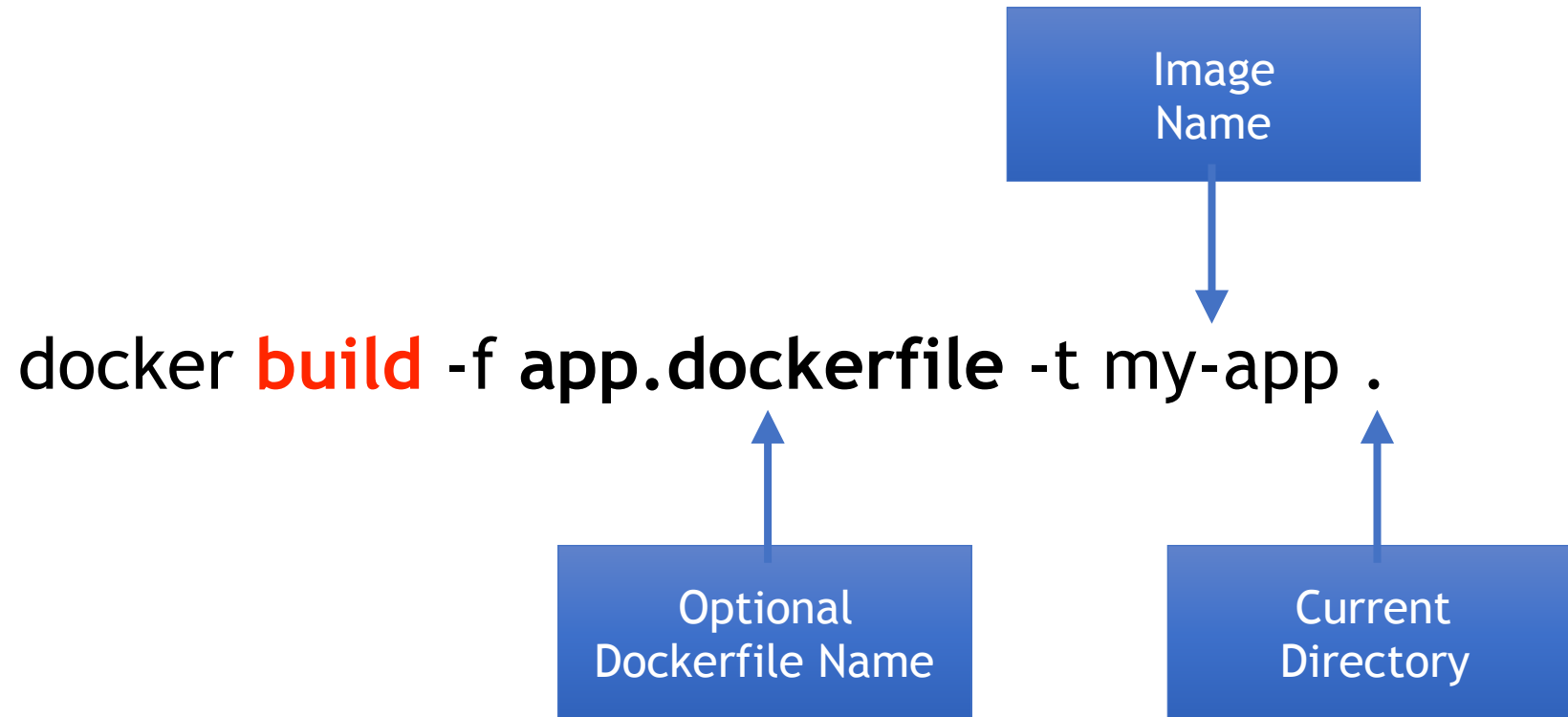
**RUN** [command, args]

**EXPOSE** [port]

**ENTRYPOINT** [command, args]

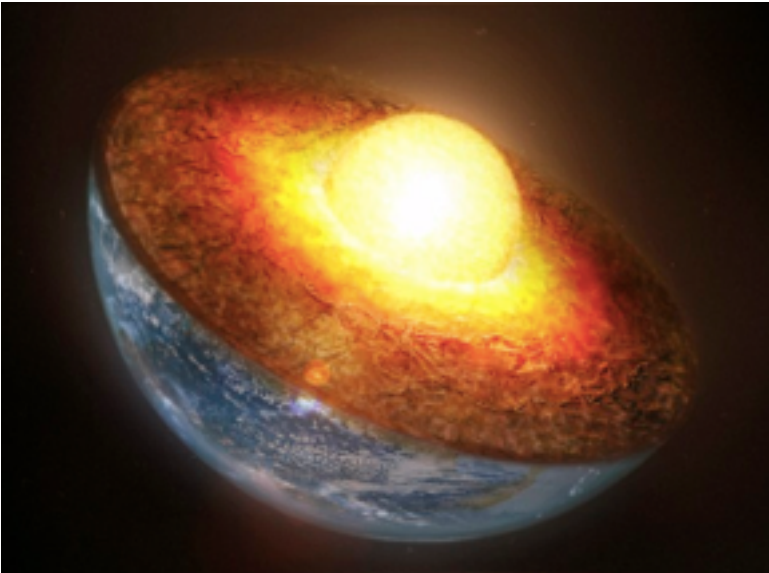


# Example: Build image from Dockerfile





# What is ASP.NET Core?



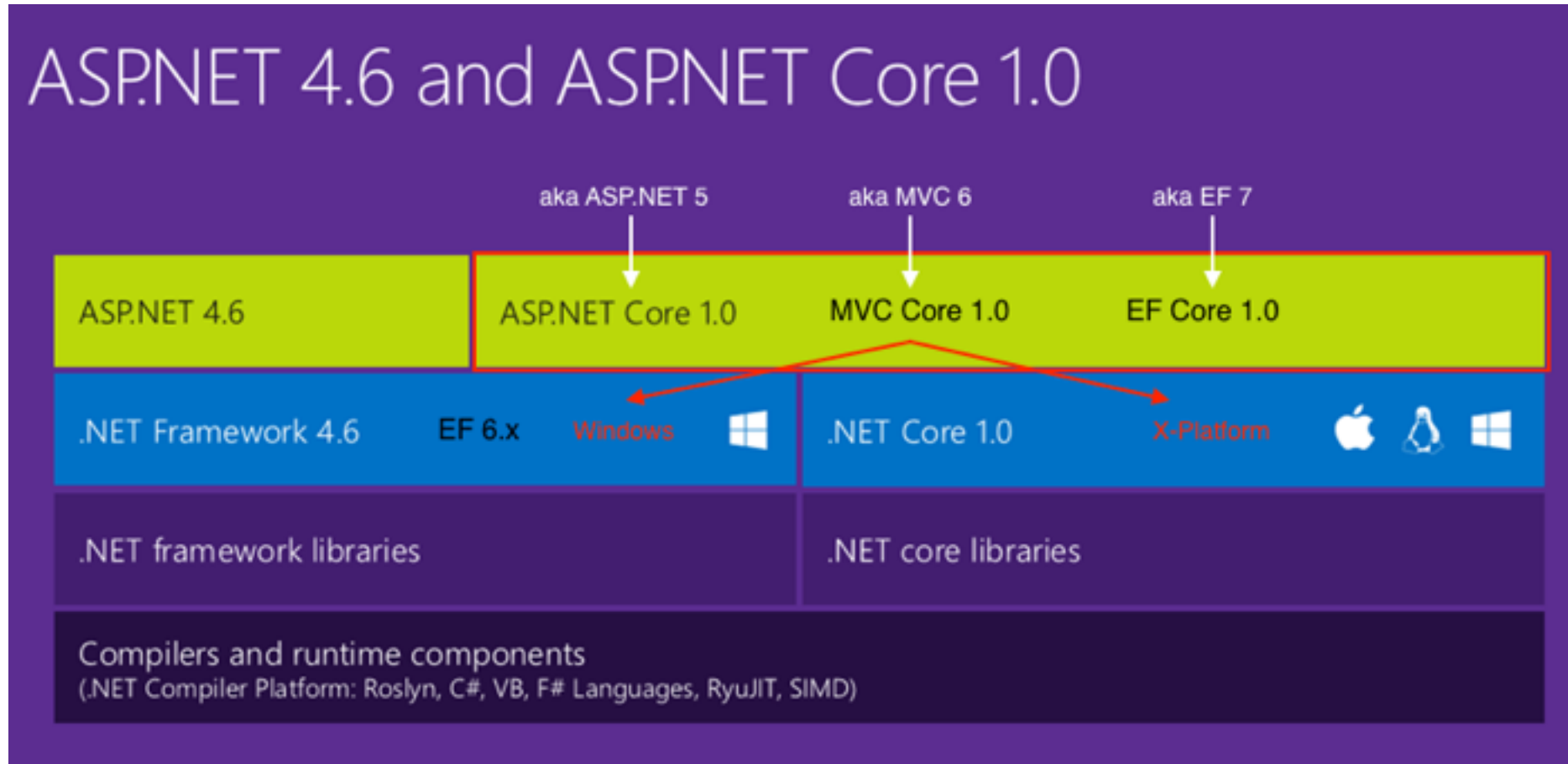
- Open-source, **cross-platform**
- **Modular**, cloud-friendly
- Highly **performant**, lightweight

# ASP.NET Core: Why Should I Care?



- No longer **shackled** to one tool chain
- Easily **mix and match** web frameworks
- Enables **cloud-first** development

# ASP.NET Core Architecture



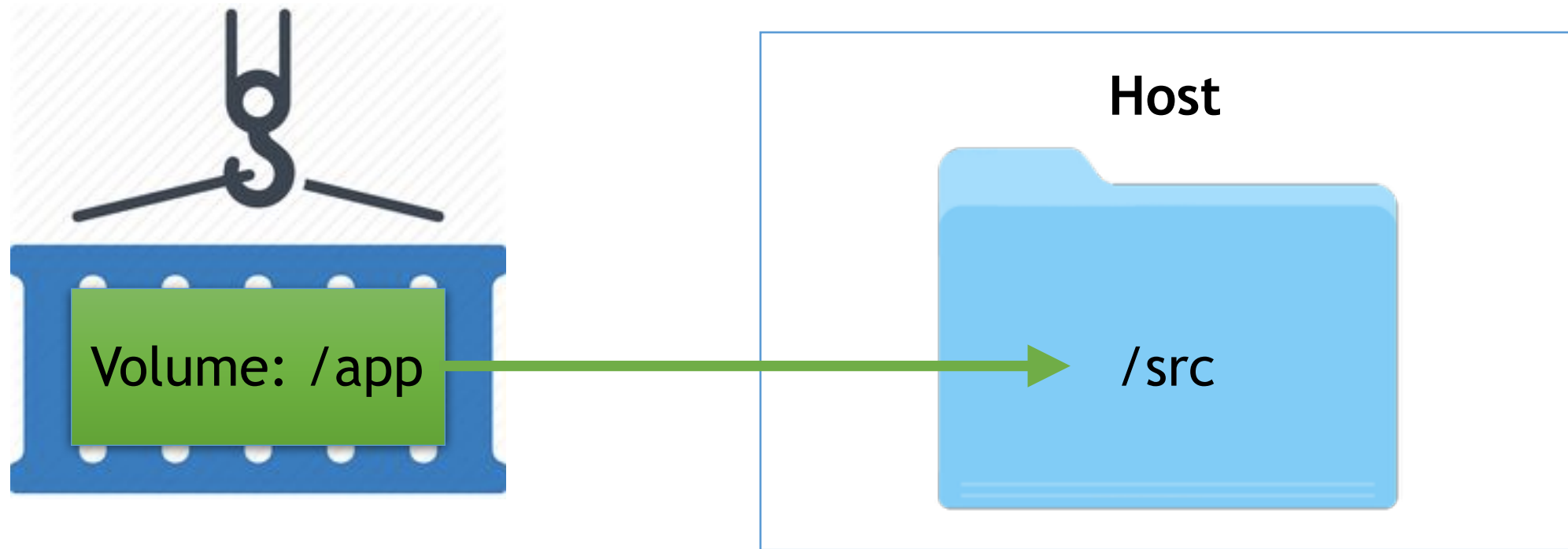
# Example: ASP.NET Core Dockerfile

```
FROM      microsoft/dotnet:1.0.0-preview2-sdk
COPY      . /app
WORKDIR   /app
RUN       ["dotnet", "restore"]
ENV       ASPNETCORE_URLS="http://*:5000"
ENV       ASPNETCORE_ENVIRONMENT="Staging"
EXPOSE    5000
ENTRYPOINT ["dotnet", "run"]
```

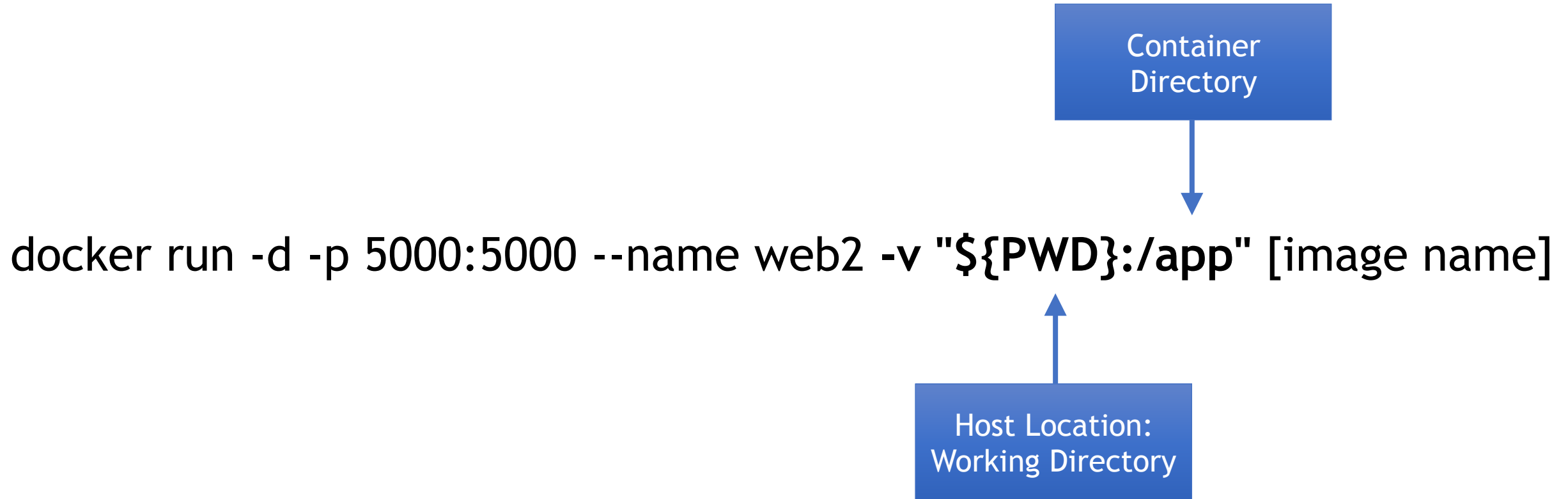
# Demo: Build image from Dockerfile



# Volumes: Mapping to host directory



# Volumes: Mounting host directory



# Inspecting volumes: host directory

docker **inspect** [image name or container id]

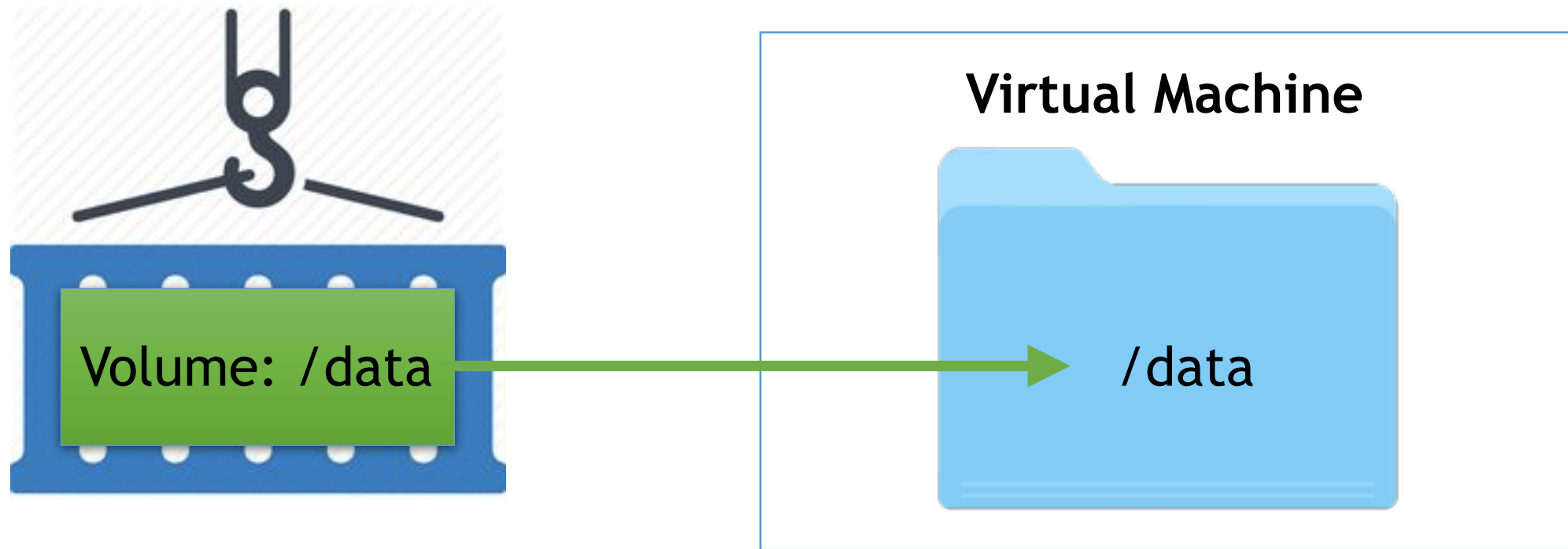
```
"Mounts": [ {  
    "Source": "/Users/Tony/Source/DotNetCore/src",  
    "Destination": "/app",  
    "Mode": "",  
    "RW": true,  
    "Propagation": "rprivate"  
} ]
```



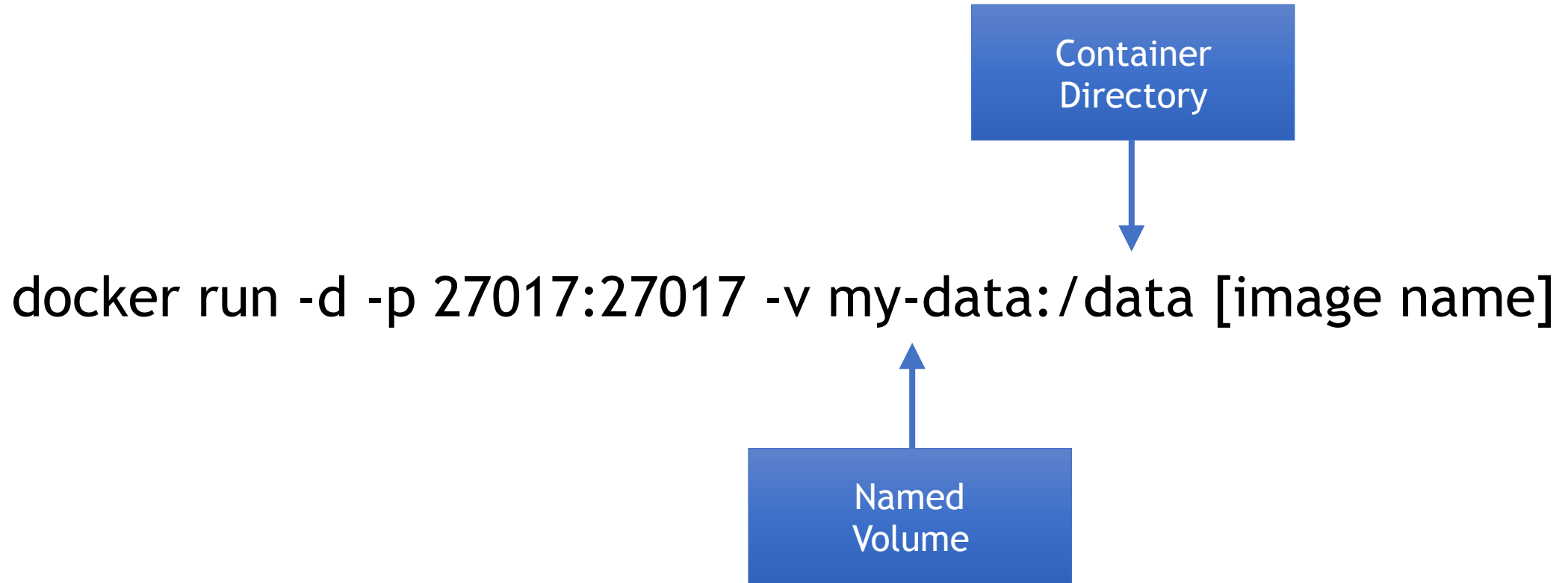
Host  
directory



# Volumes: Mapping to VM directory



# Volumes: Mounting data directory



# Inspecting volumes: data directory

docker **inspect** [image name or container id]

Virtual  
machine  
directory

```
"Mounts": [ {  
    "Source": "/var/lib/docker/volumes/mongo-data/_data",  
    "Destination": "/data",  
    "Mode": "z",  
    "RW": true,  
    "Propagation": "rprivate"  
} ]
```

# Demo: Mounting volumes



# Questions?

