

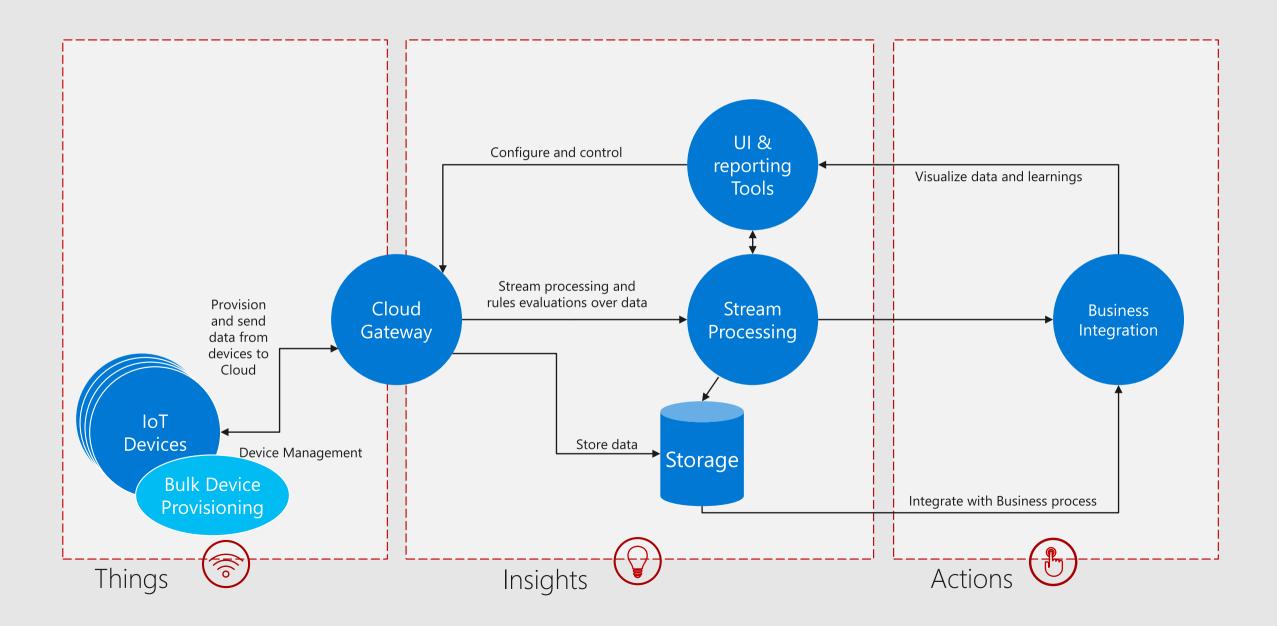
Internet vecí nie je len o "veciach" Cloudové služby pre produkčné loT riešenia

Marek Láni Software Development Engineer

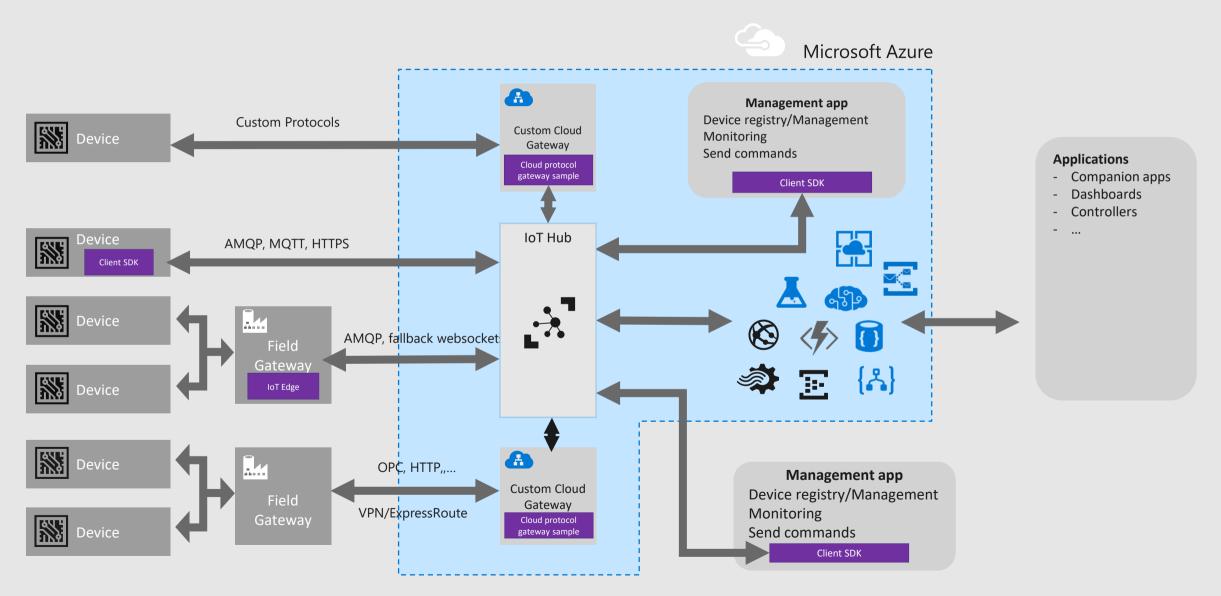
marek.lani@microsoft.com github.com/mareklani

Microsoft Confidentia

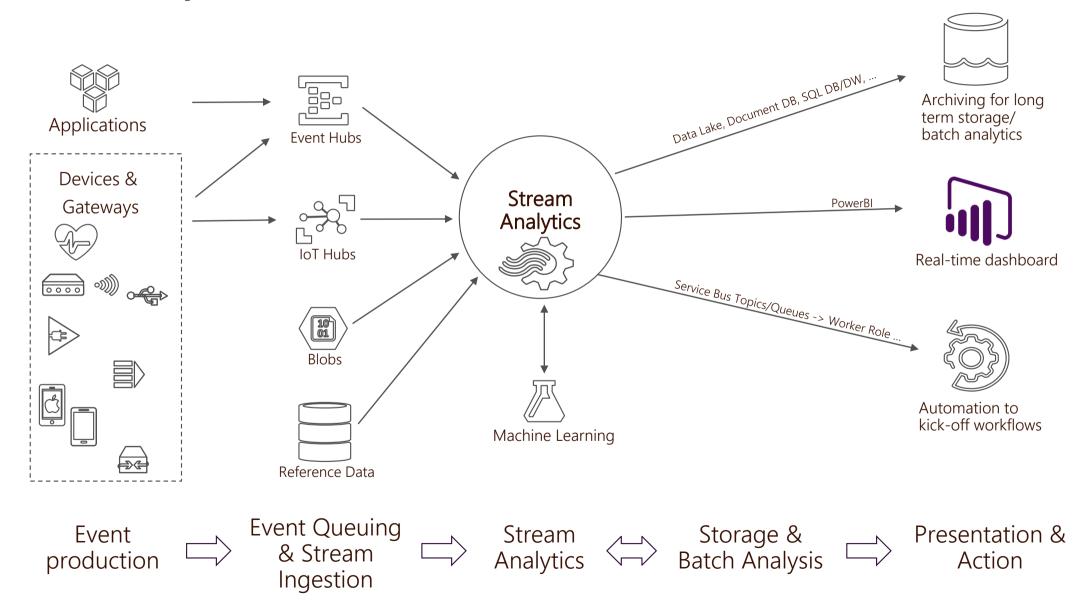
Typical IoT Architecture



Azure IoT Hub



Stream Analytics



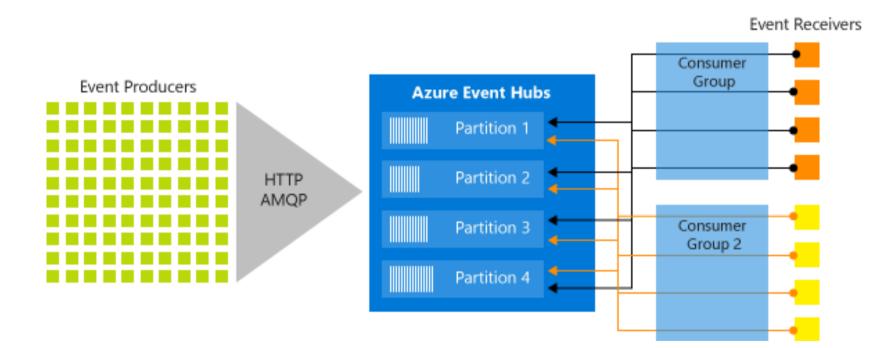
Microsoft Power Bl

- Experience your data. Any data, any way, anywhere.
- Power BI is a cloud-based business analytics service that enables:
- Fast and easy access to data
- A live 360° view of the business
- Data discovery and exploration
- Insights from any device
- Collaboration across the organization
- Anyone to visualize and analyze data



🔡 Power Bl	SR 500 Bindge Traffic 🕴 👲					
≡ → My Workspace	SR 520 Bridge Traffic A 🗘 Share Dashboard					
Filter content	Ask a question about the data on this dashboard					
Dashboards +	Daily number of cars	Daily toll revenue	Original Throughput	Original Revenue	Optimized Throughput	Optimized Revenue
01 - RevenueVSTargetxdsx Cybercrime Retail Analysis Sample Retail Analysis Sample	63.31K	231.54K	897.7K	2.79M	1.19M	4.01M
SR 520 Bridge Traffic TR20 BA Track Dashboard	Daily cars, average of speed by time		Original Throughput And Revenue BY TIME, AND SPEED		Optimized Throughput And Revenue BY TIME AND SPEED	
Wide World Importers Wide World Importers R	Count of Id Average of Speed 2K 80		Original Speed ● 32.00 ● 32.50 ● 33.50 ● 37.00 ● 39.00 ● 40.00 ● 45.00 14K		Optimized Sps 39:00 42:00 42:50 43:00 43:50 44:00 44:60 25K	
All Reports Microsoft Cybercrime Ce Resil Analysis Sample Revenuel'sTarget WWimporters Power BI E Datasets + 01 - Revenuel'sTarget	C. C. C. M. 120 M. EX M. 120 M. EX M. 10 M				204 195 106 54 55 56 56 56 56 56 56 56 56 56	
	Average Speed		Daily cars by toll amount, car color		Average of Speed BY TIMESTAMP	
WWImporters Power BIE.	° 44.26		3.5 5.4 4.5 4.5 None Gay Gay Gay None None None Gay S.4 Gay None None None None None Sove Gay None None		60 50 52 52 1025 РМ 1026 РМ 1025 РМ	

Azure Event Hub



Logic Apps

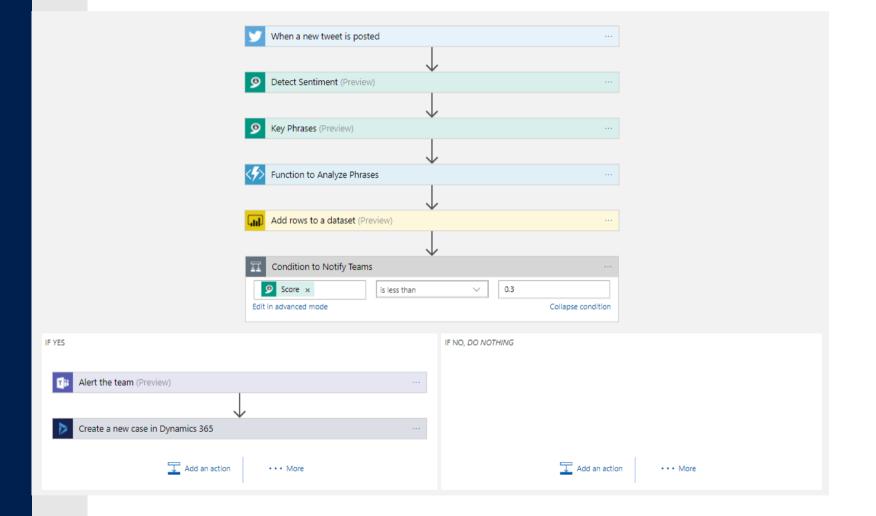
Workflow in the cloud

Powerful control flow

Connect disparate applications

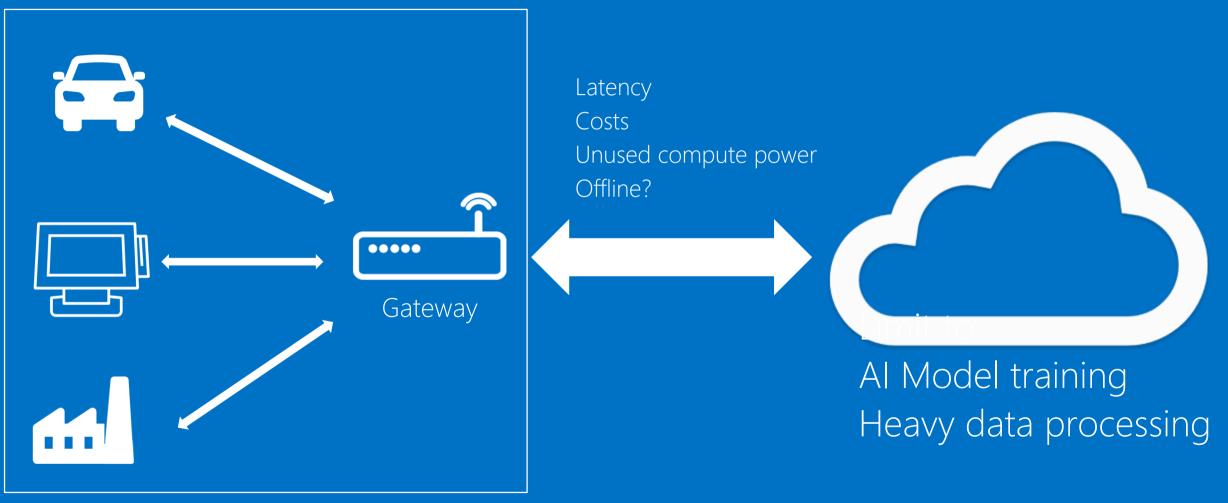
No code designer for rapid creation

Also works within Visual Studio for added CI/CD



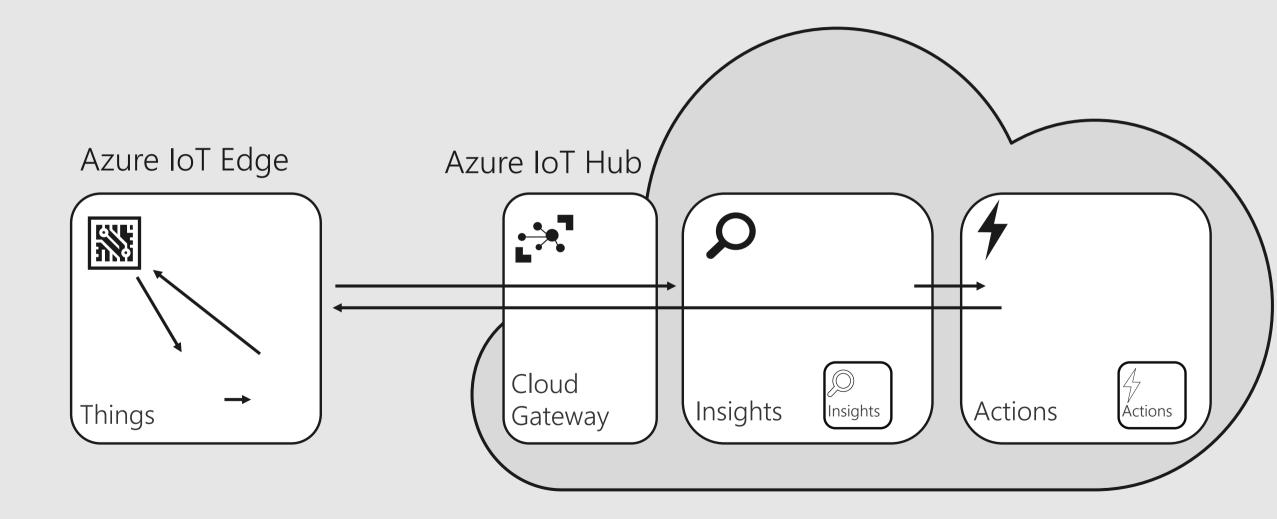
Real Time Monitoring & Automation DEMO

Future of IoT – Edge Computing



Edge Computing

IoT Pattern + Edge



Edge scenario Real-time artificial intelligence on the Edge



DJI M210 with **payload** running Azure IoT Edge

Demo

Custom Vision AI model on the Edge



Useful links

Get Azure free trial: <u>https://azure.microsoft.com/en-us/free/</u>

Windows 10 IoT: https://developer.microsoft.com/en-us/windows/iot

Azure Sphere: https://azure.microsoft.com/en-us/services/azure-sphere/

Azure IoT Hub: <u>https://docs.microsoft.com/en-us/azure/iot-hub/</u>

Azure Stream Analytics: <u>https://docs.microsoft.com/en-us/azure/stream-analytics/stream-analytics-introduction</u>

PowerBI: <u>https://docs.microsoft.com/en-us/power-bi/</u>

Azure IoT Edge: <u>https://docs.microsoft.com/en-us/azure/iot-edge/</u>

Tech choices

