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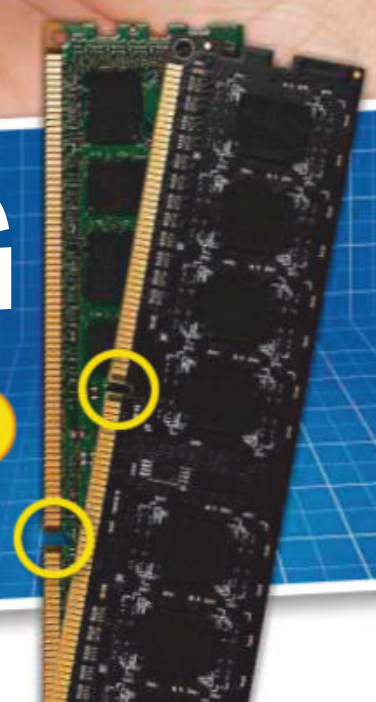

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WELCOME

From the Editor

USB sticks have been the unsung heroes of our 600 issues. Other devices grab the headlines, as laptops get lighter and phones get smarter, but these pocket-sized gizmos remain as quietly popular as ever for reasons that stretch far beyond transferring files. In our Cover Feature Will Stapley explains some of the cleverest new ways you can use them.

To celebrate reaching 600 not out (beat that, Joe Root), we've got a special competition. Turn to page 31 and you'll see we're giving away £600 worth of Amazon vouchers to one lucky reader. That's enough to buy over 100 USB sticks, though we suspect your cupboards and drawers are already bursting with them.

We hit 600 in strange times, but one thing is unchanged: we couldn't do this without you. I know that's a cliche, but your support is invaluable. Every letter you write, tip you send, problem you pose – they all help to make *Computeractive* a continuing success. Please keep them coming.

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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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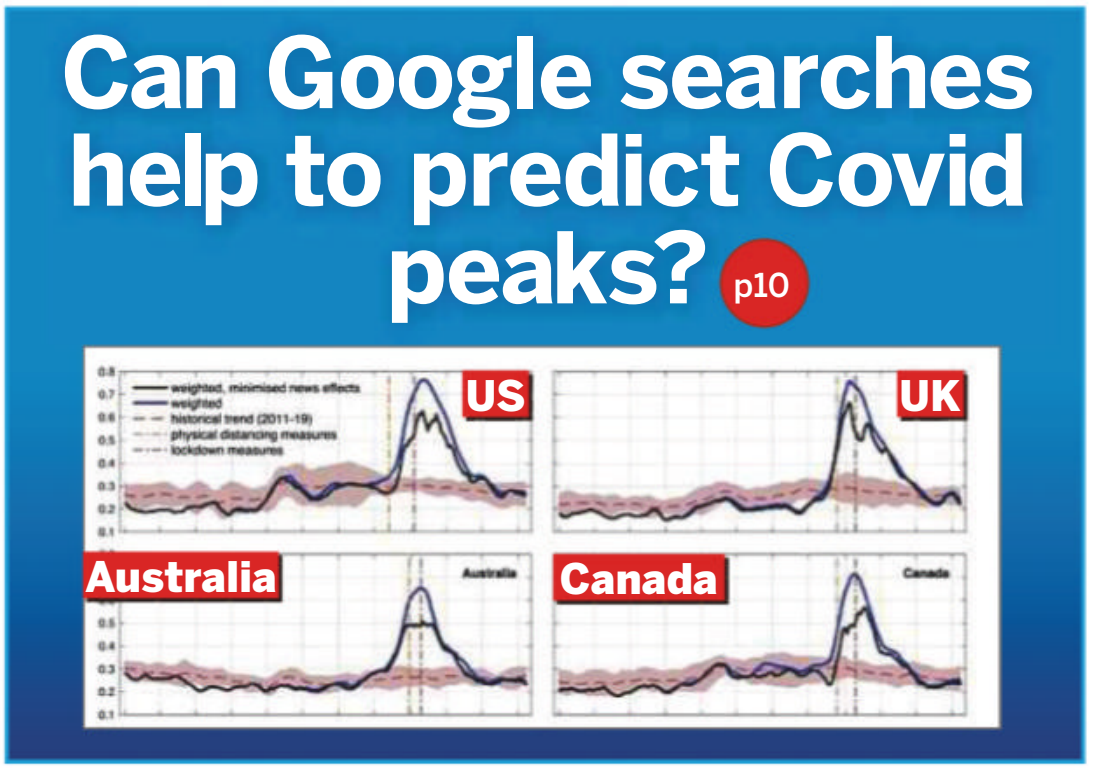

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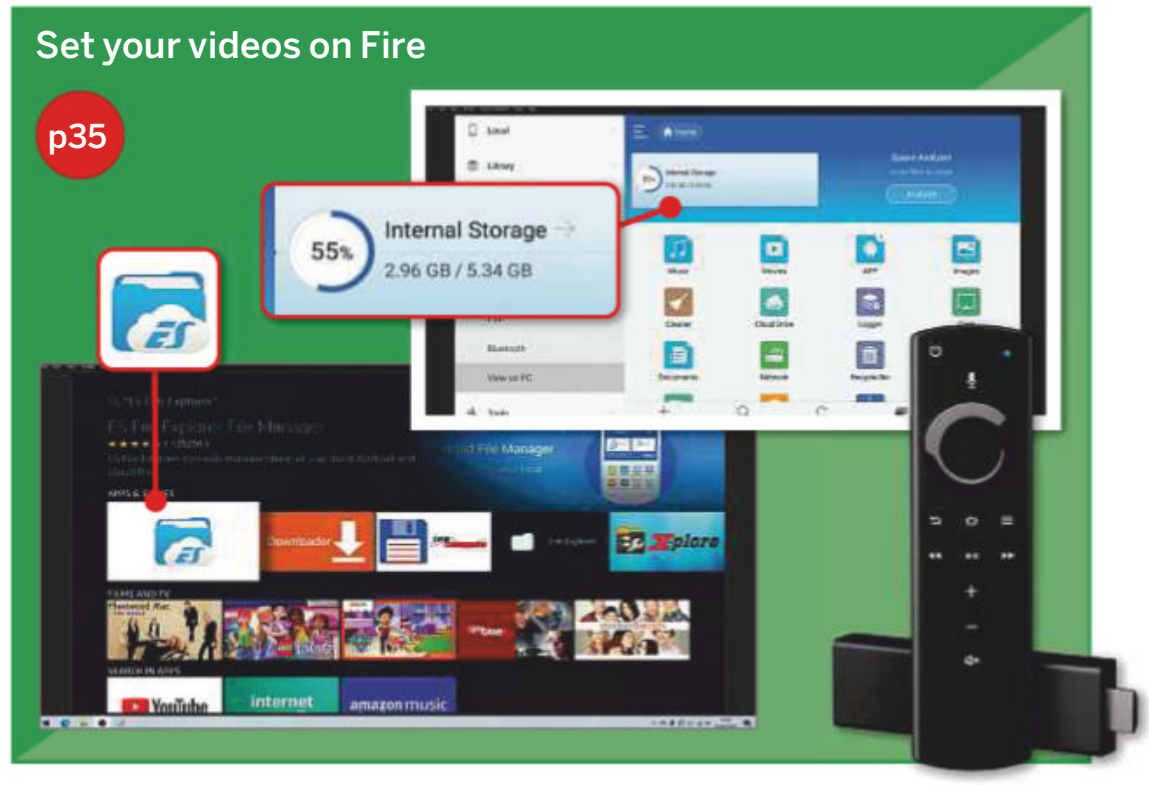


Hack Your USB STICKS

The 12 SMARTEST things you didn't know you could do with them

May 2020 Update finally ready for *all* computers

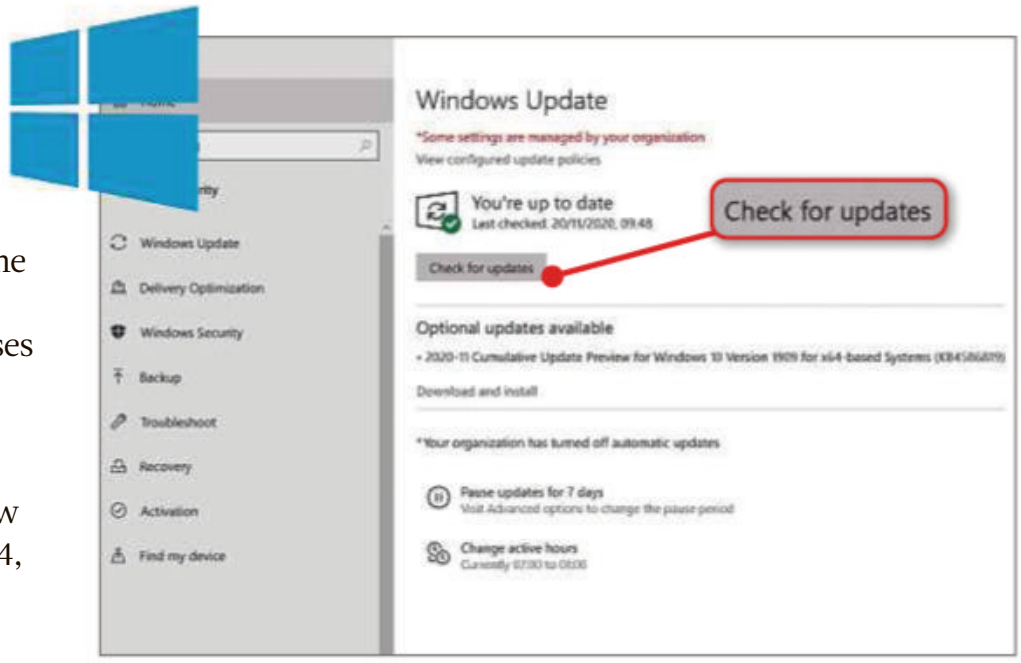
Microsoft has said that version 2004 of Windows 10, released in May 2020, is now stable enough to be installed on all computers.

It announced on 3 February that the 2004 Feature Update had reached the "broad deployment" phase. This means that Microsoft thinks it's reliable enough for everyone to install, including organisations and businesses as well as home users.

If you're still running version 1909 (released in November 2019), you'll now be prompted to install 2004, unless Microsoft blocks it because it thinks your hardware isn't powerful enough to handle it, or that it might clash with your computer's settings. These blocks are commonly called 'compatibility holds' or 'safeguard holds'.

Previously, to get version 2004 you had to click the 'Check for updates' button in the Windows Update section of Settings (see screenshot), or by installing it using Windows Update Assistant (www.snipca.com/37296).

The decision doesn't affect computers already running version 20H2, which was released in October 2020. The next update for these computers will be 21H1, reported to be coming in June.



It took over eight months for 2004 to reach broad deployment, which is the longest gap for any Windows 10 feature update, beating the six and a half months for version 1909. In previous years the gap averaged around four months.

Microsoft seems to have extended these periods because of the disastrous release of the October 2018 Update (1809), which had to be suspended following complaints that it was wiping files from computers. The company now appears to be waiting longer before approving the update for all machines, giving it enough time to fix any problems that may emerge.

However, delaying broad deployment also shortens the period you might be able to use the latest version before Microsoft stops supporting it. For example, it's due to end support for 2004 on 14 December, 2021 – only 10 months after it was made available to all.

Microsoft has also reminded users that it will stop supporting version 1909 on 11 May, leaving them to decide between upgrading now to 2004, or waiting for 21H1.

Version 21H1 is expected to be a minor feature update, containing small fixes and improvements to existing tools. A more substantial update, possibly including a redesign of Windows 10, is expected in the autumn.

WHAT WE THINK

The great US physicist Richard Feynman once said: "If you think you understand quantum mechanics, you don't understand quantum mechanics". We're tempted to say the same thing about Windows updates. Millions of people have been happily using version 2004 for months without realising that Microsoft still hadn't given it the final seal of approval. But many others still running 1909 without problems will wonder why this approval took eight months. Back in 2019 Microsoft hinted that it would abandon the 'broad deployment' classification, before changing its mind. It was right the first time. It's confusing and should be scrapped.

MONITOR YOUR LAPTOP BATTERY

You'll soon be able to check how hard your laptop's battery was working during a particular time of the day. Microsoft has updated the Battery page in Settings to include battery performance for the past 24 hours (see screenshot) and seven days. It's in Windows 10 preview build 21313, available only to Windows Insiders (https://insider.windows.com), but should come to the full version in a forthcoming feature update.

You'll like this... The UK ranks sixth on a new global table of 'internet accessibility' (www.snipca.com/37350)

but not this... The 'Is that you?' Facebook scam has spread from Germany to the UK (www.snipca.com/37351)

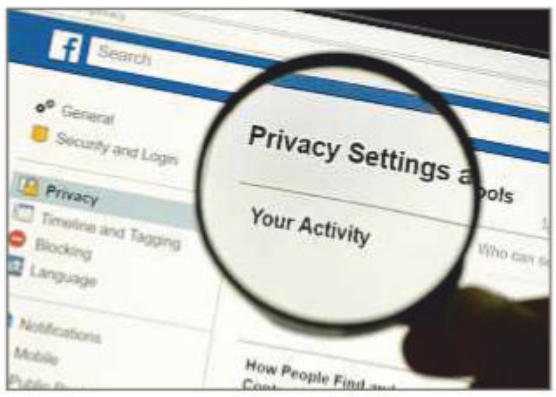
Facebook sued for ‘losing control’ of personal data

Facebook is being sued in a mass legal action for “losing control” of the data of about one million people in the UK.

The lawsuit, filed in the High Court, claims that Facebook’s privacy settings allowed an app called This Is Your Digital Life to gather not only users’ information, but also details about their friends.

This Is Your Digital Life was a personality quiz created by US data scientist Aleksandr Kogan. It allegedly transferred information on 87 million people worldwide – one million of whom were in the UK – from Facebook to British political consultancy firm Cambridge Analytica.

The lawsuit alleges that the app had access to users’ information between November 2013 and May 2015, without them or their friends



knowing. It claims the app gathered information including name, gender, location, tagged photos and pages liked.

Journalist and writer Peter Jukes has brought the case on behalf of himself and other affected users in England and Wales. He’s being represented by law firm Hausfeld, which hasn’t revealed the amount users might win in compensation if the case is successful.

It’s using Civil Procedure Rules, which allows a claimant to bring a case on behalf of a class of people with the same interest. Everyone who shares the interest is included in the case unless they choose to opt out.

Mr Jukes said his chief purpose is to ensure that nothing similar happens again.

“It is only right that we, as consumers, hold Facebook to account for failing to comply with the law and for putting our personal data at risk, and to ensure that this is not allowed to happen again,” he said.

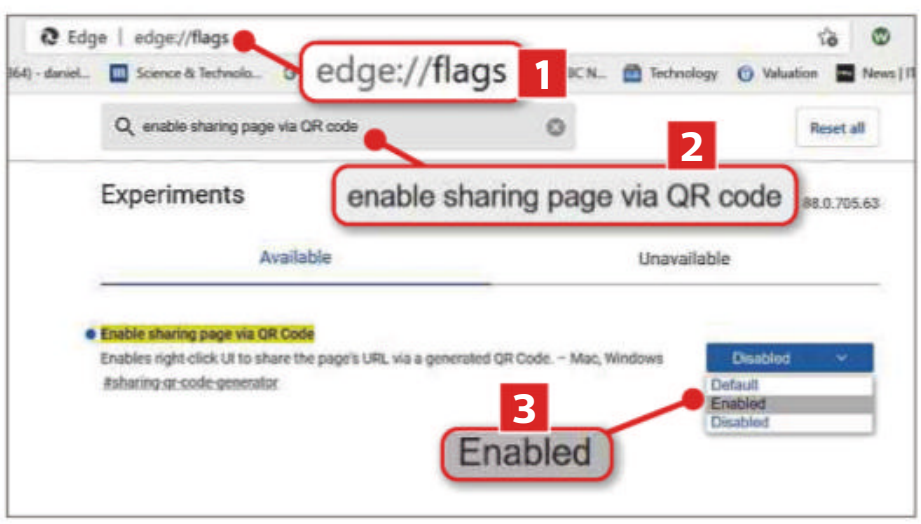
Facebook said in a statement that an investigation in 2018 by the Information Commissioner’s Office had “found no evidence that any UK or EU users’ data was transferred by Dr (Aleksandr) Kogan to Cambridge Analytica”.

Share websites by QR code in Edge

You can now share links to websites you’re browsing In Edge by scanning QR codes with your phone, making it easier than typing the URL and perfect for sharing on WhatsApp or in a text message.

You’ll first need to turn on the feature. Do this by typing edge://flags into Edge’s browser bar (1 in our main screenshot right), followed by enable sharing page via QR code 2 in the search bar. Next, select Enabled in the dropdown menu 3 and click Restart at the bottom to relaunch Edge.

When you visit a site you want to share, right-click it then choose ‘Create QR code for this page’. A code will then appear at the top (see screenshot right). You can



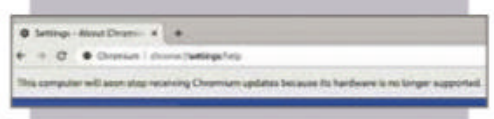
then scan the code using a code-reader app on your phone and share it as you wish. You can also download the code by clicking the Download button below the code.

Google Chrome has the same feature, though you no longer need to activate it. Instead, just right-click the page you want to share.

IN BRIEF

CHROME TO STOP WORKING ON OLD PCs

Chrome will soon stop working on some 32bit PCs, Google has said. From version 89, due in March, it won’t work on 32bit machines with chips that run Intel’s old SSE2 instructions rather than SSE3. Google says the change will affect only a “small number” of PCs. If yours is one, you’ll see this warning message (pictured – also at www.snipca.com/37336).

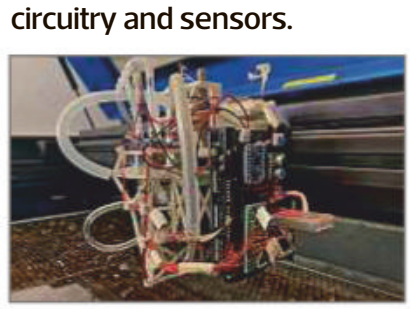


BT & EE HIKE PRICES ABOVE INFLATION

BT and EE have confirmed a rise of 4.5 per cent on their broadband prices, from 31 March. The rise reflects their new policy of increasing prices every year by January’s Consumer Price Index (CPI) rate of inflation plus an extra 3.9 per cent. The rate of inflation in January was 0.6 per cent. However, the increase applies only if you signed your current contract before the policy was changed last September. Read more at www.snipca.com/37335.

TOMORROW’S WORLD

Most of us are happy if we manage to print anything without the nozzles jamming. But scientists at the Massachusetts Institute of Technology have higher hopes: printing *robots*. This video (www.snipca.com/37337) shows how their LaserFactory device (pictured) can assemble circuitry and sensors.



IN BRIEF

51 MORE EXCHANGES MOVE TO VOIP CALLS

Openreach has named the latest 51 telephone exchanges that will move from old copper-based analogue services to a new VoIP network. The locations, which cover all four nations of the UK, include Carrickfergus, Fife, Gwynedd, Leeds and Sevenoaks (see a full list at www.snipca.com/37280). The firm hopes to upgrade all exchanges by the end of 2025.

UNLOCK iPHONES EVEN WITH FACE MASK ON

Apple iPhones will soon recognise users wearing a face mask, but only if the owners are also wearing an Apple Watch. It means iPhone owners will be able to use Face ID to unlock their phone, even if their nose and mouth are covered by a mask. The feature will be added as part of iOS 14.5, which is currently in beta and is expected to arrive on all phones later this year. At present, using Face ID with a mask brings up a screen asking for the passcode.

THE WORLD'S GONE MAD!

Facebook's mad campaign to find offence in everything has continued by removing posts that mentioned Plymouth Hoe, an area in the city overlooking the harbour (pictured). Why? Take away that 'e' and you have a misogynistic term. Local groups were shocked when the site told them to delete posts. It has now apologised.

Switch broadband faster using new 'one touch' system

You'll be able to switch from BT to Virgin Media – and vice versa – much quicker under Ofcom's proposed 'one touch' process.

At the moment, if you want to switch between providers that use different cable networks, such as BT, Plusnet, Sky and TalkTalk (which use Openreach's cables), you have to contact both firms.

It can be tricky to arrange the switch to happen on the same day, potentially increasing how long you may spend without a connection.

This is more hassle than switching providers on the same network – such as from BT to TalkTalk, or Plusnet to Sky – which simply requires you to contact the company you're moving to.

Under the 'one touch' method, you'd contact your new provider and give your details. Your current provider would then send you relevant information, including whether you have to pay any early-termination fees.

If you still want to proceed, your new provider will organise it for you, without you having to do anything else. Your old service should end on the same day as your new one begins.

The rules state that any "loss of service" must not exceed one working day "if technically possible". Providers will have to compensate you if problems continue beyond this.

Ofcom has also banned notice-period charges beyond the switch date, meaning you won't end up paying for two services at the same time.

Ofcom says such rules are needed because 41 per cent of people who decide not to switch networks are put off by having to contact both their old and new provider

It will now discuss the proposals with interested parties until the end of March, before making a decision in the summer. If confirmed, the rules will come into force in December 2022.

BT could roll out satellite broadband with OneWeb

BT is in talks with Government-backed satellite firm OneWeb to provide broadband for people in rural areas beyond the reach of fibre networks, according to reports.

Teaming up with the company could allow BT to provide modest broadband speeds without having to pay millions to dig up roads and install cables.

Satellite services could also be part of the Universal Service Obligation, in which BT is legally required to offer a minimum of 10Mbps to any household that requests it.

OneWeb has already launched 110 low-Earth orbit (LEO) satellites as part of a plan to run 648 in total. This should be enough to provide global coverage by the end of 2022 (watch its video at www.snipca.com/37283).

The Government invested £400m in the firm last June after it went bust in March, as part of a plan to replace the EU's Galileo sat-nav system. It faces strong competition from Elon Musk's company Starlink, which has already begun giving broadband satellite dishes to customers in the UK.

BT didn't comment on the story, which first appeared on US website Bloomberg (www.bloomberg.com), though OneWeb confirmed that talks were taking place.

A spokesperson said: "OneWeb would welcome the opportunity to support Broadband connectivity required to reduce the digital divide".

Hacked US water plant was still using Windows 7

A water-treatment plant that was hacked in Oldsmar, Florida was still using computers running Windows 7, making it easier for the attacker to infiltrate the system.

Microsoft stopped supporting Windows 7 in January 2020, though some businesses and organisations can pay for extended support.

Reports in the US quote investigators as saying that "the cyber actors likely accessed the system by exploiting cybersecurity weaknesses, including poor password security and an outdated Windows 7 operating system to compromise software used to remotely manage water treatment".

They added that the hacker probably used TeamViewer to remotely access and control the plant's computers. The staff also use TeamViewer to access computers, but it seems they all shared the same password, meaning the hacker had to guess only one to take over the system.

In another severe security failure, the computers were connected to the internet without a firewall.

The attacker tried to poison the water supply by increasing the amount of sodium hydroxide, which is the main ingredient in liquid drain cleaners. It can irritate the skin and eyes, and lead to hair loss, while swallowing it can induce vomiting, nausea and diarrhoea.

A worker spotted the increase and reversed it before the poisoned water reached the 15,000 businesses and residents supplied by the plant.

The attack has drawn attention to the risk posed by hackers targeting national infrastructure. Security experts have long warned that it's only a matter of time before a hack on water, electricity, nuclear power or transport kills many people. They've repeatedly urged governments to invest more to keep the security of critical infrastructure up to date.

Last year there were several unsuccessful hacks on Israeli water supplies, while in 2016 an unnamed US water plant was attacked.

Downloading from YouTube could soon become illegal

You may soon be prevented from downloading videos from YouTube following legal action from record companies.

Under existing law, broadband providers can be forced to block customers from visiting sites that offer illegal downloads or streaming of copyrighted content. It's why for example you can no longer access torrent-sharing sites such as The Pirate Bay. Over 100 similar sites have been blocked.

Record companies, represented by the British Recorded Music Industry Ltd (BPI) and Phonographic Performance Ltd (PPL), now want providers to extend that ban to online tools that make it easy for you to download videos from sites like YouTube.

This process, often called 'stream ripping', has become increasingly popular as more tools emerge to simplify the process. These include flvto.biz and 2conv.com, which are both under threat from legal action in the US.

If the companies are successful, these and many other sites will be blocked by the UK's six biggest providers: BT, EE, Plusnet, Sky Broadband, TalkTalk and Virgin Media.

The record labels say the stream-ripping sites allow users to create pirated copies of official music and videos, which is forbidden by the Copyright Act. As such, they say the sites hosting these tools should be held liable for infringement of copyright.

The High Court has yet to rule on the case, but its verdict is likely to rest on whether the sites explicitly state that the tools can be used for downloading copyrighted material.

• **Read our next Cover Feature, out on Weds 10 March: Download YouTube and iPlayer (while you still can)**

IN BRIEF

O2 FINED £10.5M FOR OVERCHARGING

Ofcom has fined O2 £10.5m after it overcharged mobile customers who left the network. Between 2011 and 2019 an error in how the firm calculated former customers' final bills meant many were charged twice. Over 250,000 customers were sent bills, totalling £40.7m. Of these, around 140,000 customers actually paid the bill, amounting to £2.4m. Ofcom has now refunded all customers it was able to contact.

MICROSOFT LAUNCHES TWO-SCREEN PHONE

Microsoft has launched its two-screen Surface Duo phone (pictured below) in the UK, priced from £1,349. It's an Android device with 6GB RAM and either 128GB or 256GB of storage. Its 360-degree hinge lets it be used in a range of positions, while the two screens are meant to make multitasking easier. It's available at Currys and on Microsoft's online store (www.snipca.com/37339).

22 FREE CHANNELS FROM VIRGIN TV

Virgin Media is making 22 channels free until 16 March, including thousands of on-demand episodes. The channels, available to all Virgin TV customers, include Comedy Central HD, National Geographic HD, Film 4 HD, Discovery HD and MTV HD. See the full list at www.snipca.com/37341.

Question of the Fortnight

Can Google searches help to predict Covid peaks?

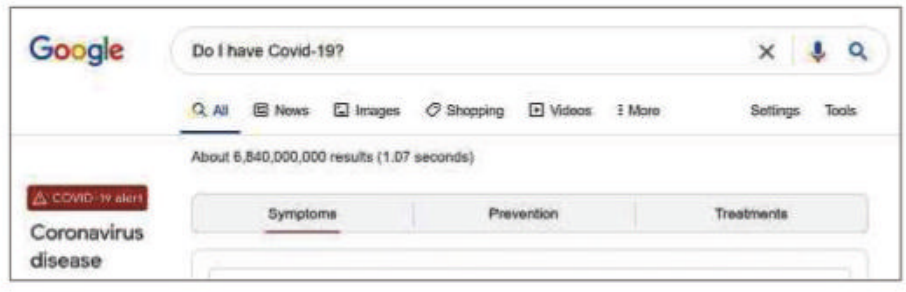
Researchers say they can help us tackle the pandemic and future outbreaks

Before the pandemic, health experts typically advised the public not to research their ailments online. Ask Dr Google about your symptoms and you could end up severely misdiagnosing your condition, making it sound much better or worse than it really is. Hypochondriacs especially ran the risk of disappearing down a rabbit hole of misplaced anxiety.

But Covid-19 has changed all that. From the early weeks of the disease, the Government and NHS listed all the symptoms online, as they urged potential sufferers to self-isolate. New symptoms have been added when they've been confirmed.

Experts continue to warn about the nonsense you can read online – from 5G spreading the virus to eating garlic to stop yourself catching it - but the internet quickly became a potent tool for informing the public about this new disease.

Unsurprisingly, Covid-related searches dominated Google in 2020 (and probably will again in 2021). 'Coronavirus symptoms' was the fourth most-searched term in the UK last year, and eighth worldwide. 'How to make a face mask?' was the UK's most-asked 'How to' question, followed by 'How to make hand sanitiser?' (see more at www.snipca.com/36953).



> "'Coronavirus symptoms' was the fourth most-searched term in the UK last year, and eighth worldwide"

Now scientists think that by analysing what people search for, they can predict a peak in cases 17 days in advance. The claim comes from researchers at University College London (UCL), who found an association between searches about skin rash and a loss of smell – both recognised Covid symptoms – and a rise in cases. To get more accurate results, they adjusted their analysis to reduce "public interest bias", which is the effect media coverage has on online searches.

The research, published in Nature Digital Medicine, builds on existing studies that show a link between internet searches and the spread of seasonal flu (see UCL's Flu Detector: www.snipca.com/37322). Dr Vasileios Lampos, who led the work, says it "provides a new set of tools that can be used to track COVID-19". His team has been sharing the findings weekly with Public Health England to support its response to the disease.

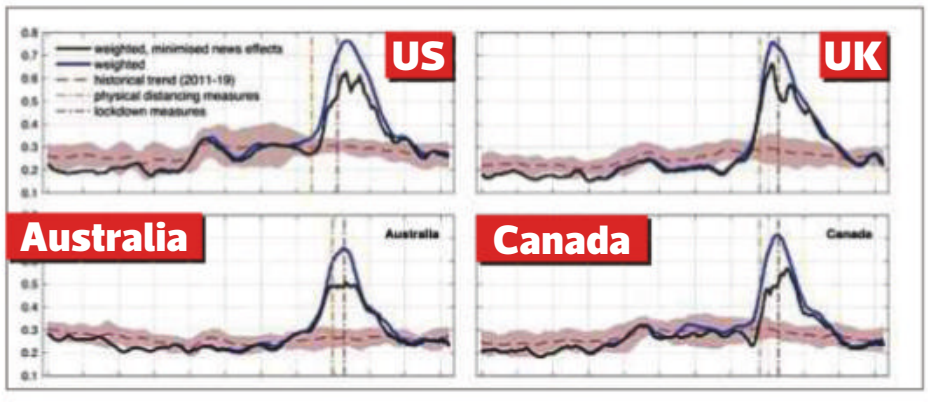
Dr Lampos said that the methodology works in different countries "irrespective of cultural, socioeconomic and climate differences", including the US, Greece, Canada, Italy, Australia and South Africa, as well as the UK. The same pattern appeared no matter where they ran their model (see screenshot left). He now hopes that analysing internet searches will become an accepted part of tackling all health emergencies, helping the world "be better prepared for the next pandemic".

The tech giants are playing their part. In September, Google released a collection of over 400 search trends designed to help researchers study the link between queries about symptoms and the spread of the virus, though for now this data is available in the US only.

In a blog post (www.snipca.com/37320), Google Health researcher Evgeniy Gabrilovich said the data can provide "an earlier and more accurate indication of the reemergence of the virus in different parts of the country".

He added that because the searches cover a broad range of conditions, including diabetes and stress, they could also be useful in studying "the secondary health effects of the pandemic".

It seems clear that while searching for symptoms carries inevitable risks, and misinformation is rife online, there's a net benefit to society. When Covid is finally under control, asking Dr Google may actually be encouraged.



Scientists saw the same pattern of searches predicting a surge in cases across several countries

THE FACTS

- Scientists say that analysing online searches for Covid-19 symptoms can help predict a surge in cases 17 days in advance
- They claim the link exists in several countries, including the UK, US, Italy, Australia and South Africa
- Previous studies have shown a link between internet searches and the spread of seasonal flu

Protect your tech

Scams and threats to avoid, plus new security tools

WATCH OUT FOR...

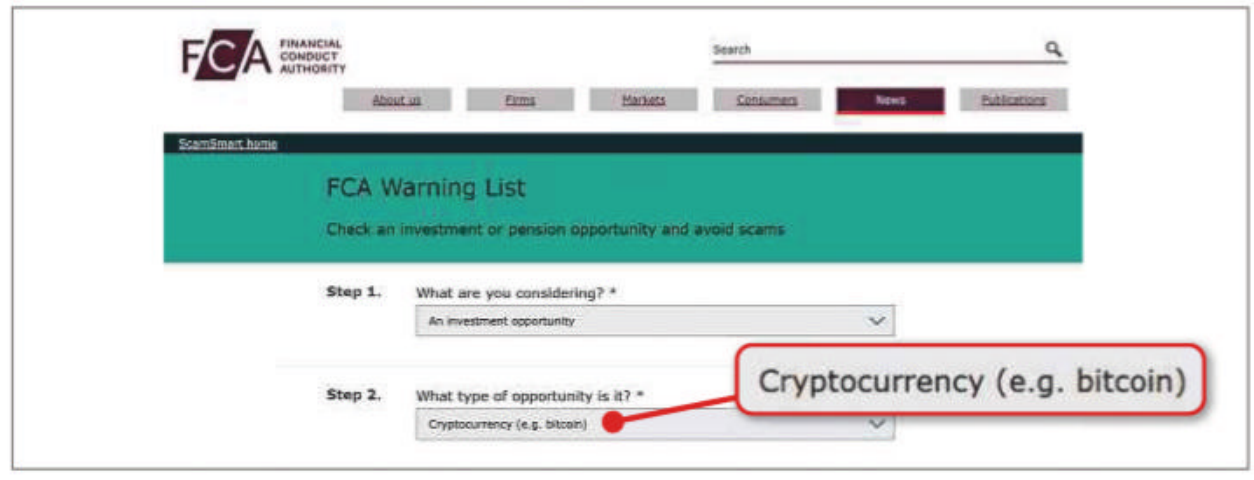
‘Clone firm’ investment scams

What’s the threat?

The UK’s financial watchdog has warned the public about scammers claiming to represent genuine investment firms, following a sharp rise in the number of such frauds at the start of lockdown last year.

The Financial Conduct Authority (FCA) said that ‘clone firm’ scams rose 29 per cent between March and April 2020, as fraudsters took advantage of people with money worries. Criminals stole more than £78m last year, according to Action Fraud, equating to an average loss of £45,242 for each victim.

In the first stage of this sophisticated scam they set up fake firms using the name, address and firm reference number (FRN) of real companies as authorised by the FCA. They then send marketing emails linking to websites of legitimate firms, hoping to trick you into thinking you’re dealing with the real company. They also use contact details that are similar to those used by the real firm.



How can you stay safe?

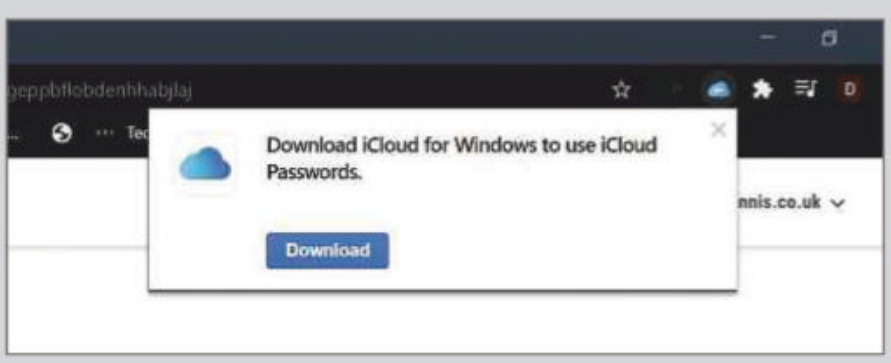
Before you sign on the dotted line, visit the FCA’s ‘Warning List’ of firms (www.snipca.com/37278), which is updated daily. Start by selecting whether you’re checking a pension or investment offer, then say what type it is (such as a cryptocurrency scheme – see screenshot) and where you saw it, before clicking the arrow at the bottom right.

On the next page the FCA will warn you about the type of scams that are prevalent, and whether they regulate such offers. Next, scroll down and click the bottom-right arrow, then type the name of the firm into the search box to see whether it appears on the FCA’s Warning List. Alternatively, visit www.snipca.com/37279 to browse an alphabetical list. You should also visit https://register.fca.org.uk/s/ to check whether the firm is registered by the FCA.

New tools | Sync iPhone passwords in Chrome and Edge

Apple has released a browser extension called iCloud Passwords that lets you sync passwords you created using Safari on your Mac, iPhone or iPad (via iCloud Keychain) with Chrome or Edge on your Windows PC. Visit the Chrome Web Store (www.snipca.com/37277) and click ‘Add to Chrome’ (this works in Edge as well as Chrome).

Once installed, you’ll see its icon – a white key in a blue cloud – in your browser bar. Click it and you’ll be prompted to download the ‘iCloud for Windows’ app from the Microsoft Store. Click the blue Download button (see screenshot) then, on the following page, the blue ‘Download iCloud for Windows from the Microsoft Store’ link. This will take you to the Microsoft Store page for iCloud for Windows. Click ‘Get’ to install the app. When it’s ready, a message will pop up asking you to launch it or pin it to your Start menu.



Usefully, passwords created in Chrome and Edge will also sync back to iCloud, so they’ll be available on your Apple devices as well.

ScamWatch
Readers warn readers

Misplaced comma revealed Royal Mail scam

I get about five parcels a month from Royal Mail, so I wasn’t surprised to get a text supposedly from them about a delivery I was due to receive. But it was surprising that it said I owed them £2.99, and that I should click a link (https://royalmail.help) to enter my personal details. They called this payment a “settlement”, which sounded a bit odd, and the message used a comma where a full stop should have been. I’ve never had to pay to receive parcels before, so I assumed it was a scam. I had this suspicion confirmed online: www.snipca.com/37276.

Anne Howard

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

Letters

Tell us what's on your mind

I've had just two phones in 10 years

I was fascinated by Issue 599's 'Question of the Fortnight' ('Are smartphones the new washing machines?'), because it sounds like the rest of the buying public have caught up with my scepticism about new technology.

Question of the Fortnight

Are smartphones the new washing machines?

About 10 years ago, stunned by the pictures of people queuing in sleeping bags to get the latest iPhone, I made a vow not to buy a new phone unless my existing one was completely useless. I bought an HTC Desire in 2010 (I still have the receipt) and used it until a deadly combination of cracked screen and old software made it worthless. That was in 2015. I replaced it with an HTC 10, and that's the phone I still use. It's true that not all the apps work anymore, but I still get by. I have promised myself a new phone in 2021 though.

To me, sticking with phones – in fact, all devices – is a matter of personal pride. I take pleasure in knowing I've extracted every last ounce of usage from them.

Ed Bolton

CA SAYS **Like Ed, many readers derive great satisfaction from using their devices for as long as possible before buying a replacement. It makes us keen to identify the oldest phone that readers are still using. Email us a photo and we'll honour it on our Letters page.**

Microsoft locked me out of PowerPoint

Many congratulations to Roger Wood (Letters, Issue 599) with his request for a 'Stop Using Microsoft' issue of *Computeractive*. Like Roger, I too was left with a hall full for people waiting for my presentation when I was locked out of PowerPoint because there was no Wi-Fi available. I fully support his criticism of the annoying random requirement to sign into my Microsoft account for "security reasons".

It's also annoying that I have to invent a new email address for that account because Microsoft claimed the one I offered was my work email. It wasn't (I'm retired), but there's no way round what can only be described as commercial, strong-arm bullying.

At least some of their password boxes are starting to get a reveal facility. As you get older, it's easy to make a mistake when typing complex passwords, especially when there's no way of checking they are correct. Eight characters was bad enough – now some websites ask for 12! Why can't *I* make this choice, not somebody in Microsoft?

Martin Marks

Behind every scam is a criminal gang

I disagree with Dennis Stanley's letter in Issue 598 ('Sorry Martin Lewis, you're wrong about web scams'), in which he says Martin Lewis shouldn't be campaigning for web scams to be included in the Government's Online Harms Bill.

He suggests scams are being perpetrated by small-time crooks. But behind these scams lie multi-million-pound criminal organisations which often tie directly into the funding of terrorism around the world. While there are a number of rogue nations who sponsor and shield terrorists, the majority of funding comes from criminal enterprises. Tackling web scammers forms part of a multi-pronged attack which contributes to making the lives of ordinary people much safer.

Robert Turner

Why *wouldn't* you try alternatives to Google?

To add to the debate about whether you should use Google, my main observation is to wonder why anyone *wouldn't* want to know what alternatives there are. Surely if you're interested in technology – particularly the internet – you'd be curious about such things.

As an example, I remember when Google was the rebellious upstart, back in around 1998, taking on big beasts like Yahoo, AOL, Lycos and so on. I'd have been interested to read a 'Stop using Yahoo' feature back then because I always want to know about which services will improve upon existing ones.

There's nothing wrong with defending Google, but you shouldn't do it at the expense of discovering new and better tools. It also seems very complacent to assume that Google's dominance will continue indefinitely. If you get sucked too deeply into Google's universe, you might regret it when it goes pop.

David Houghton

WordPress brought transport memories to life

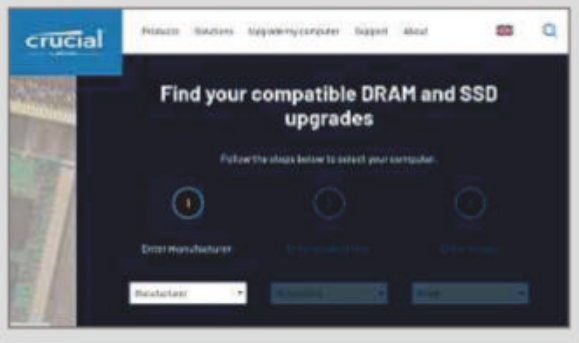
I would like to thank Robert Irvine for his column on setting up a WordPress blog (Issue 596, page 74). I'd been thinking about creating a small website about my time working on public transport, now that I've retired. I didn't want to pay much as it's just for fun and aimed only at those who are interested.

Your RAM advice boosted my laptop

Following your advice to me in Issue 593 ('Can I speed up my laptop?', page 65) regarding my Toshiba Satellite C660-2LK laptop, I ran Crucial's System Advisor tool (www.snipca.com/36300, pictured) as you suggested. It told me precisely how much extra RAM I'd need to make my laptop faster. I needed 4GB, which cost less than £20.

When the RAM arrived it was easy to install. I then checked System on my laptop and saw that it was being recognised. My laptop now has 8GB. It has made a lot of difference to how fast websites load, so thanks for your help.

David Salter



CA SAYS **David's right that adding memory to your computer is one of the most powerful upgrades you can carry out, but it's vital that you choose the right type of memory. We explain what you need to look out for in our feature on page 62.**

I first downloaded a trial version of Xara Web Designer (www.xara.com/us/web-designer), but that was far too complicated for me. So I tried WordPress (https://wordpress.com) instead, using the free version. I have now purchased a domain name and the basic package. If anyone is interested in seeing my site, they can visit https://abuseylife.com.

Steve Burns

Check 'In Your Area' for local planning notices

I was flabbergasted to read that in these financially straitened times, the Government wants to give money to Google to provide a service that in essence already exists ('Will planning notices move from lamp posts to Google?', Issue 598, page 10). It's been possible to look at planning applications online for at least a decade via local authority websites, with the ability to download plans and to respond, comment or object electronically.

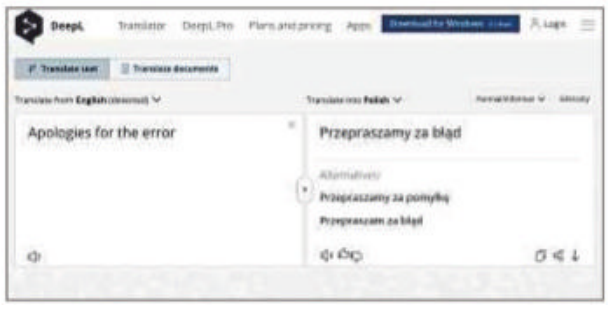
When local databases already exist, linking them is a better way forward than creating a new national one. Such resources already exist. As an example, you could try www.inyourarea.co.uk. Enter a postcode and you'll see a list of planning applications for that postcode and for the surrounding area. Clicking the link to a specific planning application takes you to the entry in the local government website. It's owned by UK newspaper publisher Reach. I would suggest that it would be a better idea for the Government to invest in dynamic UK businesses than give money to an American mega-corporation which already exploits its monopolistic position.

Jeremy Taffel

Lost in translation

In Issue 599 (page 42) you gave the wrong URL for the excellent online translator DeepL, which I now use instead of Google Translate. To use it, visit www.deepl.com/translator (pictured below). Perhaps your original instructions got lost in translation?

David Bingham



STAR LETTER

I'm living a 'gigabit retirement', not sipping Horlicks

I agree wholeheartedly with Michael Jones (Letters, Issue 599) on his point that older people also need fast broadband. Maybe Michael has detected a bias in the media (*Computeractive* excepted) towards the needs of younger people in regards to broadband.

I accept that home-schooling has focused minds on providing fast connections to children learning at home, but just imagine how much time us over-70s have had to spend indoors in the past year.

It may suit some people to caricature us all as old fogeys sipping Horlicks and doing 1,000-piece jigsaws. I'm partial to both myself, but in the past year I've also set up Plex on a NAS drive, installed mesh Wi-Fi to boost signals from the conservatory to the loft and live-streamed astronomy classes over the internet. Yes, I may be retired, but my social life is busier than ever (or it was, before Covid struck).

The point so many 'experts' forget about retirement is that we have so much time on our hands. When the weather's nice, that means endless walks in the country. When it's not so nice, that means staying indoors and diving into the latest technological advances. I've got the rest of my life to try them!

In his letter, Michael says he and his wife both need 200Mbps. Without wanting to boast, I'm now the proud owner of gigabit broadband. Some people say you don't need such fast speeds, but I've used it as a spur to discover new things to do. I treat it like a challenge: how to make the most of gigabit. In fact, I intend to spend the next decade or so living a gigabit retirement. It's patronising in the should highlight instead.

The **Star Letter** writer wins a **Computeractive** mug!

Colin Cresswell

Macrium Reflect is no 'Junk Offender'

As a long-standing user of both the paid-for and free versions of Macrium Reflect, I thought it was very unfair for you to name and shame it as a junk offender (Issue 598, page 21). The installer that you complain about is a generic installer for all versions of Macrium Reflect and can be used to update existing software as well as install it for the first time. It's no different to the installers that are used for mainstream browsers such as Firefox and Edge.

While the installer does ask for your email address to register the product, it's made pretty clear that this isn't compulsory. It's worth noting that the paid-for version of Macrium is one of the better backup solutions available, and the free version has almost all the same features, with no advertising or nag screens. If you want to name some *real* junk offenders, there are far more deserving candidates you

Your phone also tracks you, not just Google Maps

I love your magazine and the useful advice you give. However, the advice in Issue 597 to stop using Google Maps for privacy reasons is debatable. I'm definitely not a big fan of Google following my every move, but one should keep in mind that your mobile-phone network will also register your movements and keep those on record for a while (a legal obligation!). To them there's no difference between an Android, Apple or 'dumb' phone: they simply register the contact between your phone and the nearest tower on your journey. Though I do not like Google tracking me everywhere, I see Google Maps' history as a convenient overlay for data that has already been collected by the phone network.

Michel A van der Maas

Consumeractive

We stand up for your legal rights

Can Virgin charge an early-termination fee?

LEAD CASE

Q At the beginning of January, Virgin told me it was putting up its prices in March. I don't want to pay this increase and want to switch to a different provider, but I have nine months left on my contract for TV, broadband and landline phone. Virgin said I would have to pay a termination fee of around £240 if I cancelled, but I thought I could cancel without a charge if there's a price rise. Am I right?

Duncan Hillcroft

A It depends whether the price rise is above the retail price index (RPI) rate of inflation. If so, then you have 30 days from being told about the increase to cancel without paying a fee. You can check the inflation rate on the Office for National Statistics' website (www.snipca.com/37268). For December 2020 the rate was 0.8 per cent. The January 2021 rate was released on 17 February (after we went to print).

Duncan's new price is £34.50 a month, up from £32.50. It's a 6.1 per cent increase, which means he can cancel without being hit by an early-termination fee. Ofcom's rules (www.snipca.com/37267), introduced in 2016, give providers 30 days to inform you of a price rise. If they don't, you can leave without paying a fee.

Even if the rise *isn't* above inflation, you can ask to cancel without a fee by arguing that the extra cost is beyond your financial means. This is clearly hard to measure, so it's something you'll have to agree with your provider. If you can't reach a compromise, contact the relevant ombudsman to see if it can help or mediate (www.ombudsman-services.org or https://www.cedr.com/consumer/cisas).

CASE CLOSED

Who's responsible for a missing parcel?

Q At the start of January I ordered a stud finder wall scanner for £12.47 from a website based in China. I got an email from Hermes saying delivery would soon take place, but nothing has arrived. I now can't get through to Hermes. Can you help me to track it down please?

Peter Inglis

A We'll certainly try. Peter has given us the Hermes tracking number, so we've sent this to the company, asking it to find out what's happened. But whatever their response, his case is with the Chinese website, not Hermes. It's always the seller's responsibility, not the courier, to ensure goods are delivered to the buyer safely. As such, any refund must come from the retailer, not the courier.

However, Peter should back up his claim by sending the tracking number to the website. The seller can then check his claim by contacting Hermes. It may be based in China, but because it sells to UK buyers it has to abide by our laws. But as we've often seen, getting refunds from Chinese sites can be difficult. We'll let you know what happens.

CASE ONGOING

CASE UPDATE

Broken laptop hinges was 'caused by the owner'

It's always a gamble to get your device independently inspected. If an inherent fault is found, you can pass the charge on to the retailer. But if you're to blame for the fault, you could end up with a hefty bill.

Thankfully, reader Peter Webster (see Issue 599) avoided a bill when his local repair shop examined his Lenovo laptop, which he bought from Laptops Direct in March 2020. Its technicians judged that the broken hinges were caused by wear and tear ("customer-induced damage" to use the legal term), and therefore the fault wasn't inherent. They could see this with a quick look, without applying special techniques, and so decided not to charge Peter.

The shop's verdict backs up what Laptops Direct said when Peter approached the retailer last November. Because more than six months had passed since purchase, it was up to Peter to prove the fault was inherent.

Peter has told us he's not going to pursue the matter any further. That makes sense to us. He could take Laptops Direct to court, but the technicians' verdict would mean he'd almost certainly lose. However, we're still waiting to hear back from Lenovo to see if it's had other similar complaints about its hinges. If so, perhaps there could be a late twist in the tale.

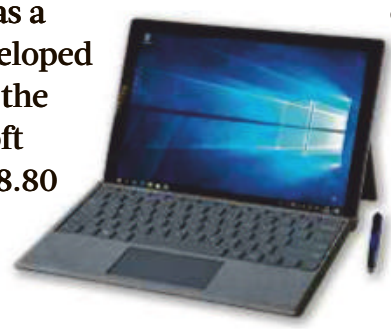
Contact us so we can investigate your case

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

Do I have to pay Microsoft's £568 repair fee?

Q I've had a similar problem to Keith Hardy (see Issue 597), who complained about the screen bending in his Microsoft Surface Book. The Surface Pro (pictured) I bought in 2017 from John Lewis now has a screen 'judder'. The fault developed in June last year, just outside the three-year warranty. Microsoft now wants to charge me £568.80 for a repair. Do I need to pay this?

John Cornford



A Not necessarily. Yes, the warranty is no longer valid, but John's still due some form of compensation if the judder is being caused by an inherent fault. If he's sure that it is, he should contact John Lewis (the retailer in this case), not Microsoft (the manufacturer).

He'll need to persuade John Lewis that the fault is inherent, and hasn't been caused by fair wear and tear or accidental damage.

To help his case, he'll have to pay for technicians to inspect the laptop, informing John Lewis beforehand that he's doing so. If the examination finds a fault and John Lewis accepts the result, it will need to repair or replace the device, and also refund John the cost of the inspection.

John says that other users have reported the problem online, so sending those complaints to John Lewis will strengthen his case. In the meantime we'll ask Microsoft to comment.

CASE ONGOING

Can Currys demand I buy security software?

Q When I went to buy a new laptop from Currys, the salesman told me that I had to buy my antivirus software from the shop at the same time. If I didn't, he said the laptop wouldn't be covered for any faults, even if I used antivirus bought elsewhere. Currys lost my custom. Was it breaking the law?

Chris Seabridge

A Yes it was. Chris would always be covered by the Consumer Rights Act (CRA) for inherent faults, no matter what security software he used and where this was bought. Inherent faults, whether related to hardware or software, are problems that exist before you buy an item. By definition, they can't be caused by malware downloaded after purchase.

However, if Currys had offered a warranty providing cover for a computer affected by malware after sale, it could apply terms and conditions, such as buying a specific brand of security software in the store. Importantly though, this warranty wouldn't override the CRA if Chris could prove the software wasn't fit for purpose.

We've told Currys about Chris's case and the store involved, because this is misleading information and a breach of the Unfair Trading Regulations. We'll give you Currys' response when we receive it. If you're ever in a similar situation, you should mention both the CRA and the Unfair Trading Regulations to the sales assistant and ask to speak to a manager. Emailing the company's boss may bring about a change in policy: **alexander.baldock@dixonscarphone.com**.

CASE ONGOING

CREDIT WHERE IT'S DUE

New bird box left me happy as a lark

Over the Christmas period I started getting my IP camera Wi-Fi bird box (pictured, bought from Green Feathers) cleaned, ready for the next breeding season. I attempted to log into the camera but had problems doing so as it required a password, which I'd forgotten.

I went on to Green Feathers' website (www.green-feathers.co.uk) and found instructions on how to reset the password, but it didn't work on any of my computers. I then emailed their help address and received a fairly quick reply (considering it was the holiday period). However, despite more instructions and a long email exchange I still couldn't access the camera.

To resolve the issue they sent me a replacement camera that arrived the next day, on the promise from me that I'd return my camera, which I did with their paid reply label. I bought the original camera from them back in April 2019, and didn't expect this kind of brilliant customer service, especially over the holiday period.

Jeff Brown

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

Contact
Green Feathers

- **Email** info@green-feathers.co.uk
- **Phone** 0117 325 8128

Grow Your Family Tree

If you've lost touch with a family member, follow **Nick Peers'** tips to...

Track down living relatives

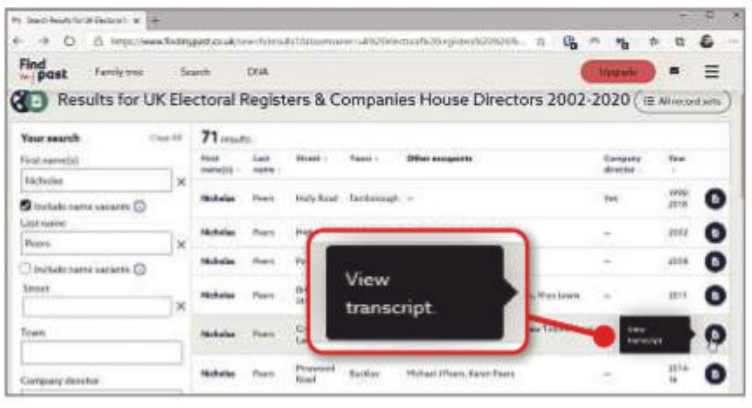
Reader Peter Carr got in touch with a question about tracing living relatives from his family tree – in his case a cousin who disappeared off the radar after marrying and moving to Wales.

Search the electoral roll

If you know roughly where your relative was living at any point after 2002, you may be able to track them down using the open version of the electoral roll (also known as the 'edited electoral register'). This assumes they've remained on the edited register. If not, you'll probably be able to track them down only to the point where – usually for privacy reasons – they opted out.

Find My Past offers access to the edited electoral register to people with a Plus subscription (£12.99 a month) - search at www.snipca.com/37197. Start by entering their name, then add what else you know – for example, another household member's name, the county, town, or even last-known postcode – to see what comes up. You can then click to view a detailed transcript that reveals this information (see screenshot below left).

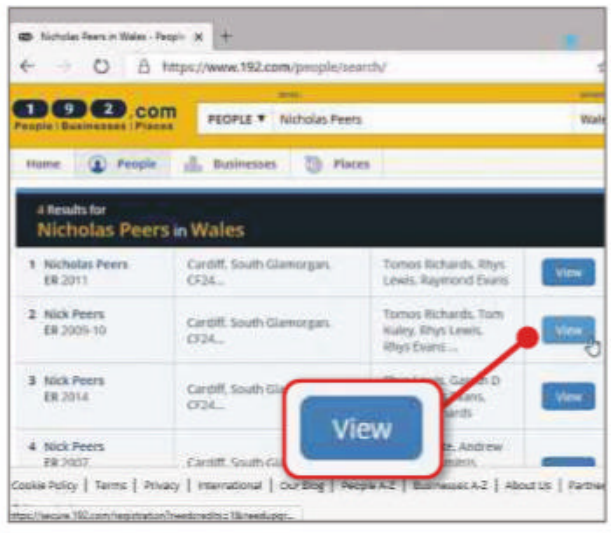
If necessary, carry out a fresh search for their name and other household members to see if you can identify their next address, and so on until they either disappear from the register or you reach 2020. If they disappear completely, they may have died or simply removed themselves from the open register. Another possibility is they've split from a partner or been widowed, in which case try a search without the partner's name.



Click 'View transcript' to see the details of a search of the electoral register on Find My Past

Search directory enquiries

Once you have their last-known address, search directory enquiries for free (www.thephonebook.bt.com/person) to see if you can confirm their current contact details. Again, not everyone will appear here. It won't find those who don't have BT landlines, or who have chosen to go ex-directory.



192.com lets you view basic search results for free, giving you a fair idea if there's a likely match

Another way to search directory enquiries and the edited electoral registers simultaneously is through 192.com's 'Search People' tool (www.192.com/people). A basic search is free (see screenshot above), as are any results from directory enquiries, but you'll have to pay for credits to access detailed information from the edited register (one per record). These cost £18 for six credits, £36 for 30, and £60 for 100.

192.com also offers a background check that can provide you with detailed information on a single individual within its records that includes the last five known addresses. This costs around £18 for each search.

Tracing someone's movements up to 2002 is trickier because Ancestry's phone books collection (www.ancestry.co.uk/search/collections/1025) sadly ends in 1984, leaving an 18-year gap to fill (see Grow Your Family Tree, Issue 589 for instructions on using it).

If you still draw a blank, download the British Library's free guide to finding living relatives, including links to people-finding services. Typing the following URL into your browser will automatically download it as a PDF: www.snipca.com/37200.

Your **Genealogy** Problems Solved

Can you provide any strategies for searching for a case-sensitive word? The family name was 'Given' (since changed to 'Givan'), but searching for this on Ancestry and other sites brings up numerous false matches for the common word 'given'.

Howard Givan

This shouldn't happen on sites like Ancestry when using the site's own search tool – just make sure 'Given' is typed into the Surname box. When it comes to Google, use the free AncestorSearch tool (www.randymajors.org/ancestorsearch), which takes your search terms and formats them into a Google search to increase your chances of finding actual people rather than generic references to the word 'given'.

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

Next issue: Find fathers of illegitimate children

AMD IMPULSE (RYZ7)

£499.99

Impulse

AMD Ryzen 5 2600 - 6 Cores (O.C 4Ghz)
ASUS PRIME B450M-A
CORSAIR 8GB DDR4 3000Mhz
INTEL 512GB M.2 nVME 660P
AMD RX 560 2GB
GAMEMAX Expedition
MICROSOFT Windows 10 or 10 Pro

INTEL i5 MERCURY (COF9)

£599.99

mercury

INTEL Core i5 9600K (O.C 5Ghz)
ASUS PRIME Z390-P
CORSAIR 16GB DDR4 3000Mhz
INTEL 1TB M.2 nVME 660P
INTEL UHD 630 Integrated Graphics
KOLINK Stronghold
MICROSOFT Windows 10 or 10 Pro

AMD NAVIGATOR (RYZ8)

£1249.99

NAVIGATOR

AMD Ryzen 5 3600X (O.C 4.3Ghz)
ASUS TUF X570-Plus Gaming
CORSAIR 16GB DDR4 3600Mhz - RGB
INTEL 512GB M.2 nVME 660P
SEAGATE 2TB Sata3 HDD
AMD 5700XT 8GB
CORSAIR iCUE 220T RGB White
MICROSOFT Windows 10 or 10 Pro

palicomp

01270 898 104
sales@palicomp.co.uk

*Sales subject to our terms of sale available online - www.palicomp.co.uk - Configuration issues will be advised by phone - any alternatives will also be advised by phone before proceeding with the order. Systems Custom built then are tested 100% prior to dispatch - dispatched via courier for next working day delivery - other delivery options available online. 0% Finance upto 12 months only - terms online - early settlement fee just £29.00 - apply online or phone. Prices inclusive of VAT and free UK mainland shipping. Q-jump cut-off time 15.00pm.

Best Free **Software**

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

OFFICE SUITE

LibreOffice 7.1

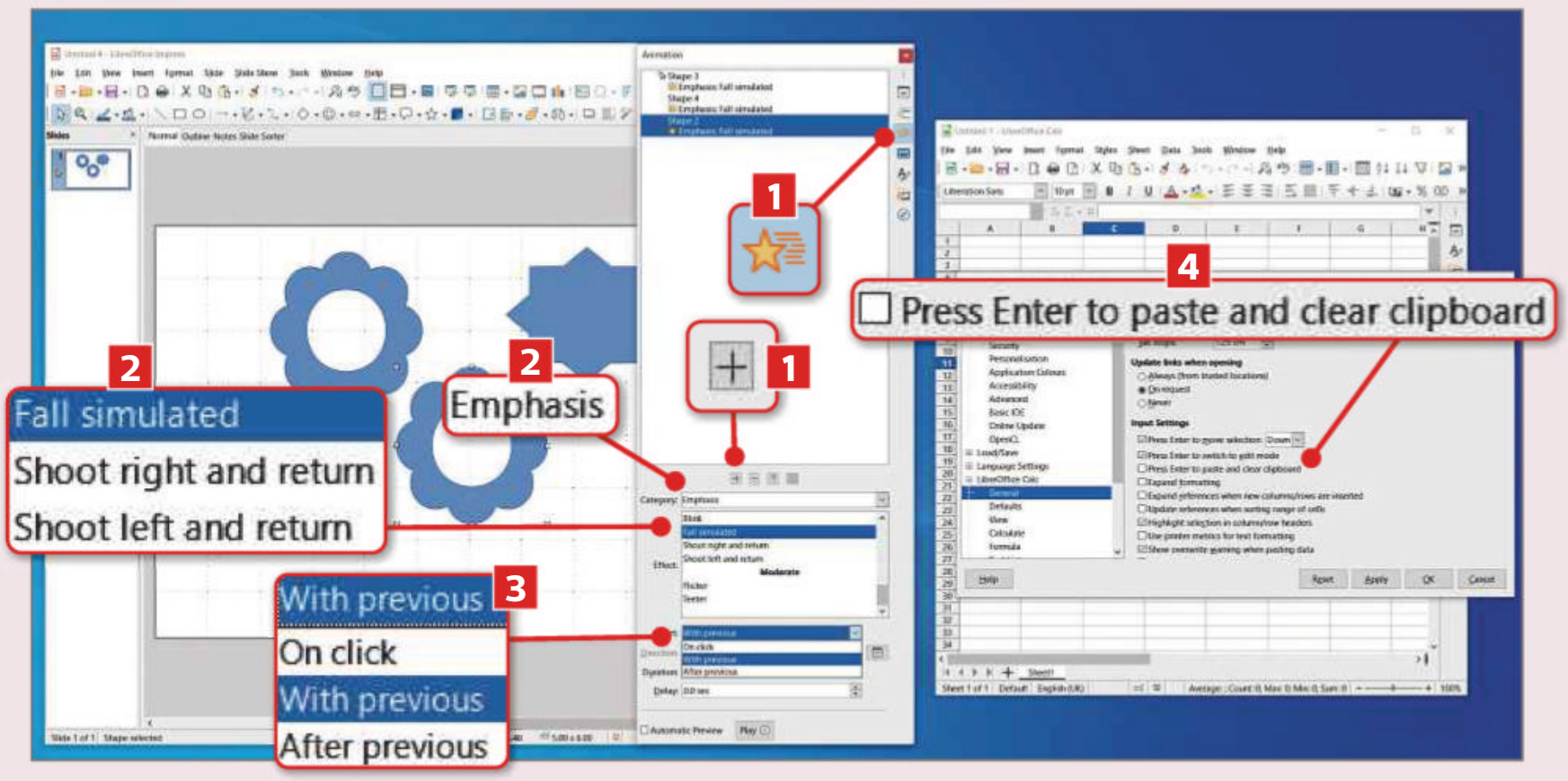
www.snipca.com/37340
What you need: Windows 7, 8.1 or 10

Our favourite free office suite just got even better, with improvements to existing tools and some handy new features. Version 7.1 is officially called LibreOffice Community, indicating that it's intended for home users rather than business. LibreOffice recommends that business users should download version 7.0.4 (also via the link above), which doesn't have the latest features but has been tested for longer (not that we've encountered any problems with version 7.1).

The 'Find & Replace' tool in Writer (press Ctrl+H) now works much faster than before – it's particularly noticeable when you're working on large documents. In the previous version, adjusting every incorrect use of a capital letter in a 20,000-word document took 15 seconds. When we carried out the same test in this version, it completed in just under seven seconds. Although a definite improvement, we'd like to see it speeded up further, especially as Microsoft Word does this in under a second.

Version 7.1 also includes a small but important update to how the clipboard works in Calc. In previous versions, pressing Enter after cutting (press Ctrl+X) or copying (Ctrl+C) a cell automatically pasted the contents into the selected cell then cleared the clipboard – something we often did by accident. The latest version still does this by default, but you can now turn it off (as explained below).

Impress (LibreOffice's alternative to Microsoft PowerPoint) also gets some new features. The most interesting is the ability to create physics-based animations, such as a group of objects that drop from the top of the slide, colliding with each other as they fall (see below). Additionally, it's now much easier to control the playback of presentations, with new Pause, Resume and Exit buttons in the console window (if you're presenting to a second screen, the console appears on your primary monitor).



1 To add a physics-based animation to an object in Impress, click the Animation button on the right (or press Ctrl+F5), select the object you want to animate, then the '+' button.

2 Now select Emphasis in the Category menu. In the Effect dropdown box scroll down to the Exciting heading, then select 'Fall simulated' or one of the 'Shoot left/right and return' options.

3 You can now repeat the process on other objects. To start the animation for each at the same time, set the Start option for the first object to 'On click' and the rest to 'With previous'.

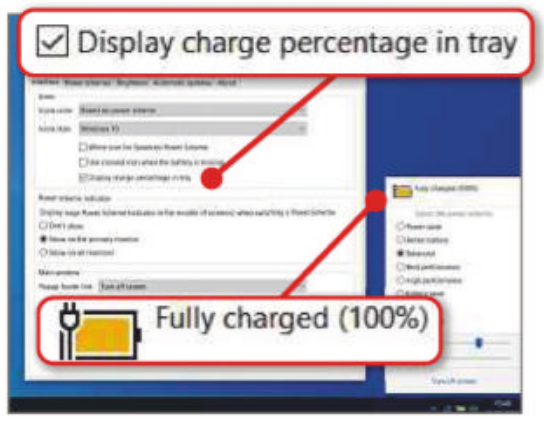
4 To avoid accidentally pasting the contents of your clipboard in Calc, select the Tools menu, Options, LibreOffice Calc, General, then untick 'Press Enter to paste and clear clipboard'.

SYSTEM TOOL

BatteryMode 4.1

www.snipca.com/37343

What you need: Windows 7, 8.1 or 10



BatteryMode (click the 'BatteryModeInstaller64.exe' file at the link above) is a small tool that provides a more powerful alternative to the battery settings tool in Windows. Once installed, BatteryMode runs directly from the system tray (the icon is similar to the Windows battery icon, but has a yellow bar on it). Left-click it to switch between power profiles and adjust the brightness of your monitor (if you have multiple monitors, you'll see separate controls for each). Right-click the icon, then Settings to tweak BatteryMode's appearance, such as changing the battery icon to a percentage indicator (see screenshot). You can turn off the Windows battery icon by selecting 'Enable or disable...' in the BatteryMode right-click menu, followed by 'Turn system icons on or off' then switching off the Power slider.

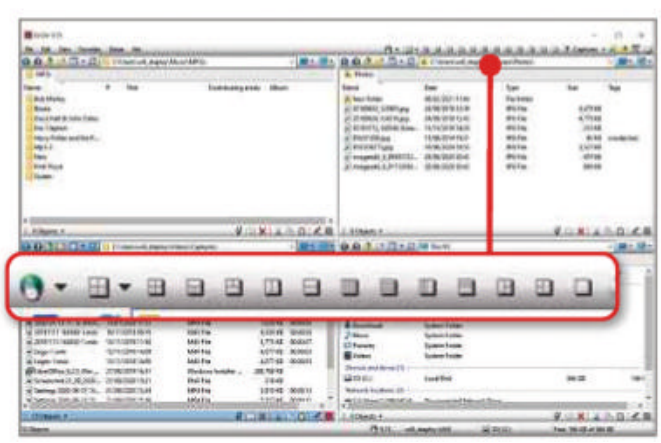
FILE MANAGER

Q-Dir 9.15

www.snipca.com/37344

What you need: Windows 7, 8.1 or 10

Microsoft has repeatedly hinted at adding tabs to File Explorer, but as yet hasn't delivered. If you're as fed up waiting as we are, try Q-Dir instead (click the 'Q-Dir_Installer_x64.zip' at the link above). Not only does Q-Dir let you open multiple tabs, but it also provides four separate panes, letting you quickly move files across various folders. You can adjust the layout of the four panes (or change it to three-, two- or one-pane mode) using the buttons at the top right of the window (see screenshot). This version adds a much-needed horizontal scroll feature, letting you view file details without having to click and drag the scrollbar at the bottom of each pane. To use this, hold down the Shift key while scrolling your mouse wheel.



WHAT SHOULD I DOWNLOAD?

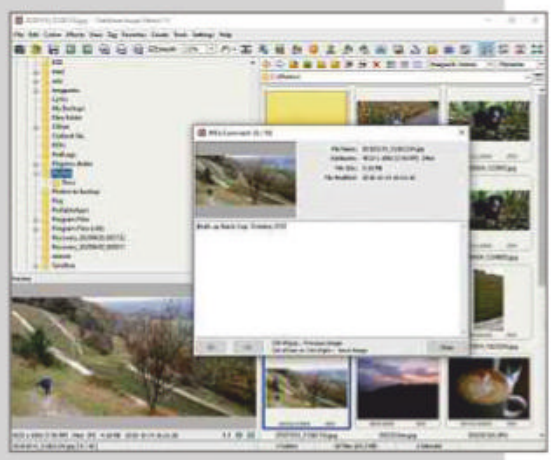
We tell you what software & apps to use

How can I add captions to my images?

Q Following one of your earlier recommendations, I installed FastStone Image Viewer as an alternative to the now discontinued Picasa. However, I can't find a way to add captions – something I used to do in Picasa to identify flowers, birds and so on. Is there a suitable alternative?

Peter Ashton

A Hold off clicking that Uninstall button. It's not made obvious, but FastStone (www.snipca.com/37342) does let you add captions. Select the relevant photo, then press T to open the JPEG Comment window (see screenshot). You can now enter your caption in the text box below the thumbnail. To save your caption, click Close. The JPEG Comment window will remain open if you select other image thumbnails, allowing you to add captions to more images or view existing ones.



Just as with Picasa, FastStone will save all captions to your images' metadata, meaning you can view them using other programs. This is particularly good news for Peter because it means he can use FastStone to view any captions you previously added in Picasa.

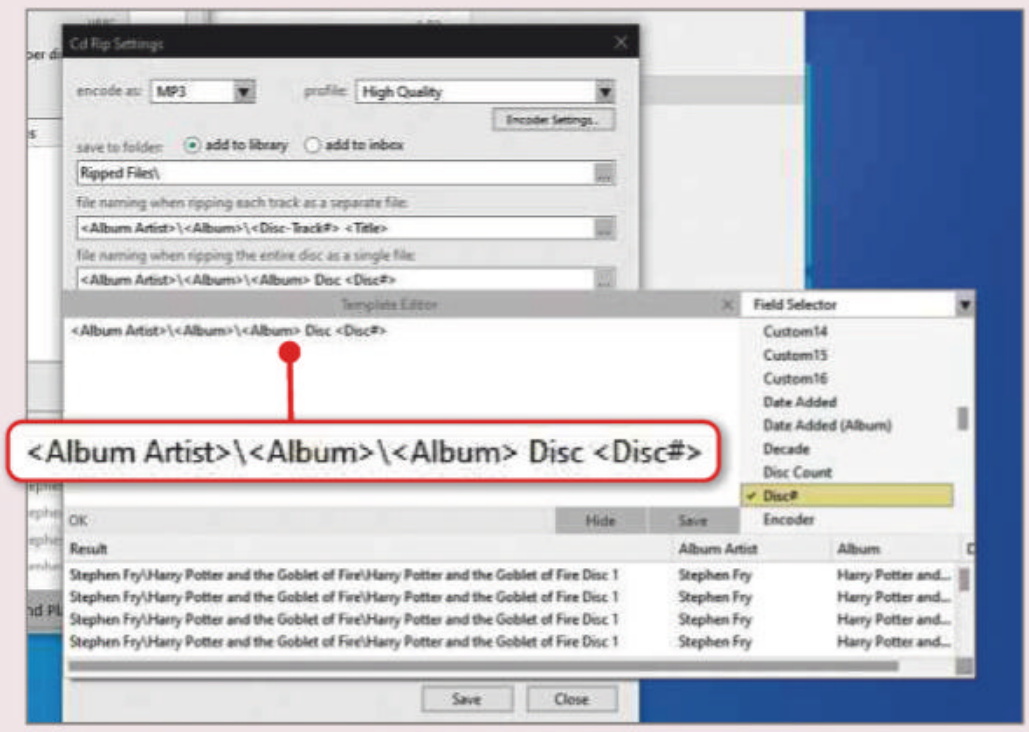
FastStone also has a tool that lets you apply annotations, which may be useful if you want to mark specific parts of your photos. To use this, double-click your image, then press D to open the Draw Board window. Click the 'A' button in the left-hand sidebar, draw a text box on your image, then enter your text (you can adjust the font style, size and colour in the Text Style box). You can then add arrows and other objects from the sidebar. Using the controls at the bottom, you can adjust (or remove) the text box's background, add a border and change its opacity level. Click 'OK' when you've finished. FastStone will offer to save the image - we recommend giving it a new file name, otherwise the annotations will be applied permanently to your original image.

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

HOW I USE...

MusicBee

Will Stapley reveals how he made child's play of ripping over 2,000 tracks

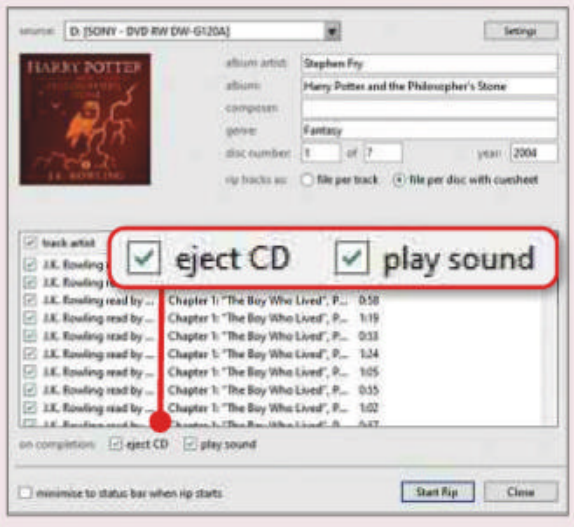


MusicBee lets you tweak the file-name structure when ripping multiple CDs

Throughout what has been a difficult time for everyone, I've been fortunate to have none other than Stephen Fry keep my kids entertained. Don't worry, we haven't been breaking lockdown laws – Stephen's stayed within the confines of the CD player in my lounge, diligently reading the first five books in the *Harry Potter* series.

Although I've tried to teach my kids the importance of looking after CDs and stress how easily they can be damaged, I still find the discs strewn around the lounge (if you saw my desk, you'd know where they got that trait). A world without Stephen reading to my kids doesn't bear thinking about, so I recently decided to digitise the collection – a daunting task considering it spans 67 discs.

I therefore turned to MusicBee (www.getmusicbee.com), which has a hidden CD-copying tool complete with settings to semi-automate the process. I inserted the first CD into my PC, opened MusicBee and pressed Alt+R to reveal the Rip CD window. MusicBee detected which disc was inserted and grabbed relevant metadata, including album artwork. I then ticked the 'eject CD' and 'play sound' boxes at the bottom of the window (see screenshot below left), which tells MusicBee to not only spit out each disc after it's ripped, or copied, but also make a satisfying beep.



Selecting 'eject CD' and 'play sound' makes MusicBee eject copied CDs with a nice beep

Each CD is split into multiple tracks, presumably to make it easier to navigate the books on a standard CD player. To avoid creating in the region of 2,000 MP3 files (most of the CDs have over 400 tracks), I selected 'file per disc...' in the 'rip track as' section, which tells MusicBee to combine all tracks in a CD into a single MP3 file. I then kicked things off by clicking Start Rip.

I soon ran into a problem. When ripping the second CD, MusicBee wanted to give it the same file name as the first, which meant it tried to overwrite the existing file. To sort this, I had to delve into the ripping settings to tweak how MusicBee names files. I clicked Settings at the top right of the Rip CD window, located the 'filename when ripping the entire disc...' box, then clicked the three horizontal dots to edit it.

You can use tags to set the file name structure (go to the Field Selector box). The one I needed was <Disc#>, which inserts the disc number into the name. So I changed the filename structure to <Album Artist>\<Album>\<Album> Disc <Disc#> (see screenshot above). This meant each MP3's file name would comprise the album name and disc number (such as *Harry Potter and the Philosopher's Stone Disc 1*), and be kept in relevant Artist and Album folders.

While in Settings, I spotted another option to speed things up: 'automatically start rip on CD insertion'. Combined with the eject setting earlier, MusicBee now not only pops CDs out once ripped, but also gets working on the next disc immediately.

Each disc takes under five minutes to rip. By the time you read this, I should have finished feeding Stephen into my PC, ensuring he continues his childcare duties for years to come.

WHAT I'D LIKE TO SEE IN MUSICBEE

Although MusicBee can rip all tracks from a CD into a single MP3 file, it doesn't detect when books are split over multiple CDs, as with my kids' *Harry Potter* collection. Until it introduces this feature, I'll have to carry on combining the MP3s separately using Audacity (www.audacityteam.org).

Next issue: How I use... Plex and Alexa to play audio books

Named & Shamed

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

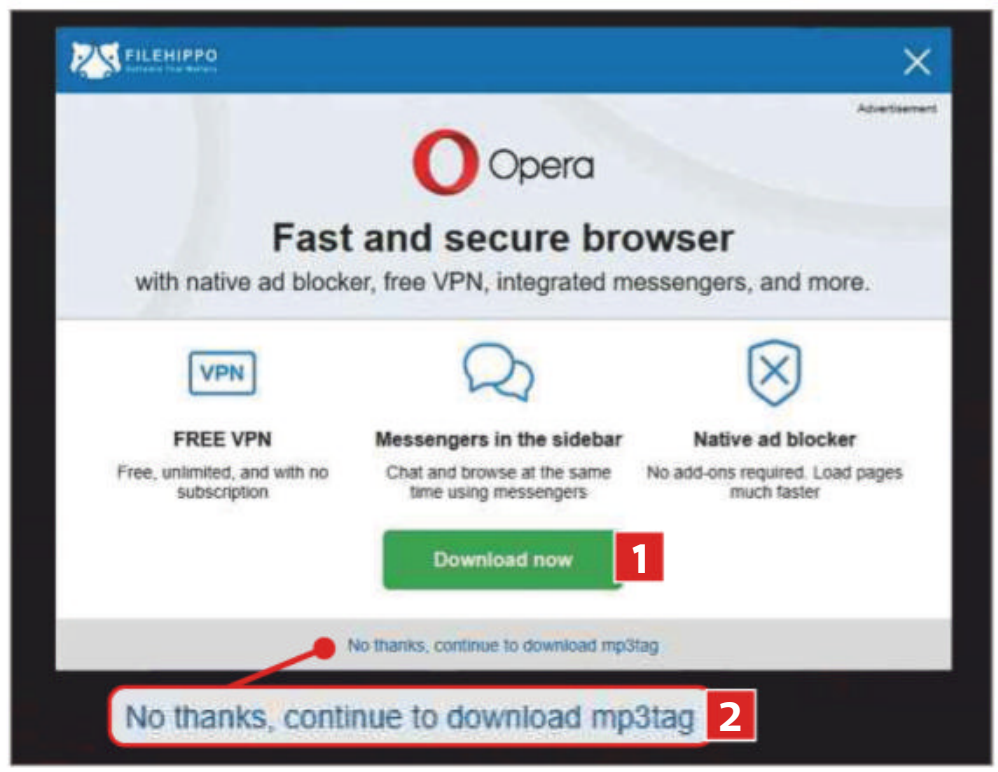
WARNING: JUNK AHEAD

Junk offender: FileHippo

When it launched in 2004, FileHippo (https://filehippo.com) quickly became one of the best download sites. I can remember using it a lot to grab useful tools and free software. But I haven't visited FileHippo for a good few years and was genuinely shocked by the way the entire website now seems geared towards tricking people into installing junk.

For a start, FileHippo seems to be flooded with adverts, many of which masquerade as download buttons for the tools you're trying to install. It's a minefield to navigate. Even if you're savvy enough to make sure you click only genuine download links, you stand a chance of being tricked by a cheeky message pop-up that attempts to con you into downloading something you never wanted in the first place.

It doesn't happen every time, but on at least two occasions, my attempts to download a legitimate program (Mp3tag) summoned a big, green 'Download now' button (like the one in our screenshot 1).



Ignore FileHippo's prominent 'Download now' button 1 and instead click this microscopic link at the bottom 2

It's easy to assume this is simply the next stage of FileHippo's download process. In fact, click this and you'll start downloading and installing software you didn't ask for (in this case, Opera – a fine browser, but not what I was after). The link to dismiss the message and continue downloading the tool you *do* want appears in tiny text below 2.

If that wasn't bad enough, FileHippo also hosts a great deal of software with dodgy installers crammed with junk. As an example, one of the programs I downloaded – Prism Video Converter – installed a second tool on my PC (NCH Suite) without my permission. My advice is to stick to downloading tools from their original websites, where possible. If you have to use a download site like FileHippo, tread very carefully indeed.

WHAT ARE THEY TALKING ABOUT?

WHAT THEY SAY

Gianfranco Lanci, Corporate President, Lenovo

www.snipca.com/37334

"As a wide array of companies re-examine the functionality of the workplace and recalibrate to varying levels of a work-from-home or work-from-anywhere, we'll start to see more traditional office workspaces become periodic collaboration hubs, while home offices become the day-to-day workplace in a new hybrid work model."

WHAT THEY MEAN

More people are working from home.

JONATHAN'S VILLAIN OF THE FORTNIGHT

Amir Tofangsazan

Persistence is an admirable quality, but not where Amir Tofangsazan (pictured) is concerned. He has repeatedly used fake profiles on dating sites to trick women into thinking he's boyfriend material, passing himself off as a model (seriously), barrister or surgeon before conning his victims out of thousands of pounds.

At a recent hearing at Wood Green Crown Court, prosecutors revealed that Amir had two previous convictions for dating fraud, neither of which made much of a dent in his criminal career. Following his first conviction in 2015, Tofangsazan smuggled a mobile phone into prison so he could continue scamming from his cell. Then, in 2019, within days of being handed a 10-year ban from using dating sites, he signed up to Tinder, Bumble and others to target his previous victims using fake identities. He's now serving three more years behind bars.

LAPTOP | **£999** from Acer www.snipca.com/37260

Acer Swift 5 SF514-55T (2021)

Small wonder

The latest incarnation of Acer's Swift 5 laptop looks similar to previous models on the outside, though Acer has improved the selection of ports around its edges. On the inside, however, it's all new, with the latest 11th-generation Intel processor, Iris Xe graphics hardware and a better battery.

There is a range of configurations available, but the one we tested hits a price sweet spot of £999. This review model had 8GB of memory installed, alongside a 512GB SSD. However, when we checked current availability, the same model available on the Acer Store now has 16GB for the same price.

> "Lightweight laptop with an outstanding screen and improved processor"

If you're looking for a small and light laptop with a 14in screen, this is a great option. Our review model weighed 950g, which is 340g less than Apple's new MacBook Air (see our review, Issue 587). Even Samsung's featherweight Galaxy Book Ion (see Issue 587) weighs 970g. It's a little wider than a MacBook Air, but slightly shallower. It's an impressive design considering it accommodates a larger screen than the these rivals.

The chassis and body come in a range of colours and are made from a magnesium alloy, which Acer claims is stronger than the aluminium alloys used in the construction of most metal laptops. On the left there's a power jack along with USB-C, USB 3.0 and HDMI 2.0 ports, while on the right there's another USB 3.0 port and a 3.5mm audio jack. Wireless communications are handled by the built-in Intel AX201 Wi-Fi 6 hardware and Bluetooth 5.

The trackpad and keyboard are real plus points. The keyboard is solid and responsive, with just the right amount of travel. We like the separation of the power button and the fingerprint scanner, with the latter sitting below the cursor keys. Our only gripe is that the cursor keys are too small and too close together. The keyboard backlight can't be adjusted, but the level of luminescence is well-judged. The trackpad, meanwhile, has an excellent click action and a pleasant tactile surface.

The Gorilla Glass touchscreen with its resolution of 1920x1080 pixels reaches a maximum brightness of 283cd/m2, which is about average in this price range. Everything else about the screen is outstanding, however, with good contrast (1,711:1) and an excellent sRGB colour coverage of 98.3 per cent.

Less impressive is the 720p webcam, which is squeezed in above the screen. Images look grainy in anything other than bright ambient light, there's no support for Windows Hello face recognition and it lacks a privacy shutter.

The Swift's brand new Intel Core i5-1135G7 processor is the same one that appeared in the Dell Inspiron 15 7000 we reviewed in Issue 599, and it's a big step forward in both performance and efficiency over previous Swift versions. In our performance tests it slightly outpaced Dell's model and significantly outpaced the results from previous laptops we've tested that use older processors. The battery is impressively durable, lasting 11 hours 15 minutes in our video-playback test.

SPECIFICATIONS

Intel Core i5-1135G7 processor • 8GB memory (reviewed, now available with 16GB) • Iris Xe integrated graphics • 512GB SSD • 802.ax Wi-Fi • Bluetooth 5.0 • 1x USB-C port • 2x USB 3.0 ports • 1x HDMI port • Windows 10 Home • 15x319x207mm (HxWxD) • 1.05kg • One-year warranty
www.snipca.com/37260

VERDICT A small, light and stylish laptop, with a good battery life, powerful processor and a fair price tag

★★★★★

ALTERNATIVE Huawei MateBook 13 £902 This similar laptop has an older Intel i7 processor which was slower in our benchmark tests, but it costs nearly £100 less

LAPTOP | **£1,500** from Asus www.snipca.com/37285

Asus ZenBook Duo 14 UX482

Are two screens better than one?

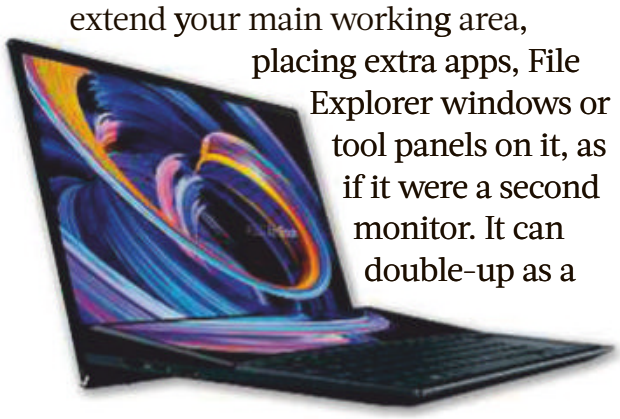
As its name implies, the Asus ZenBook Duo UX482 is a laptop with two screens. The main 14in screen is in the usual place, taking up most of the underside of the lid, while the second 12.6in, letterbox-shaped, 'ScreenPad' is sandwiched between the main screen and the keyboard. Together they provide about the same amount of screen space as you'd expect from a 17in laptop, though it folds up into a chassis the size of a regular 14in model.

The presence of that second screen pushes up the price, and as a result it's more expensive than standard laptops with otherwise similar specifications. The model we tested has an Intel Core i5-1135G7 processor and costs £1,500 – that's the cheapest in the range. It's also available with a Core i7-1164G7.

> "The second screen is an interesting idea, but makes the laptop awkward to use"

When the lid is closed there's little to distinguish this from a regular laptop. Open it up, however, and the differences become clear. The second smaller screen tilts up at a slight angle (pictured below), making it easier to view than previous dual-screen laptops we've seen.

The second screen stretches across the full width of the laptop. You can use it to extend your main working area, placing extra apps, File Explorer windows or tool panels on it, as if it were a second monitor. It can double-up as a giant touchpad and lets you enter text in your own handwriting, either using your finger or an optional stylus (not included).



It leaves less room for the keyboard, which has been pushed over to the left, so the trackpad can be accommodated on the right-hand side instead of below. The keys are smaller than you might expect on a 14in laptop and it feels cramped to work on. Its unusual location also makes it hard to learn where the keys are.

The range of connections is pretty decent, with one standard USB port, a pair of USB-C ports and a full-sized HDMI output, alongside a 3.5mm headset jack and a microSD card reader. Performance is standard and compares well with other laptops we've seen with similar specifications (though we'd expect more for the price). The main screen is bright and recreates colours well, showing 98.5 per cent of colours in the sRGB standard in our tests. The smaller screen is disappointing, though, only managing 57.9 per cent.

Overall, the extra screen makes this laptop too expensive, unless it's something that you particularly crave. It isn't as high-quality as the main screen and it creates too many compromises in the keyboard and trackpad.

SPECIFICATIONS

Intel Core i5-1135G7 processor • 8GB memory • 512GB SSD • Intel Iris Xe graphics • 802.ax Wi-Fi • 2x USB-C ports • 1x USB 3.0 port • 1x HDMI port • 1x microSD port • Windows 10 Home • 17.3x324x222mm (HxWxD) • 1.62kg • One-year warranty www.snipca.com/37285

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 magazine *PC Pro* 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 Adding a second screen to a laptop is a great idea, but this design means the keyboard and trackpad are too squeezed to use comfortably

★★★★★

ALTERNATIVE LG Gram 17 £1,050 If it's screen space you're after, this 17in model has a similar amount in a single screen

MINI PC | **£1,151** from Boston www.snipca.com/37321

Prime Computer PrimeMini 5

Small, solid and silent

We've reviewed a few mini PCs recently, which are incredibly useful if you're short on space or just don't want a huge PC taking up room around your desk. This PrimeMini 5 is a bit taller than the HP EliteDesk 705 that we reviewed in Issue 576, but it's about the same width and not quite as deep (see the specifications below). It's also more than twice the price.

We suspect that some of the extra height is to help with cooling. This is a fanless PC, which means it runs silently. When you switch it on, the only sign that it's operational is the blue LED surrounding the power button. This feels luxurious, when most desktop PCs and laptops accompany your work with, at best, the gentle whir of a fan or two.

> "It's quiet, energy-efficient and compact, but not cheap"

Another benefit is that it doesn't use as much power, because no electricity is used to keep mechanical parts moving. To give you an idea of the difference this makes, a standard desktop PC tends to consume around 80W, even when sitting idly. The PrimeMini 5 consumes 13W in general use, and even at its peak it only draws 30W. Based on average use and typical electricity prices, this will probably save you only £30 per year, so it's not enough by itself to justify the high price.

There's one more benefit to running a PC without a fan: it doesn't suck unwanted dust and dirt from the air around the PC as it's cooling. This keeps the inside of the computer cleaner and should make it more reliable.

In fact, with the protection provided by its sturdy aluminium case, the manufacturers (Swiss firm Prime Computer) are clearly confident about the PC's longevity, providing a generous five year warranty.

The key component behind its ability to run without a fan is its low-power mobile processor, the Core i5-8365U, which needs only a handful of Watts to run. The downside is that it hasn't got as much computing power as regular desktop processors, but with 16GB of RAM the PrimeMini 5 runs office apps without difficulty.

The quoted price includes a 250GB Samsung Evo 860 M.2 SSD for running Windows and other storage. Open the case by releasing the four crosshead screws and there's space for both M.2 and standard 2.5in SSDs, so you could add a second drive if you wish. It's also possible to upgrade the RAM.

What you can't expect this system to cope with is gaming. The processor comes with Intel's UHD Graphics 620, but it wasn't up to running games in our tests. It managed a barely satisfactory frame rate in a few basic tests, with the screen resolution turned down to 720p, but failed to run many games.

The model we reviewed has two USB 3.0 ports and a headphone jack on the front. On the back there are two HDMI ports, a USB-C port, another USB-3 port and a USB 2.0 port. There's also an Ethernet port and 802.11ac Wi-Fi. It would have been nice to see Wi-Fi 6, but you can't have everything.

What you do get, however, is a pair of antenna extensions (pictured below left), which attach to the back of the device if you're going to be using it with a Wi-Fi connection. These make the PC look like a router, but they certainly help it to catch your Wi-Fi signal, particularly if you need to locate it a fair distance from your router.

SPECIFICATIONS

Quad-core Intel Core i5-8365U processor • 16GB memory • 250GB M.2 SSD • 1x USB-C port • 3x USB-3 ports • 1x USB-2 ports • 2x HDMI ports • 1x Ethernet port • 802.11ac Wi-Fi • Windows 10 Pro • 55x177x114mm (HxWxD) • Five-year warranty
www.snipca.com/37321

VERDICT This sturdy, aluminium-cased mini PC operates without any fans, working silently with minimal running costs. It's expensive, though

★★★★★

ALTERNATIVE HP EliteDesk 705 G5 £479 HP's alternative is a lot cheaper, but it's noisier and uses more power

MINI COMPUTER | **£699** from Apple www.snipca.com/37282

Apple Mac mini

Closing Windows

The Mac mini joins the MacBook Pro (see our review, Issue 596) and the MacBook Air in Apple's new range of devices that use its powerful new processor, the M1. On the positive side, it's extremely fast and runs the latest macOS software at a blistering rate. On the other hand, it's less compatible than ever – with even some existing Mac software unable to run on it.

From the outside, the Mac mini looks just like previous minis: a small metal box with an Apple logo and some ports at the back. You don't get a screen, keyboard or mouse, so you need to factor anything you're missing into the price. Our review model is the most affordable, with 8GB of RAM and a 256GB SSD for £699.

> "Lightning fast and compact, but you'll have to stop using Windows"

Given its compact size, there's a fair selection of connections on offer (pictured below). It has two USB-C, two USB 3.0, and one Gigabit Ethernet port, as well as an HDMI socket and 3.5mm headphone jack. As for wireless connectivity there's 802.11ax (Wi-Fi 6) Wi-Fi and Bluetooth 5.

One significant difference to previous Mac minis is that there's no way to upgrade it. It's possible to remove its lid but the memory and SSD are soldered to the motherboard and can't be replaced.

As we found when we tested the MacBook Pro, the new M1 chip is lightning fast, and slightly faster here than with the Pro. However, we can't run our standard benchmark test on the device because, like a lot of software, it hasn't been rewritten for the M1 processor yet. We ran enough other tests to establish that it's as fast as a MacBook Pro launched in late 2019 that cost in excess of £3,700. Not bad then for £699.

Indeed, it would be too good to be true if it weren't for the M1's drawbacks. The biggest of these is that you'll have to switch to macOS. Previous Macs had Intel processors that could run Windows emulators, so you didn't have to leave your favourite software behind. The M1 can't do this, so you have to fully embrace Apple's OS. While macOS may be considered easier to use by Apple veterans, this won't be the case with anyone who's only ever used Windows PCs. The differences between the software can be tricky to get to grips with.

SPECIFICATIONS

Octa-core Apple M1 processor • 8GB memory • 256GB SSD • 2x USB-C ports • 2x USB 3.0 ports • HDMI port • 3.5mm headphone jack • Gigabit Ethernet port • 802.11ax Wi-Fi • Bluetooth 5.0 • macOS Big Sur • 36x197x197mm (HxWxD) • 1.2kg • One-year warranty www.snipca.com/37282

VERDICT A powerful and affordable desktop computer in a compact case, but having to move away from Windows may be a step too far

★★★★★

ALTERNATIVE Intel NUC10i7FNH NUC 10 £460 Although Intel's Windows-compatible alternative looks cheaper, it doesn't include RAM and storage

CHOOSE THE RIGHT SPECS

Smartphone RAM

What does it do?

Just like in a PC, a smartphone's RAM is the short-term memory that stores temporary information. It's like a shopping list on a scrap of paper, which is essential while you're in the shop but can be thrown away when you've finished.

How does it work?

In phones, RAM is a microchip (like Samsung's LPDDR5 chip, pictured) that's permanently attached to the phone's motherboard. While the RAM has power it can remember anything, up to its capacity. Information can be stored for as long as it's needed or until the phone is switched off.

What are the specs?

Capacity is measured in gigabytes (GB) and the big question is how much RAM do you need? This depends on what you want to do on your phone. Simple phone tasks such as making calls, barely need any RAM; browsing the web and watching videos need a medium amount; and some games will use as much as is available to make gameplay faster and slicker.

It also depends on the operating system. Apple's iOS doesn't need as much RAM to run because it works on a small number of specific devices. iOS 14, Apple's latest operating system, can run on an iPhone 6s, which only has 2GB of RAM. It will run quicker on later models with more RAM, though.

Android is designed to run on a broader range of devices, so it isn't as finely tuned. As a result it needs more RAM to run itself before you even open an app or a game. 4GB is a bare minimum for a modern Android phone, though we'd recommend getting a phone with more than that. The more RAM it has, the better the phone will run.

Can I change it later?

Sadly not. Because phones are so small and compact, the memory has to be soldered to the motherboard.

PHONE | **£229** from Amazon www.snipca.com/37269

Xiaomi Redmi Note 9T

5G-force

Most UK mobile-phone operators have started rolling out their 5G networks, which promise download speeds that are around 10 times faster than 4G. If you live or work in an area that has 5G (you can check this at https://5g.co.uk), you might be considering trying life in the fast lane. You'll need a 5G-compatible phone, but that needn't cost the Earth – and at £229 the Xiaomi Redmi Note 9T is the most affordable option we've seen to date.

> "The best 5G smartphone that a modest amount of money can buy"

Even if you're not ready for 5G yet, it's still a capable smartphone that's worth considering. It has a large 6.53in screen with a resolution of 2340x1080 pixels, and a 48-megapixel camera. There's a choice of either 64GB or 128GB of expandable storage, and it comes with 4GB of RAM. We reviewed the £229 64GB model, but the 128GB model costs only £20 more.

The screen is nothing to write home about but it's perfectly decent for this price. It reproduces colours well, covering 97.9 per cent of the sRGB colour range in our tests, and its peak brightness is a fairly dazzling 502cd/m². However, the contrast is a middling 1,096:1.

In our performance tests, the 9T really impressed for a budget model. It has the new MediaTek Dimensity 800U processor, and in the Geekbench 5 test it outperformed pricier 5G phones, including the £329 OnePlus Nord N10 5G (see our review, Issue 596). In our video-playback test the battery lasted 18 hours 10 minutes, which is more than enough to last a day of use whenever we all get the opportunity to be out and about again.

The previous Redmi Note had an extra ultra-wide camera lens, which has been removed from this version and we miss it. However, the main 48-megapixel camera takes great shots in decent light, though it suffers somewhat in dimly lit conditions.

Inevitably, then, there have been corners cut to get this 5G smartphone on the market at this price, but it's still much better than we have any right to expect. For those looking for the most affordable route into 5G, it's perfect.

SPECIFICATIONS

Octa-core MediaTek Dimensity 800U • 4GB of memory • 6.53in 60Hz 2340x1080-pixel screen • 48-megapixel rear camera • 13-megapixel front camera • 64GB or 128GB storage • 5G compatible • 802.11ac Wi-Fi • Bluetooth 5.1 • Android 10 • 162x77x9mm • 199g • Two-year warranty
www.snipca.com/37269

VERDICT Affordable and with a great battery, this is the perfect phone for anyone looking to buy their first 5G device

★★★★★

ALTERNATIVE

Moto G 5G Plus £299
This used to be our favourite budget 5G phone but the Xaiomi Redmi Note 9T is even better

WHAT SHOULD I BUY? We solve your buying dilemmas

Where can I buy a £100 inkjet printer?

Q I need a new inkjet printer, but they seem to be few and far between. Are they going out of fashion? I've scoured Amazon, Argos and PC World, and their inkjet printers are out of stock. I can't find anyone who's stocking your recommended printer, the Epson Expression Premium XP-6105. Can you help me find a printer for around £100?
Roger Bradshaw

A Printers are in high demand thanks to the increase in home working and home schooling, and while stocks were drastically low during the first lockdown, things have improved over time. However, stock levels still ebb and flow, and prices are higher, so if you're looking for a particular model, it's worth doing regular searches.

For example, we found the Epson Expression Premium XP-6105 from an Amazon reseller, but – with supplies low and demand high – the price has inevitably risen from £119 to £159 (www.snipca.com/37271). If you'd rather stick with your £100 limit, try the Cartridge People website, which (at the time of writing) had more than 99 Canon Pixma TS5150 printers available at £99.90 (www.snipca.com/37272, pictured). Get one while you can.

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

Computer active

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PORTABLE HARD DRIVE | **From £155** from Amazon www.snipca.com/37325

iStorage DiskAshur M2

Locked and loaded

Portable hard drives are fast and convenient, but most are also a security risk. If you can plug it into a PC and read the files, so can anyone else. The iStorage DiskAshur M2 is far more secure: if you don't know the code required to unlock it, there's no way to access the data on it.

There are various levels of protection at play here. The obvious one (as you can see in our photo) is the physical combination lock. Everything on the drive is encrypted, and can't be opened without first tapping in the code you've set. This encryption is built into the hardware, is tamper-proof and provides AES 256bit encryption, which is essentially uncrackable.

To add further protection, the drive complies to IP68 water- and dust-proofing (meaning it can survive being submerged in 1.5m of water for 30 minutes) and it has a crush-proof design that can withstand being run over by a 2.7-ton vehicle.

Despite this, it's remarkably light, weighing 65g and easily fitting into the palm of your hand. It comes with a handy carry case that can also accommodate the necessary USB cables.

The downside of this encryption is that it slows the drive down. It takes the drive a couple of seconds to recognise the code when it's entered on the keypad. Even once you're logged in, it's slower than a standard unencrypted portable USB SSD. We measured read and write speeds of around 300MB/s, compared with over 800MB/s on an unsecured Samsung Portable SSD T7, which costs only £85 for a 500GB drive.

SPECIFICATIONS

USB 3.0 • AES-XTS 256bit full-drive hardware encryption • IP68 certified • USB 3.0 and USB-C cables • Protective carry case • 12x45x111mm (HxWxD) • 65g • Three-year warranty www.snipca.com/37325

VERDICT Slow and a bit fiddly compared with a standard SSD, but it's a great option for securing and protecting precious or sensitive files

★★★★★

ALTERNATIVE Verbatim Store 'n' Go Secure Portable 1TB £68 For those looking for capacity rather than speed, this keypad-protected 1TB model uses a cheaper hard drive instead of an SSD

MICROPHONE | **£103** from Amazon www.snipca.com/37326

Shure MV5C Home Office Microphone

A sound idea

If you've spent lockdown struggling to make yourself heard in video calls, either because your laptop's microphone isn't up to scratch or the background noise in your household regularly rises above the volume of your own voice, then Shure's MV5C may come to the rescue.

It's a relatively inconspicuous addition to your desk, standing at only 14cm tall, and cuts quite a dash with its retro styling and black finish. If anything, it's *too* light, and is easily knocked over by accident. It also requires a USB cable, which trails out of the back. The supplied cable is only 1m long, so it can't be used too far away from your laptop.

The diminutive dome houses two tiny buttons: one for muting (which turns a row of three LEDs red) and one to activate the speech-enhancement mode. You'll know if this on because the leftmost of those LEDs turns green, with the middle LED simply showing that it's active and connected. The third light indicates that headphones are plugged into the 3.5mm jack. Note that you can adjust the headphone volume using a tiny volume control.

What really matters, though, is sound quality, and the MV5C lives up to Shure's reputation in this field with clear voice capture that's vastly superior to most built-in laptop mics. It's more than good enough for recording podcasts, too.

Shure recommends you switch on the speech-enhancement mode during video calls, which genuinely works to make your voice clearer and louder. The MV5C is a top-class performer.

SPECIFICATIONS

16mm unidirectional condenser mic • 0 to +36dB adjustable volume • 3.5mm jack • Mute switch • Standard tripod mount • Mounting stand included • 142x97x89 (HxDxW) • 160g with stand • Two-year warranty www.snipca.com/37326

VERDICT A top-quality mic with a handy speech-enhancement mode, but it's not cheap

★★★★★

ALTERNATIVE Blue Snowball iCE £55 A cheaper microphone that improves your PC's sound quality but doesn't have voice-enhancing features

WIRELESS EARPHONES | **£249** from Amazon www.snipca.com/37290

Grado GT220

Sounds great

Grado has been making headphones since 1993, but the GT220 are its first venture into the world of wireless earbuds. At £250, they're on the expensive side, and surprisingly they don't have the long list of features we'd normally expect for this price. There's no active noise cancellation, ambient sound mode or companion app with which to customise the sound. They're only IPX2 rated, so although able to withstand a few drops of water, they fall short of the sweat- and water-resistance offered by the majority of their rivals. This leaves you with earbuds that may be unprepared for the rigours of modern life.

> "They lack features, but sound quality is second to none"

The earbuds do have touch controls, however. Both Siri and Google Assistant are supported and the case (pictured below) can be charged wirelessly. They deliver up to six hours of audio playback per charge, which is unremarkable in and of itself, but the case provides a further five charges, taking the total battery life to a highly impressive 36 hours.

There's a USB-C cable for charging if you're not making use of the case's wireless charging capabilities, along with small and large silicone eartips in case you struggle to achieve a comfortable fit with the pre-installed medium tips.

Where the Grado GT220 truly excels is in the sound quality. Earbuds often struggle to reproduce the natural, spacious sound you get from regular headphones but these are impressive, bringing out details of performances that rivals often miss. We tested them with a range of musical styles, from acapella sea shanties to punchy, bassy dance music, all of which were handled with aplomb.

The sound quality benefits enormously from the passive noise cancellation provided by the GT220's twist-to-lock fit. Once you've wedged the tips into your ears and twisted them into position, they form a highly effective seal against external sound. It doesn't entirely make up for the lack of active noise cancellation – louder sounds will still get through when you're listening at low volumes – but it goes a long way to making up for its absence.

SPECIFICATIONS

Bluetooth 5 • Supports aptX, AAC, SBC codecs • USB-C cable • 3 sizes of ear tips • Wireless charging case • 5g • One-year warranty www.snipca.com/37290

VERDICT The Grado GT220 earbuds offer supreme sound quality, but they're expensive and don't come with weather-proofing or active noise cancellation

★★★★★

ALTERNATIVE Bose QuietComfort Earbuds £250 Bose's earbuds almost sound as good for a similar price, but come with active noise cancellation

DO I REALLY NEED...

A quad-curved 'waterfall' phone screen?

What is it?

Chinese smartphone manufacturer Xiaomi has shown off a prototype for a new type of phone display (pictured), which wraps around all four edges of the screen.

What does it do?

The screen bends 88 degrees to wrap around the edge of the phone. This lets Xiaomi replace the physical buttons typically found on a phone's edges with software buttons. To see it for yourself, watch Xiaomi's promotional YouTube video at www.snipca.com/37291.

What's the catch?

Without physical buttons, it's going to be more difficult to perform functions like a hard reset if your phone crashes. There are also no ports on the prototype, so families will be fighting over wireless charging pads rather than cables.

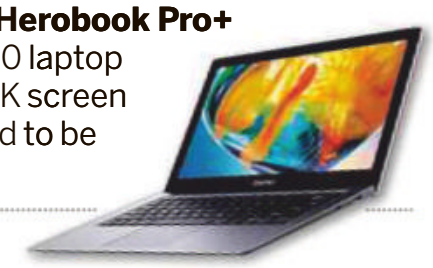
So can I do without it?

Yes. It would be handy to maximise the space on your smartphone screen but not essential, and it'll be a while before it arrives on budget phones.

NEXT ISSUE

On Sale Weds 10 March

Chuwi Herobook Pro+
Is a £250 laptop with a 3K screen too good to be true?



Motorola Moto G9 Plus
The best Moto G9 yet with a 6.8in screen for less than £200

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Buy It

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Our pick of products that have won the Buy It award

LAPTOP

Honor MagicBook 14
£600 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 £1,649 from www.snipca.com/36642

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. £1,500 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 12
£799 from www.snipca.com/36582
Tested Issue 595

The latest iPhone has a modest increase in already exceptional processing power plus even better photos and videos from the front and twin rear cameras. It comes in a redesigned case with aluminium frame and even tougher glass. Consider paying the £50 extra for 128GB of storage.

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

PRICE DROP

Realme X50 5G
£229 from www.snipca.com/36037
Tested Issue 590

Amazing value for a big 5G phone with three rear cameras (including ultra-wide and macro), a pretty quick Snapdragon 765G processor and a decent IPS screen. There's a fingerprint reader, but no wireless charging or waterproofing.

ALTERNATIVE Google Pixel 5 Cheaper than previous Pixels, this has great cameras, wireless charging and a superb screen. Battery life is 23 hours. £599 from www.snipca.com/36586

Computer active

600th ISSUE

WIN

£600 worth of Amazon.co.uk Gift Cards*

To celebrate reaching our 600th issue, we're giving away £600 of Amazon.co.uk Gift Cards to one lucky reader.

There's a lot you could buy with that – 20 Fire TV Sticks; three packs of BT's Whole Home Wi-Fi; a 65in JVC smart TV; or even 40 copies of our 2020 Back Issue CD (www.snipca.com/37026)!

Before you write your shopping list, you'll need to enter the competition. **Simply visit the site below and answer the following question: How much do subscribers pay per print issue? (hint: check page 59)**

You have until midnight Tuesday 23 March to enter the competition. We'll then contact the winner. Good luck!

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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 2021
£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

PRICE DROP

Serif Affinity Photo
£24 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. £38 from www.snipca.com/26514

PC MONITOR

BenQ GL2780
£157 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 241B7QPJEB With a great picture, stylish design and speakers, this 24in Full HD IPS is an excellent smaller screen. £199 from www.snipca.com/37096

ROUTER

D-Link DIR-1960
£104 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. £219 from www.snipca.com/30710

PRINTER

Epson Expression Premium XP-6105
£157 from www.snipca.com/37271
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 1 of 2 Crucial P5 SSDs (2TB)

Winner of a Buy It! award in Issue 595 (page 26), Crucial's P5 SSD delivers some of the fastest speeds we've ever seen in our tests – 3,420 megabytes per second when reading files, and 3,243 megabytes per second when writing them.

It's an NVMe SSD, so it makes full use of the PCIe 3 M.2 socket in most modern PCs and laptops to deliver speeds not just faster than a traditional hard drive, but in a different order of magnitude. This speed means operating systems and apps open quickly, while games load as soon as you're ready to play.

It includes advanced features like dynamic write acceleration, which writes files faster by creating a cache that's sized according to the demands of the drive, rather than using up capacity to accommodate a permanent cache. In addition, it's fully encrypted, keeping your data completely private.

To enter this competition, please email your address to **cacomp@dennis.co.uk** with 'crucial' in the subject line by midnight 9 March. Good luck!

You can buy the P5 SSD from Crucial's website: www.snipca.com/36715. It comes in four capacities: 250GB (£51.59), 500GB (£74.39), 1TB (£139.19) and 2TB (£315.59). For updates on Crucial's products follow the company on Twitter @CrucialMemory.

MESH ROUTER

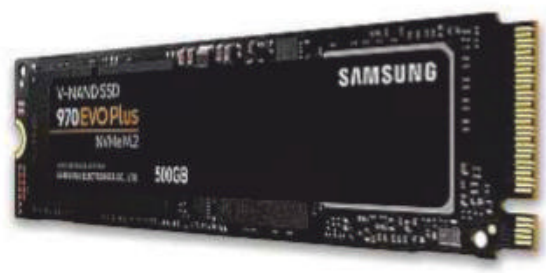
BT Whole Home Wi-Fi
£200 from www.snipca.com/26990
Tested Issue 496

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
£81 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. £65 from www.snipca.com/37304

SMART SPEAKER

NEW ENTRY

Google Nest Audio
£90 from www.snipca.com/36475
Tested Issue 593

Produces a rich, clear sound, and better understands your questions than Amazon's Echo devices. You can use Google's app to control audio from other units around your home (pair two of them for £160). The clever Ambient IQ tool increases the volume if it detects external noise, such as a hairdryer.

ALTERNATIVE Amazon Echo (4th generation) The latest version of the Echo changes the shape from a cylinder to a ball, which improves sound quality – though the Nest's is still superior. £90 from www.snipca.com/36602

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

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Pull Out & Keep

Issue 600

HOW TO...

Store videos on a Fire TV Stick to watch anywhere

by Nik Rawlinson

What you need: Amazon Fire TV Stick **Time required:** One hour

If you use an Amazon Fire TV Stick to stream films or TV from online sources, you'll already know that it has internal storage that can accommodate installed video and audio apps, as well as games. But did you know that you can also access that storage yourself, and use it to host your own videos, photos and music?

All you need do is install a couple of apps (ES File Explorer and VLC Media Player) from the Amazon App Store, which is built into the Fire TV Stick itself. Once you've done so, you can transfer files wirelessly from your computer to your stick, so you can access them on your TV whenever you want.

Space is limited, so it makes sense not to try transferring hours of unedited footage. Our advice is to work with something you've trimmed down so you can maximise the variety of videos you transfer.

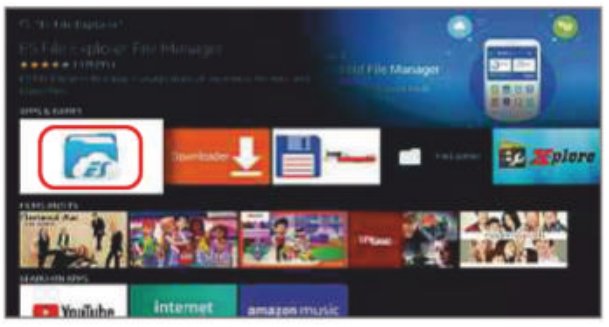
Before we start, a note about the 'four-way controller' that we refer to later. This is the circular control button that clicks up, down, left and right at the top of the Fire TV remote control (see photo left). The Select button is the large circular button inside it.

1 Install ES File Explorer

Switch your TV to whichever input your Fire TV stick is connected to and wait for it to start up. Use the remote control to move left to the magnifier, then search for ES File Explorer using the on-screen keyboard. You'll notice the list of results updates in real time. In our experience, typing ES was sufficient to pull up the result we wanted. Use the four-way controller to move down and highlight it, then press the centre button (Select) to open it.

Press Select again on the next page, where ES File Explorer is highlighted (see screenshot right), to open its full page. You'll see 'Get' already highlighted, so press Select a third time to install it. The app is free but it offers in-app purchases (you won't need to buy any of them). Once it's installed, the Get button changes to Open. Click Select again to launch the app.

As an Android app, ES File Explorer needs permission to access your Fire TV Stick's internal storage. If you're happy to proceed, press down (ie the bottom of the four-way controller) to highlight the Agree button, then press Select. On the pop-up that appears, confirm that you're happy for the app to access photos, media and files on your device by clicking Allow on the overlay that appears.



Press Select on your controller to open ES File Explorer on your TV

You now need to agree to the Terms of Service. Press down until you've highlighted 'Terms of Service' at the bottom of the page and press Select to open them. If you agree with the contents, press the remote's back button, then use the top of the four-way controller to go back up to 'Agree and Continue' and press Select to proceed.

Finally, you'll be asked whether you want to trial the paid-for features or restore previous purchases. If you don't want to do either, move to the 'x' in the top-right corner and press the Select button to go straight into ES File Explorer.

2 Check your internal storage

Now that you have ES File Explorer up and running, you can explore the internal storage on your Fire TV Stick. At the moment, the contents might not make a lot of sense as it's largely made up of system folders. At the top of the screen, you'll see how much storage you have on your device. As you can see in the screenshot below, we have 2.96GB free of the original 5GB. This is what we'll use to store our own media.

If you don't have much, consider uninstalling some of your apps – or at least clearing out their cache, which is the temporary data the apps store on your Fire TV Stick so they don't need to download it anew every time you launch the app.

To remove apps, press Home on your Fire TV remote, then click across to the far right of the top menu and press Select when you've highlighted Settings. Scroll along to Applications on the sub-menu and press Select, then down to Manage Installed Applications, and press Select.

Scroll down through the list of applications and keep an eye on the Size and Cache measurements that appear to the right, as you can see in the screenshot at the bottom-left of the page. If you don't use an app and you want to remove it, press Select when it's highlighted, followed by Uninstall. If you only want to delete its cache, select the app then move down to 'Clear cache' and press Select again.

Note that you can't remove Amazon's pre-installed apps, only those you've installed yourself. Once you've finished, return to ES File Explorer from its entry on your Fire TV homepage.

3 Transfer your videos

Press left on the four-way controller, then move down to Network and press Select to open the sub-menu. Within the sub-menu, move down to 'View on PC' and press Select. The name of your current network will be displayed on your screen.

Press down on the four-way controller and press Select when Turn On is highlighted to enable the internal FTP server. FTP, which stands for File Transfer Protocol, is a standard system used for transferring files between computers – and, although it's more often used to upload files to a website, you can use it to send files to any other machine on your local network as long as it has the necessary FTP server software installed. ES File Explorer is providing that software.

Make a note of the numeric address that will now be displayed on your screen (see screenshot below), including the digits after the colon. This address is accessible only on your local network.

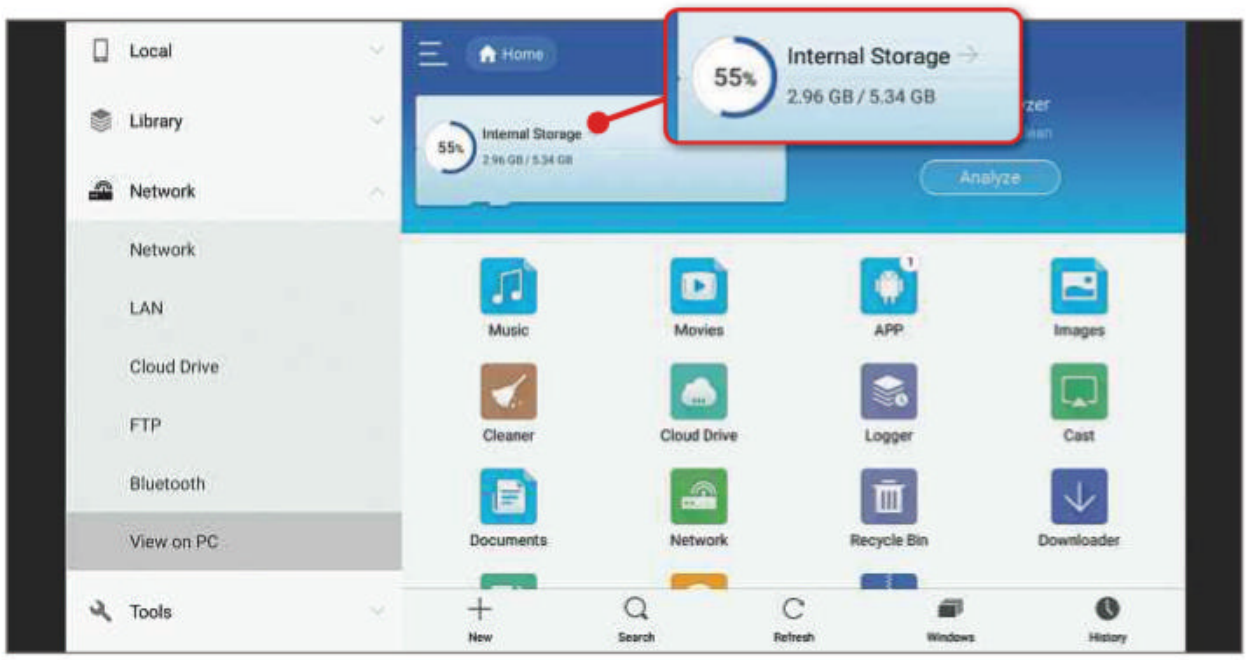
Leave ES File Explorer running on your TV, and open a new File Explorer window on the computer where your

How I use my Fire TV Stick

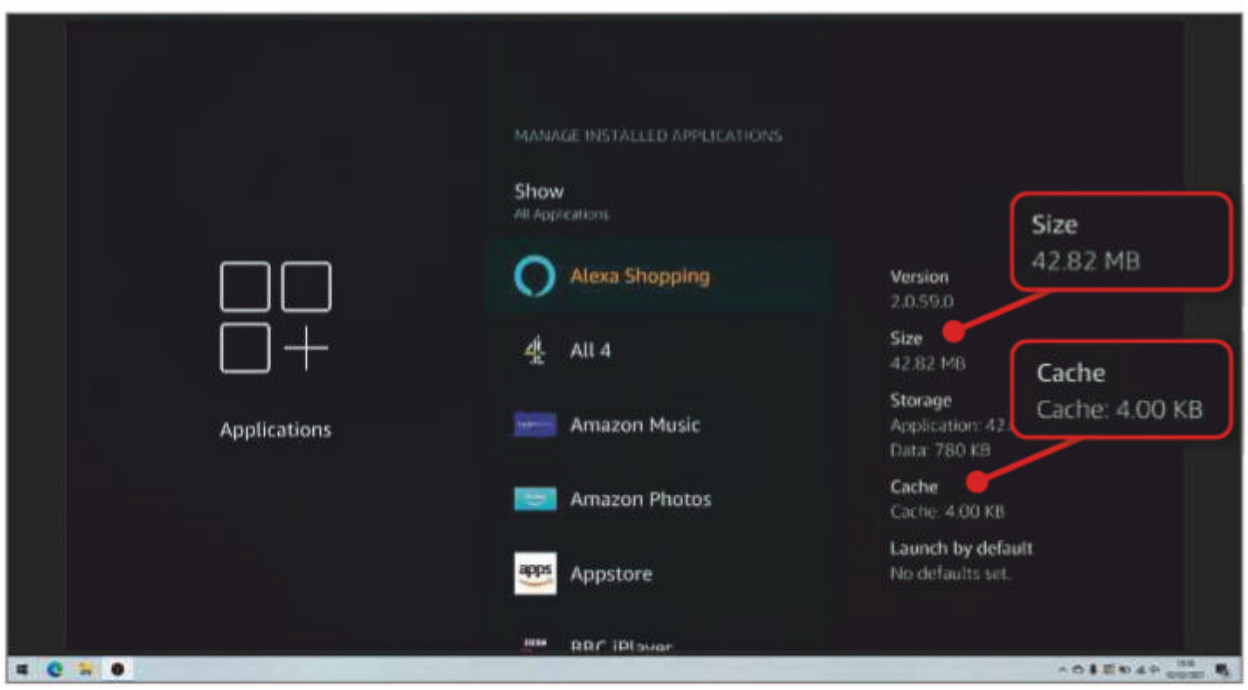
There's a handful of videos that I come back to now and then. Mostly, they're holiday moments, videos of long-gone pets, or family occasions – and they're much better enjoyed on TV than a laptop. By copying them to my Fire TV Stick, they're always available to watch whenever the mood takes me, without requiring that I dig them out of a buried folder, or head upstairs to watch them at my desk.

Nik Rawlinson

How do you make use of your Amazon Fire TV stick? Please let us know: letters@computeractive.co.uk

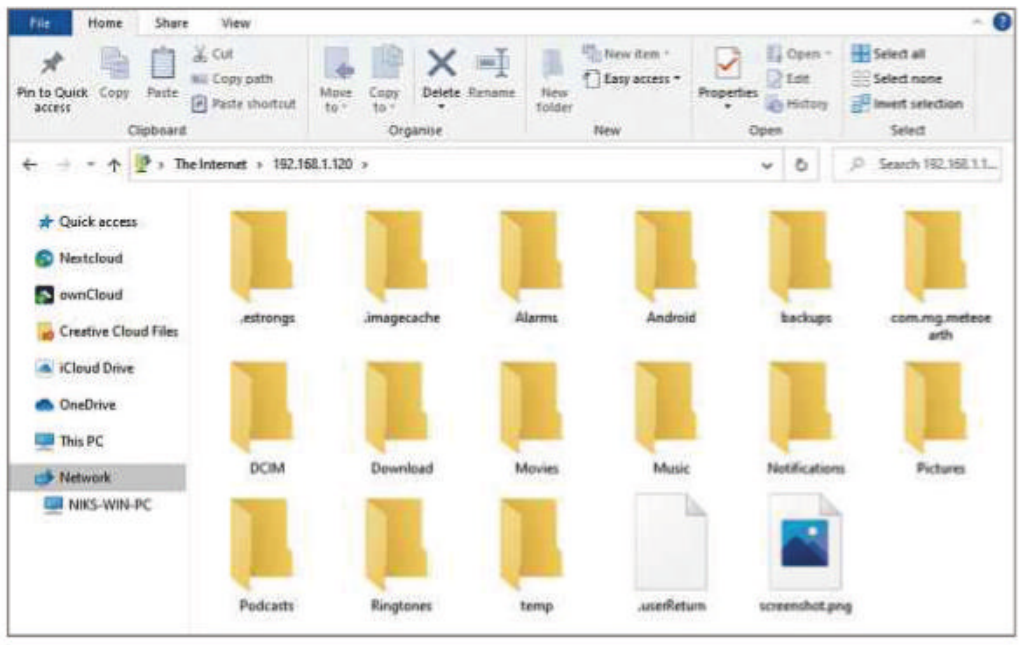


Check how much built-in storage on your Fire TV Stick is free for use



Removing an unwanted app and its cache from your Fire TV Stick will free up space

The numbers in this address are your Fire TV Stick's location on your local network



Navigate the folders on your Fire TV Stick using Windows' File Explorer

videos are stored. Type the full address into the address bar. In our case, this is ftp://192.168.1.120:3721/, although this may be different on your device, depending on how your network has been set up and what address your router has assigned to the Fire TV Stick on your network.

Windows File Explorer will refresh to show the folders stored on your stick, as you can see in the screenshot above.

Open the Movies folder within the main pane of the File Explorer window, then open a second File Explorer window beside it by pressing Ctrl+N. In this second window, navigate to the folder containing the video you want to transfer, then drag it across into the Movies folder that's still open in the first window. Repeat this process for any other video you want to copy to your Stick.

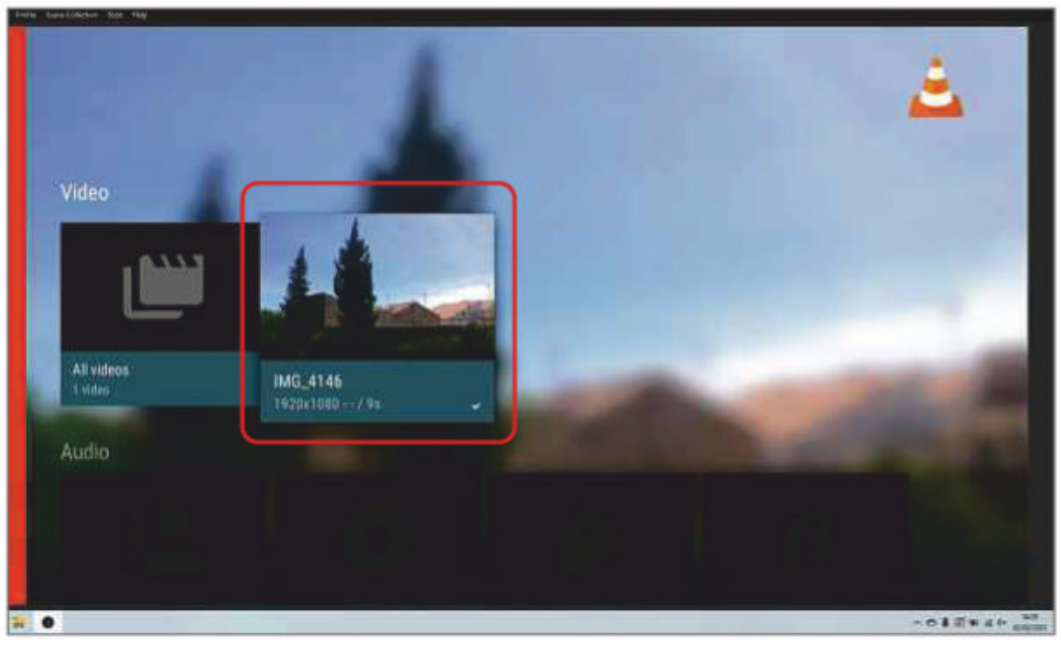
4 Play back your videos

Return to your TV and press Home on the Fire TV remote control (the button has an icon of a house on it). Scroll back to the magnifying glass on the far left of the top menu and use the on-screen keyboard to search for VLC. Scroll down the results list to VLC Media Player then press Select. This opens the 'VLC for Fire' overview. Press Select with the VLC logo selected, then press Select again to activate the Get button on the 'VLC for Fire' detail page. This installs the app.

Once it's installed, the Get button will become an Open button. It will be pre-highlighted, so press the Select button to launch VLC and, as you did with ES File Manager, press Select on the following page to allow access to photos, media and files on your device.

The first thing VLC does is scan your stick for existing media. This may take a few seconds to complete but, when it's done, the files you dragged across should appear in the 'All videos' section at the top of the main pane. Press right on the four-way controller to open this folder, then highlight the video you want to play (see screenshot below) and press Select again.

If your video hasn't been found, instead press down on the four-way controller until you've highlighted Browsing in the sidebar, then press Select twice to open the stick's internal memory. Scroll down through the list of folders until you reach Movies and press Select again to view its contents.



Use 'VLC for Fire' to play videos you've transferred to your Fire TV Stick

5 Manage space on your stick

Your Fire TV Stick has limited internal space, so it's important to use it wisely. The more media you transfer to it, the fewer apps you can install, and vice versa. It makes sense to get into the habit of deleting files when you no longer need them.

To do so, open ES File Explorer and again navigate to your Movies folder by first pressing left on the four-way controller to move across to the sidebar, then moving down to Local. Once it's highlighted, press Select to expand it, then move down to Internal Storage and press Select again.

The block that highlights what's been selected will skip across to the app's main pane. Use the four-way controller to move it down to Movies, then press Select. Now highlight the file you want to delete and press and hold the Select button. After a second or so, the file will be overlaid with a green tick and the menu at the bottom of the screen will change to a series of file-management tools. Use the controller to highlight Delete on the toolbar, then press Select.

ES File Explorer will now offer to move the file to the Recycle Bin. Doing so won't recover the space it uses, so instead press Select, which removes the tick from 'Move to recycle bin' and changes the header of the floating window to Delete. Press Select to remove the file from your stick and reclaim the space it occupied.

DELETE APPS FROM YOUR FIRE TV STICK

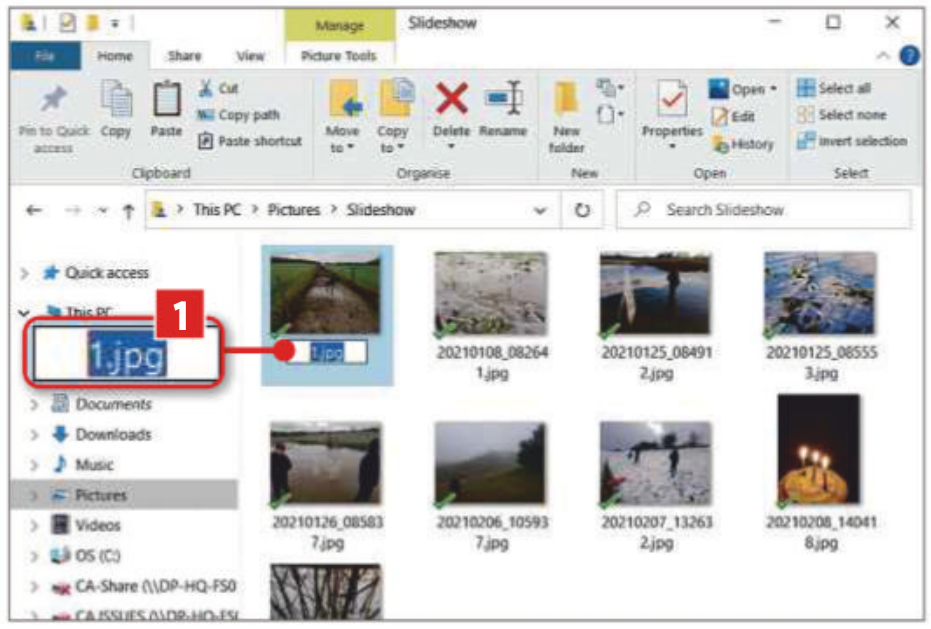
If you want to delete an app from your Fire TV Stick, press the Home button on your Fire TV remote control, then use the four-way controller to move to the last item on the top menu – Settings. Press Select, then move across to Applications, and press Select a second time. Now select Manage Installed Applications. Scroll down to and select the apps you want to remove and then, on the following screen, scroll down to and select Uninstall. Confirm by selecting Uninstall again on the next screen.

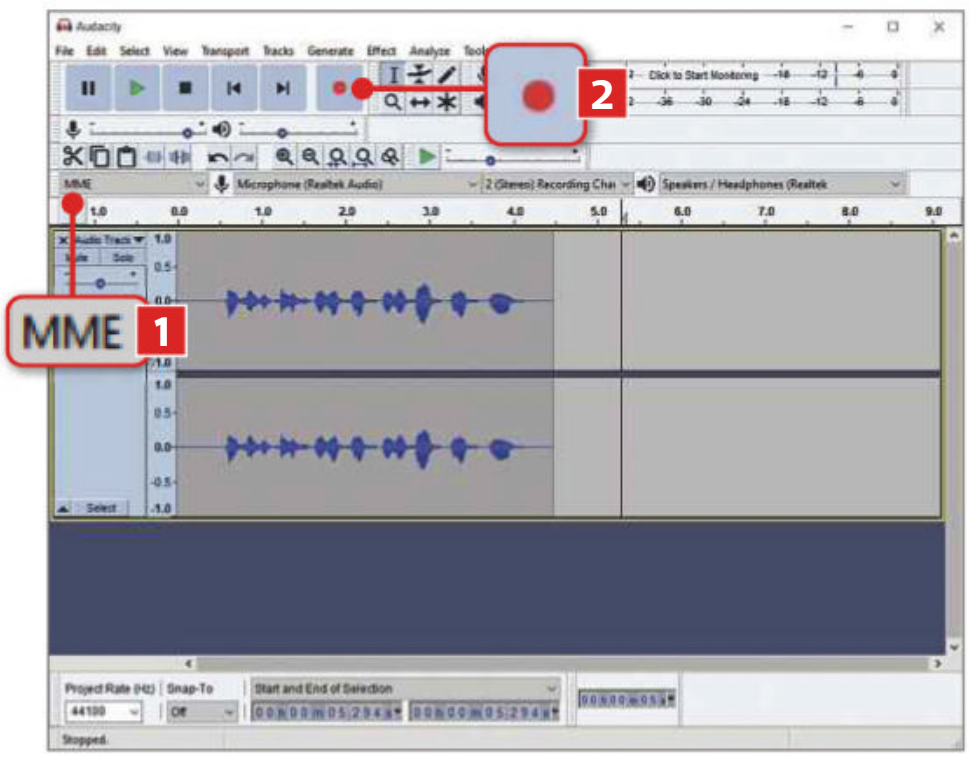
Add a voiceover to your photo slideshows

What you need: Shotcut; Audacity; Windows 7, 8.1 or 10
Time taken: 40 minutes

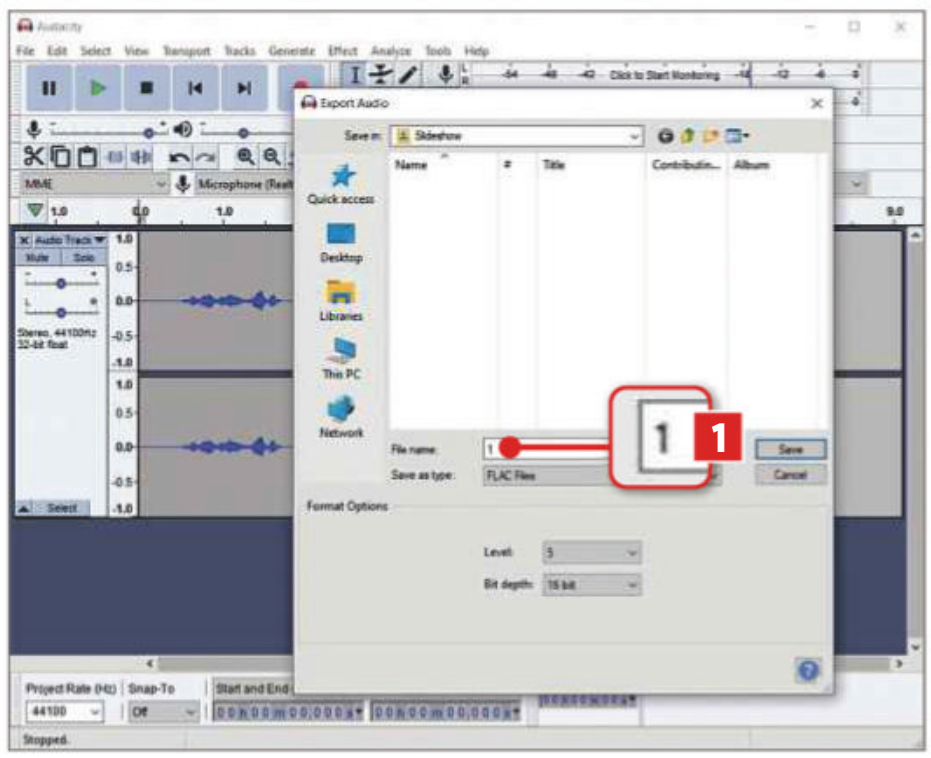
Instant-messaging services like WhatsApp make it easy to share photos, but don't always let you add context. In this Workshop, we'll show you how to use two of our favourite tools (Shotcut and Audacity) to turn your photos into an impressive slideshow complete with voiceover track, allowing you to provide the backstory to each photo. The resulting video is perfect for sharing with friends and family, and creates a lasting record for yourself.

STEP 1 Download Shotcut (www.snipca.com/37328 - click the Windows Installer link under the 'Site 1 (FossHub)' heading) and Audacity (www.snipca.com/37330 - click the Audacity Windows Installer link). Run the installers for both, then launch the programs. Now press the Windows key+E to open File Explorer and copy the photos you want to include in your slideshow into a new folder. Within this folder, rename them according to the order in which they'll appear in your slideshow. To do this, select the first photo, press F2, rename it '1' (leaving the file extension as it is 1), then repeat until you've renamed them all.

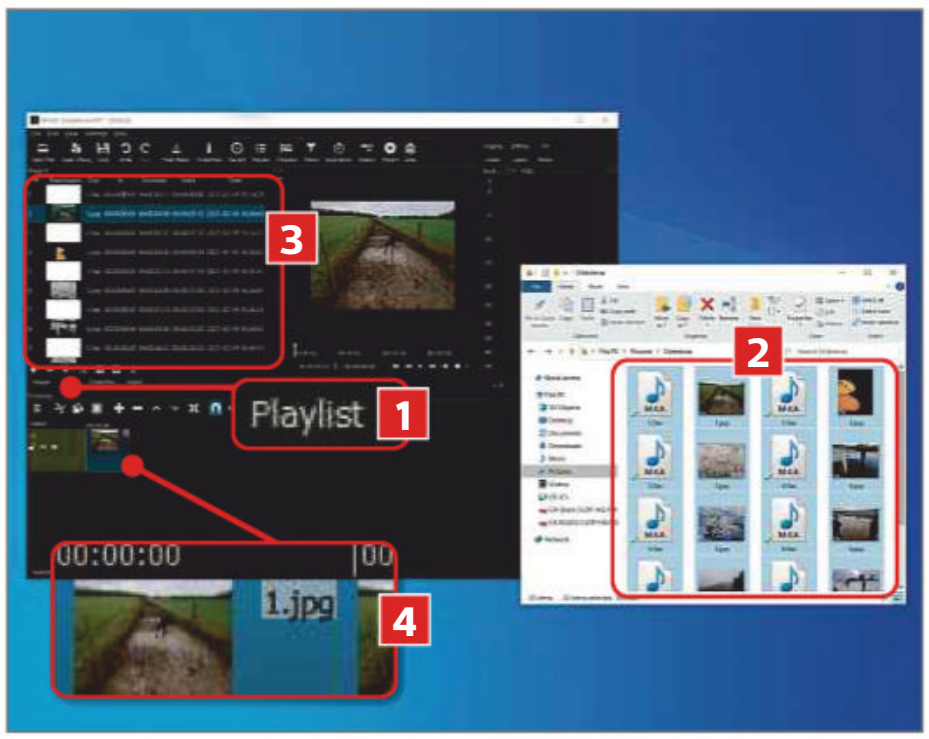




STEP 2 Open Audacity and make sure the input source is set to MME 1 (this tells Audacity to record audio captured by your microphone). When you're ready to record the voiceover for your first photo, click the Record button 2 (or press the R key). When you've finished, click the Record button again (or press Space). If needed, trim the start and end of the recording by selecting the sections you want to remove using your mouse, then pressing the Delete button.

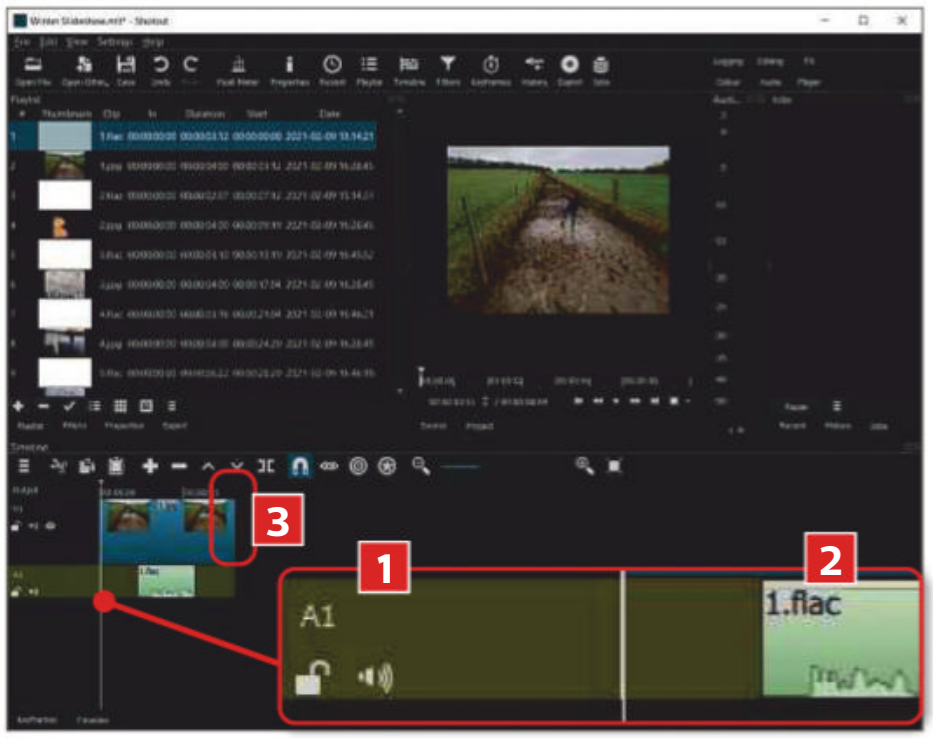


STEP 3 To save your voice recording, click File, Export then Export Audio (or press Ctrl+Shift+E). Navigate to the photos folder you created in Step 1, set the filename to 1 1, then click Save. Check that your photos folder now contains your voiceover file (this will be called '1.flac'), then return to Audacity and clear the first voiceover recording by pressing Ctrl+A followed by the Delete key. Now repeat the same process to record the voiceovers for the rest of your photos, naming the audio files 2, 3 and so on.



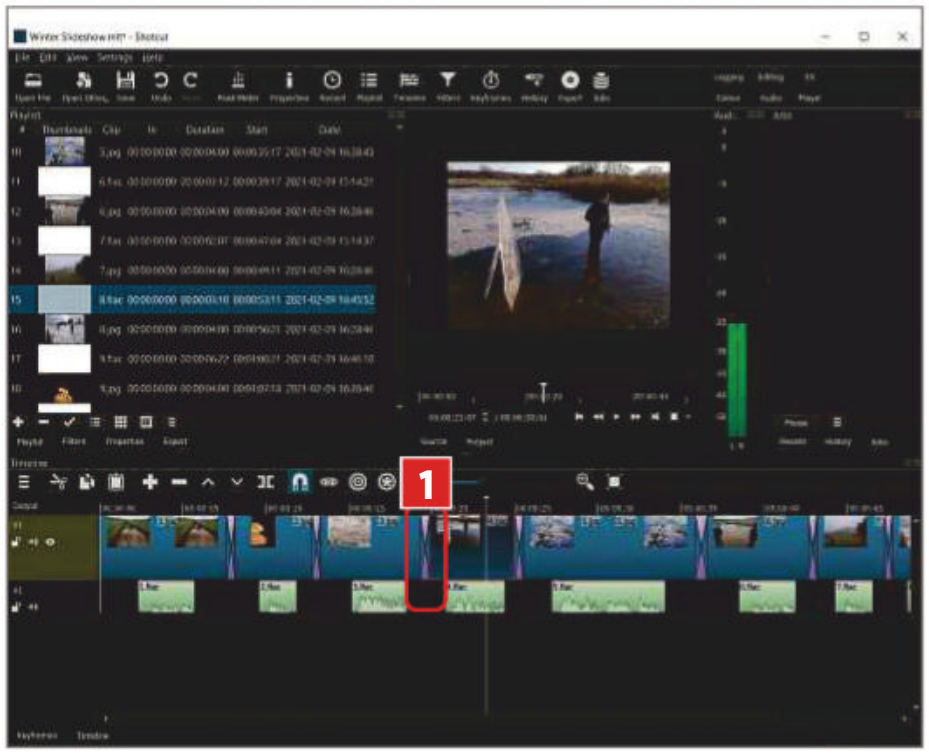
STEP 4

You now need to combine your photos with their voiceover tracks. Open Shotcut, enter a name for your slideshow in the 'Project name' box (in the New Project section in the centre of the window), then click Start. Click the Playlist tab 1, then return to your photos folder in File Explorer. Press Ctrl+A to select all your files (photos and voiceovers 2), then drag them into the Playlist section in Shotcut 3. Next, drag the first photo from the Playlist section on to the timeline 4 (as you do this, Shotcut will create a new video track called V1 in which to accommodate it).



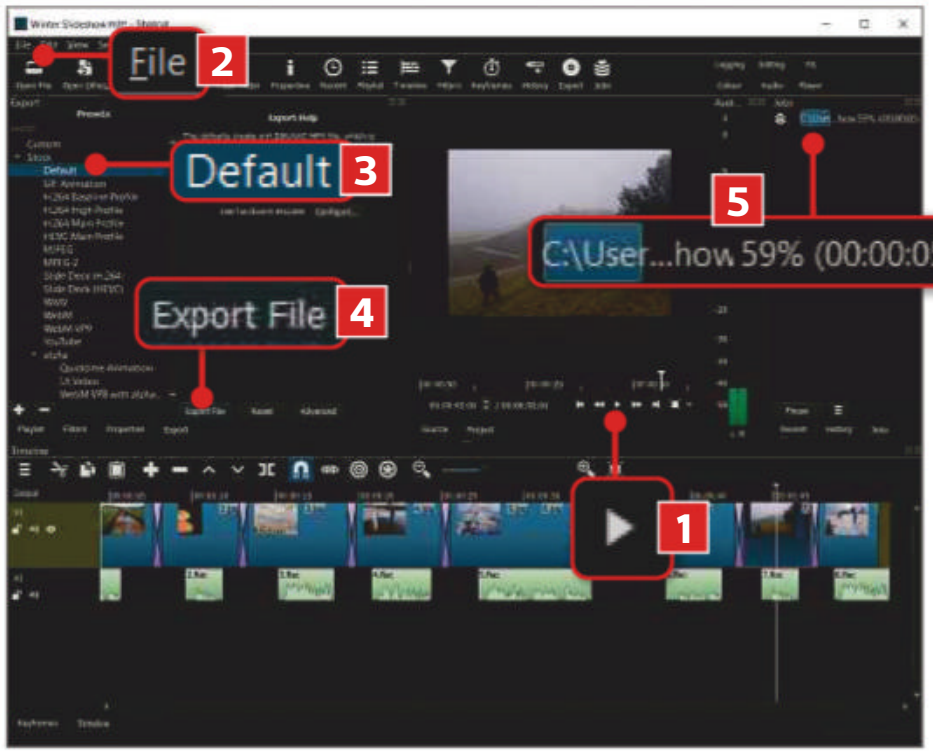
STEP 5

To make your voiceovers play over each photo, you need to create a separate audio track. To do this, press Ctrl+U. An audio track, labelled A1 1, will now appear under the video track that contains your photo. Drag the voiceover for your first photo (if you followed our file-naming convention, this will be called '1.flac' 2) from the Playlist section to this audio track. It's best to leave a small period of silence between photos, so drag the audio clip so it starts a couple of seconds after your photo. You can now adjust the duration that your photo is displayed to match the duration of your voiceover by clicking and dragging its right edge 3. Again, it's best to have your photo finish slightly after the narration.



STEP 6

Drag your second photo on to your video track and place it so it sits directly after the first photo (it will snap into place as you drag it). If you now drag the photo so that it slightly overlaps the first (as we've done here), Shotcut will apply a simple fade transition between the two 1. Next, repeat the process, adding the rest of your photos, along with their voiceover tracks, to your timeline. If you need to re-record a voiceover, select it on your audio track, press Delete, then import the new version as described above.



STEP 7

Press the Play button 1 to preview your slideshow. Don't worry if the transitions stutter or your audio sounds a little crackly – these will be fixed when you export the slideshow. When you're happy with it, click File 2, then 'Export Video...'. Unless you have a specific format you want to use, leave the Presets section set to Default 3 (this saves your video as an MP4 file, which can be opened by most computers, phones, tablets and TVs). Click 'Export File' 4, then choose where to save your video. You'll see the progress of the export process in the Jobs section 5.

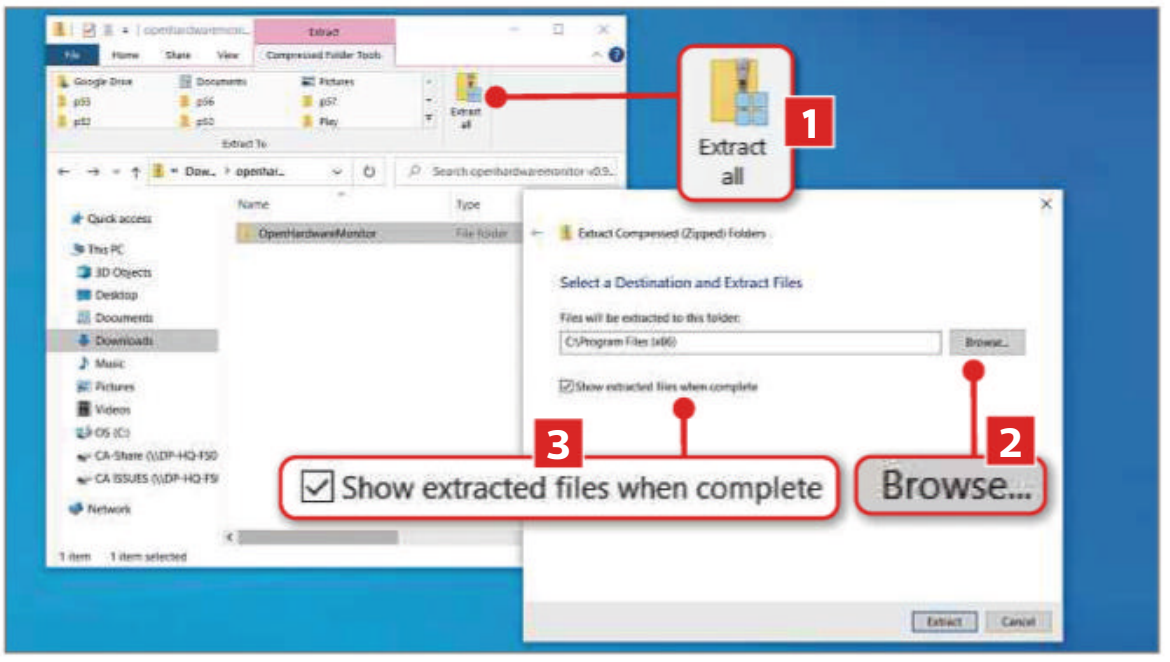
Monitor your PC's performance in real time

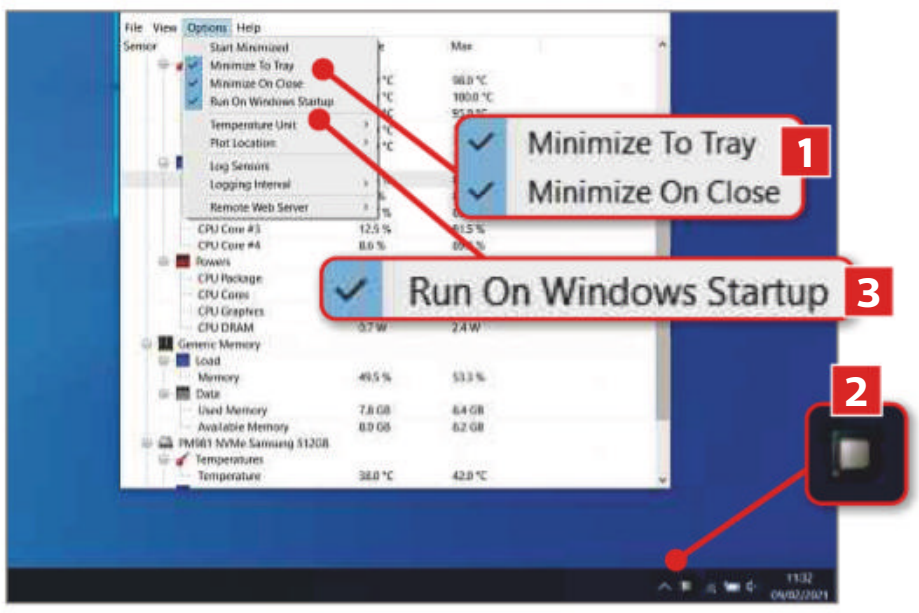
What you need: Open Hardware Monitor; Windows 7, 8.1 or 10
Time required: 20 minutes

Whether you want to keep an eye on your PC's performance, diagnose a specific problem or simply peek at what your PC hardware is up to, Open Hardware Monitor (OHM) is the perfect tool. You can use it to check everything from the temperature of your processor's cores to how much memory your PC is using and the amount of free space on your hard drive. Here, we explain how.

STEP 1

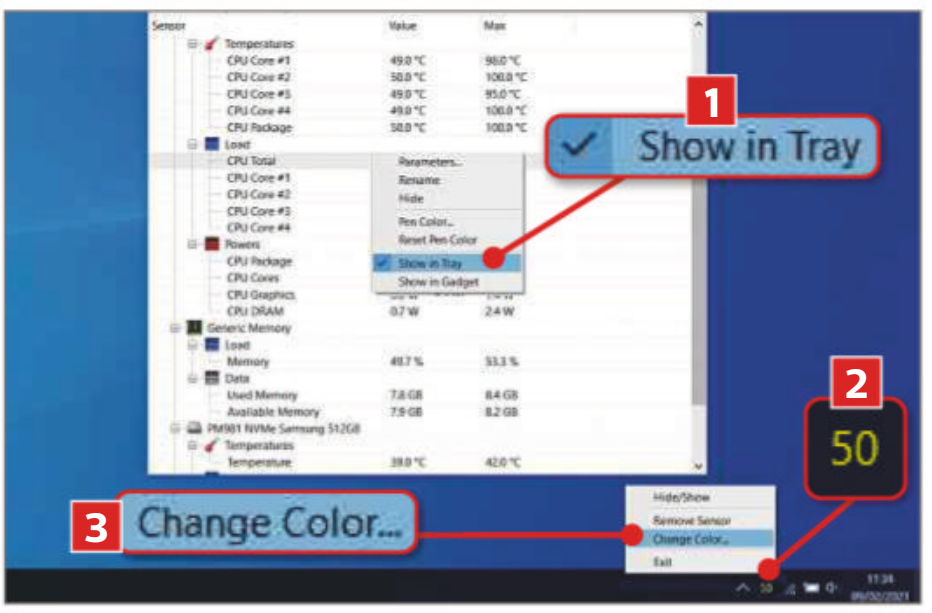
Download OHM from www.snipca.com/37319 (click the grey Download Now button), then open the ZIP file that downloads. Click 'Extract all' in the toolbar 1, Browse 2, then choose where to extract the files to. Make a note of which folder you choose because you'll need to access this later – we chose **C:\Program Files (x86)**. Leave the 'Show extracted files when complete' box ticked 3, then click Extract. Your new folder will now open. Double-click the OpenHardwareMonitor folder, then double-click the 'OpenHardware Monitor.exe' file. To make it easier to launch in future, right-click this file, select 'Send to', then click 'Desktop (create shortcut)'.





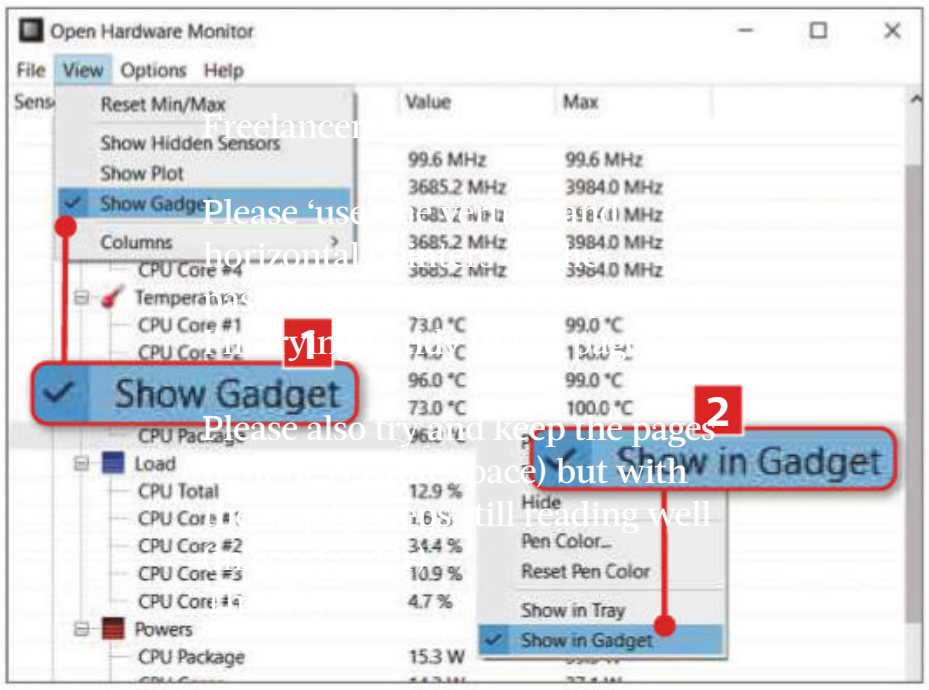
STEP 2

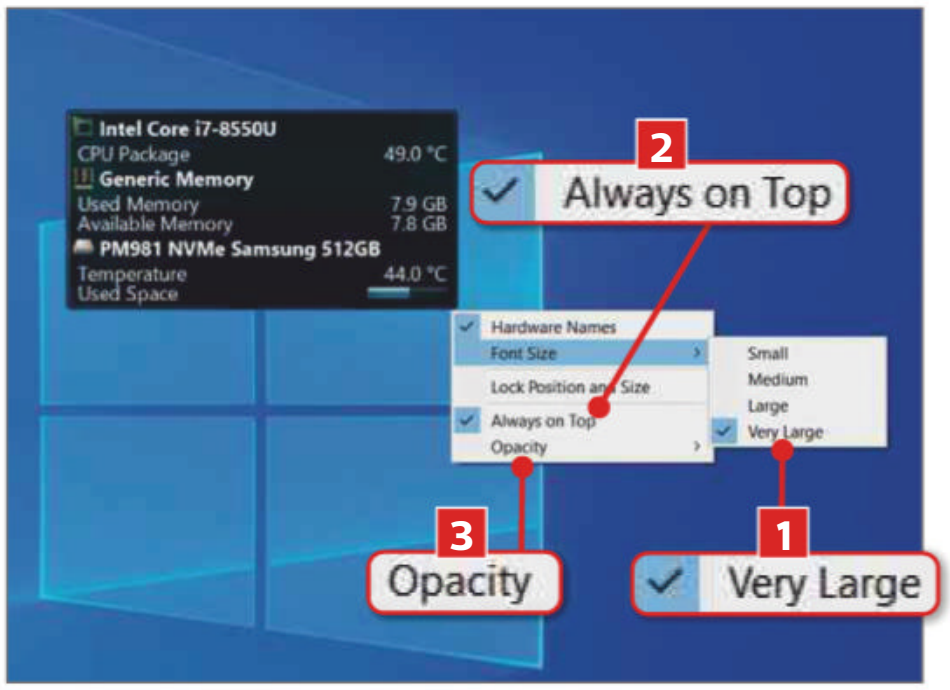
The OHM window will now open, showing a selection of hardware categories, with individual components in them. The Value column shows the current status of each one (such as its temperature or speed), while the Max column shows the highest value recorded since you opened OHM. Open the Options menu, then select Minimize To Tray and Minimize On Close 1 – this means OHM will continue to run in the background when you close the window. To re-open it, double-click the OHM icon 2 in the system tray (you may need to click the up arrow to reveal the icon). To set OHM to run when you start your PC, select Options, then Run On Windows Startup 3.



STEP 3

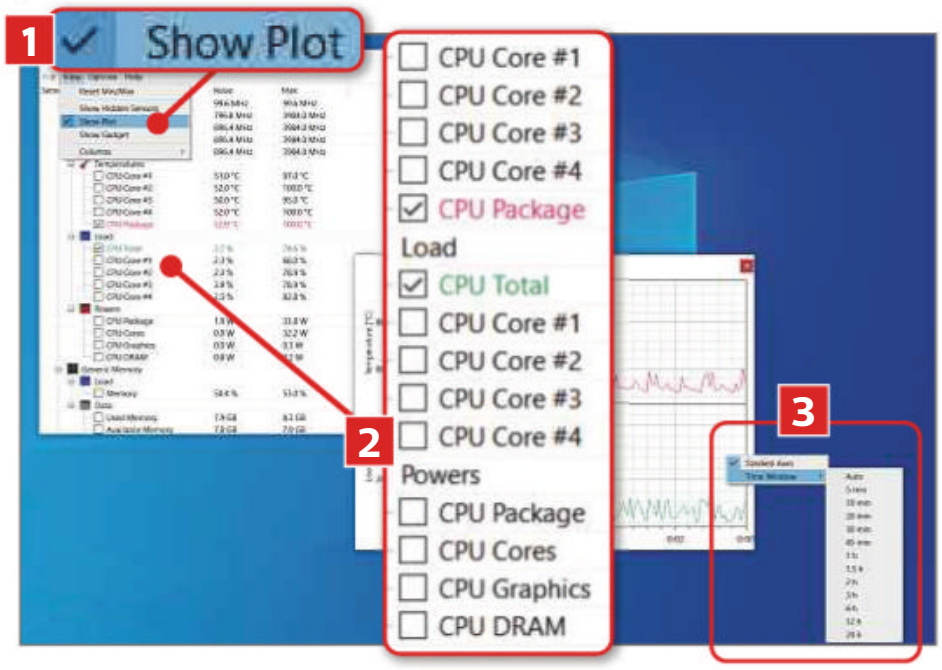
You can monitor an individual component by right-clicking it, then selecting 'Show in Tray' 1. Whenever you do this, an icon will appear in the system tray showing the component's current status (here it's showing the processor temperature 2. As before, you may need to click the up arrow to reveal it (you can drag the icon to the main system tray to make it always visible). To change the colour of the icon's text, right-click it and select 'Change color...' 3. You can now repeat this process, adding system-tray icons for as many components as you like. To remove one, return to the main OHM window, right-click it and untick the 'Show in Tray' option.





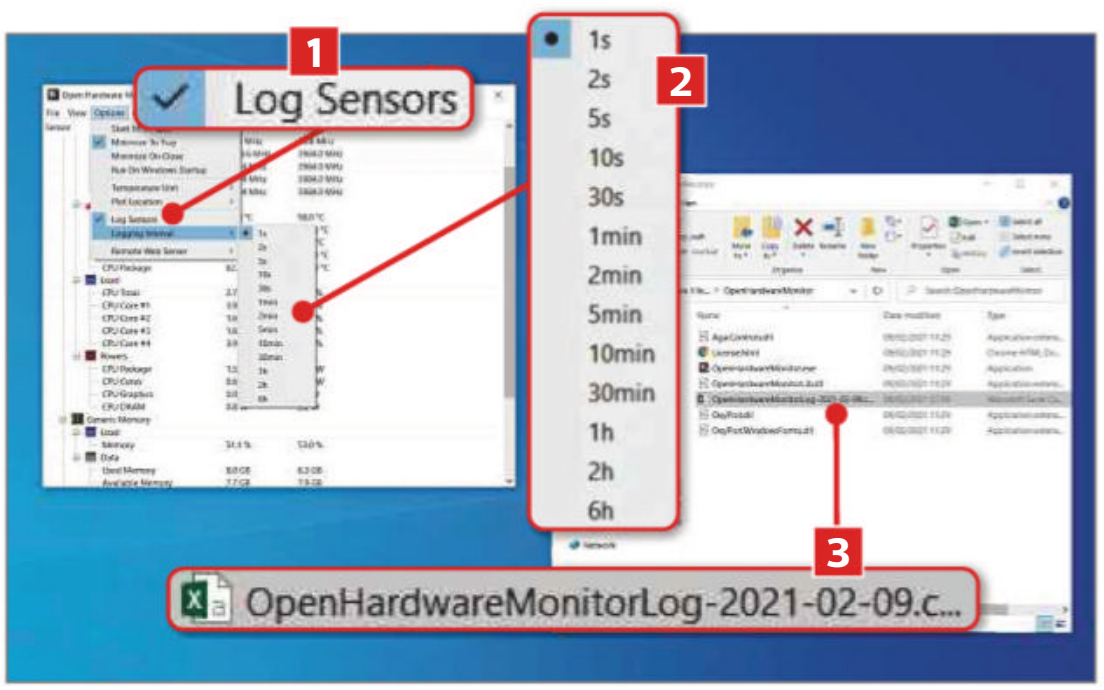
STEP 4 Another way to keep an eye on the status of a component is by adding it to a small window (which OHM calls a gadget) on your desktop. First, click the View menu and click Show Gadget 1. Next, right-click the component and tick 'Show in Gadget' 2. You can repeat this process to add more components to the gadget – we've opted to add our processor, memory and hard drive. When you've finished, you can view the gadget by minimising all windows on your desktop (press the Windows key+M).

STEP 5 Right-click the gadget to tweak its appearance. The default text size is fairly small, so we recommend clicking Font Size and increasing it (we prefer the Very Large setting 1). To keep a more constant eye on your hardware's performance you can set the gadget to appear on top of all other open windows – tick 'Always on Top' 2 to enable this. Click the Opacity option 3 and you can make the gadget semi-transparent. To hide the gadget, return to the main OHM window and untick Show Gadget in the View menu.



STEP 6 OHM also lets you look back over past measurements. Open the main OHM window, select Show Plot 1 and a chart will appear in a separate window. To add the elements you want measured (sensors) to the chart, tick the relevant boxes 2 in the main window. Next, right-click the chart, select Time Window, then choose how far back you want the chart to go 3. If you add a lot of sensors, it's best to view the chart in full-screen mode - double-click the chart's title bar to switch this mode on and off.

STEP 7 You can record all data to a spreadsheet. To start, click Options, then Log Sensors 1. OHM saves *all* sensor information to the log, so you don't need to specify which ones you want to monitor. By default, OHM will update the log every second, but when logging for an extended period it's best to increase this time interval to keep the spreadsheet manageable. To change this, open the Options menu, click Logging Interval then select an option between 1 second and 6 hours 2. The log is saved as a CSV file 3 in the same folder as the OHM program and you can open it in any spreadsheet tool. To stop logging, return to the Options menu and click Log Sensors.



Readers' Tips

TIP OF THE FORTNIGHT

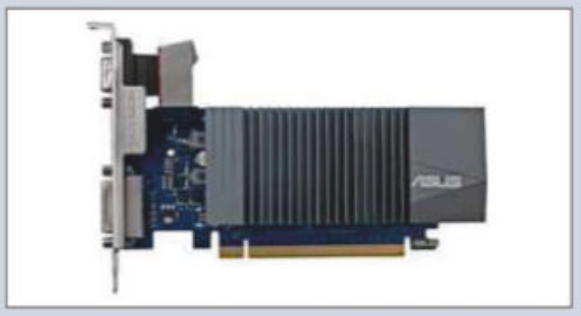
Install SSD to cut power and stop crashing

Some time back I upgraded one of my old computers – an Acer Veriton X270 – to Windows 10. Because there were no drivers available for the Nvidia-integrated graphics in the PC, I installed Nvidia's 309.08 driver for Windows XP, 7 and 8. This worked perfectly until some recent Windows 10 updates.

Reading Issue 596's feature (page 60) on upgrading graphics cards I was prompted to look for a suitable card for the PC. It doesn't have much space and needs a low-profile card, so I bought the Nvidia GeForce GT 710 PCI-e with 2GB memory (pictured). I got it from CPC for £46 (www.snipca.com/37274). It just about squeezed into my machine.

The results were amazing, but it then started to crash when I was editing videos. The PC has a puny 220-watt PSU and no room to fit a larger one, so I replaced the hard drive with an SSD to reduce power demands. This worked a treat. It now works like a new computer, with a fabulous graphics performance.

So my tip is if your PSU is working



close to its maximum, try fitting an SSD – it'll cost no more than a replacement PSU. Even if it doesn't do the trick, buying an SSD is still a good investment.

Richard Westacott

Richard wins a copy of our 2020 Back Issue CD **Buy it on Amazon www.snipca.com/37026**

OFFICE

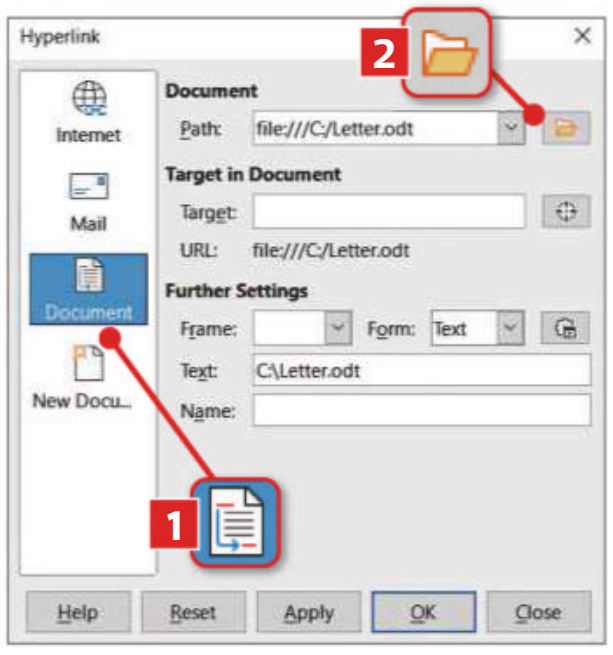
Add hyperlinks to LibreOffice Writer

Issue 596's 'Tip of the Fortnight' from Patrick Wilmore helpfully explained how to create hyperlinks within Word documents that link to other documents. I have some icing to add to his cake.

First, his tip will work in LibreOffice Writer (www.libreoffice.org/writer), although you have to double-click the word, pull down Insert Menu then click Hyperlink. The window that pops up will, by default, ask you to enter a web address to link to. This can be useful but if you'd rather link to a document, just click the Document button in the column to the left of this window (1 in our screenshot right), followed by the yellow folder icon to the right of the 'Path' bar 2.

Also, to save time, rather than the above method of bringing up the Hyperlink window, you can just press Ctrl+K (after highlighting a word) which will also do the trick. This shortcut key also works in Gmail to do the same thing and, I would speculate, in other programs as well.

Stephen Murchieson



OFFICE

Create flowcharts in Microsoft Word

In Issue 598's Workshop (page 38), you explain how to use Draw.io (www.snipca.com/37127) to create flowcharts. If you have any Microsoft Office products, then you already have the ability to do this.

There are two tricks to making good flowcharts: the first is to always put any elements within a Drawing Canvas – do this by clicking the Insert tab at the top, followed by Shapes then New Drawing Canvas at the bottom of the menu (see screenshot above right). Open the Shapes

Why I stopped using...

Plex

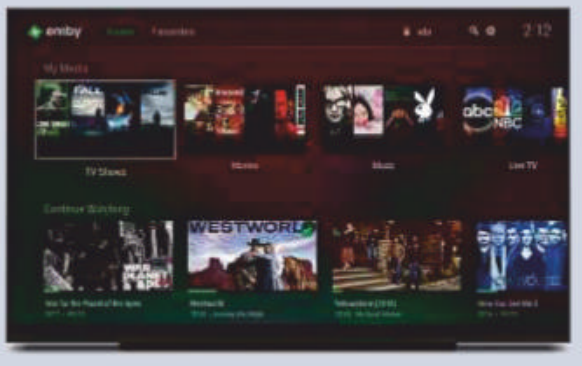
After reading your How To article on running Plex from a NAS drive (Issue 597, page 35), I found that half of the TV shows I've recorded don't show up due to naming incompatibility or a lack of recognition.

And what I use instead...

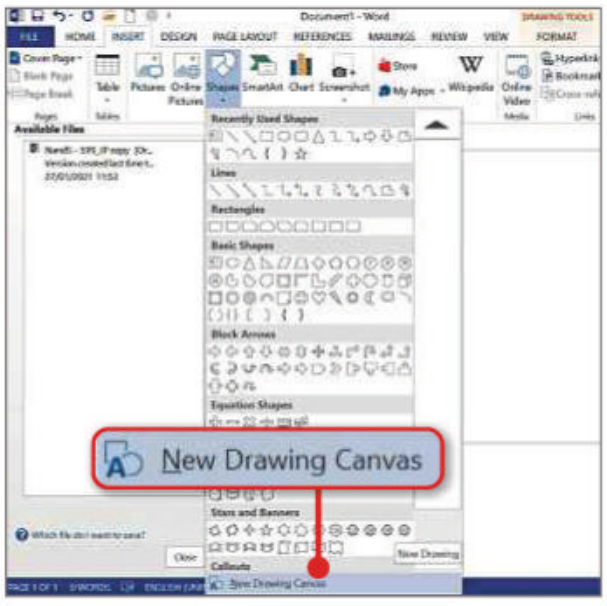
This brings me on to the **Emby Server** (https://emby.media, pictured). I record broadcast TV (Freeview and Freesat) on my PC using NextPVR (www.nextpvr.com). I then edit these shows with Video-Re-Do TV Suite 6 (www.snipca.com/37202) and sync them to my Buffalo TeraStation NAS, on which I run Emby Server. It lets me watch these shows on all my devices.

Many of Emby's tools are free, but you get more features with Emby Premiere. I'm testing it for $4.99 (around £3.65) a month, and really like it.

Bob Hirons



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



menu again and place the shapes you need inside the rectangular canvas.

Next, also in the Shapes menu, select a line in the Lines section to connect the shapes – do this by moving the tip of the line over one of the connector points on the edges of the shape (it will change colour to green). You can add text and format the shapes and lines as you want.

It's very easy, albeit a little idiosyncratic and sometimes fiddly, but it can do almost everything Draw.io can do, and has the advantage of being editable directly from within the Word document, Excel spreadsheet or PowerPoint presentation.

David Allen

Reader recommends...

Freesat Recordable 4K TV Box 2TB

£269 from Amazon www.snipca.com/37262

I really enjoyed Issue 588's Cover Feature comparing TV sticks with TV boxes, but you didn't mention the Freesat Recordable 4K TV Box (2TB), which is a better choice if you have a satellite dish. It's definitely better than the Sky Q box we recently gave up.

My wife was getting fed up with the constant change of remote controls as we changed suppliers every 12-18 months depending on the best offers available, so I purchased this box for her. My only slight criticism is the electronic programme guide (EPG), which could do with a clearer layout.

It's also better than Virgin's new 360 box, which I got recently as part of a bundle, and has become too complicated for its own good. I hardly ever use it.

Malcolm Blyth

Want to recommend hardware or software to fellow readers?
Email letters@computeractive.co.uk

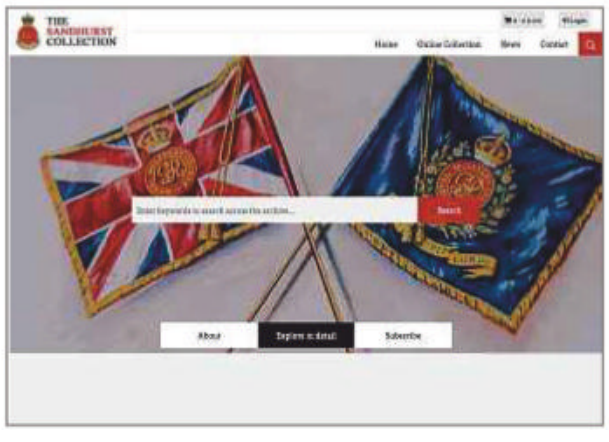
GENEALOGY

Search for military ancestors at Sandhurst Archives

During the lockdown and furlough I've been researching some of my ancestors' military careers in the Boer War and the two world wars. I was particularly interested to read the Grow Your Family Tree article in Issue 597 saying that the National Archives had waived its fee during lockdown to access its archive of war diaries.

A couple of other really useful sources for me have been the Sandhurst Archives (https://sandhurstcollection.co.uk, pictured below), which provided me with a fantastic photo of my great-grandfather when he was a cadet in 1878. It's also worth searching the Great War Forum (www.greatwarforum.org), and asking questions on it because the members are so knowledgeable.

Nick Syme

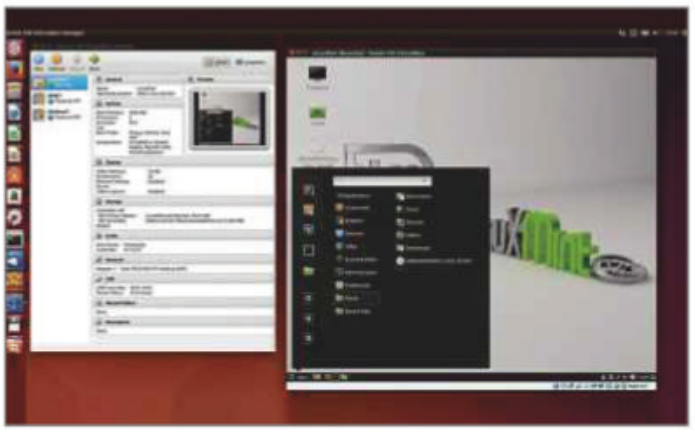


HARDWARE

Revive an old scanner using virtual operating system

I enjoyed your How To article in Issue 598 ('Edit text and extract images from scanned documents'), particularly the part that explained how to make sure that your device was installed and up to date, as this can be a problem with ageing scanners.

I have a Canon scanner which while old is perfectly functional. But it had become a paperweight after I upgraded my system to Windows 10 because Canon didn't provide any up-to-date drivers. After trying various fixes found online, I thought about using a virtual operating system that supported the scanner. My solution was to install Oracle's VirtualBox (www.virtualbox.org) and then run Linux Mint (https://linuxmint.com), which recognised the scanner straight away. The screenshot below left shows what Linux Mint looks like on VirtualBox.



OK, it's slightly long-winded, but I'm happy with it because I don't need to use the scanner very often.

David Johnson

NETWORKING

Use extension cable to check separate circuits

In Issue 598's Letters (page 13) David Edwards said that he thinks the reason he has powerline problems is because he has two electric circuits in his house. I use powerlines in my house, while outside in our garden my caravan is electrically connected to the house with a long caravan extension cable.

I have no difficulty using a powerline adapter in the caravan, connecting to another powerline adapter in the house. If Mr Edwards has a long enough extension cable, he could try plugging in one of his adapters near his router, then plugging in his extension cable and running it upstairs to where the other circuit is. He could then plug his second powerline adapter into the extension cable to see if it works.

This probably won't be ideal, but it should help him to test his dual-circuit suspicions.

JJ Reynolds

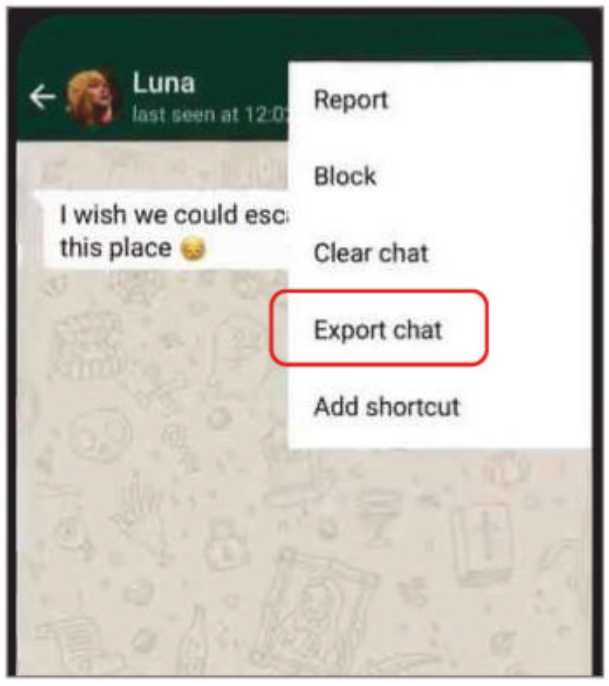
Phone and Tablet Tips

ANDROID & iOS

Export chats from WhatsApp to Telegram

As we explained in Issue 599, WhatsApp's controversial new privacy terms and conditions have led many users to switch to rival messaging apps, such as Telegram and Signal. Facebook, which owns WhatsApp, is so worried that it has even published an explanation of the changes (www.snipca.com/37305). Its very keen to point out that, whatever the changes, your messages remain private and encrypted, and WhatsApp is not keeping logs of who you contact.

What *has* changed is the way it will be handling data that helps you contact businesses. Specifically, it wants to use data that 'describes' how you interact with businesses that advertise on its sites, like Instagram and Facebook itself. This descriptive data includes things like where you were in the world when the connection between you and the business took place, what kind of device you were using and so on.



Facebook explains what's happening at www.snipca.com/37306 but, in brief, it's making it easier for you to contact businesses using WhatsApp by clicking adverts or links on the web. When you do so, the kind of adverts you see in the future may be influenced on the basis of you having made that connection, although not on the content of the message. It will also allow businesses to set up shops directly within WhatsApp, and for you to buy products through its app.

If, having read through our feature in Issue 599 and studied the new terms and conditions, you decide it's time to switch, your biggest problem will be convincing all of your contacts to do the same. However, assuming they do, one of WhatsApp's biggest rivals, Telegram Messenger (https://telegram.org), which had 100 million new sign-ups in January alone, now makes it easy to import your existing WhatsApp chats.

To do so on iOS, open the WhatsApp chat you want to export, then tap the name of the contact or group at the top of the screen to open its information page. Here, tap Export Chat. This opens the standard iOS share pane showing your installed compatible apps. Tap Telegram, then either tap an existing chat or contact within the list of options, or tap 'Import to a New Group', followed by 'Create and Import'.

On Android, open the chat you want to export within WhatsApp, then tap the three dots at the top of the screen followed by More, then 'Export chat' (see screenshot below left). Tap Telegram on the sharing pane that opens, then tap the name of the contact or group to which your old chat content should be added.

ANDROID

Organise web pages into groups in Chrome

If you're running Chrome version 88 or later, you can now organise your open web pages into groups, which makes them easier to manage.

To do so, tap the tabs icon (a square with the number of open pages inside it) beside the address box, then drag one page (ie, tab) over the top of another, and the two will be put into a box – or group. Repeat this as many times as required to create as many groups as you need, each containing multiple pages. You can then switch between them by tapping the boxes to activate their contents.

This worked on our phone only after we performed a full restart, so you may need to do the same. If you're running an older version of Chrome, you need to activate this feature manually. Type

BEST NEW APPS What you should install this fortnight

Fontasy

Free

Android www.snipca.com/37309

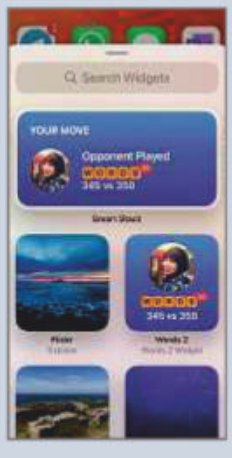
Google Fonts has hundreds of fonts, which are free to use, but it can be difficult to get creative with them on a smartphone. This app overcomes that, letting you browse fonts, type with them directly in the app, or share the font files (for example, via email attachment), which makes it easy to send them to your PC. There are 600 font families to choose from.

Flickr

Free*

iOS www.snipca.com/37307

The new version of Flickr for iPhone introduces support for iOS 14's home-screen widgets. Long-press your home screen until the icons start to shake, then tap the '+' at the top to open the Widgets menu. Drag the Flickr widget on to the home screen and position it where you want, then press the Home button. The widget will regularly update its contents, so you always have a photographic surprise to come back to.

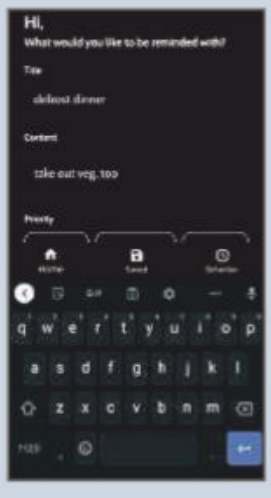


Remind Me

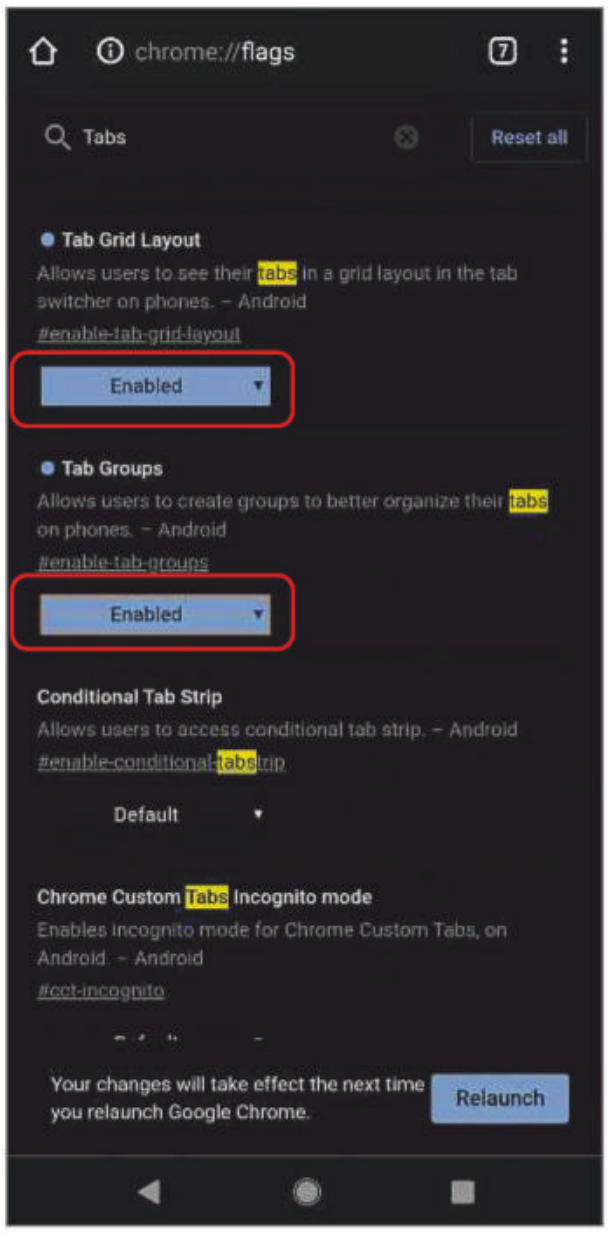
Free

Android www.snipca.com/37308

This app does a simple job very well: it reminds you to do stuff by creating notifications. You can set their importance level, add a description, and schedule them. This latter option is particularly useful because it allows you to set a notification to pop up when the task is due to be done, so you're more likely to pay attention to it.



*Contains in-app purchases



chrome://flags into the address bar, then search on the page that opens for both Tab Grid Layout and Tab Groups. Set the dropdown menus below them to Enabled (see screenshot above), then restart your phone. You should now be able to arrange your tabs into groups.

iOS

Stop new apps appearing on your home screen

It can take a while to get your phone set up just the way you like it. Then you download a new app and it gets dropped on your home screen, messing up your carefully crafted layout.

If you're running iOS 14 – which you should be if you have an iPhone 6S or later – Apple now gives you the option of sending new apps straight to the App Library, rather than adding them to the home screen. You reveal the App Library by swiping from right to left until you can go no further. Here you'll find a screen of chunky folders and – if you swipe down – an alphabetical list of installed apps.

To send apps here rather than to your home screen, open Settings, tap the Home Screen option, then in the 'Newly downloaded apps' section, tap 'App Library Only' (see screenshot below left).

ANDROID

Use SwiftKey in more languages than ever

Microsoft's SwiftKey (www.snipca.com/37312) has long been one of our favourite alternative keyboards for both Android and iOS. It's intelligent and aptly named, making swipe-typing a quick, smooth experience. The Android version has just been updated to support a wide range of new languages, which is good news for anyone communicating overseas. This brings the total number of supported languages to more than 400, of which you can activate up to five simultaneously.

BEST APPS FOR... Tracking the moon

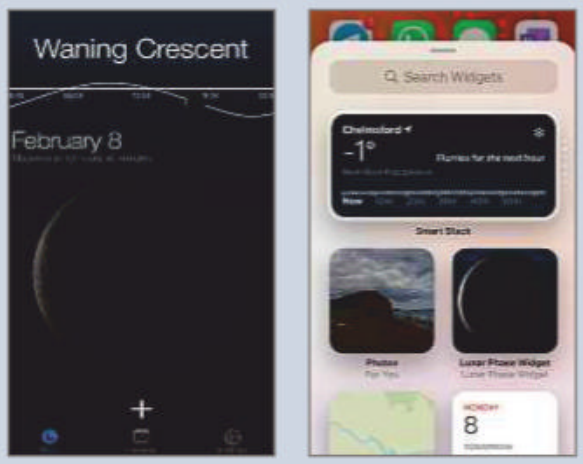
Lunar Phase Widget

Free*

iOS www.snipca.com/37318

Know what the current moon phase is at a glance by adding it to your iOS home screen. This is a great-looking app and – if all you want to know is the current phase – it'll do all you need for free. Paying £1.99 a year or £4.99 a lifetime gives you access to additional details, notifications, a zodiac calendar and widget customisation.

Best For Tracking phases at a glance



Moon Phase Calendar

Free

Android www.snipca.com/37317

This is a flexible app: you can set alerts for different moon phases, choose from three different zodiac systems, and change the way the interface looks. Once you're up and running, as well as telling you about the moon's current status, you can use the built-in compass to locate it, which can be useful if you have dense cloud cover.

Best For Locating moon when it's hidden

My Moon Phase

Free

Android www.snipca.com/37315

iOS www.snipca.com/37316

As well as tracking the current moon phase, this app lets you predict the next full moon. Perhaps the biggest draw, though, is its tools for photographers, which tell you when you can expect golden light and blue light for taking striking lunar pictures. Provides results for your location by default or you can set it to monitor anywhere in the world.

Best For Lunar photographers

*Contains in-app purchases

Make Windows Better

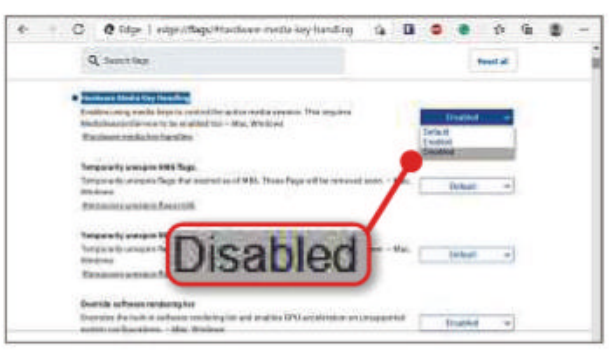
Expert tips for every version

WINDOWS 8.1 & 10

Hide Edge's distracting volume pop-up

When you use the volume shortcut keys on your keyboard while listening to audio in Microsoft Edge, you'll see the usual volume pop-up in the top-left corner of your desktop and a large banner displaying whatever's playing in Edge along with buttons to control playback. The latter is mostly just an annoyance as it takes up a large section of your screen. The banner disappears after five seconds, but if you hover over it – perhaps when looking for a way to close it – it stays on screen for longer.

Although you can't hide the volume pop-up entirely, you can stop Edge from making it so big. In Edge's address bar, type edge://flags/#hardware-media-key-handling (you can copy this command from our Pastebin account at www.snipca.com/37345), then press Enter. In the settings window that opens, set Hardware Media Key Handling to Disabled (see screenshot below), then click Restart.



The same trick works with Chrome – just replace 'edge' with 'chrome' when entering the command in the address bar (or copy the command from www.snipca.com/37346).

WINDOWS 8.1 & 10

Quickly view your desktop

When you want to view your Windows desktop, one option is to press Windows key+M, which Microsoft calls the 'Minimise all windows' shortcut. It doesn't always work as you'd expect, however – you may find something prevents one or more of your windows from minimising. Recently, when we pressed Windows+M on our PC, all windows were minimised apart from FastStone Image Viewer, which had the JPEG Caption window open (see screenshot above right – also see page 19 for more on what this window does).

To avoid this, press Windows key+D instead. Known as the 'show desktop' shortcut, this temporarily hides windows instead of minimising them, letting you see your full desktop unobstructed. To get your windows back, press Windows key+D a second time.

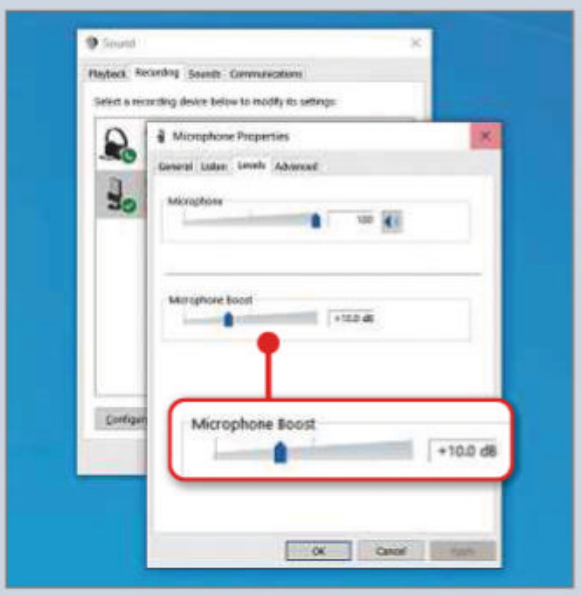
WINDOWS 7, 8.1 & 10

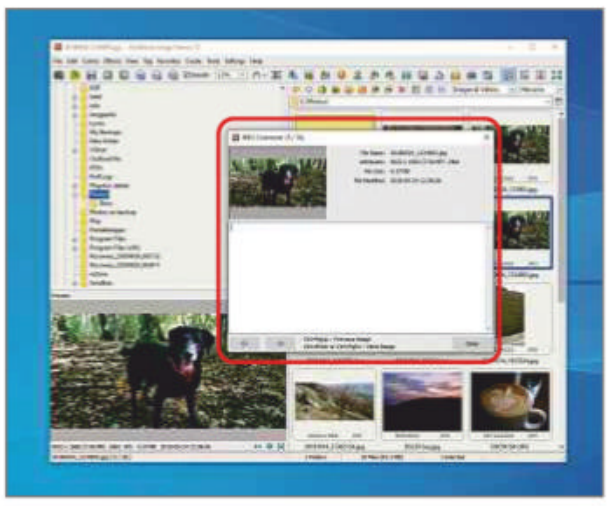
Make yourself heard in video calls

Do you ever find yourself being ignored on group video calls? Before assuming the other people on the call are being rude, it's worth checking your microphone settings in Windows.

Open the Settings app (press Windows key+I), select System, Sound, then scroll down on the right and click Sound Control Panel (in Windows 7, open Control Panel, select 'Large icons' in the 'View by' section, top right, then click Sounds).

In the Sound window that opens, select the Recording tab and double-click your microphone. If you see two microphones, double-click the one labelled 'Default communications device' (this is the microphone your video-calling software uses). Select the Levels tab, then move the Microphone slider to the far right (or type 100 into the box to the right of it). Depending on your microphone, you may also see a Microphone Boost slider (see screenshot), letting you increase its volume further - the box to the right of it indicates by how much your microphone will be boosted in decibels (dB). Take care when using this setting – distortion will start to creep in the more you boost your microphone, and your fellow callers won't thank you for that.



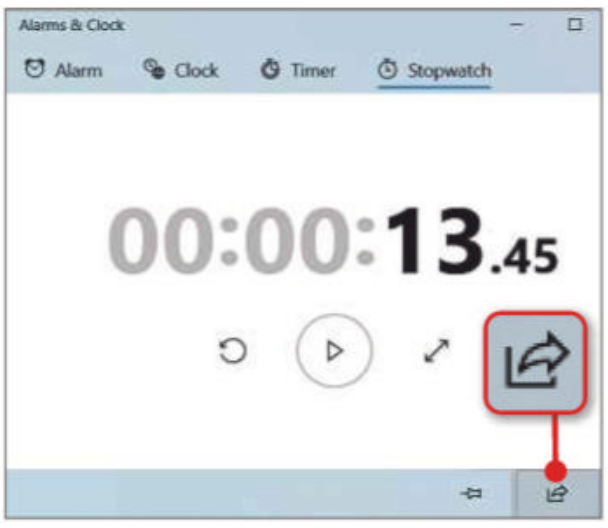


WINDOWS 10

Access Windows' hidden stopwatch

You may already know how to access Google's stopwatch tool (simply search for stopwatch in Google's search engine). Although useful, the stopwatch is confined to your browser – if you close your browser, you'll lose your timings. A better option is to use the hidden stopwatch in Windows. To open it, type stopwatch in the Windows Start menu.

The buttons under the stopwatch let you start and reset the timer, as well as maximise the stopwatch window. When you start the timer, the first two buttons change function, letting you record lap times and pause the stopwatch. Click the pin icon, at the bottom right of the window and it'll be visible on top of all other windows. You can even export the stopwatch timings and any lap times you've recorded to other Windows apps (such as Mail) by clicking the Share icon (see screenshot below).



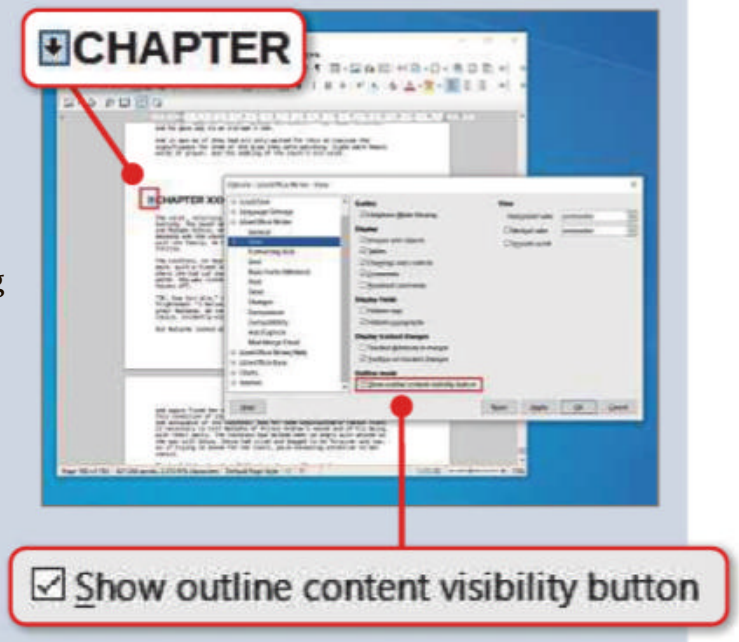
LIBREOFFICE WRITER

Hide sections of text in documents

The latest version (7.1) of LibreOffice (see page 18 for more on this) includes a new tool that lets you quickly hide the text under specific headings within your document. The tool is listed as experimental, which means it's still in development, but we haven't experienced any problems using it.

To enable it, open Writer then click Options in the Tools menu. In the LibreOffice section in the left-hand sidebar, select Advanced, then make sure 'Enable experimental features...' is ticked. Click OK, then re-open the Options window. This time, select the LibreOffice Writer section, then click View. On the right-hand side, tick the 'Show outline content visibility button' box (see screenshot), then click OK.

When you next hover over a heading in a document, you'll notice a small down arrow appears to the left of it (pictured). Click this and the text under the heading will disappear. Right-click the arrow and the text under all sub-headings will also be hidden. A second click brings the sections back into view.



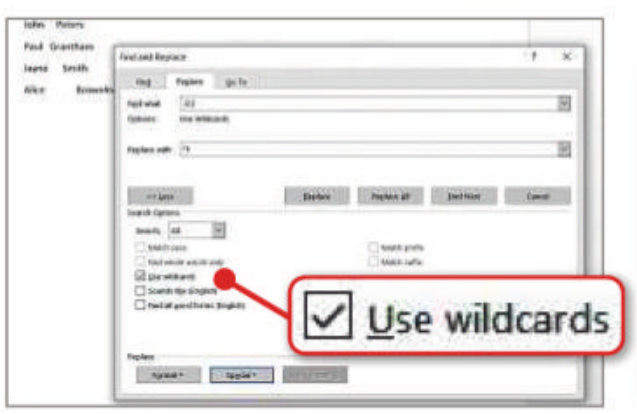
MICROSOFT WORD & LIBREOFFICE WRITER

Replace spaces with tabs

If you like to keep things neat and organised, a document littered with inconsistent spacing can be infuriating. You may have, for example, a list of names all with differently sized spaces between the first and last name. If the author of the document had simply separated them with tabs, you wouldn't have this problem. Thankfully, you can quickly convert all those spaces into single tabs.

In Microsoft Word, press Ctrl+H to open the 'Find and Replace' box, then select the 'Find what' box, and enter a space followed by {2,} – this tells Word to look for two or more spaces. To replace the spaces with a single tab, type ^t in the 'Replace with' box. Now click the More button and tick the 'Use wildcards' box (see screenshot below). To replace all instances of two or more spaces with a tab, click Replace All. Alternatively, click Find Next to cycle through each, clicking Replace where necessary.

The process in LibreOffice Writer is similar. Press Ctrl+H, then type {2,} (with space before) in the Find box. In the Replace box, type \t. Click 'Other options', tick the 'Regular expressions' box, then find and replace in the same way as you would in Word.

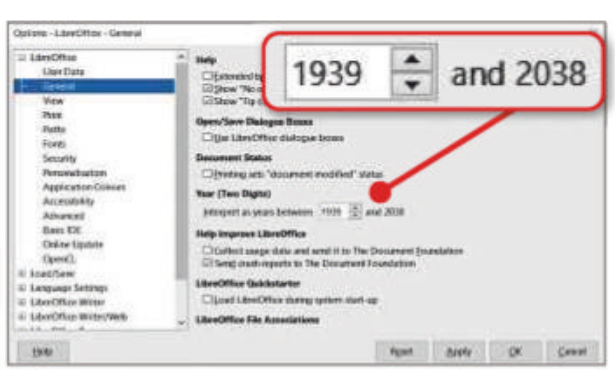


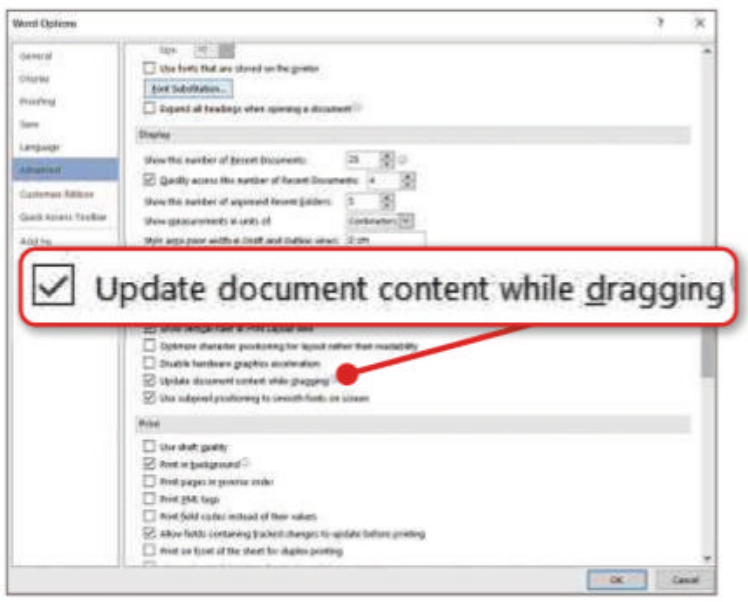
LIBREOFFICE CALC

Tweak year shortcuts

When you type a date using the DD/MM/YY format, LibreOffice takes the two digits and converts them into a year using what's called the 2029 rule. This means if the last two digits are between 00 and 29, Calc assumes you've entered a date in this century (so 15/10/05 becomes 15/10/2005); if the digits are between 30 and 99, it assumes it's a 20th-century date (12/1/99 becomes 12/1/1999).

To tweak this feature, select Options from the Tools menu, then click LibreOffice at the top of the left-hand sidebar, followed by General. On the right side of the window, locate the 'Year (Two Digits)' section, then adjust the year in the 'Interpret years between' box. In this example, we've told Calc to treat digits up to 39 as 21st-century years (see screenshot).





MICROSOFT WORD

Position an object more effectively

Microsoft Word has a handy trick that helps you place images, shapes and other objects on your page. First, add an object to your document (for example, by clicking Insert from the toolbar, followed by Shapes). Select the object, then click Layout Options (the small box that appears to the top right of the object) and choose how you want the text in your document to fit around the object.

Next, click 'File', Options and select Advanced in the left-hand sidebar. Scroll down to the Display section, tick the 'Update document content while dragging' box (see screenshot above), then click OK to return to your document.

When you next click and drag the object on your page, the text will automatically move around it as you drag, helping you to find its perfect position.

In The Club

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

Create a Google group for your club

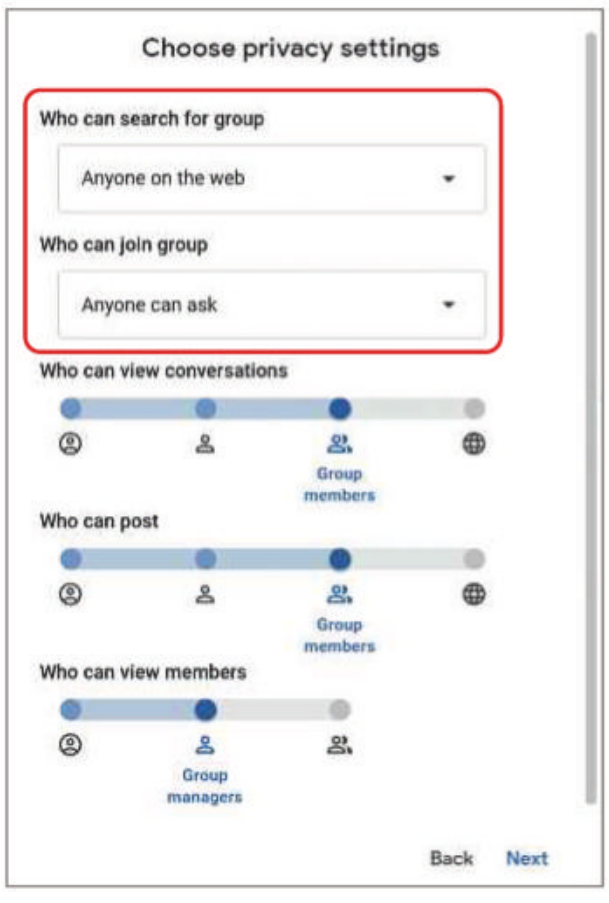
Google Groups is a free online service that lets you store all your club's communications in one place. Your members can use it to view messages, as well as post replies and create their own messages from scratch. You can also use your group to attract new members to your club.

Create your group

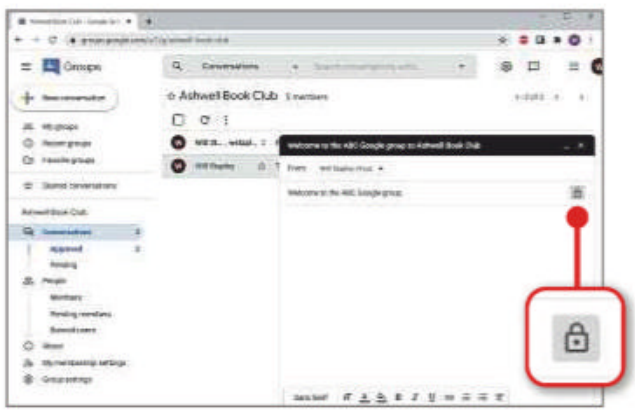
Go to https://groups.google.com and sign into your club's Google account (if you don't have one, create a free account at www.snipca.com/37331).

On your Google Groups page click 'Create group' (top left), then enter your club name – this will be used to create the group's email address, but you can edit it later if necessary (handy if your club has a long name). Enter a brief description of your club, then click Next.

Anyone can search for groups via the Google Groups homepage. If you want your club's group to appear in relevant searches, select 'Anyone one on the web' in the 'Who can search for group' box. You probably don't want people joining who haven't first been vetted, so select 'Anyone can ask' in the 'Who can join group' box (see screenshot below left) – you'll then have the option to approve or deny each request. Use the sliders below this box to set who can view conversations, post new messages and see who else is a member of the group – you can change these settings later if needed. Click 'Next' when you've finished.



Allow non-members to find your club in Google Groups and send a request to join



Click the padlock icon to prevent people from replying to your message

Add your club members

You can now add your club's existing members to the group. There are three levels: members (the basic level that follows the permissions you set in the previous screen), managers (can change group settings, add new members and send group emails) and owners (full control, including closing the group). Enter the email addresses of your members into the appropriate boxes. There's no limit to the number of members each group contains.

At the bottom of the window you can set how each member will receive updates (such as an email each time there's a new post or a digest email every day). Alternatively, you can leave it up to your members to decide by turning off the 'Directly add members' option – doing this also means members won't be added to the group directly, but will instead be sent an invitation to join. Click 'Create group' to continue.

Post your first message

You'll now see your new group listed on your Google Groups page. To post your first message, click the group's name, then 'New conversation' (top left). Give your message a subject, then type your message. You can prevent your group members from replying to a post by clicking the padlock icon (see screenshot left).

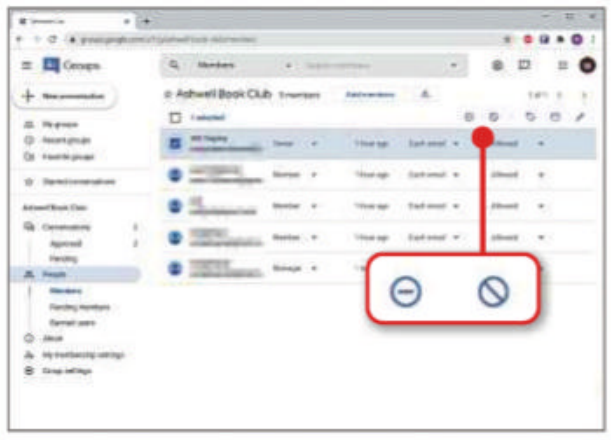
Click 'Post message' and it will appear in the Conversations section of your Google Groups page. Depending on a member's subscription settings, they will also receive the message via email.

If anyone replies to the group email address (this will be included in the CC field of the email), their message will appear under the original post on your group's page. Your members can post new messages to the group by going to the club's group page and selecting 'New conversation' or sending an email to the group address.

If you added any members with non-Gmail addresses, they'll receive emails when someone creates a new post and can post their own messages by emailing the group address, but they'll need a Gmail account to access the Google Groups page and browse posts.

Add, edit and remove members

You can add new members and change the permission levels of existing members by clicking Members in the left-hand sidebar of your group's page. To remove someone, tick the box next to their name, then click 'Remove member' (the 'no entry' icon, top-right). To prevent them rejoining in the future, select the 'Ban member' icon (see screenshot below).



You can temporarily remove (left button) or permanently ban members (right)

Next issue: Use your Google group to set up events, create a shared inbox and more

What's All the

Fuss About...

Internet teleportation

Eat lunch with holograms at speeds 100 times faster than gigabit

Oh come on, surely that's made up?

Well, we admit that it's a bit of a stretch, but Vodafone claims that its new 100Gbps broadband technology could "pave the way for 'teleportation over the internet' applications".

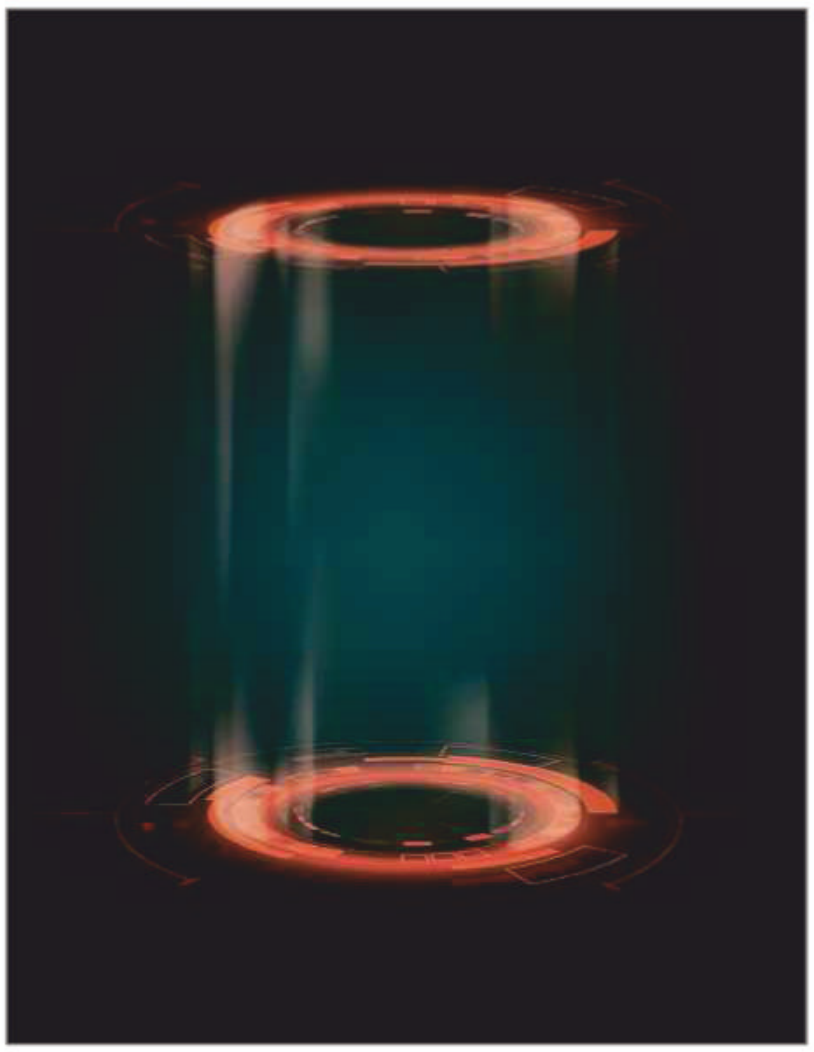
As in 'Beam me up, Scotty'?

We wish it were true: "Can you download me now, darling, I'm ready to come home". The reality is intriguingly futuristic all the same. Vodafone claims its new "immersive" technology could let you touch or smell objects remotely using sensory devices, or even share meals with family members projected as holograms.

So what is this magical technology?

It's called 100G-PON, with the PON standing for Passive Optical Network, an alternative to Active Optical Networks (AON). Both deliver fibre broadband to homes, but there's a key difference in how they split the signal to multiple users. AONs use electrically powered (ie, 'active') devices to split and direct signals to customers. Each switching device will typically serve about 500 households.

By contrast, PONs use optical (ie, 'passive') splitters that require no electrical power, with each serving up to 128 users. Not needing electricity makes it cheaper to run PONs, and they're more reliable. However, AONs can be delivered over a wider area (up to 50 miles), much further than PONs (about 12 miles). But all this is just a background to the *real* breakthrough, and that belongs to Nokia.



Using 5G and haptic technology, rugby player Juan de Jongh has just been tackled by a player 100 miles away

You mean the phone company?

Yes – or at least its Bell Labs research division, based in New Jersey, which it bought in 2015. It has built a new digital signal processing (DSP) technique that sends 25Gbps on a single wavelength. Combining it with other wavelengths would reduce the speed. Crucially, the new DSP method makes it easier to increase this 25Gbps speed to 100Gbps. Vodafone says it used Nokia's technique to hit 100Gbps during tests at its lab in Eschborn, Germany.

And exactly how fast is 100Gbps?

It's 100,000Mbps. Think your 100Mbps connection is pretty nippy? Vodafone's is 1,000 times faster. The benefits of faster broadband are usually explained by how much quicker you could download an HD film. At 1Gbps, for example, it would take you 30 seconds. But 100Gbps is so much faster that we need to measure its impact in different terms. It's not how fast you'd download something that would matter, but **what** you'd be able to download. Hence Vodafone's rather excitable claim about teleportation. In effect, it means being able to 'send' a sensory experience – touch, taste, smell – from one end of a cable to another. Vodafone demonstrated something similar in 2019 using rugby tackles.

Really? How did that work?

It showed how the impact of rugby tackles could be felt 100 miles away via 5G. The person being 'tackled' – in this case South African rugby player Juan de Jongh (watch the video at www.snipca.com/37289, pictured left) – needs to wear a full-body haptic suit, which simulates the sense of touch.

Impressive. So how soon will I be able to use 100Gbps?

Not until 2030, Vodafone predicts, and even then it'll probably be given first to businesses, hospitals and shops. It may seem as far-fetched as any *Star Trek* technology, but it wasn't too long ago that the best we could hope for was 56Kbps on a dial-up connection. Warp drives are still some way off, though.

Hack Your USB STICKS

They're small, cheap and your drawers are probably full of them, but is your collection of USB sticks an untapped resource? **Will Stapley** reveals the 12 best ways to make them safer, easier to use and more powerful than ever

What did you last use a USB stick for? We're guessing it was probably to transfer files between PCs. While these mini storage drives are perfect for this kind of task, they're capable of so much more.

Over the next few pages, we'll dig deeper into the inner workings of your humble USB stick than ever before. You'll discover ways to use them that you never considered, as well as learn secret tricks to better organise your sticks, diagnose problems and protect the files stored on them from prying eyes.

You'll need to use some powerful tools to carry out these hacks – from hidden Command Prompt tools built into Windows to programs you can download for free. As with all advanced tools, we recommend you make a full backup of all your important files before trying them (files stored on your USB sticks, as well as your PC's hard drive).

As always, we'll cut through the jargon and walk you through every stage step by step, highlighting any specific areas where you need to be extra careful.

Best of all, most of the tips work even with small-capacity USB sticks, so you'll be able to put even old flash drives to good use. In fact, once you've come to realise their full potential, we reckon you might be tempted to buy some faster, bigger sticks – and as we reveal on page 52, they're now cheaper than ever.

We'd also love to hear how you use your USB sticks. Email your top tips to **letters@computeractive** and we'll publish the best.

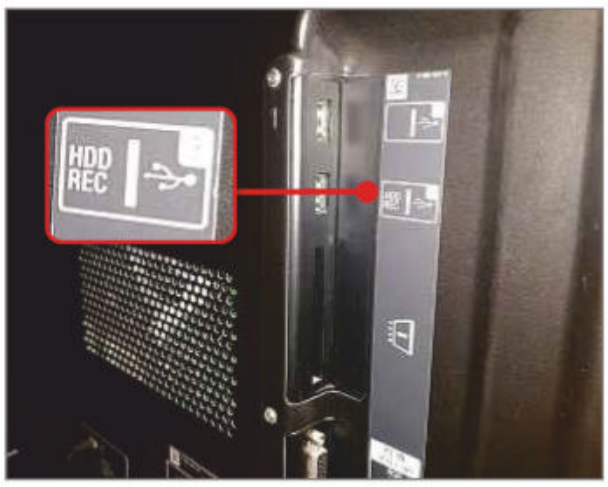
WHAT YOU CAN DO

- Record live TV programmes using your USB stick
- Assign distinct drive icons to each USB stick
- Organise your sticks by splitting them into partitions
- Fix malfunctioning sticks by deep-cleaning them

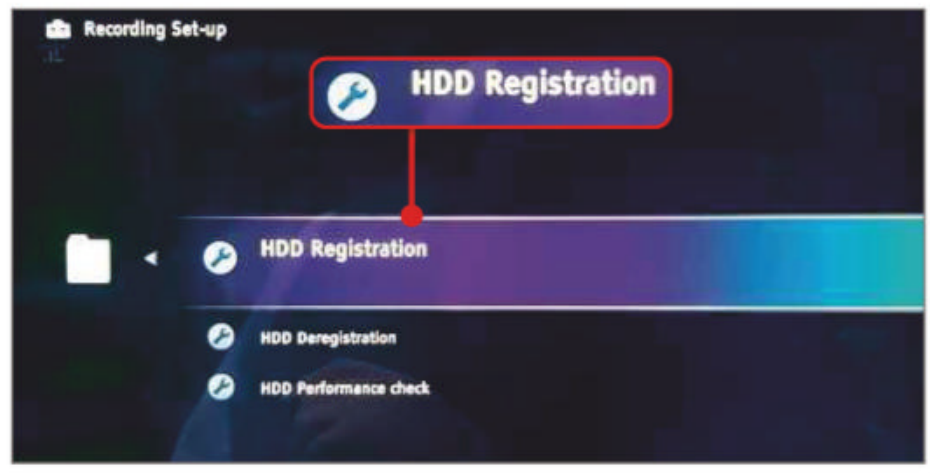
RECORD TV TO A USB STICK

In Issue 598 (page 53) we revealed the best TV set-top boxes for recording live TV. While these offer some great features, they come with a hefty price tag (starting at £166). There is a cheaper alternative. Depending on the model of TV you have, you might be able to record programmes using nothing more than a USB stick.

First, check that your TV has one or more USB ports. This won't necessarily mean you can *record* to a USB stick – some TV sets will only let you *play* media from a USB stick (see our following tip) or install firmware updates. Refer to your TV's manual or manufacturer website to check whether it supports recording to a USB stick.



Our Sony Bravia TV has a specific USB port for recording TV content



Register your USB stick in your TV's settings to format it for recording

Alternatively, just grab an old USB stick and test it out for yourself. This is what we did with our Sony Bravia KDL-55HX853 (a relative dinosaur in TV terms, dating back to 2012). Bear in mind that video requires plenty of storage space. With our Sony TV, we used a 32GB stick, which is enough storage for around 20 hour-long programmes.

Most TVs will need to format USB sticks before they can record video to them, so make sure you back up any files from your stick before proceeding because this process will delete them.

Our Sony TV has two USB ports, but only one can be used for recording (labelled HDD REC – pictured left). If your TV doesn't indicate which port you need to use, you should be able to insert your USB stick into any of them.

Next, turn on your TV. What you need to do now will depend on your TV make and model. On our Sony Bravia we had to open the main menu then go to Settings, System Settings, Recording Set-up, HDD Registration (see screenshot above) and follow the instructions to format the USB stick (this took just under two minutes).

Once complete, we were able to record live programmes to our USB stick and use the TV's Live Pause feature, which lets us pause and rewind live TV. As you might expect, it doesn't have as many features as a set-top recorder. For example, because the TV has only one tuner, we couldn't record one programme while watching another. But you are adding a handy new feature simply by making use of an old USB stick.

PLAY VIDEOS FROM YOUR USB STICK ON YOUR TV

Free software such as Universal Media Server (see Issue 598, page 18) lets you stream video, photos and music from your PC to your TV. Streaming in this way isn't always ideal, though. You'll need to have your PC switched on to access your content and slow Wi-Fi can cause video to buffer. A more reliable alternative is to copy your content to a USB stick, then insert this into a USB port on your TV. As well as not having to rely on Wi-Fi, this means you could take the USB stick with you when travelling away from home (as soon as that's allowed again).

Reformat your USB stick using the exFAT file system to play video from it on older TVs

Not all TVs let you play media from a USB stick, but if your TV has a menu option such as Media or USB, there's a good chance it will. Manufacturers also frequently update their TVs to improve USB playback. In November last year, Sony released a firmware update for its Android-based TVs (those built from 2016 onwards) that enabled them to play HEVC video files (the format used by iPhones and iPads). If you have a compatible Sony TV, the update should install automatically, but you can also download it from www.snipca.com/37284.

Our old Sony TV is incompatible with this particular update, but it still managed to play most media formats once we'd formatted our USB stick. When we first inserted the stick, our TV simply refused to recognise it. After a little research, we discovered that the TV won't work with sticks formatted using Microsoft's NTFS file system (this dictates how data is stored on USB sticks and hard drives).

To fix this, we had to format the stick using the older but more widely supported exFAT file system. To do this, insert the USB stick into your PC, right-click it in File Explorer, then select 'Format..'. In the Format window, select 'exFAT' (see screenshot left), then click Start to proceed with reformatting. After inserting our stick into the TV and selecting Media in the menu, we managed to access all media files contained on it.

Not all TVs let you use their USB port in this way. If you have one of these, read our How To on page 35, where we show you how to load your media on to an Amazon Fire Stick instead.

SPLIT YOUR USB STICK INTO PARTITIONS

It wasn't so long ago that the capacity of USB sticks was measured in megabytes, not gigabytes (we have a 128MB stick from 2003 that's still going strong). These days, most new USB sticks have at least 1GB of storage. Indeed, the price of extra-large capacity sticks has plummeted in recent months. Only last year, SanDisk's 256GB Ultra cost nearly £50, but this month it was available for just £27 on Amazon (www.snipca.com/37286).

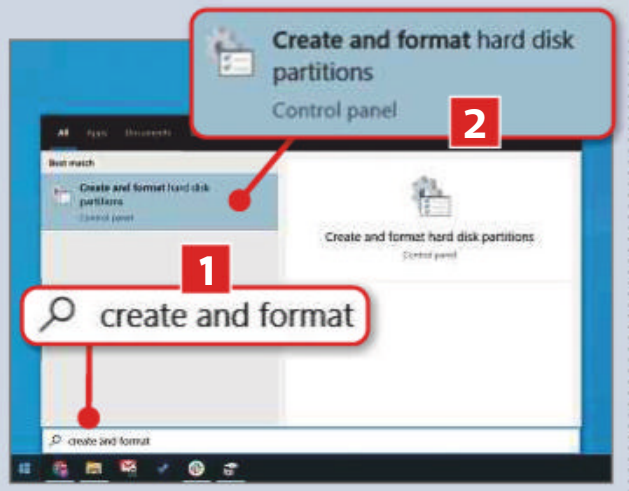
With this much storage space, keeping all the files on your stick organised isn't always easy. As is the case with your PC's hard drive, organising becomes much easier if you partition your USB sticks – in other words, split them into multiple drives.

It might sound complicated, but follow our Mini Workshop below and you'll have your stick partitioned in under 10 minutes. Once that's done, your Windows PC – along with other devices, such as your smart TV – will treat each partition as a separate drive. This makes it easier to arrange the files on your stick (for example, create separate partitions for music, video and documents) and you'll also be able to format one of the partitions without affecting the others.

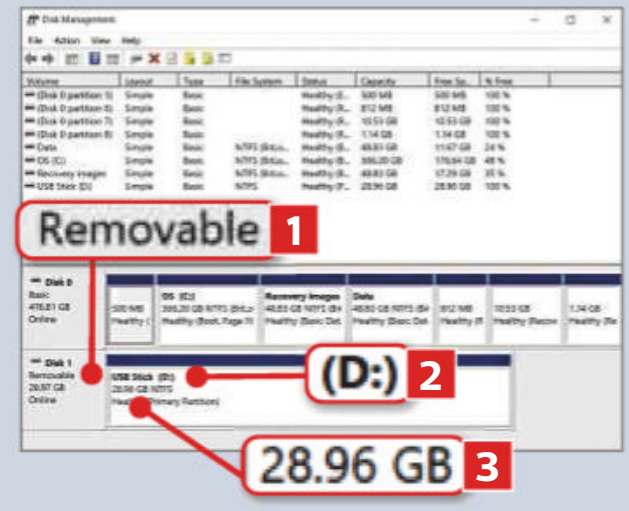
The partitioning process requires you to format (and therefore wipe clean) your USB stick, so before proceeding make sure you move all files from it to your PC. If you encounter any problems, you may need to first clean your USB stick – see page 57.

WORKSHOP Partition your USB stick into multiple drives

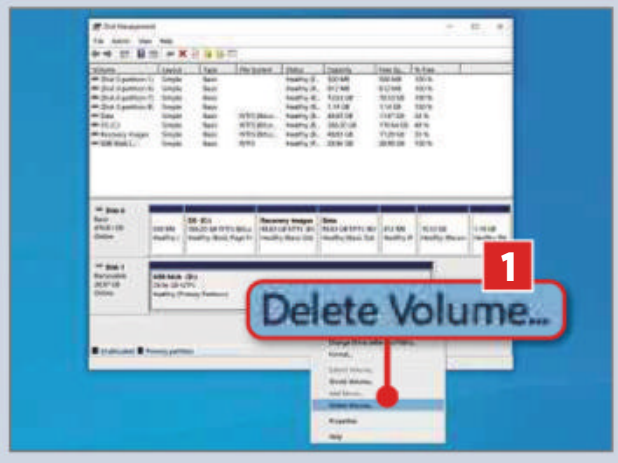
1 Once you've removed all files from your USB stick, open Windows' Disk Management tool by clicking the Start menu, typing create and format 1 then selecting 'Create and format hard disk partitions' 2.



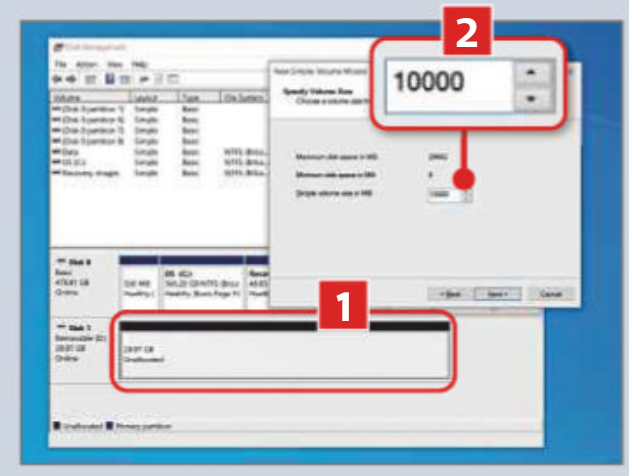
2 You should see your USB stick listed in the bottom half of the window, labelled Removable 1. To the right of this, you'll see a box containing your drive's letter 2 and its capacity (28.96 GB 3 on our stick).



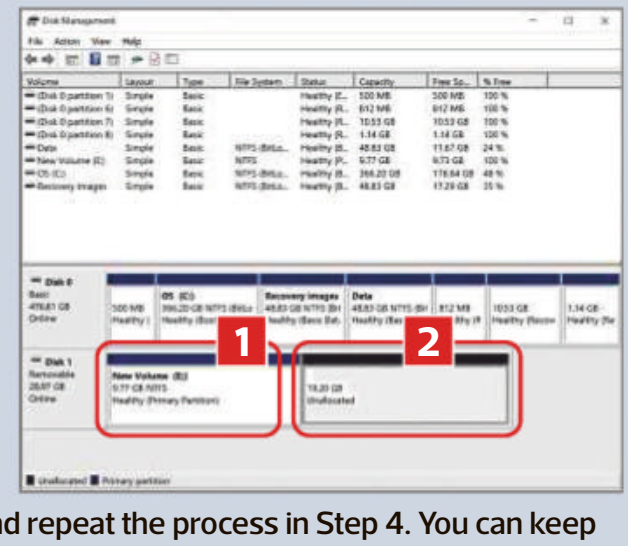
3 Right-click the box to the left of the drive's name, select Properties, then 'Delete Volume...' 1. It's vital to select the correct drive here – if in doubt, remove your USB stick then reinsert it, noting which drive disappears then reappears. When prompted, click Yes to continue.



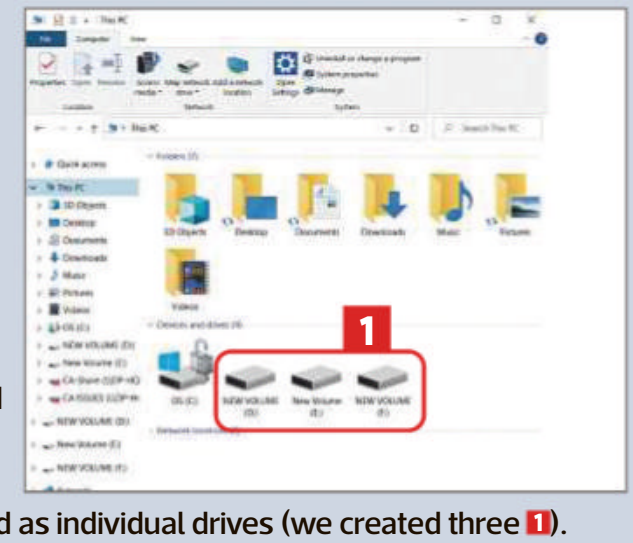
4 You should now see a single box labelled Unallocated 1. Right-click this, then select 'New Simple Volume...', followed by Next. In the 'Simple volume size...' box, enter the desired size of your first partition in megabytes (we've set it to 10,000MB 2, which is 10GB).



5 You'll now see your new partition 1 along with a box labelled Unallocated 2 to the right of it (this is the space on your USB stick that's not taken up by the first partition). Right-click the Unallocated box and repeat the process in Step 4. You can keep doing this until you've allocated all the space on your USB stick.



6 When you've finished creating your partitions, close the Disk Management window, then open File Explorer (press Windows key+E). You should now see your USB stick's new partitions displayed as individual drives (we created three 1).



GIVE DIFFERENT ICONS TO EACH USB STICK

When you insert a USB stick into your PC, File Explorer (press Windows+E then select 'This PC') will show it using the same icon as your hard drive. Insert multiple sticks – or one that you've split into partitions, as described on the previous page – and you'll see a group of identical icons, making it hard to tell one from the other. However, by creating a file (called 'autorun.inf') on your USB stick, you can set it to use unique icons, making your sticks and partitions instantly distinguishable.

You first need to select which icon you want to use for each USB stick. To browse a selection of free, high-quality icons go to IconArchive (https://iconarchive.com) and use the search box at the top. In our example, we're going to assign icons to the USB stick that we split into three partitions in the Mini Workshop opposite. The first partition is for photos, so we searched for 'camera', hovered over a suitable icon, then clicked the ICO option (see screenshot below) to download it. We repeated this to find icons for the other two partitions: videos and music.

If you can't find a suitable option on IconArchive, you could try creating your own icons from images (such as a photo of your USB stick) using Convertico (https://convertico.com). Click 'Convert' at the top and choose whether you want to convert a JPG or PNG image to an icon. Untick the 'I agree to publicly display...' box (located just under the upload box – this keeps your icons private), drag your image into the upload box, then click the red download button.

Once you have your icon, rename it usb.ico (select the file and press F2 to do this), then copy the file to your USB stick's root directory (for our stick's first partition, this is D:\).

You now need to create the 'autorun.inf' file and set it to use your icon. Click start, type notepad, then press Enter. In the Notepad window that appears, type the following over two lines (you can copy the text from our Pastebin account at www.snipca.com/37294):

```
[autorun]
icon=usb.ico
```

Press Ctrl+S to save the file, name it autorun.inf, then save it to your USB stick's root directory, alongside the icon file. To keep things neat and prevent the files from being accidentally deleted, you can hide them by selecting them both in File Explorer, right-clicking one of them, selecting Properties then ticking the Hidden box. Click OK to save your changes. If you need to view the files at a later date, click the View menu, then tick the 'Hidden items' box.

Restart your computer. Once Windows has loaded, open File Explorer, select This PC and you'll see your new USB icons (we kept it obvious – see screenshot above). Because the files are stored on your USB sticks, you'll see the drive icons you've set no matter which computer you connect your sticks to.

For the finishing touch, select each drive in turn and press F2 to change their label from the default of NEW VOLUME to something more descriptive.

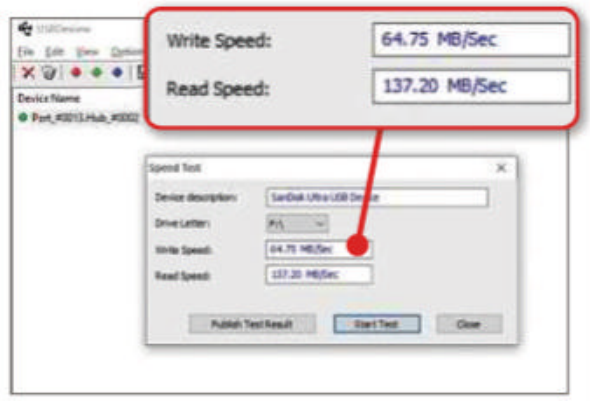
Click the ICO option to download an icon from IconArchive

Once you've assigned icons to your USB stick, they will be displayed on any PC you insert it into

Identify your fastest USB stick

It's not just size that sets USB sticks apart – the speed at which they transfer files also matters. So if you plan to use a stick to move a number of large files from one PC to another, it makes sense to choose the one that'll do the job fastest.

To speed-test a USB stick, insert it into your PC, download NirSoft's USBDeview (www.snipca.com/37293 – scroll to the bottom for the download links), then run the tool. Open the Options menu, then click Display Only Drives With Drive Letter. You should now see your USB stick listed. Right-click it, select Speed Test, then Start Test and wait for the read and write speeds to appear. We found the first few tests can return different results, so it's best to run the test a few times until the results stabilise.



Our 32GB SanDisk stick achieved write and read speeds of 64.75MB/s and 137.2MB/s respectively (see screenshot). Do you have a stick that can beat it? Email your stick's results (complete with USBDeview screenshot) to **letters@computeractive.co.uk**.

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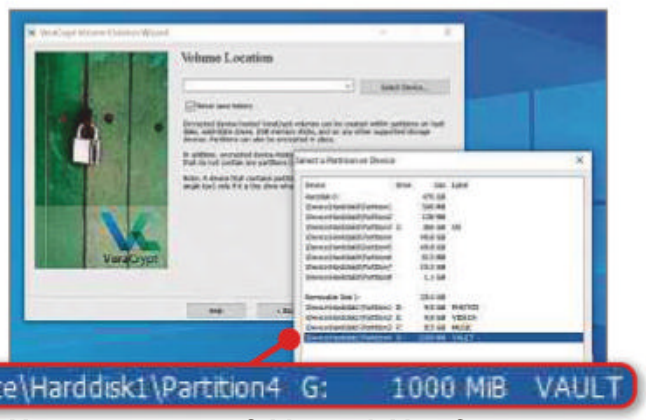
*while stocks last

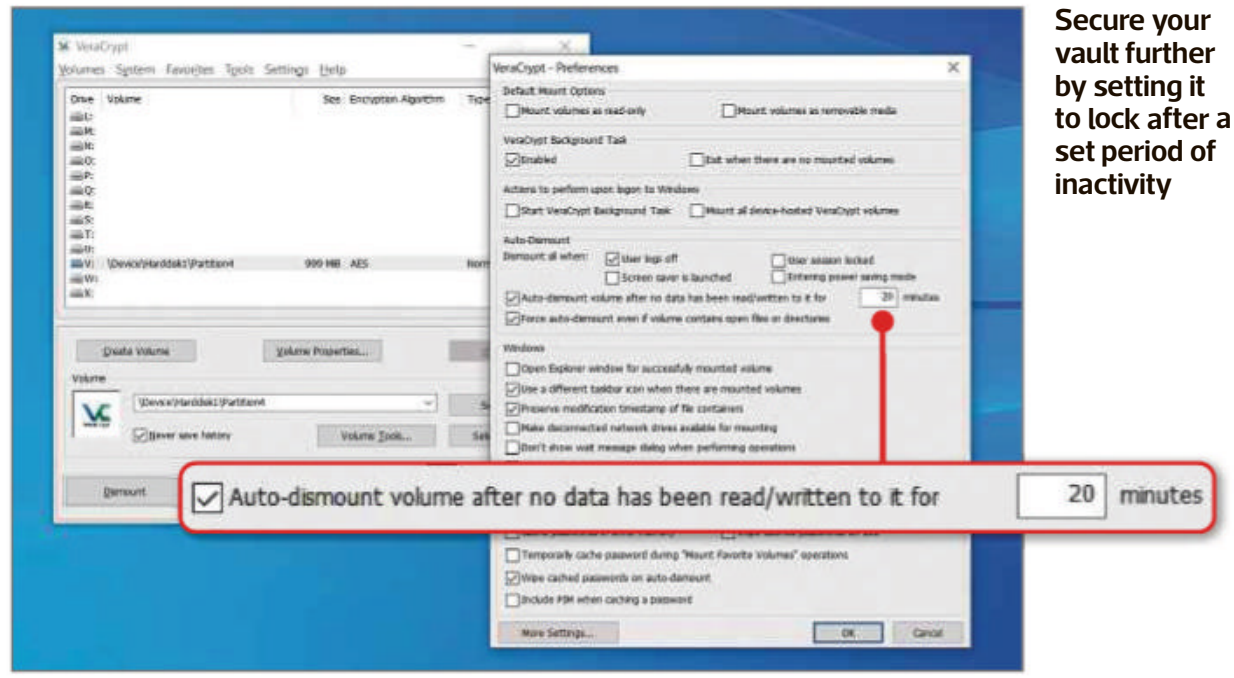
CREATE AN ENCRYPTED VAULT ON YOUR STICK

If you followed our advice on page 52 and partitioned one of your USB sticks, why not take it a step further and turn one of those partitions into an impenetrable vault? If you ever lose your stick, you can relax in the knowledge that nobody will get access to the files on it. Better still, you can set the vault to lock automatically if you haven't used your stick for a certain period of time – handy if there's a risk you might leave your USB stick in a public or work computer.

To create your vault, insert your stick in your PC, open File Explorer and make a note of the drive letter for the partition you want to turn into a vault. Be sure to also copy all files from this partition as it will be formatted (and wiped) as part of the process. Next, download the free encryption tool VeraCrypt from www.snipca.com/37299 (click the top VeraCrypt Setup link in the Windows section), run



You can encrypt a folder with VeraCrypt or, as we've done here, an entire partition



Secure your vault further by setting it to lock after a set period of inactivity

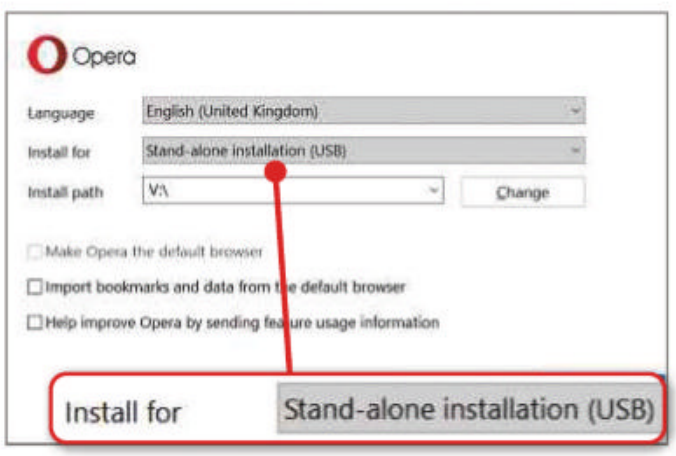
it, then click Create Volume. You can use VeraCrypt to encrypt a single folder, but because we're encrypting an entire partition on our stick, we need to select the 'Encrypt a non-system partition/drive' option. Click 'Next' twice, then Select Device and select your partition (see screenshot left – make sure it has the same drive letter that you noted down earlier). Continue clicking Next to move through the process, entering a password when prompted (make a note of this because if you forget it, you'll lose access to your data). Click 'Format' at the end of the process.

To access your new vault, you need to 'mount' (in other words, decrypt) your partition using VeraCrypt. In the top section, select the drive letter you want your vault to use (we chose V), then click 'Select Device...' and select the same partition as earlier. Next, click Mount. This process can take around 10 seconds, after which you'll be able to access the vault as you would any other drive in File Explorer.

To automatically dismount (or lock) your vault after a set period of time, open the Settings menu in VeraCrypt, select 'Preferences...', then tick the 'Auto dismount volume after no data...' box. The default is 60 minutes, but you can change this – we opted for 20 minutes (see screenshot above). Click OK to save your changes.

BROWSE THE WEB FROM YOUR STICK

When you're using a PC other than your own, such as a public computer, it's a good idea to take steps to protect your privacy – particularly when browsing the web. By using a browser installed on your USB stick, all files (your browsing history, cache and more) will be confined to that stick, so other people who use the same computer won't be able to snoop on your online activity.



Install the portable version of Opera on a USB stick to ensure you can browse privately on public computers

Neither Edge nor Chrome have portable versions that you can install on a USB. Search online and you'll find unofficial portable versions, but these lack some features of their desktop counterparts and don't receive automatic updates. For browsing on a USB stick, we recommend using Opera (download it from www.snipca.com/37303). This is an official release and has all the features of the Opera desktop browser, while benefitting from automatic updates. The latest version, released in early February, includes 'tab snoozing', which prevents tabs you're not currently viewing from using your PC's resources.

At the start of the installation process, click the small Options link (just above the Upgrade button). In the next screen, select 'Stand-alone installation (USB)' (see screenshot left) in the 'Install for' box, then click Change and select your USB stick (we opted to install it in the secure vault we created in the tip above). To opt out of sending anonymous data to Opera on how you use the browser, untick the 'Help improve Opera...' box. Finally, click Install.

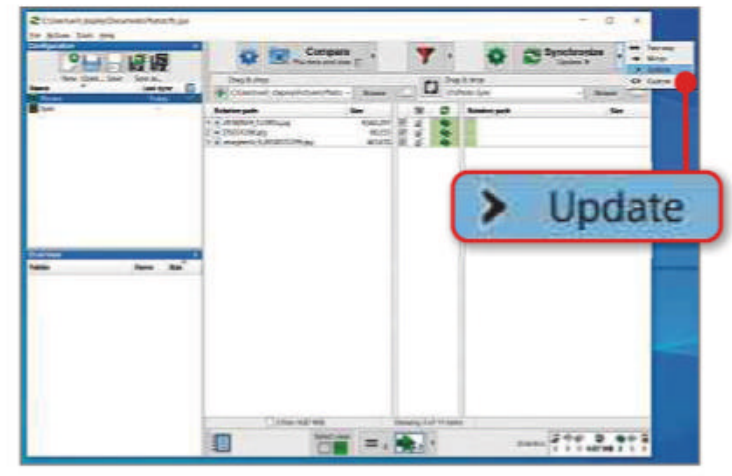
Although your browsing history, cache and other files associated with Opera will stay on your USB stick, any files you download will be saved to the Downloads folder on the PC you're using. To switch this to a folder on your USB stick, type opera://settings/startPage in the address bar, scroll to the Downloads section, click Change, then select a folder on your stick. If your USB stick changes its drive letter (this can happen when you use it on a different computer), you'll need to update this location accordingly.

SYNC YOUR PHOTOS TO A USB STICK

Having previously lured users in by offering free unlimited storage, on 1 June Google will introduce a 15GB limit to its Google Photos service. If you primarily use Google Photos to share your library across your various computers, you might want to consider syncing your photos to a USB stick instead. All you need is a suitably sized USB stick and the free tool FreeFileSync (www.snipca.com/37310 – click the top link in the Download FreeFileSync section).

While the process we explain here won't alter your existing photo library, FreeFileSync is a powerful tool and it's easy to inadvertently delete items as you learn how to use it. We therefore recommend making a full backup of your photos before continuing.

Run FreeFileSync, click the Browse button at the top of the Source pane (located under the Compared button), then select the folder containing your photos on your PC. With your USB stick inserted, click the Browse button in the Destination pane on the right (under the Synchronise button) and select the folder on the USB stick that you want to sync photos to (we named ours Photo Sync). To ensure photos only sync from your PC to your stick (and not vice versa), click the arrow to the right of the Synchronise button and select Update (see screenshot).



FreeFileSync lets you quickly sync your photos to a USB stick

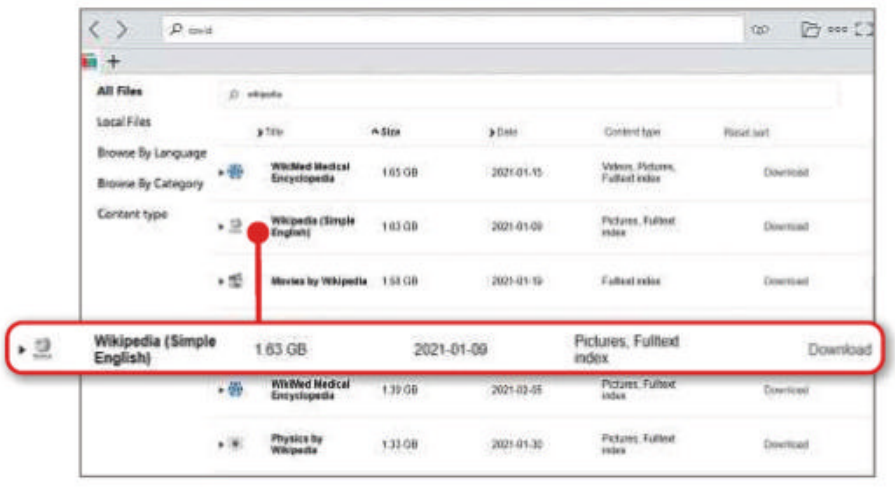
To run the first sync, click Compare, then Synchronise. FreeFileSync will tell you how many files it's about to transfer to your stick. Click 'Start' to sync them.

You can now save your sync process by clicking File, then Save As. To run it in future, simply run FreeFileSync, open the file you saved earlier (click File, then Open), then click Compare, followed by Update. FreeFileSync will now scan your photos folder and copy to your stick any new or updated photos since your last sync.

GET WIKIPEDIA ON A STICK

There's a Wikipedia page for just about everything. And while it's perhaps not quite as authoritative as the *Encyclopaedia Britannica*, it's good for a crash course on a specific subject. Until, that is, your internet connection goes down. However, thanks to a free tool called Kiwix, you can download the entire Wikipedia database of over six million articles to a USB stick, meaning it'll be available even when you're offline.

First, download Kiwix (go to www.snipca.com/37302 and click the Windows logo), then extract the contents of the ZIP file to your USB stick. Open the 'kiwix-desktop_windows...' folder on your stick then double-click the 'kiwix-desktop.exe' file. Click 'All Files' at the top, type wikipedia in the search box, then click the Size column twice so the biggest files are listed first.



Download the Simple English Wikipedia database if your USB stick isn't big enough for the full version

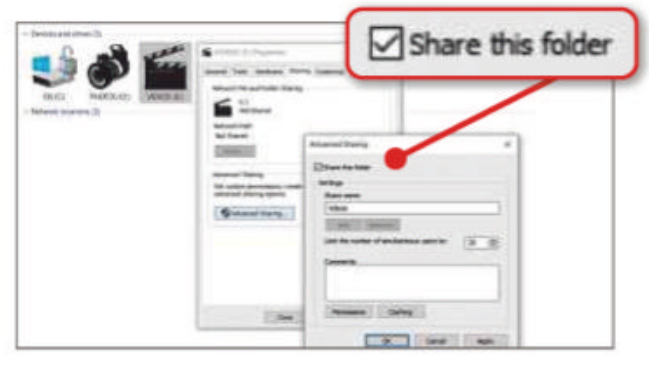
The full Wikipedia database (including pictures) will be listed at the top. To download it, click the Download button on the right. However, at 79GB you'll need a large USB stick to accommodate it. For a smaller version, scroll down the list to the 'Wikipedia (Simple English)' database (see screenshot).

This is essentially a cut-down version of Wikipedia, but with over 180,000 articles it still contains a formidable amount of information, and at just 1.67GB will fit on most USB sticks. Plus, it's bang up to date, with the latest version released only last month.

Once you've downloaded a Wikipedia database, you can browse it just like you would the Wikipedia site. Click 'Local' Files in the left sidebar to see your downloaded databases, then Open at the far right. You'll now see the Wikipedia homepage. To search it, use the address bar at the top.

SHARE FILES BETWEEN COMPUTERS

Fed up moving a USB stick full of files between your computers? There is an easier way. Insert your USB stick into a PC on your home network, open File Explorer, then select This PC. Right-click the stick (or a specific folder on it) then select Properties. In the window that opens, click the Sharing tab, followed by 'Advanced Sharing...'. Next, tick the 'Share this folder' box (see screenshot), give it a suitable description in the 'Share name', then click OK. Now you, or anyone else on your home network, can access the stick on any of your computers by opening File Explorer, clicking Network in the left-hand sidebar, then selecting the USB stick. Just remember that the PC into which the USB stick is inserted will need to be switched on for other PCs to access it.



Tick this box to share the contents of a USB stick with other PCs on your home network

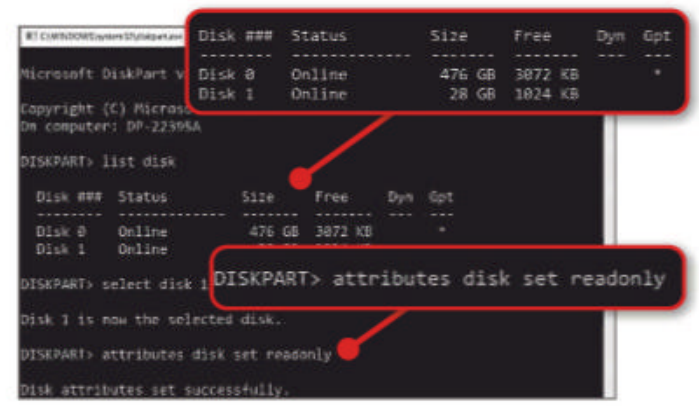
STOP FILES BEING ACCIDENTALLY DELETED

When you have a USB stick loaded with important files, the last thing you want is for them to be – accidentally or otherwise – deleted by someone. To prevent this, use the DiskPart tool that's built into Windows. Click the Start button, type diskpart, then press Enter and click the relevant suggestion.

To select the USB stick you want to protect, type list disk, then press Enter. In the window that opens locate your stick by looking for its capacity in the Size column. In our example, the stick we want to protect is Disk 1 (this is the second disk listed; the first is labelled Disk 0 – see screenshot).

To select it, type select disk 1 (replacing the '1' with the number of the disk you want to select). Type list disk again and you'll notice an asterisk to the left of your USB stick, indicating that it's now selected. To write-protect it, type attributes disk set readonly (see screenshot), then press Enter. You can now access all files on the stick, but you won't be able to edit or delete them, nor format the stick itself.

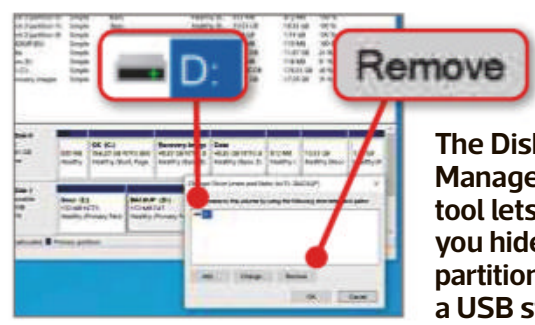
Note that the write-protect setting is applied to the entire USB stick (if you've split the stick into multiple partitions, they'll all be write-protected). To undo this protection, repeat the process, but change the last command to attributes disk clear readonly.



The 'list disk' command in DiskPart lists all storage devices currently attached to your PC

HIDE YOUR STICKS FROM FILE EXPLORER

If you've created various partitions on a USB stick, you may prefer some of them to be hidden (such as any containing a backup file). Using the Disk Management tool (click the Start menu, type create and format, then press Enter), you can quickly hide these partitions. In the bottom-half of the window right-click the relevant partition on your USB stick and select 'Change Drive Letter and Paths...'. Next, select the partition's existing drive letter (ours is D:), then click Remove (see screenshot). This partition will now be hidden when you open File Explorer and select This PC (note that if you insert this stick into a different PC, Windows will assign its partitions a drive letter as normal).



The Disk Management tool lets you hide partitions on a USB stick

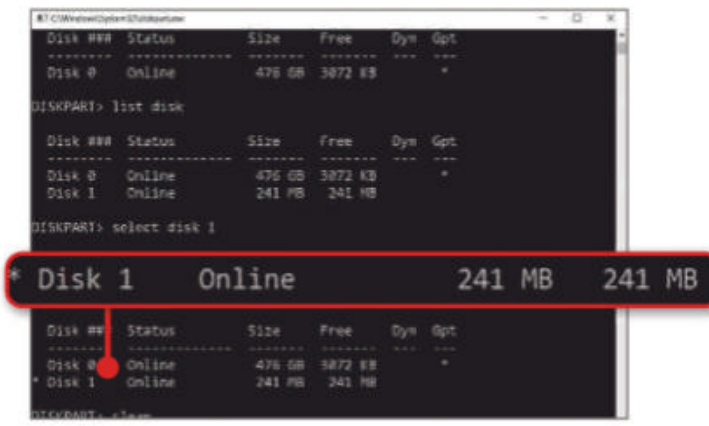
To reassign a drive letter to a partition you've hidden - and access the files stored on it – repeat the process, but click Add instead of Remove.

FIX YOUR STICKS BY CLEANING THEM

As we mentioned on page 52, you may have problems splitting a USB stick into multiple partitions. If so, a good clean with the Clean command in DiskPart can sort things out. This is also worth trying to resolve other issues, such as a stick that Windows doesn't recognise (though you should first check whether you simply need to assign a drive letter to it, as explained above).

Be aware, the Clean command deletes *all* partitions – and hence all files - on whatever storage device you run it on, so you need to be absolutely sure you have the correct one selected. For this reason, we recommend removing all other USB sticks and external hard drives before proceeding and making sure all your personal files are backed up.

Run DiskPart as explained in the previous section, using the list disk and select disk commands to select your USB stick. If you want to double-check, remove the stick and make a note of which disk disappears from the list in the DiskPart window. Once you're happy you've selected the correct disk (as before, you'll see an asterisk to the left of the one you've selected – see screenshot), type clean and press Enter. All partitions (including any hidden ones) on the stick will now be deleted. Once that's done, return to the Mini Workshop on page 52 to create one or more partitions on the USB stick before you use it.



When running the Clean command, make sure the asterisk is next to the correct disk

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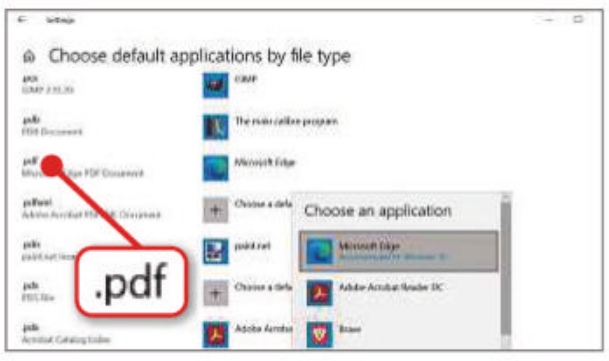
Stop making these PDF mistakes

PDFs remain a popular way to share documents, but are you still making the same errors when creating and sharing them? **Robert Irvine** reveals the best free tools to avoid falling foul of the most common PDF pitfalls

Stop using a dedicated PDF viewer

You don't need a cumbersome PDF viewer such as Adobe Reader to open, view and print PDF files. Instead, simply use your web browser. If it isn't already, you can set your browser as your default PDF reader in Windows. Go to Settings (press Windows key+I), Apps, 'Default apps' then click 'Choose default applications by file type' (located beneath the grey Reset button). Scroll down the list of file types to '.pdf' (see screenshot below), click the current default app on the right and select your browser. Double-clicking PDF files on your PC will now open them in a new browser tab.

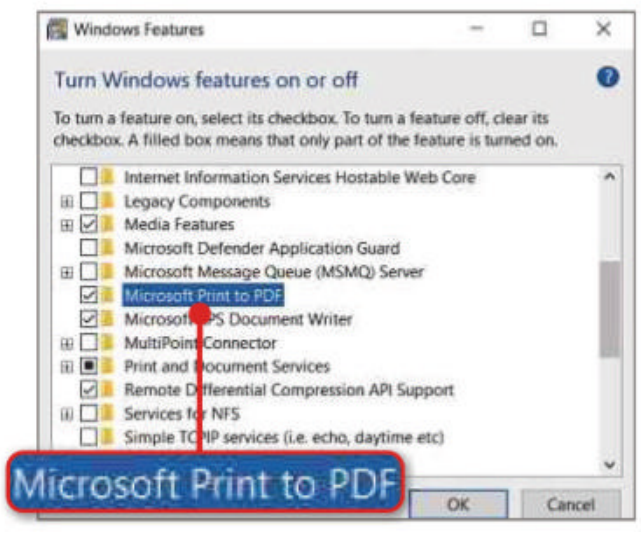


Set your favourite web browser as the default app for viewing PDF files

Don't use a program to convert PDFs

Converting documents and images to PDF used to require a dedicated program such as Adobe Acrobat, but Windows 10 has this feature built in – as do all major browsers. Simply open a file or page in whichever program you're using (your word processor, image editor, Edge or Chrome), press Ctrl+P to print it, then choose 'Microsoft Print to PDF' or 'Save as PDF' (or similar) from the Printer or Destination menu.

If you can't see this option, press Windows key+R to open the Run box, type optionalfeatures.exe, then press Enter. Tick the 'Microsoft Print to PDF' box (see screenshot below), then click OK to enable it.



Convert any file to PDF using Windows 10's 'Microsoft Print to PDF' option

Don't pay for online editing tools

There are plenty of online tools that let you edit PDFs for free, but there's usually a catch: the tool may apply a watermark, limit your PDF's size or restrict how many files you can edit per day (or even every hour, as with Sedja – www.sedja.com). Also, these services don't typically let you change existing text in a PDF.

The best free tool for editing PDFs online is DeftPDF (www.deftpdf.com), which offers many useful options including highlight, whiteout and annotations, as well as the ability to edit existing text. Simply click the Text button on the toolbar and select the text you want to erase and replace. There are no limits on how many PDFs you can edit and DeftPDF protects your privacy by automatically deleting your uploads from its servers after five hours.

If you prefer to use a tool on your PC as opposed to online, we recommend PDF24 (https://en.pdf24.org). Launch the tool, select Edit PDF, then select the PDF you want to edit.

Don't share massive PDFs

The PDF format makes it easy to share lengthy documents in a single file, but your recipients (and their inboxes) will thank you for stripping out unnecessary pages. You may also want to remove any pages that contain personal information.

The excellent free online tool PDF2Go

PDF2Go lets you quickly remove pages from a PDF by clicking this bin icon

(www.pdf2go.com) lets you quickly chop pages from your PDFs. Click the Split PDF link at the top of the page and upload a PDF or import it from Google Drive, Dropbox or a specific URL. Click the scissors icon next to a page to split the PDF after that point, or click the bin icon to delete pages from the file (see screenshot below left).

PDF24 (see above) also lets you split PDFs - simply select the Split PDF option in the main menu.

Stop sending multiple PDFs

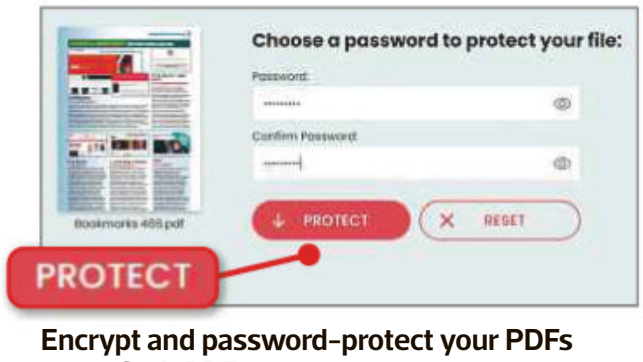
Attaching multiple PDFs to an email not only takes time, but also makes it harder for the recipient to work out what's what. So why not combine them into a single file? PDF2Go (see above) limits you to merging three PDFs. This limit is increased to five if you register for a free account, though that comes with its own dangers (see box above right), so we'd recommend Combine PDF (www.combinepdf.com) instead. This lets you upload up to 20 PDFs (with no size limit), drag and drop pages into your desired order, and download the merged file with a single click of the Combine button.

Again, PDF24 is the best offline option – just launch the tool, click Merge PDF, then select the PDFs you want to combine and put them in the correct order.

Don't send sensitive information unencrypted

If a PDF you're about to share is confidential, such as a contract or medical information, it's a good idea to prevent unauthorised viewing by encrypting the PDF before sending it. You can password-protect it using the free online tool SodaPDF (www.snipca.com/37265), which offers 256bit AES encryption. Just upload the file, choose a password and click Protect (see screenshot below). Once encrypted, enter your password to test and download the protected PDF.

You can also encrypt PDFs in Microsoft Word. When you save a document in PDF format, click Options and select 'Encrypt the document with a password'. Similarly, the PDF Toolbox add-on for Google Drive (www.snipca.com/37266) lets you password-protect PDFs created through Google Docs and Slides.



Encrypt and password-protect your PDFs using SodaPDF

Were you a victim of Nitro PDF breach?

In September last year, Nitro – a popular online PDF tool (www.gonitro.com) – released a statement saying that databases containing its users' account information had been breached by an "unauthorized third party" (see www.snipca.com/37281) - in other words, a hacker. Last month, that hacker decided to publish the databases, making public the details of Nitro's 77 million users, including their names, email addresses and IP addresses.

You can check whether your personal information was included in the leak by entering your email address at Have I Been Pwned (https://haveibeenpwned.com). If so, we recommend you change your Nitro password, along with those for any other services that use the same (or similar) password. One way to avoid your personal details being leaked in future is to use online services that don't require you to provide personal details, such as those we've mentioned in this article.

Don't print PDF forms – complete them digitally instead

How many times have you printed a long PDF form, only to make a mistake half-way through and have to redo the whole thing? Save yourself time by completing PDF forms digitally using DeftPDF (www.deftpdf.com). Click the 'Fill & Sign' link at the top of the page, upload or import the PDF form and choose 'I'm filling out' (or 'I want someone else to fill out' to share an editable form). You can then type directly into the text fields, dragging words into position to keep things tidy and correcting mistakes in a flash.

To sign the form, click Sign, then select New Signature. You can type your name and choose a style or click Draw, then scrawl your signature using your mouse. Alternatively, take a photo of your signature, then select 'image' to upload it. Once you've finished, drag the signature into place, then click Apply Changes to save the completed form.

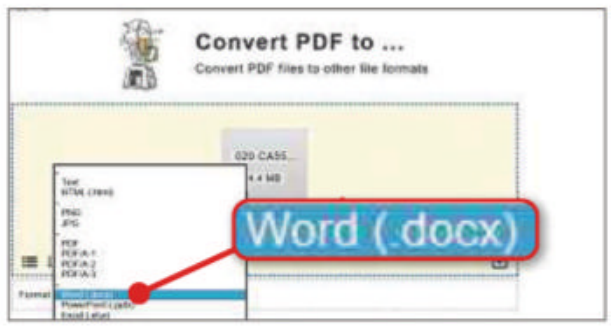
Prevent plagiarism

You can stop PDFs you share from being stolen by strangers and passed off as their own work by adding watermarks. This semi-transparent, unremovable stamp will protect your copyright and ensure your PDFs aren't re-shared without your permission. Go to PDF4me (www.snipca.com/37270), select your PDFs and choose whether to watermark all or individual pages. Click the Text button, type the words to use in your watermark, and adjust the font, colour, angle and position as required. Alternatively, you can upload an image stamp. When you've finished, click OK, choose 'Start adding Watermark' and download the result.

Once again, PDF24 is the best offline alternative and works in a similar way to PDF4me – simply select 'Add watermark' from the main menu.

Convert PDFs without ruining formatting

Google Drive lets you convert PDFs into editable documents (right-click a PDF, choose 'Open with', then Google Docs), but the resulting document won't retain the original formatting. PDF24 does a much neater job. Select 'Convert PDF to...' in the main menu, then drag your PDF into the window or click 'Choose files' and locate it. In the Format box, select 'Word (.docx)' (see screenshot below), then click Convert.



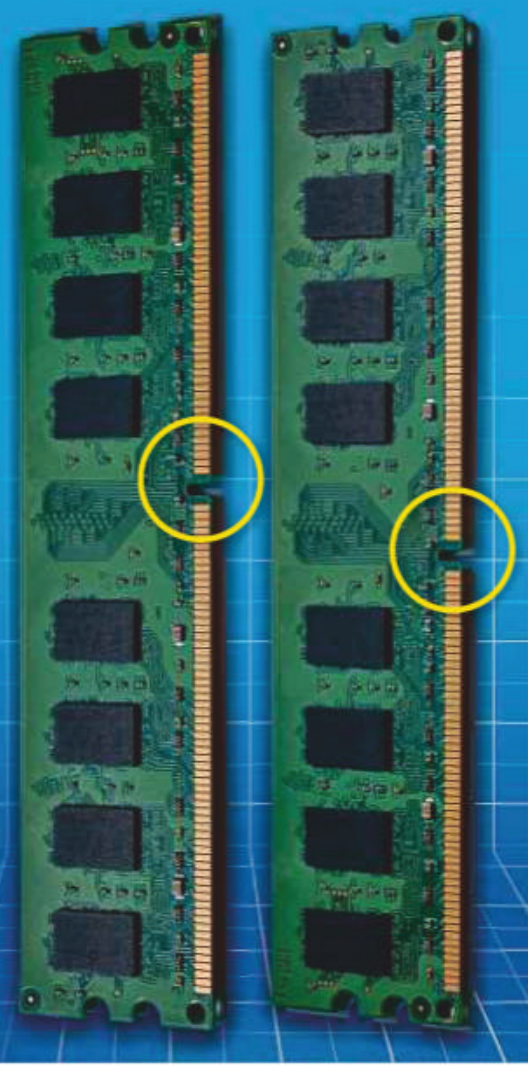
Use PDF24 to convert your PDFs without ruining their formatting

Don't use links that can't be clicked

The best PDF-creation tools, including 'Microsoft Print to PDF', automatically detect URLs in documents and make those links clickable in the converted file. If you've noticed that a link isn't working, or if you want to turn specific words into a clickable link, DeftPDF can help. Click 'Edit' and upload the PDF file, then click Links on the main toolbar. Highlight the relevant web address or text and enter the URL in the 'Link properties' box that opens. You can optionally use the Annotate tool to underline the link. Click Apply Changes to save the PDF. ca

Don't buy the wrong memory

Whether your existing memory is faulty or you just want more, it pays to do your homework before upgrading. **Nik Rawlinson** reveals how to avoid making a costly mistake



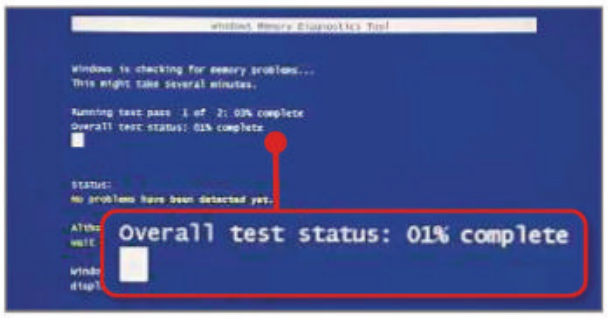
If your computer is suddenly running more slowly than before and its drop in performance can't be explained by demanding software you've recently installed, it may be that your PC's memory modules are faulty.

First, run a full scan with your antivirus software to rule out malware. If this throws up no problems, open the Start menu, type windows memory diagnostic and press Enter. Your PC will restart and test the health of your memory modules (you can follow its progress – see screenshot below).

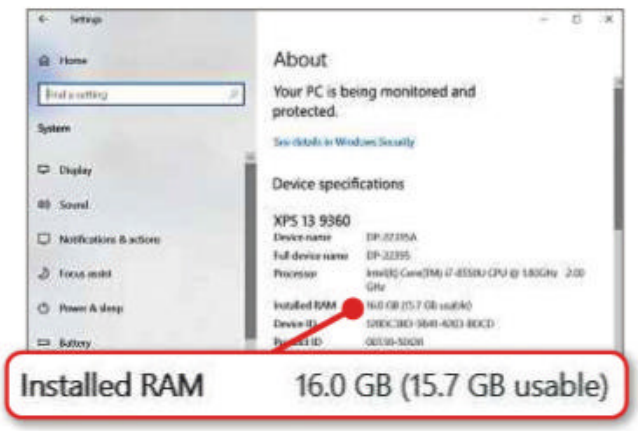
Once it's complete, Windows will load as normal and show a pop-up message with the test result. If this is anything other than 'No memory errors were detected', your memory almost certainly needs to be replaced. Alternatively, you may simply want to add more memory to improve your PC's performance (we recommend a minimum of 8GB).

Whatever your reasons, follow our advice on choosing and installing the correct memory to avoid costly mistakes.

Before we go any further, it's a good idea to confirm how much memory your PC has. Press the Windows key+I to open Settings, then click System followed by About in the left-hand menu and check the Installed RAM section (see screenshot above).



Windows' Memory Diagnostic will reboot your computer and check your memory for errors



Quickly check how much memory your PC currently has in System Settings

Types of memory

Memory chips are faster and smaller than ever, letting you store more data without the modules taking up more space inside your computer. The way they physically connect to your computer has also changed, which is why it's important to make sure you're buying the right type of memory for your device.

In general, there are two types of memory. SRAM (static random access memory) is incredibly fast, can be built into other components like your processor, and is used to briefly store data that your PC will use immediately. DRAM (dynamic random access memory) is slightly slower and used for storing data for a longer period of time. It's this DRAM that you'll be replacing when you upgrade your memory modules.

In almost every case, you'll need to buy a type of DRAM known as SDRAM. The 'S' here stands for 'synchronous', meaning data moves on to and off the memory chips at regular intervals, which are determined by the clock speed of your processor.

The first SDRAM was single-data rate (SDR) memory, which appeared in the mid-1990s and could transfer data only once at every 'tick' of your processor's clock (a 133MHz processor 'ticked' 133 million times every second, which was considered fast at the time).

By the late 1990s this had been superseded by double data rate (DDR) memory, which transfers data twice for every tick of your processor's clock. There have been several generations of DDR memory since, with the latest standard – DDR5 – arriving in July 2020. As a rule, the later the generation, the faster the memory, but don't go straight out and buy DDR5 because your computer might not be compatible.

Within these DDR standards, there are subgroups such as registered and unregistered memory sticks – the former are abbreviated to RDIMM, and the latter to UDIMM or simply DIMM (Dual In-line Memory Module). We won't get bogged down in the differences, suffice to say almost all desktop PCs use DIMM/UDIMMS (only business servers use RDIMM modules).

If you're upgrading a laptop, or a mini desktop PC that uses laptop components,

Five memory myths busted

You should always add memory modules in pairs

While this is true for some systems, most PCs can take an odd number of modules (your PC's manual or manufacturer website will be able to confirm this).

Memory is the most effective PC upgrade

In terms of bang for your buck it's good value. However, if you're not running memory-hungry tasks such as video editing, you may find 8GB (possibly even less) is sufficient, and your money would be better spent on something else, such as upgrading to an SSD.

System memory is the only memory that matters

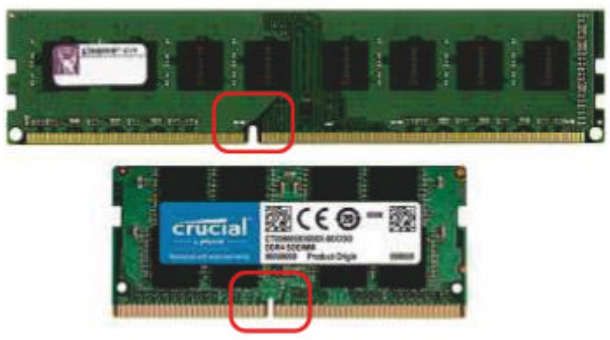
There's also memory on your processor (known as cache) and your graphics card. If you enjoy video editing or playing games, upgrading your graphics card may deliver a more significant performance boost, as the memory here is often faster than anything attached to your motherboard.

You always need plenty of spare memory

Task Manager will tell you how much memory your PC is using at any given time (press Ctrl+Shift+Escape, then select the Performance tab). However, don't assume a small amount of unused memory is bad – it often just means your PC is using your memory to store what it would otherwise have to offload on to your hard drive, which is much slower.

"640KB of memory ought to be enough for anybody"

This alleged 1981 quote is often attributed to Microsoft co-founder Bill Gates. Of course, 640KB isn't nearly enough for modern computing – even on a smartphone – but it's likely the quote has been taken out of context. Gates himself denied saying it when questioned in the 90s.



DIMM/UDIMM modules (top) are used in desktop PCs; SO-DIMM (bottom) in laptops. Both have notches to ensure they're inserted correctly

you're more likely to need SO-DIMM (the 'SO' stands for Small Outline), which are physically smaller than DIMM/UDIMMs (both pictured above).

Buy the correct memory

For a detailed overview of your existing memory, open Command Prompt (press the Start button, type cmd, then press Enter). Next, type wmic memorychip get configuredclockspeed, configuredvoltage, manufacturer, partnumber (copy this command from our Pastebin account at www.snipca.com/37264), then press Enter. This show your existing memory's speed, voltage, manufacturer and part number (see screenshot below).

Armed with this information, you can search online stores for the part number and use the speed and voltage values to verify that you've identified the correct module. You can then either buy a direct replacement if your memory is faulty or compatible modules if you want to increase your PC's memory.

Alternatively, you can let memory manufacturer Crucial's scanner do the hard work for you. This not only checks what memory your computer currently has, but also recommends compatible upgrades. You can download the free tool from www.snipca.com/37223 – you're not committed to buying Crucial products on the back of its results.

When we ran a check on our laptop, the suggested module was out of stock at Crucial, but clicking the 'Where to buy' button beside each option gave us links to third-party suppliers, including Amazon.

You can't mix different generations – DDR3 and DDR4, for example – because your motherboard will only have slots for one or the other. You can, however, mix and match speeds, so if you can only buy memory that's faster than your existing chips, pairing the two won't be a problem. Be aware, though, that all modules will adjust to match the speed of the slowest, which means that installing slower memory than you already have could reduce the overall performance of your PC, even though it has more memory installed.

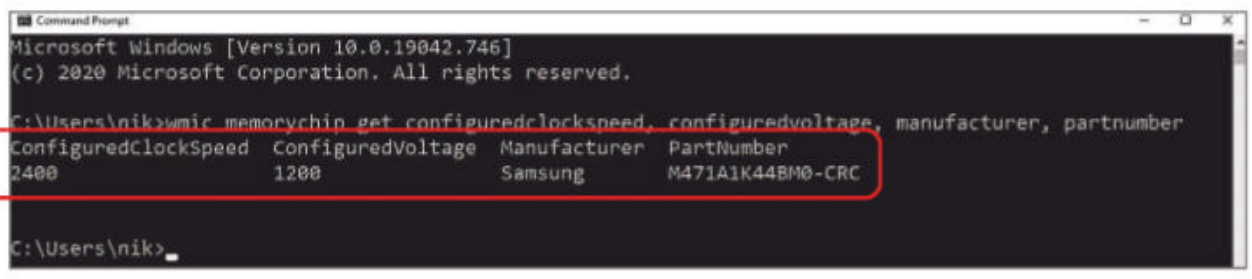
Install your new modules

Some PC manufacturers solder memory directly on to the motherboard. This can't be replaced, but it's more likely the memory in your PC takes the form of small cards – or sticks – that fit into dedicated slots. To make sure they're correctly inserted, the contact edge will feature a notch, just offset from the centre (see photo left), which makes it physically impossible to insert them the wrong way. The position of these notches depends on the generation – so DDR2 memory won't fit into a DDR4 slot, for example.

Turn off your computer and leave it for a while to cool down, then earth yourself (for example, by touching the pipe going into a radiator). Next, remove your PC's side panel. On a laptop, it's best to check your manual or the manufacturer's website (some laptops require you to remove the entire underside, others just a panel).

Because memory is susceptible to damage by static electricity, your new modules should be supplied in an anti-static bag. Once you've identified the relevant slot on your motherboard, hold the memory (still in the bag) alongside it so you can orientate it correctly. Only once you know which way it slots in should you remove it from the bag and insert it. You'll normally need to insert it almost vertically, then reduce the angle until it's secured by the integrated clips at either end of the slot. Avoid touching any of the contacts on either the memory or the motherboard - although unlikely, this can cause damage.

When you reboot your computer, Windows should detect the new memory. Return to the System section of the Settings app (as explained earlier) to check. If you hear any beeps and your PC refuses to boot, make sure all memory modules are securely in place. ca



You can find out which type of memory your PC is using in Command Prompt

Problems Solved

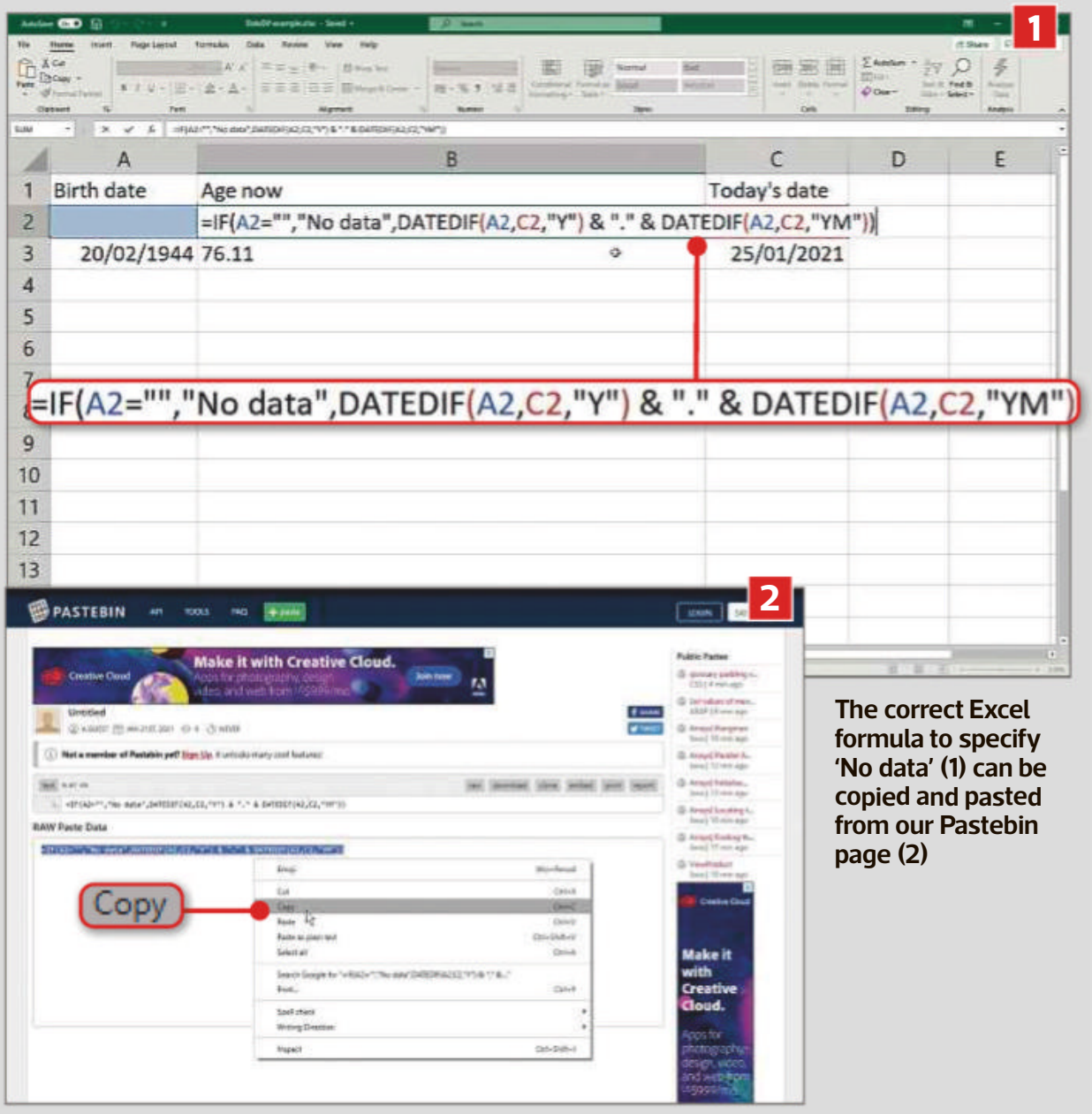
Our experts solve all your tech problems

PROBLEM OF THE FORTNIGHT

How do I fix my Excel formula?

Q I'm struggling with an Excel formula. I want to return the number of years and months from a given date of birth (DOB), or the message 'No data' if the DOB cell is blank. I'm using the formula **=DATEDIF(A2,C2,"Y") & "." & DATEDIF(A2,C2,"YM")**, which presents the relevant years and months separated by a dot. However, if the DOB cell is blank I get a number over 100. I believe this is because it counts from a default of the first day of the year 1900. Your excellent magazine is famous for its no-jargon approach, so hopefully your reply will be understood by this silver surfer!

Daniel Tilcock



The correct Excel formula to specify 'No data' (1) can be copied and pasted from our Pastebin page (2)

A Excel formulas can be incredibly powerful but equally as complex to understand and create. Moreover, there are usually multiple ways to achieve the same result.

The good news here is that you were most of the way to achieving what you want. Your existing formula can be easily tweaked to deliver the 'No data' message for a blank DOB cell. The existing string, which is a formula that in both your and our example sits in cell B2, was **=DATEDIF(A2,C2,"Y") & "." & DATEDIF(A2,C2,"YM")**, where A2 contained the DOB and C2 contained today's date (itself inserted and updated automatically using the **=TODAY() function)**.

The trick is to 'nest' your existing formula within a new formula that makes use of the =IF function, because this tells Excel to make an if/or decision before doing something else. That sounds simple enough but actually understanding how to construct such a formula can hurt one's head. With that in mind, it helps to understand the make-up of any Excel formula if one first considers the problem in plain English.

In effect, then, you want to tell Excel that it should first look at the contents of DOB cell (A2 in our example, see screenshot 1). If it's blank, then it should display a 'No data' message in cell B2. However, if A2 is not blank and instead contains a DOB, then you'd like it to calculate and display the years and months from that entered date. So, that's the if/or decision that needs to be turned into a formula using the =IF function.

Now, remember that we said you were already most of the way there? That's because your existing formula will work perfectly for the second half of this =IF function. The first half, then, simply needs to tell Excel to look in cell A2 and, if blank, enter 'No data' into B2. The =F function is structured with the logical test first (checking the contents of cell A2), then a comma followed by what to do if it's blank (type 'No data'), and then a second comma followed by what to do if it's not data (execute your existing formula).

With all that spelled out in English, the logic of the following formula – while it is undoubtedly a bit complex – should hopefully make sense, and is what you need for the desired result: **=IF(A2="","No data",DATEDIF(A2,C2,"Y") & "." & DATEDIF(A2,C2,"YM"))**. Because the width of our columns mean this long formula will be hard to get just right, we've put it on a Pastebin page at www.snipca.com/37254, so you can just copy and paste it into your sheet 2.

How do I install an ELF file on my trail camera?

Q I'm trying to update the software on a Bushnell 2011 trail camera, but the file I downloaded from the internet is in ELF format. I need a program to open the file to get it on to the camera. Can you guide me to the correct site – preferably free!

Les Lambert

2011-era models of the Bushnell trail camera are still supported by the firm

A We're not sure which exact Bushnell camera model you have, nor do we know where you got this file.

However, one quick look at the support section of the official Bushnell website, at www.snipca.com/37228, makes it clear that it still supports its 2011-era models, and that no specialist software is required to perform the update.

In fact, all you need is an SD card and a fresh set of batteries (to ensure your camera doesn't die midway through the update, which could be disastrous). The company doesn't state the size of SD card required but, as the update files are just a few megabytes, even a small card will do.

So, on the Bushnell support site, click your camera model to download the update files. Next, expand the contents of the downloaded ZIP file by right-clicking it before choosing Extract All. You'll now have both an ELF and a BIN file: press Windows key+E to fire up File Explorer and copy both of these to your SD card. Incidentally, if your PC doesn't have a memory-card reader they can be picked up very cheaply (a Vanja portable reader costs around £7 from Amazon, www.snipca.com/37229)

Next, with the camera's power switch in its OFF position, insert this SD card into your camera's slot. Then, holding down the button with the up arrow, slide the switch to the SETUP position.

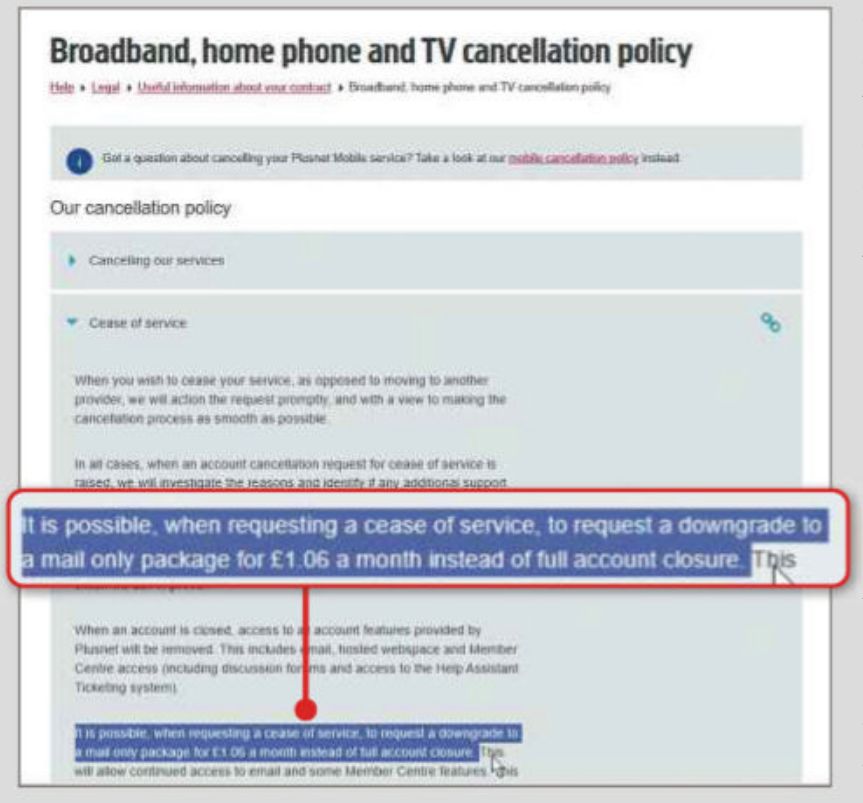
At this point, the indicator light at the front of the camera should begin to blink yellow. It is important to leave the camera alone until this light stops blinking, which could take a few minutes. Finally, move the switch back to the OFF position.

Wait a moment and then move the switch to ON, and the update should be complete.

Can I keep my Plusnet email address?

Q I've had an email account with Plusnet for over 20 years, but would now like to switch to a different ISP. However, I'm reluctant to lose my current email address, which is provided by Plusnet and includes the @plus.com domain. Would it be possible to use it through a different ISP?

Tony Kimber



Plusnet's £1.06 monthly charge for retaining an email address is stated on its policy page

A Whether departing customers can keep their email address is decided by the provider they're leaving. You're lucky in that Plusnet does indeed allow departing customers to retain an existing @plus.com email address. However, the fact is hidden in the firm's small print and it charges an ongoing fee to do so.

That subscription is £1.06 per month (see screenshot above). Clearly, that's not as good as switching to a free service, such as Gmail (www.gmail.com) or Outlook.com (www.outlook.com), but we don't think it's excessive. After all, it does cost an ISP a small amount of money to handle your emails. This option also has the benefit of not having to change anything with your existing email setup.

However, we'd actually suggest a two-pronged approach, whereby you set up an account with a free service and let your contacts know that you're in the process of switching. Then, just pay Plusnet's small monthly fee until such time as you're ready to drop it.

Incidentally, it's vital that you let Plusnet know you wish to retain your email address when cancelling your account. For full details, visit the company's policy page at www.snipca.com/37150.

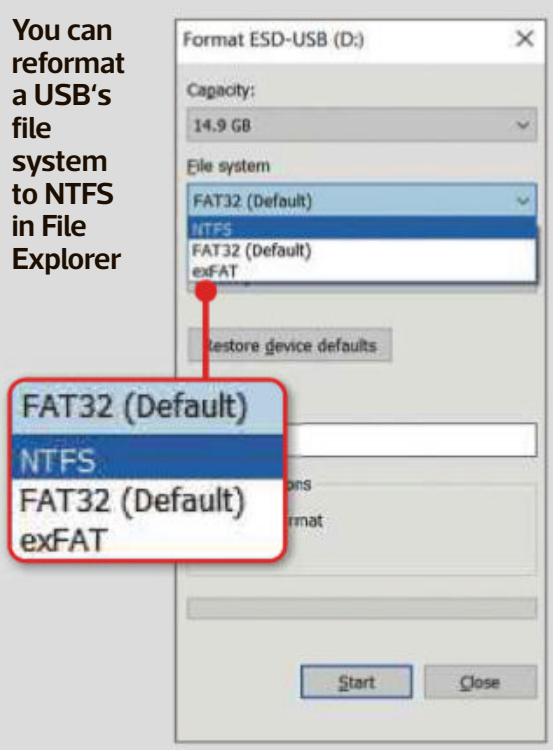
Why did Windows 10 shrink my USB stick?

Q Recently I bought a new Windows 10 PC and created a recovery drive using a 64GB USB stick. This went well but I discovered that the process had reduced the capacity of the USB to 32GB. I tried to reformat the 64GB drive to regain the lost space, but it's stuck at 32GB. Can you explain what happened and how to recover the storage space?

John Green

A Yes, when you create a recovery drive using Windows 10 the file system is converted to the old FAT32. This is done for the sake of the compatibility with the widest variety of devices, but the maximum size of FAT32 partitions is just 32GB – hence the missing space.

The solution is to convert the file system back to NTFS, which imposes no practical limitations on partition or drive size. You can do this as part of the format process. First, in File Explorer, right-click the USB stick and then choose Format. Next, under 'File system', click to open the dropdown menu and then choose NTFS (see screenshot below). Finally, click Start and that's that.



You can reformat a USB's file system to NTFS in File Explorer

Have I been 'pwned' by Kaspersky?

Q I use Kaspersky Password Manager. The company says this employs "zero-knowledge security", so my data is accessible only to me. Despite this, Kaspersky tells me it can supply a report showing how many times my passwords have been hacked according to the Have I Been Pwned? website (https://haveibeenpwned.com). Should I be concerned?

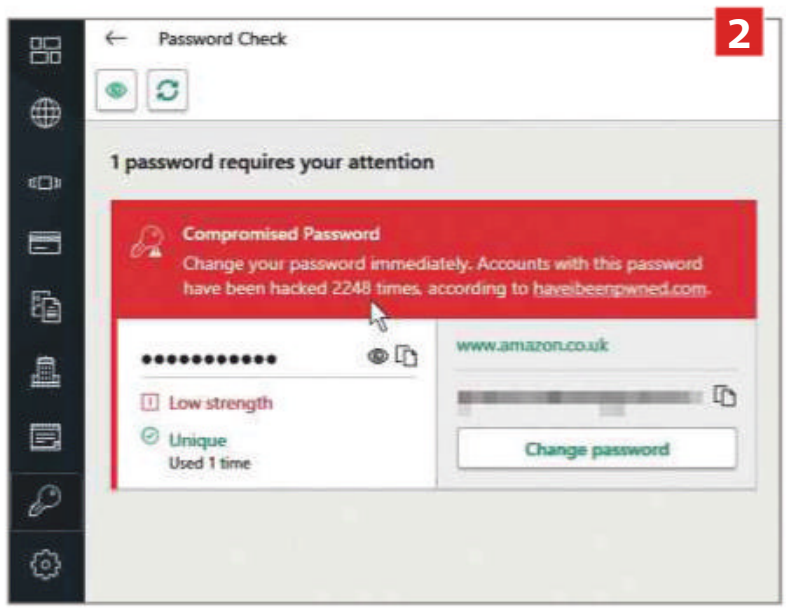
Andrew Bebbington

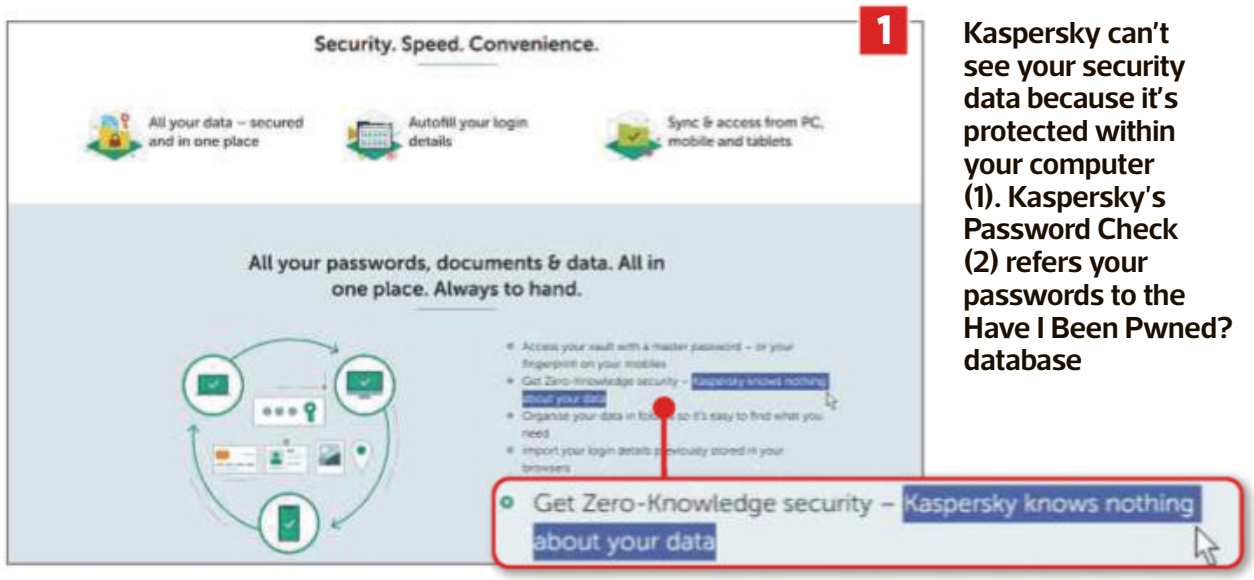
A Kaspersky's promise is that the company knows nothing about your data. That's true, though with one caveat that we'll explain at the end.

Kaspersky certainly doesn't know anything about the information that you store in Password Manager. That's contained wholly within the app on your computer, and encrypted using your master password. It is never transferred unencrypted to Kaspersky (see screenshot 1).

When you type your master key into Password Manager the database is decrypted. At that point, if you choose to use the Password Check function 2 then the passwords (but not the usernames) are checked against the Have I Been Pwned? database. You could perform this same search yourself, manually, at https://haveibeenpwned.com/passwords – and get the same results. So, Have I Been Pwned? gets to see your passwords, not Kaspersky. Neither sees the associated usernames. If you're uncomfortable with that fact, you shouldn't use the site.

Finally, know that if you create a Kaspersky account in order to sync your passwords to other devices, then the company will store and potentially share your personal details – but not your encrypted password file – as detailed in its privacy policy, at www.snipca.com/37173.





Kaspersky can't see your security data because it's protected within your computer (1). Kaspersky's Password Check (2) refers your passwords to the Have I Been Pwned? database

Q: Will an SSD save this old laptop?

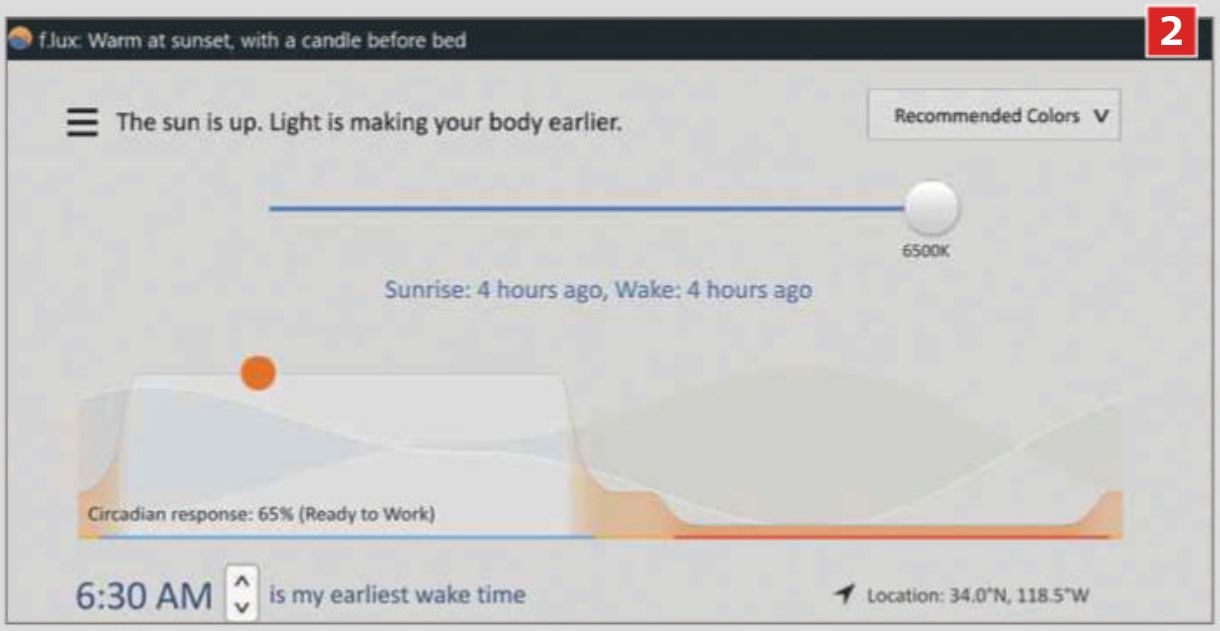
A: Issue 588, page 64 – find it on our 2020 Back Issue CD

Buy it from www.snipca.com/37026

How do I turn down my monitor's brightness?

Q Since a Windows 10 update my monitor is eye-hurtingly bright. I've tried all sorts of online suggestions to reduce it but with no success. I don't know whether I was able to adjust the brightness before because it's always been fine, so I had no reason to try. I've tried the Function (Fn) key with the F5 and F6 keys, and looked for a slider in Action Centre – which doesn't seem to exist. I've updated various drivers, including the video driver. However, as it was OK before I don't think drivers are the problem. The computer is a Sony VGC-LV1S running 32bit Windows 10.

Angus Muir



2

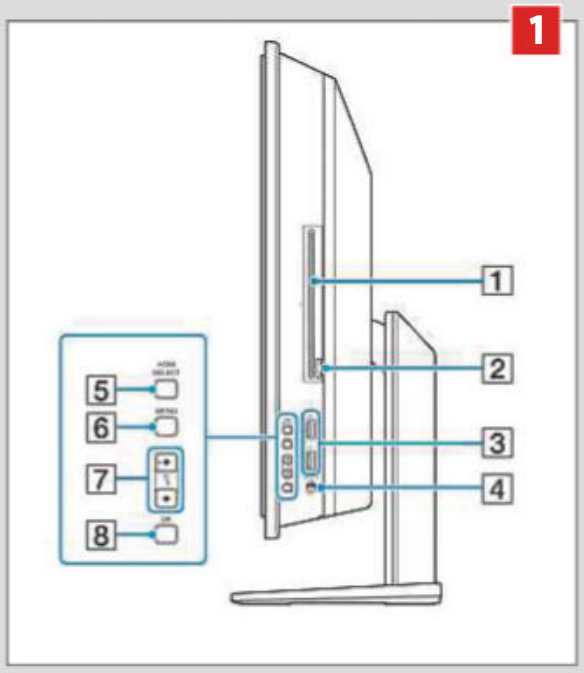
Drag the slider on the f.lux app to manage your monitor's 'temperature'

A Just because a driver worked before a Windows 10 update doesn't mean that update hasn't broken something. Your PC dates back to 2008, so the chance of updated drivers from Sony is nil.

Regardless, there might be other solutions. Yours is an early all-in-one PC, with some physical hardware controls. Have you tried these? The manual, which we found at www.snipca.com/37142, tells us that they're hidden on the right side of the display – so you might not have been aware of them. Press the Menu button and then use the Up, Down and OK buttons to navigate through the on-screen menu to find and then adjust the Brightness and Contrast options (see screenshot 1).

We think that might be the simple fix for your problem. But, if not, all hope is not lost. We'd suggest installing the f.lux app, a free download from www.justgetflux.com.

It won't adjust the physical brightness but it is able to manage your monitor's colour 'temperature': dragging the f.lux slider to create 'warmer' shades 2 can have the effect of making a screen appear less bright.



1

Press the Menu button (6) then navigate the menu to adjust brightness and contrast

Why have my Outlook icons changed?

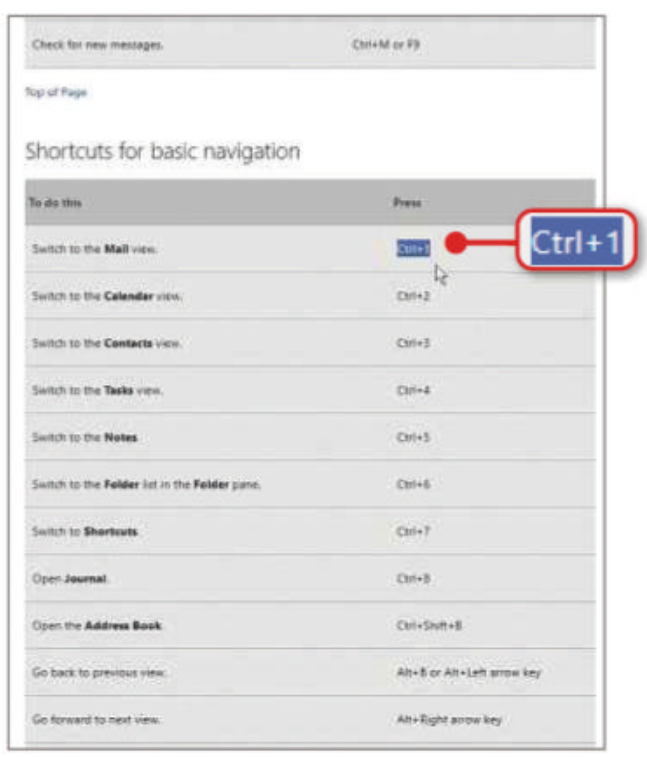
Q I recently fumbled on my computer keyboard while using my Outlook 2016 email program, and this has somehow resulted in the little folder icons all changing. Now, instead of a clean list of folder names, each folder has an icon – some plain and some with coloured details. I should say that this doesn't seem to have affected operation or navigation in any way, but I don't really like this look and I'd like to go back to how it was before. Could you offer clues as to what might have happened, and how to revert it?

Douglas Curtis

A Yes, it sounds like your finger troubles led you to executing one of Outlook's many keyboard shortcuts. In particular, if you'd inadvertently pressed Control (Ctrl)+6 then you'd have switched the folder pane's view to what Microsoft calls Folder List. You didn't send us a screenshot of your Outlook setup, but from your description we think that's what has most likely been activated here.

The quick solution is to switch back to the standard Mail view by using the keyboard shortcut Ctrl+1. Alternatively, you can click the Mail heading at the foot of the Outlook window. For the benefit of other readers, this is an envelope icon in later editions of Outlook.

Finally, it's worth learning some of these shortcuts – if only to get yourself out of bother like this. Microsoft has a list of Outlook shortcuts on the Support section of its website, at www.snipca.com/37148 (see screenshot right).



Microsoft's online list of Outlook shortcuts is useful for reversing unwanted changes

Problems **Solved**

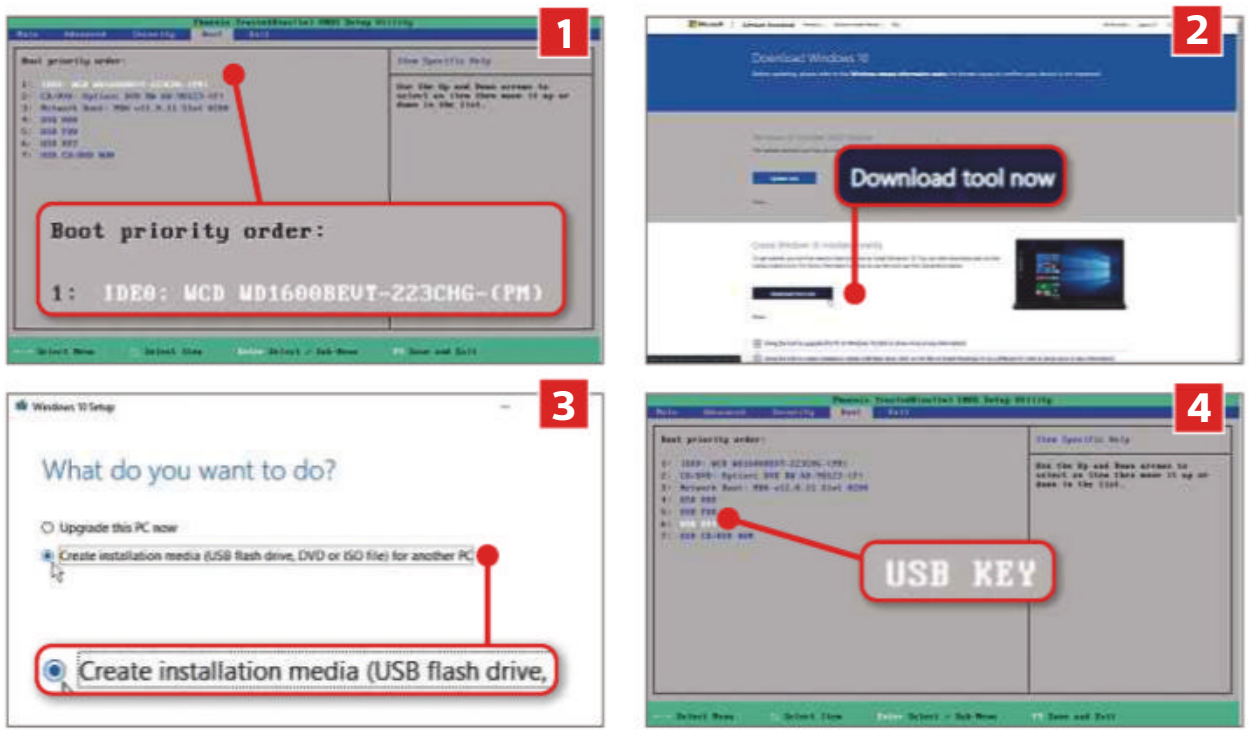
Why is my laptop displaying text?

Q I have a Medion Akoya E6234 laptop that just displays a page of text. I don't have the original setup disc. Any advice, please?

Geoff Fisher

A The fuzzy photo you sent reveals that you're seeing your laptop's BIOS screen. It's almost certainly appearing because either the hard drive or the operating system it contains has developed a fault. If you notice any messages just before the BIOS appears then that might help with diagnosis.

If you see nothing, then use the cursor (arrow) keys and Enter to navigate to the Boot menu. Under 'Boot priority' (or similar), check that the hard drive is the first device the laptop looks for 1. It probably is so, assuming the drive itself isn't faulty, you're most likely facing a corrupted operating system – and thus the need for repair or reinstallation.



Check the Boot priority is set for your hard drive (1), download Windows 10 (2), copy it to a USB stick (3) and make the USB the Boot priority (4)

As you lack the setup disc, pretty much all you can do is try installing Windows 10. This is a free download from www.snipca.com/37186. Click the 'Download tool now' button 2, then double-click the downloaded file to launch the Windows 10 media-creation tool. Now work through the menus, choosing the 'Create installation media' option to copy Windows 10 to a USB stick 3.

Now start your laptop with this stick inserted. Note that you may need to return to the BIOS to set the USB key as the first boot device 4.

How do I get the Photos widget on my iPad home screen?

Q I can get the new Photos widget on my iPhone 8's home screen but not on my iPad Mini's home screen. My iPad Mini is the fifth generation – the latest model.

The Photos widget does appear on the slide panel that's to the left of the home screen, so how do I use it?

Anne-Marie Nicol

A The short answer is that you can't (yet) do this on any iPad. Back in 2019 Apple split its mobile operating system into two versions – iOS for iPhones and iPadOS for iPads. They were (and remain) very similar, but we noted at the time that they would begin to diverge. Widgets is one such area.

Though the reasons aren't entirely obvious, it's not quite so simple for Apple to implement widgets in the iPad home screen. This is partly because iPads employ an icon grid with more space between the icons, but also because the home-screen icon grid can be rotated through 90 degrees.

The Photos widget can be accommodated on the iPhone's home screen (left) but not on iPads (right)

This is a feature that's not possible on most iPhones. Some of the older iPhone Plus models, with their larger screens, do allow home-screen rotation, but this won't work if the iPhone's home screen has widgets.

The upshot is that, as things stand, widgets on rotatable home screens would break the horizontal layout grid, so Apple doesn't allow widgets on iPads (or large-screen iPhones).

We're sure the company will eventually figure a way to do this without breaking the horizontal layout – perhaps by squashing the icon grid, or disabling rotation when widgets are present – but until then, there's no fix.

WHAT'S THE DIFFERENCE BETWEEN...

RAID 0 and 1?

Q Can you help me understand RAID? Some new PCs seem to come with RAID while others don't, and those that do appear to offer a choice of RAID 0 or RAID 1 drives. I'm sure all this means something to the clever people who make the computers, but I really don't know what to make of it.

Edward Chambers

RAID is a popular way to configure NAS devices such as this TerraMaster D2-310

A RAID stands for a redundant array of independent disks. That sounds complicated, but it merely describes different ways of exploiting the space on two or more drives.

For example, if you buy a PC with a couple of hard drives, then traditionally those two drives would operate independently of one another. In Windows 10, they'd typically be labelled as drive C and drive D.

However, with RAID it's possible to set up drives to operate together and in various different ways. This is what the RAID numbers (technically known as 'levels') define. There are lots of different RAID levels, but for most home users the only two that matter are RAID 0 and 1.

With RAID 0, the storage of both drives can be pooled to become one larger 'logical' drive. So, even if the PC had, say, two physical 1TB hard drives, in Windows all you'd 'see' would be a single logical drive of 2TB – drive C, in our example. As both drives work in unison to open or save information, this may also boost performance a little.

RAID 1, by contrast, configures the second drive to provide 'redundancy'. This means it precisely mirrors the contents of the first.

The 2TB capacity of the two physical drives become a 1TB logical drive (again, drive C in our example). The benefit is that if one drive develops a fault, then the other is immediately ready to keep things going.

The RAID level might be a pre-delivery choice for a new PC, but RAID is also a popular way to configure network-attached storage (NAS) devices, such as the pictured TerraMaster D2-310 enclosure (around £140, www.snipca.com/37230) – because it eases the management of multiple drives.

Want to know the difference between technical terms? Email noproblem@computeractive.co.uk

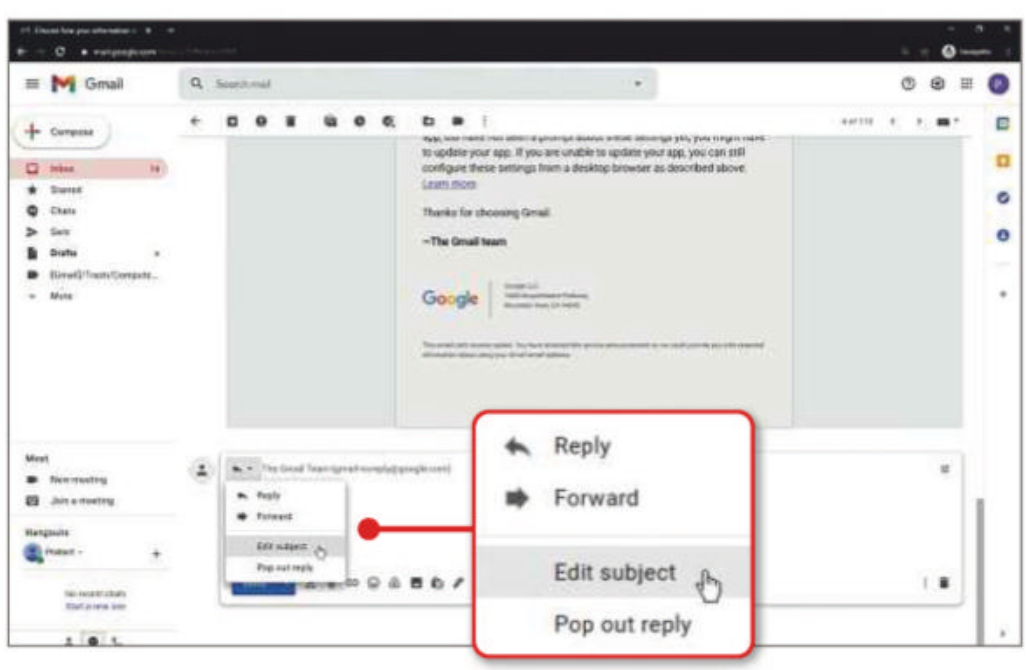
How do I change the Subject line in Gmail?

Q Recently, while replying to a friend as part of an ongoing email conversation, I thought it would be a good idea to change the Subject line of the email, as we'd long since deviated from the original topic. It was at that moment, after perhaps a decade of using Gmail, that I found that it's apparently not possible. Or, at least, if it is, I couldn't find out how to do it. Do you know if it's possible?

Anne Bellemare

A It is, but for some reason Google has buried the option to do this, rather than allow you to directly edit the Subject line – which would surely be the simplest idea.

Anyway, once you've hit Reply and are thus in Compose mode, the trick is to click the little down-pointing arrow just to the left of your friend's email address. There, you'll see the elusive 'Edit subject' option (see screenshot left). Just click this and the rest is obvious.



In Gmail you can change the Subject line of an email by clicking the down arrow to the left of the other person's email address

Next Issue

ON SALE Weds 10 Mar

- Why won't my Bluetooth mouse connect?
- Why can't I play my Amazon tunes?
- Is Street View psychic? ...And many more

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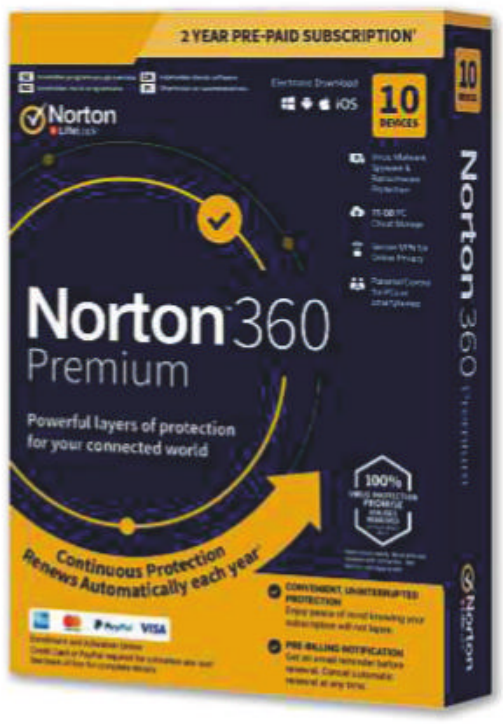

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Why can't I make photo slideshows in Windows?

Q I'm a new subscriber, with my first issue being 597. I was interested in the 'Use Windows' hidden tool to make photo slideshows' Workshop. I followed the instructions, but when I select my photos and right-click, I don't see the 'Create a new video' option. Any ideas?

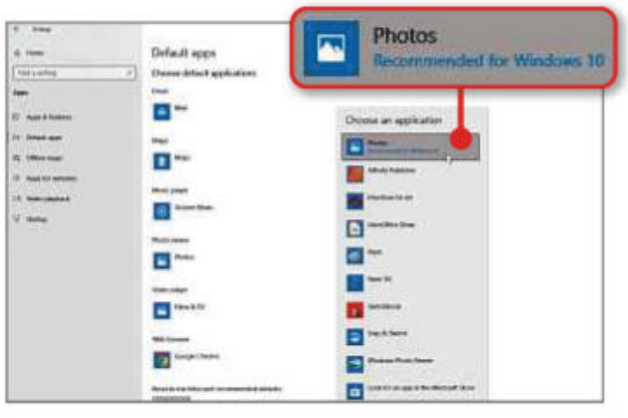
Garry East

A This is because your computer doesn't have the Windows 10 Photos app set as the default photo viewer. This could be your choice or a setting that has been changed by an image-related tool that you've installed.

There are two solutions. The first is to revert to having the Photos app as the default viewer, which will put the 'Create a new video' option back on the right-click menu. Alternatively, you can manually launch the Windows 10 Video Editor and then drag and drop photos to the Storyboard area.

To achieve the former, first click Start followed by the Settings cog and then Apps. Next, on the left, click 'Default apps' and then, on the right, note what app is listed under the 'Photo viewer' heading. If you want to keep it as the default, just skip to the next paragraph. Otherwise, click the listed app and then, from the 'Choose an application' pop-up menu, click to select Photos (see screenshot below).

If you'd prefer to keep the existing app as your default photo viewer, then launch Video Editor manually in one of two ways. Either click the Start menu and then just scroll through the list of apps to find and then click 'Video editor', or click Start then type video editor and then click 'Video editor'.



Select Photos under the 'Choose an application' pop-up menu

How do I close Gammy?

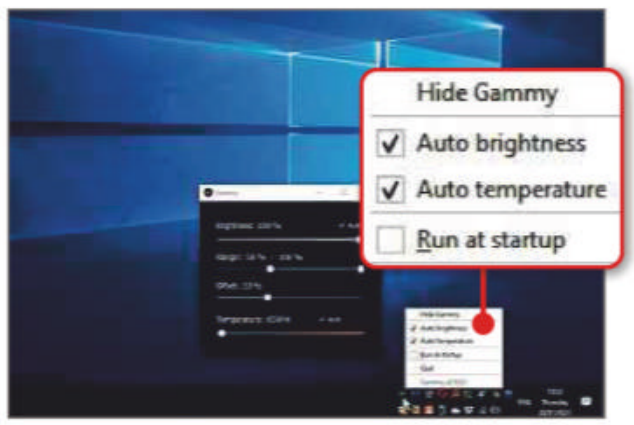
Q Following your suggestion, I downloaded Gammy (https://getgammy.com) and now have a problem. On my PC it can be found as an app by searching for it, showing up as gammy.exe. However, it will not open to enable me to adjust the settings.

Equally, I cannot delete it because it is running in the background. This is annoying when I want to work on photographs because I am not sure of the correct brightness levels. I have contacted the developer who responded quickly, but the problem remains. Is there a simple way to close a program running in the background?

Michael Gill

A When Gammy is running its icon will appear in the notification area, at the far right-hand side of the taskbar. To show Gammy's controls, just right-click it and, from the pop-up menu, choose Show Gammy. On this menu you'll also see a 'Run at startup' box (see screenshot above right): click to clear the tick from this to stop Gammy launching automatically with Windows or click Quit to close it immediately.

Othewise, yes, you can force Gammy (or any other program) to close. It's not normally advised as it can lead to data loss, but as Gammy doesn't store personal data there is no real risk. To do this, you'll need to launch Task Manager. Either right-click a blank area of the taskbar and choose Task Manager, or use the keyboard shortcut Ctrl+Shift+Esc. Then, in the Processes tab, locate and right-click the Gammy entry before choosing 'End task'.



On the Gammy menu, you can adjust the controls and select 'Run at startup'

Was your Facebook email advice wrong?

Q In Issue 597's Problems Solved you answered Roger Lewry's question about whether his wife's Facebook email had been hacked. Roger says his wife wanted to change her Facebook email address, so created a new one in order to delete the original. So far, so good. However, he goes on to say that they received a message saying the *new* email address is associated with another account. You then reply that "something is clearly awry if Facebook is telling you that your wife's email address is already in use". But it isn't! It is her new email address that's already in use, not her old one. What am I missing here? Any newly created email address may well be in use already, hence the more esoteric email addresses people use to make them unique.

Fraser Drummond

A Our assumption was that Roger and his wife merely inputted an alternative (but existing) email address of hers. So, the email would have been new to Facebook but not new to Roger's wife. We believe this to be a fair assumption, and the correct one.

This alternative (existing) email address being in use by another Facebook user could be cause for concern. Later in our reply we used the phrase 'alternative email address'. On reflection our reply would've been clearer if we'd used this phrase to begin with, so apologies for any confusion.

Jargon **Buster**

256bit AES Advanced Encryption Standard. A form of encryption based on a key length of 256 bits. Cracking it would take longer than the age of the universe.

32bit/64bit A measure of how much data a PC can process at once. Most older computers are 32bit, more modern ones are 64bit.

3G/4G/5G Technologies that deliver faster mobile broadband.

720p/1080p/1440p Common types of high-definition video of 1280x720, 1920x1080 and 2560x1440 pixels respectively.

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.

AAC Advanced Audio Coding. A type of music file.

Active noise cancelling Method for reducing unwanted sound by adding a second sound specifically designed to cancel the first.

Add-on A program that adds extra features to your browser.

Adobe RGB A wider colour space than sRGB, extending into richer cyans and greens.

AMOLED Active-Matrix Organic Light-Emitting Diode. An alternative technology to LCD for creating flat-panel screens. Most commonly used in smartphones, tablets and smartwatches.

Aspect ratio A measurement of the shape of a display. Traditional computer screens are 4:3. Widescreen displays are 16:9 or 16:10.

Benchmarking Comparing software and products with an accepted standard.

Beta A version of software that's being tested. Beta versions are often released so problems can be ironed out.

BIN Compressed binary files, typically CD and DVD backup image files.

BIOS Basic Input-Output System. Software built into every PC that connects the vital components. It's visible for a few seconds when the PC starts.

Browser hijackers Programs that change your default browser, its homepage and search engine, without prior warning, when you install them.

Buffering Downloading a certain amount of data before starting to play a video. Can cause delays to your streaming.

Cache A temporary space for storing information. Can be memory used on a computer processor, or space on a hard drive used by a web browser.

cd/m² Candela per square metre. Standard unit of brightness.

Clean install An operating system installation that overwrites all other content on the hard drive.

Clock speed The speed at which a processor can perform operations. Measured in Gigahertz (GHz).

Core Units on a processor that carry out program instructions.

CSV Comma Separated Value. A standard file format, used for storing tabulated information, that can be opened by most spreadsheet applications.

Delta E A measurement that shows how the human eye perceives different colours.

DIMM Dual Inline Memory Module. An older standard for computer memory modules.

Driver A file that tells Windows how to work with an external device.

Emulator A program that makes one computer act like another, allowing it to run that computer's software.

FAT32 An old system used for formatting hard drives, and still used for some portable drives.

Firewall A piece of software or hardware that prevents unauthorised access to a computer over a network, such as the internet.

Firmware Basic software stored on hardware, such as a processor, to control its operation.

Frame rate The number of still images, or frames, shown per second to create a moving image. Higher frame rates make games appear smoother and more realistic.

FTTP Fibre To The Premises. A fibre optic-based way of delivering very fast broadband.

Geekbench 5 A test for measuring processor speed.

Gesture Finger movements on a screen that perform an action, such as pinching to zoom.

Gorilla glass Scratch-resistant glass that's used to protect the screens of tablets and phones.

Graphics card A component in a computer that produces the image shown on the monitor.

Haptic A touchscreen or other controller can give the illusion of tactile feedback by triggering small, finely controlled vibrations in response to an action.

Hard reset When you press down a power button to force a device to restart.

HDCP Copy-protection technology for high-definition content built into Blu-ray players.

HDMI High-definition media interface. A type of connection that transmits high-definition video and audio signals.

Hyperlink A clickable link that takes you to a new document or website.

IP68 International Protection marking. The '6' denotes that a device is resistant to dust, general dirt and sand. The '8' indicates that it can be placed underwater for 30 minutes at depths of up to 1.5m without effect.

IP address Internet Protocol address. A unique set of numbers used to identify computers and websites on the internet.

IP camera Internet Protocol camera. A digital video camera that receives and sends images via the Internet.

IPX2 Resists water that hits the product at a 15-degree angle or less.

ISO file A type of image file that contains all the data from a CD or DVD.

JPEG Joint Photograph Experts Group. A common type of image file created by most digital cameras. Some image quality is lost with each save.

LCD Liquid-crystal display. The technology used to create almost all flatscreen monitors.

LED Light-emitting diode. An electronic device that emits light. Used on almost all electronic devices, and to provide the backlight for some LCDs.

Low profile (graphics card) Smaller than standard cards, normally with a single slot.

M.2 A standard specification for internal PC expansion cards and connectors.

MAC address Media Access Control. A unique code that identifies any router. A laptop might have one MAC for its wired network socket and another for wireless.

Mesh Wi-Fi Wireless network system that uses multiple, connected routers to stretch Wi-Fi further than a traditional router.

Metadata A set of data that gives information about a file.

MicroSD card A small type of memory card. Can be converted to SD size using an adapter.

NAS Network-attached storage. A hard drive attached to a network that can be shared with other PCs.

NTFS New Technology File System. A file system used by all recent versions of Windows.

Partition A large hard drive can be split into two or more partitions or 'virtual' drives. Once partitioned, each section is treated by Windows as though it were a completely separate, smaller hard drive.

Passive noise cancellation Filtering out noise by relying purely on the hardware alone, such as heavily-padded ear muffs.

PCIe Peripheral Component Interconnect Express. A faster version of PCI – a slot on the motherboard for expansion cards, such as for sound and memory.

Plug-in A small program that adds extra features to software.

PNG Portable Network Graphics. A format for images that shrinks file sizes using compression but without discarding any data.

PSU Power supply unit. The box that supplies power to the rest of your computer.

QR code Quick Response code. A square barcode that can be read using smartphones and dedicated QR-reading devices.

RAM Random-access memory. The computer's working area, used for data storage while the PC is switched on. Its capacity is measured in megabytes (MB): the more memory your PC has, the more things it can process simultaneously and the faster it will seem. Any information in RAM will be lost when the power is switched off.

Read speed How long it takes a hard drive to 'read' data, and respond to it.

Response time How fast a coloured pixel turns to white and back again.

Root directory The highest folder in any hierarchy.

SD card Secure Digital card. A popular type of memory card.

sRGB A standard RGB colour space for use on monitors, printers and the internet.

SSD Solid-state drive. Storage that, unlike a hard drive, uses no moving parts. Faster but more expensive than conventional hard drives.

SSL Secure Sockets Layer. A technology for keeping information secure and secret when sent over the internet.

SSE2/SSE3 Set of instructions for Intel processors, released in 2000 and 2004 respectively.

Torrent A file that can be downloaded using Bittorrent software. This method is generally faster than a normal download, which provides a direct connection to other PCs running the software anywhere in the world.

Travel The distance the keys of a keyboard have to be pressed before the keystroke is recognised.

USB 2.0/3.0/3.1 Faster successors to USB.

USB-C A new connector that's reversible, letting you plug it in upside down.

VoIP Voice over IP. The routing of voice conversations over the internet, which is cheaper than the telephone network.

Whiteout Lets you replace, edit or add text contained inside a PDF file.

Wi-Fi 6 Wi-Fi standard with speeds up to 10 times faster than 802.11ac. Also called 802.11ax.

Widget A small program such as a calendar that runs on the Windows desktop.

Write speed How long it takes a hard drive to save data.

ZIP file A file that contains compressed documents or files.

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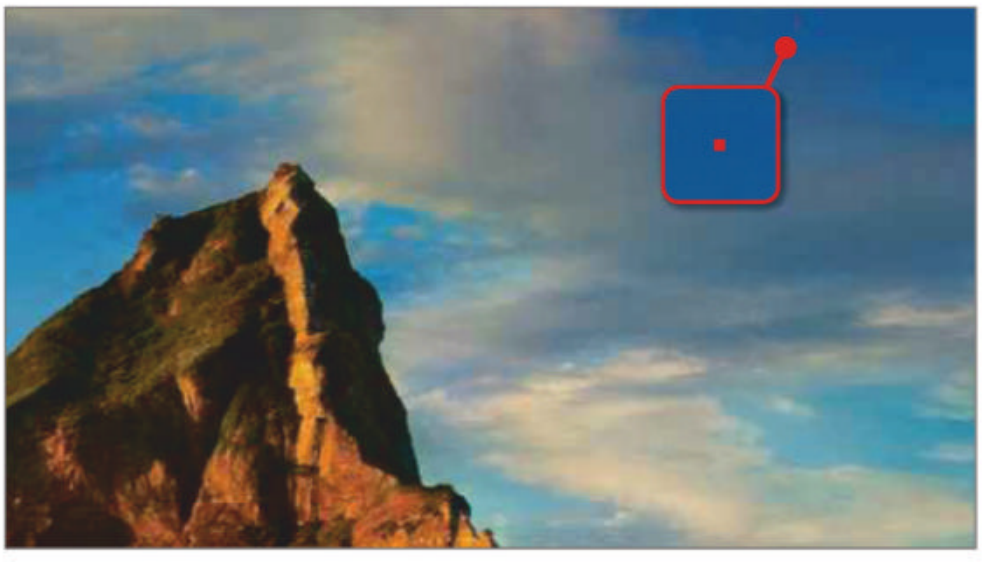
Easy when you

Know How

When a tiny blemish on his screen makes him see red, **Robert Irvine** attempts to...

Fix a stuck monitor pixel

My poor old eyes aren't what they used to be. I know this for a fact because when I went for a check-up at the optician's last week, I struggled to read past the first line on the letter chart (my guesses of '7' and 'pound sign' were way off the mark). I was subsequently prescribed new contact lenses and varifocal glasses, lest I end up having lengthy discussions with pillar boxes, a la Mr Magoo.



No, it's not Mars, but a broken pixel that was driving Robert to distraction

> I suspected the blemish to be splashback from a tomato Cup A Soup

Staring at my computer screen for long periods hasn't done my vision any favours, but it was on glancing at my monitor this morning that I noticed something was wrong – and not just with my failing peepers. In a random lock-screen photo of some far-flung, idyllic location, there appeared to be a tiny red hole in the deep blue sky. This hole transferred to my desktop after I logged into Windows, and then to pages I viewed in my browser.

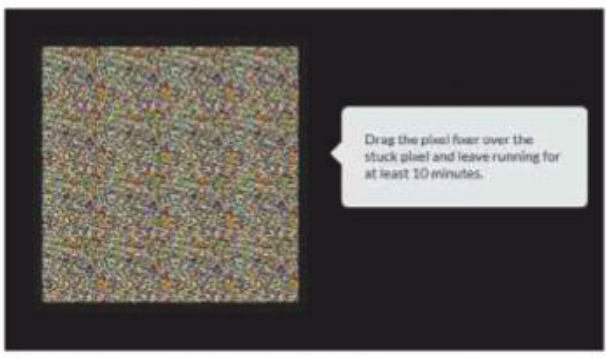
Initially, I suspected the blemish to be splashback from a tomato Cup A Soup, but when wiping failed to remove it, I realised the cause was a faulty pixel. Having spent a fair whack at the optician's, the thought of having to buy a new monitor sent chills through my bank balance, so I decided to investigate and hopefully fix this pesky pixel.

The good news was that the pixel wasn't 'dead' – such pixels are black and they ain't coming back. Instead, it was merely 'stuck', which meant it could feasibly be unstuck.

One suggestion I found online is to apply pressure to the defective pixel using a damp cloth. This apparently induces liquid in its sub-pixels to spread equally and restore the pixel's colour-displaying capabilities. For greater accuracy, you can wrap the cloth around a pointy thing such as a plastic stylus or an "incredibly dull pencil" (bit rude, I'm sure the pencil has many redeeming qualities).

The caveat to using this method is that if you're not careful, it can create more stuck pixels, which was the last thing I needed. Related advice about pressing a hot washcloth against the stuck pixel for a few seconds also sounded risky, so I sought an alternative solution to warm water.

To confirm that there were no other stuck pixels lurking on my screen, I ran the free online tool LCD Dead Pixel Test (www.snipca.com/37215). This provides full-screen test pages with solid background colours (black, red, white, green or blue) that instantly show up misbehaving pixels. Fortunately, my monitor had just the one, but unfortunately the tool couldn't fix it.



JScreenFix flashes a combination of colours to jar stuck monitor pixels back to life

For that purpose, I visited a widely recommended site called JScreenFix (www.jscreenfix.com), which claims to fix stuck pixels on "most screens". This was very easy (and free!) to use: I simply clicked the Launch JScreenFix button on the homepage to open the 'pixel fixer' tool against a black background. As instructed, I dragged the fixer – which consists of a square of flashing pixels, similar to static on an old TV – over the stuck pixel, and left it there for the advised 10 minutes.

I didn't really understand why this would work, but according to an article on WikiHow (www.snipca.com/37216), JScreenFix's random combination of red, green and blue hues can "jar the stuck pixel back into its usual cycle".

In any case, after leaving the square for half an hour (to be on the safe side), I closed the fixer and – success! – the red pixel had gone.

There's no guarantee JScreenFix will work for all stuck pixels, but it's certainly worth a try. See you next issue (eyes permitting).

Need help with any non-functioning pixels on your monitor?
Let us know: noproblem@computeractive.co.uk

Next issue: Robert combines multiple emails into one inbox

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