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From the Editor

After the year we've had, we all deserve a treat. A fortnight in the tropical sun seems unlikely at the moment, so how about a brand new computer instead? I have a hunch thousands of people will decide that the money saved from staying indoors for much of 2020 will be best spent on a new PC or laptop.

But choosing the right computer is second only to house-hunting in complexity. Just considering which processor you need propels you into a mystifying world of clock speeds, cores and threads – and that's before you move

on to graphics, memory and storage, not to mention price and *type* of device (laptop, PC, mini PC, all-in-one?).

Fortunately, Will Stapley has faced this dilemma many times over the years. In our Cover Feature he uses all his experience to explain the differences in speed, power and specification that will help you make the right choice. If you do take the plunge, please let me know what you bought.

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HOW TO USE SNIPCA URLS

We use snipcas to turn long URLs that are hard to type into ones that are short and simple. They aren't websites themselves, which means they won't be recognised if you type them into Google. Instead, you need to type them into your browser address bar, then press Enter. Doing this will take you to the correct website.

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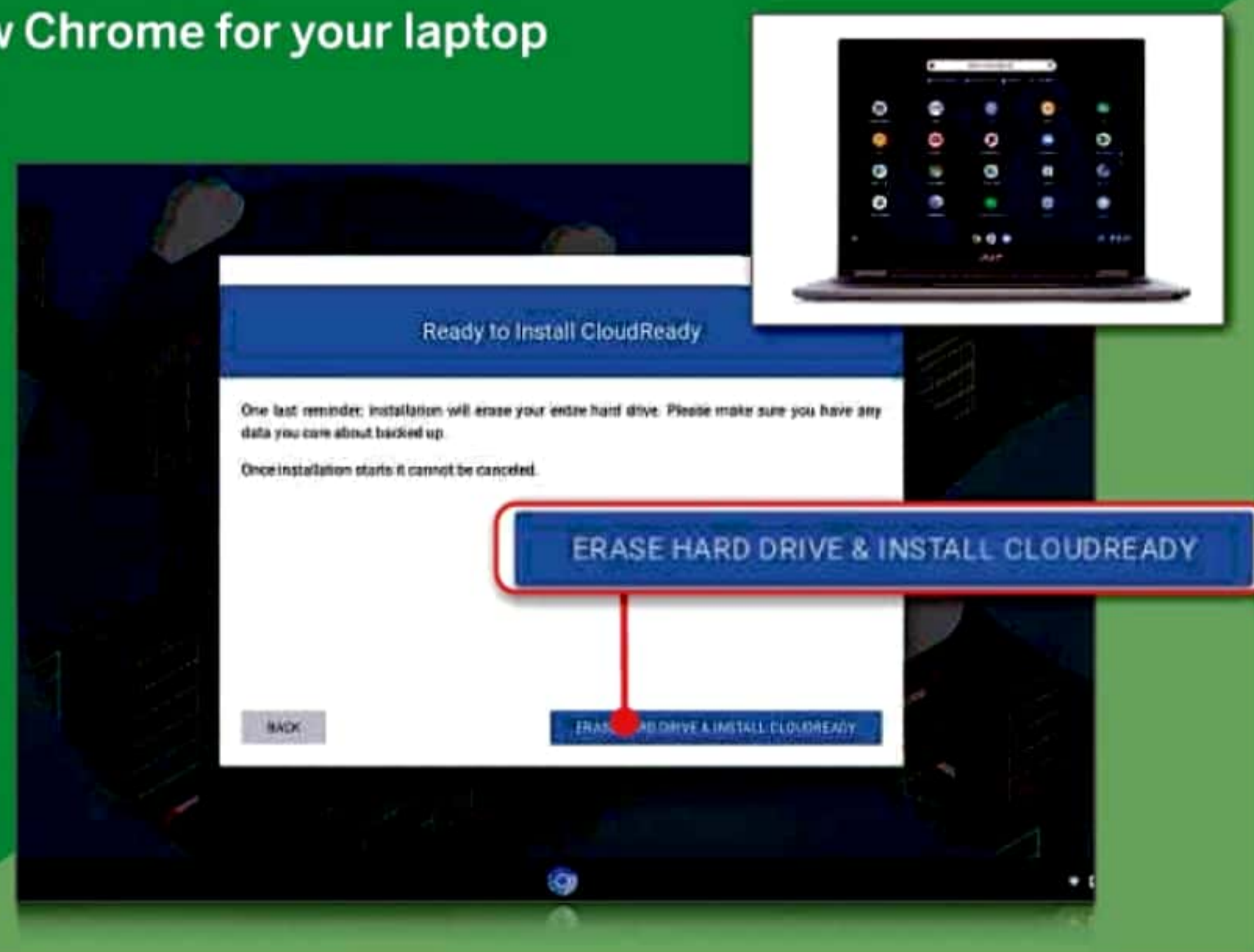


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DITCH YOUR OLD PC IN 2021

Your Complete Guide to buying a computer that's just right for YOU!

✓ Processor ✓ Graphics ✓ RAM ✓ Storage

COVER
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Remove Flash from your PC now

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'Tis the season for no updates says Microsoft

Microsoft has suspended all optional Windows updates for December because many of its staff will be on holiday for Christmas and New Year.

Writing online (www.snipca.com/36699), the

company said "preview releases" will resume in 2021. Preview releases are updates that arrive after the compulsory security updates released on the second Tuesday of each month (informally called Patch Tuesday).

They are optional updates, meaning you don't need to install them. They normally contain non-urgent security fixes and updates for Office tools.

December's Patch Tuesday (on 8 December) will go ahead as scheduled, but all other updates have been cancelled until 2021.

Preview releases are different from preview 'builds' of Windows 10, which are new versions of the operating system being tested by users signed up to the Windows Insider Program (<https://insider.windows.com/en-gb>).

It's the second time this year that Microsoft has paused preview releases,



having suspended them after March's Patch Tuesday to help people cope with the initial spread of the COVID-19 pandemic. It resumed preview releases in July.

The decision will come as a relief for users who have suffered problems caused by recent updates. The KB4579311 update, released on 13 October, has caused printers to stop working and prevented users from signing in. Others saw a black screen when restarting their computer.

In some cases, users were unable to install the update, and were shown error messages saying Windows will try again later.

Microsoft also confirmed that it will start upgrading computers running the May 2019 Update (version 1903), though only to version 1909 (November 2019 Update). It was previously thought Microsoft would try to upgrade 1903 computers to either of the versions launched in 2020 (the April and October updates).

WHAT WE THINK

Has Microsoft been peeking at our letter to Santa? Just under socks and slippers we've got 'no more updates', so we're delighted by this decision. We've long suspected that Microsoft releases more updates than it needs to, and this summer seemed to prove it. Our PCs ran fairly smoothly between March and July, as Microsoft turned off the update taps. 2020 has forced many businesses to try new ideas that have turned out to have unexpectedly positive outcomes. We hope Microsoft learns this lesson and rations updates throughout 2021.

Play old Flash content safely for years to come

The Internet Archive is preserving Flash games, videos and animations so they live on after Adobe stops supporting the unsafe **plug-in** at the end of the year.

It's using a Flash **emulator** called Ruffle, so you won't need to have Flash installed to play the content.

In its blog (www.snipca.com/36709), the Archive says it has saved over 1,000 pieces of content. To browse it, visit www.snipca.com/36710 and scroll down. You can search the content in the search bar at the top left, or sort the results by different criteria, including

how many times it's been watched and when it was created.

The Archive has "handpicked" some of the most famous animations in their own section (www.snipca.com/36711), including the 'Badger Badger Badger' dance (pictured).



• Uninstall Flash now – see page 62



You'll like this...

Vodafone has a new 15GB phone deal for £10 a month (www.snipca.com/36712)



but not this...

HMRC has received 500,000 examples of tax-rebate scams (www.snipca.com/36713)

Microsoft suggests fix for 'password log-out' problem

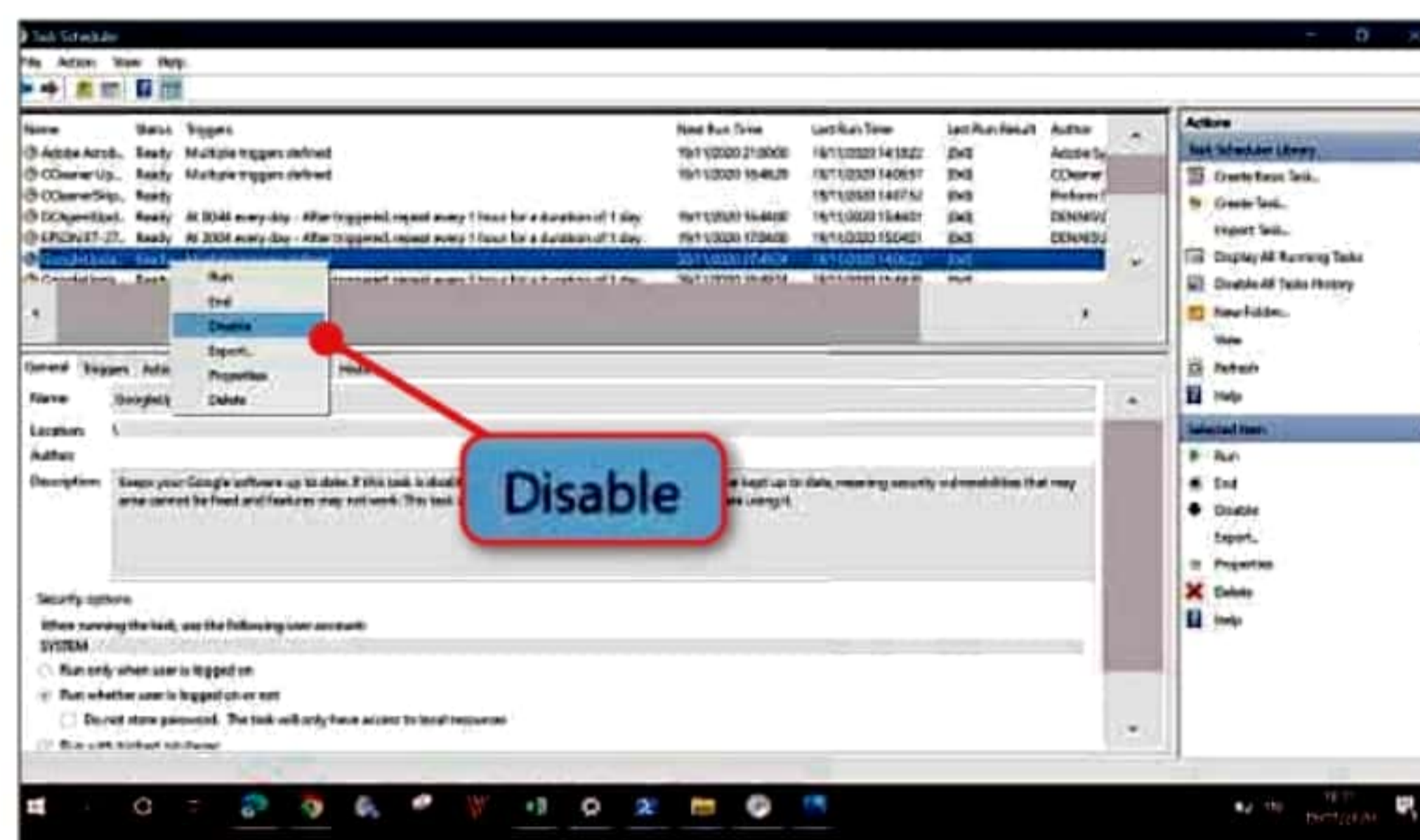
Microsoft has finally released a temporary solution for a six-month problem that was causing computers to forget the username and passwords for essential programs, including Outlook.

It has admitted that the glitch was caused by the May 2020 Update for Windows 10 (version 2004).

On its Support pages (www.snipca.com/36704), Microsoft says the problem occurs "when some Windows 10 Task Scheduler tasks are configured in a certain way". It recommends that until it releases a proper fix, users having problems should try "a workaround to disable these tasks using Task Scheduler".

To do this, right-click the Windows 10 Start button then select Windows PowerShell (Admin). Next, type the following command into PowerShell and press Enter (you can copy it from our Pastebin account www.snipca.com/36706):

```
Get-ScheduledTask | foreach
{ If ([xml](Export-
```



```
ScheduledTask -TaskName
$_.TaskName -TaskPath $_.
TaskPath)).GetElementsByTag
Name("LogonType").'#text'
-eq "S4U") { $_.TaskName }
```

Make a note of any computer task this shows. Next, open Windows Task Scheduler (type **schedule** into Windows Search then click Open). This will show you which tasks you're currently running on your computer.

Look at the Active Tasks section at the bottom – double-click any that PowerShell listed earlier. This will make it appear at the top. Right-click this, then click Disable (see screenshot) and restart your computer.

One of the tasks causing problems is 'HP Customer participation utility', so Microsoft recommends also disabling that if it appears in Task Scheduler.

Microsoft says you may need to re-enter your passwords one more time before the service you're signing into saves them.

Users have been reporting problems for months. On its site, Microsoft links to a post on its forums (www.snipca.com/36705) in which a user complains of Windows suffering from "system-wide password amnesia" because it asks him to sign into Office 365 "every few hours".

IN BRIEF

AVAST SECURE BROWSER COMES TO IPAD

Avast has launched its Secure Browser for iPhones and iPads, letting you block adverts when

you browse online. You can also stop sites tracking you, so they can't show adverts based on where you go on the internet. There's a **VPN** built in too (pictured). The browser is also available for Windows PCs, Apple Macs and Android devices. Install it from www.snipca.com/36695.



CHEAP VIRGIN INTERNET FOR CREDIT CLAIMANTS

Virgin Media has unveiled a cheap broadband service for existing customers who receive Universal Credit. Priced £15 per month, the Essential Broadband plan offers download speeds of 15Mbps, unlimited data usage and a 30-day rolling contract. The service is broadband only, so you'll lose your TV and phone line if you currently use those. Visit Virgin's site to apply: www.snipca.com/36694.

Search your open tabs in new Chrome

You can search your open tabs in the new version of Chrome (87), released in November. To do this, click the new down arrow in the browser status bar (or press Ctrl+Shift+A) and type your

search term in the box that appears.

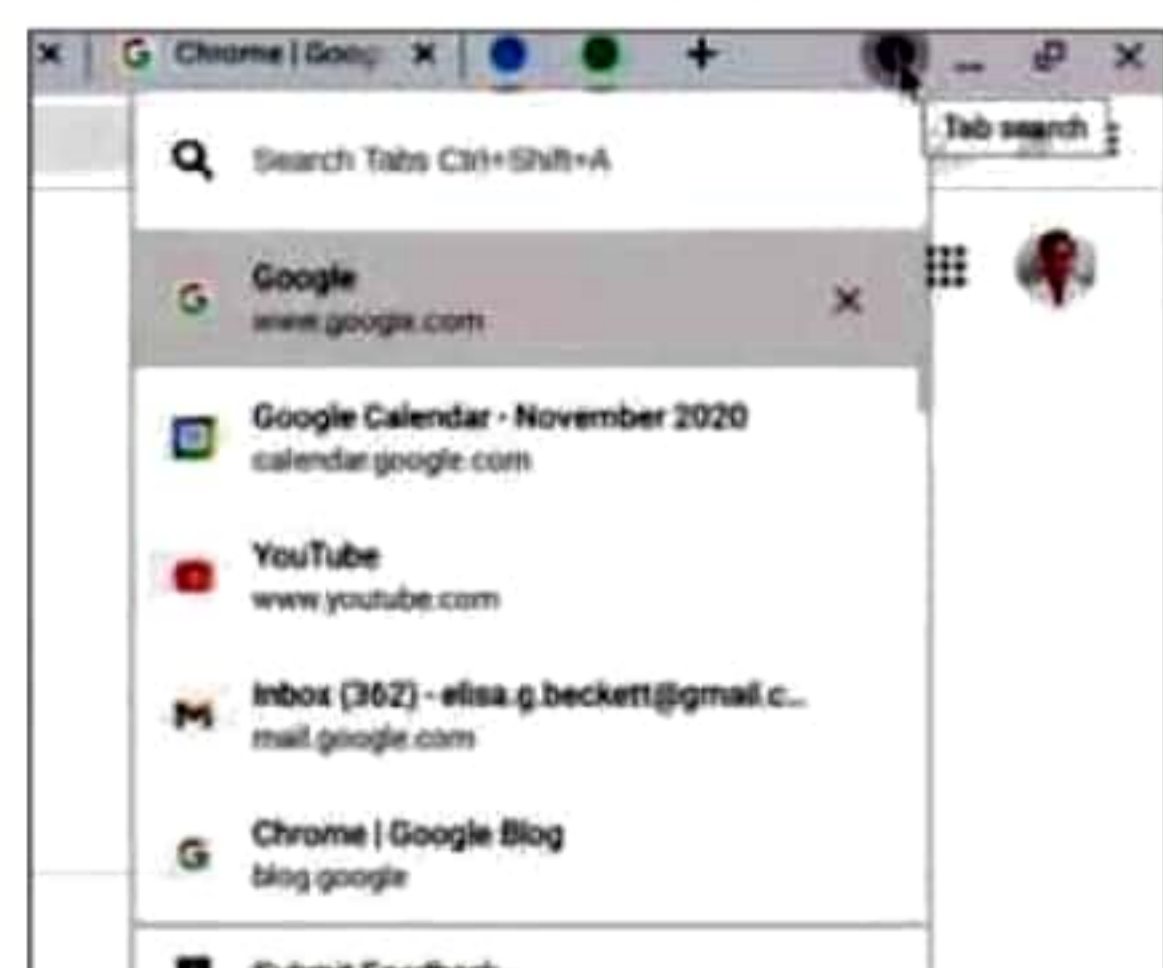
When you type, the results box will show you which tabs the search term appears in (see screenshot below left). If you click the result

you'll be taken to the relevant tab – watch how it works at www.snipca.com/36691. Google said this feature is being added to Chromebooks first, before coming to Windows versions of Chrome soon.

Also new in Chrome 87 is a redesigned PDF viewer



that has a sidebar on the left showing previews of all the pages (1 in the screenshot above). The zoom buttons 2 are now at the top of the screen along with 'Fit to Page' 3 and rotate options 4. The menu now includes the option to view pages side by side.



TOMORROW'S WORLD



Want to know what the 16th century smelled like? Scientists at institutions including UCL and Anglia Ruskin University in Cambridge have received a €2.8m grant from the EU to use artificial intelligence to recreate ancient aromas stretching back 500 years. They hope to build an encyclopedia of smells they can exhibit to the public. Read more about the Odeuropa project at www.snipca.com/36693.

IN BRIEF

SEE 'BADGE' ALERTS IN YOUR TASKBAR

Microsoft has added notification 'badges' to the sites you pin to your taskbar, showing how many alerts you've got to read. In the example above, recruitment network LinkedIn has 12 notifications for you. This new feature appears in version 85 of Edge for Windows 10 users who have upgraded to the May 2020 Update (version 2004). Edge 85 also shows notifications when websites are not running in the background. Read more at www.snipca.com/36679.



EE LAUNCHES 5G MOBILE ROUTER

EE has launched its first mobile broadband router to provide 5G in areas that can get it. The company claims its 5GEE WiFi service delivers speeds "as fast as fibre", with an average download speed of 150Mbps. Prices start at £45 a month for 50GB of data – read more at www.snipca.com/36680.

THE WORLD'S GONE MAD!



The rise in the number of video calls during lockdown has led to a new medical condition: Zoom Dysmorphia. According to skincare experts in the US, people are recoiling from how they look online while chatting, and are seeking facial surgery as a solution. The problem seems to be noses (too big) and wrinkles (too many). Researchers say users need to be reminded that webcams present a distorted image of reality.

Don't buy cheap Xmas devices online, charity warns

UK charity Electrical Safety First (ESF) has warned the public not to buy cheap electronic goods online this Christmas, saying they can pose a fire risk.

It says the danger is greater this year because the latest lockdowns will force more people to shop online than ever before.

In a survey it found that 59 per cent of people who are planning to shop online say they're doing so because they believe it'll be safer than going to shops during the COVID-19 pandemic.

However, ESF says shoppers could end up "swapping one safety risk for another". Its researchers "repeatedly found unsafe electricals" for sale on sites including Amazon Marketplace, eBay and Wish.com, particularly those listed by third-party sellers not affiliated with the manufacturers.

Lesley Rudd, head of ESF, said these counterfeit products "are often very difficult to spot to the



untrained eye". She urged shoppers "to stick to the stores or websites of known manufacturers and retailers such as those found on the high street".

As an example of what could go wrong, the charity cites the experience of Rachel Kent from Rhuddlan, North Wales, whose laptop caught fire after she installed a battery bought cheaply from a third-party seller on Amazon.

She said: "I heard a very loud crackle and bang from the laptop. Panicking, I fled into the garden, taking my dogs with me and looked in

horror to see the laptop go bang again and catch fire, spreading along the table."

The charity has long campaigned for online marketplaces to take more legal responsibility for the safety of products sold on their sites.

It has now proposed legislation that would force sites like Amazon and eBay to follow the same safety rules as other retailers, and to remove unsafe products within 24 hours.

You can sign the charity's petition at www.snipca.com/36678.

Verify your identity without using 2FA

The UK's leading mobile networks have launched a security system that lets you prove your identity when using your phone without having to receive and type a one-off code.

They hope the service, called Number Verify, will make it quicker and easier for customers to log into websites and sign into banks.

It works by checking that the phone number you're using is the same that you used to register your account. This should happen instantaneously, making it



faster than the current system of two-factor authentication (2FA) in which sites send a code to your phone that you need to type.

However, websites can combine it with other

methods of checking your identity, including asking for your username and password.

The system complies with the SCA (Strong Customer Authentication) rules, which protect businesses and customers from fraudsters stealing money by intercepting digital payments.

All four major networks will use it – EE, O2, Three and Vodafone – so it will cover 65 million mobile connections.

The technology has been proven to work in the US, where it verifies billions of transactions every month.

Google scraps free unlimited storage for photos and videos

Google will stop offering unlimited free photo and video storage next year in a move that has surprised and angered users.

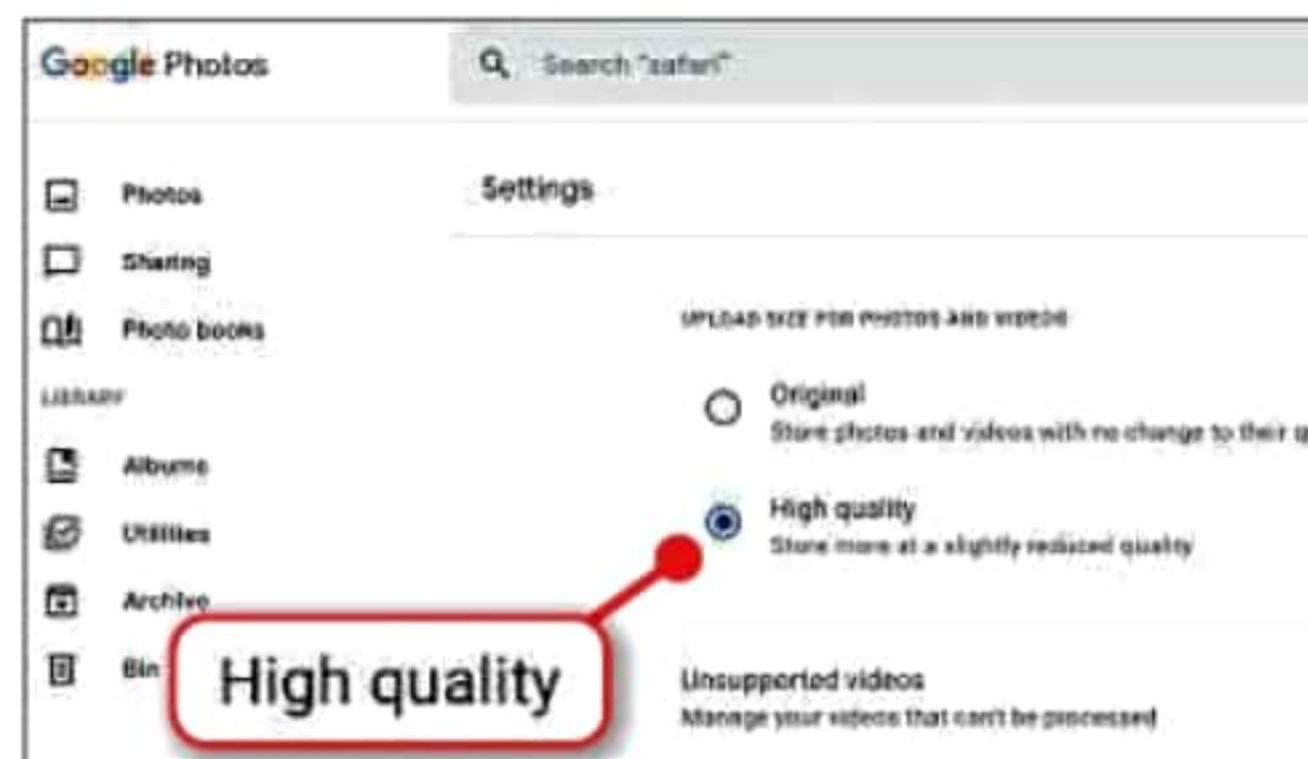
At the moment Google gives you 15GB free storage if your photos and videos are saved in 'original quality', which is 16 megapixels for photos and over 1080p for videos. Once you've hit 15GB, you have to pay to store more 'original quality' content.

But if your photos and videos are of a lower quality – which Google actually calls 'high quality' – you can store an unlimited number for free. You can switch by clicking the top-right cog icon then selecting 'High quality' (see screenshot). Google defines 'high quality' as 3-16 megapixels for photos and 480p-1080p for video.

However, Google is scrapping this free option from 1 June, 2021. Any new photos or videos you upload from then will count towards your 15GB limit. But anything you upload before 1 June won't count. As your storage nears 15GB, Google will send you an email to warn you.

To store more than 15GB, you'll have to pay for extra storage, with prices starting at £15.99 a year for 100GB (see <https://one.google.com/about>).

When it launched Google Photos in 2015 the company said: "When we say a lifetime of memories, we really mean it". But in a blog post (www.snipca.com/36646) on 11



November, it said it had to "keep pace with the growing demand for storage", adding that 28 billion photos and videos are uploaded every week.

The company also said that the change was needed to help it "uphold our commitment to not use information in Google Photos for advertising purposes".

Google is urging users to visit <https://photos.google.com/storage> to see a "personalised estimate" of how long their storage may last.

GCHQ fights Russia's 'monkey' lies about Covid vaccine

British cyber-spies have launched an operation to stop Russia-backed agents spreading lies online about coronavirus vaccines.

A Government source told *The Times* that GCHQ is believed to be combatting Russian disinformation that claims vaccines developed in the West don't work, or have bizarre side effects.

Russian news shows have reported that the British vaccine being made by AstraZeneca and Oxford University can reverse evolution by turning people into monkeys.

These conspiracy theories have been turned into crude online videos and illustrations, including one

showing Boris Johnson made to look like the Yeti, with the caption 'I like my bigfoot vaccine!' (pictured).

Russia is thought to be targeting countries outside Europe, including Brazil and India, in an attempt to sell them its own Sputnik V vaccine.

GCHQ is using the same methods it developed in 2018 to tackle propaganda shared online by Islamic State. These include taking down websites that contain disinformation and encrypting the data of those responsible for creating and sharing it. It will also try to disrupt the communication between the groups.

However, GCHQ is allowed only to remove disinformation



that's been uploaded by nations, not by individual citizens.

Foreign Secretary Dominic Raab said: "Any attempt to spread lies about Covid-19, and the vaccine in particular, when we're trying to come together as an international community to resolve a global pandemic is utterly deplorable".

It follows the UK, US and Canada accusing Russia in July of trying to steal research into vaccines carried out by universities.

IN BRIEF

NEW VIRGIN BOX REWINDS LIVE TV

Virgin Media has launched a TV-streaming box that lets you restart live TV programmes and can be controlled by your voice. Called Virgin TV 360, the box can stream Netflix, Amazon Prime Video and BBC iPlayer, with Disney+ expected to be added next year. It can show 4K and HDR shows, and comes with Mini boxes that let viewers watch different programmes at the same time. Visit www.snipca.com/36643 for details.

BT OFFERS BROADBAND WITHOUT LANDLINE

You can now sign up for BT broadband without also paying for a landline, which many customers regard as an unnecessary 'tax' on having an internet connection. However, the price isn't any cheaper than it is when you sign up for a traditional copper phone line or a VoIP service. If you give up your landline, you'll have to rely on mobile phones for all calls, including to emergency numbers. BT's site has more information: www.snipca.com/36645.

SLINGBOXES TO STOP WORKING IN 2022

Sling Media has said it will gradually end support for its Slingbox devices before taking them all offline in November 2022, meaning they'll no longer work. Released in 2005, the Slingbox sent video from your DVR to phones, tablets and PCs. Initially ground-breaking, its popularity waned amid the rise of streaming services like Netflix. The final Slingbox, called M2, was released in 2015. Read more at www.slingbox.com/discontinued.

Question of the Fortnight

Will sending fewer emails help save the planet?

Press send now and future generations might not thank you

There's so much abuse online that we think it's important to send 'thank you' emails. But such pleasantries might be helping to destroy the planet.

Government officials working to reduce the UK's carbon footprint have been looking into research that shows we send an estimated 64 million unnecessary emails every day. Each message sent pumps more carbon into the atmosphere.

The research, published last year by renewable energy company OVO, claimed that if Brits sent one fewer email per day, the UK could cut emissions by more than 16,433 tonnes of carbon a year – equivalent to 81,152 flights to Madrid or taking 3,334 diesel cars off the road.

“What really matters is buying less kit and keeping it for longer, though even this is small fry compared with your travel”

One official talking to the *Financial Times* said that many emails we send are “useless” one-line replies like “thank you”. They’ve raised the issue as the Government prepares to host next year’s UN COP26 climate change summit in Glasgow. Officials are taking the problem so seriously that it was even included in a recent paper from the National Cyber Security Centre.

If followed through, we may all be encouraged to send



fewer emails, just as we’re advised to recycle regularly and use less plastic.

Emails don’t intuitively feel like a main contributor to global warming, but as you

type your computer is using electricity. Then, when you press send, your router sends the signal along wires to the local exchange, and from there to a telecoms company. Next, the message goes to one of the massive data centres run by the tech giants. Each stage requires electricity.

As carbon expert Mike Berners-Lee (brother of Tim) said in 2019: “We don’t think about it because we can’t see the smoke coming out of our computers, but the carbon

footprint of IT is huge and growing.”

But some specialists say OVO’s report misrepresented the scale of the problem. In 2019, the UK emitted 435.2 million tonnes of greenhouse gas, so a 16,433-tonne reduction is a tiny proportion – about 0.0037 per cent of the overall figure. And that’s reached only if every single British person reduced their email output.

Berners-Lee himself recently admitted that the 16,433 figure was based on “back-of-the-envelope” maths from 2010, and said it was used to provoke wider conversations about tackling climate change.

In addition, the estimate of how much carbon an email generates takes into account everything involved in the process, from your computer to your router to the data centre. But your PC would’ve been switched on anyway (unless you did so only to send an email), as would every

THE FACTS

- Officials are investigating the environmental impact of people sending millions of “useless” emails
- It’s been estimated that by sending one fewer email every day Brits would cut 16,433 tonnes of carbon emissions
- However, experts say that amounts to just 0.0037 per cent of the UK’s emissions every year

other link in the chain. It all produces carbon whether or not an email is actually sent.

The only saving is in the data centre hosting the email, but according to Chris Preist, professor of sustainability and computer systems at Bristol University, this will be “far, far less than one gram per email”.

He told the BBC that what really matters is “buying less kit, and keeping it for longer”, though even this is “small fry compared with your travel, heating your home, and what you eat”.

His advice is reassuringly realistic, particularly as it becomes harder to tell environmental fact from apocalyptic hysteria. He added the responsibility falls not on individuals worrying that they send too many emails, but on companies to design systems that are as green as possible.

That’s not an excuse to fire off pointless emails, but it does mean you can say thank you for Christmas presents without feeling guilty.

Protect your tech

Scams and threats to avoid, plus new security tools

WATCH OUT FOR...

Fake scams 'spotted' by Martin Lewis

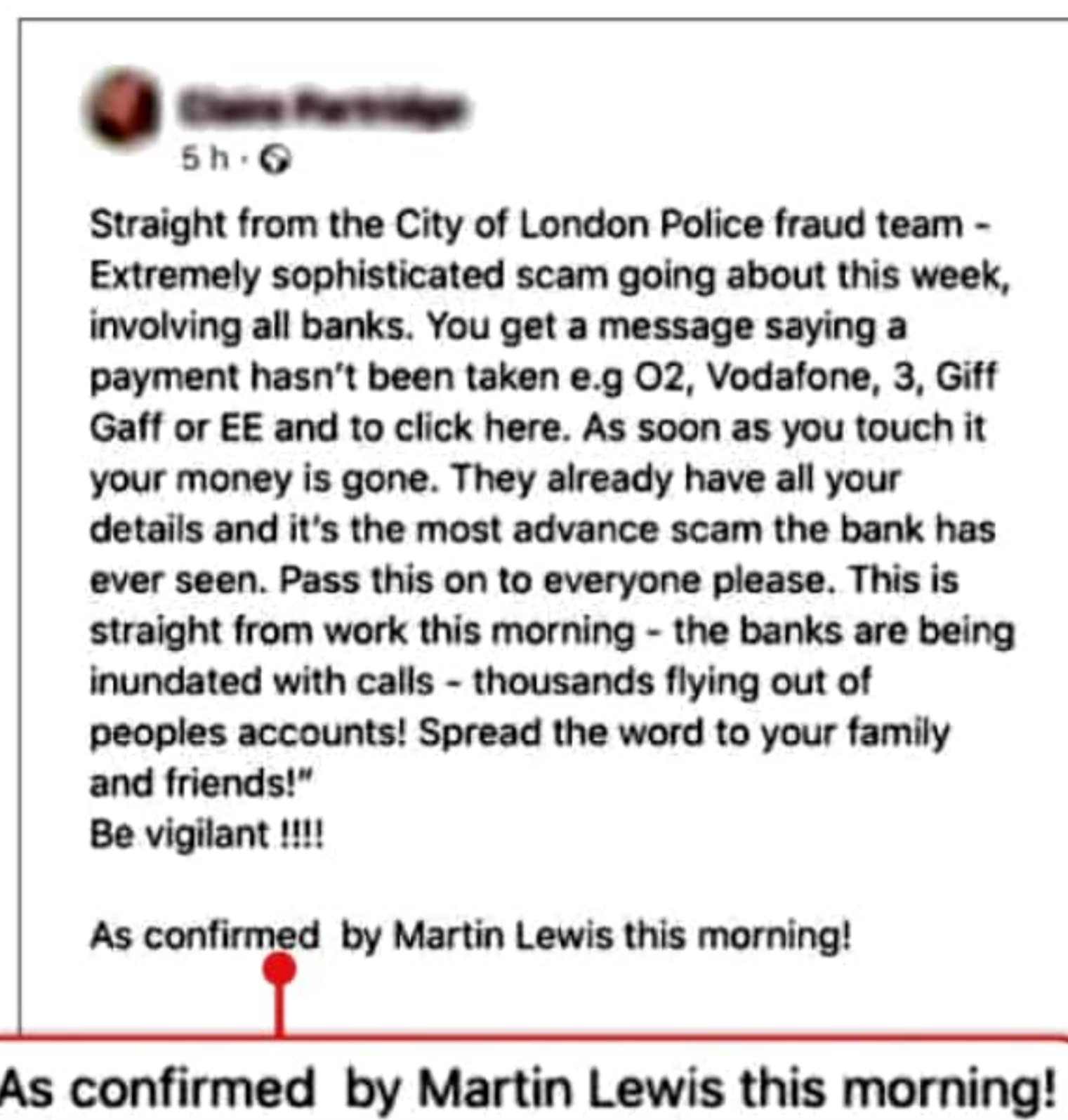
What's the threat?

People are sharing a fake warning from MoneySavingExpert founder Martin Lewis about a scam that doesn't actually exist. The message, which has spread through WhatsApp and Facebook, claims that Martin Lewis and Action Fraud are telling users to look for an "extremely sophisticated scam going around this week, involving all banks".

In the alleged scam, you're told that a payment to O2, Vodafone, Three, Giffgaff or EE hasn't gone through, and you should click a link to resolve the problem. The message describes the scam as "the most advanced" banks have ever seen. It ends melodramatically: "The banks are being inundated with calls – thousands flying out of people's accounts! Spread the word to your family and friends! Be vigilant!"

How can you stay safe?

First, let's be clear that this is a scam



about a scam. While fraudsters do try to trick you by urging you to click a link to process a payment, neither Martin Lewis nor Action Fraud have spotted this specific scam. Lewis was quick to disassociate himself from the message, tweeting that

it was "nowt" to do with him (www.snipca.com/36634). Action Fraud added that it had seen several versions over the past few months.

The scam doesn't contain malware or links to dodgy sites, so it's more of a nuisance than a malicious attack, but it's still something to avoid sharing. Also, it's a reminder that Martin Lewis is such a respected figure that criminals will be tempted to use his name and photo to add legitimacy to their scams.

Back in 2018 he sued Facebook after it displayed ads for get-rich-quick investment schemes that claimed were "endorsed" by him. Lewis agreed to drop the case when Facebook pledged to spend £3m setting up the Citizens Advice Scams Action (CASA) service, which provides one-to-one support for people affected by scams. Read more at www.snipca.com/36636.

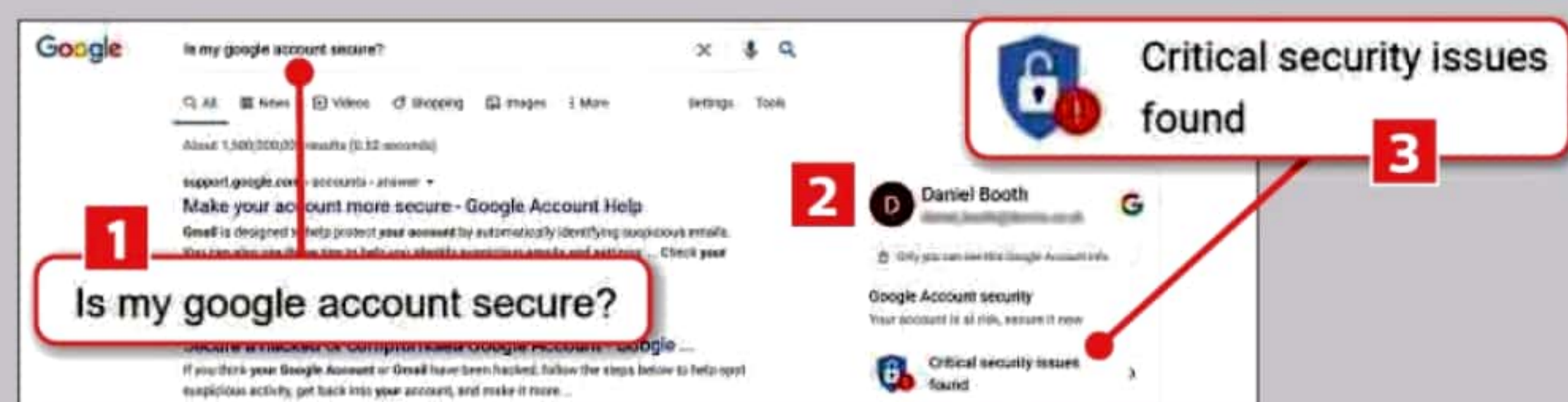
New tools | Search for Google account security flaws

We've all got used to asking Google questions, from the mundane ('When does B&Q shut?') to the profound ('Is there life after death?'). Google wants to tap into this habit to make it easier for you to check the security of your Google account.

If you type **Is my google account secure?** into Google's search box (1 in the screenshot), you'll see a results box on the right (2), with your name and email address at the top (only you can see this). When we searched, it told us

it had found 'Critical security issues' (3). We clicked this, and discovered that eight passwords saved in Chrome had been "compromised" and should be changed.

Google also warned us about a "recent security event", which turned out to be a "suspicious attempt to sign in with your password". This info is still available at <https://myaccount.google.com/security-checkup>, but it's handy that Google has added the option to type a question to access it.



ScamWatch

Readers warn readers

A curry from Currys? Pilau the other one

I received an email from **info@ticket.ma** that suggested I'd made an order for seats in a restaurant in Newcastle through Currys PC World! It said my order was unclaimed and urged me to click a purple button saying 'Click here to cancel your order'. It says you'll be able to cancel your order via PayPal, but you'll actually be taken to a fake site that will capture your credentials. The email takes many forms, as you can see on this YouTube video: www.snipca.com/36617. Several people have commented that they'd also received the email.

Bas Eastley

Warn your fellow readers about scams at letters@computeractive.co.uk

Letters

Tell us what's on your mind

Why is Microsoft ditching Control Panel?

✉ Why is Microsoft moving Control Panel settings and planning to get rid of it entirely? (News, Issue 593, page 9) I use the current Control Panel, with the setting selected to display with 'Small icons' (see screenshot above right). This is all the settings in a relatively small window.

Microsoft's new method of showing them all in the Settings app wastes space, and has time-wasting individual windows. Most of the time I can't find what I want. Microsoft's developers along with Mozilla's and others seem to have forgotten what the 'G' in GUI actually means (Graphical User Interface). So many apps these days actually have a TUI (Textual User Interface), with no Graphics. I want my computer with a GUI not a TUI.

Dave Symes

The future is expensive and subscription-only

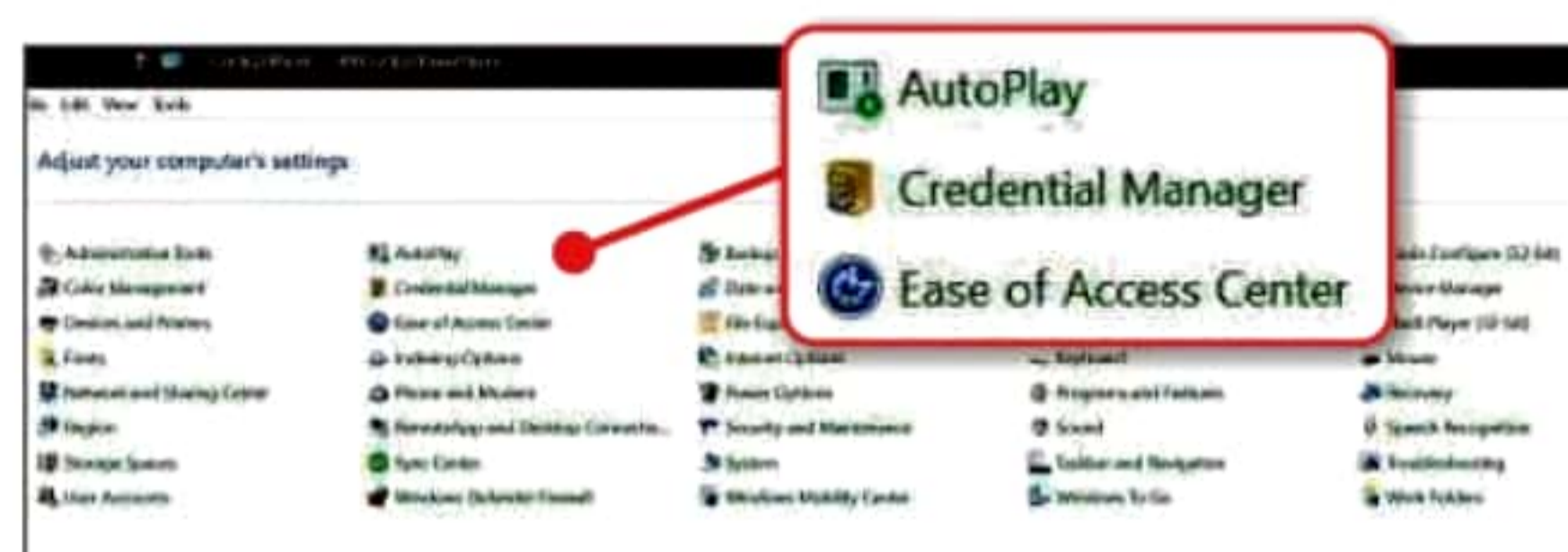
✉ A browse through Issue 593's News pages gives you a depressing glimpse of the future. On page 7 you report on Apple's new subscription service, which starts at £14.95 a month. It won't be long until all popular programs are subscription-only. They'll grab us, get us hooked, then threaten to erase our work if we unsubscribe.

Two pages later you tell us that Yahoo Mail is ending free email forwarding, though you'll still get it if you subscribe to the Pro version for £2.09 a month. Well, there's a surprise! And below this story is the scandalous news that Three and Vodafone are increasing prices above the rate of inflation. This is just the start. Over the next few years, as the business effects of the pandemic take hold, you'll see more and more firms slashing services and hiking prices. Some companies will be doing it just to survive, but the more cynical ones will use the economic uncertainty to ruthlessly cut costs.

Douglas Heath

Fast home broadband is no substitute for office working

✉ I fear that Adam Buckland has swallowed all the hype about 2020



being the year that changed everything ('Faster broadband is vital for post-COVID world', Letters, Issue 593), particularly in his enthusiasm for a new type of workforce staying at home. He's right that fast broadband is vital if millions of people continue to work from home, but I don't believe that is what will happen.

I'm the boss of a small company that's had to adapt this year by moving our operations to people's lofts, living rooms and kitchens. We've managed to cope, but productivity has taken a hit because team communication is so much harder. Emailing is fine, but nothing beats a quick chat face to face.

We're all itching for normality to resume. You can give us all free 10Gbps broadband for life – it wouldn't make a jot of difference to what really matters: productivity. Working from home feels good now because it's a novelty, but the strain will start to show by the end of next year and people will return to offices in a flurry.

Pat Clarke

Grammarly helps the aged

✉ I agree with Daniel Booth's comments about using Grammarly to improve his writing ('Easy When You Know How', Issue 593) except in one crucial area: age. I'm over 80 years old and have a benign tremor in my hands, fading eyesight, and a brain that seems to have a mind of its own.

Sometimes I need all the help I can get when writing a letter, so Grammarly is a great help to me. I too look forward to reading about other readers' aids and adaptations to their literary efforts.

Ian Fairclough

Poor websites are bad for business

✉ It's even more important right now for high-street shops to have a website, and many do. But many long-established sole-trader shops believed it was a good idea to create a site, often many years ago, and leave the content vague or even non-existent. Dead web links prevail on these sites.

As a personal example, I was searching for a local outlet that sells and fits car audio. There are around four within five miles of my location. I even once visited one. They all have websites, but not one displays exactly what they sell or at what price. One has a shopping cart, but no way of buying anything! At least one has

A marriage made in Yahoo Groups

✉ Les James wasn't the only person to shed a tear over the demise of Yahoo Groups (Letters, Issue 593). I was especially upset because it was through these groups that I met my wife, nearly 20 years ago. Like Les says, the internet was a more innocent place then. People chatted merrily to each other, without fear of causing offence or being 'cancelled'.

Appropriately enough, we met through a regional computing group, and bonded over a shared love of software programming (yes, we are both rather geeky!). Our wedding in 2003 had a Yahoo theme to reflect how we met.

Thankfully, our marriage is still going strong, unlike Yahoo. We both stopped using Yahoo Groups in around 2007,



partly because we had met each other and didn't need to talk to anyone else. These days social media has taken over, but I doubt anyone will look back on Twitter and Facebook with the same nostalgic tug that I do with Yahoo Groups.

Stephen Talbot

a homepage with links that go to content-free pages or are totally dead. What's the point? They all invite a phone call, but they don't even say if they are currently open. Who's going to drive up to five miles just to find out they're closed. I don't know how much business such companies lose because of their poor websites, but they are losing mine.

Kevin Lomas

My PC still starts slowly, despite your tips

✉ I looked forward to reading the various options in your 'Make Your PC Start Faster Than Ever' feature in Issue 592 (page 60, pictured below), and have now tried them out on my PC. However, I'm afraid I haven't had the same success in reducing the startup time as Nik Rawlinson had on his.

I have a Lenovo H50 desktop PC, with an Intel i5 3.20 GHz processor, 8GB RAM and 1TB storage. I bought it in January 2016. For some time I've used BootRacer (<https://gratis.com/bootracer>) to measure and analyse startup time. At present it takes on average 125 seconds from switching on to being ready to open programs. I've tried opening Microsoft Edge before the startup process has completed, but it still seems to take the same amount of time.

I've looked at disabling startup programs, of which there are few. I've not been inclined to disable some of them because I'm not sure what the effect might be. With reference to the actions you took, I don't see a 'Best performance' option, so instead use the 'Balanced (recommended)' power plan. I use 'Windows choice' for visual effects, and I don't want to reset Windows.

According to BootRacer, it takes 50 seconds for Windows to boot, and a further 75 for the desktop to load, though the latter varies from 60 to 140 secs. It seems to take longer after a Windows update. I find the startup time of Nik's seven-year-old computer very impressive



STAR LETTER

BT should provide 4G for the same price as fibre

✉ Having let off steam about rubbish rural broadband before in Computeractive's Letters page, I was heartened by the News story in Issue 593 (page 7) about BT pledging a 'simple solution' to make broadband provided by the Universal Service Obligation more affordable.

Could it be true? I contacted www.bt.com/broadband/USO as provided in the article to submit a request, as my village has ADSL broadband of around 5 to 7Mbps. The dream ended when I was told I was ineligible. Why? Because my village could get a 4G mobile signal. Therefore, I would have to use a 4G hub. My arguments on the strength of rural mobile phone signals made no difference. Unless I tried a BT/EE 4G hub and that proved inadequate, I couldn't request a USO connection.

Investigating 4G hub pricing demonstrates how rural communities



are getting hammered again. An ADSL 11Mbps deal with unlimited download with Now Broadband is £18 per month; 67Mbps from BT is £29.99; while 15Mbps unlimited 4G with a BT hub is £45 per month. So, it's either stick with 5Mbps or pay two and a half times as much for a dubious 4G hub.

As BT have their usual stranglehold on the broadband business, perhaps the Digital Minister could at least force BT to provide a 4G service at the same cost as they provide fibre. Dream on!

Graham Dodd



The Star Letter writer wins a Computeractive mug!

and would love to learn more about how I can reduce mine!

Stephen Lee

✉ I want to thank you for the advice in Nik Rawlinson's 'Make Your PC Start Faster Than Ever' feature in Issue 592. It has saved me from much frustration. Nik's suggestions have reduced my boot-up time from around eight minutes to just over two! This seems to have improved the PC's response time generally. I didn't have the courage to try the 'Reset Windows' option as I'm not sure whether I still have permissions for some of my programs.

Ian Pedley

Stuck on last autumn's Windows 'jumbo-sized' update

✉ I read with interest your readers' letters on how wonderful the additions to Windows updates are, and how easy they are to download. I don't know if it's just me, but I seem to be stuck in the sands of time, never

managing to get past last autumn's update (version 1909).

I have tried on several occasions to update both my Lenovo and HP Pavilion laptops, spending over 35 hours only to be told it wasn't completed or I had insufficient memory. Unfortunately, I don't have access to superfast broadband of the Microsoft empire where everything is downloaded in minutes with their jumbo-sized updates of several gigabytes.

I was alright before, with the smaller regular updates, but not with those twice a year. The last successful one (May 2019) took two attempts and over 17 hours. You might ask why I don't get fibre broadband. The answer is simple: I can't. I live on a modern estate in a town with over 250,000 people but Openreach, to my knowledge, have no intention of installing fibre broadband. They seem to be more interested in rural areas. I don't have a problem with that, but sometimes people in the towns and cities are left behind.

Stephen Brickley



We stand up for your legal rights

Can McAfee keep taking money if I'm not using it?



Q For the past two years McAfee has taken out an annual subscription of £89 from my account, even though I'm no longer using its security software. The subscription was not set up as a direct debit on my bank account, so can you shed some light on this? Have other readers been affected?

David Salenius



there's no harm in asking the company for money back as a goodwill gesture. Some companies are sympathetic when customers explain that they didn't realise they had signed up to a rolling subscription. We'll contact McAfee and see what it says.

Rolling subscriptions are common these days. Indeed, if you sign up for a

subscription you should assume that it will automatically renew unless you cancel. However, you can cancel your subscription without a fee within 14 days of it renewing.

Be careful, though: if you download software within this 14 days, that will count as using it and you won't get your money back. That said, McAfee will refund you within 30 days as long as you uninstall the program.

For more advice on cancelling subscriptions, read Issue 589's Cover Feature 'Cancel Old Software & Services' (pictured).

CASE CLOSED

Can Microsoft deny refund after failed repairs?

Q I want Microsoft to give me a full refund for a £1,500 Surface Pro laptop I bought from it on 7 August. It has had to be replaced twice. The screen on the original laptop cracked after two days, and the replacement for that froze almost immediately. The second replacement is no good because it has a German keyboard! Microsoft is being difficult about a refund. Can you help?

Michael O'Donnell

A Microsoft is extremely lucky that it was given any chance to put this right. Michael was within his rights to demand a full refund rather than a replacement with the first faulty laptop. If a fault is found within the first 30 days, you don't have to put up with a repair or replacement. Instead, the retailer must refund you.

After this time, a company is allowed to offer a repair, but it has only one chance to get it right. This saves customers the misery of being subjected to endless repeat repairs. It's worrying that a company as big as Microsoft didn't know this. We've asked it to investigate Michael's case and said it must let him send the laptop back for a full refund.

CASE ONGOING

CASE UPDATE

Currys finally refunds reader left in lockdown limbo



We often point out that retailers can ask you to prove a product is inherently faulty, or that they can deduct money from a refund to reflect how long you've used the item. Sometimes, though, often after pressure from us, they admit responsibility and give all your money back.

That's what Currys did, more than six months after John Gilson's 40in JVC TV stopped working. As we reported in Issue 582, the fault occurred in March at the start



of lockdown, just days before his 12-month warranty ran out. Currys said it would fix the TV, but never got around to it. Yes, these were difficult times and we wouldn't expect repairs to happen quickly, but Currys treated John badly by leaving him in limbo.

In the end he gave up waiting and bought a new TV. When he turned to us, he just wanted Currys to refund him. Legally, it could've asked John to prove that the fault

was inherent, and not caused through wear and tear or damage. John would've had to do this by paying for an inspection. But after we contacted the company, it agreed to give him a full refund without asking him to provide any further evidence of the fault.

This is a far better resolution than John was legally entitled to. Because more than six months had passed since purchase, Currys was allowed to issue only a partial refund. Thankfully, it realised a full refund was the decent thing to do.

Contact us so we can investigate your case

✉ Email: consumeractive@computeractive.co.uk
Please include your name, phone number and address.

Retailer has gone bust – who'll fix my laptop?

Q I bought a refurbished Dell Latitude 12 Rugged Extreme 7214 laptop for £1,000 from MCS Technology Ltd just over a couple of years ago. The touchscreen has developed a fault despite not being used much. It looks like MCS is no longer trading. If it's covered by the Consumer Rights Act (CRA), is there anything I can do?

Dom Price

A Unfortunately, there's not a lot Dom can do. Even if he could prove the fault is inherent and

therefore covered by the CRA, who would he sue? MCS isn't in business anymore and Dell isn't legally responsible.

When companies go bust, customers can add themselves to a list of creditors set up by either the administrator or liquidator. But they don't usually get much money back, if anything. It looks like no company has been



appointed to handle MCS's assets or liabilities because it's still listed as an active trader at Companies House.

You may think it's suspicious that the firm is listed as still being active, but we think its demise is very recent. It sent a confirmation statement to Companies House on 29 September, but its website and pages on eBay and Facebook have disappeared.

We'll keep an eye on the Companies House site just in case it rises from the ashes, and let Dom know if so.

CASE CLOSED

Who's liable for non-delivery – the seller or courier?

Q I didn't want to go to my local garden centre because of Covid-19, so I ordered some spring bulbs online. However, they never arrived. Hermes claims to have delivered them, having a photo of my front door as



proof. Do I have to chase Hermes about this or the retailer?

Debbie Chance

A Since emailing us, Debbie checked the photo that Hermes took and it turned out not to be her front door. She then told the garden centre that Hermes delivered the bulbs to the wrong address, and it has agreed to send her a new package.

Had she not discovered this, Debbie would've had to chase the garden centre (the retailer), not Hermes.

A customer's contract is always with

the retailer, not the courier, so the former has to guarantee delivery. The customer never pays the courier, so it can't refund them.

Since lockdown began, many courier companies are taking photos of parcels left on doorsteps. They can show the retailer this evidence should the customer claim the item didn't arrive.

However, the seller isn't responsible if an item goes missing after you tell the courier it can be left in a 'safe place', such as behind the bins or with a neighbour. This is a case of theft and should be reported to the police.

CASE ONGOING

CREDIT WHERE IT'S DUE

Telford firm got me back on my bike

✓ I have a four-year-old Tacx (now part of Garmin) Vortex Smart Bicycle Trainer, which recently stopped working. I spoke to Tacx/Garmin, who told me they couldn't repair the broken part, and nor did they know if or when replacements would be available. They also said that it was out of warranty because it was more than two years old, and suggested that I buy a new trainer!

In desperation I contacted Electronic Partners of Telford (<https://uk.electronic>

partners), and in spite of this being outside their usual line of repair work, they sent me a stamped, addressed label for me to send them the trainer.

They carried out an inspection, sent me a quote (which I paid), then they returned the unit, fully operational.

Their website is one of the easiest I've ever used. It lets you follow the progress of your repair. Brilliant all round. I'm one very grateful customer.

Phil Peacock



✉ Has a company impressed you with its customer service? Please let us know: editor@computeractive.co.uk

Contact:
Electronic Partners

- Online help: <https://uk.electronic.partners/faq>
- Phone: 0330 2233 644

Grow Your Family Tree



If you have doubts about how your ancestors died, follow **Nick Peers'** advice on how to...

Find inquest reports in newspapers

One word on a death certificate guaranteed to leave more questions than it answers is 'inquest'. It's what prompted reader Roger Allen to email us about an ancestor, William Nicholls, who died after falling from a train in 1915. The death certificate says accidental death, but Roger's family has always suspected foul play. The certificate includes the date of the inquest (1 December 1915) and the name of the coroner. Roger wants to know whether he can track down the documents involved to try and learn more about the incident.

Search local newspapers for news articles

Sadly, there's no online archive of inquests. The National Archives says that few coroners' reports from the 19th century have survived (www.snipca.com/36386). They're not considered public records, and only those recorded before 1875 were

required to be kept permanently.

Had William's death led to a trial, then the inquest may have survived in assize court records (the National Archives has information on this at www.snipca.com/36387), but otherwise Roger will need to look elsewhere.

Local newspapers often carried reports of inquests, particularly those likely to titillate the public interest. You can search these online in the British Newspaper Archive (www.britishnewspaperarchive.co.uk, £12.95 for a month's access) or on Find My Past (www.findmypast.co.uk, £16.99 monthly Pro subscription required). If you sign up to the latter, visit the 'British newspapers' section (www.snipca.com/36388) and type the name of your ancestor into the 'Who' box (1 in the screenshot below left) followed by the word 'inquest' into the 'What else?' box (2) before clicking the Search button.

In the case of Roger's ancestor, this initial search produced 1,412 articles. The next step is to narrow the search using the controls on the left – the 'By Date' option is an obvious choice, so we selected 1900–1949 followed by 1910–1919 and then 1915, which reduced the number of matches to nine. Lo and behold, the first match yielded a hit from the *Birmingham Daily Gazette*, dated 2 December 1915. A second match was



We found this article on William Nicholls' death in the *Burton Observer and Chronicle*

found at the bottom of the list in the 9 December edition of the *Burton Observer and Chronicle*.

Clicking a link from these results opens a document viewer that zooms into the article on a digital image of the newspaper. The *Gazette* carried a two-paragraph piece that provided some additional details about how William died, but the *Observer's* longer article (see screenshot above) added more info that included details of the post-mortem examination and the reasoning for the coroner's verdict ("there were no signs of a quarrel" – see screenshot above).

Use search filters for better results

Not all searches will be this successful. If your initial search proves fruitless, try searching for the surname only, or the coroner's name. If all else fails, leave the search terms blank and use the place, county, date and newspaper filters on the left to drill down to access local newspapers, then search them for 'coroner' or 'inquest', or simply browse newspapers by date to see if there's a mention of your ancestor.

Even then, you may draw a blank. The above technique failed to yield a hit for my great-granduncle Daniel Hirons, who died in a work-related accident in 1903 that resulted in a coroner's inquest. Despite this, the search yielded some interesting background information about the railway he was helping to build when he died.



Type your ancestor's name into the 'Who' box 1 and 'inquest' into the 'What else' box 2

Your Genealogy Problems Solved

What's the easiest way to incorporate Find My Past records into my Family Tree Maker (FTM) file?

Stuart West

You can do this using FTM's web-clipping feature. Switch to the Web Search view in FTM then log into your account at <https://findmypast.co.uk> using its built-in browser.

Locate your record, then click the scissors button to activate the web-clipping tool. From here you can click and drag to select portions of text to add facts using the pop-up menu. Once done, click Merge to bring the record into your family tree.

Have a genealogy question for Nick? Email letters@computeractive.co.uk with 'Grow Your Family Tree' in the subject line.

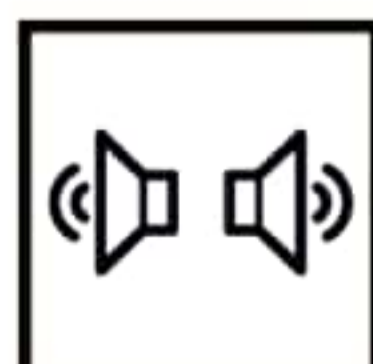
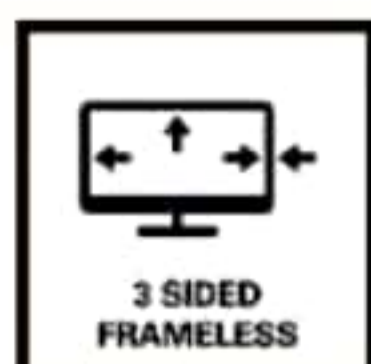
AOC



Q34E2A

High resolution and bold colours

with a wider view
& greater productivity



eu.aoc.com

Available at

amazon



BOX



CCL
COMPUTERS



Best Free Software

Will Stapley recommends new programs that won't cost you anything

FILE COMPRESSION

PeaZip 7.5

www.snipca.com/36714

What you need: Windows 7, 8.1 or 10

Windows has a built-in tool to open and create compressed files (just right-click the files you want to compress, select 'Send to', then 'Add to archive'), but it only supports the ZIP format and lacks any additional features, such as the ability to adjust compression settings or add encryption.

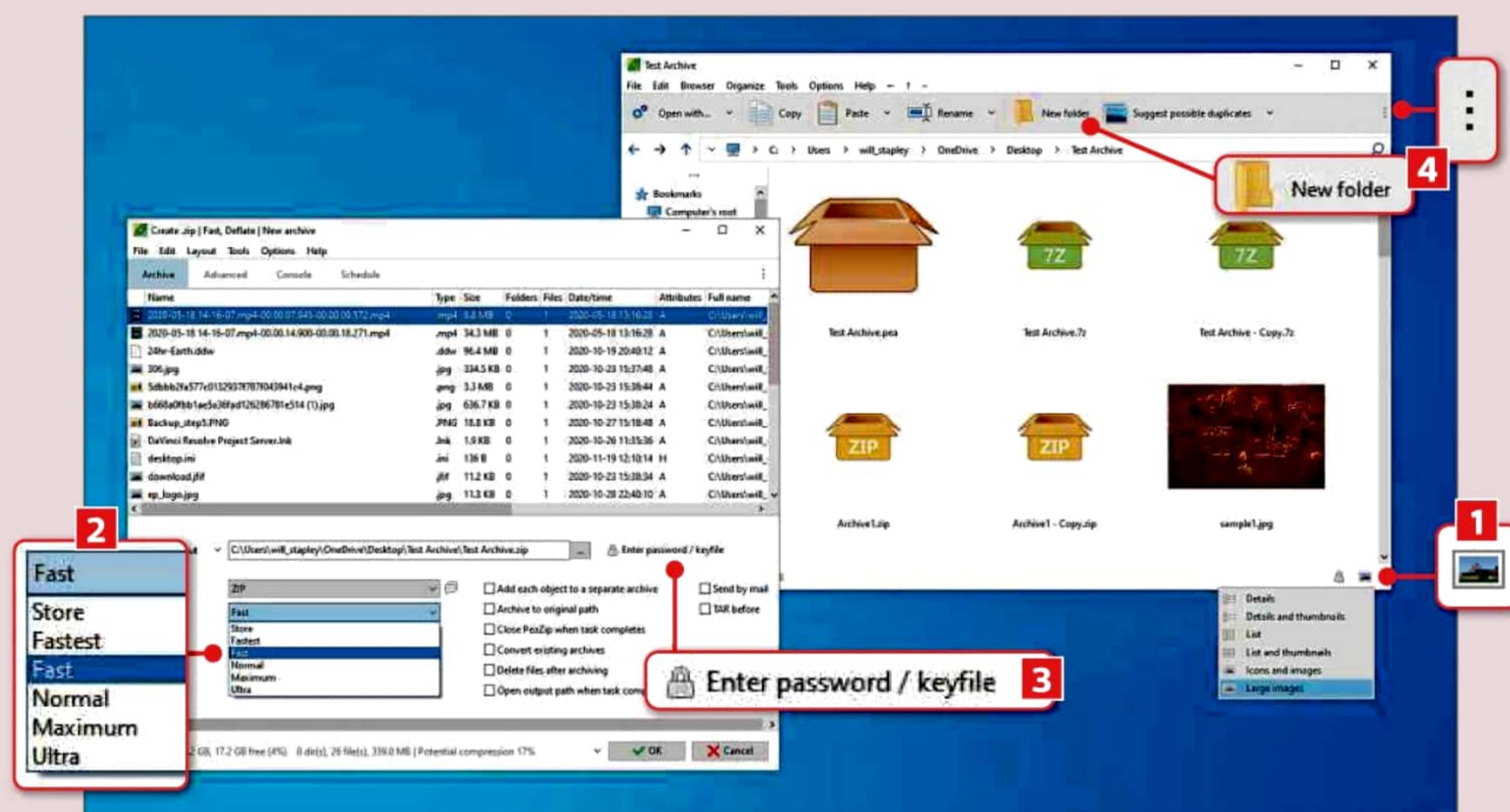
PeaZip is a far more powerful alternative that not only supports all major compression types (including ZIP, 7z, TAR, ARC and PeaZip's own PEA format), but also provides plenty of extra features.

New to version 7.5, you can now run EXE files within an archive without having to first extract the entire contents to a folder. Just open the archive in PeaZip, then double-click the file you want to preview. Another new option is the ability to create folders within an existing archive.

In addition, version 7.5 makes it easier to spot different

archive types thanks to a range of new icons – you'll need to change the view mode to see these (see below).

The release notes for PeaZip 7.5 state that it now defaults to Fast mode when creating ZIP or 7Z archives (the faster the compression mode, the bigger the resulting archive file). However, when we tested it the default setting was still set to Normal. We suspect this will be fixed in an upcoming update, but for now you can easily change the compression setting yourself when creating an archive (as explained below). In our tests using the ZIP format in Normal mode, PeaZip took 11.1 seconds to compress 26 files (including image, music and program files) totalling 339MB. When we switched to Fast mode, the archive was slightly bigger (277MB), but PeaZip took just 4.8 seconds to create it.



1 To find specific compression types more easily, click this button, then select a view other than List or Details to reveal new icons for each file type.

2 Choose the compression speed within the archive settings. To create an archive, hold Ctrl, select the files you want to compress, then right-click and select Add.

3 To protect your archive, click the 'Enter password/keyfile' option, then enter a password (make a secure note of this as you won't be able to open the archive without it).

4 To add a folder to an existing archive, click 'New folder' in the toolbar (if you can't see this option, click the three dots on the far-right of the toolbar and select 'File manager').



CATALOGUING TOOL

EMDB 3.7

www.snipca.com/36633

What you need: Windows 7, 8.1 or 10

Streaming services such as Netflix may be incredibly popular right now, but many of us still have our own movie DVD collections. EMDb lets you better manage them by creating a virtual DVD bookshelf (like those you used to see in video-rental shops). You can add films and TV series that you've recorded or downloaded to your PC by clicking Hard Disk (see screenshot), Add Multiple Movies, then telling EMDb where to look for them. This version also lets you add video files simply by dragging them directly on to the bookshelf from File Explorer or your desktop. For your physical DVDs, click Add, type the title of the movie, then Search IMDb (the popular internet movie database) and choose from the results. EMDb will then add the DVD cover, actor information, release date and more.



SCREEN TOOL



Monitorian 2.75

www.snipca.com/36632

What you need: Windows 10

Fed up fumbling for the brightness controls on your monitor or laptop's display? Monitorian (scroll to the Download section via the link above, then click Installer) lets you adjust the brightness from your system tray (bottom-right corner of your desktop). It's particularly useful if you're using multiple monitors because it lets you quickly set them to the same level. Simply click the Monitorian icon, then adjust the slider for each screen. If you want to adjust them simultaneously, right-click the icon, select 'Enable moving in unison', then click the box next to both listed displays. New to this version, you can now restrict each monitor to a specific brightness range - right-click, select 'Change adjustable range', then click the small bar next to the display you want to adjust (see screenshot) and move the sliders accordingly.

WHAT SHOULD I DOWNLOAD?

We tell you what software & apps to use

What can I use to search my large PDF collection?

Q I have hundreds of image-based PDF files scattered over my PC that I would like to perform text searches on. How can I convert them in one go using OCR, replacing the originals with text-searchable versions?

Mike Dalgleish

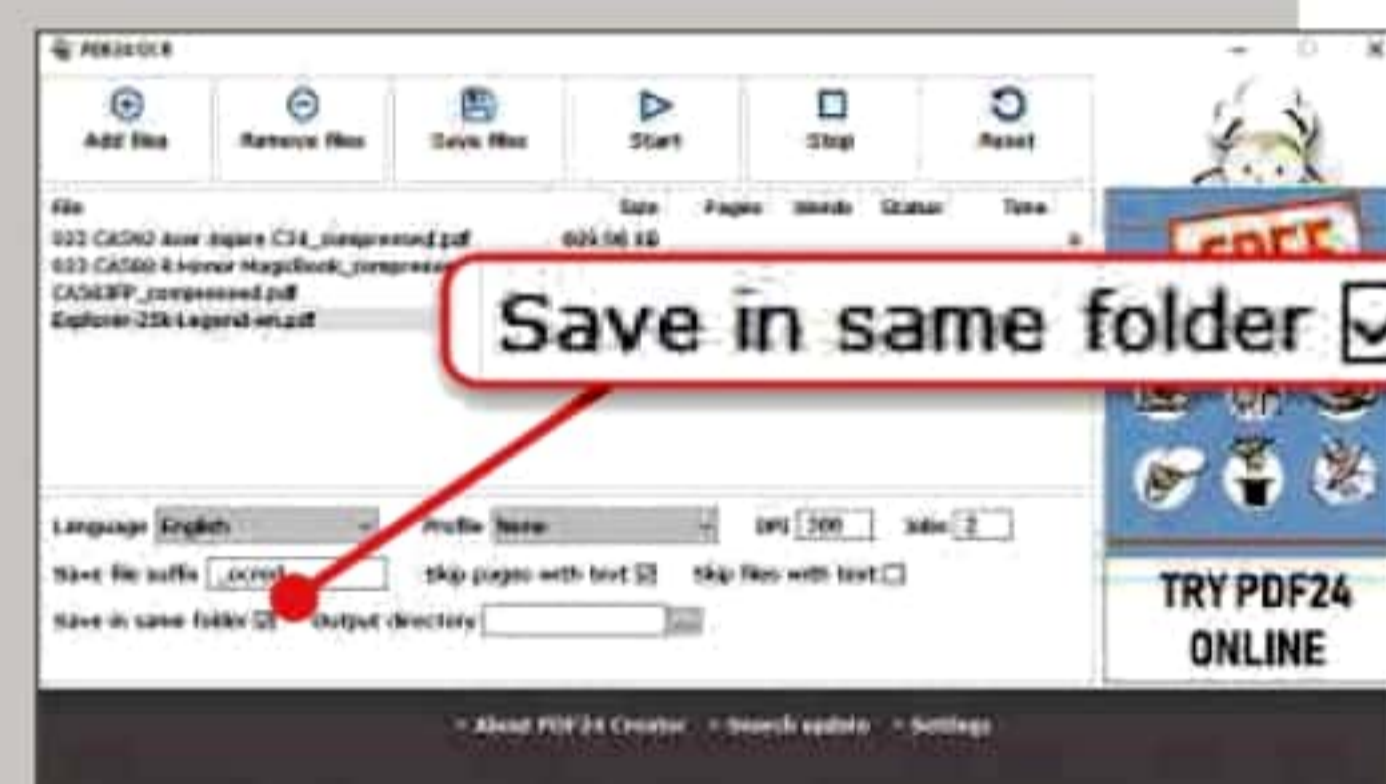
A One option is to upload all your PDFs to Google Drive (if you don't already have one, create a Google account at www.snipca.com/36637, then go to <https://drive.google.com>). Google Drive automatically applies OCR (optical character recognition) to everything you upload, and it works impressively well.

To upload your PDFs, drag them from a File Explorer window into Google Drive within your browser - don't worry, the originals will stay on your PC. Because your PDFs are spread across multiple folders, you might find it easier to first locate them using the free search tool Everything (www.snipca.com/36638).

Run the tool, then search for *.pdf at the top. Order the results by folder, then drag those you want into Google Drive as before.

If you'd rather keep everything on your PC, you can do so but it involves a few steps. First, install and run PDF24 (www.snipca.com/36639 - click Download, then select the first download in the list). From the main menu, select PDF OCR, then click 'Add files' and select your PDFs. Alternatively, drag your PDFs directly into the PDF24 window. Tick the 'Save in same folder' box (see screenshot) and all OCR-converted versions of your PDFs will be saved with '_ocred' at the end of the filename.

To search your newly converted PDFs, install and run Acrobat Reader (www.snipca.com/36640 - click 'Download Acrobat Reader', top-right) then press Ctrl+Shift+F to open the search window. Select 'All PDF documents in', tell Reader which folders to search, then enter your search term. Like we say, it's a little fiddly, but it works well.



Do you need our advice on what software to use? Just email us at letters@computeractive.co.uk

HOW I USE...

VeraCrypt Portable



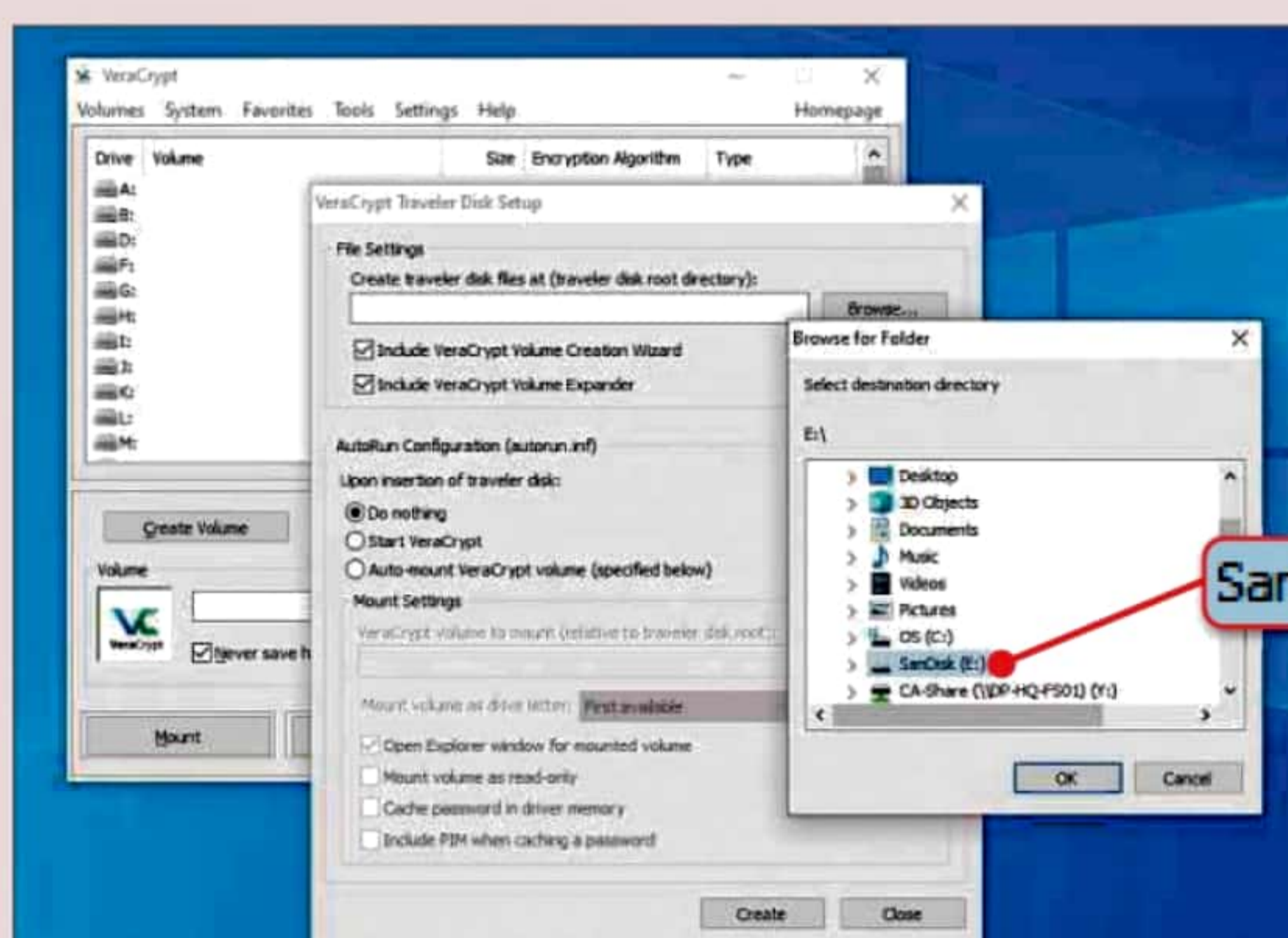
Will Stapley explains how this portable encryption tool keeps his precious USB stick safe

I couldn't be without my 32GB USB stick. I use it on a daily basis to transfer photos between PCs, store notes, run **portable apps** and much more. However, its portability also presents a problem: it's very easy to mislay. Whenever I've lost it in the past, it's always turned up again. But if it does get permanently lost – or worse, stolen – I'll at least have peace of mind that no one will be able to access my files. Why? Because I've encrypted it with VeraCrypt (www.snipca.com/36631).

On this page back in Issue 542, I explained how I used VeraCrypt to encrypt a section of my PC's hard drive. To do the same for my USB stick, I didn't want the hassle of having to install VeraCrypt on whichever PC I'm connecting the stick to. To avoid this, I decided to use VeraCrypt's portable version.

You can download this from the VeraCrypt site (in the Windows section via the link above), but because I already had VeraCrypt installed on my PC I did it all from the program itself. I simply selected Tools, 'Traveler Disk Setup...', then clicked Browse, selected my USB stick (a SanDisk model – see screenshot above right) and clicked Create. Within a few seconds, I had VeraCrypt installed on my USB stick.

I then had to create what VeraCrypt calls an 'encrypted volume' on my stick – essentially a file in which all



Use VeraCrypt's Traveler Disk tool to run the program directly from a USB stick

the encrypted data is stored. Staying in VeraCrypt, I clicked Create Volume, then 'Create an encrypted file container' and followed the onscreen instructions. When prompted for the volume location, I clicked 'Select File...', chose my USB



To make access to your portable VeraCrypt easier, add your USB stick to Favorites

stick, then gave the volume a name (Vault). The rest of the process is straightforward. You'll need to choose how large you want your volume to be – because I wanted my entire stick encrypted, I opted for the maximum. On my 32GB stick, this took around half an hour to create.

To access my encrypted vault I opened the USB stick in File Explorer then ran the 'VeraCrypt.exe' file in the VeraCrypt folder. I've created a shortcut for this in my USB stick's root directory (right-click the file, then select 'Create shortcut').

The first time I ran VeraCrypt from my stick I had to select a drive letter to **map** my encrypted vault to. I then clicked 'Select File...', chose the Vault file on my stick, clicked Mount and finally entered my password. To avoid having to do this every time, I then clicked Favorites, 'Add Mounted Volume to Favorites...' (see screenshot above left), followed by OK. I now only have to click 'Auto-Mount Devices' then enter my password to access the stick.

WHAT I'D LIKE TO SEE IN VERACRYPT PORTABLE

This portable version of VeraCrypt requires a Windows account with administrator rights, presumably because it has to assign a drive letter in Windows for me to access my encrypted

vault. This means I can't use my USB stick on most public computers. It's not a huge problem as I very rarely use them, but I'd still appreciate a way to run VeraCrypt *without* administrator rights.

Named & Shamed



Jonathan Parkyn puts the boot into tech villains, jargon-spouting companies and software stuffed with junk

WARNING: JUNK AHEAD

Junk offender: PDF Creator



What is it with PDF tools, these days? Not long ago (Issue 589), I named and shamed a program called PDF Shaper Free, which tries to trick users into installing a horde of junk. Well, since then I've discovered yet another free PDF tool that's seemingly intent on clogging up hard drives – PDF Creator from www.pdfforge.org/pdfcreator.

PDF Creator is a once-respected tool that appears to have fallen from grace. It used to be a popular way to convert word-processing documents and images into PDFs. That was before Windows provided a built-in option to create PDFs from within pretty much any program (just click Print then select 'Microsoft Print to PDF' from the Printer menu).

I appreciate that PDF Creator offers features that Microsoft's tool doesn't, such as compressing and resizing documents to reduce their file size. What



Jonathan spies with his little eye – a cog...

I appreciate far less, however, is the way that PDF Creator cunningly attempts to install other software on your computer, unless you know how to block it.

Run PDF Creator's installer and you'll be presented with the setup screen pictured above **1**. Notice the tiny cog icon on the right? No, neither did I at first. But unless you click this to reveal the



...click it then untick this box to block PDF Architect

installer's advanced options, then untick the relevant box **2**, you'll end up also installing PDF Architect.

The free version of PDF Architect requires your email address to sign up for an account and does little more than hog an unnecessary 105MB of your storage space while nagging you to pay (£40 per year) for premium features.

WHAT ARE THEY TALKING ABOUT?

WHAT THEY SAY

Microsoft's security team
www.snipca.com/36514

"In this blog, we'll detail the innovative ways in which this ransomware surfaces its ransom note using Android features we haven't seen leveraged by malware before, as well as incorporating an open-source machine learning module designed for context-aware cropping of its ransom note."



WHAT THEY MEAN

If our antivirus doesn't beat malware, we'll confuse it to death instead.

JONATHAN'S VILLAIN OF THE FORTNIGHT

John Wood

Some of my villains are scammers who rip people off. Some are big businesses that treat customers unfairly. And some, like John Wood, are just deeply unpleasant individuals.

The 42-year-old was arrested during an investigation into LuminosityLink – malware he used to hack people's webcams. Police discovered his hard drive was full of thousands of illicit recordings made between 2011 and 2016, most of which showed people having sex in their own homes.

Wood also used secret cameras to

record people at a number of other locations, including the women's changing rooms at the Butlin's resort in Bognor Regis.

Of course, actions like these aren't just unpleasant – they're illegal. In October, Wood pleaded guilty to six counts of voyeurism and two charges under the Computer Misuse Act in Swindon Crown Court, where he was sentenced to two years' suspended imprisonment, 30 days of rehabilitation activities and 100 hours of unpaid work. He'll also need to sign on to the sex offenders' register for 10 years.



LAPTOP | £2,249 from Ebuyer www.snipca.com/36492

Gigabyte Aero 15 OLED

Light work

Like the Aorus 15G (see our review, Issue 586, page 24), this is a laptop based on an Intel i7-10875H eight-core processor and the portable Max-Q version of Nvidia's RTX 2070 Super graphics. But while the Aorus packed a mechanical keyboard into its chunky case, the Aero is slimmer, lighter, and notable for a stunning 4K OLED screen that covers 100 per cent of the P3 video-editing colour space and 95 per cent of Adobe RGB. Combined with Studio Driver software that optimises the GPU for graphics programs as well as 3D games, that gives it strong appeal as an all-round creative PC.

“Its stunning OLED screen makes it ideal as an all-round creative laptop”

In conventional LCD screens (whether IPS, TN or VA), pixels are illuminated from behind by a number of white LED backlights. With OLED, every pixel emits its own light. This results in a trade-off on brightness. Although screens traditionally used by graphic designers tend to use fairly low brightness to increase colour accuracy, video and game content is moving towards HDR, which uses high brightness to increase tonal range, showing detail in very dark and very light areas at the same time.

When we talk about brightness,



however, we really mean the difference between the brightest and darkest areas. With no backlight leakage, OLED pixels can go completely black. So although the Aero's maximum brightness is average, HDR content looks great, and the wide colour gamut suits all types of graphics work. Our test meter found slightly disappointing colour accuracy, with an average Delta E score of 3.3 – we'd prefer under 2, but it's not far enough out to be a significant concern.

We did miss the Aorus' keyboard. Here you get a mushier tile-style affair with a layout that cramps the cursor keys to squeeze in a numeric keypad. It has the same per-key colour backlighting, though, handy for reminding yourself of shortcuts, and the touchpad worked flawlessly.

This is still a large laptop, with a solid-feeling metal chassis, but no bigger than it needs to be, with only a tiny border around the screen. On the minus side, the webcam is relegated to the hinge, pointing at your chin. As well as three USB-A 3 ports limited to 5Gbps Gen1 speeds, there's a USB-C with Thunderbolt 3 for fast storage or an extra

monitor connection, on top of both HDMI and DisplayPort. A Gigabit Ethernet socket and Wi-Fi 6 (802.11ax) are built in.

In our tests, the i7 processor didn't quite hit the highest speeds we've seen from it, held back by thermal throttling. We're not keen on the Intel Optane-accelerated SSD, which may be fast under ideal conditions but only managed 1,252 megabytes per second (MB/s) reading and 459MB/s writing in our file-transfer tests.

Overall, though, performance was very good, and fan noise moderate, while the battery lasted a respectable six hours of video playback. Heavy work could halve that, but for this class of machine it's a good result, and the Aero plus its mains adapter weigh less together than the Aorus alone.

SPECIFICATIONS

2.3GHz Intel i7-10875H eight-core processor • 16GB memory • 512GB SSD • 8GB Nvidia GeForce RTX 2070 Super graphics • 15.6in 2840x2160-pixel screen • Webcam • 802.11ax Wi-Fi • Bluetooth 5 • USB-C Thunderbolt 3 port • 3x USB-A 3 Gen1 ports • HDMI port • Mini DisplayPort • Gigabit Ethernet • Windows 10 Pro • 20x356x250mm (HxWxD) • 2kg • One-year warranty www.snipca.com/36493

VERDICT A capable all-round laptop with high performance, an excellent screen and a few flaws

★★★★★

ALTERNATIVE Razer Blade 15 £2,310

Compromise on an i7-10750H chip and RTX 2070 graphics for a brighter OLED 4K screen



LAPTOP | £800 from Currys www.snipca.com/36495

Avita Admiror 14

Vanity unit

Owned by the Hong Kong-based Alco Group, Nexstgo is one of many computer brands you've never heard of. Unlike others, its Avita laptops are now readily available in the UK. And while earlier models like the Pura 14 (£350 from JD Williams www.snipca.com, see our review, Issue 590, page 24) were aimed at the bottom of the market, this is a premium machine that could claim to compete with big-name rivals costing over a grand.

“Looks stylish but can be ponderous on any but basic tasks”

The sleek metal case comes in a distinctive copper-coloured finish (brown and pink versions also exist). It's too slim for even **USB-C** ports to fit on any edge, so instead you get one each side of the hinge. An adapter for **USB-A**, **HDMI** and headphones is provided.

Open the lid and it's all black plastic but clean and classy, even if there's a rather wide bezel around the 14in Full HD screen, disguised by edge-to-edge glass. Below is a huge **gesture**-sensing touchpad and a surprisingly solid keyboard, with flat tile tops that click almost like mechanical switches. Typists will appreciate it, even if those in the same train carriage don't.

Speakers either side go quite loud, and there's a fingerprint reader for Windows Hello login.

Our meter found the screen covered 82 per cent of **sRGB** colours with above average brightness and contrast. This isn't accurate enough for serious photo editing but good for general use



and watching videos.

The unexpected weak link is the AMD Ryzen 7 3700U processor, a fair mid-range choice on paper but held back by the inadequate efforts of the Admiror's fans, which kick in as soon as you attempt any real work. Overall, it scored 30 per cent lower than the much cheaper Honor MagicBook 14 (£550 from Amazon www.snipca.com/34688, see Issue 580, page 23) with a Ryzen 5 3500U. Avita hasn't helped by using a **SATA SSD**, limited to speeds below 500 megabytes per second; the MagicBook is nearly five times faster with **read speeds** and three times **writing**.

As a result, Windows 10 felt slightly ponderous by today's standards. It's usable for everyday tasks, and the integrated RX Vega 10 graphics will manage some 3D games with quality compromised. Battery life of five hours and 21 minutes in our video-playback test was poor. It's a shame about these flaws, because the Admiror is otherwise attractive and practical. But the Acer Swift 3 (£750 from Box www.snipca.com/36497) is a much more powerful laptop with a better screen, albeit not as attractive.

SPECIFICATIONS

2.3GHz AMD Ryzen 7 3700U quad-core processor • 8GB memory • 512GB SSD • 14in 1920x1080-pixel screen • 802.11ac Wi-Fi • Bluetooth 4.2 • 2x USB-C ports • USB-A and HDMI adapter • Windows 10 Home • 18x325x235mm (HxWxD) • 1.3kg www.snipca.com/36494

HOW WE TEST

Computeractive is owned by Dennis Publishing, which employs a team of specialist technical reviewers. You'll often read references to our benchmark testing, which is a method of assessing products using the same criteria. For example, we test the speed of every PC and the battery life of every phone and tablet in exactly the same way. This makes our reviews authoritative, rigorous and accurate.

Dennis Publishing also owns the magazines *PC Pro*, *Computer Shopper* and *Web User* and the websites Expert Reviews (www.expertreviews.co.uk) and IT Pro (www.itpro.com). This means we can test thousands of products before choosing the most relevant for *Computeractive*.

FAIR AND IMPARTIAL

Our writers follow strict guidelines to ensure the reviews are fair and impartial. The manufacturer has no involvement in our tests.

OUR AWARDS



We award every product that gets five stars our Buy It! stamp of approval. It means we were

extremely impressed by the product, and we think you will be too.



Every product that gets a four-star review is given the Recommended award. We highly recommend these products, although they just fail to meet the high standard of our Buy It! winners.

PRICES

Our reviews contain a link to the best price we found online at the time of press.

VERDICT Styling and design are good for the money, but performance and battery life aren't

★★★★★

ALTERNATIVE

Acer Swift 3 £750

With a faster SSD and i7-1065G7 chip, this covers 94 per cent of sRGB



devolo Magic 2 WiFi next Whole Home Kit

Need your Wi-Fi to reach further in your home? **devolo Magic 2 WiFi next Whole Home Kit** could be the answer. Five *Computeractive* readers tell us the difference it made to their home networks

Earlier this year devolo teamed up with *Computeractive* to offer readers the chance to review its new **Magic 2 WiFi next Whole Home Kit**. This uses your home's own electrical wiring for data transmission, creating a lightning-fast hotspot at any socket, bypassing walls, ceiling, closed doors and other obstacles that normally block signals. In addition, Ethernet ports provide your smart TV, streaming box and games console with super-fast internet.

The new WiFi Access Point Steering function ensures that mobile devices like phones and tablets are always automatically connected to your strongest hotspot. This becomes especially important as you move from room to room and want to stay connected.

Another WiFi innovation in this kit is that it supports MU-MIMO (Multi User – Multiple Input Multiple Output), greatly

increasing the number of devices that can be connected simultaneously. It means you'll get fast Wi-Fi even when the whole family is online.

It may sound technical and complicated, but setting up Magic 2 is

easy. Once you've plugged in the first adapter, others that you plug in within the next two minutes are automatically connected to each other. The connection which is established is secure and can't be infiltrated from outside.



devolo

Our chalet bungalow of 16 rooms over two floors has provided connectivity challenges due to its large L-shaped footprint – over 2,750 square feet with no usable Wi-Fi signal outside. The existing Wi-Fi router is placed on the first floor landing, which meant we couldn't update the software in our two cars parked in the drive or access Wi-Fi at the back of the garden in the shed.

Before setting up the kit, our average download speed was 58Mbps across the ground floor and 77Mbps across the first floor.

You don't need to change your Wi-Fi router's status when setting it up. The two Magic 2 Wi-Fi units were plugged into 13A wall sockets and paired to the Magic 2 LAN unit. The Wi-Fi speed was tested, as before, with the two Magic 2 Wi-Fi units plugged into various 13A sockets in different rooms to determine the optimum performance across our

Thanks to the Magic 2, Patrick's Wi-Fi now stretches 40 metres to the garden shed



home and garden.

I'm pleased to say that devolo's kit has dramatically improved our download speeds and how far our signal reaches (throughout the home, and into the front drive and garden) for our 17 electronic devices.

The average download speed across the ground floor rooms is now 104Mbps, an improvement of 79 per cent. Upstairs, across the first-floor rooms, our speed has improved by 34 per cent to 103Mbps. It means we can now update the software and maps in our two cars as they sit in the drive. In the shed at the back of the garden I have

“
The average
download on the
ground floor is
now 104Mbps, an
improvement of
79 per cent

”

41Mbps, and that's 40 metres from our home! It really is 'magic' to use and has transformed our connectivity experience!

Patrick McCormack, Newtownabbey

“

The mesh Wi-Fi provided full access to my network in three rooms that had previously been ‘dead spots’

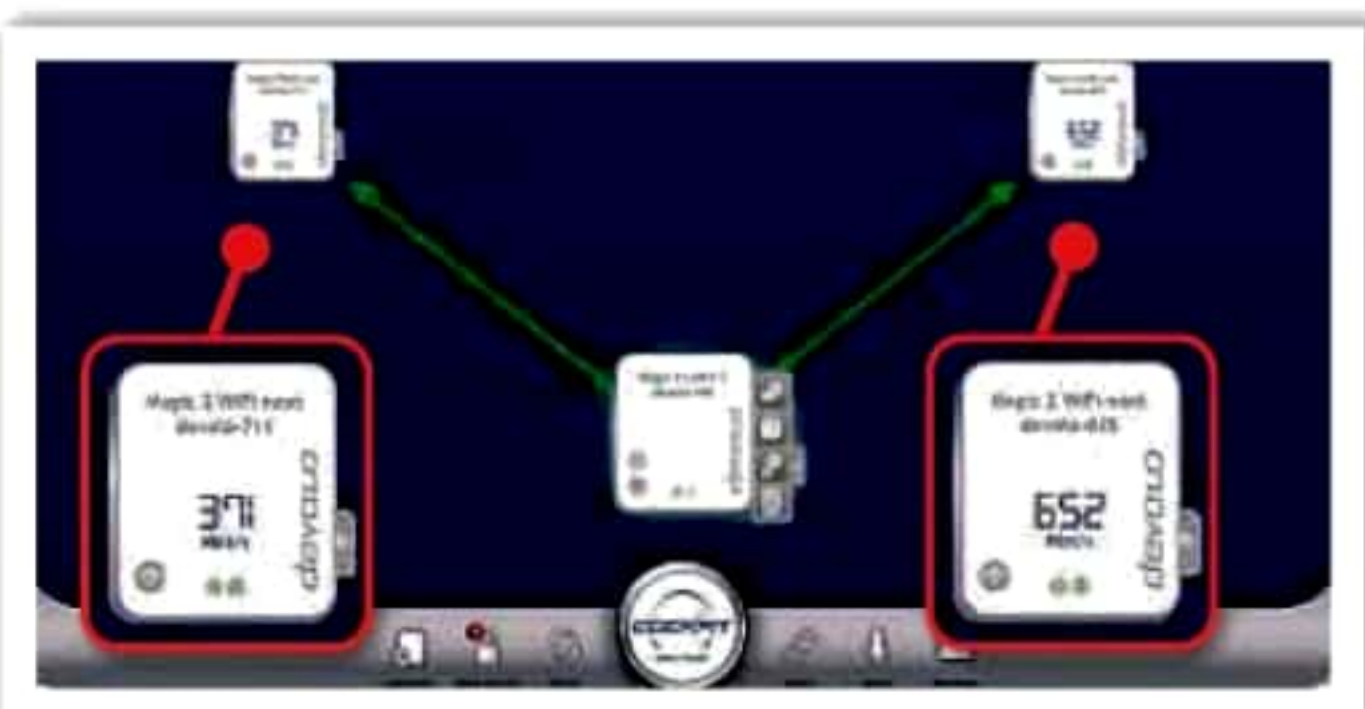
”

Setting up is fast, smooth and easy – less than half an hour and that included taking photos as I unpacked the box as well as taking PC screenshots during software configuration. The Cockpit app indicates in real-time the speeds that each connected device is running at (pictured below).

How did it perform? Glad you asked! It's quick, *really* quick. The mesh Wi-Fi provided full access to my network in three rooms that had previously been ‘dead spots’, while the Powerline system supplied static devices speeds up to 800Mbps, outperforming (by a factor of three) my older system. Overall, I tried but couldn't find anything to fault the setup or use of the Magic 2. It's five stars from this judge!

Alan Mitchell, Sandon, Essex

After moving to live in a single-storey converted stable block, it was never going to be easy to set up a home Wi-Fi network that had a strong signal throughout the property. With two Wi-Fi extenders in place, I could get 8-16Mbps in every room other than the kitchen, which was slower and suffered from frequent dropouts. We had a long ethernet cable from the router to the extender in the lounge which meant that it generally got 10Mbps rather than 100 Mbps.



The Cockpit app shows how fast your devices are running

Setup basically consisted of three stages. First, plug it in and register the two Wi-Fi adapters together (took about one minute). Next, plug in and connect the LAN adapter to your home router to encrypt all devices (took around three minutes). Finally, using one WiFi adapter and the WPS button on your router, then activate the mesh technology to give the best coverage in your home (took two minutes).

Automatic setup proved easy and operation seems simple, with only two buttons on the adapters (home/pairing and WiFi – pictured right). There's also a manual pairing button on the left side of the LAN adapter, which is not obvious.

Since I installed the kit, my network has been running rock-solid, with no dropouts. The technology feels more stable in the way it connects – fewer activity lights to worry about and no issues when switching off and moving adapters. So far it's running at about the same speed as

Installation of the devolo Magic 2 WiFi kit is described as ‘Plug and Play’ on the box and should be really simple. The reality was that you need to be careful to plug the adapters in and press buttons in just the right order to get things working properly. Firmware upgrades were needed for the adapters, and I ultimately needed to reset them all to factory settings and go through the install process again (twice) to get them to sync properly.

But once it's set up, the system works seamlessly, with speeds pretty close to the 16Mbps maximum that my broadband signal allows everywhere. Although signal strength is still low in the kitchen, the beauty of the kit is that you can easily move one of the adapters to another room if needed.

There are Android and iOS Home Network apps available to control and configure the adapters, as well as the devolo Cockpit for Windows, Mac and Linux.

Steve Parker, Northumberland

The hub of my setup is in an upstairs room and consists of a desktop PC connected to a Sky Hub. I have two printers, one of which has wireless capabilities. Downstairs I have one smart TV, one laptop, and various smartphones and tablets. Previously, the signal to our smartphones and tablets was OK upstairs, but very patchy on the

Initial registration | Registration complete



There are two buttons on the adapters – they both light up when registration is complete

my previous adapters, but what I haven't managed to achieve is strengthening the signal around the house (and into the garden). Overall though, I much prefer how the kit works and will continue to use it.

Tom Coups, Southampton

ground floor.

I placed the Wi-fi adapters on the ground floor – one in the rear conservatory where most of the phone and tablet usage occurs, and one in the front room next to the smart TV. Every device on the ground floor now has a signal ranging from good (in one room only) to excellent in the remainder. The results have been very impressive!

I've had a maximum of five devices simultaneously online with no drop in signal quality or speed. The grandchildren will be mightily impressed. I've now moved the wireless printer to the room with the adapter installed, and it works perfectly. Network access on the laptop is now excellent. I can link this hard-wired if necessary, as it is near the adapter. This gives excellent access.

David Eagle, Whitley Bay

Where to buy it

You can buy devolo's **Magic 2 WiFi next Whole Home WiFi Kit** (containing three adapters) from Amazon: www.snipca.com/35650, priced £269.99. Here you can also buy the Starter Kit (two adapters) for £169.99 and single Add-on adapters for £109.99. Devolo provides a three-year manufacturer's warranty on all products.

STREAMING STICK | £60 from Google www.snipca.com/36517

Google Chromecast with Google TV

Up stream

Google's Chromecast TV dongles have always relied on you also having an Android phone or tablet. Although they could play content directly from the internet over your Wi-Fi, they didn't have their own built-in software and remote control to let you choose what to watch. This is where that all changes. Like Amazon's Fire TV boxes, Apple TV and alternatives from makers like Roku (see our Cover Feature, Issue 593), the Chromecast with Google TV has its own operating system, Android TV – previously seen in Nvidia's Shield (see our review, Issue 575, page 25) and Sony Bravia smart TVs. You can also still use it to **cast** from your Android device and from some apps on iPhones and iPads.

The neat little remote control responds both to button presses and your voice, so you can tell it what you want to watch or talk to Google Assistant. As before, the Chromecast dongle, a rubbery blob in a new oval shape, plugs into an **HDMI** port

SPECIFICATIONS

Android TV OS • 802.11ac Wi-Fi • Bluetooth • HDMI output • Mains adapter • Google Assistant voice remote with Bluetooth and IR (2x AAA batteries included) • 12.5x61x162mm (HxWxD) • 55g • One-year warranty www.snipca.com/36518



on your HDTV and connects to the mains with a supplied **USB-C** adapter. Wi-Fi is built in; if you want to use a wired Ethernet connection to your router, an adapter is £20 extra.

Apps support most of the services you'd expect, like BBC iPlayer and Netflix, with **4K** and **HDR** colour where available, and integrate them into one interface. There are some omissions, though. You can't get Sky's Now TV or Apple TV+, nor use Apple AirPlay to stream or mirror the screen from iPhones and iPads. Although Amazon Prime Video is now available on Chromecast, we found searches favoured results from Google Play. Amazon's Fire Stick 4K with Alexa (£50 from www.snipca.com/36519) and Roku's Streaming Stick+ (£48 from Amazon www.snipca.com/34892) support Now TV and Apple TV+.

Also lacking, awkwardly, is compatibility with Google's Stadia game streaming service, which Google says will be added in the first half of 2021. Until then, you'd need a Chromecast Ultra, which doesn't have Google TV and is



effectively superseded, but still included in the Stadia Premiere Edition pack (£90 from www.snipca.com/36515). This is obviously an oversight, and if you're interested in Stadia it might put you off paying for either product right now.

VERDICT Amid strong rivals, Google's first proper streaming box isn't the cheapest or most comprehensive, but does work well

★★★★★

ALTERNATIVE

Google Chromecast **£30**
Cheaper if you don't have a 4K TV and just want to cast from an Android or iOS phone or tablet



WHAT SHOULD I BUY?

We solve your buying dilemmas

What's the best mouse for my arthritic hand?

Q My arthritic hand doesn't sit well on my PC mouse because my fingers are distorted to one side, making access to the buttons difficult. Are there options that allow the mouse shape to be customised, or any mice that may be more suitable?

Peter Grundy

A Looking at the photo you sent showing how your hand rests on the mouse, the Trust Ozaa



(£45 from www.snipca.com/36484) might help. It's angled downwards towards the outside and has ledged grips for your thumb and little finger. A more radical option is the Anker Vertical Ergonomic Mouse (£18 from Amazon www.snipca.com/36485, pictured), which is turned almost on its side, changing your hand position. Contour, Evoluent and Logitech also make angled mice at higher prices, while the Jelly Comb Ergonomic Mouse (£24

from Amazon www.snipca.com/36486) offers a different style of grip.

You won't know how a mouse works for you until you try it, but remember you have 14 days by law to return items ordered online in good condition for a refund. This includes the original minimum delivery cost, although you may have to pay a few pounds for return postage. Amazon allows 30 days, currently extended to 31 January 2021.

Do you need advice on what you should buy? Email us at letters@computeractive.co.uk

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ROUTER | £80 from Honor www.snipca.com/36562

Honor Router 3

Three and easy

Wi-Fi 6, also known as the **802.11ax** wireless networking protocol, is now appearing in new laptops and mobile devices, and to take full advantage at home you'll need a Wi-Fi 6 router. It's not an urgent upgrade, because Wi-Fi standards are backward-compatible, so everything will keep working. But by encoding data more efficiently to pack more into the signal, and using new technologies to improve the handling of multiple streams simultaneously, a Wi-Fi 6 router should give you better speeds around your home. That's even true when connecting existing **802.11ac** devices, especially if your current router is getting on a bit.

“Budget Wi-Fi 6 router is quick and goes the distance”

So far, however, Wi-Fi 6 routers like TP-Link's Archer AX6000 (£279 from Amazon www.snipca.com/36561, see our review, Issue 579, page 26) and Netgear's Nighthawk AX8 (£280 from Amazon www.snipca.com/32695, see Issue 563, page 26) are pricey, so we were intrigued to see Honor, a subsidiary of Huawei, offering this model for just £80.

In our tests, it was only about half as fast as the AX8, but that's still pretty good for just £80. However, even in a more distant room, download speeds of just over 10 megabytes per second were still far beyond what you need for streaming **4K HDR** Netflix videos. This was our trickiest blackspot, where some routers have trouble reaching at all, and even 802.11ac devices got a good connection.

The Router 3 is **dual-band** rather than tri-band, running only one **5GHz** network rather than two, in addition to a 2.4GHz network that can reach better

SPECIFICATIONS

802.11ax Wi-Fi router • 4x Gigabit Ethernet ports (including 1x WAN) • 41x242x152mm (HxWxD) • One-year warranty www.snipca.com/34648



through walls. So you might see reduced performance if a lot of devices are connecting at once. If reach is a problem in a larger home, you can add another Router 3 as a wireless extender, and it still works out relatively affordable.

During setup, you can choose to keep the bands separate or run them as a single network, to which devices will connect on whichever band works best. You'll need to connect it to an existing broadband modem and configure it from a web browser or Huawei's app on your Android or Apple device. Basic options, including parental controls and a guest network, are easy to set up, but there aren't many advanced features, and there's no USB port to share a printer or storage. Still, when you add in a sleek design that looks at home in a hallway or living room, this is a very good buy for improved Wi-Fi performance.

VERDICT Not the router for maximum Wi-Fi 6 performance, but good enough for most purposes at a great price



ALTERNATIVE Netgear Nighthawk AX8 **£280** Very high speeds and long reach justify the price for heavier users



CHOOSE THE RIGHT SPECS

Phone cameras



What do they do?

The camera on the back of a smartphone (pictured) lets you take photos and videos of what's in front of you, previewed live on the screen. The camera on the front lets you take photos and video of yourself.



How do they work?

As in any digital camera, a lens focuses light on to a sensor chip, which takes the place of film. Like a screen, the sensor is divided into pixels, each recording how much light falls on it while the camera shoots one picture or frame. This data is processed and saved into a file, using compression to take up less storage. When a phone has multiple cameras, each duplicates these components; lenses with different focal lengths provide a choice of zoom factor. Your phone's processor and software also play a big part. As well as automatically setting focus and exposure, they'll balance colour and tone. With a secondary depth-sensing camera, 'portrait' modes can defocus the background, mimicking the natural effect of wide lens apertures in a full-size camera.

What are their specs?

Resolution determines the maximum detail captured, although many other factors affect image quality. Photos are typically 12 to 48 megapixels (thousands of pixels). Video is recorded in Full HD (1920x1080 pixels) or **4K** (3840x2160 pixels), at 30 or, for crisper action, 60 frames per second (**fps**). Slow motion uses higher frame rates. Stabilisation – physically shifting the lens or sensor – prevents shaky footage.

Can I change one later?

A few manufacturers have tried building phone cameras you can replace, but they haven't caught on. However, you can sometimes improve cameras by installing software updates.

SMART SPEAKER | £90 from Amazon www.snipca.com/36602

Amazon Echo (4th generation)

Net ball

Amazon's Echo smart speaker has always been a cylinder, but now it's a ball, chopped off at the base, where the ring of **LED** light that used to appear at the top now reflects on to whatever it's standing on. About the size of a melon and covered in white, blue or dark grey mesh fabric, it's a pleasant enough object, oddly bisected by a hard metal segment that rises up towards the back. And that's its point: the Echo, which was previously designed to radiate sound in all directions, has a new speaker arrangement that points one way.

“Sound quality is very good, with a rich tone and plenty of detail”

This actually makes sense, because it's most likely to be sitting on a piece of furniture at the side of the room, especially considering it needs mains power. The 3in **woofer** is now accompanied by not one but two ³/₄in **tweeters**, and **smart EQ** adapts to your room's acoustics. It's not as well suited to sitting on a kitchen island playing music or answering questions from all quarters.

We found the sound quality very good, with a rich tone and plenty of detail. Higher frequencies aren't as punchy as with the previous model, but overall it's a big improvement, although we preferred the sound of Google's Nest Audio (£90 from Google www.snipca.com/36475, see our review, Issue 593, page 29). Output is stereo-like, but for the full effect you can pair two units, as with the Nest Audio. And unlike Google's

SPECIFICATIONS

802.11ac Wi-Fi • Bluetooth • 75mm woofer • 2x 20mm tweeters • Mains adapter • Requires Wi-Fi and Android 6 or iOS 11, FireOS 5.4.4 or higher device (app required for setup) • 133x144x144mm (HxWxD) • 970g • One-year warranty www.snipca.com/36602

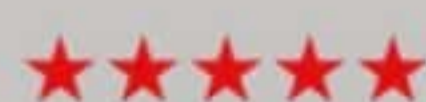


speakers, Amazon has preserved a 3.5in jack that you can use to input audio from a device without Bluetooth or output to another speaker system.

Questionable design decisions continue with the four volume and mute buttons embedded in the top, which at least are more usable than the Nest's unmarked touch sensors.

Setting up the Echo is simple, and while Amazon's Alexa is still a few classes behind Google Assistant in AI school, it does recognise your voice quite reliably and supports a lot of features and accessories, especially with a **Zigbee** home-automation hub now built into the Echo. Previously reserved for the Echo Plus, it means gadgets normally requiring a Zigbee hub can receive Alexa commands directly over your Wi-Fi network, as long as they don't rely on extras incorporated into their own-brand hub.

VERDICT The choice between Google and Amazon may come down to tasks and accessories, but the Echo is better than ever



ALTERNATIVE Amazon Echo Dot (4th gen) **£50** The mini version also gets a spherical makeover, if you want to spend less



DO I REALLY NEED...

Speaker shoes?

What are they?

DropLabs' EP 01 trainers (pictured) incorporate speakers in their soles. Audio vibrations can be felt up your legs, and when you're listening to the same audio source through headphones, the sound becomes more immersive – or that's the theory.



How do they work?

Selling for \$299 (about £225 without VAT), the EP 01 shoes connect to your Bluetooth device and headphones, and run on batteries charged through a magnetic port on the back. Users have found them particularly effective with virtual-reality games, enhancing the sense of being in the computer-generated scene. To keep the sound synced with the action, often a problem with wireless connections, there's an optional wired low-latency cable that connects to the same magnetic port.

What's the catch?

It's hard enough using a VR headset without tripping over the coffee table. Try it with wires attached to your heels.

So can I do without it?

Shoes? Probably not. Speakers in them? Yes.

NEXT ISSUE

On Sale **Weds 16 Dec**

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New six-core processor and Wi-Fi 6 in an £800 PC



Apple iPad Air (2020)

High performance and a superb screen for £579

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LAPTOP

PRICE
DROP

Honor MagicBook 14

£550 from www.snipca.com/34688

Tested Issue 580



Using an AMD Ryzen 3500U processor, this lightweight metal laptop beat Microsoft's Surface Laptop 3 with Intel's i7-1065G7 in our tests. The 14in Full HD screen lacks colour accuracy but looks decent. For the money, it's a great buy.

ALTERNATIVE Dell XPS 13 New Intel CPUs and a taller screen make this a more powerful, all-round slim notebook, although prices now start at a steep £1,600 from www.snipca.com/35349

DESKTOP PC

Palicomp Intel Mercury

£600 from www.snipca.com/34223

Tested Issue 576



If you don't need advanced gaming, your money's well spent here on a six-core Intel i5-9600K processor overclocked to 5GHz. 16GB of memory and a full terabyte of fast SSD storage round off a powerful PC with good expansion potential.

ALTERNATIVE Chillblast Photo Zen Fast Ryzen 7 CPU plus adequate GPU makes a superb work PC. £1,558 from www.snipca.com/35840

APPLE IPAD

Apple iPad 10.2in

£329 from www.snipca.com/36178

Tested Issue 566



The basic iPad is great value, especially now it's been updated with a powerful A12 processor and iPadOS 14. It includes Scribble handwriting recognition with the £89 Apple Pencil. Storage isn't expandable; consider 128GB at £429.

ALTERNATIVE iPad Mini With an even better, but smaller, screen than the 10.2in iPad, the Mini also supports the Pencil and has 64GB of storage. £399 from www.snipca.com/33050

ANDROID TABLET

Samsung Galaxy Tab S6 Lite

£349 from www.snipca.com/35795

Tested Issue 582



Competing with Apple's cheapest 10.2in iPad, this slim aluminium tablet comes with an S Pen stylus and a generous 64GB of storage at a reasonable price. It's less powerful, but a great buy if you prefer Android.

ALTERNATIVE Amazon Fire HD 8 Now with USB-C and 32GB of storage, this plastic-cased tablet is more limited, with no stylus option, but good for the money. £90 from www.snipca.com/35336

APPLE IPHONE

Apple iPhone 11

£599 from www.snipca.com/32938

Tested Issue 565



At over £400 less than the new iPhone 12 Pro, this has two rear cameras rather than three, but it's a superb phone for the money and takes fantastic photos and video. With full-day battery life, the only flaw is its 64GB of unexpandable storage – 128GB is £50 extra.

ALTERNATIVE iPhone SE With a single camera and smaller screen but the same powerful A13 processor and 64GB storage as the iPhone 11, it's great value. £399 from www.snipca.com/34773

ANDROID PHONE

Google Pixel 4a

£349 from www.snipca.com/35796

Tested issue 588



Still only one camera on the back, but it takes some of the best photos around. In other respects the 4a is a thoroughly modern phone that runs Android very smoothly, with 128GB of storage, fingerprint reader and all-day battery.

ALTERNATIVE Xiaomi Redmi Note 9 Ridiculously good value, with a big OLED screen, triple camera, fingerprint reader and 128GB. £199 from www.snipca.com/36179

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Buy It

Our pick of products that have won the **Buy It** award

EBOOK READER

Amazon Kindle (2019)
£70 from www.snipca.com/31621
Tested Issue 555



Now with built-in light and audiobook support, this budget model is fine for most users, though limited by its 4GB of storage. The Paperwhite (£120) is even sharper, waterproof, and has bigger storage options as well as a cellular data option (£100 extra).

ALTERNATIVE Kobo Clara HD

Not waterproof, but has more lighting options to avoid blue light. £110 from www.snipca.com/32586

SECURITY SOFTWARE

Kaspersky Internet Security 2020
£14.99 from www.snipca.com/21532
Tested Issue 564



Kaspersky Internet Security has won our past nine antivirus tests and the 2020 version is now available at an exclusive reader discount on our Software Store. Go to the link above for a one-year, one-device licence or buy a two-year, two-device licence for just £26.99.

ALTERNATIVE Norton 360 Deluxe

Almost as good as Kaspersky, but blocks more legitimate software. £15 from www.snipca.com/32069

PHOTO EDITING

Serif Affinity Photo
£49 from www.snipca.com/23739
Tested Issue 498



Designed for both full-time professional image retouchers and the rest of us keen amateurs, this is a beautifully designed and comprehensive program for both Windows and Mac users, although so far it performs better on Macs.

ALTERNATIVE Xara Photo & Graphic Designer

For all-round design and drawing plus photo filters, this affordable app has a lot to offer. £50 from www.snipca.com/26514

PC MONITOR

BenQ GL2780
£150 from www.snipca.com/34834
Tested issue 581



This budget 27in screen offers accurate sRGB colour with good contrast, plus auto brightness and low blue light modes. Speakers are built in. Using TN LCD rather than IPS, it needs to be viewed straight on, but works well for games too.

ALTERNATIVE Philips Brilliance

241B7QPIEB With a great picture, stylish design and speakers, this 24in Full HD IPS is an excellent smaller screen. £180 from www.snipca.com/34869

ROUTER

D-Link DIR-1960
£77 from www.snipca.com/32849
Tested Issue 564



Giving us download and upload speeds of 460Mbps and 375Mbps respectively, this is phenomenal value. Even two floors away we got 329Mbps and 284Mbps. It has four Ethernet ports for wired devices and a USB 3.0 socket to share storage via your network.

ALTERNATIVE Synology RT2600ac

Comprehensive sharing features, controls and plenty of add-on apps complement excellent long-range performance. £209 from www.snipca.com/30710

PRINTER

Epson Expression Premium XP-6105
£119 from www.snipca.com/36630
Tested Issue 554



With many leading all-purpose printers having sold out during lockdown, this white version of the XP-6100 wireless six-ink printer/scanner/copier is a good choice for photos first and text second. It's easy to use and speeds aren't bad, but ink costs can work out high.

ALTERNATIVE Epson EcoTank ET-2711

This inkjet printer/scanner/copier isn't cheap but will save you a lot on ink (1p for two colour pages). Photo quality isn't the best, but scans are good. £180 from www.snipca.com/36183

COMPETITION

Win an... AOC Q34E2A 34in monitor

AOC



This AOC Q34E2A 34in IPS monitor has Wide Full HD (WFHD) resolution – 2560x1080 – delivering superior picture quality and crisp imagery that reveals every detail.

Besides looking modern and attractive, the frameless design makes it easy to set up more than one monitor. Your cursor and windows will not be lost in the dark bezels when you have screens placed side by side.

The widescreen 21:9 aspect ratio is perfect for watching films in an

expansive format or immersing yourself in the latest game, plus it offers more space when it's time to work.

Built-in speakers make it easy to catch up with family, friends and colleagues when video chatting. You'll enjoy quality audio in films, TV and games without the hassle of connecting external speakers. AOC's Flicker-Free Technology uses a DC backlight panel to minimise.

To enter this competition, email your

address to cacomp@dennis.co.uk with 'AOC' in the subject line by midnight Tuesday 15 December. Good luck!

You can buy the AOC Q34E2A 34in monitor for £352 from Amazon (www.snipca.com/36378). For more information on AOC's monitors visit <https://eu.aoc.com/en> and follow [@AOC_Gaming](https://twitter.com/AOC_Gaming) on Twitter.

MESH ROUTER

BT Whole Home Wi-Fi
£192 from www.snipca.com/26990
Tested Issue 496



BT's set of three discs, managed from an Apple or Android app, connects to your broadband and spreads high-speed Wi-Fi all around the house. Reception is far better than a single router, and the price is lower than any rival.

ALTERNATIVE Zyxel Multy X

These two pillow-shaped boxes are powerful enough for most homes and provide four Ethernet ports apiece. £255 from www.snipca.com/27309

SOLID-STATE DRIVE

Samsung 970 Evo Plus
500GB
£95 from www.snipca.com/31265
Tested Issue 552



Although its price has fluctuated since we tested it at £99, this is a very fast (over 3GB per second) M.2 SSD unfazed by tests that make others slow to a crawl. Also consider the Adata XPG SX8200 Pro if you find it a bit cheaper.

ALTERNATIVE Crucial MX500 500GB

As fast as an SSD can get in the traditional 2.5in SATA format, this is a great-value upgrade. £52 from www.snipca.com/30188

WEB DESIGN

Xara Web Designer
Premium
£70 from www.snipca.com/34150
Tested Issue 453



This visual program makes creating sites more like laying out a document than writing HTML code, and sites can be responsive, meaning they look good on big and small screens. A cheaper, basic version is also available for £35.

ALTERNATIVE Incomedia WebSite X5

v13 Evolution It may feel basic, but this program outputs efficient HTML code and responsive pages. £39 from www.snipca.com/31179

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Workshops & Tips

14 pages of easy-to-follow workshops and expert tips

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HOW TO...

Turn an old laptop into a Chromebook

by Simon Handby

What you need: An old laptop (minimum 2GB memory); USB stick (8GB or 16GB) **Time required:** One hour

A brand new Windows laptop can feel like driving a new car, but hardware and software move on relentlessly. Within a few years even a high-end model can feel sluggish. It's tempting to take this as a cue to buy a new machine, but it's a shame to write off laptops that still work. One way you can give an ageing laptop a new lease of life is by turning it into a Chromebook.

You may see Chromebooks as Google's alternative to the Windows PC. In truth, they're nowhere near as powerful. The main difference is that they run Chrome OS, which is more simplified than Windows (see screenshot above right for

a typical desktop). You also have less control over the operating system, and you work in a web browser, rather than in software installed on your laptop.

However, this simplicity is why many like Chromebooks. It means they boot faster and use fewer resources, making them speedy to work on. Another reason why they're so fast is down to *where* they store your work. Traditionally, a PC saves files locally (ie, on your hard drive), whereas a Chromebook saves them in 'the cloud' – essentially, a large online server.

For many users, Chromebooks are too lightweight to serve as their main PC, but



they are still great if you want a hassle-free second computer. While new Chromebooks start at around £200, you can make your own for free. Here, we'll show you how using CloudReady, which will convert your Windows system into Chrome OS.

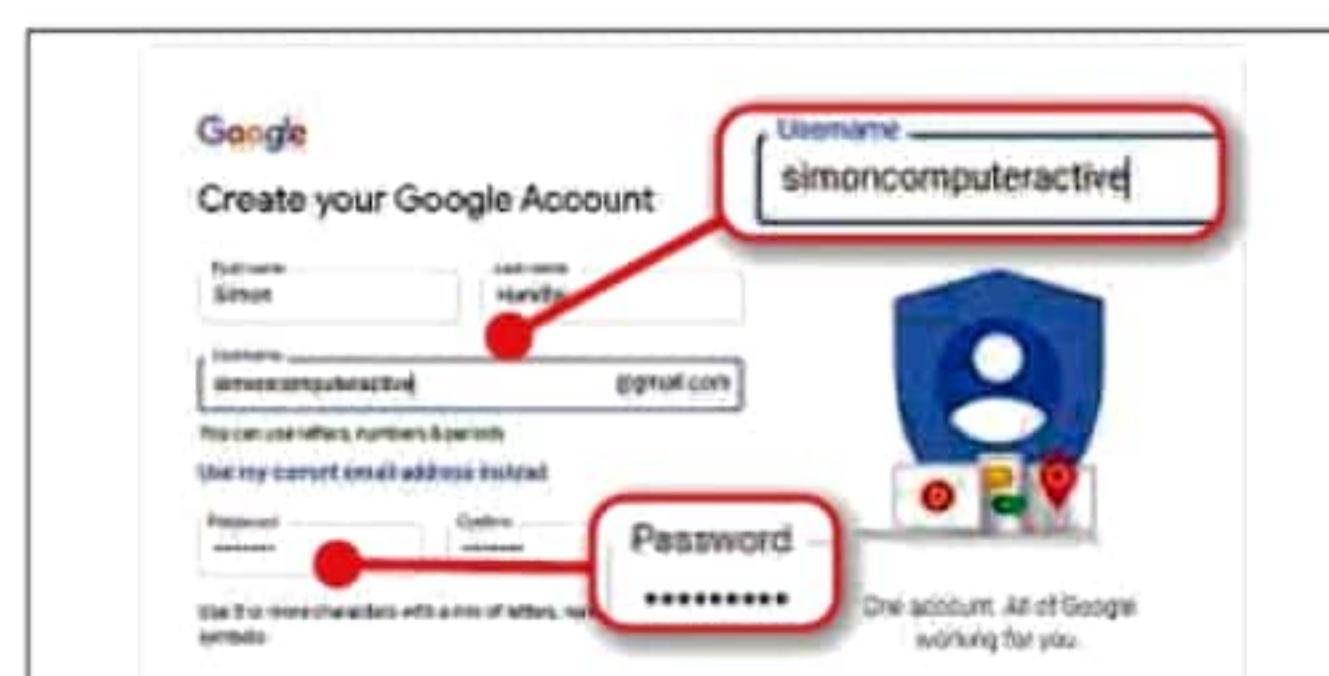
1 Sign up for a Google account

Just as you need a Microsoft account to install Windows, you'll need a Google account to use Chrome OS. If you don't have one, open a web browser and visit <https://accounts.google.com/signup> to create one for free.

You'll need to provide your name, create a username, then provide and confirm a password (see screenshot right). Click 'Next', then on the next screen provide your date of birth and gender. You don't have to give a phone number or recovery

email address, but doing so will help make the account more secure.

On the next screen, read and agree to Google's terms of service and privacy



You need to set up a Google account to use Chrome OS

policy, then click Create Account. You can click More Options to stop Google collecting data about you.

We'll show you how to try Chrome OS before you commit to it, but it's important to understand that installing it permanently (as covered in Step 5) will overwrite the Windows installation and all existing data on your laptop. So, if you are going to replace Windows, make sure you've backed up or transferred any documents, photos, emails, games or other data that you need first. If in doubt, make a full backup as a precaution.

2

Turn your USB stick into a CloudReady installer

To get started, you'll need to turn a USB stick into a CloudReady installer. You can do this using the laptop you're planning to upgrade, or from any other Windows PC. Make sure your USB stick is empty, and that it has a capacity of at least 8GB. Note also that CloudReady won't install from SanDisk drives.

Open a web browser and visit www.neverware.com/freedownload. When the page loads, click the orange 'Install the home edition' button. You'll then see a list of tests the developer Neverware recommends you perform to check that CloudReady can run on your network. Click the 'Test your network compatibility' link and make sure every item in the list is ticked (as was the case on our laptop – see screenshot below). If not all boxes are ticked, repeat the test a couple of hours later to rule out a temporary problem.

Next, click the 'Check if your device is certified' link. CloudReady will now check whether your laptop's model works with the software. Don't be discouraged if your laptop doesn't appear on the list, as CloudReady may not have assessed it yet – many other computers will work just fine.

Once you're ready to go ahead, scroll down and click 'Download the USB Maker', then save the **EXE** file to your desktop. Once the file has downloaded, ensure your USB stick is inserted and that

How I use a Chromebook

I bought my Chromebook more than three years ago, for about £230. As a writer I wanted a highly portable computer I could use when travelling, and for meetings with clients. Before long I found I was using it at home, too, with my Windows PCs barely getting a look-in. You can see how much I've used them by looking at how



worn out the keys are (pictured). I love the simplicity of Chrome OS, and the security of knowing everything I write is instantly backed up online. Now I've used CloudReady to convert two old laptops to Chromebooks – my sons use them for school work.

Simon Handby

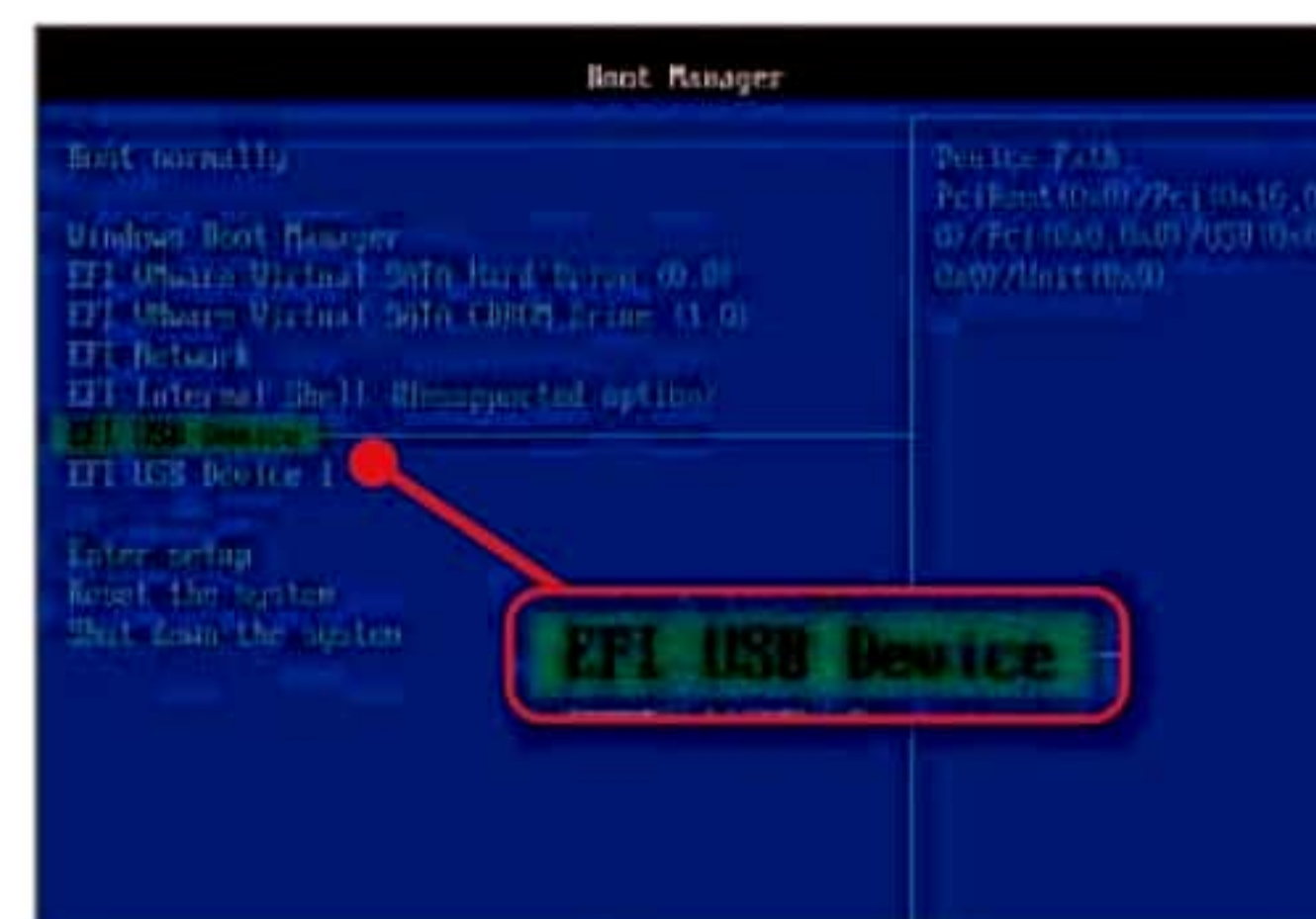
How do you use your Chromebook? Please let us know: letters@computeractive.co.uk



you've backed up any files on it that you want to keep. Creating the installer will wipe its contents.

Next, double-click the USB Maker file to run the program and, if prompted, agree to let it make changes to your device. Once the CloudReady USB Maker is running, click Next, ignore the warning about SanDisk devices and click Next again. Select the drive you want to use, being sure not to accidentally select and overwrite any other USB storage you have connected. Click Next again.

The CloudReady USB Maker will automatically download the necessary files and write them to your USB stick. When this has completed, click Finish.



Find the USB drive in your laptop's BIOS, then select it and press Enter, or move it to the top and save your changes

If you're already using the laptop you intend to upgrade, turn it off and go straight to Step 3.

If you're using a different laptop, click the up arrow at the right of the Windows taskbar, click the USB stick icon, and eject the USB stick so it's safe to physically remove it. Now insert the USB stick in the laptop you're intending to upgrade.

3

Change the boot order in your BIOS

With the USB stick inserted, turn on your laptop. If you're lucky it'll boot into the CloudReady installer and you can skip straight to Step 4. It's more likely though that you'll find it booting to Windows, in which case you'll need to change some settings in the laptop's BIOS. This controls which storage device the computer should load its operating system from. We need to change this so it boots from the USB stick.

There isn't a universal action to get into a computer's BIOS, but you usually need to press either F1, F2, Del or Esc on your keyboard. Ideally, you want to do

Service	Domain	Result
Licensing Server	mothership-2015-08-31.neverware.com	✓
Update Storage	cloudready-paid-update-storage.neverware.com	✓
Update Server	cloudready-paid-update-server-2.neverware.com	✓
Legacy Update Server	cloudready-update-server-2015-03-12.neverware.com	✓
Plugin Storage	cloudready-plugins.neverware.com	✓
Hardware Info Service	hardware-service.neverware.com	✓
Feedback Service	feedback.neverware.com	✓
Metrics Service	chromeover-metrics.neverware.com	✓
User Metrics Service	uma-metrics.neverware.com	✓
Crash Reporting Service	crash-reports.neverware.com	✓
Geolocation Service	geo.neverware.com	✓

Geolocation Service geo.neverware.com

CloudReady runs several tests to check whether it can run on your laptop

this as the computer starts up, when it's showing text or the manufacturer's logo. It can take a couple of attempts to get the timing right.

Turn the laptop off then on again. You may briefly see a message along the lines of 'Press F2 to enter system BIOS', but otherwise you'll have to guess from the keys mentioned above. Try pressing all four, one after the other, several times. If you still can't access the BIOS, try an internet search for 'Access [your computer manufacturer] BIOS' to find the right key to press.

Once you're in the BIOS, use the left and right cursor keys to navigate between menus, and up and down to browse each one. Open the Boot menu if there is one. If not, look for Boot Options within a System Configuration menu. You may even have to open a Boot Order sub-menu.

If you can't find the appropriate menu, look in your laptop's manual, or search the manufacturer's support website to see if you can download one. Once you're in the right place in the BIOS, you'll typically see a list ordered by priority. Typically you'll need to use the down-arrow key to select the USB device (see screenshot left), then use the + key to move it to the top of the boot order. If this doesn't work, look at the bottom of the screen for keys specific to your PC.

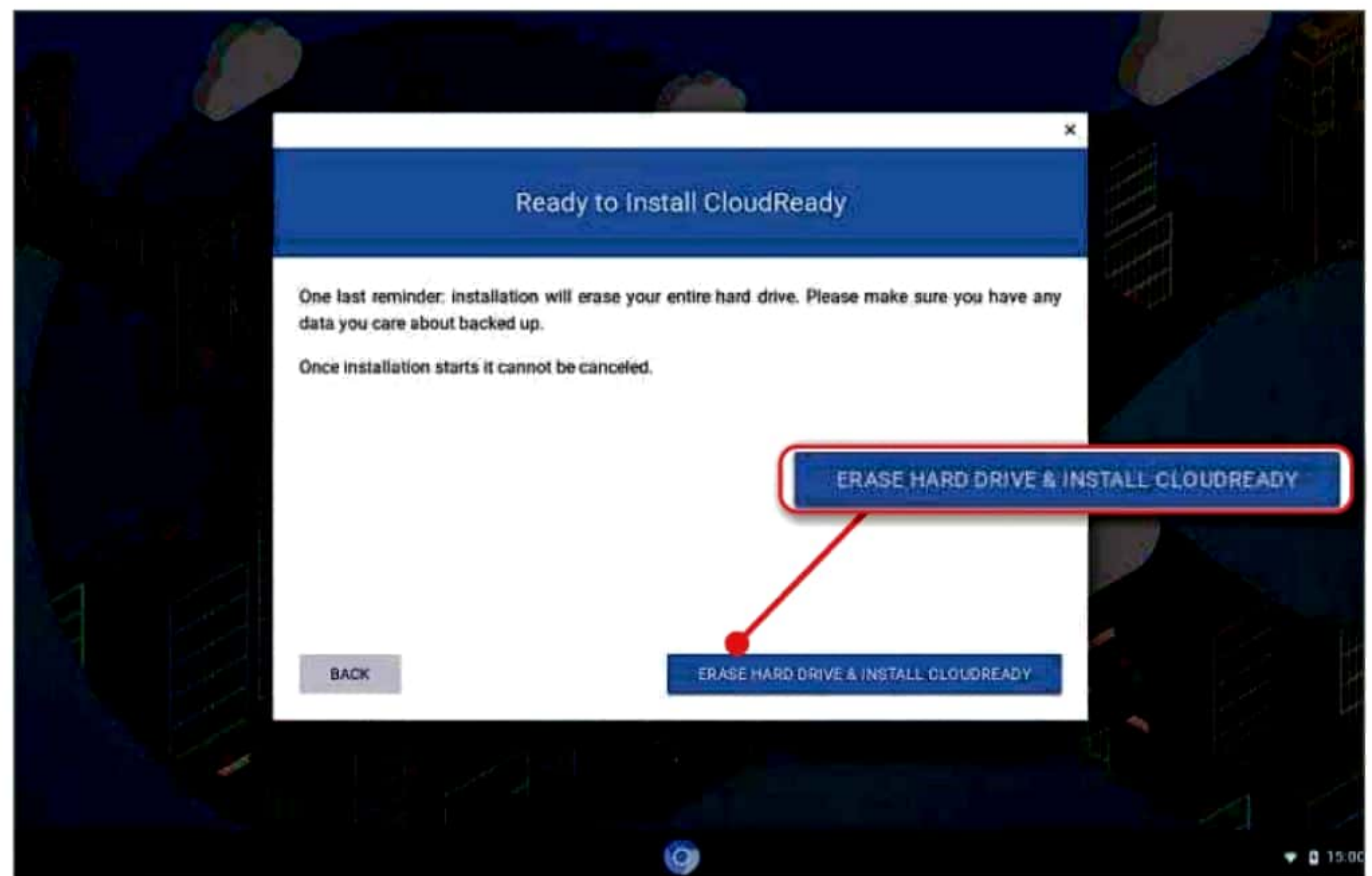
Once you've made this change, use the Exit menu to save changes and exit. Your laptop should automatically restart and begin booting the CloudReady install program.

4 Run Chrome OS from a USB stick

In this step, you'll be running Chrome OS from the inserted USB stick, which means the contents of your hard drive shouldn't be overwritten. It's a safe way of testing Chrome OS to see whether you like it.

At the welcome screen, click English (United States) to customise the language and keyboard settings for the laptop – you'll probably want English (United Kingdom) for the language and UK for the keyboard. Click OK, then click 'Let's go' on the introductory screen. On the next screen, click your wireless network in the list, enter the password, then click Connect. CloudReady should then advance automatically to the next screen.

If you don't see any networks, check that the laptop's **Wi-Fi card** is switched



Click this button and CloudReady will permanently overwrite Windows on your laptop

on. On some laptops, there's a dedicated switch to turn Wi-Fi on and off, while on others there's a **function key** on the keyboard.

If you still don't see any networks, CloudReady may not support your laptop's wireless adapter. If it also has a wired Ethernet (network) port, you could continue by connecting a network cable between it and one of the network ports on your router. However, this means the Chromebook won't be able to use Wi-Fi in the future. Plug the cable in and you should see 'Ethernet' in the list. After a few seconds you should see 'Connected' appear below it. Click 'Next' to continue.

On the next screen, you can choose not to 'Send metrics to improve CloudReady' by unticking the box at the bottom left (this will stop CloudReady tracking how you use the operating system). Next, provide your Gmail address and password. If you've previously set up **two-factor authentication**, provide permission on your phone or enter your authentication key when prompted. After a few seconds you should be ready to start using the computer as a Chromebook: click the 'Get started' button.

If you've had a Google account for some time you may see the warning that 'Chromium OS could not sync your data'. If you do, click this message and provide the passphrase you previously specified to decrypt and synchronise your account information. You're now ready to try Chrome OS. Keep the USB stick inserted, and explore the system.

5 Install Chrome OS by overwriting Windows

So far you've configured CloudReady to run without wiping your laptop's existing operating system. If you find you don't like Chrome OS, or you're stuck with an unsupported wireless adapter, you can simply shut the computer down, pull out the USB stick, then reboot it back into Windows.

But if you like Chrome OS, you can make it your permanent operating system by clicking the notification area in the bottom right of the screen, then clicking Install OS. Note the warning about overwriting your hard drive. Click 'Install CloudReady', then agree to the final warning – there's no going back once you click the blue 'Erase hard drive & install CloudReady' button (see screenshot above). Once the process has finished your laptop will shut down. Remove the USB stick, then turn your laptop back on and you'll be using a Chromebook.

You'll need to retrace the instructions in Step 4 to set the correct language, join your wireless network and log into your Chromebook. After this you'll be ready to go, having turned your sluggish old laptop into a useful Chromebook – for free.

You don't need to keep the USB installation stick inserted, but you won't be able to wipe it using normal Windows or Chrome OS tools. The easiest option is to use the CloudReady USB Maker program again. Click 'Done with your USB installer? Format it here', then click Next on the following screen.

Workshop1

Share multiple windows during video calls using a 'virtual camera'

What you need: OBS Studio, Windows 8.1 or 10

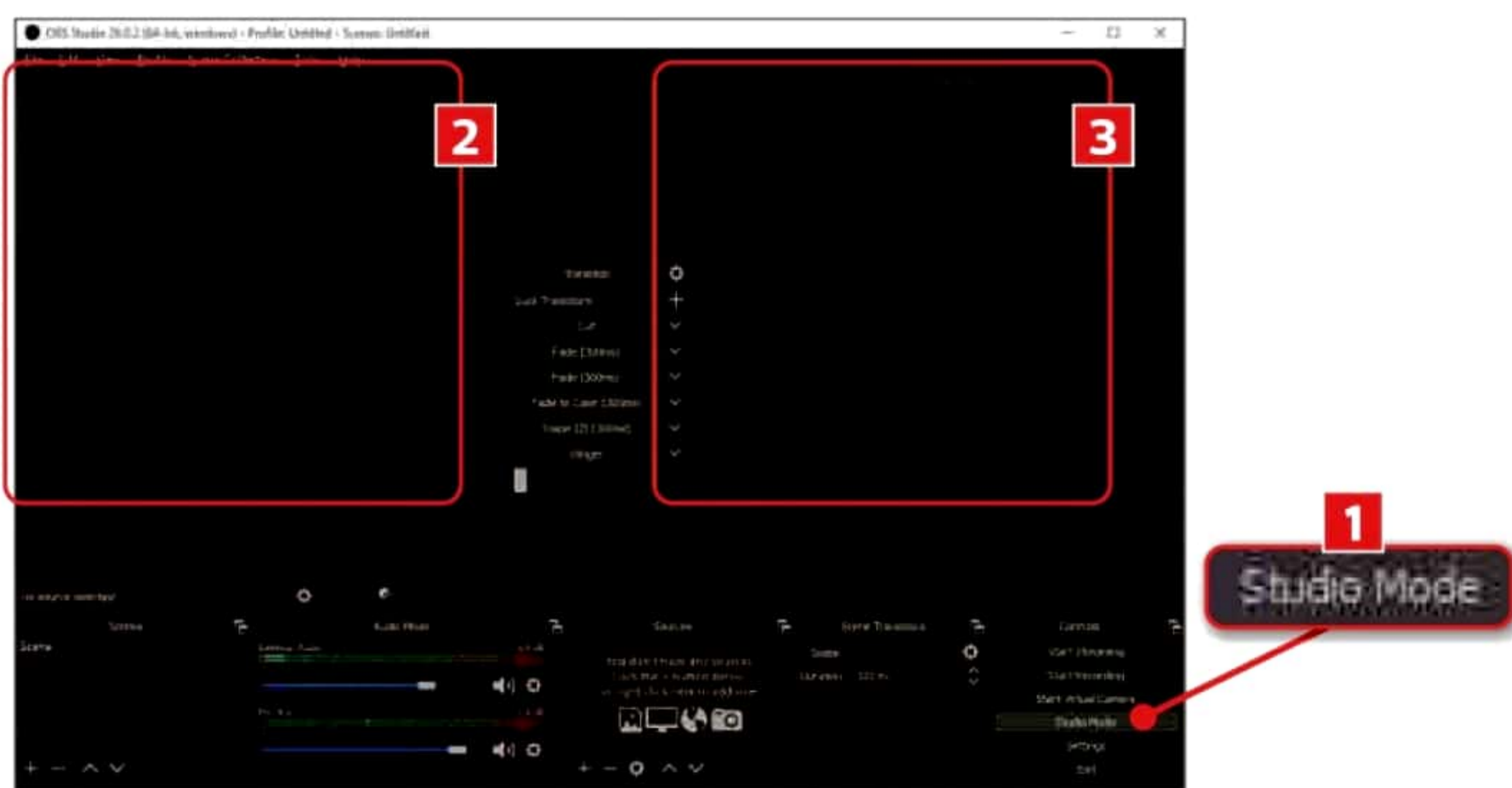
Time required: 30 minutes

Video-chat tools such as Skype and Zoom let you share your desktop or a single window during a call, but little beyond that. Using the new 'virtual camera' tool in OBS Studio, you can simultaneously share multiple windows,

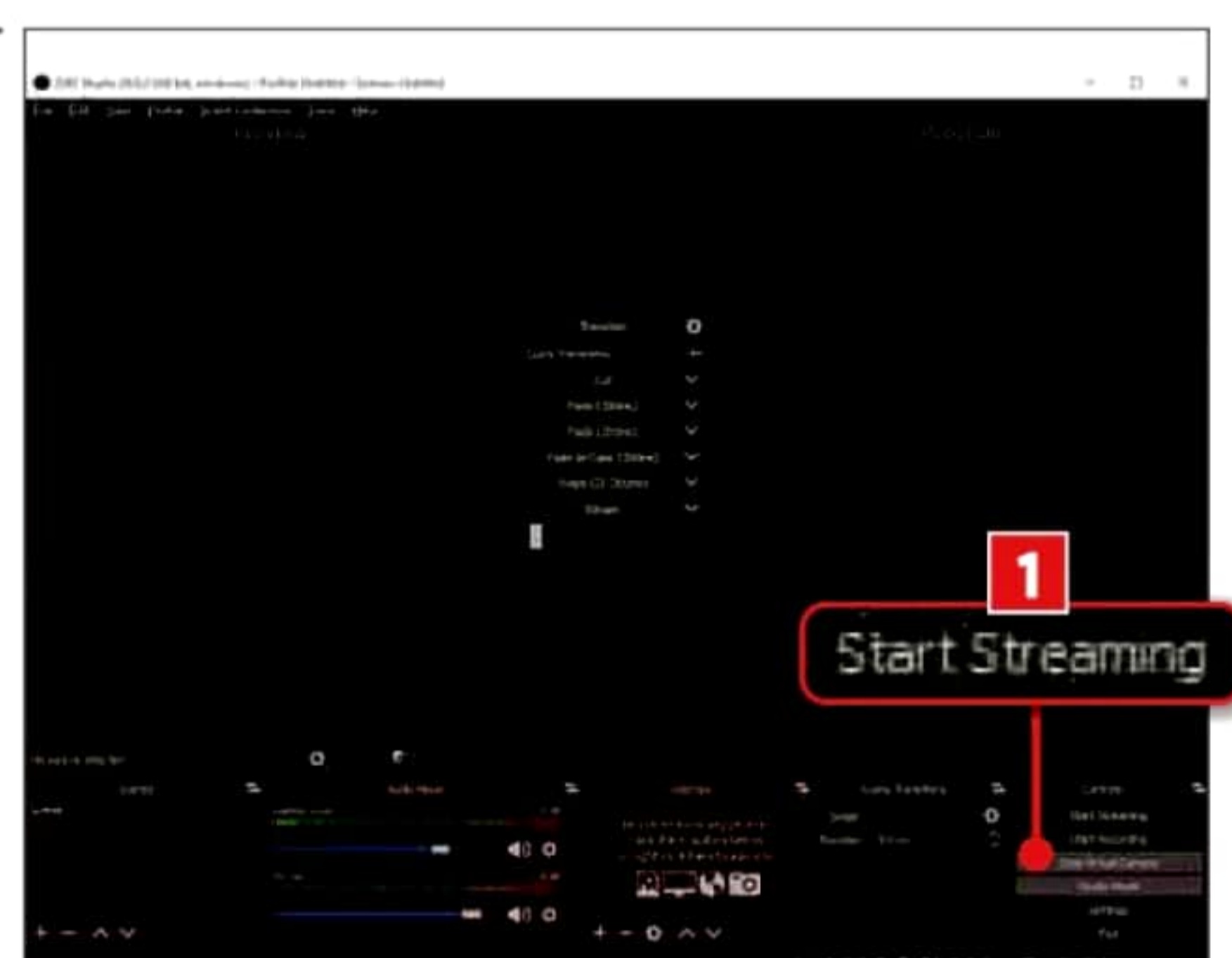
along with a slideshow and your webcam feed. You can arrange each window how you like and fade them in and out as required. To do so you need to use a virtual camera instead of your webcam. Here, we explain how.



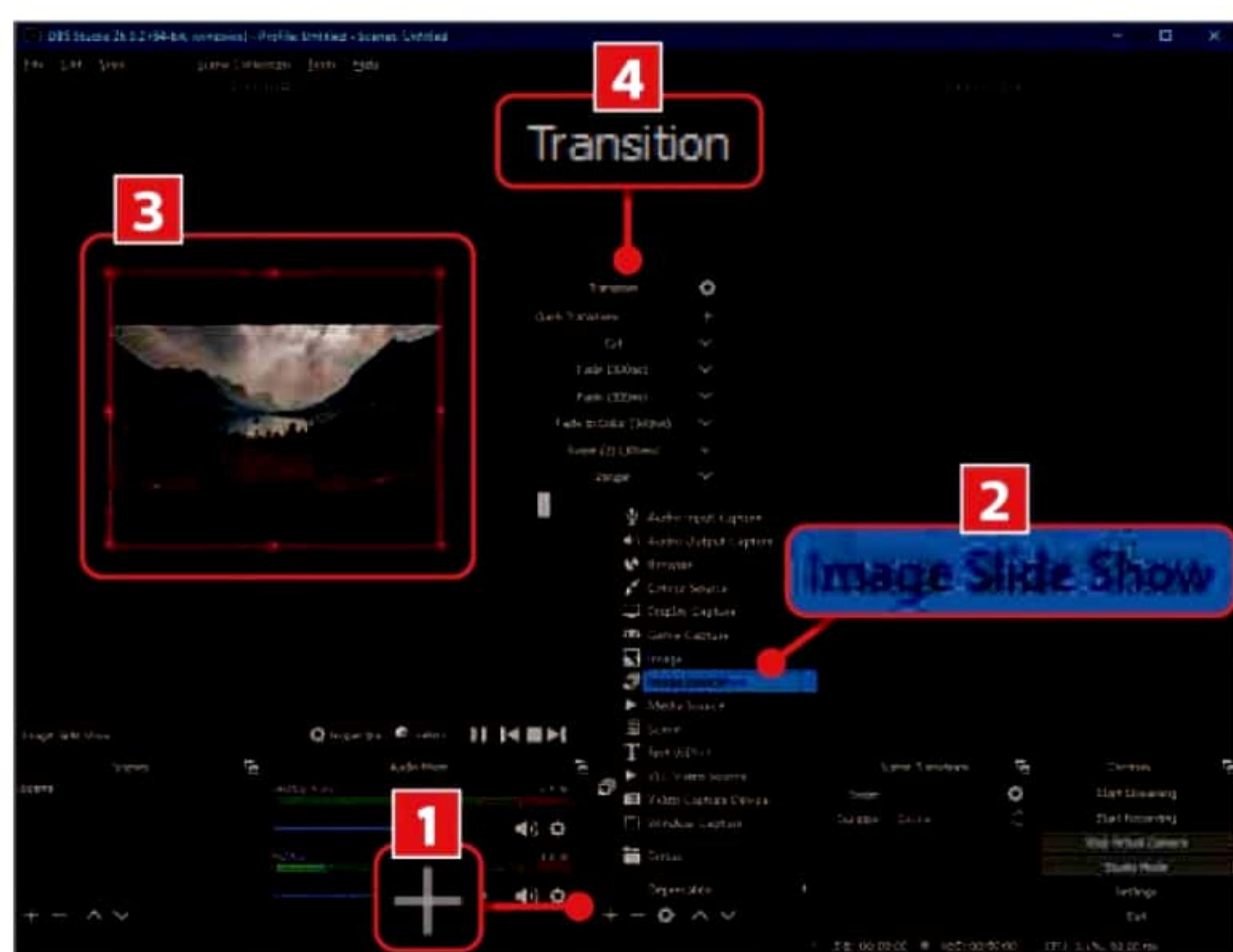
STEP 1 Install OBS Studio by going to www.snipca.com/36533 and clicking Download Installer. Run the program, then click the Studio Mode **1** button so that it displays a light-grey background (this means the mode is enabled) and the Preview and Program windows appear. The Preview window **2** lets you queue up what you want to display in your call, while the Program window **3** shows what's currently being displayed (think of it as your 'live' video).



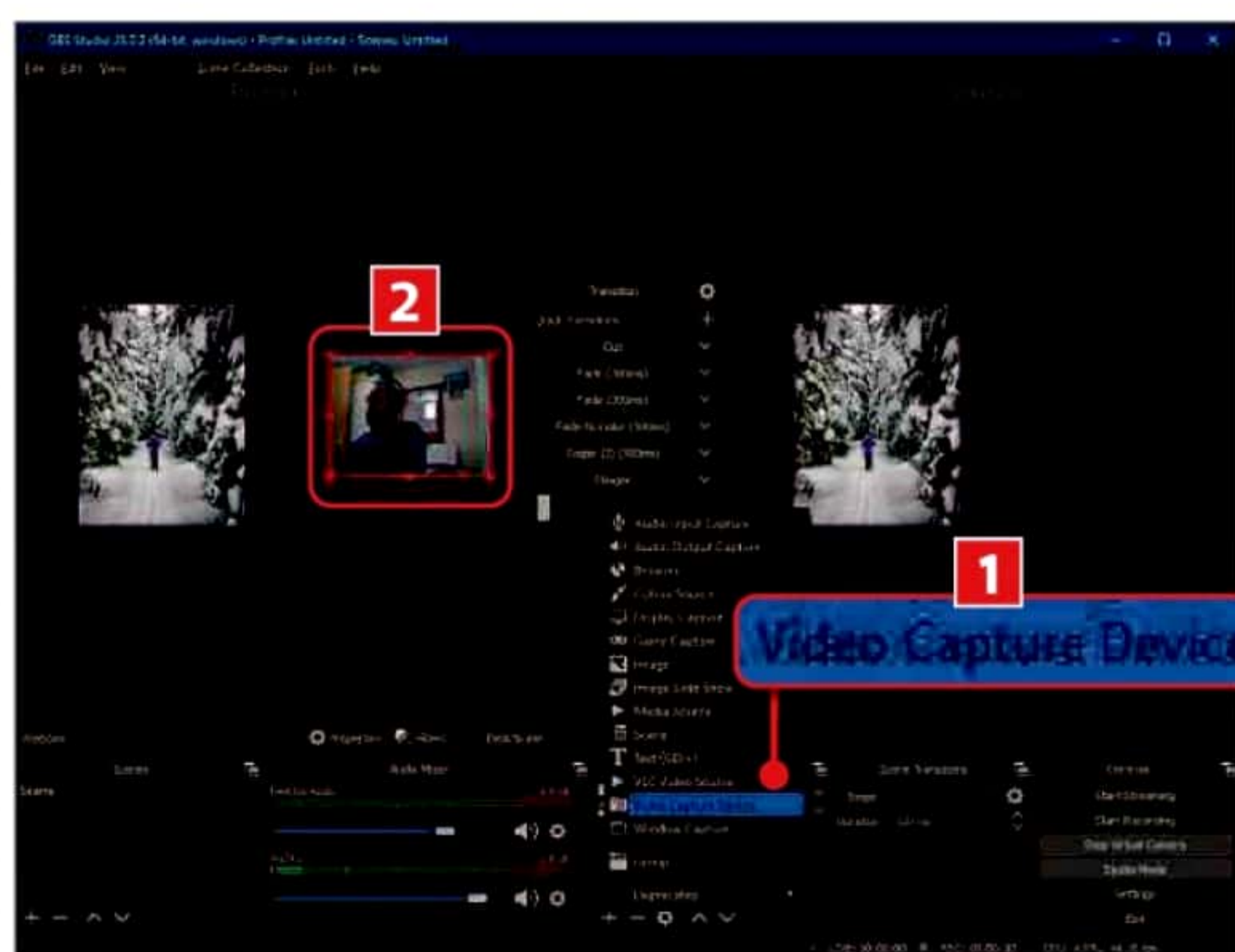
STEP 2 In our example, we're using Skype to make our call. To do this, open Skype, then click the menu button (three dots, top left **1**), followed by Settings. Next, select the 'Audio & Video' tab, click Integrated Webcam and change it to OBS Virtual Camera **2**. If you want to revert to your main webcam later, simply reverse this change. To use the OBS virtual camera in Zoom, click the settings (cog) icon **3**, Video, then select OBS Virtual Camera in the dropdown menu under Camera **4**. You can switch back to your webcam during a Zoom call by clicking the small up arrow next to the Stop Video button.



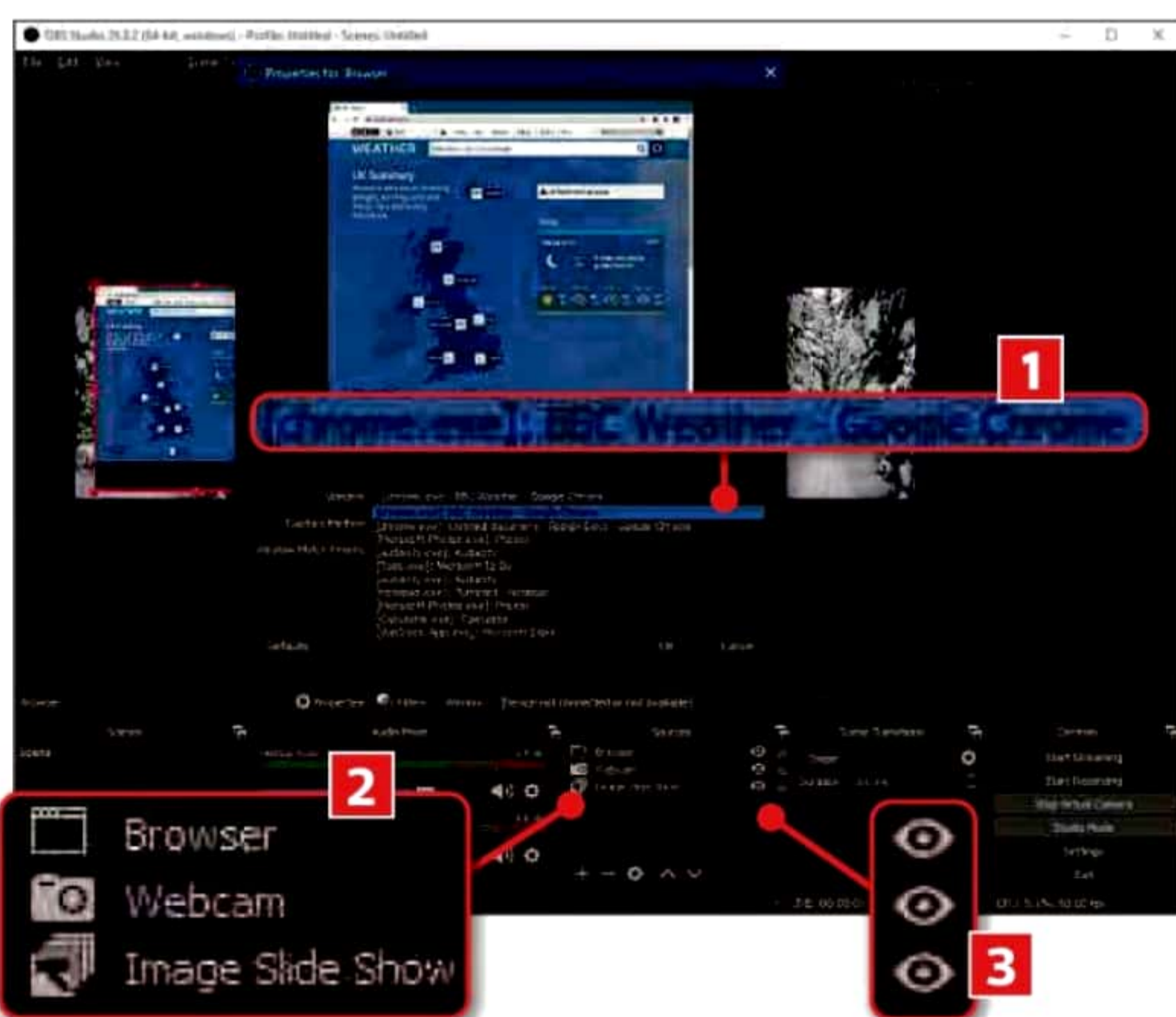
STEP 3 Whichever video-chat tool you're using, you now need to start a video call to test how your virtual camera looks. You could call a friend, but if you'd rather test in private you can set up another Skype (or Zoom) account on another PC, or phone or tablet, then call that using the PC running OBS Studio. The call recipient will only see the OBS Studio logo, indicating that the virtual camera is switched off. To turn it on, return to OBS Studio, then click Start Virtual Camera (this changes to Stop Virtual Camera when it's enabled **1**).



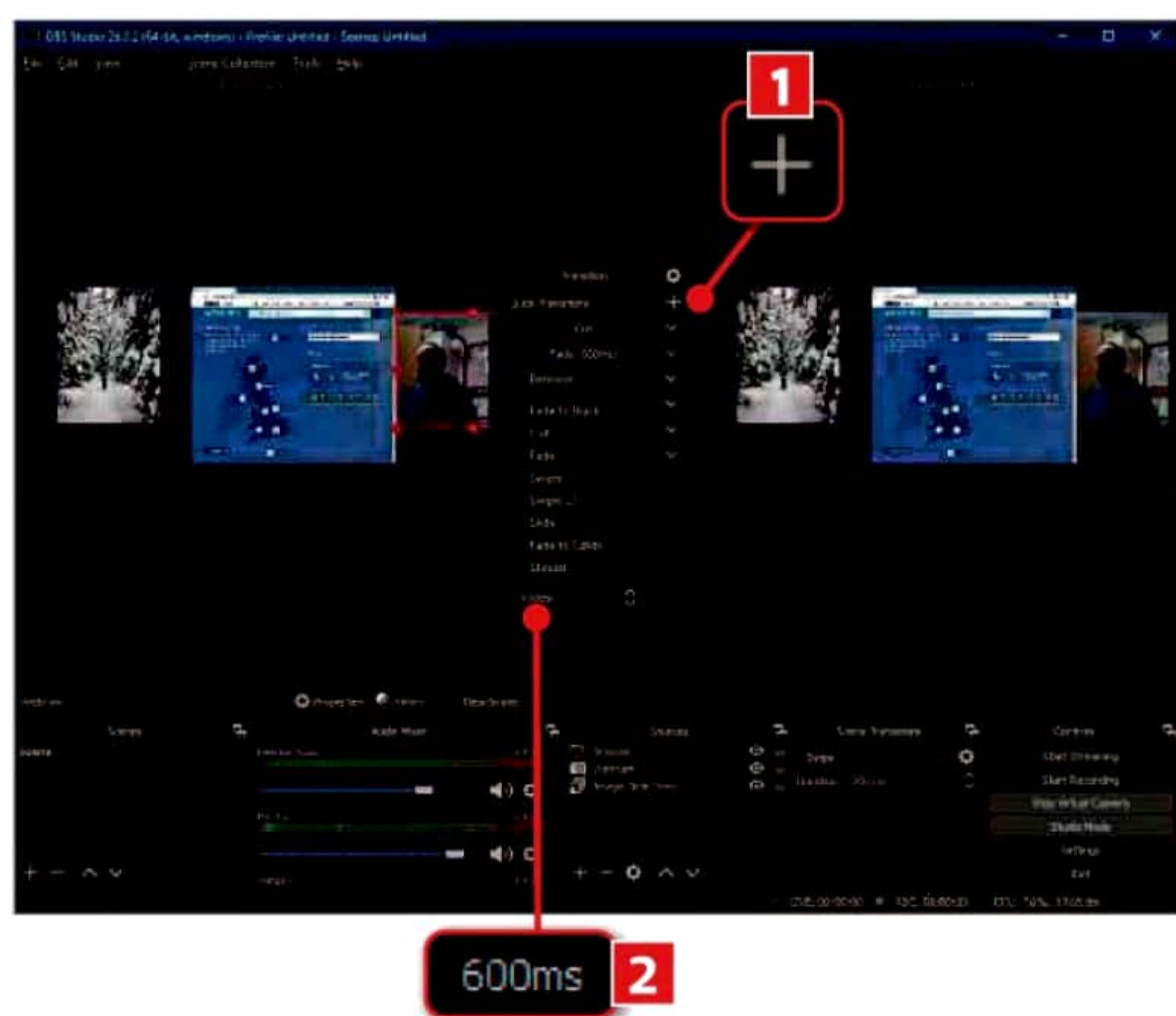
STEP 4 We'll now add a simple slideshow to the virtual camera. Click the '+' button **1** in the Sources pane, then select Image Slide Show **2**. Give your source a name, then scroll down to the Image Files section and click the '+' button followed by Add Files. Choose the photos you want to display (hold down Ctrl while selecting them), click Open, then OK. You'll now see your slideshow in the Preview window. Adjust its size by dragging the box around it **3**, then click Transition **4** to move it to the Program window. At this point, you'll notice the Skype video on the device you're calling will show the slideshow.



STEP 5 Next, we'll add our webcam feed to the virtual camera, allowing us to appear alongside the slideshow. Resize the slideshow in the Preview window so that you have room to display your webcam feed. Next, click the '+' button in Sources, then select Video Capture Device **1** and give it a name (we opted for Webcam). Leave the settings at their defaults, then click OK. You should now see your webcam feed in the Preview window **2**. You can adjust the size of your slideshow and webcam feed windows, before clicking Transition to move them to the Program window. At this point, the call recipient will see both feeds.



STEP 6 We'll now add a third source showing a browser window on our desktop. Click the '+' button in Sources, then select Window Capture, give it a name (we opted for Browser) and select the window you want to display **1** – you'll see a preview of each option when you click them. Select OK when you've chosen the one you want, then resize it in the Preview window as before. As you add more sources, you may need to change their order (ie, which window sits on top, which at the bottom and so on). To do this, click and drag them up or down in the Sources list accordingly **2**. You can also hide a source by clicking its eye icon **3**.



STEP 7 You can also change the transition style when you move sources from the Preview window to the live Program window. Click the '+' button **1** next to Quick Transitions, then select the one you want to use. If you want a fast transition, try Cut – this updates the Program window instantly. For a more subtle transition, select Fade. Your six most-recent transitions will appear below the Quick Transitions heading. Click any of these to apply the transition, or click the down arrow to adjust how long the transition lasts – 600 milliseconds (ms) equals 0.6 seconds **2**.

Workshop 2

Remove all personal files from your USB sticks

What you need: Eraser; Recuva; Windows 7, 8.1 or 10

Time required: 30 minutes

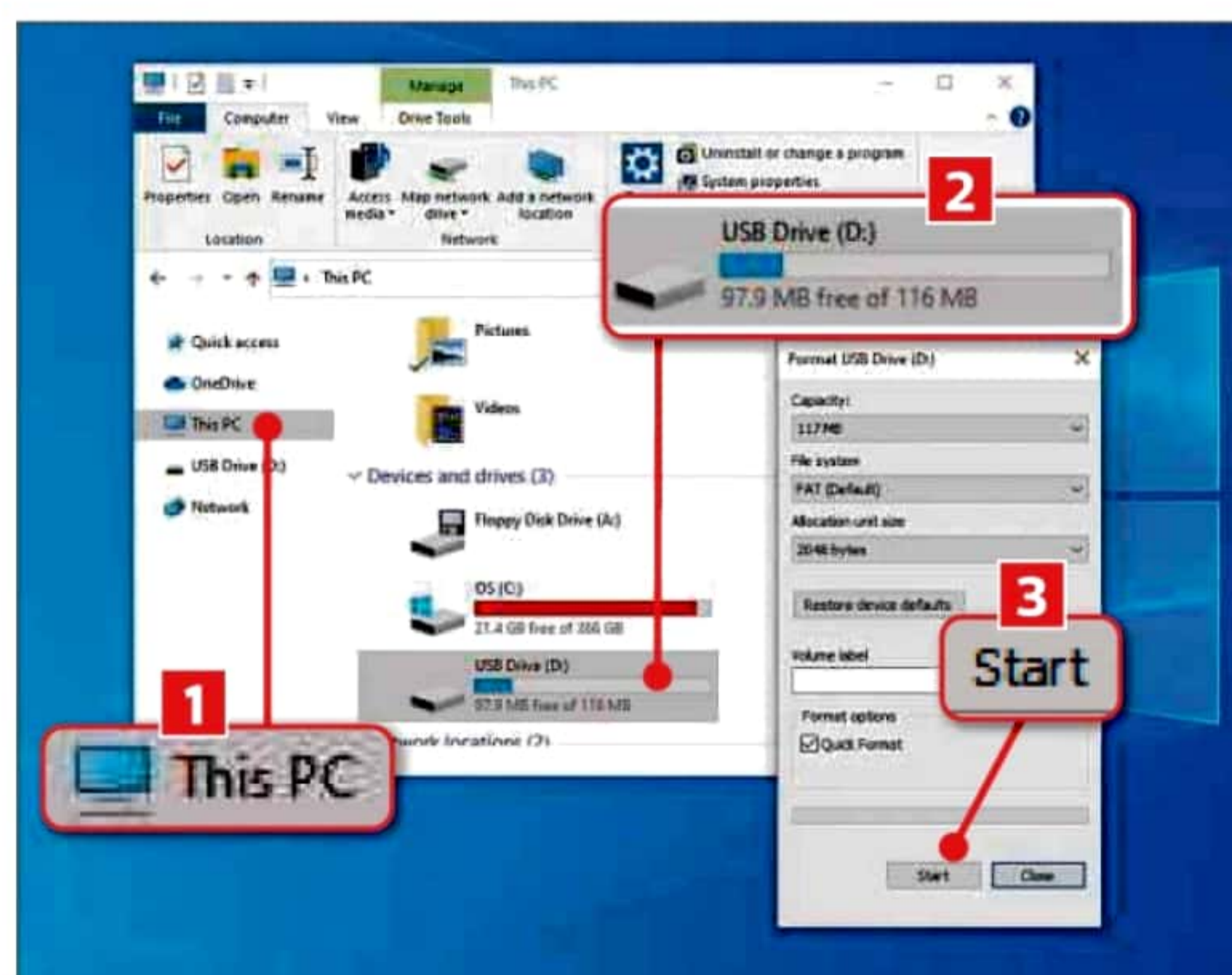
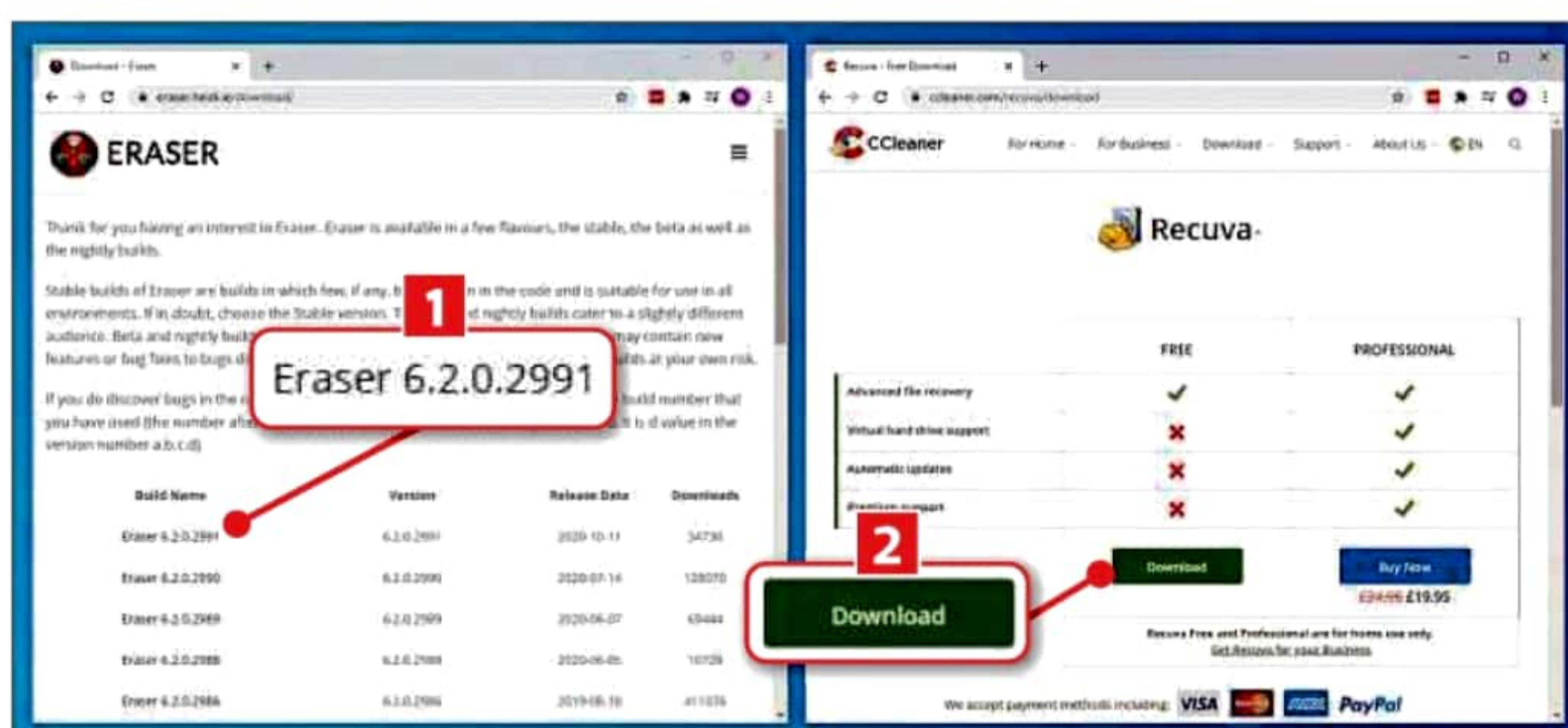
As we revealed in Issue 593 (see News, page 9), it's all too easy to leave personal files lying around on your USB sticks. Even if you're not intending to sell your USB stick, it makes sense to wipe any sensitive files (such as bank

statements and legal contracts) when you no longer need them. In this Workshop, we'll show you how to wipe clean your USB sticks, then use a file-recovery tool to make sure that all files have indeed been deleted.



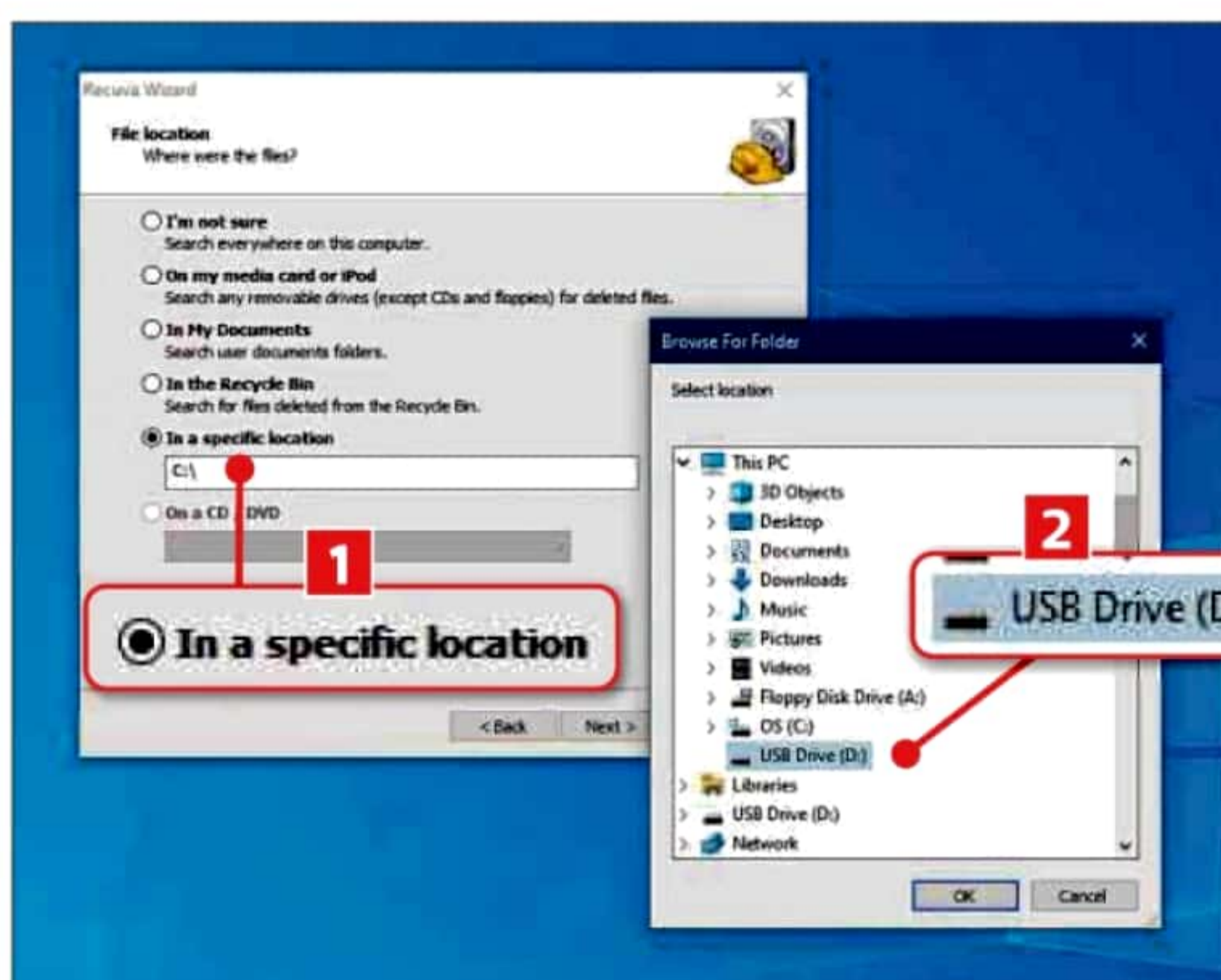
STEP 1

To securely wipe your USB stick, you'll need to download a free, open-source tool called Eraser. Go to www.snipca.com/36566 and click the link at the top of the list of downloads (Eraser 6.2.0.2991 **1** at the time of writing). Once downloaded, open the EXE file and follow the installation process. To test that Eraser is doing its job, we'll also install the free data-recovery tool Recuva. Visit www.snipca.com/36567 and click the green Download button **2**.



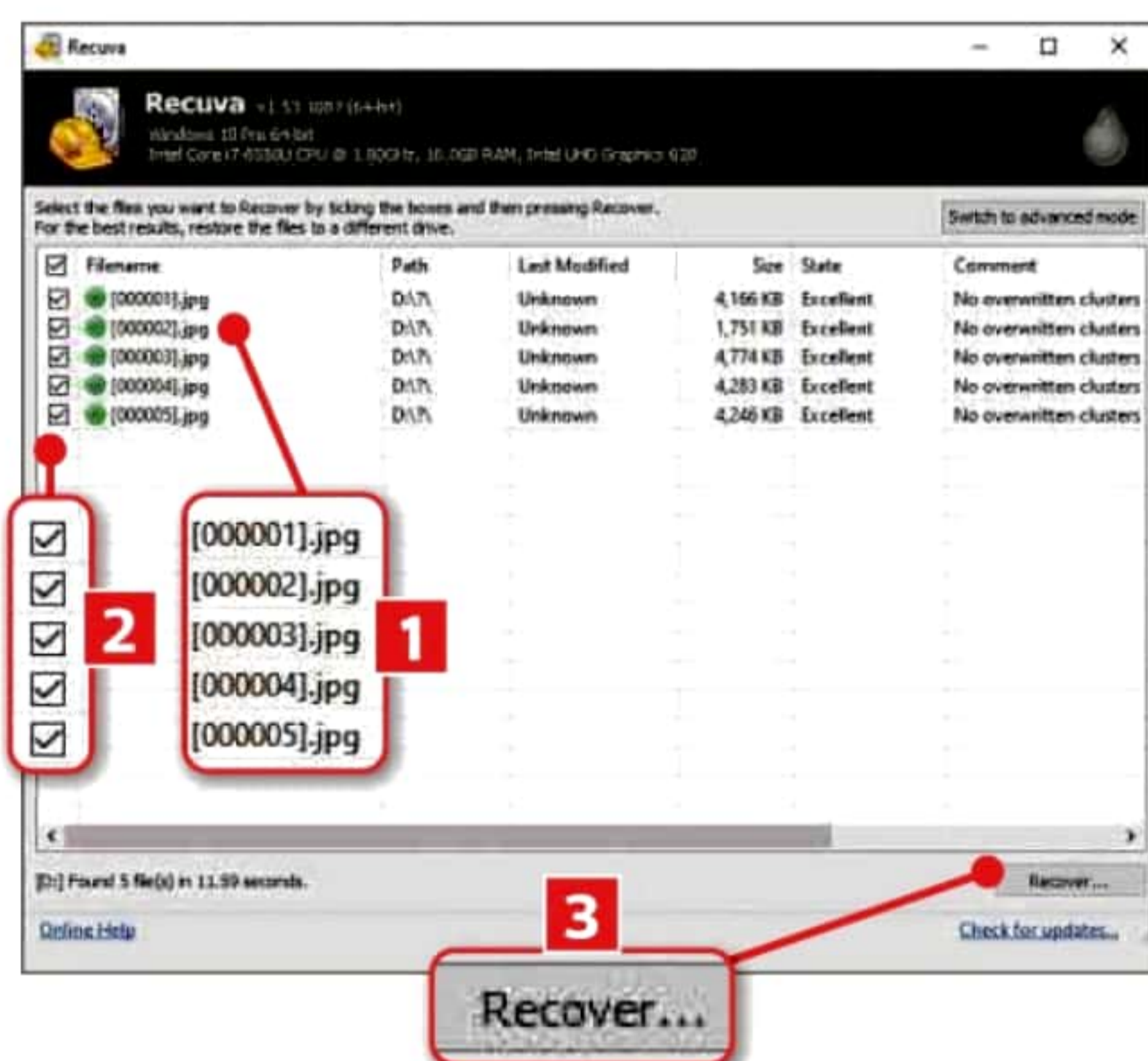
STEP 2

Insert your USB stick into your PC, then back up any files on it that you want to keep. We're now going to format the stick (this deletes all files in one go). Open Files Explorer (press Windows key+E), click This PC **1**, then right-click your USB stick **2** and select 'Format...'. Leave the settings at their defaults, then click Start **3**. The formatting process should only take a few seconds. Once complete, open the USB stick in File Explorer and you'll see that all files on it have been deleted. Or have they? To make sure, open Recuva.

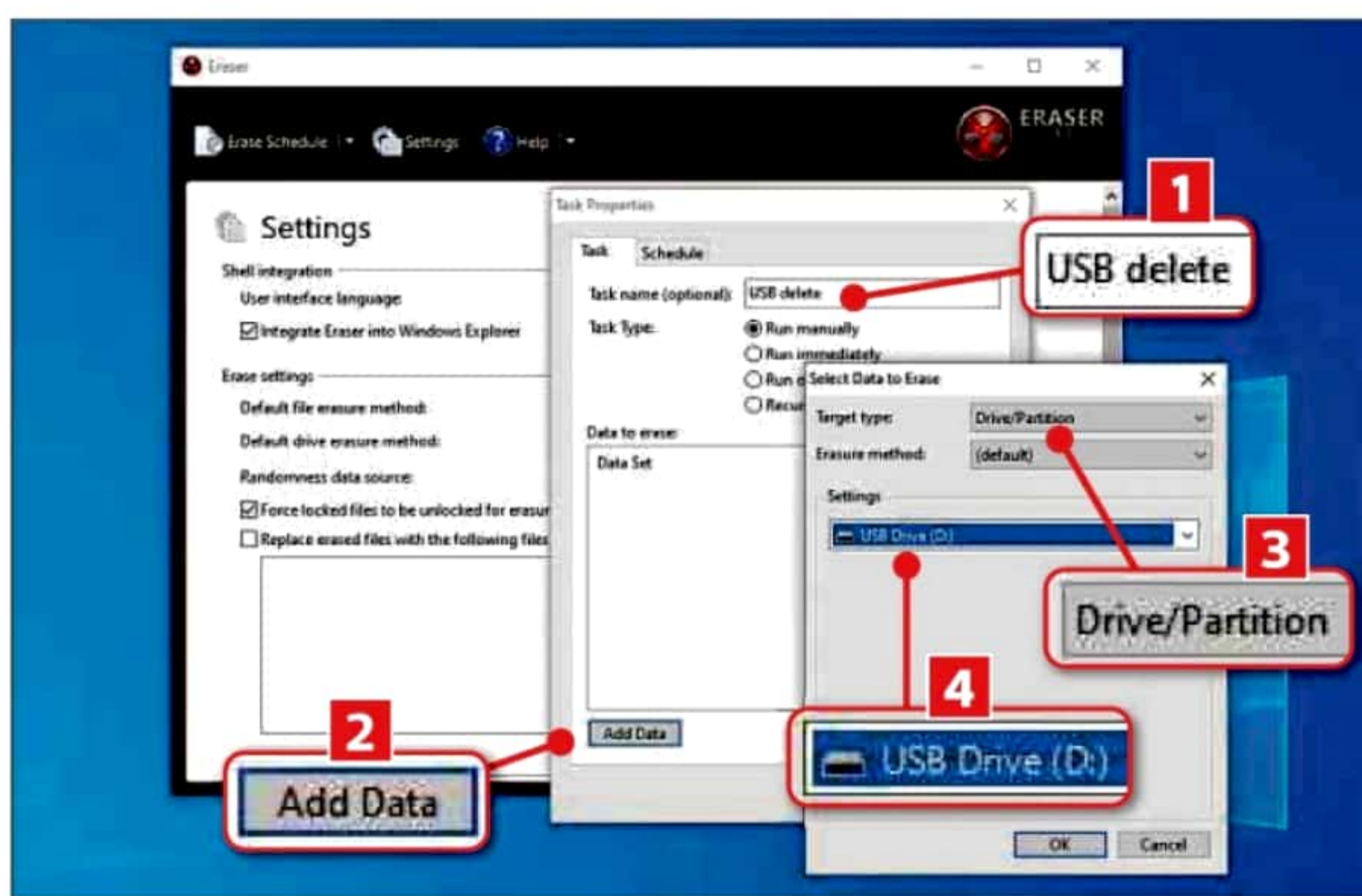


STEP 3

The Recuva Wizard will now open. Click 'Next' and you'll be prompted to choose which files you want to look for - select All Files, then click Next. Recuva will then ask where to look for them - select 'In a specific location' **1**, click Browse, then locate your USB stick **2** and double-click it. Click 'Start' to carry out a quick scan. If Recuva doesn't find anything, it will prompt you to run a deep scan. Select 'Yes'. How long this takes depends on the capacity of your stick.

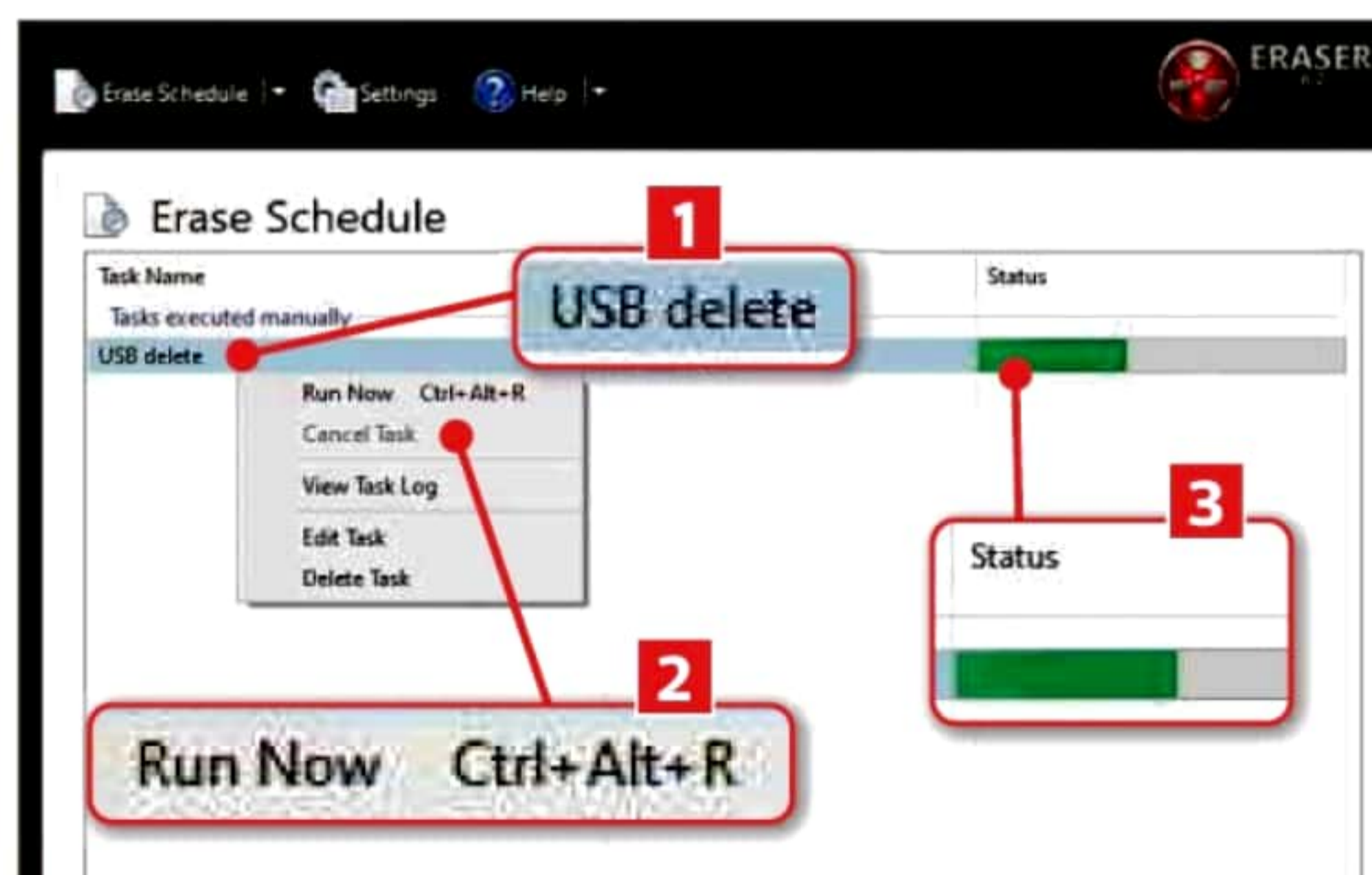


STEP 4 Once the scan has finished, you'll see all the files Recuva has found. As you can see here, although it couldn't recover their original names, Recuva detected the five images **1** that were on our USB stick before we formatted it. To recover and open these images, we need to select them **2**, then click 'Recover' **3**, and choose where to save them. If we'd sold this USB stick (or had it stolen), someone else would have been able to recover our files in the same way.



STEP 5 To *completely* wipe your USB stick, leave it inserted into your PC, then run Eraser. Press Ctrl+N to open the Task Properties window. Give your task a name (we chose 'USB delete' **1**), then click Add Data **2**. Change 'Target type' to 'Drive/Partition' **3**, then click the Settings dropdown menu and select your USB stick **4**. Make absolutely sure you've selected the correct drive here. If you're unsure, open File Explorer (press Windows key+E), click This PC, then remove your USB stick - when you reinsert it, make a note of its drive letter. Our stick has the drive letter E, so we're selecting 'USB Drive (D:)'. Click 'OK' twice to return to the main Eraser window.

STEP 6 Click 'Erase Schedule' and you'll see your task listed **1**. Before you run it, make sure you've backed up any files on the USB stick that you want to keep - once you complete this step, these files will be lost forever. To run the task, right-click it, then select Run Now **2**. Eraser will immediately start wiping your USB stick. Keep an eye on the Status column **3** - if it says 'Completed with errors', make sure you don't still have any programs open that are accessing the USB stick (including Recuva), then re-run the task. The process takes about 30 seconds per GB, so depending on the size of your USB stick you may have to wait a few minutes.



STEP 7 In wiping your USB stick, Eraser also deletes its **file system**, which means you'll need to format it (as in Step 2). Once that's done, it's time to check whether Eraser has done its job. Load Recuva, then repeat our instructions from Steps 3 and 4 to run both quick and deep scans on the USB stick (bear in mind that, because you've reformatted it, your stick may have changed its drive letter). You should find that Recuva can't detect any of the files **1** that the stick contained before you ran Eraser.

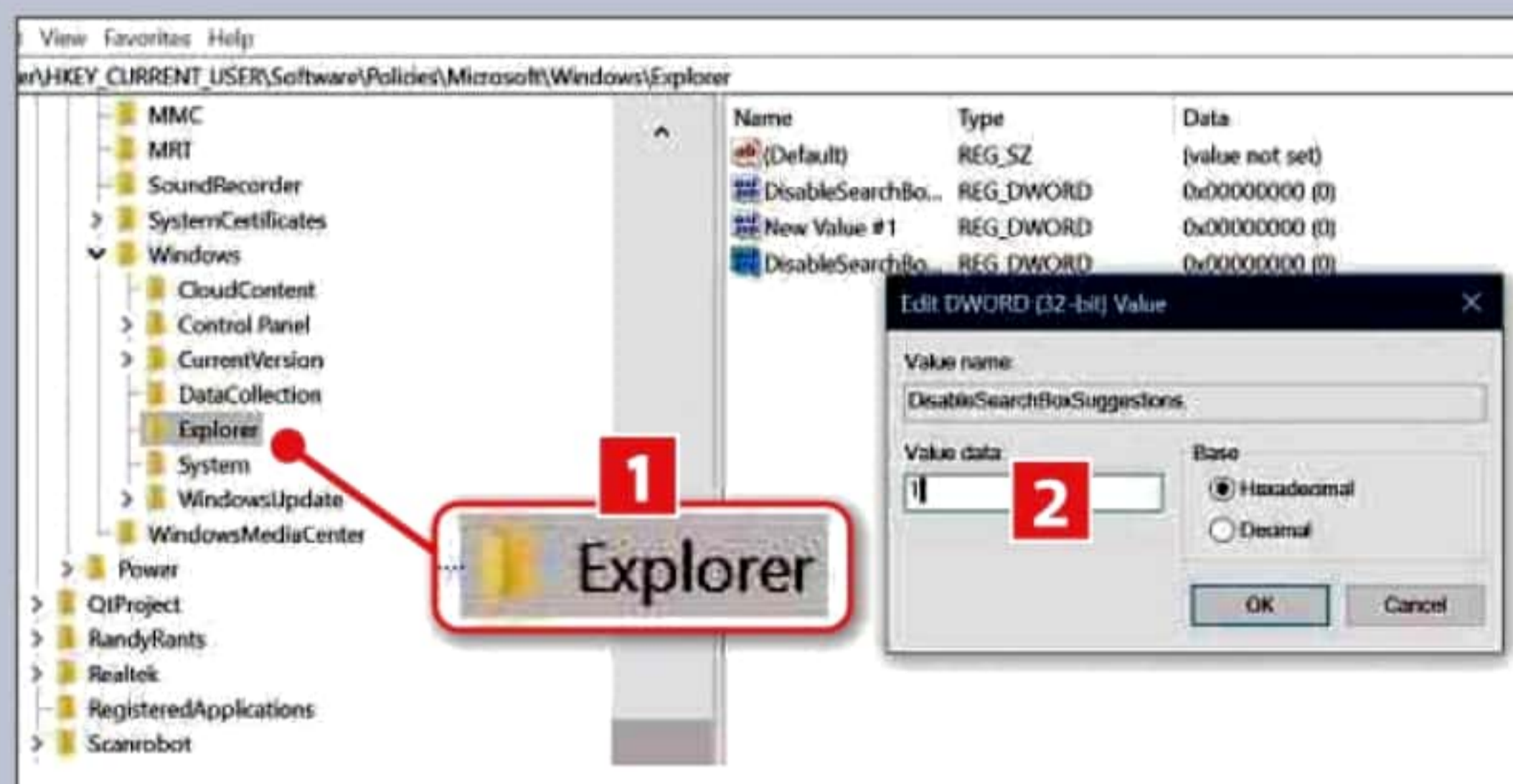
Readers' Tips

TIP OF THE FORTNIGHT

Turn off Bing when searching your computer

I've just discovered a new registry tweak for turning off online search results from Microsoft Bing when you search for files in Windows. It looks like Microsoft has added this new tweak having disabled the old option earlier this year. It's a good idea to deactivate this if you don't use Bing because it can slow down Windows Search.

You have to open the Registry Editor (press Windows key+R then type **regedit** and press Enter). Next, navigate



to **HKEY_CURRENT_USER\SOFTWARE\Policies\Microsoft\Windows\Explorer**. If you can't see an Explorer folder, right-click the Windows folder and create a key

with the name Explorer.

Now right-click the Explorer folder (1 in the screenshot) and hover your cursor over New. Click 'DWORD (32-bit) Value' and look for a box that appears in the central pane. Type a new key here: **DisableSearchBoxSuggestions**. Double-click this and set the 'Value data' box to 1 2. This will disable both Bing and

advertises in Search. All that's left is to click OK, close Registry Editor and restart your computer.

Warren Holmes



Warren wins a copy of our 2019 Back Issue CD

Buy it on Amazon www.snipca.com/33711

APPS

Use FileBrowser to move files from phone to PC

✓ Thanks for your great How To on dragging and dropping files between phone and PC (Issue 590, page 35). In the past, I've found transferring files between my PCs and Apple devices very frustrating. Having used Windows' logical folder system, I find iTunes confusing and have no desire to use online services like iCloud. I also don't want to mess about with USB-to-

Lightning leads every time. I just wanted a simple method where you can copy files from your PC and paste it into your Apple device (or the other way round).

What I now use is the iOS app FileBrowser from Stratospherix, downloadable from the Apple App Store (www.snipca.com/36369, pictured above right). I use the basic version, which costs £6.99. You pay once and can download it to additional devices on the same account. I've used it to take my entire collection of document folders from my



PC and pasted them wholesale on to my iPad and my iPhone 6s. When I take photos or videos on my iPhone, I copy them out of the Camera Roll directory and paste them into my own folder structures on my PC. I can also take photos from my 'serious' camera, transfer them on to my PC, and then copy and paste them on to my Apple devices.

The one difficulty I've encountered is that my PC has to have its security settings set so that the Apple devices can access it. However, when I've had a problem, I've found useful instructions on www.stratospherix.com. One thing to watch out for is if a Microsoft update, in its wisdom, changes any of your security settings.

Robin Carr

Why I stopped using...

Microsoft Photos

✓ When I upgraded to Windows 10 earlier this year I vowed to try all the apps that came with it. One of these, Microsoft Photos, might be fine for storing photos, but it's too basic for video editing, and certainly no replacement for Windows Movie Maker.

What I use instead...

I now use **Shotcut** (www.shotcut.org) for my video-editing projects. I always judge video software by how easy they make it to drag clips to the timeline, and Shotcut does this nicely. If you make the clips overlap slightly, it creates an attractive 'crossfade'



transition. There are other transitions available in the Properties section (see screenshot).

In my view, Shotcut is the perfect 'middle choice' between the primitive Microsoft Photos and over-complicated programs like Kdenlive (<https://kdenlive.org/en>).

Stephen Betts

✉ Tell us why you stopped using a website, app or program: letters@computeractive.co.uk

EMAIL

Avoid spam by using 10-minute email addresses

✓ I read your Workshop in Issue 589 on AnonAddy with interest ('Use a fake email address to keep your details private'), but can't help thinking it

Handy hints and tips from your fellow readers

✉ Email us your tips: letters@computeractive.co.uk



sounds like overkill and one more thing to manage. Personally, I use 10MinuteMail (<https://10minutemail.com>). Just go to the site and you're instantly given a random email address, which you supply to whichever site you're wanting to access. The link you'll need to click after signing up will appear in your 10MinuteMail inbox.

The beauty of it is that the temporary email address expires after just 10 minutes, although you can request short extensions if necessary. This 10 minutes begins to count down as soon as you visit the site (it's down to nine minutes, 23 seconds in our screenshot above).

I've heard that some websites won't accept a 10MinuteMail address, but I've never had any problems. Similar services exist, but I haven't needed to try them.

Michael Potts

BACKUPS

Save your files in four different places

✓ I actually interpreted Barry Blackshaw's question differently to how you answered it (Problems Solved, Issue 590, page 64). When I read his question ('Can I protect my SD cards?'), I believed 'protect' meant from accidental erasure rather than anyone being able to see the contents if they got hold of the card. I'm not sure how any form of protection from prying eyes might work. There is not likely to be a single

Reader recommends...

Chuwi Herobook laptop

£195 from Wish www.snipca.com/36325

✓ As a grateful subscriber for over 17 years, I'm pleased at last to offer a contribution. I recently purchased a Chuwi Herobook laptop from Wish. It has 8GB of RAM, a 256GB SSD, a 14.1in screen, and comes in a grey rigid metal case. It runs Windows 10, weighs 1.4kg and has an eight-hour battery life.

Nothing is ever perfect, and the various overlays for the American keyboard do not include a QWERTY one. This is easily resolved though with a £2 set of adhesive keyboard labels.

Like most octogenarians my needs are modest – emails, Zoom, browsing, shopping and online banking. I'm delighted with its portability,



appearance, speed and performance and am happy to recommend it.

Malcolm Elliott

✉ Want to recommend hardware or software to fellow readers?

Email letters@computeractive.co.uk

encryption solution applicable to a camera, an Android tablet and a Windows PC. Also, I am not sure how practical it is to have to unlock a camera before taking or viewing photos.

Unfortunately, nor is there a single solution to protecting his photos from accidental erasure. The 'write protect' tab on an SD card (but not available on a microSD card) is a mechanical signal to the SD card slot to prevent writing. There are two problems with this. One, not all card slots have the mechanical sensor to detect the state of the protection slider; and two, if the slider has been used a lot it can become slightly loose.

You could mark individual files as 'read only'. This generally works in many cameras and in Android and Windows, though it doesn't prevent a drive from being formatted, which will delete protected files.

The third option I tried was using diskpart.exe in Command Prompt to set the 'ReadOnly' attribute for the whole physical device (see screenshot left). This works for Windows, but neither my Kodak digital camera nor my Android phone took any notice of this setting.

Ultimately, to minimise the risk of erasure, the best solution has got to be keeping multiple backup copies on different media that are not all mounted at the same time. My solution is to keep a live backup of my photos on my desktop PC, two further copies on two external hard drives, and a final copy in online storage. I used to use CDs or DVDs, but the disappearance of such drives in many PCs and the increasing pixel counts and corresponding file sizes has tended to make this unrealistic nowadays.

Richard Taylor

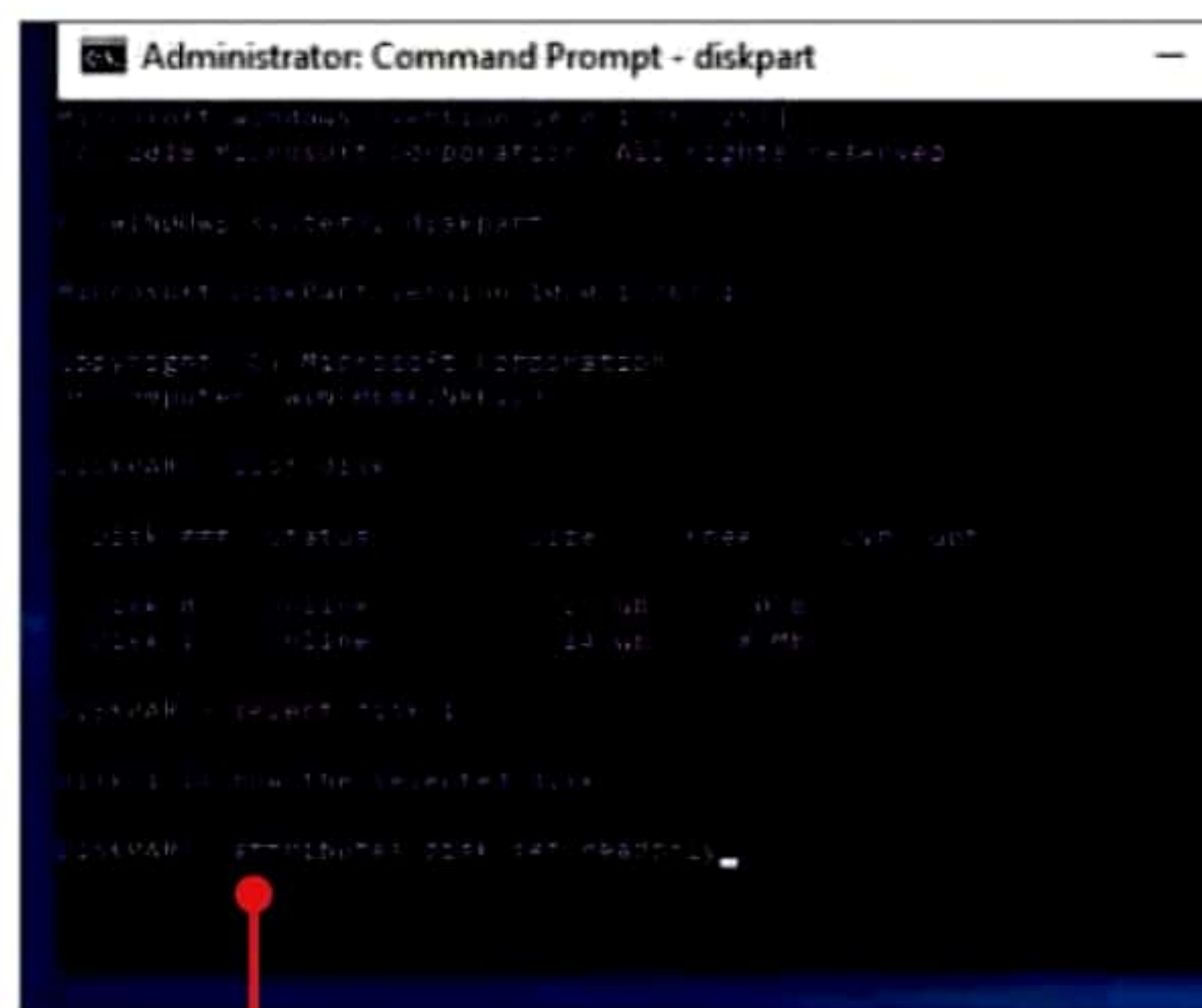
HARDWARE

Erase your hard drive using sandpaper

✓ In Issue 591's Problems Solved (page 64), you answered David Ritchie's question about securely wiping old hard drives. You suggested using Eraser (<https://sourceforge.net/projects/eraser>) to repeatedly write random data over any free space on the drives.

I have a swifter method that's an effective belt-and-braces solution. I take the drive to pieces and then rub the nice mirror disks with a little bit of sandpaper. Job done! They're fully safe in a few minutes. I then throw all the pieces into the recycling bin.


Paul Doust



DISKPART> attributes disk set readonly

Phone and Tablet Tips

ANDROID Use Google's new screen-capture tools

 Android 11 introduces a new screen-recording tool, which lets you add a voiceover so you can narrate what's happening on screen. You can find it by swiping down from the top of the screen to reveal your shortcuts, then swiping to the second screen and tapping 'Screen record'. If you're running Android 11 but can't find this option, tap the pencil icon at the bottom of the shortcuts pane to open the full range of tools, then drag 'Screen record' from the shaded bottom area into the top black half of the screen. Tap the left-pointing arrow to return to the shortcuts.

Once you've tapped 'Screen record', use the on-screen sliders to (optionally) simultaneously record audio using the phone's built-in microphone, and to 'Show touches on screen' (see screenshot

1 below left). This latter option is particularly useful if you're demonstrating how to do something on your phone for someone who'll receive the resulting video.

Tap 'Start' to begin recording and you'll notice a red recording icon appear at the top of the screen, near the clock. When you've finished your recording, swipe down from the top of the screen and tap the red Notification block to stop.

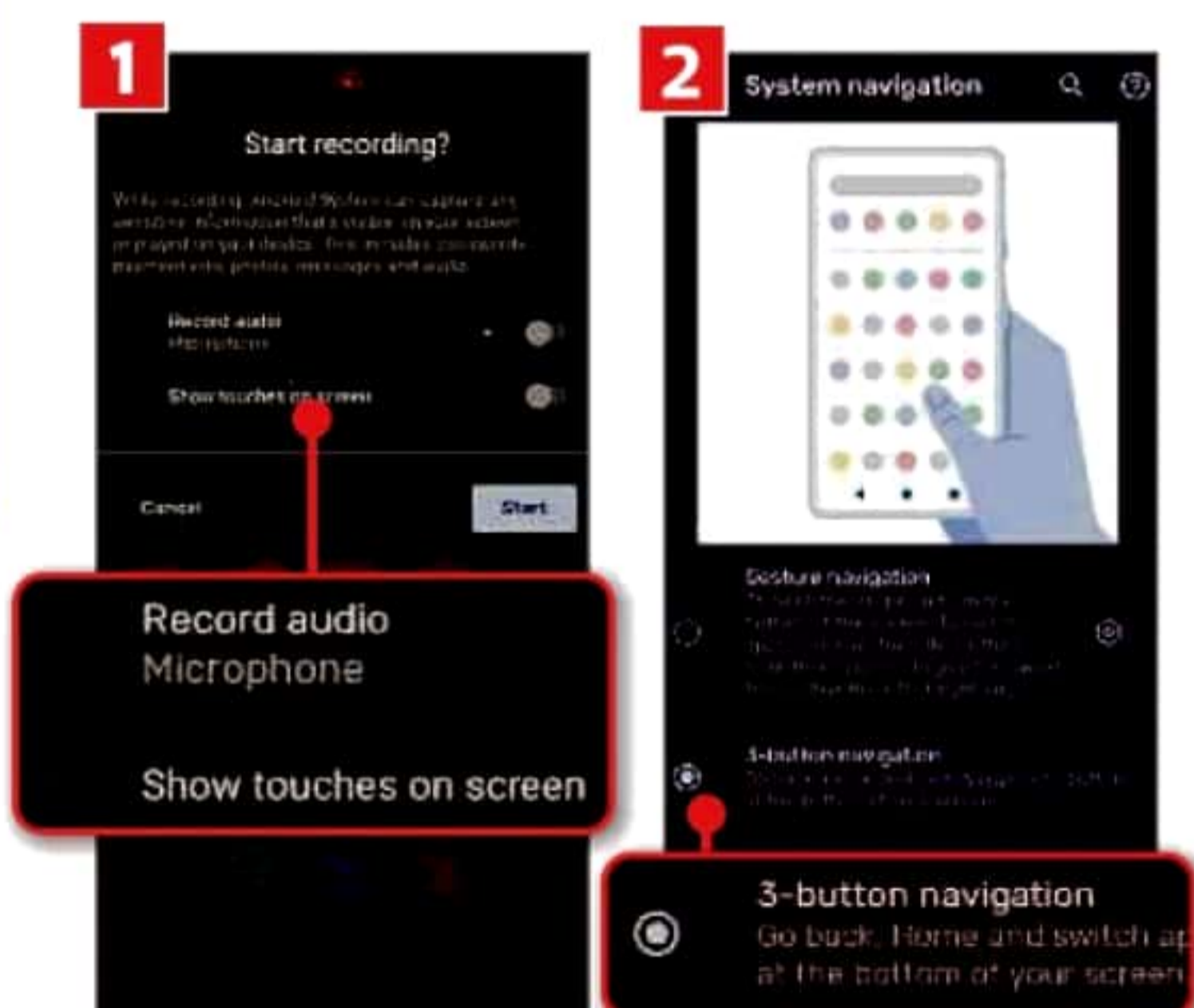
The video is saved to your Photos app. Open this, then tap Library on the bottom bar, then on the next screen tap the Movies album. If you want to trim your video, first play it, then tap it once to reveal the toolbar at the bottom of the screen. Tap the adjustment sliders icon at the centre of the toolbar, then drag the handles on the left and right of the strip of frames at the bottom of the screen towards the centre. Only the section of the video that sits between these handles when you tap 'Save copy' will be retained.

On a related note, there have been some changes to the way Android captures screenshots. The usual method of holding down the power button while pressing the down-volume button still works but, if you've switched to **gesture**-based navigation (which uses swipes to move around inside apps rather than the three on-screen buttons that appear at the bottom of the screen), the software control for capturing screenshots will have disappeared. To get it back, open Settings and tap System followed by

Gestures. Tap 'System navigation' and select '3-button navigation' (see screenshot **2** below left), then quit Settings. The three on-screen navigation buttons will reappear. From now on, to capture the screen, you can tap the square app-switcher button on the right, followed by the Screenshot option that appears below the preview window.

iOS Make better voice recordings

 Apple's Voice Memos tool, which is built into iOS, has new enhancement tools in the latest version of iOS (14), which runs on the iPhone 6S and all later models. Whether you've just made a new recording, or you're working with an old one, tap it in the recordings list, followed



BEST NEW APPS

What you should install this fortnight

Hydra

£4.99

iOS www.snipca.com/36565

Hydra is a do-everything camera tool that can improve low-light performance, zoom beyond your phone's built-in abilities and shoot HDR photos with shadows and highlights that really pop. How? By combining up to 60 photos taken in quick succession and combining the best parts of each.



Reeder 5

£4.99

iOS www.snipca.com/36555

Rather than skipping from site to site to read the latest news, subscribe to your favourites using Reeder, and they'll all be available in a single app. It presents the contents of each one in a clean, readable layout, and you can easily add new subscriptions by typing their homepage address.



Rain Sounds - Sleep & Relax

Free*

Android www.snipca.com/36548

Whether you're having trouble sleeping or finding it difficult to concentrate on what you're reading, some relaxing nature noises



may be just what you need. Rain can be one of the most relaxing sounds – particularly if you're tucked up somewhere cosy – and the latest release of this ambient audio app lets you simulate a range of settings like lakes, beaches and even rain on a tent.

*Contains in-app purchases

Brilliant things to do on your device

by '...', then Edit Recording. You can trim the beginning and end of the audio file by tapping the crop tool on the upper right of the following screen, then dragging the yellow bars that overlay either end of the waveform towards the centre. Press 'Trim' when you've isolated the part you want to keep, followed by Save.

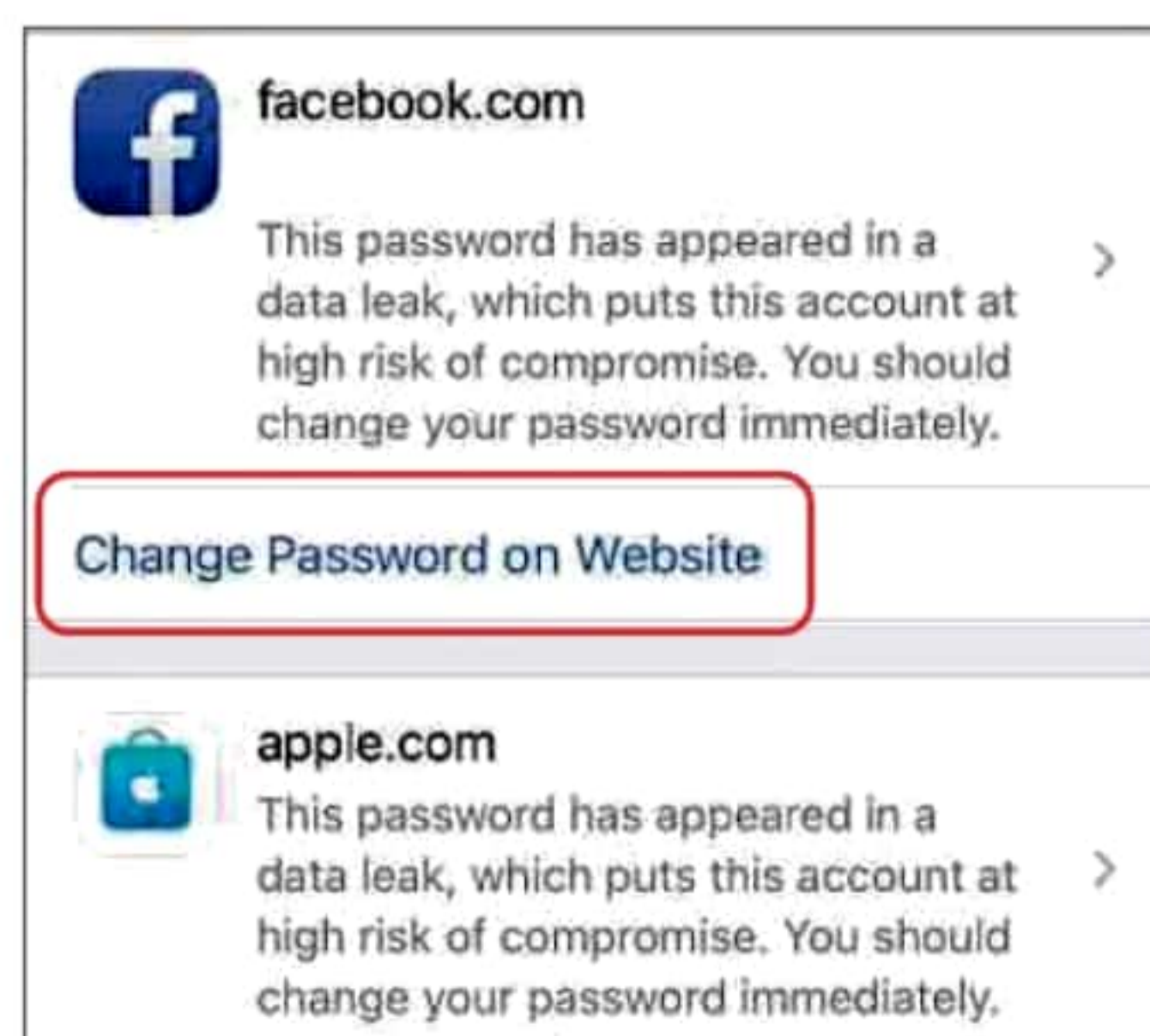
However, there's another tool that we think is more interesting: tap the magic-wand icon in the upper left of the screen and Voice Memos will automatically enhance the recording, helping to make your voice clearer. Tap the play button to preview the result. If it doesn't sound any better, you can tap the wand again to remove the effect but, if you like what you hear, tap Replace instead (see screenshot left).

ANDROID & iOS Detect stolen passwords

Android iOS 14 keeps tracks which of your passwords have been part of a hack or breach, and warns you when you need to make changes. But you can pre-empt these warnings by checking every so often yourself.

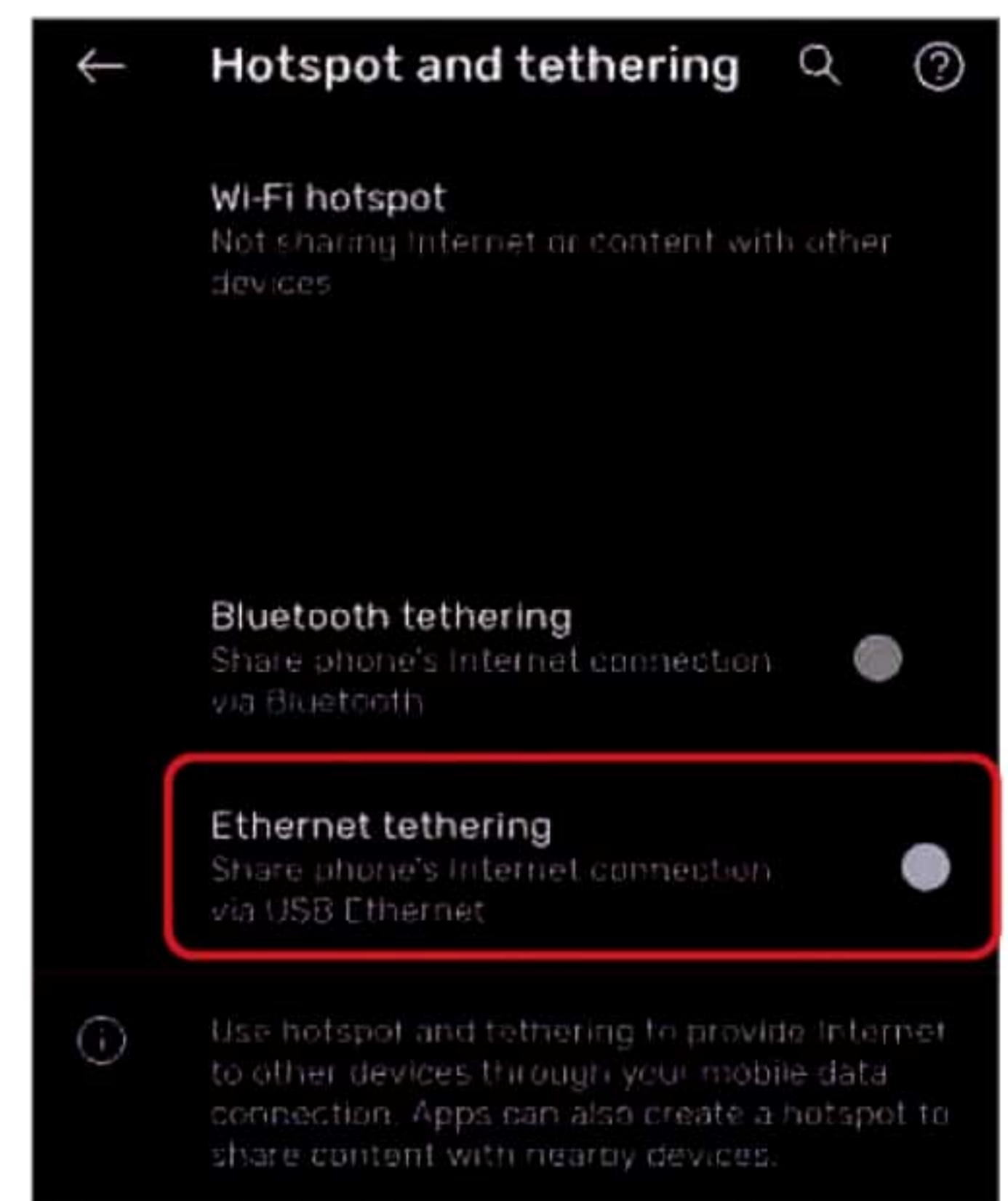
Open Settings, tap Passwords, then put your finger on the fingerprint reader to unlock. You'll see a new Security Recommendations line showing how many of your accounts have been leaked. If this is anything other than zero (in our case, it was a shocking 77), tap it to see which passwords are at risk, then tap 'Change Password on Website' below each one (see screenshot below) to make the necessary changes.

On iOS and Android, the latest version of the mobile Chrome browser will similarly check whether the details you've just typed you've just used appear on lists of compromised accounts. If so, it'll warn you. It's free on both Android (www.snipca.com/36541) and iOS (www.snipca.com/36542).



ANDROID Use wired networking

Android has long allowed users to create mobile hotspots so they can share their 3G or 4G connection with Wi-Fi-only devices. With Android 11 it's now possible to do the same over a wired connection. It requires a 'USB to Ethernet' dongle which makes your phone behave like a router for any wired device connected using a regular Ethernet cable. The feature isn't enabled by default; to turn it on, open Settings and tap 'Network and Internet' followed by 'Hotspot and tethering'. Tap the slider beside 'Ethernet tethering' (see screenshot right), which will only be accessible if your phone has detected that an appropriate dongle is attached.



BEST APPS FOR... To-do lists

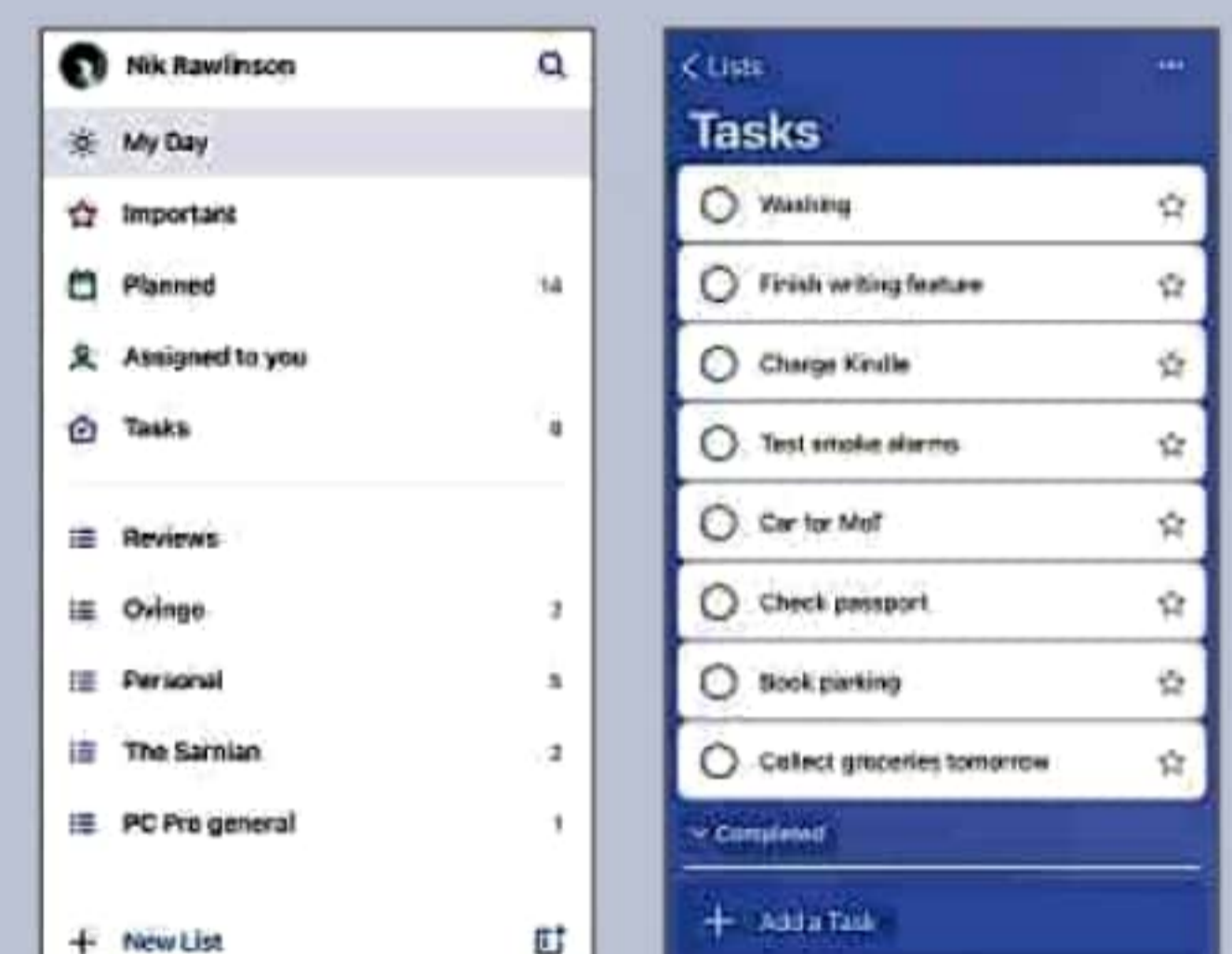
Microsoft To Do Free

Android, iOS and web

<https://to-do.microsoft.com>

Check the item counts to see at a glance how many jobs you still have outstanding, and sync your tasks across mobile devices and Windows 10. You can also view them online.

Best for Syncing across mobile devices and Windows 10



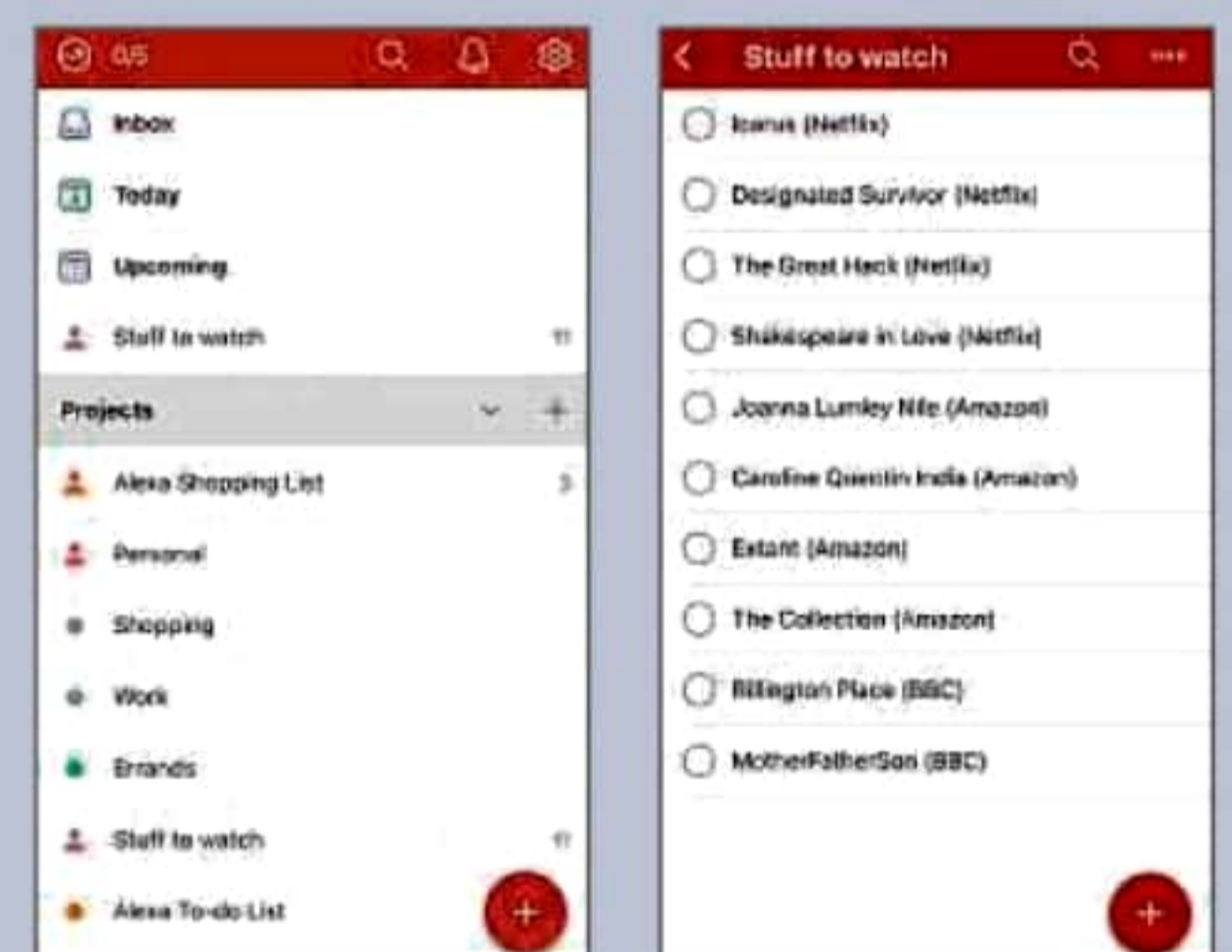
Todoist Free*

Android www.snipca.com/36552

iOS www.snipca.com/36551

Todoist lets you keep multiple to-do lists side by side. It works with Amazon's Alexa smart speakers, letting you add items to your shopping list using your voice, then check them off in the store using the synchronised list on your phone.

Best for Use with voice assistants



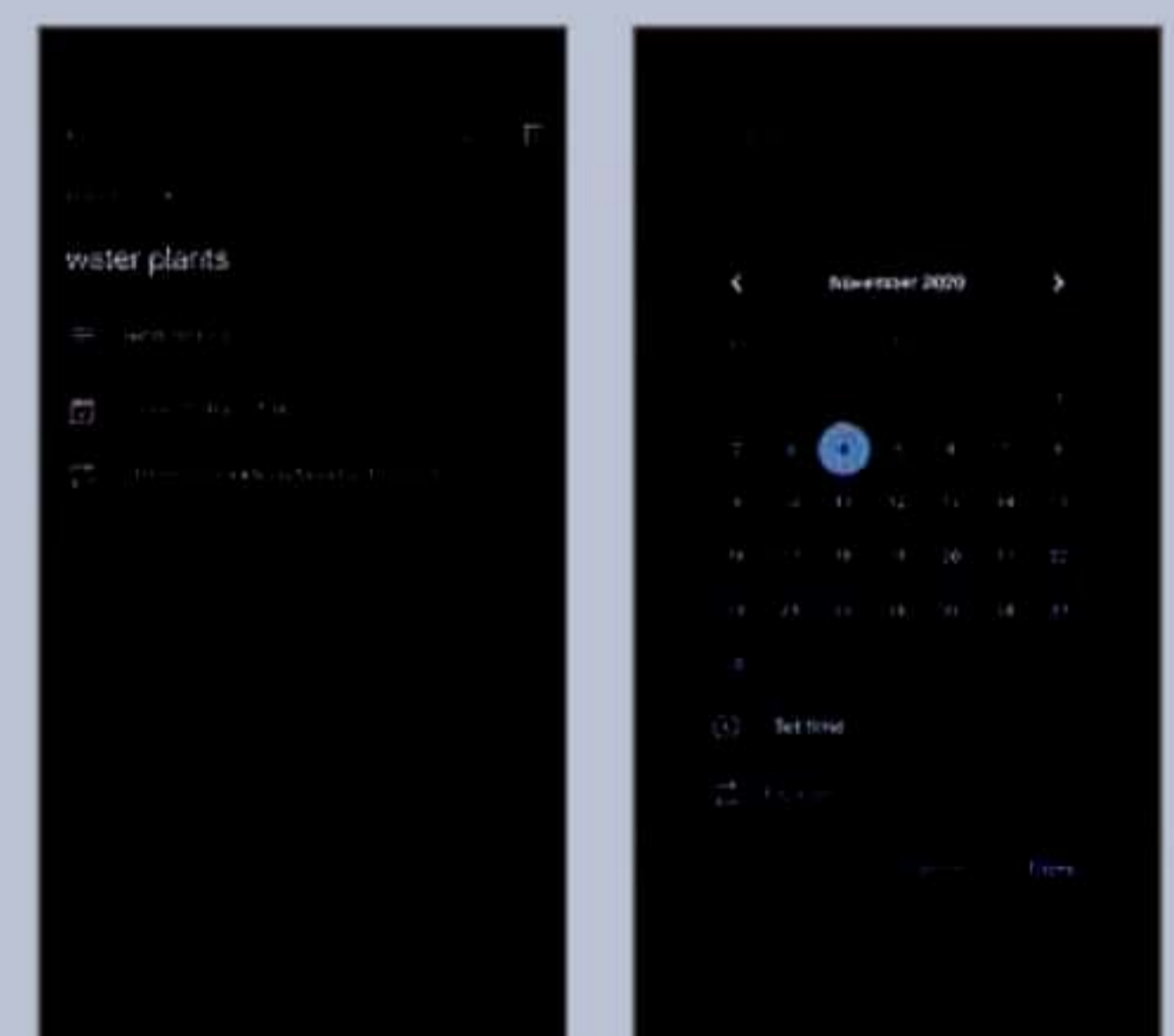
Google Tasks Free

Android www.snipca.com/36549

iOS www.snipca.com/36550

For anyone already using Google Calendar, the Tasks app neatly adds any tasks that have a date. If you access Gmail through a browser, you'll see a Tasks button at the top of every message – click this to add a reminder to yourself to respond to messages you can't deal with right away.

Best for Use in tandem with other Google services



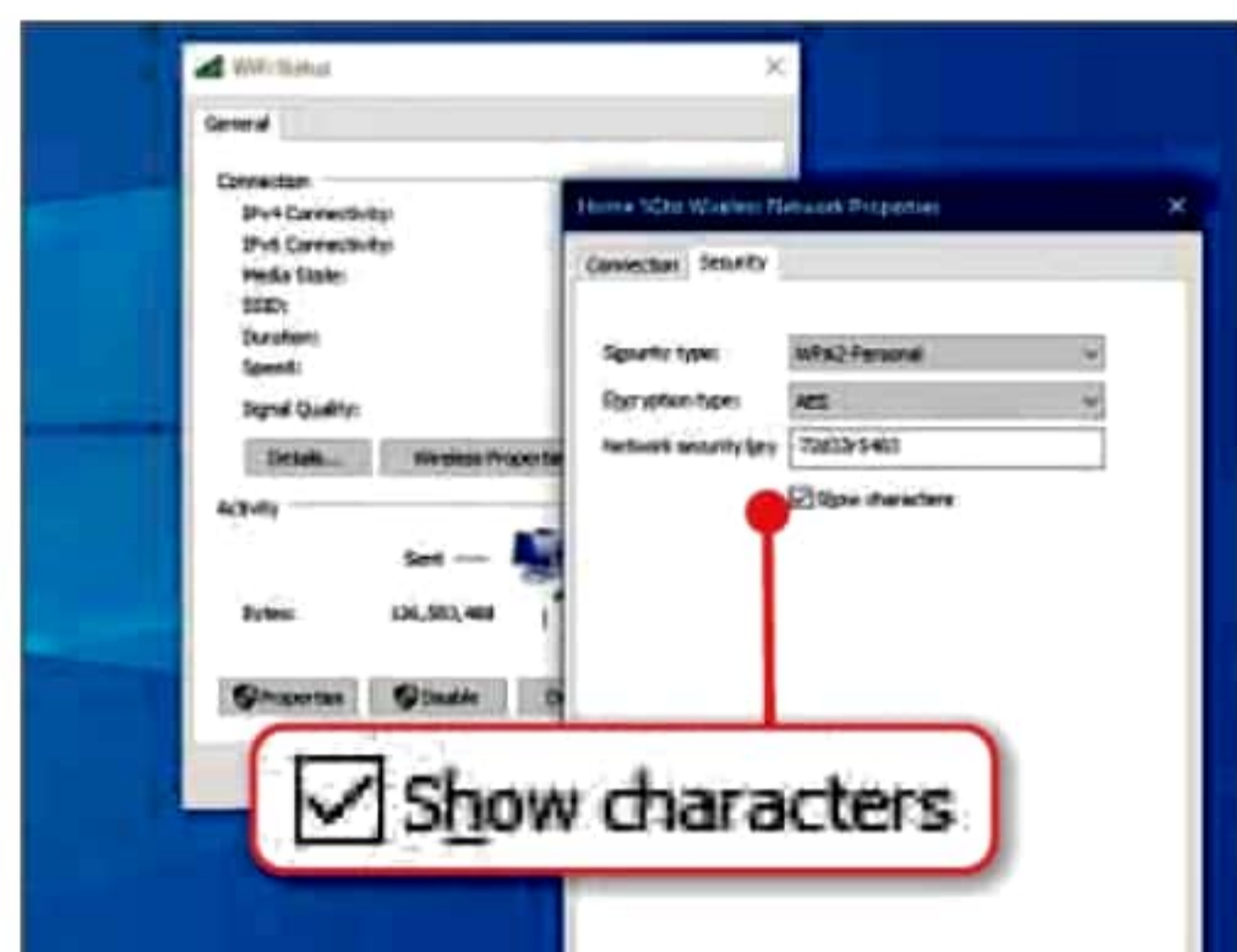
*Contains in-app purchases

WINDOWS 7, 8.1 & 10

Find your Wi-Fi password



When a house guest asks for your Wi-Fi password, it's unlikely you'll be able to recite it from memory. If you haven't changed it from the default password that came with your router, you'll probably find it on a printed label on the back of it. BT routers list it on a small, removable panel on the back.



If it's not there or you changed the password, there's a quick way to find it. Log into a PC or laptop that connects to your router via Wi-Fi, then right-click the Wi-Fi icon in the system tray (bottom-right corner of your desktop) and select 'Open Network & Internet settings'. Scroll down and click 'Network & Sharing Centre', then click your network name (listed next to Connections).

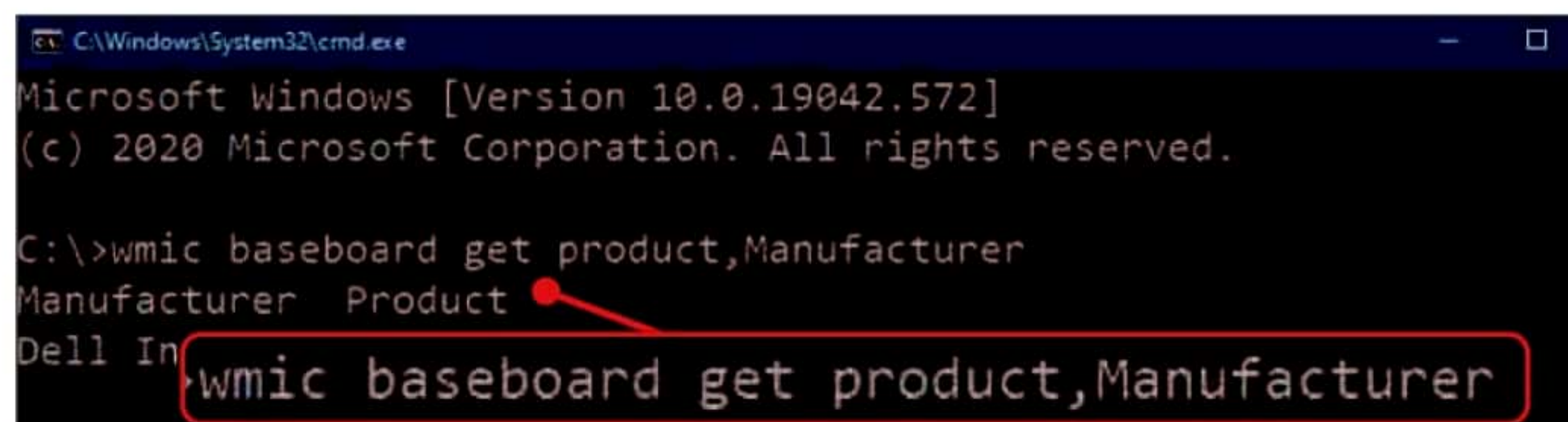
A new window will now open. Click 'Wireless Properties', then the Security tab. Finally, tick the 'Show characters' box (see screenshot above) to reveal your password in the 'Network security key' box. Your password will be obscured until you tick this box, and you can only do so if you're logged into Windows with an administrator account.

WINDOWS 7, 8.1 & 10

Identify your motherboard in Command Prompt



If you have your eye on a new graphics card, you'll need to check that it's compatible with your motherboard's make and model. While



WINDOWS 7, 8.1 & 10

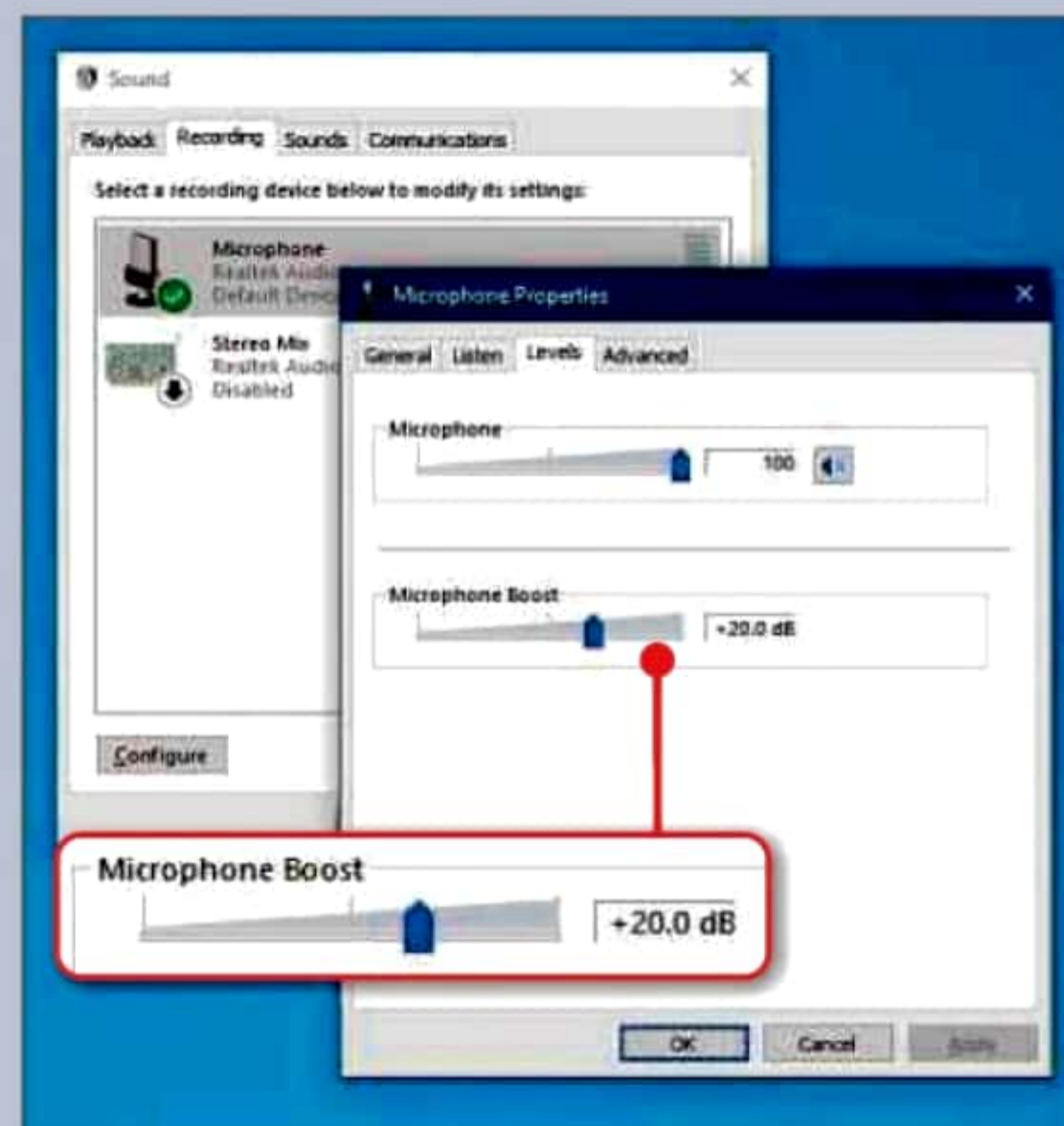
Give your microphone a boost



When you're on a video call and your friends or relatives are struggling to hear you, it could be because your microphone levels are set too low.

To check this, right-click the volume icon in the system tray, then select Sounds. In the window that opens, select the Recording tab. You should now see your microphone listed. Double-click it to open the Microphone Properties window, then select the Levels tab. The 'Microphone' slider at the top lets you adjust its overall level (in most cases, you'll want to set this to its maximum).

The slider below that (Microphone Boost) lets you boost your microphone level by 10 decibels (dB), 20dB or 30dB (see screenshot). Bear in mind that the louder your voice is in Skype calls, the more distorted it will sound. It's therefore a good idea to test whatever setting you choose.



To do this, open the Voice Recorder app by clicking Start, typing **voice recorder** and pressing Enter. Click the large microphone button to start a voice recording, then talk as you would on a video call. When you've finished, click the Stop button, then Play to hear what effect your new microphone settings have had.

tools such as CPU-Z will tell you this information and more (download it from www.snipca.com/36553), you can also find this info without having to download anything.

First, open a Command Prompt window (by clicking Start, then typing **cmd.exe**), then press Enter. In Command Prompt, type **wmic baseboard get product,Manufacturer** (see screenshot below) and press Enter. The manufacturer and model name of your motherboard will now be displayed.

To get even more information, add **version,serialnumber** (without spaces) to the end of the command. You'll now also see the specific version of your motherboard and its serial number.



WINDOWS 10

Hide Edge tabs from Alt+Tab menu



Windows 10's October 2020 Update introduced a feature for Edge that lets you see your browser tabs when using the Alt+Tab task switcher menu. If you prefer to minimise the windows that appear when you press Alt+Tab, you can turn this new feature off. Press Windows key+I to open Settings, click System, then Multi-tasking. Scroll down the list of options on the right, then click the dropdown menu under the 'Pressing Alt+Tab shows' heading and change it to 'Open windows only' (see screenshot above). When you next press Alt+Tab, you'll only see each instance of Edge that's running on your PC, not their individual tabs.

Make Office Better

Top tips for MS Office & LibreOffice

LIBREOFFICE WRITER & MICROSOFT WORD

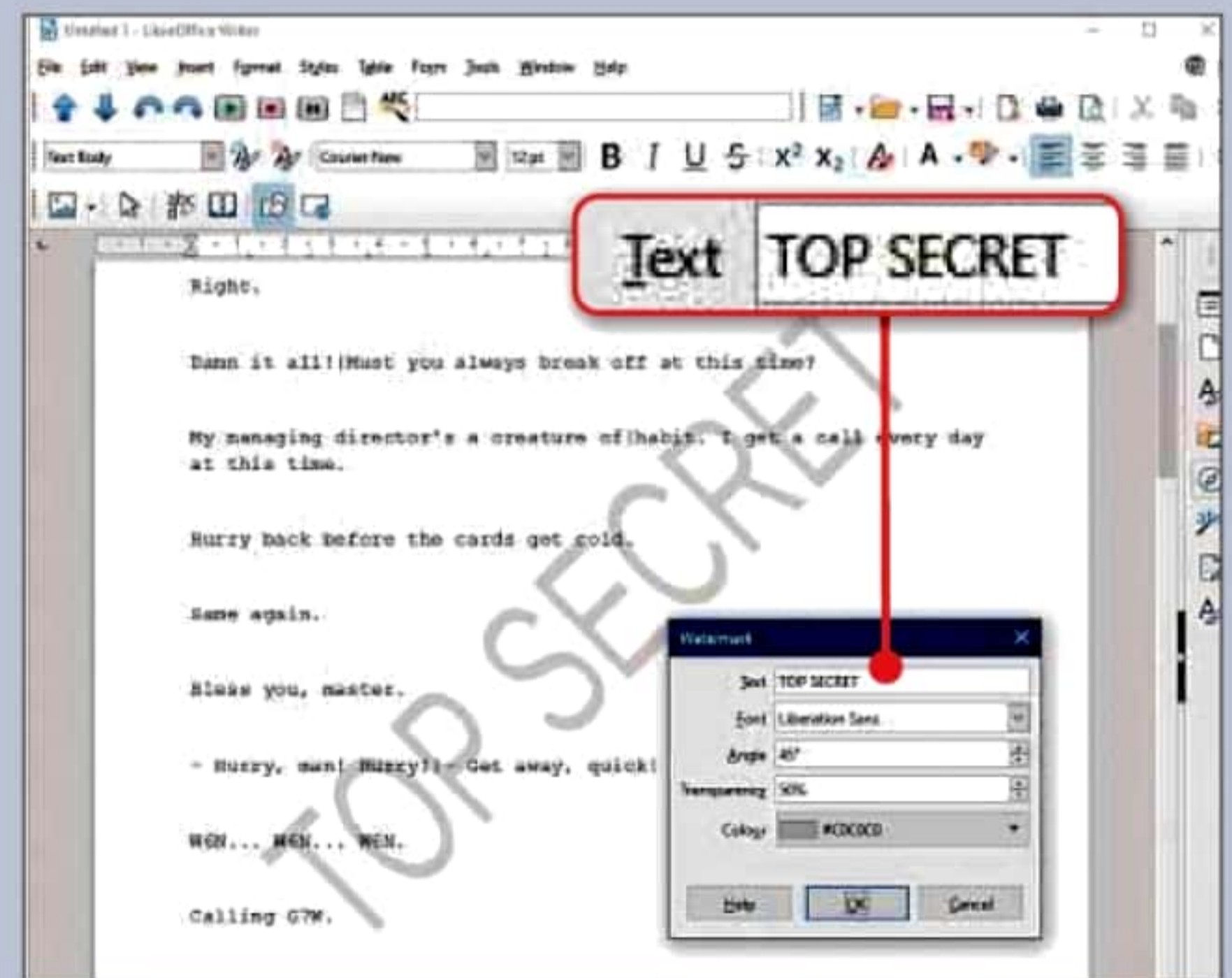
Add watermarks to your documents



Whether you want to mark a document as a draft, confidential or even top secret, a watermark will leave whoever's reading it (whether in printed form or on their computer) in no doubt as to its status.

In Writer, open the Format menu, then select 'Watermark...'. In the window that opens, type the text for your watermark in the Text box (see screenshot), then choose what font you want it to use. The other options let you change the angle of the watermark, along with its transparency and colour. When you've made your choices, click OK. You'll now see the watermark appear on all pages of your document.

In Word, select the Design tab, then click Watermark, which is located in the Page Background section at the right of the toolbar. You can now choose from eight watermark templates. If none of those suit, you can create your own by clicking 'Custom Watermark...'. In the window that appears, type the text for your watermark, then choose whether it should be transparent and select a colour. Unlike in Writer, you can't set a precise angle for the watermark. Instead, you can only



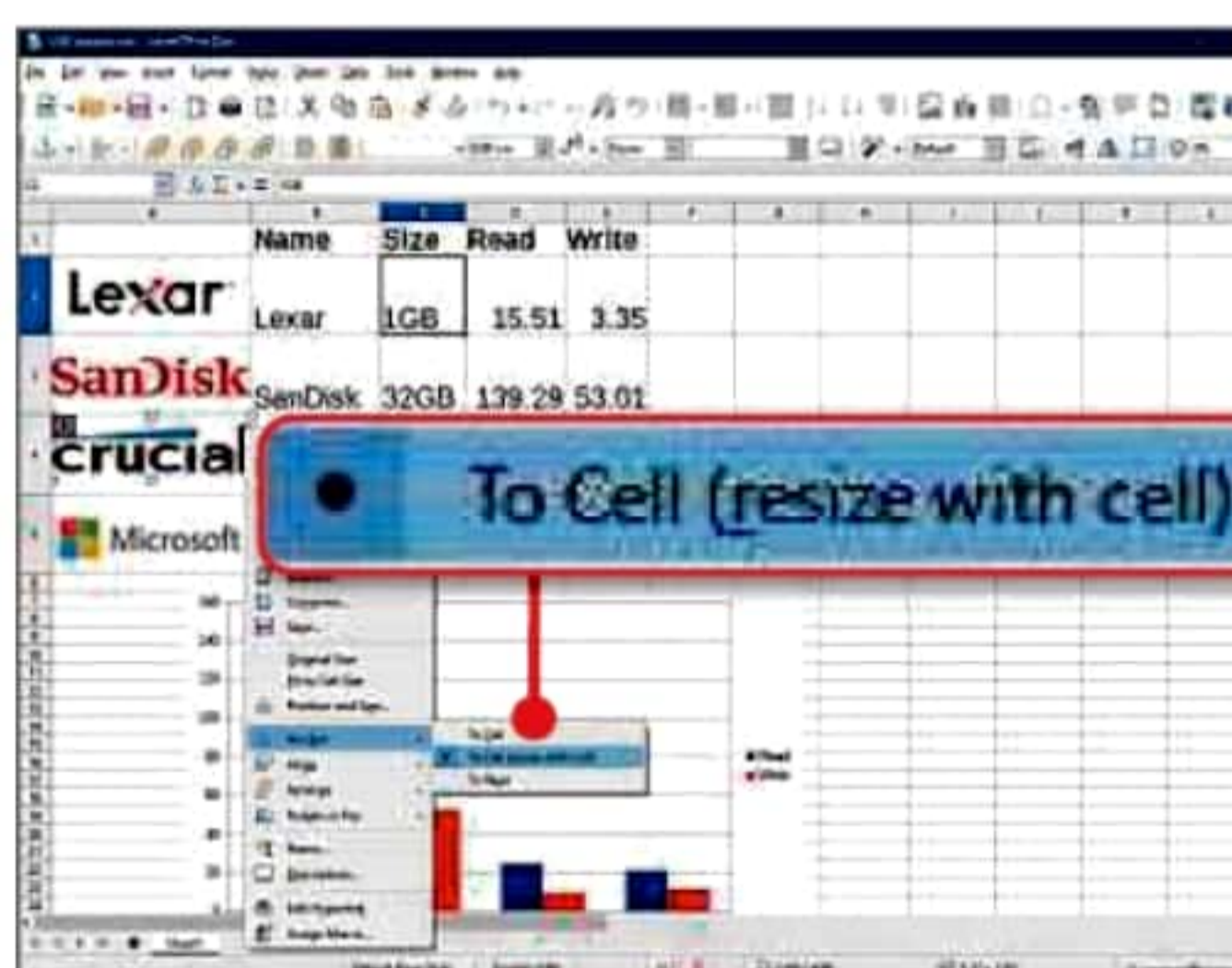
choose whether it should be horizontal or diagonal.

LIBREOFFICE CALC

Resize images with cells



If you want to add images to cells in your spreadsheets, it's worth using a few of Calc's hidden tools to size them automatically. In this example, we've added logos for the USB sticks in our speed-test spreadsheet.



To add an image, select the cell you want it to appear in, then click Insert, 'Image...' and select the appropriate image file. The image will now appear in your spreadsheet, but it will probably be far too big. Right-click the image, then select 'Fit to Cell Size'. You can also set Calc to automatically resize your images if you change the size of the cells they're in. To do this, right-click the image again, then click Anchor, followed by 'To Cell (resize with cell)' – see screenshot above.

You can now try resizing the row or column containing an image – as you do so, Calc will resize the image to match.

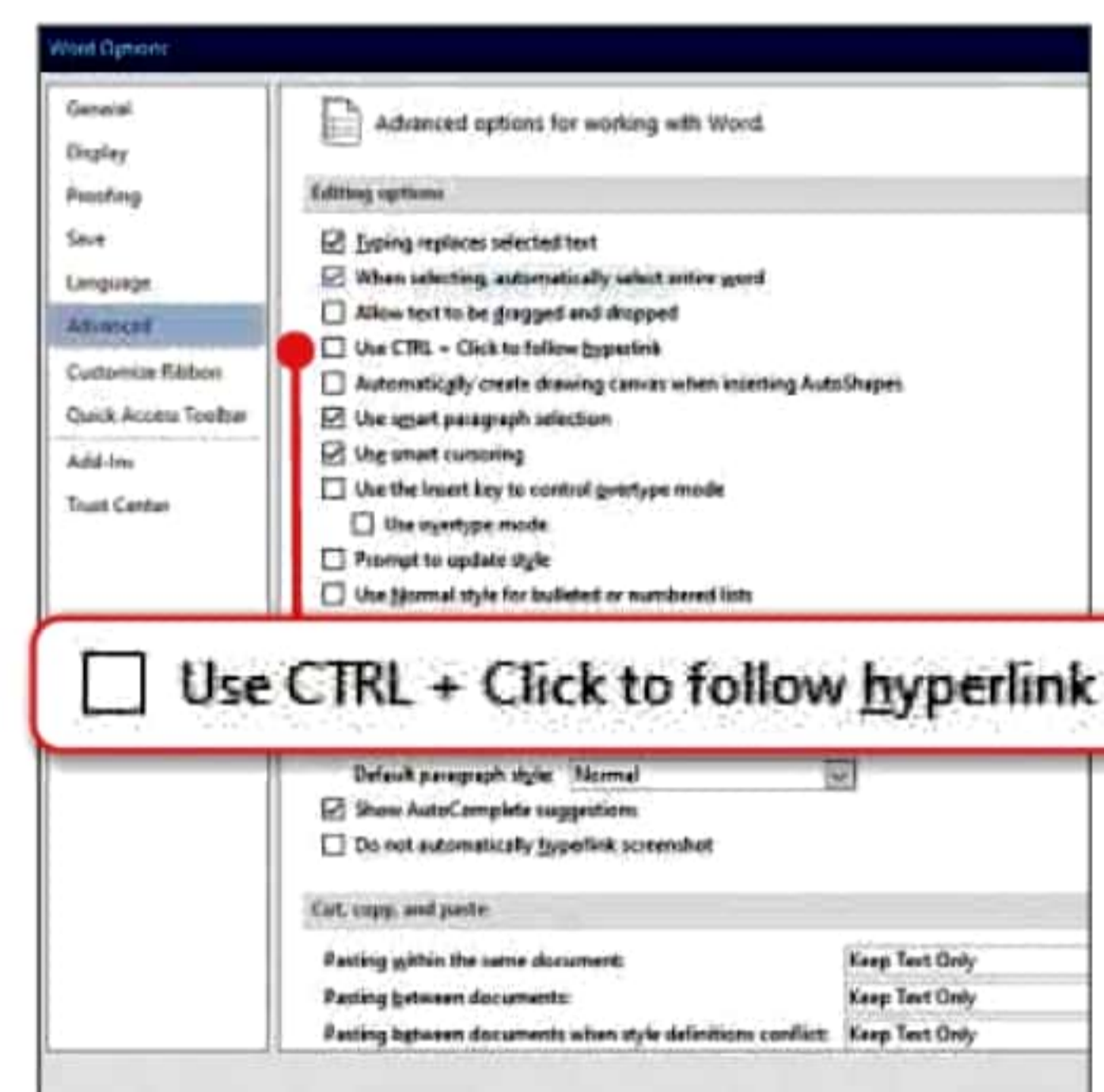
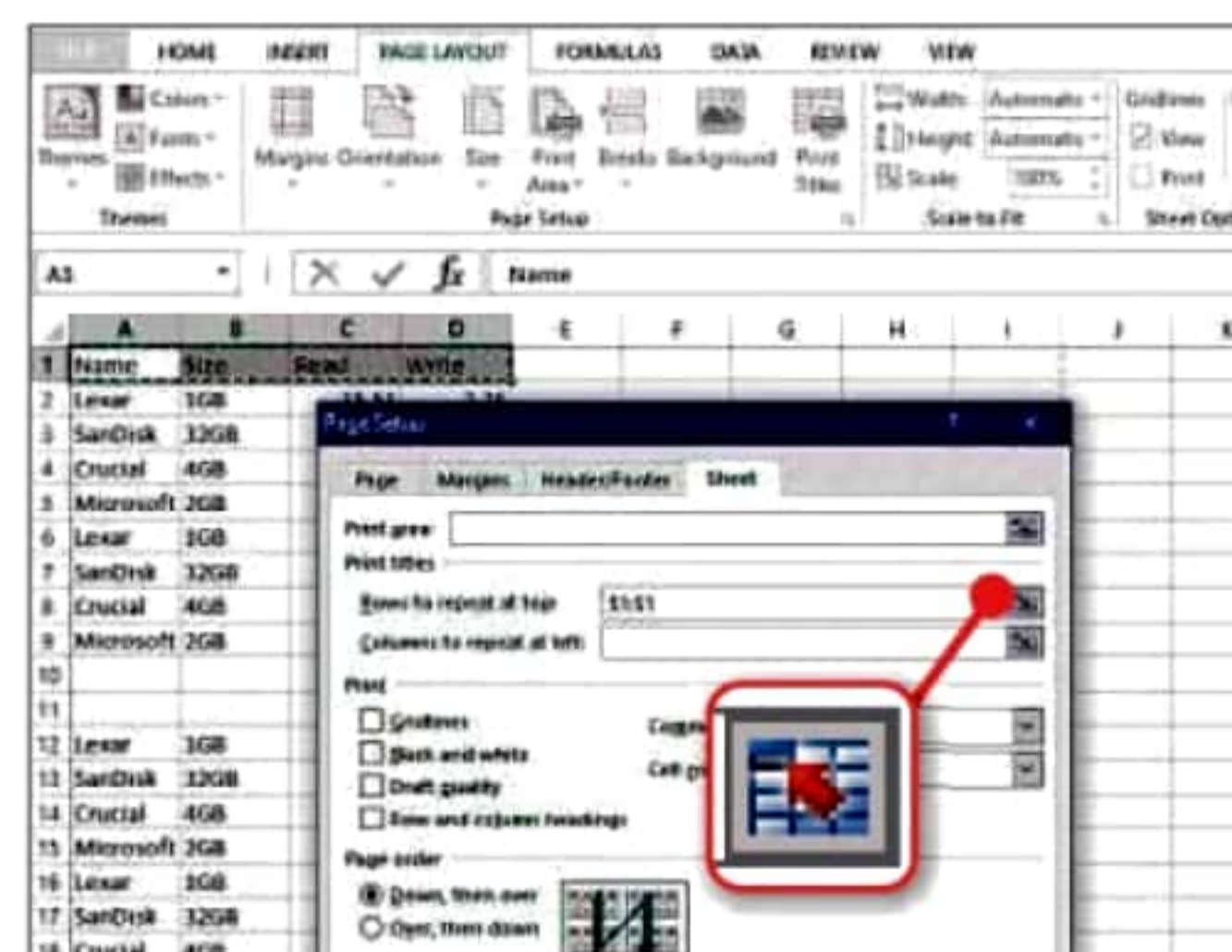
MICROSOFT EXCEL

Print header rows on each page



When you print a large table in a spreadsheet it might span multiple pages. If so, you'll probably find the lack of header rows on all but the first page make the data hard to read. Excel can help out by letting you define header rows that will be printed on *all* pages, so you'll know what each column refers to.

Open your spreadsheet, then select the Page Layout tab. In the toolbar below, click Print Titles (you'll find this in the Page Setup section). Now click the selection button to the right of the 'Rows to repeat at top' box (see screenshot below), then use your mouse to select which rows you want to be used as headers, then press Enter. You can now preview how the header rows will look when printed by clicking Print Preview at the bottom of the window. Press Escape to return to your spreadsheet.



MICROSOFT WORD

Make web links easier to click



If you're reading a Word document and see a web link, you can visit that site by holding Ctrl, then clicking the link. If you'd rather have Word documents act more like your browser (in which you can click links *without* also having to hold Ctrl), you can tweak this function in Word's settings. Click the File menu, then Options. In the Word Options window that appears, select the Advanced option on the left, then look in the 'Editing options' section on the right for the 'Use CTRL + Click to follow hyperlink' option (see screenshot above). This is ticked by default.

To avoid having to hold Ctrl when clicking links, remove the tick from the box, then click OK.

In The Club



Run a club or society? Here's how your tech can make it easier

Set up an online booking system

If your club relies on an offline or paper-based system for members to book its facilities (whether that's a tennis court, bowls lawn or even a laptop that you lend to members), you'll probably already know how unreliable it can be. Not only does one person have to keep on top of all the existing bookings, but they'll also have to handle emails and phone calls from members wanting to make new bookings.

By switching to an online booking system, everyone will be able to see the latest availability and manage their own bookings. In our example, we're going to use a tool called Schlott to set up a booking system for our tennis club.

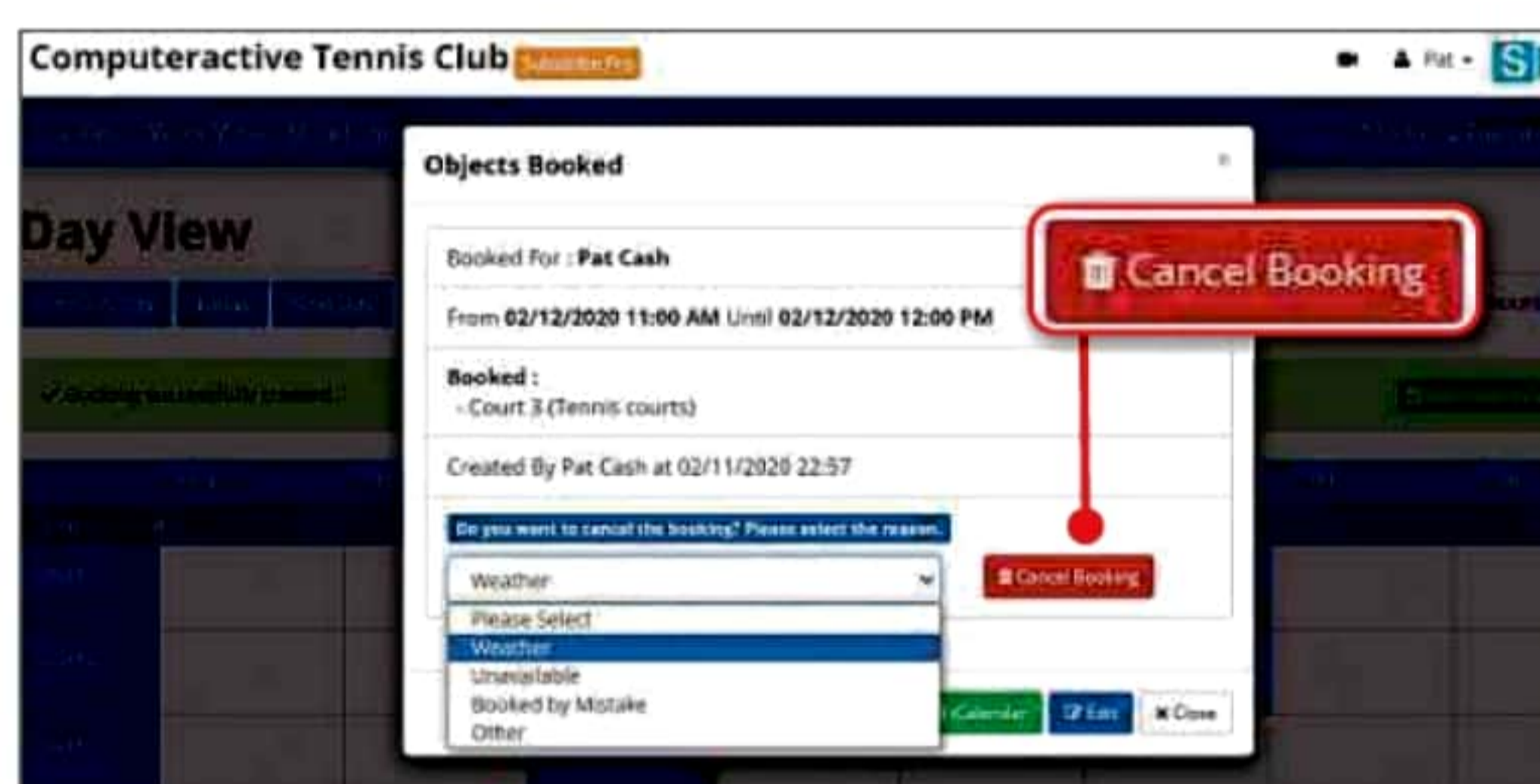
The web is awash with online booking tools, but Schlott is one of the few to offer a comprehensive free package. Although it has some restrictions (such as a 100-member limit), it should suffice for most smaller clubs. Larger clubs will need to pay £10 per month for the Pro version, which allows unlimited members and removes all adverts.

Create categories for your bookings

Create a free Schlott account at www.snipca.com/36504. Once you've logged in, you need to create a category for whatever it is your members are booking. Click the Categories menu at the top (if you can't see this, click Manage Group, then the Categories button). Ignore the six default categories and instead give yours a name – we've called ours 'Tennis



Once you've created a category specify individual items that members can book



When cancelling a booking you can specify your reason for doing so

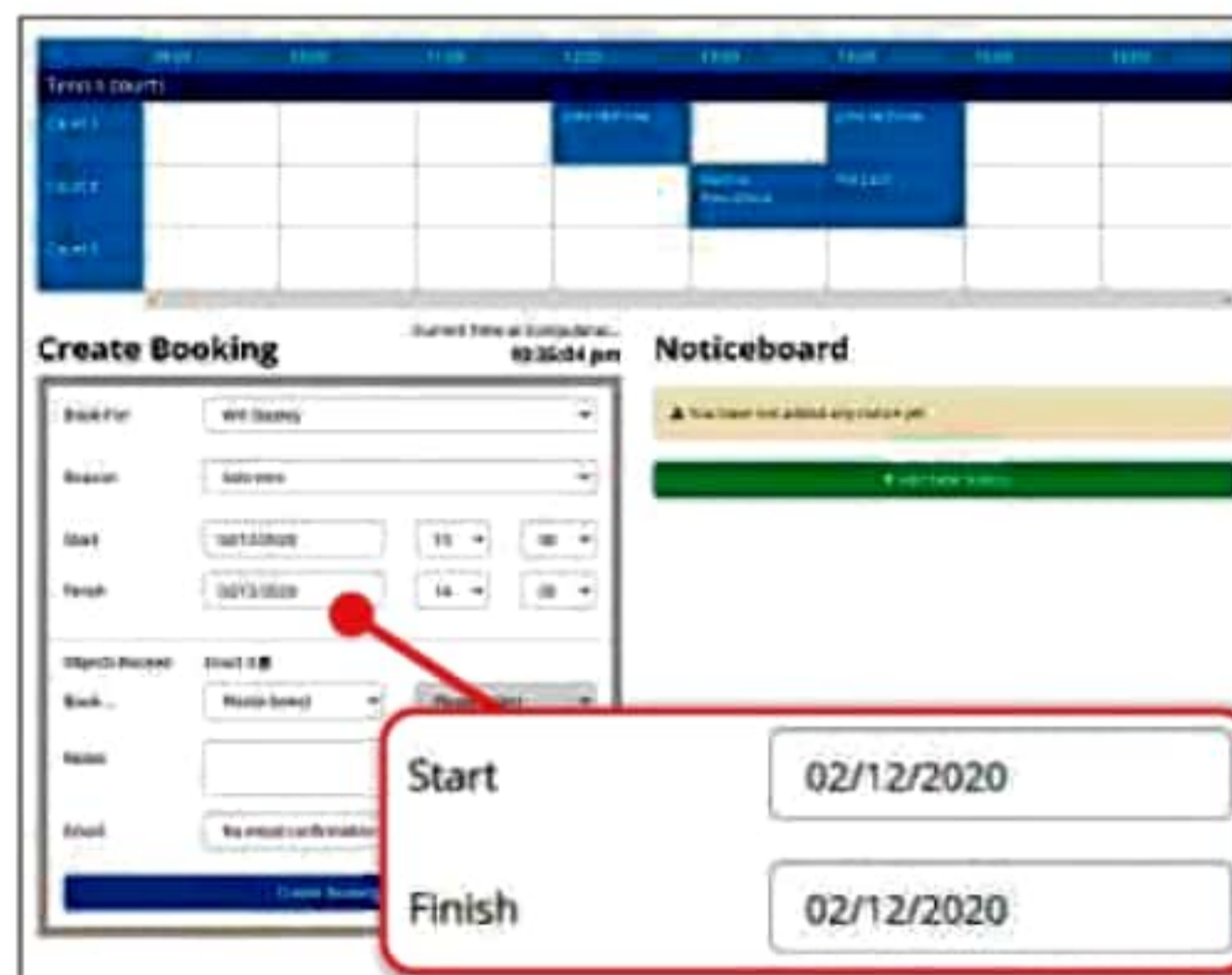
courts' – then click Save.

You can now specify what can be booked. Click 'Manage Group', Categories, then the name of the category you just created. Next, click the green button – this will be labelled with your category, so ours reads 'Add Tennis courts' (see screenshot below left) – then enter a name for it (we chose 'Court 1'). You can now repeat this process to add more bookable items (we added Courts 2 and 3).

Add members and select time slots

Click the Members button, then click 'Add new' to add an individual or 'Add multiple' to add a batch of members. If you choose the latter, you'll need to format the list correctly – instructions are provided on the page. Everyone you add will receive an email with a link to set a password for their account.

If you or any of your members want to make a booking, select the Day, Week or Month view at the top, then navigate to the desired day and click a time slot.



Once you've selected a time slot, you can change details such as the length of the booking

In our example, we have three courts, so we just need to select which court to book. You'll now see the Create Booking menu, which lets you adjust details such as your booking time (see screenshot below left) and add any notes you want to include. Next, click Create Booking and it will be added to the calendar, preventing other members from booking that slot.

Once you've made your booking, you can change it by selecting the slot in the calendar, then clicking the blue Edit button. If you want to cancel it, select a reason, then click the red Cancel Booking button (see screenshot above).

Keep members' details private

We don't want our members seeing the names of people who have booked courts, so we've hidden these by scrolling to the Calendar Settings section in the Manage Groups window and setting 'Hide member information on calendars' to Yes.

Members will now just see a Booked label on calendar slots already taken rather than the name of the person who booked them. We've also prevented people from seeing a list of all other members by setting 'Hide members list from non Admins' (in the Group Settings section) to Yes.

Schlott groups can be searched for by other users outside of your club (click your name at the top, then 'Join a Group'). They can then send a request to join your group. If you'd rather keep your Schlott group completely private, set 'Hide this group from the Join Group feature' (in the Group Settings section) to Yes.

What's All the Fuss About...



5G drones

Look to the skies for a possible solution to ugly phone masts

What are they?

Airborne devices that can transmit 5G to the ground below. The UK companies building them – Cambridge Consultants and Stratospheric Platforms Limited – claim they have one key advantage over masts.

What's that?

They're not ugly metal contraptions blighting the countryside and suburban areas. Residents are increasingly opposing mast constructions, successfully forcing councils to scrap plans.

But won't they be ugly metal contraptions in the sky instead?

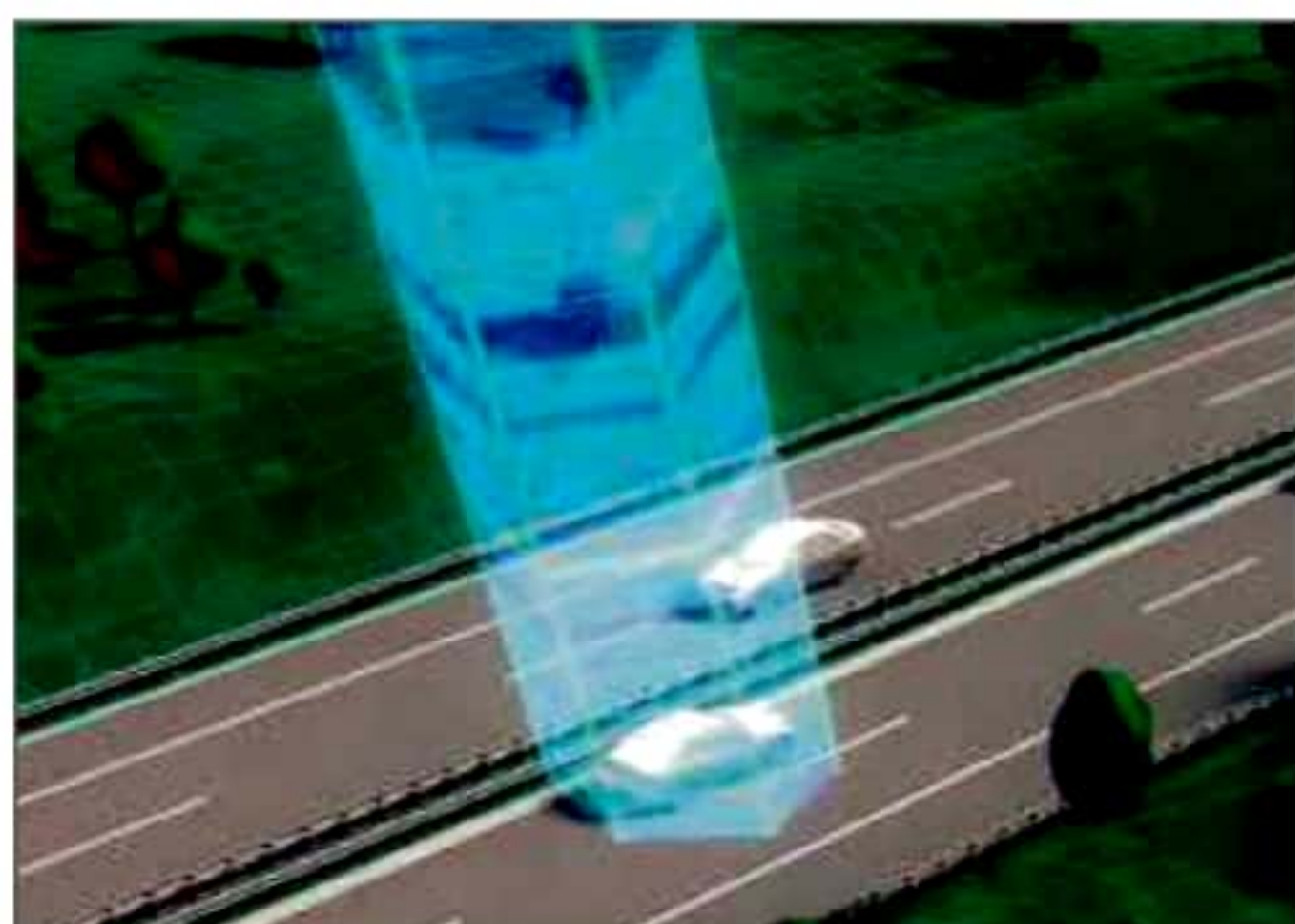
That won't matter because they'll be 20,000 metres above the ground, so you won't see them. By comparison, aeroplanes fly at 9,000 to 13,000 metres.

How many masts does the UK need?

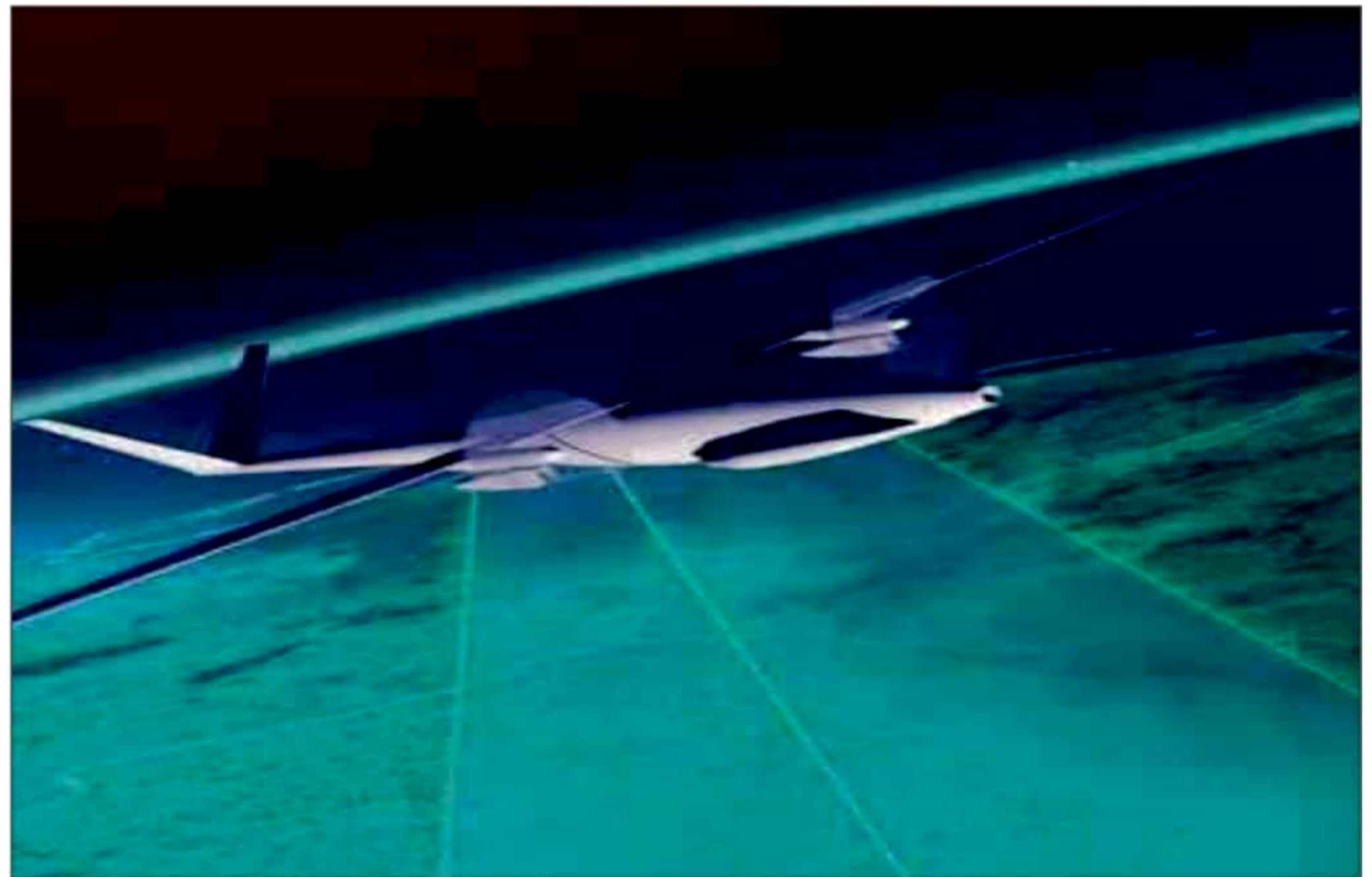
In 2017, it was estimated we'd need 400,000 additional masts to cover the country in the fast 5G network that businesses and the Government say is essential to build an economy fit for the 21st century. That number would be on top of around 1.5 million phone towers already in the UK, providing data coverage to 99 per cent of the population.

Presumably we don't need 400,000 drones?

That's right. Drones can transmit over a much wider area, so only 60 would be



This car is receiving 5G signals from a drone, not being abducted by aliens



needed to cover the whole of the UK. Stratospheric Platforms' chief executive, Richard Deakin, says each drone covers 140 kilometres, equivalent to an area covered by 200 masts. Speeds will hit 100Mbps, letting you download a 4GB film in under six minutes. The plan is also environmentally friendly because the planes are powered by hydrogen and therefore produce zero emissions. Enough power would be produced to keep the drones airborne for nine days at a time. But their secret weapon is the 264-pound, three-metre antenna.

What does that do?

It produces hundreds of beams that ensure fast and consistent coverage across an area, and yet it's light enough to be carried by the drones (which weigh 150 times less than a Boeing 747). Cambridge Consultants boasts that the antenna, which contains more than a million components, makes "possible what was once unthinkable". It can even send a 5G signal directly to a car as it drives.

How can it do that?

Using digital beamforming, which focuses a signal towards a specific receiving device, rather than spreading in all directions. It means the drones can

segment the ground into small enough patterns to target villages, roads, shipping lanes and railways. That car pictured below left isn't being abducted by a passing UFO; it's receiving fast 5G beamed from above. At least, that's how Cambridge Consultants imagines it'll work – watch its video at www.snipca.com/36662.

Are these drones above us now?

No. The project is still at the planning stage, and the two firms have only run trials transmitting slower signals from a plane flying nearer the ground. They've partnered with Germany company Deutsche Telekom to test it in rural southern Germany in 2024. But even if those are successful, many challenges remain.

Such as?

First, airspace is heavily regulated. Experts say that the companies will struggle to get permission to fly a network of drones by 2024. Also, four years is a long time in technology. By the time the drones are flying, telecoms companies will have built thousands more masts, strengthening their network. Finally, there's money. The companies will need to raise a lot more of it to hit their 2024 deadline. We'll know by then whether the idea is for the birds.

DITCH YOUR OLD PC IN 2021



2020 hasn't just been difficult for us humans – your PC is probably also feeling the strain. **Will Stapley** reveals what to look for when buying a new one, and how to make sure your next PC is everything you need

Let's face it, 2020 has been a year to forget. We've endured health fears, lockdowns, work-from-home orders and months apart

WHAT YOU'LL LEARN

- What makes processors perform faster
- Why graphics cards aren't just for gamers
- How to choose exactly the right amount of memory and storage
- How to save hundreds of pounds by buying refurbished PCs and laptops

from friends and family. It's also been the year we've all been using our PCs more than ever – for streaming, downloading, working and gaming. But is your PC still up to the increased workload? If not, it might be finally time to ditch it and get the computer you always wanted.

We're confident that the reviews and recommendations in each issue of *Computeractive* will help you in your buying decisions, but we wouldn't blame you for wanting to browse online stores and – pandemic permitting – high-street shops to see what else is available. We also know that, with their long, unwieldy names and specifications that leave your head in a spin, it's not easy knowing

which PC is right for you.

As always, we're here to help. Over the next few pages, we'll explain all you need to know about those vital components – processor, graphics card, memory, storage and more – and what to prioritise when buying a new desktop PC or laptop. We'll reveal which components can make your PC faster and which you can afford to scale back on, helping you avoid splashing out on things you simply don't need.

Even if you aren't currently in the market for a new PC, our advice will help you understand your machine better and provide handy tips if you're thinking of upgrading specific components.

CHOOSE THE RIGHT PROCESSOR

Sometimes referred to as a central processing unit (CPU), the processor is best thought of as the brains of your PC. Although modern computers are able to shift some of the work to your graphics card (more on this later), the processor still handles the majority of tasks – from running programs and background services (such as your antivirus and backups) to ensuring Windows runs smoothly.

AMD used to be seen as the cheaper and lower-performing of the two major processor manufacturers (the other being Intel), but these days there's very little to separate them in terms of performance. Both offer a huge range of processors and understanding the relative merits of each is a complicated business, so instead we'll look at specific AMD and Intel processors in a moment. First when considering which processor you need, keep in mind clock speed and cores.

Clock speeds

Clock speed (measured in **GHz**) indicates how fast a processor is – the higher the clock speed, the quicker it can carry out calculations and the faster your computer will perform. You may see processors with faster speeds listed as Turbo Boost (Intel) or Precision Boost (AMD). This means that when the processor is put under strain by a particularly demanding program, your processor's speed will be temporarily **overclocked** to improve performance. However, because this generates more heat, your processor can usually only sustain this speed for a few minutes (or even seconds) before dropping back down to its standard speed.

Cores

Most processors have multiple cores. Each core acts like a separate processor, allowing your computer to carry out multiple tasks at once. Among other benefits, this means background processes, such as your antivirus, have less impact on any programs you're currently running.

Modern processors build on this by accommodating two threads on each core. Your PC can use these threads in the same way as cores, so a four-core, two-thread processor can run eight separate calculations simultaneously. You can see your cores and threads in action in Windows' Resource Monitor tool –

Our processor has four cores with two threads each, meaning it can run eight tasks simultaneously

click Start, type **resmon**, press Enter, then select the CPU tab (see screenshot above).

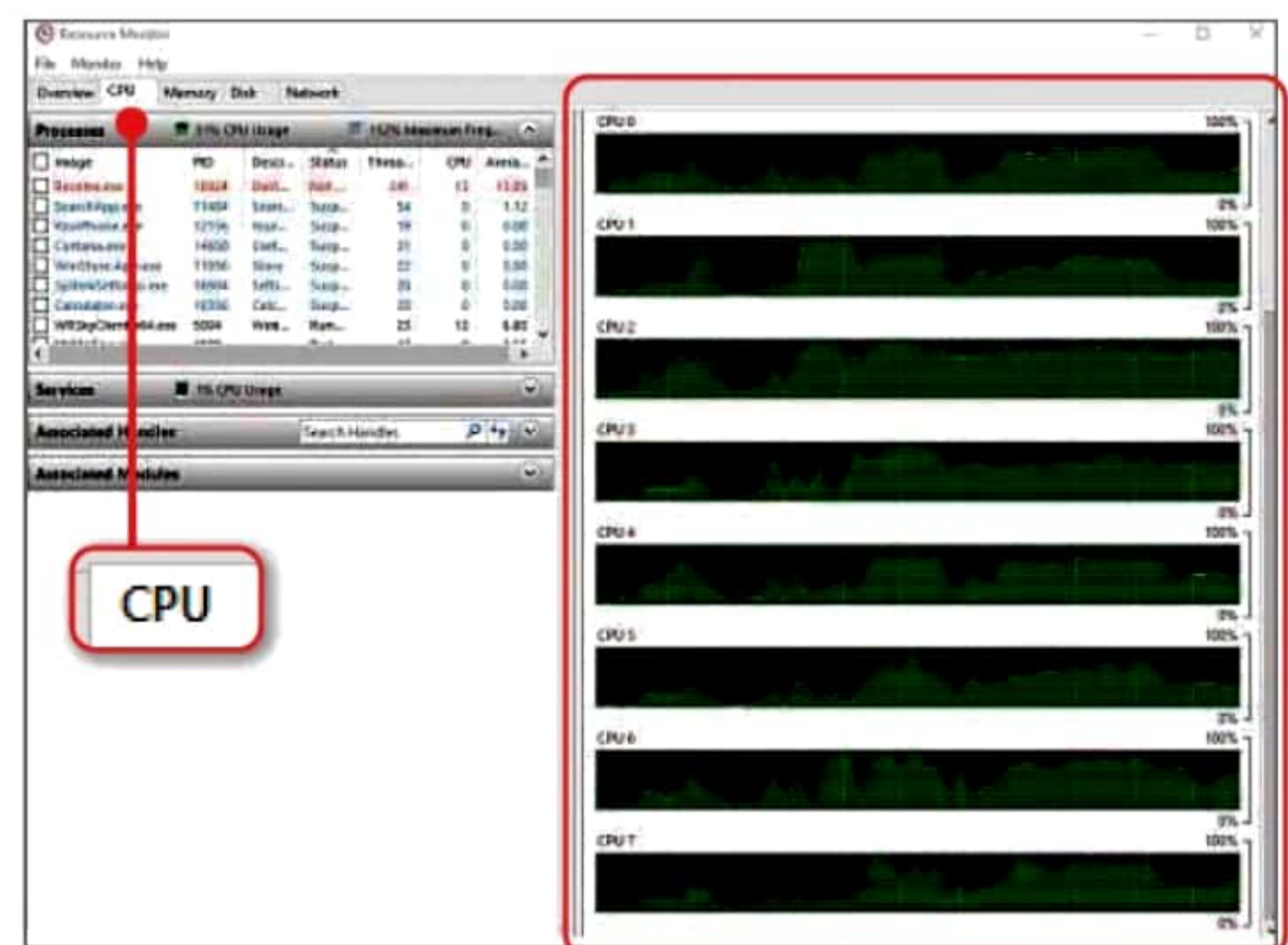
Budget processors

Processors have a big impact on the price of a new PC. Those marked as Celeron (Intel) or Athlon (AMD) are the slowest available and are found in cheaper PCs. Although they can run Windows smoothly, they will struggle with resource-intensive tasks such as video editing, and with fewer cores and threads they'll be particularly slow when running multiple programs simultaneously. You'll also find Windows takes longer to boot. But they're perfect if you're only likely to be emailing, browsing and using office software. You'll be able to buy one of these low-chip PCs for under £300.

HP's S01-aF0017na (£299 from www.snipca.com/36591) is a great-value desktop PC powered by an AMD Athlon Gold 3150U (a two-core, two-thread 2.4GHz processor). If you want a budget laptop, consider Acer's Aspire 3 (£279 from www.snipca.com/36592), which has the Silver version of the same processor, meaning a slightly slower clock speed of 2.3GHz and only one thread per core.

Mid-range processors

If your budget allows, consider spending a bit more and getting a PC with a faster processor, such as an Intel Core i3 or Core i5, or AMD Ryzen 3. These typically offer faster clock speeds, more cores and more threads than lower-end chips. PC Specialist's Magma R1 desktop PC (£799 from www.snipca.com/36584 – see our review, Issue 584) has an AMD Ryzen 3 3100 processor. That's a 3.5GHz processor with four cores, each with two threads. As well as making Windows run smoothly, this processor will also cope well with video-editing programs such as Shotcut (see Issue 593, page 18), although you'll find applying complex effects and exporting videos can take time.



High-end processors

PCs with the latest, most expensive processors are usually more than the average home user will need. Yes, they'll load Windows in a flash, but you'll end up paying a lot extra for a relatively modest performance increase compared with a mid-range chip. That said, they'll run more powerful video editors like DaVinci Resolve (www.snipca.com/36593), smoothly as well as the latest games.

Intel's Core i7 and i9, along with AMD's Ryzen 5 processors, are currently the fastest available – and prices for PCs that contain them reflect this. Scan's 3XS Gamer RTX (£2,000 from www.snipca.com/36594, pictured below – see our review, Issue 593) has an Intel Core i7-10700 processor. At 2.9GHz, its clock speed might be a little slower than AMD's Ryzen 3 3100, but it has twice the cores and threads (8 and 16 respectively). Throw in a Turbo Frequency rating of 4.8GHz, and you have yourself a very powerful PC.

If you're willing to wait a few more weeks, Intel will release its latest batch of high-end processors early in 2021. Codenamed 'Rocket Lake' processors, they're likely to offer speeds in excess of 5.3GHz.



Scan's 3XS Gamer RTX is powered by a fast, eight-core Intel Core i7 processor

CHOOSE THE RIGHT GRAPHICS CARD

You might assume that graphics performance on a PC is only of interest to gamers. However, if you want to perform creative tasks – such as video- and image-editing – a decent graphics card will also pay dividends, making those programs run much faster. By taking on much of the hard work (such as **encoding 4K** videos or applying complex effects), it'll also leave your processor free to concentrate on other tasks.

There are two main types of graphics on a PC: integrated and dedicated. A PC with integrated graphics is one where the graphics processing unit (GPU) is stored on the same chip as your processor. This works by borrowing parts of the processor to carry out graphics tasks. In contrast, dedicated graphics is where you have a separate graphics card plugged into your motherboard. As you might expect, dedicated graphics offer the best performance, but also cost more.

Integrated graphics

Most processors – both for desktop PCs and laptops – come with integrated graphics, and if you don't have a dedicated graphics card this is what your PC will use. A decade or so ago, integrated graphics would struggle to handle anything more demanding than the Minesweeper game. However, the technology has advanced hugely in recent years. Intel's Celeron 4020 processor, for example, has Intel UHD Graphics 600 integrated graphics. Despite this processor being a budget option, its UHD Graphics is capable of decoding ultra-

high definition (4K) video and handling less demanding games. However, most games will need to be run on the very lowest graphics-quality settings, while others will not run at all.

For better graphics performance, you should consider an AMD-based PC with Vega 8 graphics, which will perform much better than even the fastest Intel integrated graphics. You'll find Vega 8 on desktop PCs such as Scan's AMD Gaming PC (£459 from www.snipca.com/36598), as well as laptops like the Honor MagicBook 14 (£550 from www.snipca.com/36597 – see our review, Issue 580).

Dedicated graphics

There are two main graphics card manufacturers: AMD and Nvidia. As with processors, there's a bewildering array to choose from. Unless you like to play the latest games at the highest quality

settings, you won't need powerful graphics. Our advice is to instead save money by opting for a PC with a low to mid-range graphics card, such as the PC Specialist Magma R1 (see page 51), which comes with a GeForce GTX 1650 graphics card (pictured above). This is at the bottom of Nvidia's range of graphics cards, but it's a big step up from integrated graphics and, as long as you turn quality settings down, will play the latest games. It will also allow video-editing programs to run faster.

For something more powerful, take a look at Cyberpower's Infinity 79 RTX (£1,300 from www.snipca.com/36599 – see our review, Issue 590). This has a faster Nvidia GeForce RTX 2060 Super graphics card, but more importantly is paired with an Intel Core i7-9700KF – a lightning-fast processor that means the PC will blaze through creative tasks and play the latest games. We used it to take to the skies in Microsoft Flight Simulator 2020 and it only struggled when we set the graphics to High in 4K mode.

If ultimate games performance is your aim, Scan's powerful, albeit expensive, 3XS Gamer RTX (see page 51) delivers the goods yet again. With its GeForce RTX 3080 (pictured below) – one of Nvidia's latest graphics cards – this PC will handle the latest games at their highest quality settings.



The Nvidia GeForce 1650 is one of the more powerful budget graphics card

Compare graphics cards at a glance

With so many graphics cards available, knowing which one is best for you can be a challenge. If you're deciding between two PCs with different graphics cards, visit UserBenchmark's



site (<https://gpu.userbenchmark.com>) to compare the merits of each one.

Search for the first graphics card in the box just to the left of the 'User rating' box – and click the Compare box next to the relevant card, then do the same for the second one. You'll now see graphs showing which card performs best (these use data from thousands of benchmark scores added by users), along with a percentage value indicating how much faster the winner is (see screenshot). You'll also see when each card was released and its average price. The latter can help you determine whether the PC you're looking at is priced fairly.



The GeForce RTX 3080 is one of the most powerful graphics cards you can buy

CHOOSE THE RIGHT MEMORY

Ensure you have enough

In the same way you'll use a notepad to jot down figures when making calculations, your processor uses memory (or RAM) modules to help it store information while performing tasks. If you were computing back in the 1990s, you'll remember that a PC with 8MB of memory was considered high-spec. Today, the norm is around a thousand times more powerful (8GB).

While your older 2GB or 4GB PC may still work fine, next year and beyond will see the launch of even more demanding programs, and your PC's lack of memory will begin to hamper performance.

Don't assume large chunks of memory are needed only for games and video-editing. Launch 'Task Manager' (press Ctrl+Shift+Escape) then re-order the list by clicking the Memory column (if you can't see this, first click 'More details' at the bottom) and you might be surprised by just how much memory your browser gobbles up. In our PC, Chrome and Edge use nearly 3.5GB of memory between them (see screenshot).

Name	Status	5% CPU	71% Memory	0% Disk	0% Network
Google Chrome (19)		0.5%	1,329.3 MB	0.1 MB/s	0.1 MB/s
Microsoft Edge (27)		0.3%	1,220.4 MB	0.1 MB/s	0.1 MB/s
Google Chrome		0.2%	445.4 MB	0 MB/s	0 MB/s
Slack (7)		0.1%	267.1 MB	0 MB/s	0 MB/s
Photos		0%	235.8 MB	0 MB/s	0 MB/s
Google Chrome		0%	208.5 MB	0 MB/s	0 MB/s
Google Chrome		0%	188.0 MB	0 MB/s	0 MB/s
googledrivesync.exe		0%	168.4 MB	0.1 MB/s	0 MB/s
Antimalware Service Executable		0.1%	163.8 MB	0.1 MB/s	0 MB/s
Desktop Window Manager		1.2%	137.5 MB	0 MB/s	0 MB/s
Google Chrome		0.1%	89.6 MB	0 MB/s	0 MB/s

Make sure your new PC has at least 8GB of memory to cope with your browsers

Speed

You may see a speed rating (in MHz) listed next to the amount of memory. You don't need to worry too much about this. The performance of your new PC is determined to a much greater degree by the processor, graphics card and hard drive than the speed of its memory. In fact, you'll probably only notice the speed difference between various memory modules when running **benchmarking** tools.

Upgrades

Pay close attention to your new PC's scope for upgrades. Most desktop PCs have at least two free memory slots, letting you easily upgrade at a later date simply by adding new memory modules to sit alongside the existing ones.

Laptops, on the other hand, tend to come with all their memory slots filled. With no free slots, you'd have to ditch the current memory before upgrading, which adds to the total cost.

CHOOSE THE RIGHT STORAGE

Everything seems to need more storage space these days. Microsoft Office 2019 requires 9GB, Windows reserves 7GB just in case it needs it when installing a Feature Update, and your photo and video library with its high-res files may stretch into many hundreds of gigabytes.

When considering your new PC's hard drive, then, it might seem like a case of the more storage, the better. To some extent this is true, and even cheap desktop PCs typically come with a large hard drive – the £299 HP S01-aF0017na

(see page 51) has a 1TB (1,000GB) drive.

However, don't assume bigger is *always* better. **SSDs** often have much smaller capacities than traditional hard drives (usually between 250GB and 500GB), but they are much faster. You won't necessarily benefit from their speed when opening photos, listening to music or watching videos, but they can dramatically reduce the time it takes to boot Windows (from a few minutes to a few seconds) and load programs. On the downside, they are more expensive than hard drives.

For this reason, many modern desktop PCs come with both. PC Specialist's Magma R1 (£799 from www.snipca.com/36584) has a 1TB hard drive for storing your music, photos and videos, alongside a fast 256GB SSD for handling Windows and other software.

Most laptops can only accommodate one drive, so you'll have to choose between an SSD or traditional hard drive. Although more expensive, we always recommend an SSD because of the boost in performance. You can then buy a large external hard drive on which to store your media files (such as this £41 Western Digital 1TB drive from www.snipca.com/36604).



NVMe SSDs plug directly into your computer's motherboard, making them much faster

www.snipca.com/36604).

If you want lightning-fast storage, look for a new PC with an **NVMe** drive, such as Samsung's Galaxy Book Ion laptop, which has a 512GB SSD (£1,249 from www.snipca.com/36588 – see our review, Issue 587). Unlike standard SSDs, which use **SATA** cables to connect to your computer, NVMe SSDs (including Samsung's 960 Evo, pictured above) plug directly into the motherboard using a faster **M.2** connection.

The end result is that **read speeds** are boosted from just over 500 megabytes per second (MB/s) to in excess of 3,000MB/s. As well as letting you copy and transfer large files quickly, this will also ensure that your programs – and Windows itself – run more smoothly.



If your new laptop comes with a small SSD, add extra storage with an external hard drive

READER OFFER!

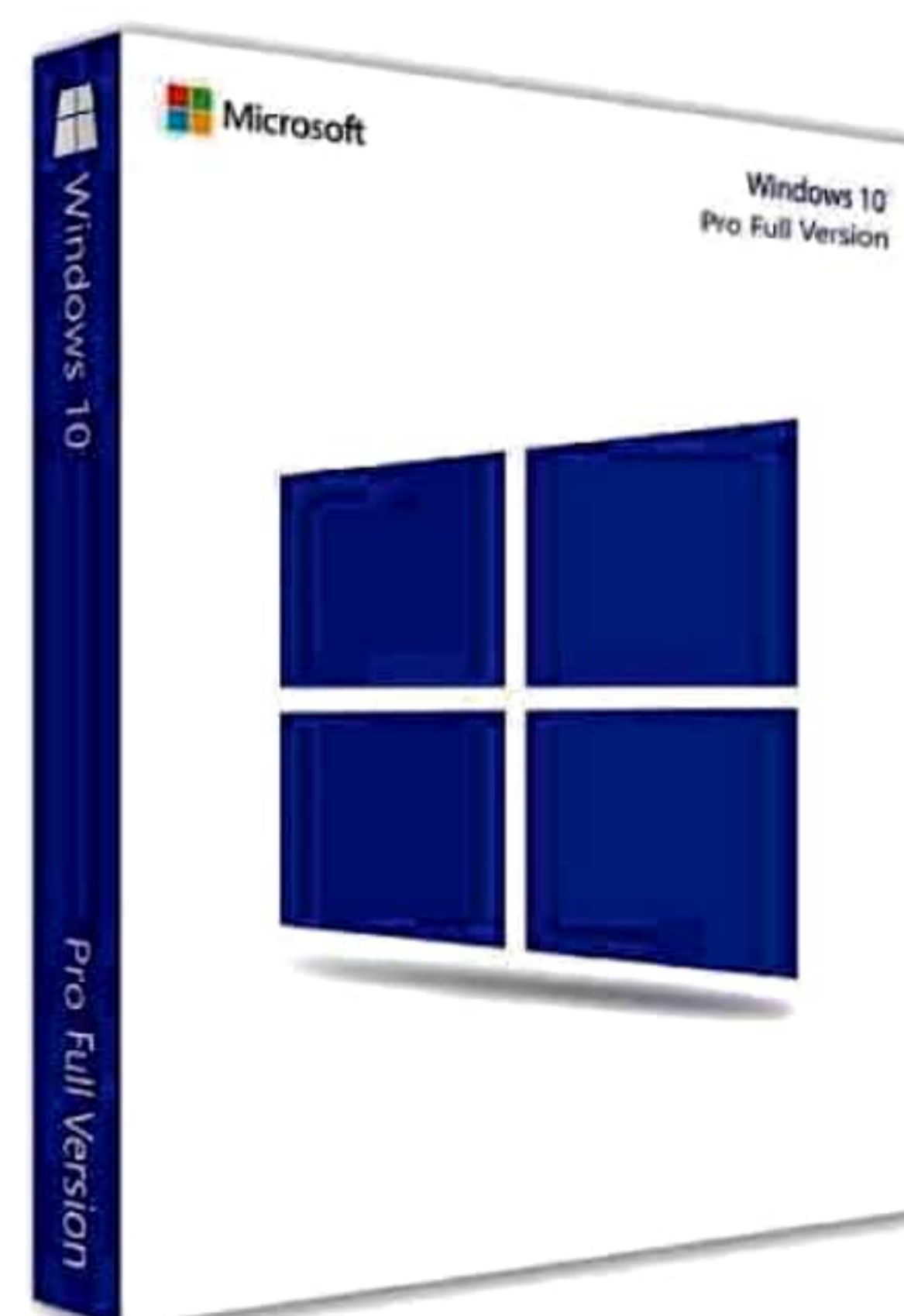


Buy **Windows 10 Pro** for just **£39.99**

In this new Reader Offer, we're selling **Windows 10 Pro** for just £39.99 (1-PC, unlimited lifetime licence)!

That's just £10 more than Windows 10 Home, and is an 82% reduction on Microsoft's full price of £219.99.

To buy **Windows 10 Pro**, visit www.snipca.com/34720 and click the red Buy Now button on the right. If you have any questions about your purchase, please email Daniel Booth, Editor of *Computeractive*. You can reach him directly at editor@computeractive.co.uk.



JUST SO YOU KNOW...

We have a limited number of **Windows 10 Pro** codes for this offer, but we should have enough to satisfy the high demand we anticipate from readers

CHOOSE THE REST OF THE SPEC

Display

Most desktop PCs don't come with a monitor, but that's no bad thing. There's no point paying extra for a new monitor if the one connected to the PC you're replacing is still performing well. You can simply connect it to your new computer, and save yourself a lot of money in the process.

Laptops, of course, have integrated screens, and small ones can be awkward to use and hard to see. So, if you don't plan to connect your laptop to an external monitor, we recommend a laptop with at least a 14in display.

Check also the type of coating the laptop screen has. Some have a glossy sheen that lets them produce more vibrant colours, but these also create distracting reflections. For this reason, we prefer laptops with matte screens, which have an anti-glare coating and work well in all lighting conditions.

Online stores such as Amazon and Currys don't usually state the type of coating a laptop screen has, so we recommend contacting them, or the laptop manufacturer, to find out before buying.

Ports

New desktop PCs should have sufficient ports for all your needs. Most offer at least six USB ports (front and back), along with **HDMI**, an Ethernet socket, audio output, memory card slots and more.

Modern laptops, on the other hand, may come with as few as two USB-C ports. For these, you can always add ports using a hub or docking station such as the StarTech USB-C Multiport Adapter, which adds HDMI, Ethernet, two USBs and card readers (£60 www.snipca.com/36610, pictured below – see Issue 593, page 62 for more options).

If you'd rather avoid having to use a docking station, make sure you check the the port specifications on any laptop you're interested in, including whether they require an adapter. For example, Dell's XPS 13 (from £1,399 www.snipca.com).



If the laptop you have in mind lacks ports, consider a docking station like this StarTech model

Buy a mini PC or an all-in-one

Besides desktop PCs and laptops, what are your other options? If space is limited, you could consider a mini PC. These tiny devices can be carried with you wherever you go and can even be attached directly to the back of your monitor. And they operate quietly, so you'll barely notice they're switched on.

One downside is that you'll be paying a premium for their compact dimensions. Plus, with limited space inside there's little room for fans, so they run relatively low-powered components.

The Jetway JBC420 (which you can configure at www.snipca.com/36614, pictured) measures just 129x34x109mm (similar to a large hardback book) and is our current favourite thanks in part to its fanless design. With a 1.6GHz Intel Celeron N3160 processor, 2GB of RAM, and a 120GB hard drive, it costs £350. Clearly these specs are not ideal for demanding programs, but for browsing the web and office tasks it works well.



Alternatively, you could go for an all-in-one (AIO) PC. These combine a PC and monitor into one unit and often come with a wireless keyboard and mouse. If you crave a tidy desk, they're a great option that reduces the need for cables. Although AIOs can be heavy, they're easier to move around than a traditional desktop PC with separate monitor setup.

Lenovo's IdeaCentre (www.snipca.com/36613) costs £449 and comes with a 23.8in display, AMD Ryzen 3 4300U processor and a 128GB SSD. Although neater than a desktop PC, they lack the same upgrade options, and if the monitor breaks you'll need to replace the whole thing (and vice versa).

[com/36621](http://www.snipca.com/36621) – see our review, Issue 585) has just two USB-C ports (one of which doubles up as the power socket) along with a 'USB-C to USB-A' adapter. In this instance, you'd need to buy a docking station if you wanted to connect to an external monitor or wire up to your network via an Ethernet cable.

Optical drive

Whether to listen to CDs, watch DVDs or burn photos to discs, we still love using optical drives. Although it's rare to find one on a new laptop, most desktop PCs still come with a disc drive. If the PC you're considering does, check whether it's a DVD or Blu-ray writer. DVDs can hold a maximum of 8.4GB, while Blu-ray discs have up to 50GB storage space. Plus, a Blu-ray drive lets you watch high-definition movies.

Wireless

Announced last year, **Wi-Fi 6** is the latest wireless standard. Most new PCs support it (look for Wi-Fi 6 or **802.11ax** in the specifications), but to make use of it you'll also need a Wi-Fi 6 router such as the Asus RT-AX86U (£229 from www.snipca.com/36611).

If you have set your heart on a new PC that doesn't have Wi-Fi 6, don't let that put you off. Yes, Wi-Fi 6 is capable of speeds up to 10Gbps instead of the 3Gbps of Wi-Fi 5 (**802.11ac**), but it's unlikely you'll need such blistering speeds in everyday usage. Likewise, although Wi-Fi 6 does provide better multi-device performance in your home, it's primarily aimed at businesses and Wi-Fi hotspots, where hundreds or even thousands of devices connect simultaneously.

Fans

All PC components, especially processors and **graphics cards**, generate heat. If you opt for a high-performance computer, you could find it gets very warm, very quickly. If this heat is contained within your PC or laptop your components will soon start to fail.

One way or another this heat needs to be **dissipated** and this is done at lower temperatures by a built-in **heat sink**. If you have lots of programs running, generating more heat, then your laptop's fan will kick in to disperse the excess.

Most desktop PCs have fans to create airflow inside the case (typically, one at the front to draw cool air in, and another



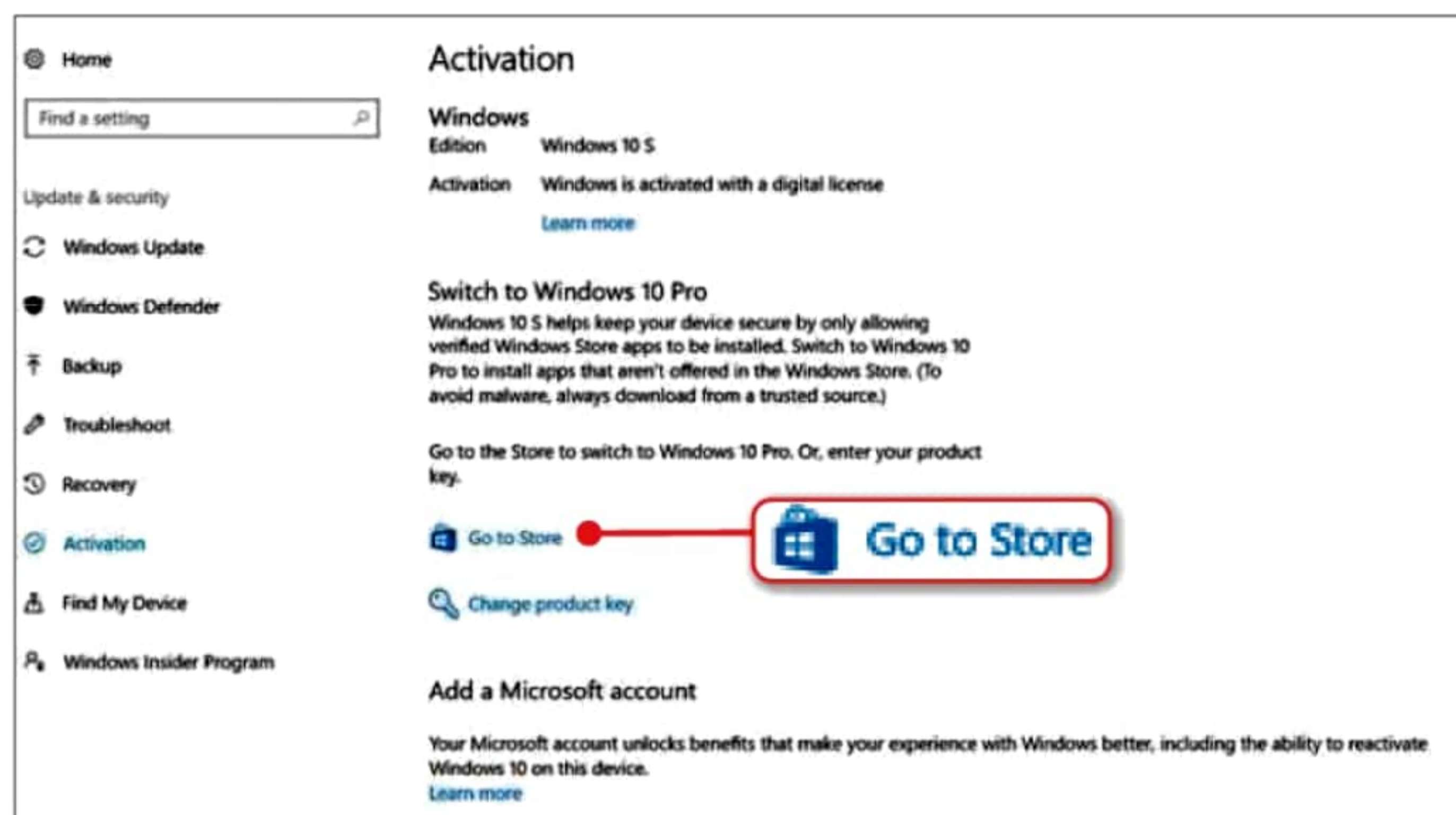
The blue water-cooling tubes help keep this PC Specialist machine quiet

at the back to expel the hot air). Don't be put off if you see a PC with three or more of these fans – they usually spin relatively slowly and therefore make little noise.

However, the smaller fans found on graphics cards and processors tend to be louder. Sadly, few manufacturers reveal how loud their PCs will sound when operating. If having a PC that's quiet is important to you, look for components that are listed as 'fanless'. If your budget allows, consider a water-cooled PC. Instead of fans, these keep components cool by flushing cold water around your PC (in sealed tubes as in the blue system in our photo above). PC Specialist offers a range of water-cooled PCs, but expect to pay upwards of £1,700 for one (visit www.pcspecialist.co.uk/liquid-series).

Operating system

Most cheaper PCs and laptops come with Windows 10 Home. Although this is perfectly adequate for some users, Windows 10 Pro does have some exceptional features.



If you buy a PC with Windows 10 S, you can convert it to Home or Pro for free

Pro's BitLocker tool, for example, can encrypt your entire hard drive (as well as USB sticks), meaning if someone steals your computer they won't be able to access anything stored on it. Additionally, Pro lets you defer Windows updates by a set number of days, remotely control your computer from another Windows PC, and create a virtual operating system on which to test programs you're not sure about.

If you find a PC that meets all your requirements but comes with Windows 10 Home, you can always upgrade to Pro at a later date (visit the *Computeractive* Software Store to do so for just £39.99 www.snipca.com/36615).

You may also see PCs that run Windows 10 S. This is essentially a cut-down version of Windows that lets you install apps from the Microsoft Store only (not programs you've downloaded elsewhere or have on CD/DVD). If this sounds too restrictive, you can easily switch to Windows 10 Home or Pro for free (check with the seller which version is available

for that model).

To switch from Windows 10 S, go to Settings, 'Update & Security', Activation, then click 'Go to Store' (see screenshot above) and follow the on-screen instructions. Be aware this is a one-way process, so you can't then revert to Windows 10 S, but we wouldn't imagine you'd want to anyway.

You may also spot laptops for under £200, such as Lenovo's IdeaPad 3 (£179 www.snipca.com/36622). Look a little closer, however, and you'll discover that they run Google's Chrome OS, not Windows. Called Chromebooks, they let you use Google's range of web-based tools (Google Docs, Sheets and so on) and other apps from the Google Play store, but you won't be able to install programs for Windows such as LibreOffice.

If you're happy with these limitations, there's another thing to bear in mind. Chromebooks get six and a half years of support from Google, after which they will no longer receive security updates and may become unsafe. Google's calls this cut-off the Auto Update Expiration date (though we think of it more as a 'best before' date).

Crucially, the clock starts ticking when the manufacturer releases the Chromebook, not when you buy it, so you could end up buying one that stops getting updates in under a year. It's therefore vital to check the model against Google's list at www.snipca.com/36616 before buying. Scroll to the bottom, then open the section for the manufacturer of the Chromebook you're thinking of buying and look for its model number (that Lenovo IdeaPad we mentioned earlier has an end date of June 2026 – see screenshot left).

100e Chromebook 2nd Gen MTK	Jun 2025
100e Chromebook 2nd Gen AST	Jun 2026
N23 Yoga Chromebook	Jun 2025
300e Chromebook	Jun 2025
300e Chromebook 2nd Gen	Jun 2026
300e Chromebook 2nd Gen MTK	Jun 2025
300e Chromebook 2nd Gen AST	Jun 2026
500e Chromebook	Jun 2024
500e Chromebook 2nd Gen	Jun 2026
N42 Chromebook	Jun 2022
T4e Chromebook	Jun 2026
IdeaPad C330 Chromebook	Jun 2025
IdeaPad S330 Chromebook	Jun 2025
IdeaPad 3 Chromebook	Jun 2026
Yoga C630 Chromebook	Jun 2025
ThinkPad C13 Yoga Chromebook Enterprise	Jun 2029
ThinkPad X131e Chromebook	Jun 2018
ThinkPad 11e Chromebook	Jun 2026
ThinkPad 11e 3rd Gen Chromebook	Jun 2026
ThinkPad 11e 4th Gen Chromebook	Jun 2024

Manage policies for Chrome devices

- Manage updates on Chrome devices
- Chrome OS release best practices
- Chrome OS version doesn't autoupdate
- Auto Update policy

If considering a Chromebook, check Google's Auto Update Expiration list for your chosen model

CUSTOM-BUILD YOUR PC OR BUY REFURBISHED

Throughout this feature, we've recommended specific PCs that you can buy from online stores, such as Amazon and Currys PC World, and directly from the manufacturer. However, there are other ways to buy your next PC, and save some money in the process.

Custom-build your next PC

Now that you know what you're looking for, why not use your newfound knowledge to custom-build your next PC? This way you can scale back on components you don't need, and spend more on those you do.

Chillblast has an excellent PC-customisation service at www.snipca.com/36627. Start by choosing whether you want an AMD or Intel-based PC, then choose a case, before selecting components such as the processor, memory and graphics card (see screenshot above right). You can even determine the type of thermal paste used (this sits between the processor and its heatsink to improve cooling).

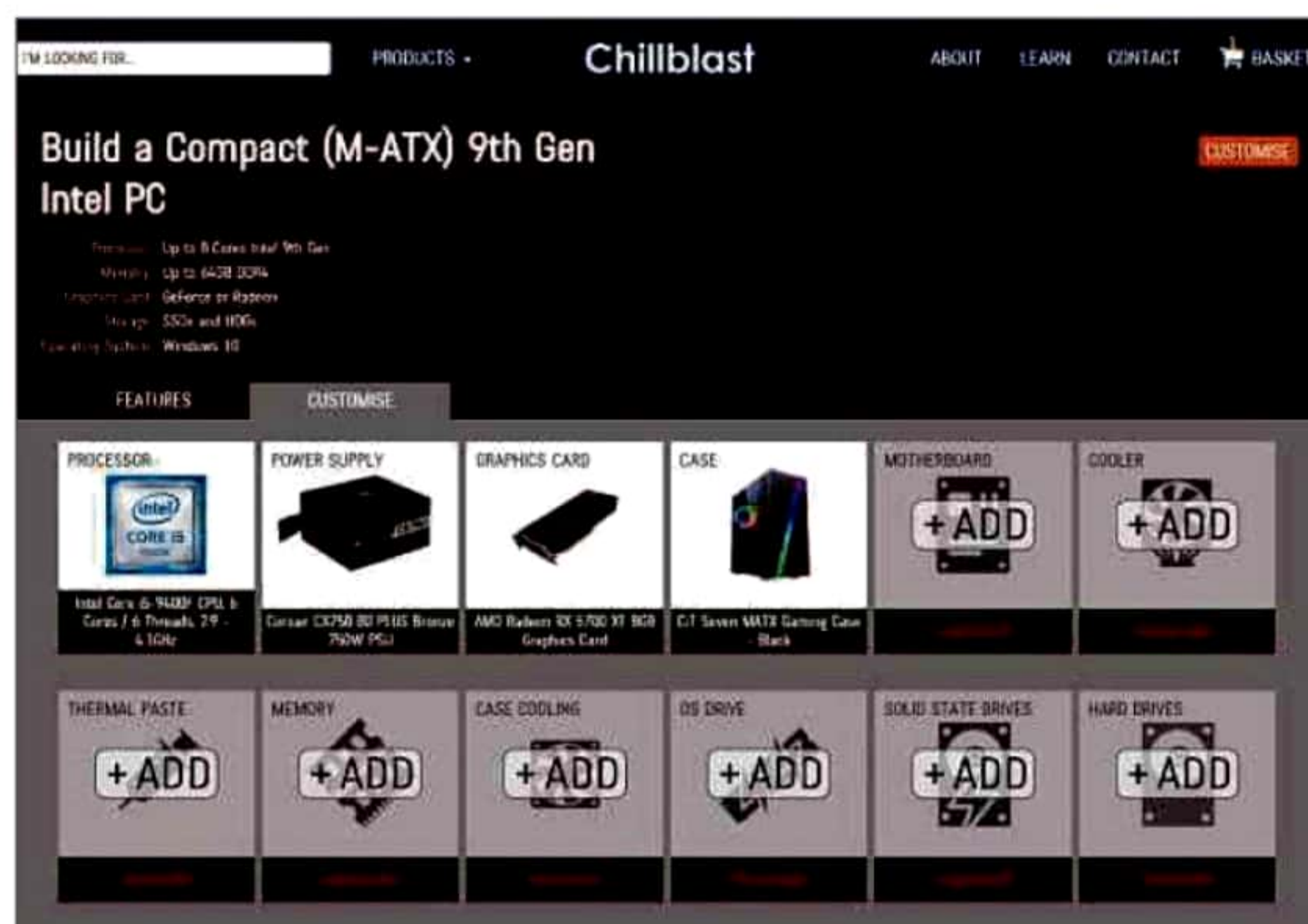
Don't worry if you're not sure what to choose – leave the option blank and Chillblast will use recommended components. Once you've placed your order, Chillblast will build and test your custom PC, before delivering it.

PC Specialist (www.snipca.com/36628) provides a similar custom-build service, including the option to send them your own case into which they'll install your chosen components – perfect if you're happy with how your current PC looks. Just select the 'Send in your own case' option in the 'Select a case' section.

Refurbished options

Buying a **refurbished** PC may sound like a risky option, but if you know where to look, you can find models that are as good as new and come with a warranty.

Laptops Direct's Refurbished store (www.snipca.com/36624) is a good place to start – scroll down, then click the



Chillblast's custom-build service lets you configure every aspect of your new PC

category you're looking for (despite its name, the company also sells refurbished desktop PCs). The website grades items from A1 (best quality) to A3 (cosmetic damage such as small dents), but they're all in full working order and come with a warranty (from three months to one year).

You'll find details about a model's condition by selecting it, then clicking More Info. We found an A1-graded Dell XPS 13 laptop with an Intel Core i5 processor for £939 (www.snipca.com/36625), which is £179 less than on the Dell store.

Amazon also offers a refurbished PC scheme. Avoid any listings marked as 'pre-owned' (these are sold by third parties) and instead opt for those labelled Amazon Renewed, which have been refurbished by the manufacturer and come with a one-year warranty. Visit www.snipca.com/36626 and select Laptops or 'Desktop computers' from the list on the left.

Second-hand options

Buying a second-hand PC obviously comes with a level of risk. You have no idea how well it's been looked after and if you buy via an auction site such as eBay you won't have the opportunity to see it



Second-hand computers cost more on CEX compared to auction sites, but they also come with a 24-month warranty

in person before purchasing.

Any PC on offer should be as described in the listing, and eBay will refund you if this isn't the case. However, proving this isn't always easy.

If you're still keen to save money by buying a second-hand PC without the risk, we recommend CEX (<https://uk.webuy.com>). All models come with a 24-month warranty, so you'll be covered if something goes wrong. We found Acer's Nitro 7 AN715 (www.snipca.com/36623, pictured above) – a powerful Intel Core i5 laptop that we awarded five stars when reviewing it back in Issue 566 – for £880, which is £320 less than its original price. **ca**

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What you need to change to get stronger home signals



PLUS

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Don't renew your antivirus software

Shocked by the sky-high renewal price for your antivirus software?

Will Stapley reveals why you shouldn't pay, and how to continue your protection for much less



As with insurance, broadband and pretty much any subscription-based service you can think of, antivirus companies attract new customers by offering big introductory discounts. Their hope is that once you've installed their software and used it for the length of the licence period, you'll be so happy with it that you'll willingly pay full price when your subscription comes up for renewal.

This could be as much as double what you were initially paying – or more. Worse still, if you've signed up for automatic renewal (McAfee, for example, demands you do this if you want to use its bundled VPN), the payment may be taken from your account weeks before your original licence has even expired. Of course, you'll be emailed in advance about the payment, but it's easy to overlook this. It's all great news for the

antivirus company, not so much for your bank balance.

You can of course simply switch to an antivirus that's offering big discounts to new customers. That means spending time learning how to use your new antivirus tool. You'll also need to uninstall your existing software, which isn't always as straightforward as it should be. Your Windows Settings app won't always get the job done, and you may need to download a dedicated uninstall tool just to remove it from your PC (such as Bitdefender's range of tools available at www.snipca.com/36502 – see screenshot below left).

Alternatively, you could contact your antivirus's support team and negotiate with them to reduce the renewal price. We've heard from many people who threatened to switch being offered the same, cheaper deal as new customers. However, as we explain here, there's a way you can save even more.

Buy an antivirus product key from a third party

Instead of accepting a cheaper offer to extend your current antivirus's licence, we recommend buying a **product key** from elsewhere. This will be an even cheaper option and you won't need to reinstall your software or change any settings. You'll also receive exactly the same support and updates as you would if you renewed directly through your antivirus company. You can simply add



Renew your antivirus for significantly less on the Computeractive Software Store

the new product key to your account, then carry on as normal.

So where can you get these cheap product keys? Naturally, we're keen for you to check out the deals on our own Computeractive Software Store (www.snipca.com/36499), where you'll find discounts on all the major packages (Kaspersky, McAfee, Norton and so on – see screenshot above) – sometimes over 80 per cent off the standard price.

As proud as we are about the discounts on our Software Store, it's always a good idea to shop around for any 'flash sale' deals, where sites such as Amazon and Currys offer significant discounts for a limited time (often just 24 hours or until the licences have sold out).

Always make sure you buy from a seller you trust, however. If you're buying from a private seller on eBay, for example, there's no way of knowing whether



To remove your existing antivirus you may have to use a special uninstall tool

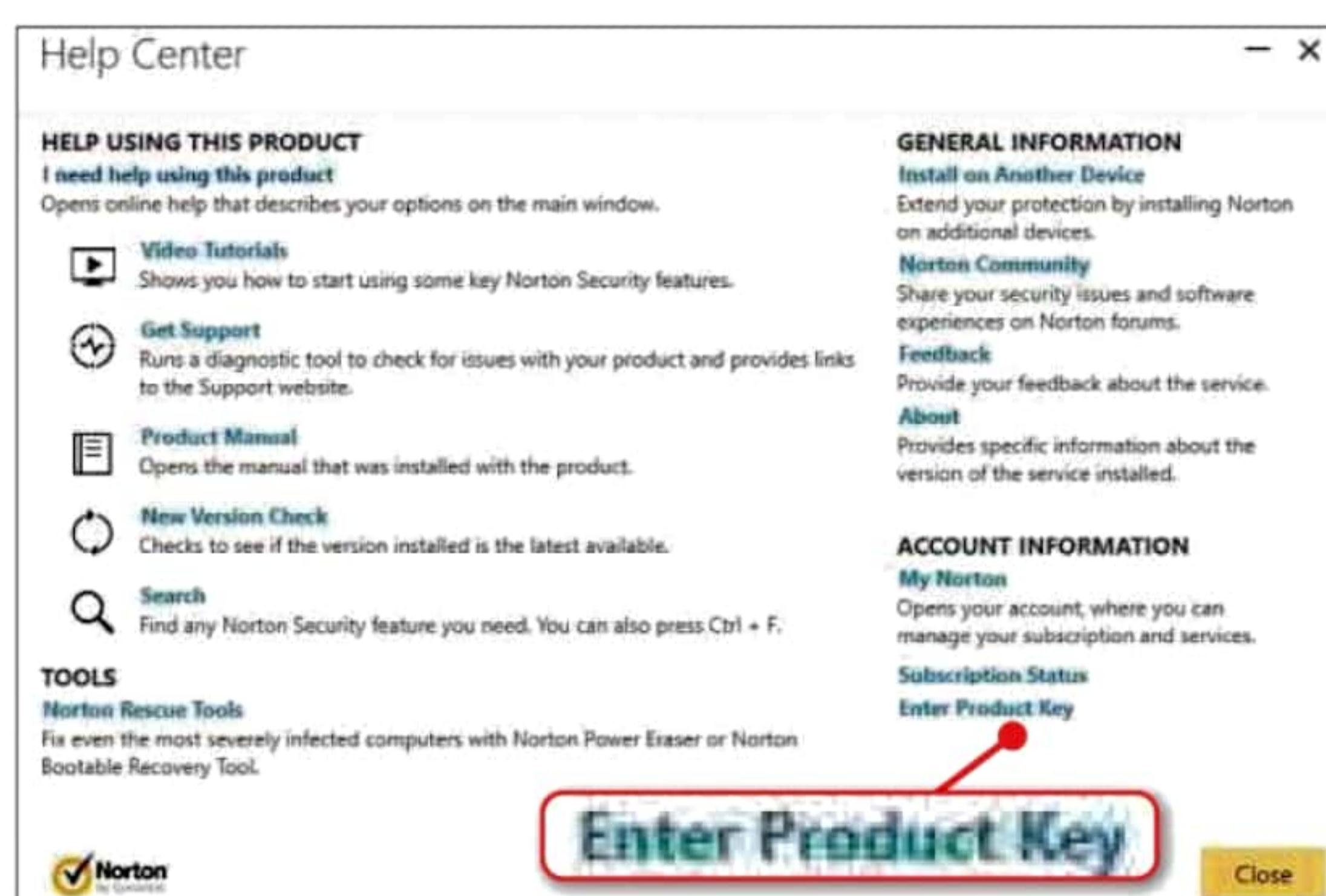
you're receiving a product key that won't then be sold on to someone else later. If this happens you'll effectively be sharing your licence's device limit with that person. In a worst-case scenario, the key might simply be a fake. Also, bear in mind eBay only allows 'digital delivery' items, which includes antivirus product keys, to be sold by users who are authorised by the software company. If you buy from an *unauthorised* seller, eBay won't refund you if the key doesn't work (read the full policy at www.snipca.com/36560).

The following advice relates to antivirus software you can buy in the *Computeractive* Software Store. Other legitimate online stores will operate in the same way, but it's best to check before buying your licence.

Choose your licence

For the smoothest transition, choose a licence for the same version of the antivirus software you're currently using. Don't worry about the year referred to in the name of the software – as long as you have a valid product key, you'll receive the latest version of that software, as well as any updates that are released during your licence period. Instead, just ensure that the name is the same. So if your existing software is McAfee Internet Security, buy a new product key for exactly that product, not one for McAfee Total Protection.

If you *do* end up buying a different version, the product key will still work, but you may have to uninstall your



Once you have your product key, you'll need to enter it into your existing antivirus software

existing software, then install the new version from scratch.

Your new licence won't start until you enter the product key into your antivirus software. This means, if you like to plan ahead, you can purchase your key weeks or months in advance of when your existing licence expires.

There's no need to buy a product key that covers the same number of devices as your original licence. So if you've only ever made use of a fraction of your current 10-device licence, you can save money by opting for one that supports fewer devices this time round. Just make sure you have cover for sufficient devices, because you won't be able to add additional devices part way through your subscription period. Instead, you'll have to buy an extra single-licence version of the software.

Bear in mind that a licence covering more devices doesn't usually cost a great deal extra – on the *Computeractive* Software Store, a one-device licence for Kaspersky Internet Security costs £14.99, with the two-device version costing just £5 more (www.snipca.com/36557).

If you're happy with your antivirus software, you'll probably be willing to sign up for longer than a year, letting you save even more money. For example, a Norton 360 Premium 10-device, one-year licence costs £19.99 (www.snipca.com/36558), with the two-year version just £24.99 (www.snipca.com/36559).

How and when to enter your product key

Once you buy your antivirus licence, you should receive an email with your product key, along with a link to download the software. You can ignore the link if you already have the software installed. If you've bought your new product key a few weeks in advance, don't use it immediately or you'll effectively lose the remaining weeks on your existing licence. We recommend holding off until a couple of days before your existing licence ends.

Precisely how you enter the product key varies from one product to another. With Norton, you need to open the antivirus program, click Help at the top to open the Help Center window, then click Enter Product Key (see screenshot above) and paste your product key.

If you can't find a similar option in your software, contact the company directly. They should be able to update your licence if you provide them with the product key. If not, you'll need to uninstall your existing antivirus software, then use the link in the product key email to install the new version. **ca**

Already renewed? Get your money back!

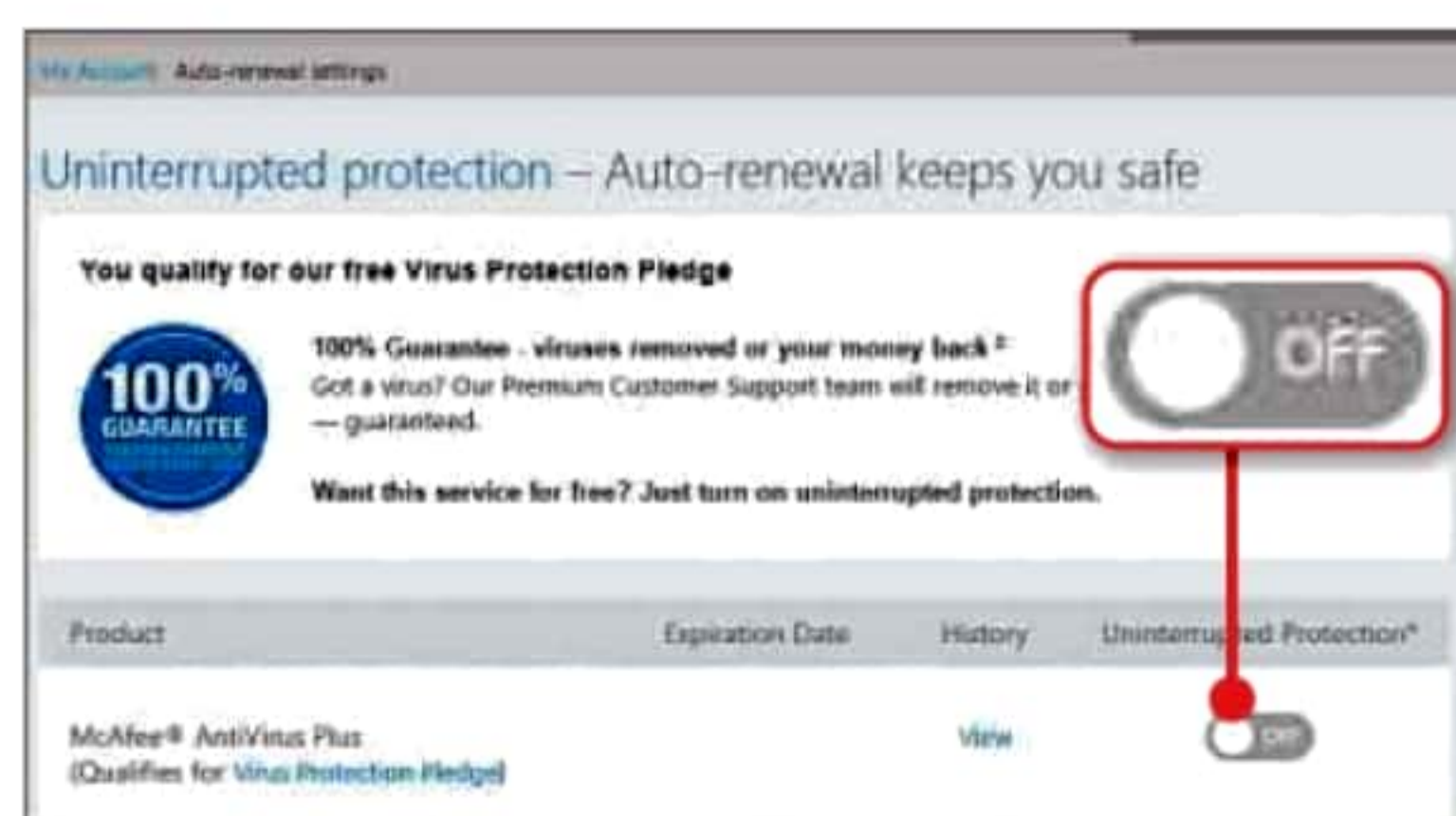
If you've recently renewed your security software at the full price, you might fear that our advice here has come too late. However, depending on how recently you renewed, you might still be able to get your money back.

Most antivirus programs let you get a full refund on automatic renewals, but for a limited time. McAfee and BitDefender will refund all renewals within 30 days of purchase. Kaspersky is less generous, refunding up to 14 days, but Norton will refund you up to 60 days after payment is made. Contact your antivirus provider via its website to arrange the refund.

To avoid getting stung in future, we recommend making sure your licence isn't set to

automatically renew. How you do this depends on your software, but in most cases you'll need to log into the website and look for the renewal option in your account.

For McAfee, for example, log in at www.snipca.com/36512, click My Account, then Auto Renewal Settings and make sure the Uninterrupted Protection slider is switched to Off (see screenshot).



Remove Flash from your PC now

Once one of the internet's cornerstone technologies, Flash is about to be killed off. **Jonathan Parkyn** explains why this is happening and what you must do right now to stay safe

Plagued by a series of security flaws over the past few years, Adobe Flash is finally being put out of its misery on 31 December. That's hardly breaking news – web browsers have been popping up notifications about the end of Flash for a few months now (see screenshot below). But what exactly is Flash? And what will its demise mean for you?

Originally created by a company called FutureWave, then bought by Macromedia in 1996, Shockwave Flash (as it was called then) was a technology that provided a platform for animations, videos, games and apps. It was quickly adopted by web developers as a means to include eye-catching animations in their web pages. In 2005, Adobe acquired Macromedia, at which point 'Shockwave' was dropped, and it became Adobe Flash.

As with other online formats from that era, such as RealAudio and QuickTime, Flash initially required you to install a separate **plug-in** (Flash Player) to view content via your web browser. Eventually,

Flash became so widespread that support for it was built into most browsers.

Why is Flash problematic?

Following Adobe's purchase, Flash started to gain a reputation for being problematic. Flash has always been resource-hungry, meaning it tended to slow down PCs, but the main criticisms focused on how unsafe it was.

A number of high-profile vulnerabilities came to light, including flaws that allowed hackers to take remote control of users' PCs (such as this case back in 2010 – www.snipca.com/36580). To make matters worse, Adobe's track record of fixing security holes has been patchy at best. In many cases, it was slow to release fixes for these vulnerabilities, leaving PC users at risk.

Having proved to be an expensive headache for Adobe in recent years, in 2017 the company finally announced it was killing off Flash. It laid out what it called an 'end-of-life' plan, announcing that all support would be terminated at

the end of 2020. After this point, Adobe will no longer develop, support or release security fixes for Flash. Like other unsupported software, it will effectively become unsafe to use.

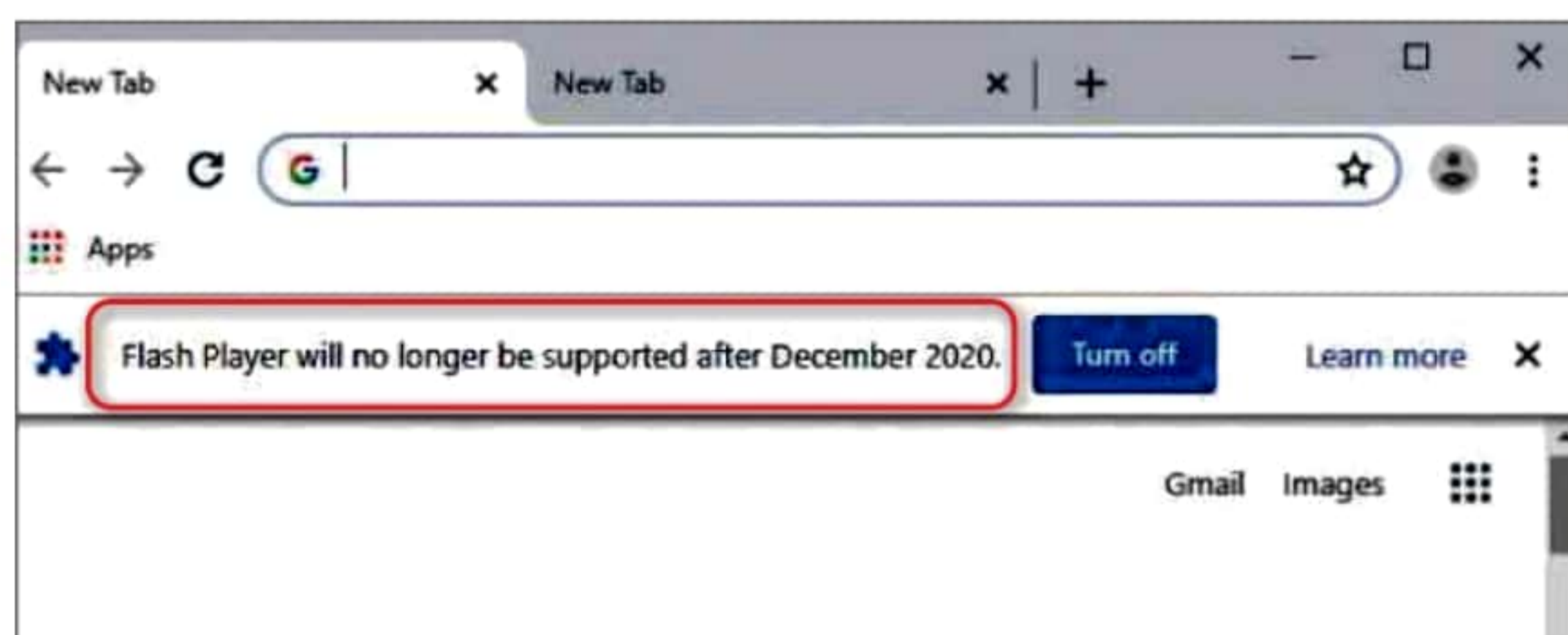
What you need to do

Most websites have long since moved away from Flash, preferring more recent, safer, and more efficient technologies, such as **HTML5**, which supports video, animation and other multimedia content in your browser, without the need for additional plug-ins.

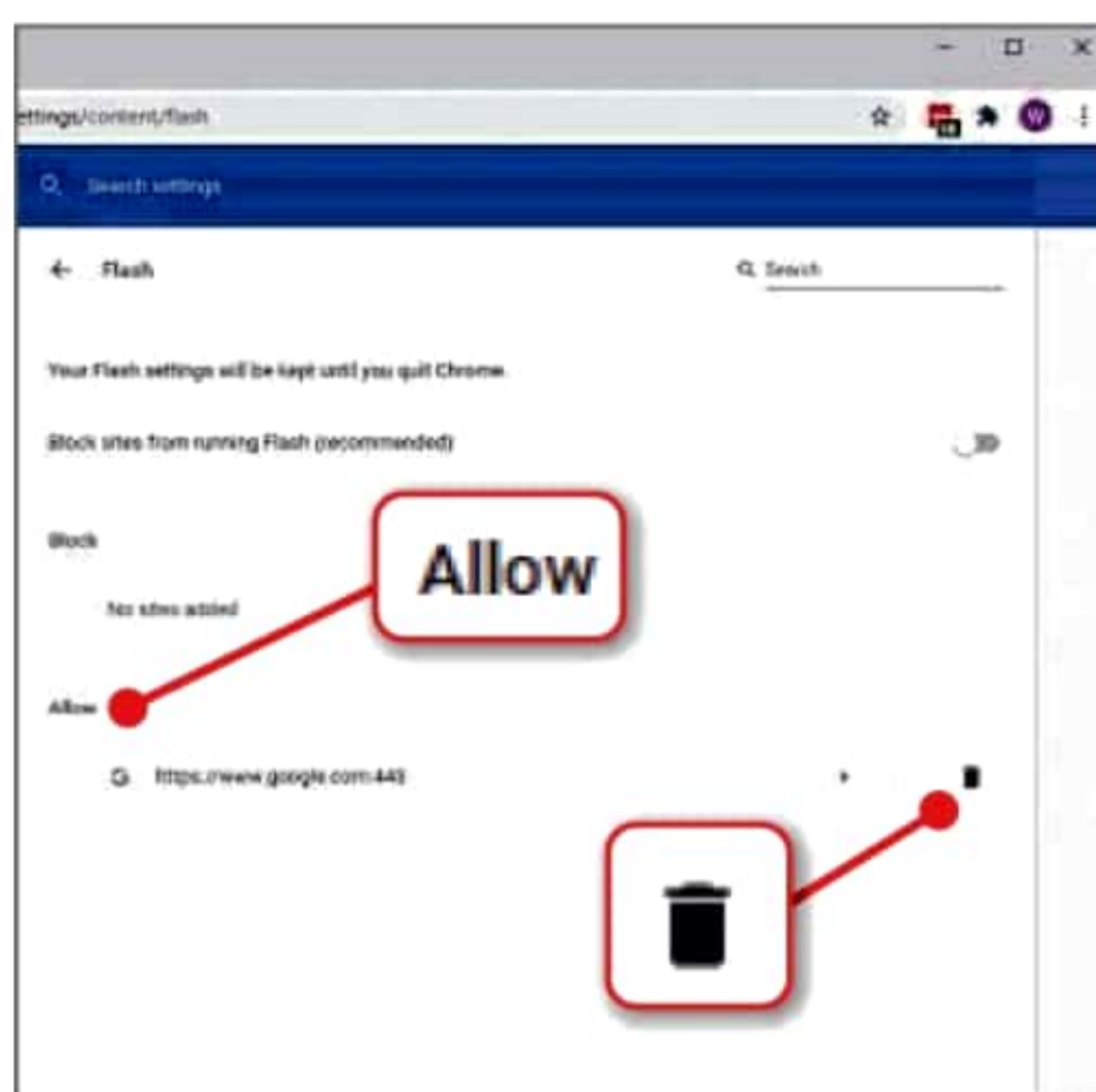
However, not everyone has left Flash behind. According to web analytics company W3Techs, just over two per cent of the 10 million websites it monitors still use Flash in some form (see the latest figures at www.snipca.com/36581) – that's over 200,000 websites.

There's a quick way to find out whether you regularly use any of these sites. Today's popular browsers disable Flash by default, requiring you to manually *enable* Flash for sites that need it. When you do this, the website is added to something your browser calls an 'allow list'. By checking this list, you'll be able to identify which sites may not work when Flash comes to an end.

To view the list, type **chrome://settings/content/flash** into the address bar in Chrome or **edge://settings/content/flash** in Edge, then press Enter. Any sites you've set Flash to run in will be listed under the Allow heading. If you see a website that



Browsers such as Chrome have been displaying warnings about the end of Flash for some time



Delete any Flash-based websites that you no longer visit from Chrome's 'Allow list'

you still use, we recommend contacting the website owner to see whether they plan to update their site before the Flash deadline. It's likely that the website is no longer being developed, in which case you should download any personal data from your account on that site, then find an alternative that doesn't rely on Flash.

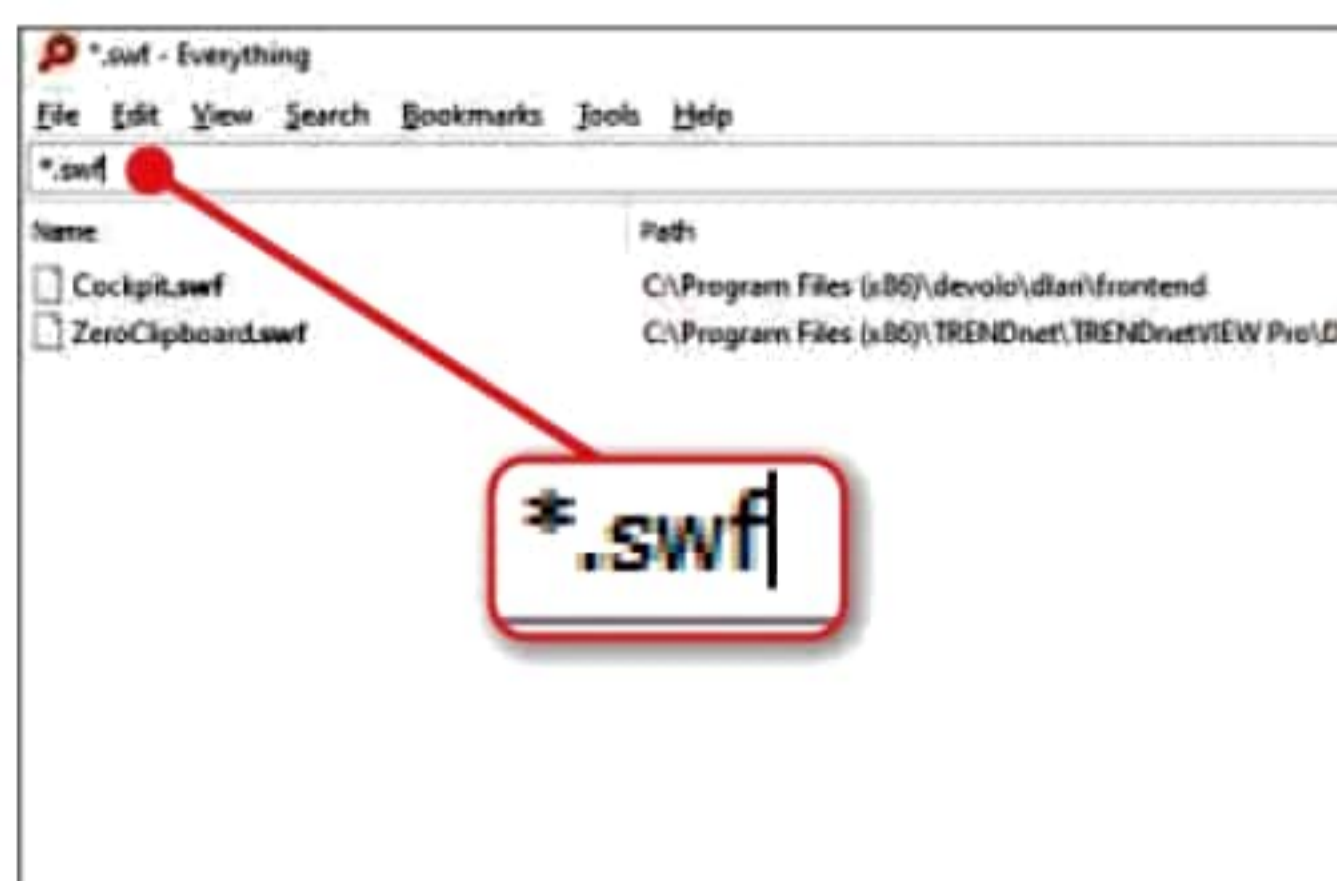
If you no longer use a listed website, you should click the bin icon next to it (see screenshot above), removing them from the list and stopping Flash from running on them.

While in your browser's Flash settings, it's worth making sure that it's disabled for all other sites. Scroll to the top of the window, then check that the slider next to 'Always block Flash (recommended)' (Edge) or 'Block sites from running Flash' (Chrome) is set to Off.

Identify programs on your PC that use Flash

Flash content can also be found on some older PC programs. While Flash's demise might not stop these programs working completely, it may affect certain functions within them. One way to find out which programs could be impacted is to search for Flash files on your PC.

To do this, download the search tool Everything (www.voidtools.com) then search for FLA and SWF files (both are Flash files, the latter when it used to be



Uncover programs on your PC that use Flash by searching for FLA and SWF files

Can you continue using Flash in 2021?

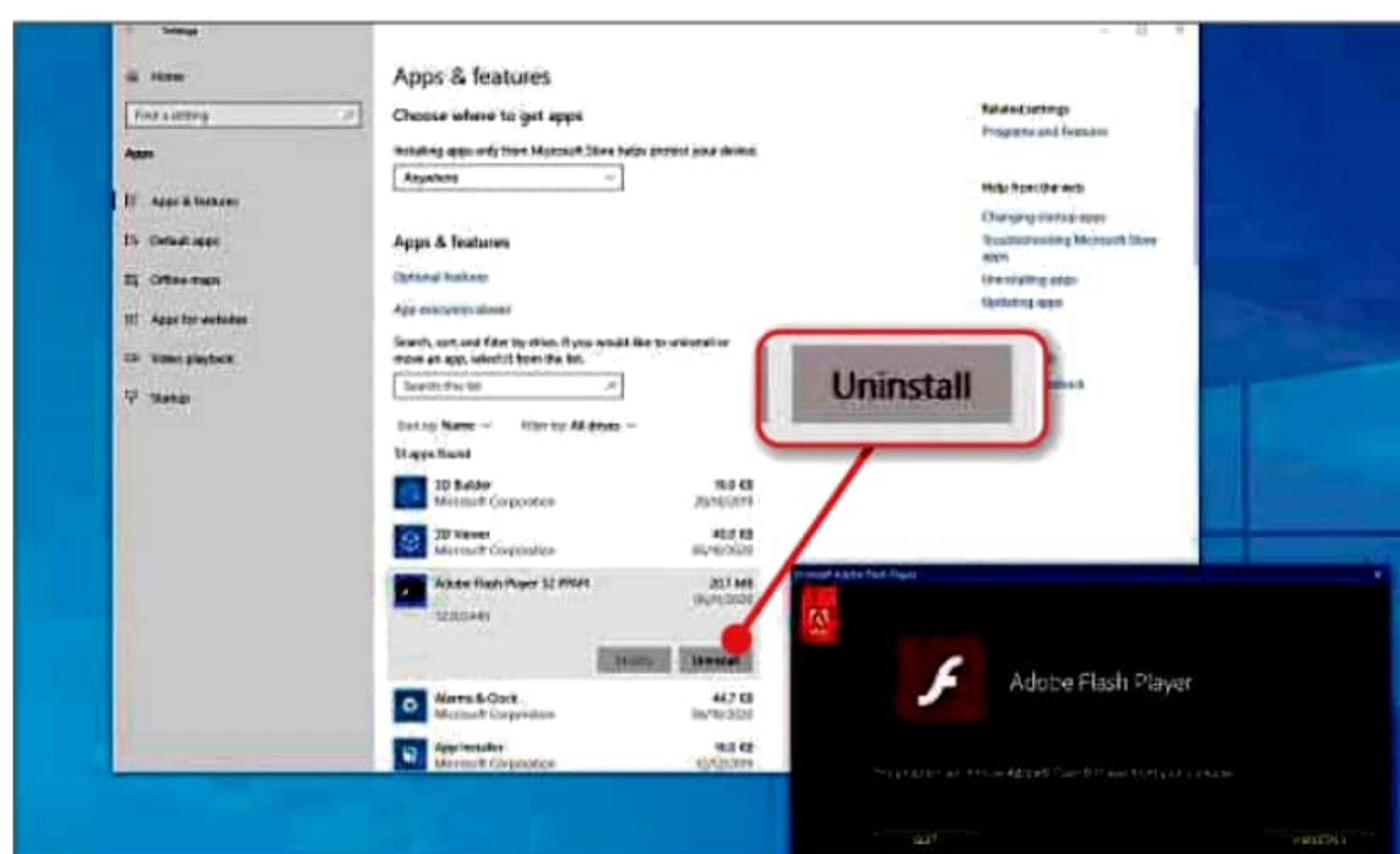
If you've found a website or program on your PC that relies on Flash, you may be tempted to find a way to carry on using it next year. One option is to download an old version of Chrome (or any other browser) that runs Flash, and then stop it from updating – thereby keeping its built-in Flash player working.

However, we don't recommend doing this. Browsers are regularly updated with security fixes, and using one that's out

of date puts your PC and your personal data at serious risk. Likewise, we don't recommend installing any browser extensions or programs that promise to keep Flash running. In all probability they'll either be faulty and may even contain malware.

Our advice? Use what little time remains before Flash goes for good to find alternatives to those websites and programs that rely on it.

Search for any Flash installations on your PC, then remove them



called Shockwave Flash) – to search for FLA files type *.fla, and for SWF type *.swf (see screenshot below left).

When we carried out this search on our PC, we only found one file, which was part of an old Devolo tool that managed its range of powerline devices. Further investigation revealed that this Flash content was simply a video guide to setting up the devices, so the end of Flash won't stop the tool running.

If you find any programs with Flash files on your PC, contact the developer to see what its end will mean for their software.

Uninstall Flash from your PC

Flash can get on to your computer in a number of ways – often without you even realising. Windows 10 comes with a

version of Flash Player built in – open Control Panel, then select 'Large icons' in the 'View by' options at the top right and you'll see an entry for Flash Player here (see screenshot below).

Microsoft recently released an update that removes this version of Flash Player, but you have to install it yourself and choose the correct update for your specific version of Windows (the update is available from www.snipca.com/36572). Instead, we recommend simply waiting until the end of the year, when the correct update for your PC will be applied automatically through the Windows Update service.

You may also have some standalone versions of Flash installed (these would have been installed either by you downloading them, or as part of another program's installation).

To find out, click Start, Settings, Apps, then search for **adobe flash**. If you find any, we recommend clicking their Uninstall button (see screenshot above). If this causes problems for an older program on your PC, you can always reinstall Flash from Adobe's website (<https://get.adobe.com/flashplayer>), giving you a few weeks to save any data in it before Flash bites the dust at the end of December. **ca**



Windows 10 comes with Flash Player built in, but this will be removed when support ends

Problems Solved

Our experts solve all your tech problems

PROBLEM OF THE FORTNIGHT

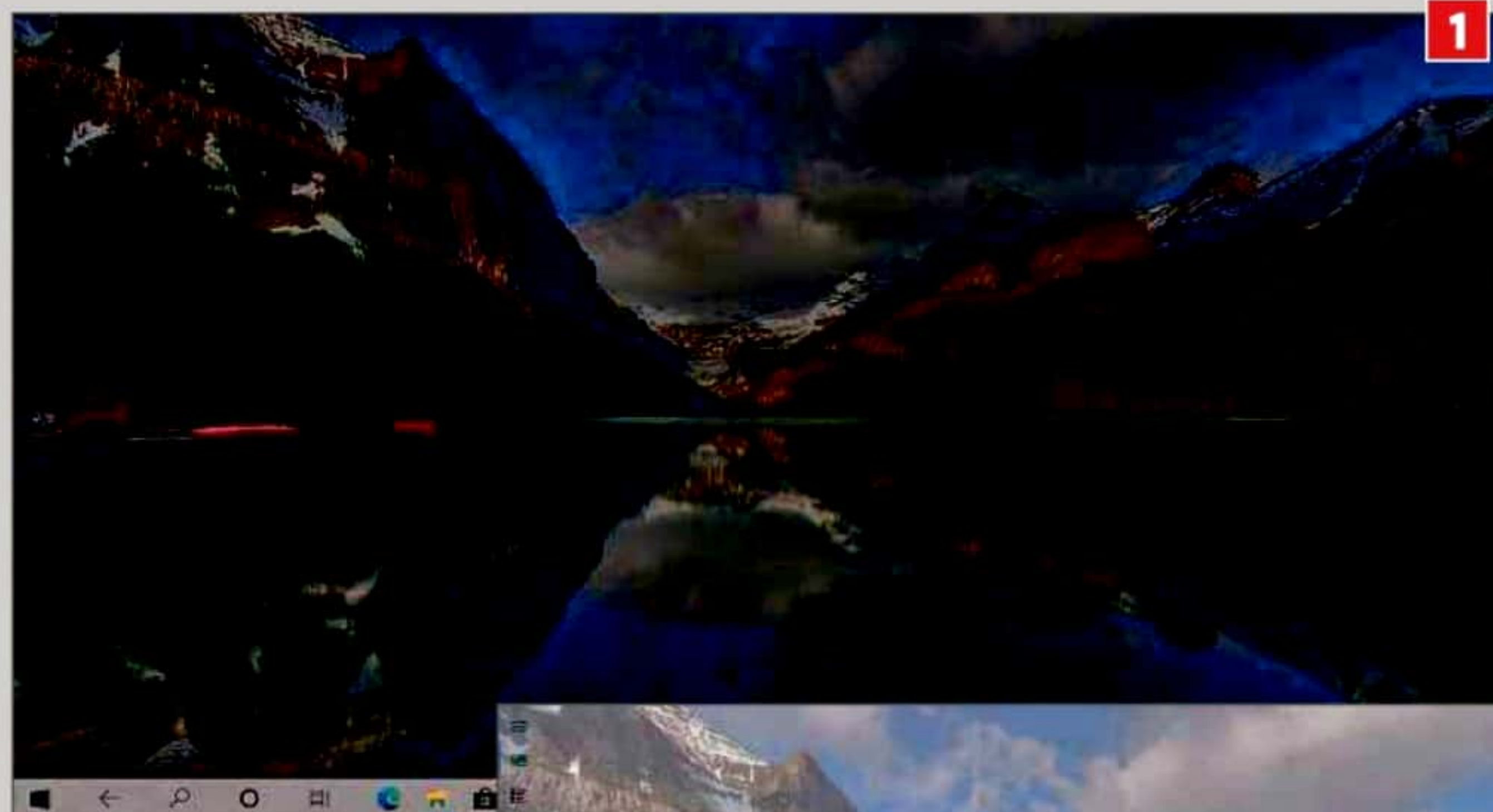
Why is Windows desktop washed out?

Q As an avid subscriber to *Computeractive*, I've been taken from novice to a fairly confident techno addict – but I finally need to ask for your help. I bought a new 'convertible' laptop/tablet, which is excellent except for one niggling issue. The Windows desktop background is a lovely clear image until the icons load. Then, it immediately fades to a wishy-washy picture. I've updated Windows and numerous **drivers**, but no change. I've never had a convertible laptop before, so I'm not sure if there are special settings that also affect the desktop image. I did find that Windows 10's Tablet mode was on but disabling this didn't fix the problem.

Janet Fowler

A We'll admit this one had us scratching our heads for many weeks. In fact, we'd pretty much given up when one team member had a middle-of-the-night epiphany – and we're now confident we know the cause of your problem.

The screenshots you sent us do show a perfect Windows desktop background image (see screenshot **1**), followed by much the same picture but with an obvious washed-out appearance. You described this as happening when "the icons load". It's not your fault but that phrase actually put us off the scent, because by focusing on why icons



The clear Windows desktop (above), and washed-out with icons (right)

loading might be causing the problem we missed the real answer – and it was staring both you and us in the face.

Your second screenshot does show some icons, but we belatedly realised that it also displayed Start menu elements running down the left-hand side. So, what you're looking at is not the Windows desktop at all but a full-screen Start menu. The fact that you can see the Windows desktop image behind it is merely because you have transparency effects enabled in Windows 10.

That your Start menu is largely barren, sporting only icons for Firefox and Edge **2**, didn't help with this realisation: the frosted desktop image just looks like some weird graphical glitch. So, parking our curiosity about why your Start menu is so empty, the question is why is your PC launching to display this menu at all – and in full screen?

The answer is two-fold. First, you or the manufacturer has set this screen-hogging mode as the default, perhaps because this device is a convertible. Second, when you're finished with the computer we're



guessing you put it to sleep, by clicking Start followed by Power and then Sleep (or that the device's own power button in effect does the same).

Either way, the device goes to sleep with the full-screen menu open. So, when you later fire up, Windows 10 awakes from sleep and then within moments displays the full-screen Start menu – just how you left it.

That's a necessarily long explanation of a perplexing problem that actually has a simple solution.

Now that you know the cause, you can either click the Start button to hide the Start menu, or switch back to a standard Start menu that won't obscure the Windows desktop. To do this, click Start followed by the Settings cog, and then Personalisation followed by Start. Now, on the right, just flip the 'Use Start full screen' switch to its Off position **3**.



Switch back to a standard Start menu by flipping 'Use Start full screen' to Off

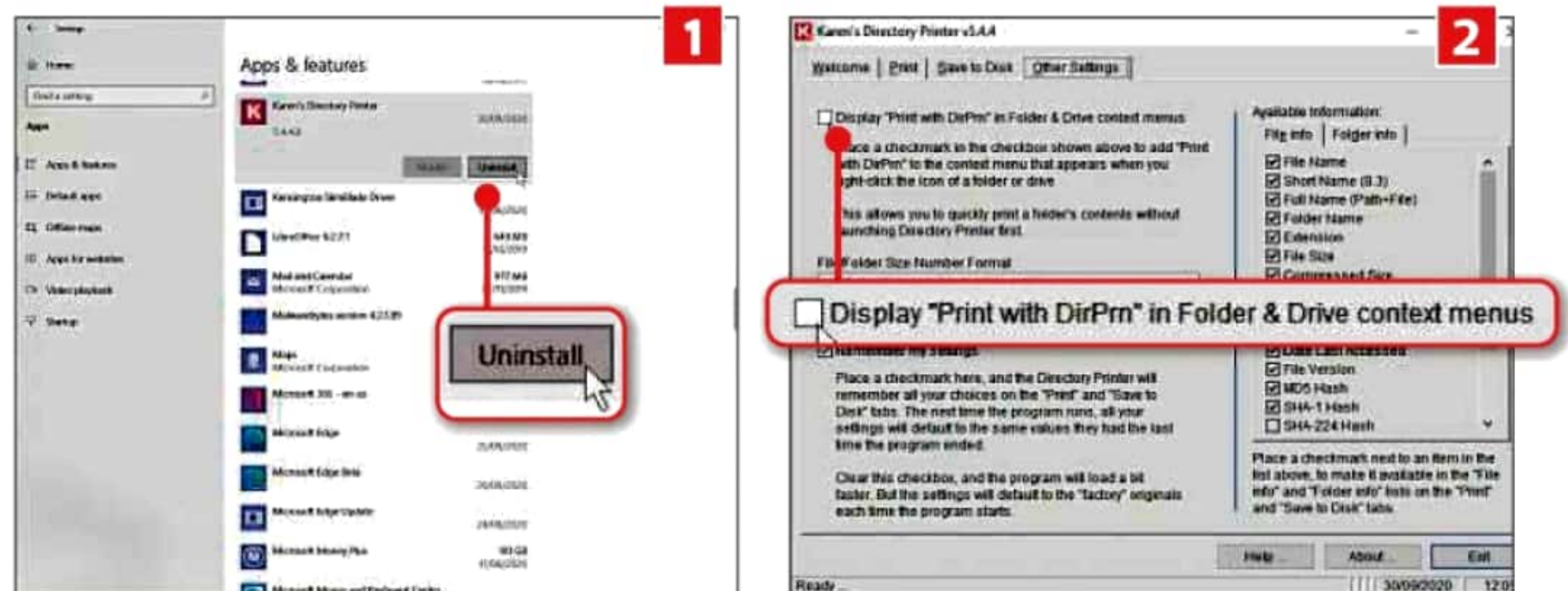
What is 'Print with DirPrn' in my right-click menu?

Q The other day I right-clicked on a ZIP file to extract the contents, which is something I do reasonably regularly. However, as I paused for a moment's daydream, I noticed that the pop-up menu contained a mystery entry – 'Print with DirPrn'. I do not know what this is, and obviously didn't click it in case it initiated some malware app that might've slipped on to my system. I've run a full scan with my Malwarebytes security software but it has come up blank. Should I be worried?

Ben Lynch

A Certainly, it's wise to be alert to situations like this: if an option appears unexpectedly on one of Windows' context (right-click) menus, it is usually a sign that something or other has been newly installed.

Here, though, we have a feeling that there's nothing untoward. Rather, we have high confidence that this option relates to a program called Karen's Directory Printer. This is a free tool whose purpose is to make it easy to print the contents of entire drives, folders, subfolders or yet-to-extracted ZIP files.



You can uninstall Karen's Directory Printer (1) or remove its right-click option (2)

It's a free download, from www.snipca.com/36367. Once installed, it adds precisely this option to context menus.

This is a nifty little utility that we've recommended a handful of times. It's a tool that people install for a particular need – when trying to organise a hard drive's contents, say – and then promptly forget about it when the job is complete. As the program is otherwise invisible, we suspect this is what's happened here: you installed Directory Printer years ago, perhaps following a suggestion in *Computeractive*, and then forgot about it.

As such, you have three options. The

first is to do nothing: the program is doing no harm, and is just a right-click away should you ever need it.

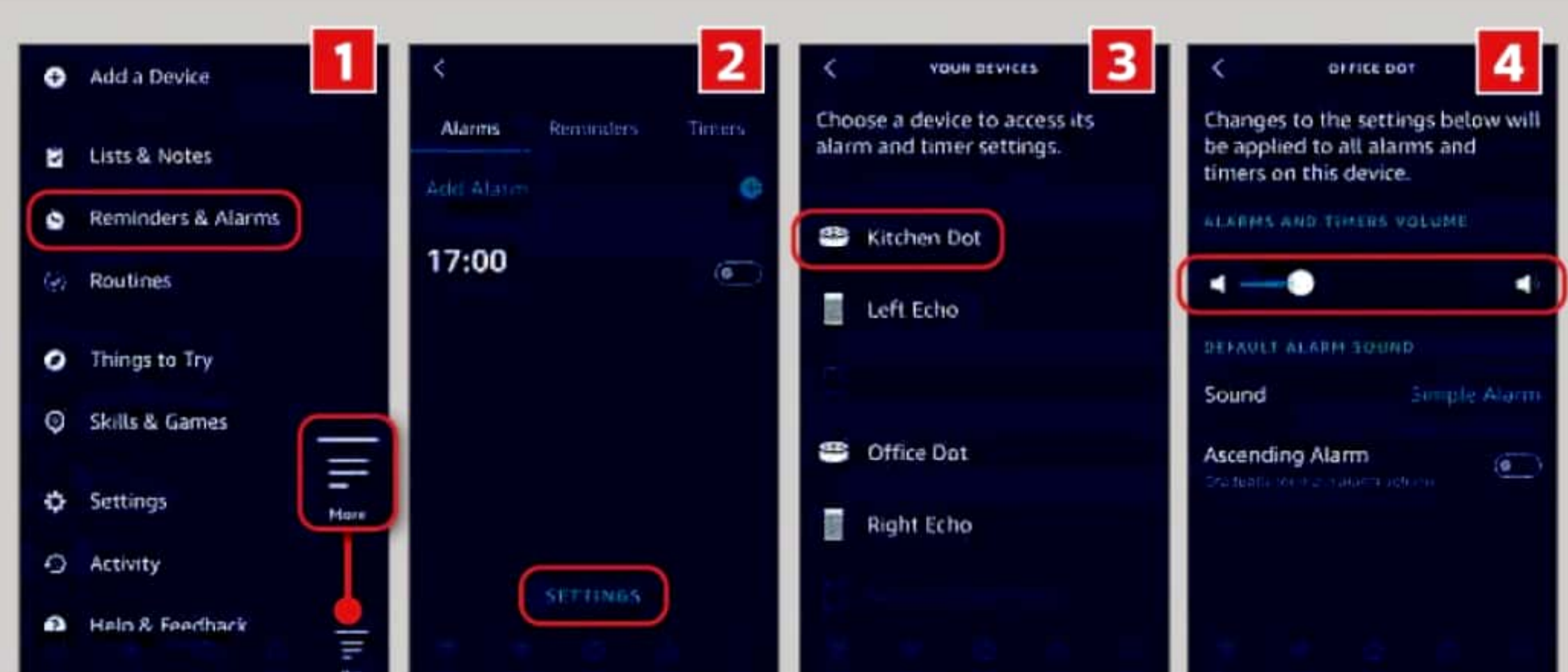
Alternatively, you could uninstall it. Open the Start menu followed by the Settings cog, and then Apps, then click the Karen's Directory Printer entry followed by Uninstall (see screenshot 1).

Finally, if you want to keep the tool but lose its right-click option, then first launch Director Printer (via your Start menu), then choose the Other Settings tab and click to clear the tick from the box labelled 'Display "Print with DirPrn" in Folder & Drive context menus' 2.

Can I change Alexa's reminder volume?

Q I purchased an Echo Dot as a bit of a punt, because Amazon was selling them cheap. I managed to set it up without too much bother and after a few days' use I've grown rather fond of it. However, I've noticed that reminders I set are played at a different volume to everything else – quite a bit louder! This isn't too much of a problem during the day, but in the evening it can be a bit startling to have Alexa suddenly shout: "I'm reminding you...". Is there any way to change this? Pressing the Dot's own volume controls just adjusts the output for radio (which is what I mainly use it for), but not these reminders.

Naomi Morton



Select 'More', 'Settings', then the Echo's name (Kitchen Dot here), and finally adjust volume

A You can do this via the Amazon Alexa app on your smartphone or tablet. That app is something of a design mess, though, so you'd certainly be forgiven for not being able to find the relevant option.

First, tap the More icon (three horizontal lines, bottom right 1) and then tap 'Reminders & Alarms'.

Next, at the top, tap to select the Alarms tab and then, at the bottom, tap Settings 2. Next, tap the relevant Alexa device name: that'll be Naomi's Echo Dot, assuming you didn't use its default name during setup 3.

Finally, under 'Alarms and Timers Volume', just drag the slider to set the desired volume level 4.

What are CWS and CWK files?

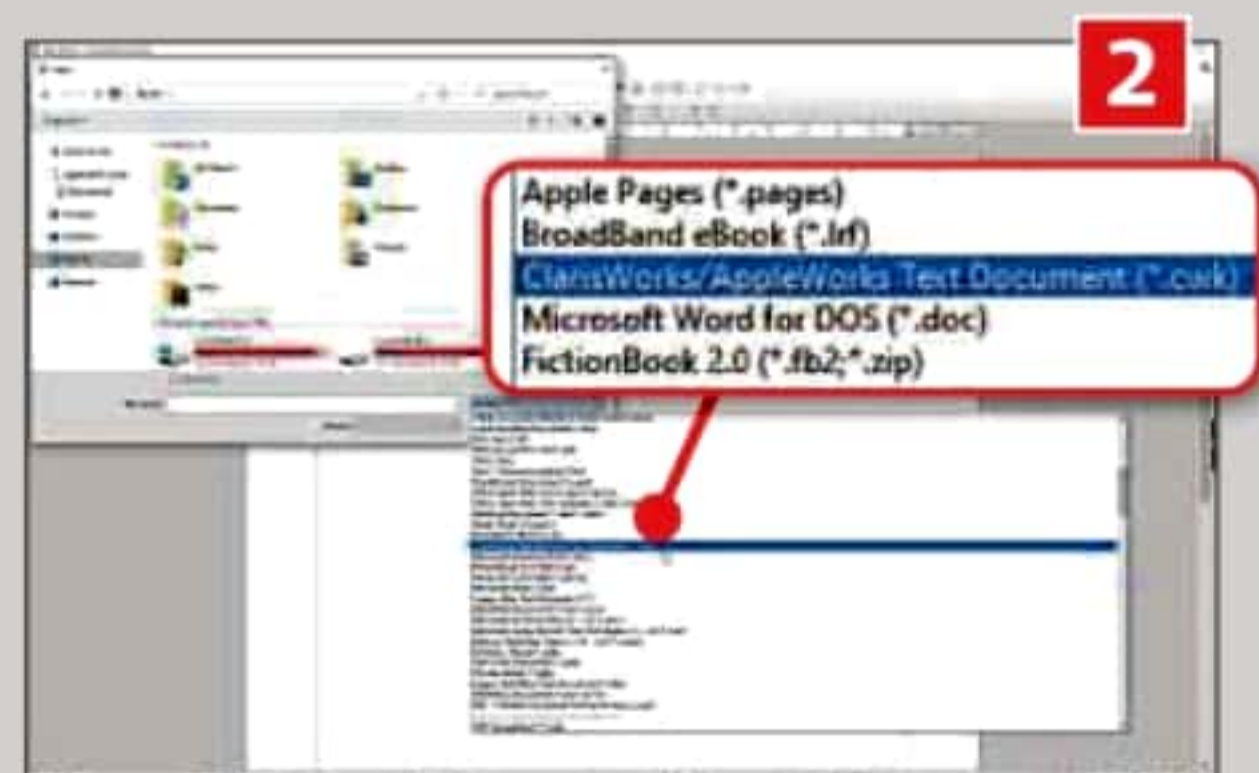
Q On one of my old discs I have found several files with CWS (.cws) and CWK (.cwk) extensions. I use Windows 10 and Microsoft Office 2007. How can I open these files, please?

Harry Hair

A You didn't offer any clues about the origins of these files but it's very likely that they're from an archaic Office-style software suite that has at various times been branded either AppleWorks or ClarisWorks.

It ended up as AppleWorks, before being abandoned in the mid-noughties. Both ClarisWorks and AppleWorks saved documents with a CWK extension, and templates as CWS files.

You can't open these in Office but the free LibreOffice suite can open both CWK and CWS files. This is a free download from www.libreoffice.org **1**. Note that CWK/CWS files can be word-processor documents, spreadsheets or databases, so you might need to experiment to find out which LibreOffice program can open these files – though it's most probably Writer. Just click File followed by Open, and then navigate to a file **2**, click to select it and then click Open.



LibreOffice is free (1) and lets you open ClarisWorks/AppleWorks documents (2)

How do I connect my Asus routers to my Vodafone hub?

Q My wife and I are working from home, so I'm trying to revamp our internet with an Asus ZenWiFi AX dual-node system. I'm not sure how to set this up with an ISP-provided router. We have Vodafone's Superfast 2 broadband using its WiFi Hub – it's a combined modem and router. I thought I'd simply need to connect them using an Ethernet cable, but I'm encountering terms I don't really understand, such as 'double NAT' and 'bridge mode'. Unlike our previous Virgin router, the Vodafone hub doesn't seem to have a modem mode.

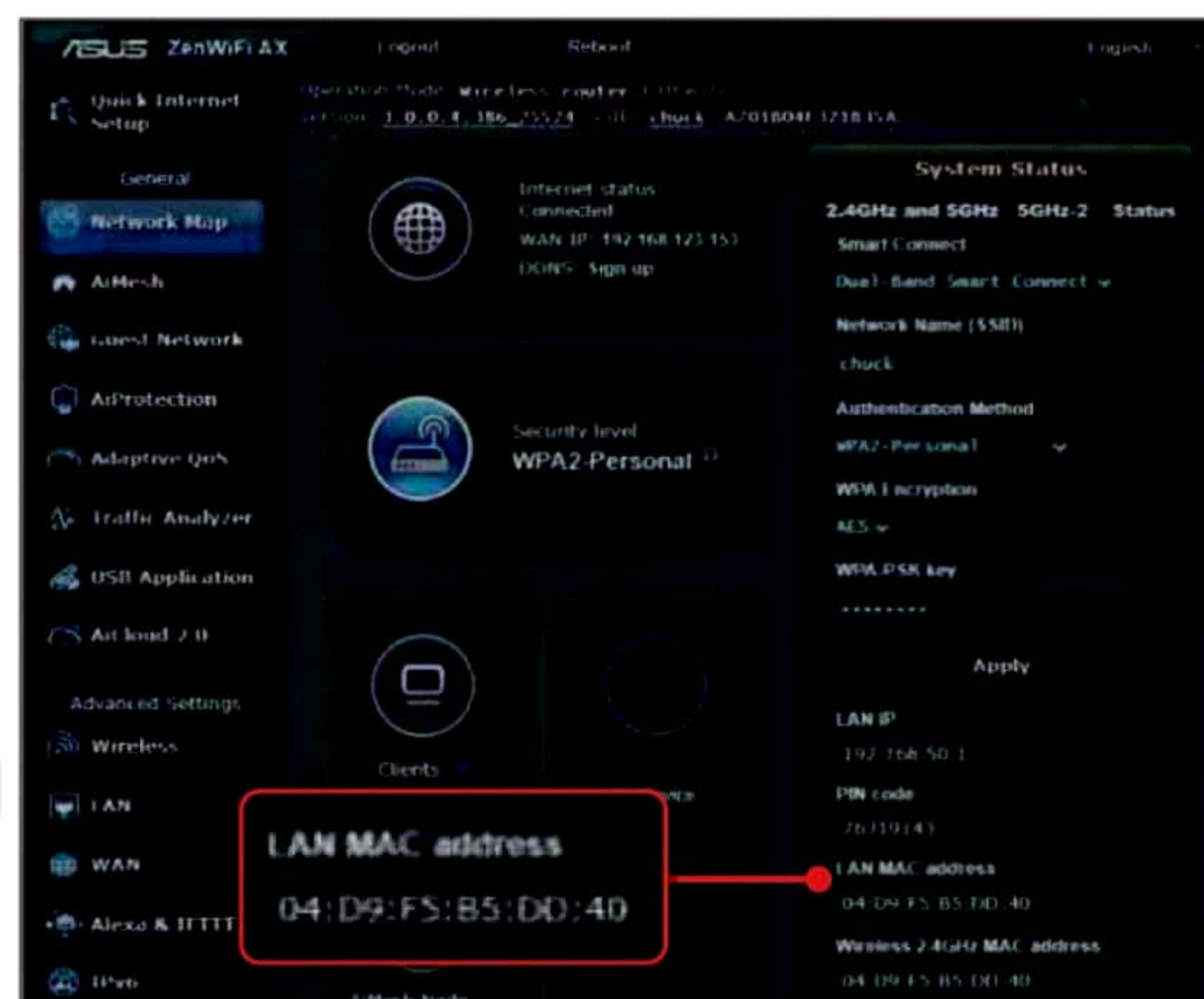
Alex Davies

A Home hubs from ISPs are usually fairly restricted, and it appears that Vodafone's hub doesn't have a modem-only mode. If so, you can try two things. First is to use most of the features of the Vodafone hub while using the Asus system only as a

powerful wireless access point. Log into the Asus site, then enter the LAN settings. Next, set the router's IP address, so it's within your Vodafone hub's range.

You should also turn off the DHCP server, then view the Clients page on the Network Map and note down the LAN MAC address shown for the router (see screenshot below). You should configure the wireless network if you haven't already. On the Vodafone hub, use the dropdown box at the top of the admin interface to select 'Expert' mode. Use the options to reserve the IP address that you allocated to the Asus router, providing the MAC address you noted down if required. Then connect an Ethernet cable between a port on the Vodafone hub's switch and a switch port on the first Asus router; don't use its WLAN port.

You should now be able to connect to the Asus network and access the internet. If so, log back into the Vodafone router and switch off its Wi-Fi network.



Find the Asus router's LAN MAC address in the Clients page on the Network Map

Q: Do I need more antivirus than Windows Defender?

A: Issue 563, page 67 – find it on our 2019 Back Issue CD

Buy it from
www.snipca.com/33711



Why did my wife see adverts for items I looked at?

Q I don't have any social-media accounts. I use a Windows 10 PC with Firefox, while my wife has a laptop and uses Google's Chrome. We're both connected to the same router and have the same external IP address; to the outside world, that's all we share.

Recently I was searching online for decking boards and a specific mirrorless camera. Later that day my wife, who *does* use social media, logged on to Facebook. She saw adverts for decking boards and the same camera I searched for. How can my browsing jump to another machine and be hijacked by Facebook?

Tony Nicholls

A The sites you visited probably use advertising services connected to Facebook, which have recorded that a user with your IP address may be interested in buying decking and a camera. By default, Facebook serves personalised adverts to its users, basing its customisations on recent behaviour – in your case, picking up on the browsing activity



from your IP address. It's important to note that, while Facebook may know a lot about your wife (depending on her settings), it's not sharing this information with the advertisers in question. Instead, advertisers pay to have their adverts shown to the most relevant audience, as determined by Facebook's data.

To stop this, you could try Firefox's Do Not Track feature. This asks websites to not track you, though they don't have to comply. Click the top-right menu button (three horizontal lines), then Options, 'Privacy & Security'. Scroll down and select Always under 'Send websites...

tracked' (see screenshot above).

Your wife could stop Facebook targeting data based on her (or your) activity on third-party sites. Click the top-right dropdown menu on Facebook, followed by 'Settings & privacy', Settings. Click 'Your Facebook information' on the left, then 'Off-Facebook activity' in the middle. Next, on the right, click 'Clear history' to delete the existing history Facebook has added to your wife's account. Click 'More options', then Manage Future Activity to prevent Facebook from associating third-party information with her account in future.

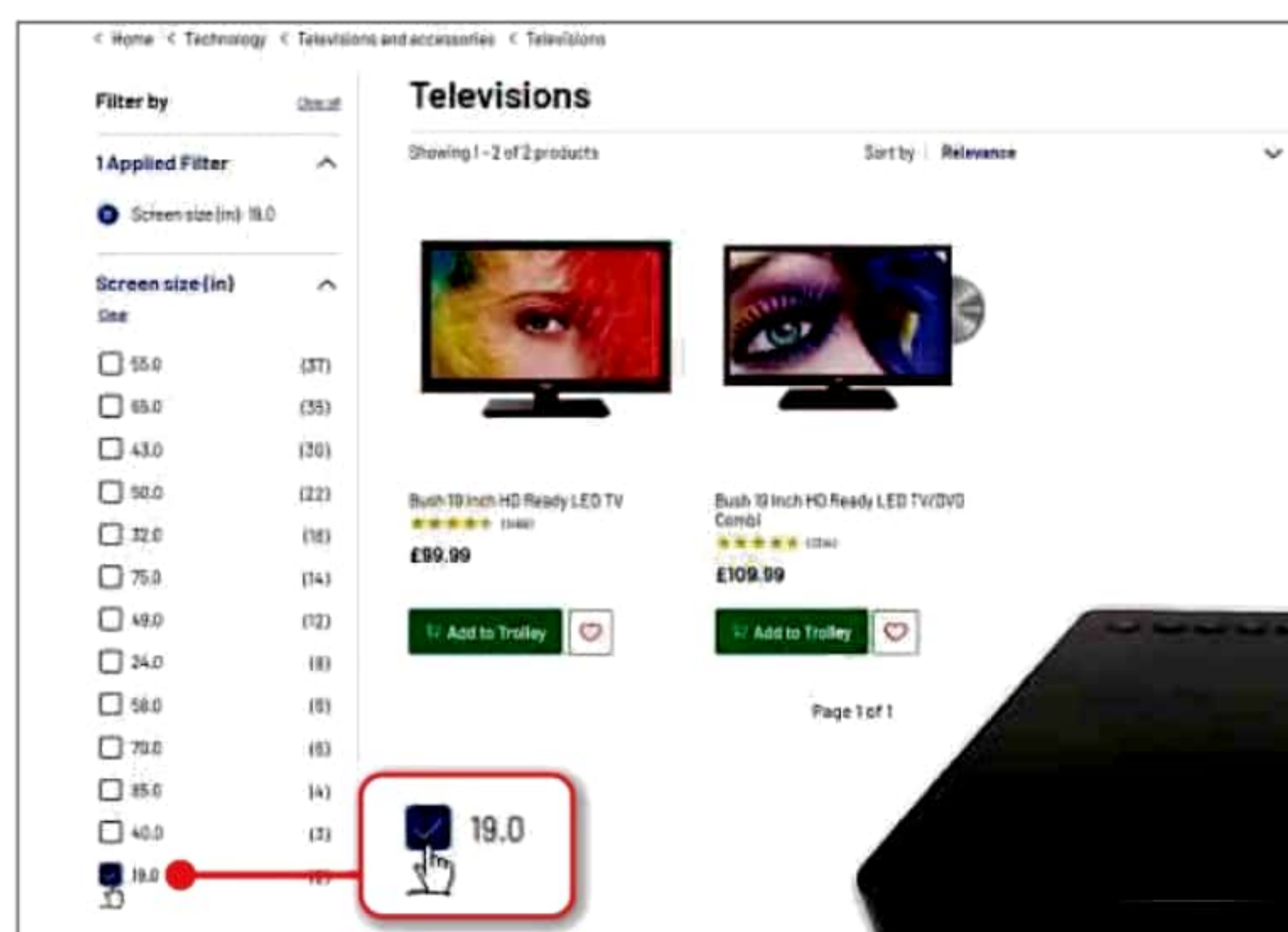
Can I turn a monitor into a TV?

Q Issue 590's News story about an old TV knocking out a village's broadband resonated with me, as my old bedroom TV has finally died. This was fed through a Freeview digital box. On looking for a replacement I could find nothing smaller than 32in models, but I don't have room for anything larger than about 20 inches. Would it be possible to use my existing digital box with a separate monitor?

Brian Hillier

A It might be possible but it's unlikely to be practical or economical.

We don't know your specific digital box but if it has an **HDMI** output (pictured right) and you have a monitor with an HDMI input, then you'd be able to get Freeview pictures on the monitor. However, unless it also has built-in



19in TVs are available from retailers such as Argos (left). The HDMI output on a digital box (below)



speakers then you're not going to get any sound – and it's rare for basic Freeview digital boxes to offer separate audio outputs. You could buy a monitor with speakers and a digital box with external audio outputs, but it's all getting a bit Heath Robinson, not to say costly.

Besides, there are smaller TVs on sale, but you do have to go looking for them. A

glance at the Televisions section of the Argos website (www.argos.co.uk), for example, might make you think 32in sets are as small as they get. But click the 'Show more' link and you'll see tick boxes for smaller sizes: just click one to see what's on offer (see screenshot above left).

Is Magical Jelly Bean risky?

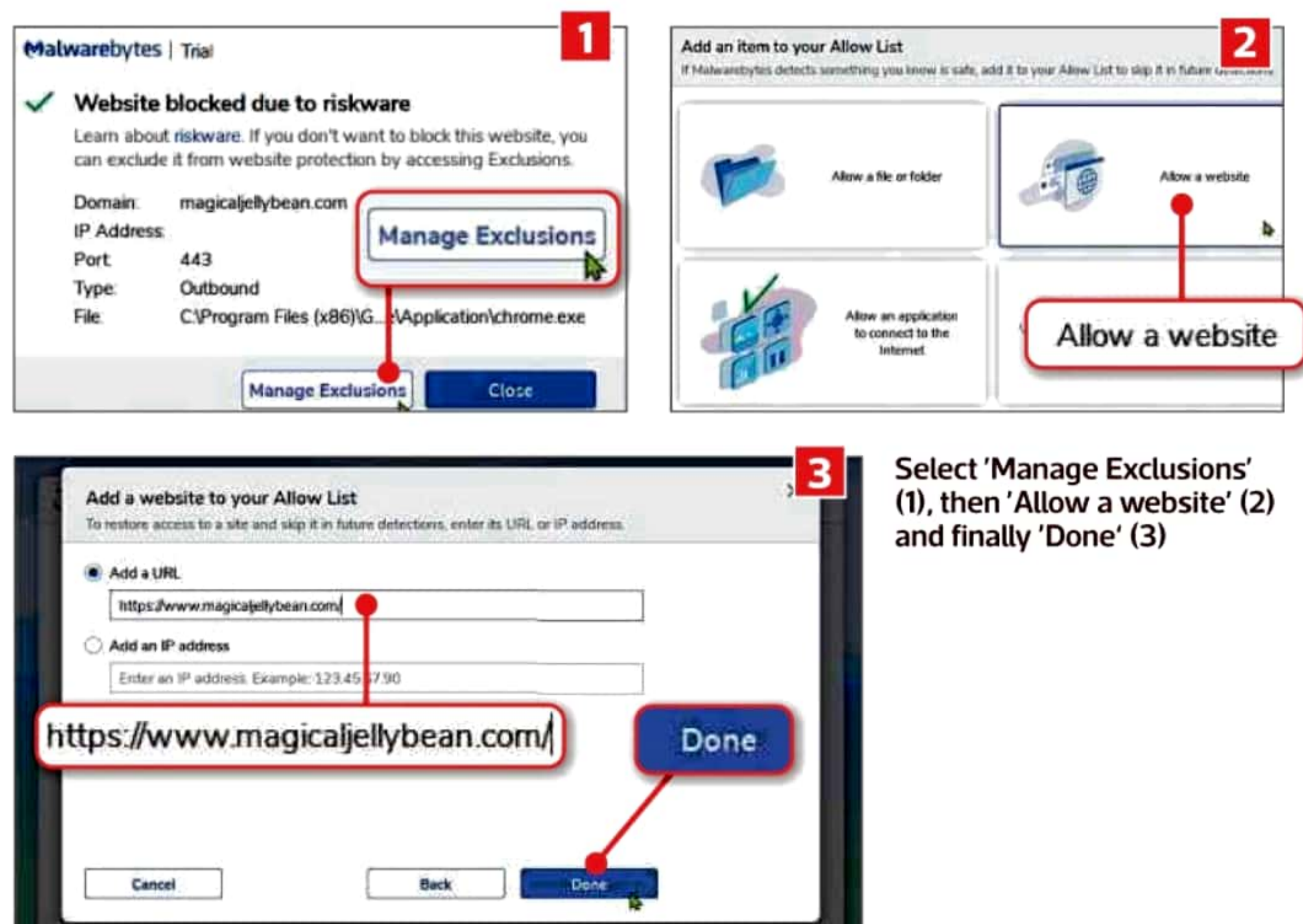
Q I wanted to try Magical Jelly Bean Keyfinder, which I've seen recommended in *Computeractive* numerous times. However, when I visited the website (www.magicaljellybean.com) my Malwarebytes security software warned me that it'd blocked the website due to 'riskware'. Should I be worried? If not, how do I get to this tool?

Glen Chapman

A The security industry has a giant bucket filled with curious and colourful terminology. Riskware is just one of the many in that container.

The particular 'problem' with Magical Jelly Bean Keyfinder – not to mention the website that hosts it – is that it does exhibit behaviours that could indeed be considered dodgy. After all, it literally hunts down and then displays information that is otherwise hidden by your PC's operating system.

The same is true of several of the other tools available for download



Select 'Manage Exclusions' (1), then 'Allow a website' (2) and finally 'Done' (3)

from the same website.

That's why Malwarebytes stands in your way: it's alerting you to the fact that the website contains programs that could be considered risky.

That is true, but you know what the programs do and the 'risks' they represent, so you understand that there's

not actually any risk to you. Here, then, you can tell Malwarebytes that you wish to proceed. To do this, first click Manage Exclusions **1** followed by 'Allow a website' **2**. Now, if not already filled in, type <https://www.magicaljellybean.com> into the 'Add a URL' box and click Done **3** – and that's that.

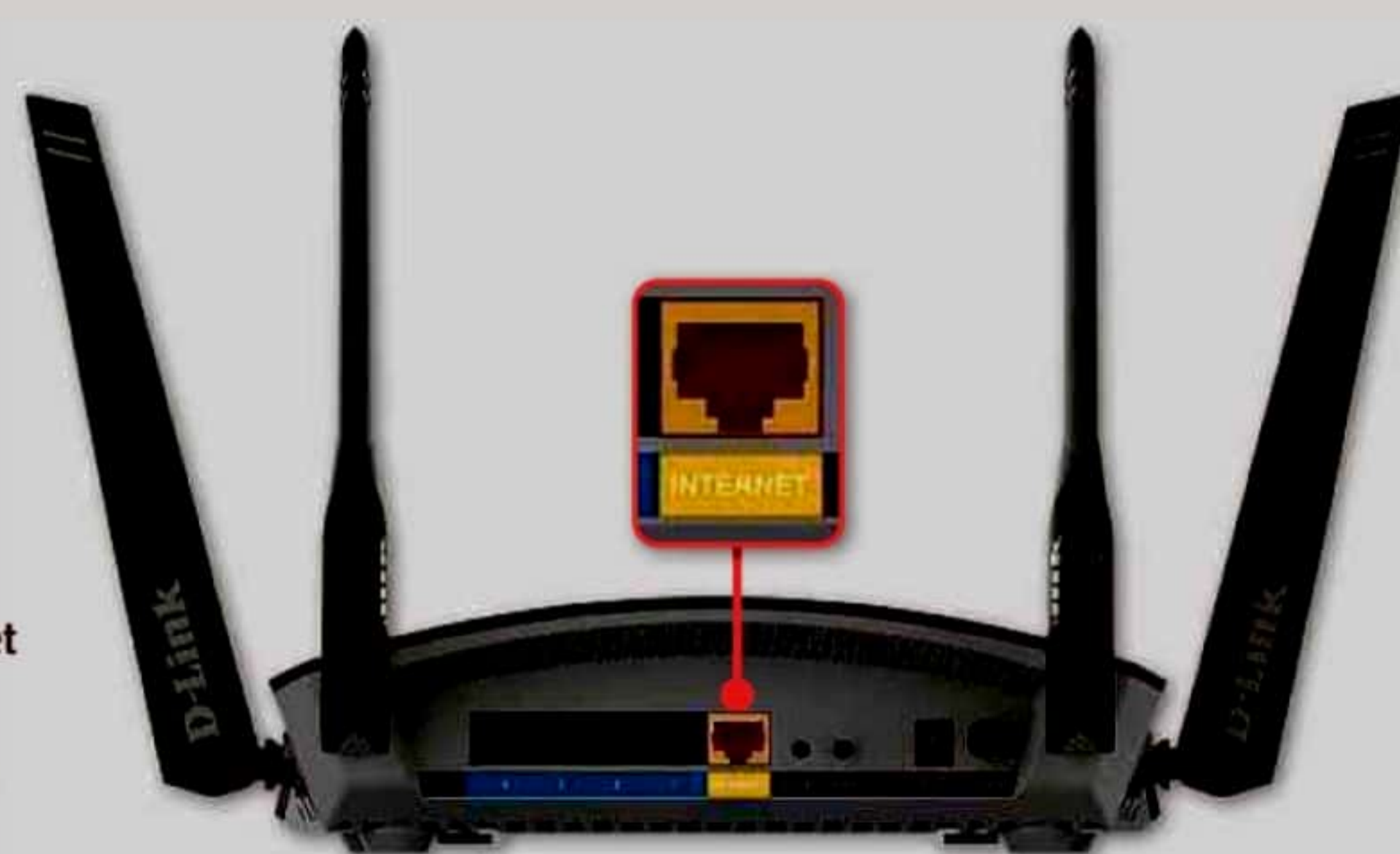
How do I connect my new router to the internet?

Q I've recently bought a D-Link DIR-1960 router. Unfortunately, there are no instructions to say what type of cable I need to connect the internet port to a phone splitter in order to access broadband. Local shops have been unable to assist and I am thoroughly confused by the many options there seem to be via the internet. My broadband supplier is TalkTalk, should that have any significance.

Tim Goodwin

A We fear you're unaware that the model you've bought is a standalone router, meaning it lacks an ADSL modem. As such, it cannot be plugged directly into a phone line via an ADSL filter/splitter. Routers supplied by ISPs such as TalkTalk, basic though they tend to be, do include a modem: that's why they can be used to

Connect an Ethernet cable from your modem-router to the D-Link's yellow internet port



connect directly to an incoming broadband service.

However, your new router needs to be connected to another device that's already connected to the internet. That might not be the answer you were expecting: you've purchased a product that does not directly connect to a broadband service.

So, what's the solution? Well, we don't know what router TalkTalk supplied but many can be switched into 'modem-only' mode. In this manner, you can connect

your fancy new router to your old one, which will do the dull-but-essential job of connecting to your broadband service. Launch your web browser, type your current modem-router's IP address into the bar at the top – typically 192.168.0.1 – then look through the settings for an option to enable modem-only mode.

Now connect an Ethernet cable from your modem-router to your D-Link's yellow internet port (pictured above), and you're good to go.



WHAT'S THE DIFFERENCE BETWEEN...

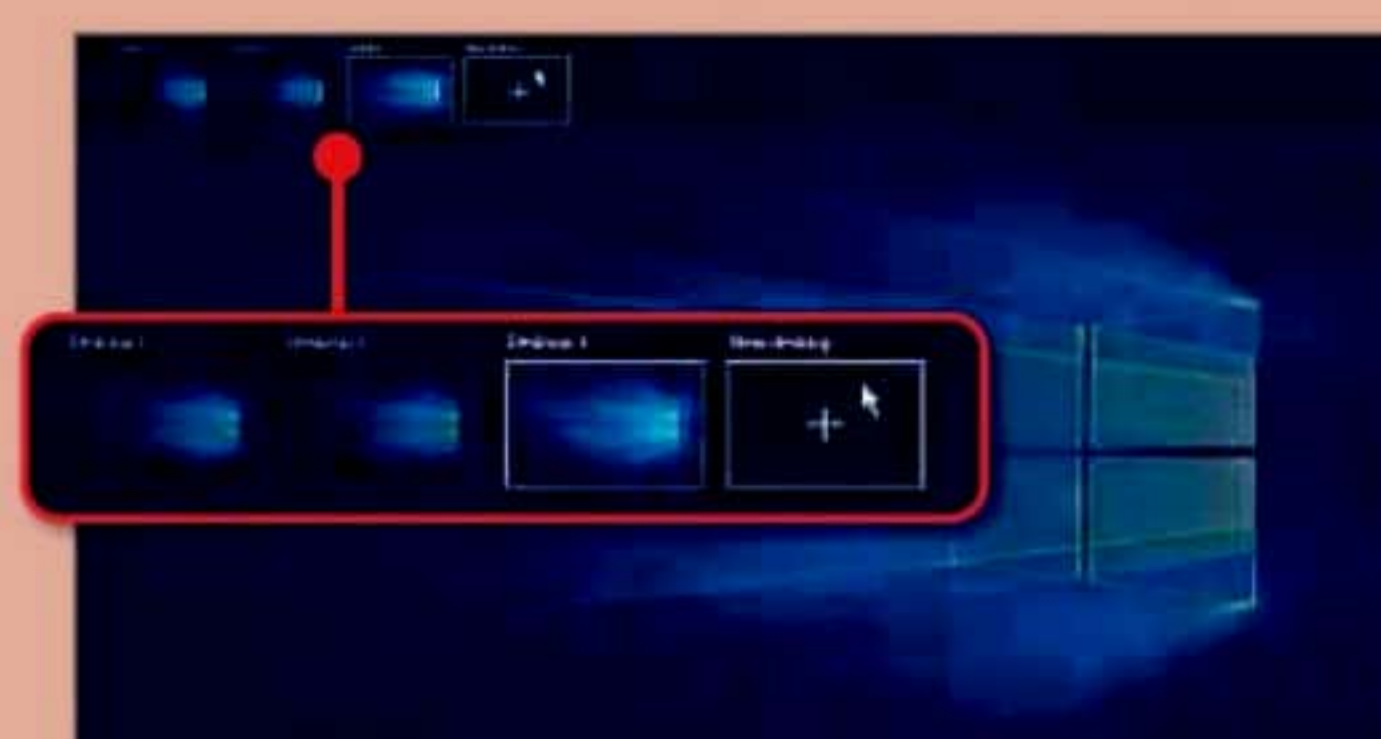
Virtual PCs and virtual desktops?

Q I've read your recent articles on virtual PCs and find the idea interesting, if perhaps a bit much for me. However, the other day I was noodling about in the Windows 10 Settings screen when I stumbled upon a reference to virtual desktops, under the 'Multi-tasking' section in the System page (see screenshot far right). Is this Microsoft's version of what you've been talking about? If so, what would be the benefit of using VirtualBox over whatever system is built into Windows 10?

Charles Newman

A The 'Virtual desktops' feature you found is nothing to do with the true virtualisation enabled by VirtualBox and similar tools (including Microsoft's own Hyper-V tool that's included in the Pro and Enterprise editions of Windows 10).

A virtual PC is effectively an entire computer, albeit one that exists only in software (hence, virtual). It is 'sandboxed' from your real computer, so whatever you do inside a virtual PC cannot affect

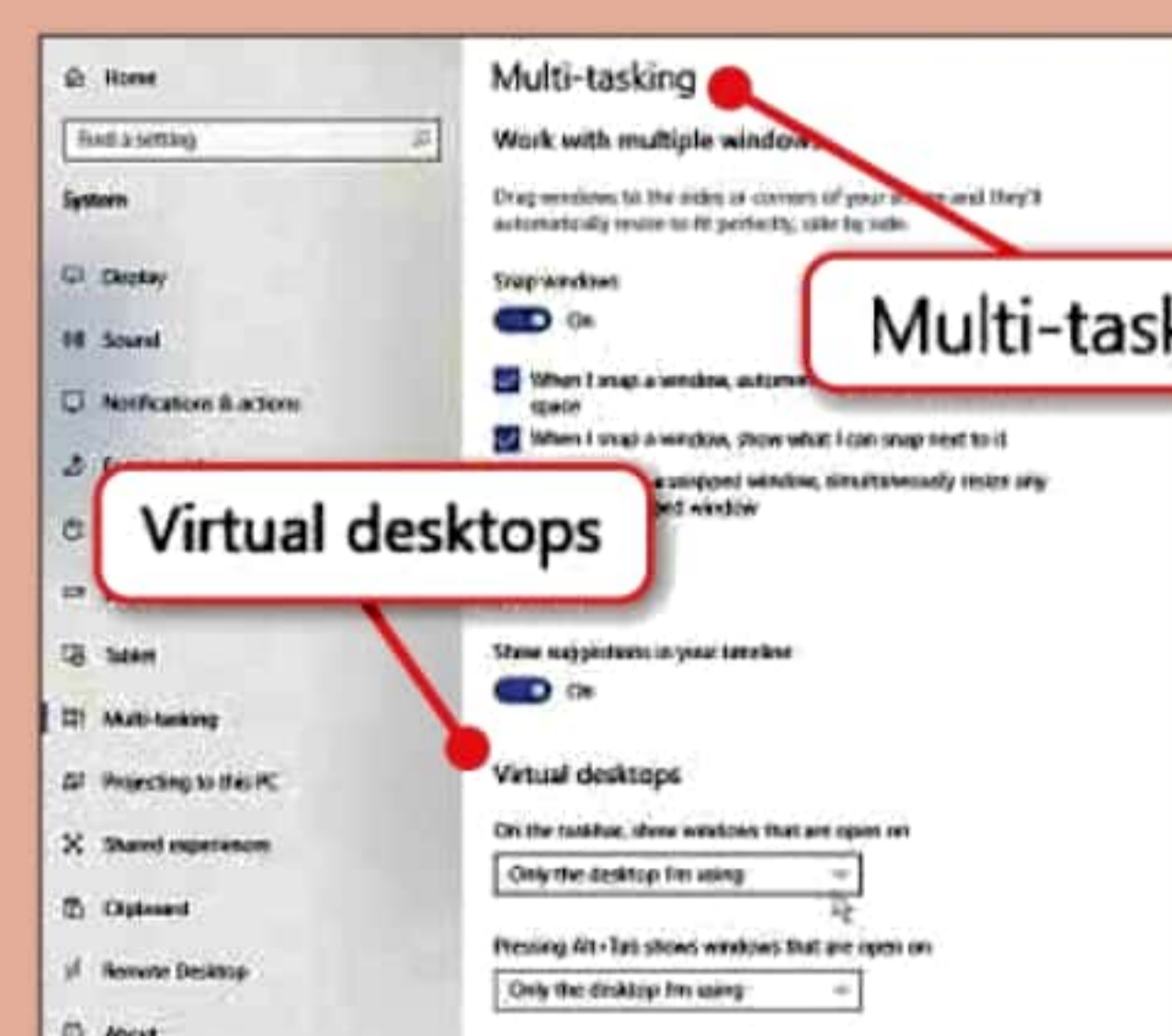


'Multi-tasking' controls how you see taskbar apps and switch between desktop windows

the real computer that hosts it. Add or remove apps, mess around with system files or infect it with a virus, just for thrills – it doesn't matter. It's a virtual PC, and distinct from your real, physical one.

By contrast, Windows 10's Virtual Desktops feature is little more than a tidy way of grouping apps that you might use for different purposes. You can open as many virtual Windows desktops as you want, by clicking the Task View button on the taskbar (it looks a bit like a film strip), followed by 'New desktop'.

Each one looks like your normal desktop, but can have a different set of apps opening and running separately. So, for example, you might set up one virtual



desktop to run all your favourite photo tools and websites and a different one for word processing and research. However, these are little more than digital partitions for organisation or task focus: each of these desktops would be able to access all the same files and folders on the PC.

Incidentally, the settings you found within System and then Multi-tasking control how you see apps on the taskbar or switch between windows within the various virtual desktops (see screenshot above left).

Want to know the difference between technical terms? Email noproblem@computeractive.co.uk

How do I use USB 3.0 in USB 2.0?

Q Both my TV and DVD player have USB 2.0 ports. Could you please advise what kind of converter or adapter I could purchase that would let me use USB 3.0 drives in these ports?

John Hunter

A The answer here is most likely that you don't need an adapter. The USB 3.0 standard is backwardly compatible with USB 2.0, so you can insert a USB 3 stick into a USB 2.0 slot and it'll work – albeit it at the slower speeds of USB 2.0.

However, it's possible that you're getting confused by the physical port shapes. The USB 3.0 (or 3.1) technical standard is sometimes mistaken for USB Type-C (USB-C) physical connector, which is the modern, smaller and reversible port. Obviously, such sticks are incompatible with the older, rectangular



The Acessorz adapter (left) can connect a USB Type-C drive (such as the SanDisk drive, right) into a USB 2 Type-A port

Type-A port that's traditionally associated with USB 2.0 and earlier. So, if you have a USB-C stick that you want to insert into a USB 2.0 Type-A port, then you will indeed need an adapter – like the pictured model from Acessorz (around £7, www.snipca.com/36368).



Next Issue

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- Can I uninstall all these Visual C++ apps?
- What's wrong with my laptop's cooling system?
- Why can't I FaceTime?
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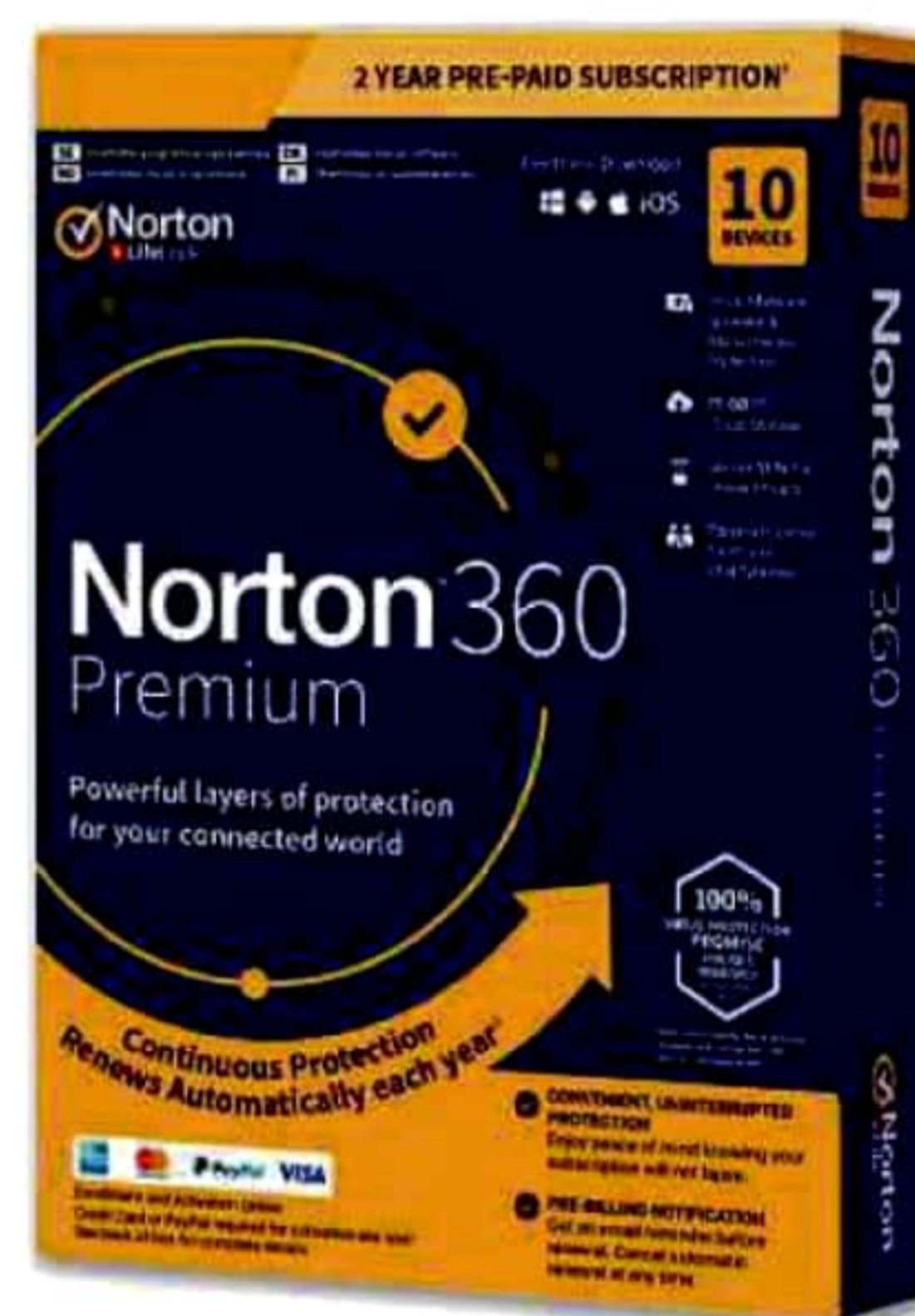
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How do I block the BBC?

Q I followed the 'How to... Block adverts everywhere without using plug-ins' article in Issue 588. However, I couldn't block the BBC. The Hosts file appears to save correctly, as my amendments are there when I reopen it. But until I prove to myself that I can block the BBC URL, I'm unable to progress any further with the Workshop. Is there anything that I am overlooking?

Joseph Simpson

A We have an inkling that you may have misunderstood why we highlighted the hash symbol, referenced in Step 2. We commented that the hash symbol is important, but we did so precisely because its inclusion in the examples contained in the Hosts file means everything following would be ignored.

So, the instruction in Step 3 omitted the hash symbol. However, we fear that it's possible yourself and some other readers took our comment in Step 2 to mean that the hash was important and therefore should be included. If this is the case and you typed, say, `# 127.0.0.1 www.bbc.co.uk` as the first line of your Hosts file, then this would simply be ignored by Windows – meaning your browsers can still reach the website.

To recap, then, the hash symbol is important in that it tells Windows to ignore whatever comes next. That's necessary for the examples contained in the Hosts file but needs to be removed for subsequent

entries. So, the first line of your hosts file, after all the lines preceded by hash symbols, should simply be `127.0.0.1 www.bbc.co.uk`. You should now be able to continue with the Workshop. If not, email us your Hosts file so we can take a look.

Where's my mouse cursor colour option?

Q I read your reply to Eric Cannon in Issue 591's Problems Solved (page 66), about changing the colour of the mouse pointer. I didn't know this was possible. Like Eric I am in my 70s with visual problems so tried to do this. However, there's no colour option box to select. On my PC all I see is the white or black options. I'm using Windows 10, so why has my PC not got this option?

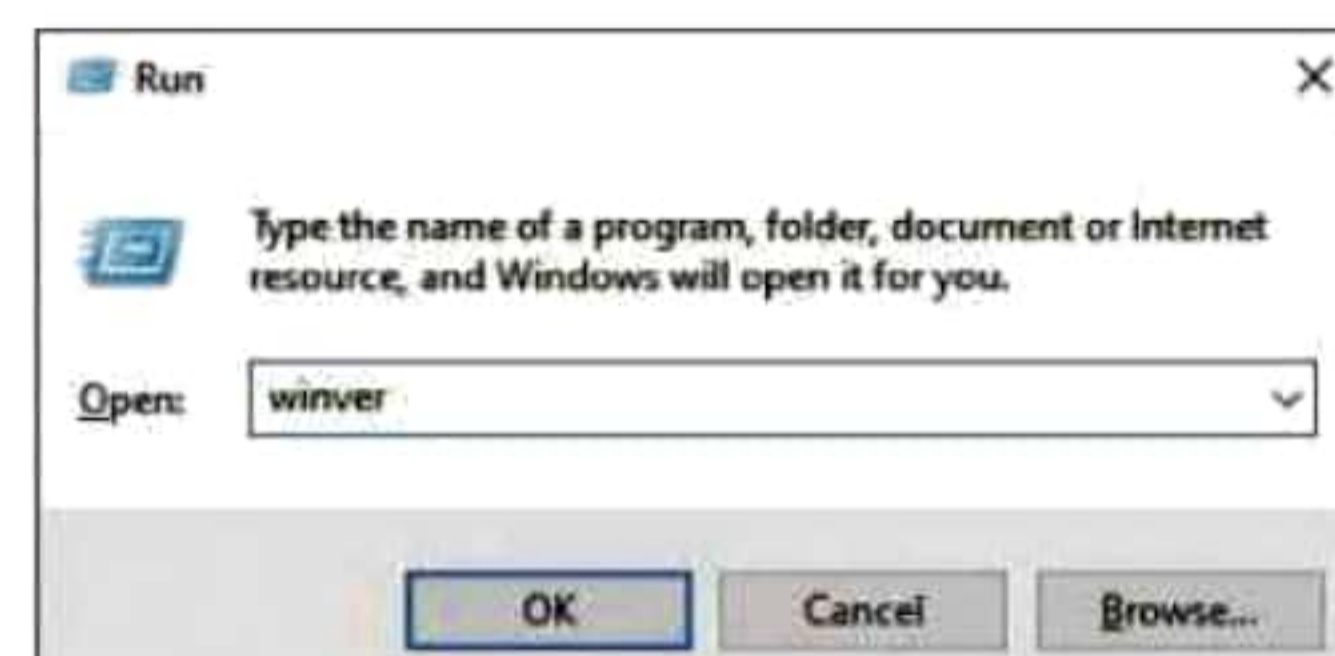
Jim Fraser

A The feature we described was introduced with the Windows 10 May 2019 Update (1903). If you're not seeing it then the most obvious explanation is that, for whatever reason, your copy of Windows 10 has not made it past the October 2018 Update (1809).

That would certainly be unfortunate but it's not impossible. As we've noted before, not every PC will be forever compatible with all future Windows 10 updates. Microsoft intentionally prevents PCs containing incompatible hardware from downloading the newest updates. Sometimes those conflicts are eventually fixed, and Microsoft will allow affected computers to proceed with the updates, but sometimes they're not.

We're afraid those machines are in effect left to fester on the last compatible version of Windows 10. A quick way to check where you're at is to press Windows key+R, type `winver` in the Run box (see screenshot above right), then press Enter. If you're not on 1903, check for updates by clicking Start followed by the Settings cog, then 'Update & Security' followed by Windows Update.

However, we're afraid that if your PC



Type **winver** into the Run box to quickly find out which Windows 10 version you have

hasn't by now moved on from 1809 – a version of Windows 10 that Microsoft stopped supporting in May this year – we fear it's reached the end of the road for Windows 10 updates. Your current version of Windows 10 will continue working, but officially it won't receive any more feature or security updates (though we think Microsoft will actually continue to issue the latter for a good while yet).

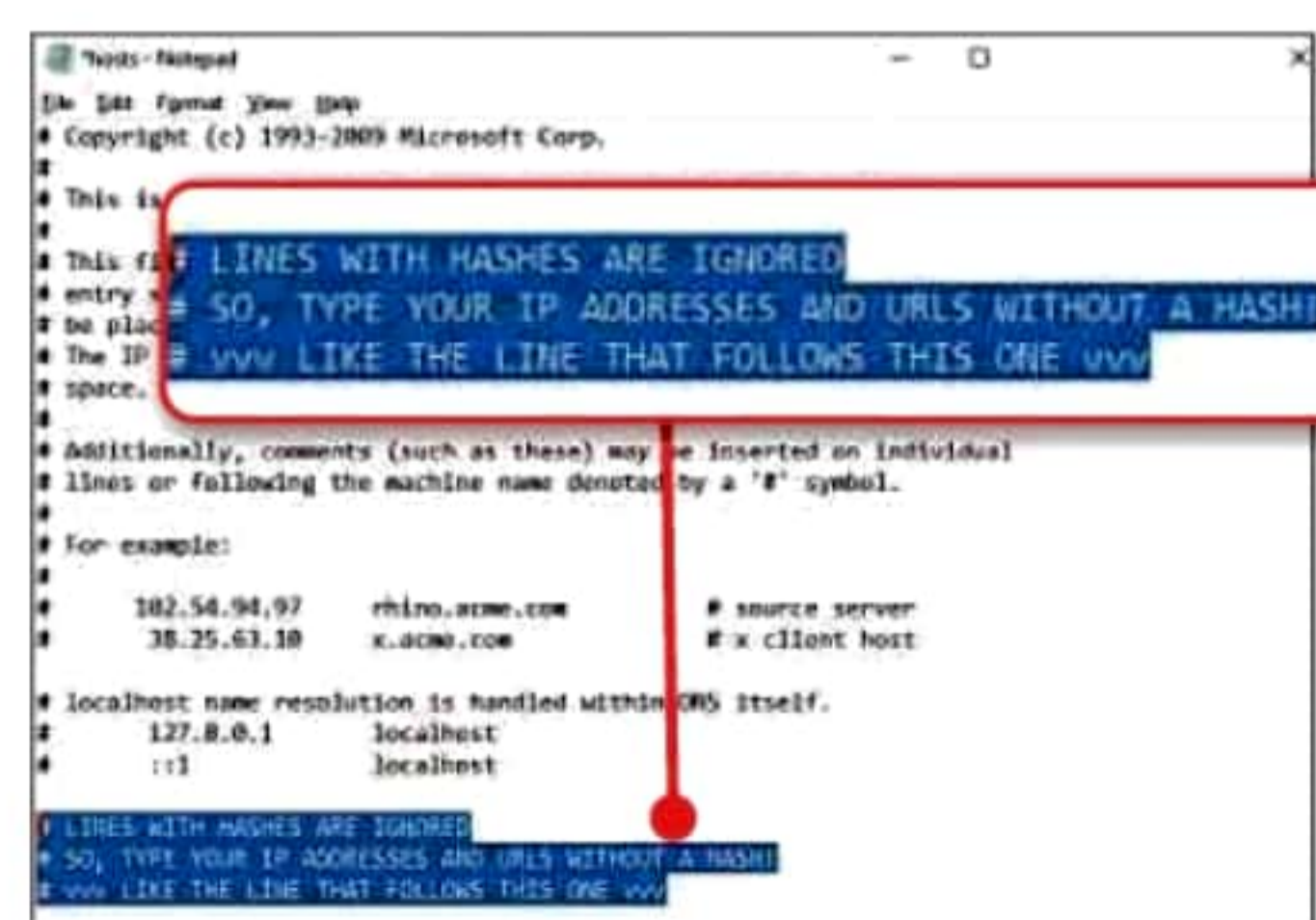
Why won't Calibre run?

Q I've used the ebook management tool Calibre for some years without problems, and I agree it's an excellent program. Having read Best Free Software in Issue 591 (page 18), I decided to update to Calibre 5.1. However, the program then wouldn't run. I've since also tried updating to Calibre 5.3 without success. Luckily, I managed to reinstall version 4. Is there a problem with the latest update?

John Brook

A Yes and no. This is actually a long-running quirk of Calibre, for which there are a variety of possible remedies. You'll find the full list at www.snipca.com/36377 but one of the most common causes is security software preventing the first run of any new version. We suspect this is because of how Calibre catalogues your ebook files.





The usual fix, then, is to briefly disable your security software while you install and first launch the latest version of Calibre, before enabling once more when the program is up and running.



Ensure that any URL you want to block is preceded by a hashtag in the Hosts file

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3		Sky: Superfast Talk and Line Rental	£25.00	18 months	59Mbps avg. speed	∞ unlimited	£300.00
4		Virgin Media: Big Bundle + Fibre Broadband + Weekend Calls	£29.99 (£62 after 12 months)	18 months	108Mbps avg. speed	∞ unlimited	£359.88

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Ofcom
Broadband Genie's helpline is powered by Simplify Digital, the Ofcom-accredited switching service

THE FINAL ISSUE OF WEB USER...

Yes, we regret to say that after 20 years and over 500 issues, our sister title *Web User* is logging off for the final time. But in this special issue it's saying goodbye by looking ahead 20 years to predict the technology that will soon revolutionise our lives, and explains how you can prepare for it.

The *Web User* team would like to thank everyone who bought the magazine since it launched in March 2001.

We're going to miss you.



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Jargon Buster

1080p Common type of high-definition video: 1920x1080 pixels.

3G/4G/5G Technologies that deliver faster mobile broadband.

480p Standard definition resolution, also known as 'DVD quality'.

4K Video with a resolution of at least 3840x2160 pixels.

802.11ac A standard for wireless networks that allows for much higher transfer speeds than **802.11n**.

802.11ax Wi-Fi standard with speeds up to 10 times faster than 802.11ac. Also called Wi-Fi 6.

Adobe RGB A wider colour space than sRGB.

ADSL A technology that converts a standard phone line into a broadband internet connection.

Benchmarking Comparing software and products with an accepted standard.

BIOS Software built into every PC that connects vital components.

Cast To send content from your PC to TV.

Core Units on a processor that carry out program instructions.

DDR4 The newest, fastest commonly used type of PC memory.

Delta E A measurement that shows how the human eye perceives different colours.

Dissipate Transfer heat from hot to cold objects or environment.

DisplayPort A new socket for connecting monitors.

Driver A file that tells Windows how to work with an external device.

Dual band A router that can work at two radio frequencies.

DVR Digital Video Recorder. A video recorder that uses hard drives instead of tapes or discs.

Emulator A program that makes one computer act like another, allowing it to run that PC's software.

Encode Convert media files to a new format.

EXE A program file designed to run in Windows.

File system Controls how your PC stores and retrieves data.

Fps Frames per second. Indicates level of gaming performance.

Function key The F1 to F12 keys on a keyboard. They can be programmed to perform specific tasks.

Gesture Finger movements on a screen that perform an action.

GHz Gigahertz. A measure of how many instructions a chip can process per second.

Gigabit Ethernet A very fast networking standard that can transfer data at up to 1,000Mbps.

Graphics card Component in a PC that produces the image on a monitor.

HDMI Connection that transmits high-definition video and audio.

HDR A camera that takes more than one photo with different levels of colour and contrast.

Heatsink A block of metal used to help dissipate the heat from a computer chip.

HTML5 Hypertext Markup Language used to create most web pages.

IP address A set of numbers used to identify computers and websites on the internet.

IPS A screen technology that provides wider viewing angles and more accurate-looking colours.

LAN Local-area network. A computer network in one place.

LCD Technology used to create almost all flatscreen monitors.

LED Light-emitting diode. An electronic device that emits light.

M.2 A standard specification for PC expansion cards and connectors.

MAC address A unique code that identifies any router.

Machine learning The science of teaching computers how to learn without further human input.

Map To connect a drive from one PC to a directory or folder on another.

MicroSD card A small type of memory card.

NVMe An interface that lets solid-state drives work faster.

OCR The process by which printed text is scanned and converted into documents that can be edited.

OLED A thin-film organic light-emitting diode used in computer displays and television screens.

Open source Software that can be modified by anyone.

Overclock Make a processor work faster to boost performance at the cost of requiring more power.

P3 A colour space that has a wider spectrum than sRGB.

Plug-in A small program that adds extra features to software or to your web browser.

Portable app Software that runs directly from a USB stick and doesn't need to be installed on a PC.

RAM Random-access memory. Used for data storage while the PC is switched on.

Ransomware Malware run by hackers who lock files on your PC and demand a payment to release them.

Read speed How long it takes a hard drive to 'read' data, and respond to it.

Refresh rate Measured in Hertz (Hz), the number of times per second that the image on your monitor is redrawn.

Refurbished A second-hand device that has been repaired by its manufacturer.

Response time How fast a coloured pixel turns to white and back again.

SATA Serial ATA. An interface for connecting hard drives to a PC.

SD card Secure Digital card. A popular type of memory card.

Smart EQ Audio technology in smart speakers that tweaks the sound to match your room.

sRGB A standard RGB colour space for monitors and printers.

SSD Solid-state drive. Storage that uses no moving parts.

Studio Driver Software from Nvidia that connects Windows and your graphics cards to specific creative programs.

Thermal throttling Reducing processor speed to prevent it overheating.

Thunderbolt A very fast port for connecting external storage to a PC.

Tweeter A speaker designed to produce high audio frequencies.

Two-factor authentication A system that uses two different means to identify the user, such as PIN and a password.

USB 2.0/3.0/3.1 Faster successors to USB.

USB-C A new connector that's reversible.

VoIP Voice over IP. The routing of voice conversations over the internet.

VPN Keeps all internet communication safe and private.

Waveform An image that represents an audio signal or recording.

Wi-Fi card Adds Wi-Fi connectivity to a computer.

Woofer A speaker designed to produce low-frequency bass sounds.

Write speed How long it takes a hard drive to save data.

Zigbee An alternative to Bluetooth and Wi-Fi for connecting low-powered devices around the home

ZIP file A file that contains compressed documents or files.

Easy when you **Know How**

Tired of being told he sounds like an ageing Mafia don, **Daniel Booth** tries to...



Add subtitles to video chats

Will this turn out to be the year our morning pleasantries changed forever? Instead of greeting colleagues and friends with a passing reference to how unseasonably hot/cold/wet/dry it is, we now start conversations with “Can you hear me?”, as our video chats stutter into life. We then have to work out how to unmute ourselves and switch on the video camera, before adopting a position that doesn’t make us look like we’re squatting in a cave.

“

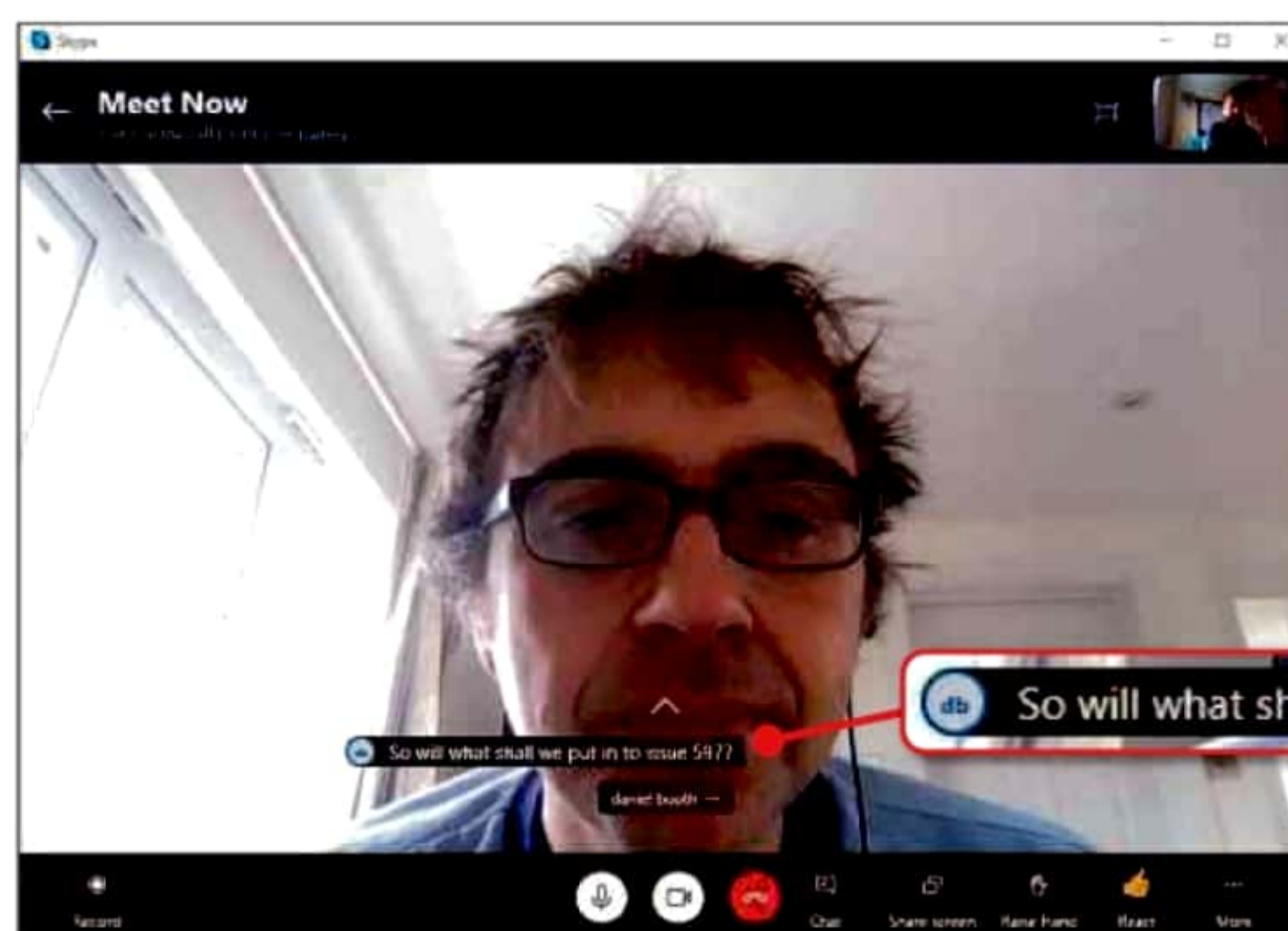
Unless you’re eating a fish-finger sandwich or cleaning your teeth (or both), Google Meet should understand you

”

But that’s the easy bit. Not sounding like Marlon Brando in *The Godfather* is harder. Apparently, I mumble in video chats, and have been told to speak more clearly by almost everyone, including my consigliere (and you wouldn’t want to upset him).

I considered searching for a local ‘Enry ‘Iggins to give me elocution lessons, but that would presumably also be by video – or in person while wearing a face mask, and they make me sound even more mumbly. Instead I tested whether I could add live subtitles to chats.

Skype makes it sound easy. You just need to click the More button (three horizontal dots) at the bottom right of

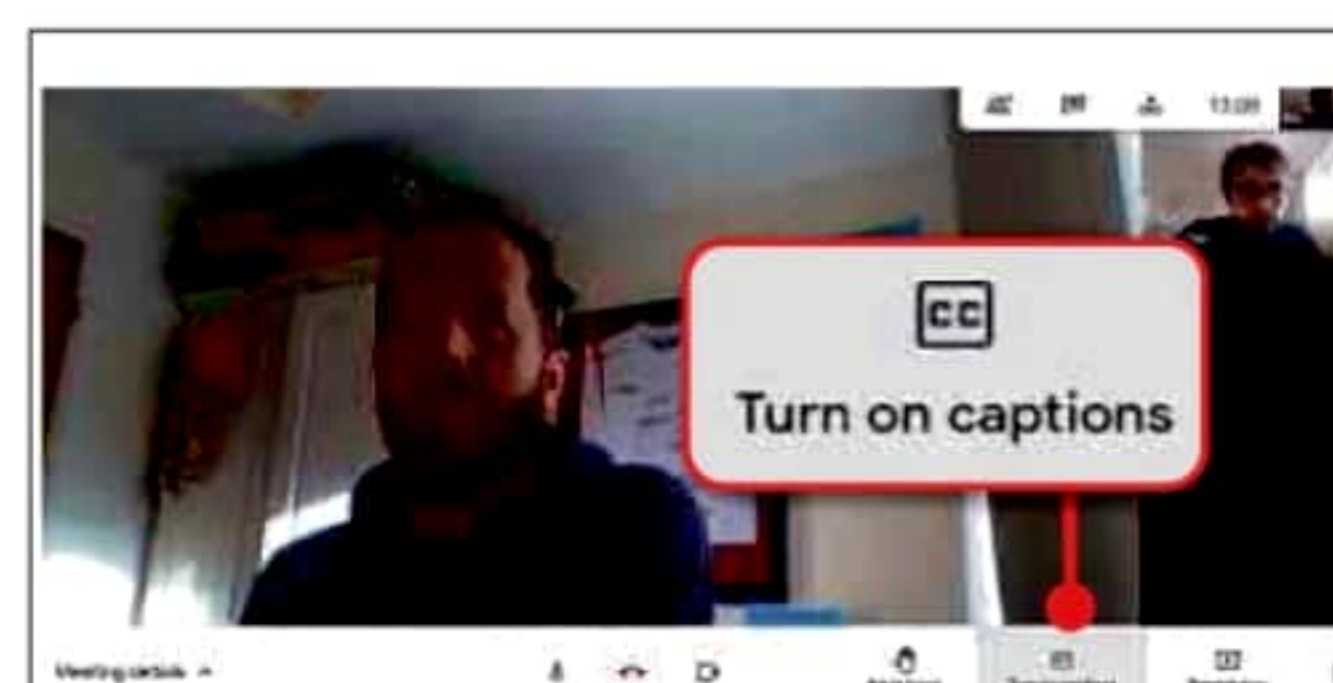


Skype understands Daniel, but only if he talks v-e-r-y s-l-o-w-l-y

your chat screen, then select ‘Turn subtitles on’. You then need to get your talking speed just right so Skype doesn’t garble your words. I spoke to my Deputy Editor Will Stapley for our daily chat about what’s coming up in *Computeractive*. I started at my normal talking speed. Skype was flummoxed. The question ‘What’s the best free software next issue?’ appeared on Will’s screen as ‘What’s best to soft wear in tissue?’

After a few minutes we worked out a speed that Skype understood: unnaturally slow. It requires the same deliberate clarity as when you talk to an automated phone service (“speak to an advisor”), or perhaps the same patronising slowness young shop assistants adopt when talking to someone who dares to be more than 10 years older than them.

As our screenshot above shows, I made myself understood – just about. Skype didn’t capitalise the W of ‘will’, but we’ll let that pass. Halfway through our chat I



Click ‘Turn on captions’ and Google Meet should be able to decipher what you say

spilt some tea on my desk and let out a little swear word. Skype didn’t like this, asterisking it on Will’s screen. We then spent a silly 10 minutes experimenting to find out which words Skype considers rude enough to asterisk.

Childish fun aside, Skype’s subtitling isn’t good enough for brisk conversations, so we tried Google Meet (<https://meet.google.com>) instead. The difference was instantly obvious – it was faster and more accurate, and reacted well to my normal speaking speed.

To turn them on though, you need to know that Google calls them ‘closed captions’ not subtitles. It sounds jargonny, but it’s the proper name for on-screen text showing what’s being said. Strictly speaking, subtitles are only when you translate between languages, though to me it feels like the right term. The word ‘caption’ brings to mind newspaper competitions featuring photos of politicians holding vegetables in suggestive poses.

None of that really matters of course. You just click ‘Turn on captions’ at the bottom (see screenshot left) and unless you’re eating a fish-finger sandwich or cleaning your teeth (or both), Google Meet should understand you mist of the thyme – sorry, I mean most of the time.

Need help with your video chats? Let us know: noproblem@computeractive.co.uk

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