



Containerized Delivery with Docker & Visual Studio Team Services

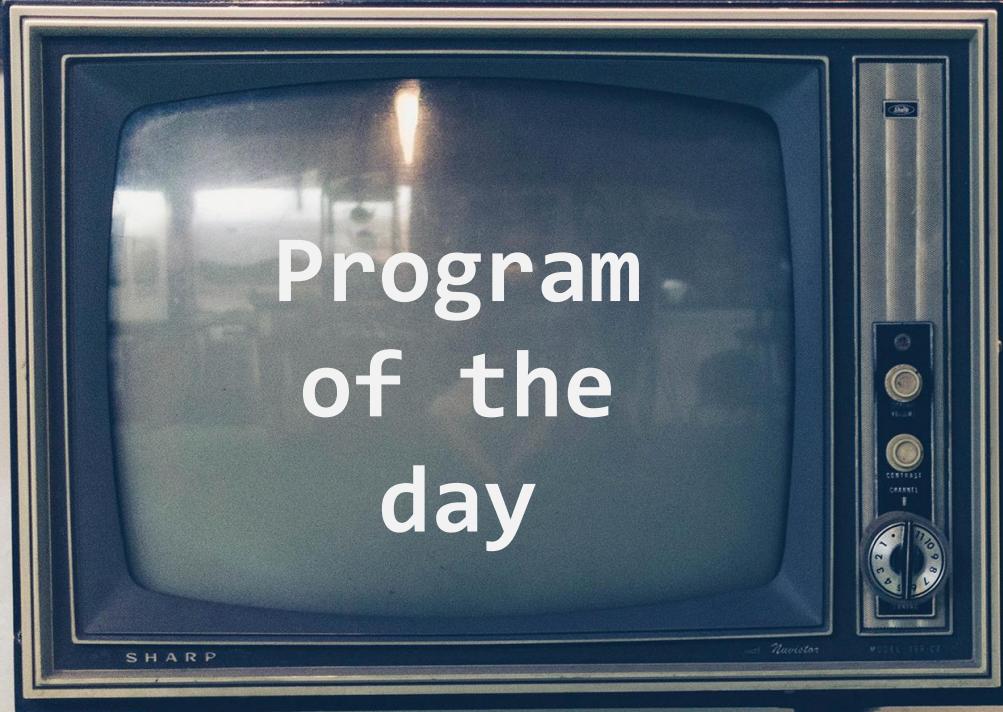
TECHORAMA



René van Osnabrugge
Xpirit

An aerial photograph of a large shipping port terminal. The scene is filled with thousands of shipping containers stacked in tall, organized piles across numerous rail tracks. The containers come in various colors, including red, blue, green, and white. In the foreground, several red gantry cranes are visible, some with blue canopies, which are used for moving containers between the tracks and the larger cargo ships. The overall impression is one of a busy, industrial hub of global trade and logistics.

Containers Will Revolutionize the
Way We Develop and Deploy Our
Applications in the Future



Why Should You Care about Containerized Delivery?

How Do We Create Containerized Applications?

Where Does Continuous Delivery Fit In?

How Can VSTS Help in This Process?

How to Develop and Move Containers from Local PC to a Cluster?

What Do We Need to Do for That ?



Continuous Delivery (CD) is a set of processes, tools and techniques for the rapid, reliable and continuous development and delivery of software.



- Better
- Faster
- Cheaper



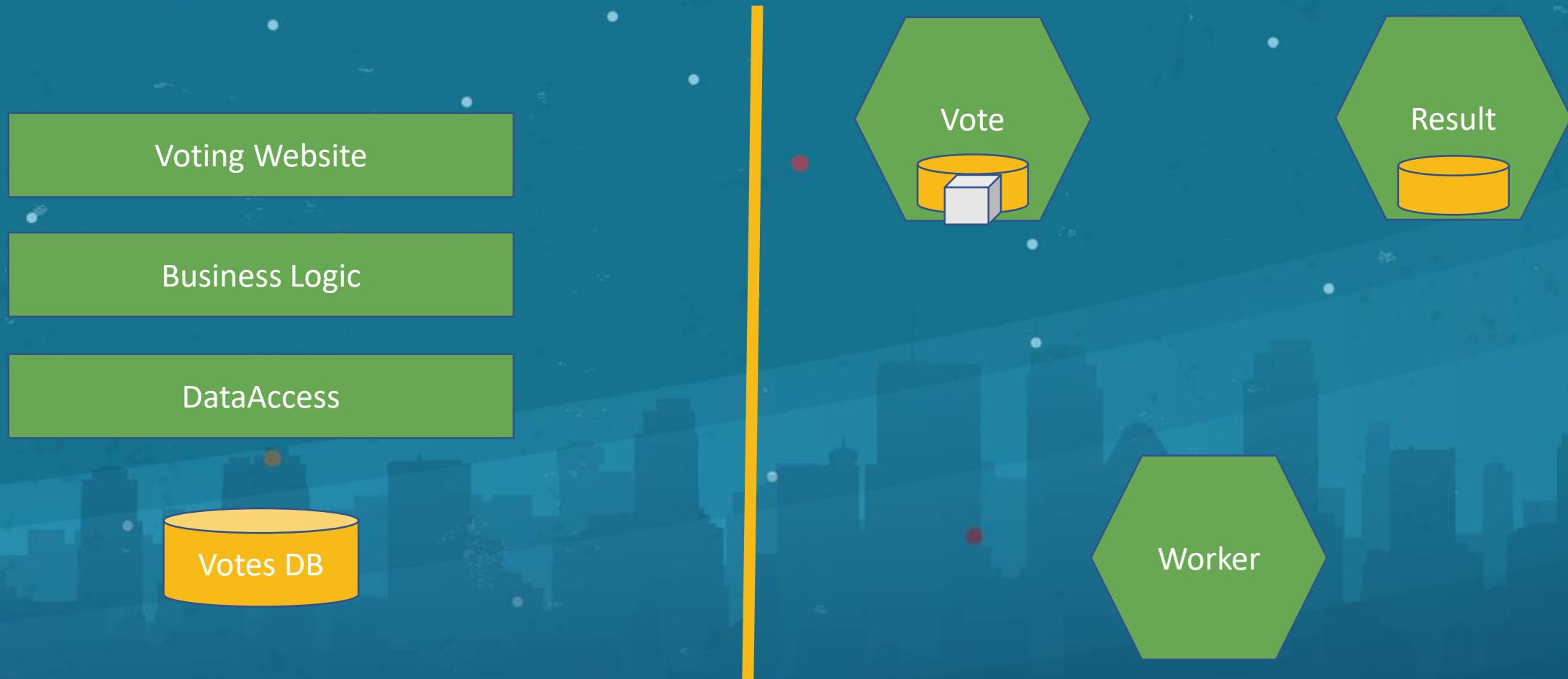
Continuous Delivery Goes Beyond the Pipeline!

Shipping the Monolith..



TECHORAMA

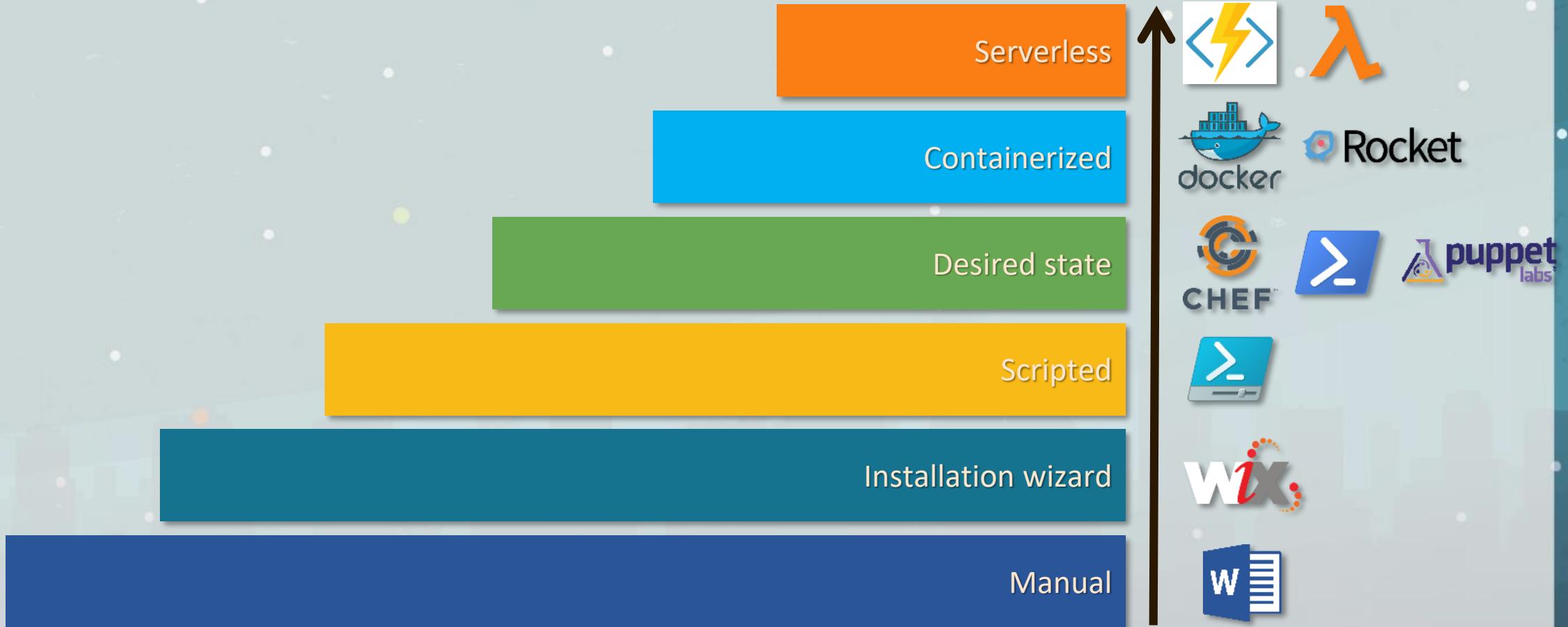
Traditional vs. Microservices Architecture



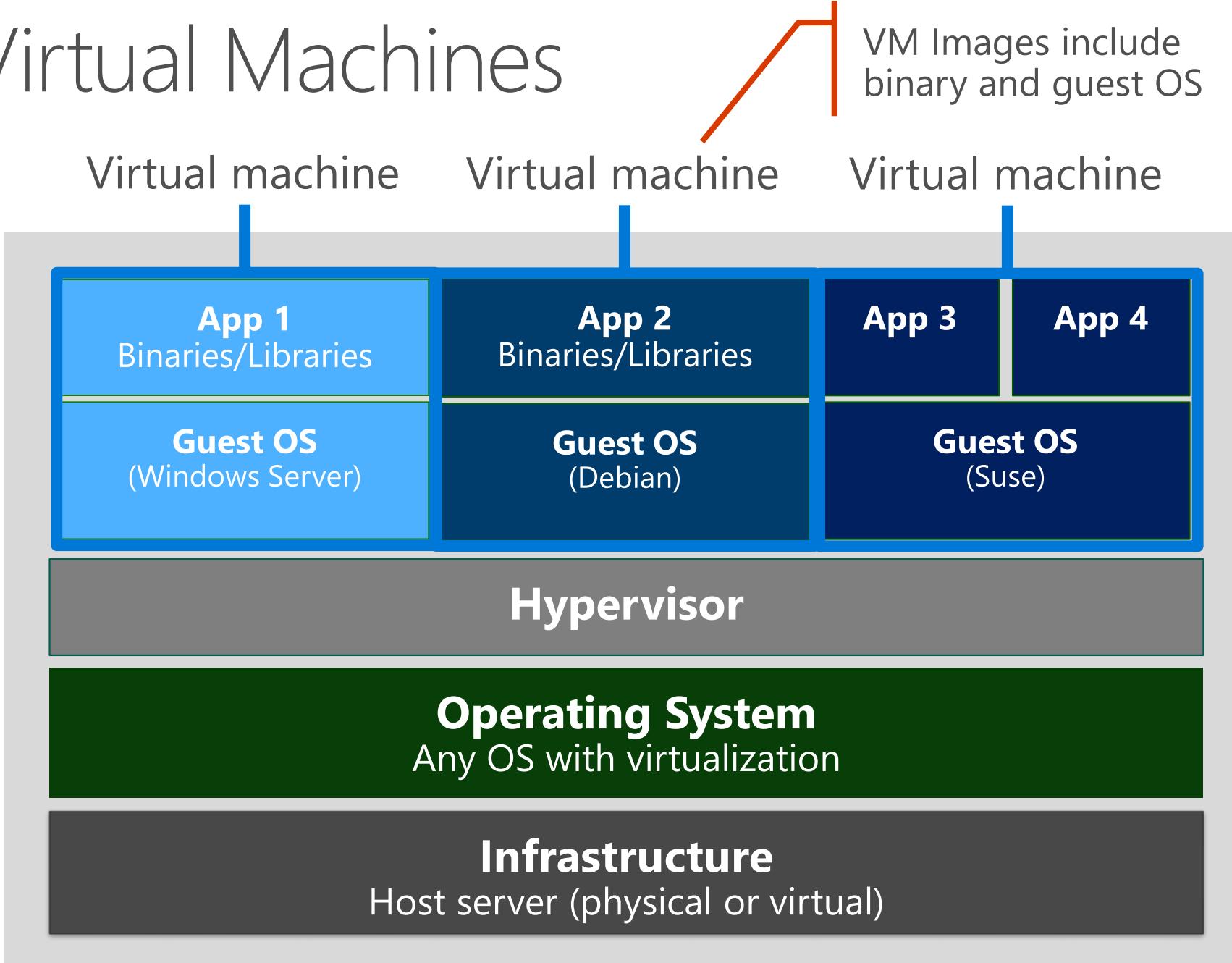
Find the Right Platform for Your Application



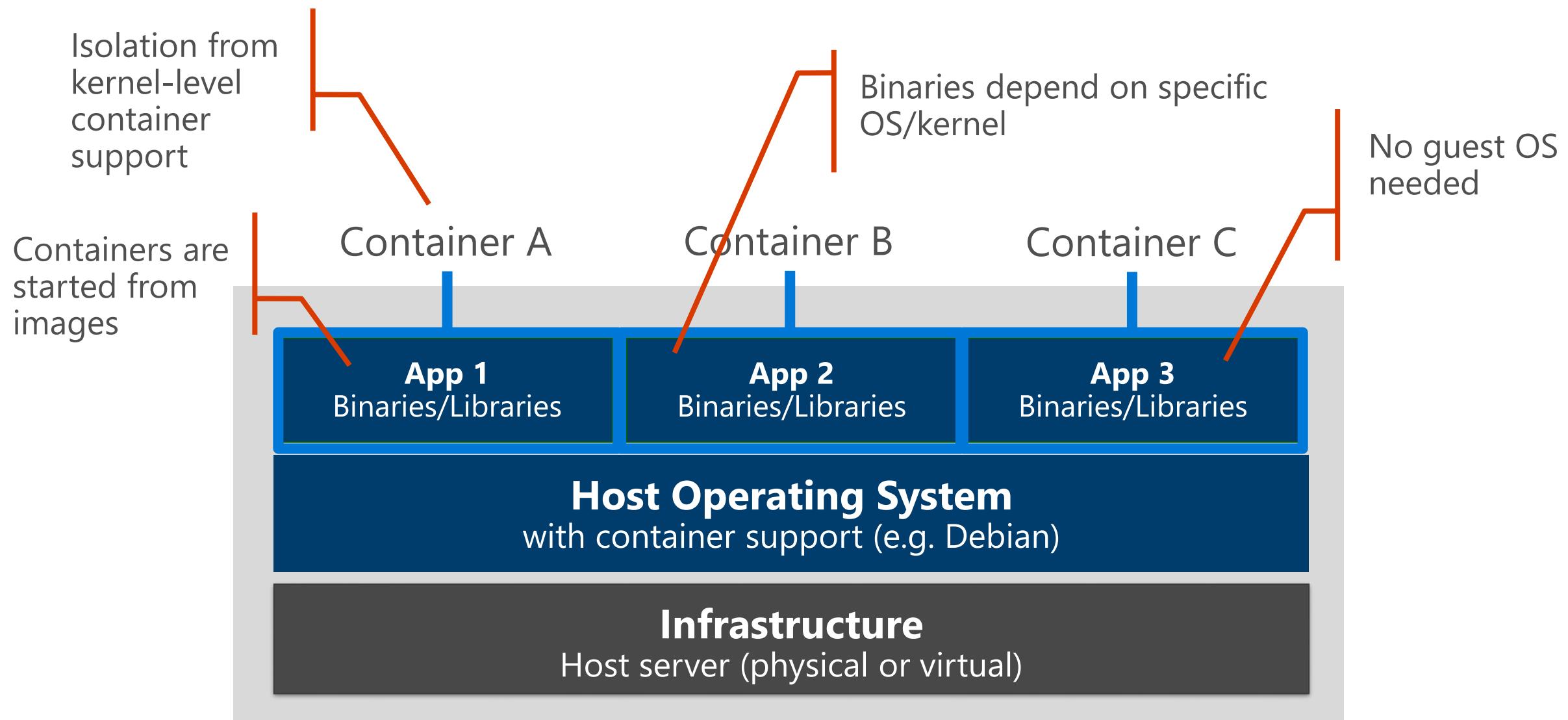
Evolution of Application Delivery



From Virtual Machines



To Linux Containers



To Windows Containers

Similar to Linux, but
Windows instead

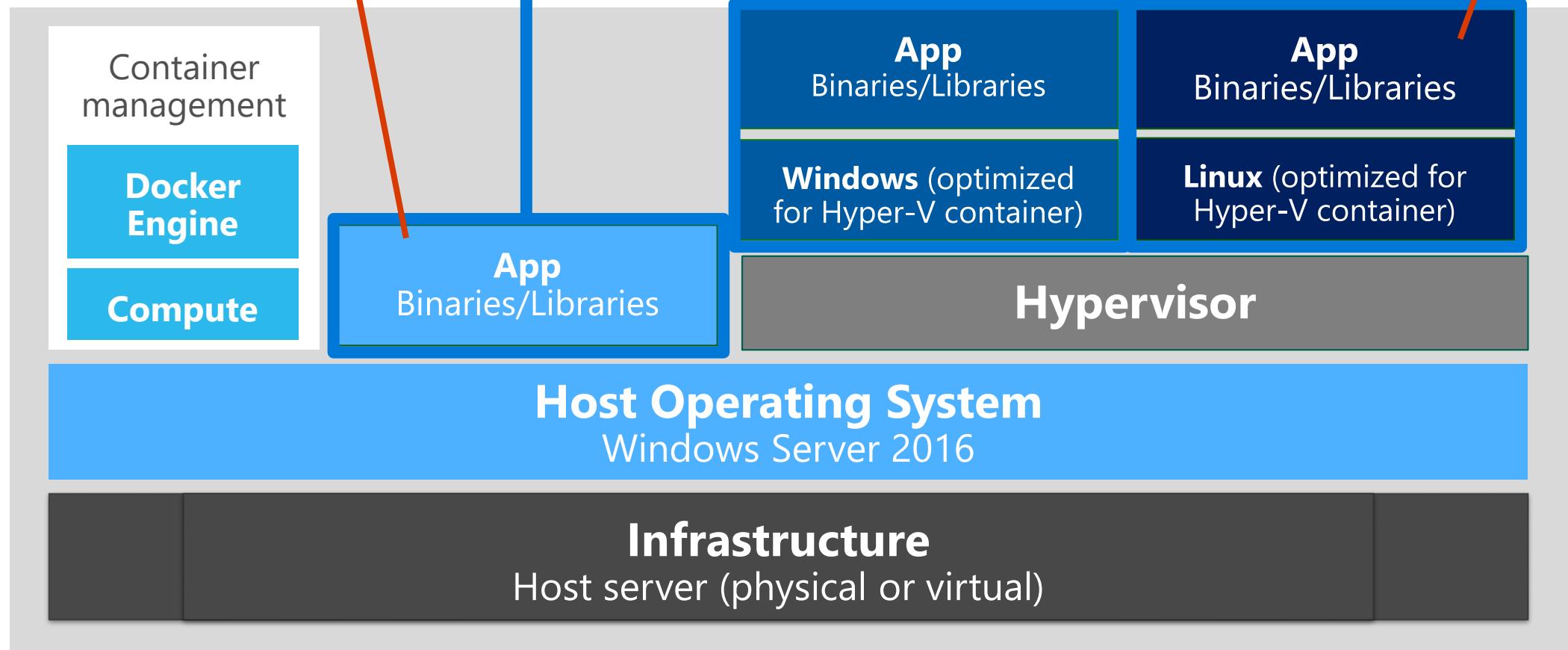
Windows Server
Container

Hyper-V
Windows Container

Hyper-V
Linux Container

Better isolation from
hypervisor virtualization

Coming
soon



Docker Image Layers

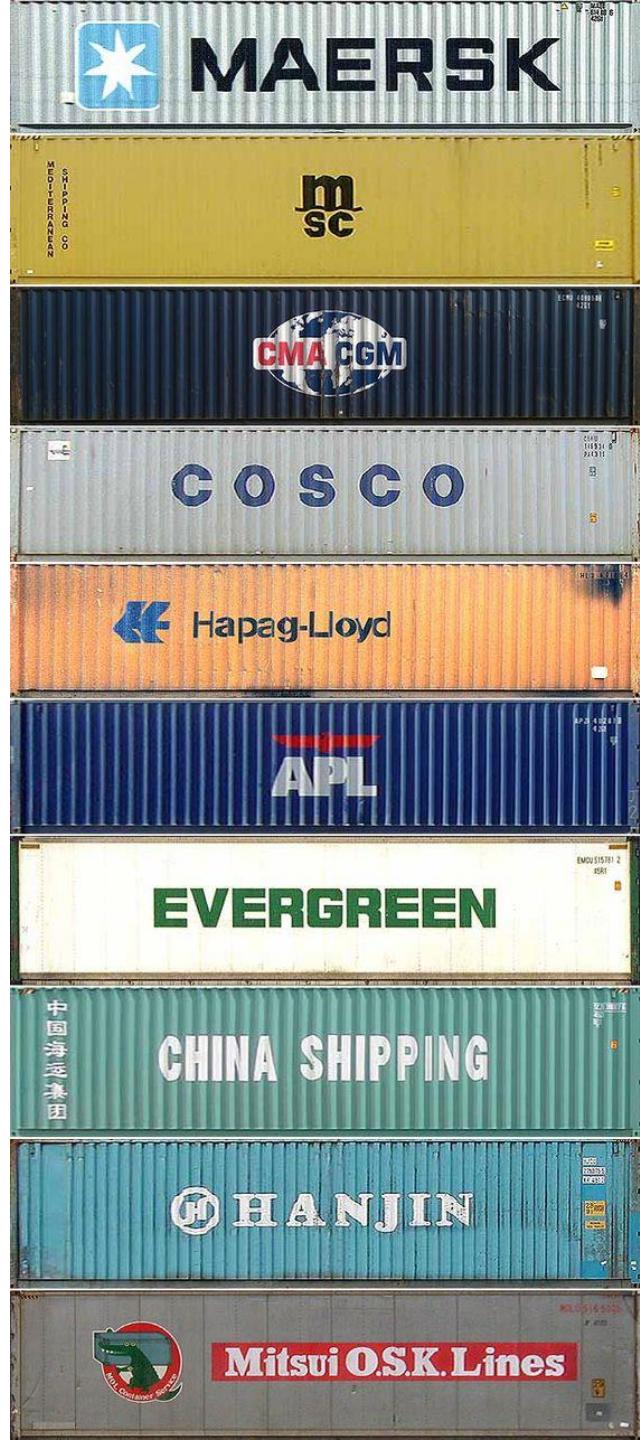
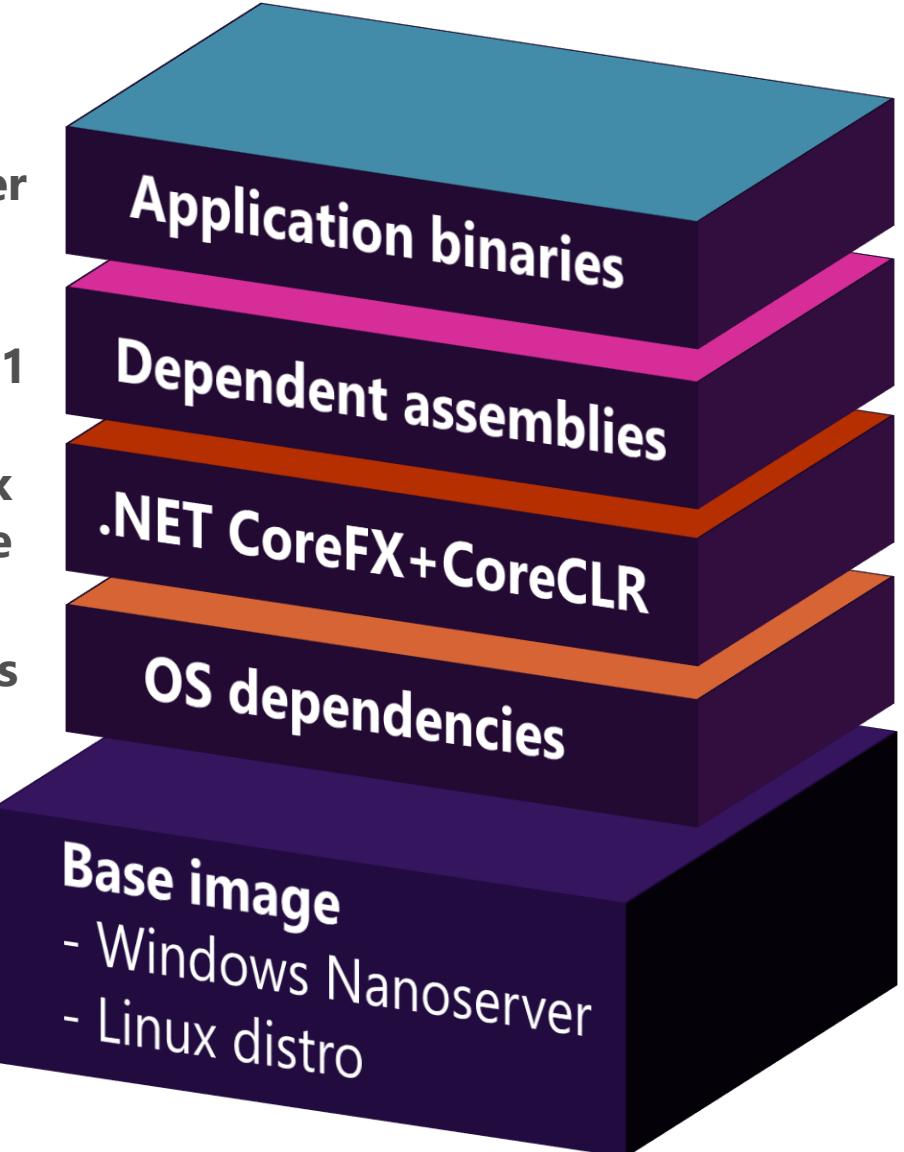
Your application layer

`microsoft/aspnetcore:1.1.1`

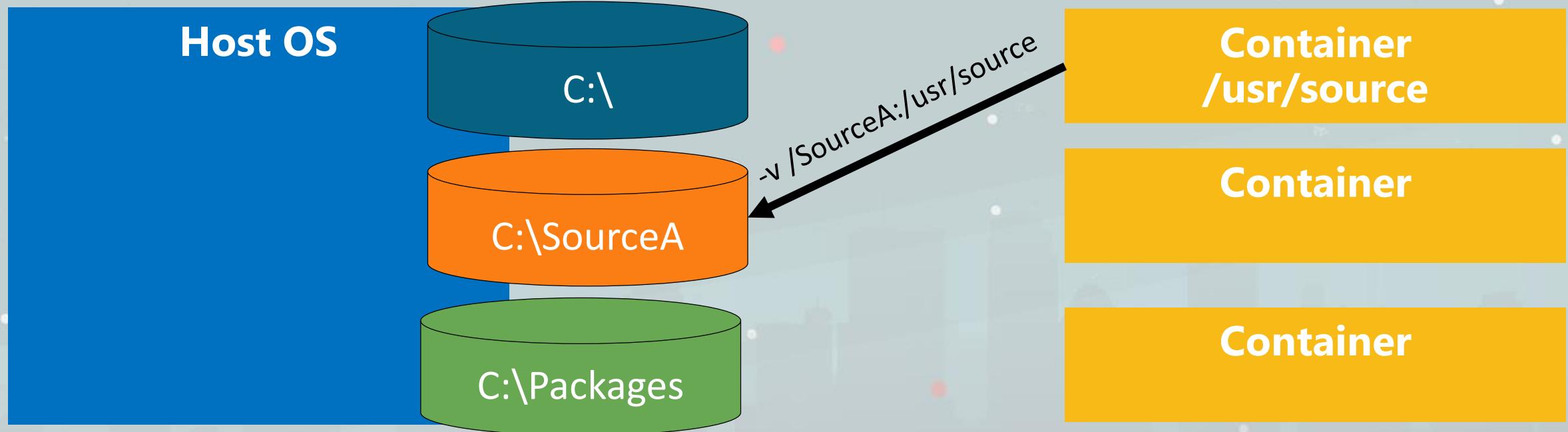
`microsoft/dotnet:1.0.0-sdk`
`microsoft/dotnet:1.1.1-runtime`

`microsoft/dotnet:1.1.1-runtime-deps`

`microsoft/nanoserver:10.0.14393.1066`
e.g. `debian/jessie`



Volumes Mappings



A whale is breaching the ocean surface, creating a large splash. The whale's dark grey body is partially submerged, with its white underbelly and flippers visible. The water is a deep blue-green color, with white foam from the breach. The background shows more of the ocean surface.

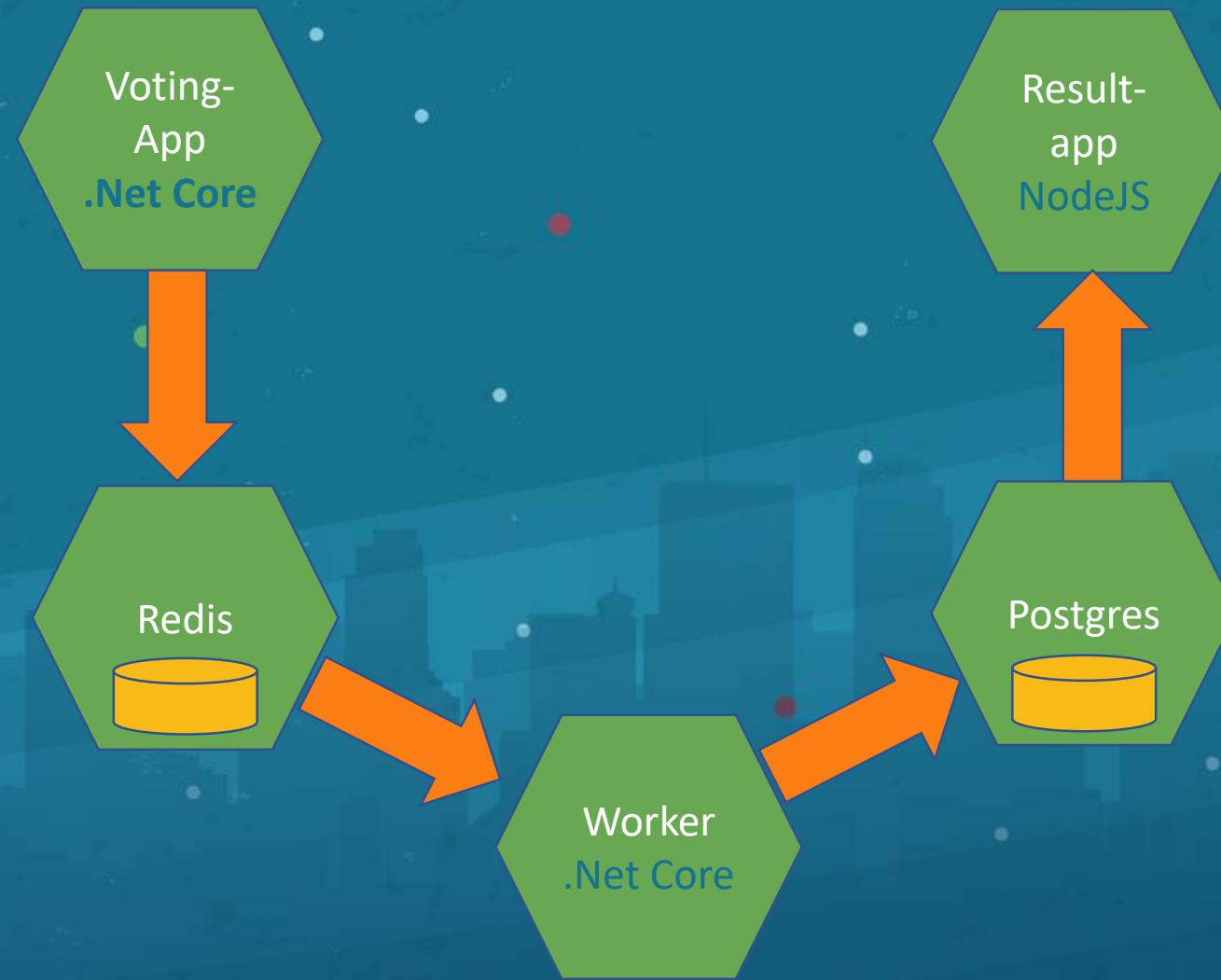
demo

A short look at Docker and why I like it so much !

The 6-step Guide to Containerized Delivery

- 1-Move your app into a container
- 2-Test your composed app locally
- 3-Set up a container bakery
- 4-Publish the container images to a registry
- 5-Set up a container cluster
- 6-Release your app on the cluster

Sample App



demo

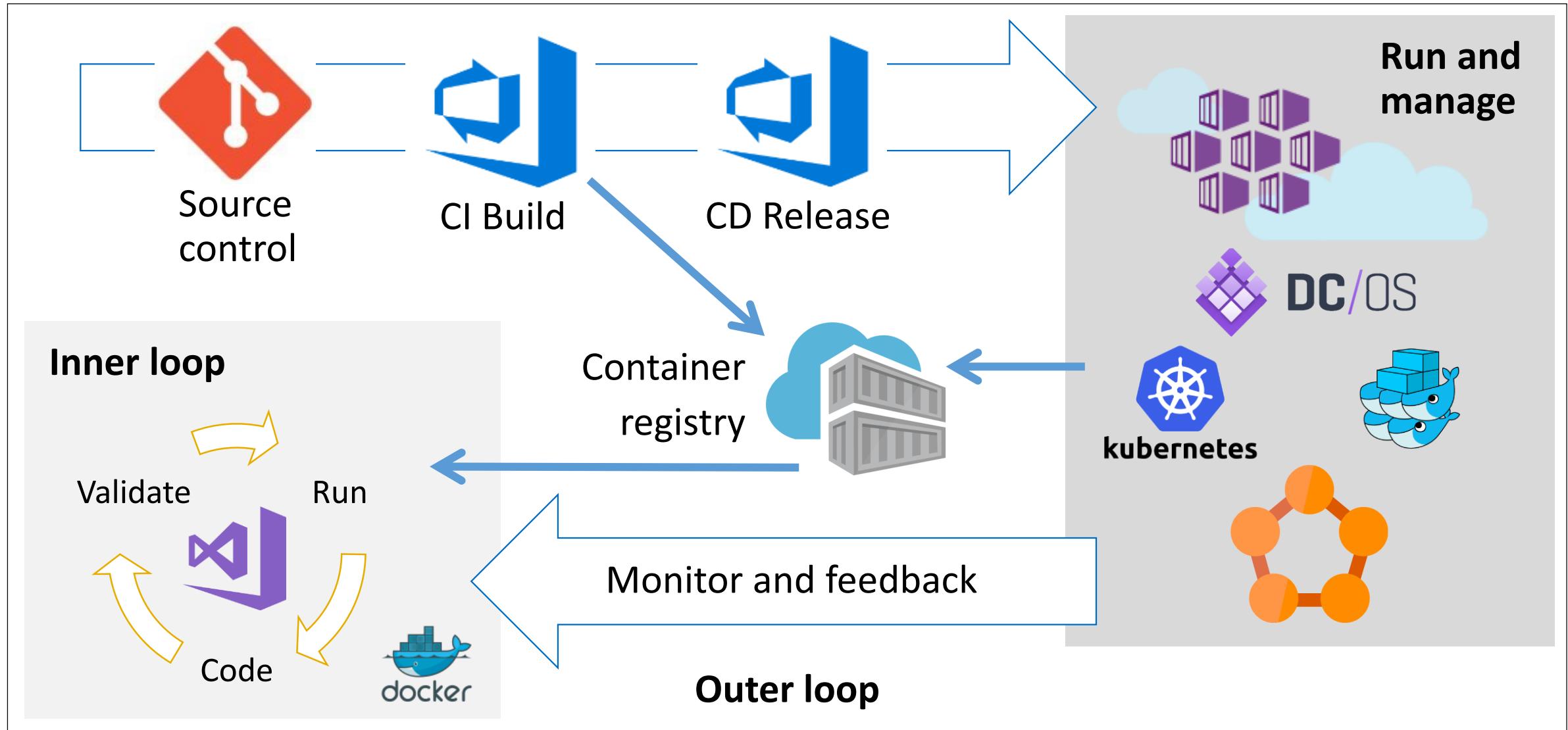
1-Move your app to a container





demo

2-Test your composed app locally



The Container registry is key!

- Stores version of your container
- Functions as distribution point
- Public or private
- Docker Hub/Docker Store
- Azure Container Registry



A New Way of Deployment

Continuous Deployment

Source Control

Continuous Delivery Pipeline

Build Binaries

Deploy to Test environments

Test Binaries



Production

Source Control

Containerized Delivery

Continuous Delivery Pipeline

Dev

Test

Production

Build Binaries

Bake Container

Move Container

Move Container

Move Container

A close-up photograph of a display case filled with various baked goods. In the foreground, several golden-brown croissants are visible, some with dark chocolate chips. Behind them, there are rows of smaller, round pastries, possibly scones or cookies, some with white frosting. The background is slightly blurred, showing more of the bakery's interior.

demo

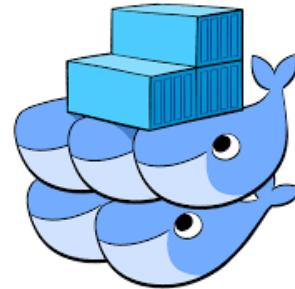
3-Set up a container bakery

4-Publish the container images to a registry

Cluster Orchestrators



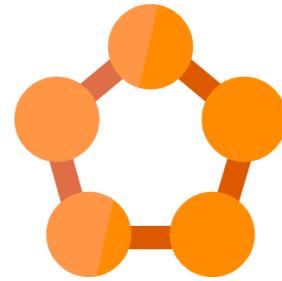
Mesos DC/OS



Docker Swarm

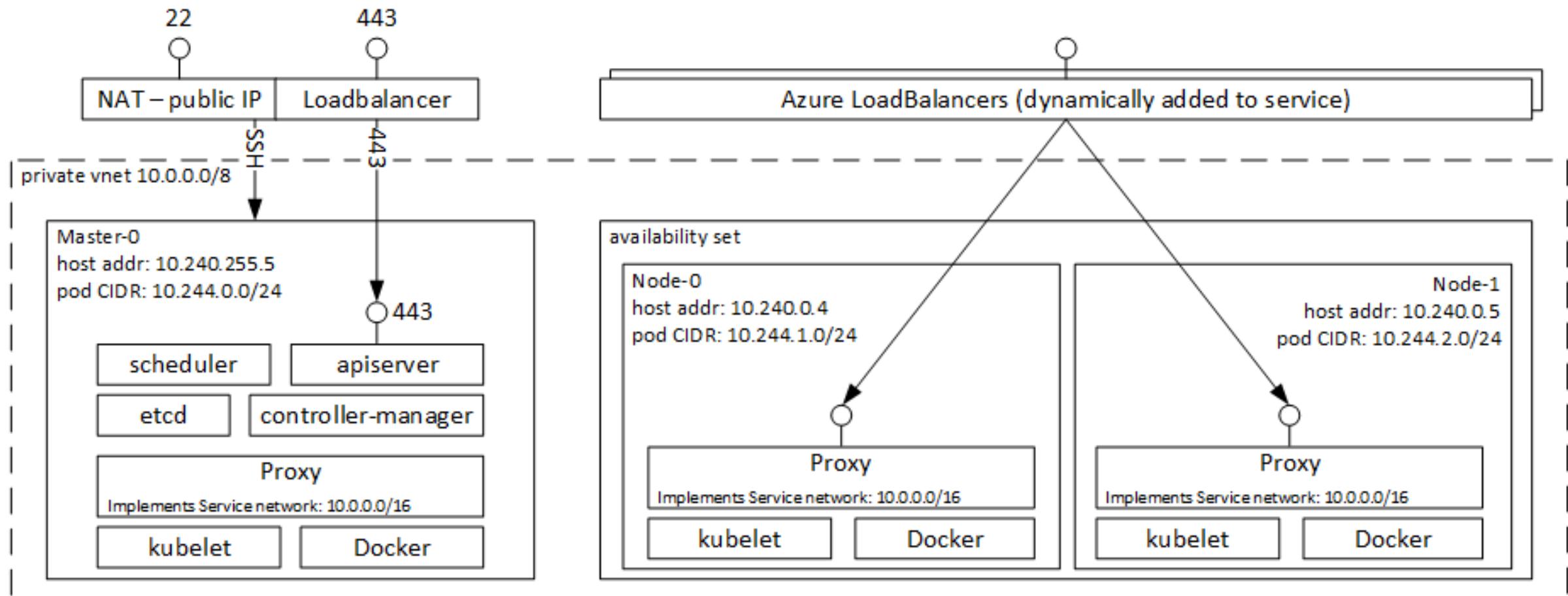


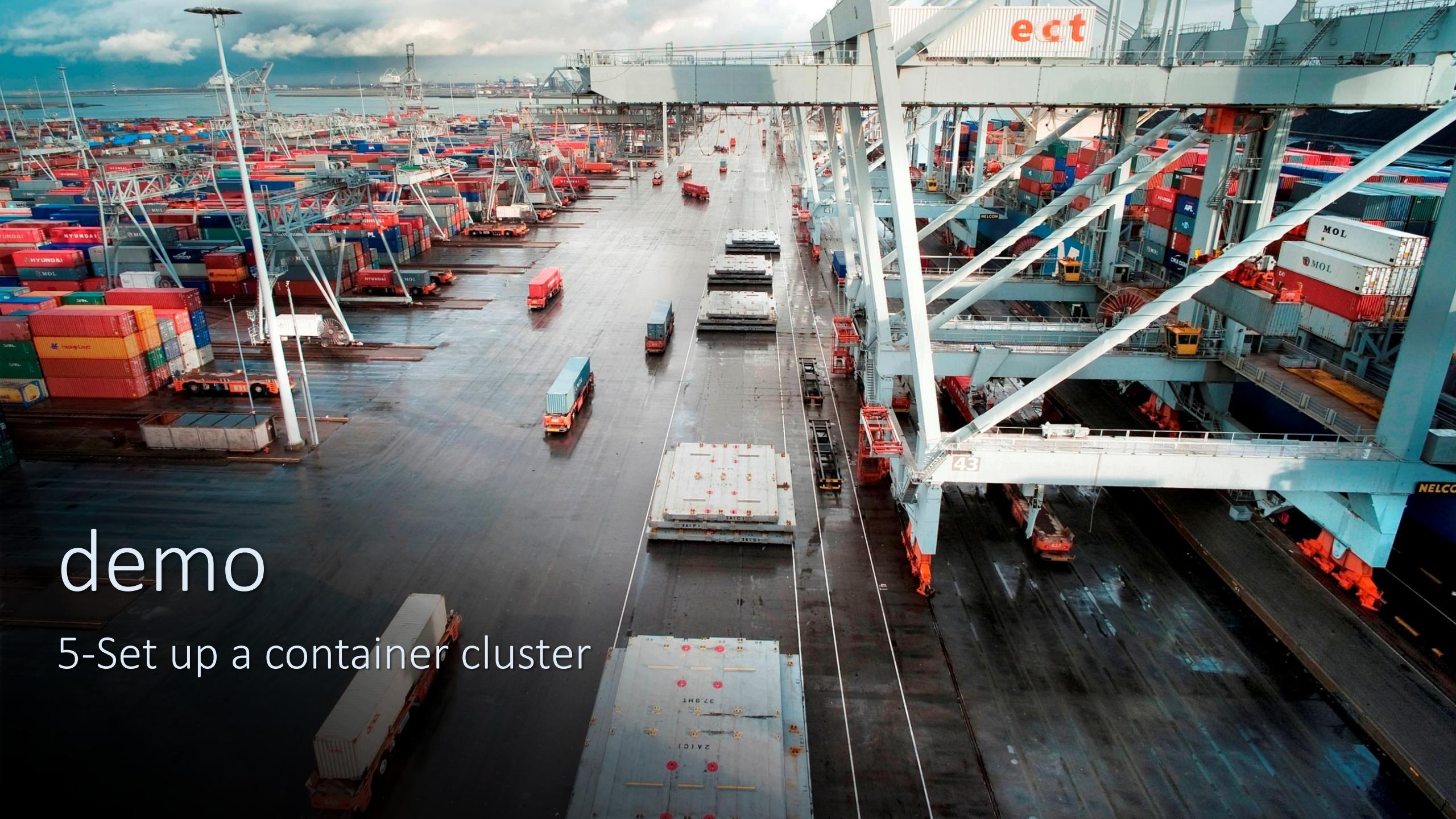
Google Kubernetes



Azure Service Fabric

Clusters of Container Hosts



An aerial photograph of a large port terminal. On the left, a massive stack of shipping containers in various colors (red, blue, green) is visible. In the center, several orange and white trucks are moving along the paved ground. On the right, a large white gantry crane with the number "43" on its side is positioned over a stack of containers. The sky is blue with some white clouds.

demo

5-Set up a container cluster

Thin pipelines

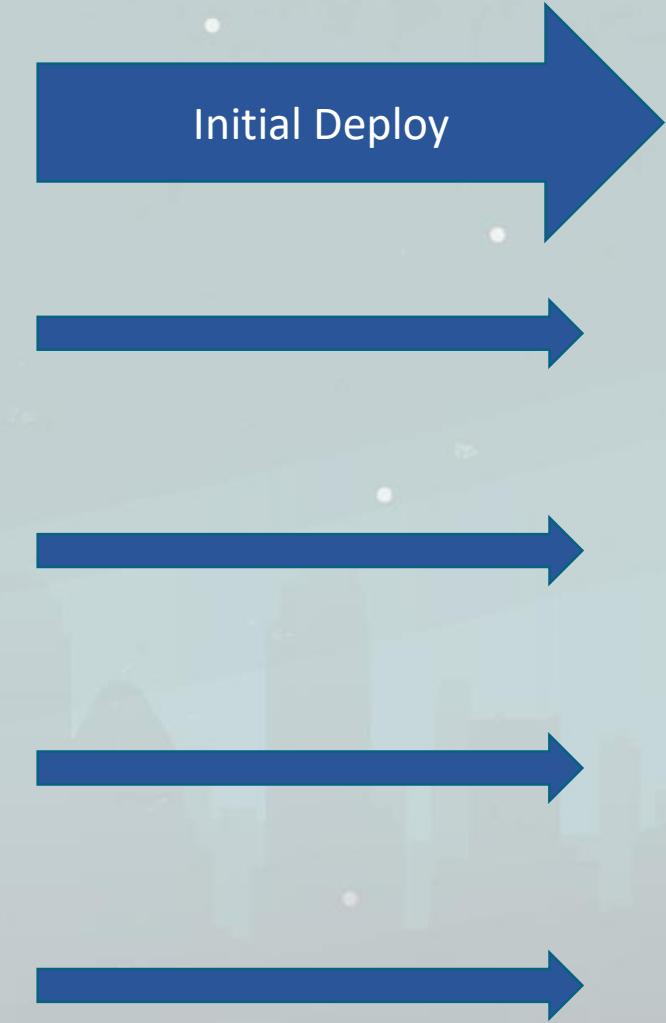
Source
Control

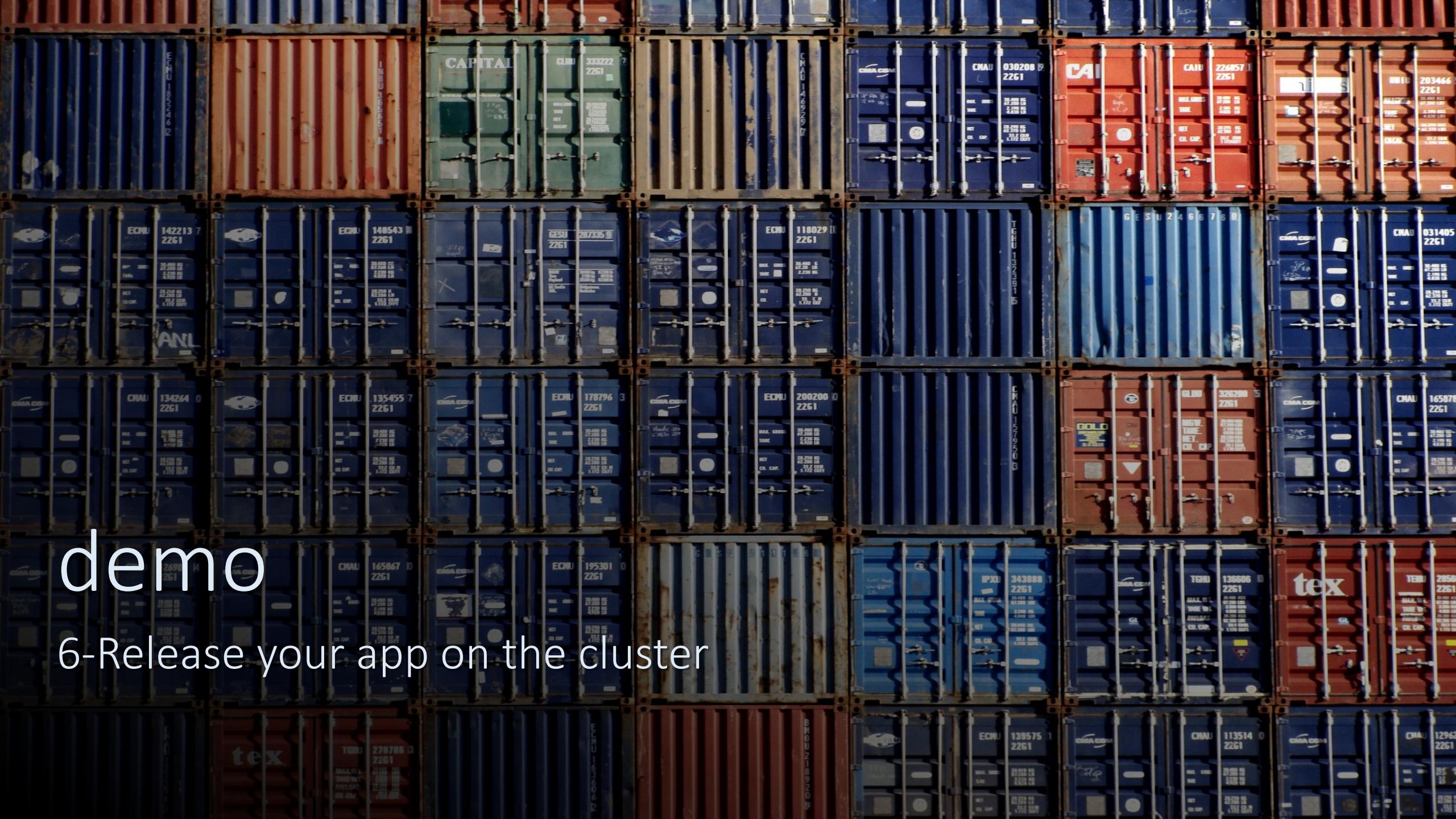
Bakery



Registry

Initial Deploy



The background of the image consists of a dense stack of shipping containers. They are arranged in a grid-like pattern, creating a repetitive texture. The containers come in various colors, including shades of blue, red, green, and orange. Many of the containers have white markings or labels on them, such as "CAPITAL", "CMA CGM", "CHAU", "ECMU", and "tex".

demo

6-Release your app on the cluster



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René van Osnabrugge

ALM Consultant at Xpirit

@renevo

rvanosnabrugge@xpirit.com

<https://roadtoalm.com>

<http://xpir.it/rvo-techorama-2017>

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René
van Osnabrugge

ALM Consultant at Xpirit

@renevo

rvanosnabrugge@xpirit.com

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