Executing a Containerized Job with Docker

Gerald Ho
TECHNOLOGIST

@gezzahead www.yellowstick.com

Module Overview

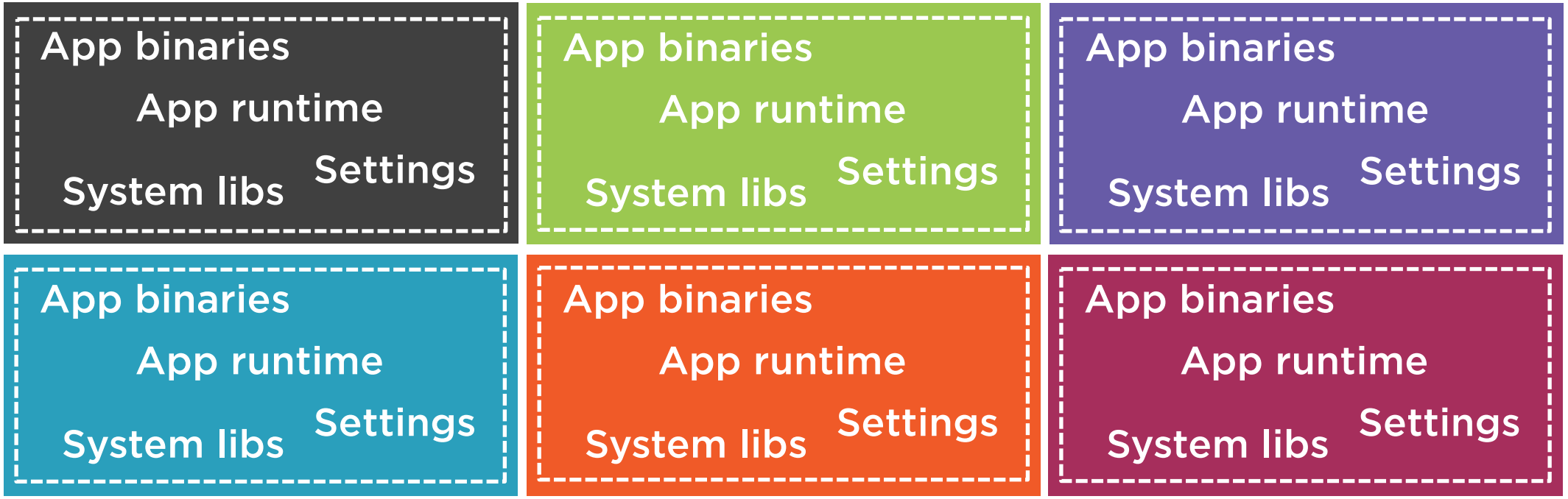
Introducing containers

Introducing nvidia-docker

Building and deploying containers

Utilizing containers in the OptionPricer

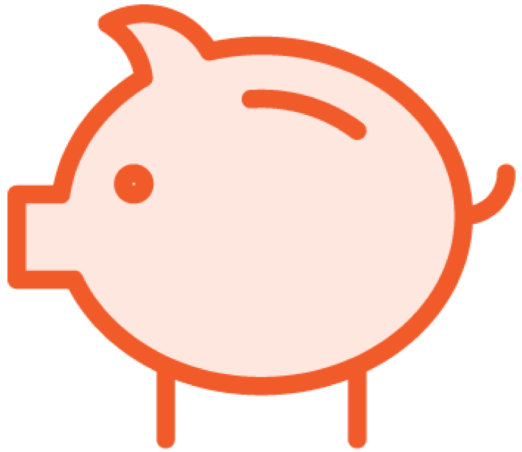
Containers 101



Containerization Benefits

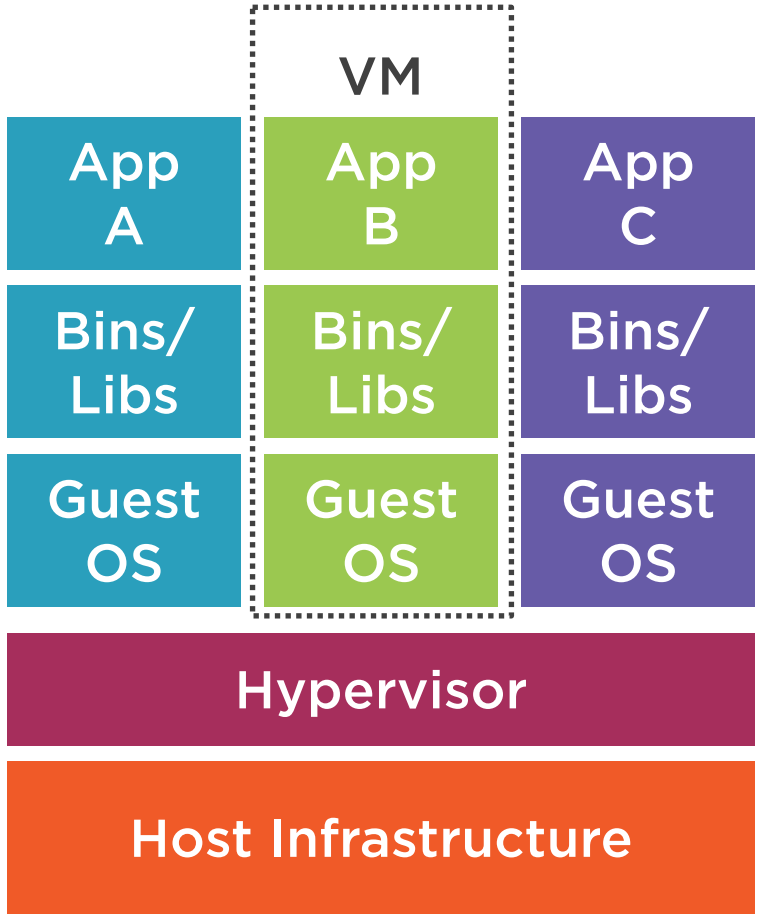
Consistent portability
Works the same everywhere

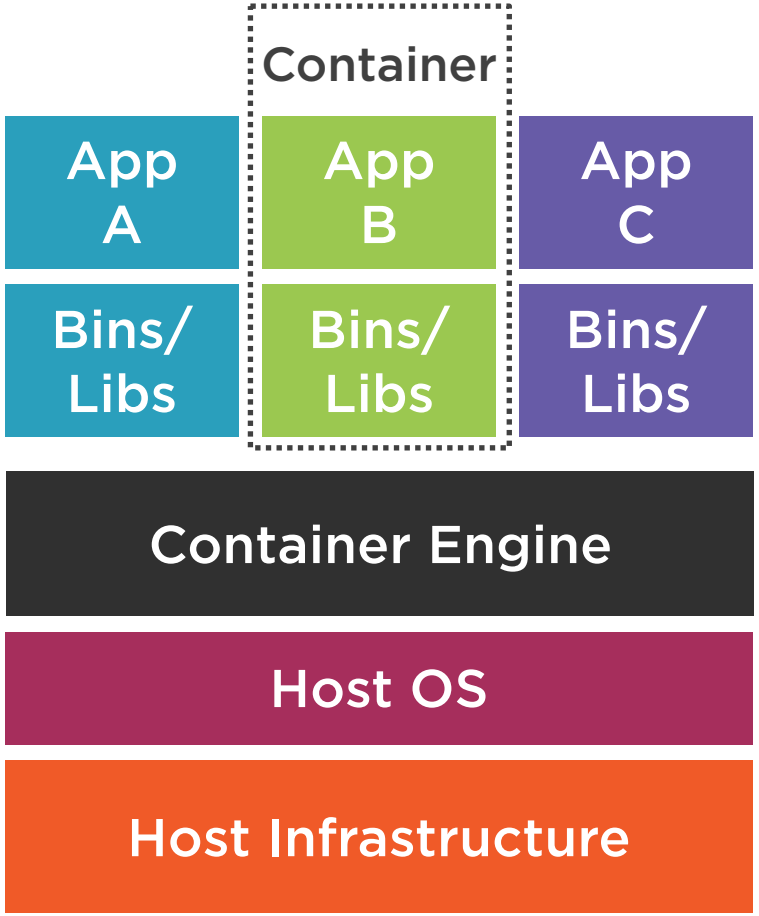
Scalability
Scale up and down in near real-time



Cost-effective
Run more on the same hardware

Containers vs. Virtual Machines





Containers and GPUs

Platform and hardware agnostic

= Portability ☺

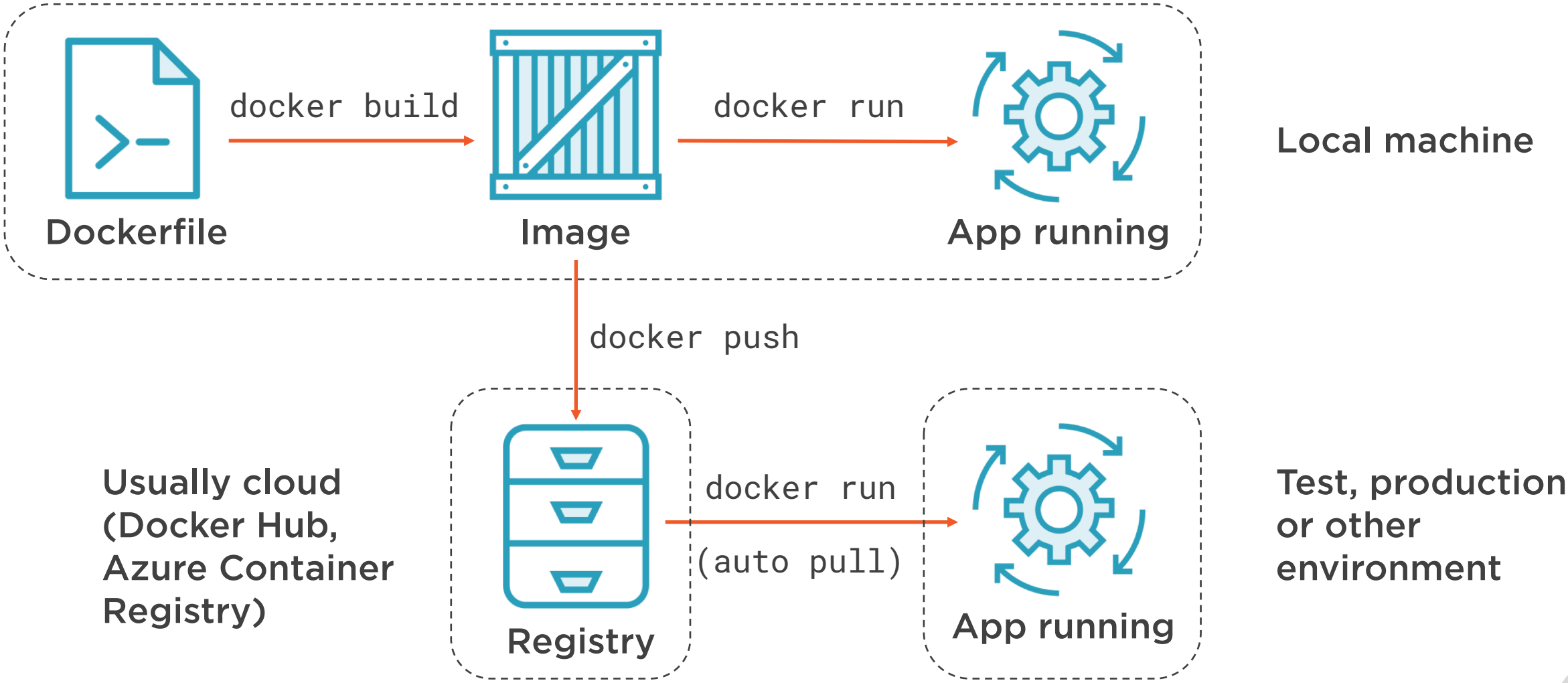
GPUs are specialist hardware

= Not so portable ☹

nvidia-docker gives driver agnosticism

= More portable ☺

Building and Deploying Containers



Containers in Batch

Azure Batch Shipyard

No coding, just config files

Azure Batch SDK

Custom app development

Demo

Setting up the Azure Container Registry

Writing, building and publishing a container image

Utilizing containers in the OptionPricer

Module Summary

Containers provide portability, easier scalability and cost-effectiveness

GPUs are problematic but nvidia-docker helps

Utilizing containers in Batch is easy

Course Summary

Batch is a free service to help you execute HPC workloads

Use Batch from the Azure portal and in a .NET application

Accelerate the workload using GPUs

Increase portability through containers