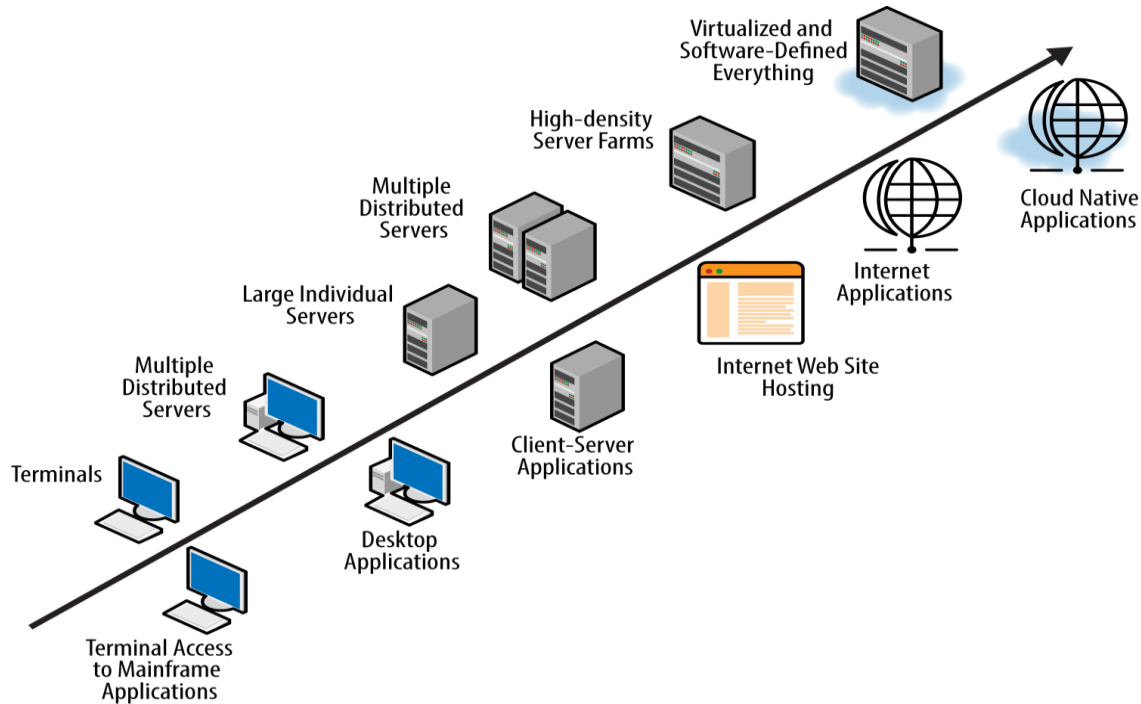


# How to Put Your AF Server into a Container

Eugene Lee  
Technology Enablement Engineer

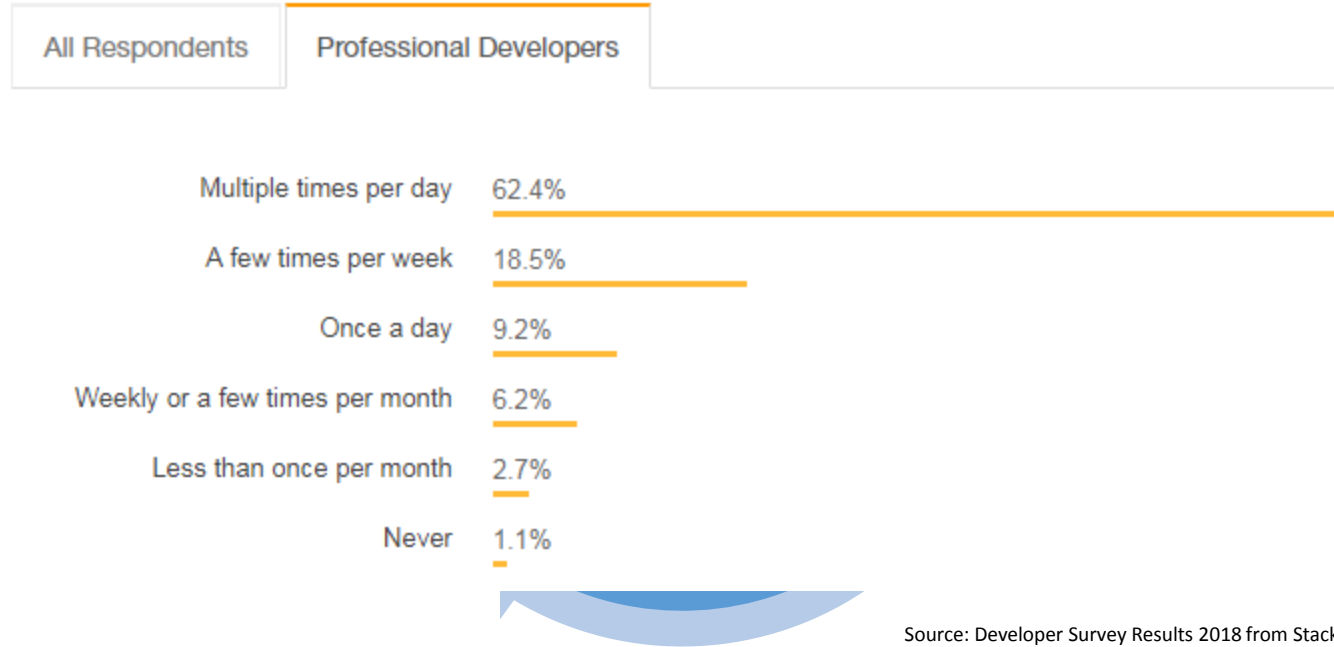
# Technology Challenges

# Cloud Native bring different expectations



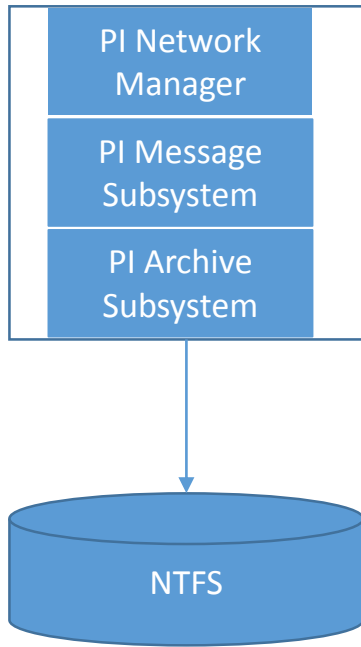
# We are becoming more impatient

## How Often Do Developers Check In Code?

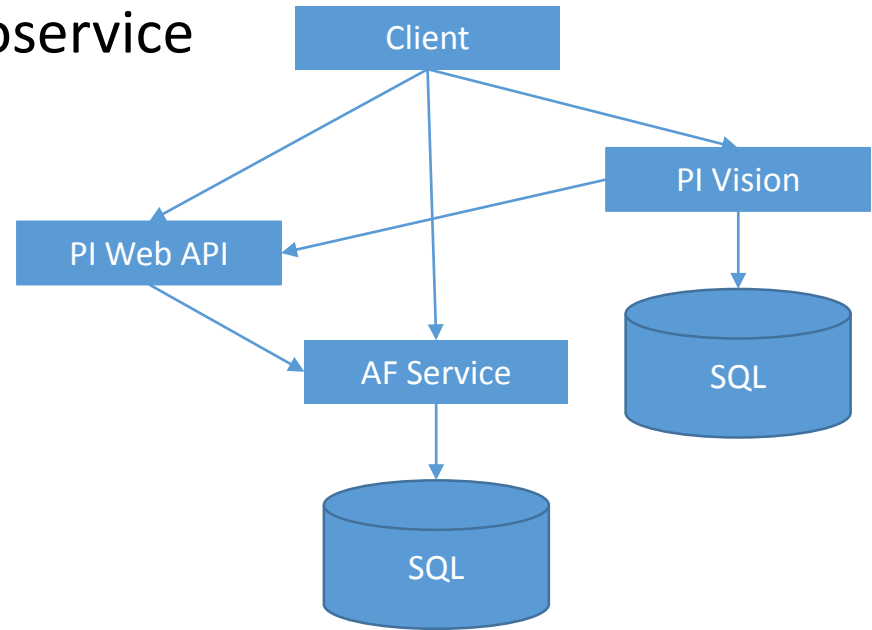


Source: Developer Survey Results 2018 from Stack Overflow

# Current architecture is too fragile

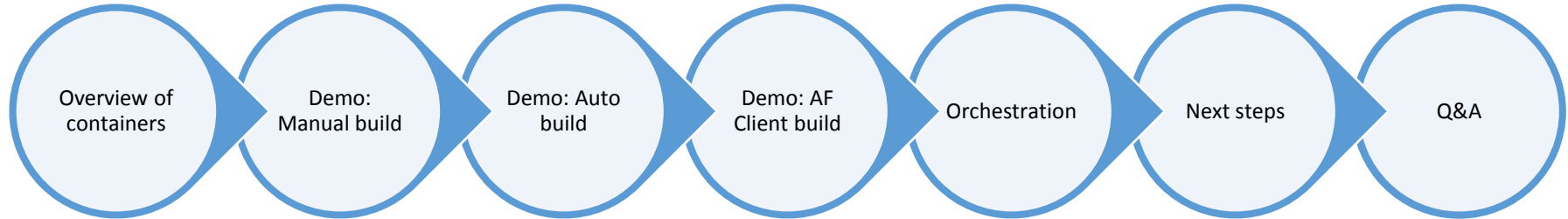


Monolith | Microservice



Containers can help to solve these challenges

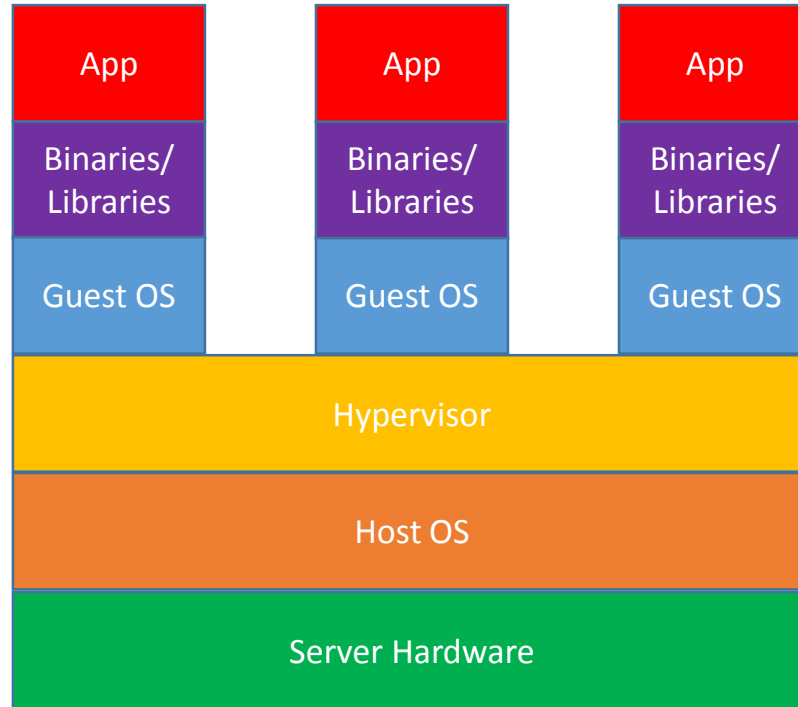
# Agenda



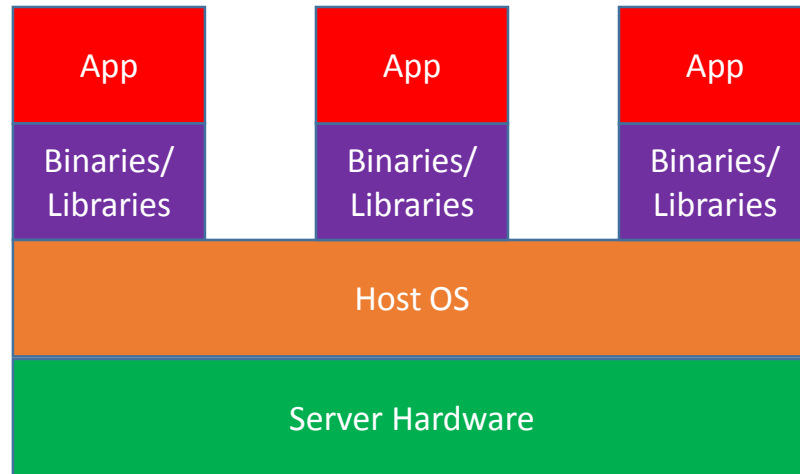
# What is a container?



# VMs carry unnecessary weight



# Containers are more lightweight



# Benefits of containers

# We want the service to be always up







# We want to pay only for what we use



# Easier to store and transfer small objects



# Run many instances on the same box

 OSIssoft.REST.Host.exe	3232	Running
 OSIssoft.REST.Host.exe	7924	Running
 OSIssoft.REST.Host.exe	11872	Running
 OSIssoft.REST.Host.exe	7356	Running

# Write once, run anywhere





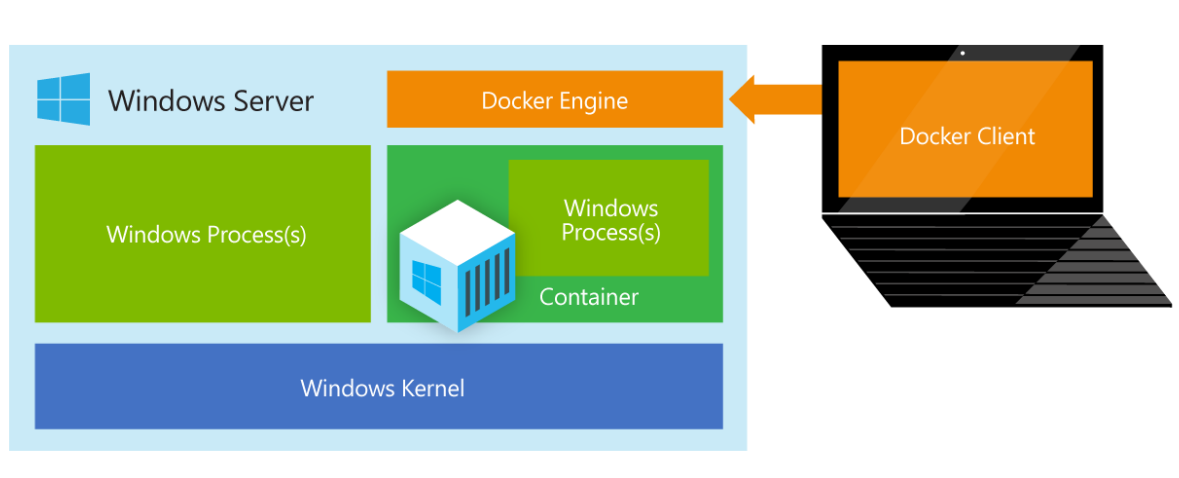
# Faster is always better



# Compatibility for containers

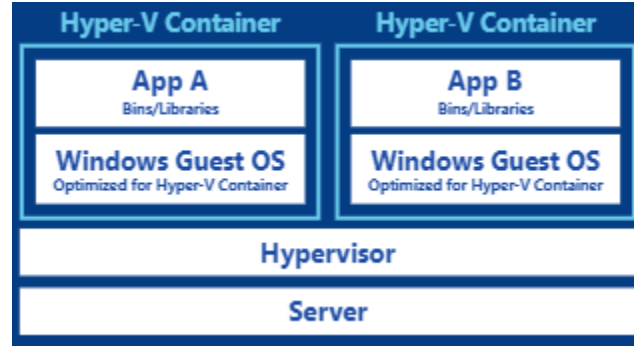
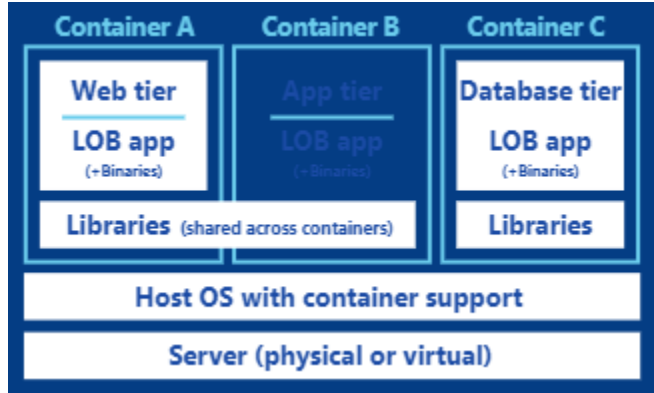
# Windows meet Containers

- Linux only previously
- Native support for Windows with Windows Server 2016



# Choose the type depending on your needs

- Windows Server container
- Shared kernel
- Efficiency
- Hyper-V container
- Isolated kernel
- Security



# Ideas for usage

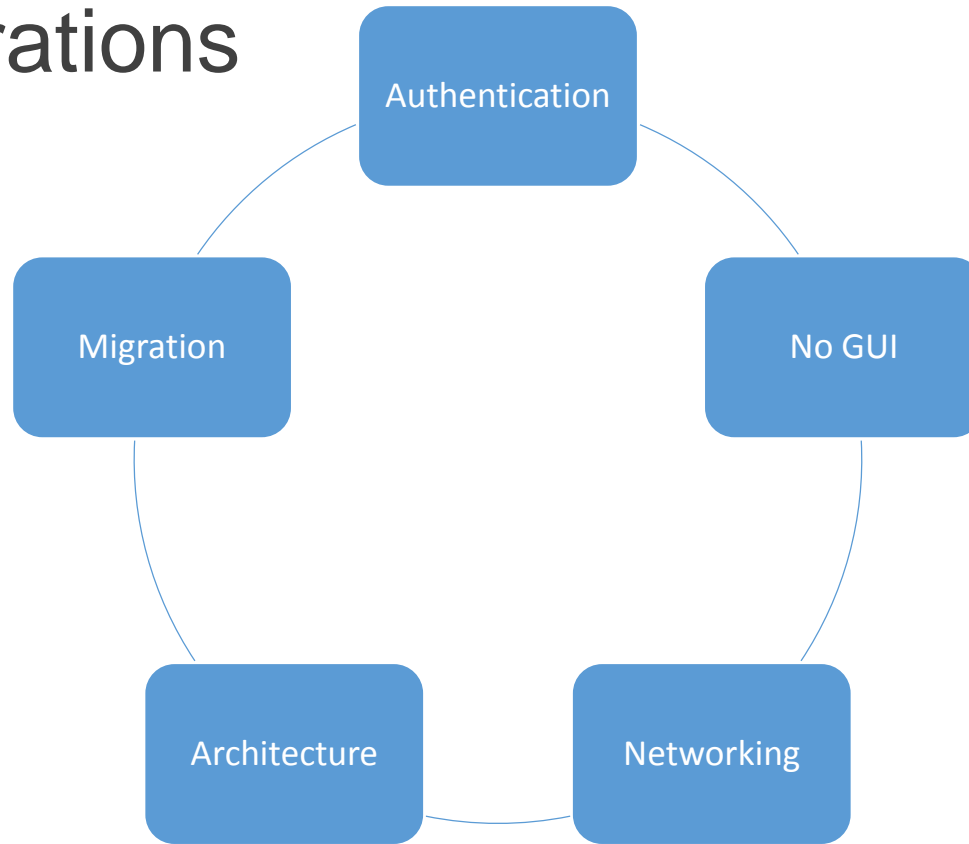


PI Server 2017 R2  
PI Server 2017  
PI Server 2016 R2  
PI Server 2016  
PI Server 2015 R2  
PI Server 2015  
PI Server 2014 R2  
PI Server 2014  
PI Server 2012



# Manual build

# Considerations







# Manual

- Curse of the golden image
- Easier to produce
- Can't upgrade base image



# Auto



- Easy to reproduce
- Tougher to produce
- Continuous delivery
- Serve as a documentation

# When to use commit then?

- Before you run something that might break the container

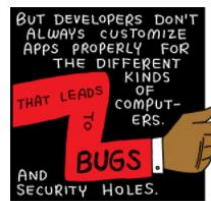
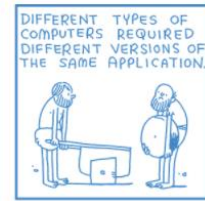
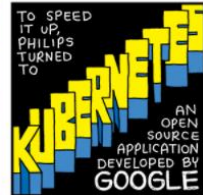
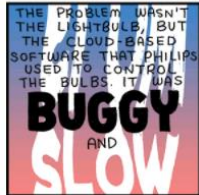
# Automatic build

# Automate as much as possible

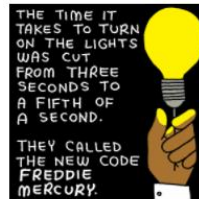
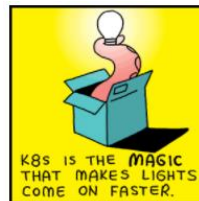
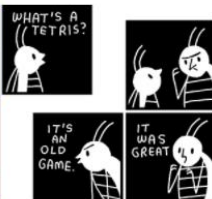
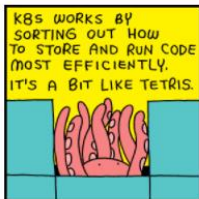
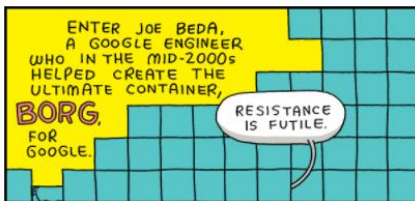


# Containerize AF client app

# Exploring container orchestration The Tale of Kubernetes





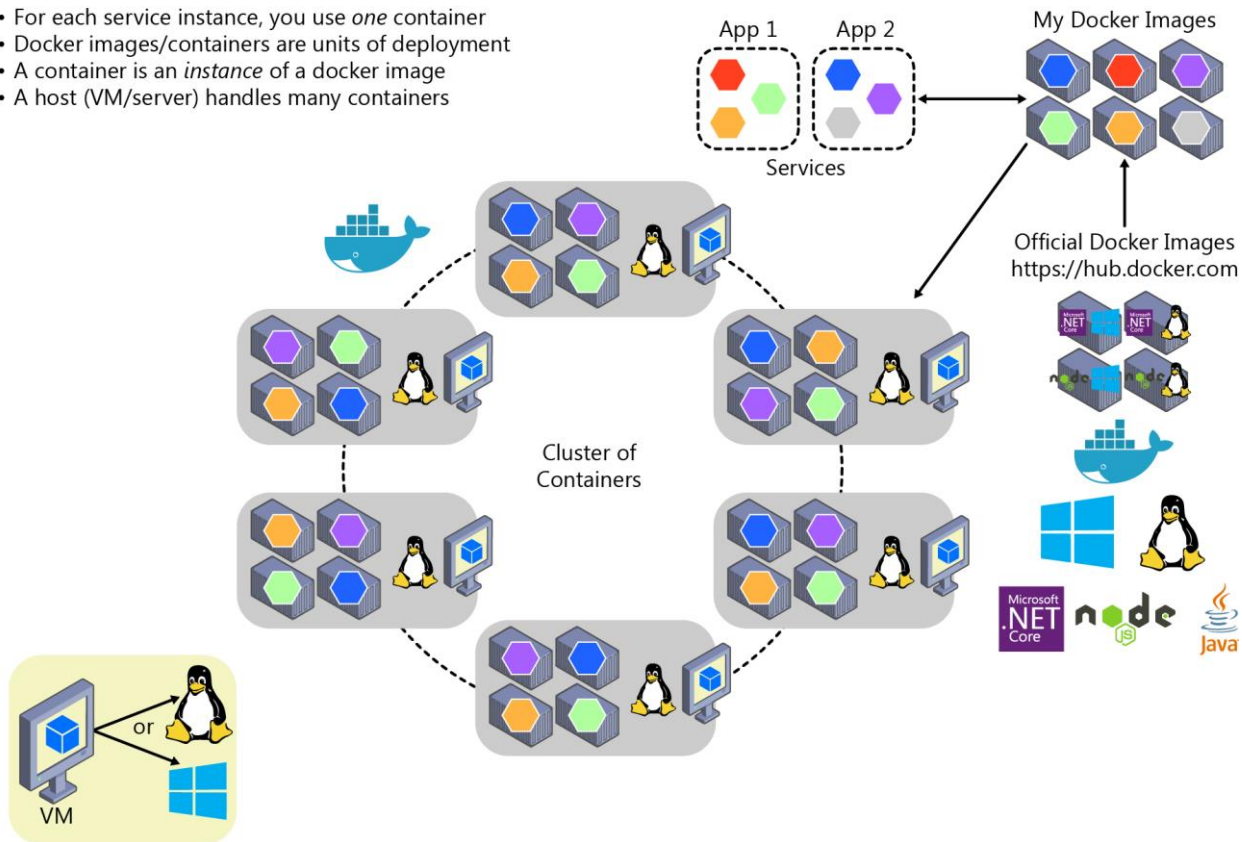


# Orchestration with Service Fabric

# Benefits of orchestrating containers

- Auto provision hosts
- Easy scaling
- Self healing
- Instantiate services together
- Rolling updates

- For each service instance, you use *one* container
- Docker images/containers are units of deployment
- A container is an *instance* of a docker image
- A host (VM/server) handles many containers

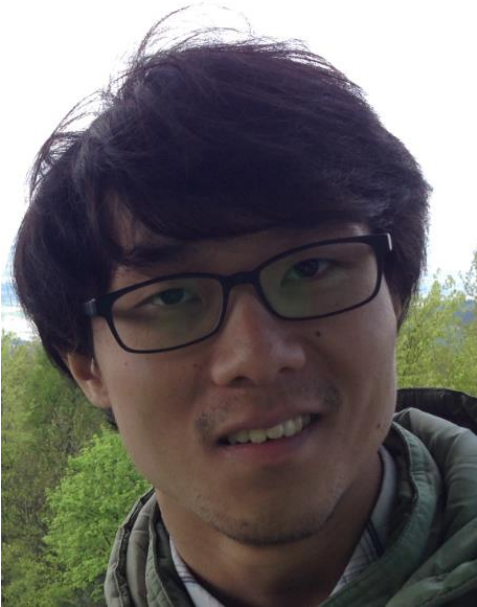


# Next steps

# PI Square blogs

- [AF Server](#)
- [PI Web API](#)
- [PI Data Archive](#)
- Standalone AF Server
- Standalone PI Web API

# Contact



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- OSIsoft

# Questions

Please wait for the **microphone** before asking your questions



State your **name & company**

# Please remember to...

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Merci

谢谢

Спасибо

Danke

Gracias

Thank You

감사합니다

ありがとう

Grazie

Obrigado

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- <https://www.safaribooksonline.com/library/view/the-enterprise-cloud/9781491907832/ch01.html>
- Container 101 poster and cluster of containers image from Microsoft
- Tale of Kubernetes from <https://www.bloomberg.com/features/2017-kubernetes/>

Host Operating System	Windows Server Container	Hyper-V Container
Windows Server 2016 (Standard or Datacenter)	Server Core / Nano Server	Server Core / Nano Server
Nano Server	Nano Server	Server Core / Nano Server
Windows 10 Pro / Enterprise	Not Available	Server Core / Nano Server

Starting in Windows Server 1709, Nano Server will be available only as a container base OS image.