Introduction to Docker Enterprise Edition

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Microsoft

The future of Linux Containers

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Docker Momentum in Three Years

14M

Docker Hosts

900K

Docker apps

77K%

Growth in Docker job listings

12B

Image pulls Over 390K% Growth

3300

Project Contributors

Microsoft docker

Docker Advances Mainstream Container Adoption

Open Source

Advancing the container industry with new open source projects

LinuxKit
Toolkit for building secure, lean and portable Linux subsystems

Moby Project
Library of components and framework for container ecosystem

Community Edition (CE)

Small DIY teams to started with Docker

Free to use and available for desktop, cloud and community Linux distros

Includes swarm mode orchestration, security and networking.

Enterprise Edition (EE)

Enterprise IT teams that build and run critical apps at scale in production

Subscription (software, support and certification) for cloud, enterprise x86, mainframe Linux and Windows Server 2016

Includes integrated orchestration, management, security and access control.

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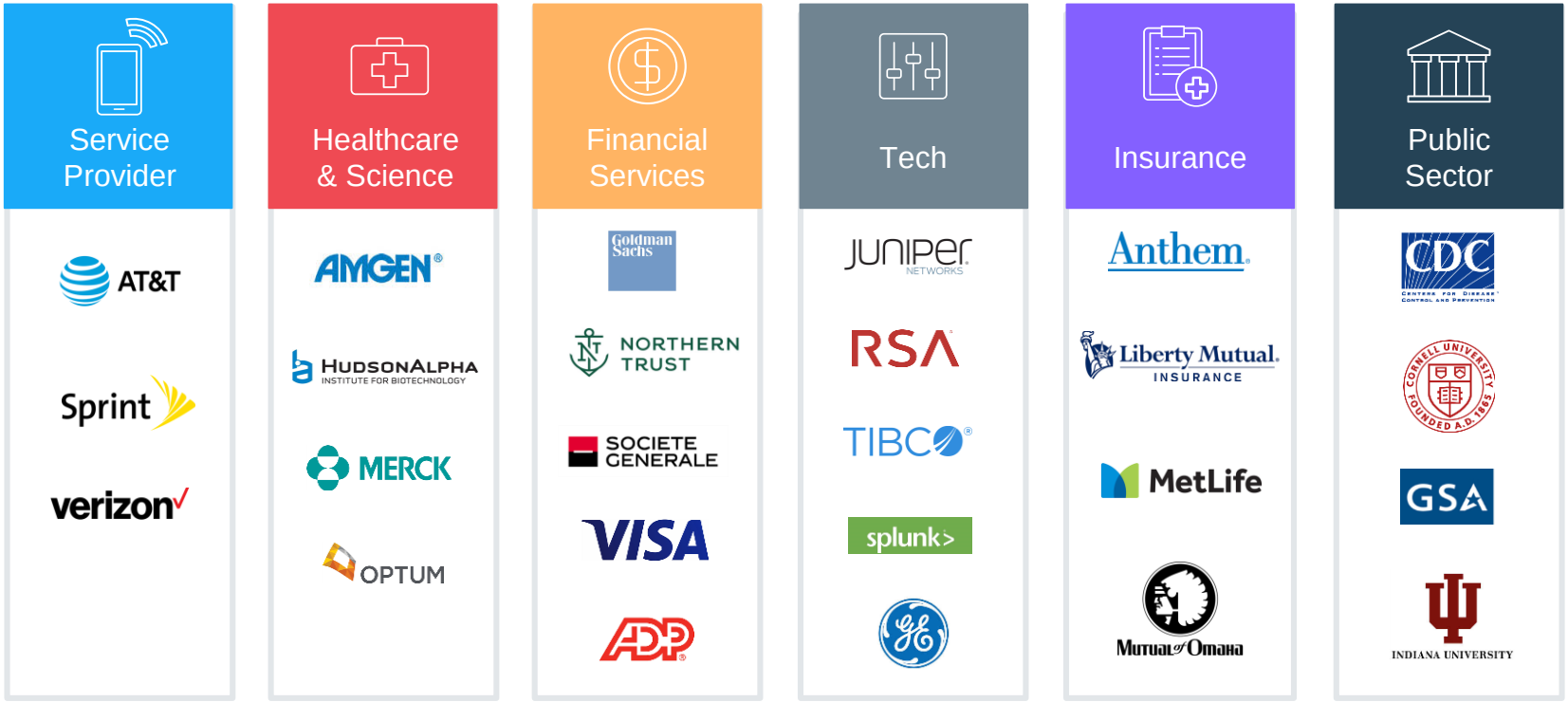
Docker in the Enterprise



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Certified Technology Ecosystem

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Docker delivers benefits

Agility

13X

More software releases

65%

Reduction in developer onboarding time

Portability

41%

Move workloads across private/public clouds

Eliminate

“works on my machine” issues

Control

62%

Report reduction in MTTR

10X

Cost reduction in maintaining existing applications

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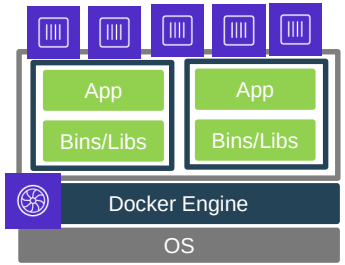
Container revolution

Docker Basics



Docker Image
The basis of a Docker container

Docker Container
The standard unit in which the application service resides

Docker Engine
Creates, ships and runs Docker containers deployable on physical or virtual host locally, in a datacenter or cloud service provider
(*Be careful of “FrankenDocker”, only Docker and official partners support authentic Docker)

Docker Trusted Registry
On-premises registry for image storing and secure collaboration

Universal Control Plane
Container orchestration and deployment tool, giving organizations the ability to provision and cluster containers across environments, built on **Docker Swarm** - A powerful, scalable clustering solution for Docker engines and can leverage all existing Docker APIs

Docker Compose / Docker Stack
Allows users to deploy multi-container applications into any Dockerized environment

Microsoft docker

Docker and Microsoft delivers integrated tooling across the application lifecycle

Build

Ship

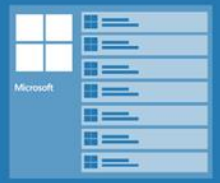
Run

Visual Studio

Visual Studio Tools for Docker

Docker for Windows

Library of Microsoft images on Docker Hub



Docker Datacenter for orchestration, management and security

Microsoft Operations Management Suite for hybrid cloud visibility and control

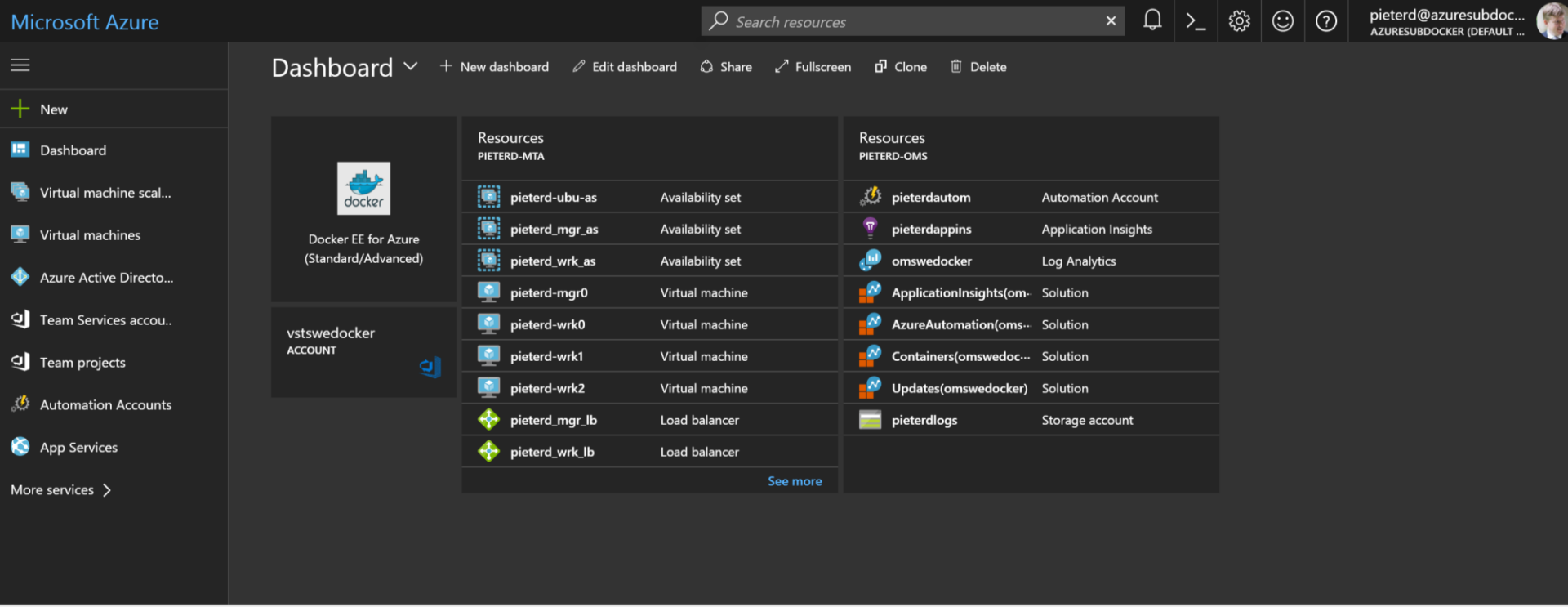
Windows Server

Docker containers available for Windows Server running on any infrastructure

Microsoft Hyper-V

Azure

www.docker.com/microsoft



Bash

```
ype "az account list" to see your subscriptions.
ype "help" to learn more about Cloud Shell.

ieter@Azure:~$ cat /proc/1/cgroup
1:memory:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
0:freezer:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:hugetlb:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:cpu,cpuacct:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:perf_event:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:net_cls,net_prio:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:blkio:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:cpuset:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:devices:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
:pids:/docker/e94784bf9d832f461963ad633b10d4055fbc6c548ef2f82842b66bd5ed1a693a
```

Microsoft images on Docker hub

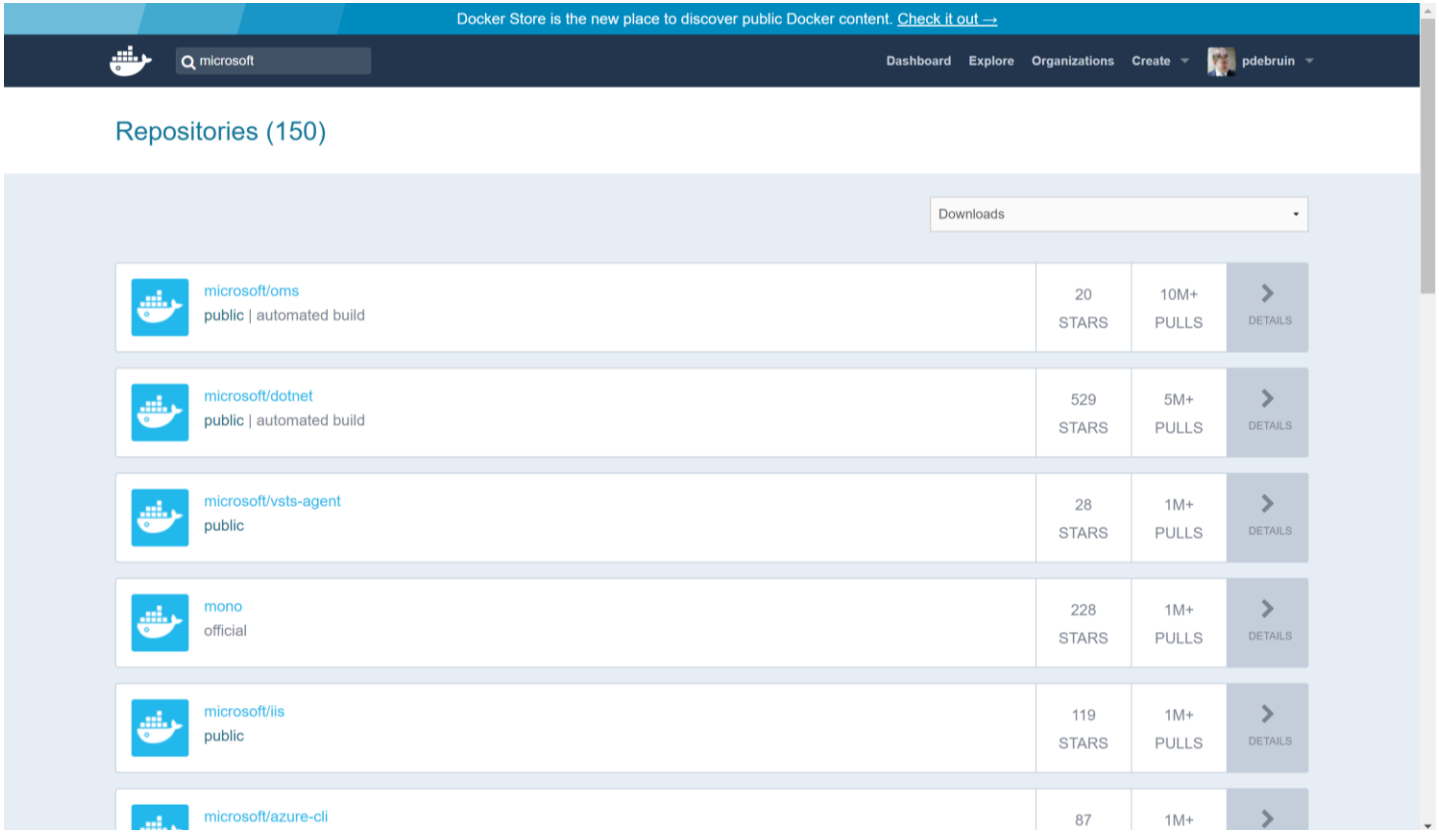


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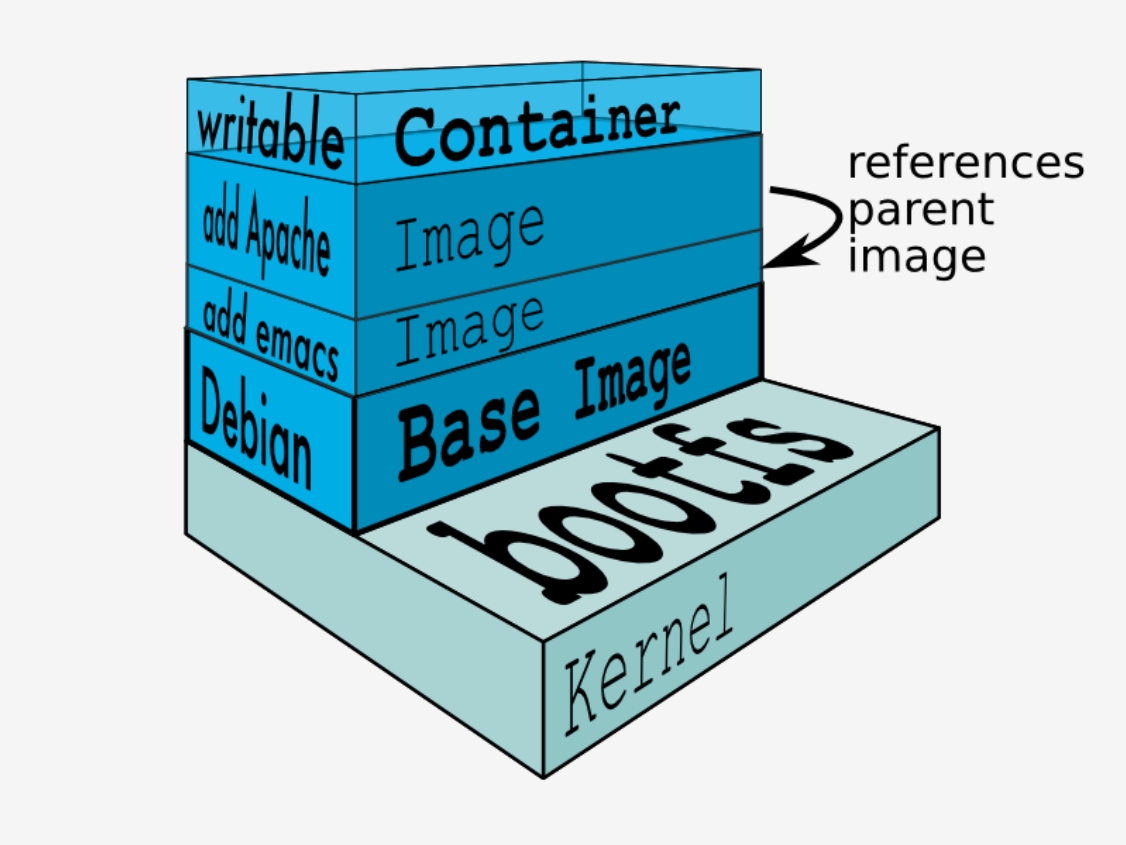
Image layers

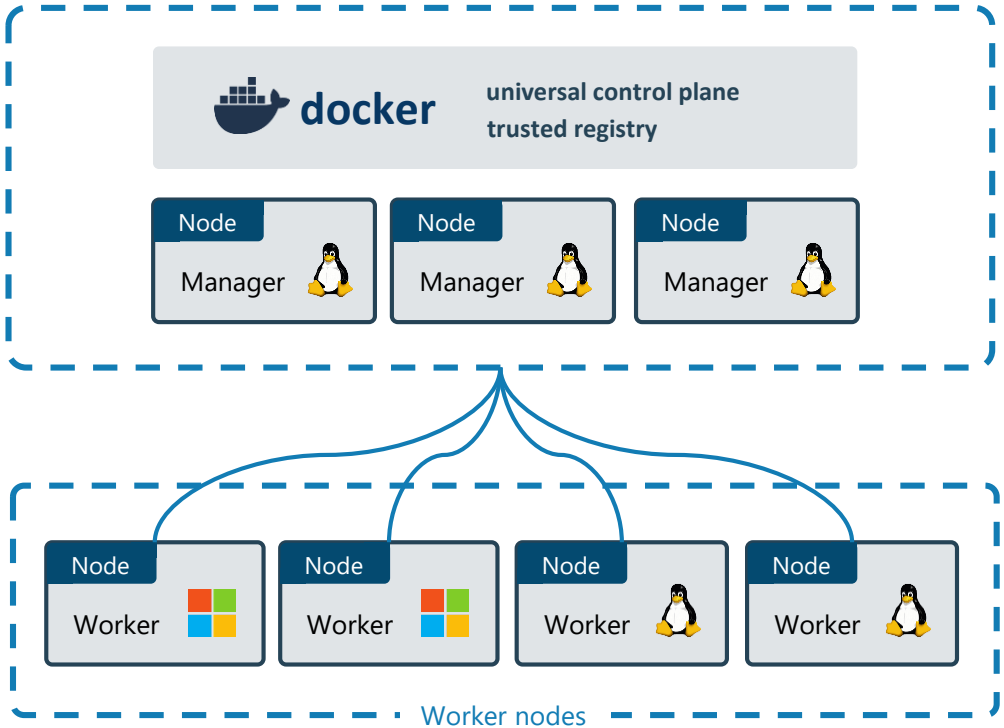


DockerCon announcements: Microsoft contributions

Organization	2016 Changesets
Total Independent	**41.5%**
Yong Tang	4.7%
Harald Albers	4.4%
Allen Sun	2.8%
Steve Durrheimer	2.7%
All others	26.9%
Docker	40.6%
Microsoft	7.7%
IBM	3.2%
Huawei	3.0%
Red Hat	3.0%
All other corporate	1.0%

Microsoft docker

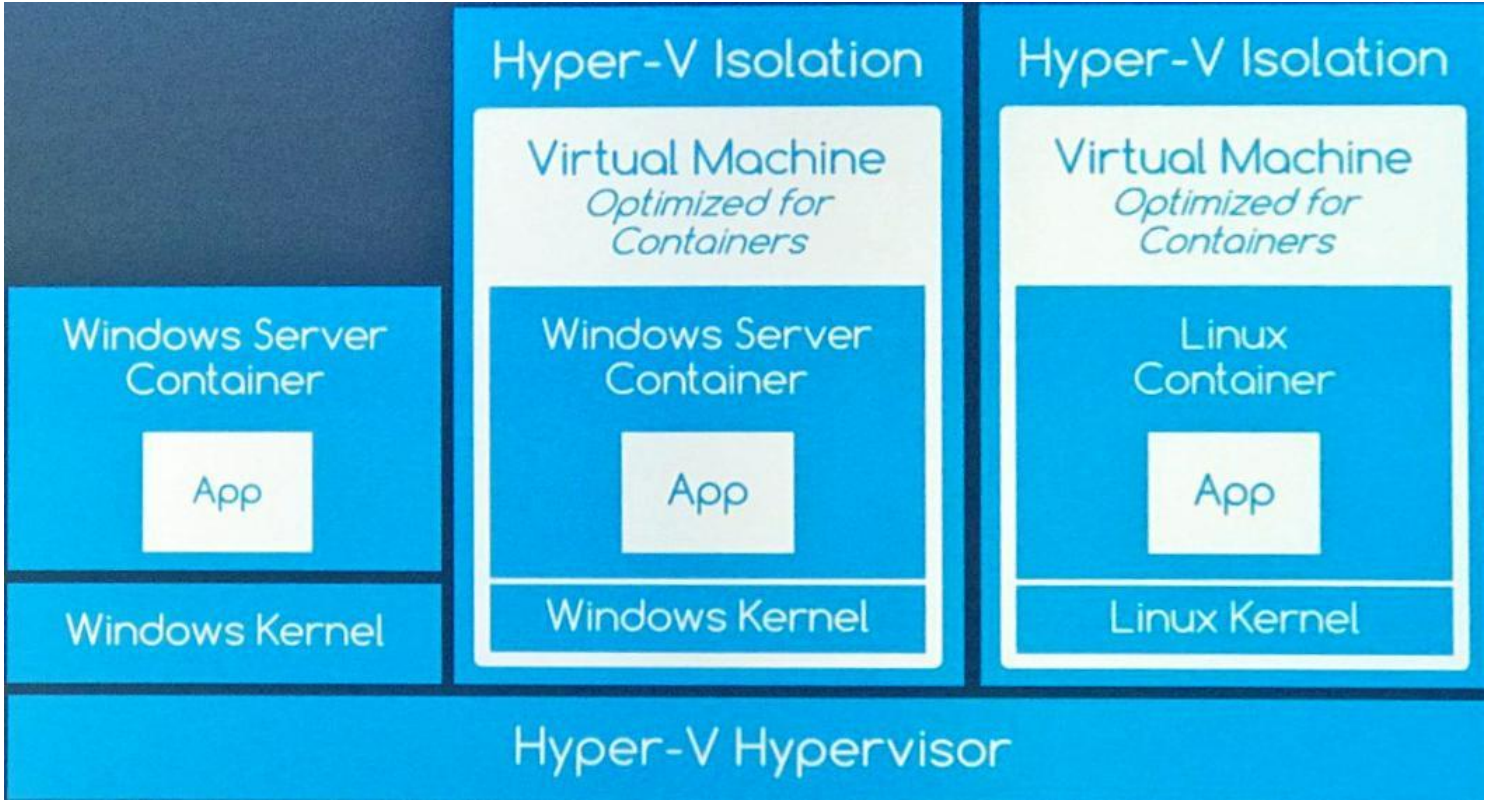
DockerCon announcements: Mixed clusters



- Linux Managers
  - UCP controllers + DTR replicas
  - Authentication, Image Scanning, Signing and shared services
- Mixed Workers
  - Windows native containers on Windows nodes
  - Linux containers on Linux nodes
  - Overlay network support between Linux and Windows
- Some features not yet in Windows
  - Port Routing Mesh (HRM supported in host mode only)
  - Encrypted Networks

Microsoft docker

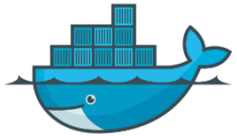
DockerCon announcements: Linux containers on Hyper-V



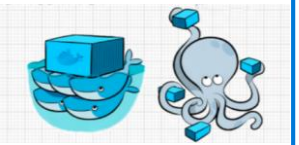
Microsoft docker

Microsoft-Docker partnership results

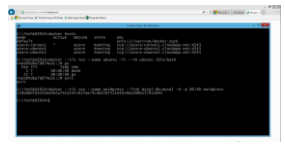
Docker extensions in Microsoft Azure



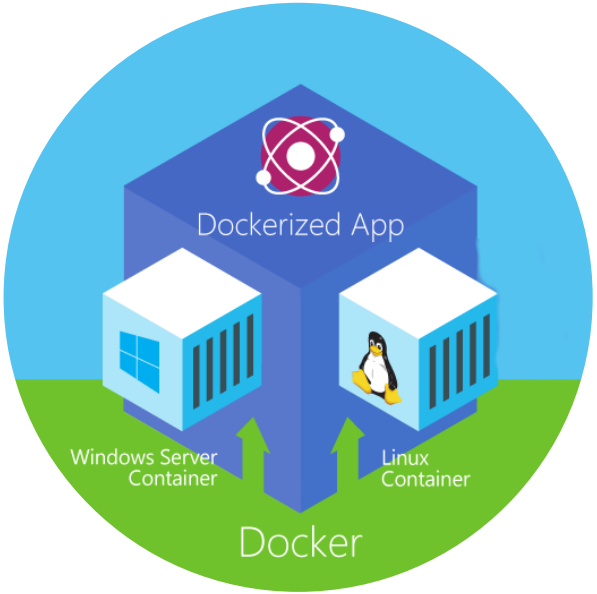
Libswarm support



Docker client for Windows



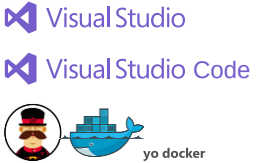
Docker VM image in Azure



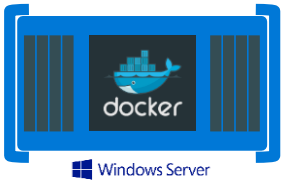
ASP.NET Core Docker image

Orchestration in Azure

Developer tools



Windows Server Containers



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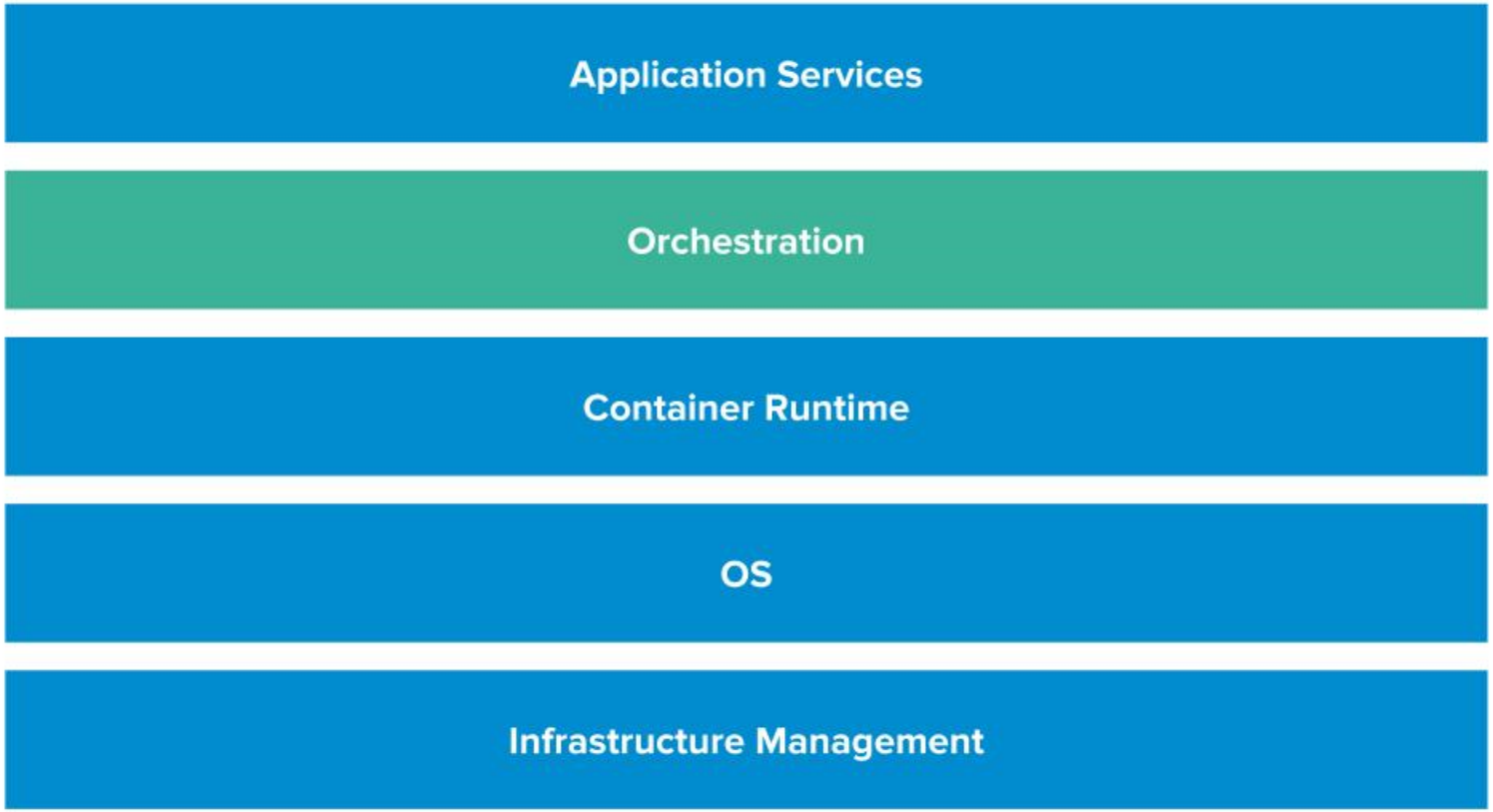
Orchestration is just one aspect…



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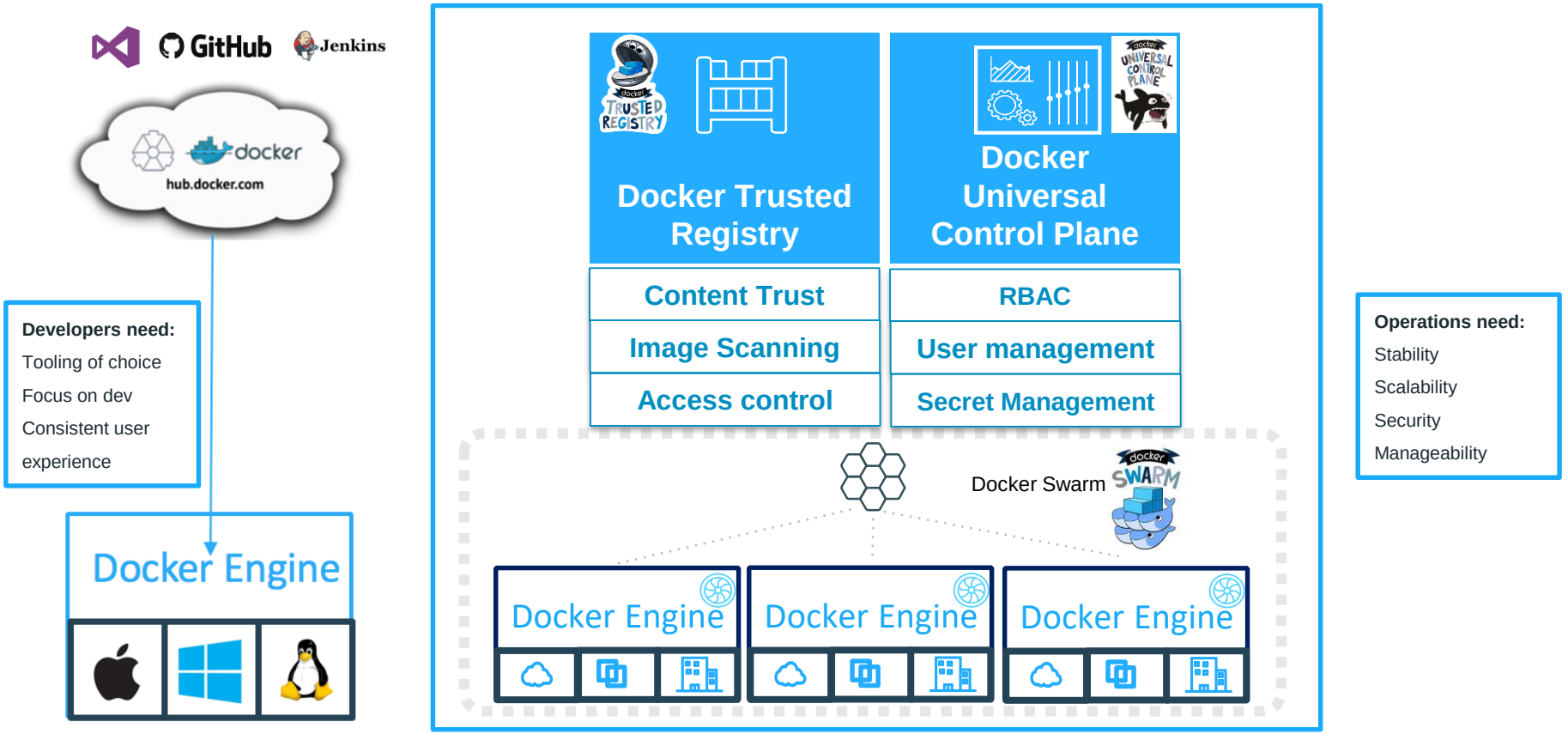
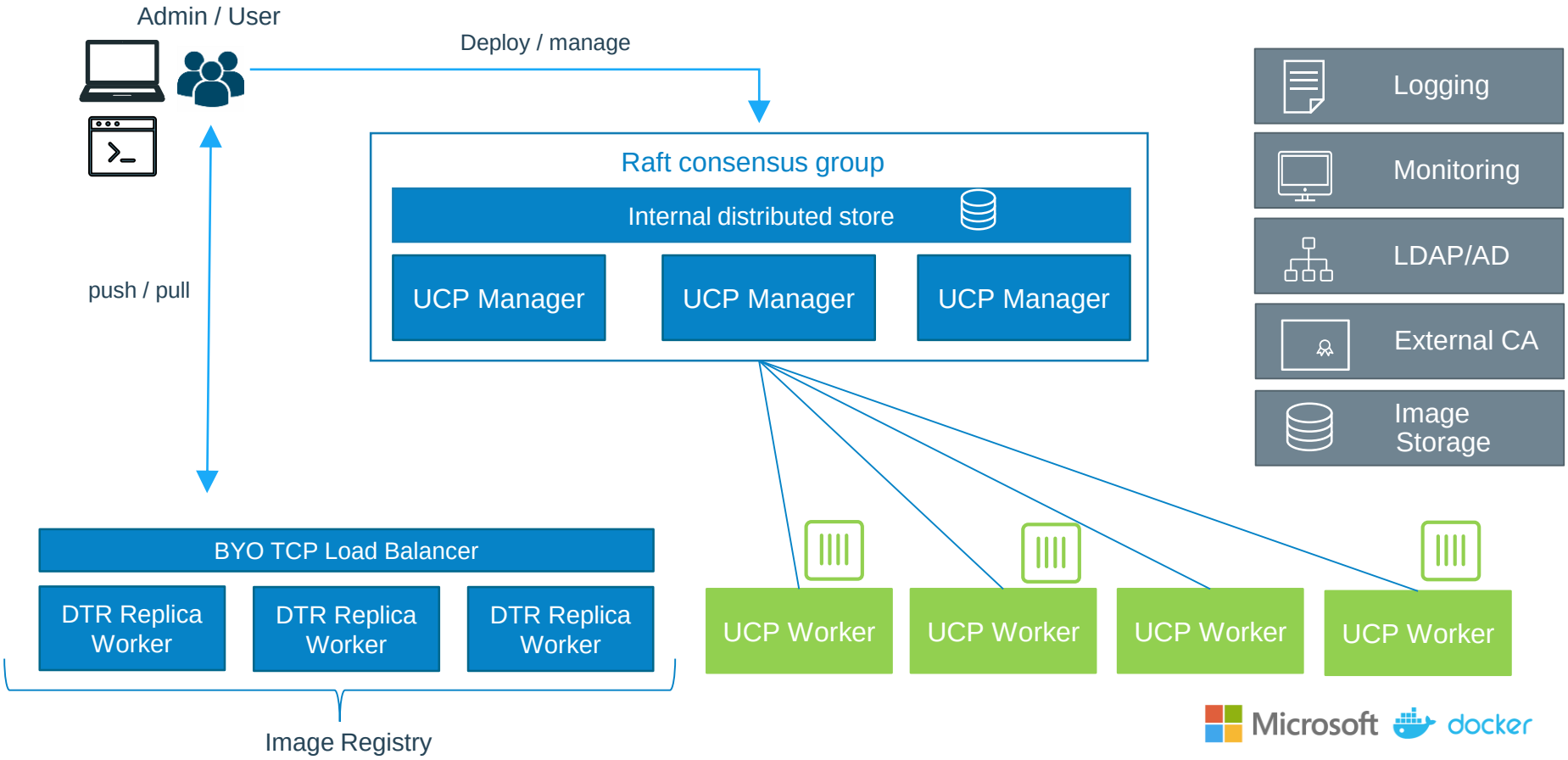
Docker Enterprise Edition for devs and ops

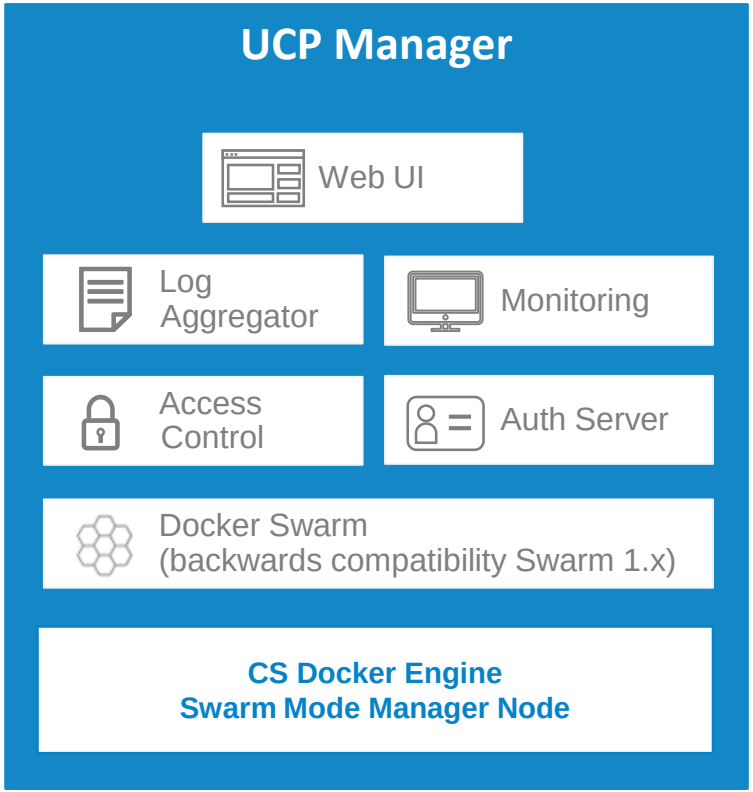


Container hosts are generic nodes

Docker EE Architecture



Deep Dive: UCP Manager Nodes



- Backwards compatibility for Swarm 1.x and simultaneous support for swarm mode
- Point and click UI to manage nodes, services, containers and networks
- CLI and API support
- Secure access control with LDAP/AD support and granular RBAC
- Content security policy

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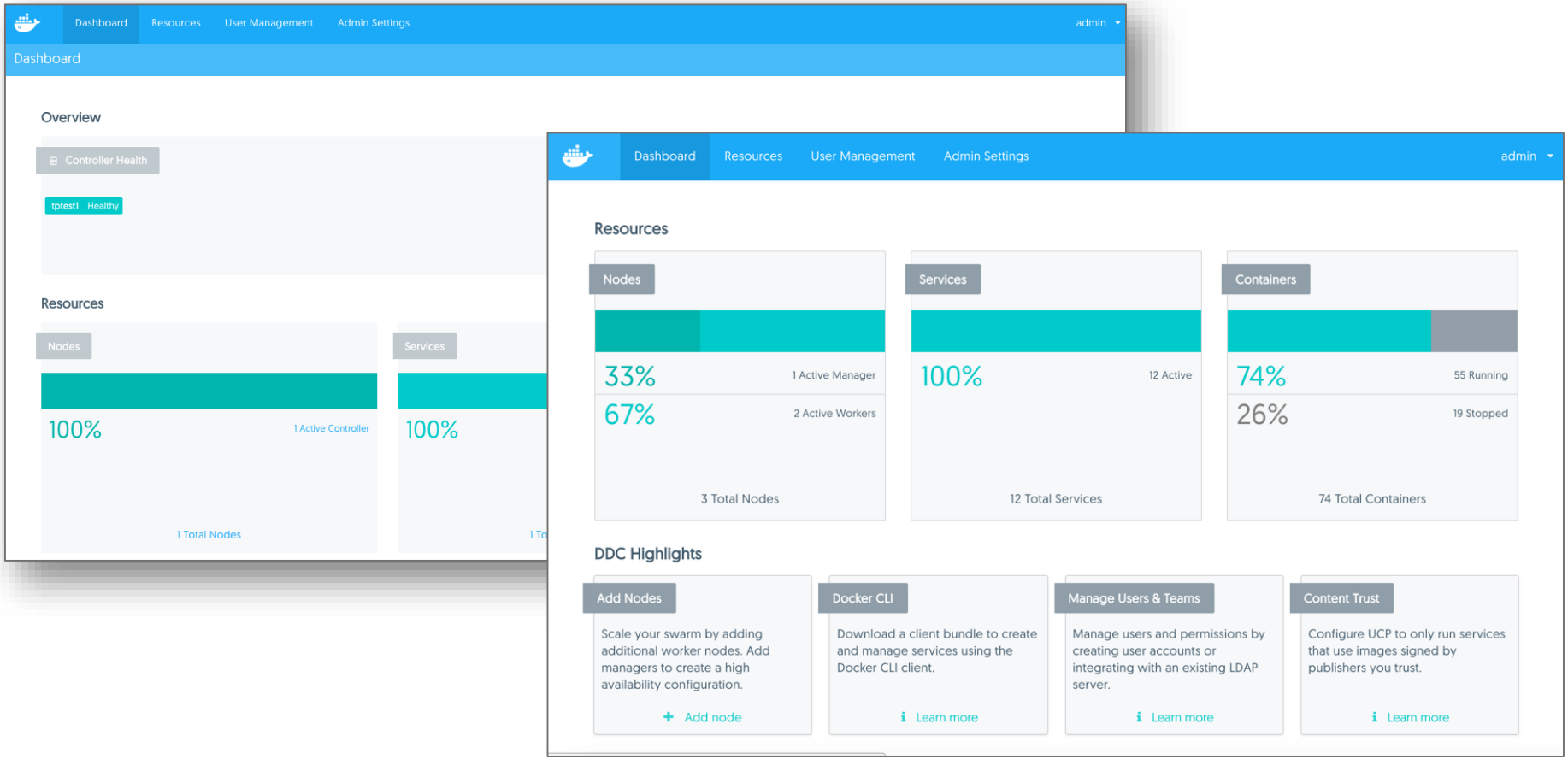
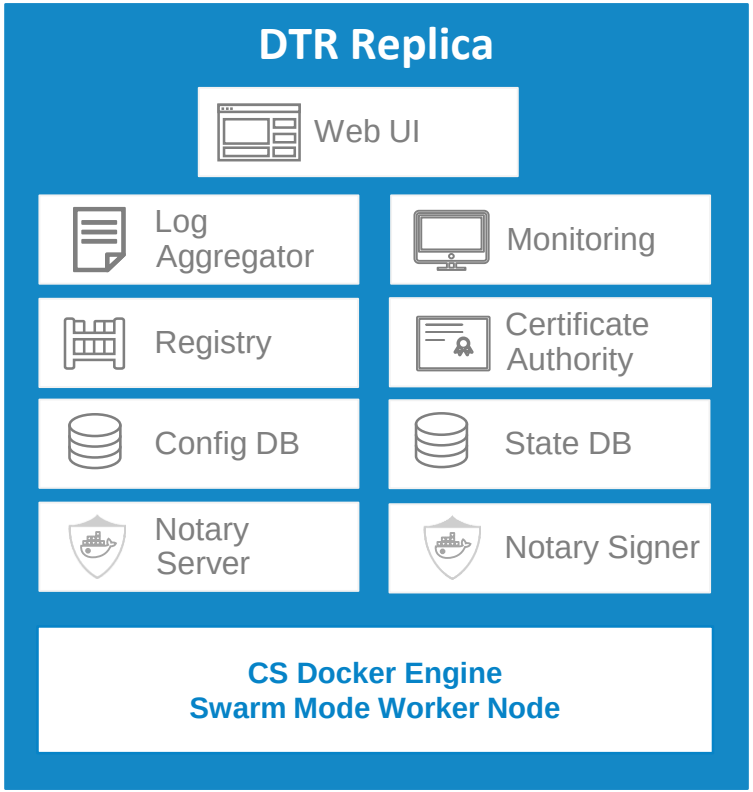
Intuitive UI to orchestrate and manage at scale



Deep Dive: DTR Replica Worker Nodes



- Point and click UI to manage repos, images and team collaboration
- Image management with labels, tag store and garbage collection
- HA and redundant system
- Content security with built in image signing and verification
- Wide variety of storage driver support for image store

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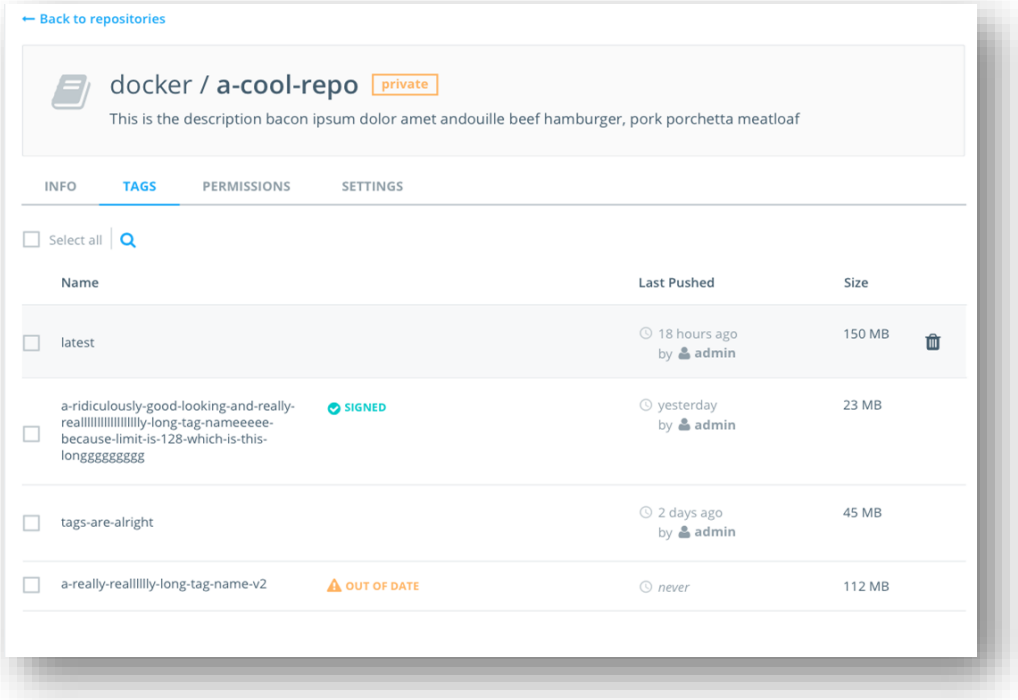
Central image management



- Search and browse repos
- RBAC by repo
  - Users, Teams, Orgs
  - Read, Read-Write, Admin
- Garbage collection
- Image tag metadata
- Integrated Content Trust

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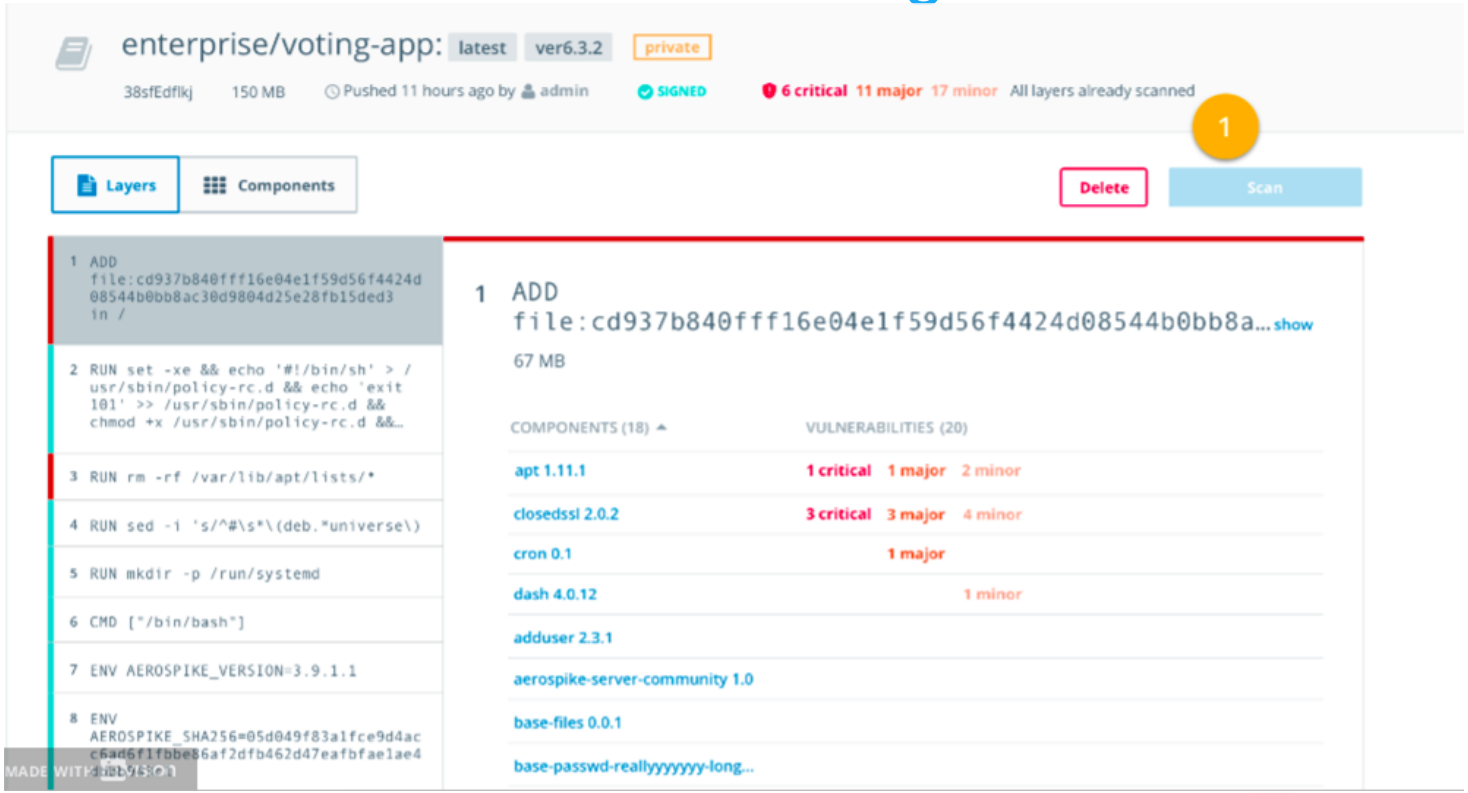
Security Scanning:
Get a full BOM for a Docker Image



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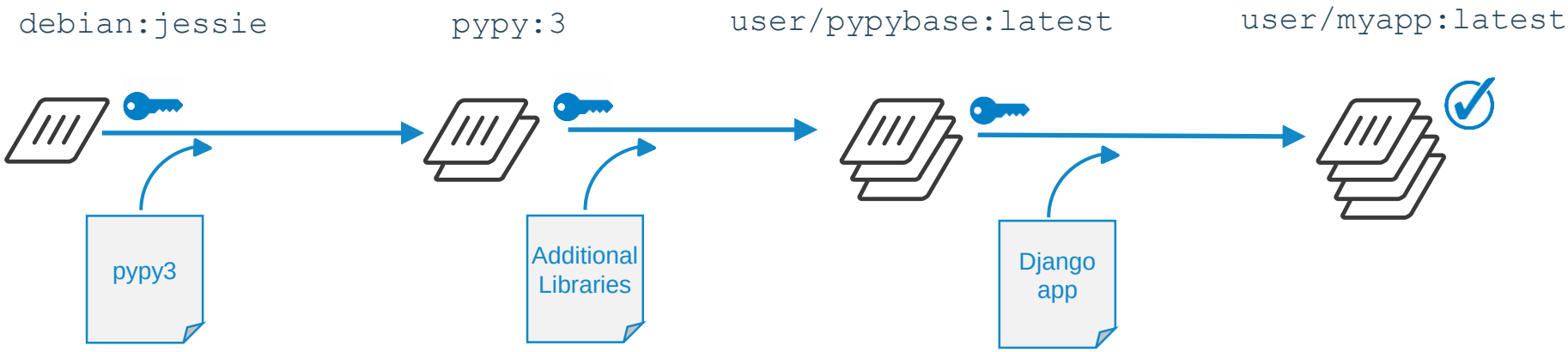
Security: Trusted image chaining



Add image layer, sign then push image to private registry
Continue until complete for a trusted chain of image layers

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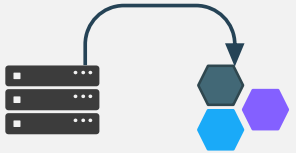
One platform and one journey for all applications

1

Traditional apps in containers
Gain portability, efficiency and security

2

Transform to Microservices
Look for shared services to transform



3

Accelerate New Applications
Greenfield innovation

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Modernize Traditional Apps: Customer Benefits

Portable	Enable workload portability across hybrid cloud infrastructure
Secure	Reduce the attack surface are of legacy apps and gain visibility to know exactly what is running in production
Efficient	Optimize infrastructure costs and streamline operations

Gain immediate benefits without changing the app

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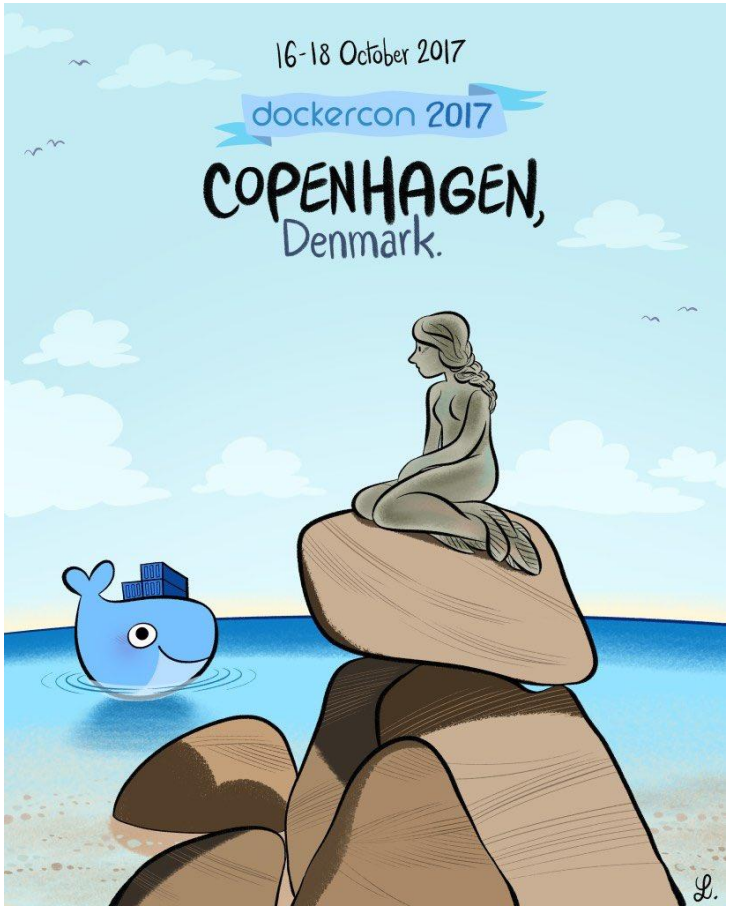
See you at DockerCon Europe http://dockr.ly/CPH



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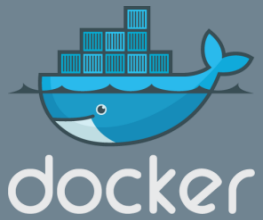
Microsoft


docker