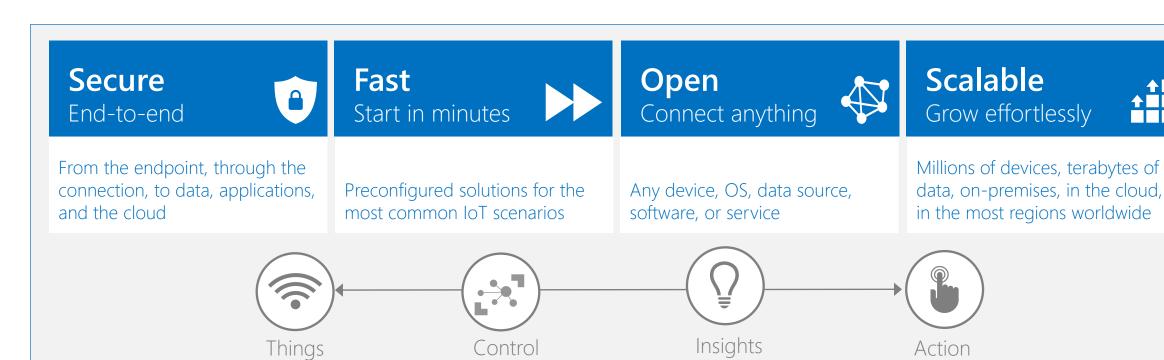


Azure IoT: Ready for the enterprise



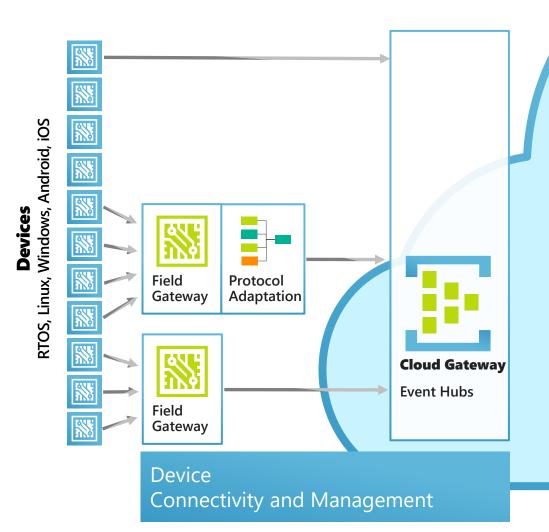
From endpoint to insight to action, across the enterprise, and around the world



Recognized as a leader in Business Intelligence and Analytics Platforms
Recognized as a the leading visionary for Internet of Things platforms

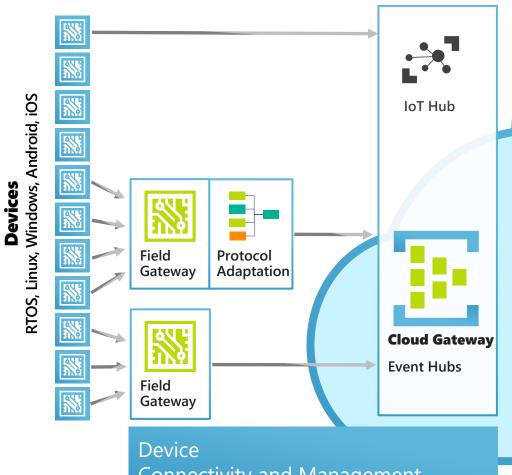






Event hubs

- High scale telemetry ingestion service
- HTTP/AMQP protocol support
- Each event hub supports
 - 1 million publishers
 - 1GB/s ingress
- Generally available worldwide
 - 30 billion messages per day
 - 100+ TB ingested per day

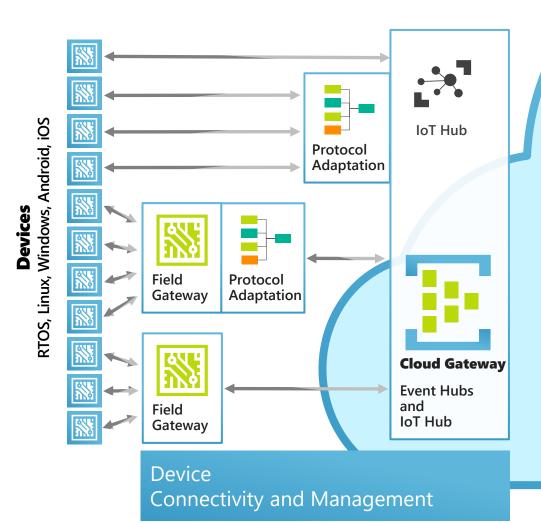


Additional IoT needs

- Command and control
- Device identity
- Device registry
- Device management

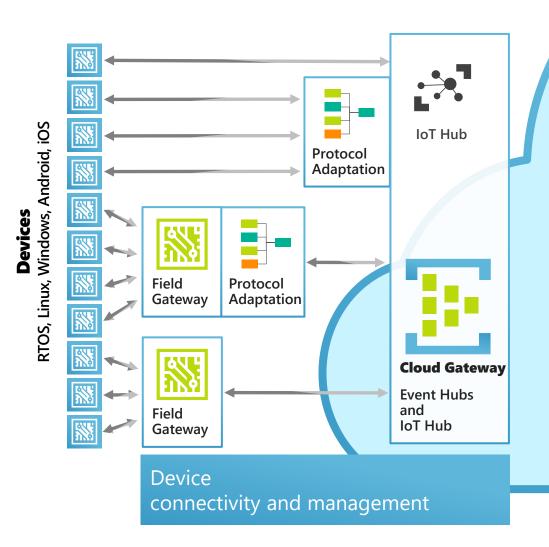
Coming with the Azure IoT Suite and IoT Hub

Connectivity and Management



IoT hub

- Capability of the Azure IoT Suite
- Bidirectional device <-> cloud
- Up to 10 million devices
- Telemetry ingestion
- Command and control
- Device registry and identity
- Device management
- HTTP/AMQP
- Extensible protocol support/MQTT



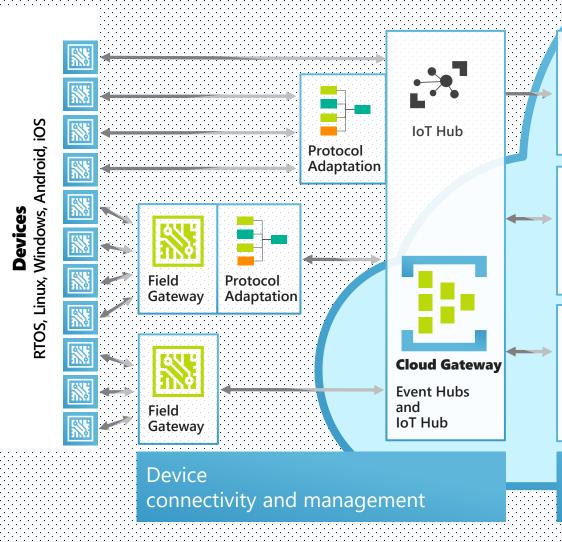
Cross-platform device support

- Open source "agent" framework
- Simple, secure device <-> cloud connectivity and management
- RTOS, Linux, Windows, Android, iOS
- Easy to use, not required

C API .NET API Java API Javascript API

Cross Platform C Code

OS abstraction layer/OS bindings



Batch Analytics and Visualizations

Azure HDInsight, AzureML, Power BI, Azure Data Factory, Azure Data Lake



Horiathanilyticights to
Azure Stream Analytics, Azure HDInsight Storm

Power new services

Improve your "thirds"

Hot Path Business Logic

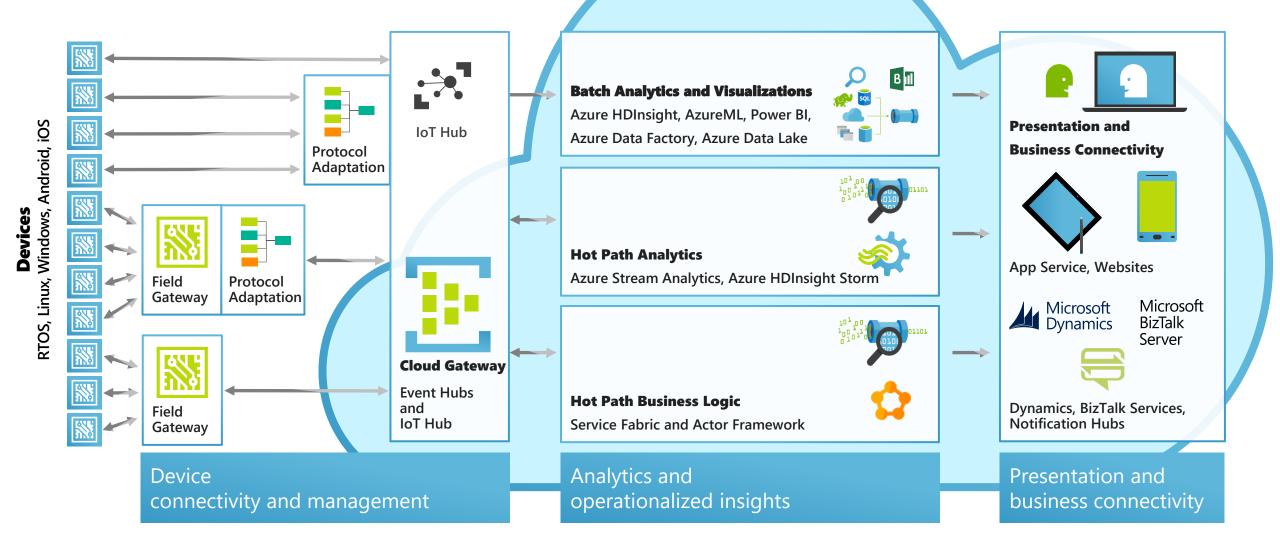
Service Fabric and Actor Framework

Ŷ

Analytics and operationalized insights

Operationalize your insights in real time

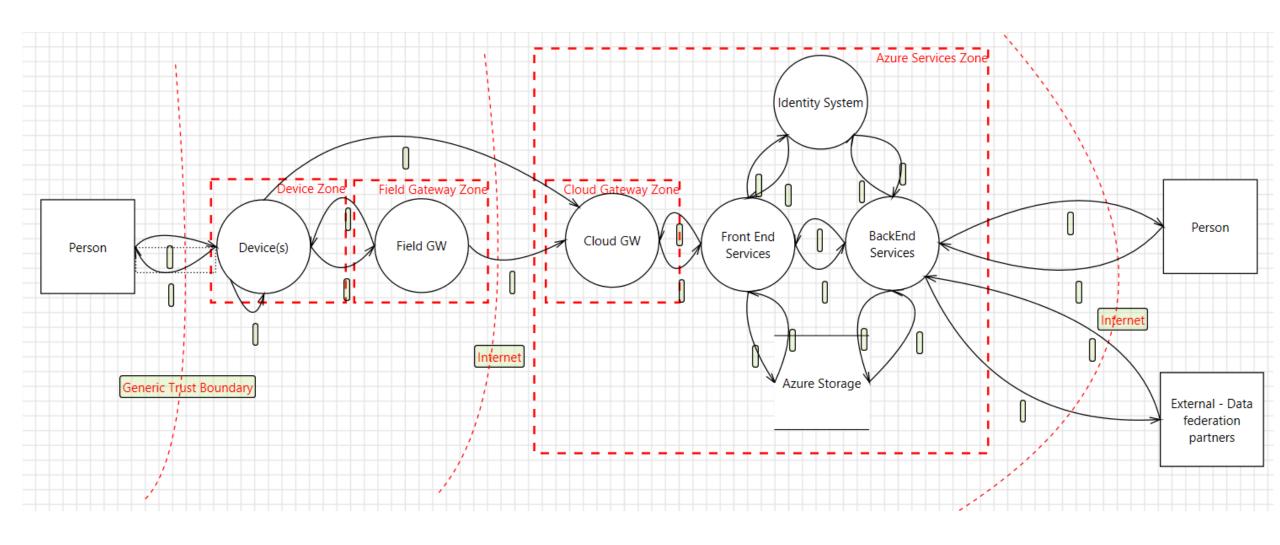
IoT scale
Object models
and business
logic



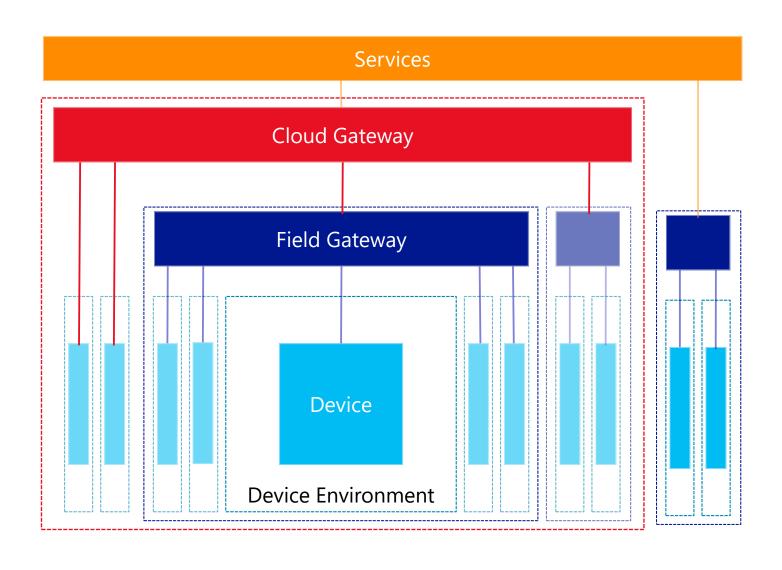
Microsoft Azure IoT services

| Devices | Device connectivity | Storage | Analytics | Presentation and action |
|----------|--------------------------|--------------------------|------------------------|-------------------------|
| | Event Hubs | SQL Database | Machine Learning | App Service |
| ₹ | Service Bus | Table/Blob Storage | Stream Analytics | Power BI |
| | External Data Sources | { } DocumentDB | HDInsight | Notification Hubs |
| | loT Hub | External Data Sources | Data Factory Data Lake | Mobile Services |
| | | | | BizTalk Services |

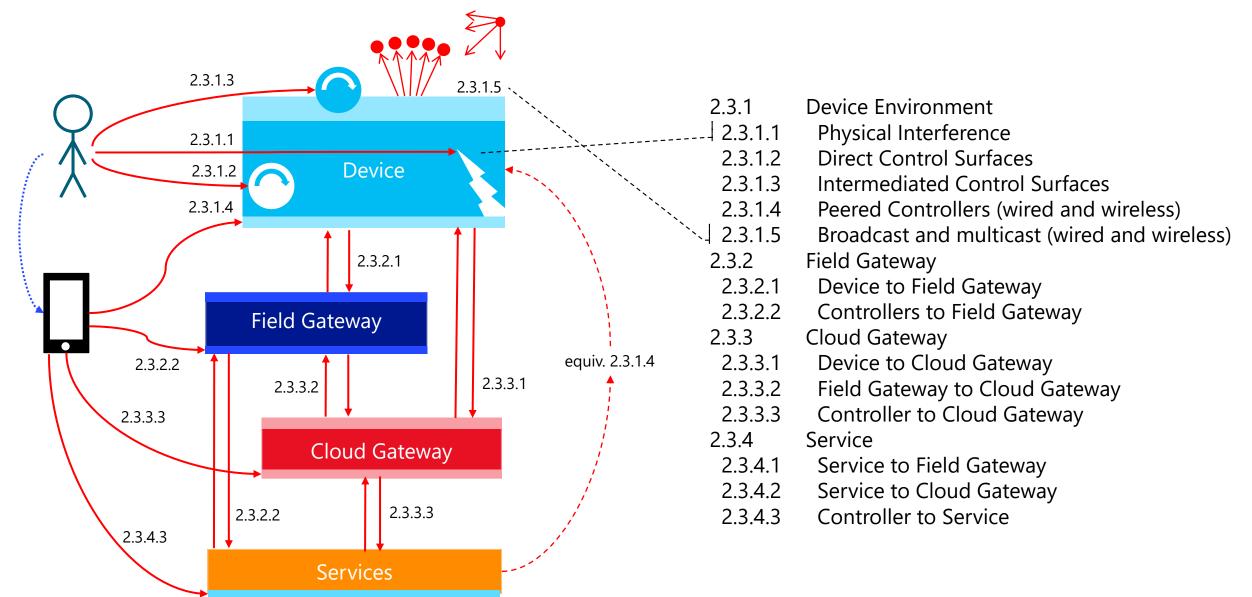
Azure IoT services reference architecture



Four zones of IoT security



High level view of IoT threats



Microsoft Azure IoT Suite

Accelerate your business transformation

Enables

Addresses

common

scenarios:

you to

Azure IoT services



Azure IoT Suite



Remote monitoring

Asset management

Predictive maintenance

And more..

Elements of Azure IoT Suite

1. Connect and Manage Devices & Gateways



Preconfigured solutions



Gateway & Devices



Connect and control

2. Analyze streaming data & Generate predictive insights*



Real time analytics



Data visualization



Predictive analytics*

3. Integrate into business systems



Workflow integration



Push and broadcast notifications



ID and access management

4. Secure IoT Infrastructure



5. Customize IoT Architecture

* Only applies to Predictive Maintenance

Elements of Azure IoT Suite



















4. Secure IoT Infrastructure

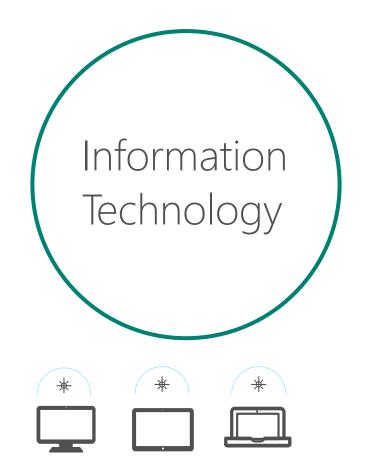


IoT Security



Why securing Internet of Things is hard

System of Systems







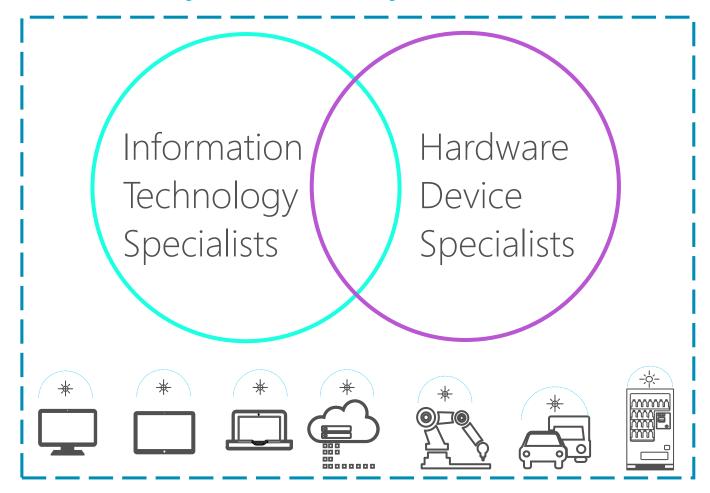


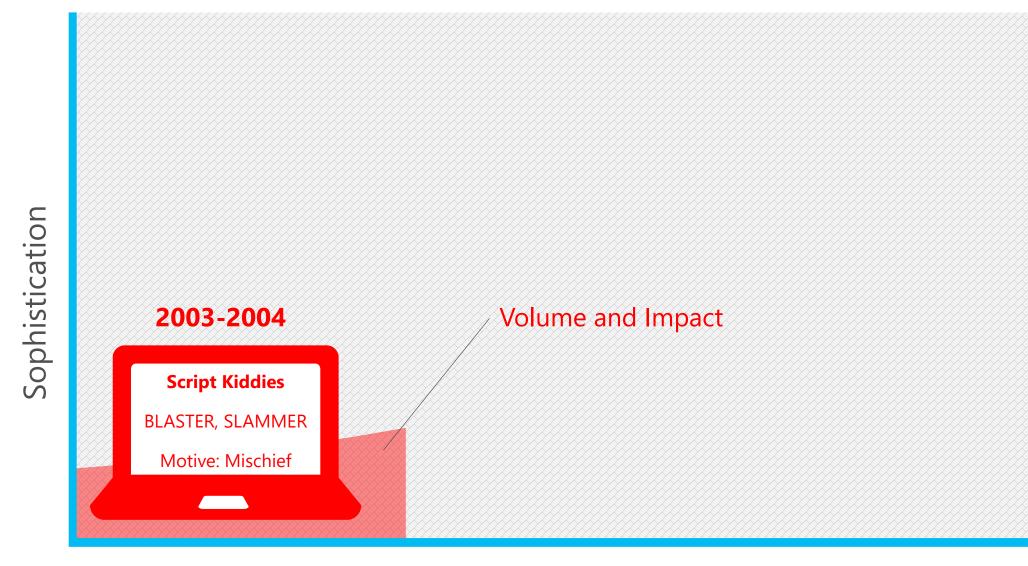




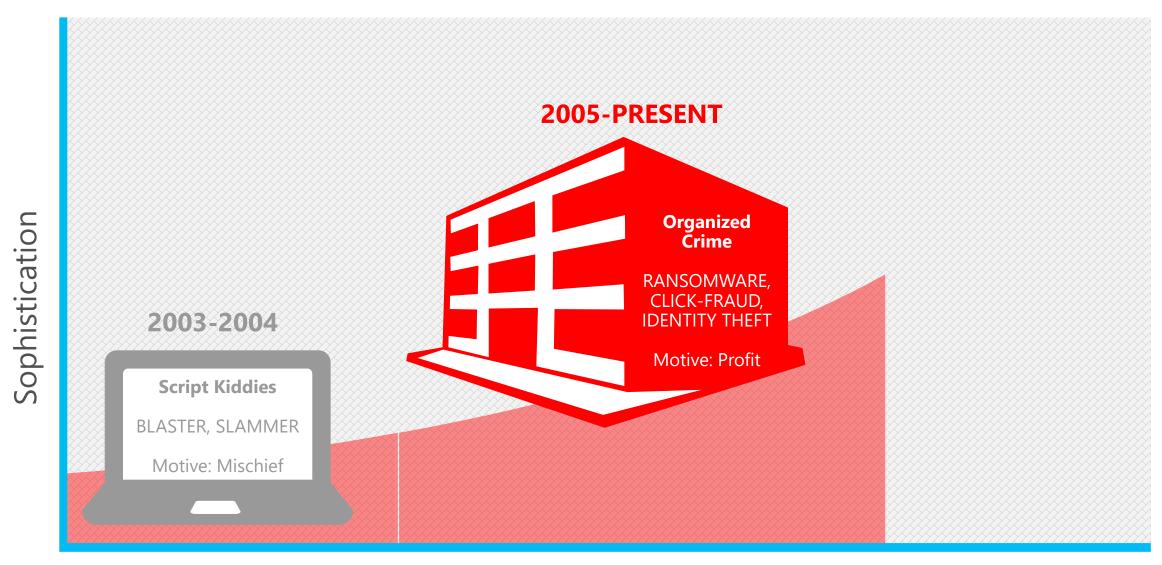
Why securing Internet of Things is hard

System of Systems



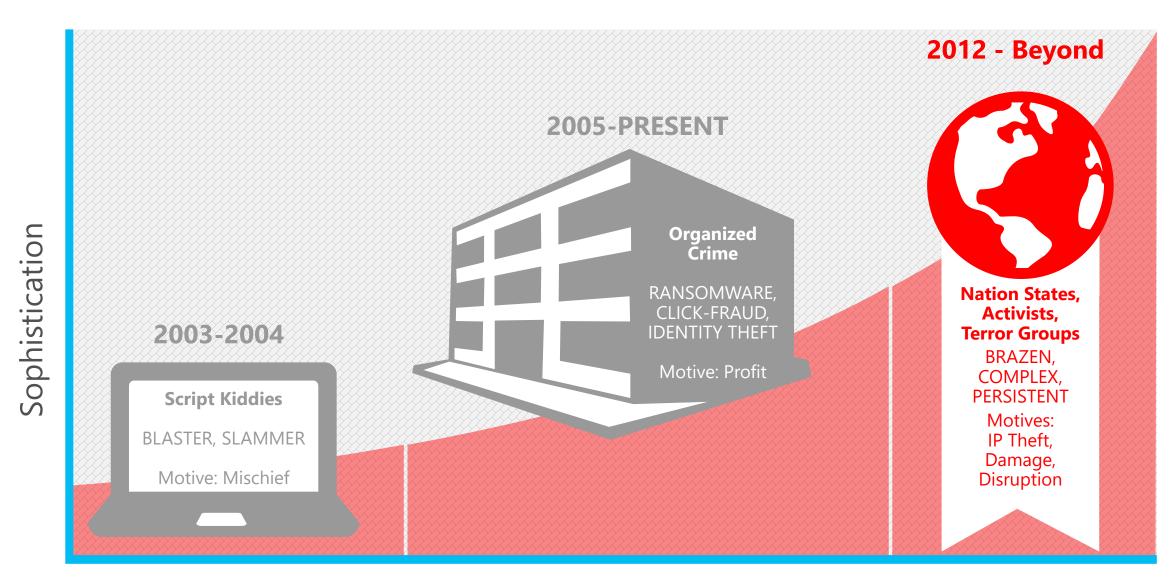


The evolution of attacks



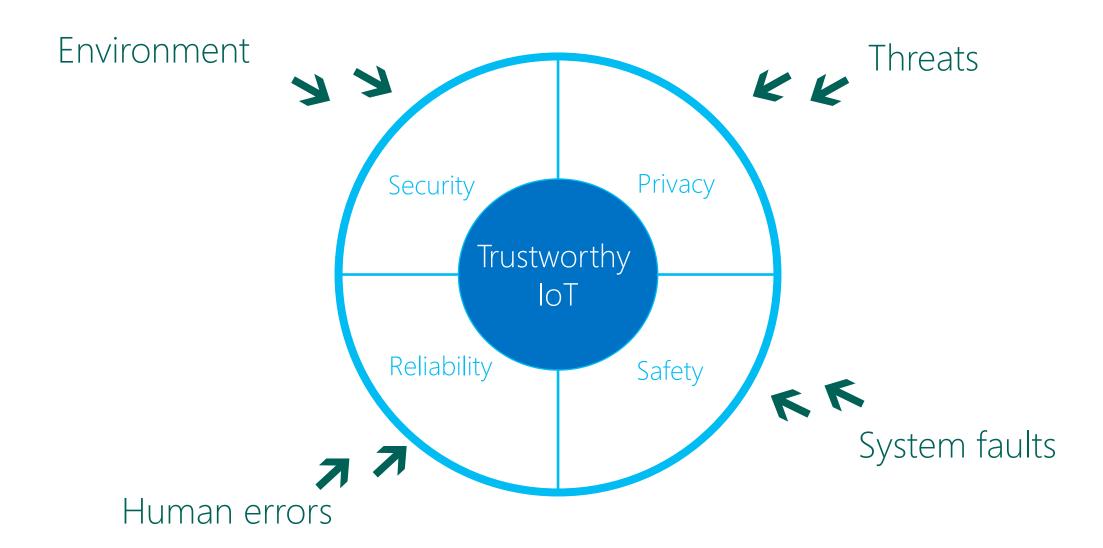
Targeting

The evolution of attacks

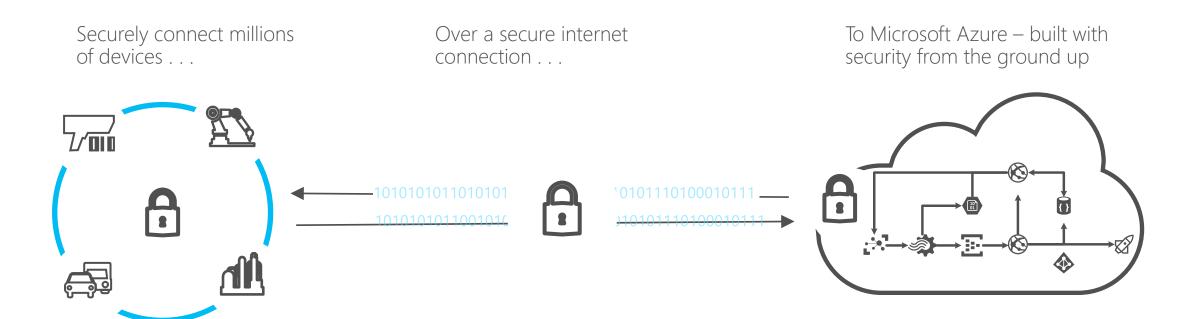


Targeting

Trustworthy Internet of Things



Azure IoT Suite security features



Device security

Device provisioning and authorization

Connection security

X.509/LTS-based handshake and encryption

Cloud security

Azure Security Center
Azure Active Directory
Key Vault
Policy-Based Access Control

Defense in depth – Important roles

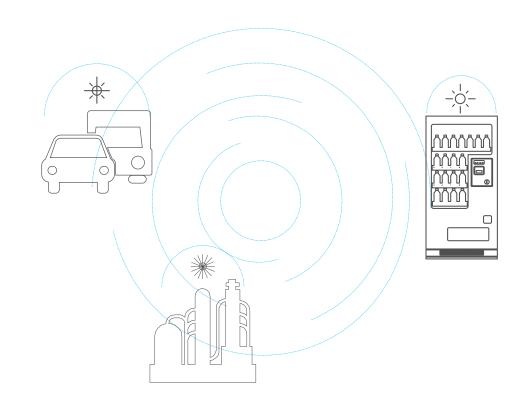
IoT hardware manufacturer and integrator

IoT solution developer

IoT cloud and solution provider

IoT solution deployer

IoT solution operator



Elements of Azure IoT Suite

1. Connect and Manage Devices & Gateways



Preconfigured solutions



Gateway & Devices



Connect and control

2. Analyze streaming data & Generate predictive insights*



Real time analytics



Data visualization



Predictive analytics*

3. Integrate into business systems



Workflow integration



Push and broadcast notifications



ID and access management

4. Secure IoT Infrastructure



5. Customize IoT Architecture

* Only applies to Predictive Maintenance



© 2017 Microsoft Corporation. All rights reserved. Microsoft, Windows, and other product names are or may be registered trademarks and/or trademarks in the U.S. and/or other countries. The information herein is for informational purposes only and represents the current view of Microsoft Corporation as of the date of this presentation. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information provided after the date of this presentation. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS PRESENTATION.