

Handling Data and Stateful Applications in Docker and Kubernetes

Understanding the Container Filesystem

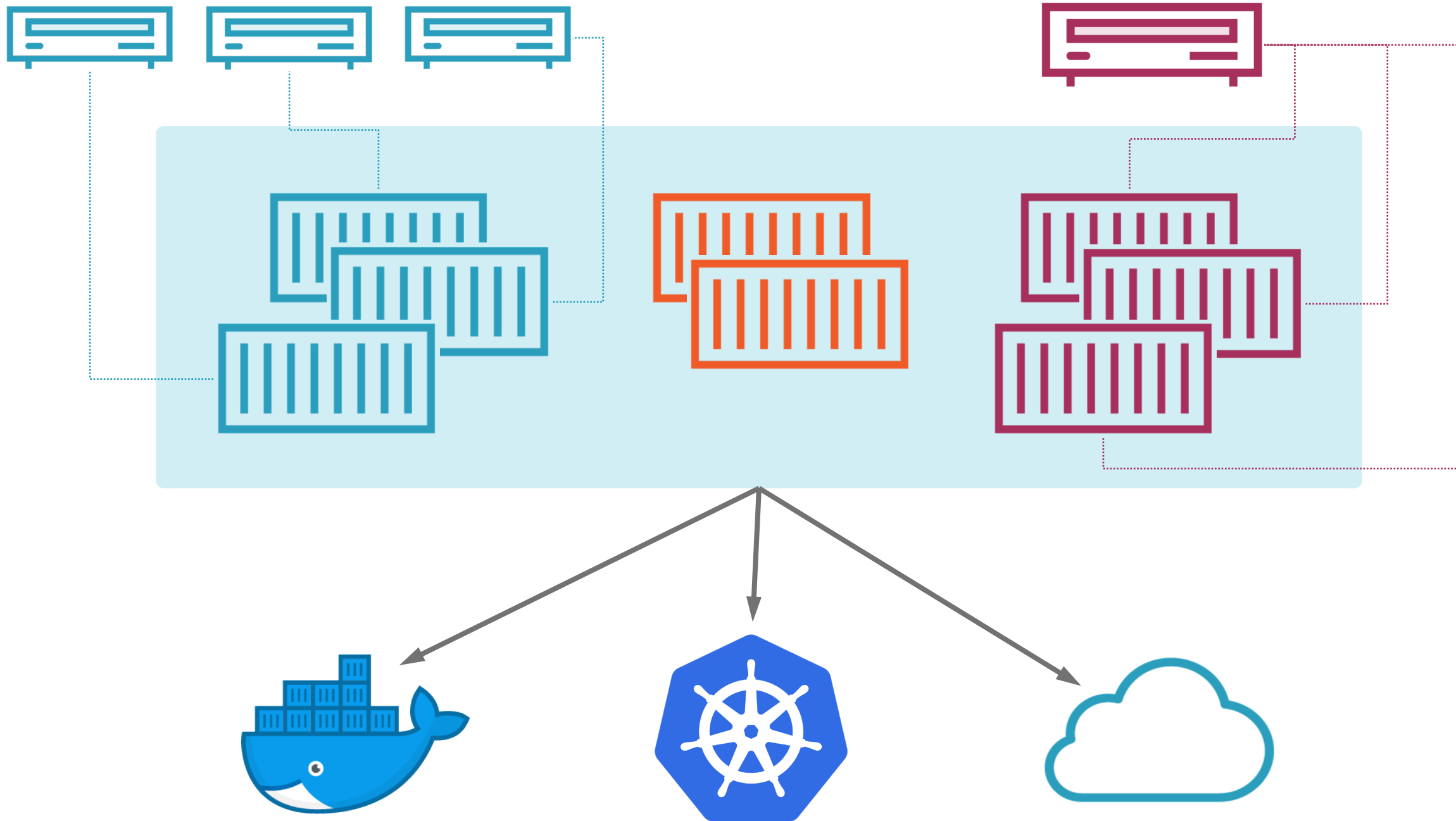


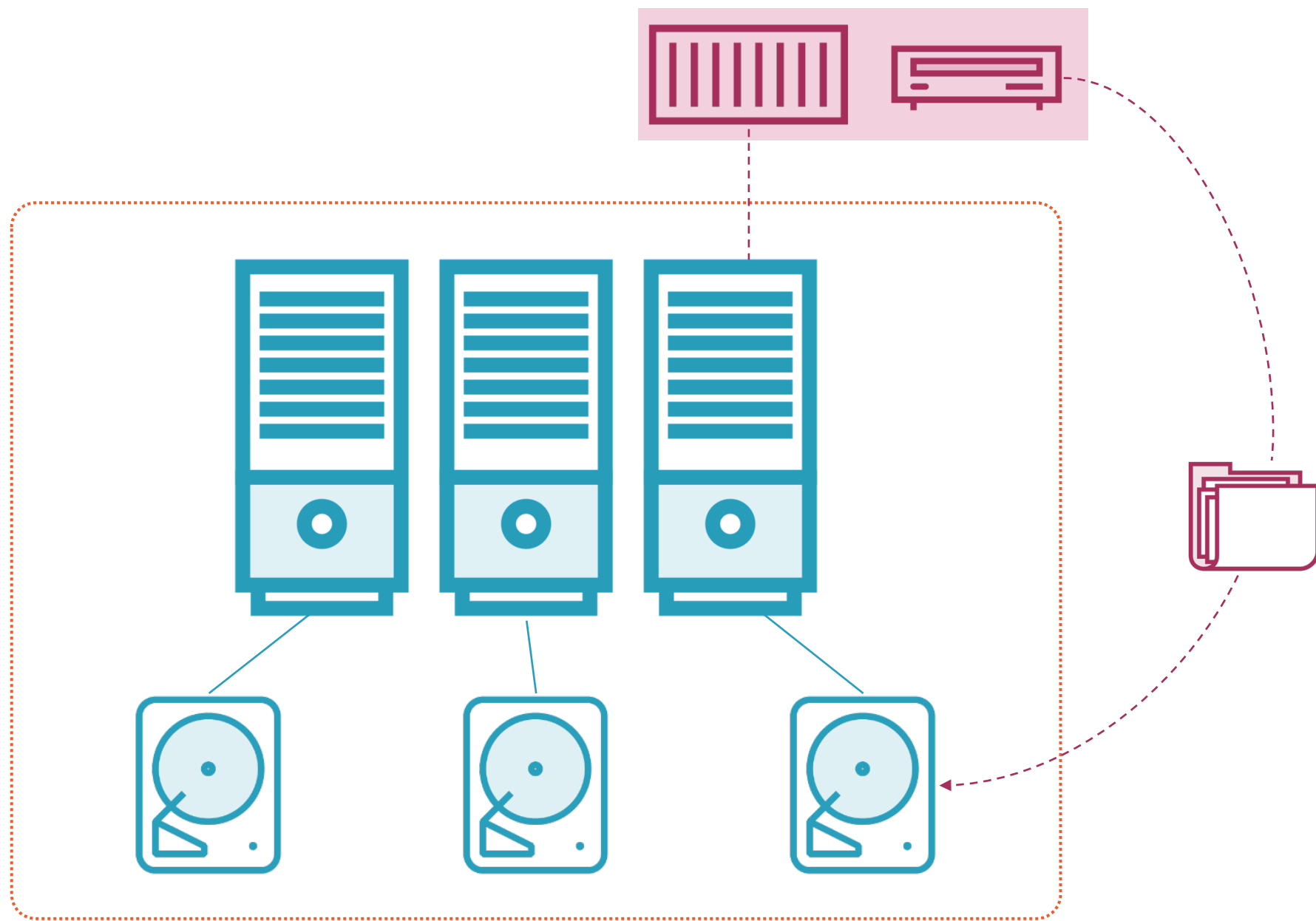
Elton Stoneman

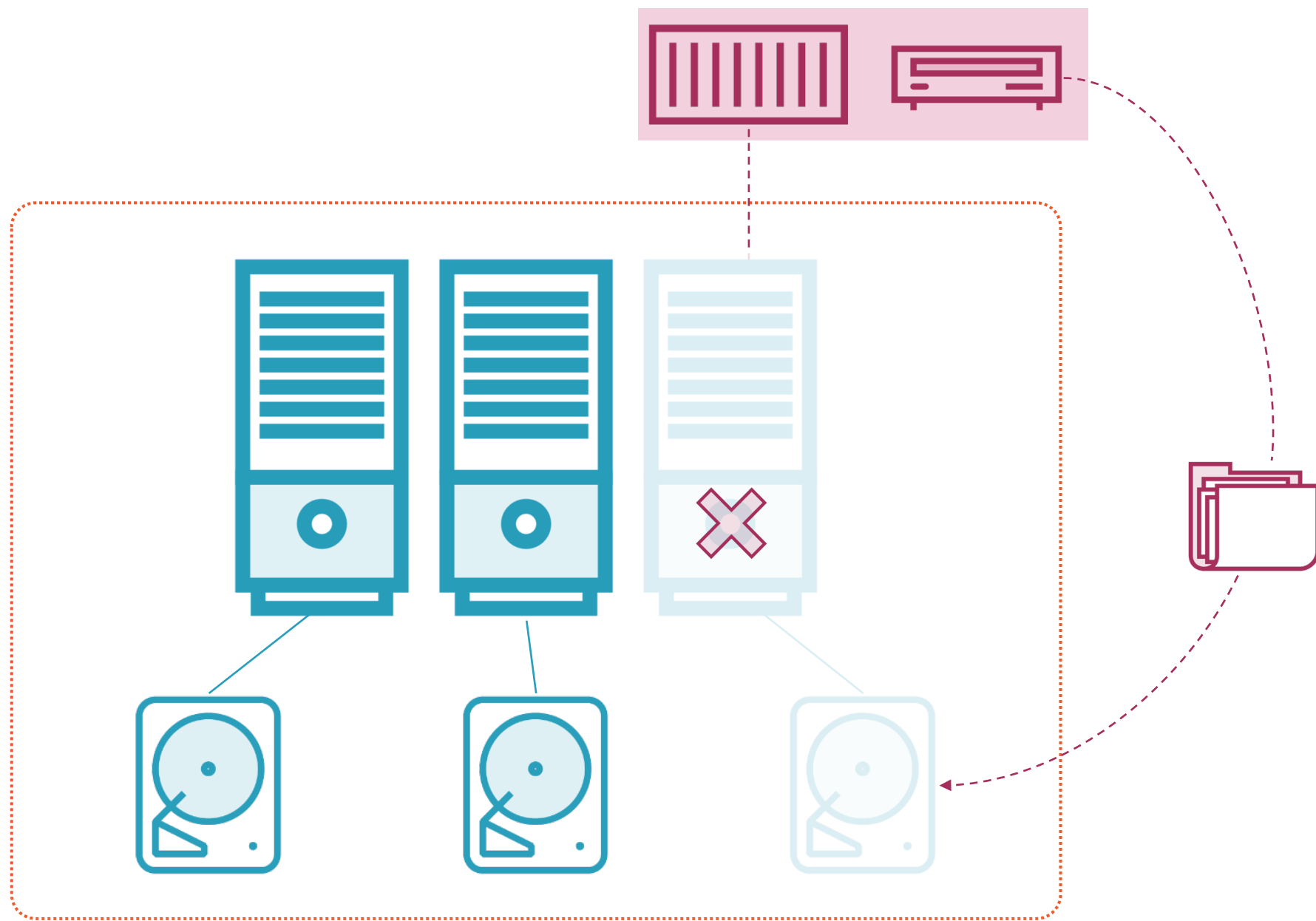
Consultant & Trainer

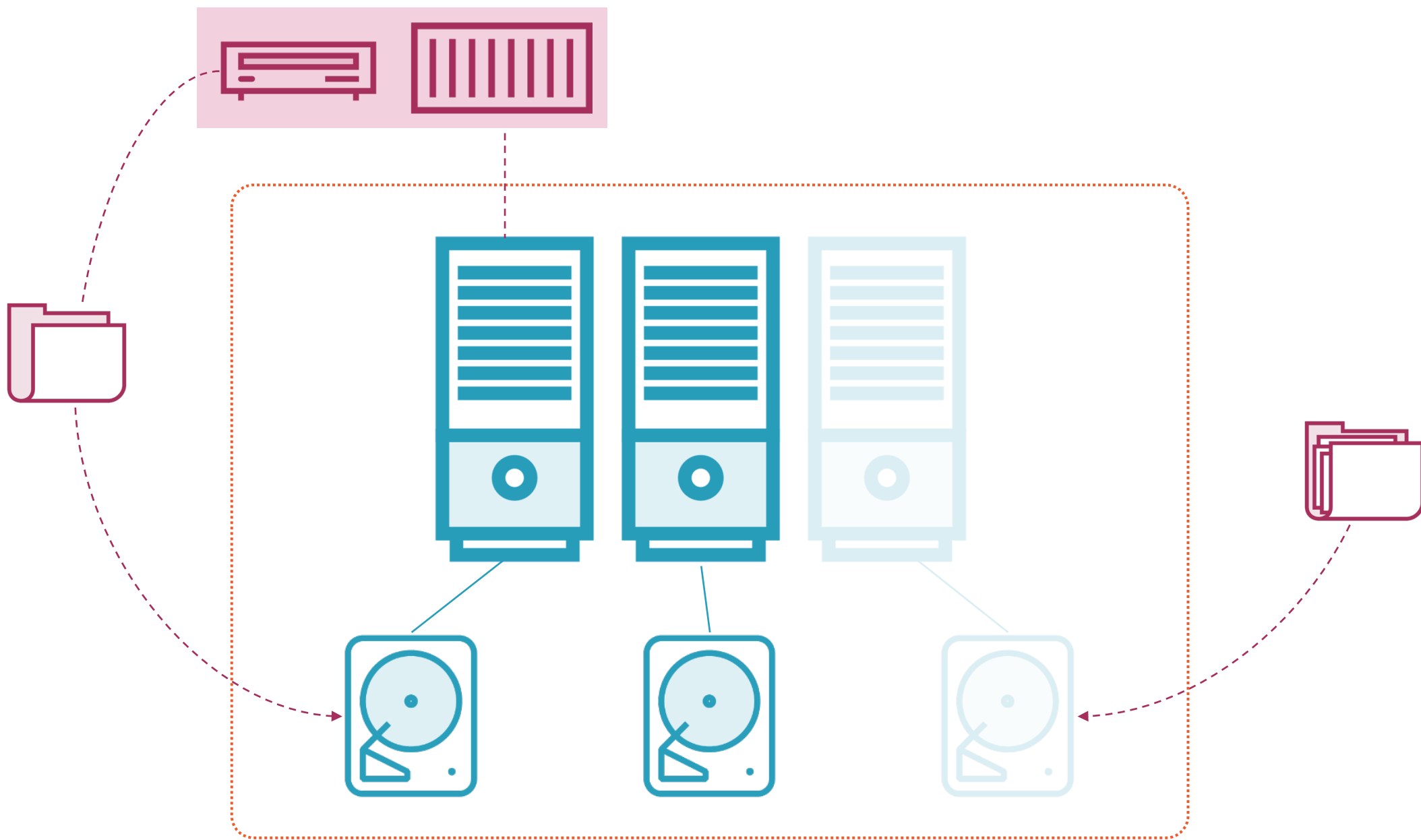
@EltonStoneman blog.sixeyed.com

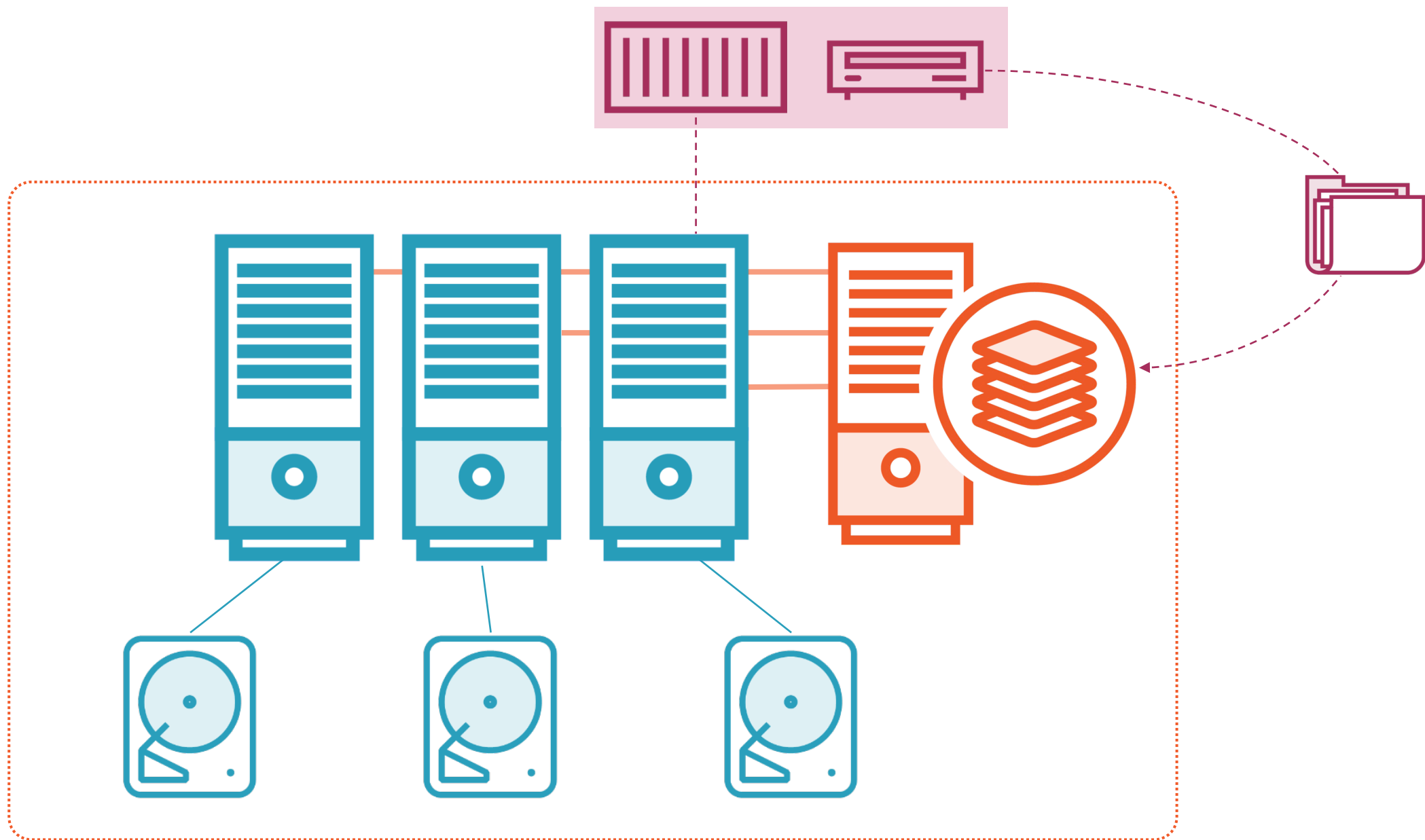
Understanding the Problem

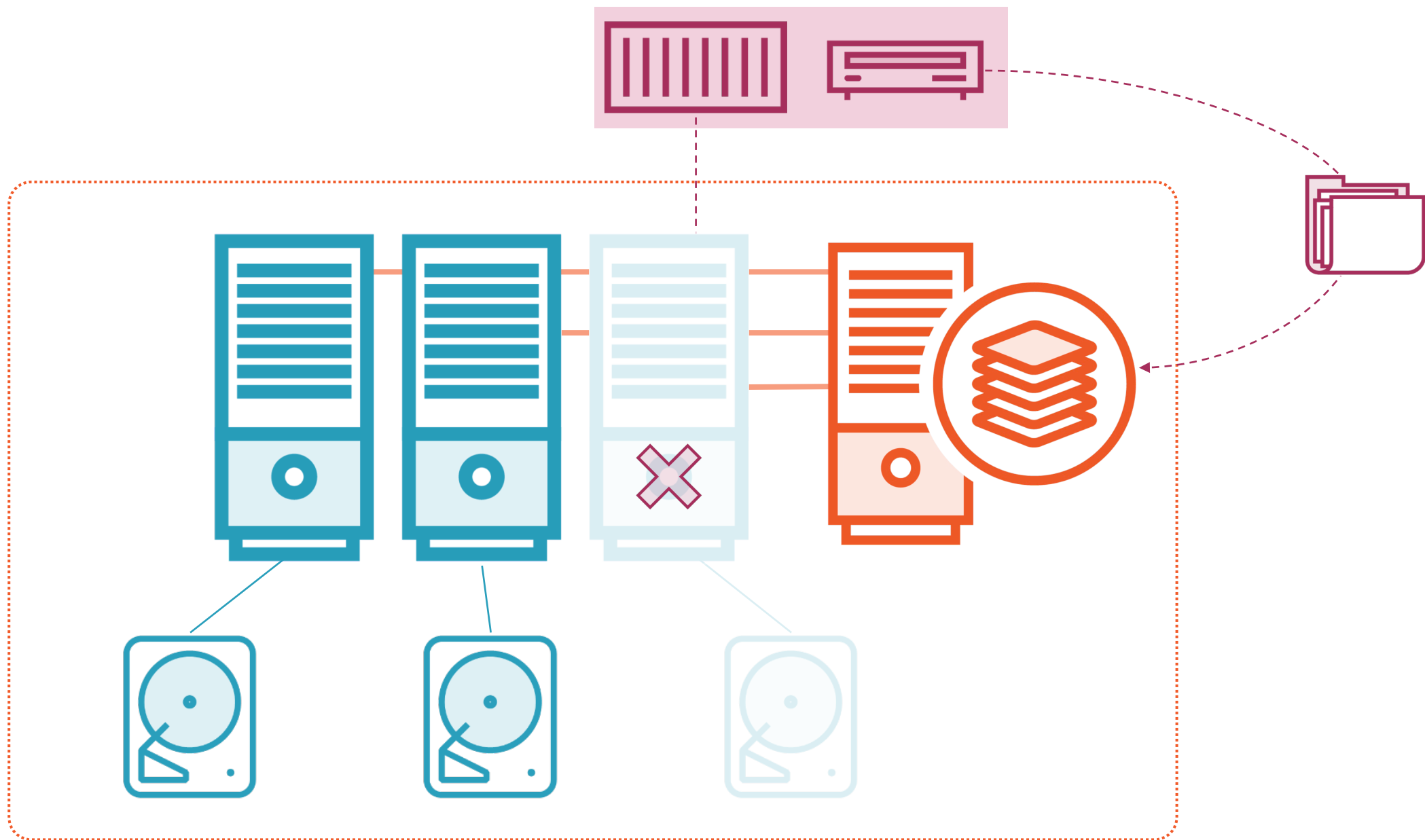


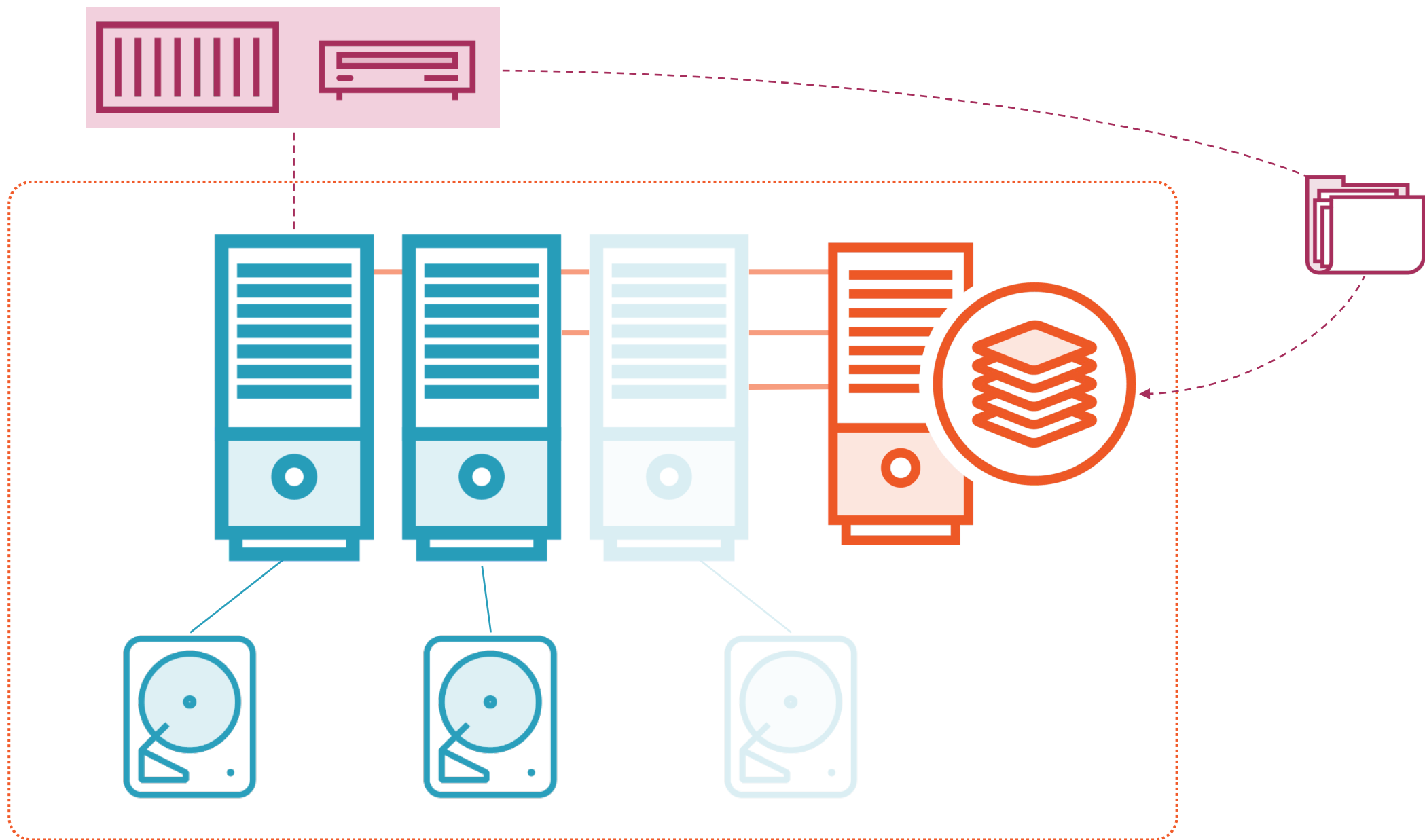










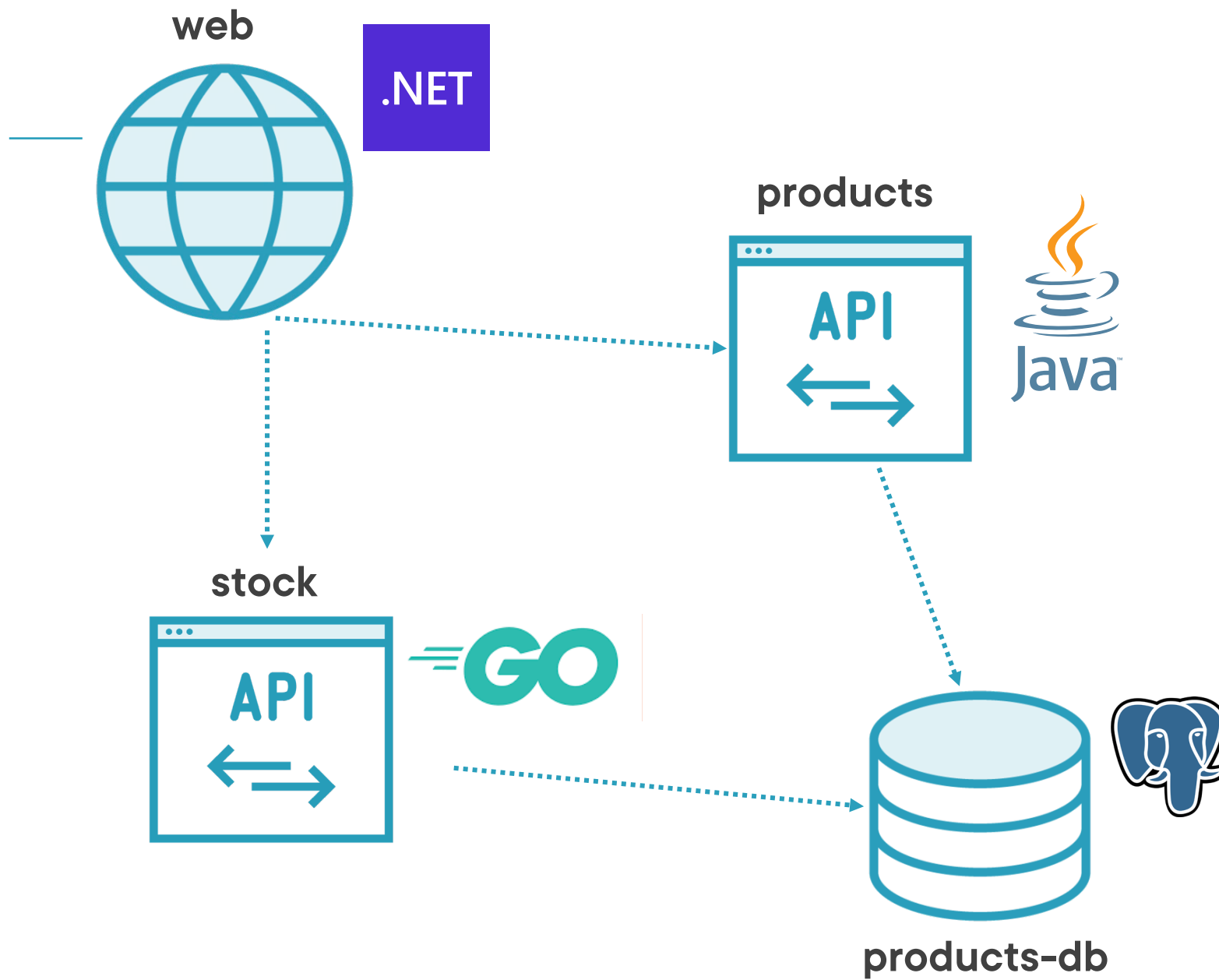
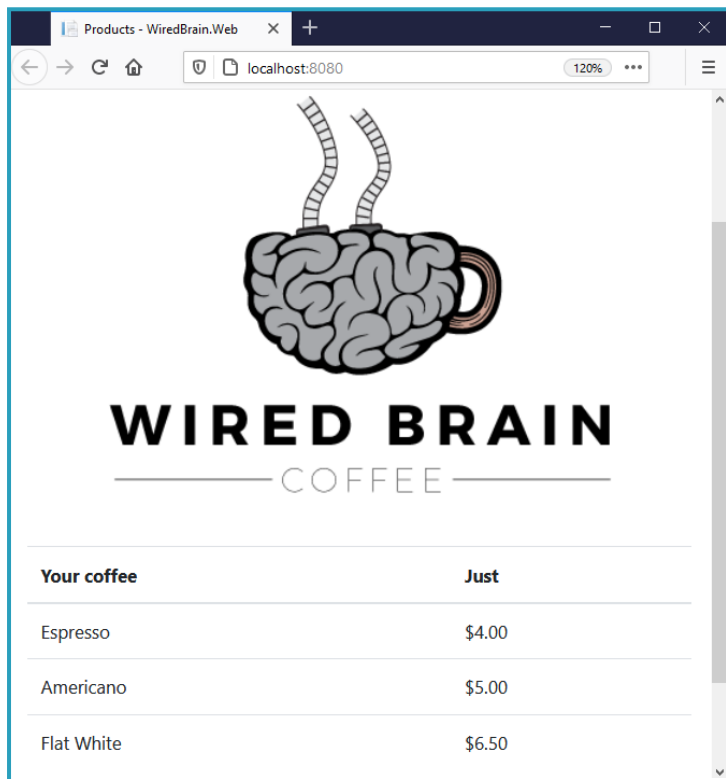




Choosing Between Container Platforms

Deploying Containerized Applications

Elton Stoneman



Course Outline



Understanding the Container Filesystem

- Image layers, writeable layers and volumes

Reading Application Configuration

- Environment-wide, read-only storage

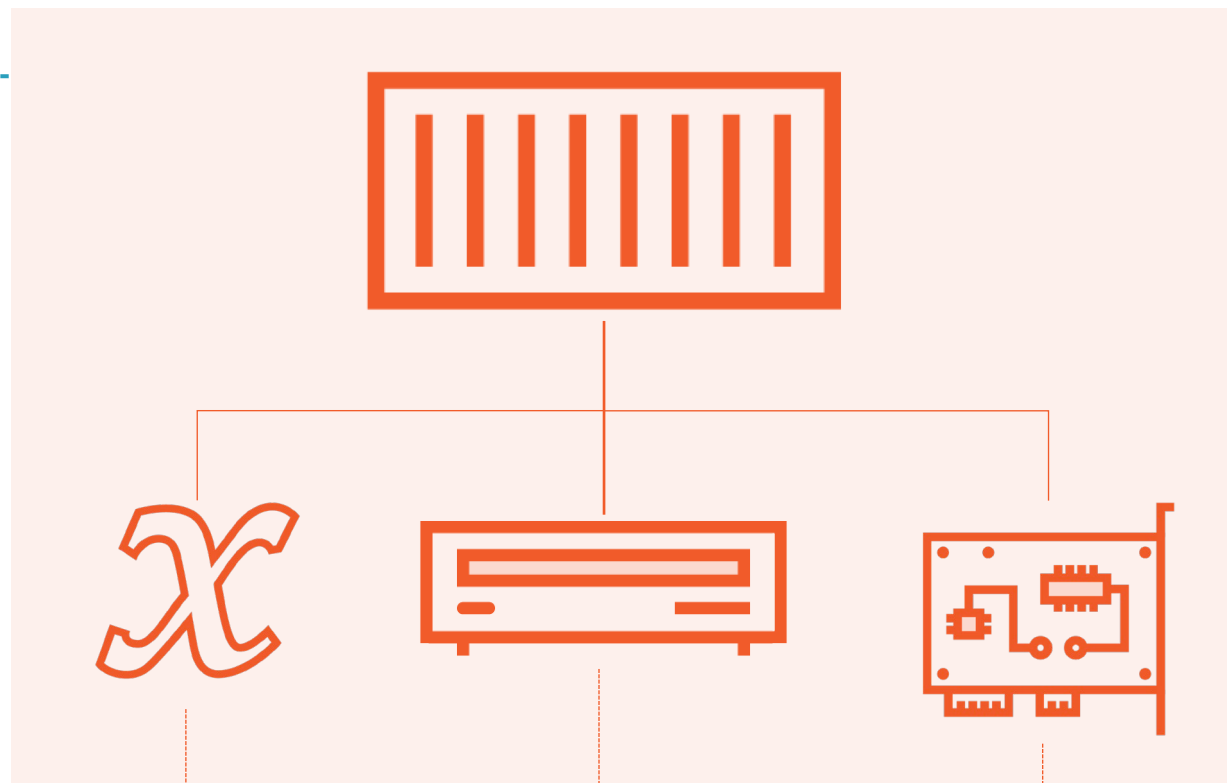
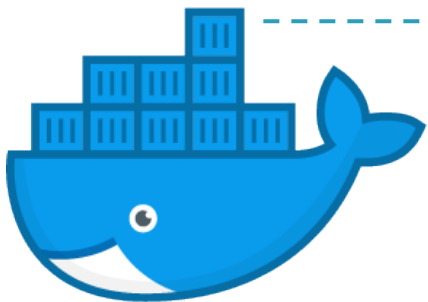
Persisting Data in Kubernetes

- Types of storage and volumes

Managing Storage on Servers and Registries

- Optimizing images and disk space

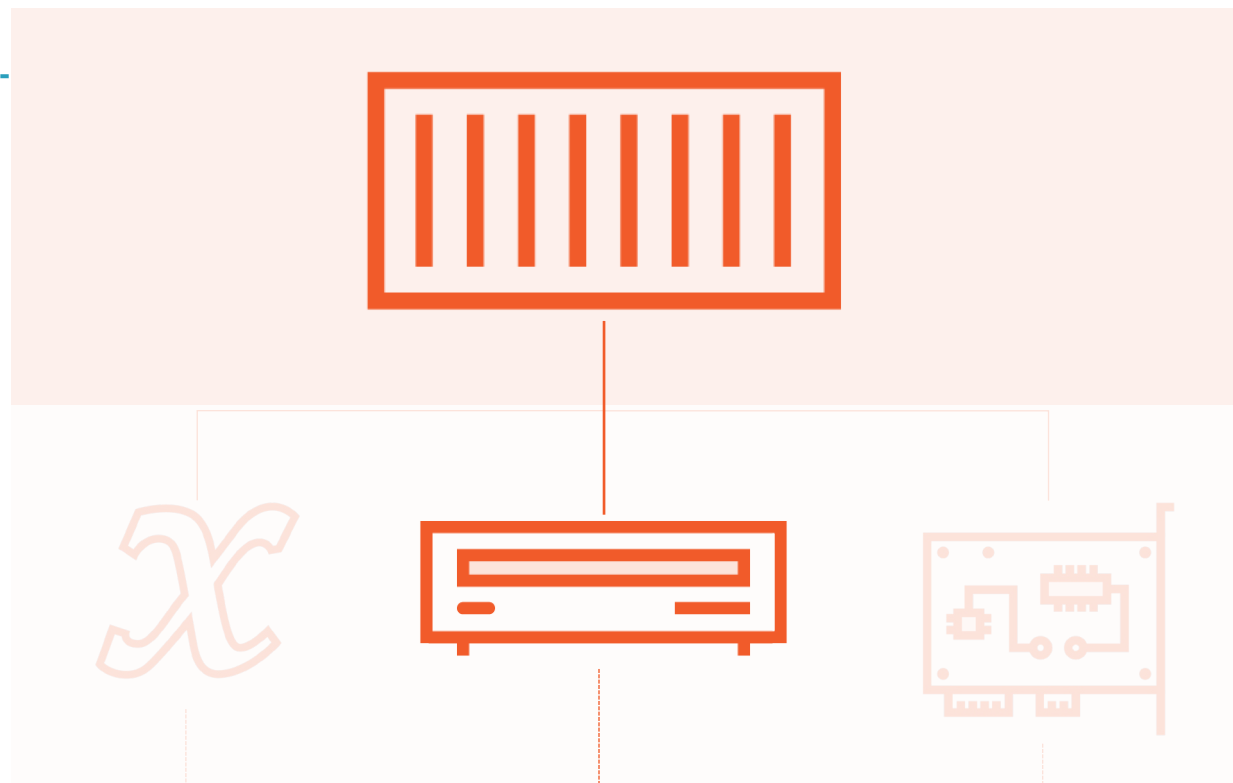
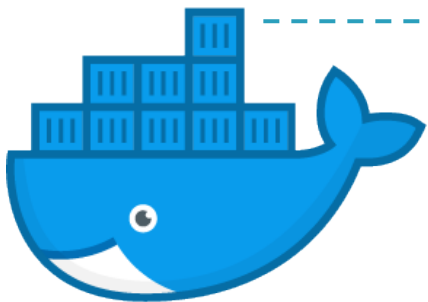
Images and Image Layers



App_Environment=TEST
App_Release=22.03

/etc
/bin/busybox

IP: 10.210.0.4
Hostname: ea5d653683

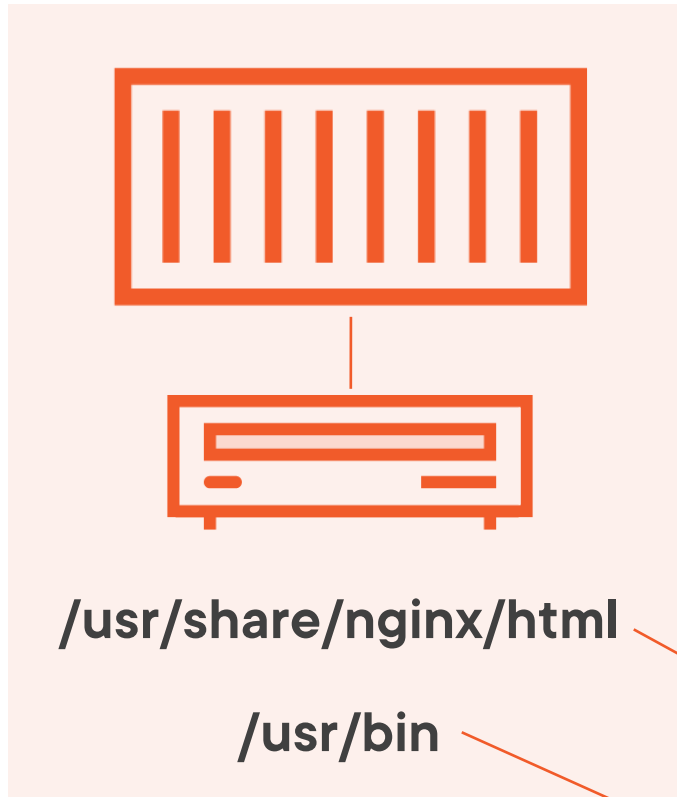


App_Environment=TEST
App_Release=22.03

/etc
/bin/busybox

IP: 10.210.0.4
Hostname: ea5d653683

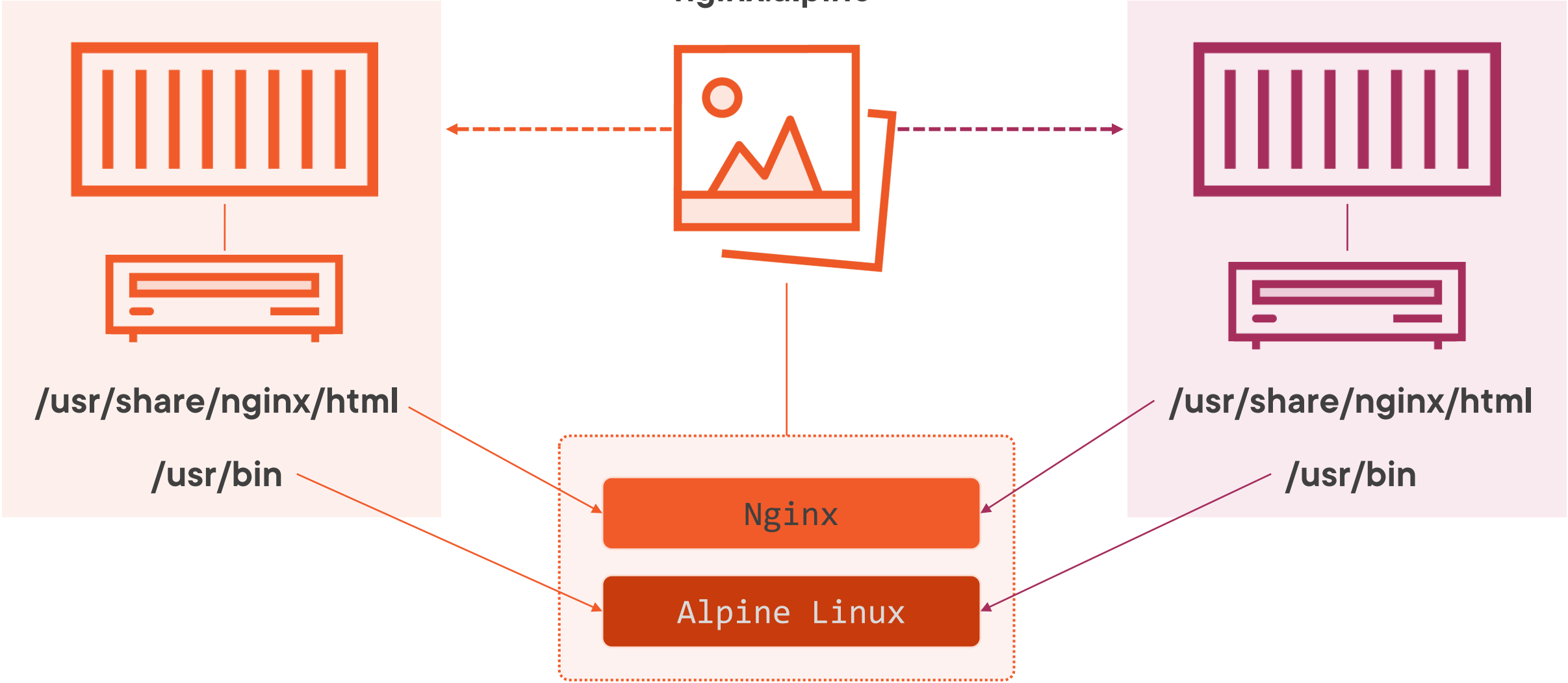
nginx:alpine



- Startup command
- Environment config
- Base filesystem



nginx:alpine



my-web-app:linux

nginx:alpine

alpine



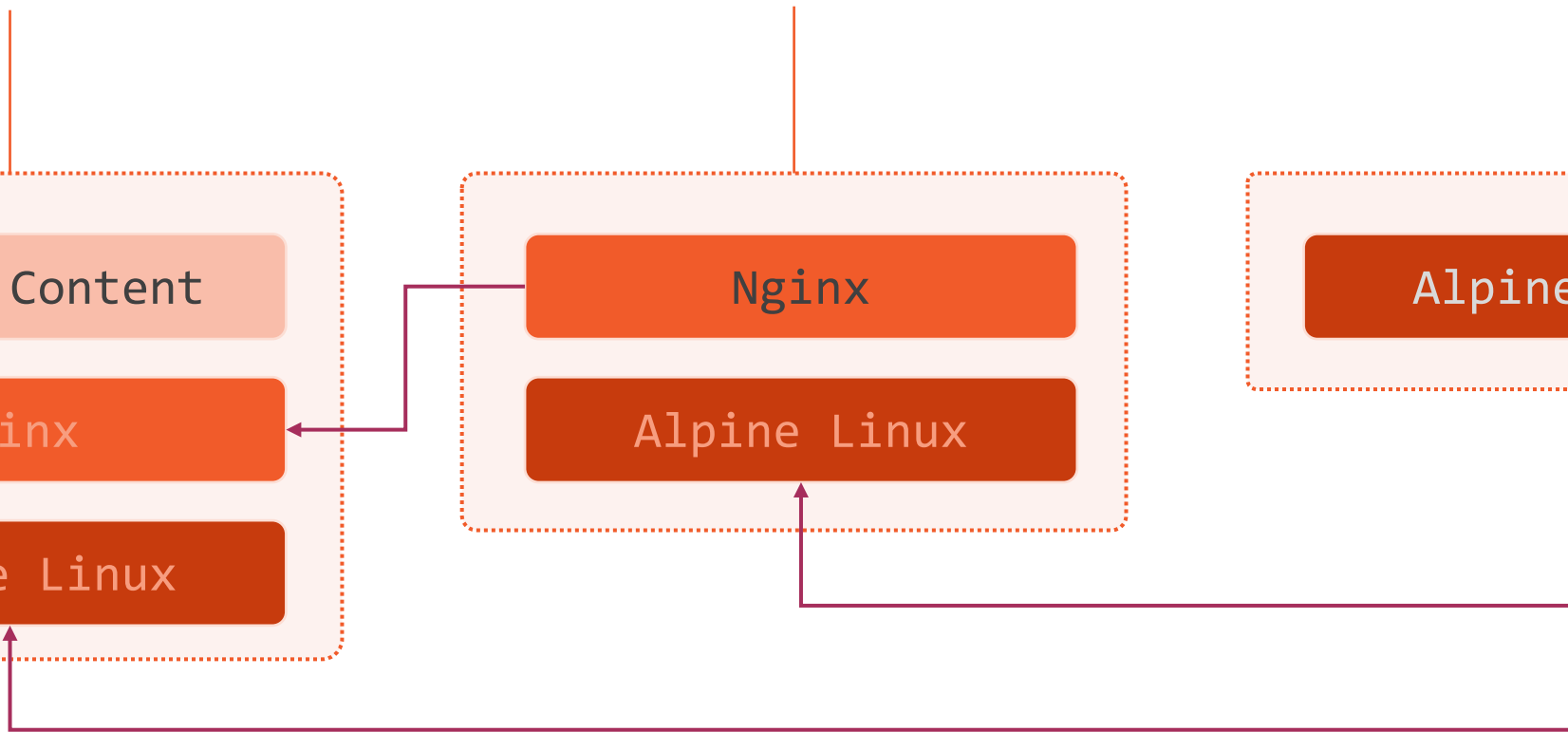
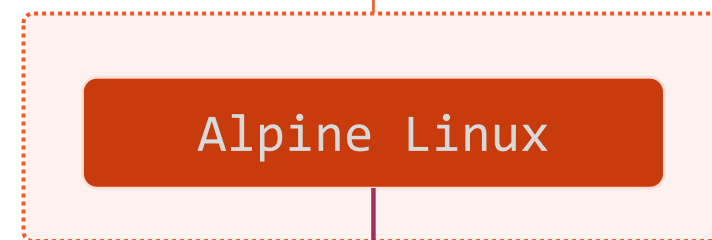
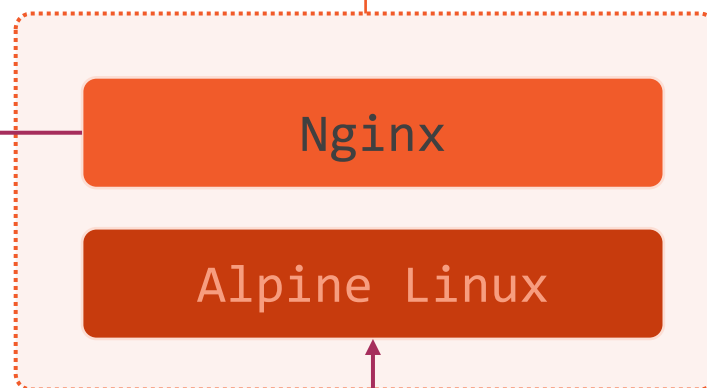
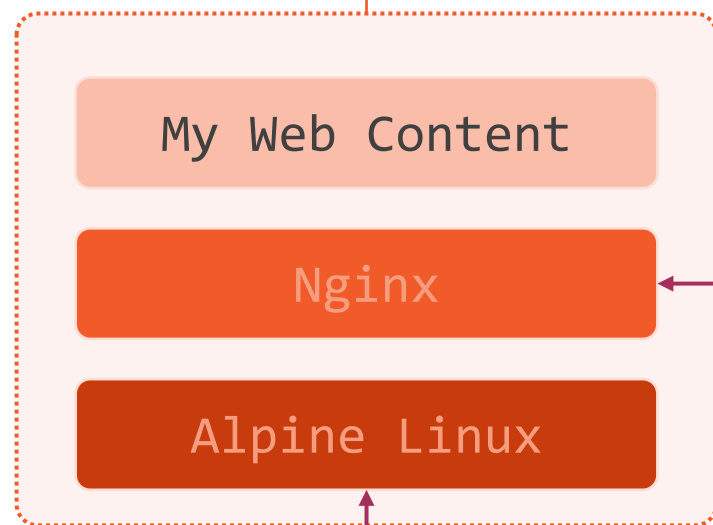
30Mb



23Mb



6Mb



my-web-app:windows

iis

windowsservercore



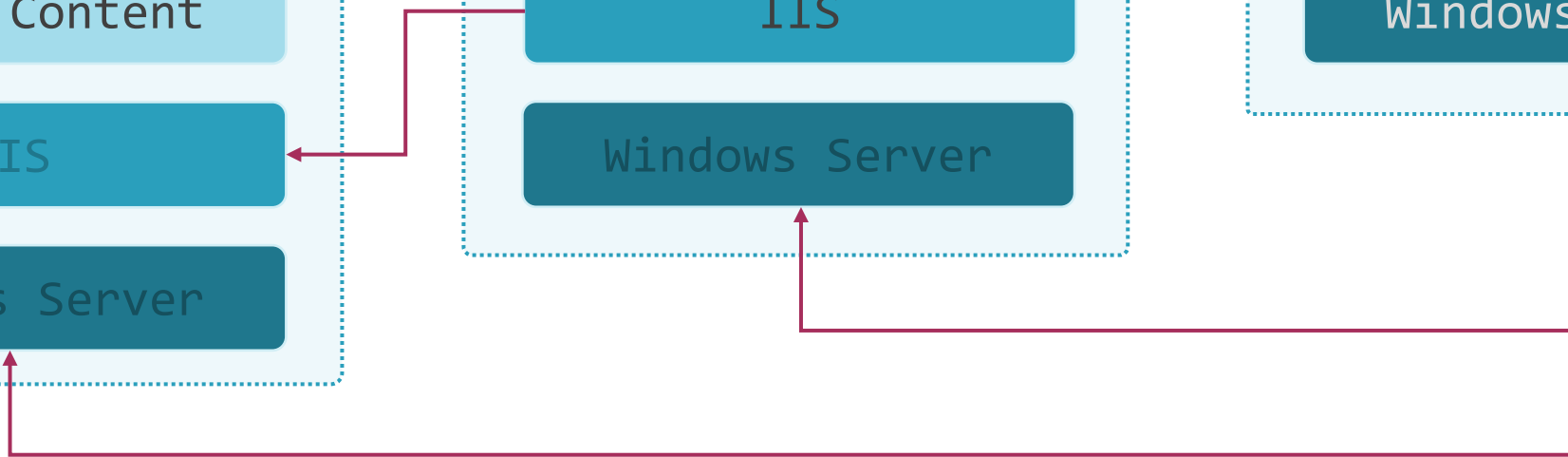
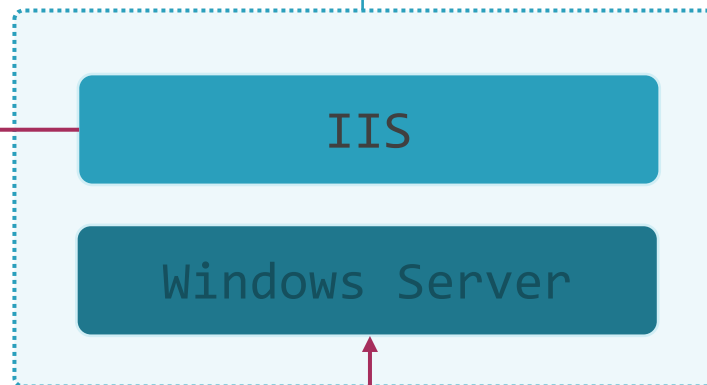
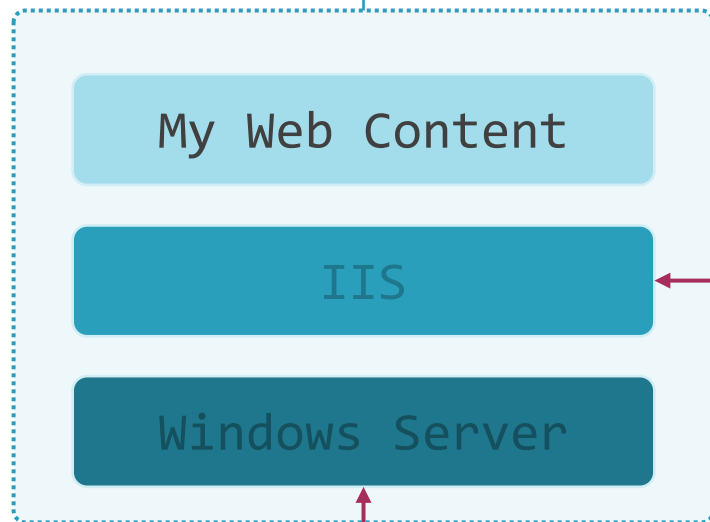
5.9Gb



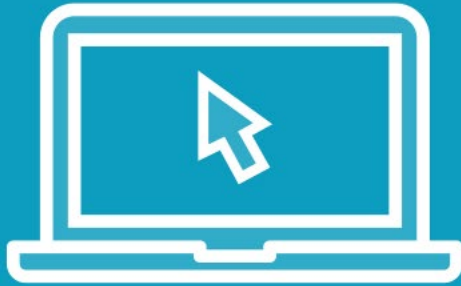
5.8Gb



5.7Gb



Demo

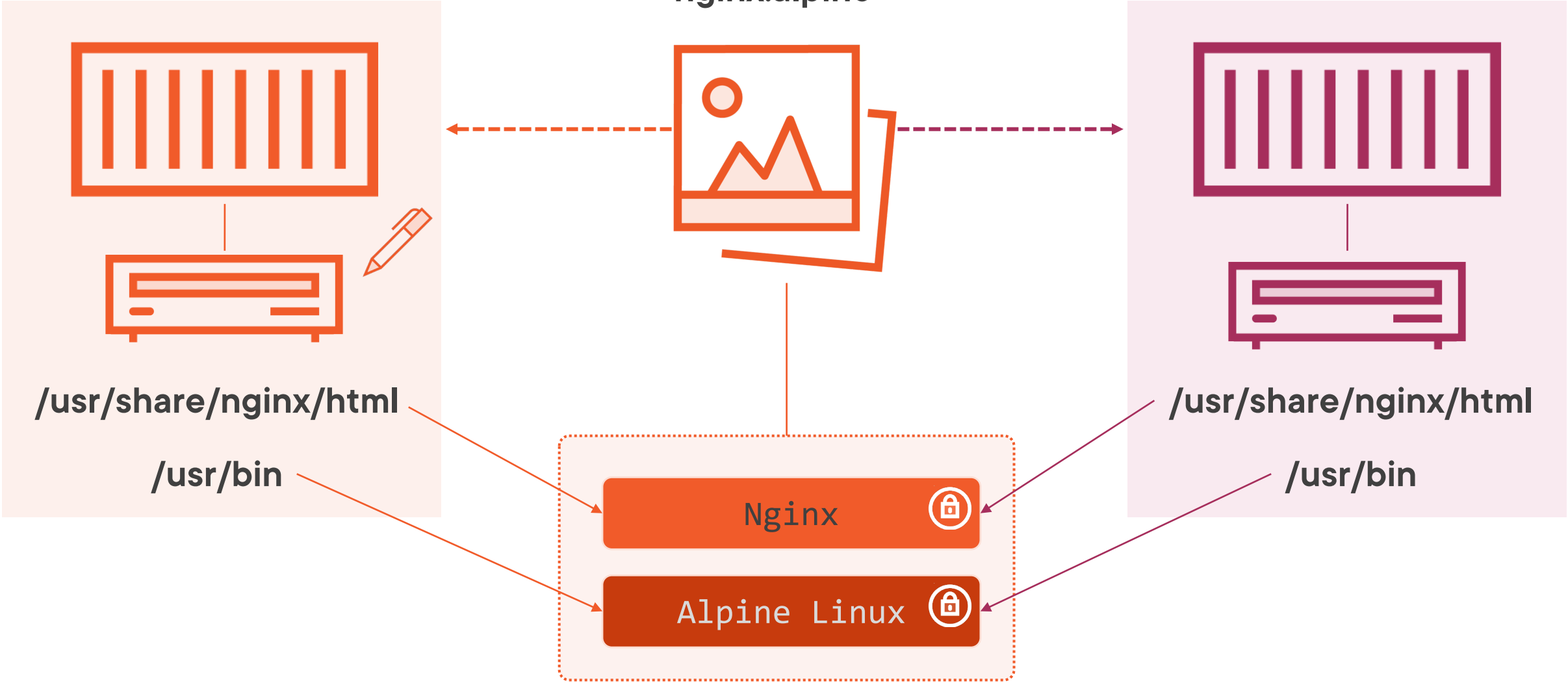


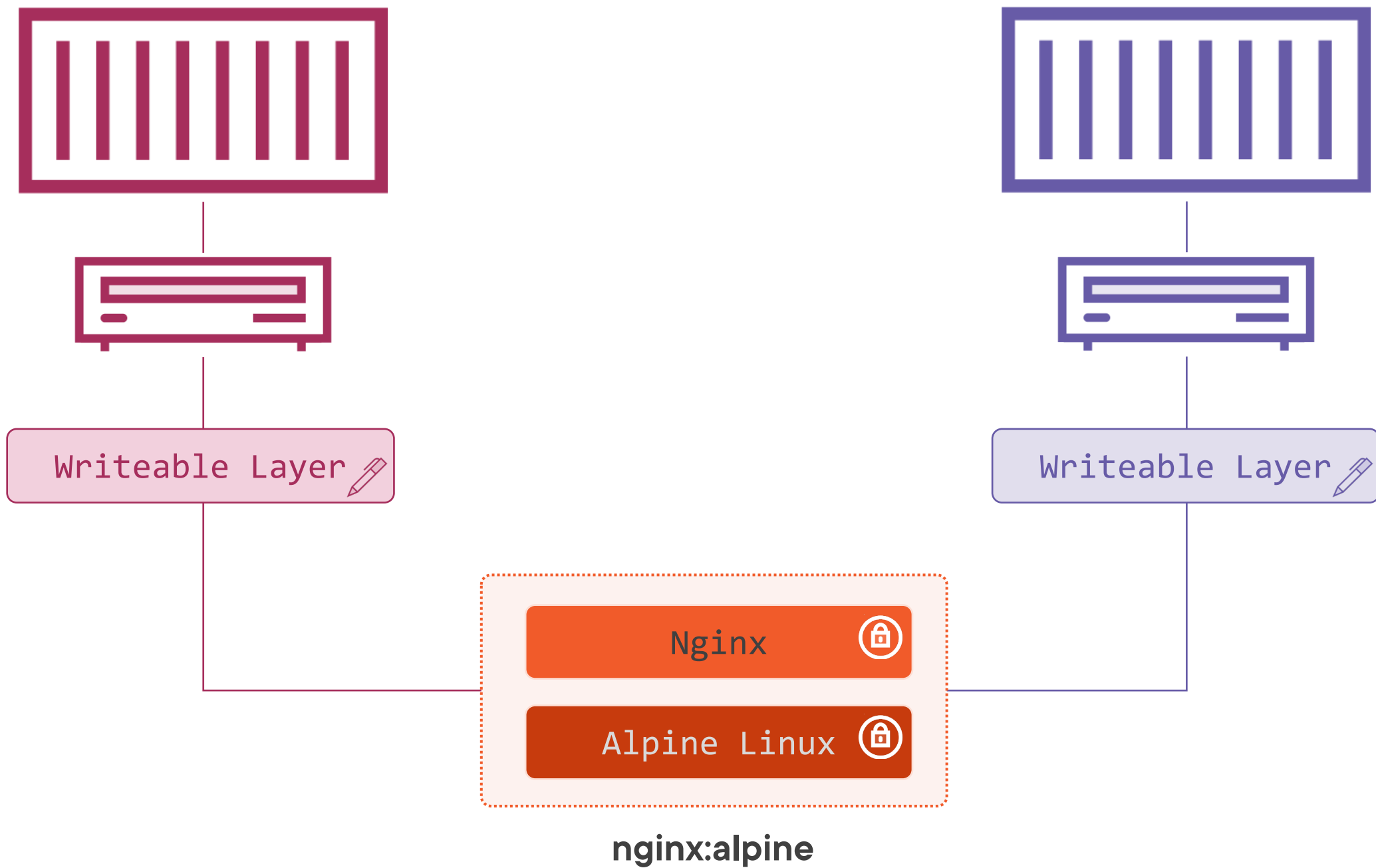
Images and image layers

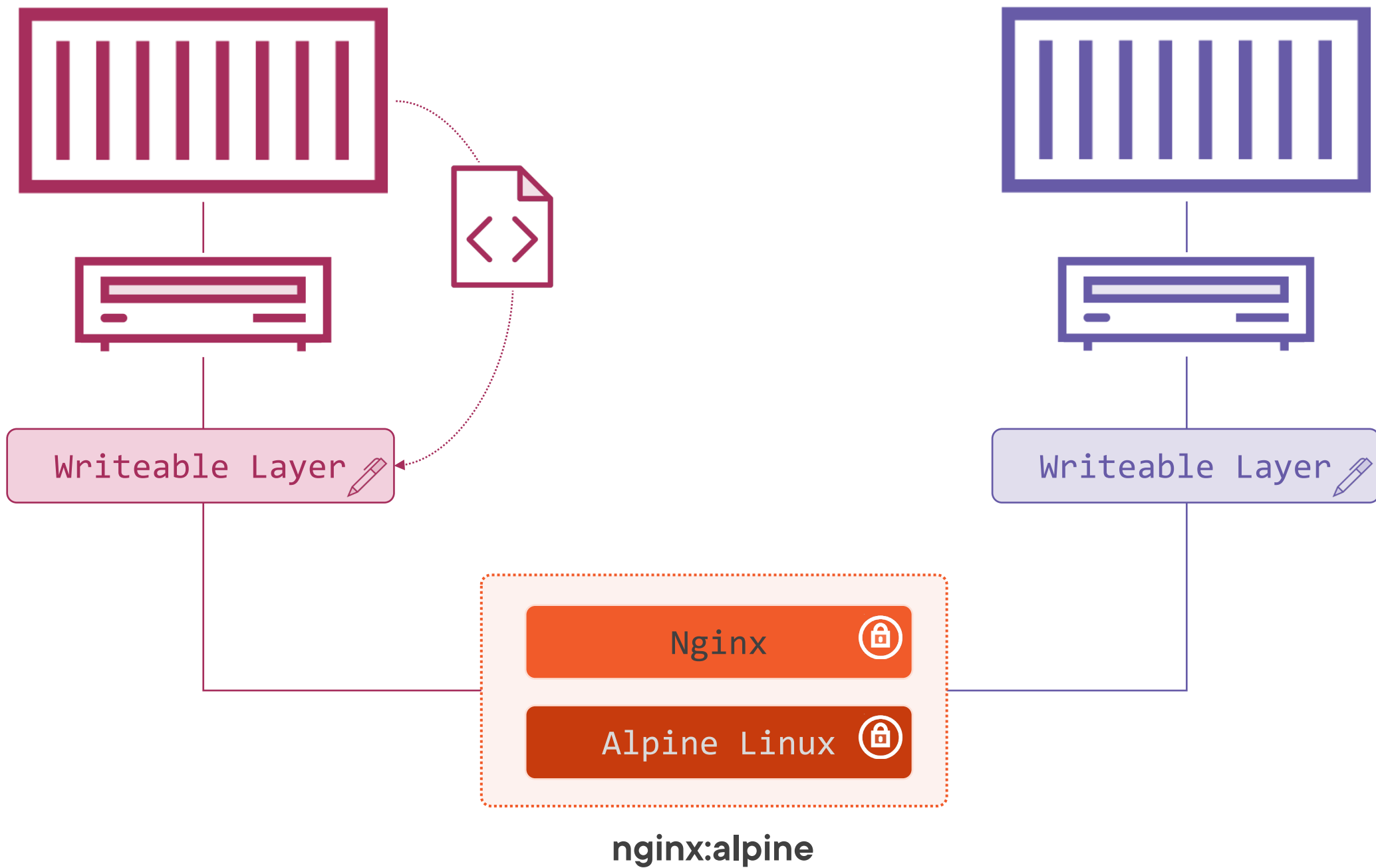
- Running containers from images
- Building images from base images
- Exploring the layer hierarchy

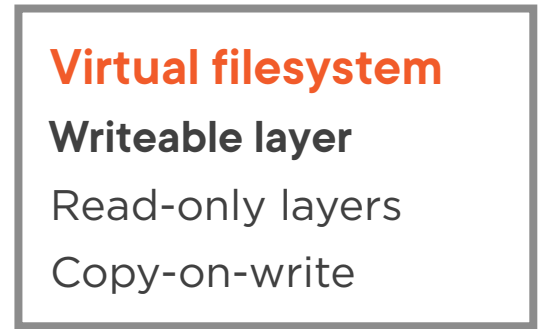
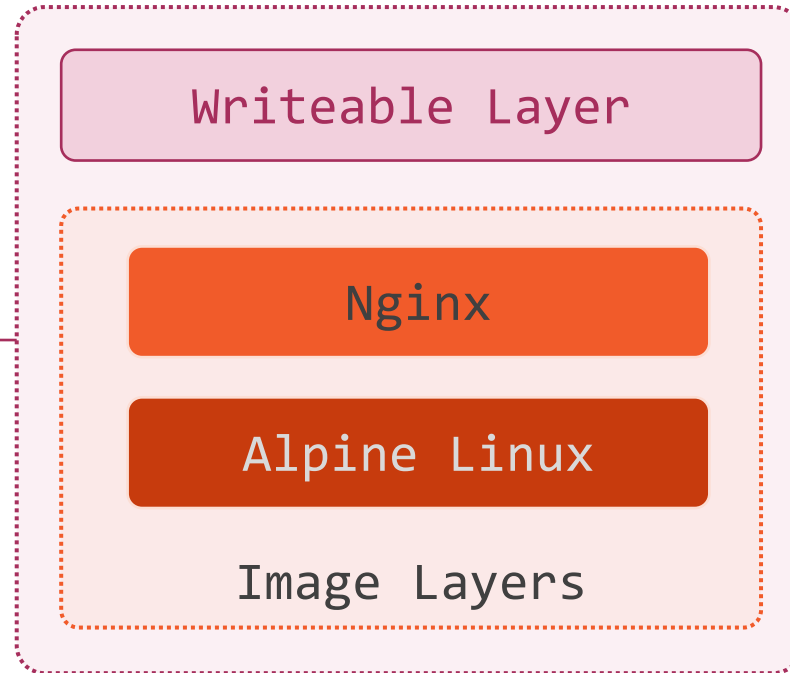
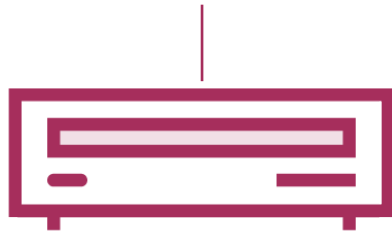
The Container Writeable Layer

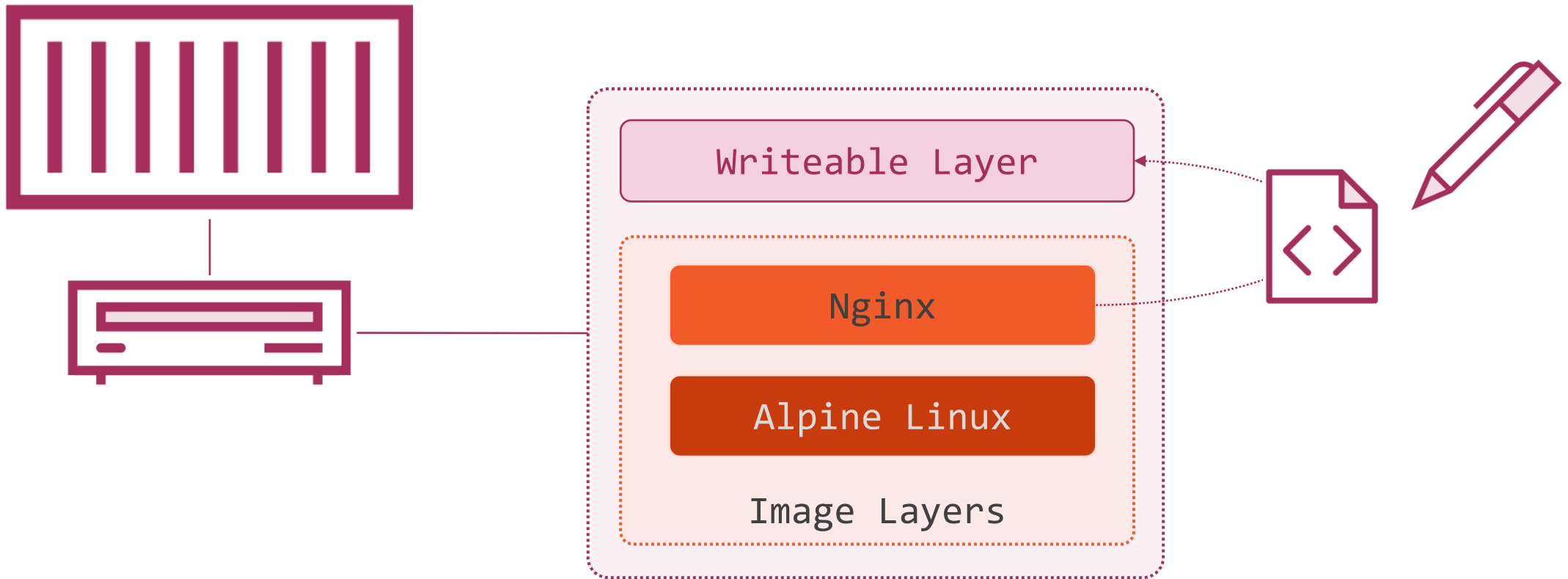
nginx:alpine

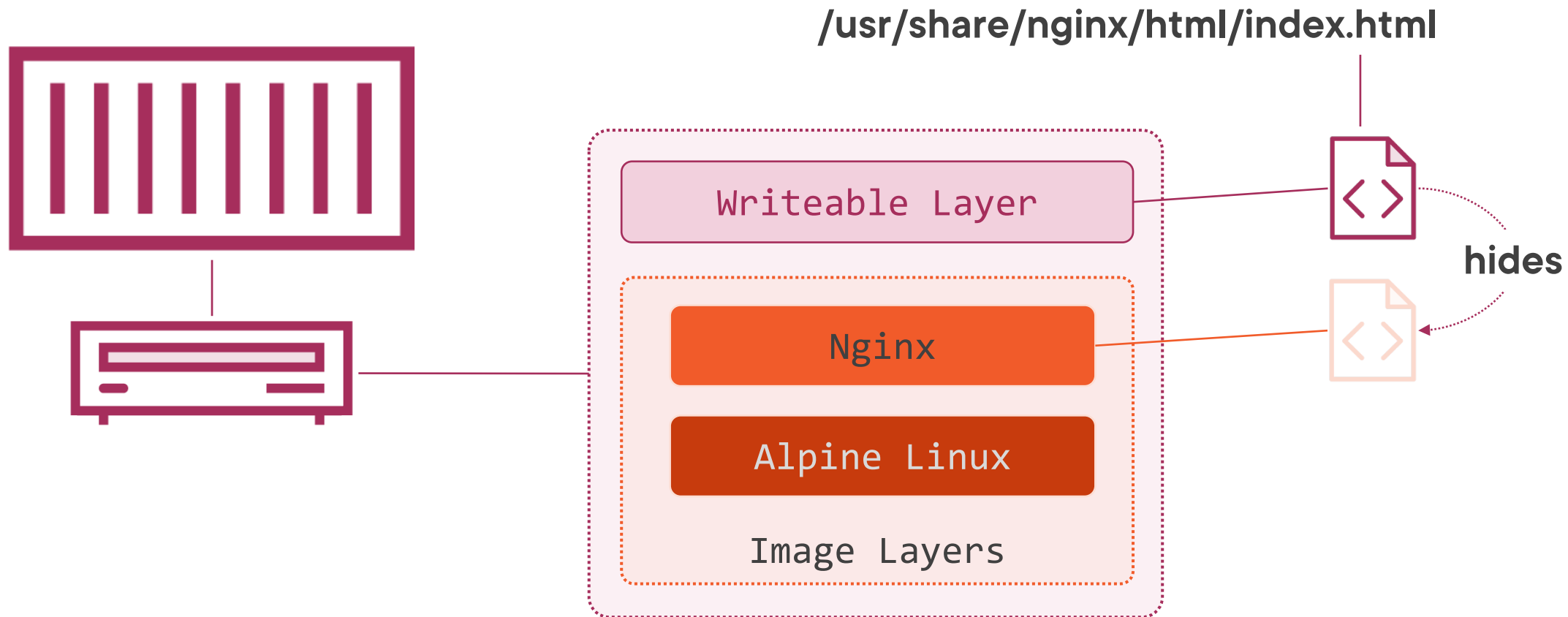


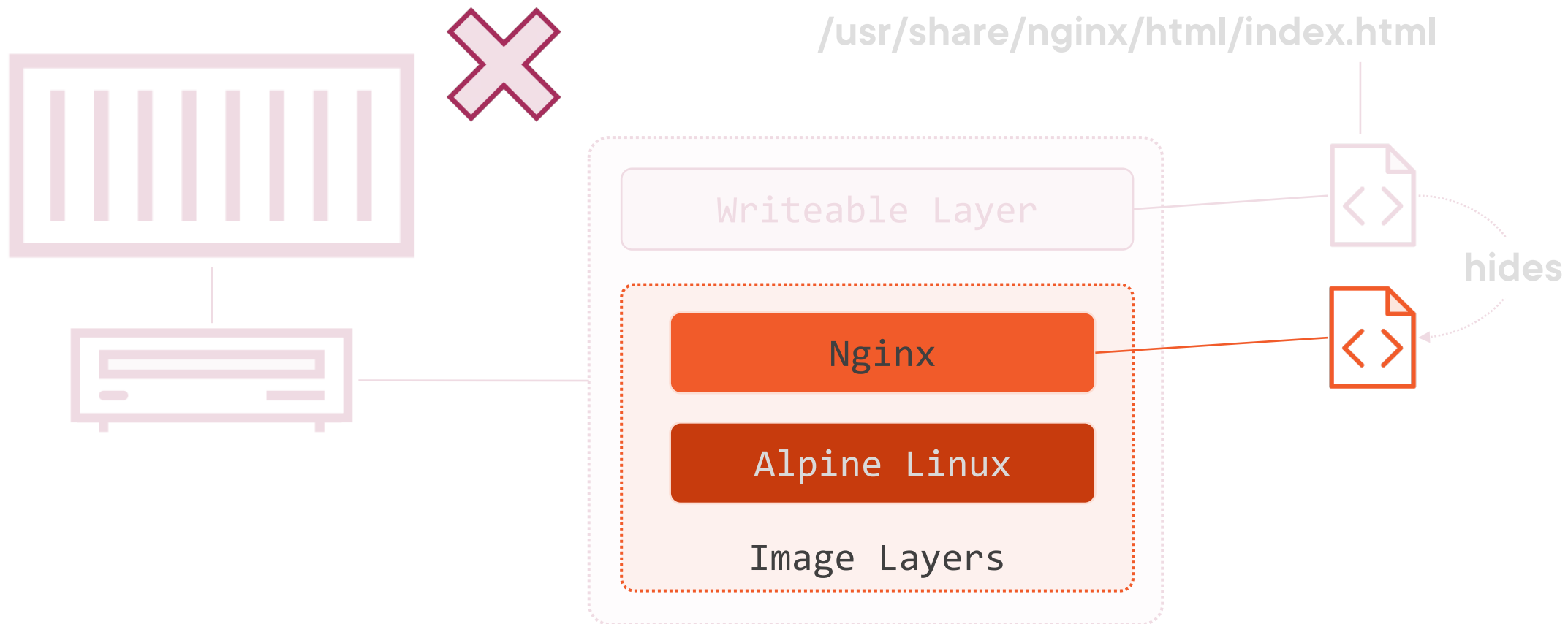




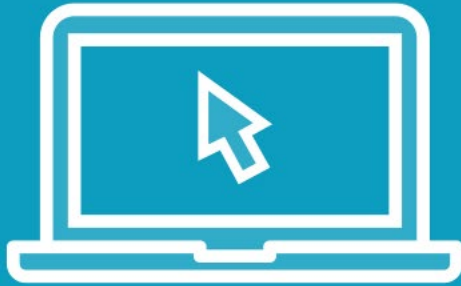








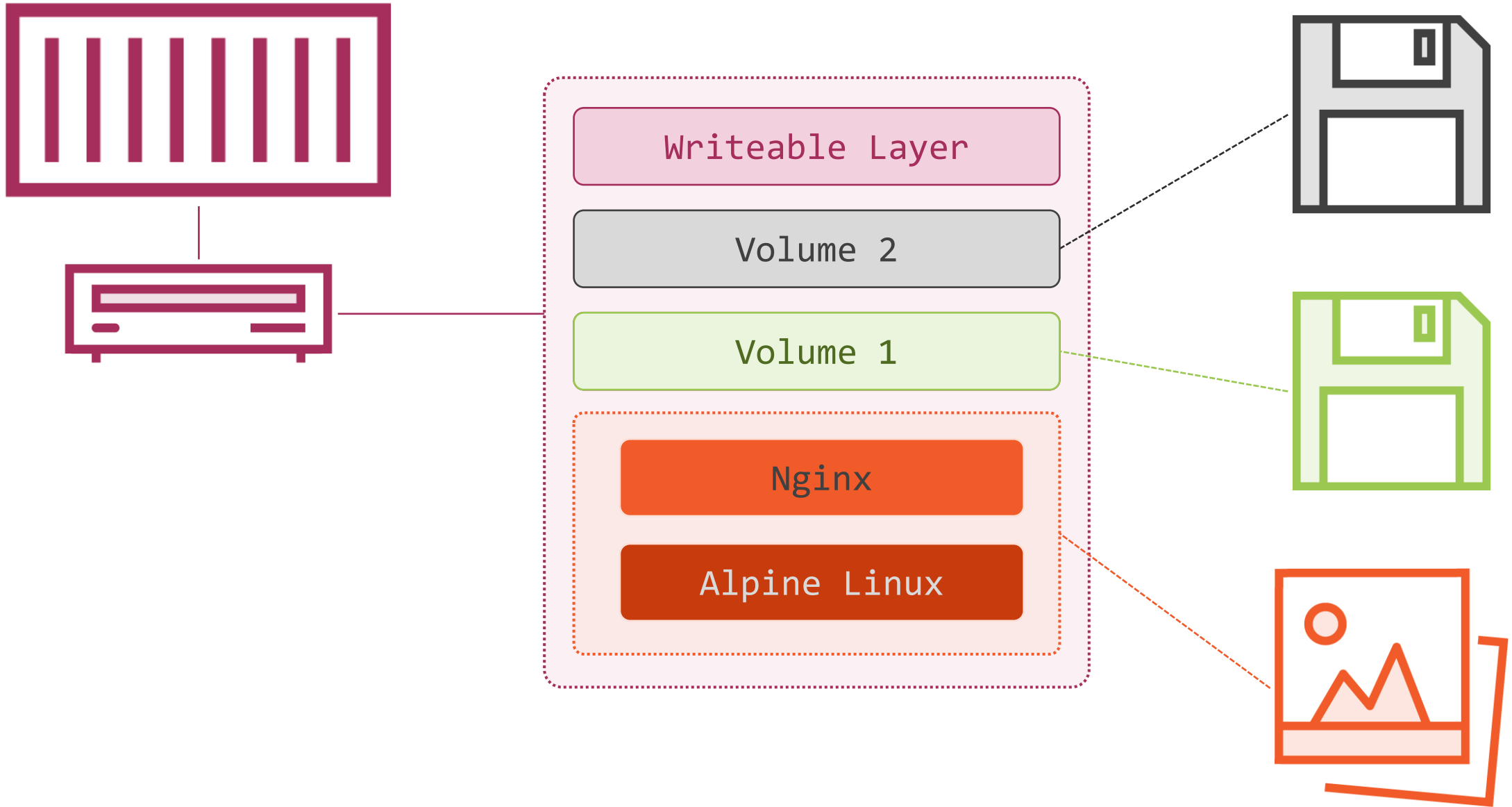
Demo

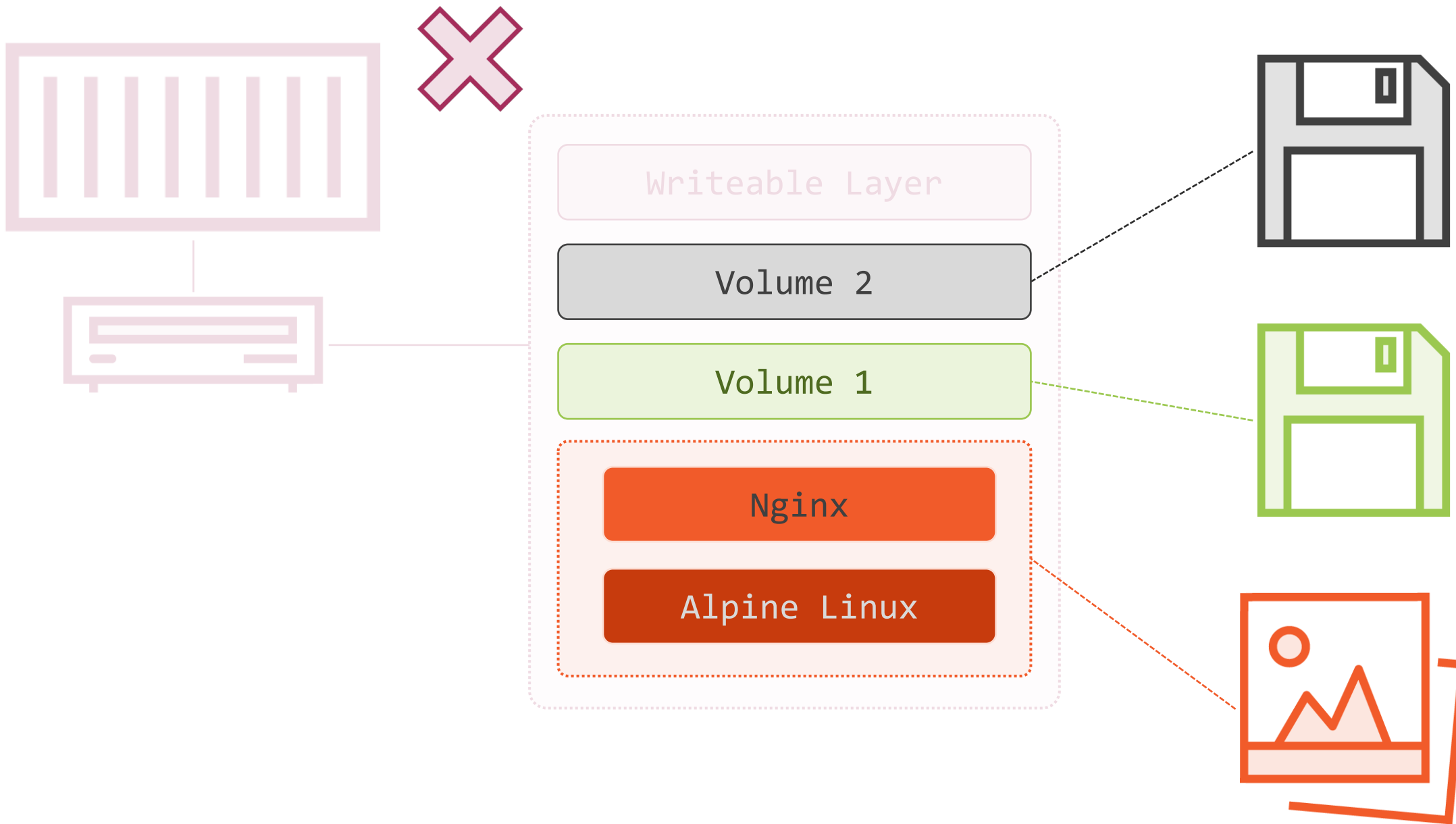


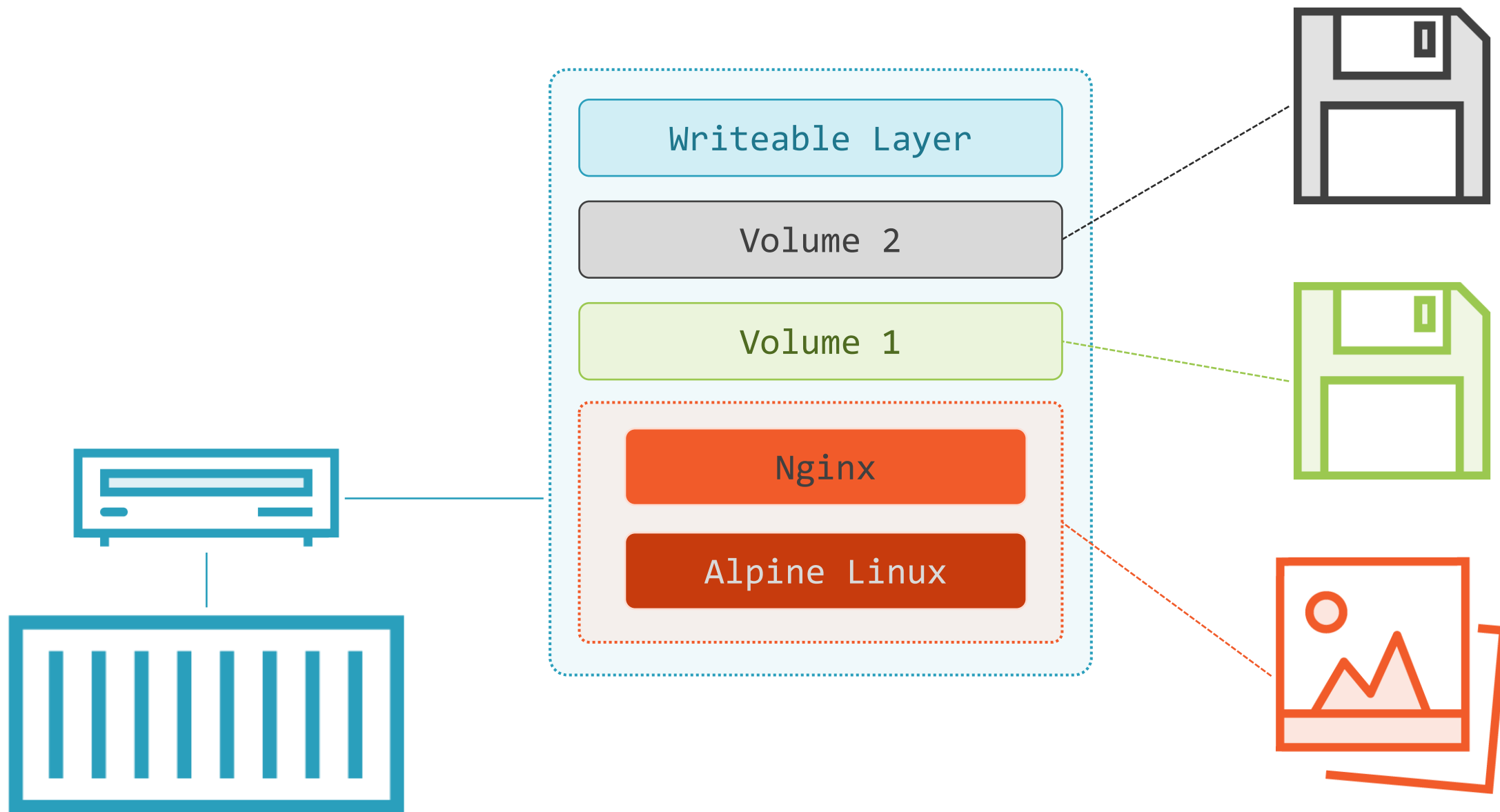
Container writeable layers

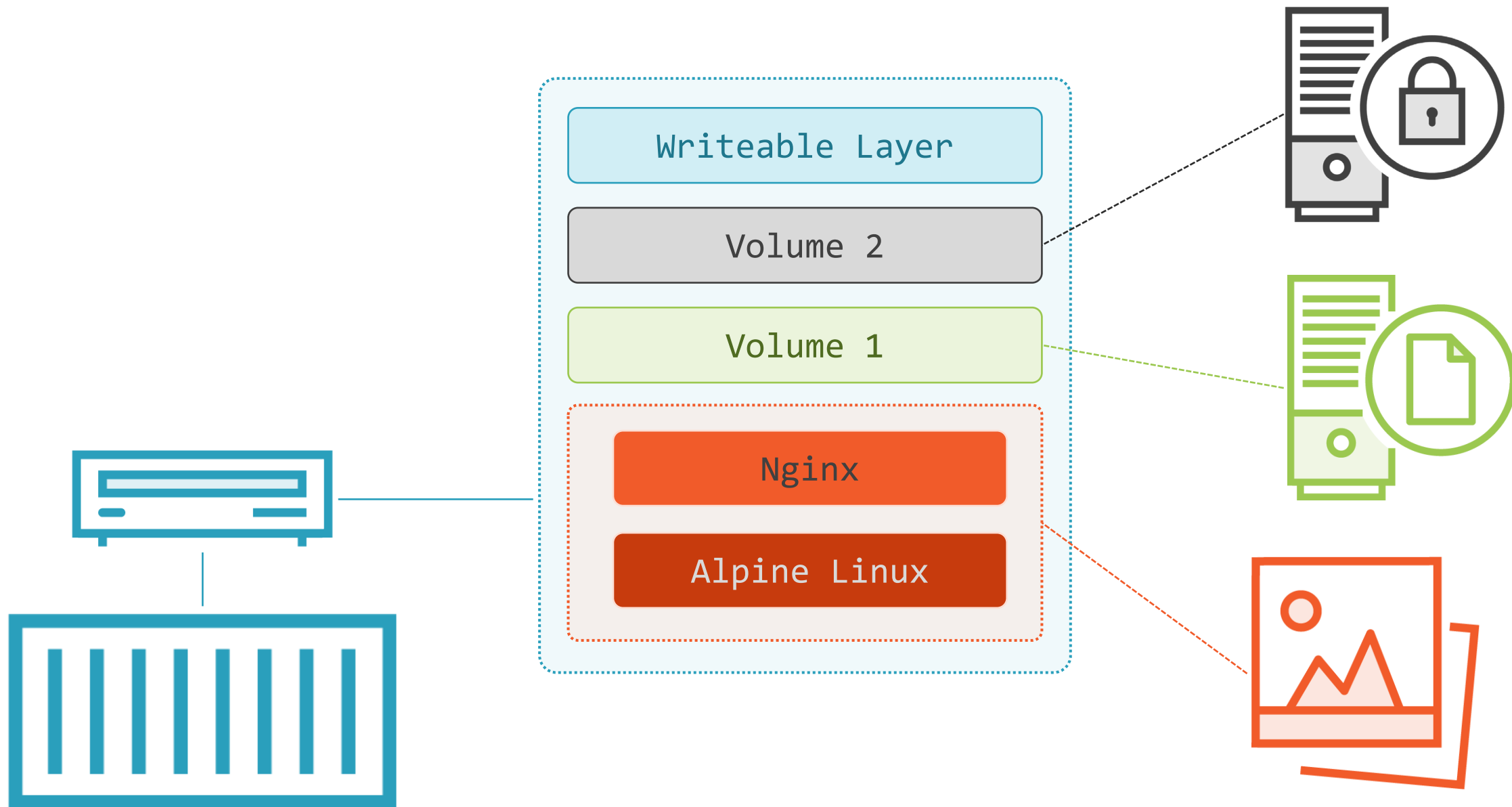
- Editing data in containers
- Container lifecycle
- Data lifecycle

Volume Mounts in the Container Filesystem

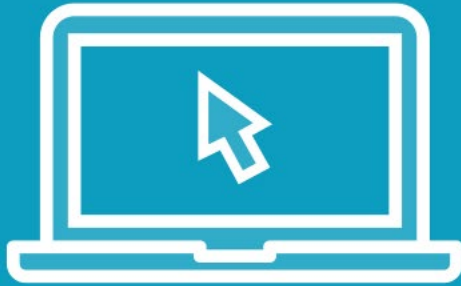








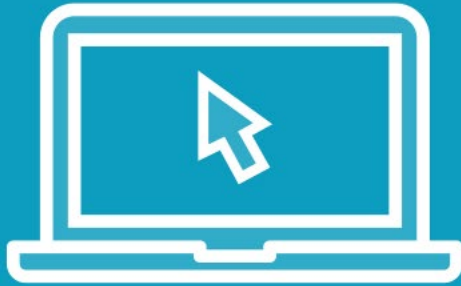
Demo



Volumes and filesystem mounts

- Using Docker volumes
- Mounting host directories
- Folder and file mounts

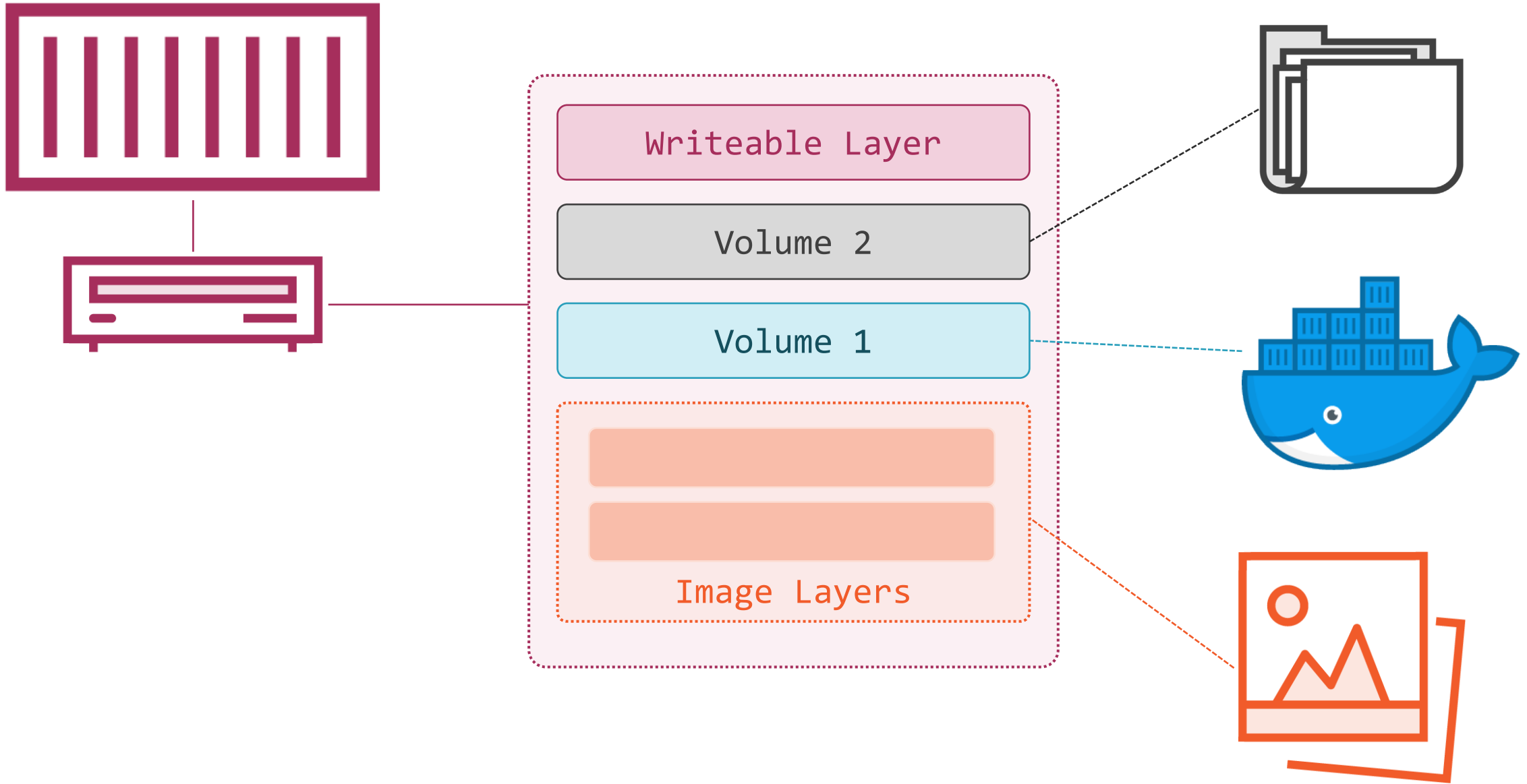
Demo

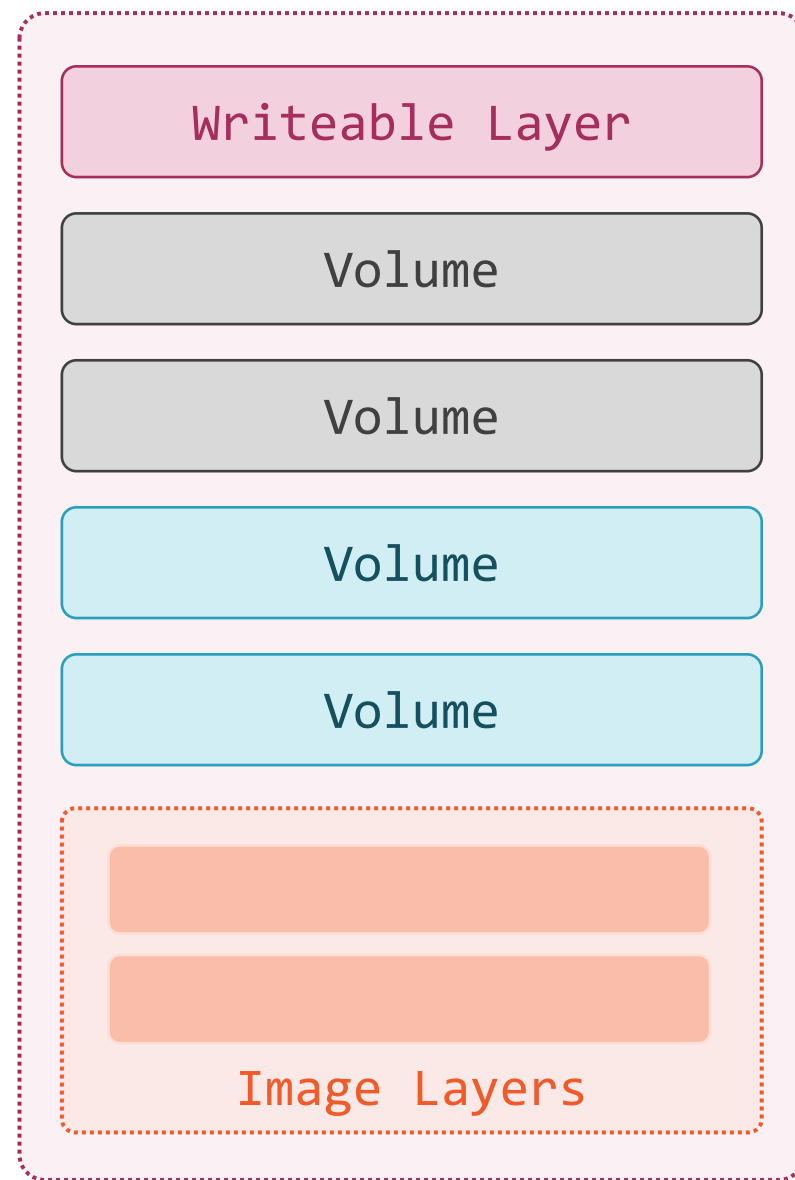


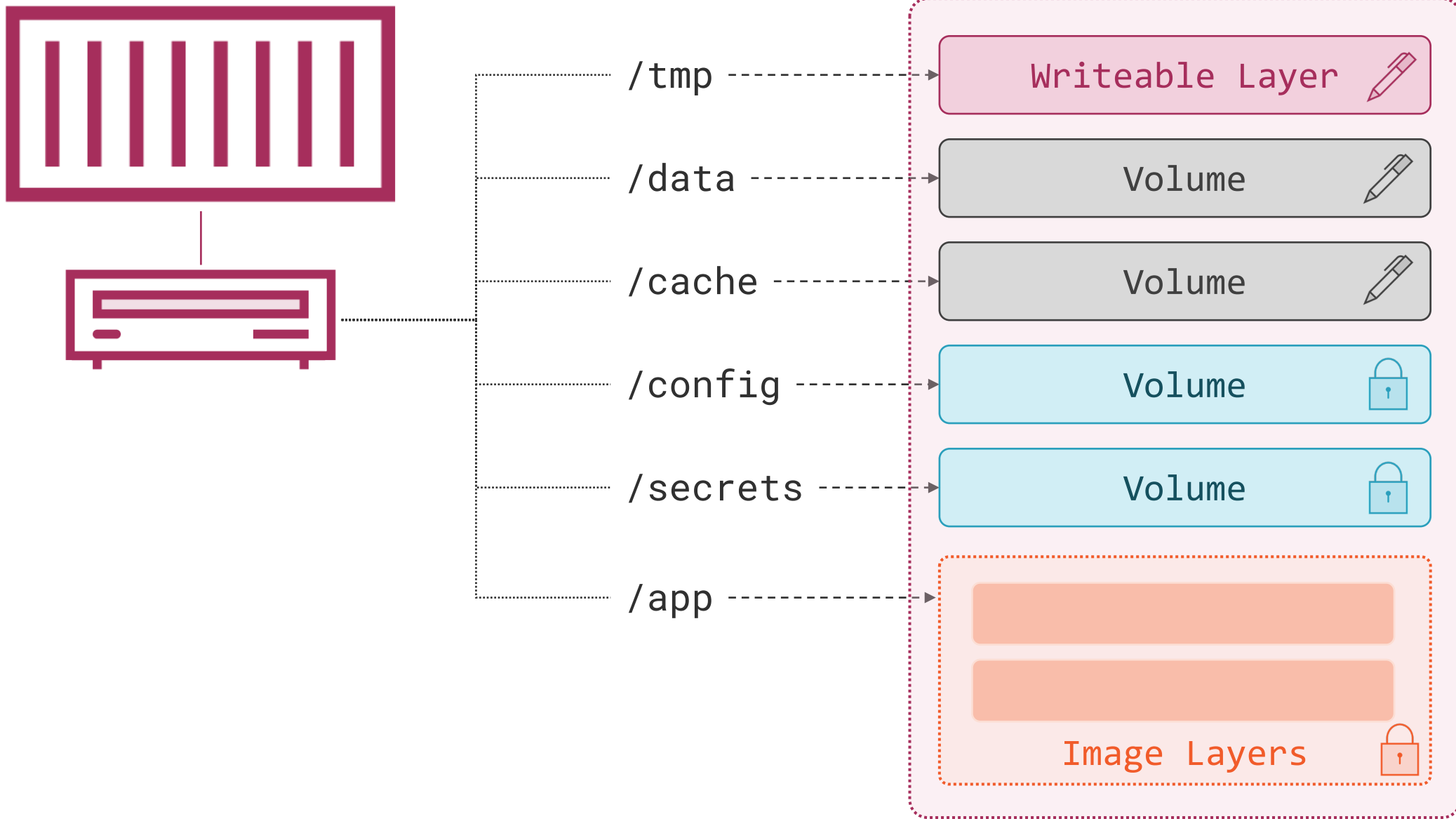
Windows volumes and filesystem mounts

- Mounts in Windows containers
- Bind-mounting host directories
- Mount limitations

Module Summary





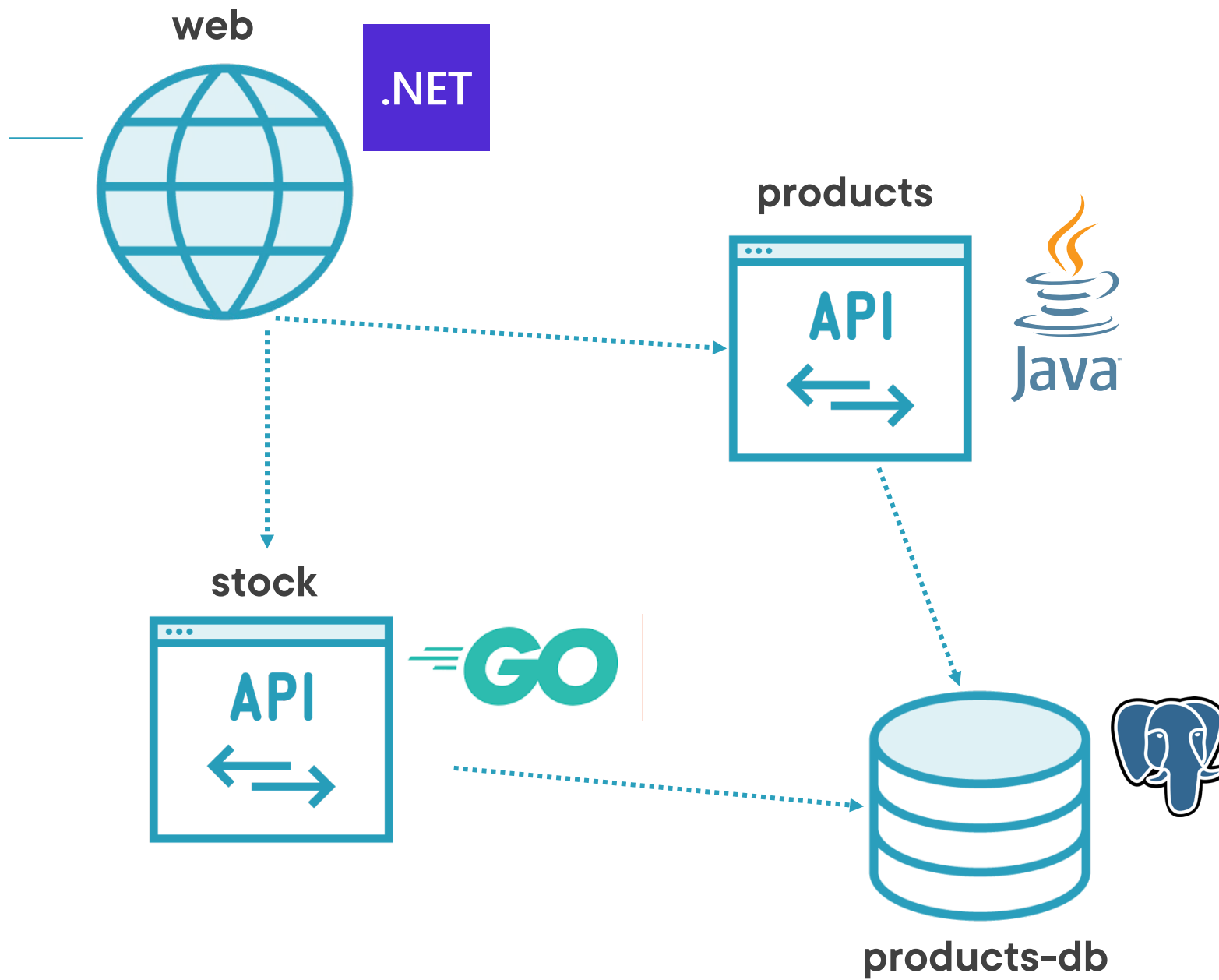
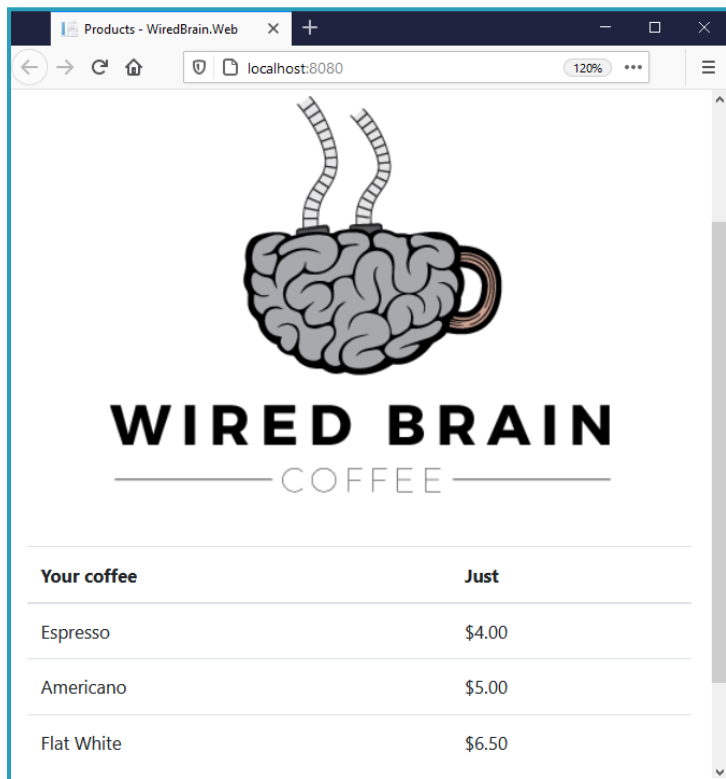


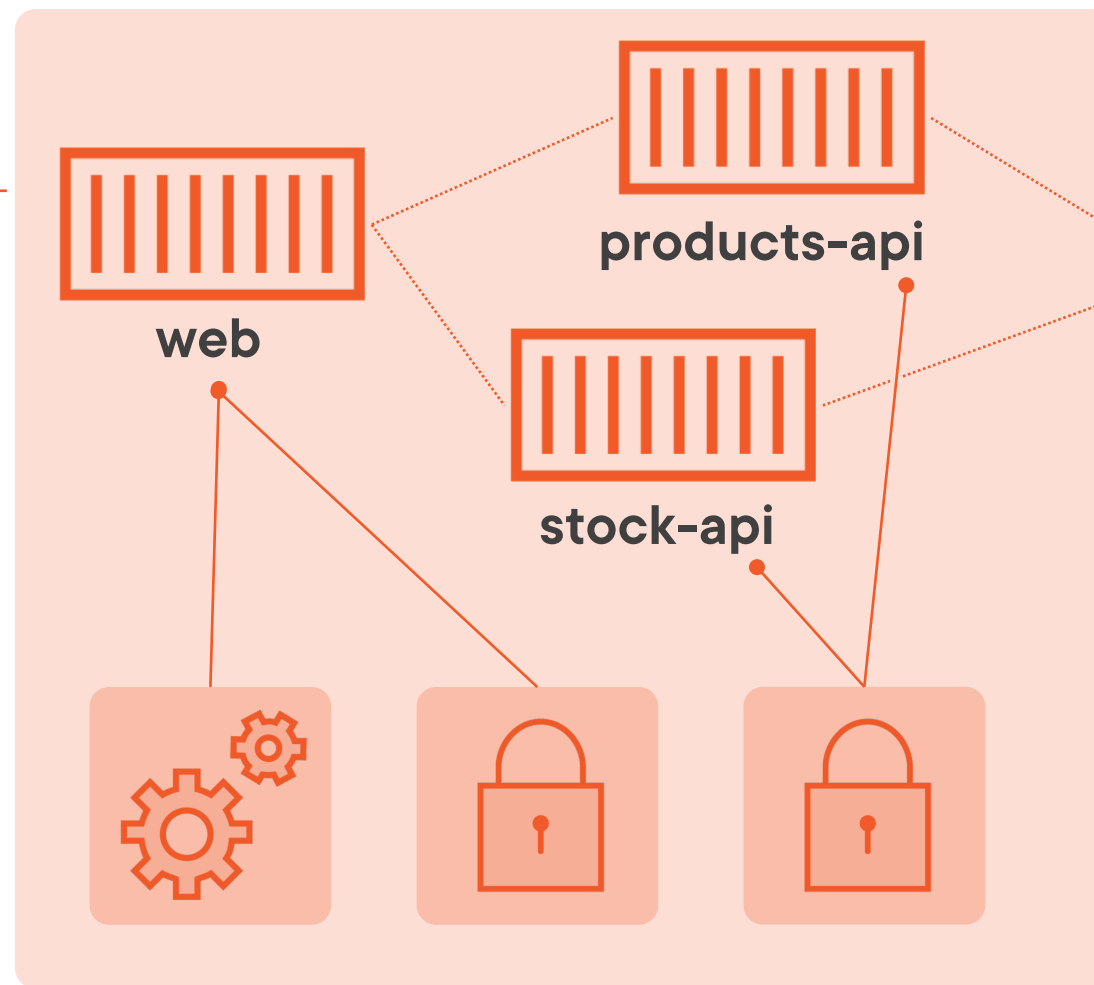
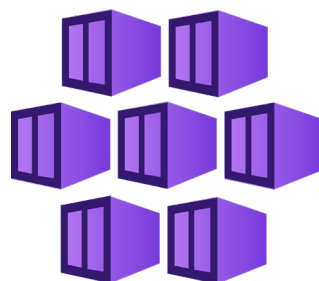
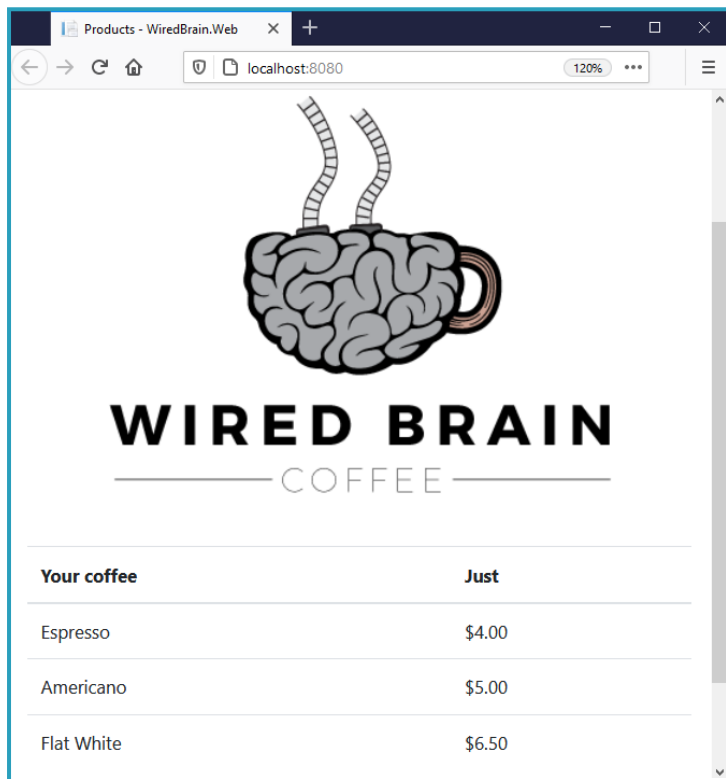


Configuration and Logging

Preparing Docker Apps for Production

Elton Stoneman





Up Next:

Reading Application Configuration in
Kubernetes Volumes
