

Windows XP – Dead or Alive?

Windows XP Professional For Embedded Systems (FES) is designed for use in what is broadly termed as an ‘embedded’ or ‘industrial’ system. This includes such embedded devices as ATM’s, kiosks and medical devices. Within these systems the standard Windows XP loading screen must be replaced with a customised loading screen and would typically boot straight into the main application rather than the Windows desktop. However, if the device is to be used for an Industrial Automation or Test and Measurement solution this customisation is not necessary. Many Amplicon customers who currently use Windows XP Professional OEM will find that they meet the criteria to legitimately move to Windows XP Professional FES.

The Microsoft Windows XP Professional FES licence terms, states: -

“Software that provides consumer or business tasks or processes may not run on the device. This includes email, word processing, spreadsheet, database, scheduling and personal finance software. The device may use terminal services protocols to access such software running on a server.”

However, use of such software is permissible if its sole function is to support the main application software which is not performing a consumer or business task or process. A good example of this is the Amplicon DAX software which interfaces with Microsoft Excel to allow our PCI 230+ or PCI 260+ data acquisition cards to be configured and log data quickly and easily to Excel. The spirit of the agreement is clear in that Windows XP Pro (FES) should never be used for office / IT applications.

Windows XP Professional FES can only be supplied installed on a device by an Authorised Windows Embedded Partner and unlike Windows XP Professional OEM, no media is supplied with the FES edition. However a recovery disk option may be provided by the OEM system builder.

As an Authorised Windows Embedded Partner Amplicon is issued with OEM Pre-installation Kits, known as OPK. The OPK disks are used to deploy the operating systems, although Amplicon use drive cloning technology to speed this process up in production.

Amplicon purchases Windows XP Professional Embedded Certificates of Authenticity (COA) through our approved Microsoft channel. Once we have deployed an operating system on a device we will affix the COA to a visible location (unless the product is too small to accommodate a label). Amplicon then transfers the licence to it’s customer via our Windows XP Professional for Embedded Systems Licence Terms. The customer must agree to these terms before using the device. [Click here to see license terms.](#)

The Windows XP Professional OPK includes the Windows XP deployment disk together with the Multilingual User Interface or MUI pack. The MUI pack contains language specific resource files which can be installed onto the English version. This will enable multi-language support on the target device, which will allow it to be shipped world wide. The end user can easily select their local interface language from a pull-down within Windows XP Professional. This is a far more cost effective means of managing multi-language support, when compared to installing a number of different language specific versions. However, inclusion of the data on the four MUI disks may not be a viable option when using smaller capacity storage devices.

The MUI pack typically contains language support for Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, Finnish, French, German, Greek, Hebrew, Italian, Hungarian, Japanese, Korean, Norwegian, Polish, Portuguese (Portugal), Portuguese (Brazil), Russian, Spanish, Swedish, Turkish. Any number of these languages can be installed together with the default language being specified.

If you would like any of the MUI languages to be installed on your system, you will need to talk to one of our Industrial Computing specialists

It is important to note that Windows XP Professional Embedded does not come with Downgrade Rights (see Windows XP Professional OEM End-User Downgrade Rights).

Installing Windows XP Professional via Vista End-User Downgrade Rights

Another route that can be taken to secure the future availability of Windows XP Professional is through what are known as downgrade rights. Traditionally, downgrade rights have been available on many of Microsoft's professional desktop products and documented within their respective End-User Licence Agreements (EULA). Windows Vista Business and Ultimate products currently include downgrade rights for Windows XP Professional OEM, these can only be exercised by the end user.

If the end user requires a system builder such as Amplicon to install Windows XP Professional using the downgrade rights available within Windows Vista Business / Ultimate, they must supply the system builder with the downgrade media and a valid Product Key. The system builder must ensure that the media is a legal version and suitable for downgrade, and they will affix the Windows Vista Certificate of Authenticity (COA) to the product and ship the system with the Windows Vista media. The system builder cannot provide copies of the downgrade media.

Although the system builder can install XP Professional with the permission of the end user, they should not undertake Activation. The Product Key used to install the downgrade software may have been used to activate a previous copy of Windows. In addition the system builder has probably built more than one system using the same key. Under these circumstances online activation will not be possible and the end user will be prompted to call the Activation Support Line where they must explain that they are using Downgrade Rights. Once the Support Line has established that the end user has a valid Vista Business / Ultimate licence the activation can proceed manually over the phone.

The activation process becomes less manageable when a large number of systems are produced. Engaging in lengthy dialogue with the Activation Support Line each time you activate will waste valuable staff time and add additional costs to processes.

Most importantly, Downgrade Rights are scheduled for removal from Windows Vista Business / Ultimate on July 31st 2009.

Windows Embedded Standard Edition

This is the latest offering of what was known as XP Embedded.

Unlike XP Professional, Windows Embedded Standard 2009 has been broken down into over 12,000 individual components, which are held in a toolkit database. For each unique operating system (OS) image, only the necessary components required to support the hardware and run the end applications need to be incorporated. This modular approach allows Windows Embedded Standard 2009 to be built into a much smaller footprint when compared to Windows XP Professional.

The most obvious benefit of Windows Embedded Standard 2009 is for use within small form factor embedded systems. Highly compact images can be produced specifically for deployment on solid state storage devices such as CompactFlash, Disk on Module or a solid state drive. In addition images can be designed to run from a non-writeable media. Avoiding a conventional hard disk would greatly increase the maximum shock, vibration and operating temperature ranges of the finished system.

Most industrial applications which make use of a non-embedded OS have many of the unwanted features disabled. This is usually done to either prevent unauthorised use of the system, or for security reasons. In comparison Windows Embedded Standard 2009 would only include the components necessary to run the industrial applications.

As the toolkit is building an operating system from the ground up, the development time is typically one weeks work for a skilled software engineer. This time can be reduced if you are not concerned about reducing the footprint size.

You may also encounter minor differences between Windows XP Professional which need to be overcome. Those that work with Windows Embedded Standard 2009 will be fully aware of the various issues that must be taken into account.

Use of Windows Embedded Standard Edition is only viable, if the reduced costs of a smaller storage device capacity are far greater than the development costs of the image. Also, a more controlled and robust operating system can be built, but the costs of doing so should be considered.

Product Name	General Availability	Product Distribution End Date
Microsoft Windows XP Professional	December 31, 2001	January 31, 2009
Microsoft Windows XP Professional for Embedded Systems	December 31, 2001	December 31, 2016
Microsoft Windows XP Embedded (Toolkit and Runtime), all versions	January 30, 2002	January 30, 2017
Microsoft Windows Embedded for Point of Service 1.x, all versions	May 24, 2005	May 24, 2020
Microsoft Windows Embedded Standard	November 1, 2008	November 1, 2023
Microsoft Windows POSReady 2009	January 1, 2009	February 11, 2024

Summary

Many industrial users of Windows XP are likely to be in for a shock the first time they hear that Windows XP is being discontinued. However, as illustrated in this white-paper, there is light at the end of the tunnel thanks to Microsoft's considered gesture of putting Windows XP Professional (FES) on the road map until 2016.

This little known workaround will be delivered by Amplicon as a service to its customers as long as Windows XP Pro (FES) is available. Amplicon are investing in this solution as we recognise that it may save you a headache, a product line or even your entire company.

Disclaimer

This document is only intended to assist with the interpretation of Microsoft Windows XP Professional for Embedded Systems Licence Terms

The Microsoft Windows XP Professional for Embedded Systems Licence Terms must be read and accepted by the end user. These licence terms are supplied with every Microsoft Windows XP Professional for Embedded Systems deployment and are available for download from our web site.