

# DBA MASTERY



SQL Server containers in  
Microsoft Azure





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## Experience

Microsoft Data Platform MVP

Friend of Redgate

+10 years of experience multi-platform  
Solutions architect

## Community

GTSSUG – Community Leader

Speaker, author, blogger, mentor

Simple Talk, SQL Server Central & MSSQL Tips

## DBA Mastery

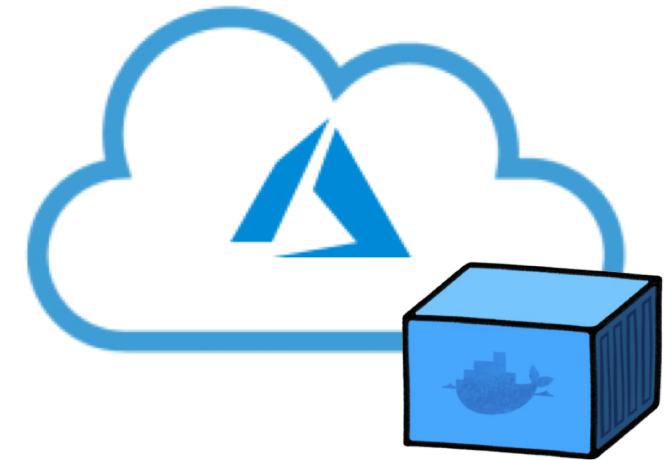
Tips, scripts, best practices & more



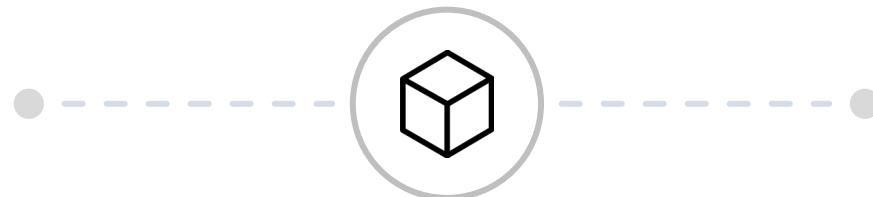
MAXDOP Calculator  
Azure Data Studio wait stats widget  
Azure Data Studio notebooks  
PerfMon for DBAs - PowerShell

# Agenda

- Containers, what and why?
- SQL Server containers
- Containers in Azure
  - Azure Container Registry (ACR)
  - Azure Container Instances (ACI)
  - Azure Kubernetes Services (AKS)



# Industry analysts agree



"By 2023, more than 75% of global organizations will run mission-critical, containerized cloud-native applications in production, up from less than 30% today."

**Gartner**<sup>®</sup>

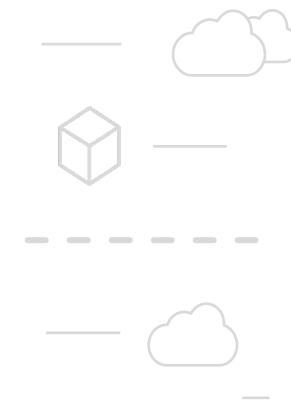
# Containers, what and why?



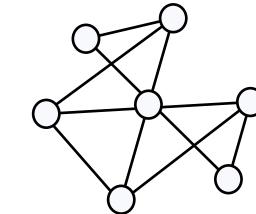
# What are containers?



Standard



Lightweight



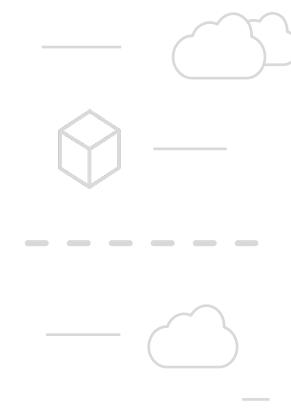
Cross platform



# Why containers?



Speed



Simple

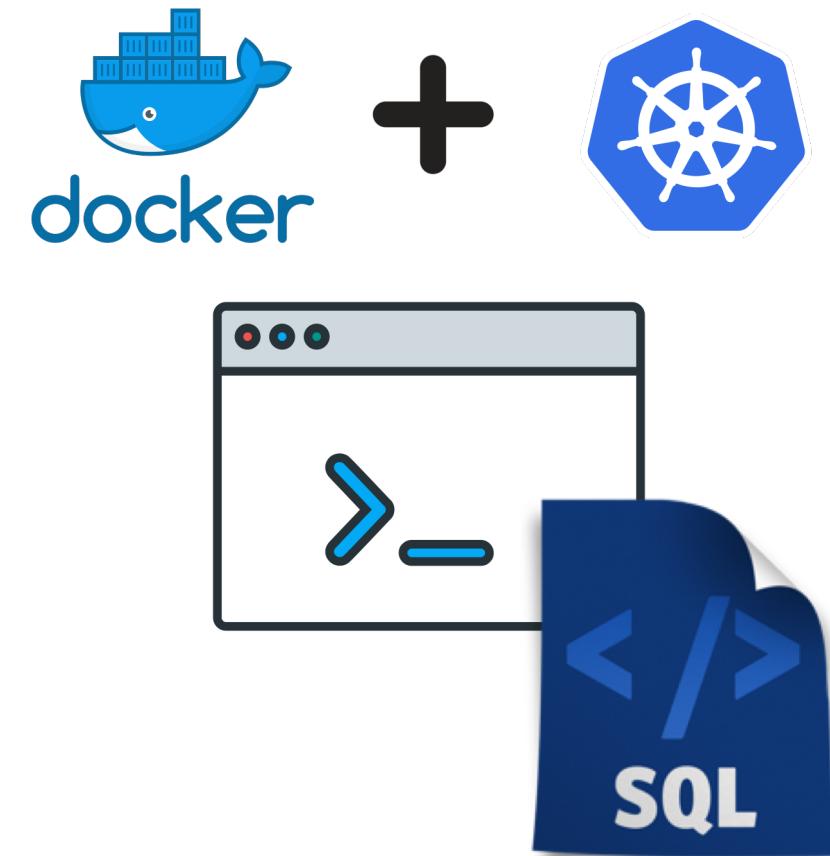


Packaging

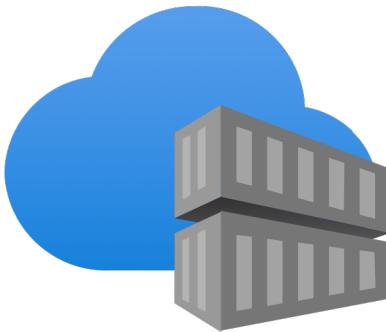


# SQL Server containers?

- Easy and simple
- Agile
- DevOps
- Compute | Storage
- Docker & Kubernetes



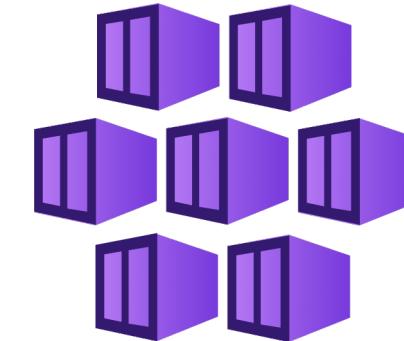
# SQL Containers in Azure?



Azure Container  
Registry



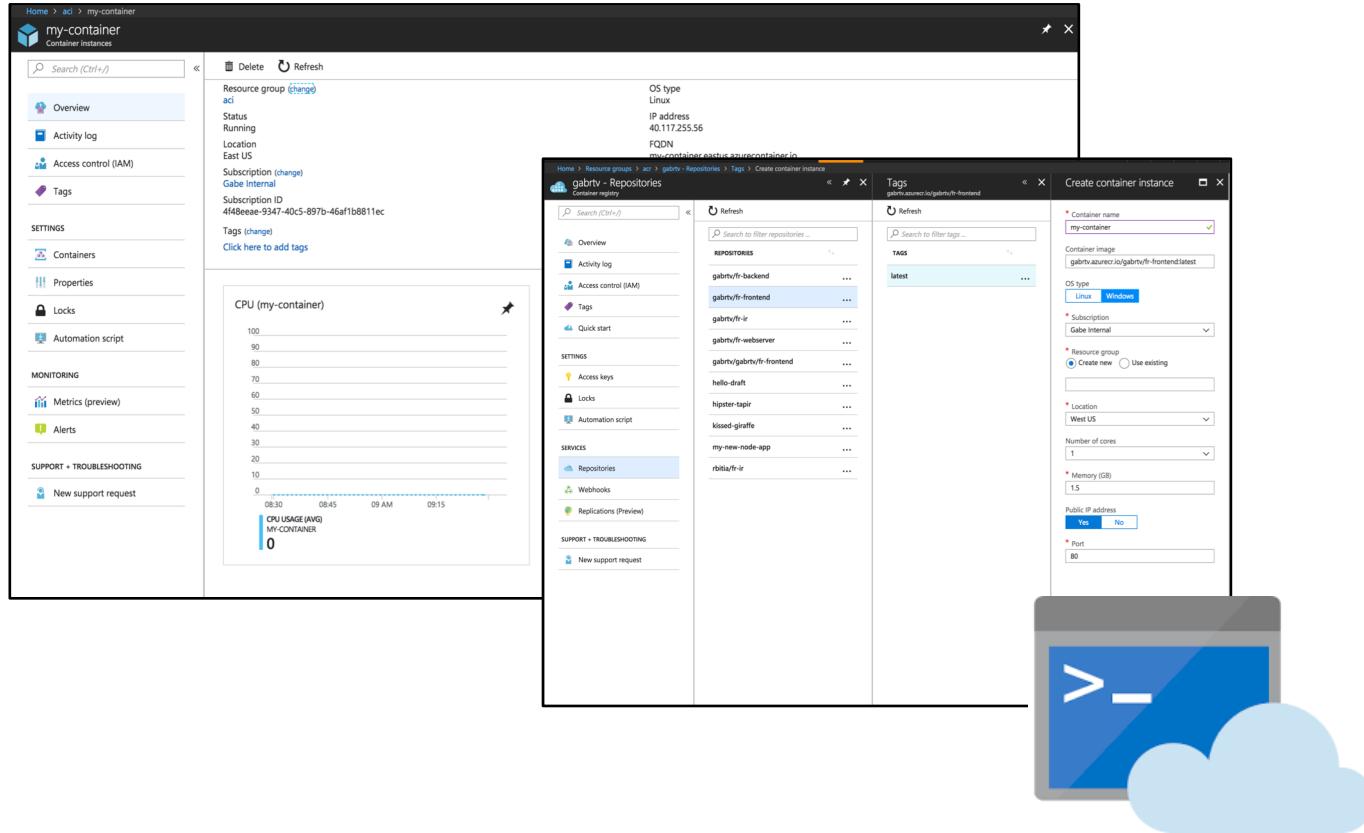
Azure Container  
Instances



Azure Kubernetes  
Services



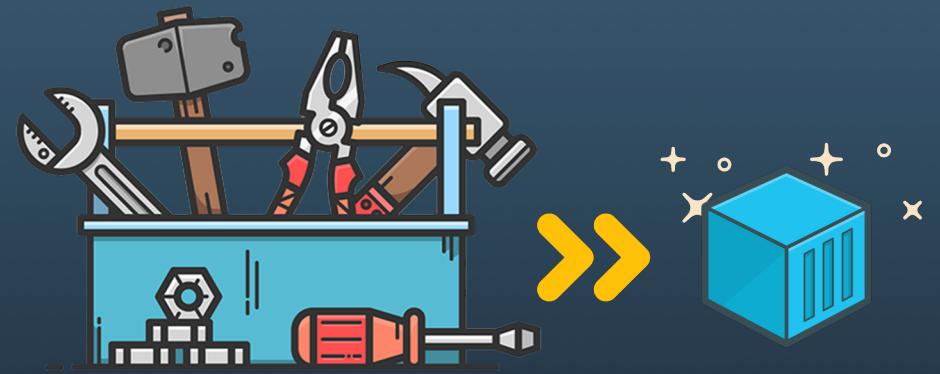
# Portal + Azure & Docker CLI



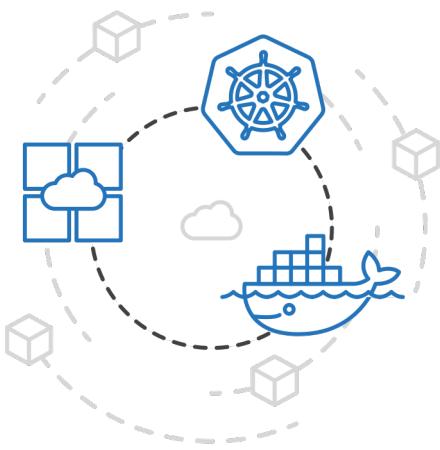
```
> az acr  
> az aci  
> az aks
```



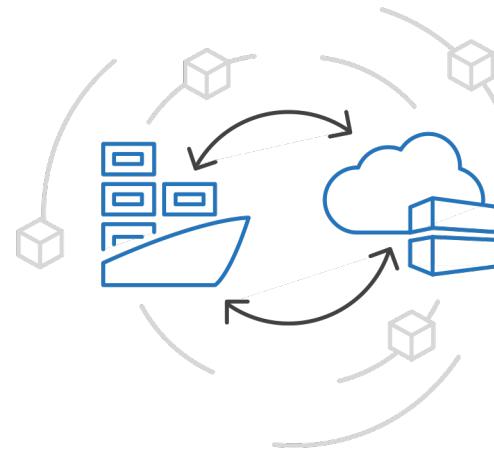
# Azure Container Registry (ACR)



# Azure Container Registry (ACR)



Manage images for all  
types of containers



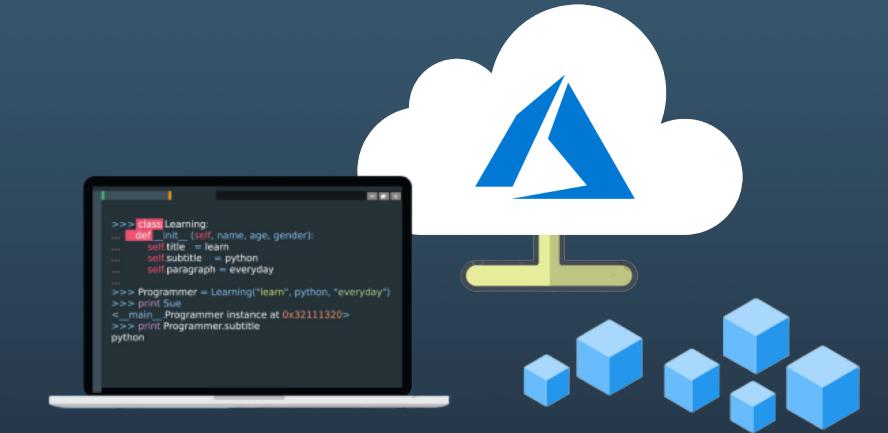
Use familiar, open-  
source Docker CLI tools



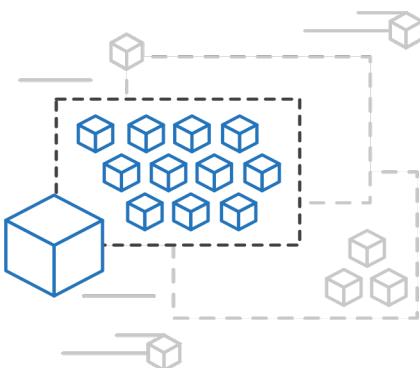
Azure Container Registry  
geo-replication



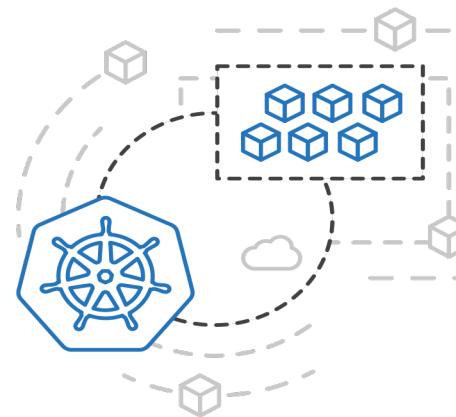
# Azure Container Instances (ACI)



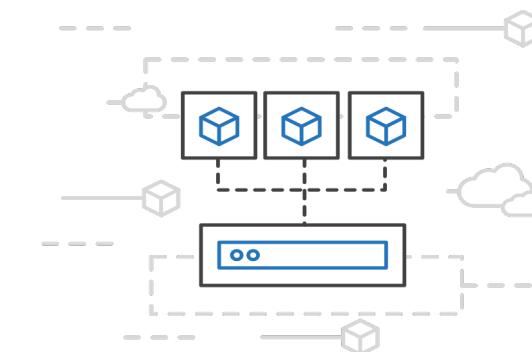
# Azure Container Instances (ACI)



Run containers without managing servers



Containers as a primitive billed per second



Secure applications with hypervisor isolation



# Why ACI?



Invisible  
infrastructure

Micro-billing

Modularity

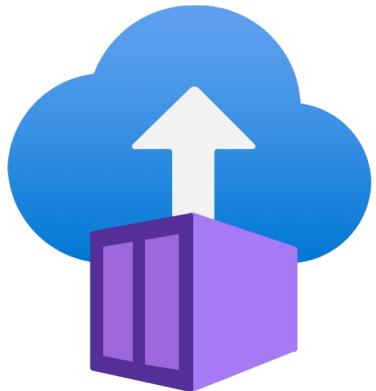


# Demo

ACI run, integrate & monitor



# ACI - Demo recap



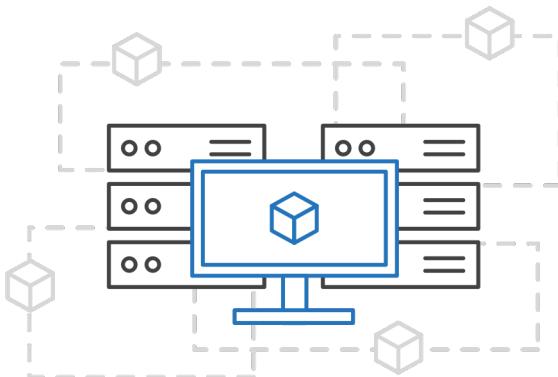
- Azure + Docker CLI & portal 
- Azure container instances + Azure file share
- Azure file explorer 
- Multi-container deployment (YAML) 



# Azure Kubernetes Services (AKS)



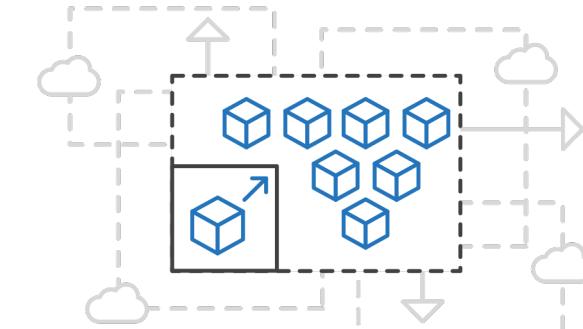
# Azure Kubernetes Services (AKS)



Focus on your  
containers not the  
infrastructure



Work how you want  
with open-source  
APIs



Scale and run  
applications with  
confidence



# Why AKS?



Easy cluster  
scaling

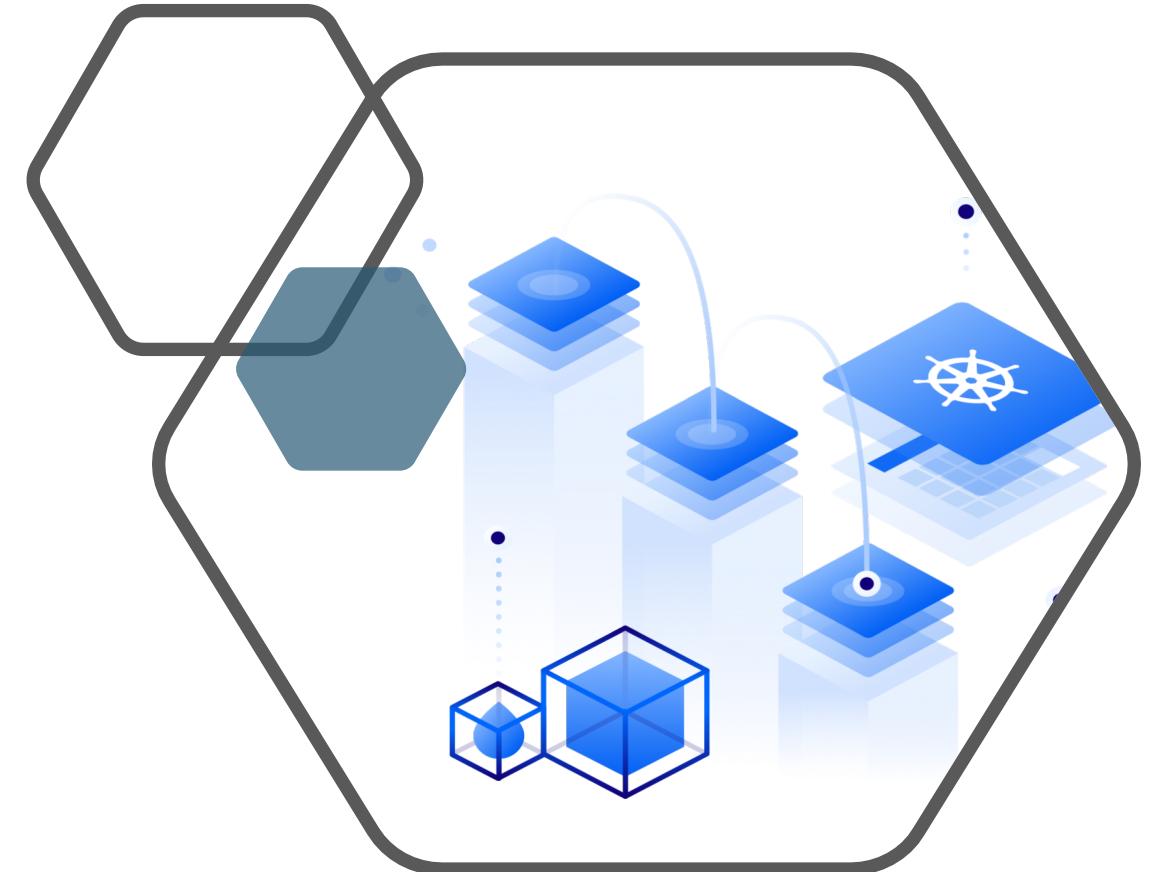
Managed  
control pane

Automated  
upgrades

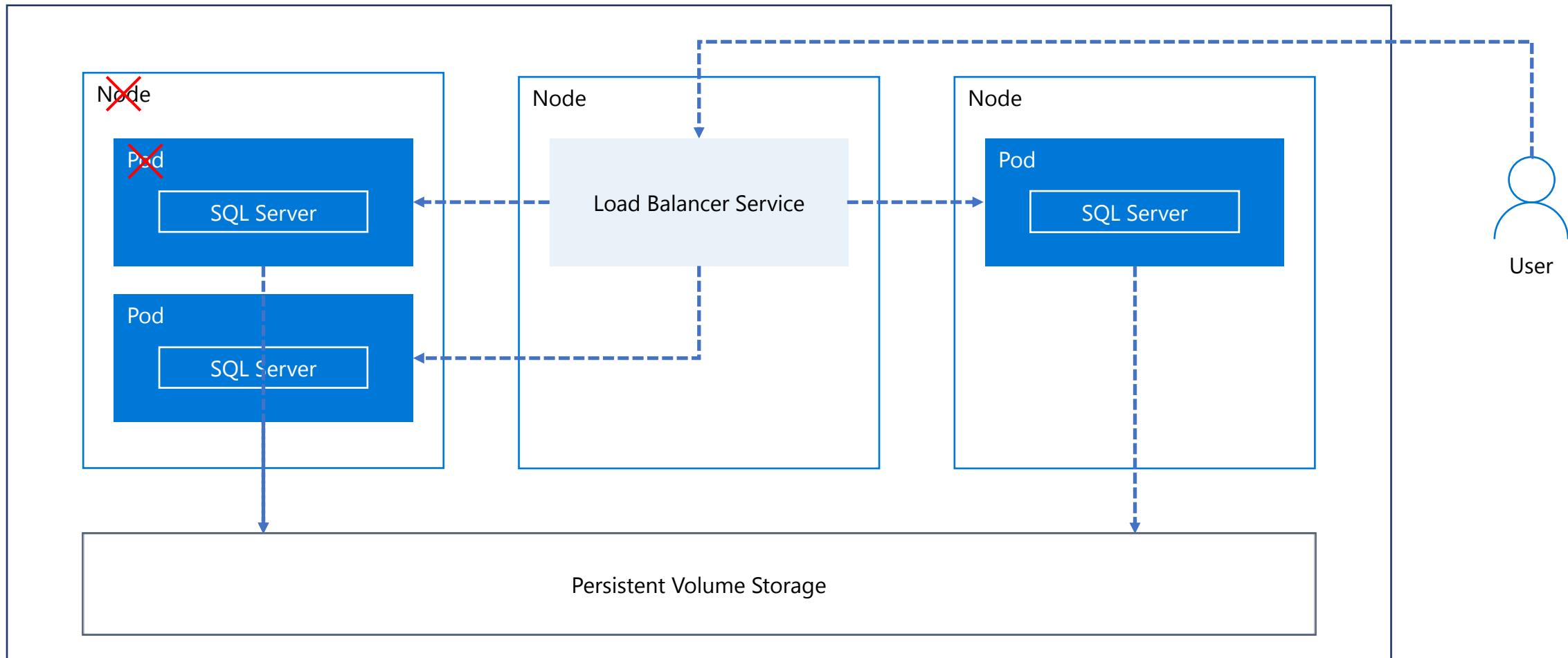


# Demo

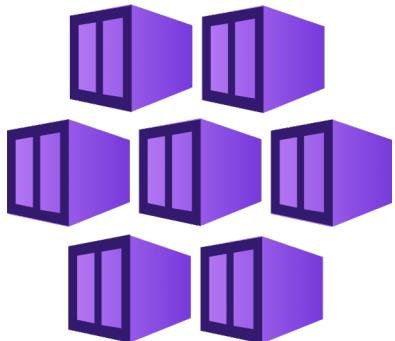
AKS deploy, orchestrate



Master



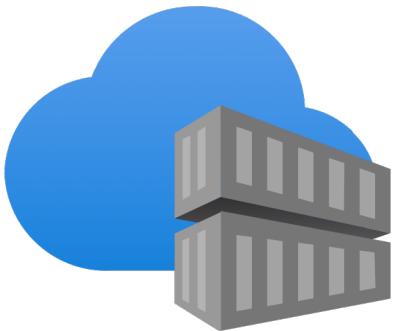
# AKS - Demo recap



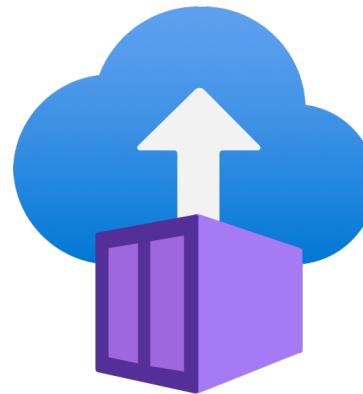
- Compute / storage is separate
- Declarative management 
- HA out of the box! 
- Managed control pane 



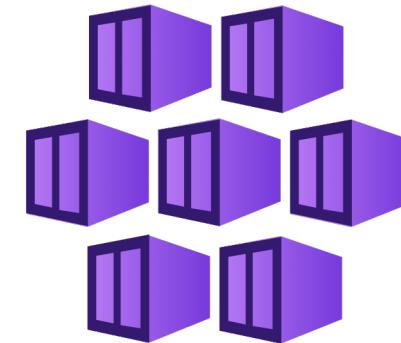
# Review



Azure Container Registry



Azure Container Instances



Azure Kubernetes Services

Build, tag, push

Run, integrate,  
serverless

Deploy, orchestrate,  
scale



# Questions?



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# References

- **Official documentations**
  - [Docker Docs](#)
  - [Kubernetes Docs](#)
- **SQL Server**
  - [SQL Server workshops](#)
  - [SQL Server in Docker](#)
- **Books**
  - [The Phoenix / Unicorn Project](#)
  - [The DevOps Handbook](#)
  - [Kubernetes: Up and Running](#)
  - [Designing Distributed Systems](#)
  - [Pro SQL Server On Linux by Bob Ward](#)
- **Pluralsight**
  - [Getting Started with Docker](#)
  - [Docker Deep Dive](#)
  - [Docker and Kubernetes: The big picture](#)
  - [Kubernetes Installation and Configuration fundamentals](#)
- **Microsoft Learning**
  - [Kubernetes Learning Path](#)
  - [SQL Workshops](#)
- **Katacoda**
  - [Docker](#)
  - [Kubernetes](#)



# More about SQL Containers?

- Published articles
  - [Redgate - Simple Talk](#)
  - [SQL Server Central](#)
  - [MSQL Tips](#)



redgate





# Microsoft





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# Thanks!

