

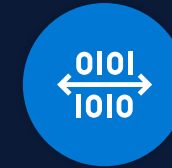
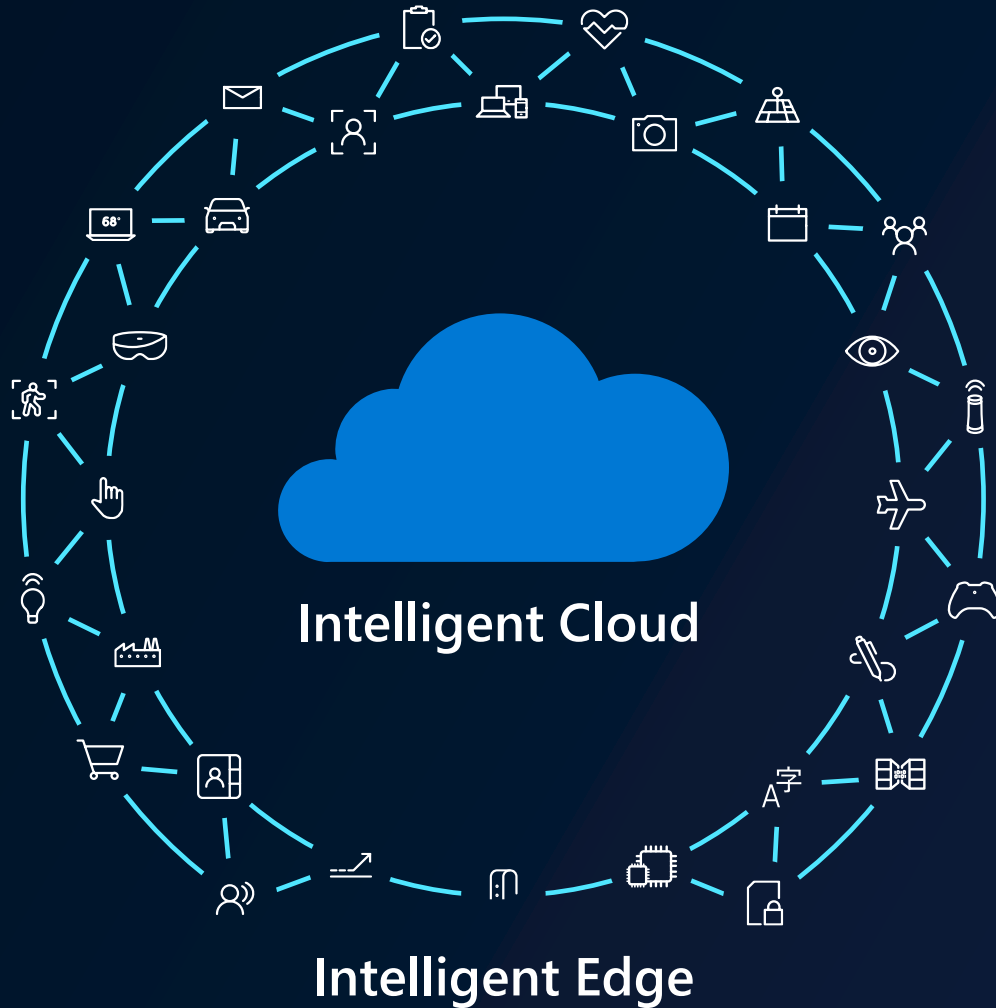
Windows IoT Enterprise – 高安全性的OT設備最佳操作系統

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物聯網解決方案專家

微軟亞太區物聯網合作夥伴事業部

Bring the Cloud to the Edge



Universal computing



AI



People-centered experiences



31 Billion IoT Devices

The Evolution of the Edge

Connected

HORIZON 1 - TODAY

Intelligent Assets



Intelligent

HORIZON 2 - EMERGING

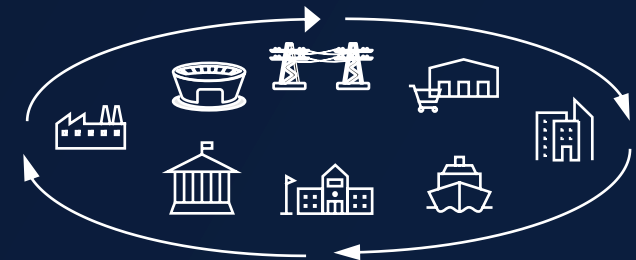
Intelligent Environments



Autonomous

HORIZON 3 - FUTURE

Intelligent Ecosystems



Comprehensive Platform for the Intelligent Edge


INTELLIGENT CLOUD




Azure Defender Azure IoT Edge Azure Kubernetes Azure Digital Twins

Azure Arc Microsoft Azure Azure ML

INTELLIGENT EDGE



MCU-Class Sensors/Actuators
Azure Sphere and RTOS



MPU-class
Windows IoT Enterprise



Server-class
Windows Server IoT

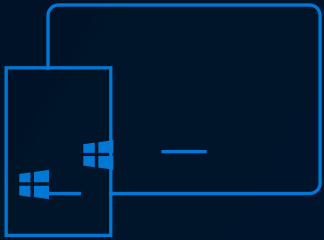


Hybrid server, Hyper converged infra
Azure Stack

Azure Percept Azure "EFLOW" Azure Kubernetes Azure Certified Devices

Windows 10 IoT Enterprise

For fixed-function, smart devices



All the power
of Windows



Specialized
features for
dedicated devices

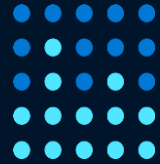
101010
010101
101010

Windows 10
security in its
DNA



Built for the
cloud

Why Windows for IoT?



PRODUCTIVE

Quickly and cost-effectively
build, deploy, and manage IoT
solutions



TRUSTED

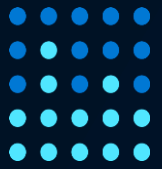
Build secure IoT
solutions that you can
trust



INTELLIGENT

Bring AI and Analytics
to the edge

Built on the foundation of over 1 billion active Windows devices



Productive



Windows IoT is ready to go out-of-the-box, allowing you to quickly develop and deploy user-centric IoT solutions



Access thousands of existing Win32 apps and leverage a huge ecosystem of ISVs, SIs, and OEMs



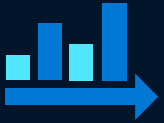
Use existing enterprise-grade device management tools to keep devices up-to-date and operating reliably



Trusted



Protect your devices with world-class security built into Windows for IoT Enterprise and deliver a predictable experience with device lockdown



10 Years of Long-Term Servicing and support



Microsoft has been a trusted platform provider for the embedded industry for over 25 years



Use Azure IoT Edge for Linux on Windows (EFLOW) to run existing Linux AI containers on Windows

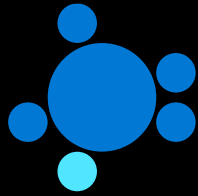


Instant Multi-Cloud connectivity



Bring AI/ML to the edge with Azure Percept, Azure Video Analyzer, Cognitive Services and Spatial Analytics

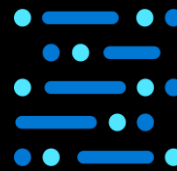
Windows IoT



Windows 10 IoT Enterprise

For powerful, smart devices

Locked down, full edition
of Windows 10



Windows Server IoT

For the most demanding
edge computing workloads



SQL Server IoT

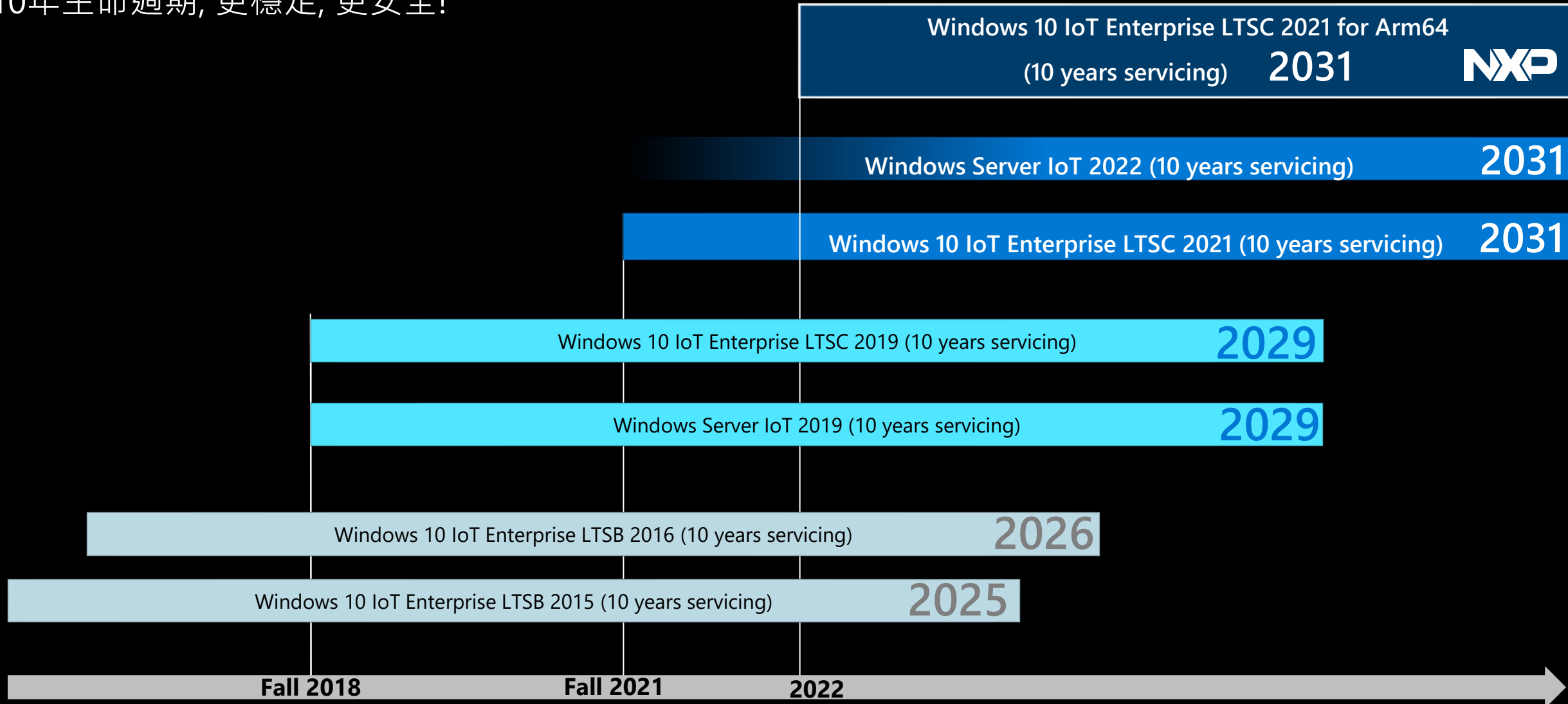
For embedded solutions
requiring the full power of
SQL Server

Why Windows IoT? – Smart, Fast, Secure

- 1) Build user experiences with natural user input
- 2) Win32 app ecosystem
- 3) 10 Years of LTS support with world-class servicing
- 4) Enterprise-grade security and device management
- 5) Seamlessly connect with Azure
- 6) Out-of-the-box solution

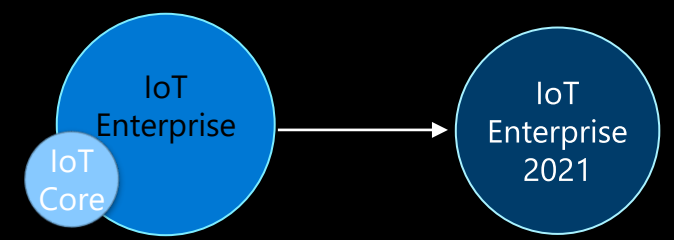
Windows 10 IoT Enterprise LTSC

10年生命週期, 更穩定, 更安全!



Windows 10 IoT Enterprise 2021

新功能



| | Customer Feedback | IoT Core | IoT Enterprise | IoT Enterprise 2021 | Value Prop |
|----|-----------------------------------|----------|----------------|---------------------|---|
| 1 | Better Azure IoT Edge Support | | | √ | Run Linux version of Azure IoT Edge on Windows (EFLOW) |
| 2 | Run Linux Workloads in Containers | | | √ | Run Linux AI modules from Azure Marketplace (EFLOW) |
| 3 | Full Range of Intel Silicon | | √ | √ | Support Device Portfolio Expansion |
| 4 | Small Footprint | √ | | √- | Min HW spec = 16GB/2GB, smaller than current IoT Enterprise, but not as small as IoT Core (4GB/1GB) |
| 5 | Appliance Features | √ | | √ | More Lockdown & Branding Control |
| 6 | OEM Controlled Update | √ | | √ | Validate & manage updates using Device Update Center |
| 7 | On-Prem Device Management | | √ | √ | Manage devices with familiar SCCM and WSUS tools |
| 8 | Full Win32 Support | | √ | √ | Leverage existing Win32 software & expertise |
| 9 | Soft Real Time | | | √ | Create devices that have soft real time determinism |
| 10 | Edge Browser | | | √ | Included in-box for modern browser |

OT 設備資安風險 = 商務損失

Financial



Destructive malware shuts down factories worldwide, causing billion of dollars in losses (WannaCry, NotPetya, LockerGoga, Ekans, ...).

IP Theft



Manufacturers are 8x more likely to be attacked for theft of IP like proprietary formulas and designs than other verticals (DBIR).

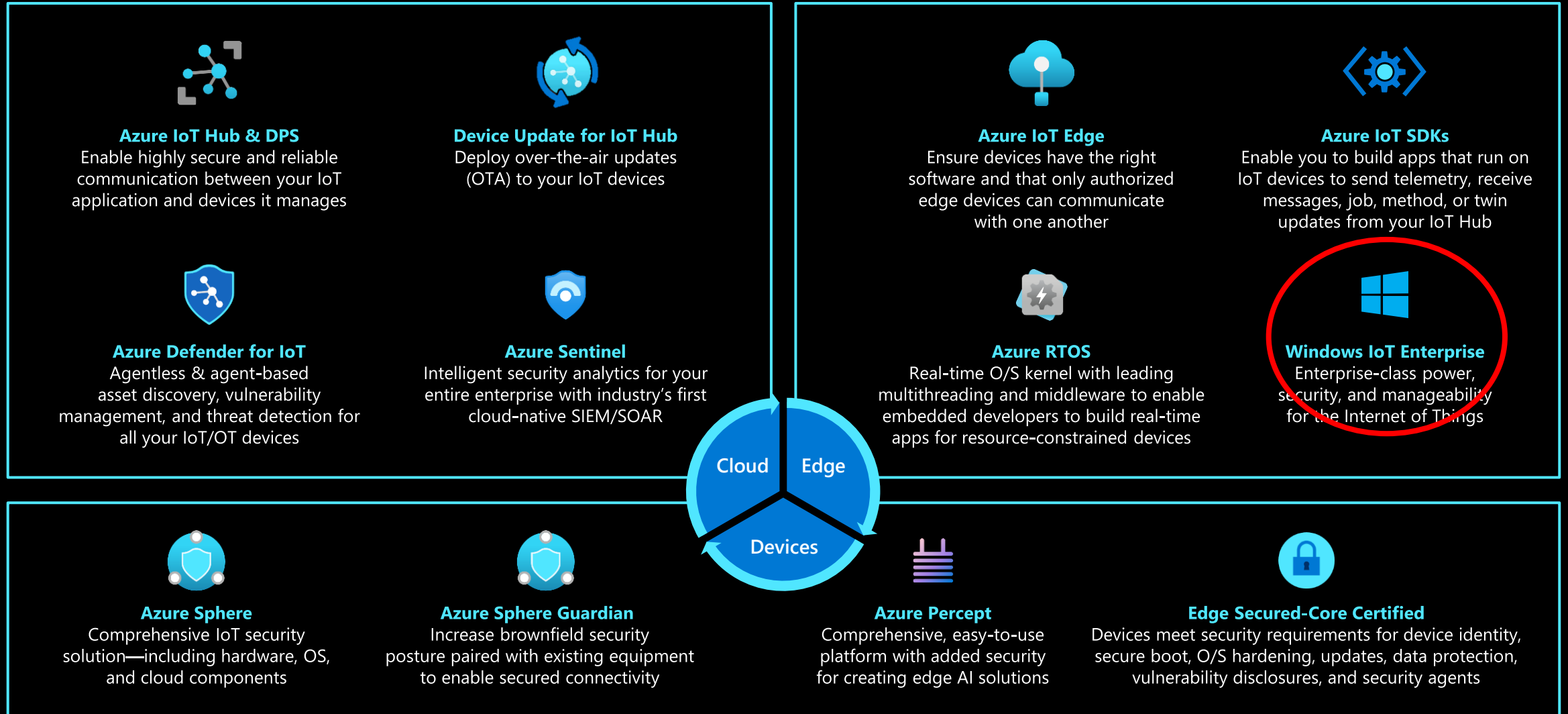
Safety



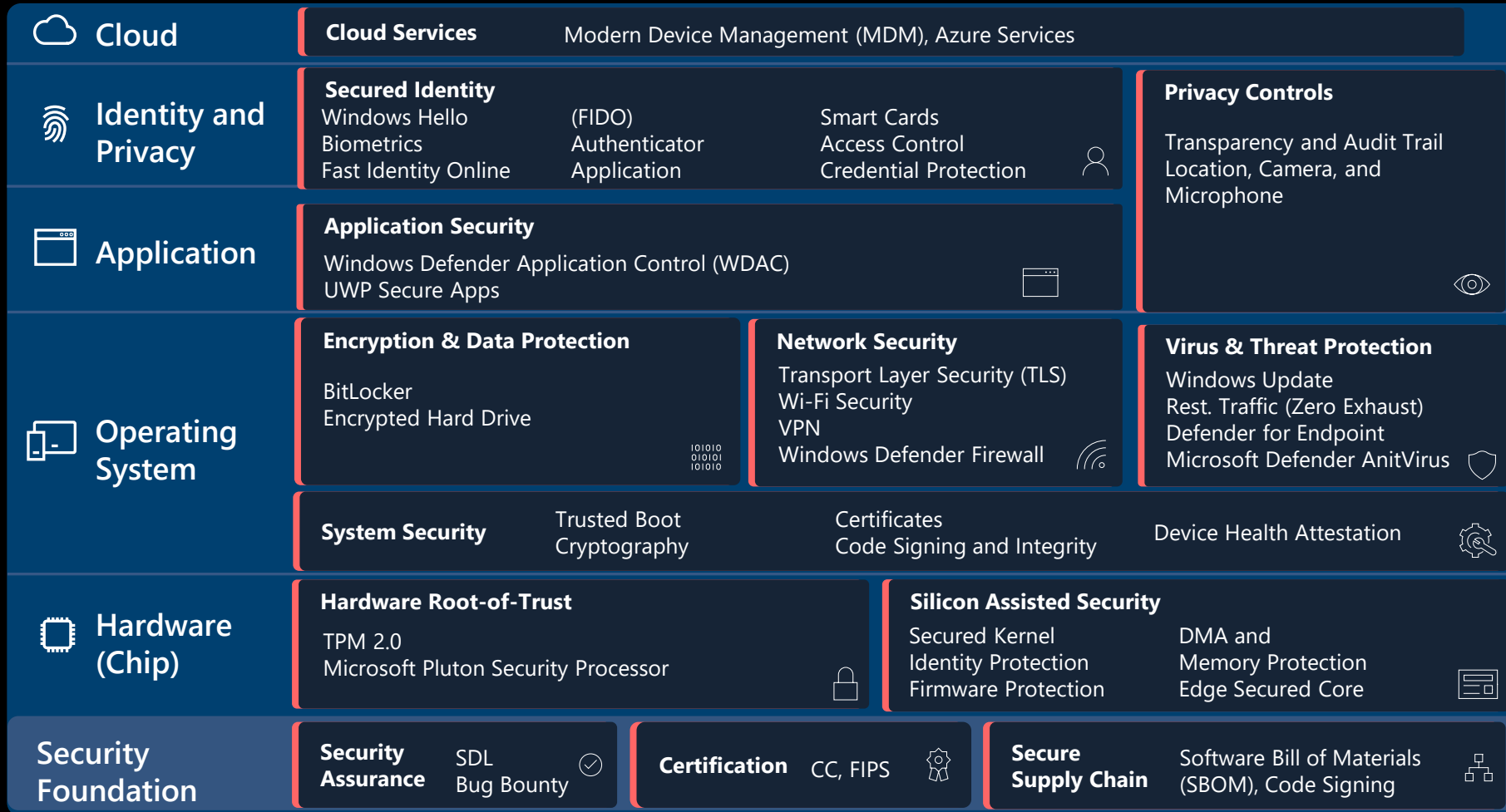
Attacks on electric grid, water utilities, gas compression facility, blast furnaces, maritime ports, building automation, petrochemical facility, ...



Select the right product for Zero Trust implementation in IoT



Windows IoT Enterprise: Security Stack Overview



Advanced Lockdown Features for Dedicated Devices

Windows IoT Enterprise offers consistent and predictable device lockdown features across form factors



Unified Write Filter + HORM

- ✓ Easily Create read-only devices
- ✓ Improve system uptime



Shell Launcher

- ✓ Enable Customers to create a Win32/UWP based shell experience



Device Safeguards

- ✓ Only enable approved USB devices
- ✓ Allow only access to certain peripherals



Assigned Access

- ✓ Enable a single Universal Windows app or multiple app kiosk experience



Keyboard Filter

- ✓ Block hotkeys and other key combinations
- ✓ Customize a breakout key sequence



Microsoft Edge Kiosk Mode

- ✓ Provide a tailored browsing experience for kiosks or digital signs



Application Control

- ✓ Create rules and policies to enforce your scenario
- ✓ Control which application and drivers can run



Unbranded Boot + Custom Logon

- ✓ Suppress unwanted Windows elements



Screen Swipe Policy

- ✓ Block screen swipe gestures that may invoke a system UI



Page Visibility + Access Controls

- ✓ Customize the page visibility of system settings
- ✓ Configure system access of device (shut down, restart)

The Windows IoT on Arm64 Journey

NXP i.MX 6, i.MX 7
Preview for
Win10 IoT Core

2018

2019

NXP i.MX 6, i.MX 7
GA for
Win10 IoT Core

2020

NXP i.MX 8
Preview for
Win10 IoT Enterprise

2021

NXP i.MX 8
GA for
Win10 IoT Enterprise

2022



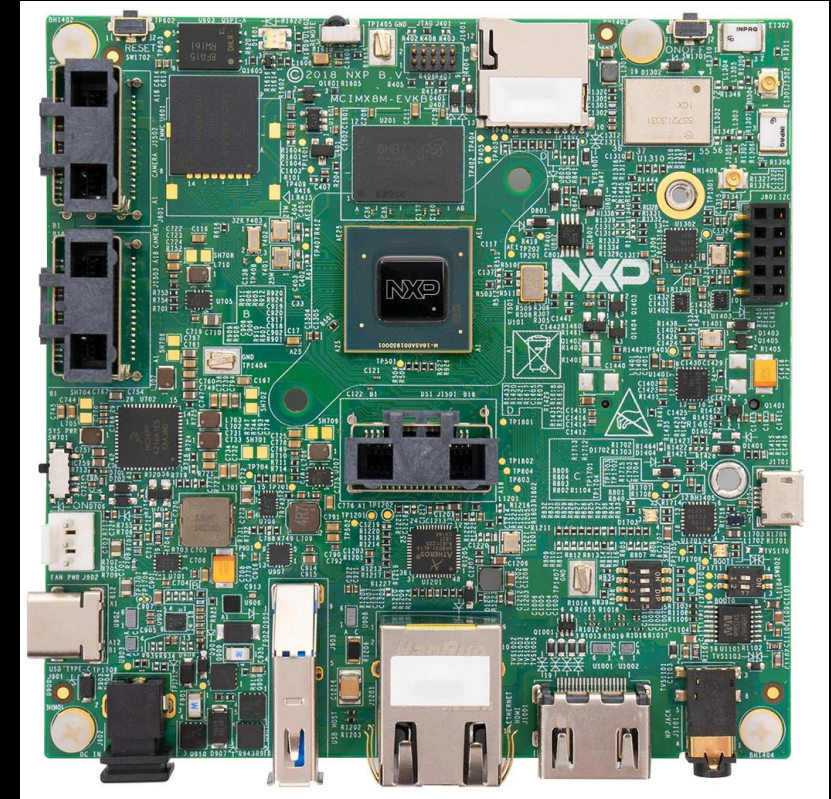
What is i.MX 8 on Windows IoT Enterprise?

NXP i.MX 8

A range of NXP Arm64 SoCs in the i.MX8 family:

- Performance: i.MX 8M, i.MX 8M Plus
- Budget: i.MX 8M Mini, i.MX 8M Nano

Multiple NXP-supported BSP releases with increasing functionality



What is i.MX 8 on Windows IoT Enterprise?

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Windows IoT Enterprise

Equivalent to Windows Client Enterprise

Two editions:

- Windows 10 IoT Enterprise 21H2 GAC
(General Available Channel, May release)
- Windows 10 IoT Enterprise LTSC 2021
(Long Term Servicing Channel, June release)

App Compatibility

Support for Win32 apps

All app development frameworks supported

Minimize application porting effort

| App Framework | IoT Core | IoT Enterprise |
|----------------------------------|----------|----------------|
| Universal Windows Platform (UWP) | ✓ | ✓ |
| Windows Forms | | ✓ |
| Windows Presentation Foundation | | ✓ |
| .NET Framework | | ✓ |
| .NET Core | | ✓ |

Verisilicon GC7000 Lite GPU driver

Included GPU driver supports

DirectX11 API

Apps not using DirectX11 API use

Windows Advanced Rasterization

Platform (WARP)

Additional apps/workloads planned

later in 2022

| Application/Workload | Now | 2H 2022 |
|---------------------------|-----|---------|
| DirectX11 API | ✓ | ✓ |
| Windows Shell (DWM) | ✓ | ✓ |
| UWP Apps (WinUI) | ✓ | ✓ |
| GDI API | | ✓ |
| Video Playback Processing | | ✓ |
| Chrome/Edge browser | | ✓ |
| WPF Apps | | ✓ |

Hardware you can use to demo the new BSP



NXP
i.MX8M EVK



Avnet
MSC SM2S-
IMX8M



ASUS
IMX8P-IM-A



Advantech
ROM-5720

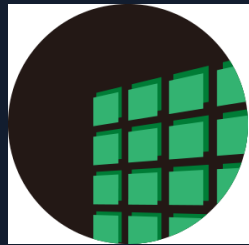


Reycom
RIA 8M

Windows IoT Distributors in Taiwan

ADVANTECH

研華科技



全達國際

Chander Electronics Corp.

SYNNEX



聯強國際

Get started now

- To get started and visit <https://aka.ms/nxpiot> to download the i.MX 8M BSP and the User Guide.
- Contact your Windows IoT Distributor to get the OPK of Windows IoT Enterprise for ARM64.
- Support for additional SoCs in the i.MX 8M family will be added later this year.
- Visit <https://aka.ms/nxpiotforums> for questions and support

