

# Docker and Windows Server 2016

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# Docker on Windows Server 2016

- Now 98% of enterprise workloads supported by Docker
- Proven benefits of Docker on Linux available to Windows Server developers and IT Pros
- One Docker platform and one adoption journey for all enterprise applications and infrastructure
- Docker CE Engine with Windows Server 2016 at no additional cost



# Docker on Windows Server 2016

- Microsoft and Docker formed partnership in 2014
- Windows kernel (both 2016 and Windows 10) now has containerization primitives
- Microsoft and Docker worked to port Docker Engine to Windows, all in the open on <https://github.com/docker/docker>
- Ancillary services like registry, Hub, etc. have multi-arch support, maintain Linux and Windows Docker images side by side



# Docker and Microsoft delivers integrated tooling across the application lifecycle



Build



Ship



Run



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



# Windows Server 2016 technical details

## Choice of base image

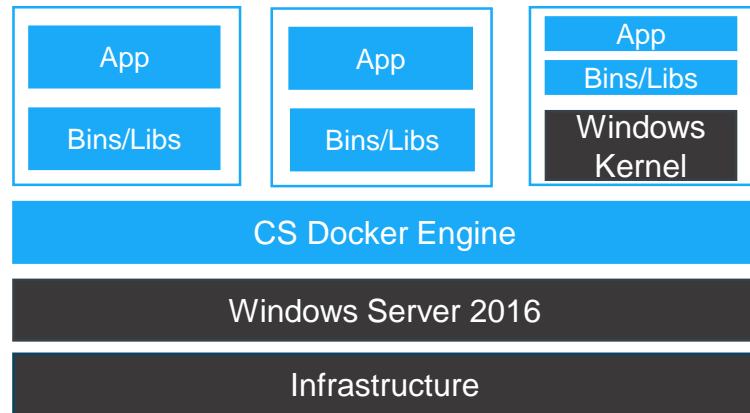
**windowsservercore:** Runs most Windows Server apps, eg. IIS, SQL Server, full .NET Framework

**nanoserver:** New minimal Windows version, runs IIS and .NET Core

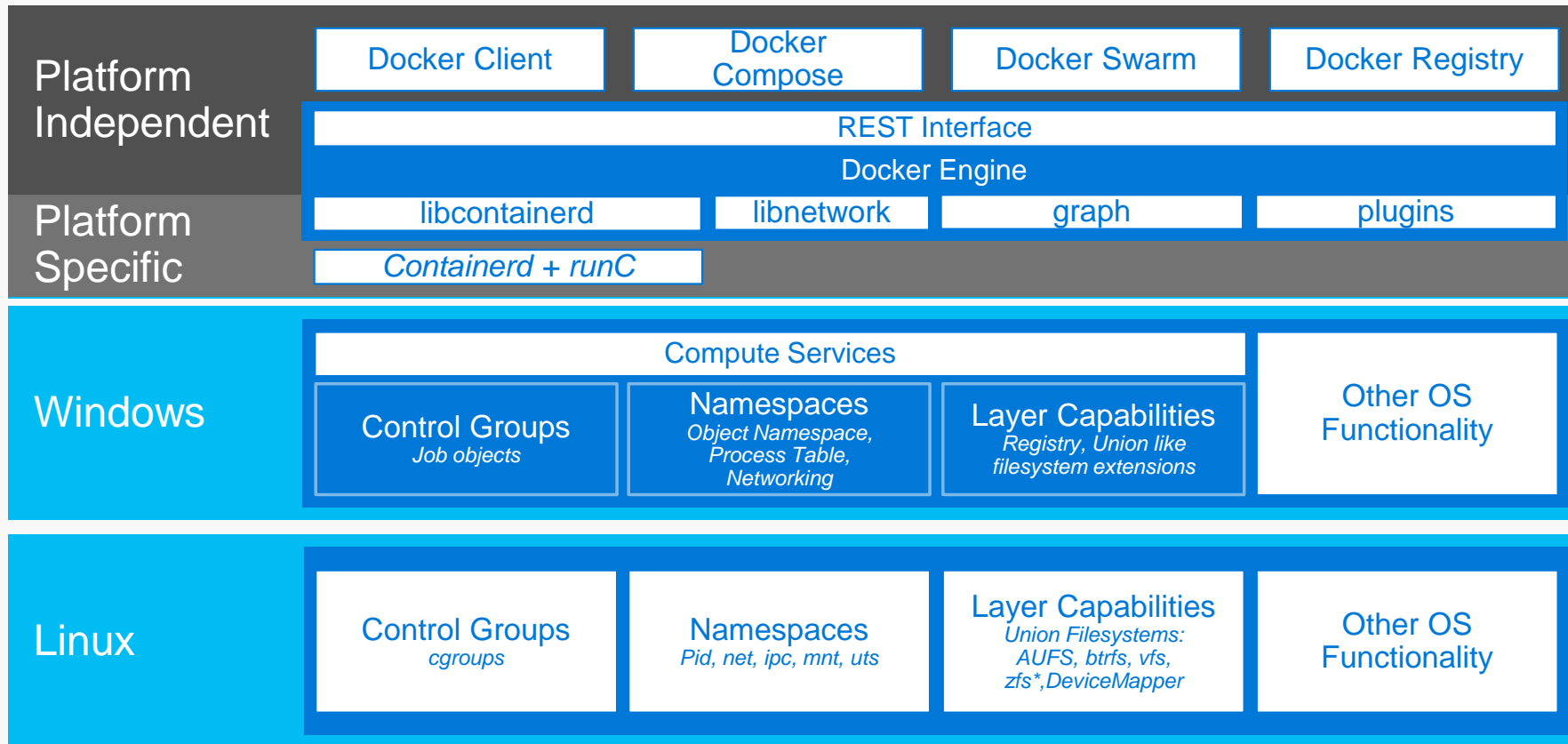
## Choice of isolation

Windows Server Containers

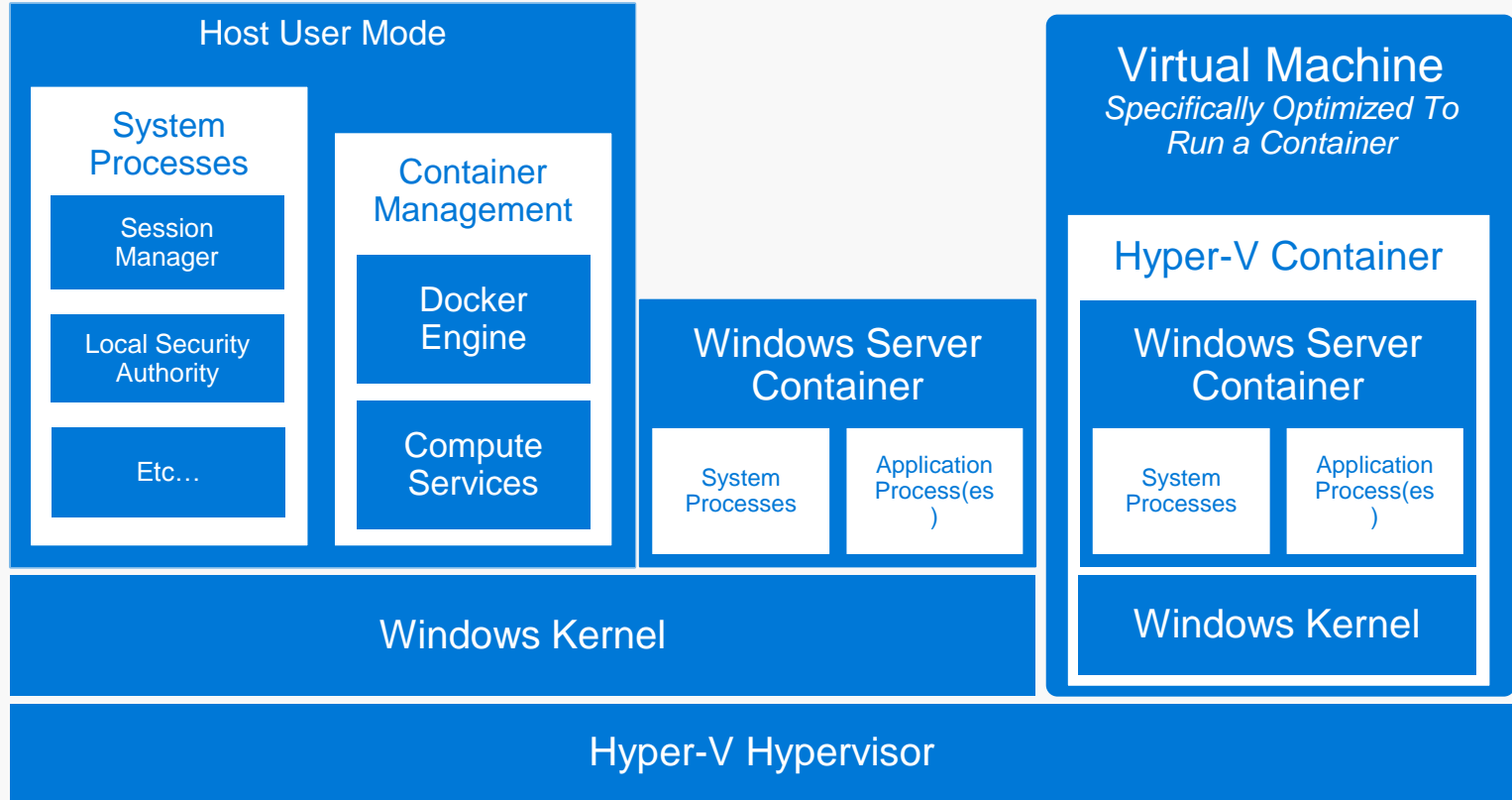
Hyper-V Containers



# Comparing OS Architectures

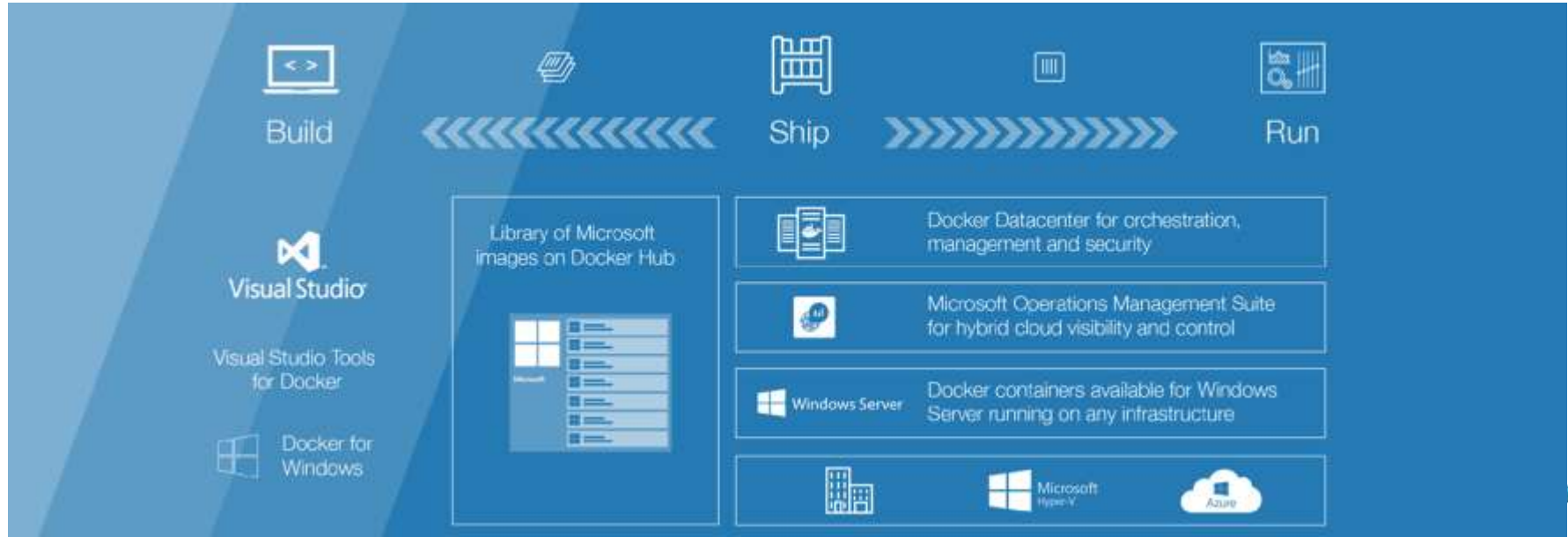


# Windows and Hyper V Containers



# Windows Server 2016 and Docker for IT pros

- Eliminate “works on my machine” problem
- Makes maintaining CI machines much simpler
- Docker images and bundles are great interface with Ops





# Use Case: Development and test in the cloud

DEVELOPERS

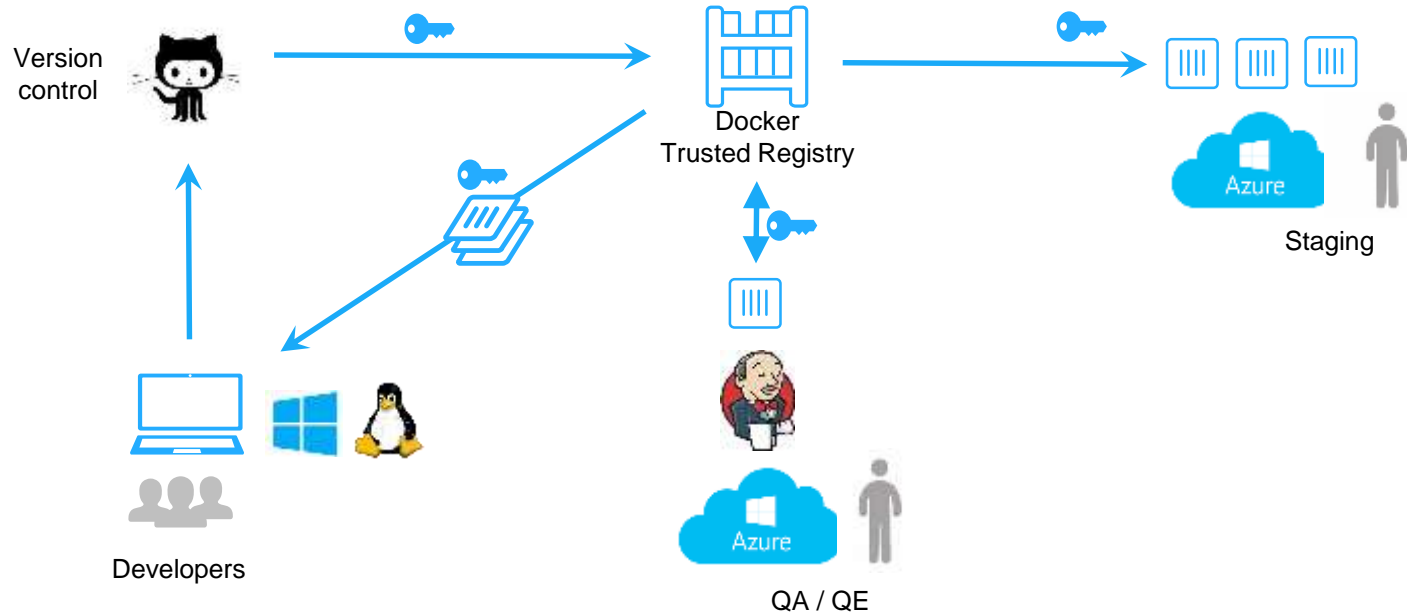
IT PRO

**BUILD**

Development Environments

**SHIP**

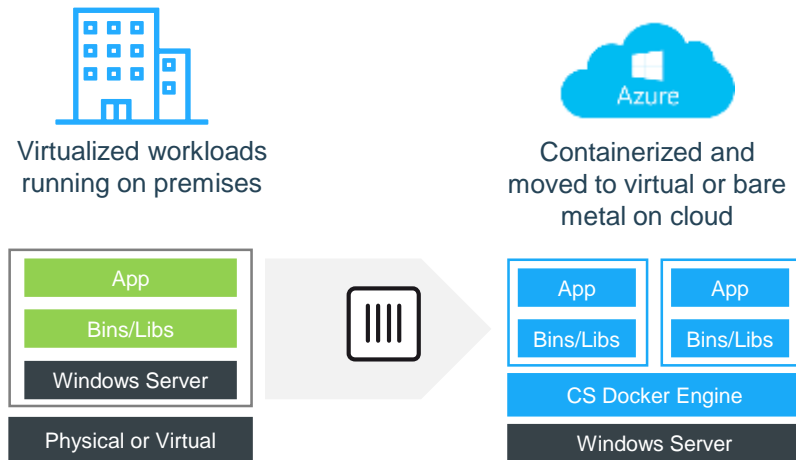
Secure Content & Collaboration



# Use Case: Lift & Shift

- **Application Agility and Flexibility**
- **Standardize:** Docker abstracts away the infrastructure and virtualization layers
  - No custom-configuring servers - Apps ship with their dependencies (IIS, .NET, Node, etc.)
- **Isolation:** Two dockerized apps with different .NET versions will run happily side by side
- **Portability:** Containers move without friction from one environment to another – no recoding from virtual, on-prem, cloud

**Lift and Shift:** Containerize legacy and microservices to gain portability



# Docker Datacenter

Manage Linux, Windows, x86

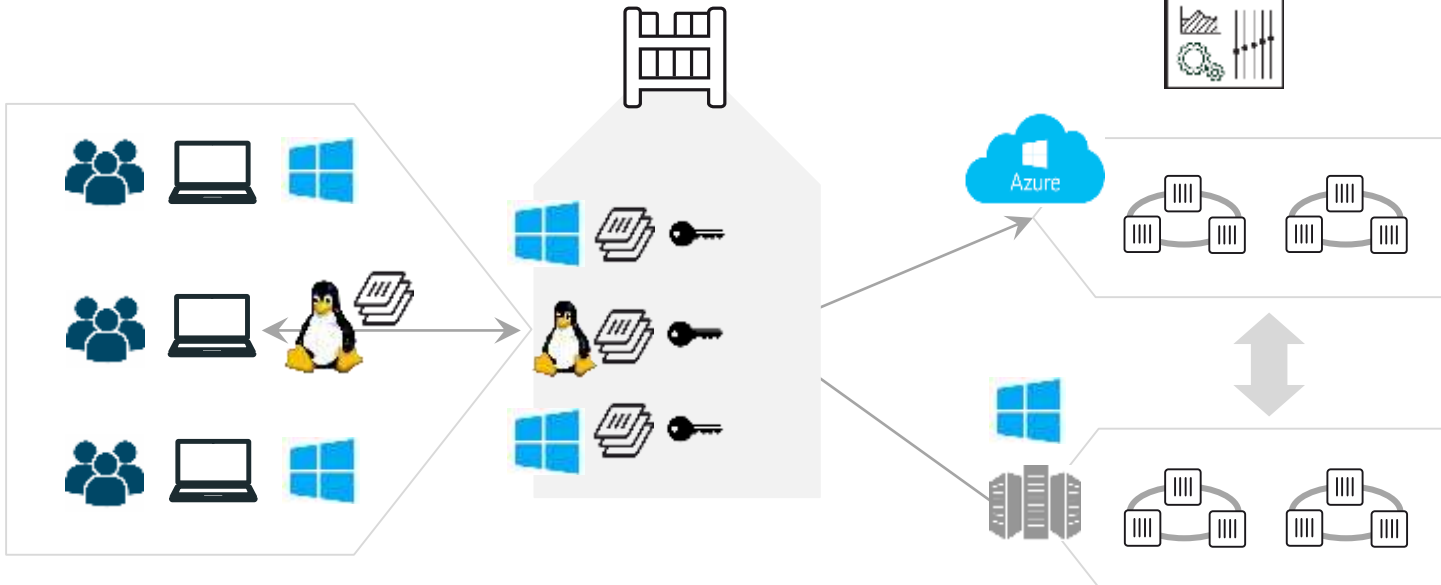
Developers

IT Operations

**BUILD**  
Development Environments

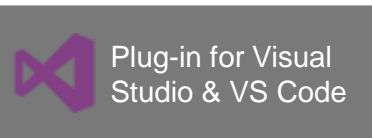
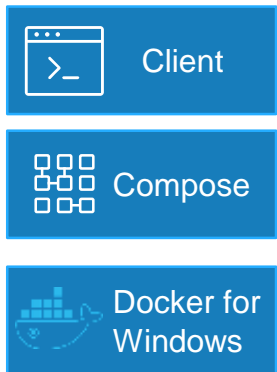
**SHIP**  
Secure Content & Collaboration

**RUN**  
Deploy, Manage, Scale

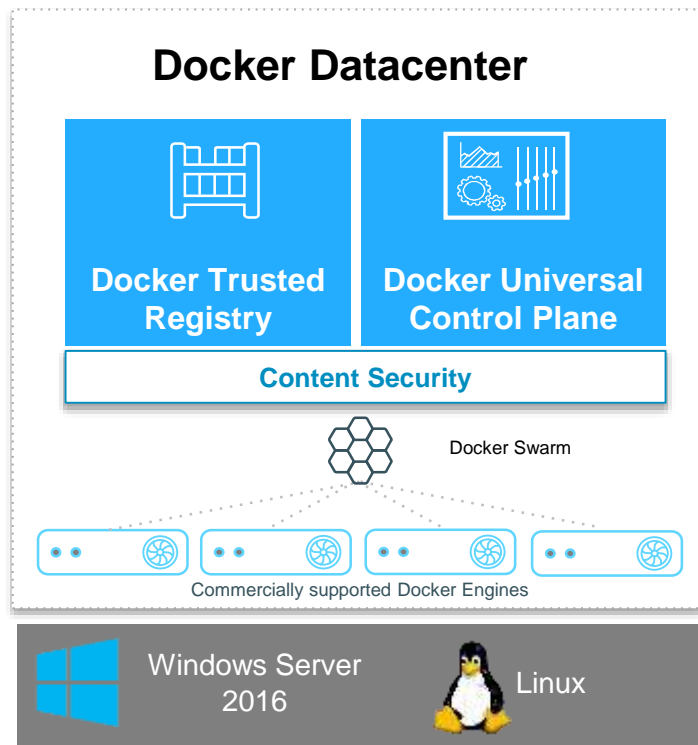


# Docker Datacenter for Windows

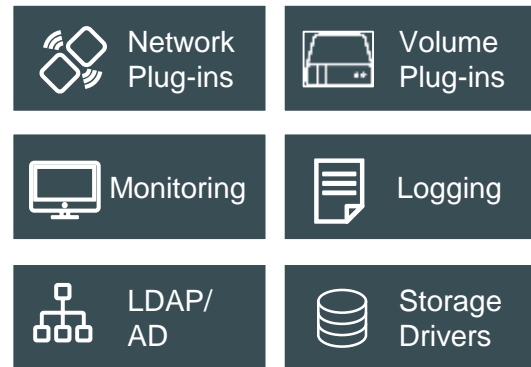
## Docker Interfaces



## Docker Datacenter



## Partner Integrations



Any Application

Anywhere



# Windows Server 2016 & Docker CS Engine

## Commercial Relationship

- Enterprise Class Support for Docker Engine with SLAs and hotfixes
  - 1yr/3yr support
  - 5x8 or 24x7
  - Full support for Docker API
- Purchased bundled with Windows Server 2016
  - Windows Server 2016 Datacenter
  - Windows Server 2016 Standard
  - Windows Server 2016 Essentials



# Demo Time



# Get Started with Docker Windows Containers

## 1. Windows 10 with Anniversary Edition update

- Install Docker for Windows (public beta channel)
- Run Windows Server 2016 in VM

## 2. Azure

- Windows Server 2016 RTM
- Nanoserver 2016

## 3. Other (macOS, Linux, older Windows)

- Windows Server 2016 in VM (VirtualBox, VMWare)

```
Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force  
Install-Module -Name DockerMsftProvider -Force  
Install-Package -Name docker -ProviderName DockerMsftProvider -Force  
Restart-Computer -Force
```

<https://blog.docker.com/2016/09/build-your-first-docker-windows-server-container/>



# Docker on Azure

## Docker for Azure

- Simple setup of Docker 1.12 swarm-mode on Azure
- Integrates with Azure load balancing etc. to make deploying apps smooth and fast
- DDC is an install-time option, or you can install it later on

## Docker Datacenter Azure Templates

- Pre-built template in Azure Marketplace
- Various VM deployment options
- BYOL Docker Datacenter license





# Additional Work with Microsoft

## .NET Core

- .NET Core works great in Docker Linux containers
- Microsoft .NET team maintains base images
- .NET Core also for Nano Server and Windowsservercore Docker containers
- To lift and shift older .NET apps, use .NET on windowsservercore Docker images

## SQL Server

- Docker Windows SQL Server container images already available and Linux in private beta

## Visual Studio Tooling

- Plugins for both Visual Studio Code and Visual Studio
- Help with Docker project setup
- Line-by-line debugging



# Next Steps...

- Resources:
  - <https://www.docker.com/microsoft>
  - <https://blog.docker.com/2016/09/dockerforws2016/>
  - <https://blog.docker.com/2016/09/docker-microsoft-partnership/>
- Try Windows Server 2016
  - <https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2016>
  - <https://blog.docker.com/2016/09/build-your-first-docker-windows-server-container/>
  - Run on Azure
- See what others have built
  - <http://blog.alexellis.io/>
  - <https://blog.sixeyed.com/>
  - <http://stefanscherer.github.io/>
- Show us what you've built, tweet at @friism and @docker
- Register for our upcoming Webinar, October 25th, 10AM PST
  - Containerize Windows Workloads with Image2Docker Tool





THANK YOU