Twin Cities Code Camp

#tccc23

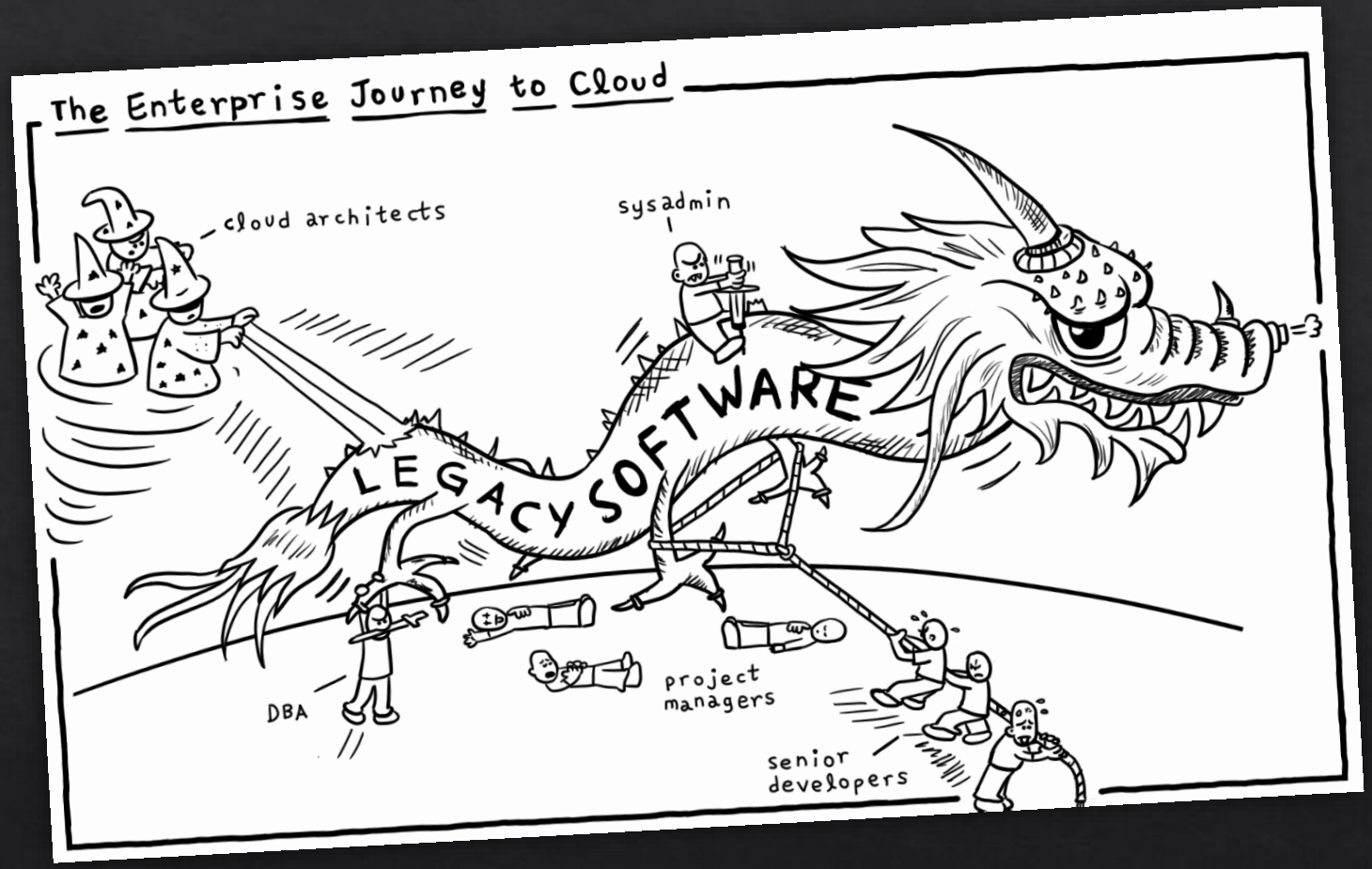
Where's my stuff?

EXPLORING DATA OPTIONS FOR THE MODERN APP

MIKE BENKOVICH | MIKE@BENKO.COM | WWW.BENKOTIPS.COM | @MBENKO

Mike Benkovich

- Enterpise Cloud Architect & **Consultant**
- Live in **Minneapolis**
- Founder of **Imagine Technologies**, Inc.
- Developing Courses for **LinkedIn** Learning
- Blog www.benkoTIPS.com
- Follow @mbenko on **Twitter**
- Send me **Feedback**! mike@benko.com



http://turnoff.us/geek/enterprise-vs-startup-journey-to-cloud/

Today

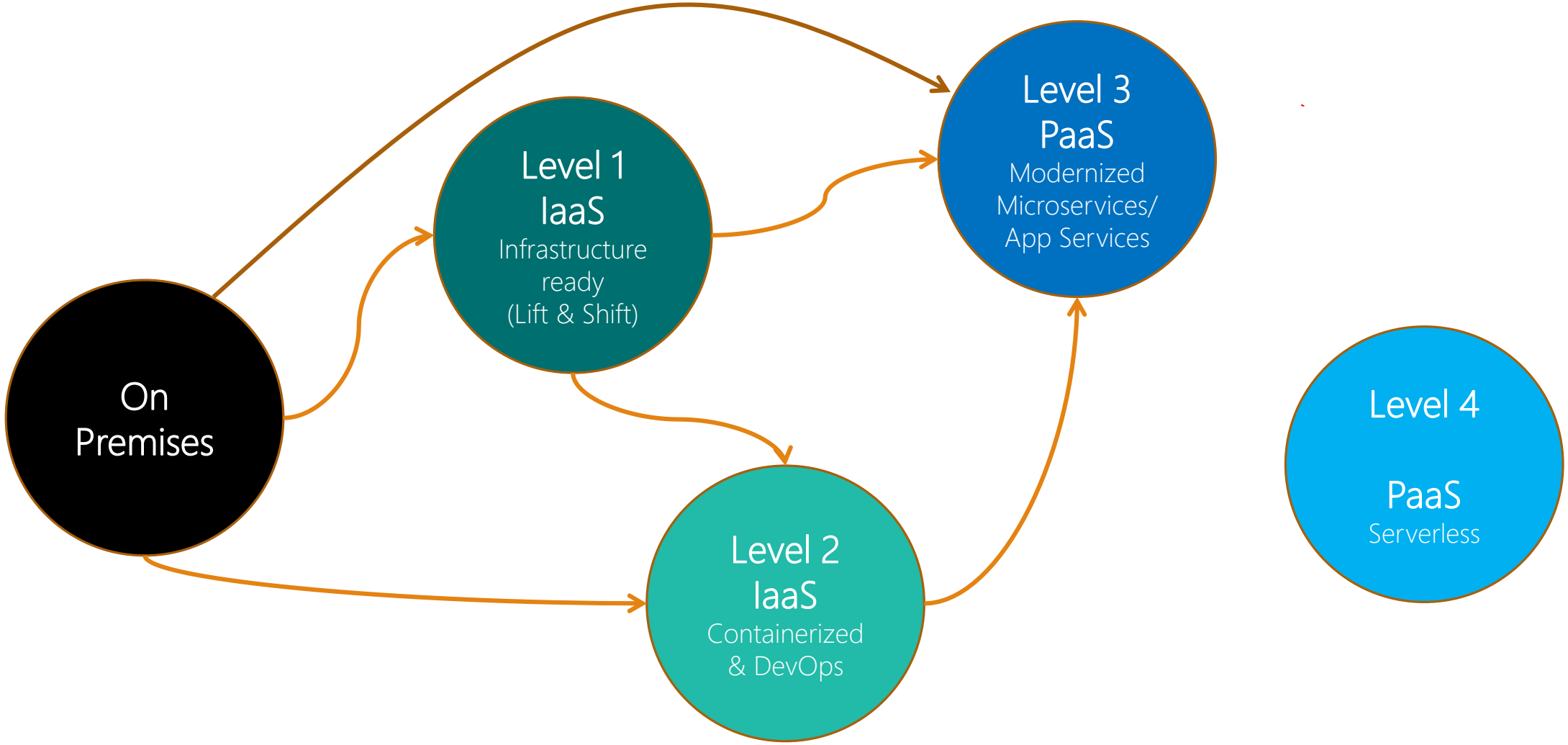
Modern Apps with VS2019 & .NET Core

Storage Options

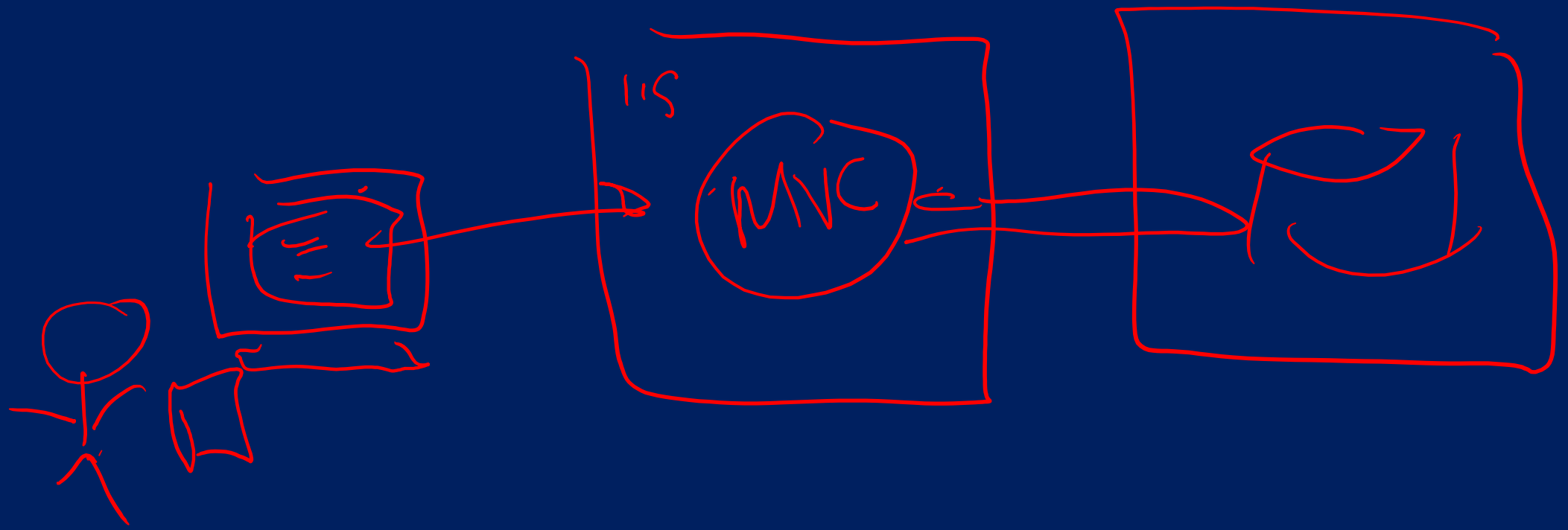
Data in Motion

Sensitivity: Confidential

Modernize Data Center Migration Paths



Sensitivity: Confidential



Sensitivity: Confidential

DEMO

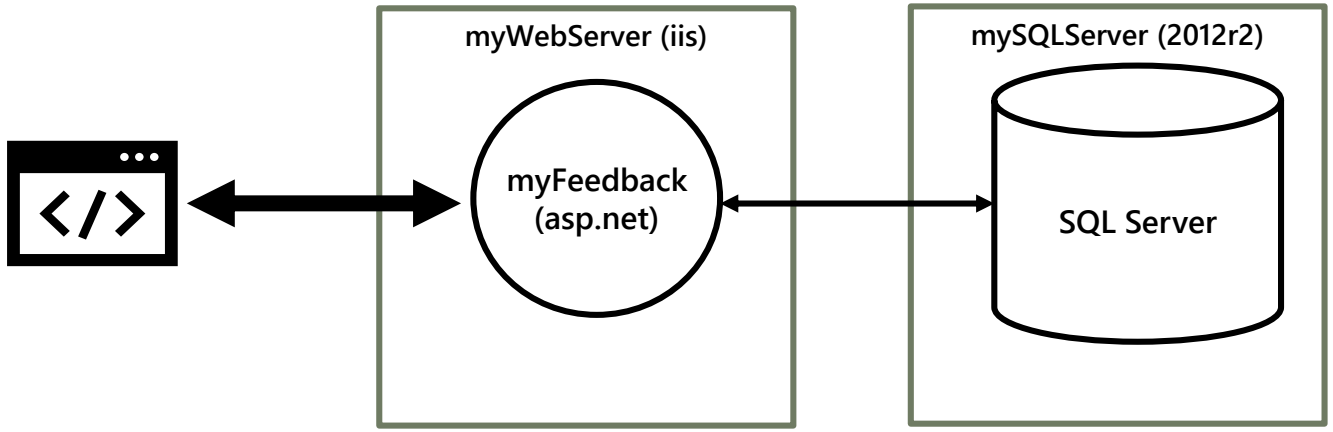
myFeedback App

.NET Core 2.2

Entity Framework

MVC (Model – View – Controller)

Build a simple Feedback app



Compute

Sensitivity: Confidential

Compute Options

PaaS

IaaS

- Serverless Functions
- App Services
- VM Scale Sets (cloud svcs)
- Service Fabric
- Container Services
- Azure Batch
- Virtual Machines

Considerations

- Hosting model
- DevOps
- Scalability
- Availability
- Architecture style
- Limits
- Budget
- Timeline

What compute should I use?

Questions to ask

- Where do I need my app to run?
- How much control do I need?
- What usage model do I need?
- What functionality do I need?

Sensitivity: Confidential

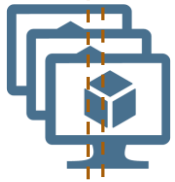
Deployment Options

Infrastructure as a service (IaaS)

VM

Batch

Platform as a service (PaaS)



VM Scale Set

Cloud Services

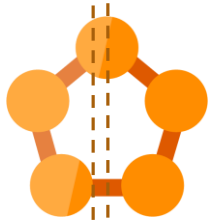
Mobile App

Logic as a service (Serverless)

Logic App

Container Service (AKS)

Web App For containers



Service Fabric

Web App

Functions

Sensitivity: Confidential

Deployment Options (run anywhere)

Infrastructure as a service (IaaS)

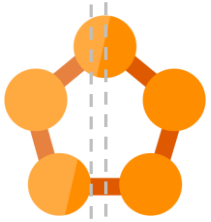
VM

Batch

VM
Scale Set

Container
Service
(AKS)

Web App
For containers



Service
Fabric

Platform as a service (PaaS)

Cloud
Services

Mobile
App

Web
App

Logic as a service
(Serverless)

Logic
App

Functions

Sensitivity: Confidential

Comparing VM and Container Options

	VM	AKS	Web App for Containers	Batch	Service Fabric
Lift-and-shift your app to the cloud	●				
Simple apps (without orchestrator)	●				
Complex Apps		●			●
Orchestrated microservices					●
Web App on Linux with app service features			●		
Repetitive jobs				●	
Run anywhere					●

Sensitivity: Confidential

Background Tasks

	Cloud Services	Web Job	Functions	Batch
Short running tasks	●	●	●	●
Long running tasks	●	●	●	●
Resource intensive tasks				●
Pay all month	●	●		
Pay only for what and when you run			●	
Need to deploy complete app to run	●			●
Can deploy only the code necessary		●	●	

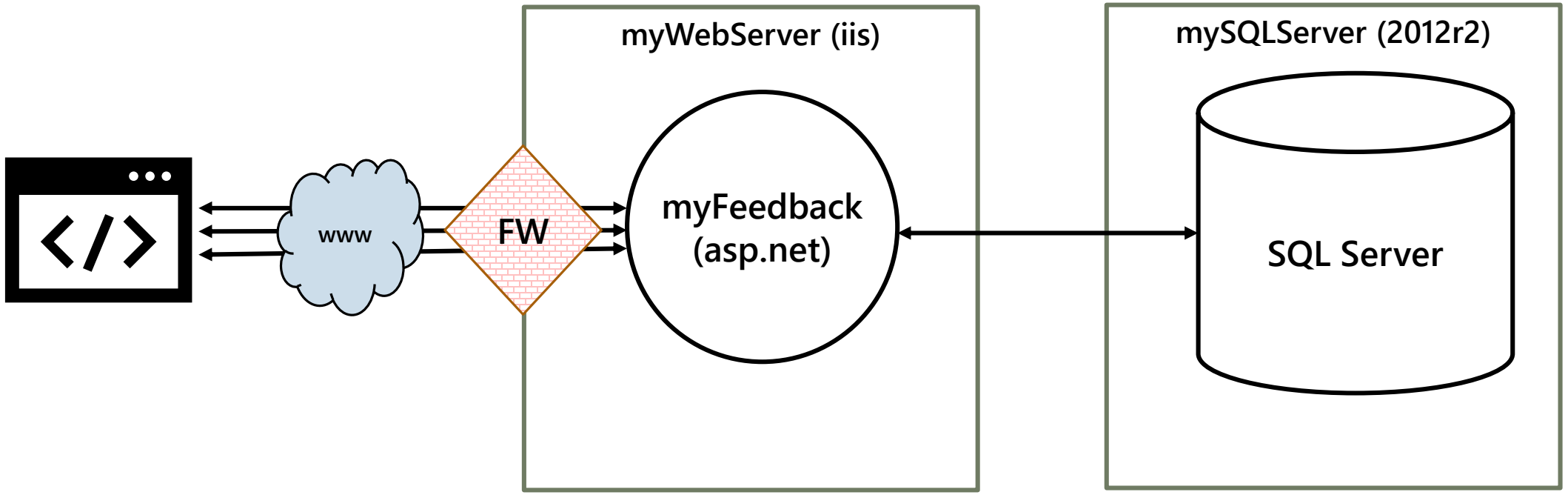
Sensitivity: Confidential

Where to Run Your Apps

	Web App	Mobile App	Cloud Services	Service Fabric	Functions	Logic App
Host web applications	●		●	●		
Host your own APIs	●		●	●	●	
Host backend for mobile apps		●				
Automate one step of a process					●	
Automate a complete process						●
Features like deployment slots, auth, etc.	●	●	●		●	
Run (micro)services at massive scale				●	●	

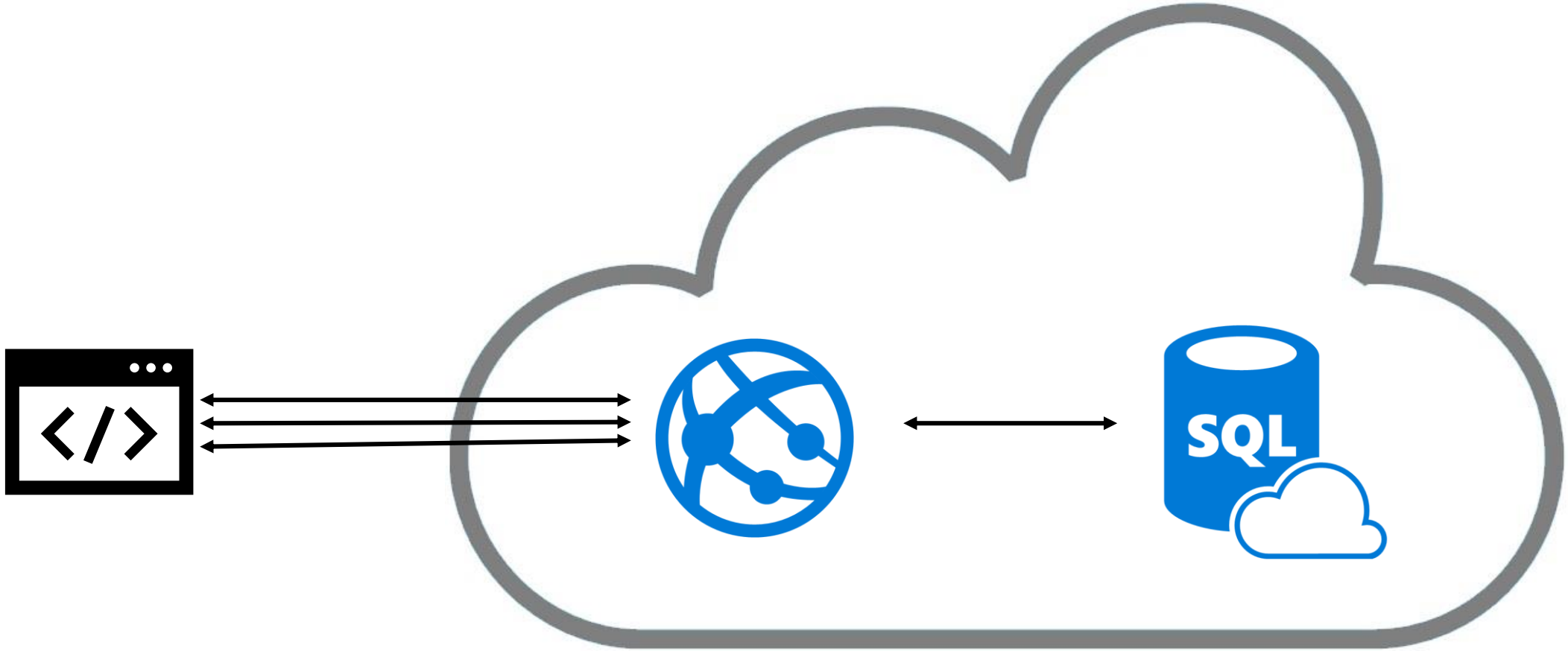
Sensitivity: Confidential

Running Apps and Storing Data (on premises)



Sensitivity: Confidential

Running Apps and Storing Data (cloud)

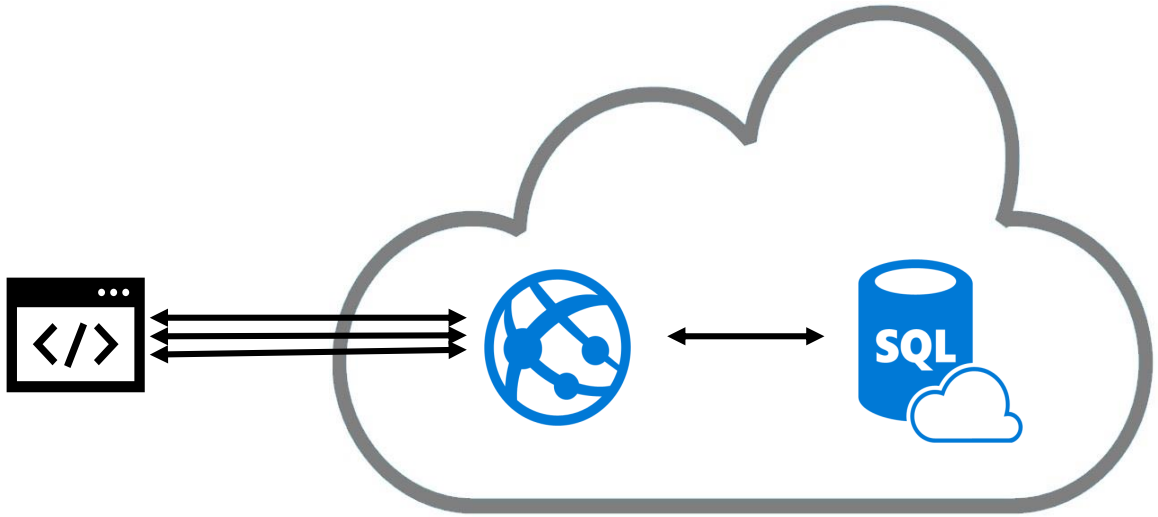


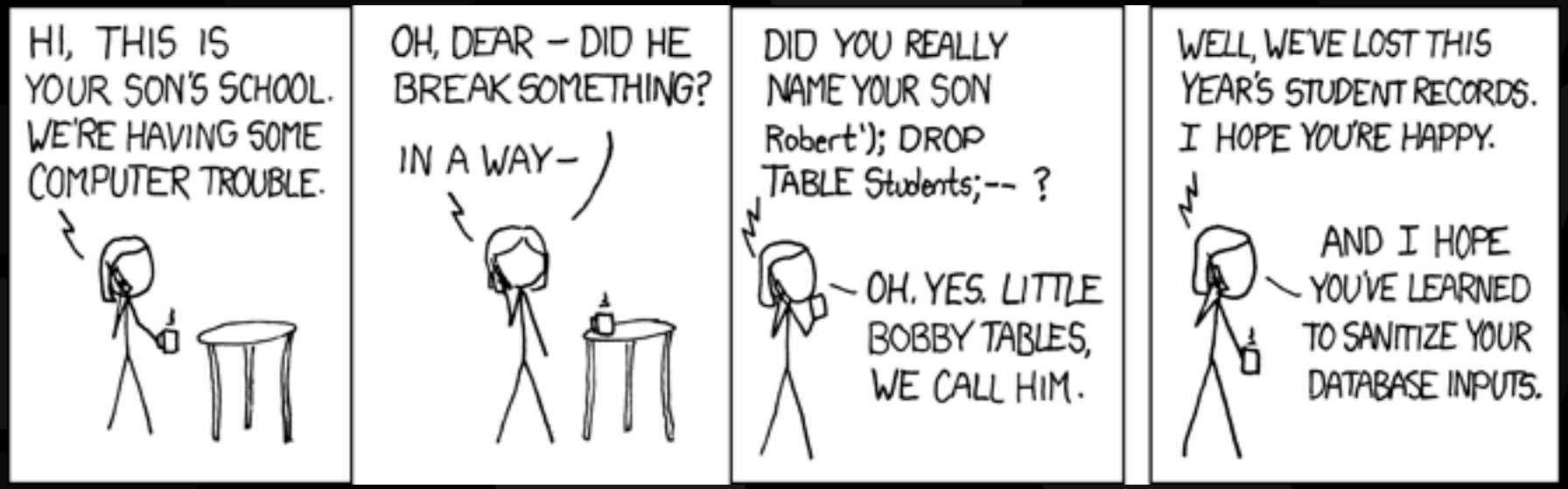
Sensitivity: Confidential

DEMO

Deploy Web App and SQL

Run Data Migrations





Sensitivity: Confidential

Data Storage in Azure

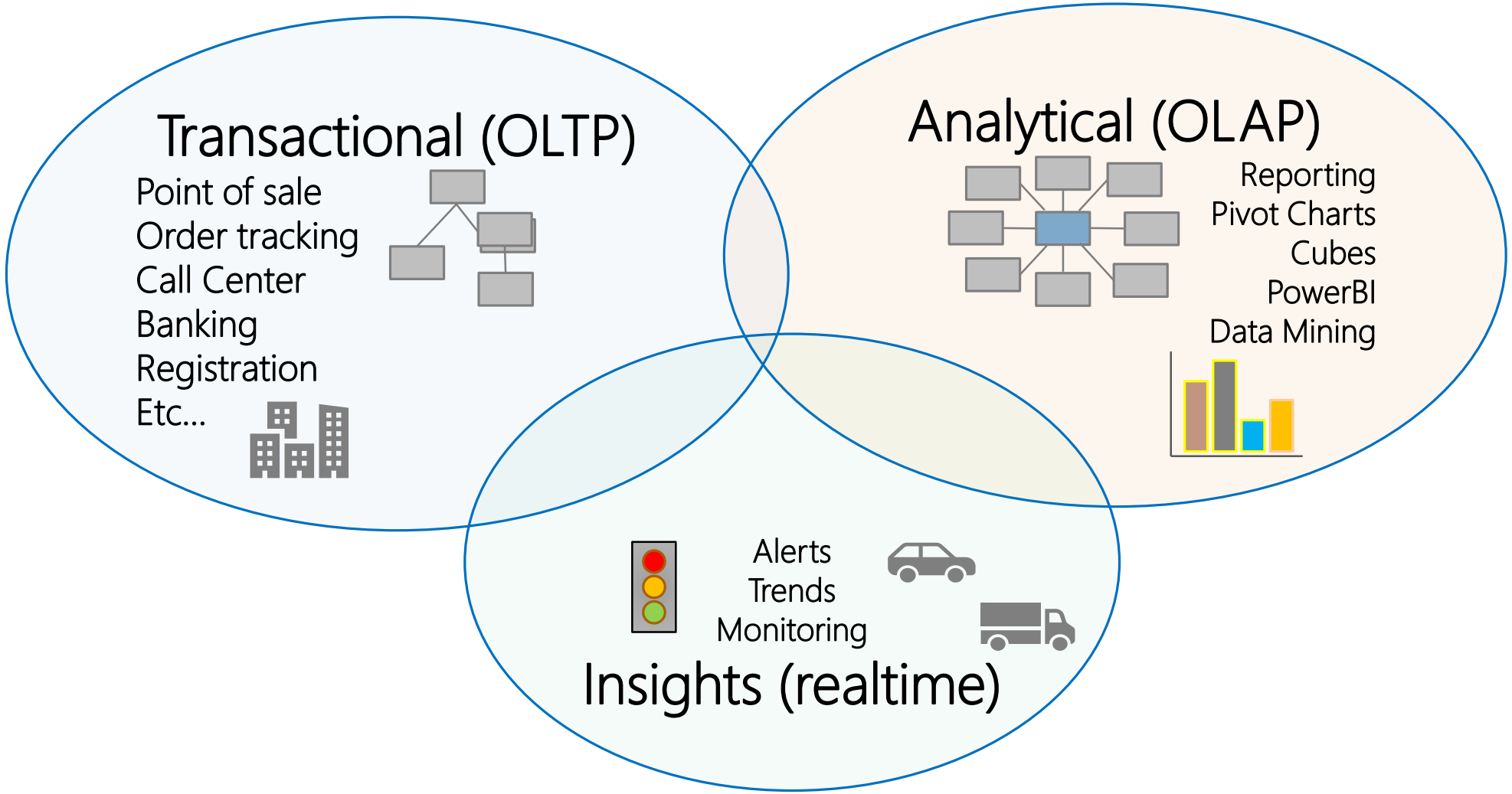
How will the data be used?

What kind of data?

What functionality do I need?

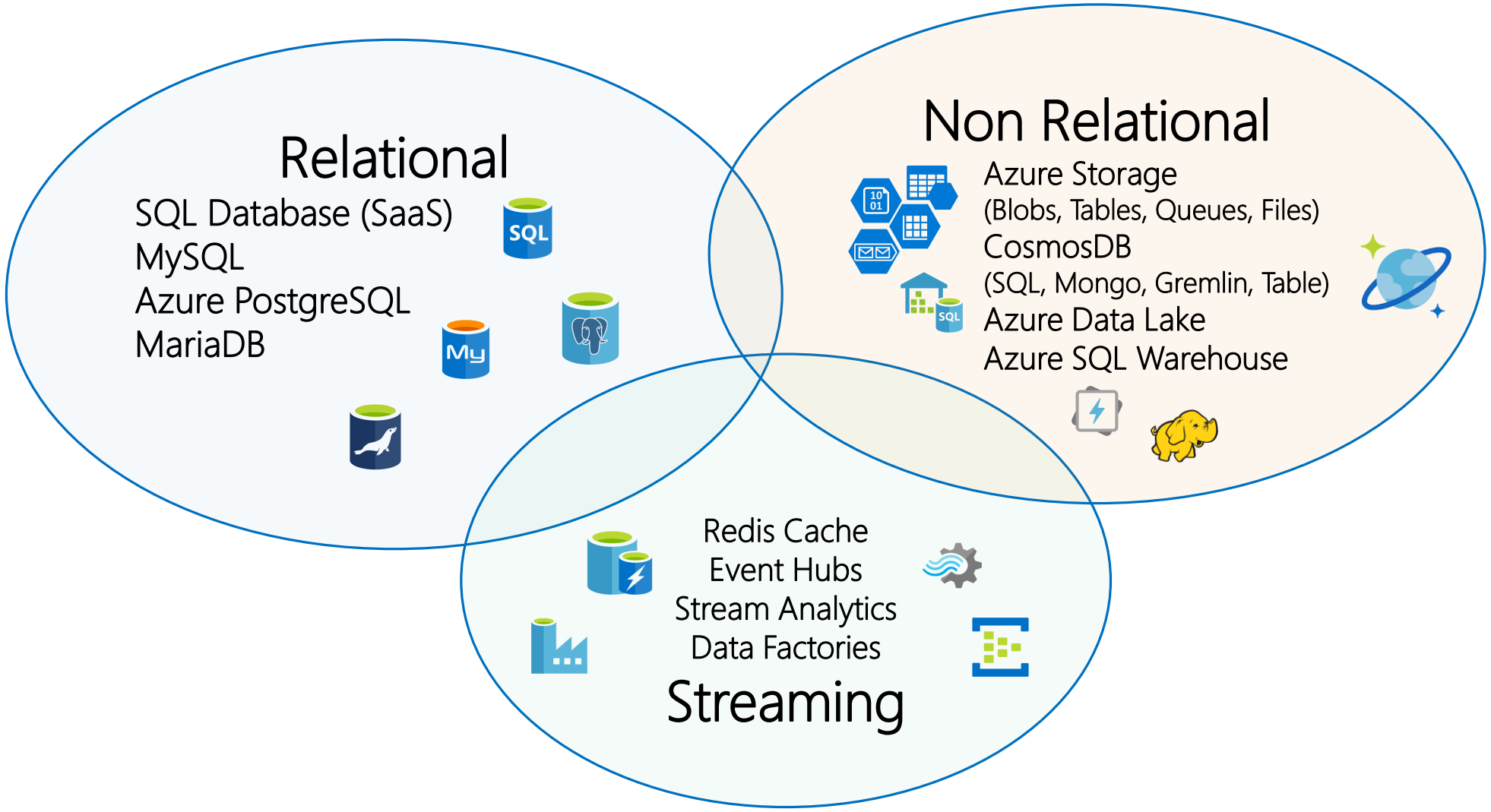
Sensitivity: Confidential

How will my data be used?



Sensitivity: Confidential

How will my data be used?



Sensitivity: Confidential

Options for storing data in Azure

OLTP

Azure SQL Database

Azure Databases for MySQL

Azure Databases for PostreSQL

Azure Databases for MariaDB

Azure Cosmos DB

Azure Storage

OLAP

Azure SQL Data Warehouse

Azure Data Lake Store

Real-time

Redis

Stream Analytics

Data Factory

EventHub

Blob

Queue

Disk

File

Table

Sensitivity: Confidential

Comparing Data Stores for OLTP

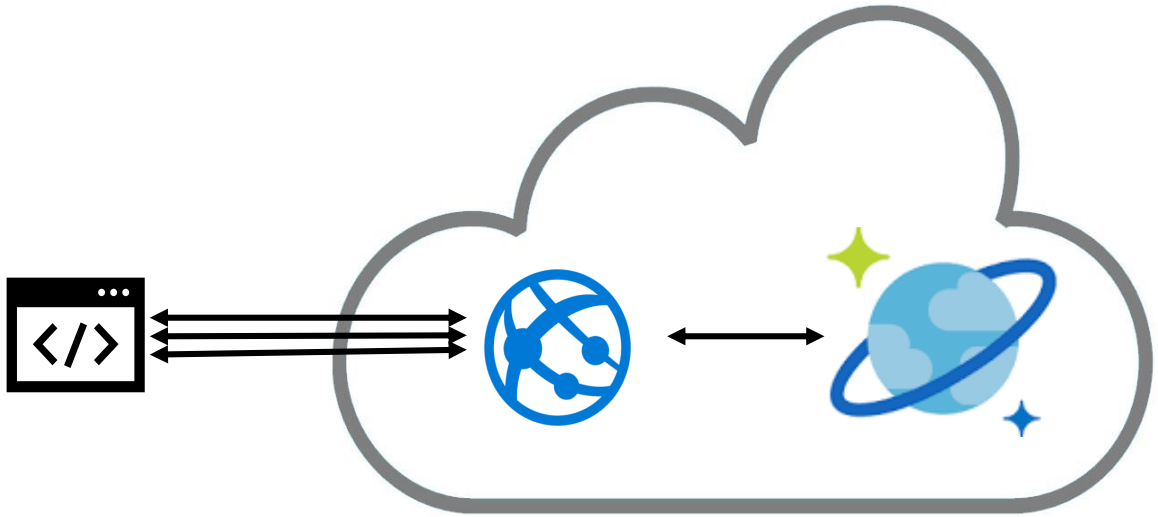
	SQL	MySQL	PSQL	MariaDB	Cosmos	Storage
Relational data	●	●	●	●		
Semi- or non-relational data					●	●
Can use Microsoft tools to manage	●					●
Advanced query capabilities	●	●	●	●		
Multi-model support						
Guaranteed performance					●	
Geo replicable	●				●	●

Sensitivity: Confidential

DEMO

Add Storage to App

Add Cosmos



Data in Motion

Sensitivity: Confidential

Data in Motion

Real time insights

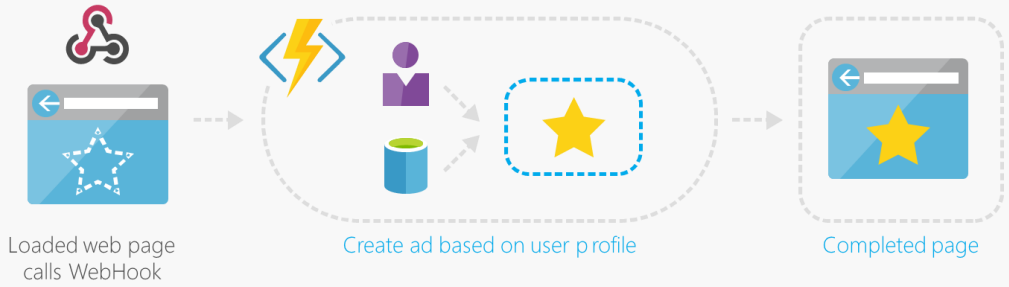
Query as it arrives

Time series analysis

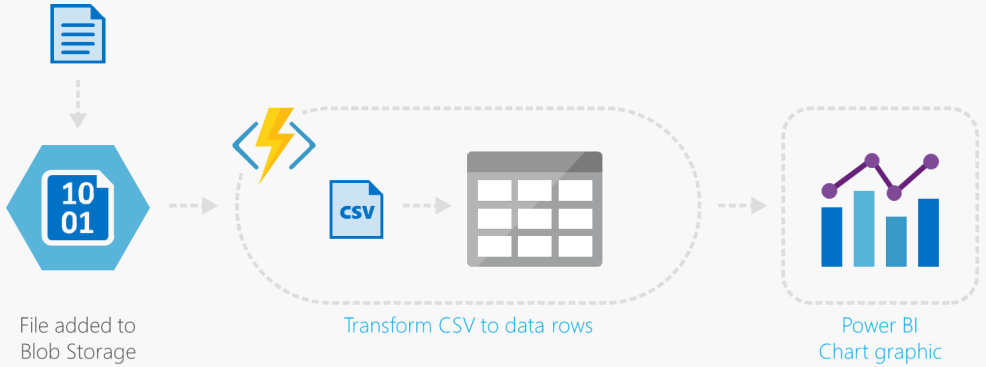
Sensitivity: Confidential

Common Scenarios

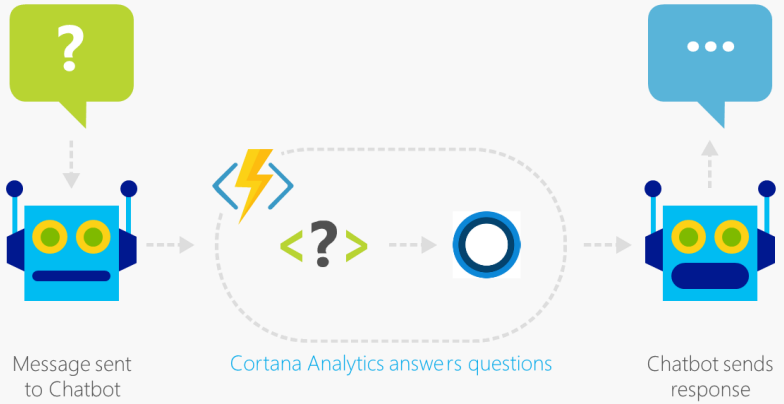
Web



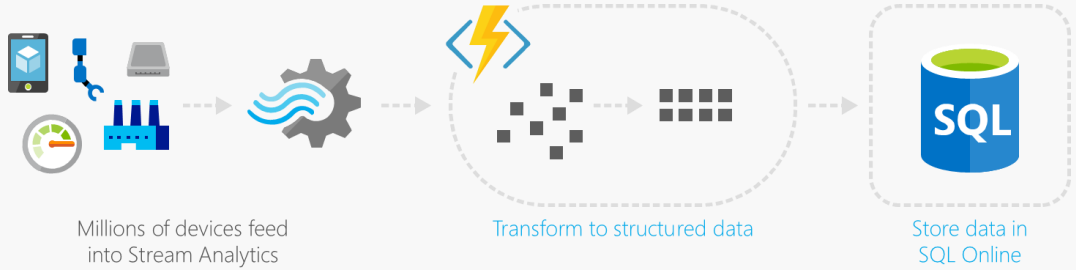
Glue



Bots

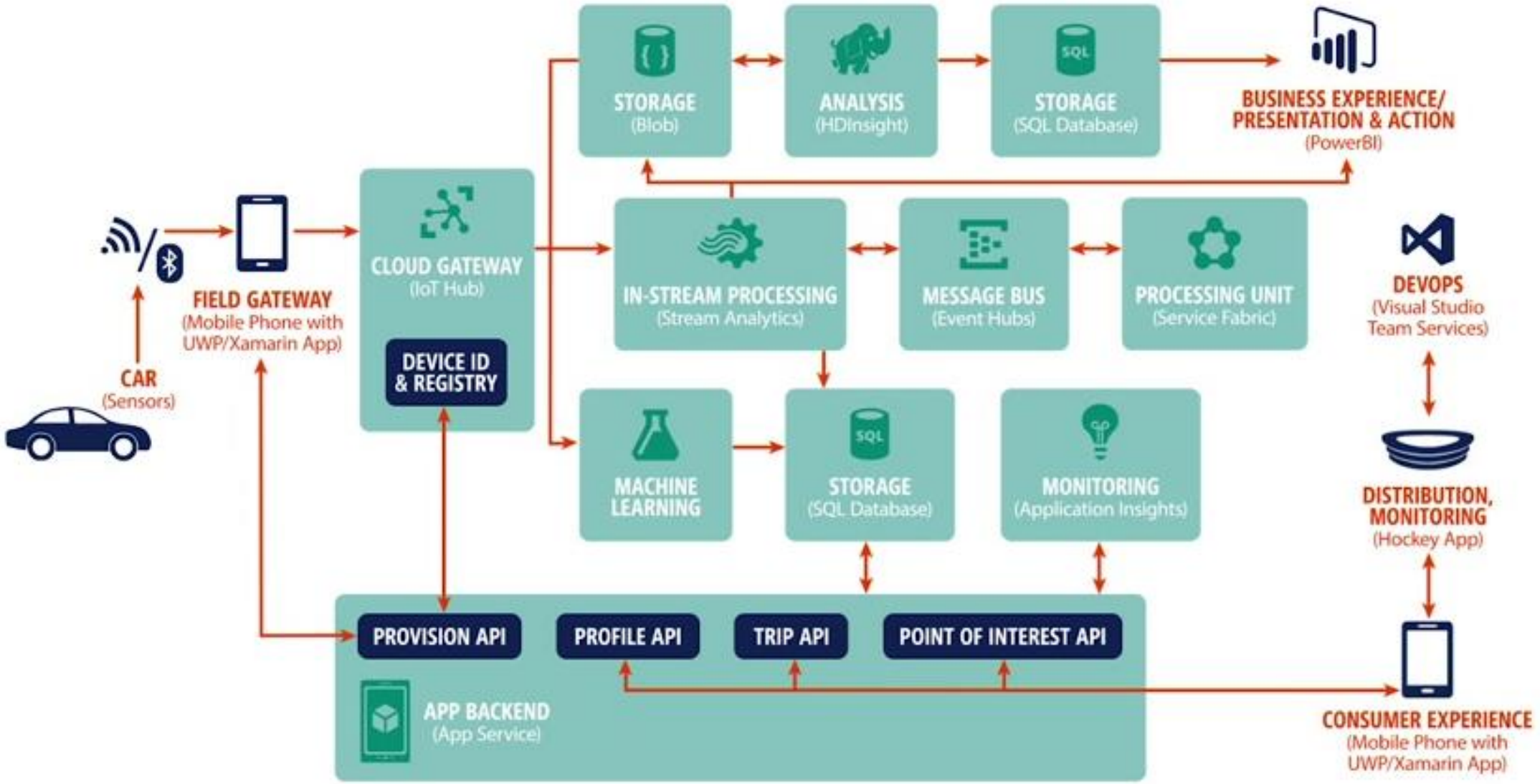


IoT



Sensitivity: Confidential

Check out www.azure.com/MyDriving



Sensitivity: Confidential

Weather tracking and prediction

Sensor devices

Streaming data

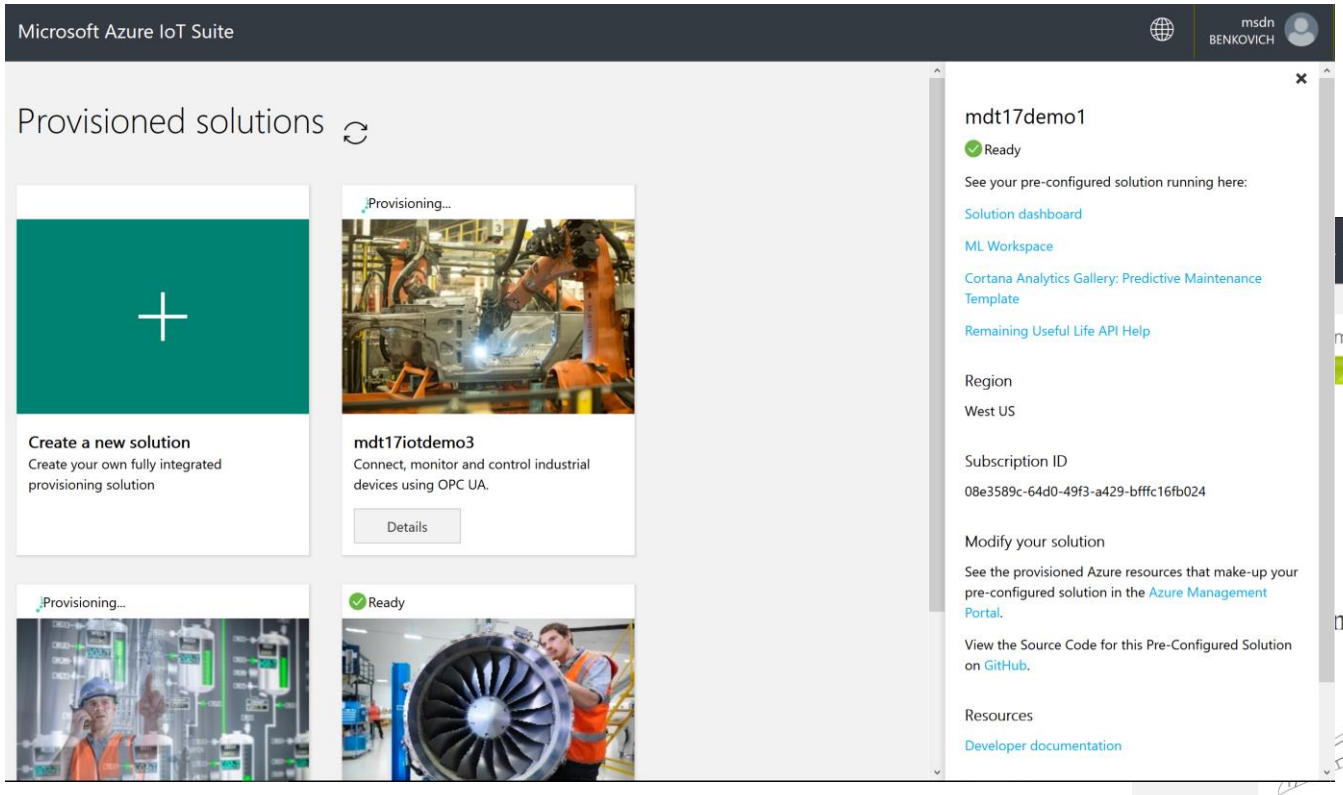
Multiple locations

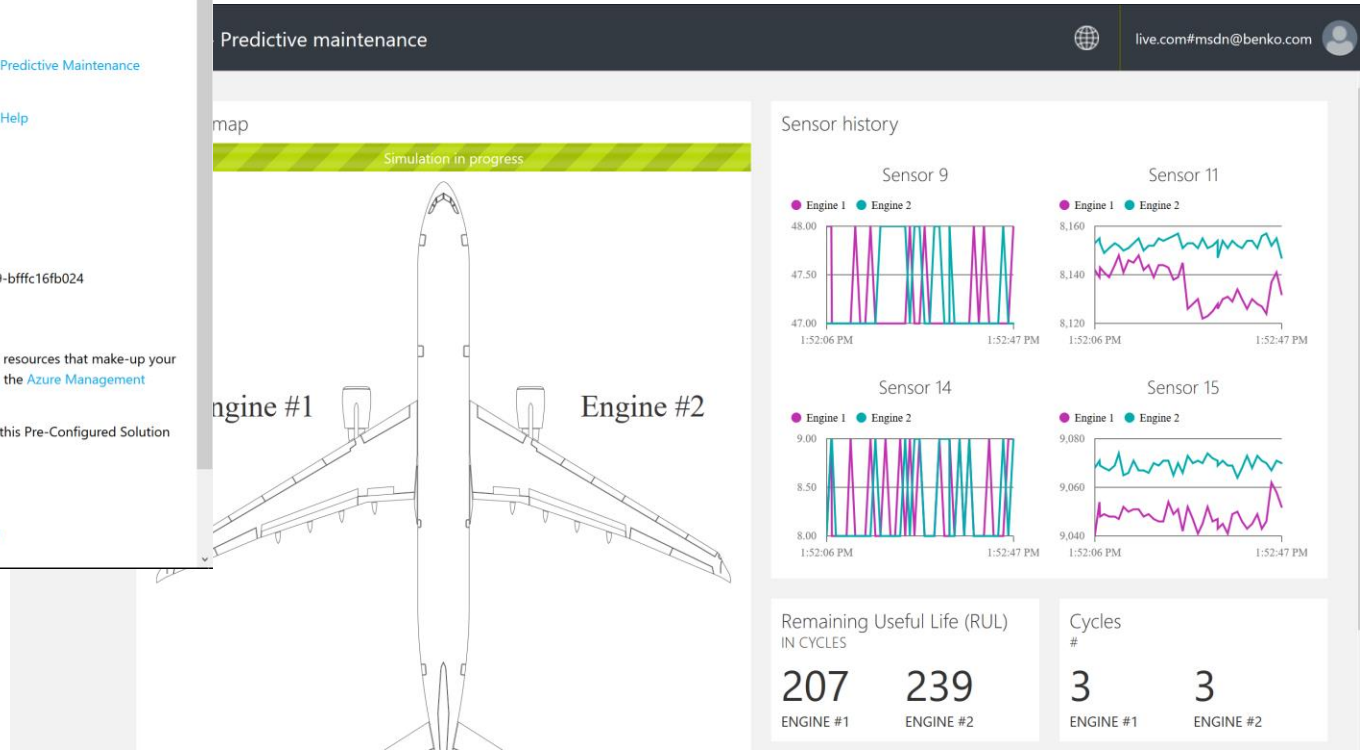
Dangerous conditions

Weather alerts

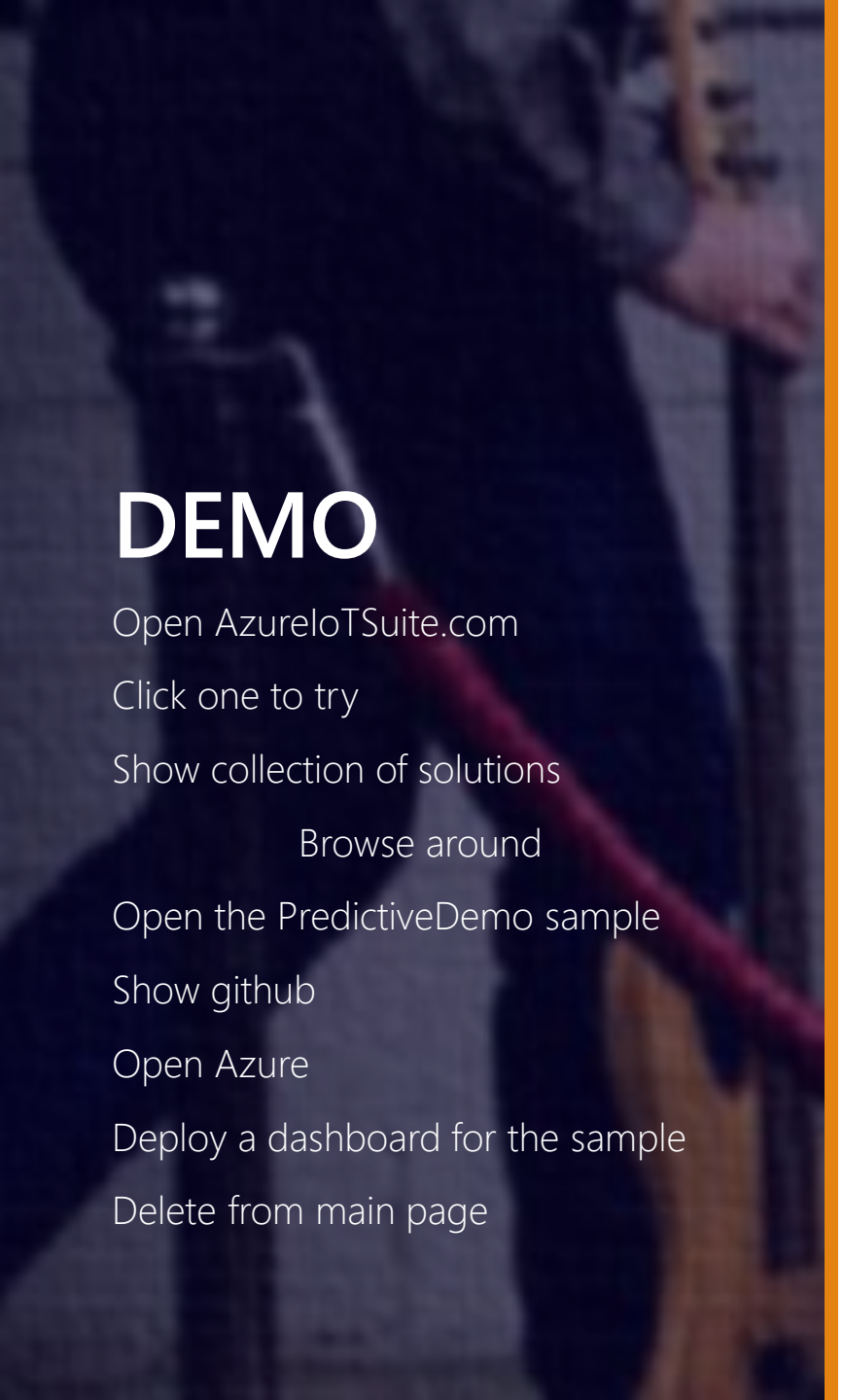
Sensitivity: Confidential

Check out http://azureiotsuite.com





Sensitivity: Confidential



DEMO

Open AzureIoTSuite.com

Click one to try

Show collection of solutions

Browse around

Open the PredictiveDemo sample

Show github

Open Azure

Deploy a dashboard for the sample

Delete from main page

01_02 AzureIoTSuite.com

Conclusion

Modern Apps = Compute + Data

Exploring data is more than just SQL

Get Started!

Sensitivity: Confidential

Call to Action – Where can I get more info?

Visit my blog

www.benkotips.com

Schedule a **workshop** to make your IT workforce cloud aware

mike@benko.com

Try it out with **low hanging fruit** white chips

MICROSOFT CONFIDENTIAL – INTERNAL ONLY

Sensitivity: Confidential