



Windows 11 IoT Enterprise

Industrial Computing Solutions

Rugged Embedded. Rugged Edge. Rugged Displays

Q1 2024 1/01/2024 Rev 1



What is IoT?

- IoT -> Internet of Things
- The interconnected network of devices, sensors, and objects that collect and exchange data over the internet without any human interaction
- From everyday objects such as smart thermostats and wearables to industrial machines and vehicles
 - Equipped with sensors and connectivity features to gather and transmit data

What is Windows IoT?

- Windows IoT is a specialized edition crafted specifically for Internet of Things devices and embedded systems
 - Intended for low-power consumption and compact hardware
 - Designed for use cases where functionality and features remain with the life of the device
- Designed for use in embedded applications:
 - Kiosks
 - Digital Signage
 - Factory Automation
 - Smart Manufacturing
 - In-vehicle Edge Computing

So Why IoT and not Pro?

- Using Windows IoT for IoT applications offers several advantages over Windows Pro:
 - **Resource Efficiency:** Consumes fewer system resources compared to Windows Pro, allowing for better performance on devices with limited processing power, memory, and storage.
 - **Security Features:** Includes built-in security features designed to address the unique security challenges of IoT deployments (device lockdown & secure boot)
 - **Licensing and Cost:**
 - Windows IoT: Microsoft offers specific licensing models for Windows IoT that are cost-effective for embedded and IoT applications. Often aligning with the scale and purpose of application deployment.
 - Windows Pro: The licensing costs for Windows Pro may not be suitable for large-scale IoT deployments, where cost-efficiency is a critical consideration.

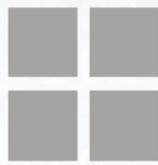
What is Windows IoT Enterprise?

- Both designed for IoT deployments but cater to different types of devices and scenarios.
- Enterprise targets commercial and industrial IoT deployments, focusing on devices that require full Windows compatibility and enterprise-grade features.
- Provides a full-fledged Windows experience similar to traditional desktop with:
 - **Domain join** (allows computer to be integrated into network domain)
 - **Group policy support** (admins can enforce security policies, configure settings, and deploy software across the network)
 - **BitLocker encryption** (full disk encryption feature)
- Windows IoT encompasses a range of lightweight editions optimized for IoT devices, while Windows IoT Enterprise provides a full Windows experience.

Entry, Value, High End

Entry, Value, High End

- Different editions of the OS
- High-End & Value Edition:
 - For more powerful computing devices and "feature-rich" devices
 - Require the most robust processing capability and extensive connectivity option
- Entry Edition:
 - Geared towards simpler, most cost-effective devices
 - Focusing on essential functionalities for basic computing tasks and connectivity
 - Simplicity & affordability > advanced features & performance



Windows 11 IoT Enterprise LTSC - Available in 2H 2024

Windows 11 IoT Enterprise LTSC 2024 | Schedule



Feature Complete

Release to OEM
Early Q2 2024

General Availability
TBD

Pre-Release Testing & Feedback
Microsoft Collaborate

Jul - 23

Oct - 23

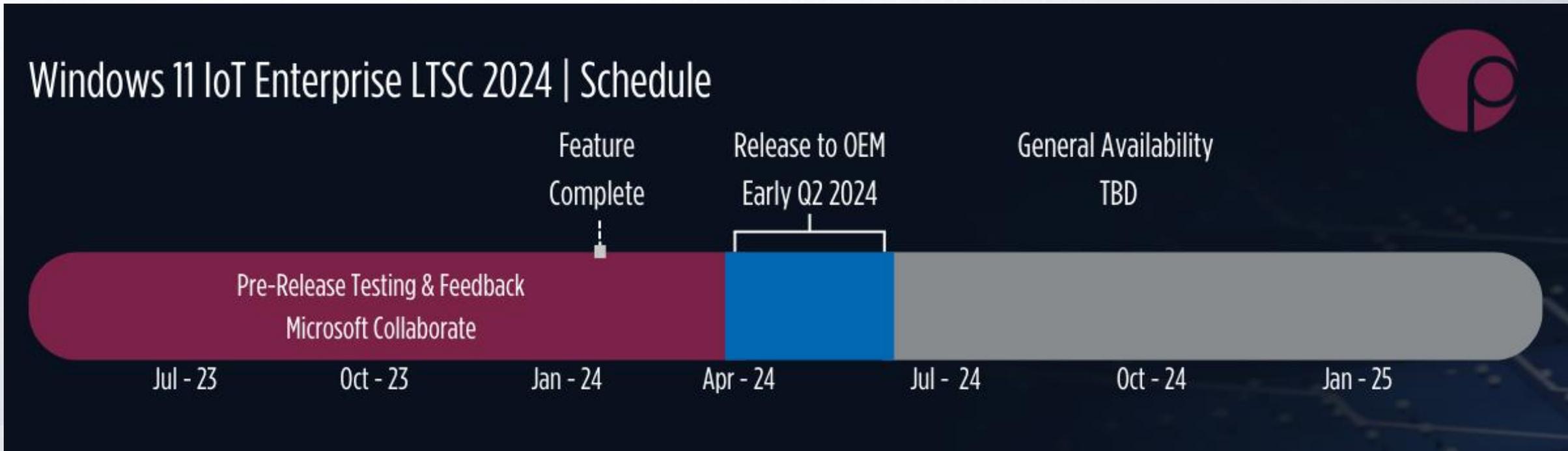
Jan - 24

Apr - 24

Jul - 24

Oct - 24

Jan - 25



What is LTSC?

- LTSC = Long Term Servicing Channel
- Releases every few years (2-3 years)
- Windows 11 IoT Enterprise LTSC focuses on
 - Functionality & stability
 - Does not introduce major new features with every update
- Ideal for devices that require long-term stability :
 - Medical devices
 - Industrial machinery
 - Manufacturing control systems
- Does not receive any feature updates during lifecycle

Enterprise GAC & Enterprise LTSC

	Windows 11 IoT Enterprise	Windows 11 IoT Enterprise LTSC
Release Cadence	Follows regular Windows 11 with new features and updates released regularly	Releases occur every few years, <u>No feature updates during lifecycle</u> , only security updates
Support Lifecycle	Receives annual feature updates Supported for a specified period, <ul style="list-style-type: none"> • 5 years of mainstream support • 5 years of extended support. 	Offers extended support for up to 10 years , providing a longer period of stability and predictability for embedded systems
Feature Set	Includes the latest features in Windows 11 <ul style="list-style-type: none"> • Snap layouts • updated Microsoft Store • gaming improvements. 	Focuses on core functionality and stability, without introducing major new features with each update.
Deployment Scenarios	Suitable for devices where access to the latest features and capabilities of Windows 11 is desired, <ul style="list-style-type: none"> • retail point-of-sale systems • digital signage • Kiosks • industrial IoT devices. 	Ideal for devices that require long-term stability, such as <ul style="list-style-type: none"> • medical devices • industrial machinery • manufacturing control systems • other embedded devices where frequent updates are impractical/undesirable.

Summary

- The choice between **Windows 11 IoT Enterprise** and **Windows 11 IoT Enterprise LTSC** depends on the specific needs of the embedded system, such as
 1. Required level of feature updates
 2. Support lifecycle
 3. Stability considerations.





Windows IoT Enterprise

For special-purpose devices that require the latest functionality provided through an annual feature update release cadence.

Modern Support Lifecycle

- 36-month support lifecycle
- Lifecycle restarts with each annual upgrade
- Monthly security and non-security updates
- Annual release available via Windows Update
- Continuous Innovation Updates (CIU) disabled by default
- Controlled Feature Rollout (CFR) settings to enable CIU

Minimum requirements:

Windows 10

- 1 GHz X64 / Arm64 CPU
- 2 GB Memory
- 20 GB Storage
- UEFI Firmware
- TPM (optional)
- DirectX 9+ Graphics

Windows 11

- 1 GHz X64 w/2 cores CPU
- 4 GB Memory
- 64 GB Storage
- UEFI Firmware
- TPM 2.0
- DirectX 12+ Graphics

Latest Release

Windows 10 IoT Enterprise 22H2

Windows 11 IoT Enterprise 22H2

Windows IoT Enterprise LTSC

For special-purpose devices that require the latest functionality provided through an annual feature update release cadence.

Note: New Windows releases needed to support new processor generations

Fixed Support Lifecycle

- 10-year support lifecycle
- Lifecycle is fixed (new license required)
- Monthly security and non-security updates
- New releases expected every 3 years
- No feature updates

Minimum requirements:

Windows 10

- 1 GHz X64 / Arm64 CPU
- 2 GB Memory
- 20 GB Storage
- UEFI Firmware
- TPM (optional)
- DirectX 9+ Graphics

Windows 11

Not Available until 2H
June 2024

Latest Release

Windows 10 IoT Enterprise LTSC 2021