



GLOBAL

DEUOPS

BOOTCAMP

BY XPIRIT & SOLIDIFY



Welcome
Québec!

Creative minds behind Global DevOps Bootcamp



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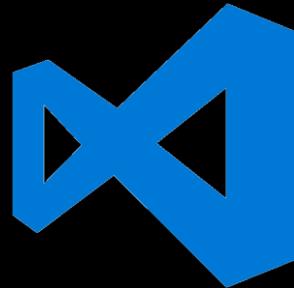
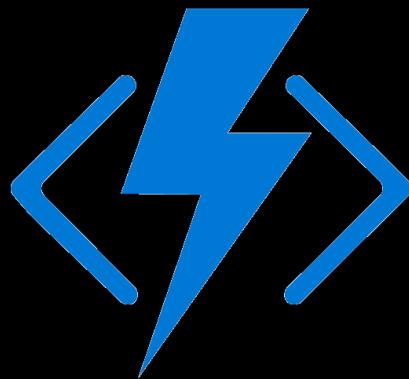
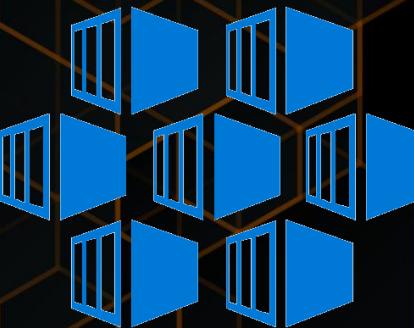
Microsoft

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Communauté Microsoft Azure Québec



Global DevOps Bootcamp

From **Server to Server less**, the next step
in cloud computing

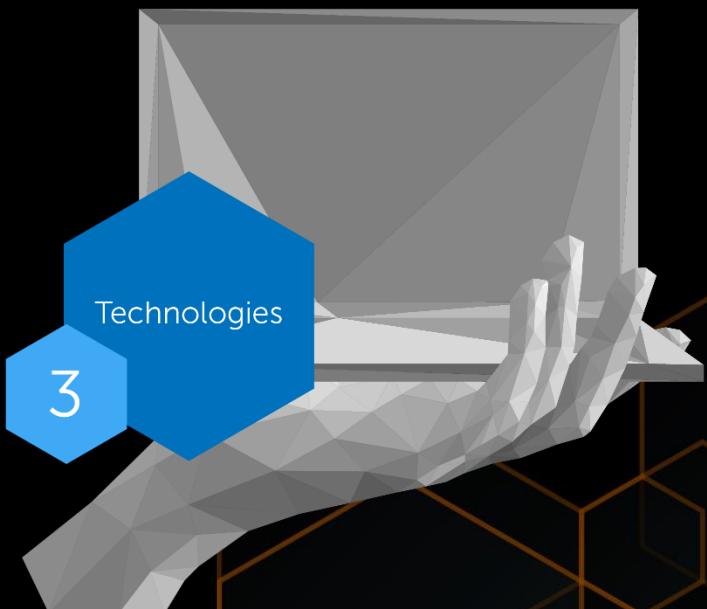
Traditional vs Modern IT

Traditional IT	Modern IT
Waterfall approach	Agile, often Scrum approach
Different teams or organizational units for requirements, development, test and operations	Multidisciplinary teams where all disciplines work together on small piece to deliver
Clear separation between Business and IT (Demand/Supply)	Business, IT and Operations in one Team
Release software 2 or 3 times a year	Release Multiple times a Day
Budget/Cost driven	Value Stream Driven

“DevOps is the union of people,
process, and products to enable
continuous delivery of value to
our end users.”

Donovan Brown

DevOps: the three stage conversation





The DevOps Challenge

Everybody is responsible for the delivery of value!

- Need for Self Service.
- Need for Secure defaults.
- Needs for automated build & deployment.
- Need for Telemetry to support pro-active monitoring.
- Need for auto scale up & down.



Automate Everything

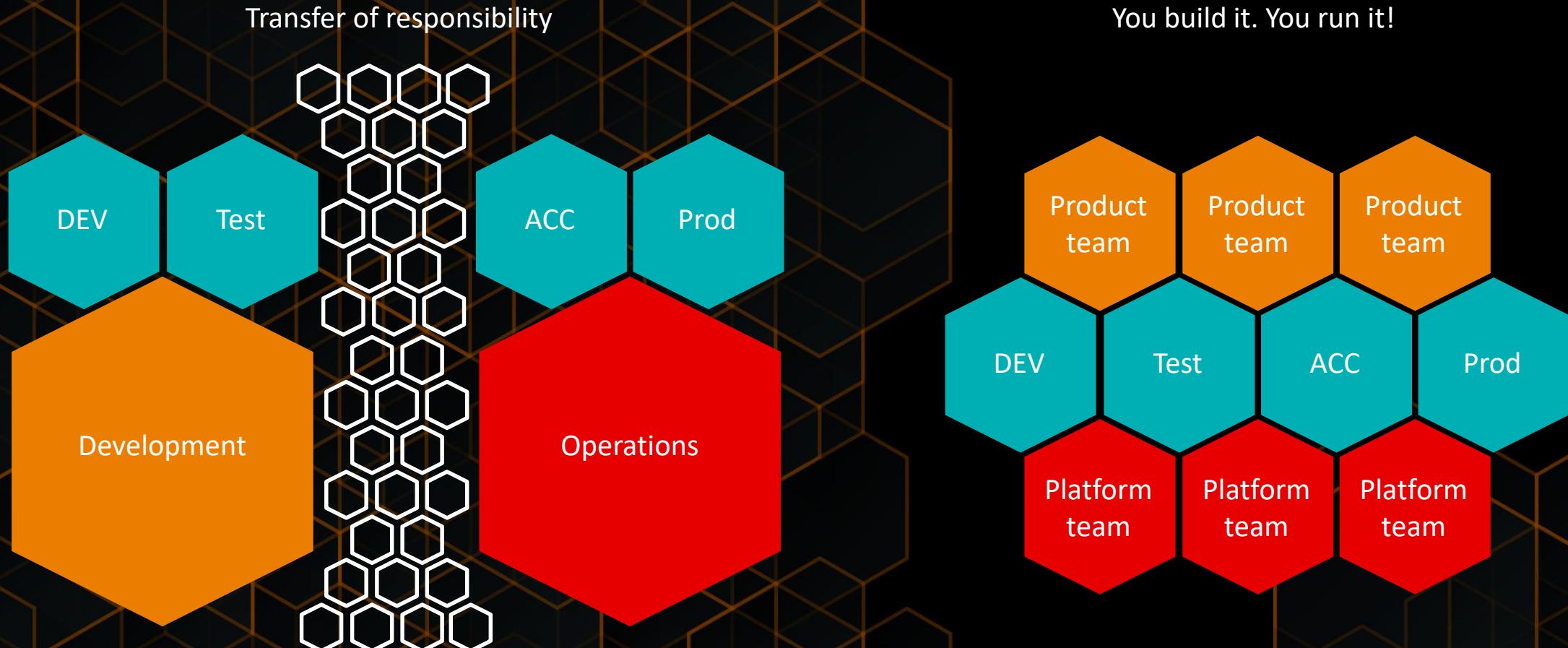
- To achieve faster delivery we must ensure stable and secure releases.
- By automating everything, you achieve stability and reliability of the release process.
- By automating quality gates we ensure reliable and predictable validation.
- Infrastructure is part of the automation.



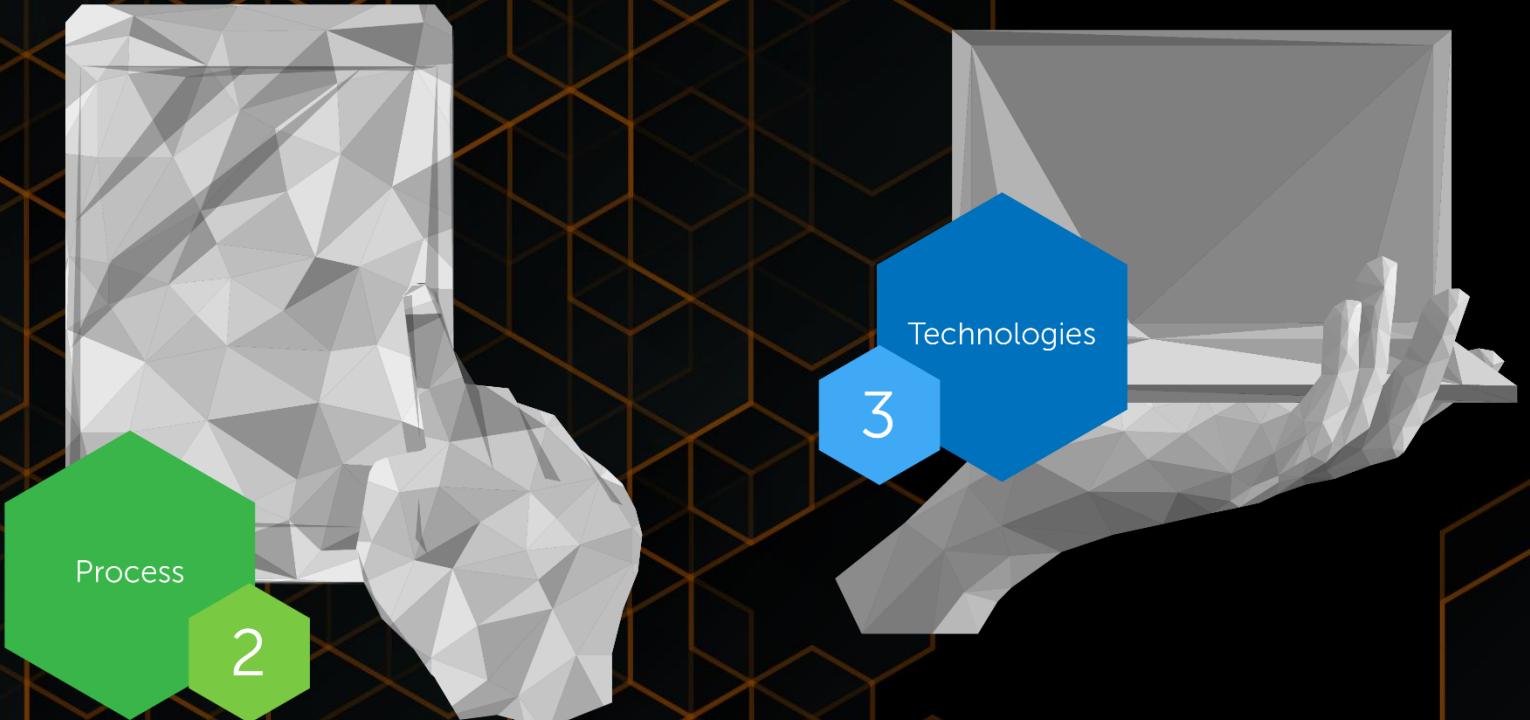
The DevOps Principles

- Customer-centric action.
- Create with end in mind.
- End-to-End Responsibility.
- Cross-functional autonomous teams.
- Continuous Improvement.
- Automate everything you can.

End to End Responsibility



Global DevOps Bootcamp Focus



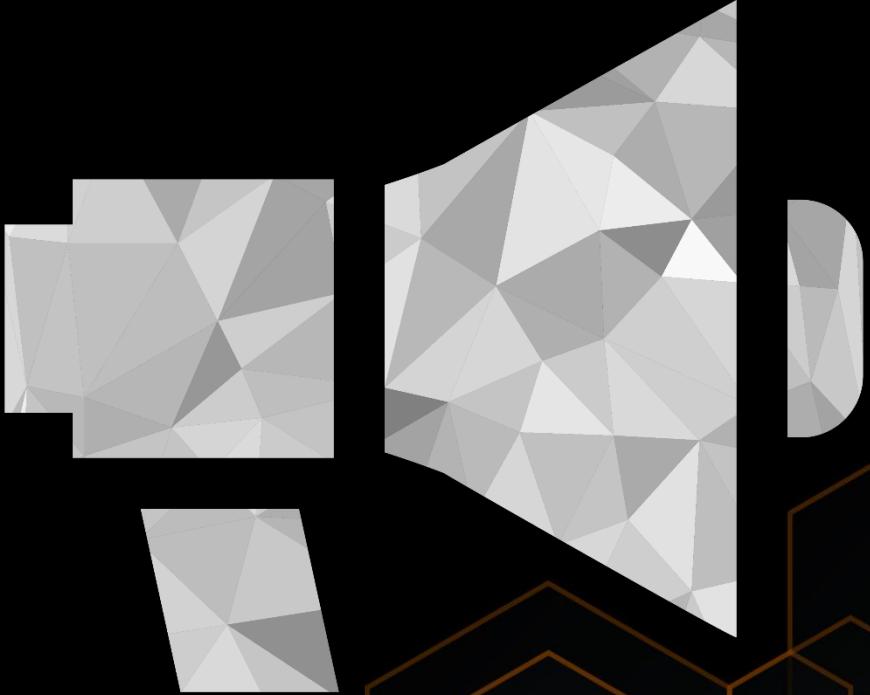
“Our highest priority is to satisfy
the customer through early and continuous
delivery of valuable software.”

1st principle behind agile manifesto

<http://agilemanifesto.org/principles.html>

The Eight Principles of Continuous Delivery

1. The process for releasing/deploying software MUST be repeatable and reliable.
2. Automate everything!
3. If something's difficult or painful, do it more often.
4. Keep everything in source control.
5. Done means "released".
6. Build quality in!
7. Everybody has responsibility for the release process.
8. Improve continuously.



Four Practices of Continuous Delivery

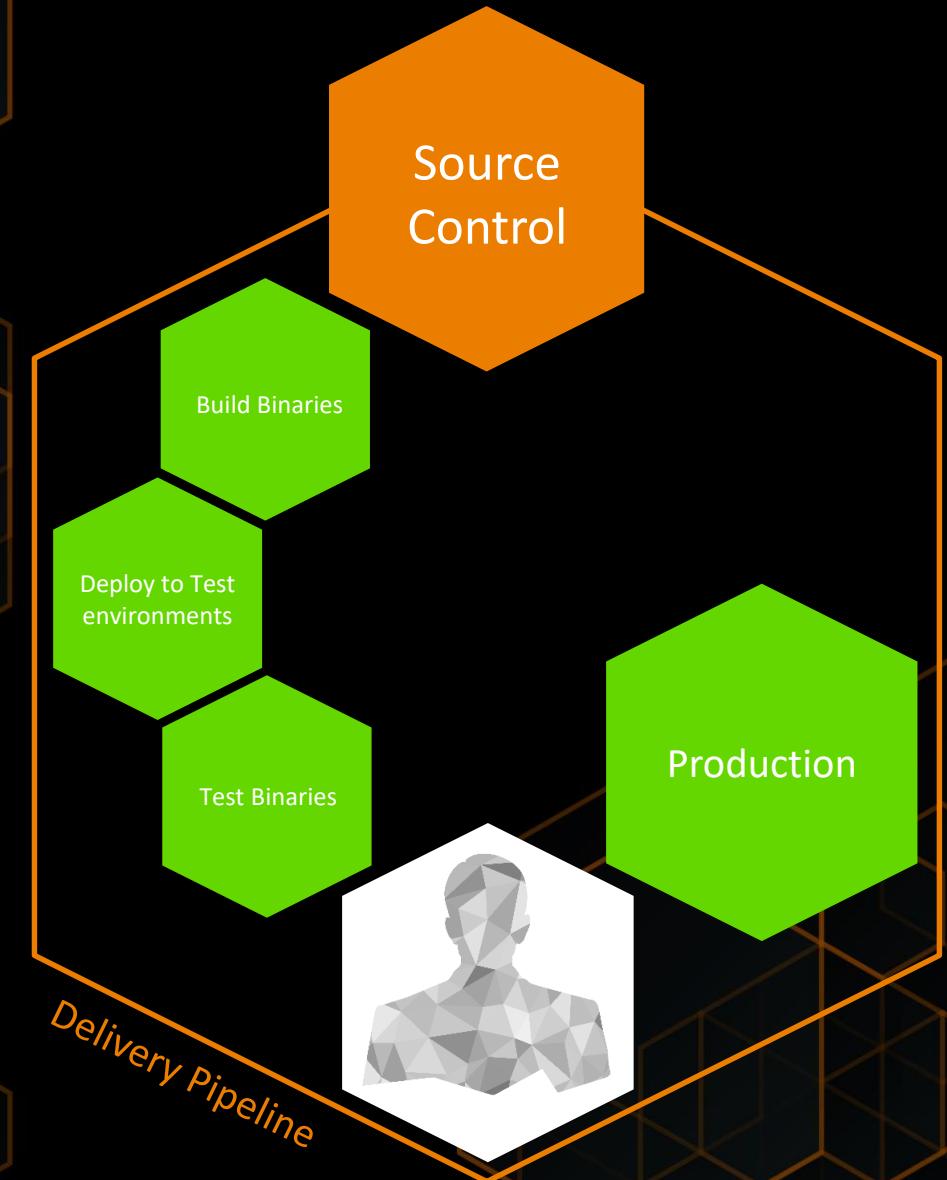
1. Build binaries only once.
2. Use precisely the same mechanism to deploy to every environment.
3. Smoke test your deployment.
4. If anything fails, stop the line!



Continuous Delivery & Delivery Pipeline

The deployment pipeline is the key pattern that enables Continuous Delivery.

- Source Control is the starting point of delivery.
- Several stages before we get to production.
- Build, Deploy and Test.



Automating the CI Pipeline with VSTS



Demo - Automating the CI Pipeline with VSTS

Visual Studio - Web + UnitTests (About page: RuntimeInformation.OSDescription)

Run locally - Show About

VSTS – Code - Git

VSTS – Build - definition, artifacts, queue, console, continuous integration

A large satellite dish antenna is positioned in a desert landscape at sunset. The dish is angled upwards, reflecting the warm orange and yellow light of the setting sun. The background features rolling hills under a clear blue sky. A geometric overlay of red and blue hexagonal patterns covers the left side of the image, partially obscuring the dish.

Continuous Delivery goes
Beyond the pipeline!



Shipping the monolith...

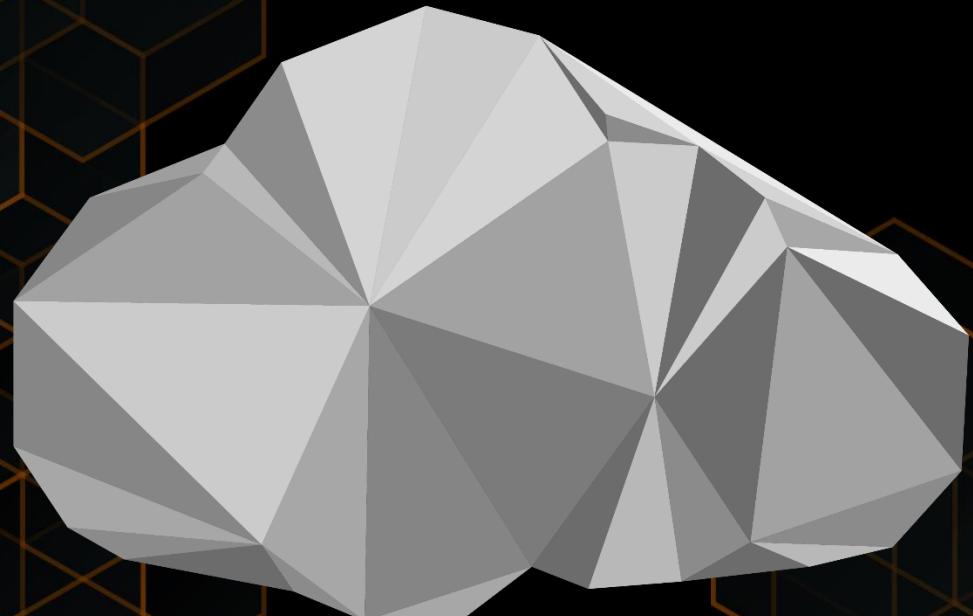
A photograph of several Amazon shipping boxes stacked in a grassy field. One box in the foreground clearly displays the 'amazon.co.jp' logo. The background is a soft-focus view of more boxes and greenery.

Find the right platform
for application

Pushing Containers

“Innovate together to
provide Next generation
cloud solutions.”

100% Azure



Cloud enables self service

Self service is key enabler for value stream delivery

Scale up or down based on demand

Pay as you go

Rapid innovation

The cloud has changed expectations



Availability

100% Uptime



Hyper-scale

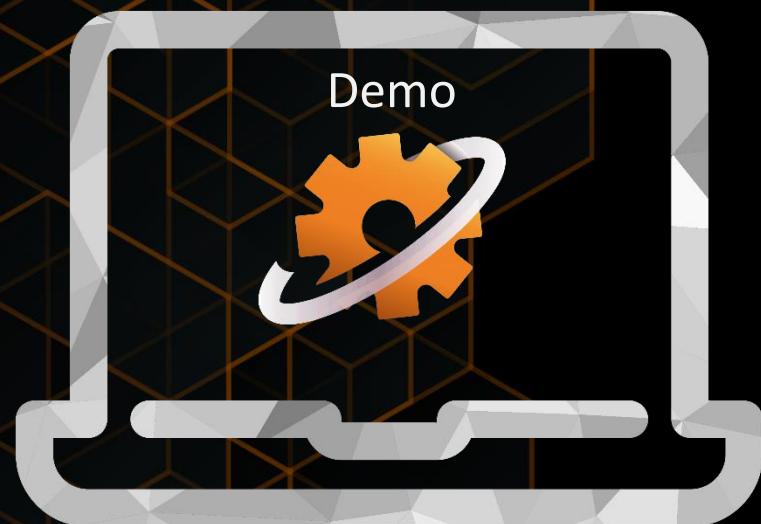
From startup to enterprise



Agility

Deliver just in time speed

Automating CD pipeline to Azure PaaS



Demo - Automating CD pipeline to Azure PaaS

VSTS – Release - Continuous deployment, release definition, tasks, environments

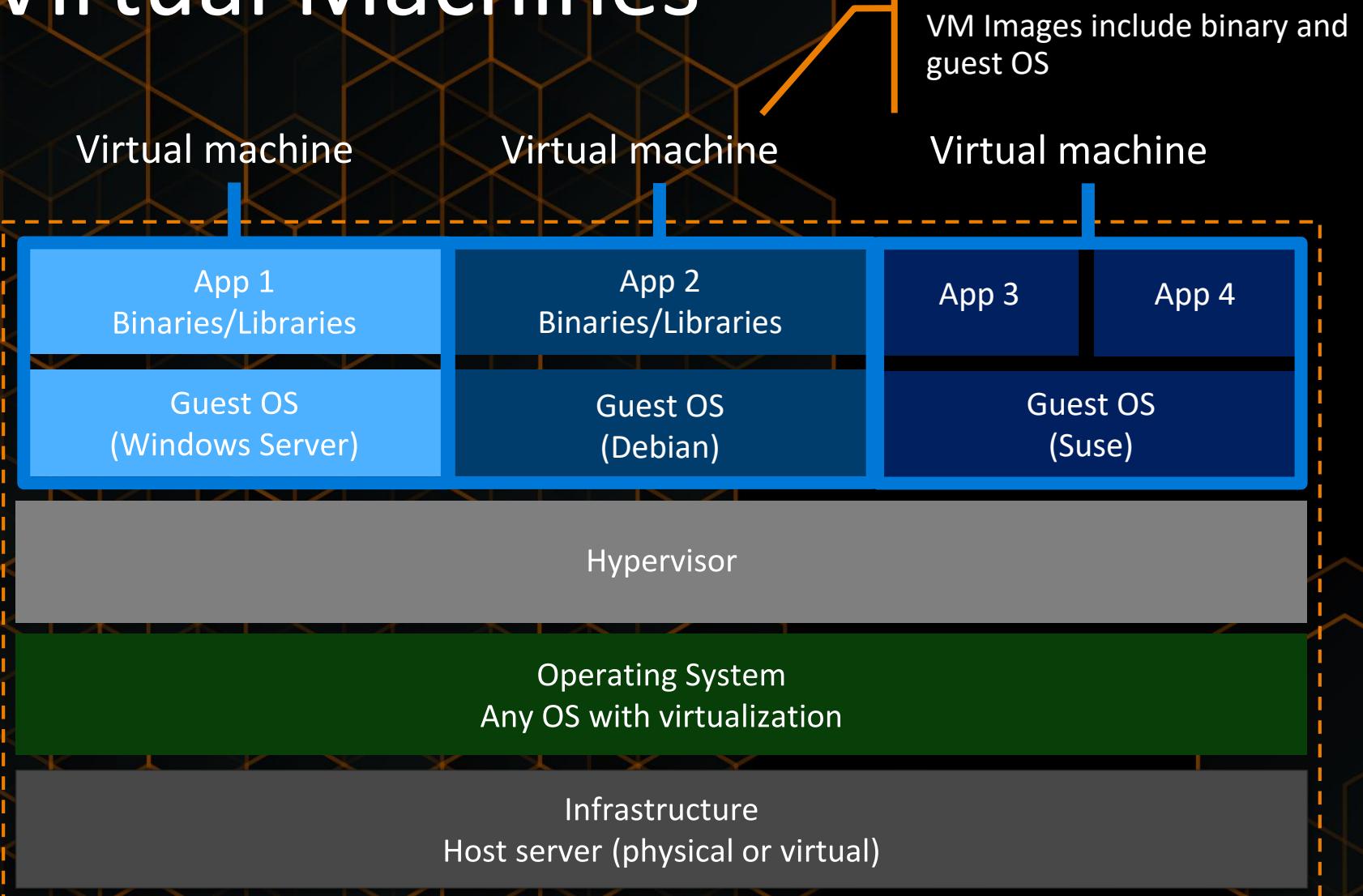
Azure portal - web app blade – scale, etc.

Browse on Azure - Show About

Evolution of application delivery



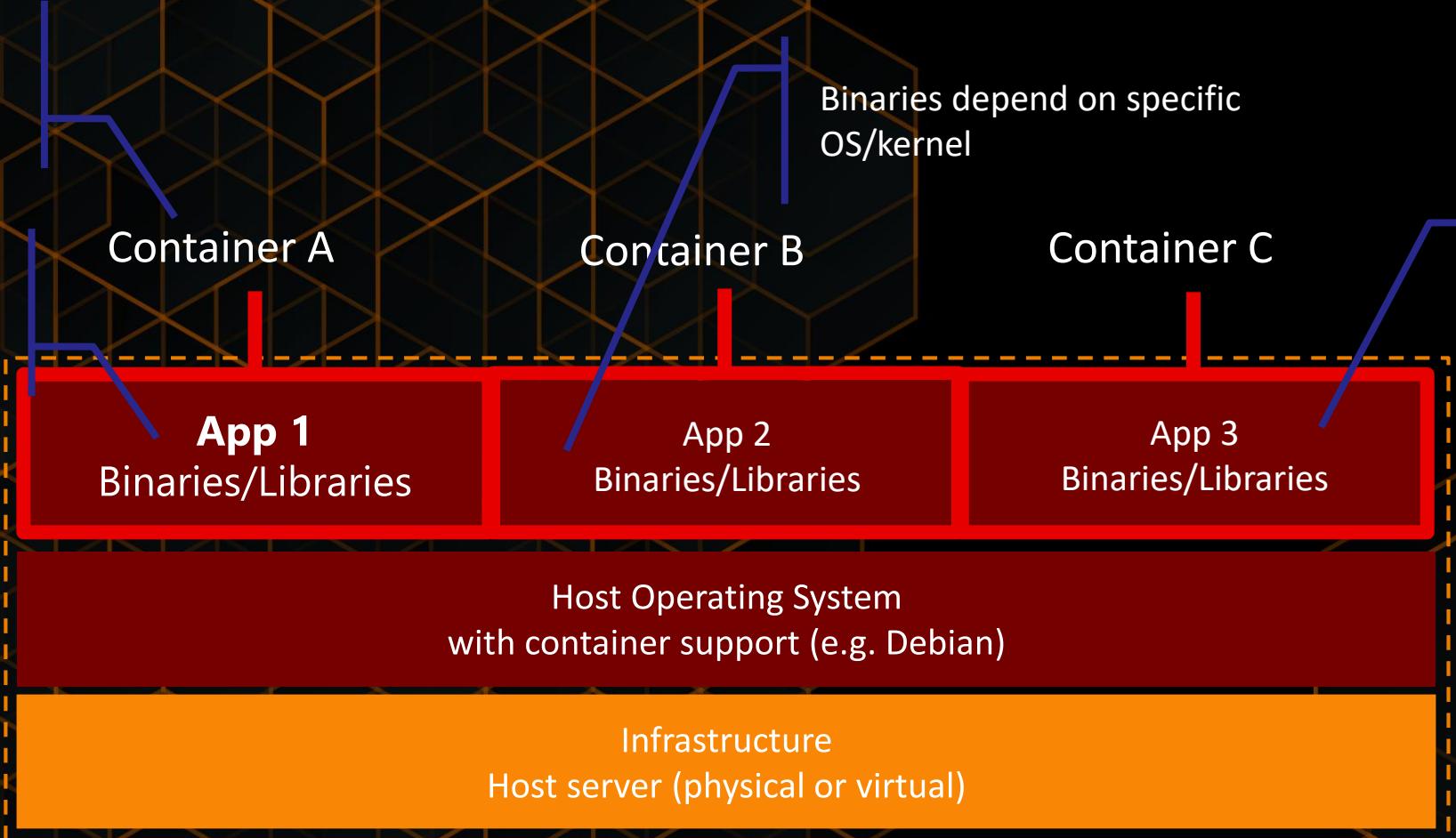
From Virtual Machines



To Linux Containers

Isolation from
kernel-level
container
support

Containers are
started from
images



Isolation from
kernel-level
container
support

Containers are
started from
images

Binaries depend on specific
OS/kernel

No guest OS
needed

To Windows Containers

Similar to Linux, but Windows instead

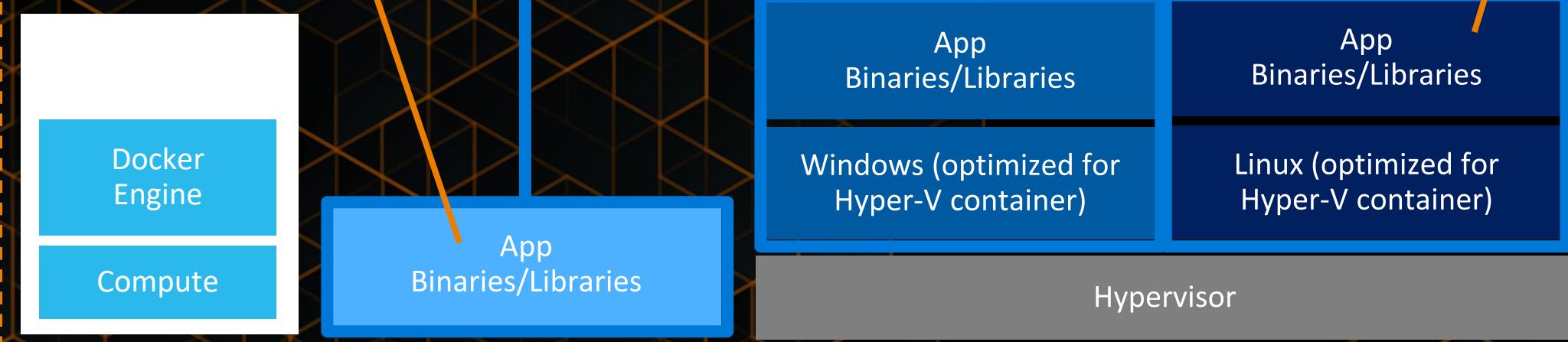
Windows Server Container

Hyper-V
Windows Container

Better isolation from hypervisor virtualization

Hyper-V
Linux Container

Coming soon

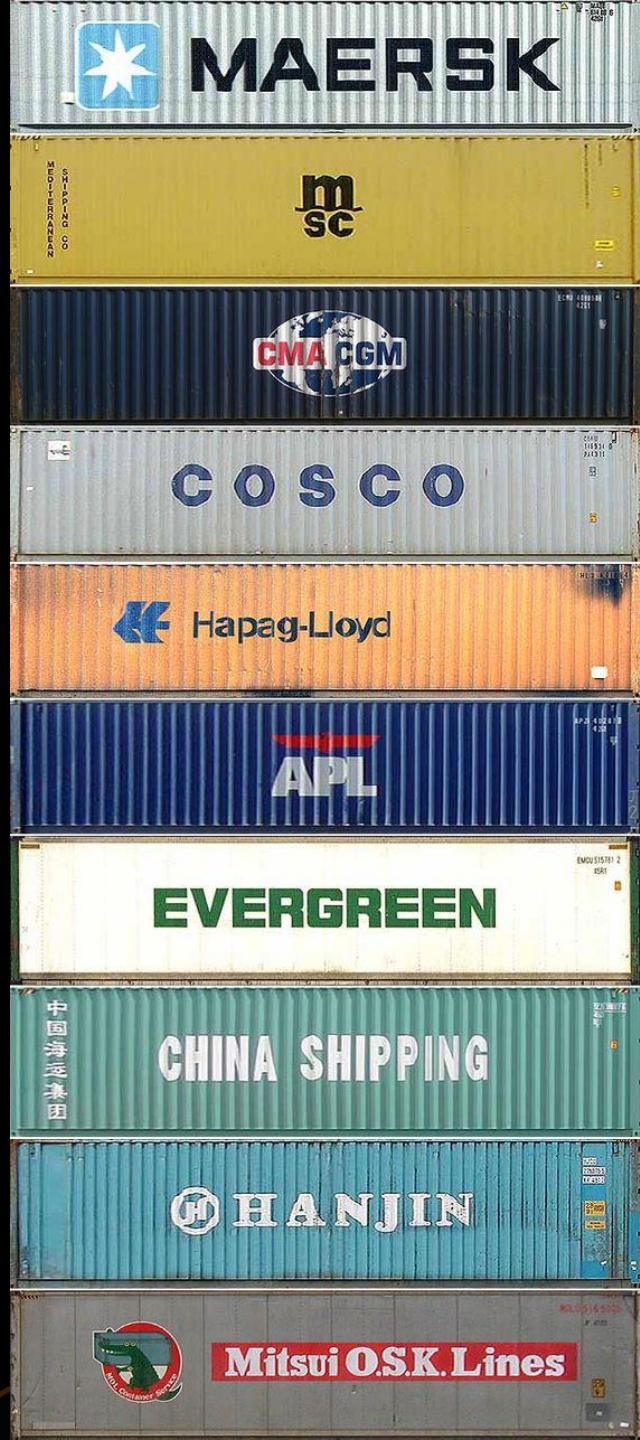
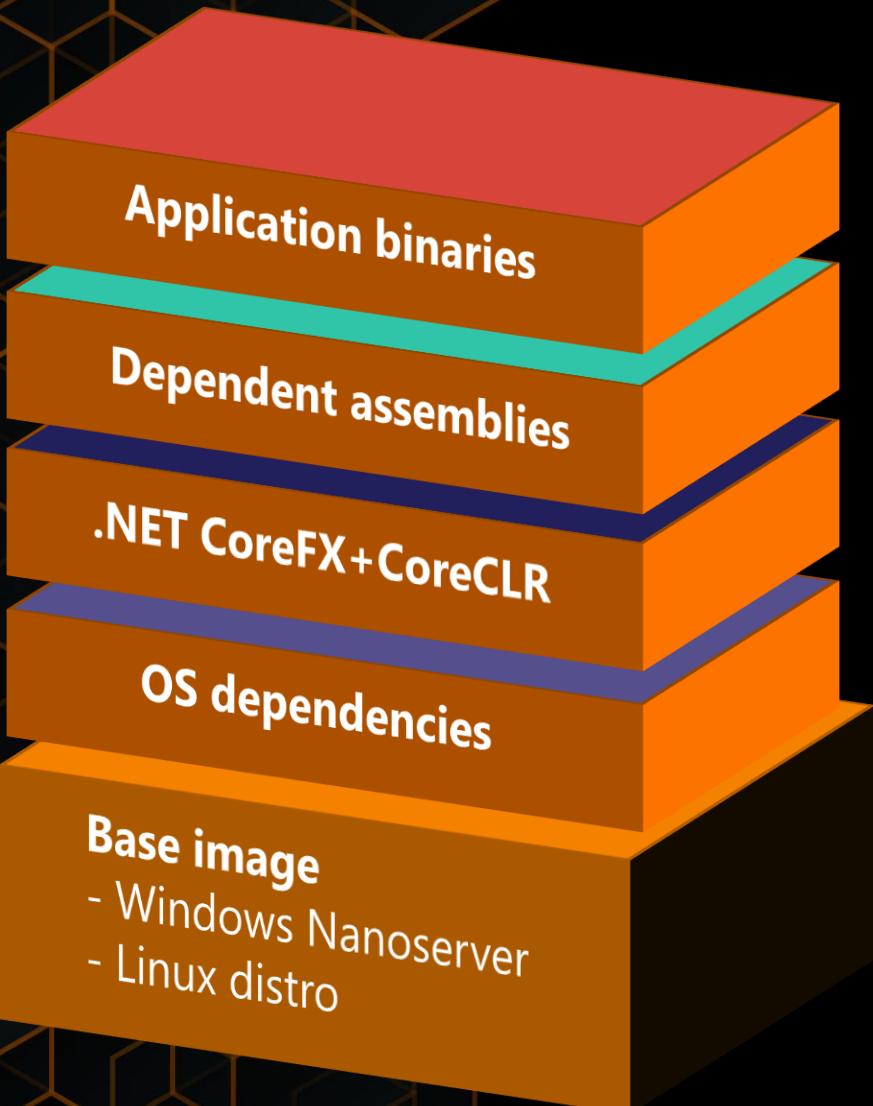


Host Operating System
Windows Server 2016

Infrastructure
Host server (physical or virtual)

Docker Image Layers

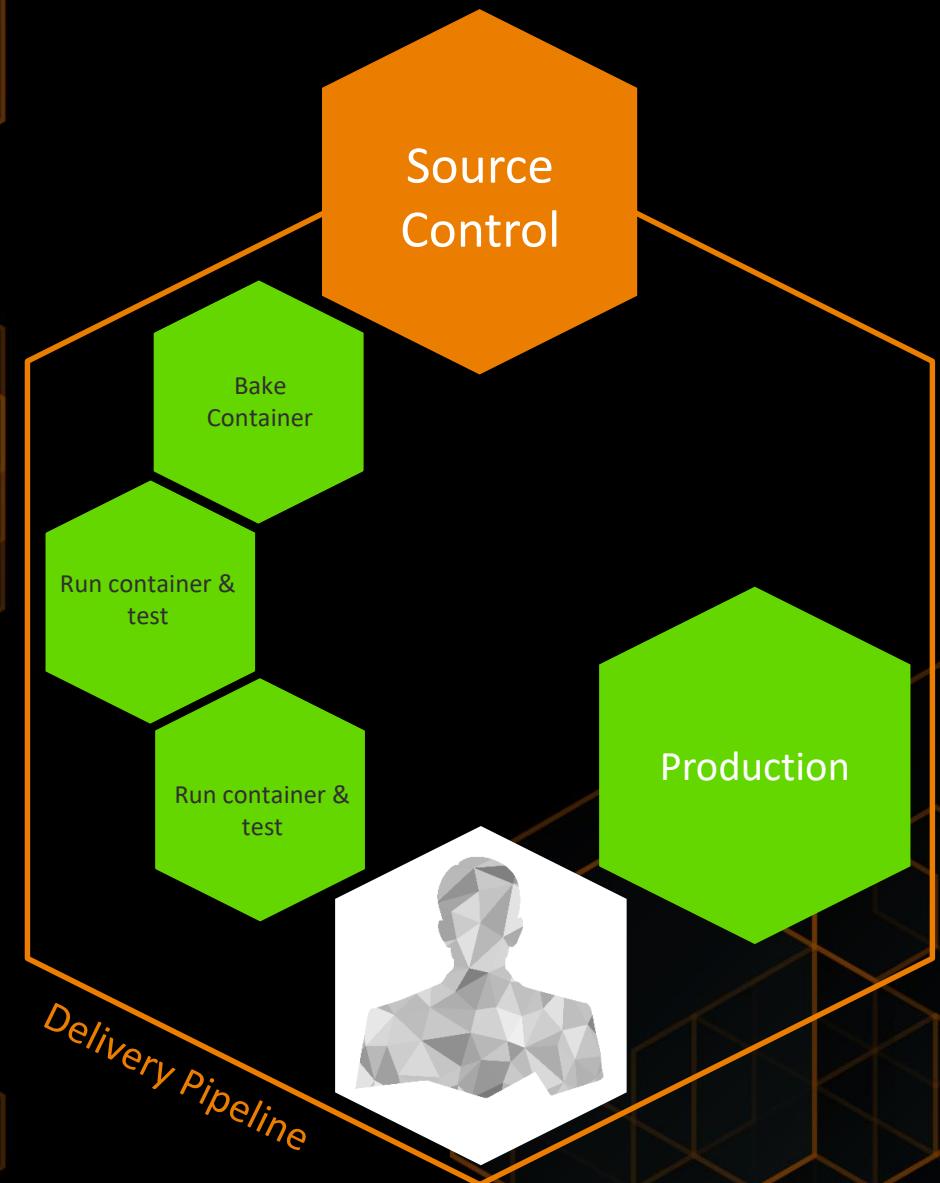
Your application layer
microsoft/aspnetcore:1.1.1
microsoft/dotnet:1.0.0-sdk
microsoft/dotnet:1.1.1-runtime
microsoft/dotnet:1.1.1-runtime-deps
microsoft/nanoserver:10.0.14393.1066
e.g. debian/jessie



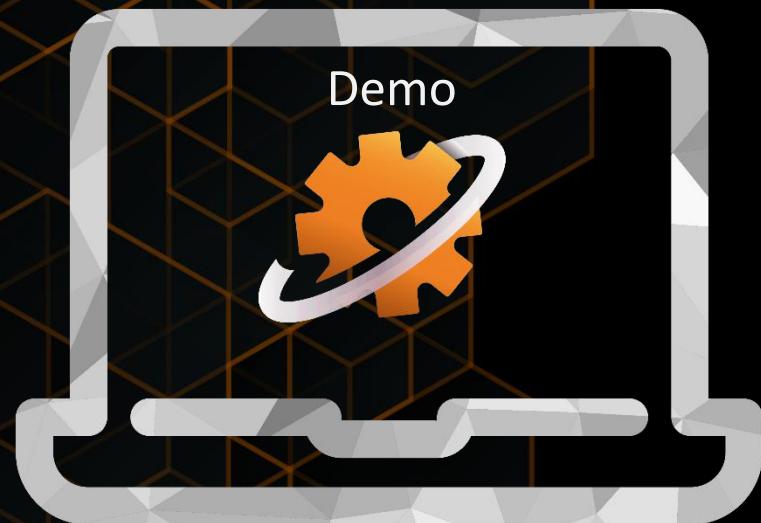
Impact of Containers on the Pipeline

The big change containers bring,
is the build once deploy anywhere
principle.

We bake the container and then we
move them between environments.



Containerize your applications



Demo - Containerize your applications

Visual Studio - Add “Docker support” to the web app project

Show the docker file with container definition

Deploy locally – Show About

Deploy it on Azure Web App (Linux) – Show About



Join the hands-on
DevOps challenges!

3 DevOps Challenges

1. Move to the cloud
2. Containerized
3. Serverless

<https://aka.ms/gdbc2017-quebec>



Have fun!

Let's tweet

#gdbc and #gdevopsbc

And share your feedback then

<http://xpir.it/gdbc-survey>

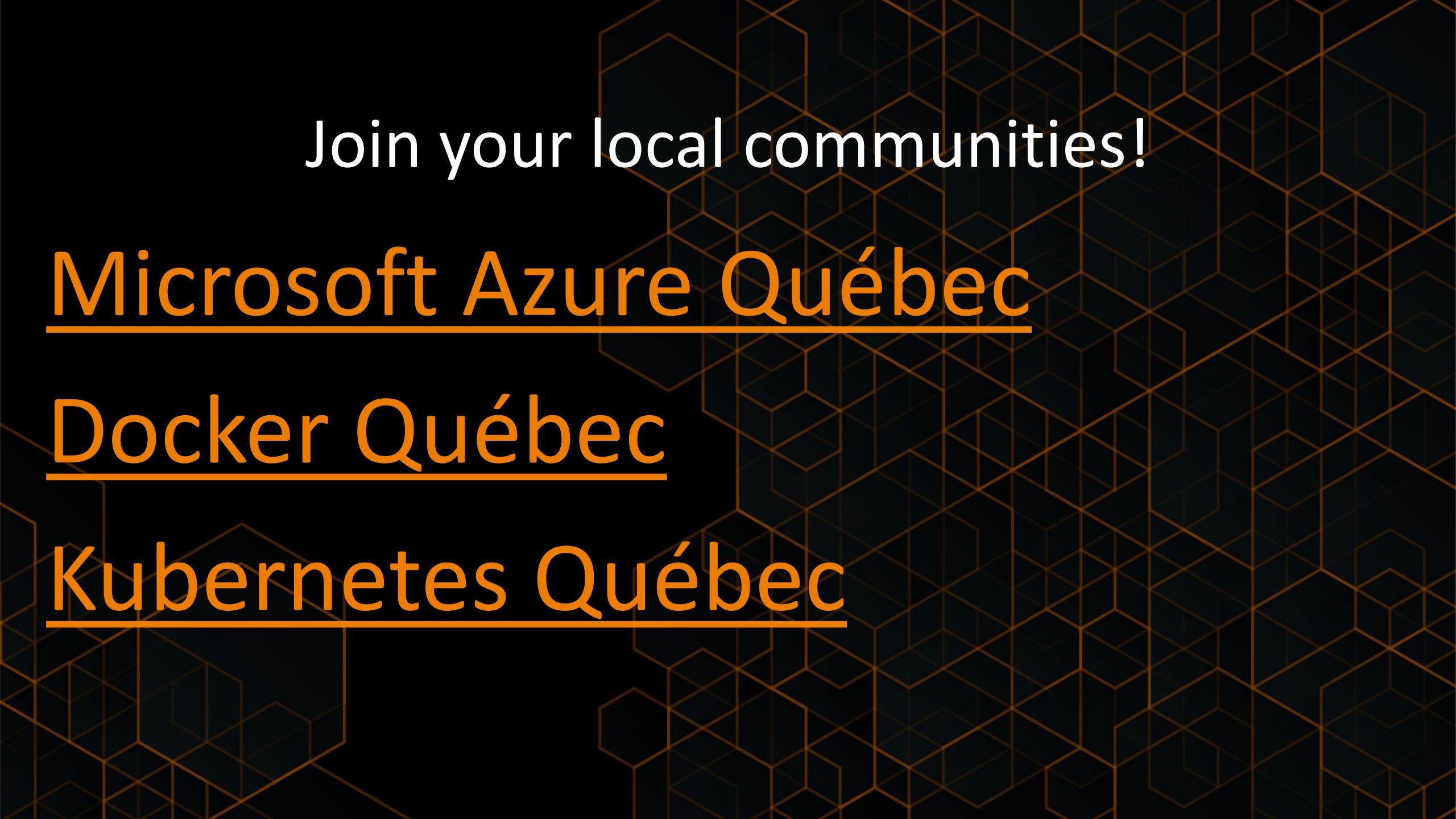
OpenDev - <http://azure.com/opendev> - June 21

SEE WHAT'S POSSIBLE



June 21, 2017 | 9:00 AM PT

Time	Company	Speaker	Session Title
9:00am	Microsoft	John Gossman Lead Architect, Azure	Welcome session
9:10am	docker	Scott Johnston Chief Operating Officer	Docker and Azure for Hybrid Applications
9:40am	CANONICAL	Mark Shuttleworth Founder and Executive Chairman	Large-scale container orchestration with Kubernetes on Azure
10:10am	Pivotal	Joshua McKenty Head of Global Ecosystem Engineering Customer: Rich Clark, Mastercard	All tomorrow's parties: Modern enterprise Java with Microsoft Azure and Pivotal Cloud Foundry
11:00am	redhat.	Nicholas Gerasimatos Emerging Technologies Evangelist	Red Hat and Microsoft: your technology, your platform, your way.
11:30am	CHEF	Nell Shamrell-Harrington Sr. Software Development Engineer	Creating Platform Agnostic Packages with Habitat
12:00pm	Microsoft	Gabe Monroy Lead Program Manager, Azure, and former CTO at Deis Michelle Noorali Senior Software Engineer, Azure, and core maintainer of the Kubernetes Helm project	Tools for Developing & Deploying Applications on Kubernetes
12:30pm	skype	Kaspars Mickevics Senior Engineering Manager	Lessons learned in managing a global-scale Linux infrastructure for Skype on Azure
1:00pm	Microsoft	John Gossman Lead Architect, Azure	Closing remarks



Join your local communities!

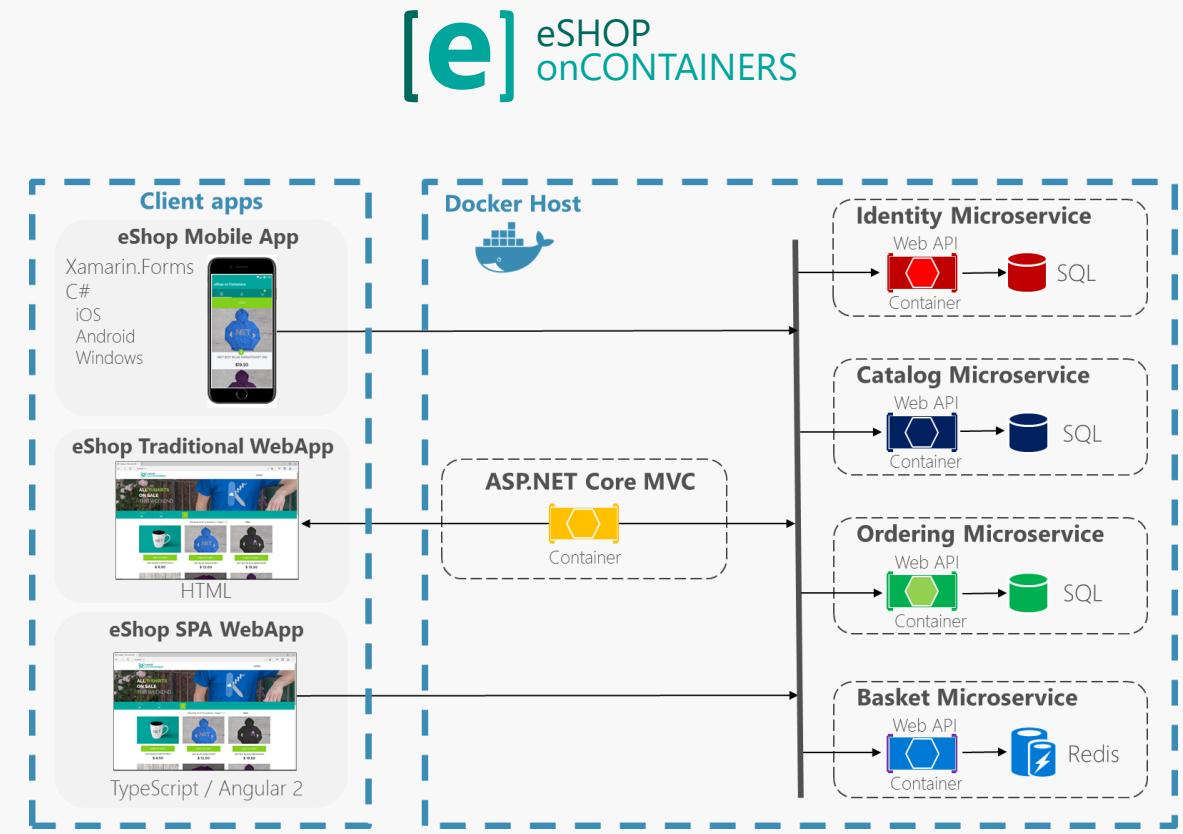
Microsoft Azure Québec

Docker Québec

Kubernetes Québec

.NET Core microservices reference app

- Includes backend services architected with best practices
- Mobile and web client apps included
- Supported in Visual Studio 2017
- Supported on Docker and dotnet CLI on Mac, Linux or Windows



Explore our beta release
and provide feedback:

<http://aka.ms/MicroservicesArchitecture>

Azure Skills Initiative - MOOCs

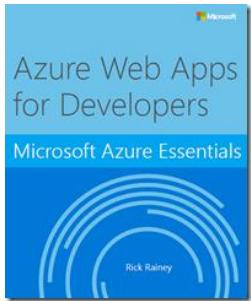


Fundamentals	<u>Microsoft Azure Fundamentals</u>	<u>Microsoft Azure for AWS Experts</u>
	<u>Developing Microsoft Azure Solutions (70-532)</u>	<u>Architecting Microsoft Azure Solutions (70-534)</u>
	<u>Selling SAP on Azure</u>	<u>Getting Started with Azure App Service: Web Apps</u>
Core IaaS	<u>Microsoft Azure Virtual Machines</u>	<u>Microsoft Azure Identity</u>
	<u>Microsoft Azure Virtual Networks</u>	<u>Microsoft Azure Storage</u>
Deployment	<u>Microsoft Azure App Services</u>	<u>Databases in Azure</u>
	<u>Azure Application Deployment and Management</u>	
Securing & Managing	<u>Managing Azure Workloads</u>	<u>Azure Security and Compliance</u>
Scale and Agility	<u>Automating Azure Workloads</u>	<u>Continuous Integration and Continuous Deployment</u>
Migration	<u>Migrating Workloads to Azure</u>	
DevOps	<u>Introduction to DevOps Practices</u>	
	<u>DevOps on Azure PaaS</u>	<u>DevOps Testing</u>
	<u>Infrastructure as Code</u>	<u>Application Monitoring and Feedback Loops</u>
Advanced Analytics	<u>Processing Big Data with Hadoop in Azure HDInsight</u>	<u>Implementing Real-Time Analytics with Hadoop in Azure HDInsight</u>
	<u>Implementing Predictive Analytics with Spark in Azure HDInsight</u>	<u>Delivering a Data Warehouse in the Cloud</u>
	<u>Developing NoSQL Solutions in Azure</u>	<u>Processing Big Data with Azure Data Lake Analytics</u>
	<u>Processing Real-Time Data Streams in Azure</u>	<u>Orchestrating Big Data with Azure Data Factory</u>
	<u>Provisioning SQL Server and Azure SQL Databases</u>	<u>Securing Data in Azure and SQL Server</u>
	<u>Recovering Data in Azure and SQL Server</u>	<u>Developing IoT Solutions with Azure IoT</u>

Free e-books – Azure App Development



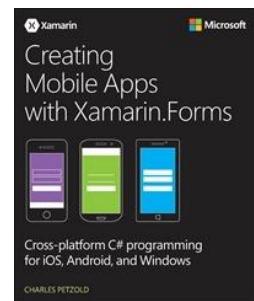
[Azure Developer Guide](#)



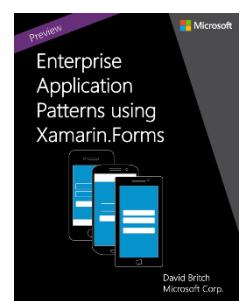
[Web Apps for Devs](#)



[Mobile App Dev](#)



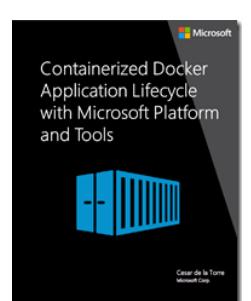
[Xamarin.Forms](#)



[Enterprise Application Patterns using Xamarin.Forms](#)

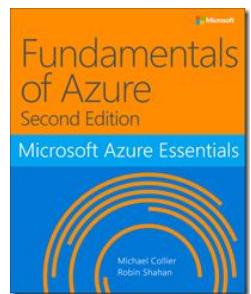


[Containerized and Microservice based .NET Applications](#)

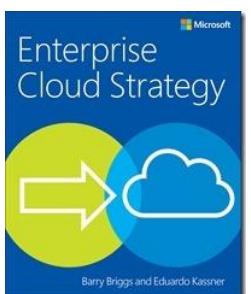


[Containerized Docker Application Lifecycle](#)

Other



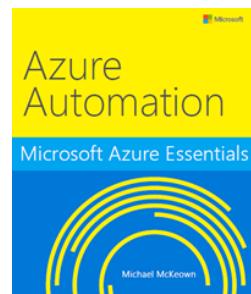
[Fundamentals](#)



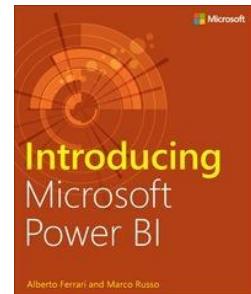
[Enterprise Cloud Strategy](#)



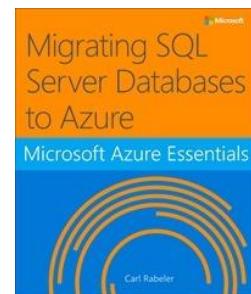
[Cloud Design Patterns](#)



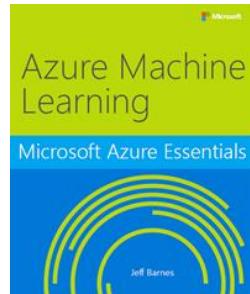
[Automation](#)



[Introducing Microsoft Power BI](#)

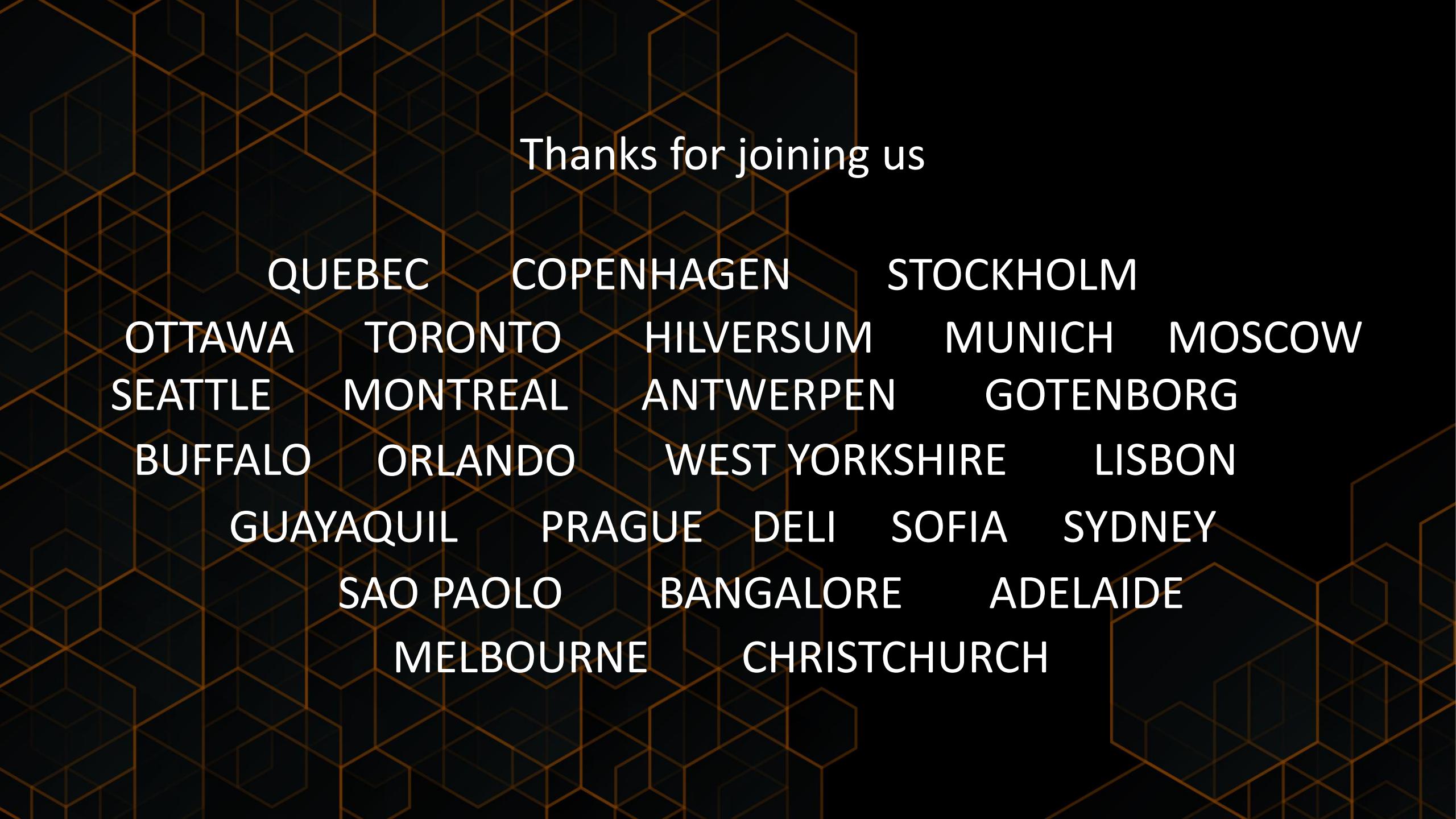


[Migrating SQL Server Databases to Azure](#)



[Azure Machine Learning](#)

Azure Data & Analytics



Thanks for joining us

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