



PASS
MARATHON

SQL Server containers in Microsoft Azure

Carlos Robles, Principal Consultant, DBA Mastery
Moderated By: Andreas Bergstedt

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Experience

+10 years working with multiple DBMS
Microsoft Data Platform MVP
Friend for Redgate
Solutions architect

Community

Guatemala SQL Server User group leader
International speaker, volunteer, author
SQL Server Central, Simple Talk & MSSQL Tips

DBA Mastery

SQL Server tips, best practices, scripts
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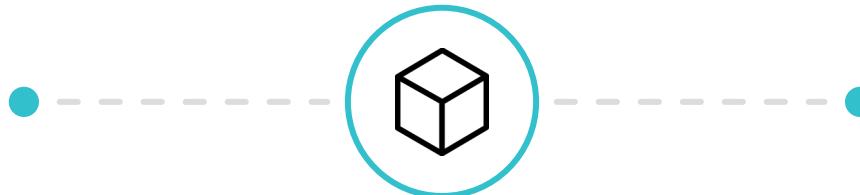
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Agenda

In this session we will explore the options we have when working with SQL Server containers in Microsoft Azure

- 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[®]

What are containers?

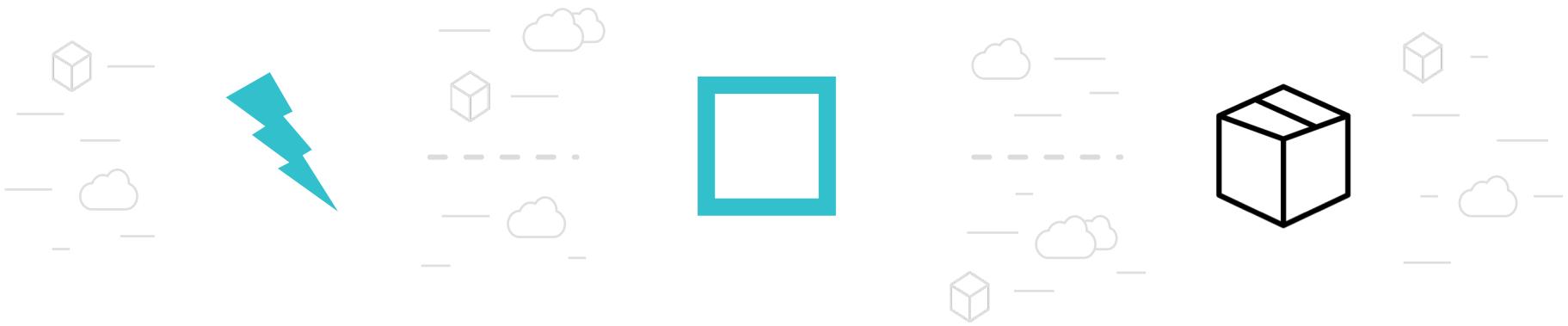


Standard

Lightweight

Cross platform

Why containers?



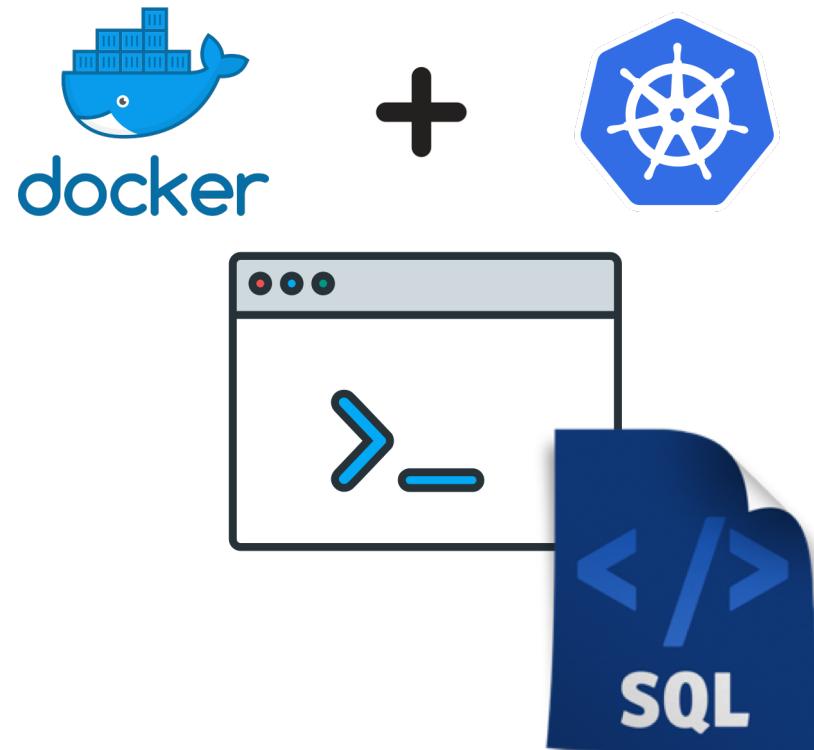
Speed

Simple

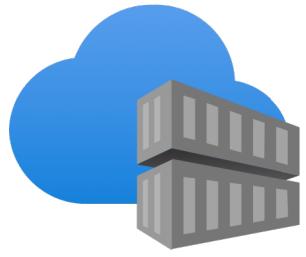
Packaging

SQL Server containers

- Easy and simple
- Agile
- DevOps
- SQL Server as application component
- Docker & Kubernetes



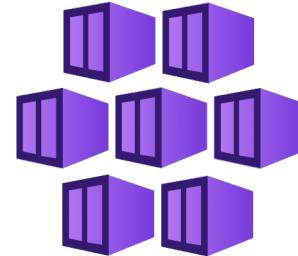
Containers in Azure?



Azure Container
Registry



Azure Container
Instances

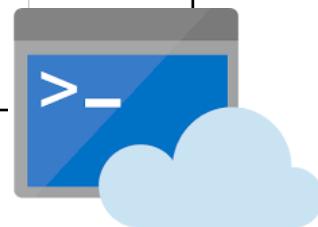


Azure Kubernetes
Services



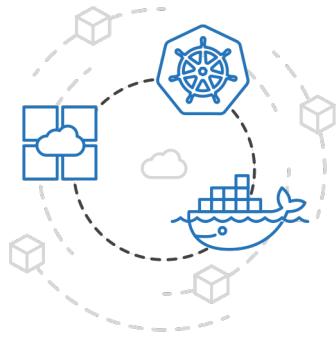
Portal & Azure CLI experience

The image displays two overlapping Azure portal windows. The left window shows the 'Container Instances' blade for a resource named 'my-container'. It includes sections for Overview, Activity log, Access control (IAM), Tags, SETTINGS (Containers, Properties, Locks, Automation script), MONITORING (Metrics (preview), Alerts), and SUPPORT + TROUBLESHOOTING (New support request). The right window shows the 'Repositories' blade for the 'gabrtv' registry, listing various Docker images such as 'gabrtv/fr-backend', 'gabrtv/fr-frontend', 'gabrtv/fr-ir', 'gabrtv/fr-webserver', 'gabrtv/gabrtv-fr-frontend', 'hello-draft', 'hipster-tapir', 'killed-giraffe', 'my-new-node-app', and 'rbtafr/fr'. Both windows have a top navigation bar with Home, aci, my-container, and a search bar.

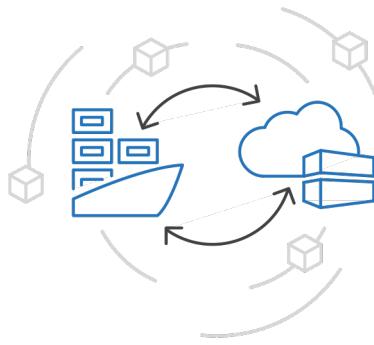


```
> az acr  
> az aci  
> az aks
```

Azure Container Registry (ACR)



Manage images for all
types of containers



Use familiar, open-
source Docker CLI tools



Azure Container Registry
geo-replication



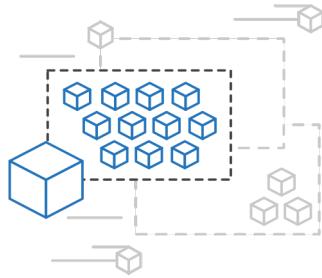
Demo

ACR – Demo recap

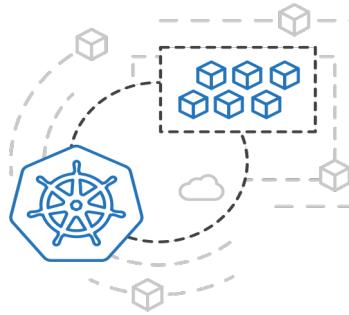


- Build, tag and push to ACR
- Visual Studio Code extension 🎉
- No Docker, no problem ! 👍
- Azure Cloud shell, to build, tag and push to ACR 🚀

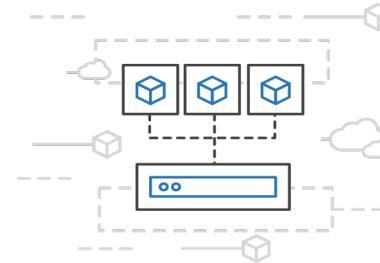
Azure Container Instances (ACI)



Run containers without managing servers



Containers as a primitive billed per second



Secure applications with hypervisor isolation

Why ACI?



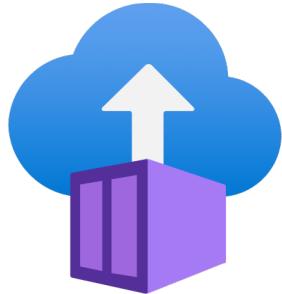
Invisible
infrastructure

Micro-billing

Modularity

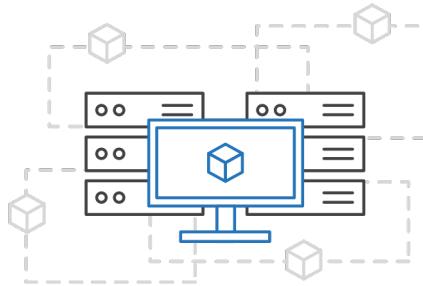
Demo

ACI – Demo recap



- Azure CLI and portal experience 
- Azure file share integration
- Azure file explorer 
- Multi-container deployment (YAML) 

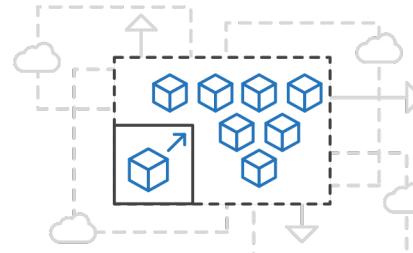
Azure Kubernetes Services (AKS)



Focus on your
containers not the
infrastructure



Work how you
want with open-
source APIs



Scale and run
applications with
confidence

Why AKS?



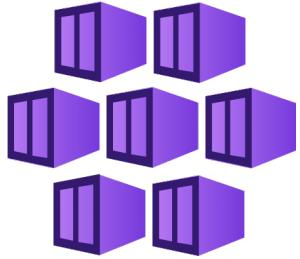
Easy cluster
scaling

Managed
control pane

Automated
upgrades

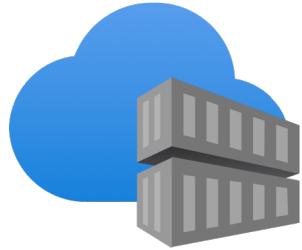
Demo

AKS - Demo recap



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

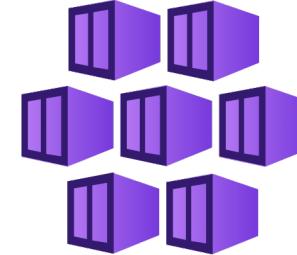
Review



Azure Container Registry



Azure Container Instances



Azure Kubernetes Services

Build, tag, push

Run, integrate,
test

Deploy, orchestrate,
scale



Resources and more



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DBA Master



A photograph of a man and a woman sitting at a wooden table, looking at a laptop screen. The man is holding a pen over the keyboard. A tablet is also on the table. Overlaid on the image are several large, colorful question mark icons in red, orange, green, blue, and purple.

Questions?

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Coming up next...

Encrypting Data Within SQL Server

Tom Norman



Thank you for attending

Learn more from **Carlos Robles**

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