

INSIDE: ESSENTIAL WINDOWS 11 TIPS & TRICKS

TECH ADVISOR

MAY 2024

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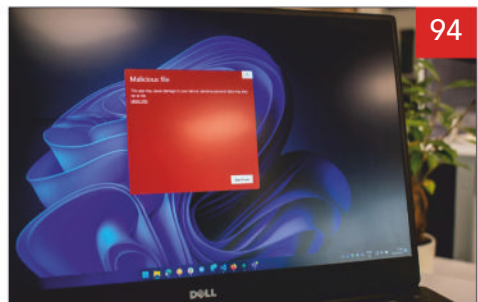
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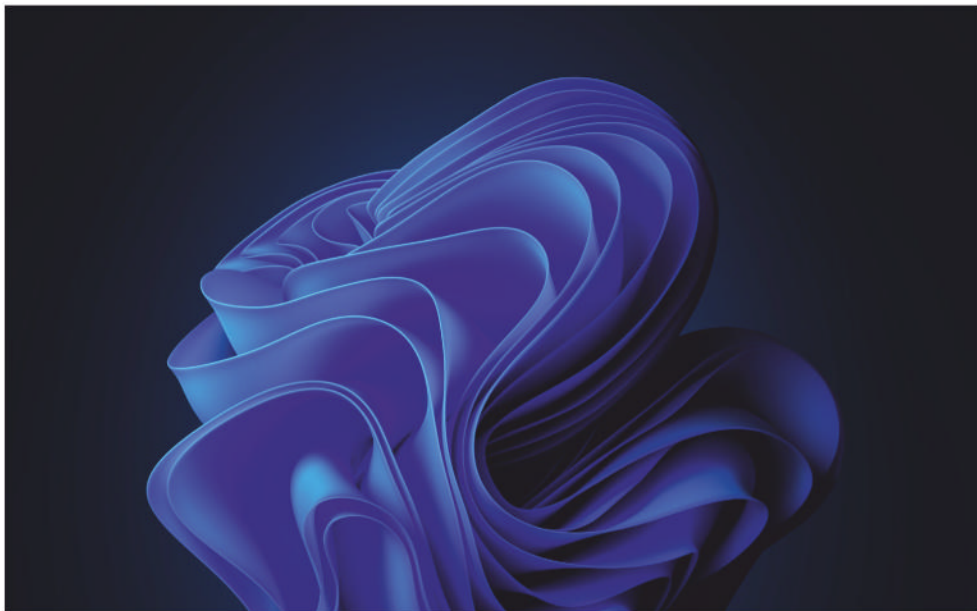
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Microsoft confirms broken Windows 11 update, offers workaround

Windows 11 update KB5034765 keeps causing new problems on computers. BRAD CHACOS & HANS-CHRISTIAN DIRSCHERL report

Update KB5034765 (fave.co/4c6lyV7), an important security update pushed as part of this month's Patch Tuesday barrage, is turning into a nightmare for many Windows 11 users. It's wreaking havoc

on some Windows 11 machines that were previously working perfectly.

Many users who install this update on computers with Windows 11 22H2 or Windows 23H2 (the most current major versions of Windows 11) are horrified

to see that the update or installation process hangs at 96 percent. The installation is then cancelled with the error code 0x800F0922. Microsoft has now confirmed this problem.

The failed installation is part of an already long chain of problems caused by the Windows update KB5034765 since its release on 13 February. For example, the taskbar sometimes disappears or File Explorer crashes after installing KB5034765. Some Windows 11 computers struggle with performance problems after installation.

But while Microsoft remains silent on all the other problems, the Redmond-based company has at least confirmed the installation failure and the error message 0x800F0922 here (fave.co/3TwNMRn) for Windows 11 version 23H2 and Windows 11 version 22H2:

“Windows 11 devices attempting to install the February 2024 security update, released February 13, 2024 (KB5034765) might face installation failures and the system might stop responding at 96%.

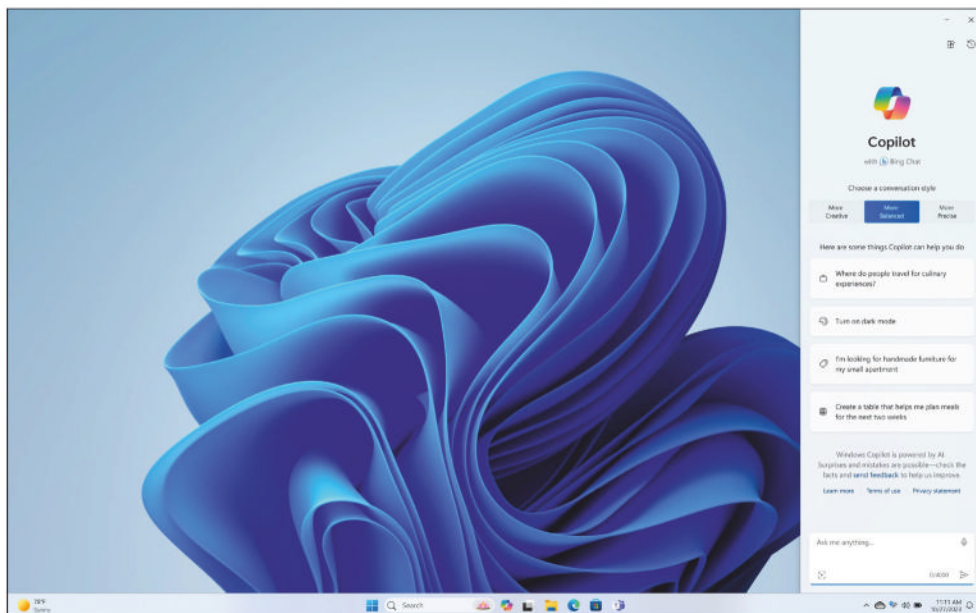
Resulting from this error, the following message might be displayed: “Something didn’t go as planned. No need to worry – undoing changes. Please keep your computer on”. This issue might be reflected in the

Windows Event Viewer with error code ‘0x800F0922’.”

Microsoft is working on a solution to the problem and intends to provide an update. Until it is released (Microsoft is not giving a date), the company advises the following temporary solution:

“This issue can be prevented by deleting the hidden folder C:\\$WinREAgent. A restart might be required. After following these steps, installing the February 2024 security update should succeed.”

Important: Before you’ll be able to see the hidden folder, you must first set File Explorer to display hidden elements. You’ll find it in File Explorer’s menu under ‘View > Show > Hidden elements’.



Microsoft's Copilot AI can now analyse your personal files

Copilot allows you to upload your own documents to the cloud. It works at lightning speed, but seems to forget quickly. **MARK HACHMAN** reports

Microsoft appears to have pushed the ability to upload documents, screenshots, and images to Windows 11's Copilot AI assistant, allowing you to ask it to make sense of documents stored on your PC.

Being able to 'query' a document is a subtly powerful capability that you may have never taken advantage of. And it's way, way faster than running it on your own PC. Unfortunately, this new capability may suffer from the same

problem that other LLMs might struggle with: persistence.

'Querying' a document means asking Copilot questions about it. "What's it mean?" "Sum it up for me in 30 words." "What next steps should I take?"

Ideally, Copilot should be able to take an involved, complex document like a contract and allow the average user (you and I) to make sense of it all. You can already do this with Edge and a web page; what this capability does is allow you to take a private file that you already have on your PC and make it queryable in just a few seconds.

Right now, I'm seeing this capability on both Copilot for Microsoft Edge as well as Microsoft's Copilot site (fave.co/3TyvkYE). Microsoft had said previously that it will launch Copilot for OneDrive soon, which will automatically analyse every file you've stored in the Microsoft cloud.

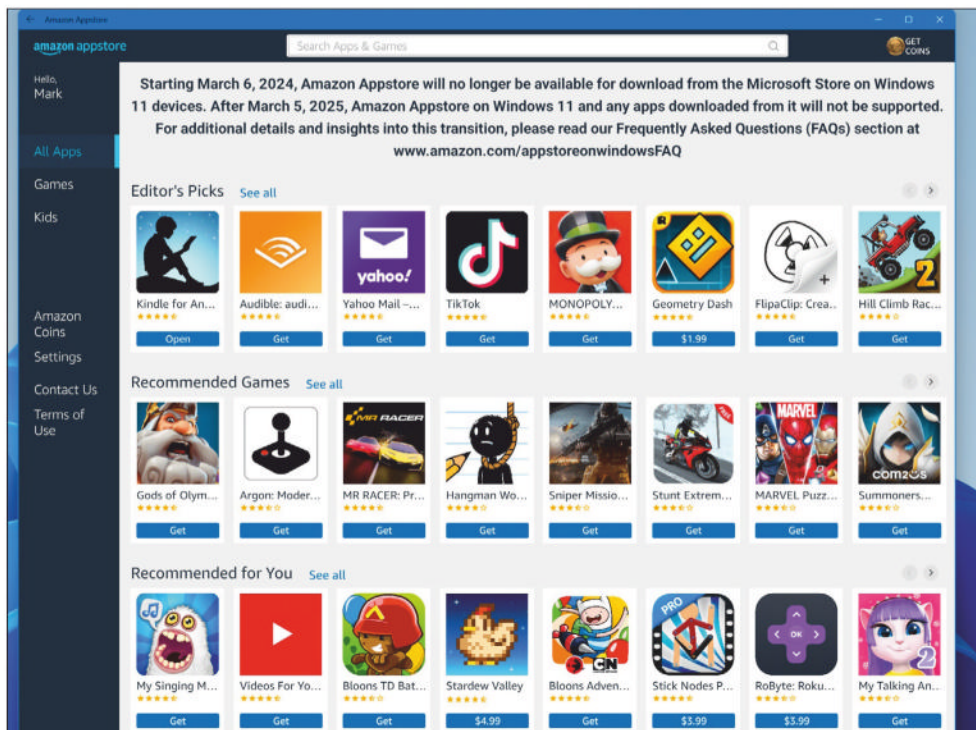
On Edge, Copilot now includes three icons below the query box: a 'camera' for image uploads, a 'scissors' for screenshots, and a 'paper clip' for uploading files. Click on the paper clip icon and select the file to upload.

Once you do so, Copilot will analyse the document in a few seconds. That's remarkably faster than the time it took to train a local LLM/AI chatbot on a local file, which took well over an hour to do

so on a fast gaming notebook. (Weirdly, Copilot for Edge performed the task; the Copilot site ran into a 'technical error' and failed.)

The problem is that Copilot doesn't seem to want to stick with it. Most of the documents residing on my PC are old press releases and presentations, and Copilot did a fine job of summarizing a long presentation into a short summary. It did the same for an old press release, as well. But when I tried to follow up, Copilot would sometimes forget what I was talking about, especially if I didn't specifically mention the document. Sometimes it would try to go the web and search for the answer instead.

There's a trade-off, of course. Analysing a private file privately, on your own PC, means that you don't have to upload a copy of your aunt's will, say, to the Microsoft cloud. But it's so much faster, too. This feature has potential, even if it comes across as a bit half-baked right now.



Microsoft is killing Android apps on Windows 11

Android apps will be gone from Windows in a year, but Microsoft already appears to be cutting off access. **MARK HACHMAN** reports

Microsoft is unexpectedly killing off its support for Android apps within Windows 11, although you'll have a year to play games on your Windows tablet until support officially

expires. But if you haven't already installed support for Android apps, you're out of luck.

The tech giant isn't saying exactly why it's ending support for the

Windows Subsystem for Android, though notice was given as part of an official Microsoft developer document (fave.co/49OHmD0). That means that the existing Android app store on Windows, published by Amazon, will cease working.

“Microsoft is ending support for the Windows Subsystem for Android (WSA),” Microsoft wrote. “As a result, the Amazon Appstore on Windows and all applications and games dependent on WSA will no longer be supported beginning March 5, 2025. Until then, technical support will remain available to customers.”

Unfortunately, it also sounds like if you didn’t act fast, your ability to play Golf Clash on a Surface Pro tablet is gone forever. “Customers that have installed the Amazon Appstore or Android apps prior to March 5, 2024, will continue to have access to those apps through the deprecation date of March 5, 2025,” Microsoft added. (Emphasis ours.)

Amazon also posted a FAQ providing a few more details (fave.co/3PePRz1). “Apps installed from the Amazon Appstore on your Windows 11 devices will continue to work until March 5, 2025,” the company said. “While we expect no immediate impact on your ability to access the

applications between March 2024 and March 2025, over time, some apps may not function properly.”

Why did Microsoft kill off Android apps on Windows? If I had to make a guess, it was because they stunk. The real killer was the lack of formal access to the Google Play Store, which meant that users had to download apps from Amazon’s app store, which sort of feels like a knock-off. And the Amazon store is still full of what appear to be junky, play-to-win games and apps. Finally, while there still are Windows tablets from Microsoft and Lenovo, there are basically zero Windows tablets catering to consumers. All that probably didn’t help Microsoft’s usage metrics.

I was, however, able to download the Kindle for Android app on to a Windows 11 PC just a few minutes ago. So if you want to try out Android on Windows, act fast.



Windows 11 hot patches could update your PC without rebooting

Frequent restarts after installing updates is a huge annoyance. Thankfully, this is set to change. HANS-CHRISTIAN DIRSCHERL reports

One of the constant annoyances of Windows 11 are the reboots after installing updates.

Sometimes a Windows PC even has to reboot several times in a row until it finally completes all the updates. But this should soon be a thing of

the past, at least for security updates categorized as 'critical'.

In the Windows 11 Insider Preview Build 26058 for Windows Insider Canary/Dev testers, Microsoft is trialling 'hot patching' (fave.co/4ce6WTC), or the installation of Windows 11 updates

while the system is running and without restarting the computer. Microsoft has plenty of experience with hot patching, as the Redmond-based company already uses this patching process for Windows servers and Xbox.

Microsoft is explicitly testing new features with the aforementioned build 26058, which are planned for a '24H2' update this autumn – at least for traditional x86 computers. ARM-based computers would not receive hot patching until 2025.

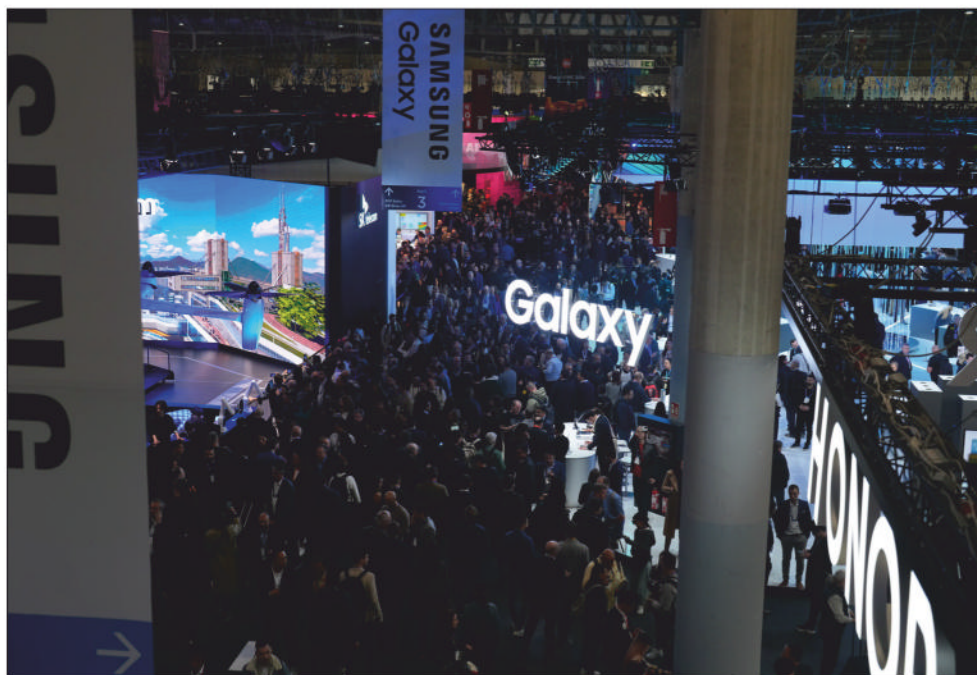
Zac Bowden, a well-known Windows expert, assumes that Microsoft wants to use hot patching for the monthly security updates, but not for adding new features. That's understandable; a repair patch that closes a security hole is certainly easier to incorporate into a running operating system than a completely new feature or a new tool. Bowden claims to have received his information from unspecified 'sources'.

But hot patching does not mean that you will never have to restart your Windows computer again. Bowden emphasizes that hot patching is based on a basic update that requires a reboot every few months. This would mean that a system restart for Windows 11 would only be required in January, April, July and October in order to install the security updates. In the other months,

however, hot patching would ensure secure computers without a reboot. Unscheduled updates are of course still possible at any time.

Bowden cannot answer one important question with the information from his sources, however: Will all Windows 11 computers really receive hot patching, or only those with Windows 11 Enterprise or Education or Windows 365?

The official Microsoft support document for Windows 11 Insider Preview Build 26058 can be found at this link (fave.co/3TbHaXn). However, there is no mention of hot patching.



Credit: © 2024 GSMA / MWC

Best of MWC 2024

Here's what caught our eye at Mobile World Congress. ANYRON COPEMAN, HANNAH COWTON & CHRIS MARTIN report

Mobile World Congress (MWC) returned last month and hosted some of the world's biggest tech brands. As ever, our team of intrepid editors hit the show floor to find the best gadgets.

Although the trade show, held annually in Barcelona, is primarily focused on smartphones, there were

plenty of other interesting devices to be found. We've searched high and low to create something of a wish list of gadgets you'll want to own this year.

1. XIAOMI 14 SERIES

Two of the best phones to launch at MWC this year were the Xiaomi 14 (£849 from fave.co/49IJCW0) and its

bigger brother, the Xiaomi 14 Ultra (£1,299 from fave.co/4a46HZj).

Both phones are highly specified starting with Snapdragon 8 Gen 3 processors and 12- or 16GB of RAM respectively. They also have CrystalRes AMOLED screens capable of a 3,000 nits peak brightness.

Perhaps most interesting of all is the cameras co-engineered with Leica, continuing the company's collaboration with the German optics specialist. The regular 14 has a trio of 50Mp cameras at the rear while the Ultra has a fourth camera in a floating periscope and its main camera has a large 1-inch sensor.

Both come with speedy 90 watts wired charging with a brick included in the box and have 50- and 80-watt wireless charging respectively.



other for efficiency, giving the Watch 2 an impressive 100-hour battery life. This is more durable than other Wear OS rivals such as Google's Pixel Watch 2 and Samsung's Galaxy Watch 6.

The build is equally impressive, with the strap options matching the

2. ONEPLUS WATCH 2

OnePlus is getting back in the smartwatch game with the Watch 2 (£299 from fave.co/3TuoFyR), which now runs on Google's WearOS software. This is a welcome change from the buggy UI seen in the first entry in this series.

One of the standout features of this wearable is its dual chipset. One is enabled for performance, and the



colourways of the OnePlus 12 flagship smartphone. The stainless-steel body is on the chunky and heavy side, but with a MIL-STD-810H standard certification, it's built to withstand tough environments. Plus, the 1.43-inch display is big, bright, and clear.

3. HONOR MAGIC6 PRO

Honor's Magic6 series debuted in China in January, but it was introduced to a global audience at MWC.

Only the high-end 6 Pro (£1,099 from fave.co/3wO3ajx) is coming to Europe, with no room for the regular model. The much cheaper Magic6 Lite is already available (£299 from fave.co/3wMMGZ3).

In many ways, the Magic6 Pro is Honor's all-out flagship. Its Snapdragon 8 Gen 3 chipset drives stellar

performance, while battery life has been superb during initial testing. Alongside fast charging (80 watts wired, 66 watts wireless) and a gorgeous 6.8-inch 120Hz OLED screen, it's a high-end phone in pretty much every sense of the word.

That extends to the cameras, which provide genuinely excellent results across all four main lenses: 50Mp (f/1.4-f/2.0 dynamic aperture) main camera, 180Mp telephoto (2.5x optical zoom), 50Mp ultrawide (122-degree field of view) and 50Mp selfie.

A separate 3D Time of Flight (ToF) sensor on the front means face unlock can be just as secure as the in-display fingerprint sensor. It also enables excellent eye tracking, which can detect when you're looking at a notification and open the associated app without the need for a tap.



4. HONOR PAD 9

Typically, cheap Android tablets come with several big compromises. That's not the case with the Honor Pad 9 (£349 from fave.co/3luaJOY), which offers a compelling all-round experience.

This 12.1-inch slate's aluminium and glass design feels very premium, while the 120Hz 2.5K screen doesn't feel like a compromise at all – even if it is an



clear how long Honor will support the device with software updates. And the combination of disappointing battery life and relatively slow charging can be frustrating at times. But considering how affordable the Pad 9 is, it's still an impressive device that's worth considering.

IPS LCD panel, rather than OLED.

Qualcomm's Snapdragon 6 Gen 1 and 8GB of RAM deliver surprisingly strong performance, even while gaming, while strong quad stereo speakers offer premium, room-filling sound. Even Honor's polarising MagicOS skin (over Android 13 here) works pretty well on the larger display. However, it's not

5. XIAOMI WATCH S3

It might not have WearOS like the Xiaomi Watch 2 but there appear to be some benefits to the Watch S3 (£129 from fave.co/3luN0mu) coming with HyperOS instead.

Top of that list is a touted 15-day battery life along with 2 days of usage from a quick 15-minute charge.



HyperOS also lets you do various things, like reject calls, with one-handed gestures – or ‘flips of the wrist’ – so there’s no need to touch the watch if your other hand is unavailable.

The S3 has a 1.43-inch AMOLED display, a 12-channel heart rate monitoring module for more accurate tracking, and can even track skiing and snowboarding.

On the design front, it has an interesting trick up its sleeve with interchangeable bezels that quickly clip on and off and also come with accompanying watch faces.

6. XIAOMI PAD 6S PRO 12.4

Getting past the tongue-twister of the name, the Pad 6S Pro 12.4 looks like it will be one of the best tablets of the year. Okay, it doesn’t come bundled with the Touchpad Keyboard or Focus Pen (stylus) but those optional extras are there if you want them.

Among other specs that we’ll come to, it has insane 120-watt HyperCharge wired charging meaning you can get the 10,000mAh battery from dead to 100 percent in just 35 minutes. As far as we’re aware, this is the fastest-charging



tablet in the world.

And the impressive specs don’t stop there as it’s got a 12.4-inch 144Hz 3K display with a 3:2 aspect ratio and a Qualcomm Snapdragon 8 Gen 2 chipset. Xiaomi’s HyperOS has various features including Cross-device collaboration and an AI Art feature that can turn your rubbish scribbles into proper artwork at the touch of a button.

The Xiaomi Pad 6S Pro 12.4 will be available in two models with either 8- or 12GB of RAM and 256GB storage for £599 or £699 respectively.

7. ANKER MAGGO FOLDABLE 3-IN-1 QI2 WIRELESS CHARGING STATION

Qi wireless charging has been around since 2008, so it’s something of a slow technology when it comes to upgrades. 2024, however, is the year of Qi2 as

proven at this year's MWC. Qi2 offers magnetic wireless charging at twice the speed of Qi, with a new maximum of 15 watts. That's the same as Apple's own MagSafe wireless charging standard but without the extra certification expense.

Anker is the first to market with a range of Qi2 wireless chargers, and the MagGo Wireless Charging Station (£99 from fave.co/435RkNL) doesn't just massively increase charging speed as this charger/stand combo is the smallest and most stable portable 3-in-1 we've seen.

It's about the length and width of a credit card and an inch deep, weighing 195g. Not only does it charge a Qi2-compatible phone (most notably the iPhone 13/14/15) at 15 watts, but it's also officially certified to fast-charge an Apple Watch and features a pad that's perfect for charging your AirPods or other wireless earbuds case.





Huawei MateBook D 16

Price: £1,199 from fave.co/3IB5bSE



Huawei's ongoing US trade ban has badly affected its Android smartphones and tablets in the UK and Europe. However, an agreement with Microsoft means there are no such problems for its laptops, which run on full Windows 11.

What's more, MateBook devices are renowned for their excellent value for money, especially when compared

to the likes of Dell's XPS range and Apple's MacBook Pros.

So, if you're looking for a 16-inch laptop and don't need top-tier performance, why wouldn't you go for the 2024 edition of the MateBook D 16?

It starts at just £699 for the entry-level model (we reviewed the £1,199 option), but there are a few reasons why it might not be right for you.

DESIGN

If you've used any recent Huawei laptop, the design of the MateBook D 16 will be familiar to you. The aluminium chassis is functional if a little boring, especially in the Space Grey finish which is your only colour option. However, I can't deny that it's very well built, and feels durable enough to withstand years of use. A more eye-catching design would've been nice, but the minimalist look makes it suitable for pretty much any scenario.

Despite the choice of premium materials, the Huawei MateBook D 16 weighs just 1.68kg. That's relatively light for a 16-inch laptop and means it won't weigh down your bag too much when travelling.

At 17mm when closed, it's by no means the thinnest laptop out there but that helps it to avoid feeling flimsy without adding unnecessary bulk. There's also room for a decent range of ports, though Huawei could've done more with the space available.

My biggest complaint is that there's only one



The MateBook is very well built, and feels durable enough to withstand years of use.

USB-C port. It means that while you're charging, you can't connect many modern accessories without a separate hub. The port also doesn't support the latest Thunderbolt 4 or USB4 standards for fast data transfer.

It's better news elsewhere, with two USB-A ports (albeit the older 2.0 standard), full-size HDMI and a 3.5mm audio jack. I've often complained about the lack of USB-A on modern laptops,



Huawei provides two USB-A ports (albeit the older 2.0 standard), full-size HDMI and 3.5mm audio jack.

but just wish it hadn't come at the cost of USB-C functionality here.

DISPLAY

As the name suggests, the MateBook D 16 is equipped with a 16-inch display – specifically, a 1,920x1,200 IPS LCD. The screen won't blow you away, but it consistently impresses across almost all everyday tasks.

During my two weeks using it as my main laptop, there were no obvious weaknesses. Everything from web browsing and Word documents to image editing and YouTube videos looked great. I never felt like I was missing out by not having an OLED.

That might be different if you want to use a laptop for serious photo editing or watching movies and TV shows, though. Its 98 percent coverage of the sRGB colour gamut is solid, but 76 percent of AdobeRGB and P3 shows there's room for improvement with regards to colour accuracy.

However, I found it to be more than acceptable for casual use, especially with good detail and viewing angles. The lack of a high refresh rate is a shame, but the standard 60Hz is



The screen won't blow you away, but it consistently impresses across almost all everyday tasks.

far less noticeable here than on a smartphone or tablet.

The display is not touch sensitive, but I didn't miss having this. It's not a crucial feature, but one that I've enjoyed using on some previous Huawei laptops.

Elsewhere, I recorded a maximum display brightness of 315 nits. That's totally fine for almost all indoor environments, but you can pretty much forget about good visibility outdoors.

In terms of audio, the MateBook D 16 boasts dual stereo speakers. Despite their position on the underside of the device, audio quality is impressive. There's a warmth and depth to the sound that isn't always available on laptops, plus a nice hit of bass. At maximum volume, it can deliver near

room-filling sound without any audible distortion.

KEYBOARD

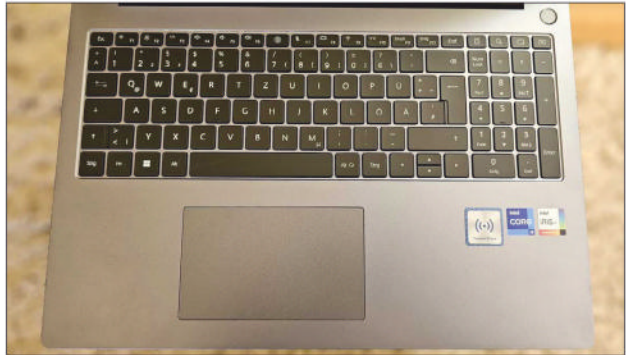
The size of the MateBook D 16 means there's plenty of room for both a full-size keyboard and separate number pad. I mostly ignore the latter, but it might be important to you as, for example, an accountant.

Either way, it doesn't take long to adjust to the placement of the keys. Within a few minutes, I was back typing close to my usual speed – despite the model I tested using the German keyboard layout.

Each key offers 1.5mm of travel, making it satisfyingly clicky without getting too loud. And there are two different levels of backlighting, so it's easy to see what you're typing from a dark room.

Huawei has added a few extra controls to the row of function keys, including shortcuts to the calendar and PC Manager app, plus toggles for Wi-Fi, the webcam and more.

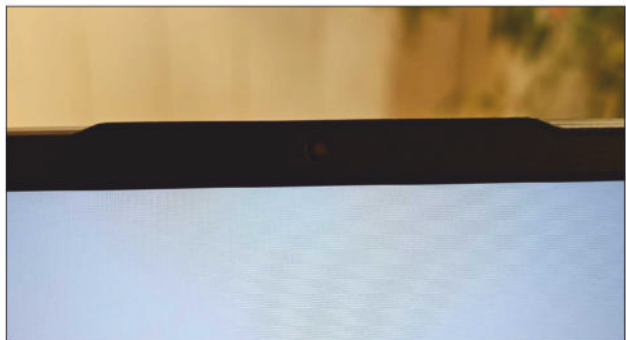
Talking of the webcam, the MateBook D 16 is equipped with a 720p



There's plenty of room for both a full-size keyboard and separate number pad.

lens. It's naturally positioned above the display, rather than built into the keyboard like some earlier models. It times out before long which is presumably to save battery but annoying, nonetheless.

However, there's no physical privacy shutter, and image quality isn't great. I often looked dull and grainy on video calls, and it struggles to adjust to bright



The MateBook D 16 is equipped with a 720p lens.



The fingerprint sensor is one of the best I've tried on any laptop.

or dim environments. If you need a high-quality webcam, you'll have to get an external one.

With no IR sensor for Windows Hello face unlock, the fingerprint sensor built into the power button is your only alternative to manually entering a pin or password. Luckily, the fingerprint sensor is one of the best I've tried on any laptop, consistently unlocking the device with a quick tap.

PERFORMANCE

Performance on the MateBook D 16 will vary hugely depending on the model you get. The version I tested is powered by the Core i9-13900H, one of the most capable processors in Intel's 13th-gen range. Alongside a bumper 16GB of RAM, performance is predictably excellent.

My daily workflow includes dozens of Chrome tabs, Word documents, Slack messaging, plenty of emails, plus regular video calls and some photo editing. Even with all these open at the same time, there was no slowdown whatsoever. I couldn't even hear

the fans kicking in.

The large display makes it well-suited to multitasking, and I'm confident the high-end model can handle pretty much all office-related tasks without breaking a sweat.

Sadly, I can't be so sure about the entry-level version. Not only is the i5-12450H a much less powerful chipset, it's from the older 12th-gen range which was released back in early 2022.

I can't comment on its performance, though other laptops with similar specs have been good everyday devices but if you're planning to use the MateBook D 16 for several years, I'd have concerns over how it might hold up over time, especially with only 8GB of RAM here.

On both models, you'll get Iris Xe integrated graphics rather than a discrete GPU. It means the device

is unsuitable for the likes of professional graphic design and demanding games, but that's probably not what you're buying it for.

Storage also varies between models, though I'm sure most people will be happy with either a 512GB or 1TB SSD. Both are generous for their respective price points.

Wi-Fi 6 and Bluetooth 5.1 aren't the latest standards, but this isn't an issue unless you have a very modern router or audio equipment.

Here's how the laptop compares to other big-screened laptops, though most of these are more expensive:

Geekbench 5 (multi-core)

Huawei MateBook D 16 (2024): 12,268

Huawei MateBook D 16 (2022): 10,372

Huawei MateBook 16s (2023): 11,639

LG Gram 16 (2022): 6,439

Samsung Galaxy Book 3 Pro (2023): 9,180

Apple MacBook Air (15-inch, 2023): 8,929

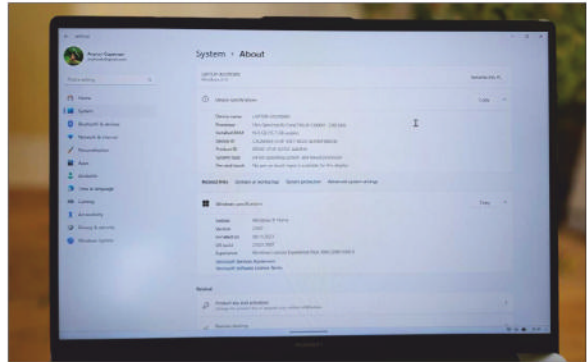
PCMark 10

Huawei MateBook D 16 (2024): 6,422

Huawei MateBook D 16 (2022): 5,768

Huawei MateBook 16s (2023): 6,404

LG Gram 16 (2022): 4,974



I'm confident the high-end model can handle pretty much all office-related tasks without breaking a sweat.

Samsung Galaxy Book 3 Pro (2023):
5,453

Battery life

Huawei MateBook D 16 (2024): 14 hours, 15 minutes

Huawei MateBook D 16 (2022): 8 hours, 49 minutes

Huawei MateBook 16s (2023): 13 hours, 46 minutes

LG Gram 16 (2022): 16 hours, 42 minutes

Samsung Galaxy Book 3 Pro (2023): 18 hours

Apple MacBook Air (15-inch, 2023): 28 hours, 9 minutes

Charge in 30 minutes

Huawei MateBook D 16 (2024): 40%

Huawei MateBook D 16 (2022): 44%

Huawei MateBook 16s (2023): 33%

LG Gram 16 (2022): 33%
 Samsung Galaxy Book 3 Pro (2023):
 33%
 Apple MacBook Air (15-inch, 2023):
 23%

BATTERY LIFE

Battery capacity is another thing that varies depending on the model you choose. The cheapest version gets a 56Wh cell, while the pricier model benefits from a beefier 70Wh.

However, even on the latter, battery life is solid rather than spectacular. I made a conscious effort to unplug it at 100 percent shortly after starting work at 9.30am, and it was down to single figures just after 5pm. This was with brightness quite high, but only Wi-Fi usage and regular daily office tasks.

Therefore, the MateBook D 16 falls just short of what I'd describe as all-day battery life. You'll want to be near a power source as the end of the day approaches.

Of course, you can get much longer from a charge if you're just watching a movie or TV show. In our 720p video loop battery test, the MateBook D 16 lasted a respectable 14 hours and 15 minutes.

When you do run out of battery, the 65-watt charger in the box is relatively quick by laptop standards. It went from 0- to 21 percent in 15 minutes, then 40 percent after half an hour. A full charge took just over 90 minutes which isn't bad at all.

SOFTWARE

As I mentioned at the start of this review, the MateBook D 16 runs a full version of Windows 11 Home.

There are very few changes to the core Microsoft software experience. In fact, I could only find three: Huawei PC Manager (for connecting to Huawei devices), Huawei Mobile Cloud (cloud storage) and Huawei Control Panel (for quick access to popular tools).

These will be genuinely useful for some people, but I was able to ignore



The MateBook D 16 falls just short of what I'd describe as all-day battery life.

them without any hassle from pop-ups or notifications.

These days, Windows 11 is slick and well optimized for a traditional laptop like this. It offers tons of features, extensive customization and the ability to download almost any app via the web. It tends to struggle more with touch input, but that's not a problem here. Even if a new major version of Windows launches soon, the MateBook D 16 is very likely to be compatible.

VERDICT

It's difficult to sum up the MateBook D 16, with its dramatically different specs between models, so it depends on which one you plump for.

On one hand, it offers a compelling experience for just £699, with an enjoyable display, impressive keyboard and solid build quality. The fingerprint sensor is very good, too.

All those things are also true of the £1,199 model, but it gets the benefit of a much more powerful processor and larger battery.

Considering both models suffer from a poor webcam, only one USB-C port and no discrete graphics, neither is an easy recommendation.

But when you consider the lack of capable sub-£700 laptops out there, the MateBook D 16 is still one of the

best options out there. The high-end version is a tough sell, though.

Anyron Copeman

SPECIFICATIONS

- 16-inch (1,920x1,200) IPS display
- Windows 11 Home
- Intel Core i9-13900H processor
- Intel Iris XE Graphics
- 8GB/16GB RAM
- 512GB/1TB SSD
- 2x USB-A 3.2
- 1x USB-C 3.2
- 1x HDMI
- 1x 3.5mm audio jack
- Dual stereo speakers
- 720p HD webcam
- Wi-Fi 802.11a/b/g/n/ac/ax
- Bluetooth 5.1
- Full-size backlit keyboard
- Fingerprint reader
- 56Wh/70Wh battery
- 248.7x356.7x17mm
- 1.68kg



Lenovo Tab M11

Price: £199 from fave.co/48R78Fh



Lenovo is one of the few manufacturers that consistently spits out new Android tablets. Even so, they struggle to match the features and success of Samsung and Apple. One of the latest is the Tab M11, a mid-budget tablet priced from £199. It was unveiled at CES in January, and is now available in Lenovo's web shop and a small number of stores. The ones

available in stores are not exactly the same product as the one I got to test. Mine includes a charger in the package. The ones I can find in stores do not. For exactly the right package, you have to go to Lenovo and order it.

DESIGN

Another big difference between the tablets available in the big stores and

mine that came directly from Lenovo is that mine is not an LTE version that you can put a SIM card in. I have the Wi-Fi version of the tablet and have to do without mobile data.

Lenovo, on the other hand, offers more options, with and without a charger, and with and without a snap-on folio case that can be folded up to become a table stand. I didn't get that.

The tablet is the same in all four choices, an 11-inch unit with semi-thin screen edges, just enough to grip without reaching the touchscreen, and not so wide as to make the tablet unwieldy. It's a well-built, unibody-style chassis with matte metal surfaces everywhere except on the screen portion, and with three distinct buttons in one corner, for volume and power.

It is just over 7mm thick and weighs 465g. With reasonably rounded edges, it's comfortable to hold. However, after a couple of hours of hand-holding I started to feel that the folio case with support might not have been so bad after all.

As I said, this is not an expensive and exclusive tablet. This is especially noticeable in two things, performance and screen. Neither of them are bad,



The tablet is not at all difficult to grip, and despite thin screen edges, I involuntarily access the touchscreen surprisingly rarely.

but clearly limited and scaled down compared to the best on the market.

PERFORMANCE

The system circuit is a Mediatek Helio G88, a circuit that was released in 2021 and wasn't very fast then either. It has two faster and six slower processor cores and the less than dazzling ARM graphics circuit Mali-G52. That, along with just 4GB of RAM and 128GB of relatively slow storage make this a tablet primarily for simple tasks.

Web browsing on it is generally good. The tablet comes with Opera pre-installed as the default browser and it

is both easy to use and well optimized. However, it is noticeable that the RAM is scarce, if you open too many tabs it can start to slow down. Surf with a sense of humour and you should be able to avoid problems.

Other apps can be a bigger challenge. WPS Office that comes pre-installed is fine to run as long as you stick to simple text documents and small spreadsheets. Too many picture elements and multiple pages and there can be some noticeable slowness in handling.

But hey, even if it's not always fast, most things can be done. Except for playing games that require even the smallest amount of 3D graphics. This is beyond the capabilities of the weak graphics circuit.



A decent tablet to stream films on, performance-wise. However, the screen leaves a lot to be desired.

Playing even the simplest games in under 20fps, and more demanding ones in under 5fps, is not exactly fun. If you're just doing some simple pastimes with 2D graphics, it'll do, but there are better options even if you're on a tight budget.

It's much better for reading text, with a 90Hz frame rate for smooth scrolling on web pages and in long documents

DISPLAY

The screen is an IPS panel with a 16:10 aspect ratio and 1,920x1,200 pixels. It has exactly the qualities I would expect from a basic IPS in a budget build. It looks sharp from the front, but lacks the perfect blackness in dark areas, and has obvious white point and colour balance issues if I look at it from the side.

The brightness level of up to 400 nits is acceptable, allowing you to use the tablet outdoors as long as there's no bright sunshine, and you do your best to avoid reflecting bright surfaces in the image. For streaming films, the screen is okay, but no more. It doesn't support HDR, and has a colour gamut well below sRGB standards, so there's never any real intensity in the picture.



Speakers to the left and right, but so close together that it's not noticeable. It's better with the tablet in landscape mode than portrait.

It's much better for reading text, with a 90Hz frame rate for smooth scrolling on web pages and in long documents. It has a good basic blue light filter that eliminates what's not visible, and then an effective reading mode that produces a sepia-toned screen and no blue light at all.

Four small speakers, two on each short side, provide clean and detailed sound with good stereo spread as long as the tablet is horizontal. However, they are too close together to provide any stereo effect if used in portrait mode.

The top-end is neither very powerful nor very rich. Bass tones are heard, but only barely. If I push the volume up to maximum, it corresponds to maybe 50 percent volume on some other slates. Not so strange when the output power of the four speakers is only 1 watt each.

LENOVO PEN & CAMERAS

The tablet comes with a comfortable stylus, Lenovo's own active battery-powered Lenovo Pen. To get it going, I need to unscrew the top, peel off a small protective film in front of the pre-installed AAA battery. Then it works, albeit not amazingly well.

There is no immediate response with pixels on the screen where I draw, but the update takes a few milliseconds. Occasionally, I get pauses in the pen input with either blank registration or a line where I drew a curve.

The pen is said to support both tilt and 4,096 levels of pressure sensitivity, but in the apps that Lenovo mentions and that are pre-installed, I have to settle for one level. When I download a better app, like the excellent Sketchbook, both pressure

sensitivity and pen tilt work well. The choppiness that occurs in pen handling may have to do with the tablet's overall moderate performance. I have experienced better in other more expensive Lenovo tablets with more power in the processor.

Even text input is annoying.

Lenovo says that it should be possible to type manually in all search boxes and similar fields, but without a larger dedicated typing field, it doesn't work and I have to delete more misinterpreted characters than the system gets right.

On both the front and back, the Tab M11 is equipped with 8Mp cameras, and they deliver about as good, or rather as half-assed, as you'd expect from a budget tablet. If you want something useful for running video meetings, sure, but you won't be a master film maker or photographer.

In Computer Mode, you get a Windows-like interface with floating



The pen is fully functional, so all you need is a good app, which I have, patience, which I don't have, and talent, which I don't have either.

and scalable windows, designed for keyboard and mouse control

SOFTWARE

The operating system is Android 13, with a customized interface that's not visually very different from stock Android, and you get two years of promised Android versions, as well as four years of security updates. Lenovo spices up the system with a small set of bonus apps and extra features.

In Computer Mode, you get a Windows-like interface with floating and scalable windows, designed for keyboard and mouse control.

If you don't want to do that, you can

multitask in split-screen mode instead, with an interface and handling that's a little smoother than Google's own. This allows you to bring up a maximum of three apps on the screen. Two on the split screen and a floating vertical window in front.

The Freestyle feature allows you to pair the tablet with a computer, and then easily share files between them, or use the tablet as an external display for the computer. You need an application on the computer and a shared login, and it all happens automatically.

I'm not entirely thrilled, which is mainly to do with the connection. Here I only get Wi-Fi 5, and also Wi-Fi 5 without very good reception. So I have to be in the right room for the image update to be acceptable.

A third feature called App Streaming allows you to launch certain apps that run on the tablet but appear in a window on the computer. "It works very poorly. I should be able to see and launch shareable apps in the Freestyle programme on my computer, but they don't show up there. I can launch them from the tablet, and stream them to the computer, but with even more lag than desktop sharing.

Other features of the system are the child-friendly Kids Space with safe and user-friendly profiles for kids, and the

media centre screen which is one swipe to the left of the home screen. There you can connect your streaming services like HBO and Disney Plus and get a common interface for them but not all major services are supported.

BATTERY LIFE

The battery is 7,040mAh, and with that you should be able to get up to 10 hours of video playback according to Lenovo. I can't quite manage that, but seven and a half hours is certainly not bad for a video stream at high brightness. For other mixed work, it lasts a little longer.

Unfortunately, battery charging is disappointingly slow. Even though I get a 20-watt USB PDA charger, the tablet only accepts 15 watts of power. After half an hour, I'm at 26 percent and it takes over three hours to fully charge the battery. Make sure you're never far from a wall socket.

VERDICT

For only £199 for the cheapest option, the Lenovo Tab M11 is a positive experience in many ways. It's genuinely well-built and feels more luxurious to hold than the price tag indicates, and it has a great set of solutions for both family and productivity. However, weak performance and some mediocre

hardware hold the Tab M11 back, and it fails to fulfil all of its own lofty ambitions. **Mattias Inghe**

SPECIFICATIONS

- 11-inch (1,920x1,200; 206ppi) IPS LCD, 90Hz display
- Android 13
- Mediatek MT6769H Helio G88 (12nm) processor
- Octa-core (2x 2GHz Cortex-A75, 6x 1.8GHz Cortex-A55) CPU
- Mali-G52 MC2 GPU
- 4GB/8GB RAM
- 64GB/128GB storage
- Rear-facing camera: 8Mp, f/2.0, (wide), AF
- Selfie camera: 8Mp, f/2.0, (wide)
- Stereo speakers
- 3.5mm jack
- Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct
- Bluetooth 5.1, A2DP, LE
- NFC
- GPS, GLONASS, BDS
- USB Type-C 2.0
- Non-removable 7,040mAh lithium-polymer battery
- 166.3x225.3x7.2mm
- 465g

INSIDE: SPATIAL COMPUTING EXPLAINED

Macworld

APRIL 2024

APPLE'S VISION OF THE FUTURE IS HERE

REVIEW: APPLE VISION PRO



PLUS: UPGRADE
YOUR MAC MINI
WITHOUT PAYING
APPLE'S PRICES



Nothing Phone (2a)

Price: £319 from fave.co/43aF7Yi



For a company that was only founded in 2020, Nothing has generated a huge amount of interest. The firm has made a few pairs of earbuds, but its smartphones get most of the attention. The original Phone (1) made a real splash, though the follow-up Phone (2) was a very small upgrade.

However, for Nothing's third smartphone, the company is doing

something a little different. The Phone (2a) is significantly more affordable than both previous handsets, though Nothing says it's technically a Phone (1) successor.

On paper, it's a noteworthy upgrade over the original that still manages to reduce the price. But does that make it the best phone you can buy for under £350? I used the Phone (2a) as my main smartphone for over a week to find out.

DESIGN

The Nothing Phone (2a) has a design that's sure to turn heads. Just like the Phone (1) and Phone (2), it has a semi-transparent back, hinting at the internals without showing them.

One notable difference compared to previous models is a plastic back rather than glass, making it feel less premium. This certainly isn't a phone that you'll mistake for a flagship.

However, it's relatively lightweight at 190g, with curved edges making it very comfortable to hold. I was even able to use it one-handed at times, which isn't something you can say for many modern phones.

Nothing's signature 'Glyph Interface' of LED lights is still here, but it's been scaled back on the Phone (2a). Rather than covering most of the back of the phone, there are just three lights arranged around the camera module.

If you loved the out-there design of Nothing's previous devices, this may be a disappointment. Personally, I prefer the slightly less brash look here.

The Glyphs themselves are just as advanced as on the Phone (2), meaning they can fade in/out or only partly light

up, with the latter used to show volume or timer progress. These subtleties aren't available on the Phone (1).

However, their main purpose is to let you know when you've received a call or other notification. Each caller or app can be set to display differently, so you know what's going on without having to look at the display. In theory, you should use your phone less.

Unfortunately, I found them to be just as distracting as my phone making a noise or vibrating. Even if I knew what app had sent the notification, I still felt compelled to check the content of it. And as someone who often gets legitimate calls from unrecognized numbers, I couldn't be sure they weren't important.

This system might work well for you, but only if you only want to answer



The semi-transparent design is sure to turn a few heads.



The camera bump blends seamlessly into the back of the phone.

calls from trusted contacts and have a handful of important apps you want to hear from immediately. Otherwise, I think a smartwatch is a better solution for reducing screen time.

However, there's plenty more to this phone than Glyphs. The camera bump in the middle of them blends seamlessly into the back of the phone, though its similarity to a pair of eyes can be off putting.

Nothing says the Phone (2a) aesthetic is inspired by a map of the New York City subway, and I can see the resemblance. Of course, the appearance is more muted on the black model I tested, though milk (cloudy white) and true white versions are also available.

Despite opting for plastic on the back, the Phone (2a) still picks up a lot of fingerprint smudges. It's also not particularly grippy, so I'd recommend applying a case.

That will improve durability, though it's something that's already a priority for Nothing. The company says the new unibody design

performs better in drop test results than the Phone (2), and I was never worried about damaging the body of the phone.

The front is certainly more fragile, especially if you put your phone face



Nothing has pre-applied a screen protector to help it avoid scratches.

down on a table to make use of the Glyphs. I'm glad Nothing has pre-applied a screen protector because it quickly picked up lots of scratches.

An IP54 water resistance rating matches both previous Nothing smartphones but means it's only protected against splashes of water and doesn't offer total dustproofing. It falls short of the IP68 on flagship phones but isn't uncommon at this price point.

One other notable design choice is the volume controls, which are on the left side and very naturally placed when using the phone. The power button on the opposite side even brings up power options when long pressed, rather than the increasingly common triggering of the Google Assistant.

DISPLAY

Display is one area where the Phone (2a) can compete with flagships. Its 6.7-inch AMOLED panel looks just as good as many high-end phones, even if the 2.4K (2,412x1,084) resolution is a slight step down.

Content is still very clear and crisp, to the extent I can't tell the difference compared to a 1440p or 4K panel. And opting for OLED means you get rich, vibrant colours and deep blacks, something which Nothing's version of



From the front, the Phone (2a) is one of the best-looking handsets you can buy.

Android takes full advantage of. This combination makes it very versatile. The Phone (2a)'s display is great for browsing the web or replying to emails, but also watching videos and scrolling social media.

In many of those scenarios, you'll notice the 120Hz refresh rate. Navigating the phone feels silky-smooth and responsive as a result, even in the default 'Dynamic' mode. This automatically adjusts the refresh rate between 30- to 120Hz depending on what you're doing, helping to prolong battery life. However, it's not an LTPO display, so can't go all the way down to 1Hz. If you prefer, you can manually set it to 60- or 120Hz.

My one complaint with the screen is visibility. I recorded a maximum brightness of just under 700 nits, but still struggled to see it outside on a bright day.

The display itself is totally flat, with only a slim symmetrical bezel surrounding it. From the front, the Phone (2a) is one of the best-looking handsets you can buy.

Within the screen is an optical fingerprint sensor. It's one of the better ones I've tried, quickly unlocking around 95% of the time. Face unlock is also available, but this is much more secure.

In terms of audio, the Phone (2a) has dual stereo speakers, with a downward-firing grille combining with the earpiece as is typical. It pumps out some impressively punchy sound and avoids distortion well at higher volumes.

A lack of bass means I still wouldn't recommend it for watching movies or serious music listening, but it's more



In terms of audio, the Phone (2a) has dual stereo speakers, with a downward-firing grille combining with the earpiece as is typical.

than acceptable for social media and the occasional YouTube video.

PERFORMANCE

The Phone (2a) is powered by the Dimensity 7200 Pro. This is a custom chipset that Nothing has co-engineered with MediaTek for 'the best performance with optimal power consumption'.

It's a surprise to see the company switch to MediaTek, given both the Phone (1) and Phone (2) use Qualcomm Snapdragon chipsets. Nothing says that the Dimensity 7200 Pro performed better in internal testing than the two most similar Snapdragon chips (7s Gen 2 and 782G).

It's hard not to be impressed with performance from the Phone (2a)

And from using it as my main smartphone for over a week, it's hard not to be impressed with performance from the Phone (2a). It punches well

above its weight, and can handle all typical phone usage with ease.

During testing, my typical days involved lots of web browsing, email and photos, plus the occasional text and YouTube video.

There was no sign of any hesitation or slowdown whatsoever, even when quickly switching between them. The Phone (2a) is clearly adept at multitasking.

The gaming experience isn't quite as flawless. You will notice some dropped frames here and there but it's still better than you'd expect from such an affordable phone. The likes of Call of Duty: Mobile, PUBG Mobile and Asphalt 9: Legends are all very playable, though you will notice the back of the phone getting warm after a few minutes.

All these observations apply to the model with 12GB of RAM, but I can't imagine there's a big drop-off on the entry-level 8GB version. Performance is undoubtedly a strength of the Nothing Phone (2a).

Geekbench 6 (multi-core)

Nothing Phone (2a): 2,602
Nothing Phone (2): 4,605
Nothing Phone (1): 2,830
Redmi Note 13 Pro: 2,872
Motorola Edge 40 Neo: 2,526
Samsung Galaxy A34 5G: 2,491
Redmi Note 12 Pro: 2,025



It's hard not to be impressed with the Phone (2a)'s performance.

GFX Manhattan 3.1

Nothing Phone (2a): 57fps
Nothing Phone (2): 60fps
Nothing Phone (1): 56fps
Redmi Note 13 Pro: 39fps
Motorola Edge 40 Neo: 44fps
Samsung Galaxy A34 5G: 40fps
Redmi Note 12 Pro: 37fps

Battery life

Nothing Phone (2a): 16 hours, 16 minutes
Nothing Phone (2): 14 hours, 17 minutes
Nothing Phone (1): 7 hours, 33 minutes
Redmi Note 13 Pro: 11 hours, 55 minutes
Motorola Edge 40 Neo: 7 hours, 39 minutes
Samsung Galaxy A34 5G: 10 hours, 59 minutes
Redmi Note 12 Pro: 11 hours, 35 mins

Charge in 30 minutes

Nothing Phone (2a): 65%

Nothing Phone (1): 67%

Redmi Note 13 Pro: 87%

Motorola Edge 40 Neo: 82%

Samsung Galaxy A34 5G: 31%

Redmi Note 12 Pro: 79%

Your only option for internal storage is 256GB, and even with around 17GB taken up with system files, this should be plenty for most people. Dual SIM cards are supported, but you can't expand via microSD. As you might expect from a 2024 phone, the Dimensity 7200 Pro supports 5G by default. It's joined in the connectivity

department by Wi-Fi 6, Bluetooth 5.3 and NFC for mobile payments, so there are no complaints here.

PHOTOGRAPHY

Compared to many mid-range phones, the Nothing Phone (2a)'s camera hardware might sound underwhelming.

There are just three lenses in total, with a pair of 50Mp rear sensors (main and ultrawide) joined by a 32Mp selfie lens. It means there's no room for a telephoto camera, macro lens or dedicated depth sensor.

The Phone (2a) has decent cameras, but they're certainly not one of the phone's main strengths

The Phone (2a) is surprisingly good in low light.





We'll start off our series of test shots taken with the 0.6x zoom...



...1x zoom...

...1.6x
zoom...



...2x
zoom...





...and 10x zoom.



In the next three photos, you can see that in good lighting conditions, shots from the main lens are decent.





The selfie camera is a pleasant surprise, delivering vibrant shots with plenty of detail.



Portrait mode does a good job of separating faces from backgrounds.

However, Nothing is clearly focusing on quality over quantity. And the good news is that this is a near-identical set-up to the more expensive Phone (2). Most of what we said about that phone still applies here.

In good lighting conditions, shots from the main lens are decent. Detail and dynamic range are strong, though Nothing's image processing makes photos much more vibrant and have great contrast than reality. A true to life camera this is not. Unfortunately, exposure is also a struggle at times. That was particularly apparent in images of the sky, which looked great in some images but totally wrong in others. That's particularly noticeable in bright sunlight, with the Phone (2a) more consistent in low-light environments.

The long-exposure night mode does a very good job of brightening darker images without sacrificing the main details. Noise is kept to a minimum, and it makes a clear difference compared to the regular mode.

The portrait mode is solid too, combining a well-exposed subject with subtle background blur. There are issues with edge detection at times, but the same can be said for most smartphone cameras. I'm pleased to report that there's no big drop-off in quality when switching to the ultrawide lens, which

increases the field of view to 114 degrees. Colours do tend to look a bit more washed-out, though.

When choosing between the two, I'd happily go for an ultrawide lens over a telephoto, but there's an obvious trade-off when it comes to zoom. There's no optical zoom at all on the Phone (2a), with the digital version going up to 10x. Anything beyond the 2x option in the camera app becomes quite grainy and lacking in detail.

The selfie camera is a pleasant surprise, delivering vibrant shots with plenty of detail. Even its portrait mode does a good job of separating faces from backgrounds, though it does crop in a lot more than on most smartphones.

On the video side, you can shoot in up to 4K at 30fps, but the default 1080p at 30fps will be fine for most people. Footage is decent, with OIS on the main lens making it relatively stable while moving around.

Overall, the Phone (2a) has decent cameras, but they're certainly not one of the phone's main strengths. You can get some really nice shots, but it's not consistently good, and there are some key weaknesses.

BATTERY LIFE

The Nothing Phone (2a) is equipped with a 5,000mAh battery, which is



The vast majority of people will be able to get a full day of usage on a single charge.

actually larger than both the Phone (1) and Phone (2). That translates to solid battery life. The vast majority of people will be able to get a full day of usage on a single charge.

I was testing this phone while out and about in Barcelona, and it held up well. On one day, I went out sightseeing at 11am with a full battery. After nine hours of near-constant navigation, lots of photos and regular web browsing, I got back with around 20 percent battery left.

Nothing claims you can get up to two days of battery life, and I can certainly see how that's possible with lighter usage. The PCMark battery test (which simulates varied usage at 200 nits of brightness) gave a score of 16 hours and 16 minutes which is up there

with the best battery life phones in this benchmark.

The vast majority of people will be able to get a full day of usage on a single charge

Sadly, charging is nowhere near as impressive. The Phone (2a) only supports speeds up to 45 watts and there's no charger included in the box.

Using a 65-watt charger I already had, it reached 65 percent after half an hour. A full charge took around 45 minutes. Not slow per se, especially when you compare to the likes of Samsung, but a long way behind the fastest charging phones around.

It's also worth noting that there's no wireless charging, even if that isn't a surprise at this price.

SOFTWARE

The Phone (2a) runs the Nothing OS 2.5 skin, which is based on Android 14 – the latest major version at the time of writing. However, the software experience is quite different to what you'll find on any other Android phone. Nothing says it wants to "reduce distractions and encourage intentional smartphone use", with its 'Glyph

Interface' at the forefront. There's an impressive amount of customization available for the LED lights on the back, including brightness controls, custom ringtones and patterns that 'dance along' to any music you're playing. Currently, using the Glyphs as a progress bar is only supported by the Clock app, plus Google Calendar, Uber and Zomato. However, Nothing has now released a Glyph Developer Kit to encourage more widespread adoption.

Elsewhere, a monochrome theme and icon pack avoids the bright colours that so often attract us to particular apps. New downloads often appear in their colour version but applying the Nothing Icon Pack will fix this.

Nothing has also gone to the effort of creating 22 of its own widgets for the home and lock screens. There's nothing out of the ordinary here, but they fit in with the overall theme nicely. The retro aesthetic is something I personally like, though it won't be for everyone.

Bloatware on the Phone (2a) is also kept to a minimum, with Nothing X (its earbuds companion app), Recorder and Weather the only additions I noticed. Nothing is there for the sake of it.

Nothing has made thoughtful additions to the regular Android



Nothing has made thoughtful additions to the regular Android experience.

experience that I really enjoyed using. The company's commitment to three years of OS updates and four years of security updates is decent, though not market leading, and means it should still be supported in 2028.

VERDICT

The Nothing Phone (2a) is a compelling affordable phone, but it might not be right for you.

Performance is among the best at this price point, excelling in pretty much every scenario – including while gaming. Its 120Hz OLED screen delivers an immersive viewing experience,

especially when paired with above-average speakers.

Battery life is also strong, while Nothing has put a lot of effort into making such polished software. Meanwhile, the 'Glyph Interface' of LED lights help it instantly stand out from the crowd, even if their usefulness is debatable.

However, the combination of unreliable cameras and slower charging than some rivals will make many people think twice before buying one. It's a very good phone for the money, but check the competition first. Anyron Copeman

- Wi-Fi 802.11 a/b/g/n/ac/6, dual-band, Wi-Fi Direct
- Bluetooth 5.3, A2DP, LE
- NFC
- GPS, GALILEO, GLONASS, BDS, QZSS
- USB Type-C 2.0, OTG
- Fingerprint scanner (under display, optical)
- Non-removable 5,000mAh lithium-ion battery
- 161.7x76.3x8.6mm
- 190g

SPECIFICATIONS

- 6.7-inch (2,412x1,080; 394ppi) AMOLED, 120Hz, HDR10+ display
- Android 14, Nothing OS 2.5
- Mediatek Dimensity 7200 Pro (4nm) processor
- Octa-core (2x 2.8GHz Cortex-A715, 6x 2GHz Cortex-A510) CPU
- Mali-G610 MC4 GPU
- 8GB/12GB RAM
- 128GB/256GB storage
- Two rear-facing cameras: 50Mp, f/1.9, (wide), 1/1.56-inch, PDAF, OIS; 50Mp, f/2.2, 114-degree (ultrawide), 1/2.76-inch, 0.64µm
- Selfie camera: 32Mp, f/2.2, (wide), 1/2.74-inch
- Stereo speakers



OnePlus Watch 2

Price: £299 from fave.co/3Td9tEW



OnePlus made a rocky debut in the smartwatch world in 2021 with its first model, which was chock-full of bugs and lacked many features that rivals boasted.

After a few years away from the scene, the 'Never Settle' brand is back with the follow-up model, the OnePlus Watch 2. Thankfully, there's been a major shake-up in the software, with the latest wearable sporting the latest edition of Google's Wear OS instead of

the firm's own effort. Though it's a big step forward from the OnePlus Watch, the build may not suit everyone – it certainly wasn't for me.

DESIGN

The Fluororubber strap comes in either Black Steel or Radiant Steel, which matches the colour options that the OnePlus 12 comes in, a nice touch if you're in the OnePlus ecosystem.

The chassis is made from silver

stainless steel, giving the watch a premium look and feel. However, make sure you wipe down the device now and again, as this shiny material is prone to picking up fingerprints... and that's not the only downside to a stainless-steel build.

At 12mm thick and a weight of 49g (sans strap), this is a chunky and heavy smartwatch that looks comically large on my puny wrist. It's not as comfortable to wear as other models, and the strap is not a great fit for me.

Either it's too tight, causing the body to dig into my wrist bone, or it's too loose and so the wearable slides up and down my arm.

If you have large wrists (particularly if you're a man) then you might not have these issues, but if you want something slim and lightweight that you'll forget you're wearing, this isn't the smartwatch for you. It's the opposite of the Google Pixel Watch 2 where many people are craving a larger size.

While the crown does rotate, it's purely for show rather than controlling navigation. That's a big shame, as it would prove useful when the screen is locked, such as during a swimming



At 12mm thick and a weight of 49g (sans strap), this is a chunky and heavy smartwatch.

workout. 9to5Google (fave.co/3PmZQIY) reports that OnePlus chose a spinning crown because it's more durable than a rigid one, hence the design choice. Still, it's really annoying.

Clicking the crown takes you to the app drawer, and long pressing activates Google Assistant. The button underneath gives quick access to workouts, while long-pressing controls the power.

The OnePlus Watch 2 is both 5ATM (50m) and IP68 rated, and it's got MIL-STD-810H standard certification, so it should be able to withstand harsh temperatures, knocks and bumps. It managed to survive a dip in the pool and a trip to my insane 40-degree hot pilates class.

DISPLAY

The benefit of the size of the watch is the gloriously bold 1.43-inch AMOLED face. The black bezel is on the larger side, but that doesn't matter too much with a face this size.

With a resolution of 466x466 and a max brightness of 1,000 nits, I had no trouble viewing the display, even under bright sunlight. Colours are sharp and vivid, and you get those inky blacks that you wouldn't find on a non-OLED panel.

The OnePlus Watch 2 has a typical 60Hz refresh rate, meaning swipes and taps are responsive, though the screen is prone to picking up some fingerprint marks.

Taking calls on the Watch 2 is possible if your phone is nearby, and my friends and family could hear me clearly.



I had no trouble viewing the display, even under bright sunlight.

Google Assistant voice recognition is solid, even with my northern twang that some tech companies seem to have an issue understanding.

The speaker itself is quite tinny, and not the most impressive or loud. I also had a few teething problems getting audio to play directly on the Watch 2's speakers via Spotify. I solved this by connecting a pair of earbuds to the watch, playing audio, then disconnecting the earbuds and hitting play again.

PERFORMANCE

One of the unique elements of the OnePlus Watch 2 is the fact that it runs on two chips, which the company calls a 'Dual-Engine Architecture'.

The Snapdragon W5 processor

(with Wear OS 4) is for performance, whilst the BES2700 (with RTOS) allows the watch to get a long battery life. This is paired with 2GB RAM, and 32GB of storage which is more than enough for downloading songs onto the device.

Day-to-day performance is rapid and responsive. The

only time the Watch 2 is slightly slow is after restarting, but that's the case across most tech products anyway.

Although there's Bluetooth 5.0 and NFC support for contactless payments, there's no LTE option. Therefore, you can't use the OnePlus Watch 2 for calls and texts as a standalone device. If having that freedom is important to you, look elsewhere.

SOFTWARE

The adoption of Google's wearable operating system (the original had OnePlus Watch OS) makes navigating the OnePlus Watch 2 smooth, simple and intuitive.

As standard, the Watch comes with an Apple-style tile layout, but you can switch things up by having things in a list format (useful if you're a numpty like me who can't remember all the various app icons).

You'll find all the standard Google apps here, including Maps, Calendar and Wallet, and all of them work just fine. There's also widely used third-party app support such as Spotify and WhatsApp.



As standard, the Watch comes with an Apple-style tile layout.

Notifications from your phone will also sync onto your wrist, and you can reply on the watch for some apps.

At first, I had trouble connecting WhatsApp, but an update to the watch solved the issue. If you prefer fitness tracking via other apps such as Strava and Google Fit, then you can also add these to the Watch 2 via the Play Store.

Connecting the Watch 2 to my phone was one of the most seamless experiences I've had. All you need to do is download the OHealth app, search for the wearable and pair it. Once that's done, just make sure you enable permissions for precise tracking, such as your location, and so on.

OnePlus has committed to two Wear OS updates and three years of security updates, meaning it should be supported through 2027.

Google's wearable operating system makes navigating the OnePlus Watch 2 smooth, simple and intuitive

FITNESS & TRACKING

For exercise, the OnePlus Watch 2 has over 100 modes available. These include staples such as running, walking and cycling, to more niche modes such as pilates, golf even the Tango – ideal if you happen to be training for *Strictly Come Dancing*.

Modes that aren't core to the Watch 2 have generic tracking, only recording the calories and heart rate. However, others include additional measurements. During a swim workout, it correctly recorded the right number of laps, and which strokes I did when I changed them up, something cheaper wearables from the likes of Amazfit sometimes get wrong.

If you're a runner or a keen walker, then the OnePlus Watch 2 has dedicated workout modes via the app that prompt you to keep jogging until you reach a specific goal. For example; burning 200 calories.

There's dual-frequency GPS included on the smartwatch for improved tracking in dense areas,

such as cities and forests. During a stroll around Soho, the Watch 2 was accurate in logging my path.

Auto-detect workouts are available for running, walking, rowing, elliptical, cycling and swimming, with the option for the watch to ask permission to record. I used it to track a walk automatically, and it was quite responsive.

For health monitoring, there's a dedicated heart rate monitor, a SpO2 monitor, and stress level tracking. All these recorded similar figures to what I got on other wearables. I did have one occasion where the Watch had trouble recording my SpO2 levels and stress, but this was immediately after updating it. A quick restart solved the issue.

Sleep tracking includes a lot of information. There are the usual zones



For health monitoring, there's a dedicated heart rate monitor, a SpO2 monitor, and stress level tracking.

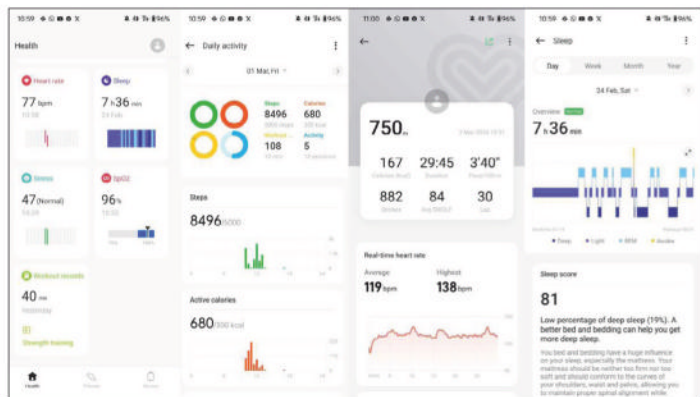
such as REM, light sleep, deep sleep and REM. My awake time seemed in line with my experience. OnePlus also includes an 'assess breathing problems' feature, which logs your SpO2 levels during sleep. You can also enable mic access if you're worried about snoring.

While the app includes a great deal of analysis and feedback on your sleep score, there aren't any links to accredited sources as rivals such as Withings do. This would add more reliability and trust to the wearable.

Some key features are lacking from the Watch 2, the biggest of which is an ECG monitor (electrocardiogram). Cycle tracking is also not available. Whilst not all smartwatches cover these things, at this price point it's a surprise.

Some reviewers have noted that they found exercise tracking to be inconsistent on the Watch 2, but personally, it was in line with what I recorded on the Pixel Watch, and the step counter on my phone.

The accompanying OHealth app is reasonably clean. All the basic



The OHealth app offers information, such as the calories burnt in a workout, your average steps in a week and sleep data.

information is there, such as the calories burnt in a workout, your average steps in a week, your sleep data and more.

Having an entire page dedicated to the running/walking modes seems like a waste, as it takes up a lot of space, and the built-in map on the phone doesn't seem to work properly.

OnePlus could add more pre-built workouts into this section like Fitbit or Huawei does to make it more useful.

BATTERY LIFE

The dual chipset on the OnePlus Watch 2 really proves its worth when it comes to battery life.

OnePlus claims that it has an impressive 100-hour battery life in Smart Mode, and after testing for a few weeks I can back up that number. If that's still

not enough, then you can switch to Power Saving Mode, which can offer up to 12 days.

Of course, you will be trading in some features here, such as GPS. You'll only be limited to core workout modes, rather than the huge list that's available as normal.

That battery life is really impressive when you consider that most smartwatches from Google, Samsung and Xiaomi can only last a couple of days max. OnePlus has proven that a dual-chipset is key to better power efficiency.

OnePlus has also kitted this smartwatch with fast-charging support. Using my 100-watt SuperVooc charger I had to hand, I got it from flat to 100 percent in less than an hour. Most smartwatches with big batteries don't support charging this quick, so this is certainly impressive.

VERDICT

There's a lot to love about the OnePlus Watch 2. It has a durable and premium build, a killer battery life compared to other flagship wearables and most importantly, software that actually works (compared to its predecessor).

In many ways, it's the smartwatch that OnePlus fans have been waiting for but does that make it perfect?

Not exactly. The heavy materials used mean it's not the most comfortable, especially if you have slimmer wrists like me. If you also want an LTE version of the Watch, then that's not possible. Some rivals also pack in more sensors and tracking options.

Nonetheless, OnePlus has proven it's here to stay in the smartwatch space. Now, what I'd really like to see is a slimmer and lighter version. Or better yet, size options for different types of users. Hannah Cowton

SPECIFICATIONS

- 1.43-inch (466x466; 326ppi) AMOLED display
- Android Wear OS 4
- Qualcomm Snapdragon W5 Gen 1 (4nm) processor
- 2GB RAM
- 32GB storage
- Loudspeaker
- Wi-Fi 802.11 a/b/g/n, dual-band
- Bluetooth 5.0, A2DP, LE
- NFC
- GPS (L1+L5), GLONASS, GALILEO, BDS, QZSS
- Non-removable 500mAh lithium-polymer battery
- 47x46.6x12.1mm
- 49g



Credit: Getty Images/Olbon Alija

Best laptops

The top systems you can get right now. **CHRIS MARTIN** reports

Laptops are here to stay, despite a brief challenge from tablets to replace them, and they are thinner, faster and more impressive than ever.

Picking one from a huge choice is an extremely difficult task though, especially when there are so many elements to factor. You need to consider size, operating system, specs, price and more. We are here to help make that

decision easier with our expert in-depth reviews and buying advice.

Each of the devices in this list is an excellent laptop, but only for a certain kind of user. It's also not an exhaustive list, with some of the best 2-in-1s, student laptops, business laptops, budget laptops and cheap gaming laptops not making the grade.

We also only include Windows

and macOS computers here, and it's still worth considering Chromebooks, especially if you're on a budget. To help narrow it down, you'll also find detailed buying advice in the next section.

WHAT TO LOOK FOR

Price

The very best laptops usually command a high price tag, but you don't necessarily need to spend upwards of £1,000 for a great experience.

These days, you can get a capable budget laptop for £500 or even less, although it'll probably only be suitable for everyday tasks such as web browsing, emails, word processing and the occasional video call.

But pay £700 or more and you should get great performance, plenty of RAM, loads of storage and a gorgeous display. You should also expect excellent build quality and premium materials. Many laptops these days are above £1,000, which is when you start getting the likes of 4K touchscreens and ultra-premium builds.

Display size

Laptop screens range from around 11- to 18-inch. A smaller screen might be harder to work on and offer fewer ports, but it will be more portable.

A big-screened laptop, on the

other hand, is probably a desktop replacement and so not designed to be taken everywhere with you. Generally, 13- or 14-inch is the sweet spot between usability and portability.

Some cheap laptops have a low 720p resolution, but it's worth aiming for at least Full HD (1,920x1,080) or higher. A QHD or 4K screen is nice to have, but not necessary for most people. While they're increasingly rare in 2023, a matte display trades some vivid colours in exchange for a less reflective screen.

A touchscreen isn't always required, but it might be preferable to connecting a mouse or using the trackpad all the time. But on 2-in-1 laptops, this is a necessity.

High refresh rate displays are beginning to make their way into consumer laptops, but 60Hz remains the standard. Something above this will give the screen extra fluidity and help it feel more responsive, but the effect isn't as noticeable as on smartphones.

OLED panels are considered higher quality than LCD, but each have their own benefits and drawbacks. Some laptops are beginning to move to mini-LED technology these days, too.

Storage

The amount of storage you require will depend on what you plan to use the



Portability will be of importance to some.

laptop for. As a general rule, get as much as possible without it feeling like you're wasting money on the upgrade.

An SSD will help your laptop run faster, but typically offers less space for your files (consider supplementing it with a portable USB drive). You can also use cloud storage – but only when you have an Internet connection.

Memory (RAM) is where programs and files are stored only while you're using them, so more is usually better. Consider 4GB as a minimum, although 8GB or even 16GB will be the sweet spot for most people.

Processor

Unless you're going to run complex software or demanding games, you

don't need a top-spec processor. If the latter is something you plan on doing, we have a separate round-up of the best cheap gaming laptops under £1,000.

But regardless of your budget, you're probably looking at a device powered by Intel or AMD. The former's latest 13th-gen Raptor

Lake CPUs will be found in many 2023 laptops, but the Ryzen 7000 Series won't be far behind in terms of popularity. There are also ARM-based Qualcomm processors such as the Snapdragon 8cx Gen 3, but they still struggle slightly for performance and app compatibility.

Of course, Apple's MacBooks run the company's own Apple silicon instead. Various iterations of M1 and M2 chips have already been released, and it looks like more are on the way.

Thin and light laptops

A thin and light laptop is much the same as any other laptop, although your priorities may be slightly different. Top of the list might be ultraportable laptop

that's light but will last a long time on battery power.

However, other people want an device that's powerful and can handle demanding applications without breaking your back when you carry it around. Both are available.

Compromises are inevitable if you want a thin and light laptop, though. There's less space for a battery, so it's common to find shorter runtimes. Thin laptops also tend to have shallow key travel – look at specific reviews to see how much of an issue this is.

You'll may miss out on ports and connectivity, too. These can be extremely limited, and you'll want to avoid carrying a hub or adapter with you if possible. If HDMI or USB-A is important, make sure the laptop you're considering has them.

1. APPLE 14-INCH M3 MACBOOK PRO (2023)

Price: £1,550 from fave.co/3PnNIRI

Pros: Powerful; long battery life; stylish, compact and light; great screen

Cons: Price; no USB-A

MacBook Pro generations keep coming and they keep getting faster and faster.



It seems Apple's decision to move on from Intel was a savvy move and the M3 series of its own chips are blazingly quick. Of course, you might not be able to afford an M3 Max model but the entry-level MacBook Pro is a more than suitable option for most people and makes for a portable powerhouse in this 14-inch size, though we were also very impressed with the 16-inch MacBook Pro if you need a larger display.

The display is one of the best out there and despite its quickness, the battery life is reliably long.

Add in that, particularly in black, the MacBook Pro is one of the best-looking laptops on the market, it's got an excellent keyboard, decent port selection (though no USB-A) and a good webcam there's very little to dislike.

You might just want something running Windows that costs less.

2. SAMSUNG GALAXY BOOK3 PRO 360

Price: £1,599 from fave.co/4aePdcD

Pros: Great 120Hz display; excellent design; impressive performance; S Pen included

Cons: Underwhelming keyboard; average battery life; no discrete GPU

You might have heard a lot about Samsung's Galaxy Book Ultra, but the more affordable convertible Pro model is a better option for most people. It's the finest convertible laptop you can buy right now, with that 360 degrees not compromising design, durability, or ports. But the 120Hz OLED touchscreen is a real highlight here, especially when combined with



solid all-round performance and stylus input via the included S Pen. You even get quad speakers and a Full HD webcam, although it's not all good news. The typing experience isn't the most convincing, while battery life falls just short of a full working day for most people. With a still-high price tag and no discrete GPU, your main decision here is whether it's worth spending the money for a laptop that's very good, but by no means perfect.

3. SAMSUNG GALAXY BOOK3 ULTRA

Price: £2,149 from fave.co/445rGYG

Pros: Stellar performance; great battery life; superb display; excellent webcam

Cons: Expensive; not the best keyboard and trackpad; hit-and-miss audio

The Galaxy Book3 Ultra is Samsung's most powerful laptop to date, and its first foray into the world of content creation. Despite some key shortcomings, it's undoubtedly been a success.

Performance is the highlight, with Intel's 13th-gen CPUs, Nvidia RTX 40 Series GPUs



The keyboard and speakers aren't great, but the high price tag is the main reason to look elsewhere.

Unless you're set on high-end content creation, in which case you'll struggle to find a better option.

4. HUAWEI MATEBOOK X PRO (2023)

Price: £1,799 from fave.co/43k9lb2

Pros: Excellent keyboard and trackpad; slick design; strong performance; 90-watt fast charging

Cons: Underwhelming battery life; no discrete GPU option; only USB-C ports

and at least 16GB of RAM proving to be a potent combination. But unlike many laptops, the Galaxy Book Ultra delivers both top-tier performance and excellent battery life.

With a superb 16-inch, 120Hz OLED display, Full HD webcam and premium build, there's a lot to like here.

Huawei's flagship laptop has stuck with the same core design for a few years now, but the 2023 MateBook X Pro is the best one yet.

It looks as slick and premium as ever, with a magnesium alloy build helping the device remain both durable and lightweight. At 1.26kg and 15.6mm thick, it's one of the most portable 14-inch laptops around.

The 14.2-inch panel is a 3K LCD touchscreen, complete with 90Hz refresh rate. It



looks great, although the webcam above is due an upgrade.

Other highlights come in the form of solid performance from Intel's 13th-gen CPUs (despite no option for a discrete GPU) and a great keyboard and trackpad. While battery life could be better, the speed of the 90-watt fast charging is impressive.

But can you put up with just USB-C ports? If so, the MateBook X Pro is a great laptop – just not for most creators.

5. APPLE 15-INCH MACBOOK AIR (2023)

Price: £1,299 from fave.co/49TKsFO

Pros: Great thin and light build; impressive performance; superb battery life

Cons: Dim display; not enough ports; ugly notch

The 15-inch MacBook Air is technically a brand-new laptop, but it'll still be very familiar if you've used one of Apple's recent laptops.

Essentially, this is simply a bigger version of the 13-inch MacBook Air that



already exists. That means you get the same great performance from Apple's M2 chip, which also delivers excellent power efficiency.

The latter benefits battery life, which can comfortably last a full day with plenty of charge to spare. Apple's classic MacBook design still looks great, even if you'll have to deal with an unsightly notch.

But compared to some Windows rivals, the display isn't the brightest, while ports are still limited to just USB-C.

However, if you're set on an Apple laptop, these are probably compromises you're willing to make. And if you can't afford a MacBook Pro, this really is the next best thing.

6. HUAWEI MATEBOOK 16S (2023)

Price: £1,499 from fave.co/48SHCO3

Pros: Superb 16-inch display; great keyboard; good battery life; lots of ports

Cons: No discrete GPU; no number pad; relatively expensive

The MateBook 16s remains the best 16-inch laptop you can buy, despite very few changes compared to the 2022 model.

In fact, the only difference is a shift to a 13th-gen Intel CPU, but it has benefits for both performance and battery life. The former is very good for everyday usage, but lacks the discrete GPU necessary for top-tier performance.

There's lots still to like here, though. The keyboard is one of the best around, and Huawei has used the space where

you'd normally find a separate number pad for a great pair of front-facing speakers.

The 16-inch touchscreen is also very good, despite being IPS LCD rather than OLED. You also get a premium design and plenty of ports, provided you can live without an SD card slot.

However, with only a high-end model currently available, the MateBook 16s starting price is significantly higher. It's still an excellent laptop, but value for money isn't quite as good.

7. ASUS ZENBOOK 14 FLIP OLED (2023)

Price: £1,499 from fave.co/43k9LhC

Pros: Excellent convertible design; great 90Hz OLED display; solid battery life; impressive keyboard and trackpad

Cons: Annoying pre-installed apps; poor webcam; expensive in the UK

The 14 Flip OLED is an expensive convertible laptop, but it ticks a lot of boxes for most people.

Undoubtedly the highlight is that 90Hz OLED display, which delivers both vibrant colours and crisp details. It's a touchscreen panel, but can also work





The Zenbook S 13 OLED's name gives a big clue as to its key strength. Its 13.3-inch OLED display is a joy to use, with a high 2,880x1,800 resolution meaning everything looks very clear and crisp, even if it's only a 60Hz refresh rate.

Performance from Intel's 13th-gen CPUs is solid, and Asus has struck a good balance between

with the stylus included in the box – that's where you'll want to make use of the 360-degree hinge.

Performance from Intel's 13th-gen CPUs is solid, despite no separate discrete GPU. And with an impressive keyboard, decent battery life and plenty of ports, the 14 Flip OLED has all the fundamentals covered.

it and battery life – the S 13 OLED can comfortably last a full working day. You still get a good range of ports, plus a 1080p webcam and impressive stereo speakers.

So, why is it not higher in this list? That comes down to a combination of noisy fans and a shallow keyboard, which become more difficult to ignore

8. ASUS ZENBOOK S 13 OLED (2023)

Price: £1,399 from fave.co/3wWJLgn

Pros: Excellent OLED display; solid performance; good battery life; compact and lightweight

Cons: Noisy fans; relatively expensive



at this premium price point.

But if you can afford the Zenbook S 13 OLED, you're unlikely to be disappointed. If you're looking for something a bit bigger and more affordable, it's also worth considering the Zenbook 15 OLED.

9. ACER ASPIRE VERO 15 (2023)

Price: £799 from fave.co/3TxS0BU

Pros: Made using part-recycled plastic
Great battery life; impressive 1440p webcam; solid performance; good 1080p display

Cons: Annoying pre-installed software; feels a little flimsy

While many laptop makers opt for an aluminium build, Acer has embraced plastic on the Aspire Vero 15.

But this isn't any old plastic – it's

partly recycled, using material from both before and after being used by consumers. Most of the packaging is recycled paper, too, though you can't repair or upgrade the internals yourself.

However, despite its relatively affordable price, the Aspire Vero 15 doesn't make any big compromises under the hood. Performance from Intel's Core i7-1355U (Core i5-1335U models are also available) is impressive, even if the Iris Xe integrated GPU can't quite stretch to gaming.

The power efficiency of that processor combines with a 56Wh battery to deliver very good battery life, too. In most cases, it means you'll be able to use the attractive 15.6-inch Full HD IPS LCD display for a full day and not run out of charge.

However, arguably the 1440p

webcam is its most impressive feature, bettering the vast majority of built-in laptop cameras.

You'll have to put up with some annoying Acer additions to Windows 11, and the Aspire Vero 15 doesn't feel the most durable, but there's no doubting its impressive credentials.





10. FRAMEWORK LAPTOP 13

Price: £1,049 from fave.co/43jpDkt

Pros: Easy to repair and upgrade; great matte display; good performance; solid design and keyboard

Cons: Poor battery life; limited and expensive port options; loud fan

While laptops last longer than many tech products, they still have a finite lifespan. Outdated hardware is almost always the issue, especially with the rate at which technology progress.

But what if you could just replace or even upgrade key parts as they get old? That's possible with the Framework Laptop 13, even without much technical experience or any special tools – a screwdriver is included in the box.

It's possible to build the device

yourself, but the pre-built Windows 11 version is already impressive. It features a very good 13.5-inch IPS matte display, solid performance from a 13th-gen Intel CPU (AMD model also available) and great keyboard, all within a solid (if uninspiring) design.

However, you will have to contend with sub-par battery life, while adding ports (known as 'Expansion Cards') is expensive despite being limited to just three. The fans can also get quite noisy.

But when it comes to longevity, the Framework Laptop 13 can't be beaten. If you like the idea of tweaking and upgrading your laptop, this is the device for you.

11. DELL XPS 13 PLUS

Price: £1,349 from fave.co/3VcYmOO

Pros: Gorgeous OLED screen; stunning design; great keyboard

Cons: Underwhelming battery life; not enough ports; expensive

With the XPS 13 Plus, Dell has reimagined what a 13-inch laptop can



12. **LENOVO YOGA BOOK 9I**

Price: £2,240 from fave.co/3wQ68nD

Pros: Versatile dual-screen design; excellent OLED screens; impressive audio; great webcam and microphones

Cons: Underwhelming keyboard and touchpad; lacklustre performance; expensive

be. Undoubtedly the highlight is a new edge-to-edge keyboard, which delivers a truly excellent typing experience. An invisible trackpad is surprisingly good, but the row of physical function keys with haptic equivalents doesn't quite hit the mark.

However, it's easy to excuse, given the quality of the 3.5K OLED screen and gorgeous design. For a device that's only 15mm thick and weighs just 1.26kg.

Ports and battery life are the big reasons it's not higher in this list though. The XPS 13 Plus definitely isn't the most practical laptop, but it is one of the most exciting.

The Yoga Book 9i is unlike any other laptop you can buy right now, but that has both pros and cons.

Having two screens means the device is very versatile, allowing it to be used in a variety of different positions. That includes as a dual-screen desktop replacement of sorts,



with the wireless keyboard separate. However, the keyboard feels awkward and uncomfortable to type on. It can combine with a virtual touchpad in laptop mode, but this set-up needs work to make it feel intuitive.

With no discrete GPU, performance from Intel's 13th-gen CPUs isn't quite enough for a smooth experience across all displays, either. But the screens themselves are truly excellent, while the audio (speakers and microphones) and webcam betters most laptops around.

As you might expect from the a first-generation device, the Yoga Book 9i is an expensive hybrid that most people shouldn't buy. But it proves that the dual-screen design can work, and Lenovo gets top marks for originality.



Credit: Getty Images/gorodenkoff

Foocus is the easiest way to create AI art on a PC

This is the best, and simplest, way to generate AI art on your Windows PC. MARK HACHMAN reports

What's the simplest way to create AI art on your PC? An application called Foocus. Although Stable Diffusion is often seen as the best way to create AI art on your PC, Foocus offers a simple set-up experience, with rewarding depth for those who wish to dive deeper.

Stable Diffusion debuted two years ago as the way to create AI art on

your PC. While I've used some of the techniques that David Wolski outlined in his tutorial on using Stable Diffusion (fave.co/3VeCuT5), it just feels so complicated to set up. Foocus offers essentially a one-click set-up process in the same vein as something like winget: You tell it what to do, and then Foocus goes out and does it. It's an absolutely free app that runs on Windows, with

no hidden costs. You will need a pretty powerful PC to run it, though.

Just a reminder: There are many ways of running AI art, and yes, many of the established ways are quite good. Both Google Bard and Microsoft Copilot (previously Bing Image Creator) will generate AI art for you while running in the cloud, and both offer detailed creations that you can download and use, too.

Running localized AI art, however, can be almost as fast with the right hardware, and the images are arguably just as good or better. You'll also have more freedom to choose the subject matter, and you can resize them, edit them, or use other images as source art. And, of course, it's all free. Fooocus also takes its cues from Midjourney, long recognized as a pioneer in premium AI art: Instead of literally taking your instructions and turning them into AI art, it makes some behind-the-scenes guesses about what you'll like and optimizes its own requests accordingly.

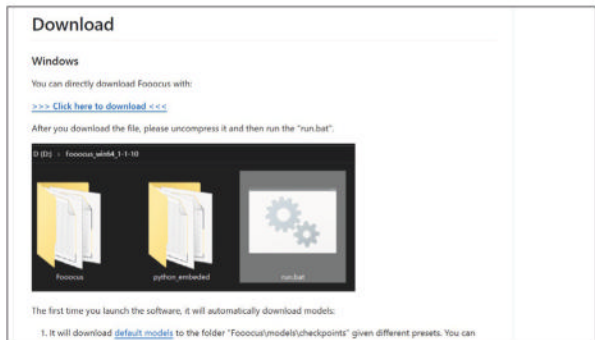
If you're a gamer, or just have a powerful PC, it's worth giving Fooocus a try. There are no specific hardware requirements, but we'd make sure you have a

few dozen gigabytes of spare storage space on your SSD, and a discrete GPU (Nvidia preferred, but not necessary) is almost a must.

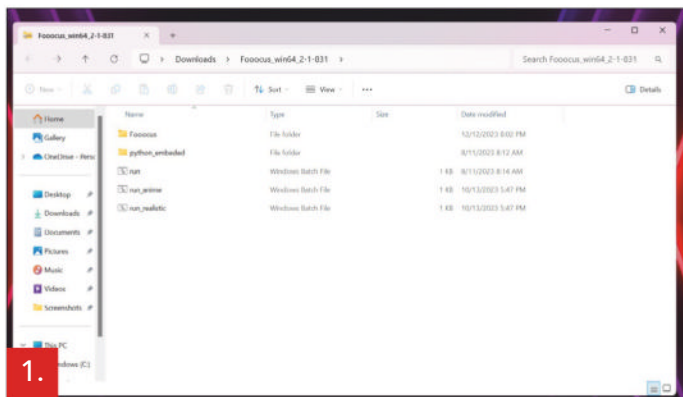
HOW TO DOWNLOAD AND SET UP FOOCUS

Foocus is open source, and its code may be found on GitHub where the code has been probed and prodded. This Fooocus download link (fave.co/49TOSwo) will actually bring you to developer Illyasviel's Fooocus GitHub page, while the real download link can be found by scrolling down Illyasviel's page. It leads to a 1.8GB .7z file. (If you don't want to run Fooocus from your Downloads folder, move it somewhere else on your PC.)

Normally, the .7z file format would imply that you have to unzip with 7Zip



Our download link won't take you to the multi-gigabyte download itself. The page's download link looks like this, midway down the page.



come back to it in the future and click the 'run_anime' batch file and it will set up an alternate configuration that's more optimized for anime. You can do the same for 'run_realistic', too (1.).

When you do, however, chances are that you'll see a

– which your PC will do, but only after you click the 'Run.bat' batch file. This extracts about 5.5GB of data, which appears like it will take a long time to decompress but took my system about 10 minutes.

Foocus is a little weird in that you can click the 'run' batch file, and it will set everything up, with an emphasis on generic models. But you can also

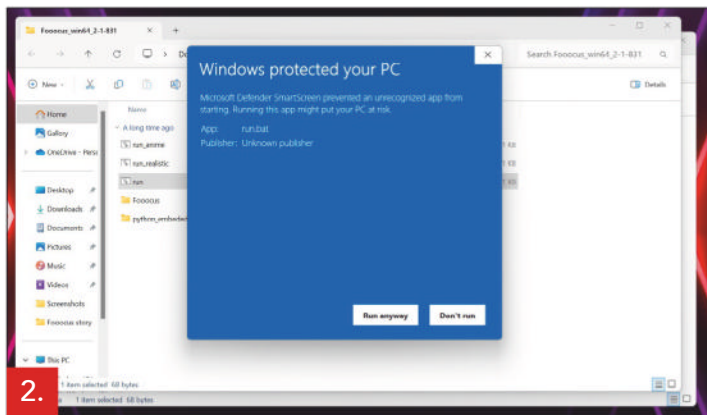
Windows Smartscreen warning. Foocus isn't a well-known application that Microsoft Windows has seen much of, so you'll need to manually approve the download (2.).

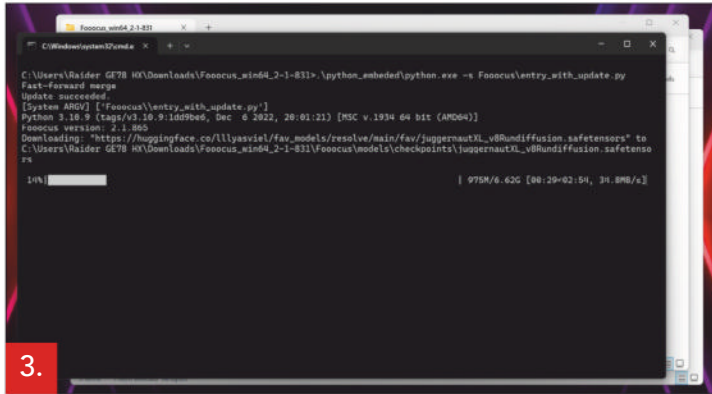
If you do, Foocus downloads all of the software infrastructure it will need to run, which will require yet another few more gigabytes and a few more minutes to download. It will download them

from HuggingFace.com, the Internet's repository for AI applications.

You'll see this Command Line screen while it does so (3.).

Very soon, however, you'll see the Foocus interface, which





Absolutely feel free to click the tiny 'Advanced' checkbox at the very bottom of the screen. This opens up a wealth of stylistic options, which many of my examples have enabled.

will launch inside your web browser. This isn't unusual for AI applications. But there's a lot of white space, which we'll try to briefly explain. But, basically, you're done.

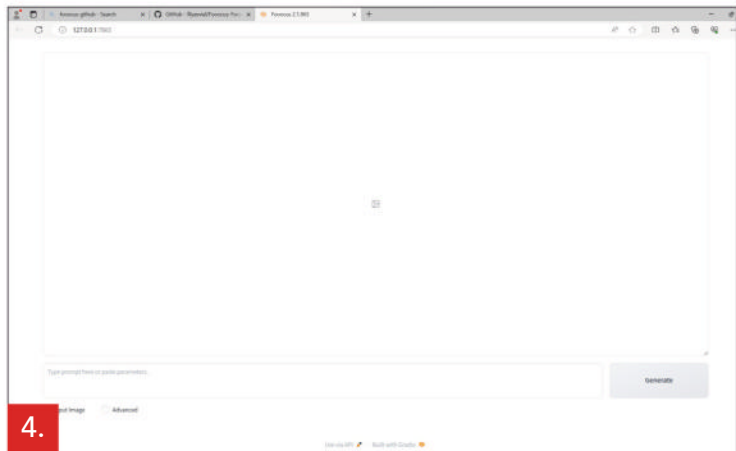
HOW TO USE FOOCUS: STYLES AND PROMPTS

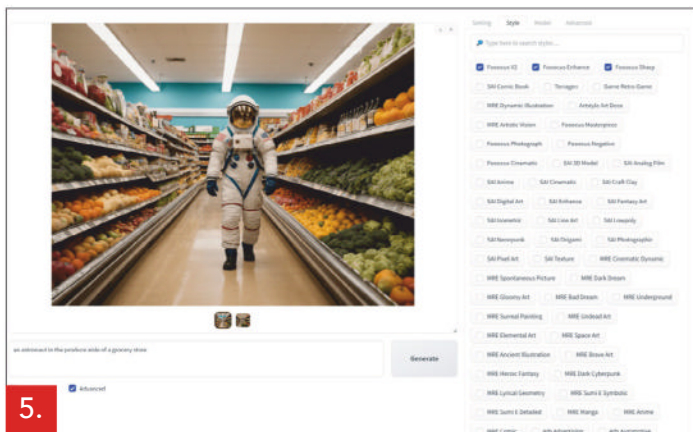
Once you do see the Foocus web interface below, you're in business (4.). There's a prompt box at the bottom of the screen, where you can decide what the scene should have in it. Clicking 'Generate' kicks off the generation process and creates your art.

A prompt like 'a

cat' will work, of course, though that's nothing you haven't seen before. 'A cat wearing a pirate hat' adds some variety. 'A cat wearing a pirate hat at a burger restaurant' is even more creative.

If you'd like, you can specify the style you'd like in the prompt, such as 'sinister' or 'epic'. This is open to interpretation, of course. Foocus





5.

prefers a rather photographic style by default (5).

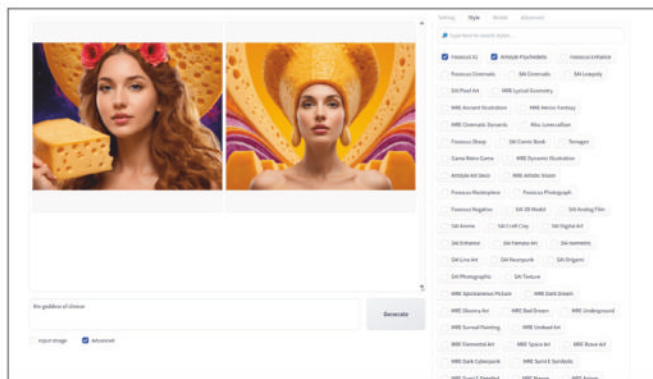
If you do have a GPU in your system, Fooocus will automatically load itself onto it if it can, speeding up the process considerably.

When you click 'Generate', Fooocus will step through multiple iterations of the image (30, by default), refining and enhancing with each step. I've run Fooocus on a pair of systems (a 13th-gen Core desktop, with a GeForce RTX 3090; and a 14th-gen Intel Core HX laptop, with an RTX 4090) and the images took about 10 seconds or less to generate on the default

'Speed' setting. You can choose either 'Quality' or 'Extreme Speed' to adjust the iterative steps, but it's really not necessary.

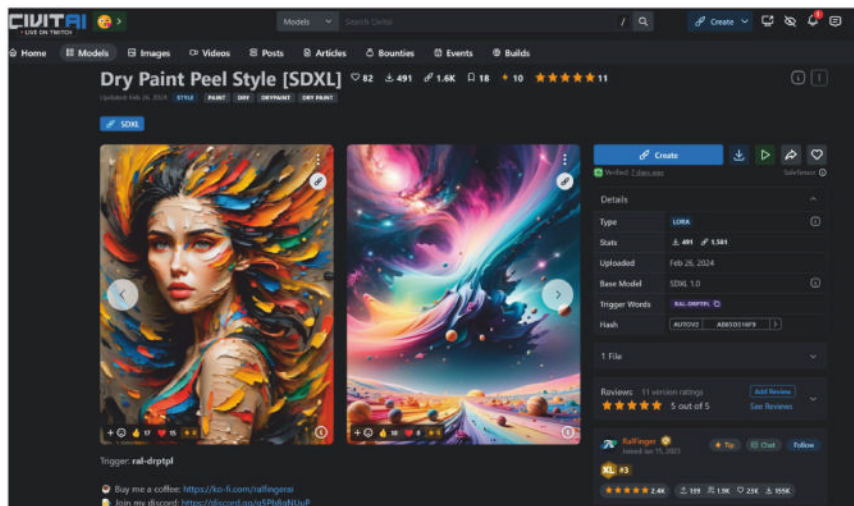
You can get crazy with prompt generation, but there are limits: 'a cat walking on the rings of Saturn' didn't give me a recognizable

result. But it's all about experimentation. And yes, Fooocus is trained on celebrities and public figures, and it won't offer too many limits on NSFW material. If you want to imagine Donald Trump and Joe Biden kissing each other, well, yes, you can. And aside from some AI weirdness where it doesn't really



Feel free to get weird. Is there a 'goddess of cheese'? Now there is.

This is a neat artistic style that you can add to your model.



landscape-y backdrop.) But you're free to specify your own style in the prompt box: If you want a Viking princess (or Queen Elizabeth I) in the style of Gustav Klimt, give it a whirl.

While I'm not going to delve into the finer details of how to fine-tune prompts to tweak AI art, I do want to point out one advanced feature that might be worth playing with: Low-Rank Adaptations, or LoRAs. These are optional, and if you don't want to deal with them, you can stop here.

ADVANCED WORK: DOWNLOADING ADDITIONAL LORAS

You may have already played around with the filter options within Fooocus.

LoRAs are even more specialized tools for specific types of art. They're absolutely not necessary, but if you want to focus on a certain effect, adding a LoRA may allow the model a greater range of options. One featured LoRA I saw recently specifically focuses on lightning and lightning effects.

Put another way, a LoRA is just a plug-in, like a browser extension for Fooocus. The site I use to find them is called Civitai.com, and there are a ton of LoRAs available for download. (You'll need to sign up for a free account, and choose a number of content preferences. Some of the LoRA options cater to the NSFW, but you can filter those out.)

There are a couple of tricks. For

now, you'll need to filter the models by 'SDXL', the base model which Fooocus runs on top of. You'll also need to download or copy the LoRA into the appropriate directory, such as Fooocus\models\loras.

Once you download the additional LoRAs, you can turn them 'on' within the Fooocus Advanced Menu (under the Model tab), and use them to influence your AI art output. Again, it requires some experimentation to see what works and what doesn't.

Remember, AI art is deterministic, which means that (by default) the model is starting with a random example (or seed) each time. That means that there's an element of randomness in AI art – you may need to try a few times to get a good result. If you do, you can dive deeper into the Fooocus documentation for learning how to upscale the art for either printing or a desktop background, editing it, or more.

And that's it. Just remember: try things out, and have fun.



The laptop features that matter most in 2024

Focus on the features that matter most. **JOSH HENDRICKSON** reports

If you're in the market for a new laptop, it's easy to get overwhelmed by the literal hundreds of choices. And it seems like every laptop out there advertises a different set of 'must-have features' adding to the confusion. But the truth is, most of that is just hype to get your hard earned pounds. And, realistically, most laptops share the same basic features you should care

about and only after you settle on those do you need to worry about any extras specific to your needs.

We've narrowed down the five laptop features that really matter. That said, if all you want is the absolute best laptop recommendation, whether it's for gaming or day-to-day tasks, we have that covered for you too. But if you prefer a 'choose your own

adventure' with guidance, keep on reading. Bear in mind that your choice of operating system will pose limitations automatically. For example, you're not going to buy a new MacBook with an Intel process anymore.

1. YOU NEED RAM

Every laptop needs RAM, so it's best to start narrowing down your options there. If you think of a laptop as a workshop, then RAM is like your workbench. The bigger the workbench, the more projects you can work on at once. But at some point, more doesn't necessarily mean better. If you're never going to work on seven projects at the same time, then you don't need a workbench that can handle seven projects. RAM works in a similar fashion.

The more you have, the more your computer can do at once without having to close down programs. But the same 'too much is unnecessary' is true of RAM. The average person probably doesn't need 64GB of RAM (yet). In general, the bare minimum you should go with is 8GB of RAM. That's true regardless of your OS preference. But if you want your laptop to last for years to come, then you should pick 16GB of RAM, as that 'minimum' is always growing with operating system updates. Unless you buy a Framework laptop, in

which you can upgrade any part of the machine, there's no guarantee you can upgrade later.

2. SSD: THE ONLY STORAGE YOU SHOULD CONSIDER

Just like a workshop, you need a place to store your stuff on your laptop. SSDs (Solid State Drives) and HDD (Hard Disc Drives) are the storage bins of the laptop. But not all storage bins are the same and that goes for laptop storage. Many laptops still offer HDDs as a storage option and you should avoid those. In the past, HDDs had an advantage over SSDs in terms of cost. You could buy larger HDDs for a much cheaper price than an SSD. And while that's still somewhat true, the cost of SSDs have dropped so dramatically that it's no longer a difference worth dwelling on.

But the advantages of SSDs over HDDs are important, even more so with laptops. When it comes to accessing data, SSDs are much faster than HDDs. Have you ever tried moving a file from one folder on your laptop to another, only to find yourself counting the minutes go by while watching the progress bar? No matter the size of the file, an SSD will work through that process faster than an HDD and it will help your laptop boot up quicker, too.

The very nature of laptops demands an SSD. An SSD has no moving parts unlike traditional spinning HDDs. While it's never a good idea to drop your laptop or knock it around too much, HDDs are especially vulnerable to this. An SSD, on the other hand, is more durable in this regard.

Not all SSDs are the same, either, so make sure you check the details. You'll want to pay attention to two things: whether the SSD is a 2.5-inch drive or an M.2 and whether it connects over SATA or NVMe. 2.5-inch drives are larger than M.2, which resemble a bubble gum stick in shape and SATA is a slower connection than NVMe. If you want the fastest option, go with NVMe, which will nearly always be M.2 in form factor.

Just like RAM, you can buy as much storage as you want, but just because you can doesn't mean you need to. And the more you buy, the more it will raise the price of your laptop, especially at higher speeds. You'll still find laptops offering just 256GB SSDs, but we recommend going with at least 512GB if not more. Many (if not most) laptops won't let you upgrade internal storage,



but in a pinch external drives are an option if less convenient.

3. GET A RELATIVELY MODERN CPU

In our workbench analogy, the CPU (Central Processing Unit) is the artisan in the workshop. You can have all the workbench space and storage for tools you want but without someone to do the work, the workshop is useless. The CPU does all the heavy lifting when it comes to running programs, including the operating system itself. Just like a more skilled artisan can complete a project faster, a more powerful processor can finish tasks more efficiently. And if you go with something out of date, your laptop won't last nearly as long as it could.

But CPUs get tricky, depending on your OS preferences and desire for future proofing. If you want a MacBook, you can only choose Apple's custom

silicon. The company started phasing out Intel a few years ago. You can either choose to go with an M1 or M2 chip and, for average use case scenarios (browsing the web, writing emails, watching videos), an M1 chip will do just fine. Apple famously supports its devices for many years (seven is the average), but if you want the longest support or have higher power needs, go with an M2 chip option.

For everything else, your two main considerations are Intel and AMD processors. These change practically every year and you should go as new as you can afford. For an Intel processor, you should at least aim for a 13th-Gen processor while AMD's 6000 series processors is as old as you should go.

Whether you go with Intel or AMD is as much a question of budget as it is flavour. Intel processors are typically seen as more powerful than AMD, with the 6000 series matching closely to Intel's 12th-Gen processors. Conversely, AMD processors are usually less expensive, reducing the overall price of the laptop. In a price for performance scenario, AMD can be a good choice. For many, Intel versus AMD is a choice as personal as Coke versus Pepsi.

More power isn't always better. For a budget laptop focused on browsing and word processing tasks, an Intel i3

will do the trick, as will an AMD Ryzen 3. But if you can afford it, consider getting at least an Intel i5 or AMD Ryzen 5. Anything more than that is best for gaming and media creation.

What you don't need to splurge on is a laptop promising an NPU (neural processing unit) or using the words 'AI PC'. While both AMD and Intel are making big promises around NPUs and 'AI PCs', the truth is Windows hasn't caught up to the hardware yet and can't do much with it. At the same time, Windows 11 already offers 'AI' (in the form of Copilot) without an NPU.

4. ALL THE PORTS YOU NEED STARTING WITH USB-C

Of all the things related to laptops, USB ports might be the most confusing thing to dig through. Modern ultrabooks and 2-in-1's seldom have SD card slots or disc drives and forgoing the headphone jack and HDMI port is more common with each year. If any of those are necessary to you, check to see if the laptop you're interested still has them. But after that, you'll want to look at your USB port options. USB-A used to reign as king of ports, but it's slowly being transplanted by USB-C.

But while USB-C promised simplification, it's provided anything but. With USB-C, you can potentially

power your laptop, send out a display signal to a monitor, and transfer data at varying speeds. Not all USB-C ports are capable of all three features and some are slower than others.

If you want the best of the best, look for a USB-C port that supports Thunderbolt 4. Typically associated with Apple hardware, Thunderbolt is an option on Windows laptops as well. Thunderbolt 4 USB-C ports are capable of powering compatible monitors and fast charging speeds.

Confusingly, USB4 ports can also support Thunderbolt 4, but they don't always. If you want to save a few dollars and still reap most of the benefits of a Thunderbolt port, you can go with a USB4 port that doesn't support it. That'll get you something equivalent to Thunderbolt 3, which is still very fast in terms of data and power.

If possible, aim for two USB-C ports (the faster the better). And if you have room, it doesn't hurt to have one or two USB-A ports for compatibility with any external drives you have lying around or an external disc drive. But more

accessories are making the jump to USB-C every day. If you don't mind buying new or getting a dongle, you can make do with just USB-C.

5. A DISPLAY YOU CAN LOOK AT ALL DAY

One area that sets laptops apart from desktops is the built-in display. You can't change that after purchase, so you don't want to skimp too hard in this area. The main aspects to look at are size, resolution, and brightness. When it comes to size, bigger sounds better but just keep in mind that you'll lose portability as you go large.

Bezels seem to shrink more every year and these days a 13-inch laptop display seems to fit into what used to be an 11-inch laptop frame. You'll still feel it when you step up to a 15-inch laptop,



though. Go larger if you need more real estate for your work, but if portability is key, a 13-inch should do you just fine, as long as it has decent resolution.

At this point, even with a 13-inch laptop, aim for at least 1,920x1,080 resolution. Some devices like Surface Laptops go with a 3:2 aspect ratio, which is more square-looking than the more traditional rectangular variety, but those typically exceed 1080p resolution. You can step up to 4K resolution, but keep in mind you'll take a hit in battery life and the text may appear very small on smaller screens, so you may have to make adjustments.

Most people probably don't need a touchscreen and if you want a MacBook, it's not an option at all. If you want a tablet-like experience on the go, then look for a touchscreen. Otherwise, don't feel the need to spend extra, especially since you'll lose battery life by adding one. It's a nicety, not a necessity.

6. ALL-DAY BATTERY LIFE

A few years ago, you'd be lucky to get three to five hours out of the average laptop before you needed a wall plug, but things have changed. CPUs are more efficient, as are batteries. If at all possible, look for a laptop with eight hours of battery life. But don't trust the manufacturer stats, as most tend to

over-promise. It's better to check our testing for real world use data.

Battery life does depend on what you are using your laptop for, however. Typing emails for eight hours a day will use a lot less energy than gaming or watching a 4K video for the same period. If you want a gaming laptop, battery life is less of a crucial factor, as you'll get the best performance when plugged into a wall outlet.

The choices you make in other areas will impact battery life. Higher resolution and brighter displays will typically shorten battery life while a less powerful processor (like an Intel i3) may extend it over the most powerful options. If you want a more powerful CPU without sacrificing battery life, splurging for a newer generation may help thread that needle. But if you make the right compromises, you can get all day power by settling for something a little heavier or less powerful.

7. EVERYTHING ELSE IS USE-CASE

That still leaves a lot of territory, but nearly everything else a laptop might offer comes down to what you want to use it for and other preferences you might have. A 2-in-1 laptop might be a great option for cutting down the number of devices you carry, but if

you want a MacBook, you won't have that option. Apple simply doesn't offer one right now (or a laptop with a touchscreen).

Start with focusing on your primary goal for your daily laptop use. If you want to play games or create videos on a laptop, then you'll need to consider a dedicated GPU (graphics processing unit). But if you just need something to write email or browse the web, you can save a lot of money by skipping the GPU.

Chances are any new laptop you look at will have plenty of connectivity options, including Bluetooth and Wi-Fi. For most people, Wi-Fi 6 is as 'future proof' as you'll need to go, as few homes are ready for Wi-Fi 7 and likely won't be for years to come. And more laptops offer enhanced stylus support (especially 2-in-1's), but you should only spend extra if you truly take frequent handwritten notes, or plan to use your device for art creation.



It's time to switch to Windows 11, everyone

I've moved past many of Windows 11's annoyances, and with more AI-infused apps, I think it's time to upgrade. **MARK HACHMAN** reports

After three years, it's finally time to upgrade to Windows 11. With Windows 11, Microsoft shifted into productivity mode, and to this day Windows 11 still feels like the operating system for work, while Windows 10 still feels lively and fun. But Windows 11 not

only is where entertaining new features are landing, but also includes new AI capabilities that may improve your lives. It's time to embrace the change.

Last year, I was split: I wrote five reasons to switch to Windows 11, and five more to remain on Windows 10. In



Windows 11 is visually underwhelming, but it's functional. And it's grown on me.

my initial review of Windows 11 I called it “unnecessary”, and I know that many of you will still agree with me. But I'm less reluctant now, and I think we're approaching a tipping point for most people. I'm already past it.

WINDOWS 11 IS BETTING BIG ON AI-POWERED WINDOWS APPS

So why switch to Windows 11? Let's start with the acronym Microsoft cares most about: AI. And no, I don't mean Copilot. Microsoft has bet big on Copilot, of course, but its AI chatbot is available within Windows 10, Microsoft Edge, the web, mobile – you name it. If you want to chat with an AI, Microsoft has made Copilot as ubiquitous as possible. What it hasn't done is sprinkle

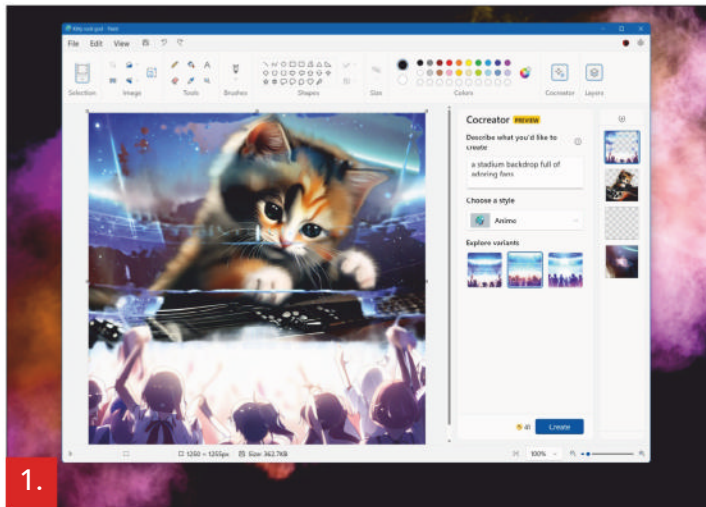
AI on the Windows 10 apps, in the same way it has for Windows 11. Some of my favourite AI-powered applications and features within Windows 11 include:

Paint: Microsoft added its CoCreator AI generation technology to Paint

(1.), plus background removal and even layers, like Photoshop. Those features aren't in Windows 10. Part of the reason I like all of this AI art is that while I can write, I certainly can't draw. Paint goes beyond any of the AI art services by allowing me to add or subtract, using layers.

Live Captions: As outlined in our Windows 11 2022 Update review, Windows 11 can transcribe incoming or recorded audio on your PC, including Teams calls or just a home movie that you recorded years ago.

Windows Studio Effects: Though Zoom and Teams automatically blur your background, this collection of utilities can pan and zoom to lock in on



1.

it would add it to the Windows 10 (preview) version of the app, too. (It's essentially Google's Magic Eraser technology, but within Windows.) So, well, yeah.

If Microsoft's smart – and they usually are – the company is simply going to find more and more ways

your face, and help fool people into thinking that you're paying attention. And the AI audio filtering they do in conjunction with your laptop's hardware can be magical.

AutoHDR: Windows 11 can automatically add HDR features to games that don't natively support them.

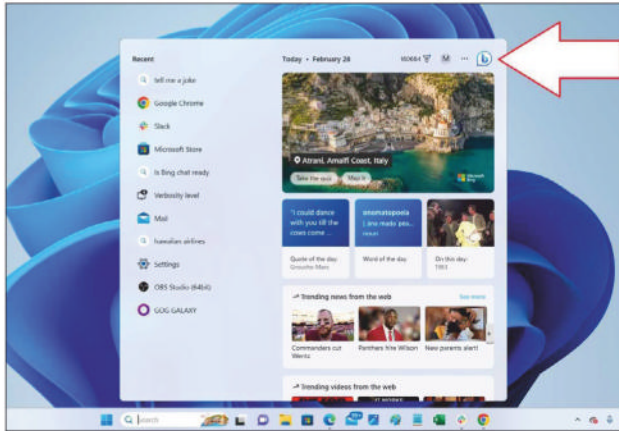
Windows Automatic Super Resolution: Microsoft has begun testing a way to automatically upscale your PC's frame rate (using a compatible PC graphics card or GPU) on Windows 11.

To be fair, Microsoft took one cool AI-powered feature in the Windows 11 Photos app, Generative Erase, and said

to boost Windows 11 apps via AI, enticing you to switch. If you switch to Windows 11, you'll be there as those changes roll out.

CORE AI IMPROVEMENTS WITHIN THE WINDOWS 11 OS

You don't have to be a psychic to know Microsoft is going to lean heavier on AI as time progresses. Since Windows apps move at their own pace with their own development road maps, it makes sense that they'll integrate AI capabilities first. But reports also say that Microsoft plans to improve Windows 11's own built-in search capabilities with an AI-powered tool that should 'know' more about you and what you want. That could roll out as early as this summer.



and Surface Pro 10 are also expected, too. Switch now, and you'll be ready for the next wave of AI PCs.

QUALITY-OF-LIFE IMPROVEMENTS

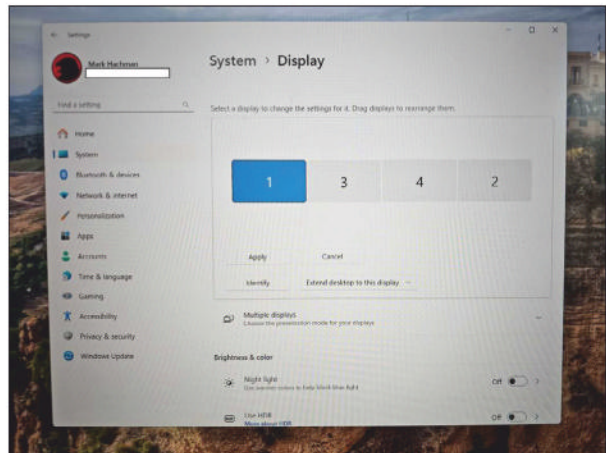
I know this isn't a big deal for some of you, but Windows 11 automatically stores the positions of my monitors when I undock them. Since I review the best Thunderbolt docks as part of my job (and I recently reviewed one which allowed for four 4K

Windows 11 did combine fun and smarts in the search box in this 2023 screenshot featuring Bing. Today, it's been replaced by a rather plain Copilot interface. Can Microsoft somehow combine the two?

This sounds like an AI-infused resuscitation of Timeline, a feature that Microsoft has rolled out before – then deprecated after no one used it. An OS that 'knows' you can feel a little disconcerting. If it is, don't think about what your smartphone already knows about you.

Microsoft isn't calling this new AI-powered OS Windows 12, as once thought. Instead, it will be Windows 11. PC makers have already said that it will debut in June. That's when the Surface Laptop 6

displays) this matters! To me, at least. I can't imagine the pain it would be



Not everyone uses four 4K displays in the course of their work, but I do.

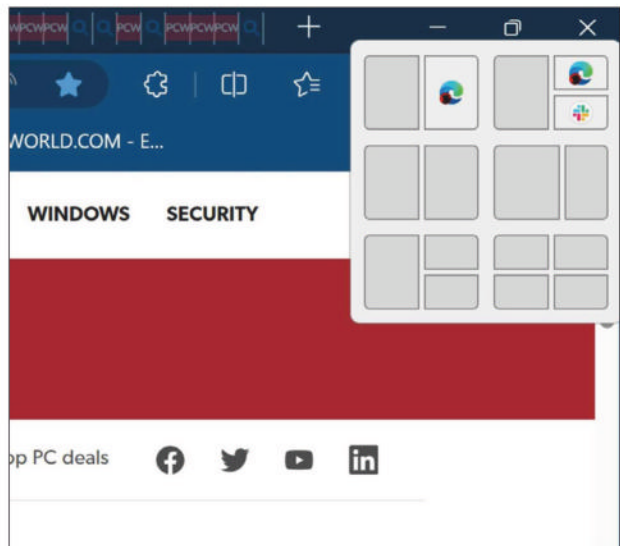
to configure each display just so after I undocked my laptop.

Likewise, snapping Windows via Windows Snap feels far more intuitive in Windows 11 than in Windows 10. While you can snap a window to the side of the screen via the Windows + [direction arrow] key in Windows 10, being able to hover your cursor over the 'maximize window' icon and see suggested layouts makes much more sense.

I don't see as much value in Snap Groups (where, in addition to the suggested layouts, Microsoft suggests which apps should go where) but it's still an attempt at convenience that just isn't there in Windows 10.

Windows can automatically also lock your PC when you leave, which isn't a big deal for a home with a trusted family, but may be for a shared apartment or workplace. And Microsoft is also providing a Narrator feature that can read to you in a natural tone. Phone Link now connects to iPhones, but it won't on Windows 10.

Some of these features aren't tremendous advantages. (In the spirit



Windows 11's Snap Layouts/Groups, on a laptop display. Bigger monitors have more layout options.

of full disclosure, Microsoft provides a cheat sheet of feature differences between Windows 10 and Windows 11.) Widgets, for example, serves more as a nuisance than as a genuine source of news.

But you may see under-the-hood changes, too. Intel launched its 12th-gen 'Alder Lake' processors in 2021, and said then that its Thread Director management software wouldn't offer the same advantages on Windows 10 as they would over Windows 11. Usually it works the other way around – an OS eventually drops support for older processors. Over time, who

knows? As processors and the OS become more tightly integrated, we can't say for certain what will happen to Windows 10 performance.

WINDOWS 10 IS DYING, AND WINDOWS 11 IS THE FUTURE

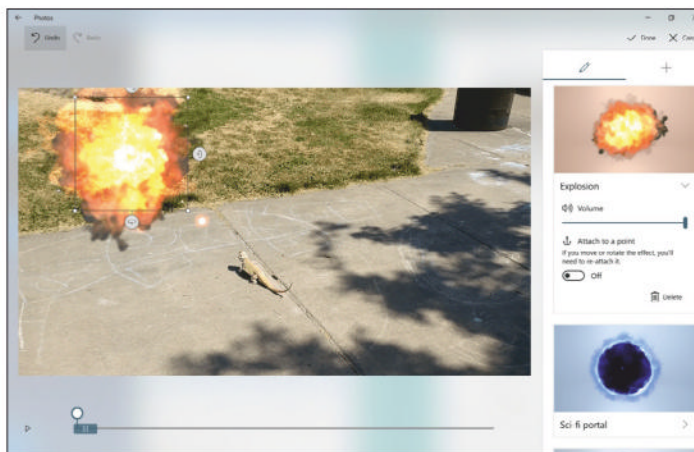
So far, we've focused on the positives, but there's a real consequence to remaining in Windows 10: the end-of-life date. Windows 10 users have about eighteen months before Windows 10 runs out of support on Oct. 14, 2025. And if you want support after that, Microsoft will force you to pay up.

That fact's a bit troubling, as Microsoft still hasn't convinced a majority of users to adopt Windows 11. As I write this, it's 883 days since the launch of Windows 11. Windows 11's North American market share is dragging: 64.3 percent of PCs are still running Windows 10, according to StatCounter, versus 31.3 percent which have jumped to Windows 11.

If you go back in time, 883 days after Microsoft launched

Windows 10, it commanded a 47.8 percent market share. But a year earlier, in January 2017, Windows 10 was dead even at 41.3 percent with Windows 7 – the operating system that everyone proclaimed their love for at the time.

So why does this matter? For two reasons: the 2017 releases of the Windows 10 Creators Update and the Windows 10 Fall Creators Update. Microsoft didn't deliver quite everything it promised, but both updates were chock full of consumer-friendly features nevertheless. Not surprisingly, the two were the most consequential Windows 10/11 updates Microsoft has ever delivered, and they convinced users to jettison the beloved Windows 7 in favour of something new, cooler, and



Remember when Story Remix/Photos allowed you to add 3D effects to a photo? Now you can just do it with AI in Windows 11.

more useful. That's the bar Microsoft has set for itself as it heads into 2024: can it convince users that they need AI? I think that what Microsoft has already added to Windows justifies the switch, with more to come.

DO I MISS WINDOWS 10? A LITTLE

Some people I know work within Windows 11, but maintain a separate Windows 10 PC for gaming and fun. I can totally understand why they would. When Windows 11 rolled out, it felt somewhat sterile, and still does – the Start menu doesn't offer much configurability, the Taskbar doesn't move and expand, and so on. I really missed Windows Spotlight's rotating backgrounds, and am happy they're now on Windows 11.

If you're in the camp that argues that Microsoft hasn't done enough to win you over to Windows 11 – part of me agrees with you. But I also think that I've developed workarounds for the things I dislike with Windows 11. Time has dulled the pain. I rarely touch the Start menu, launching apps by name via the Windows key. The Mail app (never die, Mail) shows numerical icon badging, even if most Taskbar icons do not. The technical improvements Windows 11 promises simply outweigh the aesthetic

elements I disagree with.

So, I'm done with Windows 10. And I'm not going back.



Roll back a problematic Windows update

Windows updates can cause problems, which is why Microsoft introduced the Known Issue Rollback. PETER STELZEL-MORAWIETZ reports

In addition to closing security gaps, the monthly Windows updates are used in particular to solve errors and problems that have arisen in the meantime. In practice, however, it is not uncommon for the updates to cause new problems. There are many reasons for this, ranging from errors in quality assurance to the fact that, unlike Apple computers, the software and hardware

used in Windows systems is extremely heterogeneous.

This is why Microsoft introduced the so-called Known Issue Rollback (KIR) three years ago. If it turns out that an installed update is causing problems on a large number of computers, Microsoft sends a KIR update afterwards.

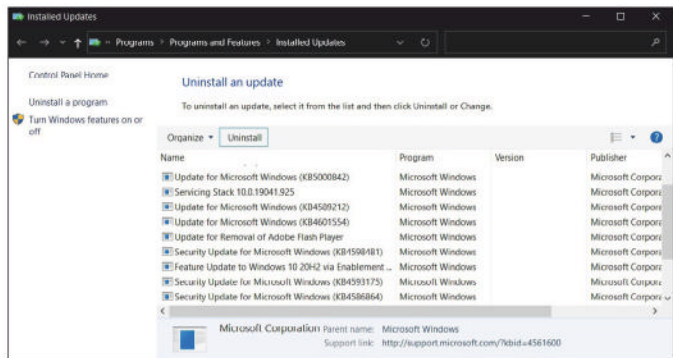
This either restores the affected Windows systems to the state they were

in before the faulty update or distributes a corrected update version straight away. You don't have to take any action, as the problem is automatically fixed via the Windows update. The KIR rollback is only used for non-security-related errors, not for updates to close security gaps.

In principle, Windows updates can also be uninstalled manually via the Settings app: For Windows 10 via Update & Security > Windows Update > Show update history > Uninstall updates. For Windows 11, this is done via Windows Update > Update history > Uninstall updates. However, this option is not available for all updates.

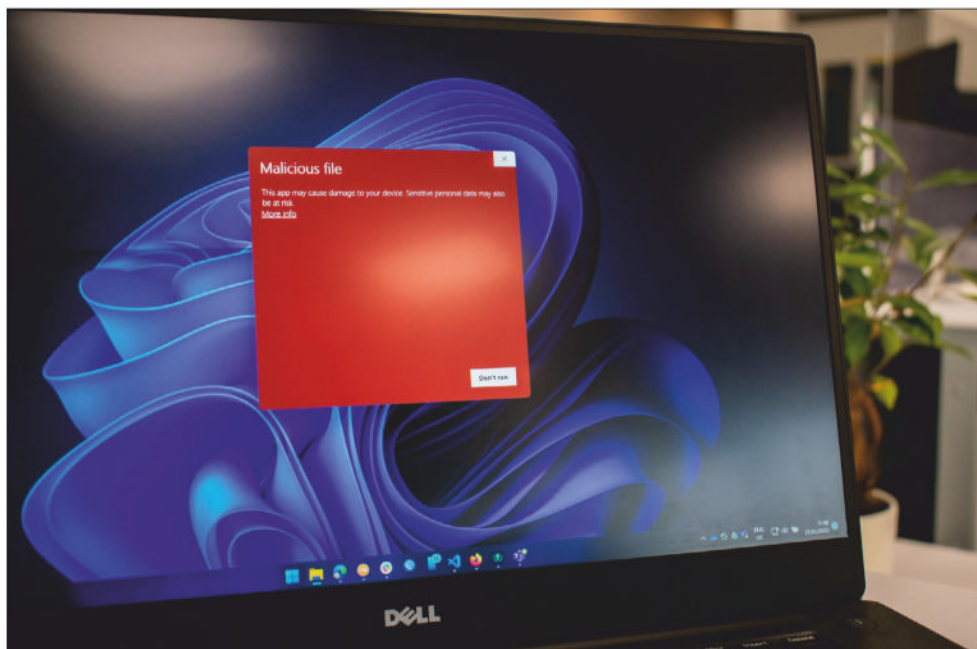
There is also the basic option of not installing updates for the operating system immediately, but waiting a few days instead. This will at least prevent you from being affected by widespread update problems. In such cases, Microsoft would ideally have already rectified the error via a known issue rollback before you encounter it.

In Windows 10, the Windows update can be postponed by one week



Windows generally allows installed updates to be uninstalled manually in the event of problems. However, this does not apply to all updates.

(‘Update pause for 7 days’) or until a specific date via ‘Advanced options’. In Windows 11, the function is called ‘Suspend updates’. It is particularly useful to pause updates if you are urgently dependent on your computer in the following days and cannot afford any update problems.



Windows includes built-in ransomware protection. Here's how to turn it on

Be sure to enable automatic backups, too. ALAINA YEE reports

Ransomware is nasty stuff. This type of malware encrypts files on your PC so that you can't access them – unless you pay the attacker to unlock the data. In other words, your files are held hostage until you cough up the

demanded ransom, unless you're able to survive the ransomware attack using other means.

The best defence against ransomware is avoiding sites and downloads riddled with it, but you can

take other protective measures, too.

Modern antivirus software often restrict which apps can change files in folders commonly targeted by ransomware.

Microsoft Defender, which is built into Windows, can do

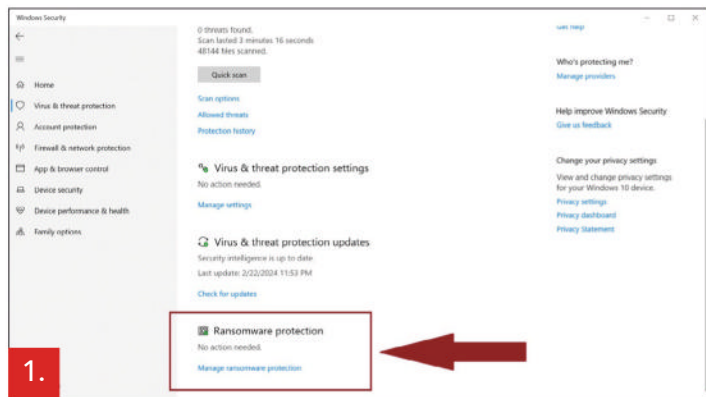
this too. (Microsoft changed the name from Windows Defender several years ago, but it's the same program.) Some antivirus suites also run automatic backups, in case you need to restore your files.

The catch? Unlike third-party antivirus software, these extra safeguards are not turned on by default in Microsoft Defender. You have to enable them yourself.

1. OPEN WINDOWS SECURITY

Open the Windows Security app on your PC. You can access it in one of several ways:

- Press Alt + Spacebar on your keyboard, type in windows security, then hit Enter
- Open your Start Menu and type in windows security, then press Enter



- Open your Settings app, then choose Windows Security in the left pane

2. FIND YOUR RANSOMWARE SETTINGS

In the Windows Security app, click on Virus & threat protection. Then click Manage ransomware protection at the bottom of the screen (1.). Turn on Controlled folder access. This setting restricts app access to your PC's default OneDrive, Documents, Pictures, Videos, Music and Favourites folders. You can also manually add other folders to the list. Not all apps will be barred from these areas in Windows – Microsoft Office programs are automatically allowed to open and alter files. But if it's not on Microsoft's internal list of trusted apps, a program can't see anything in those folders until explicit permission is granted in Windows Security.

3. MAKE SURE YOU'RE LOGGED INTO ONEDRIVE

Limiting access to files and folders won't completely protect them. Another important method of defense is to have good backups – which Windows automatically does if you're logged into OneDrive. (You can either connect a Microsoft account to your whole Windows PC, or just the OneDrive app specifically.)

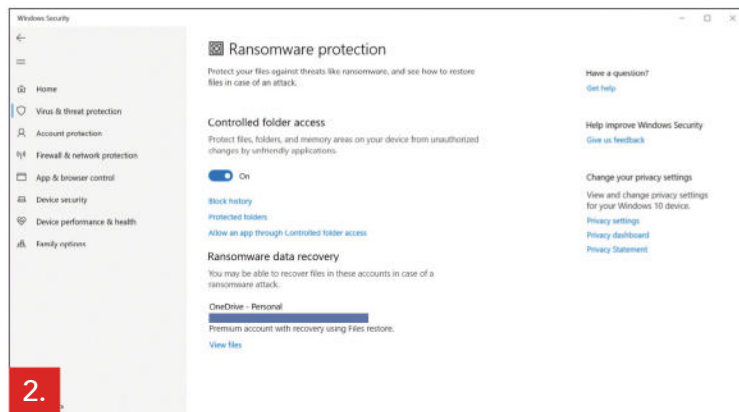
To confirm that this protection is on, you can look at Ransomware protection > Ransomware data recovery (2.).

Of course, for the purpose of warding off ransomware's worst effects, the safest backup of your files is the one you keep offline. You should make one in addition to anything stored in the cloud – if you only have one copy of your data, you're not properly backed up after all.

SHOULD YOU TURN ON RANSOMWARE PROTECTION IN WINDOWS?

Security and convenience live on opposite ends of a spectrum, and that's the case here, too. Controlling folder access in Windows can keep attackers out of your important folders, but it can also be slightly inconvenient. Gamers, for example, may find that access to save files might be blocked by default, as they're often saved in your Documents folder.

You can solve this problem with minimal work – add the app to the access list. Or save game files to a different folder on your PC that does not have controlled access to it. (You'll just have to use third-party software to set up a schedule for regular backups.)

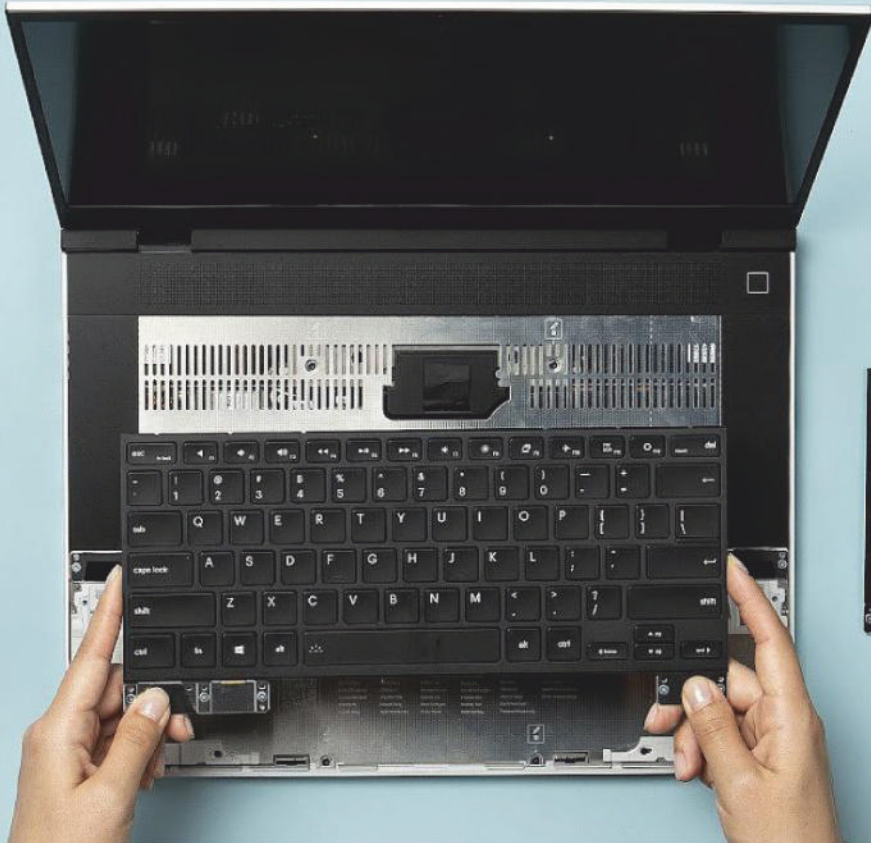


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