.Net Pipeline on Windows Kubernetes

Jessica Deen, Microsoft Azure & Dan Garfield, Codefresh

Dan Garfield

Chief Evangelist

codefresh

Jessica Deen

Cloud Developer Advocate

Azure

Agenda

Containers - What are they?

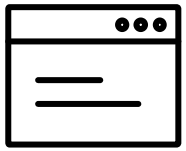
Codefresh - what is it?

Windows Kubernetes with Azure

Demo

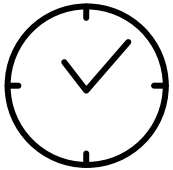
Questions?

What we hear from developers



I need to create applications at a competitive rate without worrying about IT

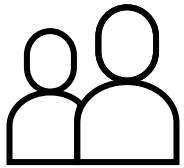
New applications run smoothly on my machine but malfunction on traditional IT servers



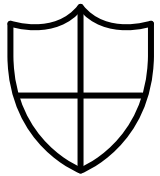
My productivity and application innovation become suspended when I have to wait on IT

What we hear from IT

I need to manage servers and maintain compliance with little disruption



I'm unsure of how to integrate unfamiliar applications, and I require help from developers

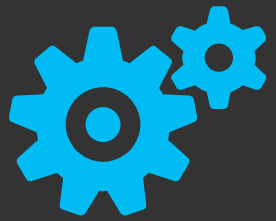


I'm unable to focus on both server protection and application compliance

IT stress points

Security threats

Datacenter efficiency



Supporting innovation

Cloud is a new way to think about a datacenter

Traditional model

Dedicated infrastructure for each application

Purpose-built hardware

Distinct infrastructure and operations teams

Customized processes and configurations

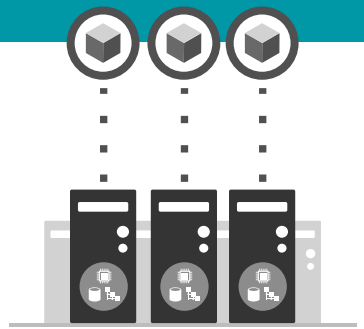
Cloud model

Loosely coupled apps and micro-services

Industry-standard hardware

Service-focused DevOps teams

Standardized processes and configurations

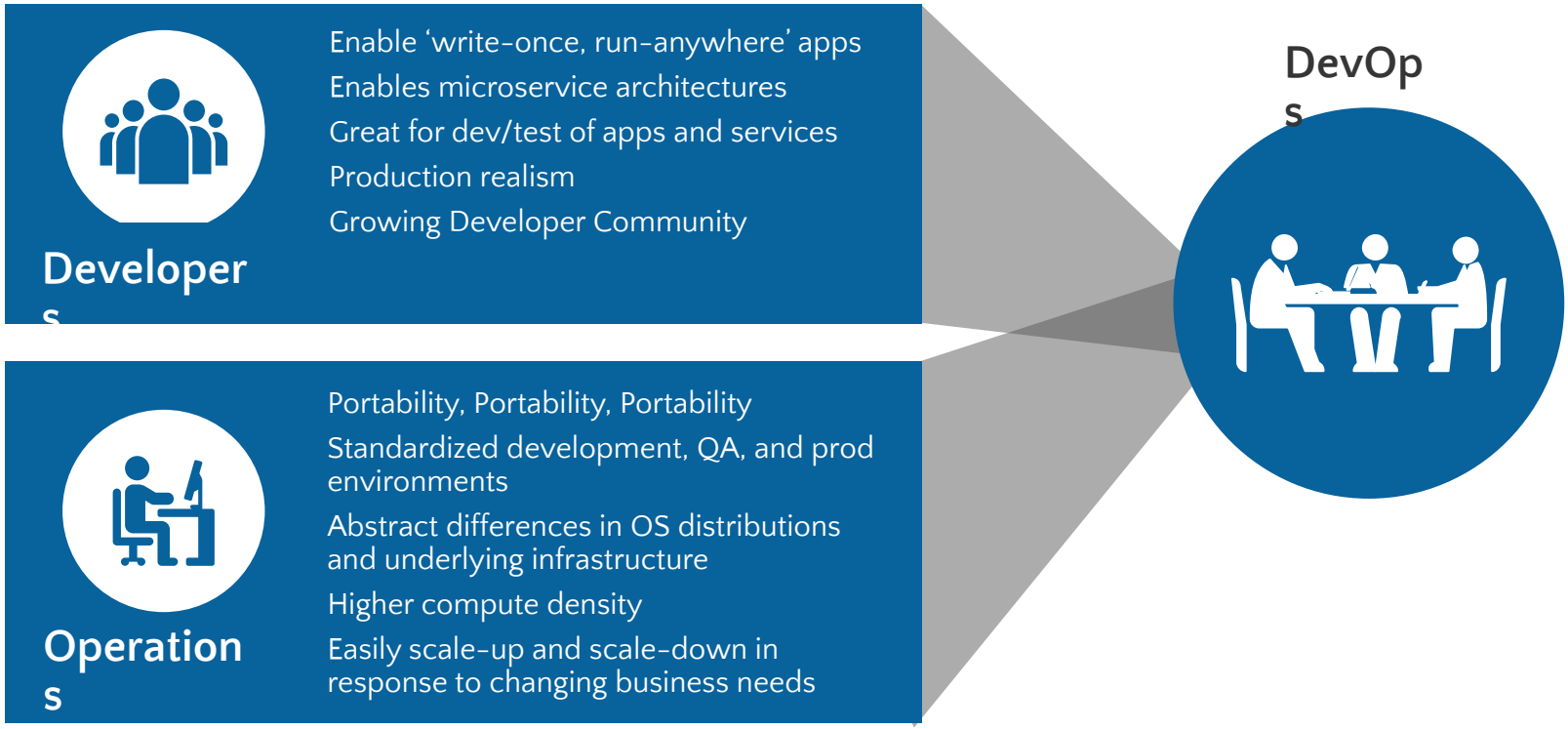


Servers

Services

Microsoft

Why Containers?



What is a Container?

Not a real thing. An application delivery mechanism with **process isolation** based on several **Linux kernel** features.

Namespaces (what a process can see)

- **PID**
- **Mount**
- **Network**
- **UTS**
- **IPC**
- **User**
- **Cgroup**

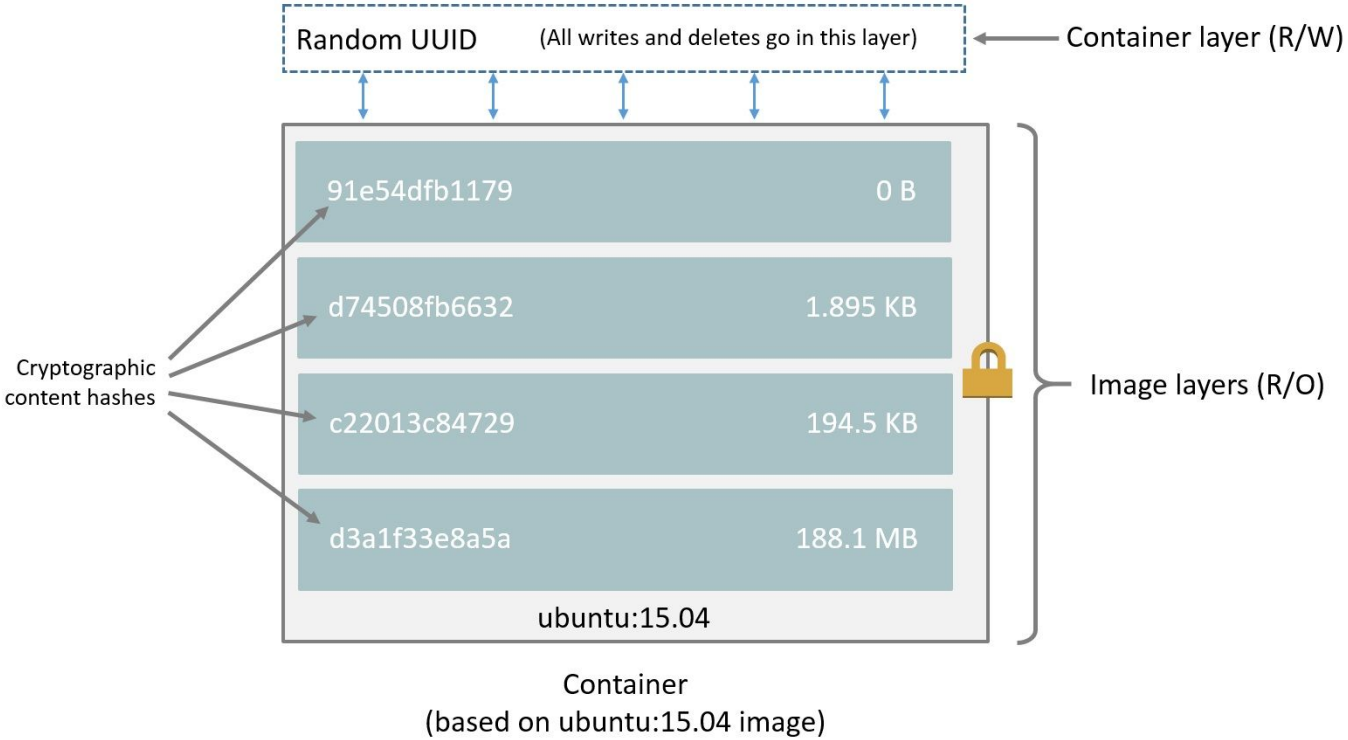
Cgroups (what a process can use)

- **Memory**
- **CPU**
- **Blkio**
- **Cpuacct**
- **Cpuset**
- **Devices**
- **Net_prio**

What is  docker

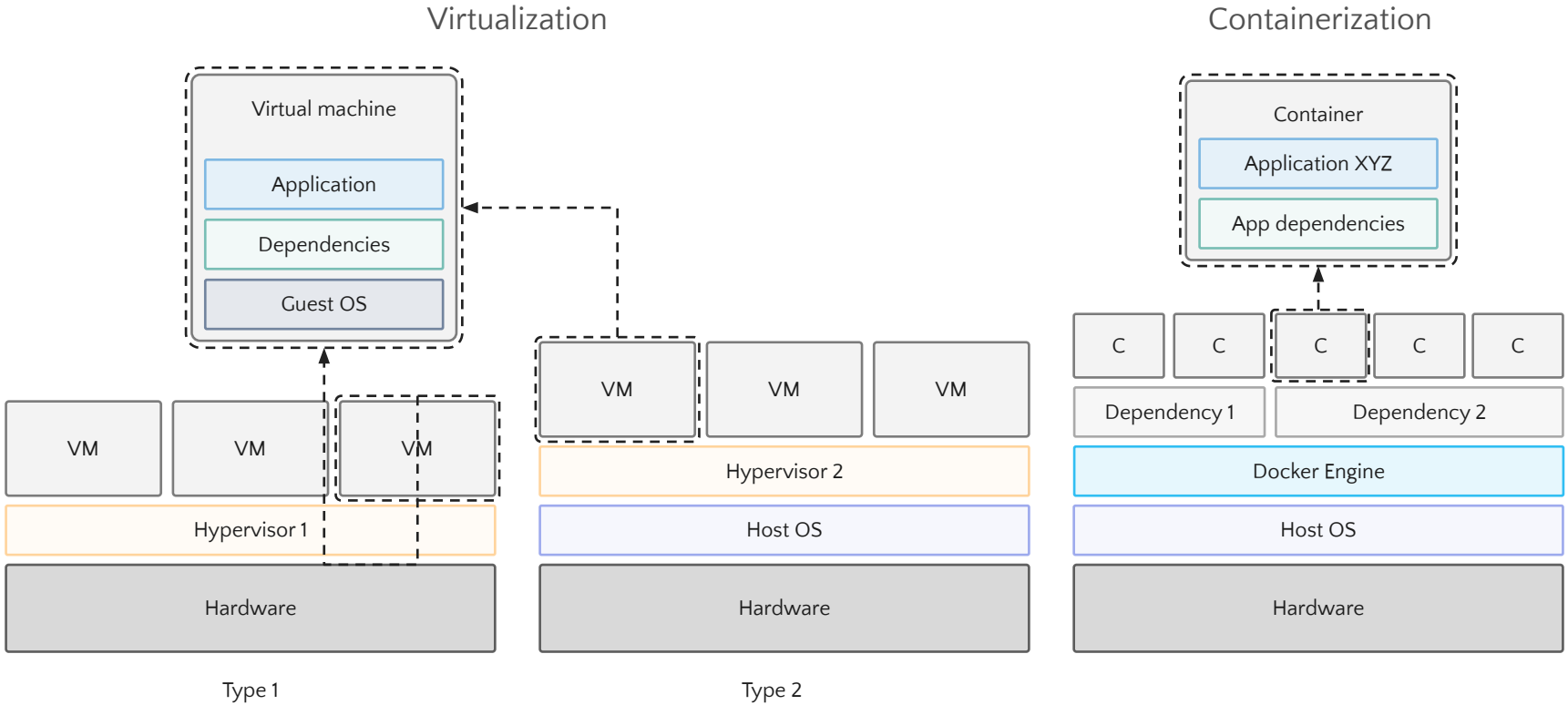
- Open Source Container Runtime
- Mac, Linux, Windows Support
- Command Line Tool
- “Dockerfile” format
- The Docker image format with layered filesystem

Docker Layered Filesystem

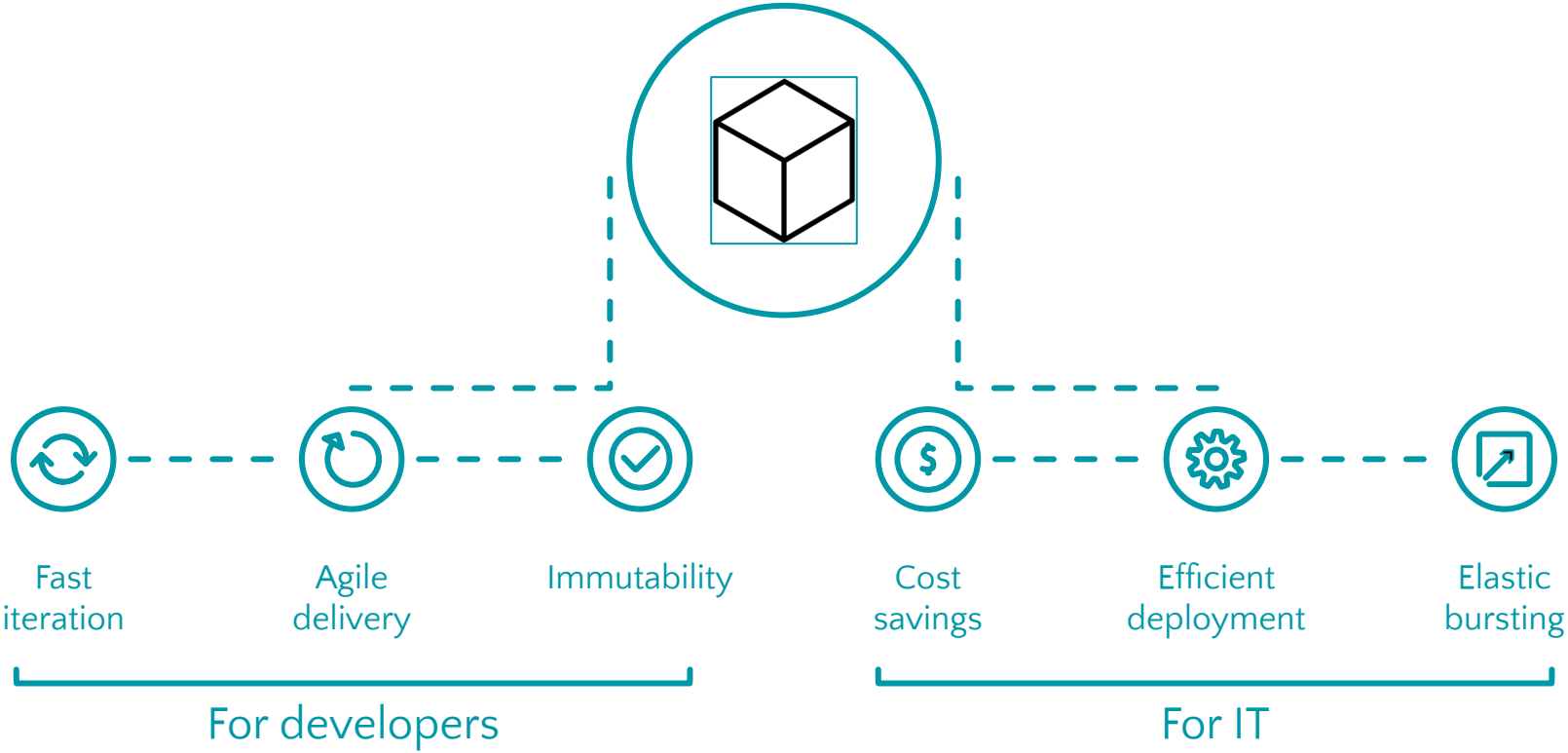


Docker Layered File System - Windows

Virtualization versus containerization



The container advantage



ACS Engine - Manual Windows Cluster Deployment

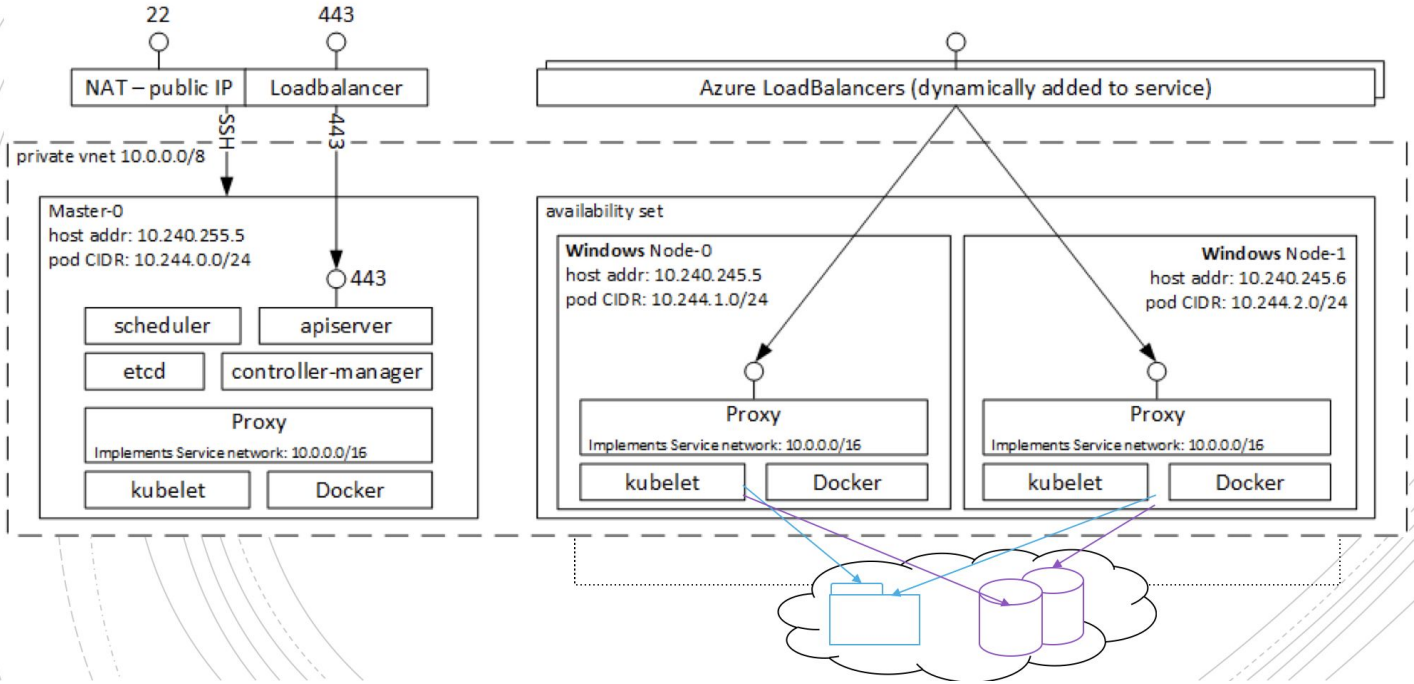
Generates ARM (Azure Resource Manager) templates for Docker enabled clusters on Microsoft Azure

- The input to the tool is a cluster definition.
- The cluster definition (or apimodel) is very similar to (in many cases the same as) the ARM template syntax used to deploy a Microsoft Azure Container Service cluster

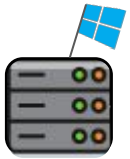
The cluster definition file enables you to customize your Docker enabled cluster in many ways including:

- choice of orchestrators
- multiple agent pools where each agent pool can specify:
  - VM Sizes, including GPU optimized VM sizes
  - Virtual Machine ScaleSets or Availability Sets
  - Storage Account Disks or Managed Disks
  - OS and distro
- Custom VNET
- Extensions

Windows Kubernetes on Azure

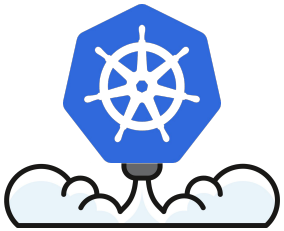


Building Windows w/Codefresh



Windows Node

Bring your own node, full caching and native support.



Agent + Windows Cluster

Behind the firewall access, code stays on node, *caching not yet available

Demo

Questions?

Thank you!

Resources!

https://github.com/jldeen/wink8sdemo

http://azure.microsoft.com/account/free

- 12 Months of FREE services
- $200 credit

Thank you

codefresh

Get 120 FREE builds/month

Codefresh.io

Azure

Learn More

azure.microsoft.com