Are you Ready for Windows 11?

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Microsoft recently announced the release of Windows 11, with the launch expected in the autumn of 2021. Although many specific details are still to be released, there are several key differences that will be important for both end users and OEMs.

This guide has been developed by Avnet Embedded to help share information and prepare our customers, original equipment manufacturers (OEMs) and other partners for the launch of Windows 11 and key aspects to be aware of, along with how Windows 11 will impact the OEM channel and global embedded installations. As with the launch of Windows 10, the general-purpose channel only licences the Pro and Home editions, which are suitable for most PCs for home and commercial use. The volume licencing channel provides businesses with enterprise offerings for their internal devices.

The OEM IoT / Embedded channel was created for those businesses making dedicated devices. In software terms, this channel is the correct one to buy through and is optimised for features, pricing and licensing rights. The team at Avnet Embedded are experts in both the hardware, software, design and integration of embedded devices and solutions and we can help you with planning your project and getting you to market fast and efficiently, whatever and wherever your project is.

Why Has Microsoft Released Windows 11?

In their launch blog, Microsoft described how the Covid-19 global pandemic had dramatically changed how people worked and lived and that many of those changes are here to stay. Many of us saw a blurring of boundaries between work and life as our homes became our main places of work. While this has produced many positive changes, it has also meant that more often than not, we're using the same computing devices now for both work and life.

In designing Windows 11, Microsoft drew heavily on the nostalgia of early Windows as the place where 'the web was born and grew up'. Now, with over a billion global users, and after seeing the changes the world has undergone in the Covid-19 pandemic, Microsoft say that Windows 11 has been 'redesigned for productivity, creating and ease'.

In his launch blog about Windows 11, Panos Panay, Chief Product Officer for Microsoft had the following to say:

> *"Windows has always existed to be a stage for the world's innovation. It's been the backbone of global businesses and where scrappy startups became household names. The web was born and grew up on Windows. It's the place where many of us wrote our first email, played our first PC game, and wrote our first line of code. Windows is the place people go to create, to connect, to learn, and to achieve – a platform over a billion people today rely on."*
>
> ***– Panos Panay***

What Are the Main Changes in Windows 11?

Every new operating software release is a milestone, and Microsoft releases affect much of the developed world. But this iteration of Windows feels significant. Microsoft have responded to the fact that we are spending more and more time on mobile devices.

Ralf Groene, Head of Design for Windows & Devices at Microsoft says that 'Windows 11 has been 35 years in the making.' He goes on 'Windows is the largest Swiss Army knife you can imagine... A Windows computer is something you work on and play on. It needs to be simple by default but complex by demand. We live in an age of hyper-connectivity.' Having been with Microsoft for more than 15 years, spending most of this time on Surface, Groene helped to develop the 'Fluent' identity, showing a more flexible, adaptable version of Windows which is less 'one size fits all' and represented by the 'Bloom' device, the motif of Windows 11.

What does this mean for end users?

- A simpler design and user experience that looks more modern
- A new Start button and taskbar
- New Snap Layouts, Snap Groups and Desktops to provide a new way of multi-tasking, including the ability to have separate desktops for work and personal use
- Chat from Microsoft Teams is integrated meaning the user can connect through chat, text, voice or video with personal contacts – no matter which device or platform they are using
- Widgets – a personalized feed powered by AI and a best-in-class browser performance from Microsoft Edge
- Built in security technologies that add protection from the chip to the cloud

The 'Bloom' is an AI-generated shape developed by Microsoft as the emblem of Windows 11.

What will Windows 11 mean for OEMs?

Windows 11 will be important for OEMs for a number of reasons. When designing products for embedded systems, devices and IoT, longevity and future-proofing are key considerations to maximise return on investment.

As well as the hardware requirements detailed above, there are other aspects of Windows 11 which are interesting for embedded devices and OEMs.

Microsoft will also be creating a more open ecosystem to unlock new opportunities for developers by enabling the use of apps whether they're built as a Win32, Progressive Web App (PWA) or Universal Windows App (UWA). Plus, developers will be able to use the Windows store and keep the revenue without Microsoft taking a cut, which should drive more creativity.

Windows 11 will begin rolling out in the fall of 2021. It will ship with new Windows 11 PCs and will also be offered as a free upgrade for Windows 10 users at the same time. The upgrade will be optional though, which will mean users can stay on Windows 10 until the end of support date of 2025.

Windows 11 will require a display size of at least 9 inches which means that it won't be used on mobile phones or mini tablets.

The operating software will also run on 64-bit processors. Microsoft are not releasing a 32-bit version, although 32-bit apps should continue to work well. The requirement drive storage has also increased to 64GB, up from 16GB with Windows 10. RAM has also been increased from 2GB to 4GB.

What will Windows 11 mean for OEMs? continued

A blog was released by Microsoft about Windows 11 that covered some details about the OEM channel changes. You can read it here.

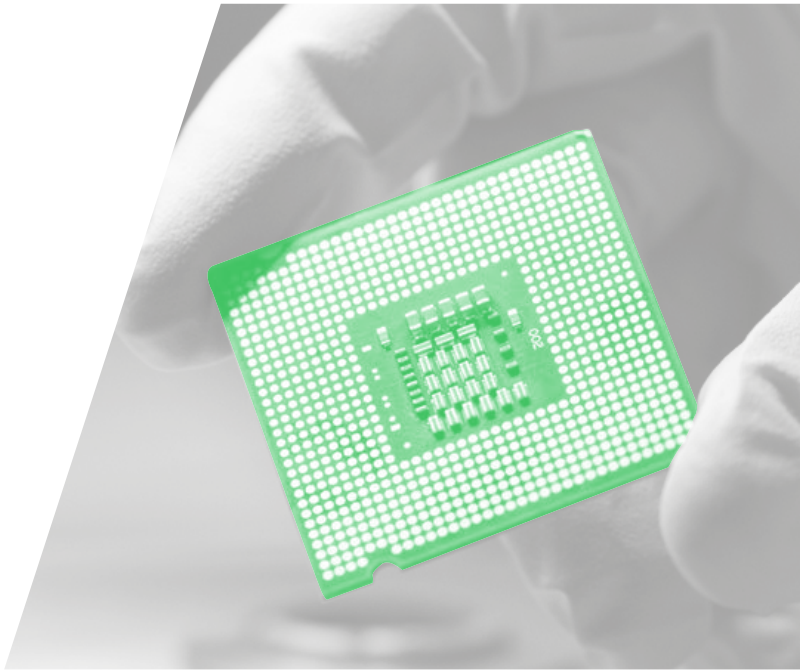
This stated that Windows 11 Home & Pro will be available on select direct OEM devices this autumn, and as a stand-alone product some time in 2022. Other facts shared included:

- Windows 11 will get one feature build per year
- There will be 24 months of support on Home & Pro build releases
- Some qualifying Windows 10 systems will be able to get a free upgrade to Windows 11 some time in 2022
- Windows 10 IoT Enterprise LTSC 2021 will continue as planned with an autumn release based on build 21H2.
- Nothing will change with Windows 10 IoT Enterprise LTSC 2019, 2016 and 2015 which already have an End of Life and End of Support dates
- IoT versions of Windows 11 and Windows Server 2022 will be released and more information around these releases will be coming from Microsoft.
- Some OEM systems for special purpose commercial use may not be required to have TPM requirements, as long as approved by Microsoft. This will be covered in the hardware requirements document released by Microsoft.

Of course, the launch of Windows 11 will also mark the beginning of the end for Windows 10, where the lifecycle will come to an end on October 14th 2025. In a post of the Windows 10 Home and Pro lifecycle page, it was stated 'Microsoft will continue to support at least one Windows 10 Semi-Annual Channel until October 14, 2025.' That means that after this Windows 10 will no longer receive security or feature updates. However, previously we have seen these dates extend, and Avnet has been able to help with our Security Updates program.

Hardware Requirements and Why This Matters to OEMs

While final hardware requirements are still being compiled, and with beta-testing still going on, new security protocols in Windows 11 are driving more specific processor requirements than previously seen with Windows releases.



Windows 11 will officially support Intel 8th Gen Coffee Lake or Zen 2 CPUs and up, which will mean that potentially millions of PCs that were sold during the launch of Windows 10 may no longer be suitable for Windows 11.

The main driver for these changes is security, with a push towards a more modern BIOS (Basic Input/Output System) that supports features such as Secure Boot and TPM 2.0 (Trusted Platform Module). When combined with some of the virtualization technologies that Microsoft uses in Windows, there is a distinct security benefit. Microsoft says that the combination of Windows Hello, Device Encryption, virtualization-based security, hypervisor-protected code integrity (HVCI) and Secure Boot 'has been shown to reduce malware by 60 percent'.

TPM support has been a requirement for OEMs to gain Windows certification since the release of Windows 10, but until now, Microsoft has not enforced this technology with businesses or consumers – so this is new in Windows 11.

As they are updated, you will be able to see more about system requirements for Windows 11 direct on the Microsoft website here.

What is the servicing timeline for a version (feature update) of Windows 11?

Microsoft says that new versions of Windows 11 will be released once per year. Customers should always install the latest version before the current version reaches end of servicing to remain supported by Microsoft.

EDITION	SERVICING TIMELINE (one release per year)
Windows 11 Enterprise Windows 11 Education Windows 11 IoT Enterprise	36 months from release date
Windows 11 Pro Windows 11 Pro Education Windows 11 Pro for Workstations Windows 10 Home[1]	24 months from release date

[1] Home edition does not support the deferral of feature updates and will therefore typically recieve a new version of Windows 11 prior to the end-of-servicing date shown.

There will also be an IoT version of Windows 11 and Windows Server 2022. The first release of Windows 11 IoT Enterprise will have a servicing timeline of 36 months from the month of release.

The Long Term Service Channel edition will be known as Windows 11 IoT Enterprise LTSC. More information will be coming from Microsoft around this version, but again Microsoft have confirmed that the Windows 11 IoT Enterprise non LTSC version will be released once per year with a 36 month timeline.

OEMs will still have to pay for a Windows 11 license, but when upgrading from Windows 10, the licence will be retained and will therefore remain activated. This was also the process with the move from Windows 7 and Windows 8 to Windows 10.

How Avnet Embedded Can Help You Get Ready for Windows 11

Avnet Embedded brings together its compute, display and software technology to become the perfect partner for the design, manufacture and management of embedded solutions, all over the world. User experience is critical when designing new product offerings but identifying the right embedded and display technologies to power your next innovation can be complex, time consuming and expensive.

With a leading track record in delivering human/machine interface (HMI) devices that combine compute and display for a range of different organisations, Avnet Embedded is ideally positioned to help with your requirements, whatever they are. Working with original equipment manufacturers (OEMs), product designers and software developers our team has the experience and capabilities to deliver embedded solutions at any scale, globally.

Avnet Embedded's experience in display, compute and software means the development and build embedded products and networks can be supported and fulfilled, whatever your needs. Our experienced teams and partners can fill in the blanks in your skillset and supply chain and get your projects deployed faster, better and stronger.

We make it easy from the very beginning. Our design expertise will help you find the perfect technology for your application, and we'll work with you to plan all elements of manufacturing, support and product lifecycle planning. All our offerings are available with industry standard compliance certification, coupled with board support packages, software services and edge to cloud IOT connectivity options.

Our partnership with other Avnet businesses means we can also provide comprehensive hardware support as well as interconnect, passive and electro-mechanical components, bringing the whole solution together. This helps to improve your user experience and provide limitless design possibilities. Importantly, we will cut your time-to-market and reduce your risk by leveraging proven designs.

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Want to Find Out How to Ensure Your Embedded Project is Windows 11 Ready?

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Whether you're looking for a complete solution, elements of your build or just help bringing your design innovation to life, Avnet Embedded can fill in the blanks in your skillset and supply chain and get your embedded projects deployed faster, better and stronger.

You can see more information about our software offering here:

Let's talk!

Contact our team on avnetembedded@avnet.com to find out more and discuss how we can help make your embedded ideas a reality.