



JULY 14
2020

IN SUPPORT OF
unicef

LIGHTUP VIRTUAL CONFERENCE

24 HOURS OF MICROSOFT TECHNOLOGIES LEARNING & FUND RAISING EVENT TO FIGHT COVID-19

SQL Containers in Microsoft Azure

Carlos Robles – DBA Mastery

@dbamastery

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Event





Carlos Robles

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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

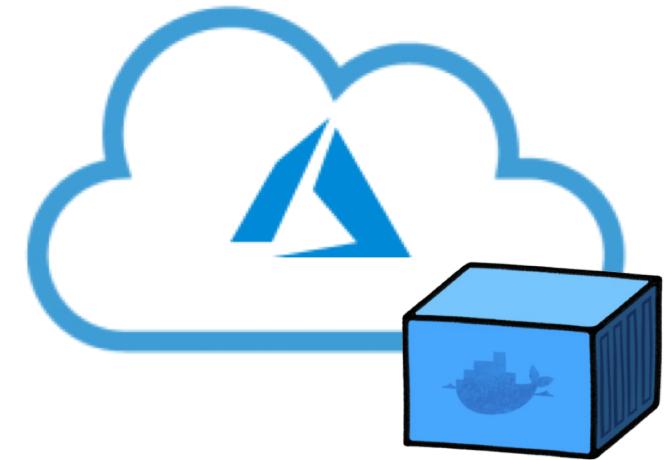
Azure Data Studio wait stats widget

Azure Data Studio notebooks

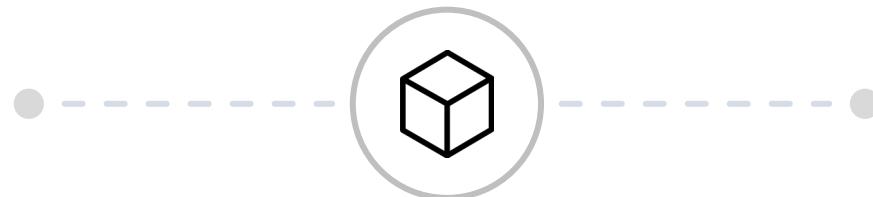
PerfMon for DBAs - PowerShell

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



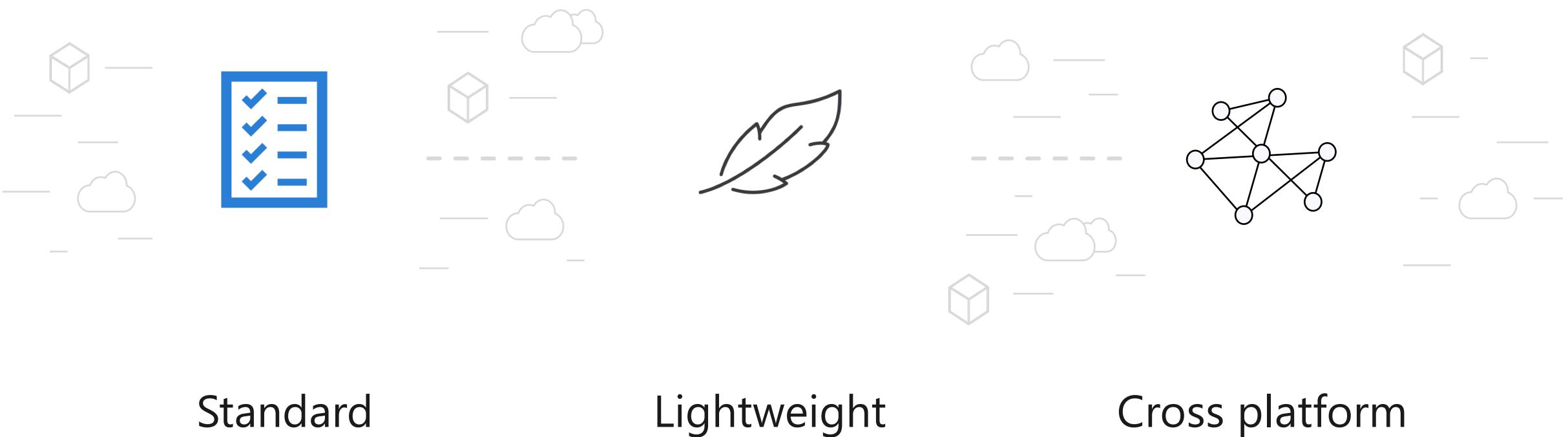
"By 2023, more than 75% of global organizations will run mission-critical, containerized cloud-native applications in production, up from less than 30% today."

Gartner[®]

Containers, what and why?



WHAT ARE CONTAINERS?



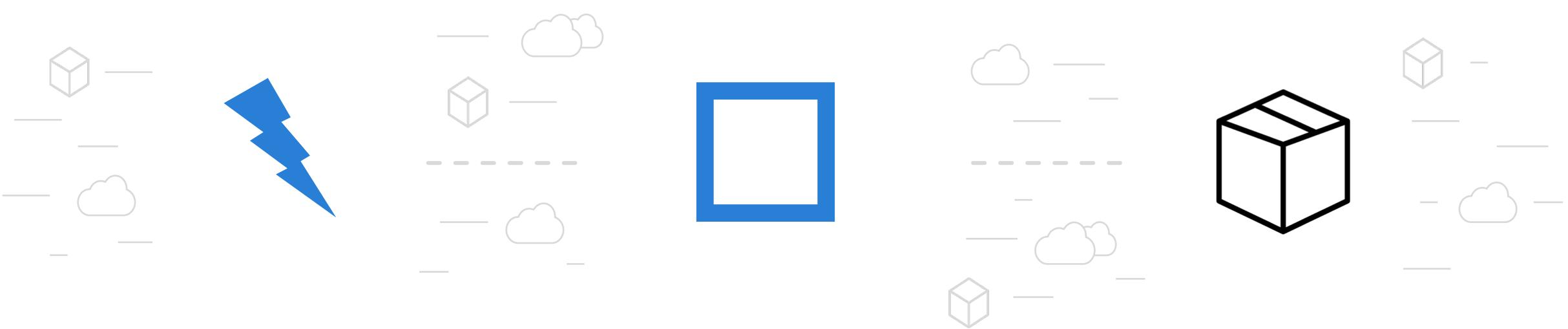
Standard

Lightweight

Cross platform



WHY CONTAINERS?



Speed

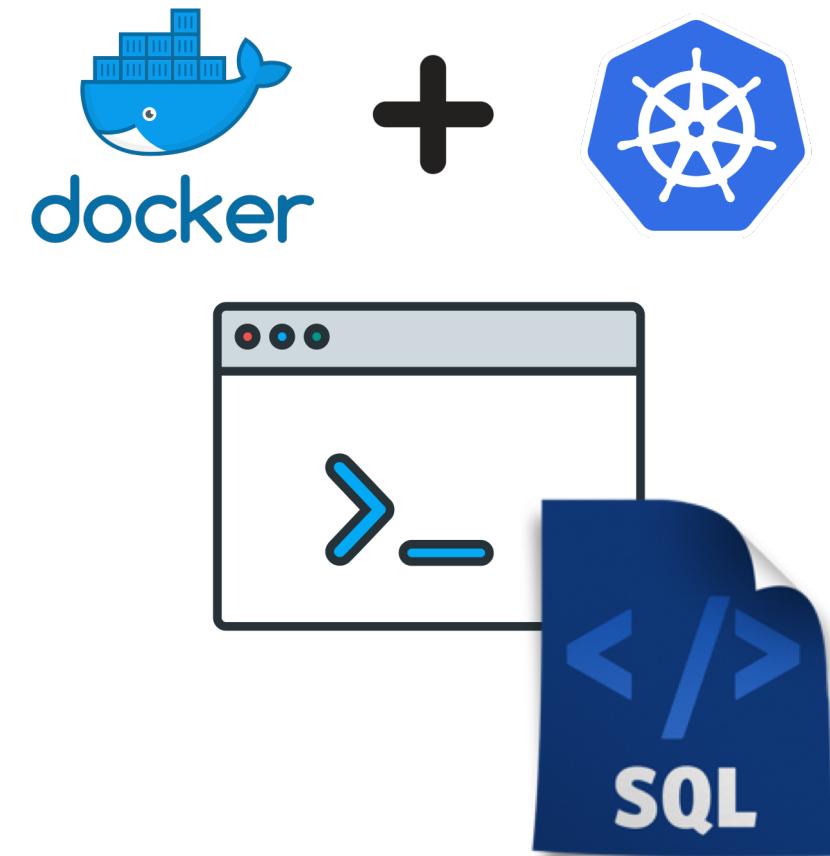
Simple

Packaging



SQL SERVER CONTAINERS?

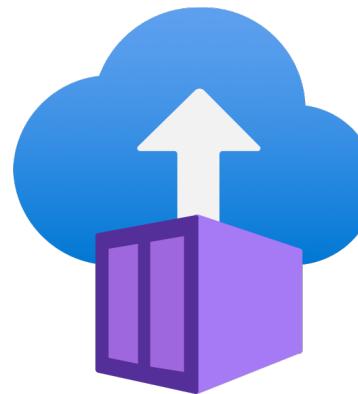
- Easy and simple
- Agile
- DevOps
- Compute | Storage
- Docker & Kubernetes



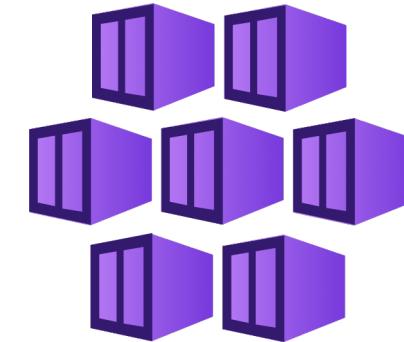
CONTAINERS IN AZURE?



Azure Container
Registry



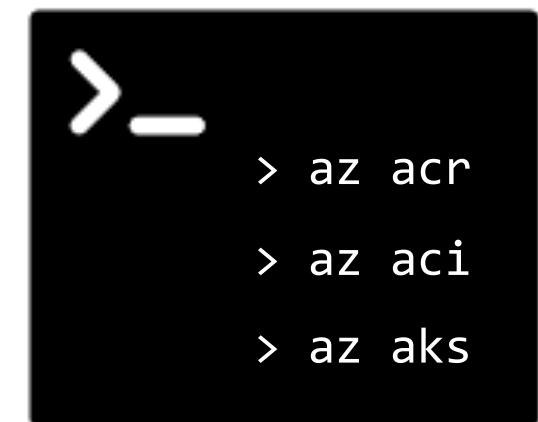
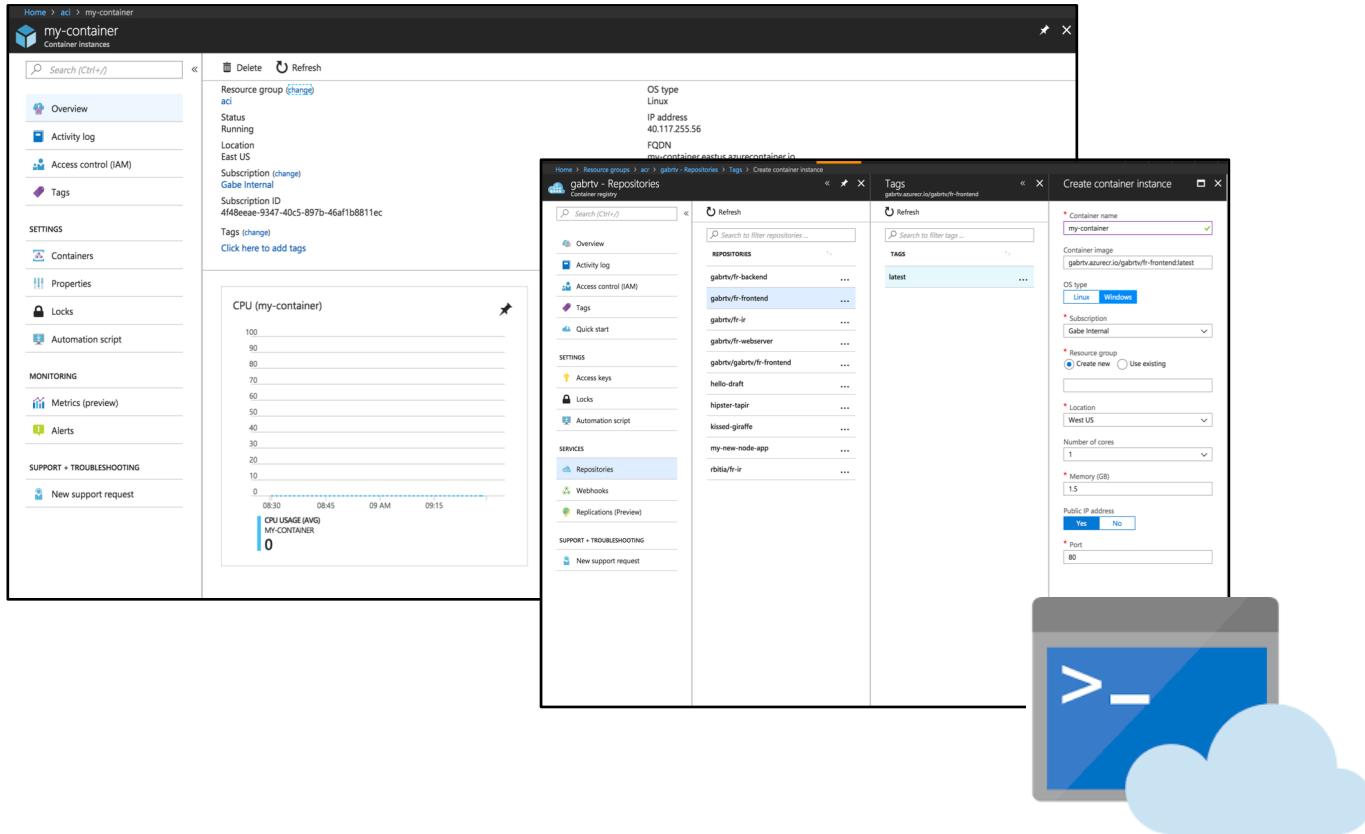
Azure Container
Instances



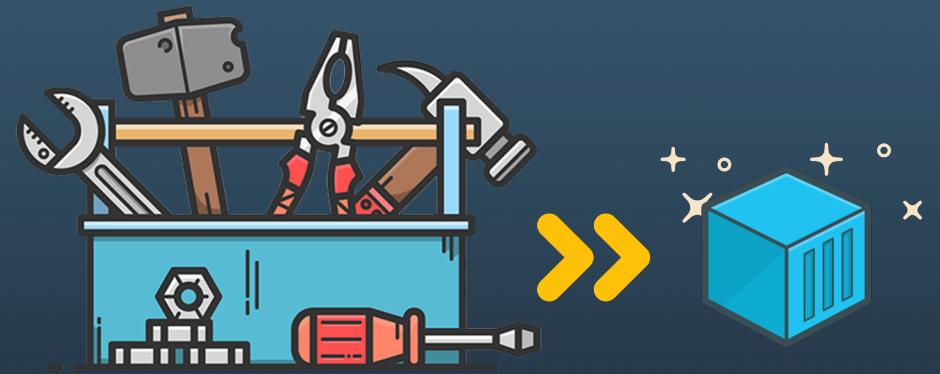
Azure Kubernetes
Services



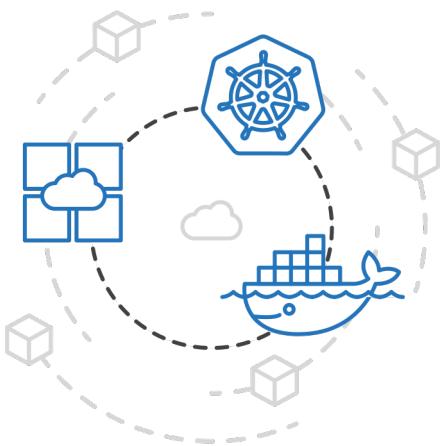
PORTAL & AZURE CLI



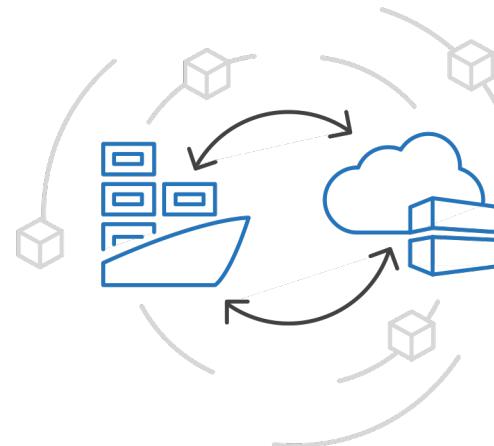
Azure Container Registry (ACR)



AZURE CONTAINER REGISTRY (ACR)



Manage images for all
types of containers



Use familiar, open-
source Docker CLI tools



Azure Container Registry
geo-replication



DEMO

ACR build, tag, push



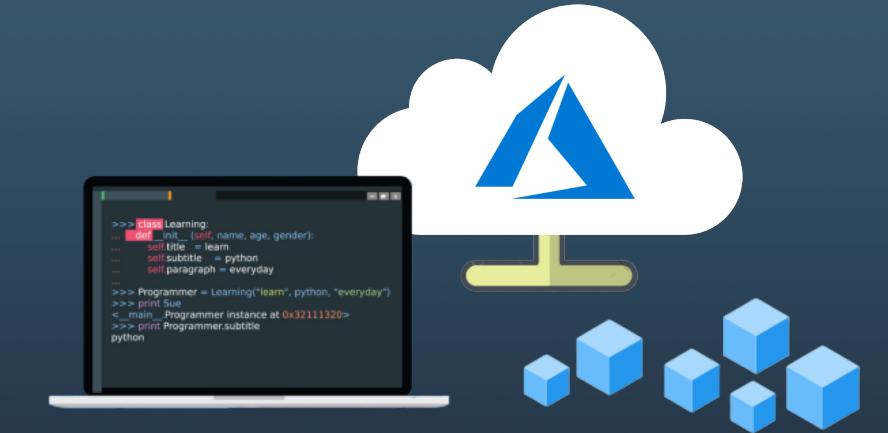
ACR - DEMO RECAP



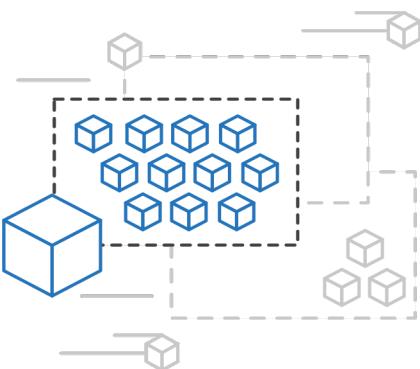
- Build, tag and push to ACR
- Visual Studio Code extension 🌐
- No Docker, no problem ! 👍
- Azure Cloud shell, to build, tag and push to ACR 🚀



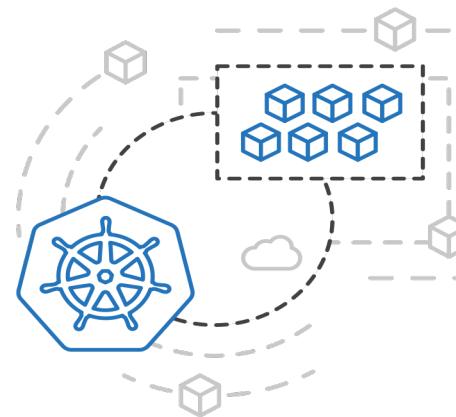
Azure Container Instances (ACI)



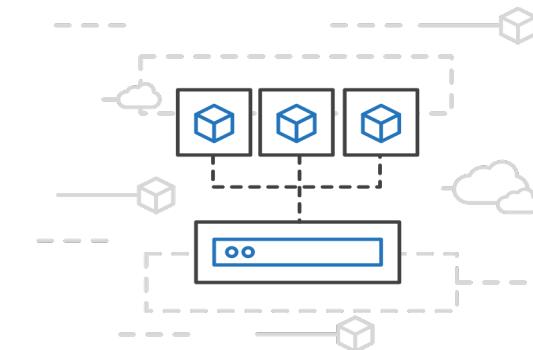
AZURE CONTAINER INSTANCES (ACI)



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



ACR - DEMO RECAP



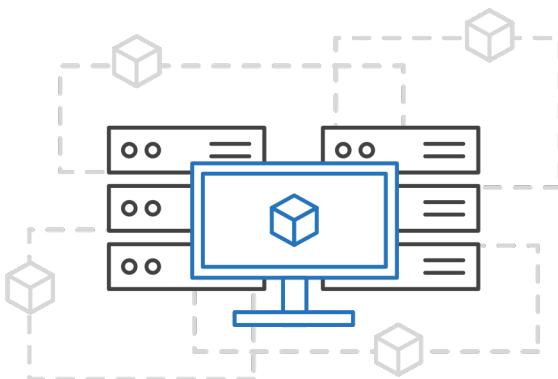
- Azure CLI & portal 🖥️
- Azure container instances + Azure file share
- Azure file explorer 🔎
- Multi-container deployment (YAML) 🤔



Azure Kubernetes Services (AKS)



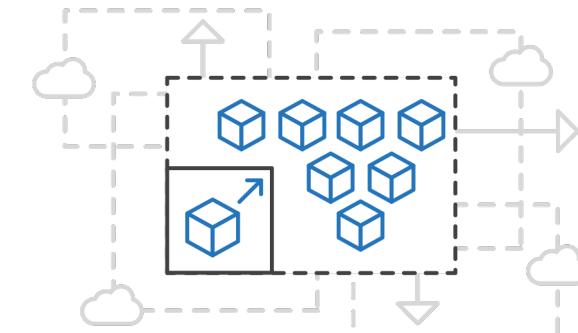
AZURE KUBERNETES SERVICES (AKS)



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

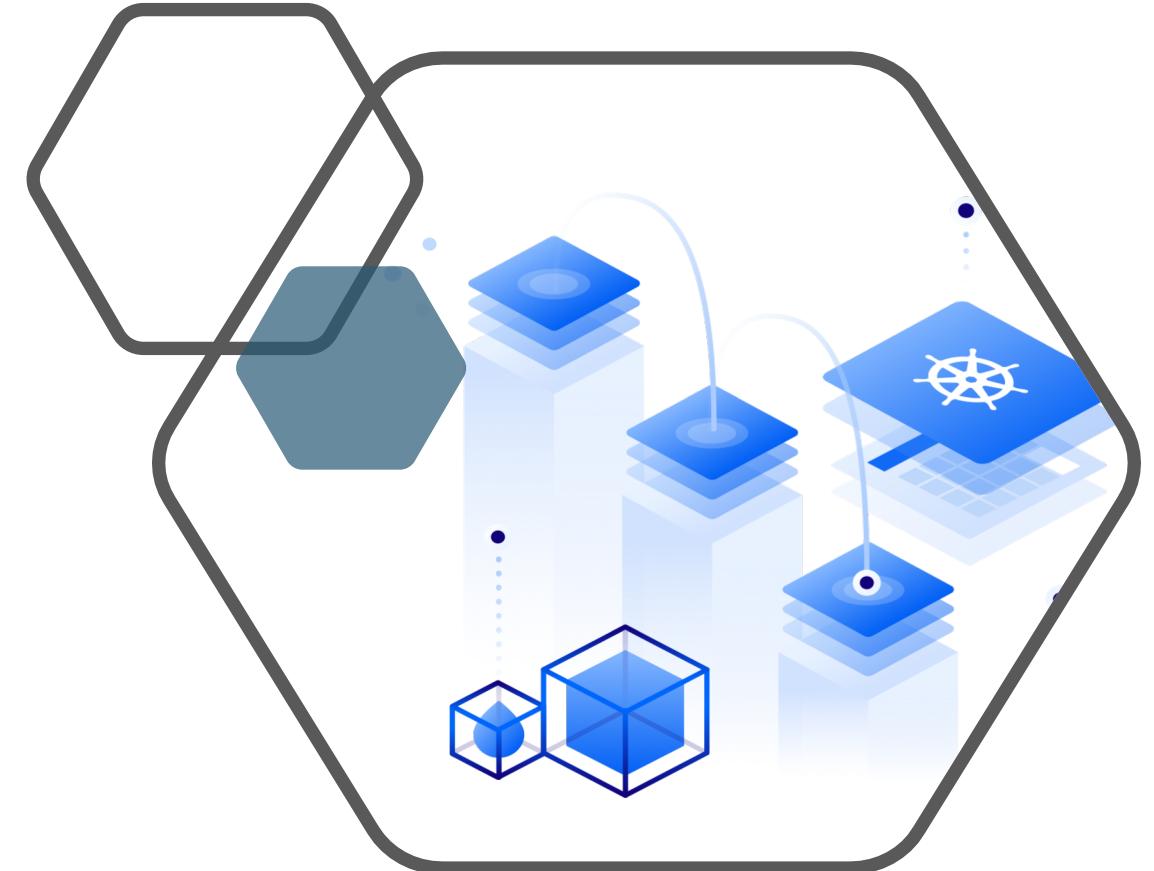
Managed
control pane

Automated
upgrades

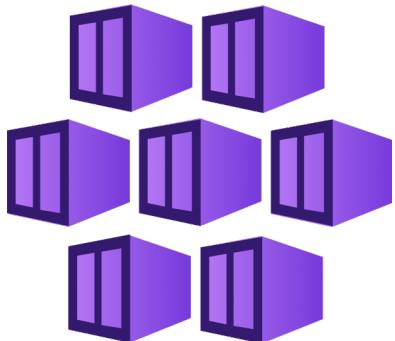


DEMO

AKS deploy, orchestrate



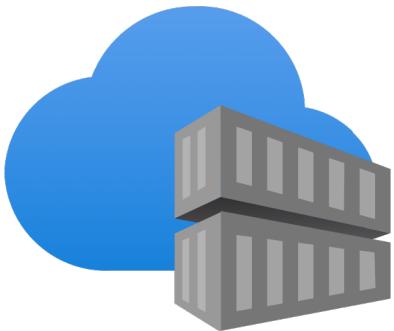
AKS - DEMO RECAP



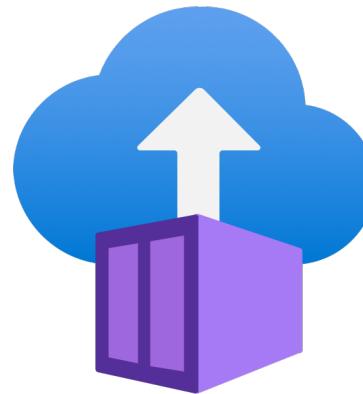
- Compute / storage is separate
- Declarative management 
- HA out of the box! 
- Managed control pane 



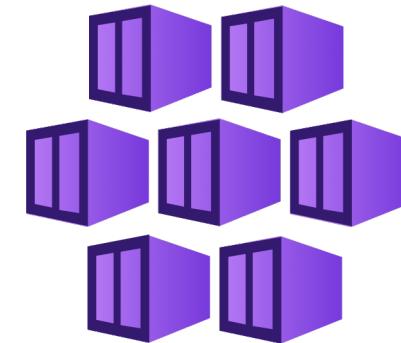
REVIEW



Azure Container
Registry



Azure Container
Instances



Azure Kubernetes
Services



Build, tag, push

Run, integrate,
test

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](#)



ARTICLES AND MORE

- **YouTube**
 - [SQL Containers on Docker & Kubernetes](#)
 - [SQL Server containers in Microsoft Azure](#)
- **Articles**
 - [Redgate - Simple Talk](#)
 - [SQL Server Central](#)
 - [MSQL Tips](#)





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Thanks!

