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Neuigkeiten zu Internet of Things und Cortana Intelligence Suite

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Technical Evangelist, Microsoft

#ReBuildDE

Agenda

~~IoT Market(ing B*)~~

Windows 10 IoT Overview

Azure IoT Overview

Cortana Intelligence Suite

Microsoft IoT

Comprehensive solutions from device to cloud

Windows

Azure IoT

IoT Editions Power a Broad Range of Devices	**Cloud-Based IoT Services & Solutions**
25 years of history in embedded devices	Easy to provision, use and manage
One Windows platform for all devices	Pay as you go, scale as you need
Enterprise-ready, OEM-ready, Maker-friendly	Global reach, hyper scale
Designed for today's IoT environments	End-to-end security & privacy
Scalable solutions from free Windows IoT Core to Windows IoT Enterprise on PC-Like Devices	Windows, Mbed, Linux, iOS, Android, RTOS support

Updates since //build 2015

Windows 10 Released

Windows 10 IoT Enterprise, Windows 10 IoT Core for Makers – July 2015

Windows 10 IoT Mobile Enterprise, Windows 10 IoT Core – December 2015

Dragonboard Launch

Qualcomm QC8016 based reference board supporting Windows 10 IoT Core

Raspberry Pi 3 Launch

NOOBs support with Windows 10 IoT Core Insider Flights

Open Connectivity Foundation Creation

New standards body for IoT device connectivity with broad industry support

Azure IoT Hub Available

Already one of the fastest growing services on Azure

Azure IoT Suite Available

Get started quickly, customize to meet your needs

Azure IoT Device SDK Live on GitHub

Open source, cross platform, multi language

Azure Certified for IoT Launched

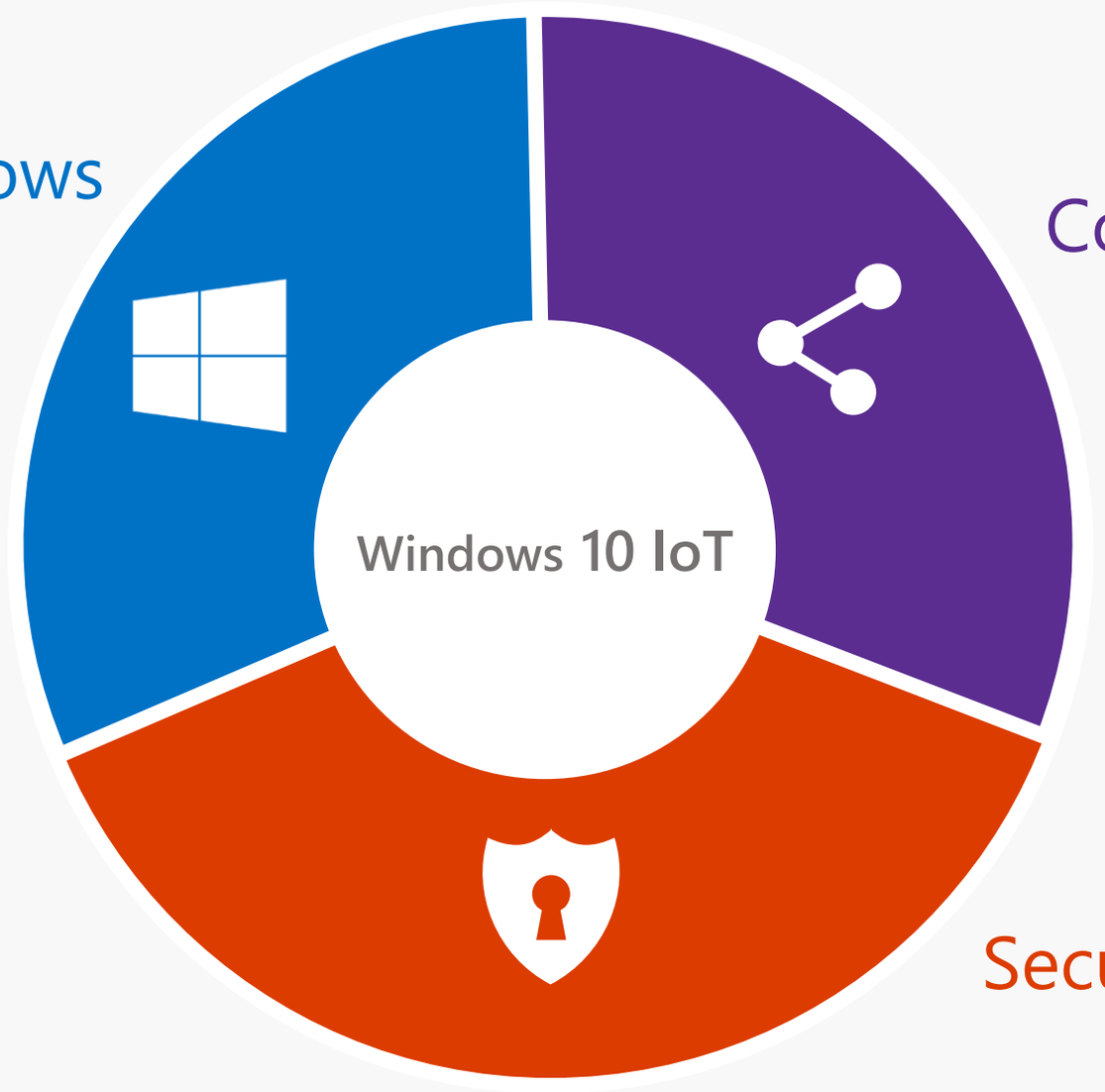
50 partners and growing

Windows 10 IoT Overview

Windows 10 IoT

Powering the Next Generation of Intelligent Devices

Universal Windows Platform

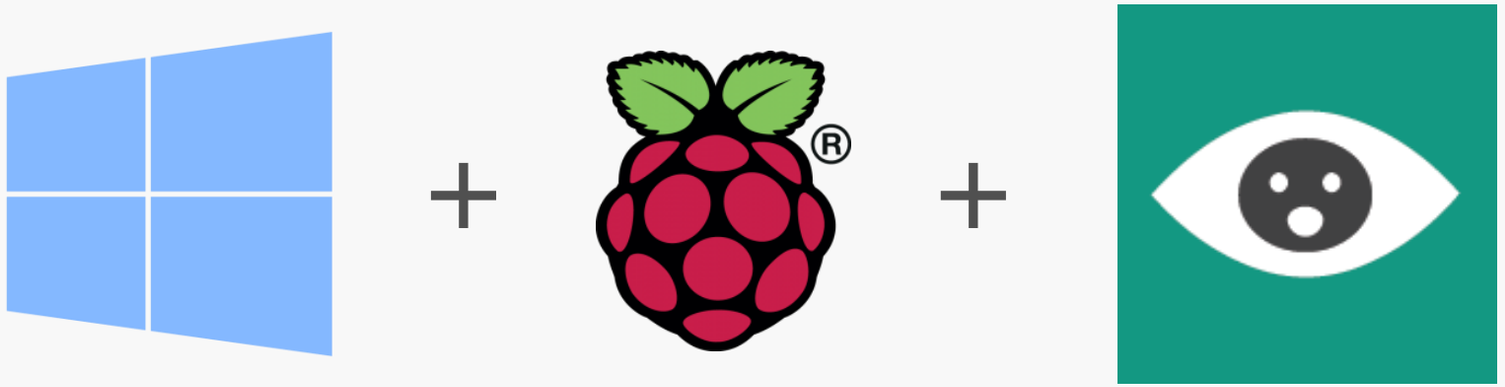


Connected

Secure

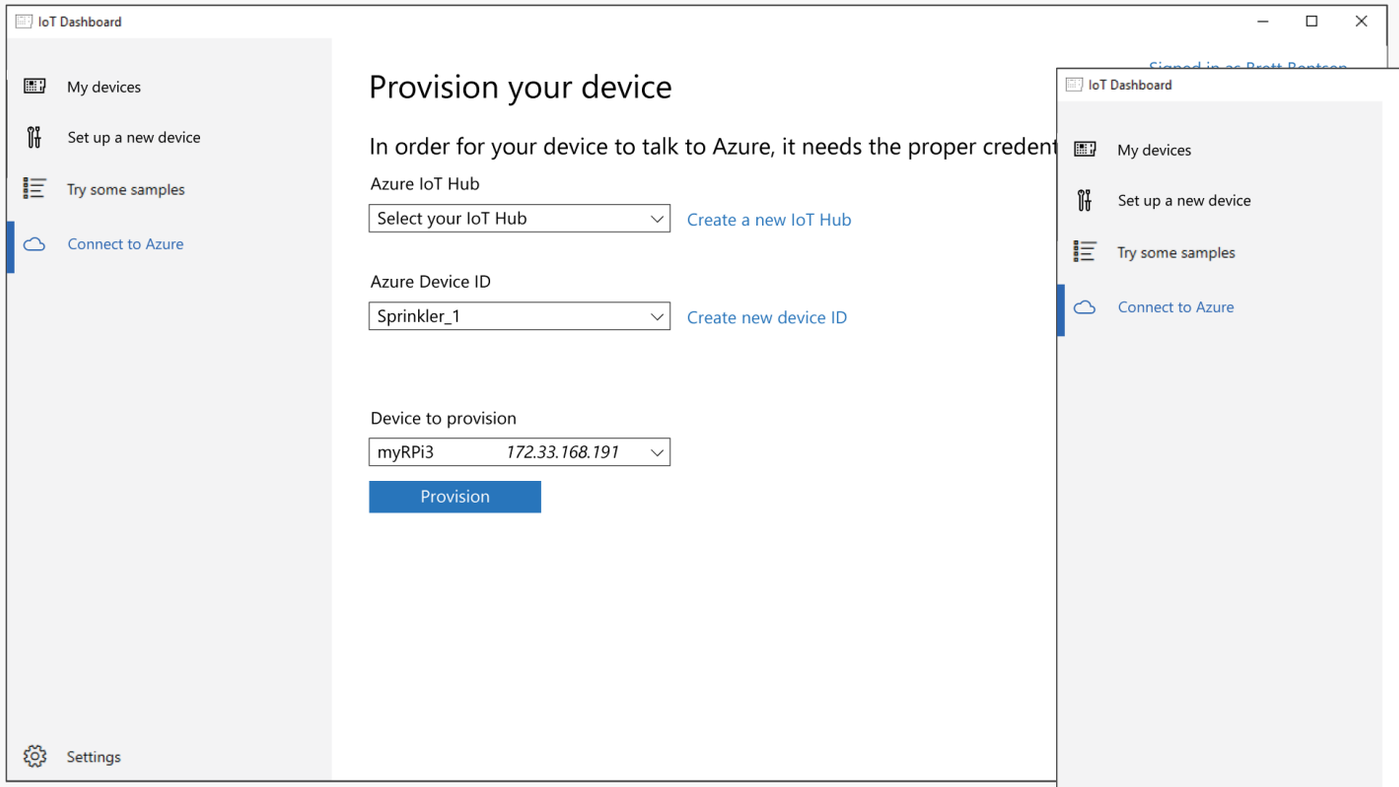
Universal Windows Platform

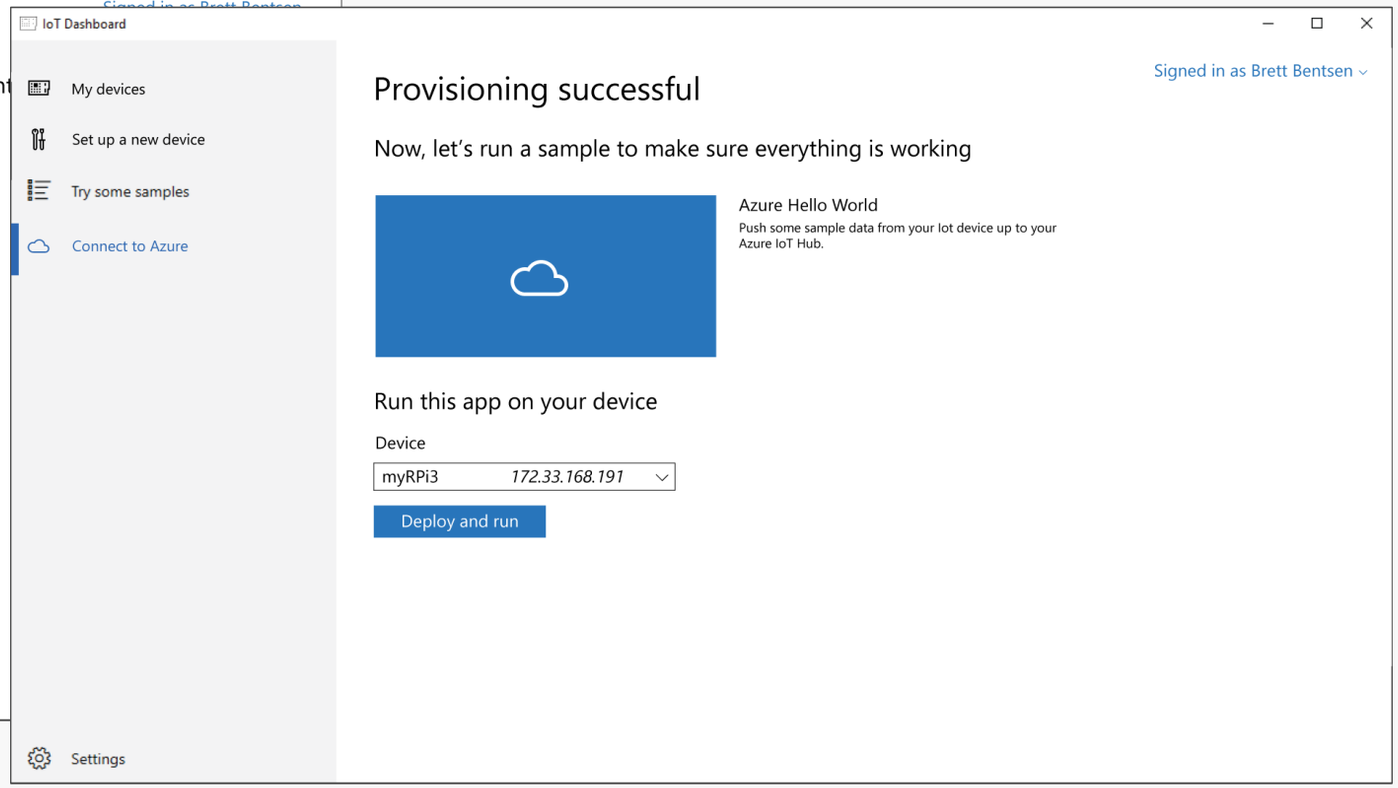
Pandora Web App on Windows 10 IoT Core running on Raspberry Pi



Windows IoT Core Connection to Azure IoT

End-to-end Azure Connection Setup and Sample for Maker Images



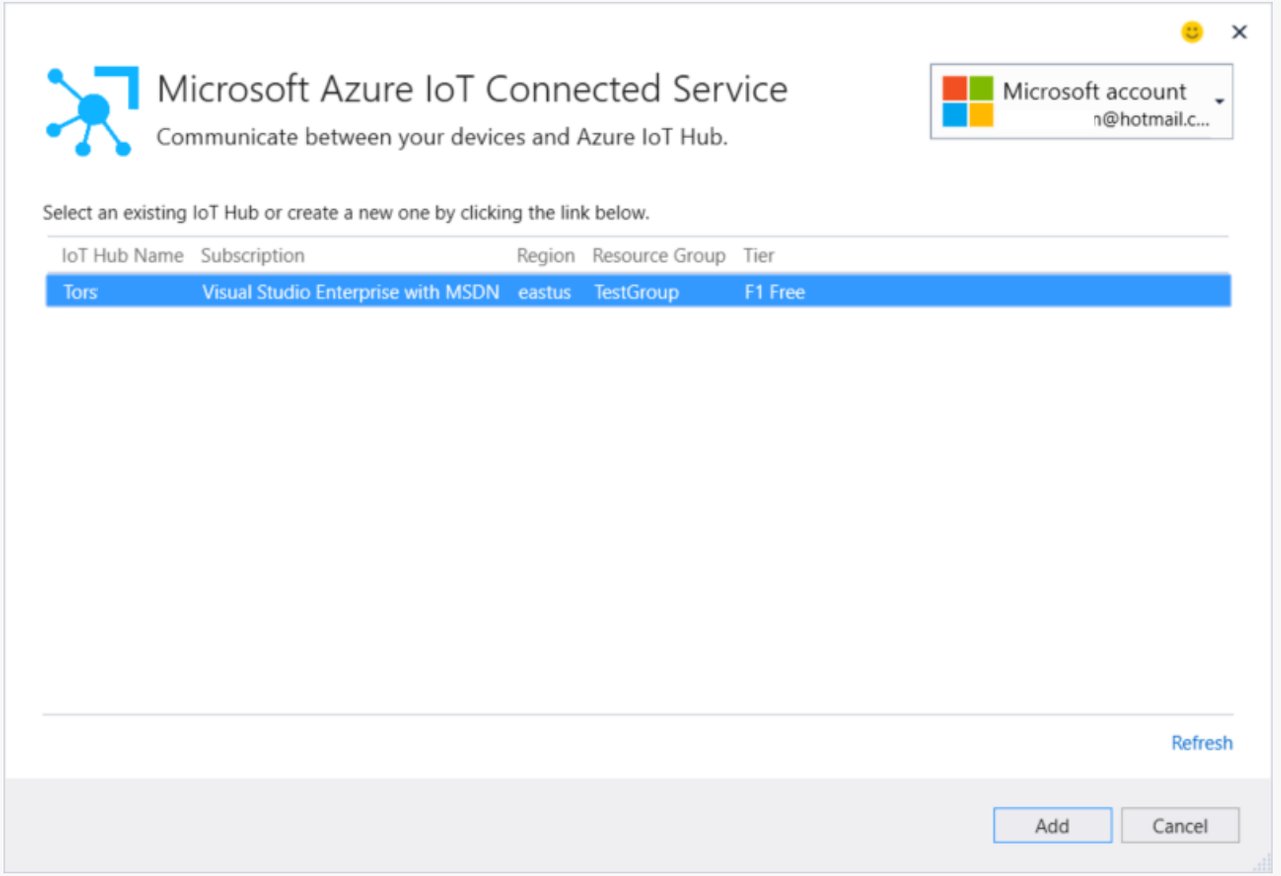


Windows IoT Core Connection to Azure IoT

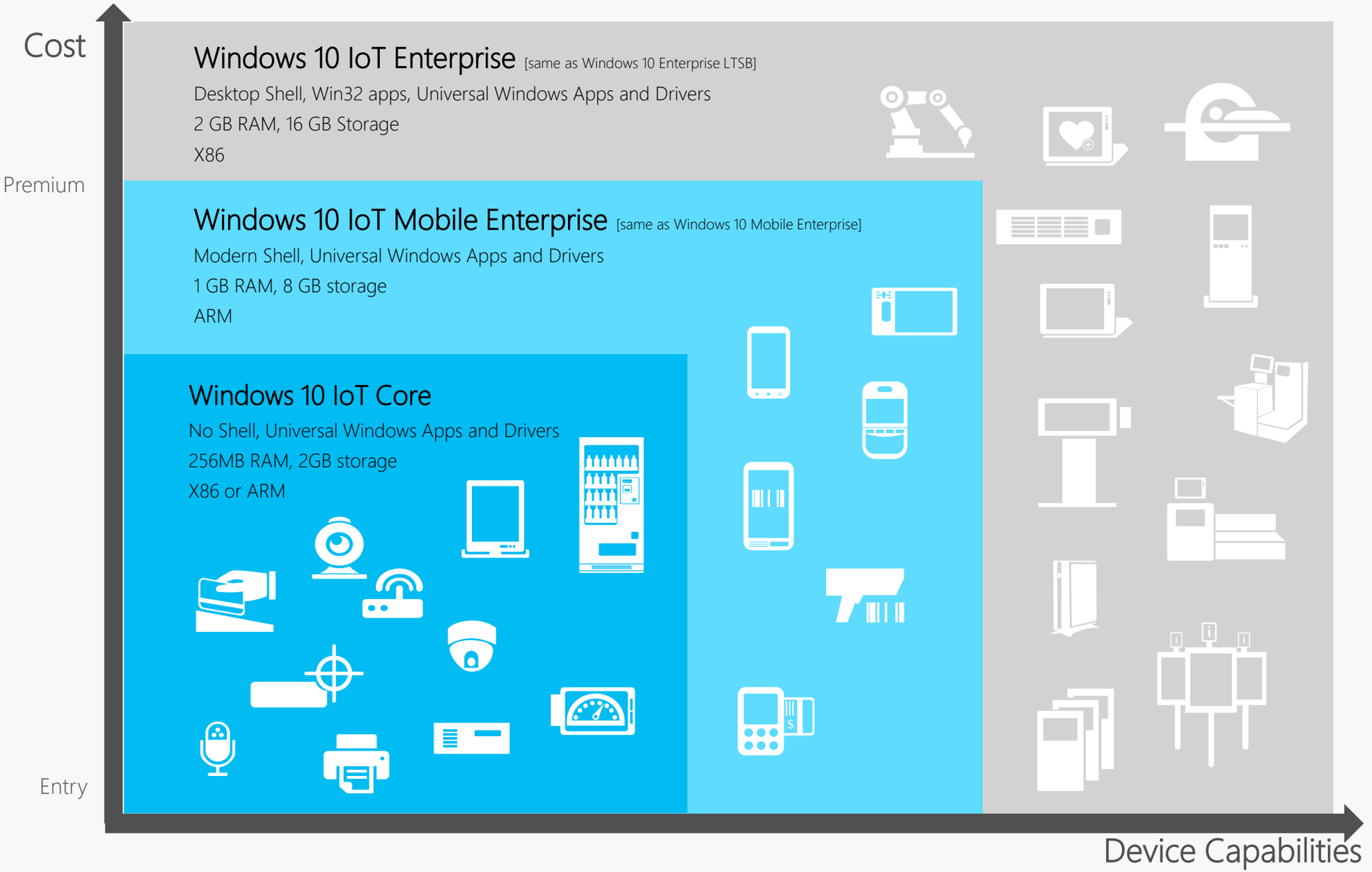
Platform Supported Secure Azure Device Key Storage

Windows IoT Core Connection to Azure IoT

Visual Studio Extension for Azure IoT Hub Client



Windows IoT Editions



Azure IoT Overview

Harnessing the IoT Revolution

IoT can get complicated quickly

And that's where Azure comes in

Platform Services

Security & Management

- Portal
- Azure Active Directory
- Azure AD B2C
- Multi-Factor Authentication
- Automation
- Scheduler
- Key Vault
- Store/ Marketplace
- VM Image Gallery & VM Depot

Services Compute

- Cloud Services
- Service Fabric
- Batch
- RemoteApp

Integration

- Storage Queues
- BizTalk Services
- Hybrid Connections
- Service Bus

Media & CDN

- Media Services
- Content Delivery Network (CDN)

Web and Mobile

- Web Apps
- API Apps
- Mobile Apps
- Logic Apps
- API Management
- Notification Hubs

Developer Services

- Visual Studio
- Azure SDK
- VS Online
- App Insights

Data

- SQL Database
- Data Warehouse
- DocumentDB
- Redis Cache
- Azure Search
- Storage Tables

Analytics & IoT

- HDInsight
- Machine Learning
- Stream Analytics
- Data Lake
- Data Factory
- Event Hubs
- Data Catalog
- IoT Hub
- Mobile Engagement

Hybrid Operations

- Azure AD Health Monitoring
- AD Privileged Identity Management
- Domain Services
- Backup
- Operational Analytics
- Import/Export
- Azure Site Recovery
- StorSimple

Infrastructure Services

OS/Server Compute

- Virtual Machines
- Container Service

Storage

- BLOB Storage
- Azure Files
- Premium Storage

Networking

- Virtual Network
- Load Balancer
- DNS
- Express Route
- Traffic Manager
- VPN Gateway
- App Gateway

Datacenter Infrastructure (30 Regions, 22 Online)

Azure Services for IoT

Azure IoT Hub

Connect, secure, communicate, monitor and manage billions of devices

Azure Stream Analytics

Real time stream processing for billions of IoT devices

Azure Storage

Blob, SQL, DocumentDB, Data Lake. Storage to meet every need at the scale of IoT

Azure App Service

Web and mobile apps for any platform on any device

Power BI

Dashboards and data connectors to visualize any data

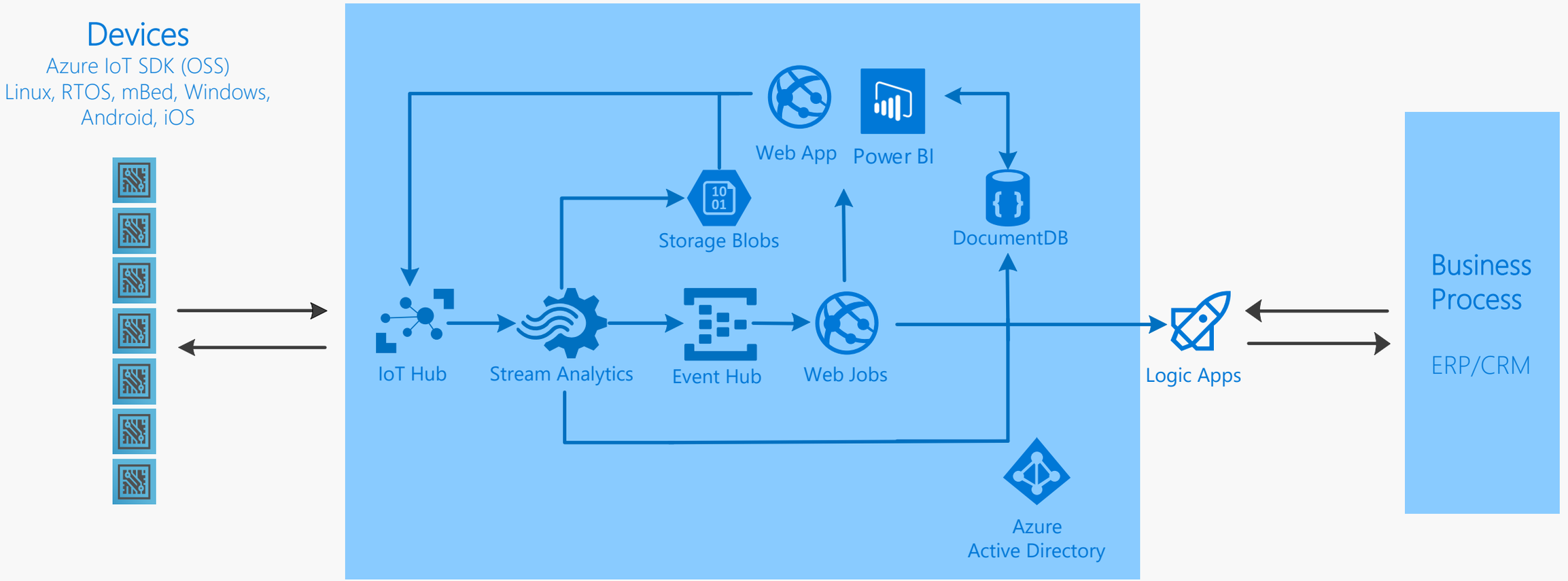
Logic Apps

Powerful workflows to automate business processes

And More…

Azure IoT Suite

Remote Monitoring Service Architecture

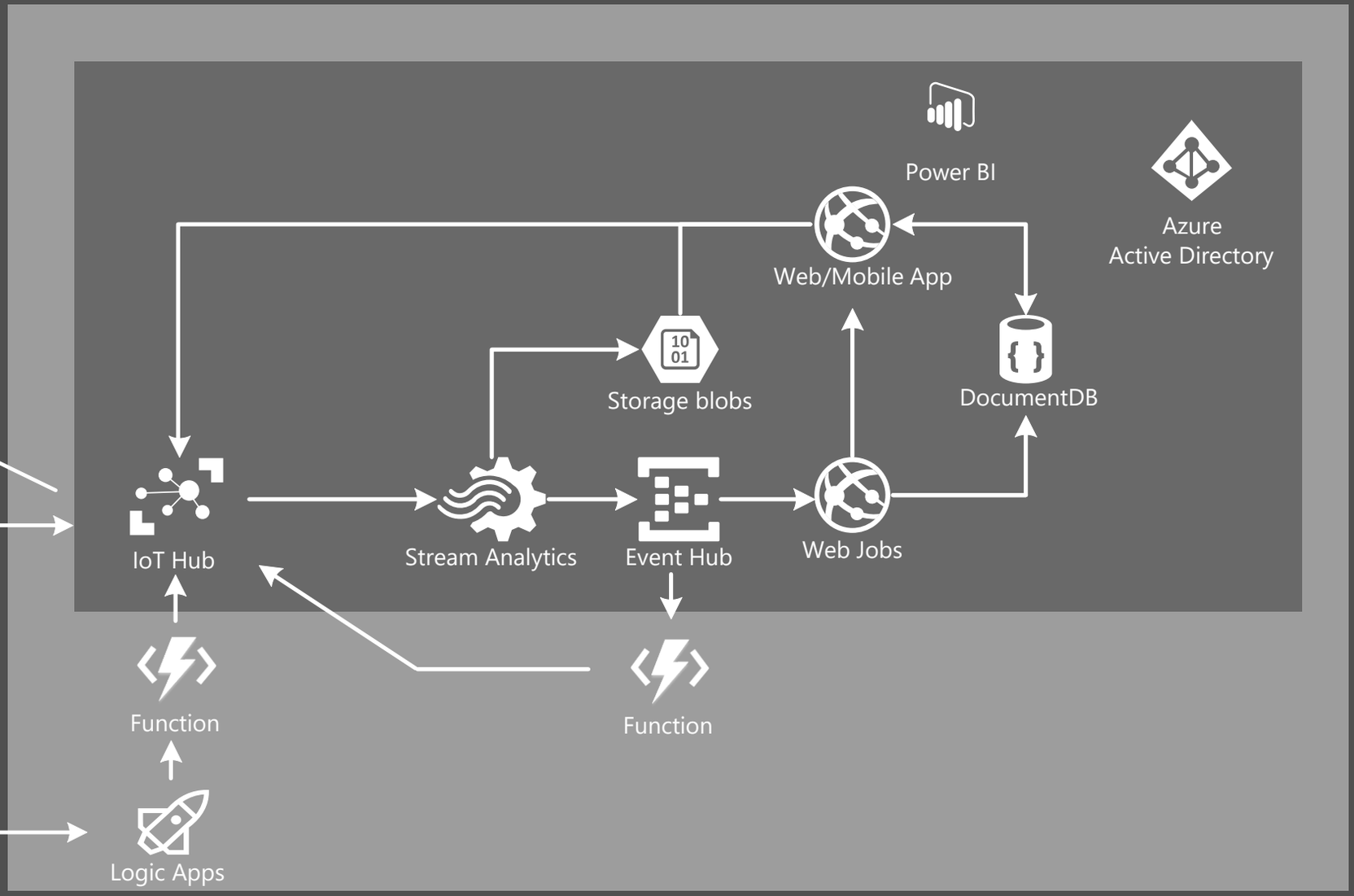


Demo:
Azure IoT Suite

http://azureiotsuite.com

AZURE
IOT

Azure IoT Suite IoT-Shirt solution

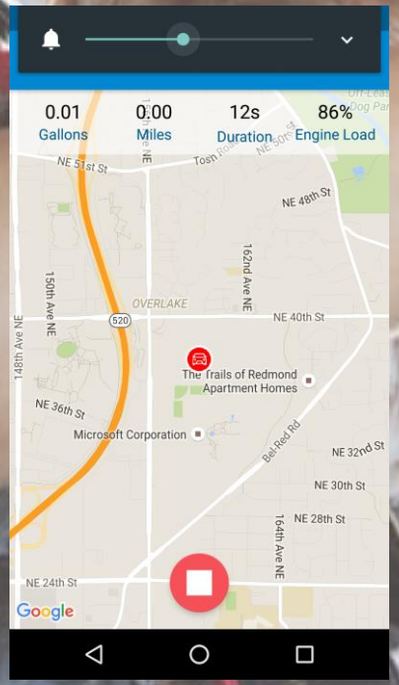


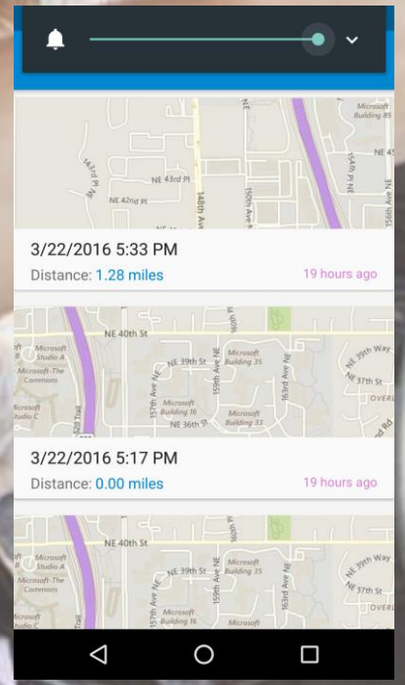
Demo:
MyDriving

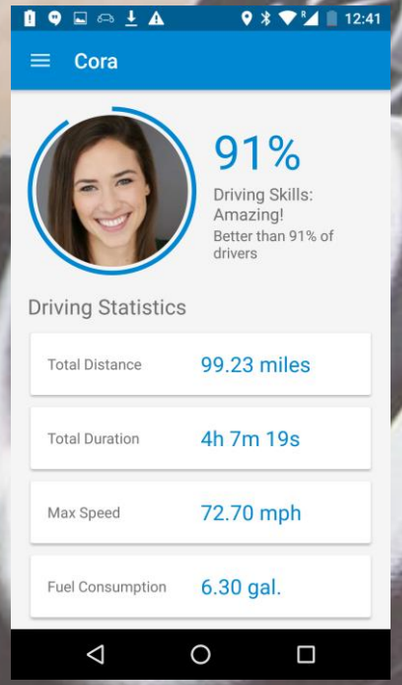
http://aka.ms/iotsampleapp

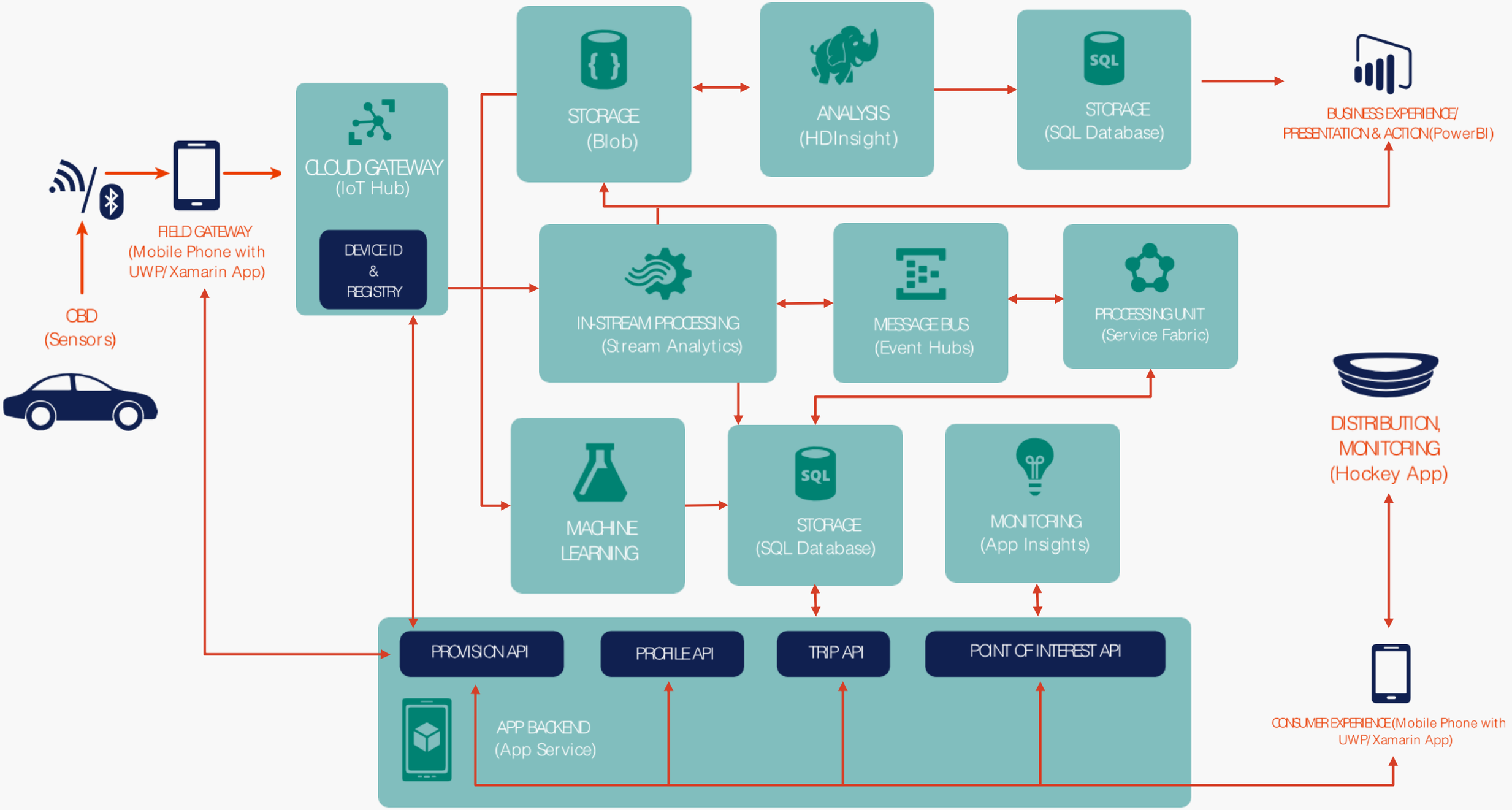
MyDriving

mydriving
Active
3/24/2016 UTC
MYDRIVING
3%
TOTAL
MESSAGES
11667 / 400k
DEVICES
7516
mydriving-df
DATA FACTORY
mydriving-ext
Ready
mydriving-hourlypbi
InputEvents, OutputEvents and one more metric pa...
mydriving
mydriving-archive
Input Events and Output Events past week
Events
MYDRIVING-DF
mydriving
Running
Requests and errors
MYDRIVING
msftdevtools
mydrivinglogs
Available
Total egress
Average E2E latency
MYDRIVINGDB
Resource utilization
MYDRIVINGDB
Online
Server responses
MYDRIVING
LAST 12 HOURS
1.29 ms
22.67 ms
1.03 K


0.01
Gallons
0.00
Miles
12s
Duration
86%
Engine Load
NE 51st St
NE 48th St
162nd Ave NE
OVERLAKE
NE 40th St
520
150th Ave NE
148th Ave NE
The Trails of Redmond Apartment Homes
NE 36th St
Microsoft Corporation
Bel-Red Rd
NE 32nd St
NE 30th St
NE 28th St
164th Ave NE
NE 24th St
Google


3/22/2016 5:33 PM
Distance: 1.28 miles
19 hours ago
3/22/2016 5:17 PM
Distance: 0.00 miles
19 hours ago


12:41
Cora
91%
Driving Skills: Amazing!
Better than 91% of drivers
Driving Statistics
Total Distance
99.23 miles
Total Duration
4h 7m 19s
Max Speed
72.70 mph
Fuel Consumption
6.30 gal.


CLOUD GATEWAY
(IoT Hub)
DEVICE ID
&
REGISTRY
STORAGE
(Blob)
ANALYSIS
(HDInsight)
STORAGE
(SQL Database)
BUSINESS EXPERIENCE/
PRESENTATION & ACTION(PowerBI)
FIELD GATEWAY
(Mobile Phone with
UWP/Xamarin App)
OBD
(Sensors)
IN-STREAM PROCESSING
(Stream Analytics)
MESSAGE BUS
(Event Hubs)
PROCESSING UNIT
(Service Fabric)
DISTRIBUTION,
MONITORING
(Hockey App)
MACHINE
LEARNING
STORAGE
(SQL Database)
MONITORING
(App Insights)
PROVISION API
PROFILE API
TRIP API
POINT OF INTEREST API
APP BACKEND
(App Service)
CONSUMER EXPERIENCE(Mobile Phone with
UWP/Xamarin App)

Demo:
Happy Stadium

Azure IoT Device SDK

Open Source

Everything is on GitHub, open source under MIT license

Cross-Platform Support

RTOS, Linux, Windows, iOS, Android

Multi-Language Support

C, Node.js, Java, C#, Python

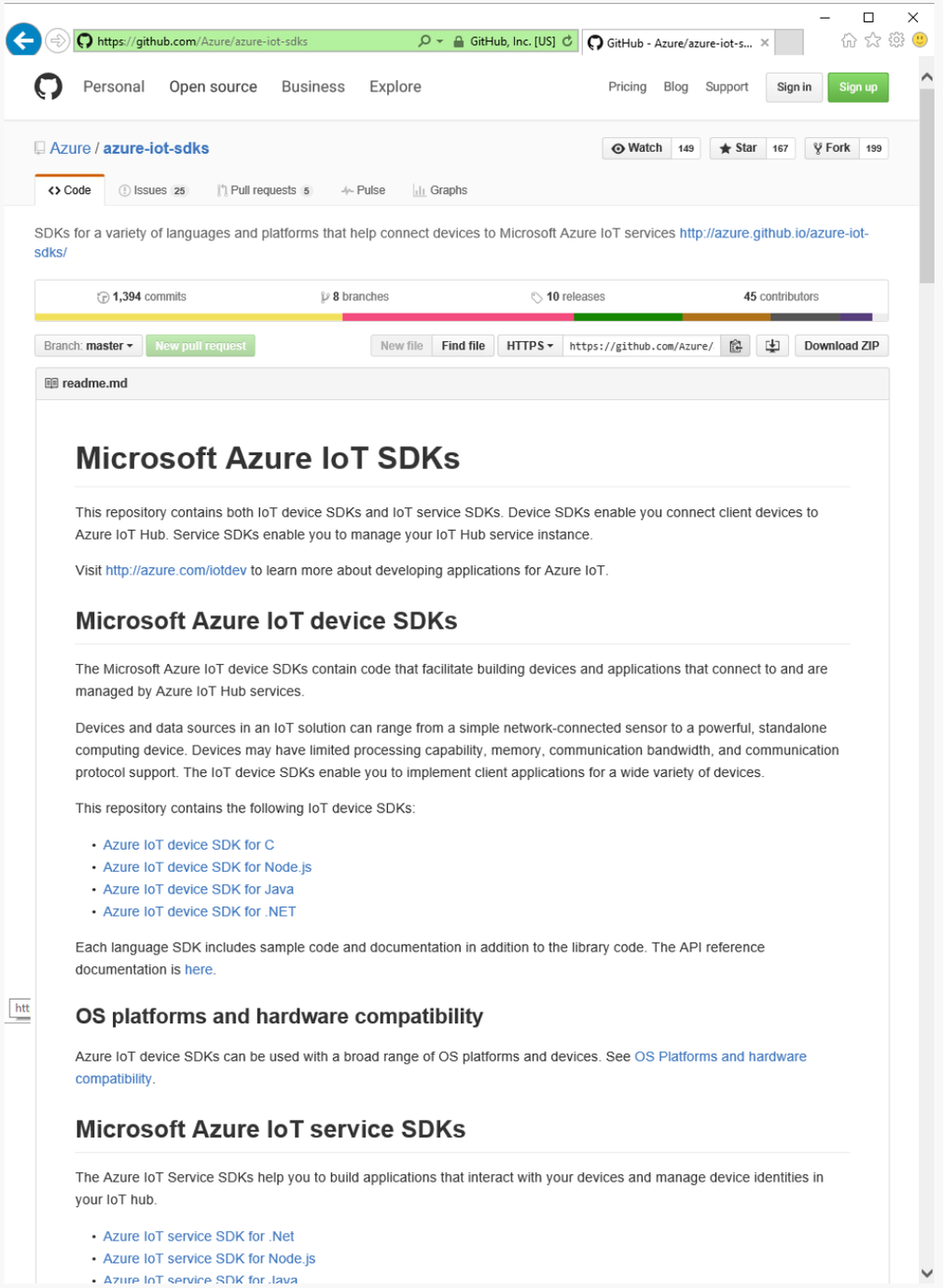
Xamarin Compatible

Includes Xamarin compatible libraries

Easy To Get Started

Samples, walkthroughs to get you started quickly

https://github.com/Azure/azure-iot-sdks



New Offering Announcements

Azure IoT Hub Device Management

Update firmware, software, configuration on *any* device running *any* operating system
Organize and update devices based on hierarchical topologies

Azure IoT Gateway SDK

Cross platform middleware for field gateways
Connect, manage and monitor multiple devices
Protocol translation & data normalization

Azure IoT Starter Kits

5 new kits to get started quickly

New Region Availability

Azure IoT Hub

Designed for IoT
Connectivity, Security & Management for billions of devices

Service Assisted Communications
Devices are not servers
Use IoT Hub to enable secure bi-directional communications

Cloud Scale Messaging
Device-to-cloud and Cloud-to-device
Durable message inbox/outbox per device

Monitor Devices
Delivery receipts, expired messages
Device communication errors

Per-Device Authentication
Individual device identities and credentials

Connection Multiplexing
Single device-cloud connection for all communications (device-to-cloud, cloud-to-device)

Multi-Protocol
Natively supports AMQPS, HTTPS, MQTT
Extensible protocol support for custom protocol needs

Multi-Platform
Device SDKs available for multiple platforms
    RTOS, Linux, Windows, iOS, Android
Service SDK supports multiple languages (Node, Java, C#)

Azure IoT Hub Device Management

Update Software, Firmware, Configuration

Going beyond simple ‘Create, Remove, Update and Delete’ for devices
Fully extensile - works on any device running any operating system or firmware

Standards Based

Based on OMA LWM2M

Manage Devices The Way You Want

Group devices into custom topologies
Update devices based on sub-sections of that topology
Role based access control

Enables IT/OT Coordination

OT is responsible for keeping things running, IT is responsible for keeping things secure
IoT requires IT/OT coordination

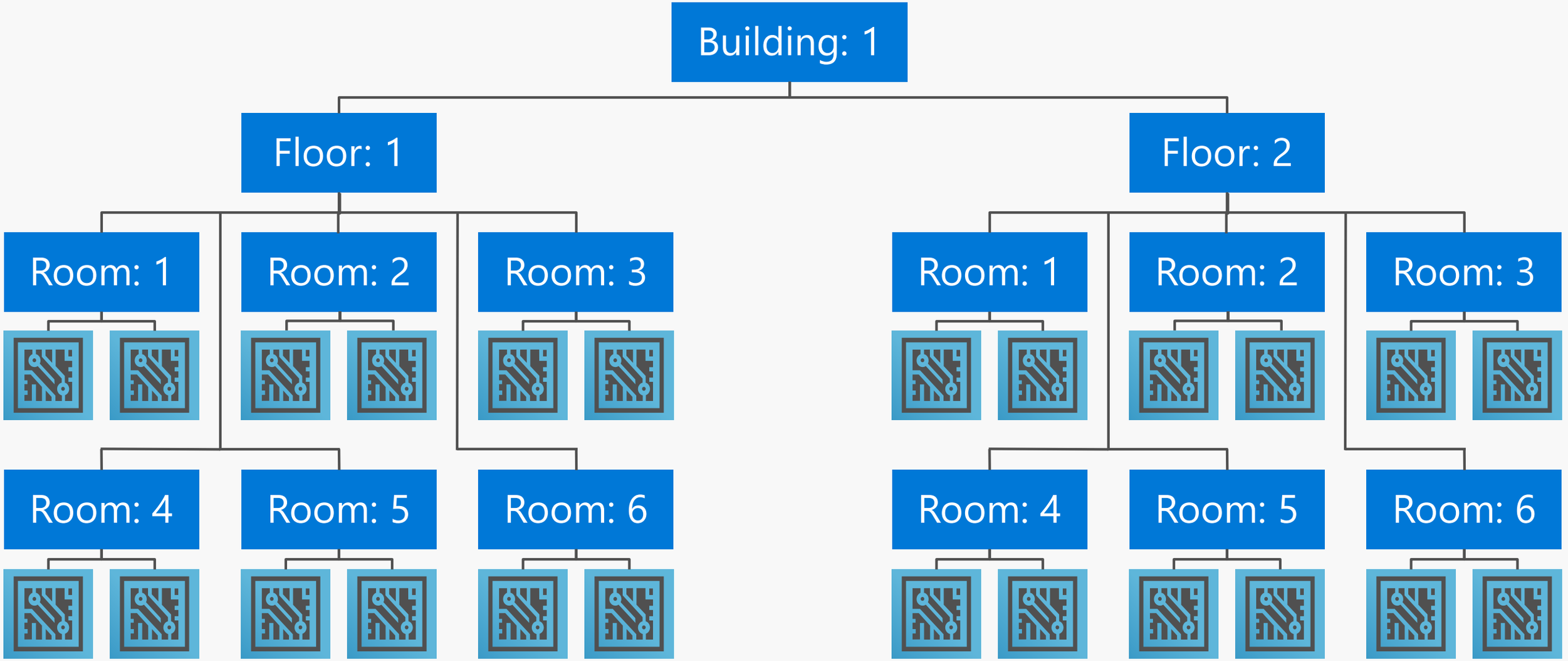
Azure IoT Hub – Device Topology Support

Group & Manage Devices Based On Your Scenario

Example: Building Management

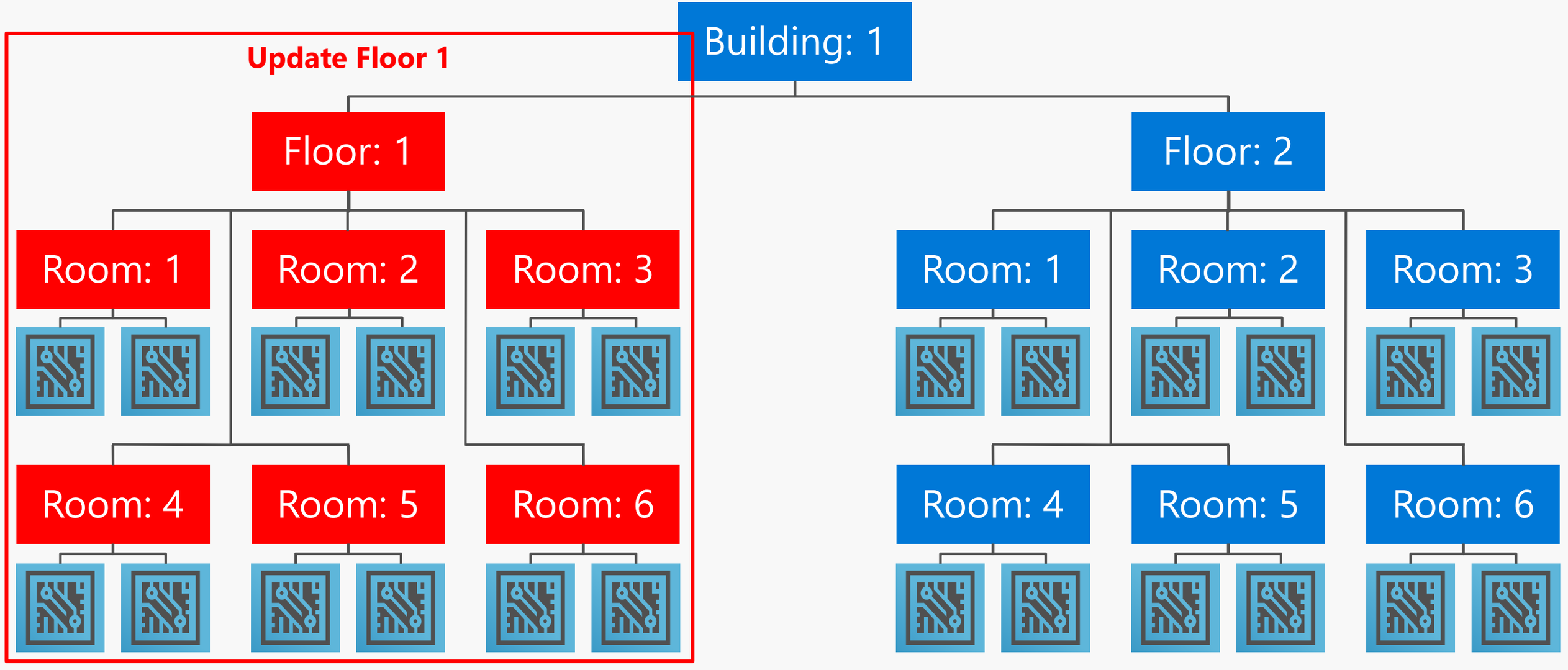
Azure IoT Hub – Device Topology Support

Group & Manage Devices Based On Your Scenario



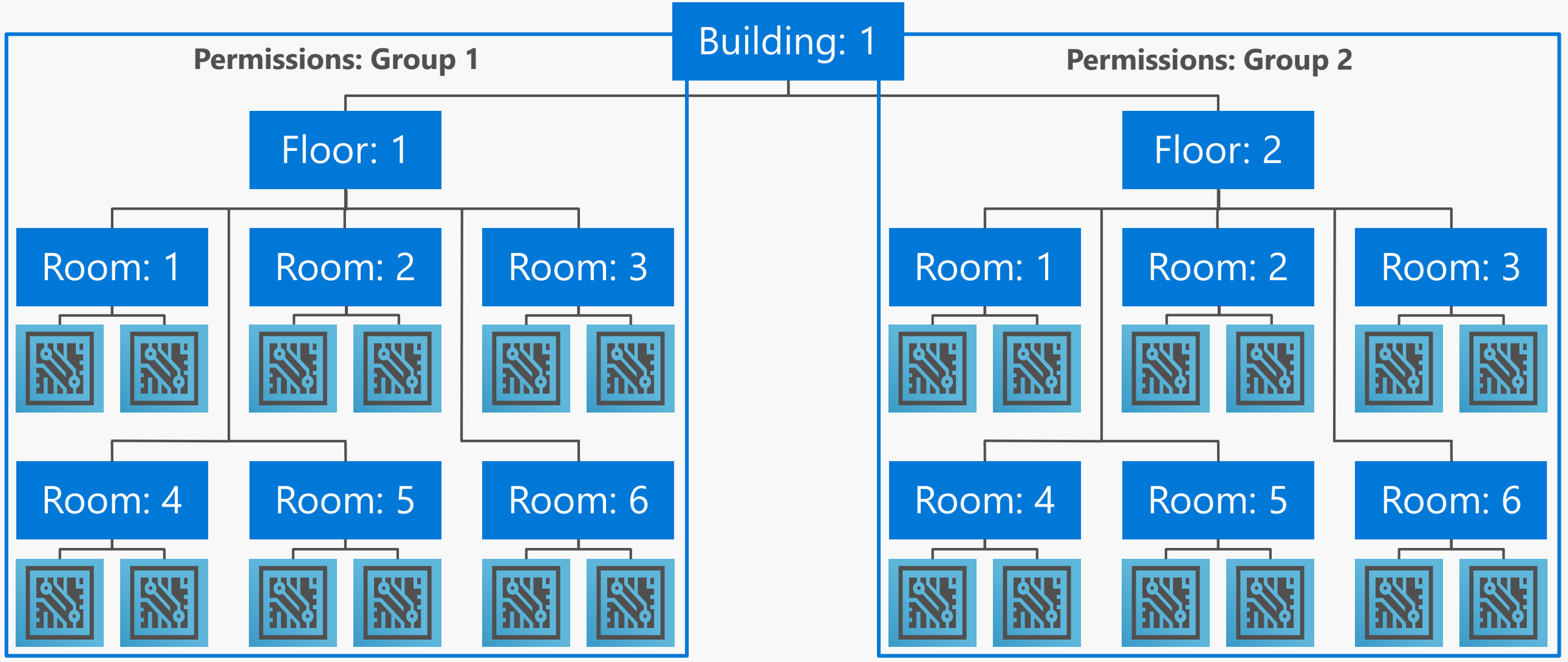
Azure IoT Hub – Device Topology Support

Update Devices Based on Sub-Topologies



Azure IoT Hub – Device Topology Support

Create Permissions Groups Based on Device Topology



Azure IoT Hub Device Management

Enroll Devices

Enroll devices and determine properties and available operations

Organize Devices

Group & manage based on your scenario

Role based access to sub-groups

Maintain Devices

Update software, firmware, configuration using “device jobs”

Operators can monitor device health and signal when it is safe to update devices

IT can update and rollback during maintenance windows

Decommission Devices

Decommission and replace devices after service lifetime

Azure IoT Gateway SDK

Open source IoT gateway middleware that enables:

- Cloud connectivity for devices that don't speak TCP/IP
- Security Isolation for devices can't be updated/secured
- Protocol translation for existing and new protocols
- Data transformation compression, annotation, filtering
- Local intelligence local processing for low latency needs

Azure IoT Starter Kits

Get started quickly

Raspberry Pi 2 Kit

Windows 10 and Raspbian

Samples in C and C#

Feather M0 Wi-Fi Kit

RTOS

Samples in Arduino IDE and C

Feather Huzzah ESP8266 Kit

RTOS

Samples in Arduino IDE and C

Intel Edison Kit

Linux Yocto

Samples in JavaScript (Node.js)

ThingDev Kit

RTOS

Samples in Arduino and C

Start today: http://azure.com/iotstarterkits

Global Availability

New Regions

Australia (East, Southeast)
Japan (East, West)
Germany (Central, Northeast) – Preview

Roadmap

	US	Europe	APAC	Japan	Australia	LATAM	China	Germany	India	UK
IoT Hub	Available	Available	Available	Available	Available	2016 Q2	2016 Q2	Available	2016 Q3	2016 Q4
IoT Suite	Available	Available	Available	2016 Q2	2016 Q2	2016 Q3	2016 Q2	2016 Q2	2016 Q4	2017 H1

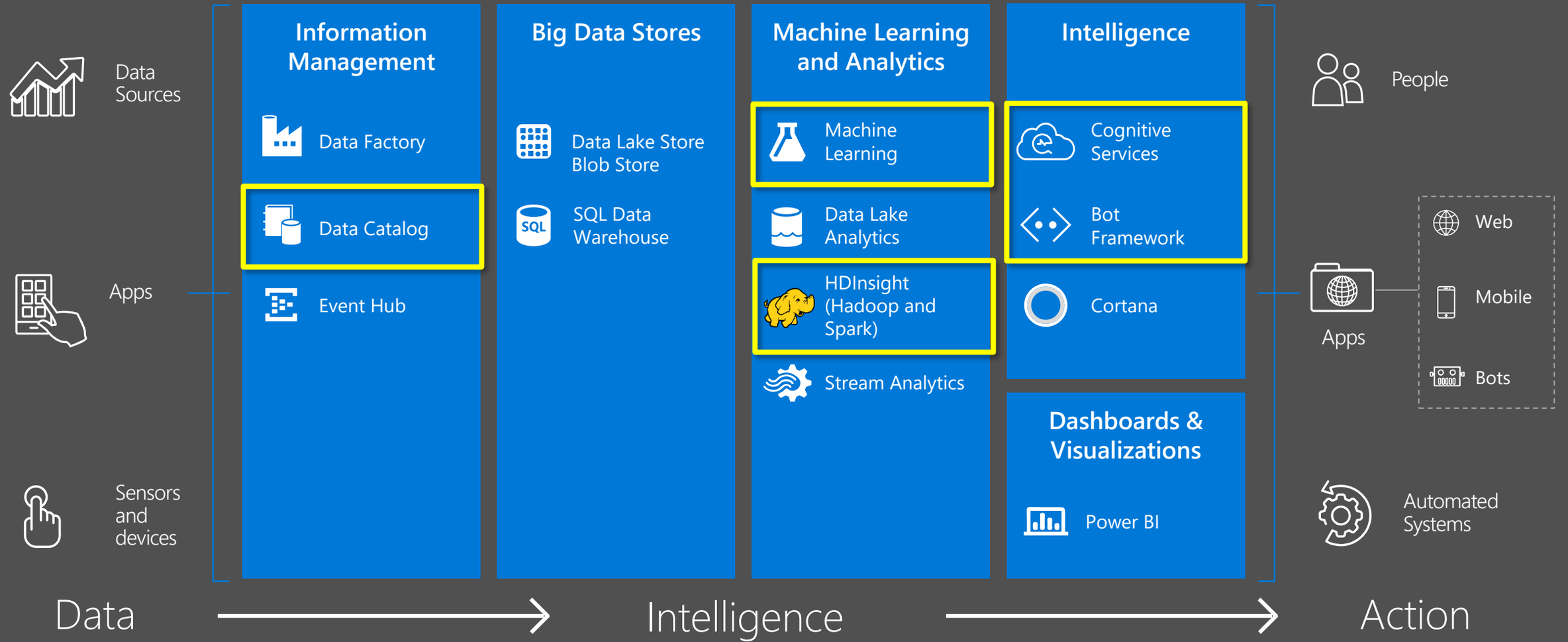
azuregermany@microsoft.com

~~Cortana Analytics Suite~~

Cortana Intelligence Suite

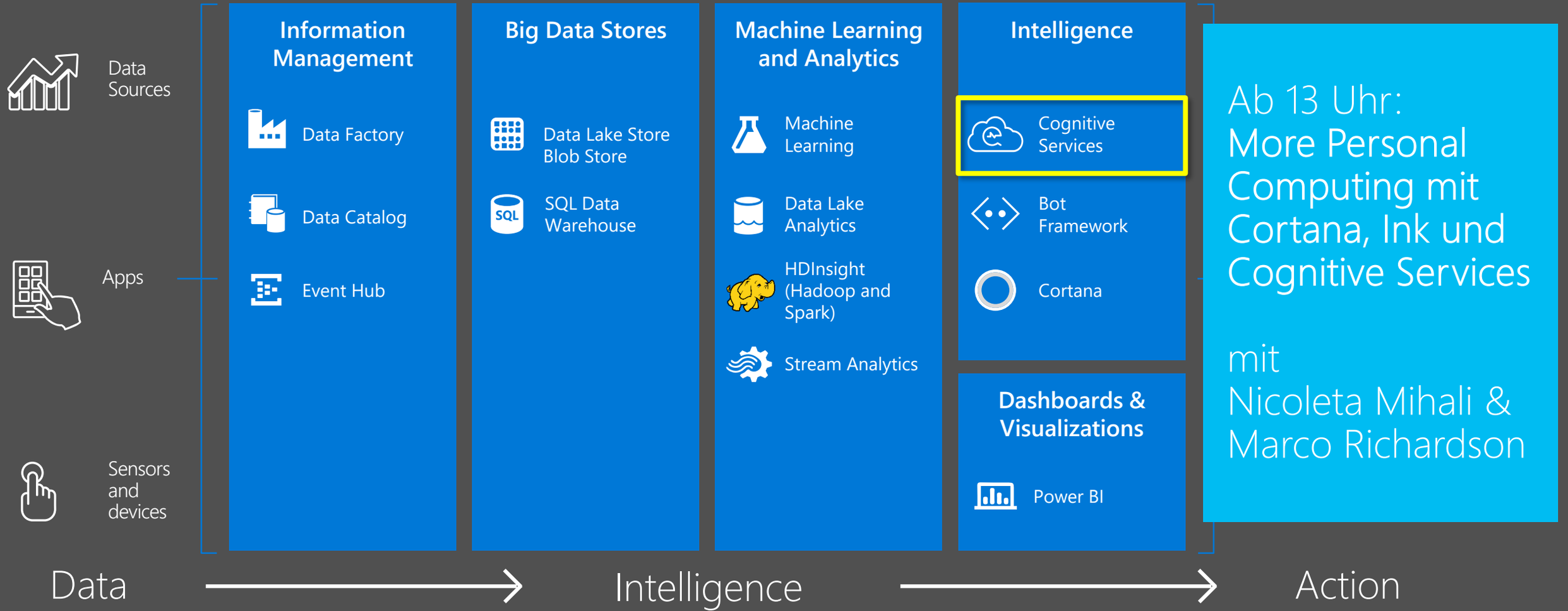
Cortana Intelligence Suite

Transform data into intelligent action



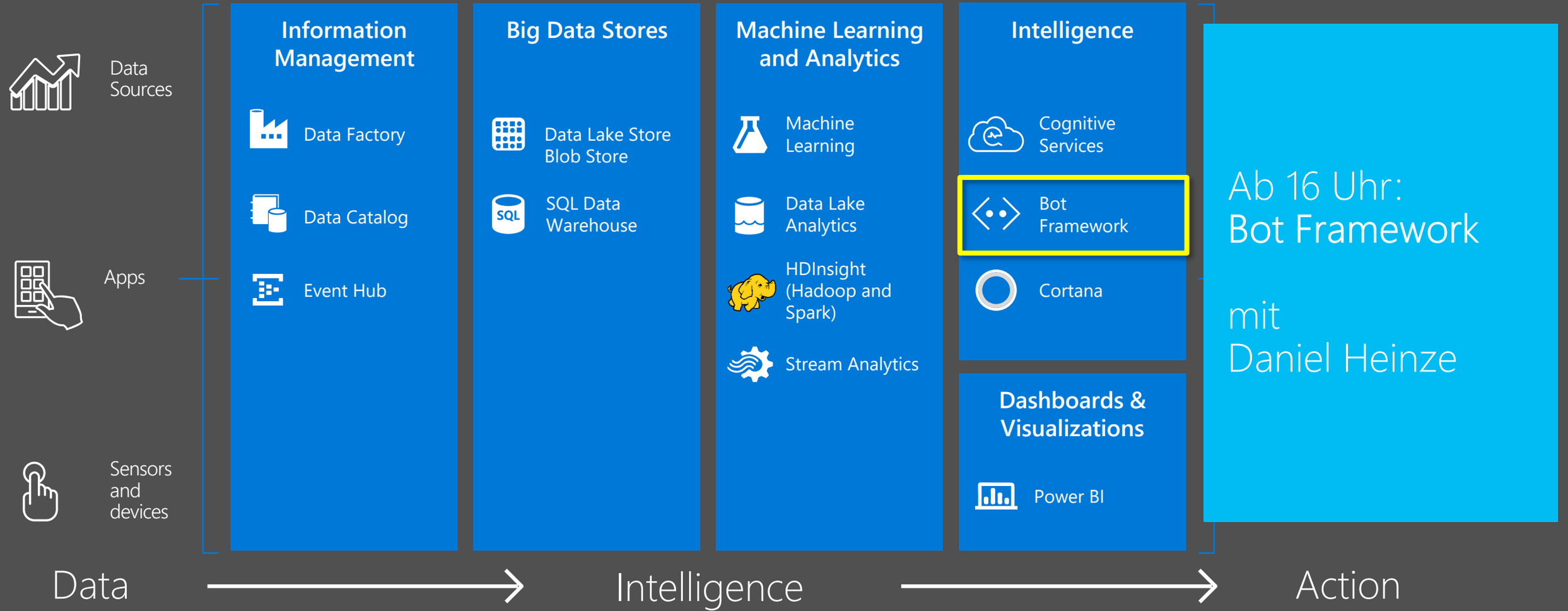
Cortana Intelligence Suite

Transform data into intelligent action



Cortana Intelligence Suite

Transform data into intelligent action



Wrapping Up…

Microsoft IoT

Comprehensive solutions from device to cloud

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Azure IoT

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One Windows platform for all devices	Pay as you go, scale as you need
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Designed for today's IoT environments	End-to-end security & privacy
Scalable solutions from free Windows IoT Core to Windows IoT Enterprise on PC-Like Devices	Windows, Mbed, Linux, iOS, Android, RTOS support

Top Sessions at //build on IoT

B861: Microsoft Vision for IoT: From Windows Devices to Azure

B815: Azure IoT: Complete Cloud Offerings for the IoT Revolution

B844: Developers' Guide to Connection Devices to Azure IoT

B860: Windows 10 IoT Core: From Maker to Market

Keynote 2

T616: Windows in the Smart Home: The Internet of Things and UWP

IoT Code Labs http://aka.ms/codelabs-iot

Further Resources on IoT

Windows 10 IoT

microsoft.com/en-us/WindowsForBusiness/windows-iot
WindowsOnDevices.com

Azure IoT

www.InternetofYourThings.com
Azure IoT Dev Center – http://aka.ms/azureiotdev
Azure IoT Blog - https://blogs.microsoft.com/iot/
Starter Kits – http://azure.com/iotstarterkits
Azure IoT SDKs – http://github.com/azure/azure-iot-sdks
Developer's introduction to Azure IoT – http://aka.ms/azureiotdevintro

Top Sessions at //build on Cortana Intelligence

B826: Building Data-driven Apps with Cortana Intelligence Suite

B837: Data Science for Developers

B849: Enhancing Your Application with Machine Learning Through APIs

B857: Intelligent Data Driven Applications that Learn and Adapt

B813: Azure Data Lake and Azure Data Warehouse: Applying Modern Practices to your App

P429: Cortana Analytics Suite and Information Management

Data Development Code Labs: http://aka.ms/codelabsdata

1. Gain Near Real-Time Insights with IoT Analytics
2. Highscale Data Processing in Azure
3. Building an Intelligent Application Using Cortana Analytics Machine Learning APIs
4. Take a Modern Approach to Data in Your Apps Using Azure Data Services

Further Resources on Cortana Intelligence Suite

http://cortanaintelligence.com

http://gallery.cortanaintelligence.com

http://www.microsoft.com/cognitive

https://blogs.technet.microsoft.com/machinelearning/

IoT TechCamps im Mai

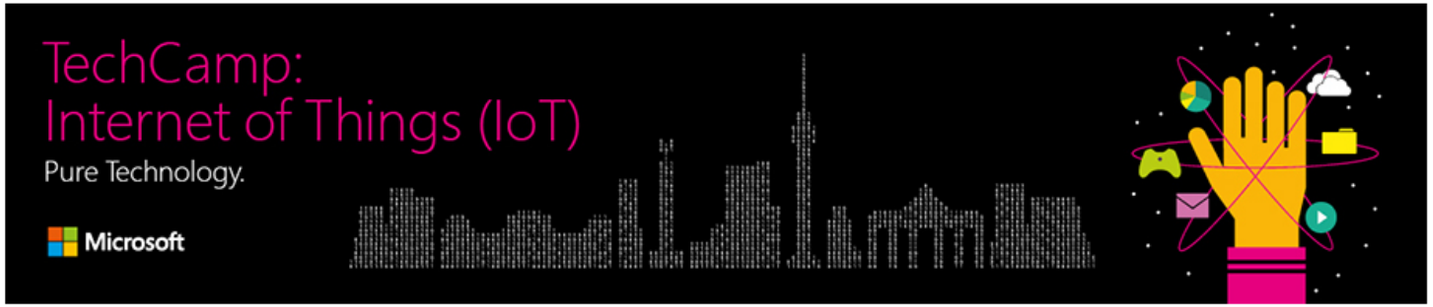
Microsoft

Anmelden

Events

Erweiterte Suche

Startseite Veranstaltungen Kontaktieren Sie uns



TechCamp – Internet of Things

Veranstaltungs-ID: 1032748175

Fast Lane Institute for Knowledge Transfer GmbH

Raum: Oslo
Gasstraße 4a
22761 Hamburg
Deutschland

Referent(en): Marco Richardson und Olivia Klose.
Produkt(e): Microsoft .NET.
Zielgruppen: Entwicklungsgeneralist und Tester.

In diesem Camp werden die unterschiedlichen Formen von Internet-of-Things (IoT) Lösungen sowie deren Realisierung in der Praxis eingehend thematisiert. Innerhalb unterschiedlicher praktischer Beispiele werden diese Lösungen und die an die einzelnen IoT Typen gestellten Anforderungen demonstriert. Der Schwerpunkt liegt dabei auf der praktischen Umsetzung auf Basis von Microsoft Azure. Diese Veranstaltung richtet sich sowohl an Hobbyisten als auch an Profis, die kommerzielle und hoch verfügbare Lösungen entwickeln wollen.

3. Mai in Hamburg
http://aka.ms/iotcamp-hamburg

10. Mai in Berlin
http://aka.ms/iotcamp-berlin

Microsoft

Thank you!

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