

# AKS – Azure Kubernetes Services

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# whoami



- Cloud developer/architect, DevOps, integration and tech pre-sales
- Working with Kubernetes, microservices and API management
- Speaker - Container Camp, Microsoft Ignite, API Days, ....
- Azure MVP
- Application DevOps Kubernetes at NBN Co
- Container and DevOps community member
- Developed for Linux in early 2000s



# Agenda

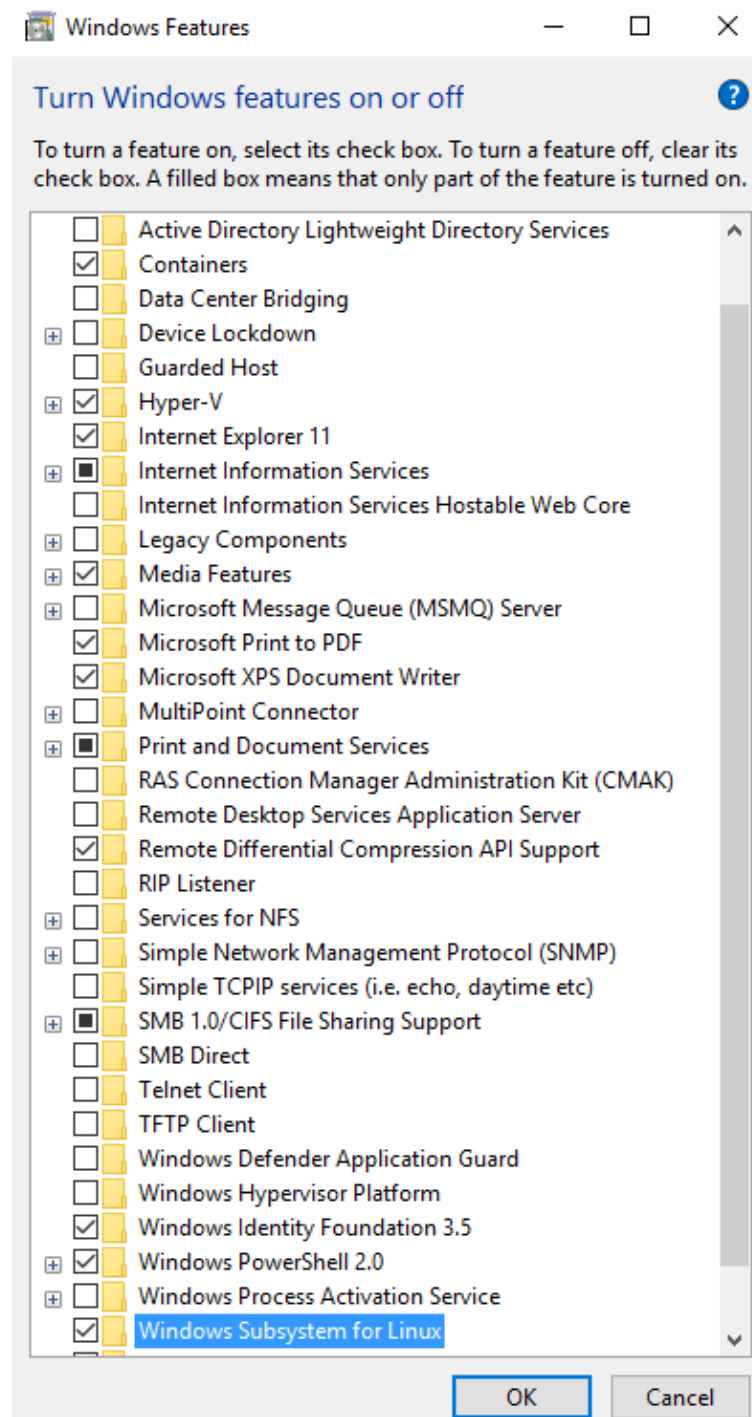


- Your laptop setup
- From ACS to AKS
- From Source Code to Kubernetes
- Demos / Use case discussions



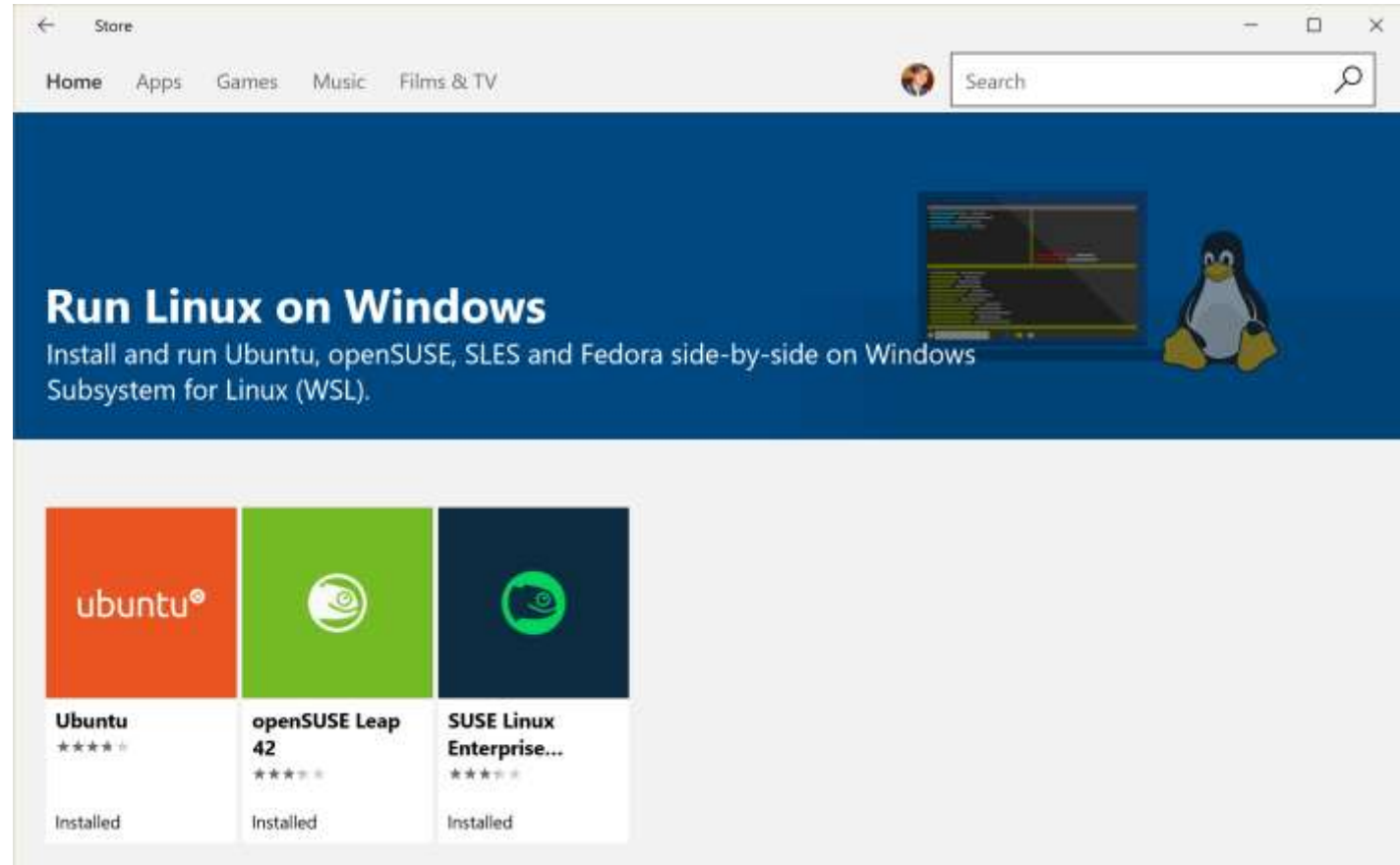
# Enable Windows Features

- Containers
- Hyper-V (Windows Professional or more required)
- Windows Subsystem for Linux



# Install from Store – Multiple Linux Distros

- Multiple Distros
- Linux User Mode
- Windows 10
- Windows Server
- SSH, python, go, linux tools
- Git



# Process level

```
jorge@azuretar: /  
jorge@azuretar:/$ ll  
total 52  
drwxr-xr-x  0 root root  4096 Jul 15 15:42 ./  
drwxr-xr-x  0 root root  4096 Jul 15 15:42 ../  
drwxr-xr-x  0 root root  4096 Aug  5 09:49 bin/  
drwxr-xr-x  0 root root  4096 Mar 30 20:59 boot/  
drwxrwx---  0 root root  4096 Jan  1 1970 cache/  
drwxrwx---  0 root root  4096 Jan  1 1970 data/  
drwxr-xr-x  0 root root  4096 Aug 15 23:41 dev/  
drwxr-xr-x  0 root root  4096 Aug  5 09:50 etc/  
drwxr-xr-x  0 root root  4096 May 31 01:04 home/  
-rwxr-xr-x  1 root root 51272 Jan  1 1970 init*  
drwxr-xr-x  0 root root  4096 Mar 30 20:59 lib/  
drwxr-xr-x  0 root root  4096 Aug  5 09:46 lib64/  
drwxr-xr-x  0 root root  4096 Mar 30 20:55 media/  
drwxr-xr-x  0 root root  4096 Jul 15 15:42 mnt/  
drwxr-xr-x  0 root root  4096 Aug  1 01:19 apt/  
dr-xr-xr-x  8 root root    0 Aug 15 23:41 proc/  
drwx----- 0 root root  4096 Jul 15 14:48 root/  
drwxr-xr-x  0 root root  4096 Aug 15 23:41 run/  
drwxr-xr-x  0 root root  4096 Aug  5 09:49/sbin/  
drwxr-xr-x  0 root root  4096 Feb 25 00:24 snap/  
drwxr-xr-x  0 root root  4096 Mar 30 20:55 srv/  
dr-xr-xr-x 12 root root    0 Aug 15 23:41 sys/  
drwxrwxrwt  0 root root  4096 Aug  5 21:26 tmp/  
drwxr-xr-x  0 root root  4096 Mar 30 20:55 usr/  
drwxr-xr-x  0 root root  4096 Mar 30 20:58 var/  
jorge@azuretar:/$
```

Microsoft Bash Launcher (2)	0%	8.3 MB
Console Window Host	0%	7.6 MB
Microsoft Bash Launcher	0%	0.7 MB
Microsoft PowerPoint (32 bit) (2)	0.1%	112.3 MB
openSUSE Leap 42 (3)	0%	7.6 MB
Console Window Host	0%	5.8 MB
Microsoft Windows Subsystem for Linux Launcher	0%	0.7 MB
openSUSE-42.exe	0%	1.0 MB
Snipping Tool	0%	4.2 MB
SUSE Linux Enterprise Server 12 (3)	0%	7.6 MB
Console Window Host	0%	5.8 MB
Microsoft Windows Subsystem for Linux Launcher	0%	0.7 MB
SLES-12.exe	0%	1.1 MB
Task Manager	1.5%	22.1 MB
Ubuntu (3)	0%	7.7 MB
Console Window Host	0%	5.9 MB
Microsoft Windows Subsystem for Linux Launcher	0%	0.8 MB
ubuntu.exe	0%	1.1 MB



# Install Client Tools

- Docker for Windows (Including local single node kubernetes)
- WSL – Windows Subsystem for Linux
- Helm <https://helm.sh/>
- Azure CLI
- Visual Studio Code
- Visual Studio latest preview
- Azure Storage Explorer
- Use Azure Cloud Shell <https://shell.azure.com/>
- Install Cmdr console app (Nice to have!)
- Install Draft <https://github.com/Azure/draft>
- Docker Hub Account <https://hub.docker.com/>



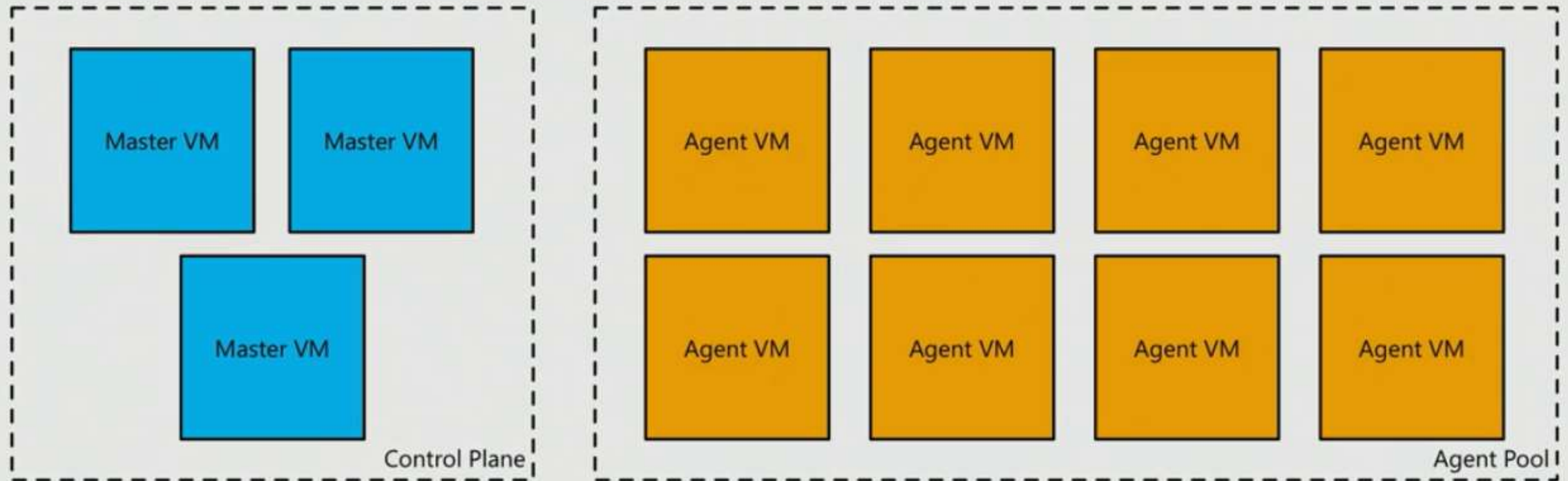
# Create AKS Cluster

- `az group create --name aznightk8s --location westeurope`
- `az aks create -g aznightk8s -n aznight1 -c 1 --generate-ssh-keys`
- `az aks get-credentials -g aznightk8s -n aznight1`
  
- `az aks get-versions -n aznight1 -g aznightk8s --output table`
- `az aks upgrade -n aznight1 -g aznightk8s --kubernetes-version 1.8.7`
  
- `az aks scale -n aznight1 -g aznightk8s -c 3`
- `az aks browse -g aznightk8s -n aznight1` (Open Kubernetes Dashboard)
- `kubectl config use-context aznight1`

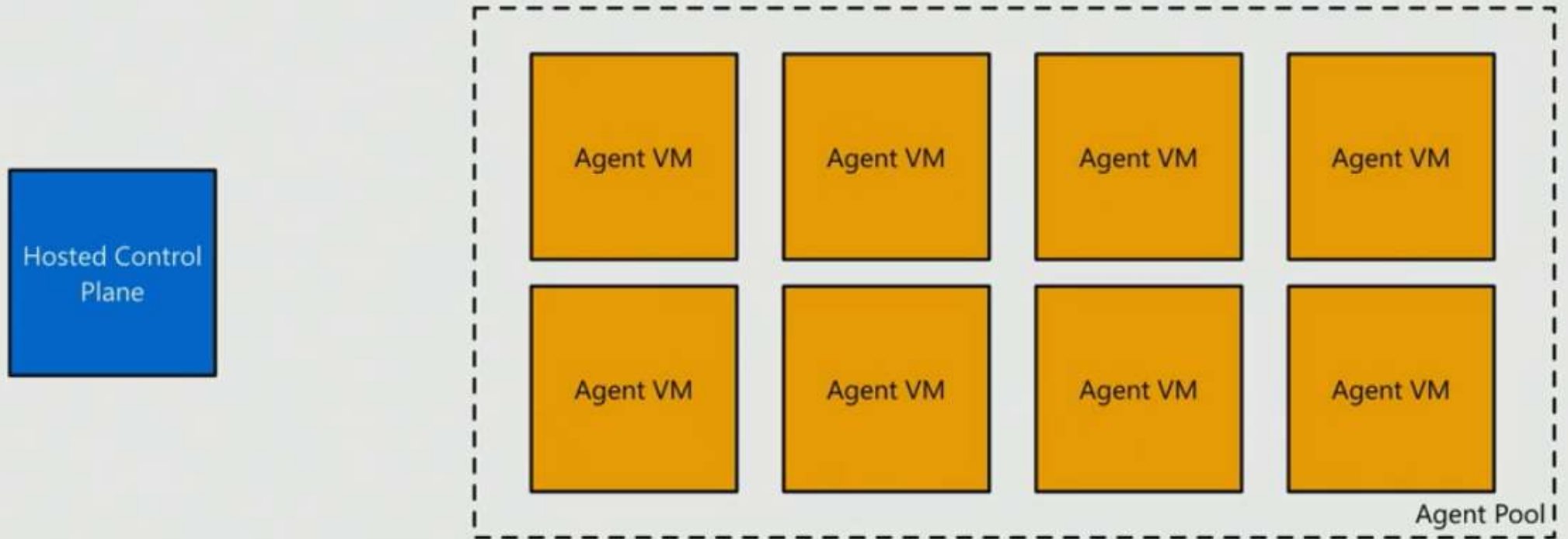




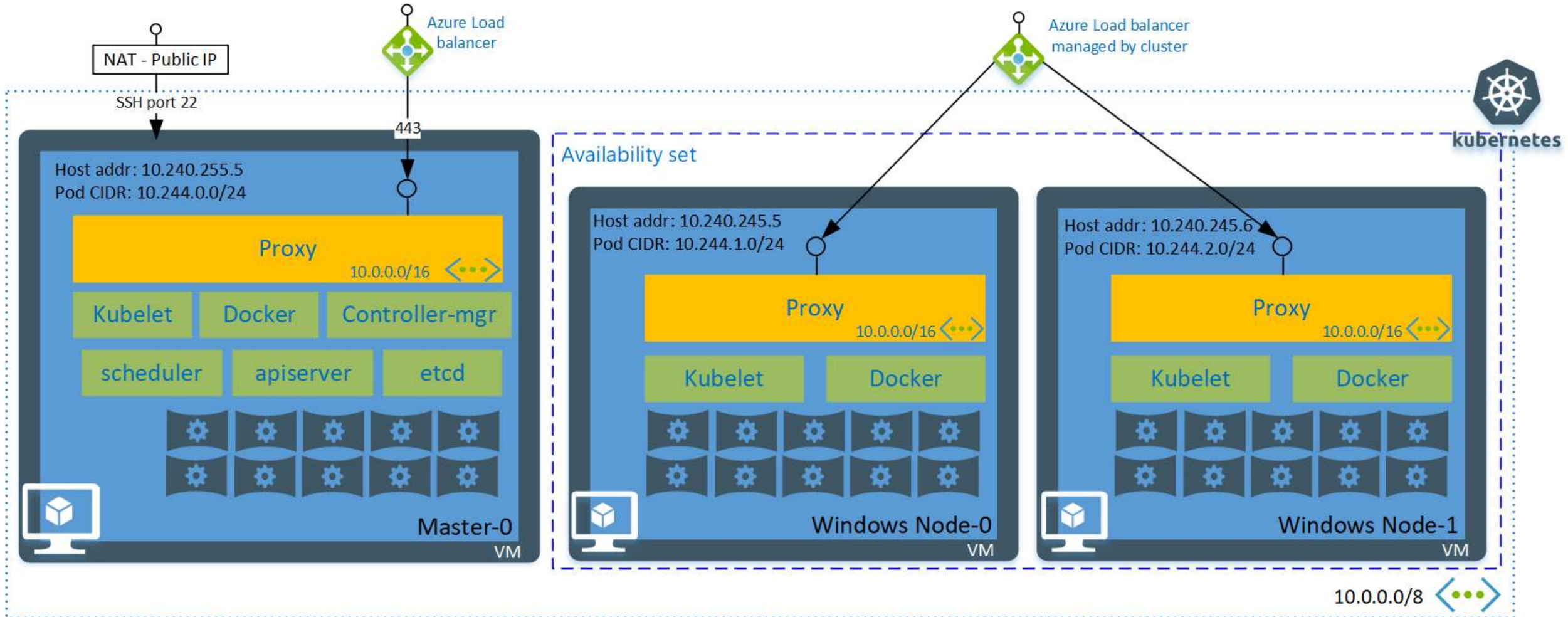
# Kubernetes without AKS



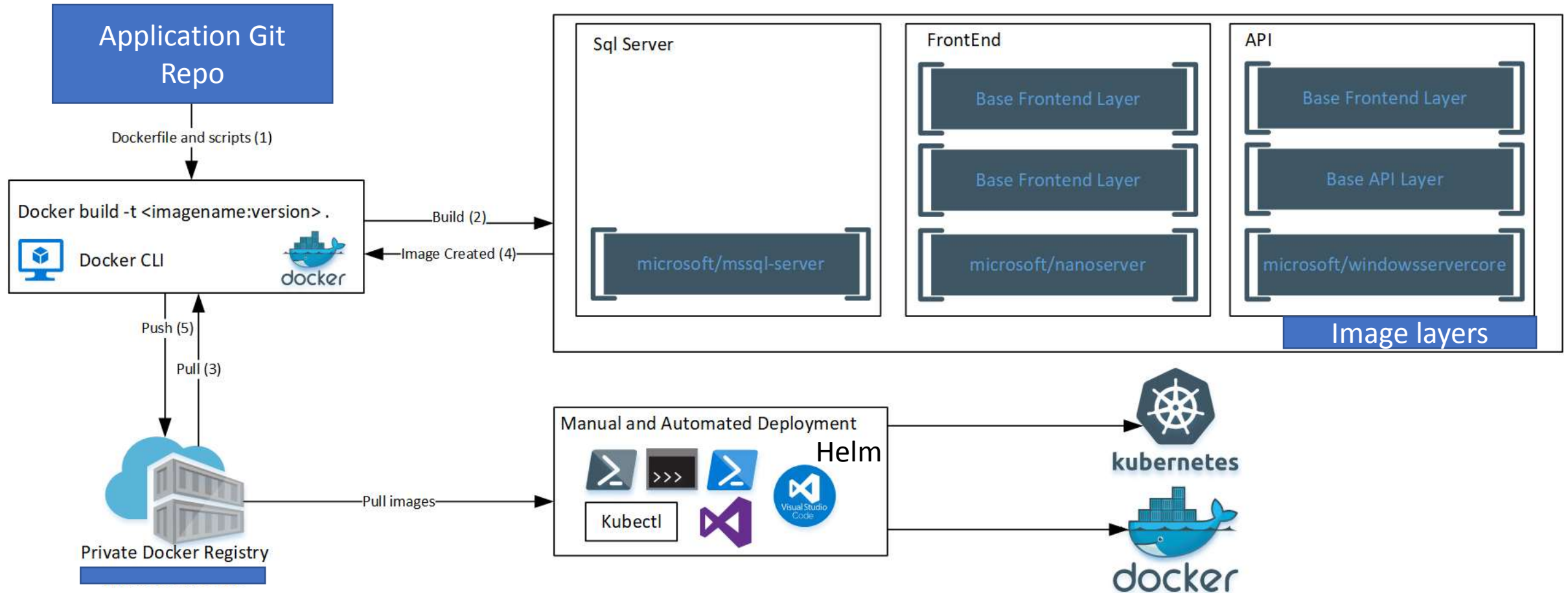
# Kubernetes with AKS



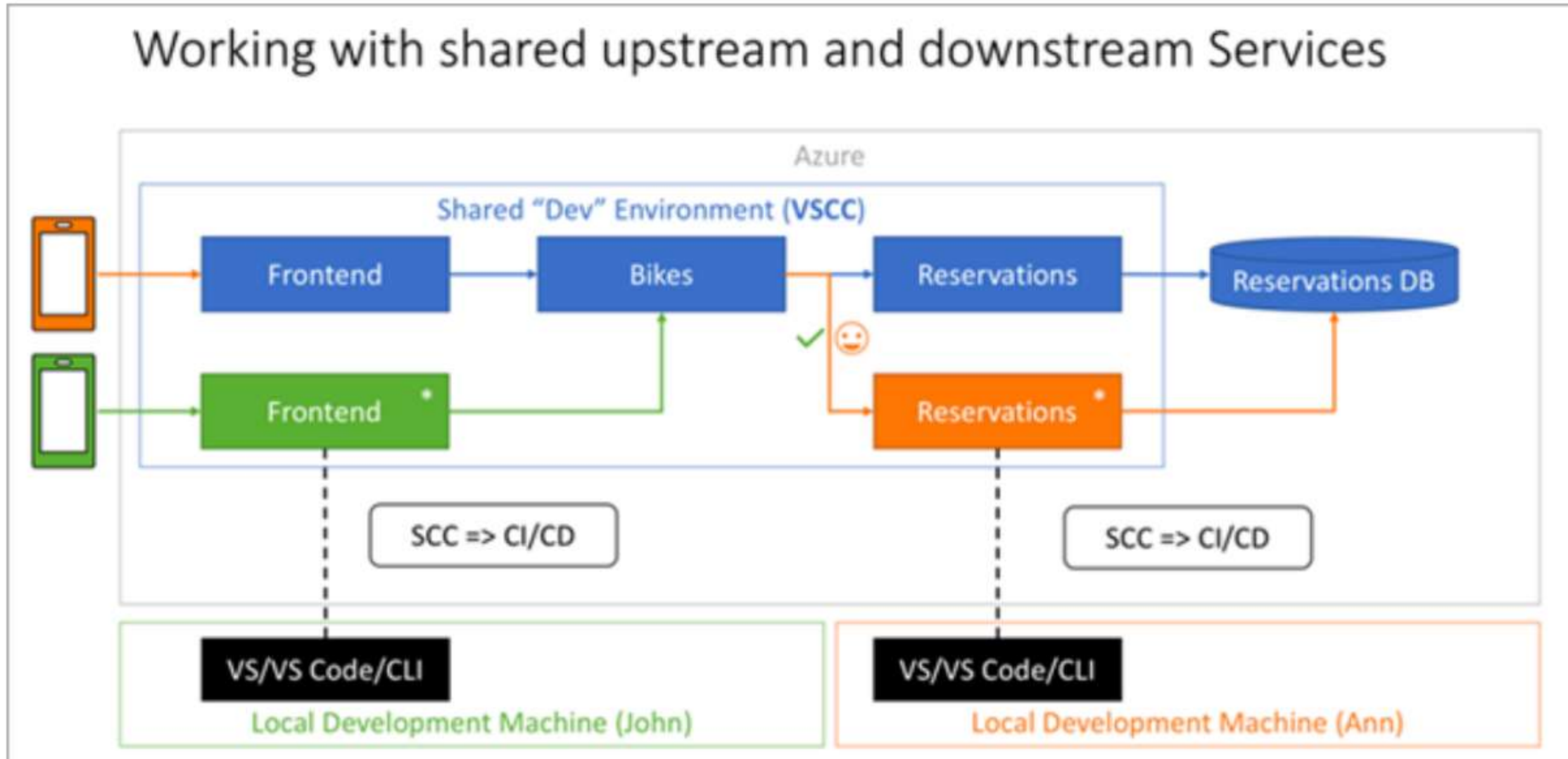
# Azure Integration – ACS Windows cluster example



# From Source code to Kubernetes

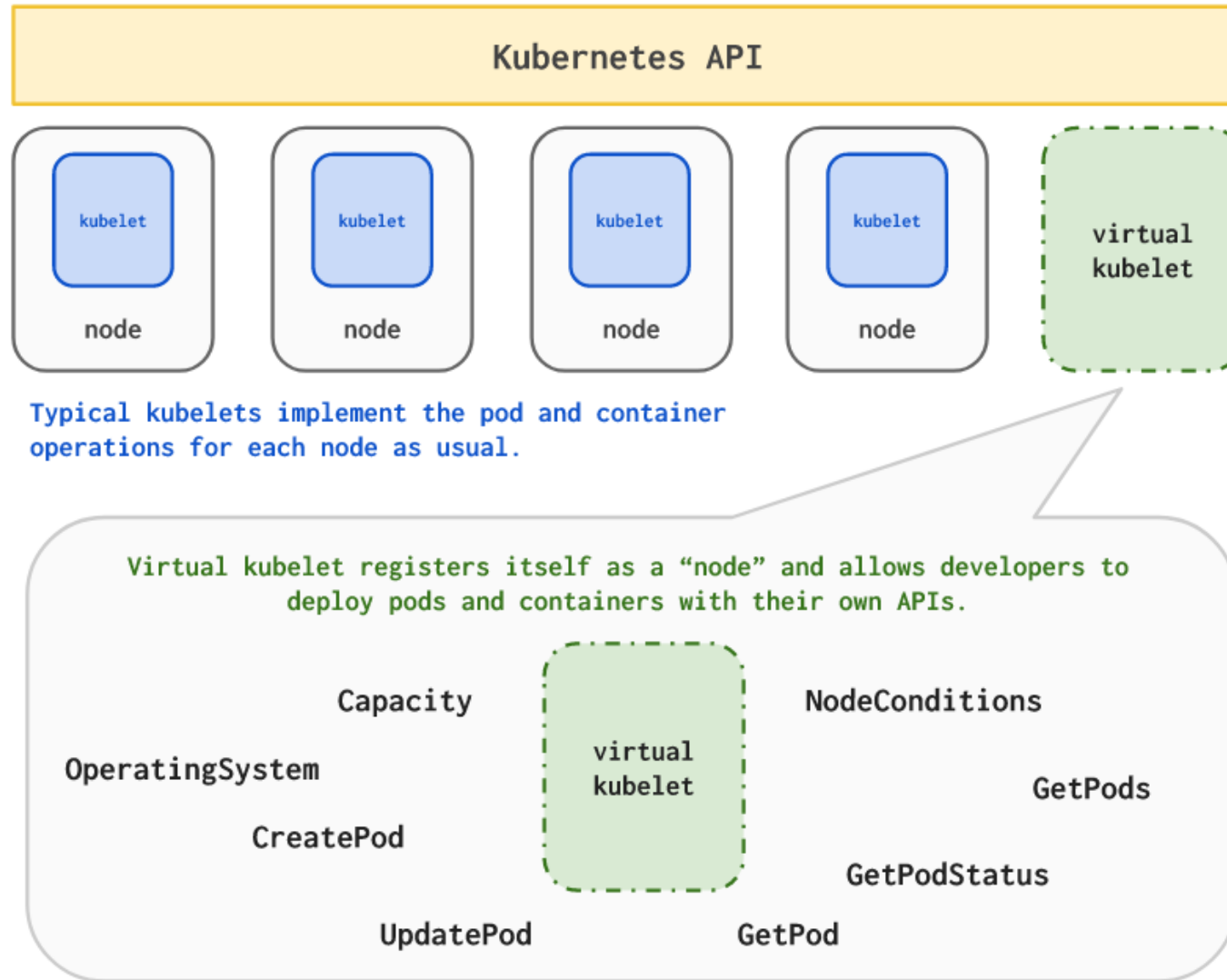


# Visual Studio Connected Environments





# Virtual Kubelet – Integration with ACI



# Let's Demo



# Thanks!

<https://msdn.microsoft.com/en-us/commandline/wsl/about>

<https://github.com/dotnet-architecture/eShopOnContainers>

<https://github.com/Microsoft/SmartHotel360-mobile-desktop-apps>

<https://github.com/virtual-kubelet/virtual-kubelet>

<https://azure.microsoft.com/en-us/features/storage-explorer/>

<https://shell.azure.com/>

<https://docs.microsoft.com/en-us/azure/cloud-shell/persisting-shell-storage>

<http://aka.ms/signup-vsce> (VS connected Environment)

<https://channel9.msdn.com/Shows/Azure-Friday>

<https://hub.docker.com/u/microsoft/>

<https://hub.docker.com/u/azuresdk/>

<https://azure.microsoft.com/en-au/blog/connect-your-applications-to-azure-with-open-service-broker-for-azure/>

<https://github.com/azure/open-service-broker-azure>

<https://github.com/kubernetes/charts>

<https://kubernetes.io/docs/concepts/services-networking/ingress/> (Ingress controller, SSL termination, routing)

