Hooking Your Source Code into a Container

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Overview

The Layered File System

Containers and Volumes

Source Code, Volumes and Containers
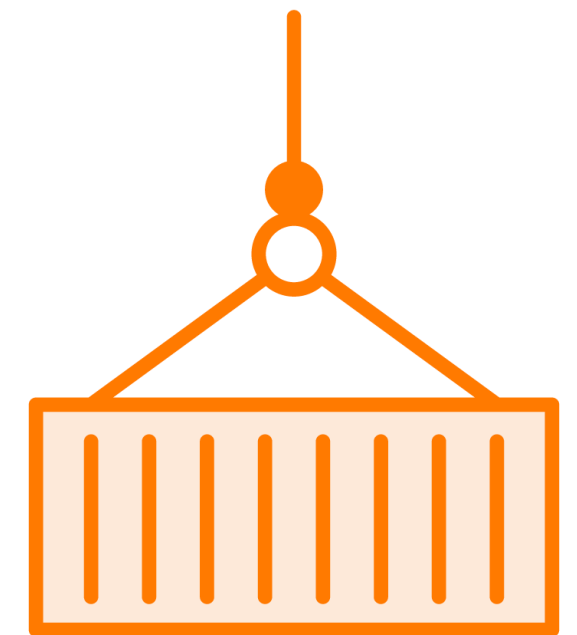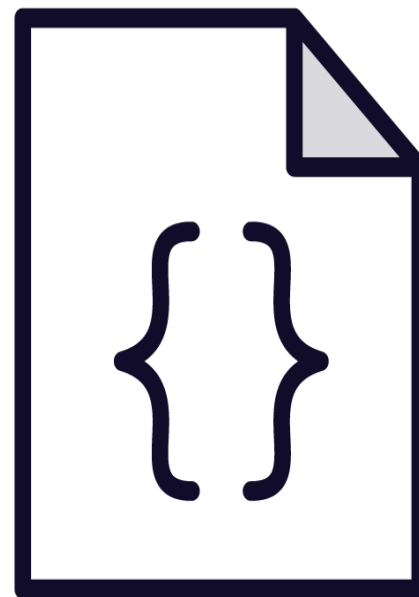
Hooking a Container Volume to Source Code

Removing Containers and Volumes

Question

How do you get source code into a container?

Answer

1. Create a container volume that points to the source code.

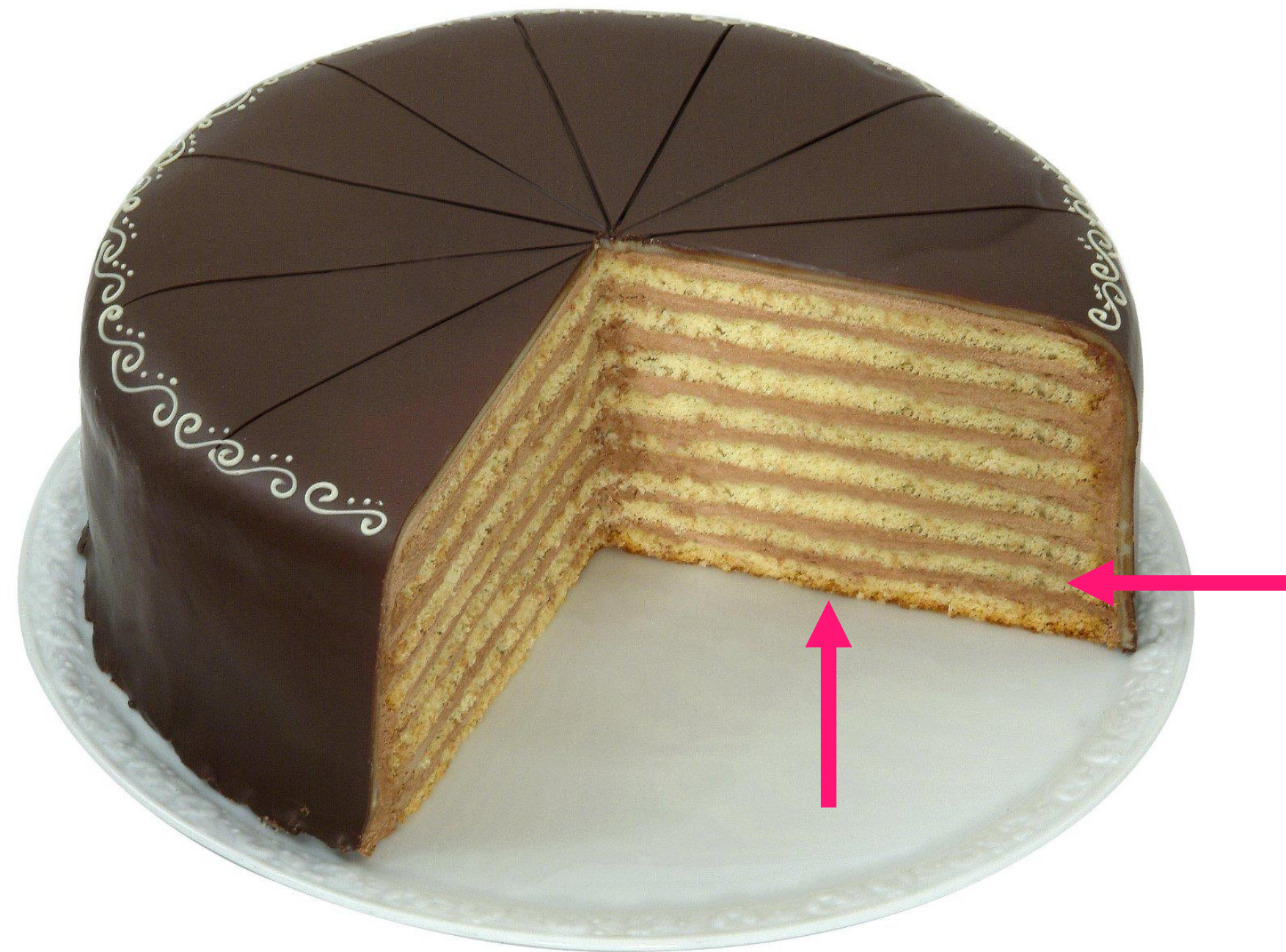2. Add your source code into a custom image that is used to create a container.
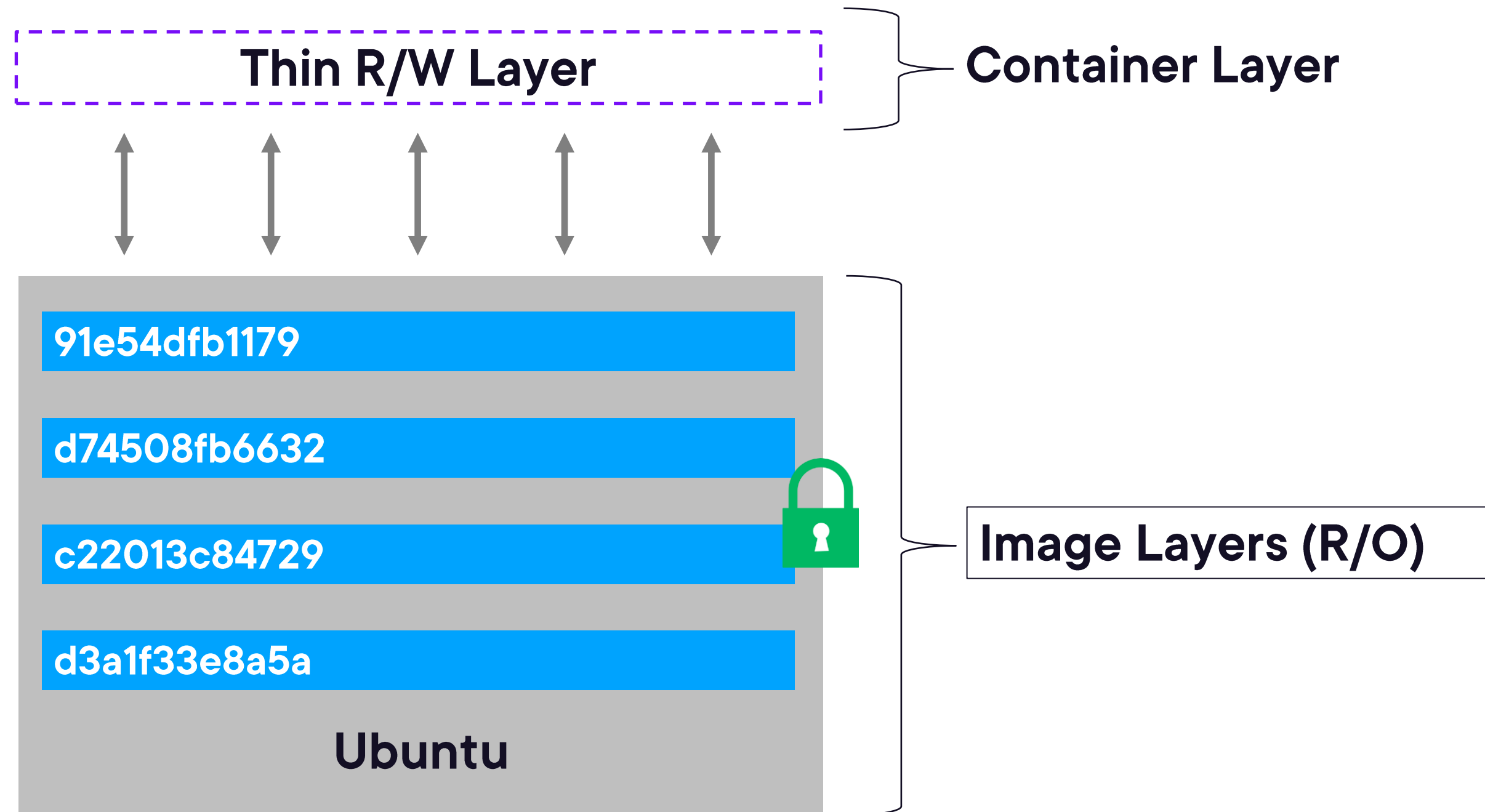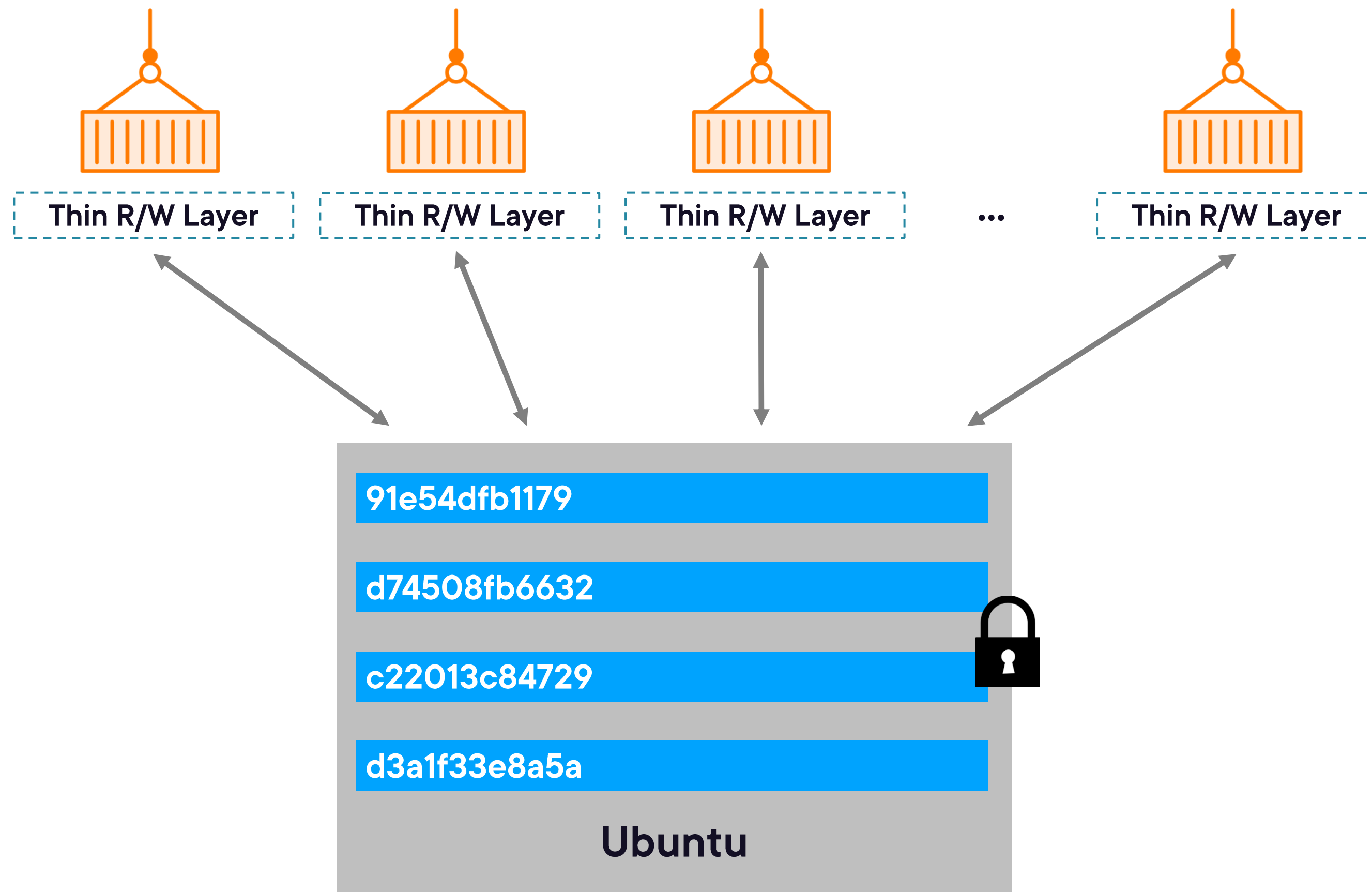
The Layered File System

Layers (from a dessert perspective)

Images, Containers and File Layers

Thin R/W Layer — Container Layer

91e54dfb1179

d74508fb6632

c22013c84729

d3a1f33e8a5a

Ubuntu

Image Layers (R/O)

Containers Can Share Image Layers

Thin R/W Layer   Thin R/W Layer   Thin R/W Layer   ...   Thin R/W Layer

91e54dfb1179

d74508fb6632

c22013c84729

d3a1f33e8a5a

Ubuntu

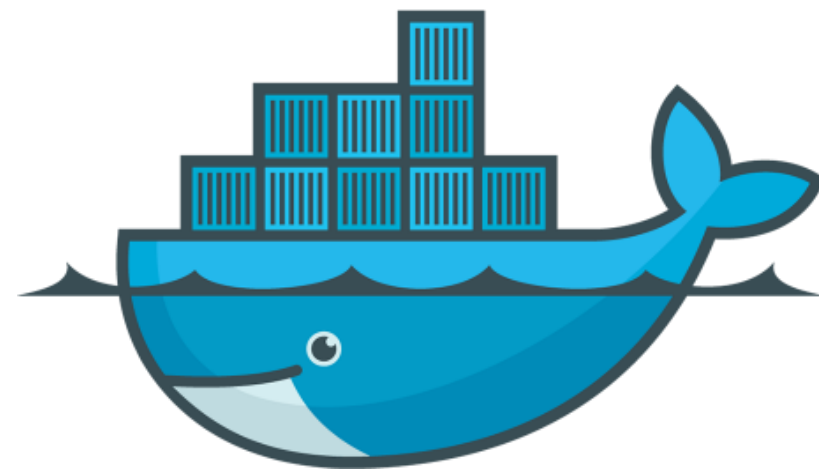# Question

How do you get source code into a container?
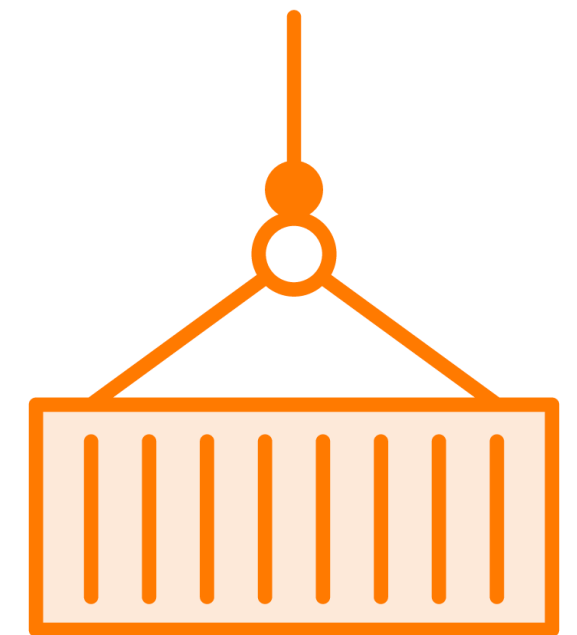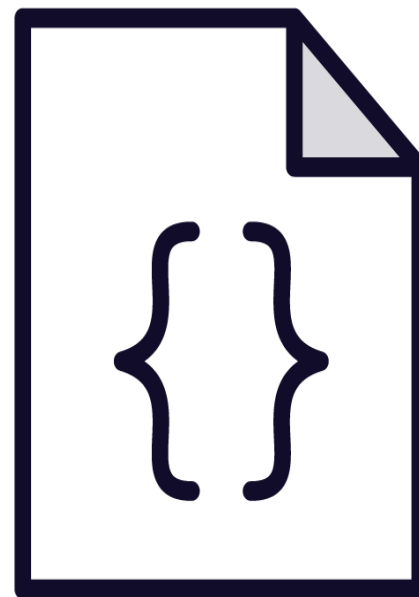
Containers and Volumes

Docker Volumes

What is a Volume?

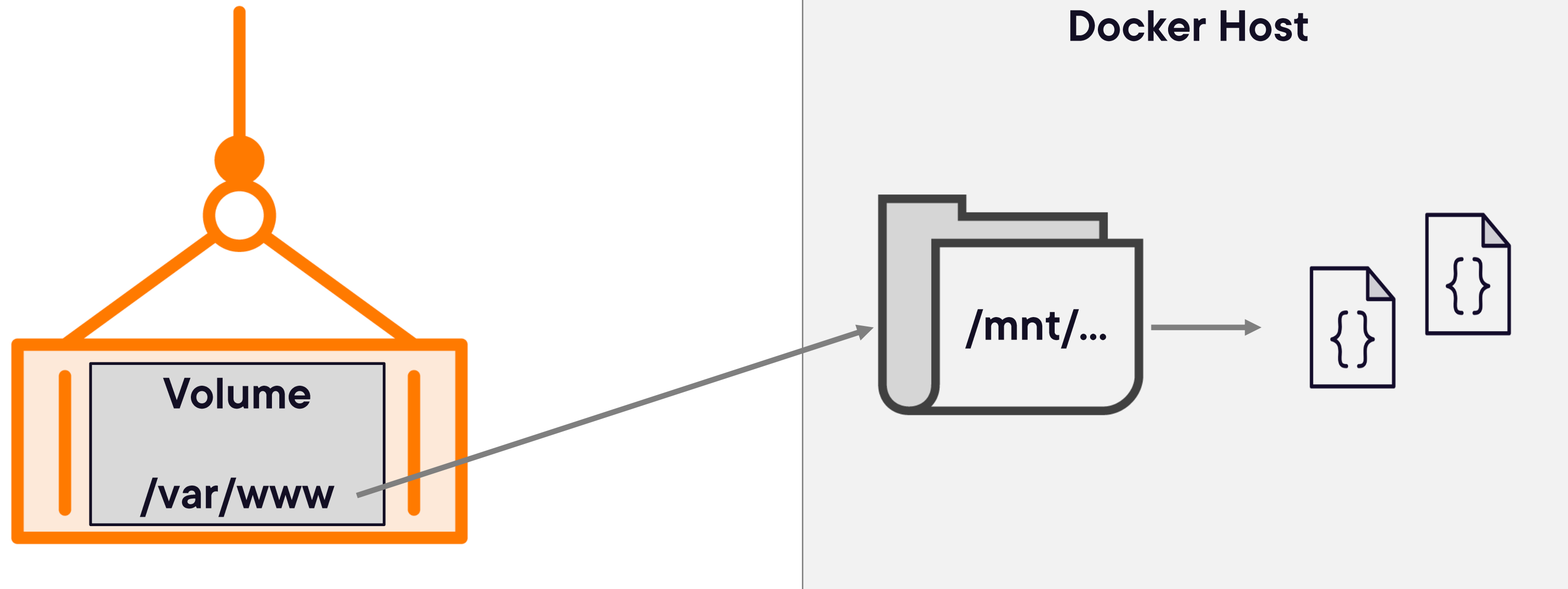**Special type of directory in a container typically referred to as a "data volume"**

Can be shared and reused among containers

Updates to an image won't affect a data volume

Data volumes are persisted even after the container is deleted

Volume Overview

Source Code, Volumes and Containers

Docker Volume Hotel
managed volume

Your House
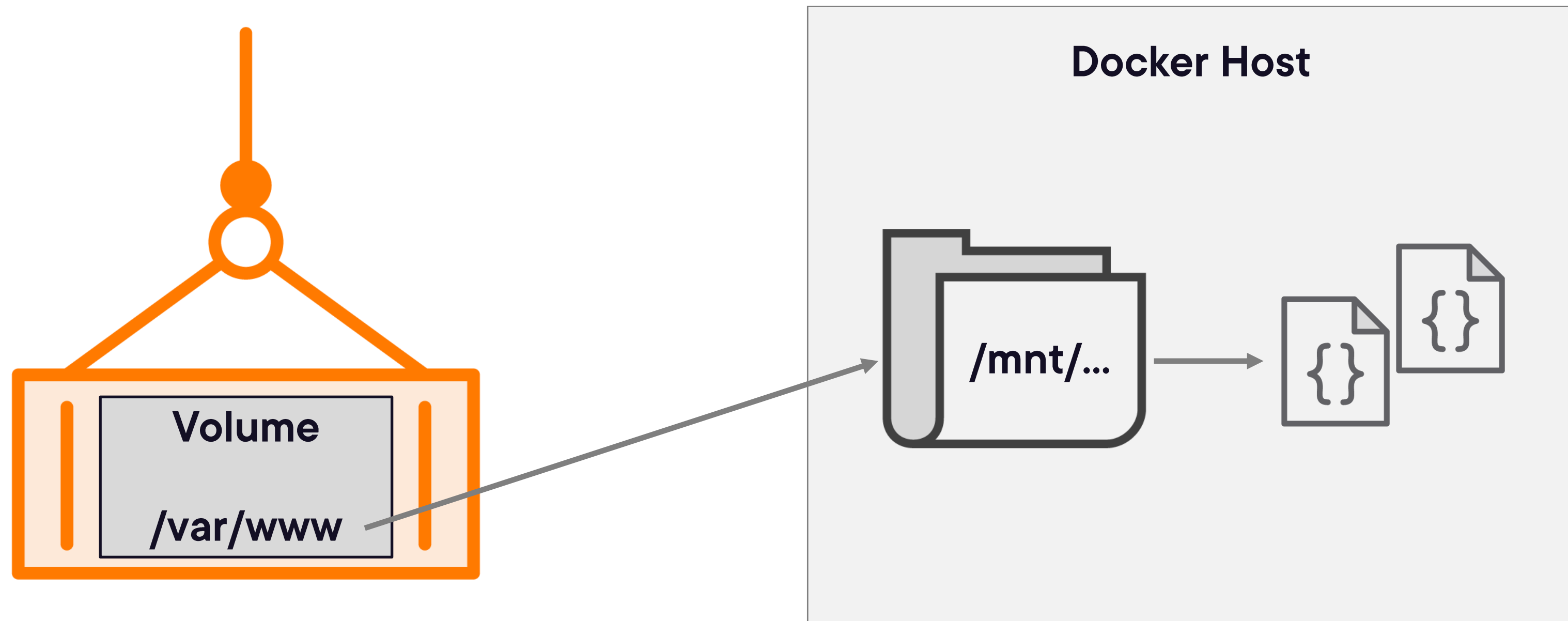custom volume
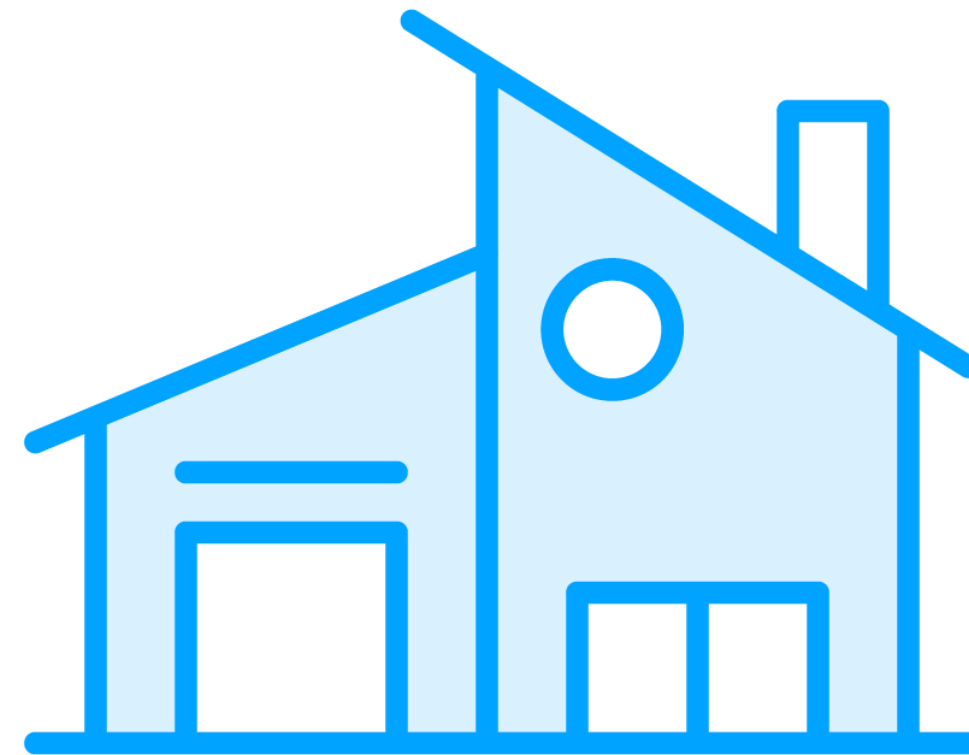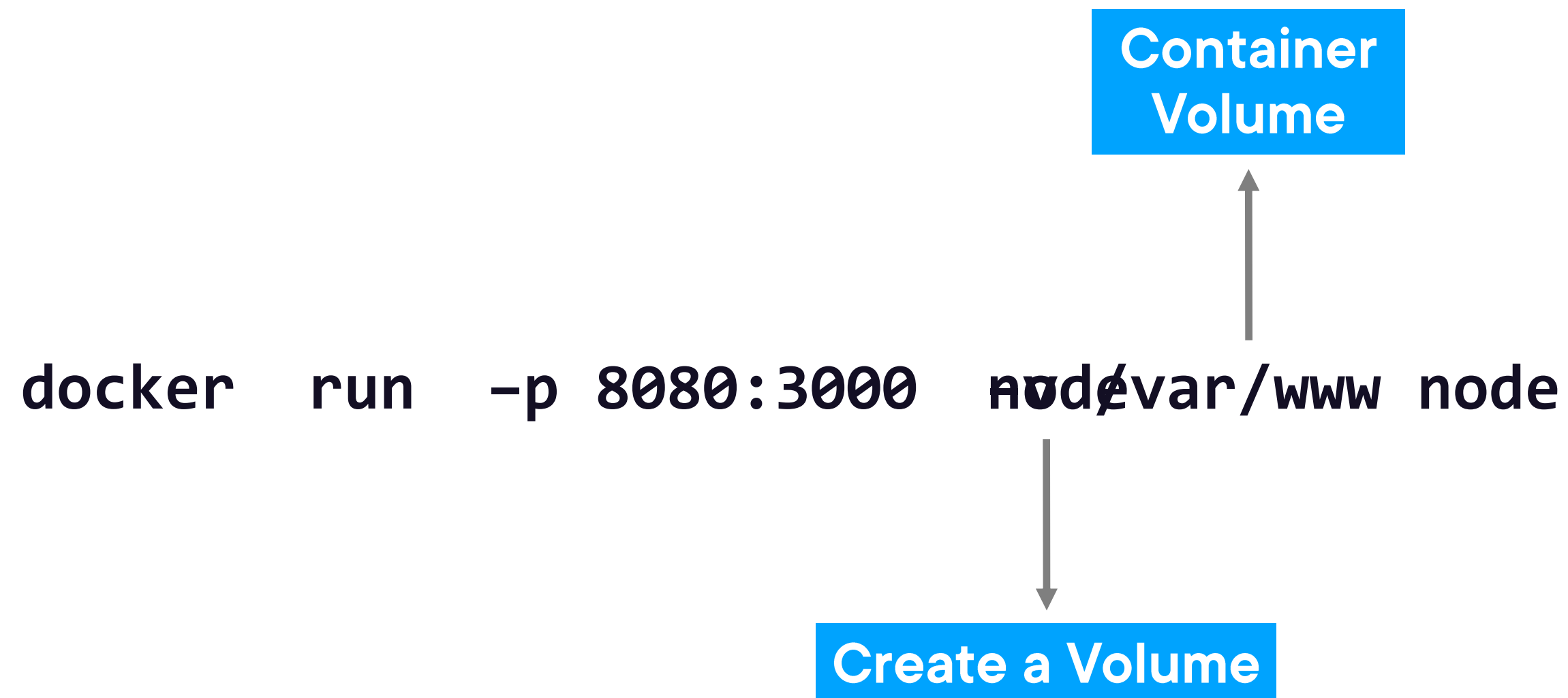
`-v /var/www`

`-v /customFolder:/var/www`

Understanding Volumes

Docker Host

Volume

/var/www

/mnt/...

Creating a Data Volume

Container Volume

docker run -p 8080:3000 node -v /var/www node

Create a Volume

Locating a Volume

`docker inspect mycontainer`

Host Location

```
...
"Mounts": [
  {
    "Name": "d185...86459",
    "Source": "/mnt/.../var/lib/docker/volumes/d185...86459/_data",
    "Destination": "/var/www",
    "Driver": "local",
    "RW": true
  }
]
...
```

Volume Location in Container
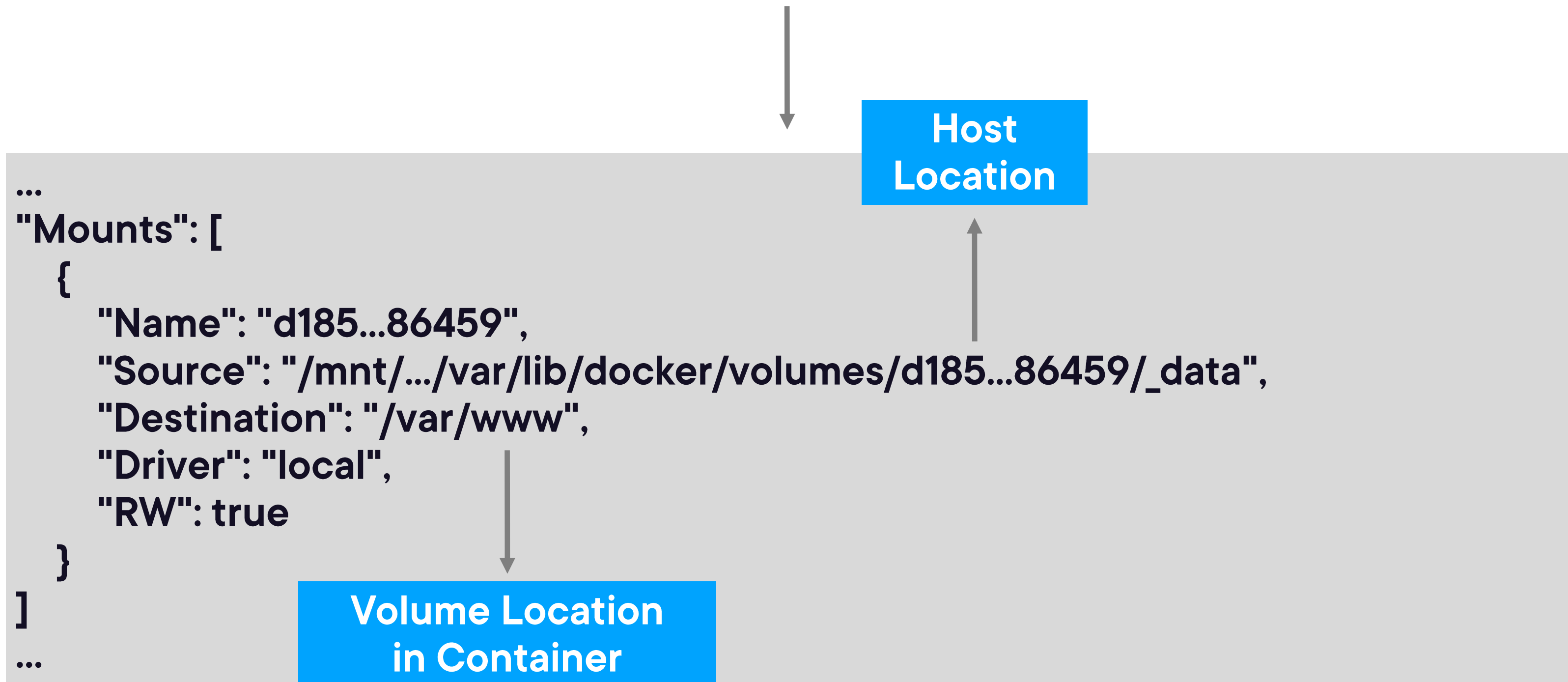
Customizing Volumes
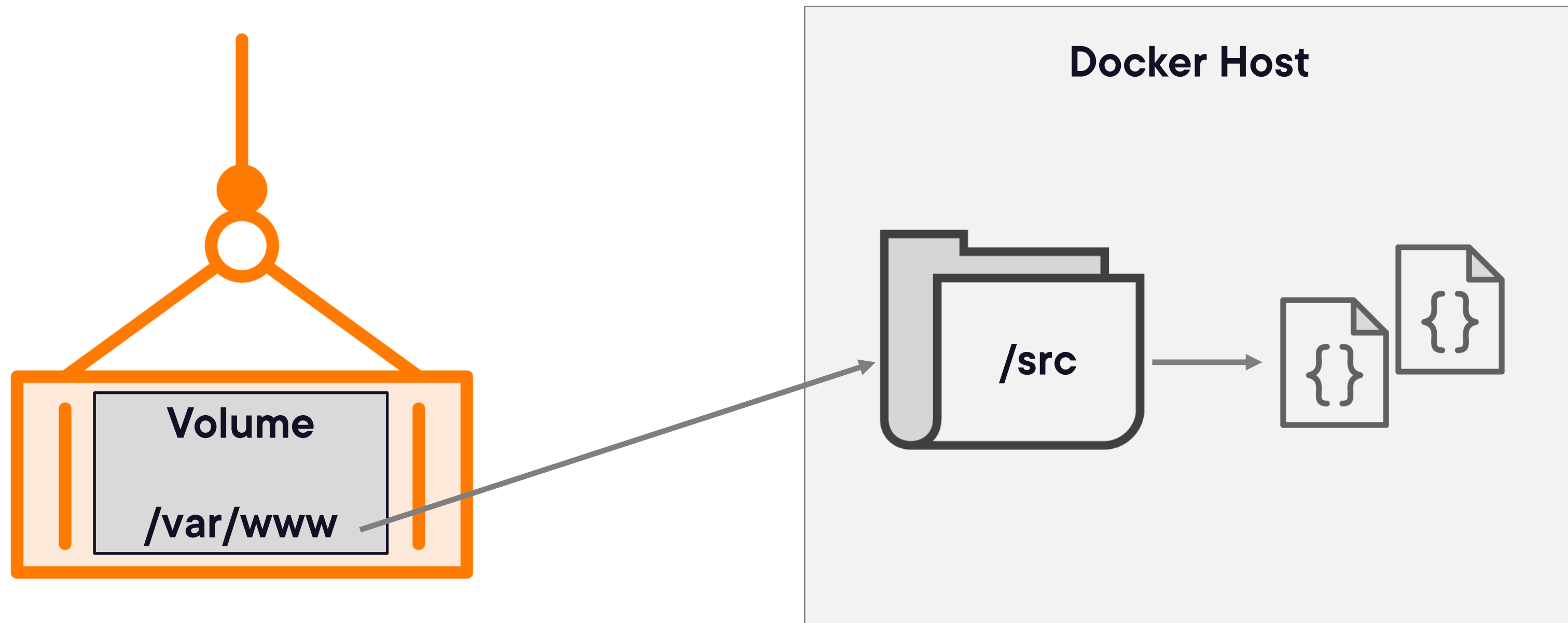
Customizing the Host Location for a Data Volume

Host Location

Create a Volume

Container Volume

```
docker  run  -p 8080:3000  node$(pwd):/var/www node
```

Locating a Volume

```
docker inspect mycontainer
```
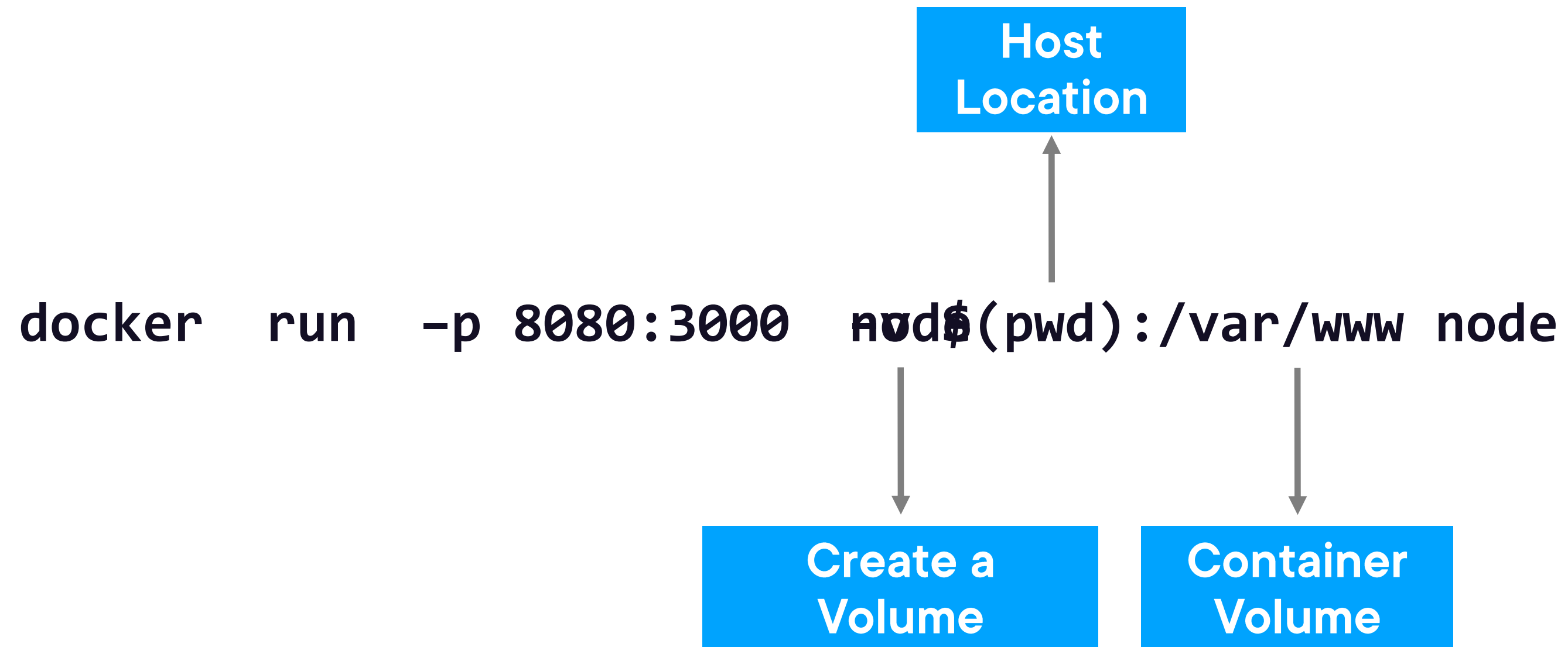
```
...
"Mounts": [
  {
    "Name": "d185...86459",
    "Source": "/src",
    "Destination": "/var/www",
    "Driver": "local",
    "RW": true
  }
]
...
```

Host Location

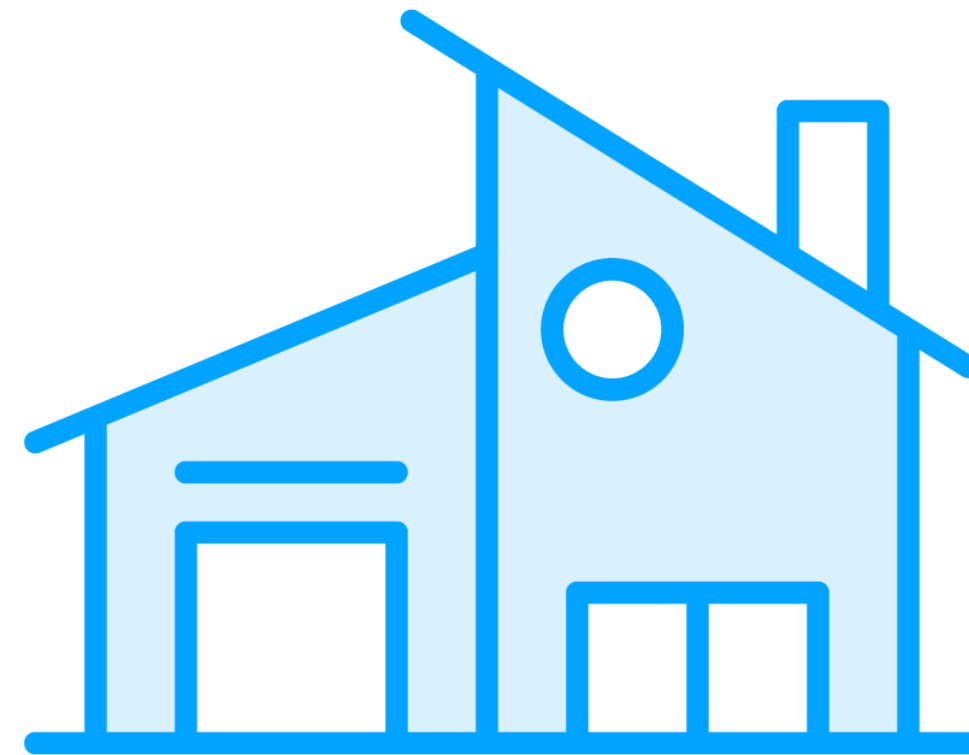Volume Location in Container

Docker Volume Hotel
managed volume

Your House
custom volume

`-v /var/www`

`-v /customFolder:/var/www`

Container Volumes in Action

Hooking a Container Volume to Node.js Source Code

Hooking a Container Volume to ASP.NET Core Source Code

Removing Containers and Volumes

Creating a Docker Managed Volume

```
docker  run  -p 8080:3000  -v /var/www node
```

Docker Managed Volumes

```
docker inspect mycontainer
```

```
...
"Mounts": [
  {
    "Name": "d185...86459",
    "Source": "/mnt/.../var/lib/docker/volumes/d185...86459/_data",
    "Destination": "/var/www",
    "Driver": "local",
    "RW": true
  }
]
...
```

Removing Volumes

```
docker rm –v lastContainer


docker volume rm nameOfVolume
docker system prune --volumes
```

Docker images and containers rely on a "layered file system"

Volumes are persisted on the Docker Host

Source code can be hooked to a container using volumes: *docker run –v*

Volumes can be removed:
docker rm –v lastContainer

Up Next:

Building Custom Images with Dockerfile