

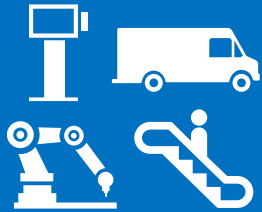
Microsoft's Approach to IoT

Digital Transformation and The Internet of Things

Dean Bethke
deanb@microsoft.com

Defining the Internet of Things

Things



Connectivity



Data

10101
01010
00100

Analytics



Business Drivers



Improve
Yield

Increase
Quality

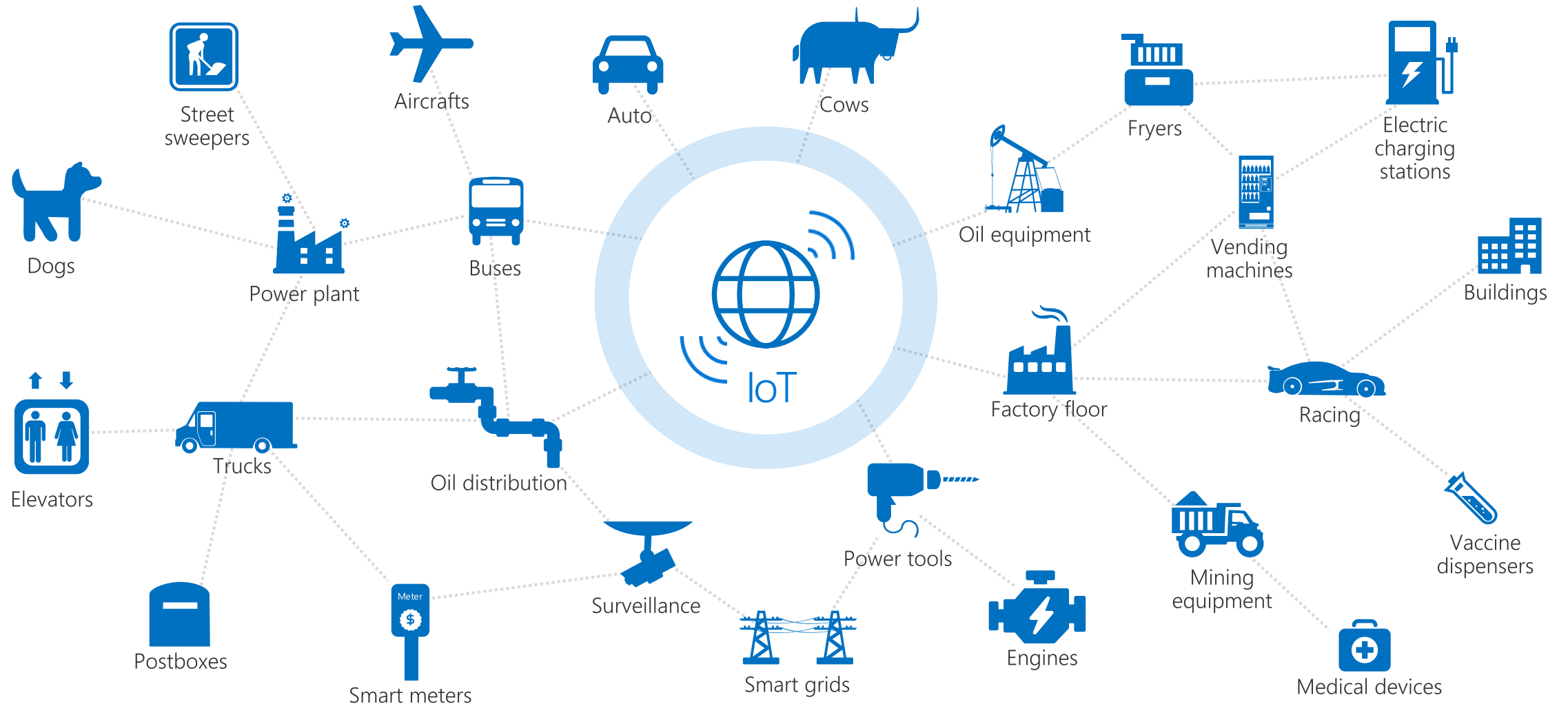
Reduce
Downtime

Lower
Costs

Enhance
Health &
Safety

Regulatory
Compliance

Innovation at work – real IoT use cases



TRACKING + FORECASTING ROAD WEATHER

In partnership with Microsoft, Fathym has expanded and hardened WeatherCloud™, a road weather forecasting and sensor solution that utilizes the full end-to-end Fathym ecosystem.

Third party and proprietary sensors collect road weather and environmental data. Weather stations are built to be configurable, adding additional sensors such as air quality or cameras. This data is sent via Bluetooth Low Energy to an edge device Smart Hub application, where it is collected and sent to the Fathym cloud.

The Fathym cloud allows for data management, real-time alerts, complex visualizations and asset tracking, and user and role management.

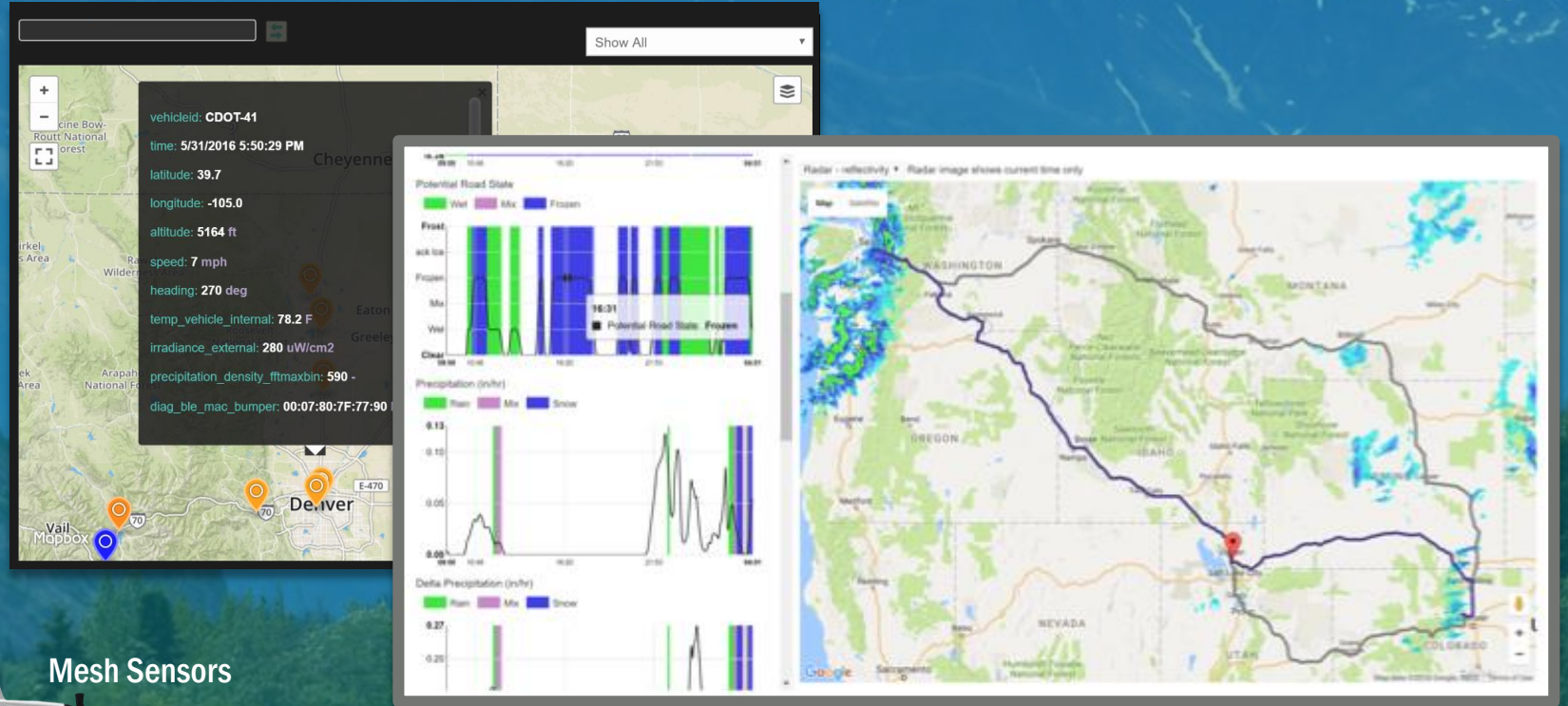
"Microsoft Azure and Azure Service Fabric has allowed us to build out a full ecosystem of IoT microservices. The ease and speed of development on the platform as well as the scalability translates to cost savings and flexibility that are very welcome to our company."

- Matthew Smith, CEO of Fathym

Learn more - <https://blogs.microsoft.com/iot/2016/12/09/fathym-iot-enabled-weathercloud-enhances-driver-safety-dubai-incident-weather>



LIVE, INDUSTRIAL-GRADE DEPLOYMENT IN EXTREME CONDITIONS CUSTOMER CASE STUDY: SWIFT TRANSPORTATION + ALASKA STATE DoT



Mesh Sensors



Mobile Sensors



Smart Hub



Data Management Cloud



A simple view of an IoT solution

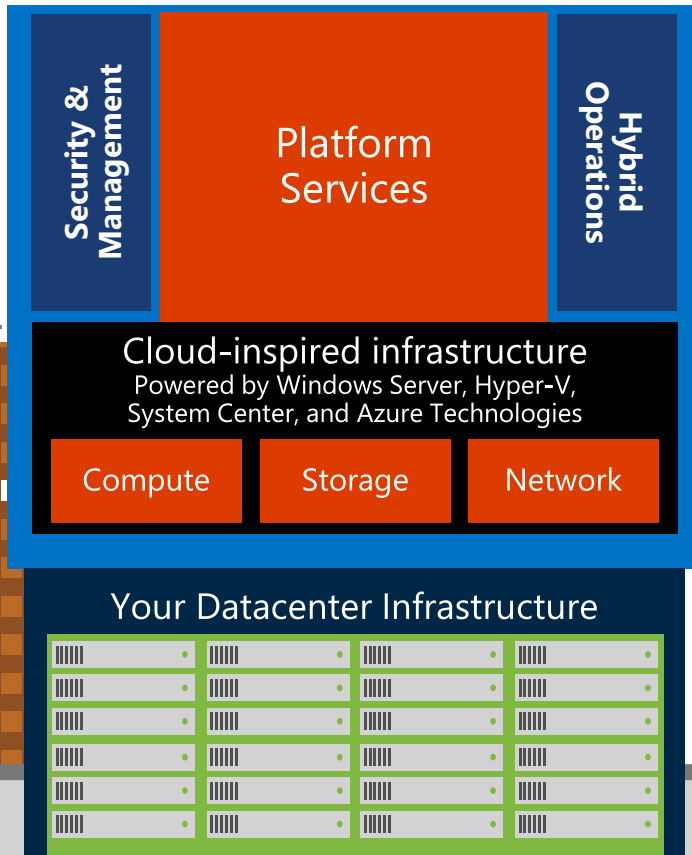


A more realistic view...



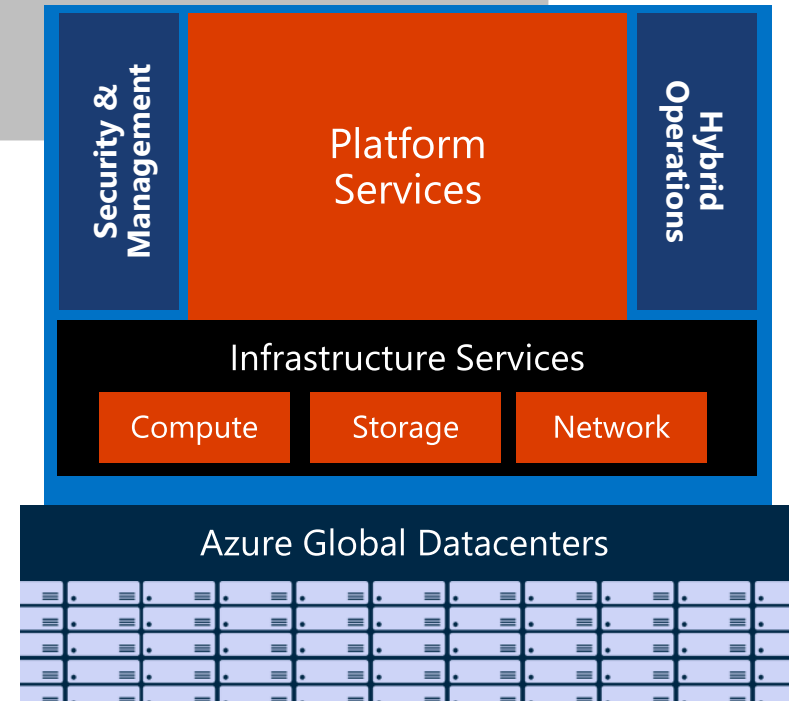
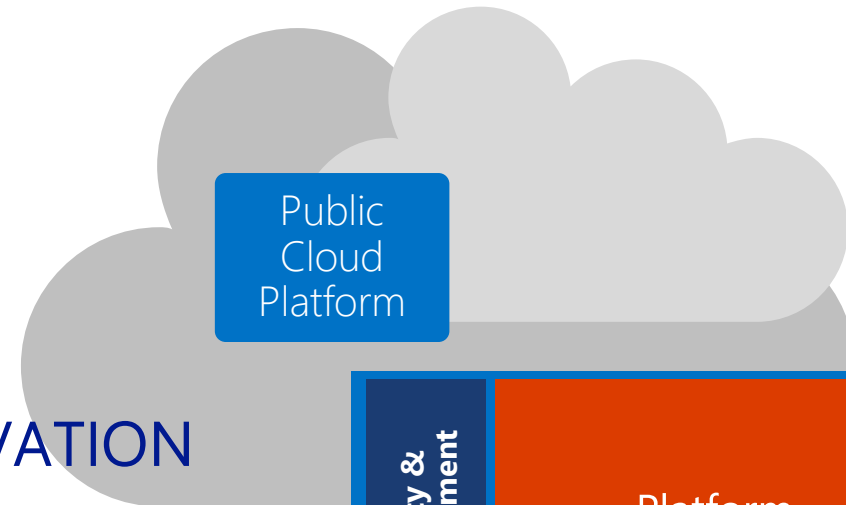
... and why IoT needs simplifying

The Azure Platform Strategy



Microsoft Azure Stack & Cloud Platform System

INNOVATION



Microsoft Azure
Public, Global, Shared Datacenters

Platform Services

Security & Management

- Service Creation & Configuration
- User/Group Directory Store
- Identity Sign-Up and sign-in
- Multi-Factor Authentication
- Scheduled Service Management
- Task Scheduler
- Encryption Key Store
- Software/Solution Marketplace
- Pre-Build VM Images

Services Compute

- Stateless Compute
- Distributed Compute
- Scheduled Compute Jobs
- Virtual App Streaming

Integration

- Simple Queuing
- B2B Integration
- Hybrid Connections
- Pub/Sub Queuing

Media & CDN

- Live & OD Media Streaming
- Content Delivery Network (CDN)

Web and Mobile

- Web Apps Infrastructure
- API App Infrastructure
- Mobile Backends
- Business Process Automation
- API Management
- Push Notifications

Developer Services

- Development Tools
- Software Development Kits
- Software Lifecycle Management
- Application Instrumentation

Data

- Relational SQL Database
- Data Warehouse
- Document Database Service
- Distributed In-Memory Cache
- Search
- Simple Key/Value Store

Analytics & IoT

- Big Data Analytics
- Predictive Analytics
- Data Stream Analytics
- Big Data Storage
- Data Pipelines
- Device Data Collection
- Data Source Management
- IoT Device Management
- Mobile Analytics

Hybrid Operations

- Directory Health Monitoring
- Privileged Identity Management
- Domain Join & Policy Management
- Server Data Backup
- Operational Analytics
- Bulk Data Import And Export
- Disaster Recovery
- Hybrid/Intelligent Data Backup

Infrastructure Services

OS/Server Compute

- Virtual Servers
- Containers

Storage

- Disk based Object/File Storage
- Shared Storage
- SSD based Object/File Storage

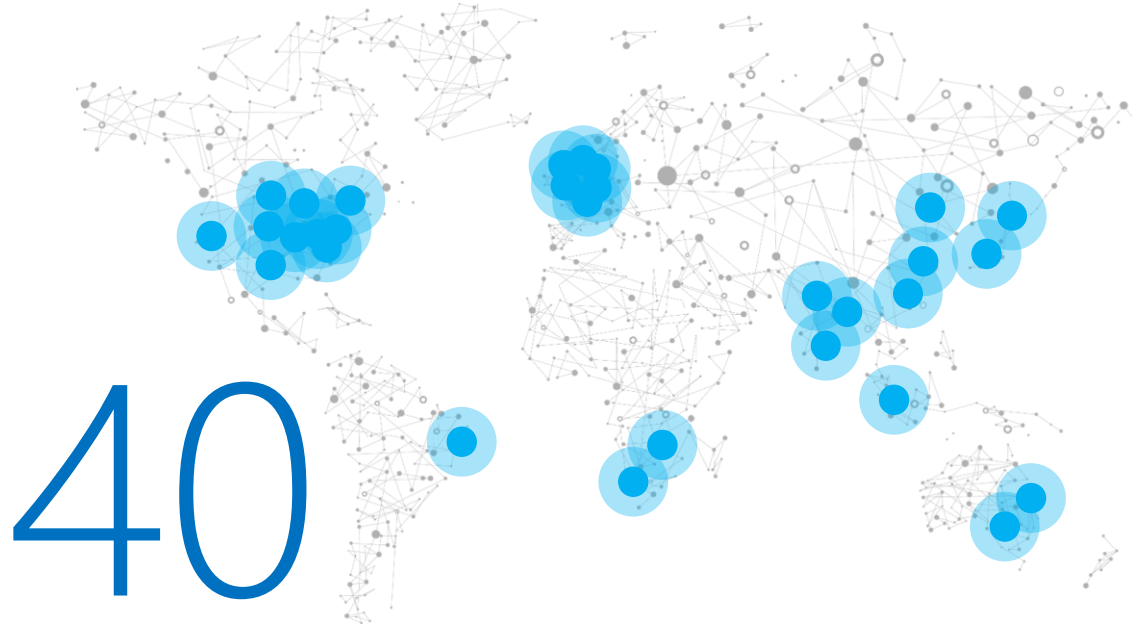
Networking

- Virtual Network
- VM Load Balancer
- DNS
- Direct Network Connections
- Traffic Distribution
- VPN Gateway
- HTTP Load Balancer

Datacenter Infrastructure (30 Regions, 22 Online)



Built on an industry's leading hyperscale cloud...



40
Azure regions
around the world

 AZURE REGIONS

More than AWS and Google Cloud combined

and powered by the industry leading BI and analytics platform...



Gartner Magic Quadrant leader, Business Intelligence and Analytics Platforms, 2017

Azure is an open cloud



Microsoft is simplifying IoT

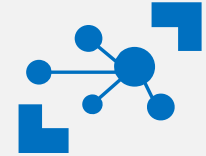
Azure IoT Edge

Securely distribute cloud intelligence locally, and at scale



Azure IoT Hub

IoT cloud gateway



Azure IoT Suite

Preconfigured solutions for common scenarios



Remote Monitoring | Predictive Maintenance | Connected Factory

Azure Time Series Insights

Explore and analyze time series data fast, and at scale



Microsoft IoT Central

Fully managed IoT SaaS



Azure IoT Security partners

IoT security auditors program



Microsoft IoT Central

A new software-as-a-service (SaaS) solution that **reduces the complexity** of solution management and cloud development with **easy solution configuration**

Easy

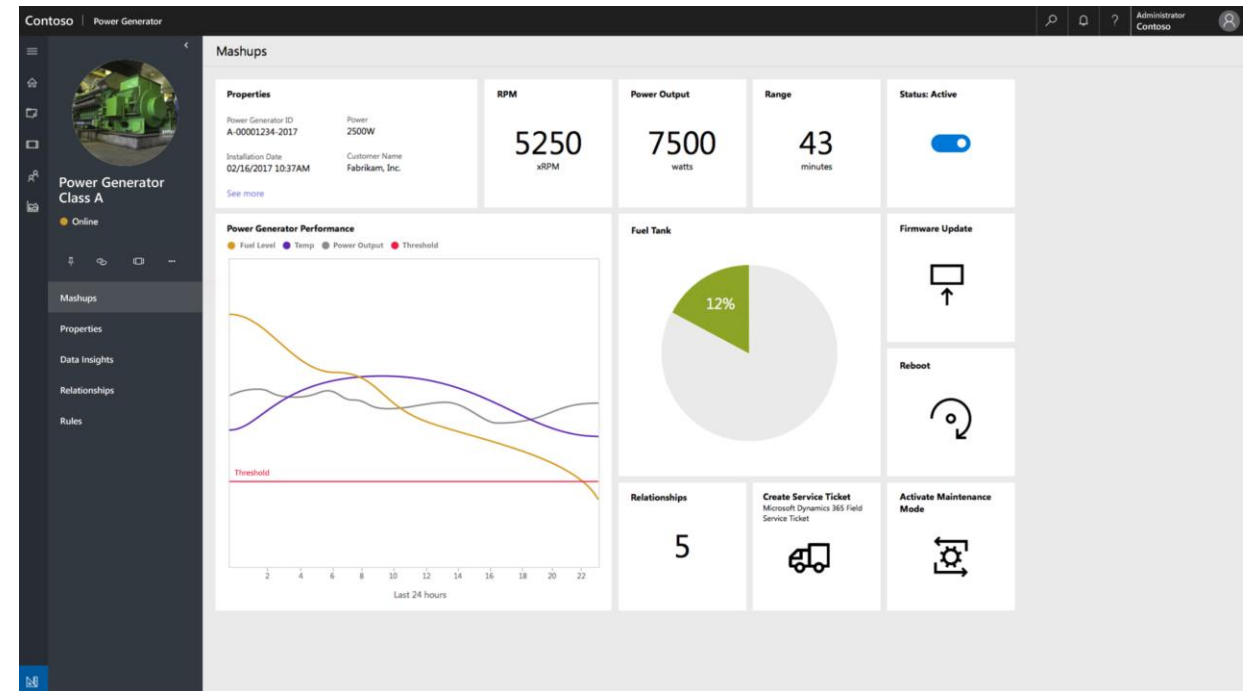
Microsoft IoT Central breaks down barriers by making it easy to create and manage IoT solutions

Fast

Microsoft IoT Central delivers a codeless experience for modeling your products and pushes new boundaries by creating new opportunities for your business with a flexible scalable solution

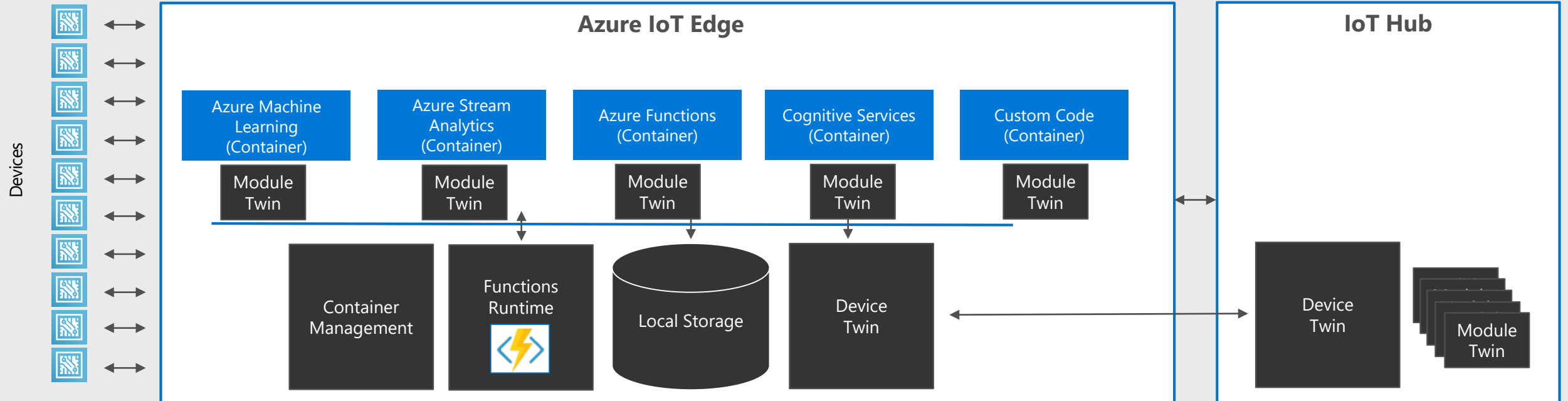
Secured

Microsoft IoT Central is backed behind a trusted, proven technology & ecosystem which is the Azure Cloud – cultivating a culture of innovation and security features you need to stay in control of your IoT solution and data

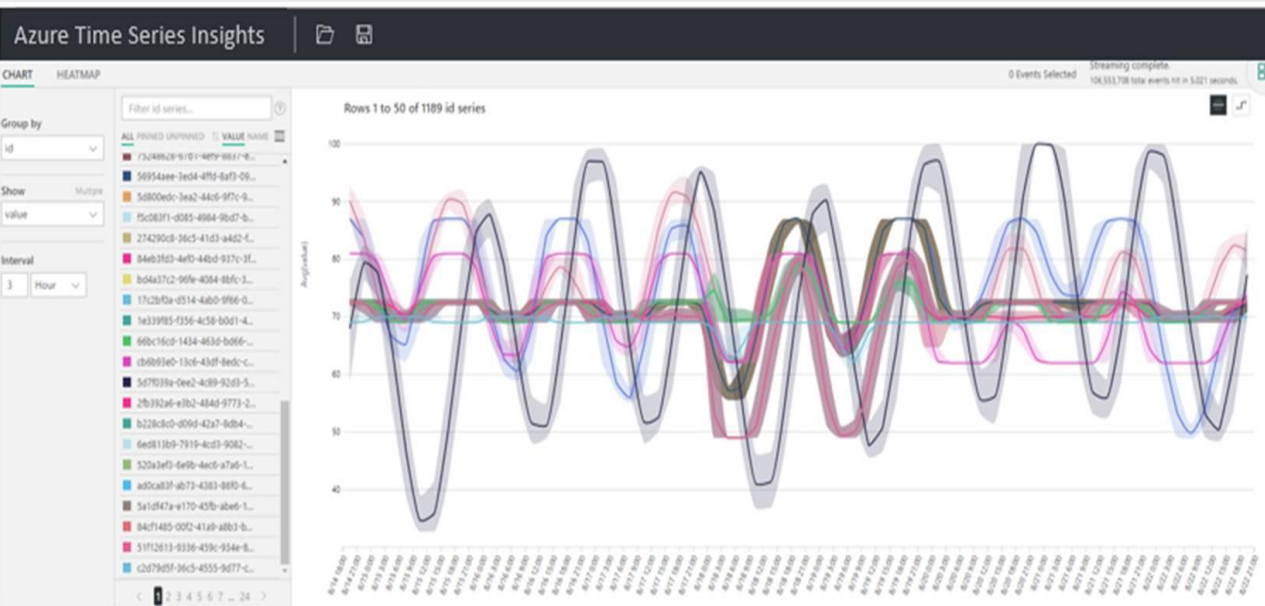
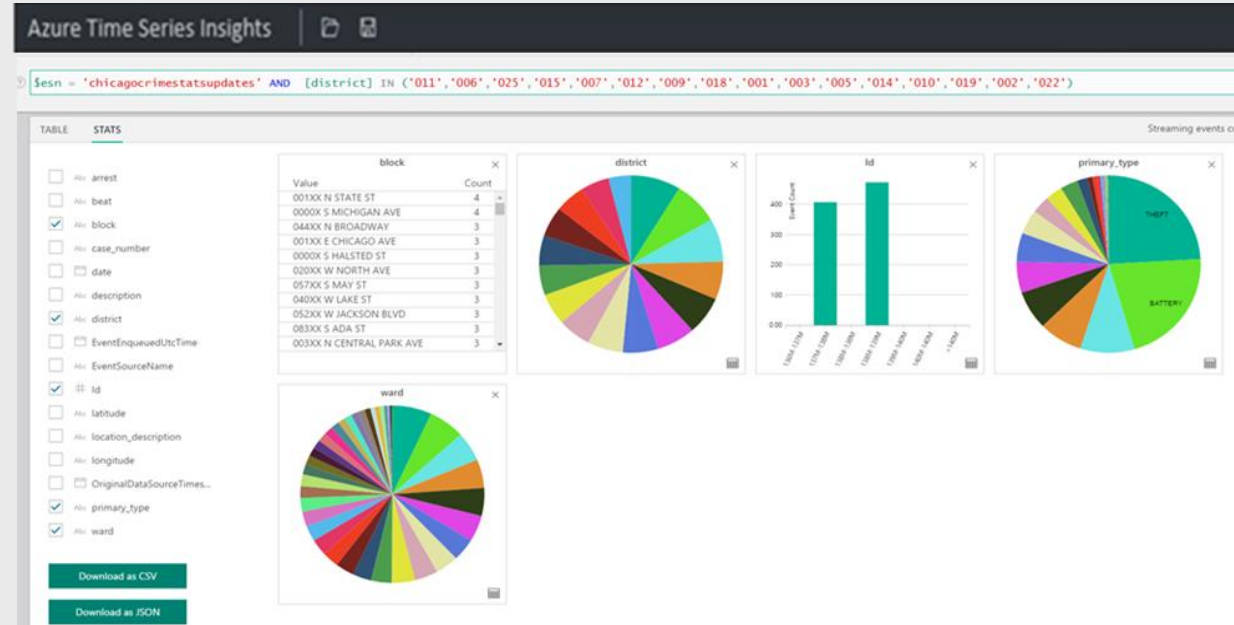
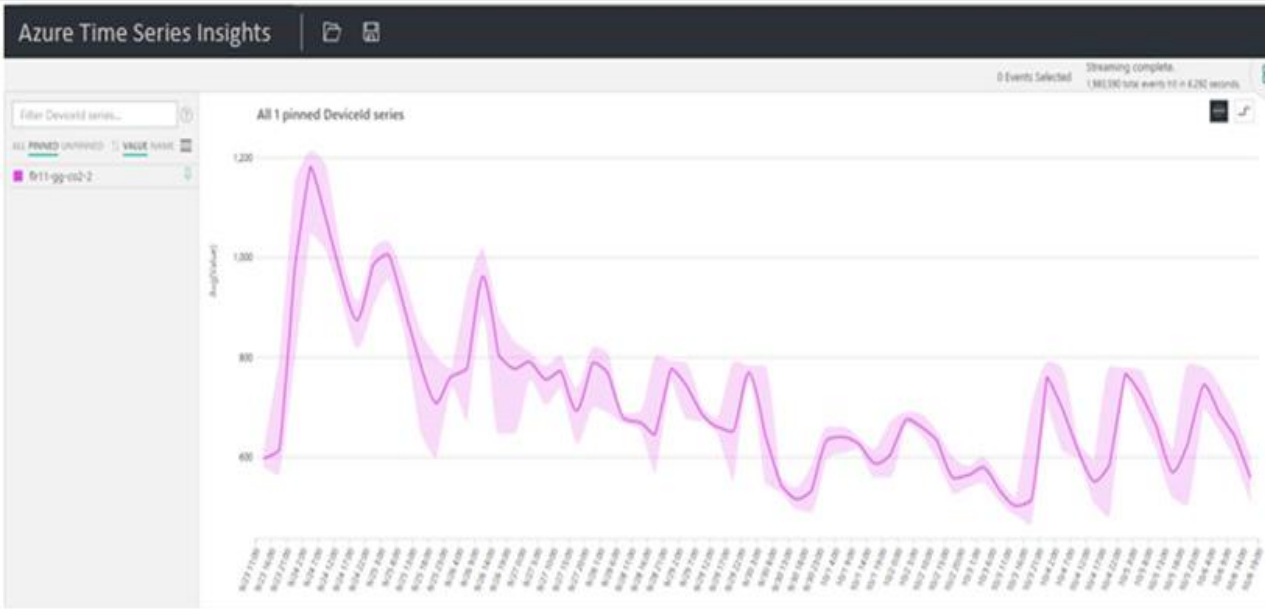


Azure IoT Edge

- Container based modules
- Azure Functions
- Azure Stream Analytics
- Azure Machine Learning
- Cognitive Services
- Offline / Synchronized Device Twins
- Local Storage
- Cloud Management & Deployment
- High Availability / Fault Tolerance
- Cloud Dev/Test Support



Azure Time Series Insights



Get started today

- 1 Define your business and use case(s)
- 2 Identify key data sets
- 3 Start small - Connect, collect, visualize, alert
- 4 Learn, refine, scale
- 5 Evolve from reactive to proactive to predictive



Thank you

Dean Bethke
deanb@microsoft.com

Microsoft is simplifying IoT

