Microsoft

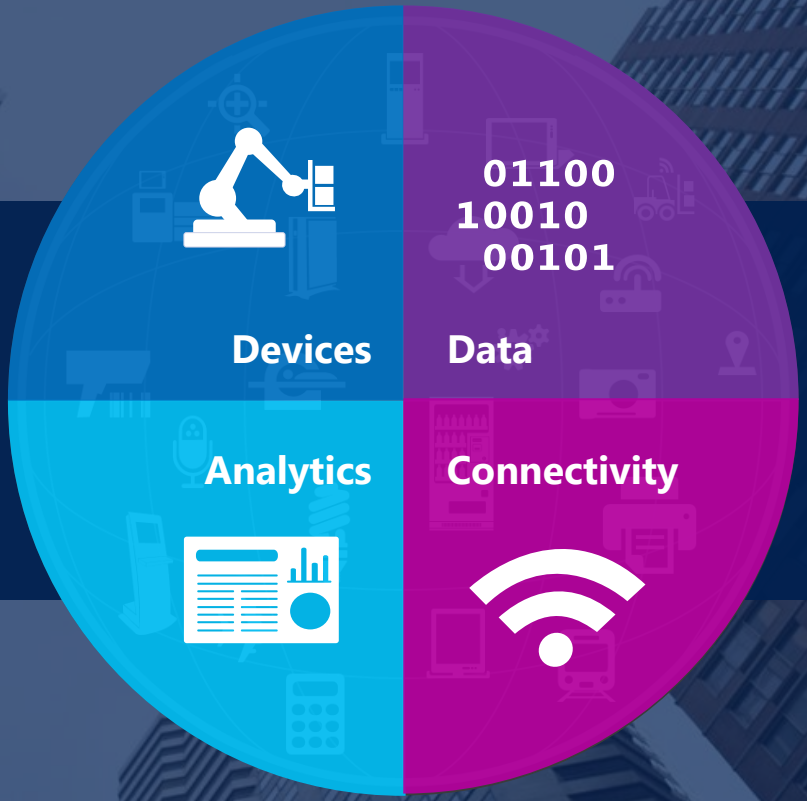
透過 Windows 打造物聯網裝置
Windows 10 IoT 家族產品介紹

Windows 10 IoT Enterprise
Windows 10 IoT Mobile Enterprise
Windows 10 IoT Core
Azure IoT

Jesse Lin
Account Technology Strategist
OEM IoT Devices

一手掌握物聯網新商機 打造 Windows 10 IoT 聯網裝置

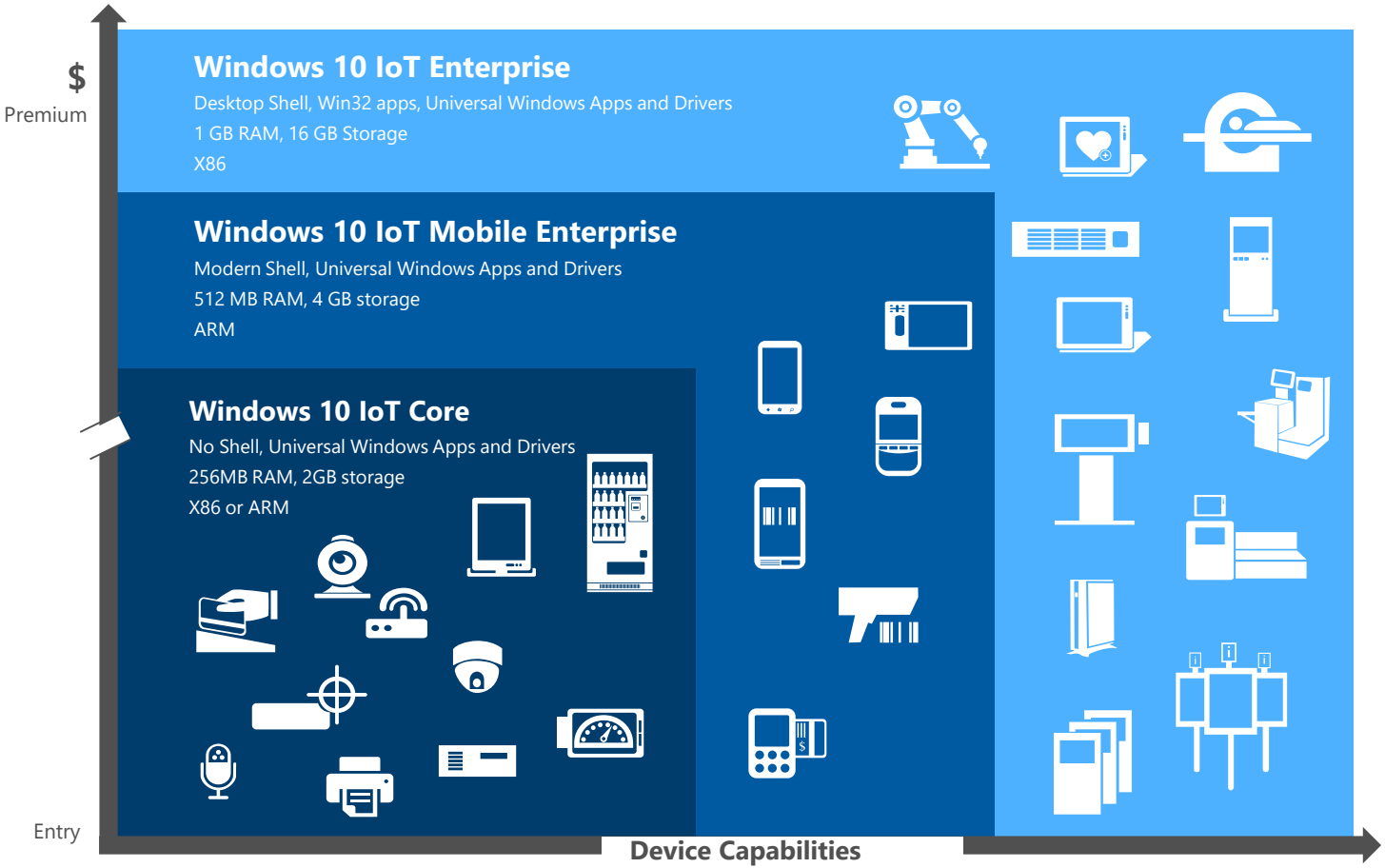
Core aspects of the Internet of Things



Core aspects of the Internet of Things

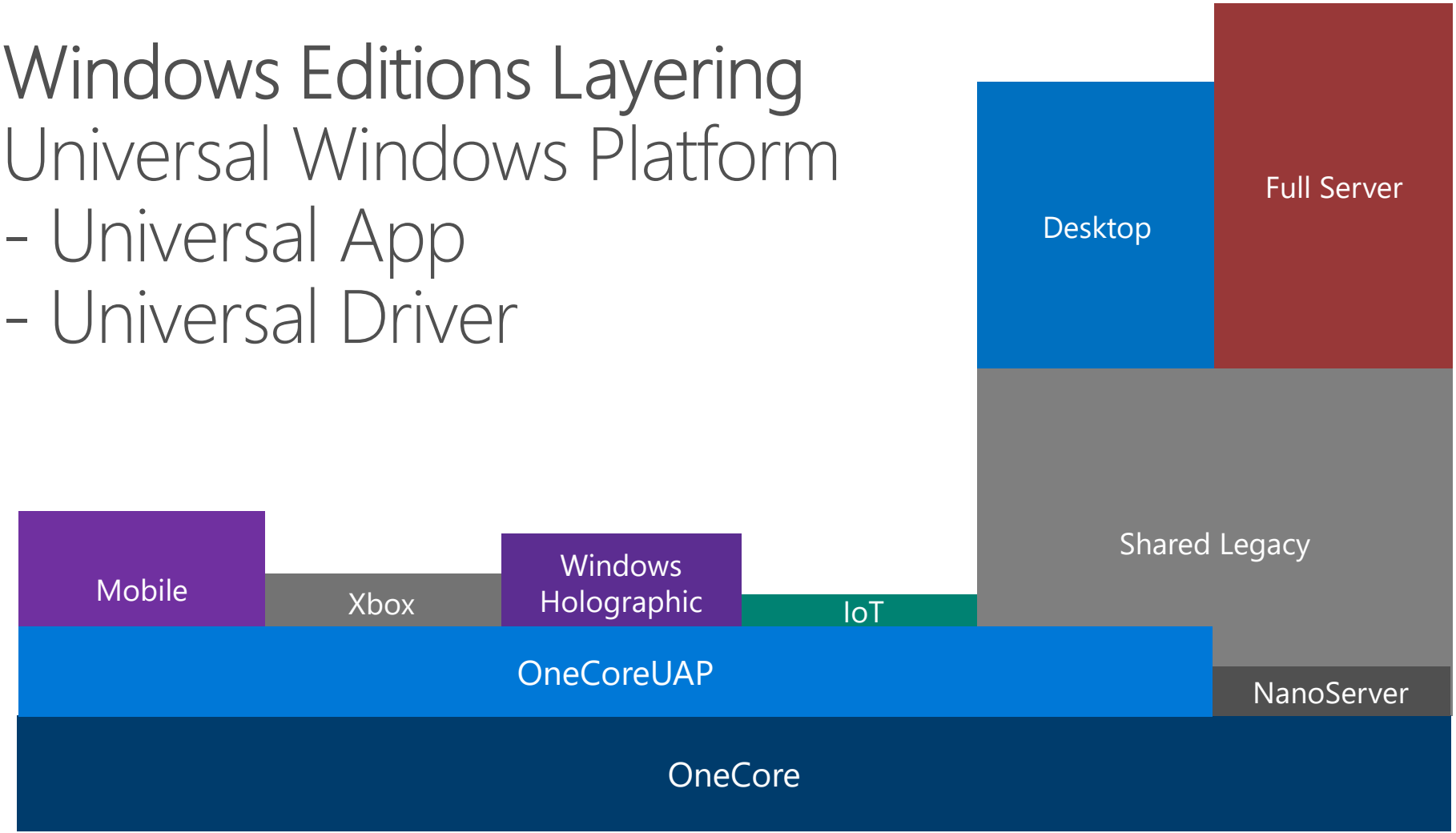
One Windows Platform

Windows 10 IoT

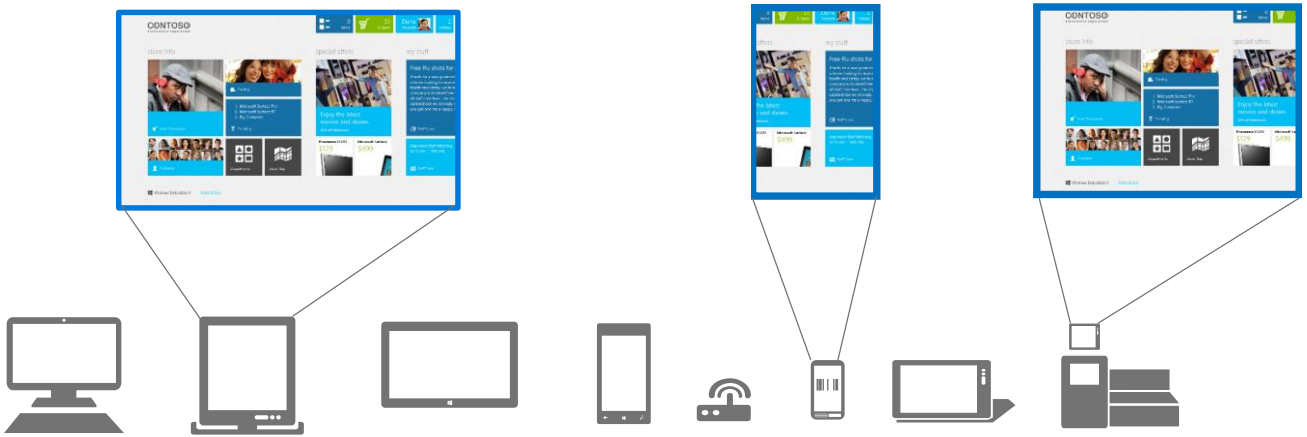


Windows Editions Layering

Universal Windows Platform
- Universal App
- Universal Driver



Windows Universal App
- Across All Windows 10 Editions



Universal Windows Platform
Common & Consistent APIs

Languages
- C++ /CX
- C#, VB
- JS
- Python
- Node.js

UI Frameworks
- HTML
- Xaml
- DirectX

APIs
- WinRT
- Win32
- .NET
- Wiring

Deployment and Execution
- APPX
- XCopy
- App Isolation

Tools
- Visual Studio
- PowerShell

Windows Universal Driver

Write **ONE** Universal Driver and target all Windows 10 editions - **Converged** device areas/APIs
Scale and get **higher ROI** by selling same components to all Windows 10 editions OEMs/ODMSs
We scanned over **100k drivers** to create a **universal driver API set** for you

Windows Universal Platform
Common & Consistent Device Driver APIs

WDF	Location	NFC
Audio	Networking - Wired	Sensors
Bluetooth	Networking - WLAN	Thermal
Buses (USB, SPB)	Security - Biometrics	Touch
HID(Retail), Buttons	Security - Crypto	UEFI
Camera	Security - Smartcard	Video
Graphics & Display	Security - TPM	

Enterprise Grade Security for Mission Critical Devices

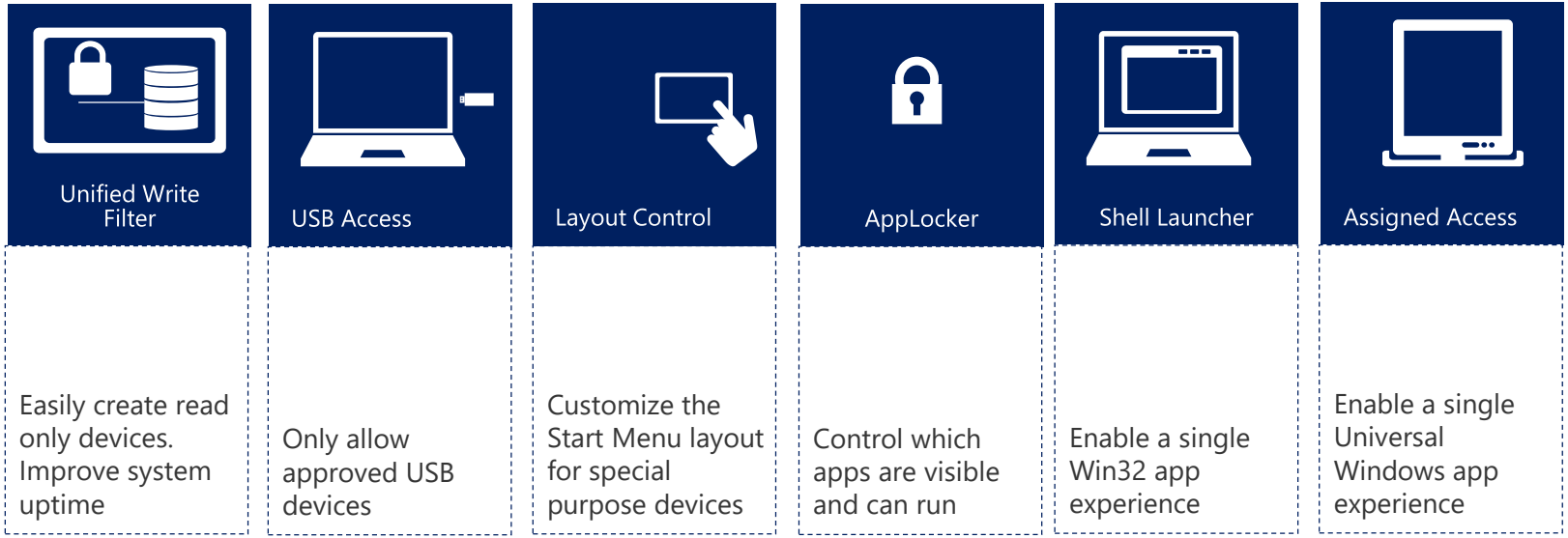
Next Generation Credentials

BitLocker

Device Guard

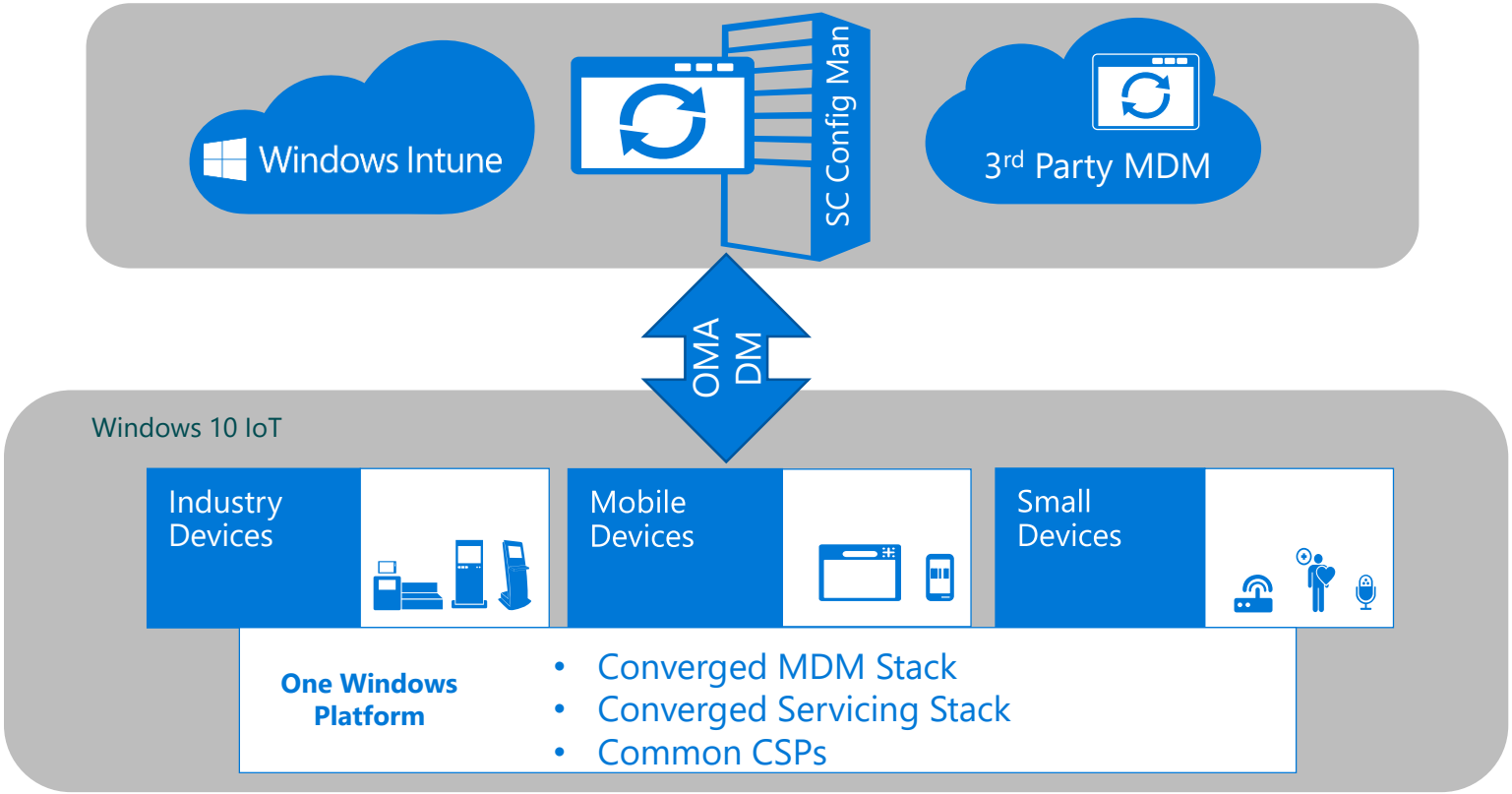
Lockdown

Consistent and predictable device lockdown across form factors



Consistent Device Management

for all Windows 10 IoT devices

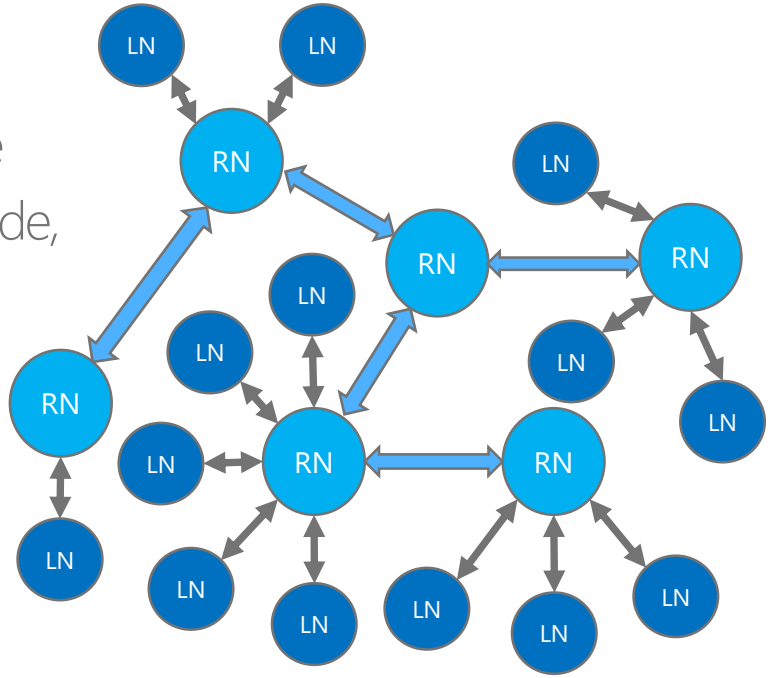


Alljoyn - How does it work?

AllJoyn Bus is composed of two types of nodes:

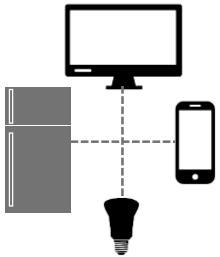
Routing Nodes (RN) – Can talk to any node

Leaf Nodes (LN) – Must talk to a routing node, via routing can talk with any node

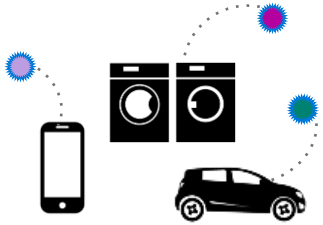


AllJoyn can be thought of as a mesh of stars

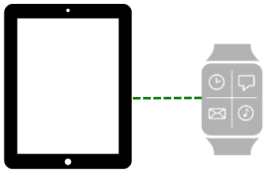
The problems that AllJoyn solves …in an open interoperable way



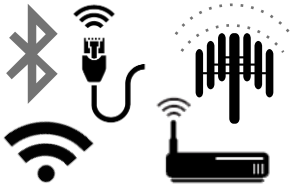
DISCOVER
nearby friendly devices



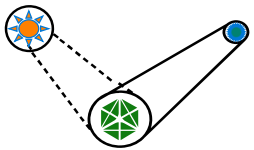
IDENTIFY
services running on those devices



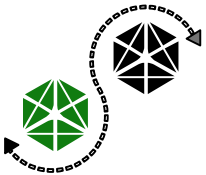
ADAPT
to devices coming and going



MANAGE
diverse transports



INTEROPERATE
across different OSes



EXCHANGE
information and services

SECURE
against nearby bad actors

Windows 10 IoT Enterprise LTSB

Long Term Servicing Branch

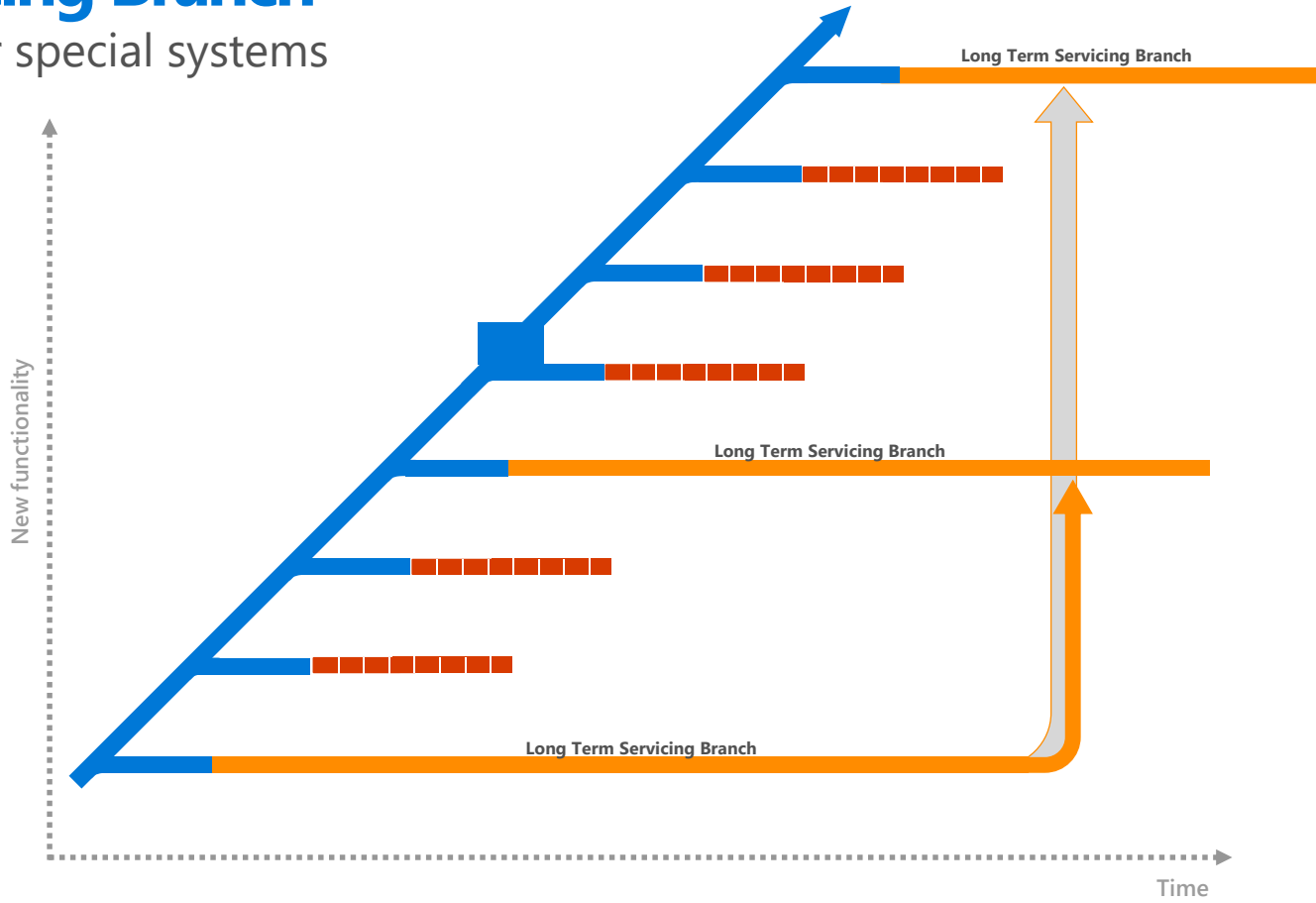
Customer experience for special systems

Security updates and fixes are delivered regularly

Customers on Long Term Servicing Branch receive security and critical fixes only for ten years

Customers can move from one LTSB to the next one via in-place upgrade and can skip one LTSB as well

Customers manage updates via WSUS

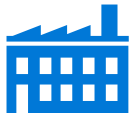


*Conceptual illustration only

Servicing and Edition Summary

Comparison	Servicing Model for Windows 10 Releases		
	Current Branch	Current Branch for Business	Long-Term Servicing Branch
Supported Editions	Windows 10 Home Windows 10 Pro Windows 10 Education Windows 10 Enterprise	Windows 10 Pro Windows 10 Education Windows 10 Enterprise	Windows 10 Enterprise LTSB
Recommended Scenarios	General Use, Early Adopter Businesses	General Business Use	Specialty Uses
Serviced life-span	~4 months	~ 8 months	**10 years** **(Servicing Updates Only)**
Latest Build (Including Apps) Required for Servicing Updates	Yes	Yes	No (Receives Up To 10 Years of Servicing Updates)
Windows Update Support	Yes	Yes	Yes
WSUS/WUFB/SCCM Support	Yes (Excludes Home)	Yes	Yes
Supports Windows 32 Versions of Microsoft Office	Yes	Yes	Yes
1st Party Browsers Included	Microsoft Edge, Internet Explorer 11	Microsoft Edge, Internet Explorer 11	Internet Explorer 11
Notable Windows System Apps Removed	None	None	Microsoft Edge, Windows Store Client, Cortana (Limited Search Available)
Notable Windows Universal Apps Removed	None	None	Outlook Mail/Calendar, OneNote, Weather, News, Sports, Money, Photos, Camera, Music, Clock

Activation States for Windows 10 IoT Enterprise



Windows Product Key is injected or installed into each device during manufacturing

Device deployment

Has never connected to the Internet

Differed Activation

- *Image is fully functional*
- *No access to MSFT and/or 3rd party services*
- *No disruptive activation notifications or watermarks*

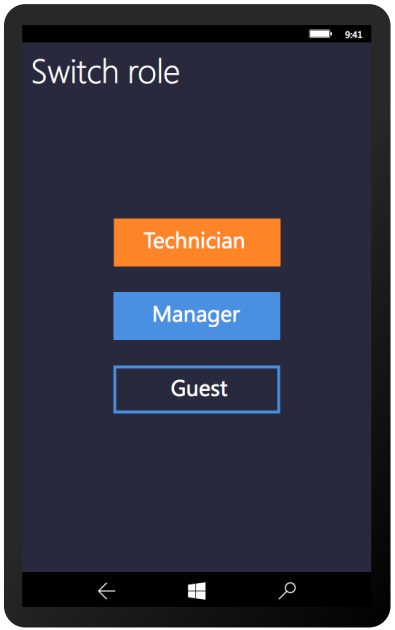
Internet connectivity

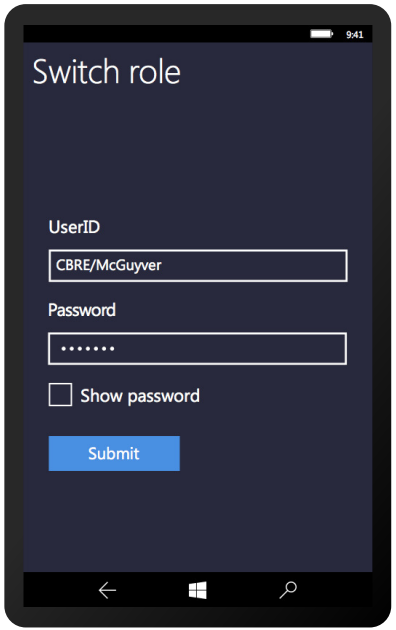
- *Device will reach AVS server for activation*
- *Upon successful activation access to online services*

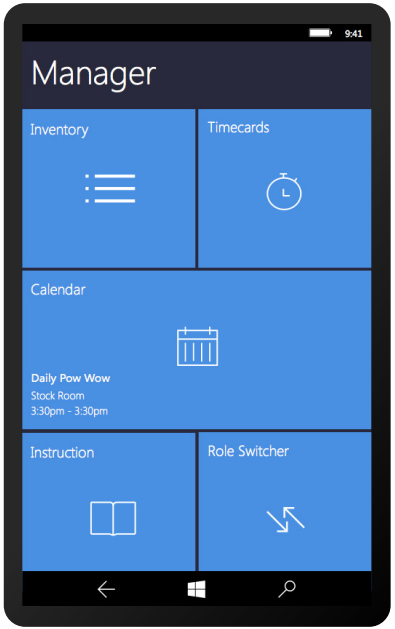
Note: Activation failure UX will be appear if activation fails

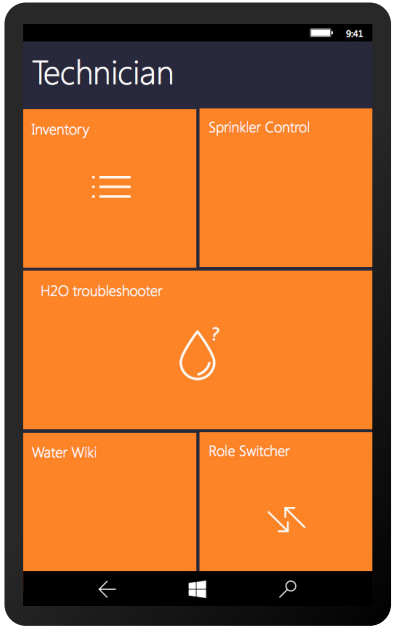
Windows 10 IoT Mobile Enterprise

Multi-Profile Support









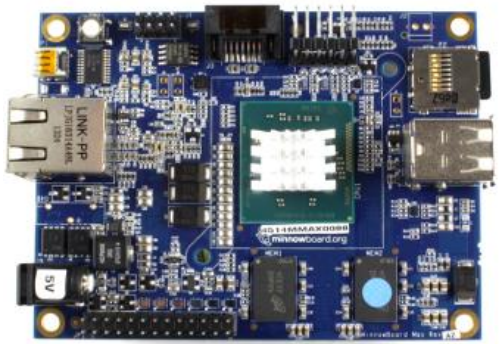
Multi-Profile Support

- Define Multiple Profiles
- API Support for Profile Switching
- Dynamic Policy Updating

Windows 10 IoT Core

Windows 10 IoT Core preview

Available for Minnowboard Max and Raspberry Pi 2



www.windowsondevices.com

http://ms-iot.github.io/content/GetStarted.htm

Targeted Boot Experience

Boot straight into desired app

No Microsoft or Windows Branding

Easily create custom device experiences

Single LoB App Model

Visual Studio 2015

Modern app dev experience

Single UWP

Multiple UWP background tasks

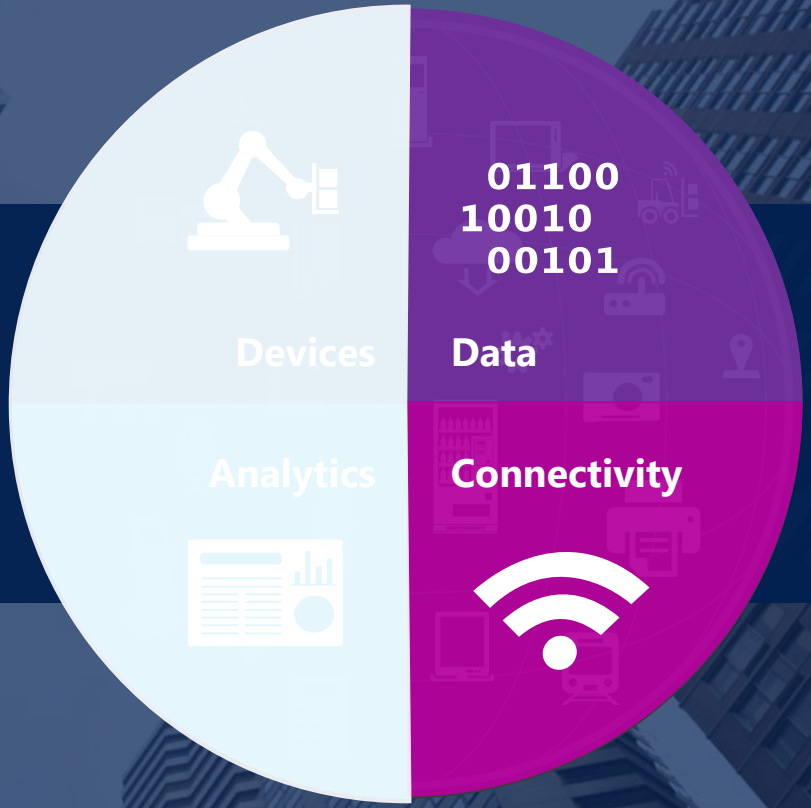
Win32 background tasks / Services

Min System Requirements (Draft)

Windows 10 IoT Core OS only

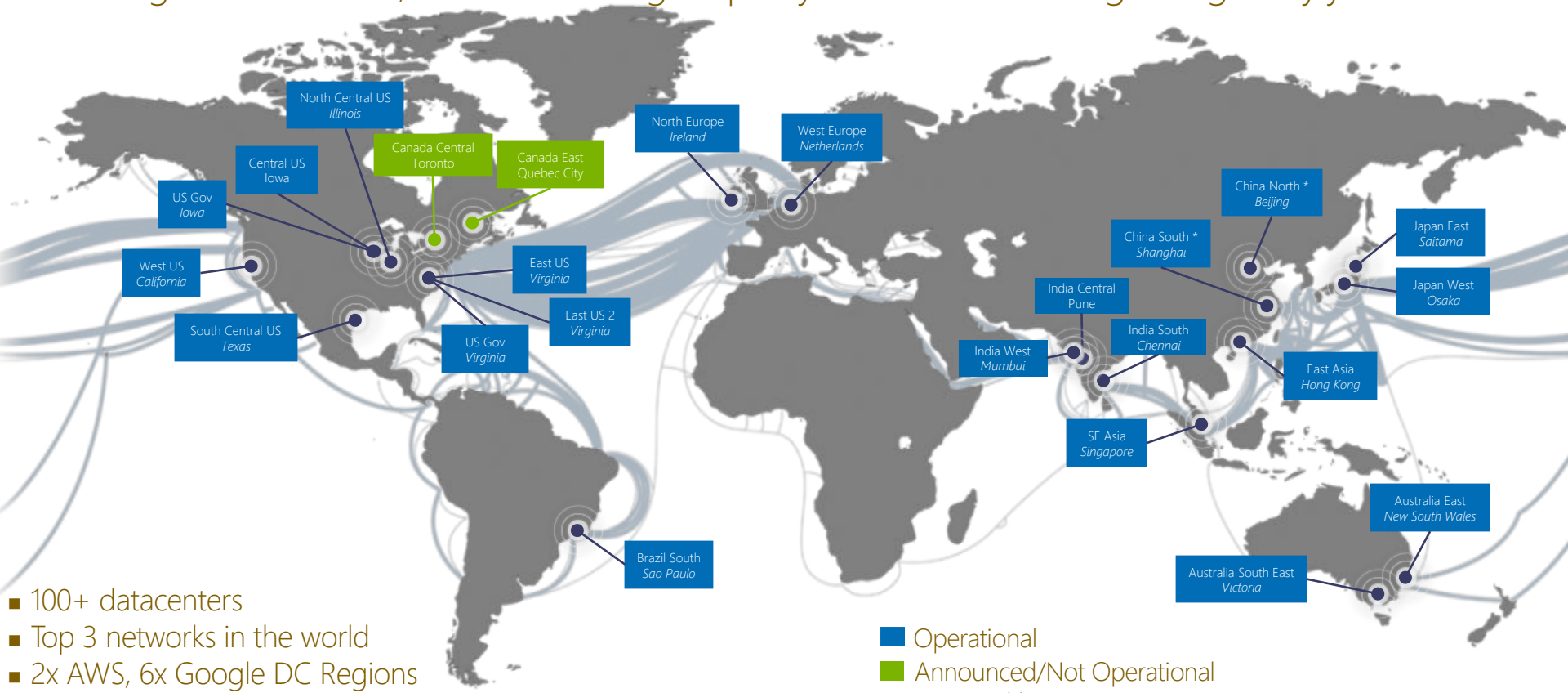
Component	With UI	Without UI
Processor	x86 and ARM, 600MHz or faster	x86 and ARM, 400MHz or faster
RAM	512MB (Design dependent)	256MB (Design dependent)
Storage	Flash = 2GB	Flash = 2GB
Display	Frame buffer graphics and 2D optional (720p HDMI / 1080p+ HDMI / 3D GPU optional for modern UI support)	N/A
Audio	Optional	Optional
Connectors	Optional	Optional
Wireless	Optional	Optional
Accelerometer & Proximity Sensor	Optional	Optional
Touch	Optional	Optional
UI		

Core aspects of the Internet of Things



Huge infrastructure scale is the enabler

24 Regions Worldwide, 22 ONLINE…huge capacity around the world…growing every year

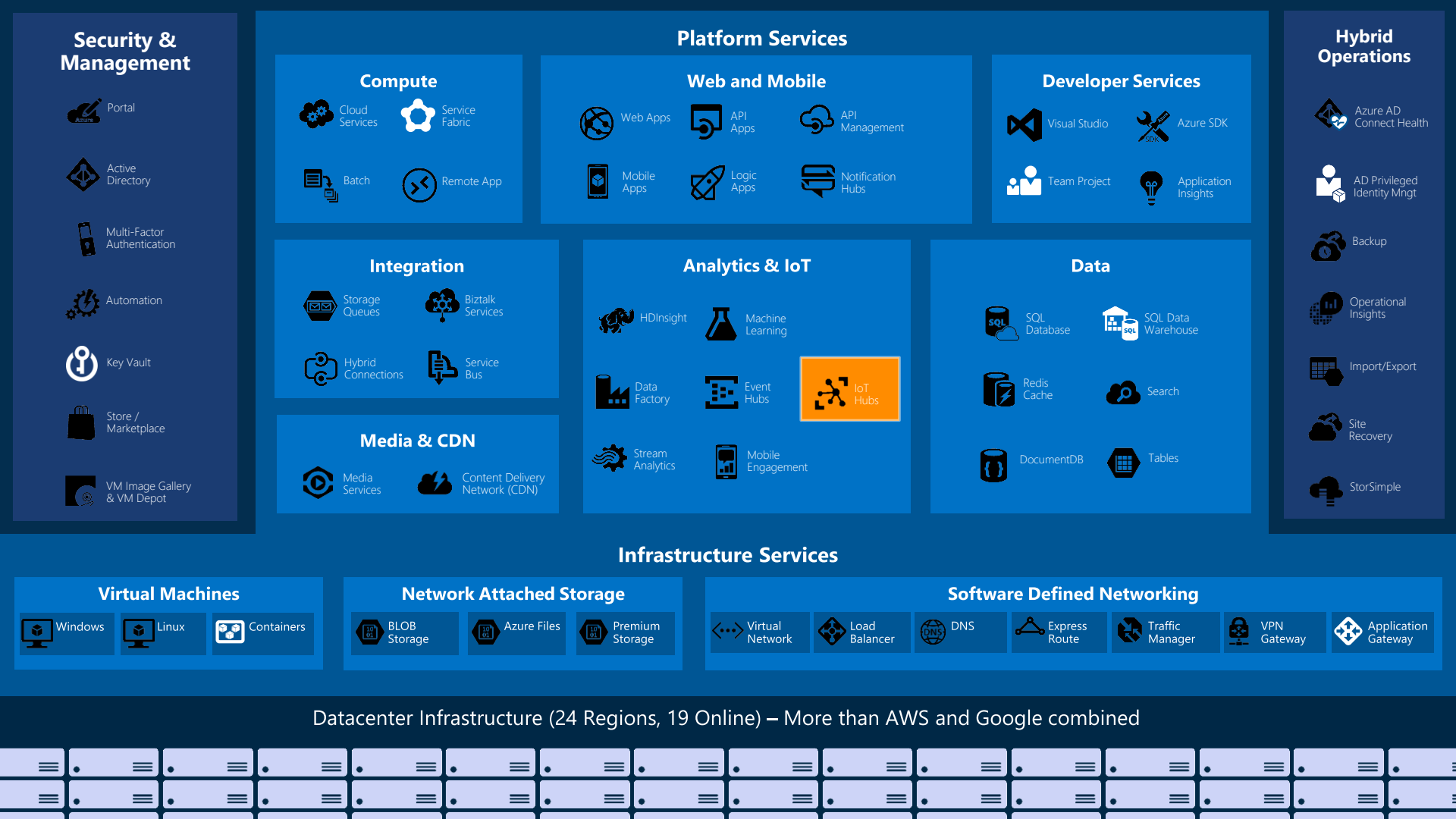


- 100+ datacenters
- Top 3 networks in the world
- 2x AWS, 6x Google DC Regions
- G Series – Largest VM in World, 32 cores, 448GB Ram, SSD…

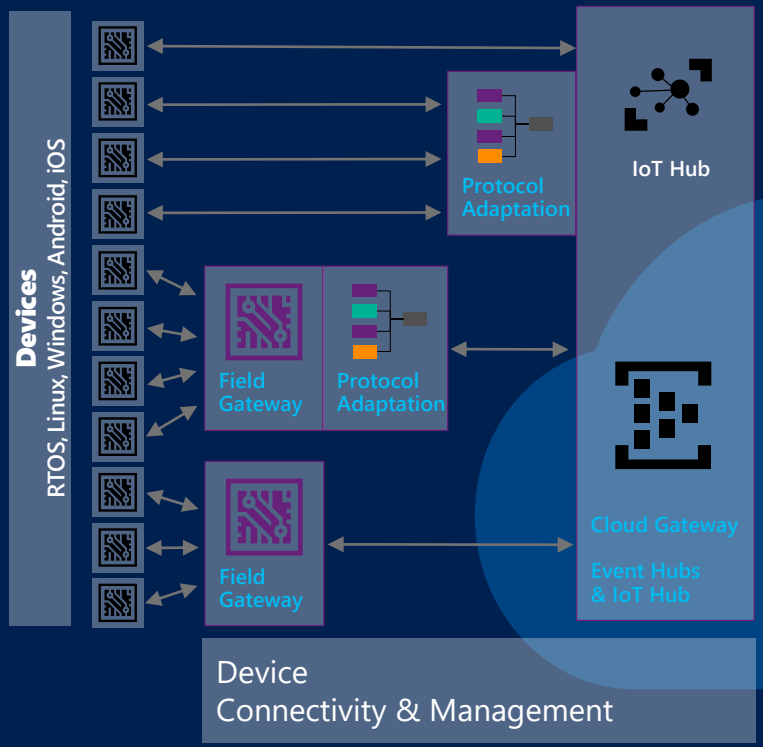
Operational

Announced/Not Operational

* Operated by 21Vianet


Security & Management
Portal
Active Directory
Multi-Factor Authentication
Automation
Key Vault
Store / Marketplace
VM Image Gallery & VM Depot
Platform Services
Compute
Cloud Services
Service Fabric
Batch
Remote App
Web and Mobile
Web Apps
API Apps
API Management
Mobile Apps
Logic Apps
Notification Hubs
Developer Services
Visual Studio
Azure SDK
Team Project
Application Insights
Integration
Storage Queues
Biztalk Services
Hybrid Connections
Service Bus
Analytics & IoT
HDInsight
Machine Learning
Data Factory
Event Hubs
IoT Hubs
Stream Analytics
Mobile Engagement
Data
SQL Database
SQL Data Warehouse
Redis Cache
Search
DocumentDB
Tables
Media & CDN
Media Services
Content Delivery Network (CDN)
Hybrid Operations
Azure AD Connect Health
AD Privileged Identity Mngt
Backup
Operational Insights
Import/Export
Site Recovery
StorSimple
Infrastructure Services
Virtual Machines
Windows
Linux
Containers
Network Attached Storage
BLOB Storage
Azure Files
Premium Storage
Software Defined Networking
Virtual Network
Load Balancer
DNS
Express Route
Traffic Manager
VPN Gateway
Application Gateway
Datacenter Infrastructure (24 Regions, 19 Online) – More than AWS and Google combined

Azure IoT Hub



Azure IoT Hub

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

Microsoft Azure Certified for IoT

Microsoft Azure Certified for IoT Details

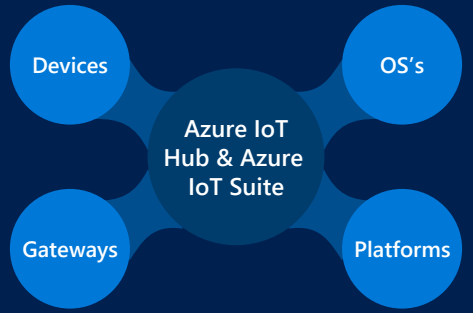
Microsoft Azure

Certified

New program

- Designed to help you find a device partner for your IoT project
- Device partners will deliver Azure IoT Suite tested, certified hardware, platforms and services as part of the program

Azure Certified for IoT	
Texas Instruments	Beaglebone Black
Intel Edison	Seeed
Freescale FRDM K64	Raspberry Pi 2
Resin.io	Minnowboard max
Arrow	



http://azure.com/certifiedforiot

Links for Azure

Azure Devices SDK

https://github.com/Azure/azure-iot-sdks/blob/master/readme.md
OS Platforms and hardware compatibility
https://github.com/Azure/azure-iot-sdks/blob/master/doc/tested_configurations.md

Azure IoT Hub

https://azure.microsoft.com/en-us/documentation/articles/iot-hub-compare-event-hubs/

Azure Code Samples

https://azure.microsoft.com/en-us/documentation/samples/

Windows 10

WindowsOnDevices.com

Design your devices using Windows 10

Start building universal drivers and UWP apps

Connect to the cloud with Azure IoT

Contact your distributors
Advantech, Chander, Synnex

IoTtw@Microsoft.com