



Windows Embedded 8 Industry Technical Deep Dive

Overview

What is Windows Embedded 8 Industry?

Windows Embedded 8 Industry is a trusted operating system platform for building differentiated commercial devices that are part of an Intelligent System:

System Requirements

- Works great on Windows 7 hardware:
 - 1 gigahertz (GHz) or faster processor
 - 1 gigabyte (GB) (32-bit) or 2 GB (64-bit) RAM
 - 16 GB (32-bit) or 20 GB (64-bit) hard disk space
 - Microsoft DirectX 9 graphics device with WDDM driver graphics card
- Additional requirements to use certain features:
 - To use touch, you need a tablet or a monitor that supports multitouch.
 - To run Windows 8 apps, you need a screen resolution of at least 1024 x 768.
 - To snap Windows 8 apps, you need a screen resolution of at least 1366 x 768.
 - Internet access (ISP fees might apply)

What's New?

- New Setup experience:
 - Streamlined
 - Modern
 - Configure Lockdown Features
- Windows 8 capabilities:
 - Rich Immersive User Experiences:
 - Windows 8 Touch
 - XAML/HTML5 for building new innovative experiences
 - Improved Power Management
 - Latest Desktop Technology innovations:
 - Internet Explorer 10
 - Remote Desktop
 - Etc...

What's New? (con't)

- Embedded Lockdown features:
 - *"Legacy" write filters are deprecated (Enhanced Write Filter, File Based Write Filter)*
 - Lockdown features are IT-configurable:
 - Interactive Setup (OS installation)
 - Setup/Syprep unattend file (SMI settings)
 - Embedded Lockdown Manager (MMC snap-in GUI)
 - Windows Management Instrumentation (WMI)

What's New? (con't)

- **New Lockdown features:**
 - **Unified Write Filter (UWF)** – replaces/obsoletes the legacy write filters
 - **Gesture Filter** – enables IT configurable filtering of touch gestures
 - **Windows 8 Application Launcher** – enables launch of Windows 8 app during boot
- **Enhanced Lockdown features:**
 - **Dialog Filter** – supports allow/deny lists of processes
 - **Keyboard Filter** – supports filtering of on-screen keyboard strokes
 - **Shell Launcher** – enables launch of Desktop application during boot (per-user configurable)

Industry and POSReady

- Windows Embedded 8 Industry is the **successor product** of POSReady 7:
- Delivers majority of Windows 8 features to enable Line Of Business (LOB) application compatibility
- Delivers Lockdown features to enable highly customized and locked down commercial device experiences
- Integrates POS for .NET 1.12 to enable 36 classes of Unified POS-compliant peripherals to work with managed Desktop applications **out of the box:**
 - Scanner (Bar Code Reader)
 - Magnetic Stripe Reader
 - Etc...
- Supports both Desktop applications and Windows 8 applications on a single OS platform – *ideal for targeting many form factor types with a single platform...*

Why “Industry”?

- Branding change from “POSReady” to “Industry” is intentional:
- WE8 Industry release is not just for Retail
- WE8 Industry is engineered primarily to enable core Retail scenarios:
 - Windows apps from 3rd-party ecosystem will work on Industry
 - Industry OS images can fit into existing IT infrastructure
 - Industry OS images can be locked down
 - Industry OS images can support Retail peripherals:
 - Full support with Desktop applications
 - Restricted support with Windows 8 applications
- Device makers for non-Retail device solutions may have similar or overlapping requirements!

Target Markets



Retail / Financial Self Services



Healthcare



Manufacturing

Why choose Industry?

- Why Industry instead of WE8 Standard?
- Industry is a **standardized** OS platform:
 - An app that works on one Industry installation will work on all Industry installations
 - OS must be standardized if the industry solution developer (ex. Retailer) depends on an ecosystem of ISVs and HW vendors for apps and drivers...
- Industry will support UPOS-compliant Retail peripherals:
 - POS for .NET 1.12 will be integrated with RTM release
 - Industry is tested and compatible with OPOS / JPOS drivers

Why choose Industry? (con't)

- Why Industry instead of WE8 Pro (AKA "FES")?
- Industry provides access to Embedded Lockdown features
- Many Windows services are configured to manual start or disabled by default:
 - Targeted at industries that must meet regulatory compliance
- Industry provides access to the same OEM activation options as WE8 Standard:
 - Embedded PKEA is only available in OEM Embedded channel
 - Embedded PKEA is designed to introduce online activation to manufacturing while minimizing disruption to existing Embedded manufacturing processes
 - *OA 3.0 is also available for qualifying OEMs*

Roadmap

- Windows Embedded 8 Industry:
- Windows Embedded 8 Industry Pro – GA on 4/2

Microsoft

Language Plan

Industry Language Plan

- 40 languages at RTM:
 - 10 languages available on 32-bit / 64-bit Install DVDs
 - 30 additional languages available on Additional Languages DVD:
 - 27 Language Packs
 - 3 Language Interface Packs

RTM Language Plan (con't)

ISO	Lang #	WE8 Industry Supported Languages	Notes
x86 Install DVD	10	en-US , de-DE, es-ES, fr-FR, it-IT, ja-JP, ko-kr, ru-ru, zh-CN, zh-TW	
x64 Install DVD	10	en-US , de-DE, es-ES, fr-FR, it-IT, ja-JP, ko-kr, ru-ru, zh-CN, zh-TW	<i>Same as x86 Install DVD</i>
Additional Languages DVD	27 LPs	ar-SA, bg-BG, zh-HK, hr-HR, cs-CZ, da-DK, nl-NL, en-GB, et-EE, fi-FI, el-GR, he-IL, hu-HU, lv-LV, lt-LT, nb-NO, pl-PL, pt-BR, pt-PT, ro-RO, sr-Latn-CS, sk-SK, sl-SI, sv-SE, th-TH, tr-TR, uk-UA	
	3 LIPs	ca-ES, eu-ES, gl-ES	
Total: 40 Languages (37 LPs + 3 LIPs)			

Language Pack Installation

- Setup Experience

- During Setup the end user must choose exactly one language for the operating system installation:
 - Ten language choices during Setup:
 - English (en-US)
 - German (de-DE)
 - Spanish (es-ES)
 - French (fr-FR)
 - Italian (it-IT)
 - Japanese (ja-JP)
 - Korean (ko-kr)
 - Russian (ru-ru)
 - Traditional Chinese (zh-CN)
 - Traditional Chinese (Taiwan) (zh-TW)

Language Pack Installation (con't)

- Post-Setup Experience
 - After Setup the end user can **optionally** install (or remove) additional languages packs:
 - 10 languages are available on x86/x64 Installation DVDs (same language set on each DVD)
 - 30 languages are available on Additional Languages DVD
 - For each desired language, the end user must install **two** language pack cabs **in the right order**:
 - Install the Client lp.cab first (can be installed with either lpksetup.exe or DISM)
 - Install the Embedded lp.cab second (can be installed with lpksetup.exe or DISM)
 - Adding languages through Control Panel is **not supported**:
 - *Windows language packs do not provide full localization for Industry*
 - End user must use lpksetup.exe and/or DISM to install or remove additional languages on Industry

Embedded Lockdown Features

Lockdown Feature Availability

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Embedded Lockdown Features	File Based Write Filter	✓		
	Enhanced Write Filter	✓		
	Unbranded Screens	✓		
	Custom Logon	✓	✓	
	Unified Write Filter	✓	✓	
	Gesture Filter	✓	✓	
	Keyboard Filter	✓	✓	
	Shell Launcher	✓	✓	
	Windows 8 Application Launcher	✓	✓	
	Dialog Filter	✓	✓	
	Embedded Lockdown Manager	✓	✓	

Product Activation

Activation Options

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Windows Product Activation	PKEA			✓
	Embedded PKEA (EPKEA)	✓	✓	
	OEM Activation 3.0	✓	✓	✓
	Non-genuine Notification: Persistent Watermark	✓	✓	
	Non-genuine Notification: Periodic Interactive UI			✓

Internet Explorer

Internet Explorer 10 Functionality

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Internet Explorer	Adobe Flash for Windows			✓
	Internet Explorer Automatic Upgrade			✓

Inbox Windows 8 Apps

Inbox Windows 8 Apps

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Windows 8 Apps	Store App - Calendar			✓
	Store App - Camera			✓
	Store App - Finance			✓
	Store App - Games			✓
	Store App - Mail			✓
	Store App - Maps			✓
	Store App - Messaging			✓
	Store App - News			✓
	Store App - People			✓
	Store App - Photos			✓
	Store App - Store			✓

Desktop Features

Desktop Feature Deltas

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Desktop Features	Sticky Notes	✓		✓

Optional Windows Features

Optional Windows Features

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Optional Windows Features	.NET Framework 3.5 (includes .NET 2.0 and 3.0)	✓	✓	✓
	.NET Framework 4.5 Advanced Services	✓	✓	✓
	Active Directory Lightweight Directory Services	✓	✓	✓
	Internet Explorer 10	✓	✓	✓
	Internet Information Services	✓	✓	✓
	Microsoft Message Queue (MSMQ) Server	✓	✓	✓
	Network Projection	✓		✓
	RAS Connection Manager Administration Kit (CMAK)	✓		✓
	Remote Differential Compression API Support	✓	✓	✓
	RIP Listener	✓		✓
	Scan Management	✓		✓
	Services for NFS			✓
	Simple Network Management Protocol (SNMP)	✓	✓	✓
	Simple TCP/IP Services (i.e. echo, daytime etc)	✓	✓	✓
	Subsystem for UNIX-based Applications			✓
	Telnet Client	✓		✓
	Telnet Server	✓		✓
	TFTP Client	✓	✓	✓
	Windows Identify Foundation 3.5	✓	✓	✓
	Windows Location Provider	✓	✓	✓
	Windows Media Player	✓	✓	✓
	Windows PowerShell 2.0	✓	✓	✓
	Windows Search	✓	✓	✓
	Windows TIFF Filter	✓	✓	✓
	XPS Services	✓	✓	✓
	XPS Viewer	✓	✓	✓

APIs

Availability of APIs

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
APIs	Win32	✓	✓	✓
	.NET Framework 3.5	✓	✓	✓
	.NET Framework 4.0	✓	✓	✓
	.NET Framework 4.5	✓	✓	✓
	POS for .NET 1.12		✓	✓
	WinRT	✓	✓	✓

Multimedia Codecs

Multimedia Codec Licensing Rights

- WE8 Industry Pro ships with the following 3rd-party codecs:
 - MPEG-4
 - AVC/H.264
 - VC-1
 - MP3 Audio
- *OEMs/Enterprises are responsible for determining and securing license rights to include any of the above codecs in commercial products and services using WE8 Industry software*

Multimedia Codec Availability

		WE8 Standard	WE8 Industry Pro	Windows 8 Professional
Multimedia Codecs	Dolby / AC3 Audio	✓		✓
	MPEG-2 Video & Audio	✓		✓
	MPEG-4	✓	✓	✓
	AVC/H.264	✓	✓	✓
	VC-1	✓	✓	✓
	MP3 Audio	✓	✓	✓

Multi-Touch Functionality

Touch Hardware Quality Assurance (THQA)

- THQA is used to allow or prevent a full touch experience on a device:
 - To have a full touch experience on Windows 8, touch devices must meet specific Windows Hardware Certification Requirements
 - Touch vendors can use Microsoft testing facilities (i.e. the Windows Touch Test Lab) to certify that the touch quality of a device meets THQA certification requirements
 - When a touch input device complies with THQA certification requirements, it can receive a THQA signature in the device firmware to show certification
 - For more information about the Windows Touch Test Lab, see this MSDN website: <http://msdn.microsoft.com/en-us/library/windows/hardware/hh872970>

Supported Touch Scenarios

- WE8 Industry supports the following Touch scenarios:
 - **Full touch** – full Windows 8 touch experience
 - **Legacy touch** – similar to full Windows 8 touch experience, with the following exceptions:
 - Windows edge UI values are adjusted to relax edge triggering from 1 pixel to 20 pixels to accommodate finger swipes from the edges of the display.
 - There is no Windows touch prediction that provides faster, crisper interaction.
 - There is no ability to reveal accent keys on the Windows On-Screen keyboard.

Supported Touch Scenarios (con't)

- Enabled touch scenarios depending on whether the touch input driver is THQA certified:

Product	THQA certified	Not THQA certified
Windows Embedded 8 Standard	Full Touch	Legacy Touch
Windows Embedded 8 Industry	Full Touch	Legacy Touch
Windows 8 Pro	Full Touch	Legacy Touch with external monitor* No Touch support with internal monitor*

*Monitors are identified as internal or external through their Extended Display Identification Data (EDID)

Microsoft