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It'll keep your data PRIVATE p38

HOW TO ADD USB-C TO YOUR PC

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WELCOME

From the Editor

My first ever PC, nearly 30 years ago, was so big you could've used it as a fence at Aintree. It took up almost half of the floor of my tiny student bedroom. Over time, my PCs got smaller as my bedrooms got bigger, but I never dreamt you'd be able to cram immense processing power into a box half the size of a packet of Shreddies – or indeed one that fits in the palm of your hand.

As Jonathan Parkyn reveals in our Cover Feature, the new breed of mini PCs make great alternatives to desktop computers and laptops. They're fast, quiet, use little energy and, crucially, are now affordable.

But as with many areas of computing, 'mini PC' means different things to different people. Here, we explore the many varieties, explain how to set them up, and suggest brilliant ways to use them.

Out of interest, what's the biggest PC you've ever owned? Did you have to breathe in when walking past it? Please let me know.

Daniel Booth
editor@computeractive.co.uk

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Number of extra workers BT needs to deliver full-fibre broadband everywhere by 2025 – *p9*

40Gbps
Potential speed of Li-Fi – *p49*

100,000
Reported number of "vulnerable" Virgin customers whose prices will be frozen – *p8*

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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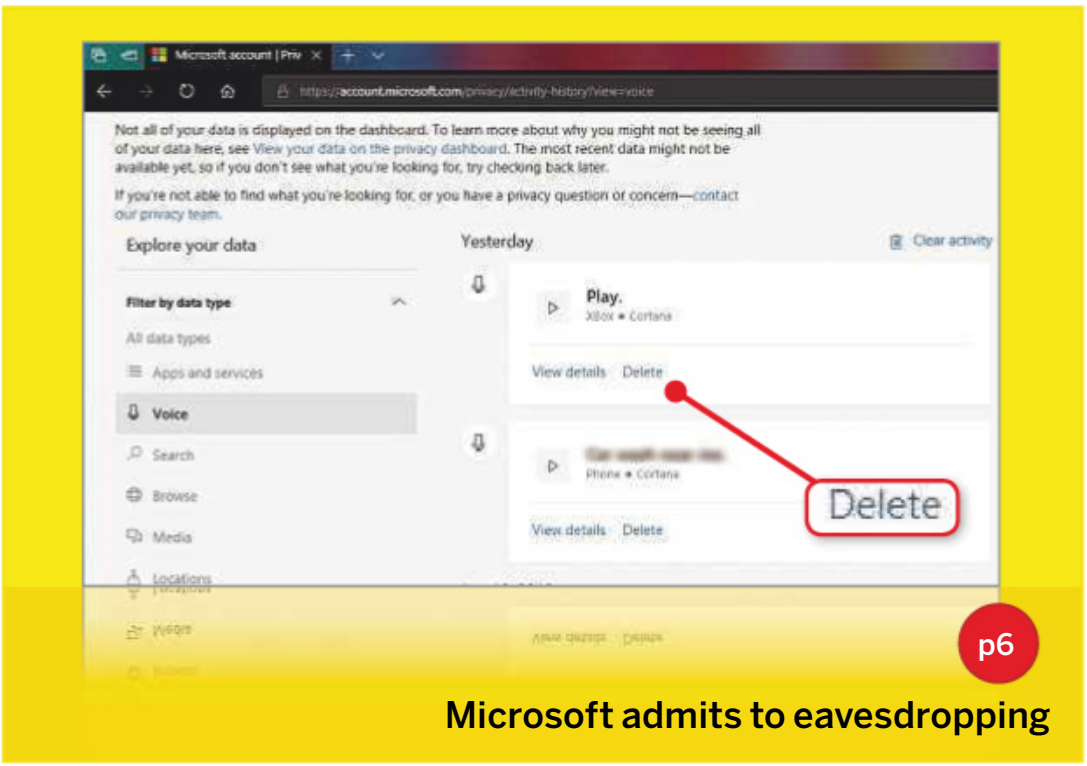

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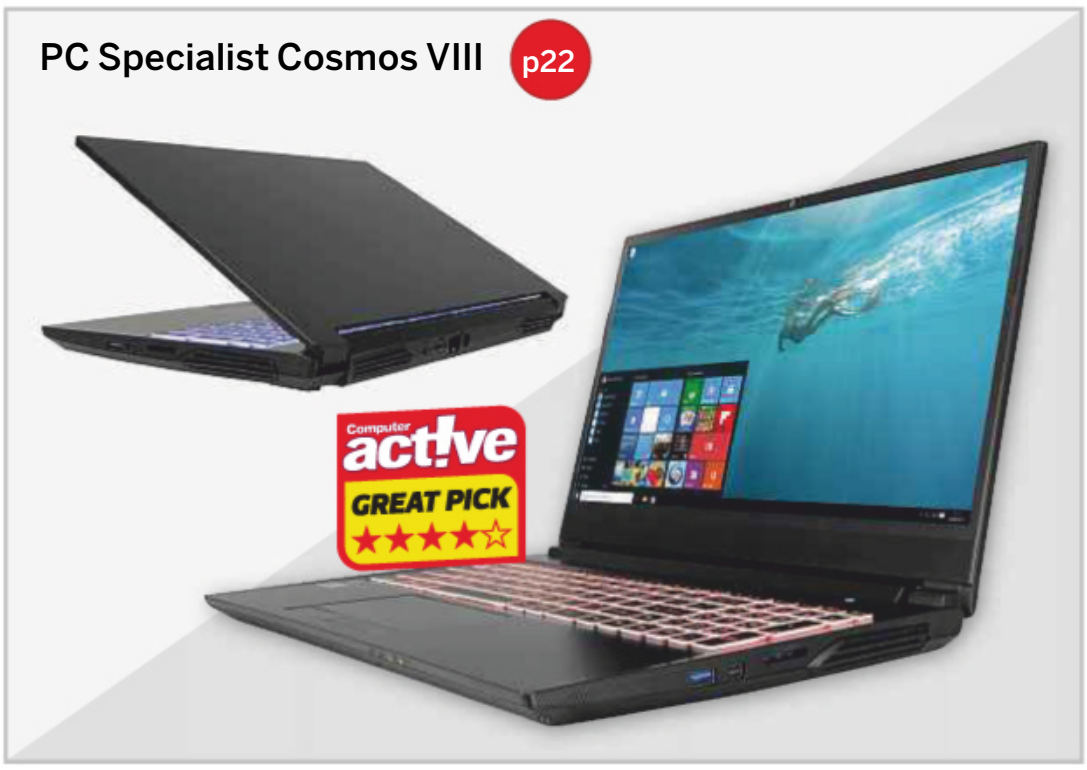
Microsoft admits to eavesdropping



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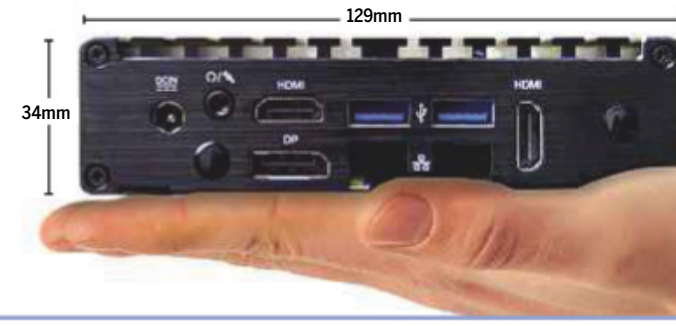
WHY YOU MUST BUY A MINI PC

☑ Save space ☑ Slash energy bills ☑ Totally silent
✚ Desktop PC power in a tiny case



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Google's best NEW secret tools

With Google debuting new tools at a blistering rate, it's hard to keep up. **Nik Rawlinson** highlights 10 of the best recent releases

Get more from Google p60

Microsoft: we pay people to listen to Skype chats

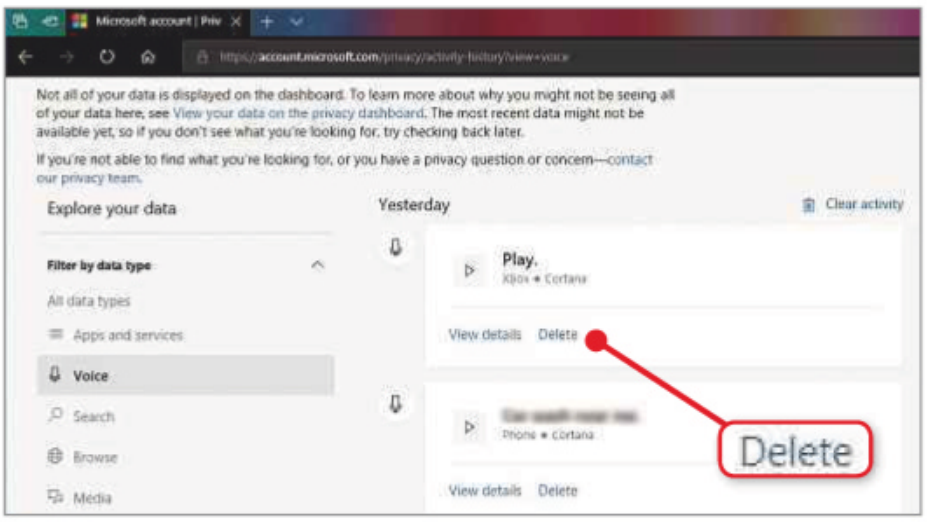
Microsoft has updated its privacy policy to admit that it pays people to listen to some Skype Translator conversations and voice commands given to Cortana. This is different to Apple and Google, which recently stopped staff listening to recordings after it emerged that they were doing so.

The decision follows accusations a week earlier that Microsoft pays third parties to listen to conversations that Skype translates into other languages, in order to test how accurate the translation is.

Website Motherboard said it obtained audio recordings of conversations in which users "spoke intimately to loved ones". They discussed personal matters, including relationship problems. One worker even said he heard a couple having "phone sex" on Skype.

The fact that humans listen to calls was until now not stated in Skype's terms and conditions, although Microsoft said it had the permission of users to collect and process their data.

Microsoft's new policy confirms that some conversations in Skype Translator – but not untranslated Skype calls – are listened to by "automated and manual (human) methods of processing".



It also states that "when you talk to Cortana or other apps that use Microsoft speech services, Microsoft stores a copy of your audio recordings".

The recordings may include conversations with Microsoft employees or people working with other companies that sell services and apps through the company.

The policy says these "vendors" follow procedures "designed to prioritize users' privacy, and adhere to the high privacy standards set out in European law and elsewhere".

It claims Microsoft needs to record "small snippets" so it can improve the artificial intelligence that powers tools like Cortana and Skype.

To delete voice recordings, visit Microsoft's privacy dashboard (https://account.microsoft.com/privacy), then scroll down and click 'View and clear voice activity'. Next, click Clear or Delete next to the recordings you want to erase (see screenshot).

After that, click Cortana Notebook at the top, then the 'Clear Cortana data' button on the right.

WHAT WE THINK

Translation software is far from perfect, so we understand why Microsoft needs people to check it. We think the public would accept this, so Microsoft should have been upfront from the start. Instead, by changing its policy, Microsoft looks like it's got something to hide. It's a mistake tech companies keep making. Unless they're more honest, people will never trust them to store copies of their fingerprint and face, ending the dreams of those who want to replace passwords with biometrics.

Can you pass the phone please, darling?

For some using a phone while eating at a restaurant is the height of bad manners, but new research shows that many diners now demand a good phone signal as well as excellent food.

In a survey from Wi-Fi-engineering firm Global Wireless Solutions, 26 per cent of Brits said they regularly browse the web at the dinner table, with 18 per cent now expecting free Wi-Fi as standard in restaurants.

Over a fifth (23 per cent) said they had to leave a restaurant because the signal wasn't strong enough, while 11 per cent complained that a poor connection had "ruined" their dinner.

The survey tested signal strength at 50 restaurants, finding that O2 and EE had the highest rate of successful call attempts at 99 per cent.

However, EE only completed 87 per cent of data-driven tasks, such as browsing the web, significantly lower than O2 (99 per cent), Vodafone (98 per cent) and Three (97 per cent).

Is it rude to use your phone in restaurants? Let us know: letters@computeractive.co.uk

You'll like this...
Google is building a copy-and-paste clipboard for Chrome (www.snipca.com/32507)

but not this...
A scheme to prevent online shopping fraud has been delayed (www.snipca.com/32485)

Social-media giants face huge fines for 'harmful' content

Websites like Facebook, YouTube and Instagram will be fined millions of pounds for showing "harmful" videos, as part of the Government's aim to protect children online.

Broadcasting regulator Ofcom will be given new powers to investigate and penalise sites if they show videos that contain violence, child abuse or pornography.

It will be able to fine sites that don't check users are over 18, and fail to give parents controls to stop their children seeing video content that "impairs their physical, mental or moral development".

As well as fining sites five per cent of their revenue, Ofcom will be able to "suspend" or "restrict" their services in the UK. The Government says Ofcom will be given the powers in

September 2020, following a consultation this summer. Ministers are also planning laws to force sites to prevent *all* types of harmful content, including messages and photos.

Tech giants have come under intense pressure to do more to clamp down on such content. Facebook was heavily criticised in March for not stopping Brenton Tarrant live-streaming his attack on Christchurch mosques in New Zealand.

Instagram and Pinterest have also been slammed for using algorithms that suggest harmful images to users. The parents of 14-year-old London schoolgirl Molly Russell said one of the reasons she took her own life in 2017 is that the sites had shown her images relating to depression, self-harm and suicide.

Andy Burrows, the NSPCC's head of child safety online policy, praised the powers as a chance to "finally hold sites to account if they put children at risk".

The charity highlighted the increasing danger of live-streaming, in which children can be "coerced by abusers" into performing harmful acts on video.

Its research shows that one in 20 children who have live-streamed had been asked to take off their clothes.

Digital cameras 'at risk of ransomware'

Digital cameras can be hacked with ransomware to encrypt all the photos on its SD card, security researchers have warned.

Experts at Israeli firm Check Point showed how hackers can infect a DSLR camera through an inserted USB stick, or via Wi-Fi if it was connected to an unsafe public network.

The ransomware exploits the popular Picture Transfer Protocol (PTP), which cameras use to perform many tasks, including taking photos and updating firmware.

Check Point chose to demonstrate the attack using a Canon DSLR because the Japanese company makes up 50 per cent of the camera market. It picked the EOS 80D model because it supports both USB and Wi-Fi, though

most of Canon's cameras are vulnerable.

In his blog (www.snipca.com/32450), Check Point's Eyal Itkin said that PTP's complexity means cameras made by other manufacturers might also be vulnerable.

He added that hackers may try attacking a camera over Wi-Fi near a popular tourist attraction, creating fake hotspots to lure victims.

Check Point's research is significant because it's the first time PTP has been used to install malware on to a camera. Previously it had been used only to remotely *access* a camera, not infect it.

Canon released a fix for the flaw at www.snipca.com/32452 - just select your model then follow the instructions. Watch Check Point demonstrating the attack at www.snipca.com/32449 (pictured).

IN BRIEF

BBC PULLS STATIONS FROM TUNEIN

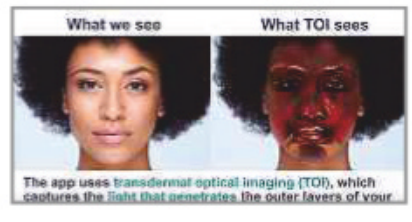
The BBC is pulling all its radio stations from the audio-streaming service TuneIn (https://tunein.com) on 30 August. It said it took the decision because TuneIn wouldn't let users sign into their BBC accounts, nor provide the corporation with data that would let it show personalised recommendations to listeners. BBC podcasts will remain available on TuneIn. Read more on the BBC's site: www.snipca.com/32480.

ONE FIFTH OF CARE HOMES HAVE NO WI-FI

A fifth of care homes in the UK lack Wi-Fi, while less than half make it available in both communal areas and residents' bedrooms, according to research from Carehome.co.uk. The site, which surveyed 2,800 care home owners, managers and care workers, called the findings "shocking". Minister for Care Caroline Dinenage said: "I want to see every care home getting online as Wi-Fi can help residents stay connected with loved ones".

TOMORROW'S WORLD

Have we finally found a positive use for selfies? Scientists at Toronto University have shown how people can measure their blood pressure by looking into their phone's camera. It works by analysing light reflected from blood behind the skin of the face (pictured). This YouTube video explains more: www.snipca.com/32477.



IN BRIEF

VODAFONE LAUNCHES 5G & BROADBAND DEAL

Vodafone has become the first UK company to launch a package comprising both broadband and a 5G service. Called Vodafone Together, it gives you unlimited data for £43 a month. The cheapest deal, priced £31 a month, limits you to 1GB. New customers will receive an Amazon Echo Plus smart speaker for no extra cost. For more details visit www.snipca.com/32497.

GOOGLE: WINDOWS IS BROKEN-DOWN CAR

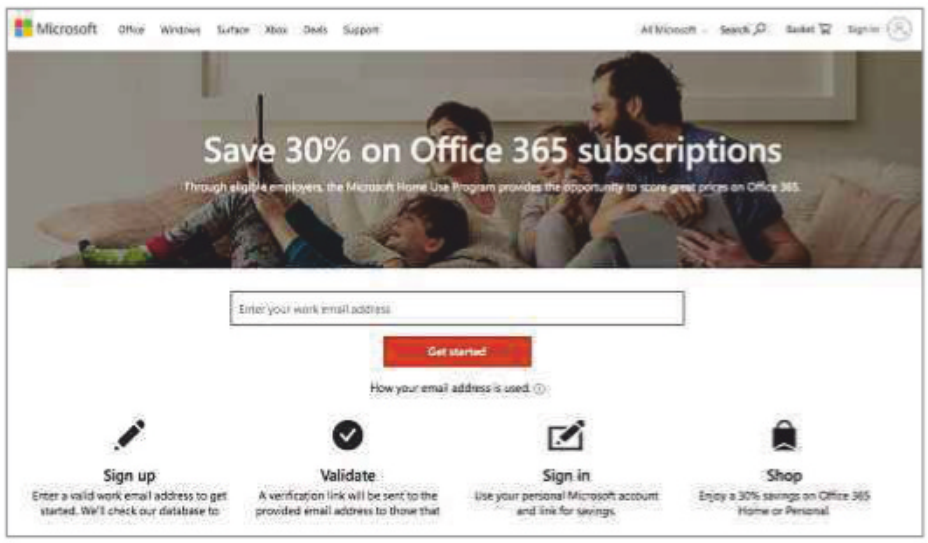
Google has compared Windows to a broken-down car in a new advert trying to persuade users to switch to Chromebooks.

Although it doesn't mention Windows by name, the ad sees US science TV presenter Bill Nye attempting to fix a car with the registration number WNDWS (pictured). The premise of the advert is that people stick with Windows because they are scared of trying something new. Watch it at www.snipca.com/32498.

THE WORLD'S GONE MAD!

It seems that the modern equivalent of being grounded is having your phone confiscated. 'Dorothy', a 15-year-old fan of pop star Ariana Grande, became a social-media martyr when she was forced to tweet to her followers using a web-connected fridge, after her mother had taken away her other electronic devices. Within hours '#FreeDorothy' had gone viral on Twitter.

Microsoft ends discounted 'Home Use' Office 2019



Microsoft has axed a scheme that let people buy discounted downloadable versions of Office, forcing them to sign up to annual subscriptions instead.

Its Home Use programme (www.snipca.com/32505) allows people with an Office account at work to use it at home at a cheaper rate. Until recently, this let people download Office for just $15 (about £12.40), and keep it for as long as they liked.

But Microsoft has ditched this option, leaving only a subscription that costs about £42 a year for the Personal edition of Office 365, and £56 for the Home package. These are still discounts on the full prices (£59.99 and £79.99), but users will have to pay them every year to continue using Office.

Subscribing to Office this way brings some advantages over the downloadable version, such as frequent updates, 1TB of OneDrive storage and the ability to use its tools (Word, Excel, etc) on other devices.

But it also makes commercial sense for Microsoft to push subscription over one-off purchases because it guarantees regular revenue from users. If customers unsubscribe, they can no longer use the software. By contrast, people buying Office for a one-off fee can use it indefinitely.

Microsoft's decision has renewed speculation that it's planning to end all one-off purchases of Office (which it calls "perpetual" versions). At the moment you can still buy Office 2019 for £119.99 (Home & Student, www.snipca.com/32502), though Microsoft promotes the subscription-only Office 365 much more strongly.

Visit www.office.com, for example, and you'll see several references to Office 365, including a link to buy it, but no mention of Office 2019. In February, it even published videos showing users doing work faster in Office 365 than Office 2019: www.snipca.com/32504.

Virgin freezes broadband prices for 'vulnerable' customers

Virgin Media has promised to freeze prices for "vulnerable" customers, such as pensioners, the unemployed and people with disabilities.

The move is part of an "enhanced package of measures" to protect a reported 100,000 customers who find it hard to shop around to find better deals.

Virgin said it will freeze prices for customers who haven't contacted the firm for three years. It will then try to get in touch with them to conduct an "annual review" to see if they can be moved to a better deal.

If Virgin can't reach customers, they'll be automatically moved to "the most appropriate and best available package", which should be cheaper than their existing deal.

It claimed these measures go further than Ofcom's new rules which, from next February, force broadband providers to tell customers several months in advance when their contract is ending.

Virgin will also make engineers more aware that some people take longer to answer the door when they visit to fix a problem.

The company admits that identifying vulnerable customers "is not a clear-cut or simple process", and said it will take into account events such as bereavement and illness, treating each case on its merits.

In addition, it will look for "uncharacteristic late payments" as a potential sign that a customer might need help, and make it easier for customers to choose a friend or family member to manage their account.

BT: Boris's 2025 full-fibre pledge would cost £30bn

BT has said it would cost £30bn and require up to 35,000 extra workers to deliver on Boris Johnson's aim of delivering full-fibre broadband to the whole of the UK by 2025.

Writing in the *Daily Telegraph* in June during the Conservative leadership contest, Johnson criticised the existing full-fibre target of 2033, calling it "laughably unambitious".

He said faster broadband would be part of his Government's "moral mission to unite Brexit Britain".

Many broadband experts welcomed Johnson's plea, but questioned whether it was realistic given that just seven per cent of UK premises currently have full-fibre – in which fibre cables reach all the way into the home, rather than stopping at a streetside cabinet.

It's been estimated that to hit the 2025 target, nearly

12,000 premises every day would need to have full-fibre installed.

To achieve this, BT chief executive Philip Jansen called for "quick, decisive action" from the Government, including the abolition of planning regulations that delay cables being installed.

He admitted this would cause disruption, but said that "at the kind of pace Boris is talking about, we have to accept a little bit of inconvenience".

Jansen added: "It is fantastic this is now being seen as a national priority. This is an enormous plan. We will find a way of paying for it".

BT said it could pay for the project by borrowing from investors and possibly cutting its dividend. Jansen also called for Johnson to consider a government subsidy to help fund the work. "No company could spend £30 billion-plus without a view on future returns," he said.

His stance differs from his predecessor Gavin Patterson, whom he replaced in January. Patterson had argued that full-fibre was too costly to install in rural areas, and that most people didn't need it.

Half of pensioners now shop online

More than half of Brits aged over 65 now shop online, according to the 2019 'Internet access' report (www.snipca.com/32454) from the Office of National Statistics (ONS).

The number has jumped from 48 to 54 per cent – the first time it's been over half in the 21 years the ONS has been surveying the public about internet use.

However, over-65s don't shop anywhere near as often as younger people. They were most likely to buy three to five items in the three months surveyed (January, February and April 2019), much lower than the 11 items people were

most likely to buy in every other age group.

Overall, 82 per cent of adults bought items online in the past year, a jump of five per cent. Among all shoppers, 44 per cent spent between £100 and £499 during those three months. Nine per cent limited their spending to under £50.

The most popular reason given for not shopping online was preferring to buy items in person, at 83 per cent, while 43 per cent were put off by privacy and security concerns.

The ONS also found big differences in what men and women buy online. Some 42 per cent of men bought electronic equipment, compared with 26 per cent of women, who are more likely to buy clothes and sports goods.

Just over a fifth of men bought computer hardware (21 per cent), much higher than the eight per cent of women who made similar purchases.

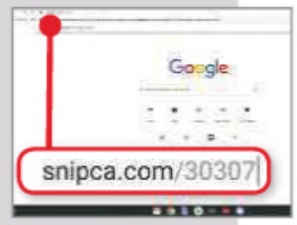
Do you prefer shopping online or in the high street? Let us know: letters@computeractive.co.uk

IN BRIEF

CHECK BANK BALANCE USING YOUR VOICE

NatWest is running a trial in which 500 customers can access their accounts by speaking commands to Google Assistant via their phone, tablet or smart speaker. Once they confirm their identity, they'll be able to check their balance and transactions. NatWest said it will make banking easier for people with disabilities because it "eliminates the need for customers to use a screen or keyboard".

CHROME HIDES 'WWW' IN BROWSER BAR



Chrome is now hiding the 'https://www' prefix in its browser bar to make "URLs easier to read and understand". The latest version (76) shows the bare minimum that you need to type, for example 'bbc.co.uk/news', or our own Snipca URLs (pictured). To see the full address you now need to click twice in the browser bar.

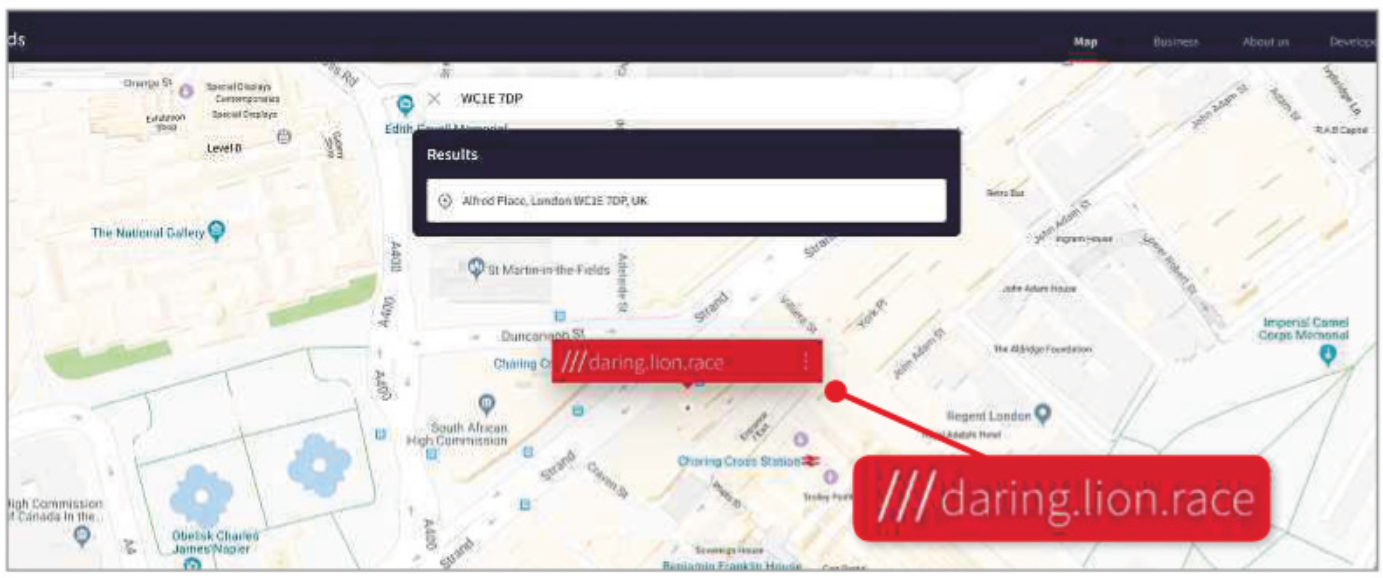
GOVT GIVES NHS £250M FOR AI RESEARCH

The Government is giving NHS England £250m to spend on setting up the National Artificial Intelligence Lab to boost patient care and research. The Lab's work could help to improve cancer screenings and identity patients most at risk of dementia. Health Secretary Matt Hancock said artificial intelligence had "enormous power" to enhance care, save lives and help doctors spend more time with patients. Read more on Gov.UK: www.snipca.com/32453.

Question of the Fortnight

How can three words in an app save your life?

No, not ‘Help, rescue me’ – it’s much cleverer than that



THE FACTS

- What3words divides the world into small squares and gives each a unique three-word code
- Emergency services can use this code to locate lost and trapped people
- You don’t need a phone signal to find out your location’s code

Kicked. Converged. Soccer. Those three words, sounding like a failed attempt at word association, were enough to save the life of 24-year-old Jess Tinsley and her friends, after they got lost walking in the 4,900-acre Hamsterley Forest, in County Durham.

She didn’t shout them, hoping to attract a passing (if momentarily confused) rescue team. Instead, with midnight approaching, she found a spot with a phone signal and called 999. She was told to download the app What3words to her phone. Within a minute, the police said they knew where she was. Her group, soaked and shivering, was soon rescued by the Teesdale and Weardale Search and Mountain Rescue Team.

What3words could well be the cleverest app ever made. It divides the world into 57 trillion squares, each measuring 3m by 3m (or 10ft by 10ft). It then gives each square a unique, random three-word address. Try it yourself at https://what3words.com. Type your address or postcode at the top and see what appears in the red box below.

> “It divides the world into 57 trillion squares, giving each a unique three-word address”

Computeractive’s three-word code, for example, is ‘daring.lion.race’ (see screenshot), which sounds rather exciting. It’s certainly more interesting – and easier to remember – than our postcode, WC1E 7DP. Indeed its creator, Chris Sheldrick, sees the app as an alternative to postcodes. His childhood home in rural Hertfordshire was often missed by delivery vans because the postcode didn’t point to his house.

The idea must have been planted during those years, but it became reality after several frustrating years working in the music industry, when he struggled to get bands to meet at the right entrance to a concert venue.

He wondered whether he could shrink the 16 digits of longitude and latitude into something easier to remember, and worked out that he only needed 40,000 words to make unique codes for every location in the world.

Six years after launching, his London-based company now has clients around the world. Mongolia uses it for its postal service, as does Mercedes-Benz for its voice-controlled navigation systems – instead of fiddling with a sat-nav while you’re driving, just speak your destination’s three-word code.

But it’s as an aid to emergency services that What3words may prove invaluable. Crucially, you don’t need a phone signal to find out your location, assuming you already have the app installed (available from www.snipca.com/32513). This is why emergency teams are encouraging people to install the app *before* they go hiking, rather than hoping they’ll find a signal in the wilds.

It means that if a member of your hiking group got injured, you wouldn’t need to move them to an area with a signal. Instead, just make a note of the three words, then seek help.

More than 30 emergency services in England and Wales are using the app. Humberside Police resolved a hostage crisis after the victim used the app to tell them where she was being held, while in July South Yorkshire Police used it to find a 65-year-old man trapped on a railway embankment in Sheffield.

Ambulance crews have used it to find the location of crashed cars, while firefighters can arrange meeting places in large, difficult terrain, such as when fighting moorland fires.

It’s become common these days to call apps life-savers, when they’re really just extremely convenient, but What3words is the real deal. Hopefully, you’ll never need it, but install it now, just in case.

Protect your tech

Scams and threats to avoid, plus new security tools

WATCH OUT FOR...

Fake public hotspots hacking you

What's the threat?

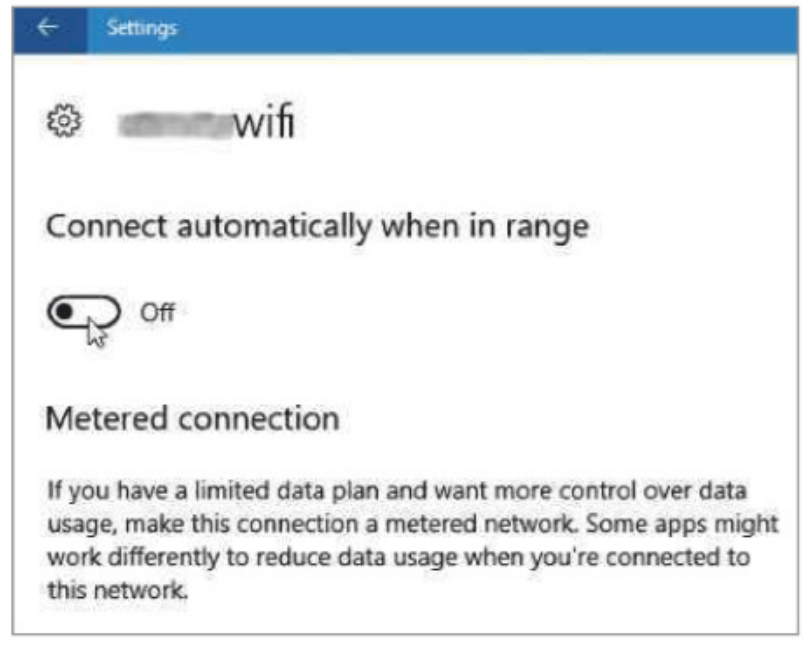
More than three-quarters of Brits take huge risks when browsing online using public hotspots, increasing their chances of being hacked.

A survey of 2,000 people by security firm BullGuard found that 79 per cent prioritise signal strength over security. Many choose free hotspots with strong signals without first checking whether they're genuine, and not fake hotspots set up by hackers.

When they've logged on, many people perform tasks that reveal personal details scammers could use. BullGuard says 31 per cent of people log into their bank accounts, while just over a fifth make payments with credit cards.

How can you stay safe?

One way is to turn off the setting on your device that automatically connects to hotspots you've used before. To disable it in Windows 10, open Settings, click 'Network & Internet', Wi-Fi, then 'Manage known networks'. Select the Wi-Fi network, click Properties, then switch off 'Connect automatically when in range' (see screenshot)



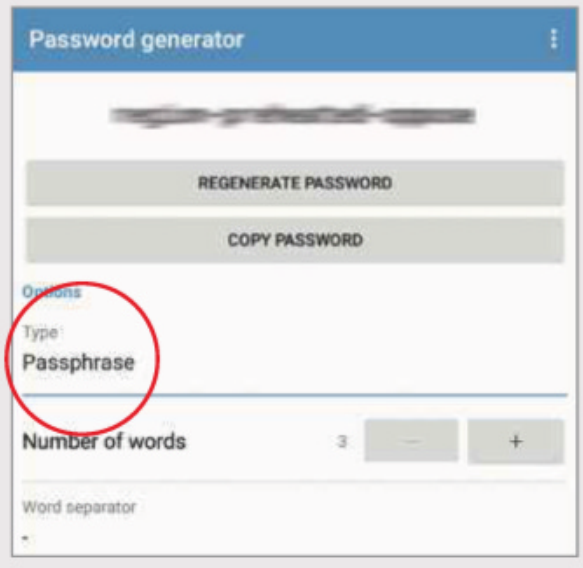
There seems to be a lot of ignorance about staying safe on public Wi-Fi. BullGuard says nearly half of people mistakenly assume their antivirus will prevent their data being stolen. Instead, it recommends using a VPN to mask your location and identity - and we agree. Our current favourite is the Swiss-based ProtonVPN (https://protonvpn.com), which works on phones and tablets as well as computers – follow our Workshop, Issue 552, page 40 for instructions.

Also be aware that hackers slap the word 'free' on to the name of hotspots in a bid to trap users who don't want to pay for public Wi-Fi. If you're in a coffee shop, for example, and see two hotspots using the venue's name, ask a member of staff for advice. If you suspect a hotspot is fake, try entering an incorrect password. It'll probably let you in because all it cares about is stealing your data.

New tools | Bitwarden passphrase generator

Wombat sieve thunder tulip cowpat. Such gibberish is a 'passphrase', and they're harder to hack than mere passwords (like 'wombat123', or even 'w0mBAt!23'). Free password manager Bitwarden has added a passphrase generator to its Android app, letting you create random phrases that hackers will never be able to guess.

First, install the password manager from the Google Play Store (www.snipca.com/32398), then create an account and a master password (which you *mustn't* forget – add a hint to help you remember). Tap 'Generator' at the bottom, then change the 'Type' from 'Password' to 'Passphrase' (see screenshot) then tap OK. You'll see the phrase at the top (blurred in our screenshot). Add more words to make the phrase even tougher to crack.



You could of course try to create your own passphrase, wombat-related or otherwise, but it's surprisingly difficult for humans to think randomly. As with obvious passwords ('123456'), avoid famous mnemonics such as 'Richard Of York Gave Battle In Vain'.

ScamWatch
Readers warn readers

Almost fooled by Norton 'renewal'

I received an email apparently from Symantec telling me my Norton Security Premium would soon expire, and that I should click one of the links to renew. I was almost taken in because it quoted my real product key. However, my subscription expires in 2021, so I emailed Symantec who identified it as a scam because the address that sent the email (**renewalpromo@norton-sales.com**) isn't genuine. Fortunately, no damage was done as I didn't click the links. The subject line of the email was 'Super Renewal 1 year of extra Norton protection and Norton Utilities'.

David Spens

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

Letters

Tell us what's on your mind

BritBox should cater for 'discerning viewers'

If nobody else will defend the BBC/ITV's BritBox, then I guess I must. In Issue 560's Letters Stephen Palmer asked why he should pay £5.99 a month to watch shows such as *Downtown Abbey*, *Gunsmoke* and *Space:1999*, which he already gets. My answer is that the £5.99 will include a greater *quality* of programme from the past, including those not available on the current channels.

Just think of the great dramas of yesteryear: *Tinker, Tailor, Soldier, Spy*, *I, Claudius*, *The Naked Civil Servant* and *The History Man*. And all the landmark documentaries like *Civilisation*, *Man Alive*, *The Ascent of Man*, *Life on Earth* and *Ways of Seeing*. These acquired tastes won't be served on throwaway channels like Dave or ITV4.

I think there will be a small but discerning audience of viewers who'll be prepared to pay £72 a year to access the BBC's (and sometimes ITV's) high-quality archive. That's assuming those programmes are included in BritBox! If not, and it's just rubbish like *EastEnders*, then BritBox will die as quickly as its critics predict.

Brian Alderton

Don't just rely on apps when walking in remote areas

I read with interest Nik Rawlinson's 'How To' feature in Issue 556's on creating walking maps to access on your phones. I have yet to find a decent free mapping app to aid my walks, so will certainly consider using the app Nik mentioned (GPS Master, http://gpsmaster.org/download).

I was however surprised by the lack of caution Nik showed before sending out droves of people from the city into the countryside with just a phone and app. As these areas can be remote and mountainous terrain, having just a phone to rely on can be quite dangerous. Phone signals can be sparse in some areas. Should the phone become damaged, wet, or lose charge or signal, you can be in the middle of nowhere scratching your head about how to get back. A little warning at the end of the feature would have been practical. It could have read: "Ensure phone is fully charged, make sure someone has access to and the ability to use a map/compass, and tell someone where you are going and what time to expect you back".

Despite that, it was a great article which, along with many others I have read, will prove beneficial. I have become an avid reader of *Computeractive*, which blows the other publications away with content and price.

Steven King

Question of the Fortnight

Can Boris Johnson deliver full-fibre broadband by 2025?

Boris's broadband pledge: reliability matters more than speed

I think you nailed Boris Johnson's 'pledge' in Issue 560's 'Question of the Fortnight' (pictured above) when you called it an 'optimistic vision of what can be achieved if the will exists'. Sadly, the will *doesn't* exist. The UK was a slow starter in recognising the value of fast broadband, and has been playing catch-up since. Our network is still a mish mash of different companies and vested interests – not as bad as the rail network, but not far off.

But here's the question: has anybody ever stopped to ask whether people actually *want* full-fibre broadband? For most people, it's not the speed that frustrates them, but reliability. I've survived on a fair-to-middling 50Mbps for the past few years, and never needed anything faster. But every couple of months I have to phone a customer assistant to ask why the service is down. It's got to the point where I can no longer assume my internet will be working. Boris has made lots of promises in his first few weeks. Maybe I can ask him to take a look at my broadband?

Barbara Pilton

Microsoft should charge W7 users for support

Together with millions of other happy and loyal users of Microsoft's best operating system, Windows 7, I have today received a reminder from the company that it will, as expected, be pulling the plug on it in six months.

It seems to me that the company is doing this for purely commercial reasons and not with their customers' best interests at heart. Windows 7 is still thought to be the most stable operating system. It's used by millions around the world, and Microsoft is expecting them all to upgrade to the buggy Windows 10, spending thousands of pounds on new hardware and

Tech won't stop kids loving the countryside

I've been a member of the National Trust (NT) for some 30 years now, and love visiting its sites and buildings. But I've noticed in recent years a tendency for it to create silly news stories to drum up publicity. I never thought one would appear in *Computeractive*, but there it was on page 6 of Issue 560 ('Tech beats nature in war of words'). To paraphrase Andy Beer from the NT, he seems to think that if children think tweeting has nothing to do with birdsong, they will lose their love of nature. Poppycock!

Every time I visit an NT site there are loads of kids running, skipping and playing. They paddle in streams (nothing to do with Netflix). They listen to birds singing (nothing to do with Twitter). And they pretend clouds in the sky are monsters and dinosaurs (nothing to do with Dropbox). It's simply daft of the NT to suggest that children will stop enjoying the outside because technology has adopted words like tweet, stream and cloud.

Gareth Benson

software. It really doesn't make sense.

A much better way would be for Microsoft to continue to issue security updates for Windows 7 home use on a paid-for basis. It would mean users such as me could continue using the operating system we love, and it would make a bob or two for Microsoft too. I gather this will be made available for business use, so surely it would make good business sense for the company to give home users the same security for a reduced premium.

John Hale

CA SAYS **Many readers urged Microsoft to introduce a similar paid-for service when support for Windows XP ended in 2014. It didn't then, and it seems unlikely to next January when the axe falls on Windows 7. However, millions of people will continue to use Windows 7 after support ends, so we expect Microsoft will release emergency security updates if a threat as big as 2017's WannaCry hits computers. Other than that, Microsoft will file Windows 7 in the cabinet labelled 'operating systems we have loved'.**

To prepare you for life after Windows 7, we'll publish a complete survival guide throughout the autumn explaining your options. It begins in Issue 563, out on 25 September.

Who needs DVDs? Why not use hieroglyphics?

I am dismayed that using DVDs for storage seems to be in decline. But that's only true for films and video as many people switch to streaming we are told. But what about data? That's not in decline, particularly for my own hobby, genealogy, where records are copied to DVD along with family photos. Sometimes such DVDs are distributed to relatives who may not have computers so that they can view them on a TV via a DVD player.

Then there is the storage medium of cloud services. These are popular, but that is only another computer somewhere that could be hacked, despite enhanced security. Electronic storage deteriorates over time and electric storms can obliterate the data.

Why not print data on to paper? It's known to last over a thousand years, and cannot be hacked, as well as being safe from deterioration if stored correctly. Then there is stone, which outlasts paper even, as we see with Egyptian hieroglyphics which will only disappear when the sun expands and destroys the world. The electronic world has gone mad

Larry Sharrock

STAR LETTER

Laws of marketing state there will be a 'Windows 11'

In Issue 560 (News, page 6) you raise the intriguing possibility of Microsoft releasing a Windows 11. I think you may be right. It won't be called that, of course. Microsoft has said many times that there will never be a Windows 11, so using that name would be too embarrassing a U-turn. But I suspect it may be coming, with a trendy name that dispenses with numbers.

My theory is based on Microsoft's decision to reduce the number of Feature Updates to one a year. This is a very good move because users like myself were getting fed up with the constant and random restarts while the computer updated.

But the consequence of this is that Microsoft will only be able to release new tools once a year. That's enough for most people, but is it enough for developers at Microsoft? Presumably they spend every working day building new tools that they think people are crying out for. If they can only force these on to the public once a year, it will create a large backlog of tools piled up in Microsoft's virtual warehouse. Eventually this will grow so big that Microsoft will submit to the inevitable and pack them all together in a new version of Windows.

The other reason there's bound to be a Windows 11 is that marketing execs love to promote products as 'new and improved'. It's worked for toothpaste and washing powder for decades. Microsoft can't expect to rewrite the laws of marketing without suffering a financial blow. By 2023, Windows 10 will be eight years old, which is ancient in both computing and marketing terms. I predict a 'new' version by then, although I'm not clever enough to suggest what it may be called.

Douglas Rodwell

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

Finally upgraded to Windows 10 after four years

I've been running Windows 7 for 10 years on my HP Pavilion laptop, but when Windows 10 was announced I looked forward to the change. I registered for the upgrade, but when the time came I could not upgrade. I was bounced back to Windows 7 every time.

In your magazine I followed all the suggestions to upgrade (ISOs, USBs, talking nicely to it, etc). All to no avail. I bowed to the inevitable that my laptop must be too old, like myself.

In Issue 559 you mentioned your new forthcoming guides, so all hope wasn't lost. In the same issue you also referred to HP diagnostics software (www.snipca.com/32243), which I downloaded and ran. It told me my laptop was perfect. I had a Windows 7 shortcut icon left over on my desktop, so with nothing to lose I clicked it. Wow! A couple hours later I now own a shiny new Windows 10.

What was different about this try? Well, the diagnostics software told me to disable all the sleep options before it carried out its checks. Could it have been that simple? I don't know, but if like me you've become frustrated trying to upgrade, it could be worth a try.

Am I happy now I have Windows 10? Not really - I still think Windows 7 was a great operating system. But thanks *Computeractive*. For unknown reasons, you got me my upgrade eventually. To other readers, keep persevering.

David Mitchell

Consumeractive

We stand up for your legal rights

Is TV screen burn an inherent fault?

LEAD CASE

Q In February 2017, I bought a £1,600 55in LG OLED TV from Domestic & General (D&G, www.domesticandgeneral.com), and now there's a ghost image in one corner and the middle of the screen is a different colour. The problem is screen burn, according to the technician sent out by D&G, but this fault isn't covered in my warranty. LG says it will charge me £1,200 to repair the TV. But isn't screen burn an inherent fault?

David Biggins

A Good question, but it's not easy to answer because screen burn (also known as burn-in) isn't a clearly defined problem. Rather, screen burn is something of a catch-all phrase that describes several types of fault.

It's also possible that the problem is being caused by defective pixels being permanently turned on or off. You might think that a TV with defective pixels would be classified as inherently faulty, but the law actually allows a percentage of broken pixels before manufacturers are obliged to act. Every manufacturer has its own policy on pixels, so we've asked LG to clarify.

LG does explain the risk of screen burn on its site (www.snipca.com/32396), saying its TVs come with "special features and settings to preserve image quality and prevent burn in and image retention". These include Screen Saver, which turns on if it detects a static image for two minutes.

Aside from these technical matters, the other question is who does David have a contract with? It's not with LG, because that's the manufacturer, so presumably it's with D&G – but that company typically sells only extended warranties, not TVs. We'll ask D&G whether it acted on behalf of another retailer.

CASE ONGOING

Can you help me close an Amazon account?

Q I can't close an Amazon account because it's associated with a Virgin email address I can no longer use. I also can't remember the password for the account. Another Amazon account associated with that address that I *do* want to use is under investigation for fraud. Amazon won't help me, so can you?

Mark Sanger

A We'll try, though it's often tricky to close an account when you can't access the associated email address. To start, click Contact Us at the bottom of www.snipca.com/32399 and follow the instructions. Amazon will phone you to confirm. However, Mark has a disability that makes it difficult to speak to people over the phone, and he found it tricky to explain his predicament to customer services. It doesn't help that he has several Amazon accounts, not all of them linked to his Virgin email.

We'll contact Amazon to see what assistance it can provide Mark given the difficulties he faces. We'll also check whether he'd lose any content – such as videos or games - if he manages to close his account.

CASE ONGOING

CASE UPDATE

Layen apologises for bouncing emails

We feared the worst when Neill Harrild's emails to Bluetooth and audio retailer Layen UK (www.layen-uk.com) kept bouncing back (see Issue 560). He wanted to get a refund for an i-Dock 4.1 Bluetooth music receiver (pictured) which he had returned after it developed a fault.

When emails go unanswered, it's usually because the company has terrible customer service, or is deliberately ignoring the customer. In some cases, though, it's because the company has gone bust. We thought that was possible because in February Layen dissolved a name it had been trading under.

However, the company's owner Martin Kamarauskas assured us that Companies House had forced it to make the change. He replied quickly to our request for help, apologising for Neill's "bad experience". As a small company, he said, customer service is "very important" to it. He added that it does try to answer customers' emails, as well as queries on social media.

We were impressed by Mr Kamarauskas' honesty, and the speed of his reply – much faster than we typically receive from bigger companies.

Can Apple renege on its two-year warranty?

Q I was having problems with my iPhone 6, bought from ID Mobile (www.idmobile.co.uk) two years ago, and tried to resolve the issue myself. Now I'm outside of my warranty, ID Mobile refuses to help. I then went to Apple because I thought it offered a two-year warranty, but was told that is only for iPhones bought in store. What's going on?

Doug Williamson

A The cause of Doug's confusion is an article he read in the *Daily Mail* in 2017 saying iPhones had a two-year warranty. He doesn't recall it saying it applied only to phones bought in store, and we can't find this caveat on Apple's website. We've asked Apple to clarify.

Of course, Doug won't need to use the warranty if he can prove the iPhone is inherently faulty. Because six months have passed since purchase, he'll need to prove this, which will mean paying for an independent inspection. This is always a gamble because he'll only be able to claim a refund for the inspection if a fault is discovered. If he takes this action, he should let ID Mobile know in advance, because it's allowed to examine the phone. This would save him the price of an inspection by another company.

But before he makes this decision, we've advised him to return the iPhone to an Apple store to see if an assistant can identify the problem and maybe fix it as a goodwill gesture.

CASE ONGOING

Should my bill go down once I've paid for my phone?

Q My wife and I use different mobile providers – I'm with EE and she's with Virgin. Her payments are split in two each month, and her bill was reduced when her contract ended. Will mine with EE do the same?

Simon Ward

A Yes, it should do, but Simon needs to check his bills to confirm. Generally, when you buy a phone and airtime from a network, or from a retailer such as Carphone Warehouse, these are two separate contracts: one for the phone and one for all the calls, texts and mobile data. These are normally bundled into one payment.

The price of a phone is wound into the length of the contract, so you shouldn't be charged for it once the initial contract ends. The only costs you should subsequently pay are for network coverage.

Simon's email is timely because, under pressure from telecoms regulator Ofcom, most networks have agreed to automatically move customers to a cheaper deal when their initial contract ends. We say 'most' because Three has declined to do so, saying it'll deter customers from shopping around for new deals (see News, page 9, Issue 560). Ofcom says these measures, which networks must implement by February 2020, will prevent UK customers overpaying by about £182m a year.

CASE CLOSED

CREDIT WHERE IT'S DUE

£20 TalkTalk refund a 'pleasant surprise'

I've been a TalkTalk customer for many years now and have, of course, been aware of the seemingly relentless criticisms that the company has faced. However, despite these problems, I have remained relatively trouble-free, and on the odd occasion I've needed help I have, with a degree of patience, managed to overcome any difficulties.

I recently received an apology in the form of an email from the company headed 'We'll be adding a credit to your account'. To my surprise, this was in connection with my requested upgrade to TalkTalk's faster fibre broadband. The email explained that the refund of £20 was compensation for a delay which was at most four days beyond the predicted date. This gesture was completely unsolicited and came as a pleasant surprise.

Terry Martin

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

Contact:
Talktalk

- **Live chat** https://community.talktalk.co.uk
- **Phone** 0345 172 0088

Grow Your Family Tree

If you'd like to present your research in another program, follow **Nick Peers'** instructions to...

Export data from your family tree

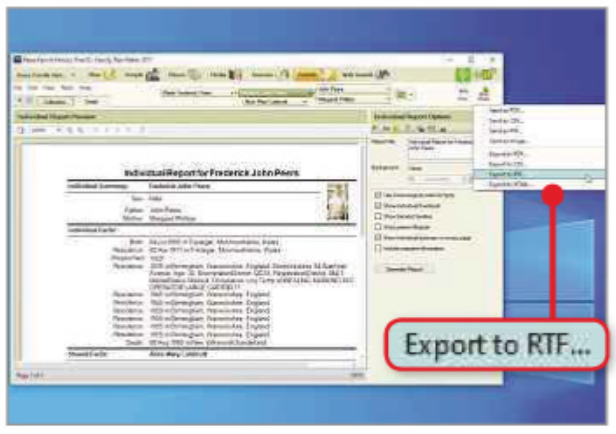
Reader David Roberts emailed us to ask how he could transfer a family tree from paper to digital using his copy of Family Tree Maker (FTM). Once done, he needs to export the file in a format that his brother-in-law – who doesn't have FTM – can see on his laptop.

To do this, set up the tree in FTM then choose File, Export. Click Continue and select GEDCOM from the 'Output format' dropdown menu. Click OK twice to export the file using the default settings, then email the GEDCOM file to the person who needs it (they'll need to install My Family Tree, free from https://chronoplexsoftware.com/myfamilytree). Once it's installed, they'll then need to choose 'Import GEDCOM...' at the welcome screen.

Share data as charts, reports and stories

You can also share selected data as charts, reports and stories. In FTM, select a person from the People view, then click the Publish button to create a chart or report centred on that individual, using the options in the right-hand pane to customise its content and appearance.

Once complete, click the Share button and choose which format to save the file in: options include PDF and images for charts, and PDF, images, RTF word processor (see screenshot above) and HTML web pages for reports.



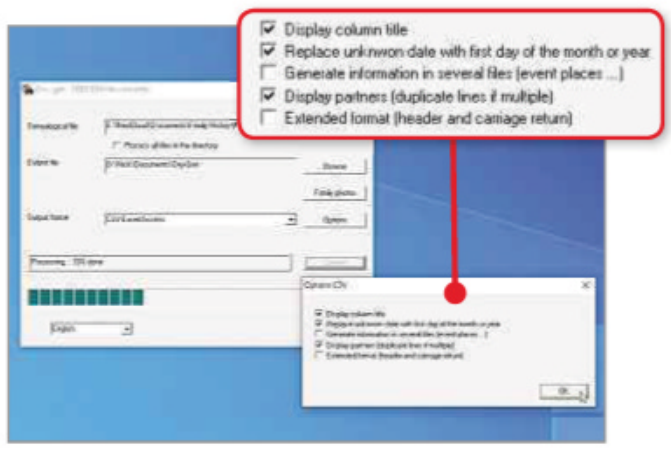
To export data in different formats, click Share, then the required option, such as RTF

You can also use the data to write stories about ancestors to share with others. Install Personal Historian Essentials (free from www.personalhistorian.com), then import the GEDCOM file to combine it with photos to help write memoirs and other stories.

Transfer data to spreadsheets and databases

To view family-tree data on a spreadsheet or in a database, you'll need to convert your GEDCOM file into a simple CSV (Comma Separated Values) file. Oxy-Gen is the best free tool for the job.

Browse to www.snipca.com/32336 and click the 'Auto install Exe' link next to 'Light version'. During installation, the Windows SmartScreen warning may pop up, but this is a false positive result, so click 'More info', then 'Run anyway'. Once complete, open the program and click the first Browse button to select your GEDCOM file, then click the second to choose where to place your converted file.



Oxy-Gen converts GEDCOM files for use in spreadsheet and database programs

You'll see Oxy-Gen is set to produce HTML pages by default. This lets you build an interactive website, but the results aren't as good as simply opening the GEDCOM file in a program like My Family Tree. Instead, click the Output Format dropdown menu and choose 'CSV Excel/Access' to create a file that will open in a spreadsheet such as Microsoft Excel or LibreOffice Calc, or a database program like Microsoft Access or LibreOffice Base.

Click the Convert button and a list of options will appear. To produce a list of individuals with key data such as birth, marriage and death dates and places, tick the 'Display column title', 'Replace unknown date...' and 'Display partners...' boxes, then click OK (see screenshot above).

Once the CSV file has been generated, open it in your spreadsheet or database. The simple table-like structure – individuals in rows, facts divided into specific columns – makes it easy to access key information.

Your **Genealogy** Problems Solved

Can you recommend a user-friendly alternative to a text editor that allows me to directly view and edit the code in GEDCOM files?

Joe Hollis

Ancestris is a GEDCOM viewer and editor that offers a range of editing tools. You'll need to install Java Runtime files (www.java.com), but once in place download the 'Daily' version of Ancestris (visit www.ancestris.org, click the Download heading, then scroll down a little). Extract its zip file to a folder, then double-click ancestris64.exe inside **ancestris-latest\ancestris\bin**. Open your GEDCOM file, then choose View, Gedcom Editor to edit it, line by line.

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

Next issue: Open your family tree in a new program

Stinkyink.com

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1. Based on a SpencerLab 2018 study commissioned by HP for the on-average performance of 12 brands of remanufactured cartridges, refilled cartridges from leading refill service providers, and refill kits compared to Original HP ink cartridges (61XL, 62XL, 63XL, 564XL, 950XL, 951XL, 970XL & 971XL) sold in North America. See spencerlab.com/reports/HPInkReliability-NA-2018.pdf.

2. HP Planet Partners Program availability varies. For details, see www.hp.com/recycle. On recycled materials in cartridges, see hp.com/go/recycledcontent.

Best Free **Software**

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

OFFICE SUITE

LibreOffice 6.3

www.libreoffice.org
What you need: Windows 7, 8.1 or 10

Microsoft might be content to have Office 2019 "frozen in time" while its tools won't "ever get updated with new features" (read the full Microsoft blog post at www.snipca.com/32496), but the free alternative LibreOffice continues to release regular updates.

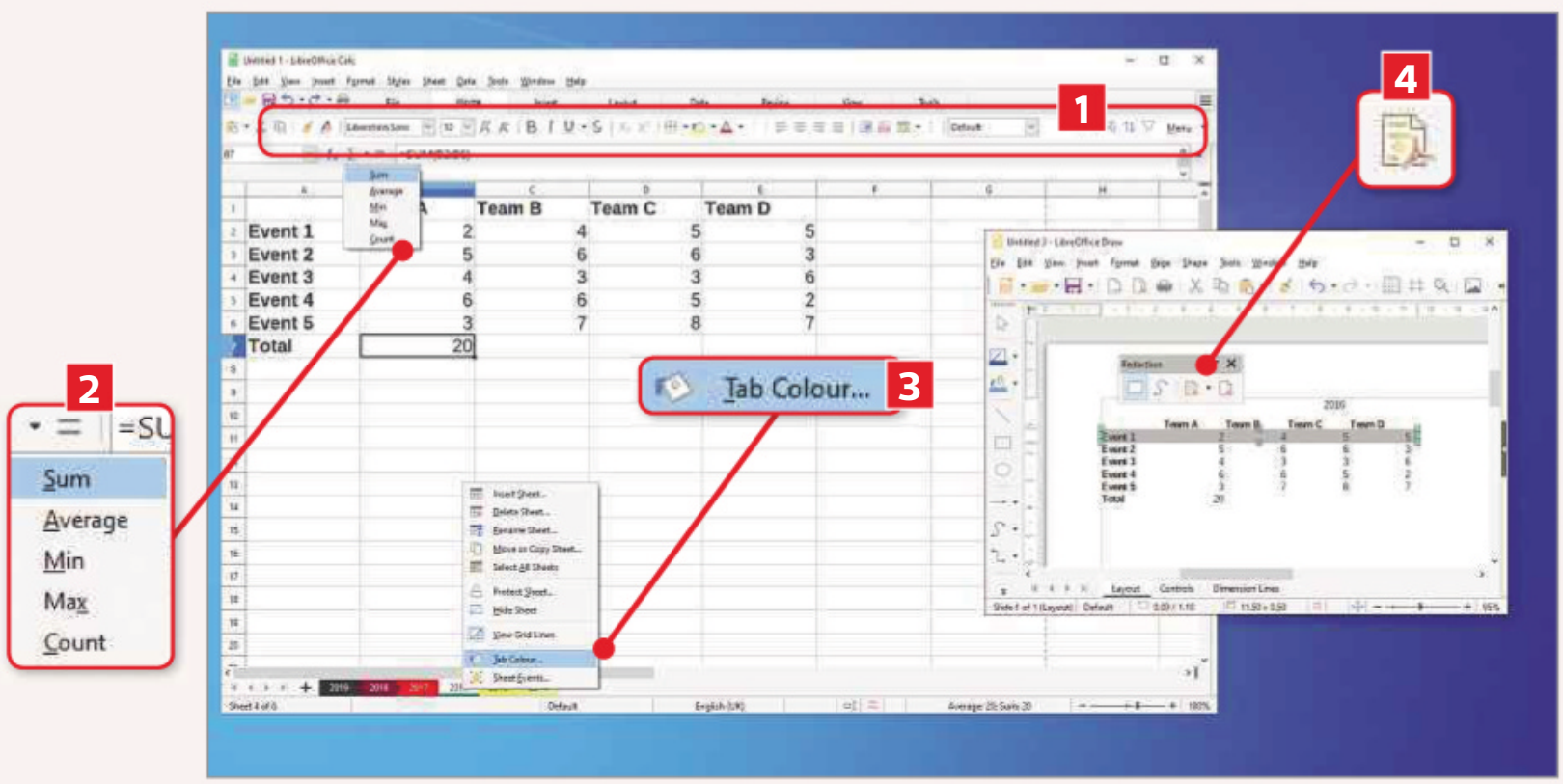
Continuing LibreOffice's attempts at streamlining the suite's design, this version adds a new Tabbed Compact view. This keeps the tabbed layout of previous versions, but limits the buttons below each tab to a single line, allowing more space for your document. Click View, User Interface to select it.

Version 6.3 also introduces a new redaction tool, which lets you obscure sensitive sections of a document before sharing them – useful if you need to hide details on a bank statement you're sending as part of an insurance claim, for example.

It also enhances existing tools, including the background colour option in Writer. In previous versions, you could set a background colour for your documents, but the edges would remain white. In version 6.3, the background colour fills the entire page, letting you create posters with full-colour backgrounds, for example. Go to Format, Page, then the Area tab to set your background colour.

In Calc, a new button to the left of the formula bar lets you quickly choose from the five most common formulas, while spreadsheets with multiple tabs are now easier to navigate thanks to larger, clearer tab buttons along the bottom.

LibreOffice also claims that the speed at which you can open and save complex documents has been improved by up to 90 per cent. In our tests, however, we only noticed a small improvement. A large spreadsheet in CSV format with 500,000 cells took one minute 50 seconds to open, compared with just over two minutes in version 6.2. Given Microsoft Excel was able to load the same spreadsheet in just 20 seconds, we'd like to see more of an improvement in future versions.



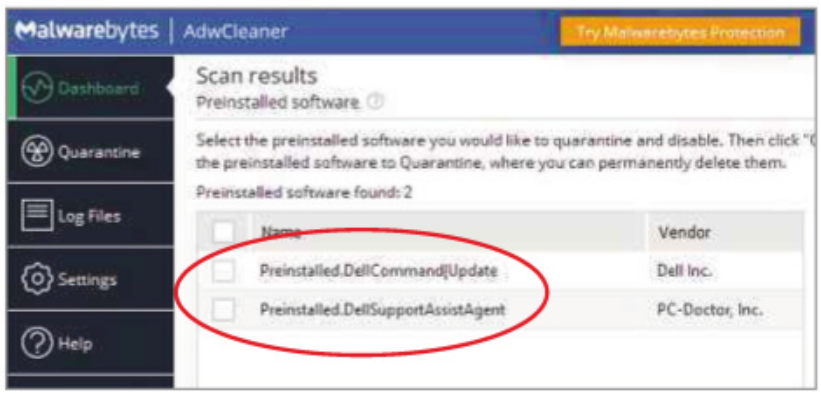
1 To try the new Tabbed Compact menu bar layout, click View, User Interface, then select Tabbed Compact within any of the LibreOffice tools.

2 A new button next to the formula bar in Calc lets you quickly choose from the five most popular formulas.

3 Tabs in Calc spreadsheets are now easier to view, thanks to a larger design. To change a tab's colour, right-click it, then select Tab Colour.

4 To remove sensitive data from a document or spreadsheet, click Redact in the Tools menu, mark the areas you want to hide, then click the Export button to save it as a PDF.

SECURITY TOOL



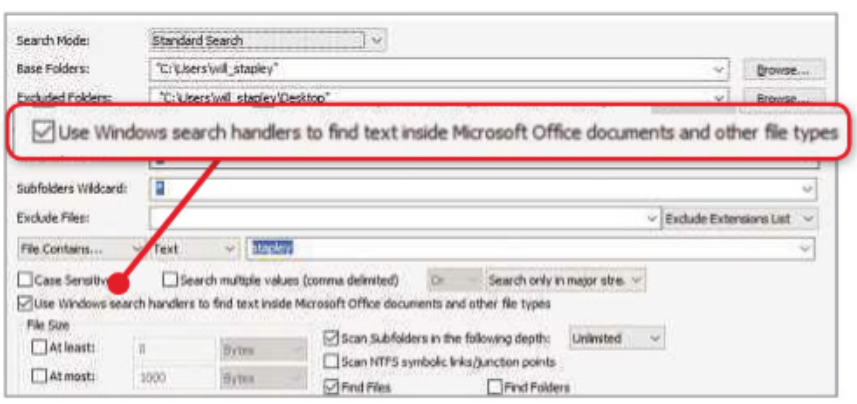
AdwCleaner 7.4

www.snipca.com/32500

What you need: Windows 7, 8.1 or 10

No matter how careful you are when downloading free programs, it's easy to install junk without realising, such as browser toolbars. AdwCleaner scans your PC for all traces of unwanted programs, then offers to get rid of them. Unlike antivirus software, it doesn't run in the background, so it won't slow down your PC. However, this also means you need to run the scans yourself. Version 7.4 adds a new tool that looks for PUPs installed by your computer's manufacturer. We recommend checking the results carefully, though – testing it on our Dell laptop it highlighted two Dell update tools (see screenshot), which the company uses to install firmware.

FILE MANAGEMENT



SearchMyFiles 3

www.snipca.com/32499

What you need: Windows 7, 8.1 or 10

SearchMyFiles is a powerful tool that lets you run detailed searches for files on your PC. Unlike Windows' search tool, it doesn't index your files, so searches can be slow. However, in terms of search options it's unrivaled. You can exclude specific folders and file types, make searches case sensitive, search by file attribute (Hidden, Read-only, etc) and much more. New features include the ability to search for specific text within Microsoft Office documents and PDFs (tick the 'Use Windows search...' box - see screenshot). For simple file searches it's quicker to use Windows search, but SearchMyFiles is perfect when using very specific criteria. One criticism is the lack of a progress bar, so it's tricky to know when a search is complete.

WHAT SHOULD I DOWNLOAD?

We tell you what software & apps to use

How do I remove silences from my audio recordings?

Q I regularly attend astronomy talks and like to record the sessions as MP3 files to listen back to at a later date. Many of the recordings contain long pauses, making them frustrating to listen to. Can you recommend a tool to remove these silences?

Ian Marsden

A Audacity is perfect for this, although the process does involve a little trial and error. First, download Audacity (free from www.audacityteam.org), then open the audio file you want to edit.

Once loaded, press Ctrl+A to select the entire audio track. Next, click Effects at the top, then select Truncate Silence. The default settings often work well, so before tinkering leave them as they are, then click Preview (see screenshot). Your audio will now play, minus any detected pauses that are longer than 0.5 seconds.

You may, however, find that Audacity cuts out sections where the speaker is still talking, albeit quietly. If so, try reducing the Threshold setting from '-20' to '-25', then press Preview. Keep reducing the Threshold setting until only genuine silences are removed.

If you're happy to keep shorter pauses, adjust the Duration setting. This tells Audacity how long a detected pause must be before it's removed. The default is 0.5 seconds, but you can increase it to any figure you like.

Finally, you can change the effect so that instead of removing silences, it reduces them by a set percentage, which can result in a more natural-sounding clip. Click the box in the Action setting and change it to Compress Excess Silence. In the 'Compress to' box, you can choose how much to reduce the pauses by. Setting this to 50 per cent, for example, reduces a four second pause to two seconds, and so on.

When you're happy with your settings, click OK, then save the file by selecting File, Export, 'Export as MP3'.

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

HOW I USE...

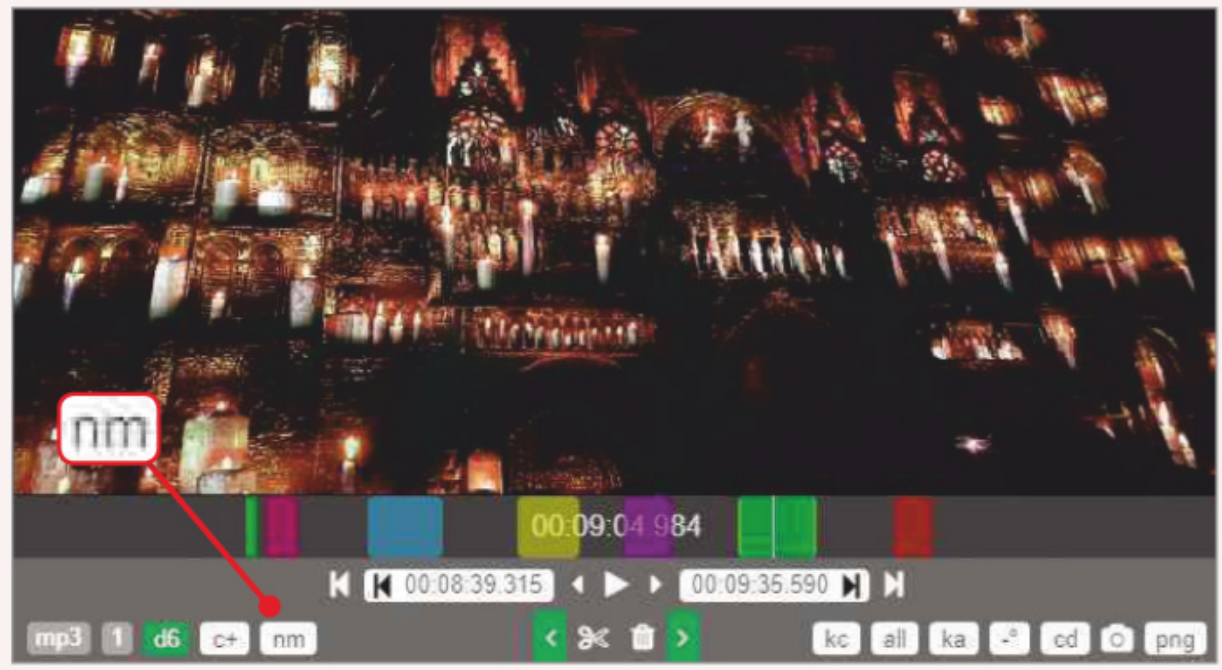
LosslessCut

Will Stapley explains how he reduces lengthy videos in seconds

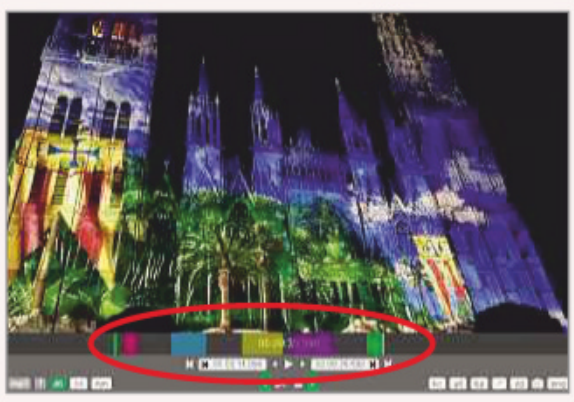
As a child back in the 1980s, I single-handedly kept Radio Rentals in business by hiring camcorders all the time - the oversized type that took full-size VHS tapes and left you with backache. Editing my masterpieces was always a chore, though, and involved linking the camcorder to my VHS player having inserted a blank tape. I then had to play the video on the camcorder, while frantically pressing the Record and Pause buttons on my VHS player to capture what I wanted.

Thanks to my smartphone, these days I can record video at a far higher quality whenever I like. But editing on the phone can be just as fiddly. Yep, I can quickly trim the start and end points of clips, but there is no easy way to cut a single long video into multiple segments, then merge them into one. To do this, I fire up LosslessCut - free from www.snipca.com/32407 (for 32bit ending in 'win32-ia32.zip' or 64bit 'win32-x64.zip').

Common to most open-source tools, it suffers from a confusing design, with oddly named buttons that only reveal their function once you've clicked them, so be prepared to spend a little time getting to grips with these.



Click 'nm' before exporting to merge all your selected sections into a single clip



Lossless Cut marks the sections you want to include in your finished video

I used the program recently following a family holiday to sort out my hundreds of snaps and videos. One clip was of a hugely impressive 3D projection on to a cathedral (see screenshots left and above – can you identify the cathedral? **letters@computeractive.co.uk**). The clip lasted over ten minutes, so to reduce it to just the best bits I transferred the video to my PC, then dragged it into LosslessCut.

I prefer using keyboard shortcuts over my mouse (press 'H' to see a full list). Using the left and right arrows, I navigated near to the start of the first section I wanted to keep, then used the comma and full stop keys to slowly move to the precise cut point, then pressed 'I' to mark it. I then used the same process to navigate to the end point of my clip, but this time pressing 'O' to mark it. Next, I pressed '+' to start marking the second section I wanted to keep... and so on (see screenshot left).

Once I'd marked all the sections I wanted, I clicked the 'nm' button (see screenshot above) to turn off 'no merging', which turns on merging (I did say the buttons were confusing) and combines all clips into a single video. I then pressed 'E' to export the video, which appeared in the same folder as the original seconds later.

You can also use LosslessCut on audio files, which lets me strip out ads and periods of silence from MP3 files I've downloaded or recorded online. It works in exactly the same way – I drag the MP3 file into the program, then choose which sections to keep. Because no encoding is involved during the export process, the quality of the clip isn't degraded – something full-blown video editors are guilty of.

WHAT I'D LIKE TO SEE IN LOSSLESSCUT

One reason I love LosslessCut is that it doesn't overcomplicate things. It does one job, and does it well, so I'd hate to see too many changes. However, its unnecessarily complex layout may put novices off, so it would be good to see a redesign that makes its various options easier to understand.

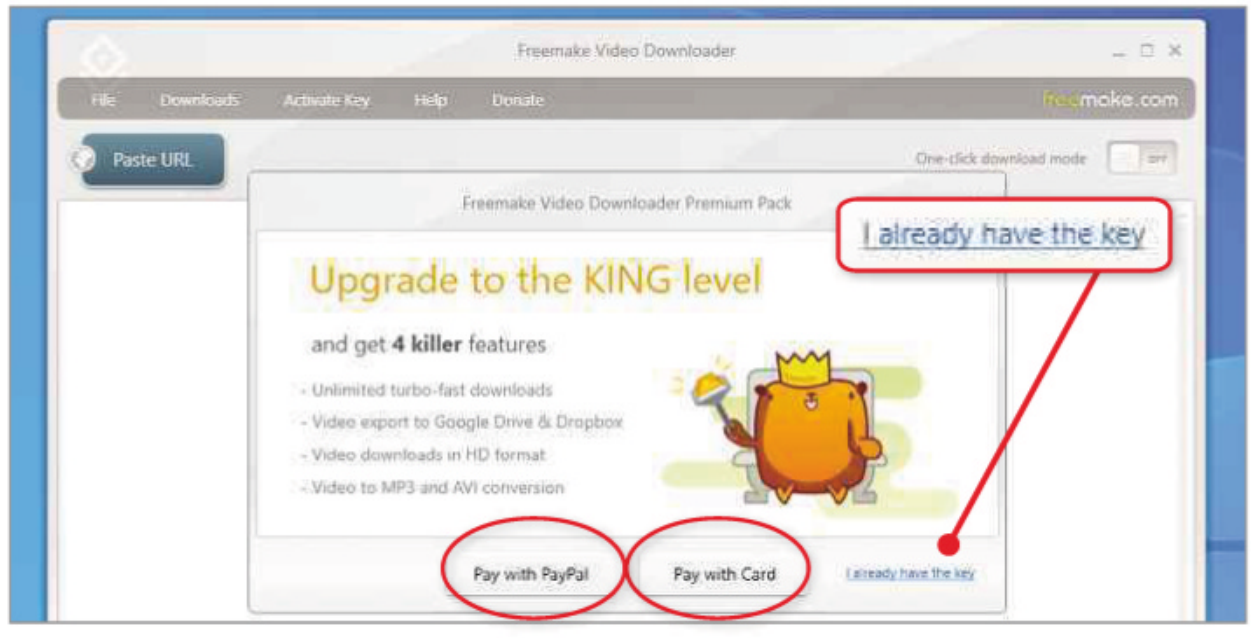
Next issue: How I use... WiFi Analyzer

Named & Shamed

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

WARNING: JUNK AHEAD

Junk offender: Freemake Video Downloader



King con? Click the tiny X to close Freemake's nag screen

Freemake's free video-related software used to be pretty decent. Indeed, there was a time when I considered Freemake's Video Converter tool all but essential for making sense of the many different video file formats flying around the internet.

Since then, however, Freemake has seemingly transformed itself from a fairly trustworthy software provider into one of those companies that resorts to tricking users into paying for premium upgrades and offloading unwanted junk on to people's hard drives.

Take Freemake Video Downloader (www.snipca.com/32483). The tool's primary function is to download copies of online videos from sites such as YouTube, Vimeo and others in a variety of formats – a practice that, in itself, is slightly dodgy, since downloading content violates most video-streaming sites' terms and conditions.

That aside, you'll find that the free version is less useful than you'd like.

Unless you pay for the £28 Premium Pack, it throttles your download and conversion speeds to a crawl, locks you out of many of the advertised formats, and adds a branded watermark to any videos you download. This is a shame, but it isn't unusual for free programs to restrict their features.

What's much less acceptable is that Freemake Video Downloader's installer adds a PUP to your computer, even if you select the 'Custom install' option and untick unwanted options. Also infuriating is the aggressive upgrade nagging you'll get for your troubles, including a confusing pop-up screen over the main program window every time you close it. The only options are 'Pay with PayPal', 'Pay with Card' or 'I already have the key' (see screenshot). There's no obvious 'Close' or 'No Thanks' button (beyond a small 'X' in the top-right corner) and no way of preventing the screen from appearing. It's just a dirty trick to get users to click through to a payment screen.

WHAT ARE THEY TALKING ABOUT?

WHAT THEY SAY

Suraj Rao, Western Digital
www.snipca.com/32472
"Connected industrial devices have started to see wider adoption in many areas – from IoT gateways to networking equipment and more. In this change, companies are combining data from networks of IoT and IIoT devices and computer-controlled systems with cloud and ML computing to accelerate the journey towards fully automated smart factories."

WHAT THEY MEAN

Robots are taking over the workplace.

JONATHAN'S VILLAIN OF THE FORTNIGHT

Muhamed Talukdar & Syam Hussain

Boris Johnson is making big promises about keeping criminals locked up for longer. I only hope these pledges extend to crooks who scam money out of vulnerable people.

Muhamed Talukdar and Syam Hussain (pictured) are a case in point. In June, they were found guilty of laundering £200,000 stolen by fraudsters who phoned elderly people posing as police officers.

In June at Worcester Crown Court the pair were sentenced to eight months in prison. But a recent appeal saw this slashed to a community order with an unpaid work requirement of 50 hours, meaning they walked out of court as free men.

This result sends exactly the wrong type of message to would-be fraudsters. Get caught helping cheat people out of thousands of pounds and you'll get a slap on the wrist.

LAPTOP | **£799** from PC Specialist www.snipca.com/32494

PC Specialist Cosmos VIII

Star turn

King Midas, as you may or may not recall, tied up the ox cart on which his father Gordias had entered the city of Telmissus with an intricate knot in a rope of cherry bark. It sounds like a lot of faff, but bear in mind immobilisers hadn't been invented and Phrygians were paying an arm and a leg just for third party, fire and theft on ox carts.

According to an oracle, whoever could unravel the knot would become ruler of all Asia, which seems relatively sensible compared to the way people get to be Prime Minister nowadays. Even Alexander couldn't undo the Gordian knot, but he still won the challenge, either by cutting the rope or dismantling the cart, depending on who you ask. Sure enough, he then went on to conquer Asia, earning the nickname Alexander the Great, rather than Alexander, That Bloke That Couldn't Undo That Knot.

> "It's chunky and battery life is poor, but it has processing power to burn"

Similarly, many PC makers struggle to get a top-end processor working at full speed in an ultra-slim laptop, but the folks at PC Specialist have got round the problem by not using an ultra-slim laptop case. The Cosmos VIII is thinner than an ox cart but twice as thick as, say, a MacBook Air. Unlike a MacBook Air, it has an

i5-9300H chip with four cores running at up to 4GHz, giving proper mid-range desktop PC-level performance in our tests.

It's paired with a GTX 1050 graphics card with 3GB of its own memory, good enough to run any 3D game smoothly at the 1080p Full HD resolution of the 15.6in screen, and Windows 10 comes installed on a 256GB NVMe SSD that zoomed through our sequential read and write speed tests at an average of 1,881 and 1,111 megabytes per second respectively. We've seen faster, but these are very good scores, and there's a 1TB hard drive too for the rest of your files.

This would be an ideal spec for photo or video editing, even at 4K, but a closer look at the screen brings any such ambitions down with a bump. According to our meter, it covered just 55 per cent of the sRGB colour range, so you'd need a decent monitor to attempt any serious graphics work. We found it quite acceptable for general use, games and films, with average brightness and contrast.

Style-wise, the best we can say of the chunky plastic chassis is that it might deter self-respecting thieves. The tightly spaced flat keyboard took a bit of getting used to, but does have a nice click to it as well as adjustable backlighting, and the touchpad worked fine. Plenty of ports round off the case, which is more than the designers have done.

At just 3 hours 15 minutes in our video-playback test, battery life is a weak point, beaten even by the 4 hours 30 minutes of Chillblast's skinnier Helios 4 (see our review, Issue 560). So this isn't a laptop for those regularly on the move, but in terms of processing power per pound sterling, it's excellent value.

SPECIFICATIONS

2.4GHz Intel i5-9300H quad-core processor • 16GB memory • 256GB SSD • 1TB hard drive • Nvidia GeForce GTX 1050 graphics • 15.6in 1920x1080-pixel screen • Webcam • 802.11ax Wi-Fi • Bluetooth 5.0 • USB 2.0 port • 2x USB 3.0 ports • USB-C port • Gigabit Ethernet • HDMI and Mini DisplayPort outputs • Windows 10 Home • 32x362x257mm (HxWxD) • 2.04kg • One-year warranty www.snipca.com/32494

VERDICT If you mostly stay near mains sockets and don't need to edit photos on the built-in screen, this is excellent value

★★★★★

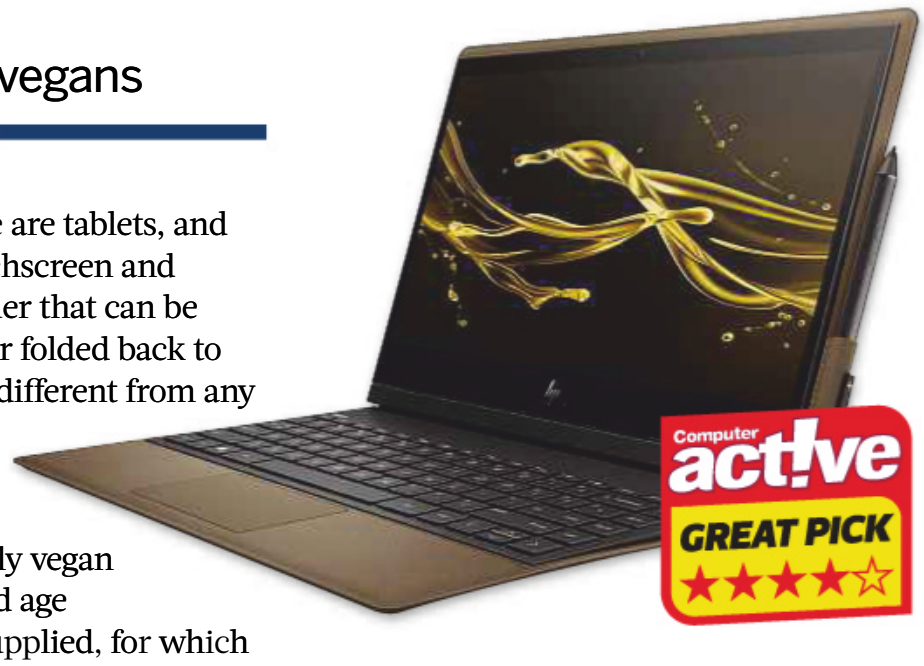
ALTERNATIVE

Chillblast Helios 4 £750 No graphics card and a slower i5 chip, but a fast 512GB SSD and a much better screen

LAPTOP-TABLET | **£1,499** from HP www.snipca.com/32402

HP Spectre Folio 13

Not suitable for vegans



There are laptops, there are tablets, and now there's this: a touchscreen and keyboard fixed to a folder that can be stood up like a laptop or folded back to use as a tablet. It looks different from any other laptop with its chocolate-brown real leather finish – a brave choice in an increasingly vegan age, but one that should age gracefully. A stylus is supplied, for which our Folio lacked the advertised storage loop, making it easy to lose.

> "A timeless design, a pleasure to use and a long battery life"

There's something slightly self-defeating about making an incredibly thin laptop and then welding it into a thicker shell. HP reckons the whole thing is 15.4mm deep, although they must have squashed it a bit to get that measurement: we made it 17mm. It's about 25 per cent bulkier than the very slimmest and lightest models, but still well below average, and no trouble at all to carry. The mains adapter is also unusually compact, at just over 200g (7oz), but you probably won't need it: in our usual video-playback test, the Folio lasted 10 hours 38 minutes.

That's an excellent result for a Windows 10 system of this size, and it's pretty clear how it's been achieved. Almost everything inside is battery except the i7-8500Y processor, which isn't much like an i7 at all, but comes from Intel's low-power mobile range. That means performance can keep up with regular mid-range laptops in less demanding tasks, but with anything more complicated it begins to lag behind. At the challenging end of our tests, which attempts several highly demanding operations at once, the Folio took hours to complete what chunkier machines managed in minutes. The integrated GPU, meanwhile, supports 3D gaming in principle, but it will struggle with the latest games.

For basic tasks, though, it's more than adequate, and HP's design makes it a pleasure to use. The flat keyboard is well laid-out and surprisingly clicky, even if the touchpad – set into the leather front panel – is rather small. There are only USB-C ports, but two have Thunderbolt 3 for fast external SSDs – the built-in 256GB could be a bit tight – and there's a webcam with Windows Hello face recognition.

The screen is Full HD, with no 4K option, but covered over 95 per cent of the sRGB range with very high accuracy and strong brightness and contrast. The only flaw is a highly reflective finish.

SPECIFICATIONS

1.5GHz Intel i7-8500Y dual-core processor • 8GB memory • 256GB SSD • 13.3in 1920x1080-pixel touchscreen • Webcam • 802.11ac Wi-Fi • Bluetooth 4.2 • USB-C 3.1 port • 2x USB-C Thunderbolt 3 ports • SIM slot • Windows 10 Home • 15.4x320x235mm (HxWxD) • 1.49kg • One-year warranty
www.snipca.com/32402

HOW WE TEST

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

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

FAIR AND IMPARTIAL

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

OUR AWARDS

We award every product that gets five stars our Buy It! stamp of approval. It means we were extremely impressed by the product, and we think you will be too.

Every product that gets a four-star review is given the Great Pick 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 You could get higher performance for less, but the Folio is something different – both stylish and practical

★★★★★

ALTERNATIVE

Dell XPS 13 2-in-1 £1,199 Soon to be replaced, this very similar spec comes with a more conventional 360-degree hinge

BEST BUYS FOR BACK TO SCHOOL & COLLEGE

If you want the best results then it helps to have the best technology! Here are eight products that should be on every student's shopping list

iiyama GB2530HSU-B1 24.5in LCD monitor

PRICE £170 inc VAT
SUPPLIER www.box.co.uk

The iiyama GB2530HSU-B1 24.5in LCD monitor includes an ergonomic height-adjustable stand that can rotate into portrait for working on documents and nailing that essay. Then, with the 1ms response time, 75Hz and Custom Gamer modes, you can nail your foes with some fast-paced online gaming!

HP Tango printer

PRICE £120 inc VAT
SUPPLIER www.johnlewis.com

HP's Tango printer is built for a seamless wireless printing experience from your mobile device. You can print and scan from anywhere with Wi-Fi. You can also print text documents and photos from the cloud, from social media or scan with the camera on your smart device using the HP Smart app (available on iOS and Android). And it can automatically order ink supplies when it's running low, thanks to HP's Instant Ink service.

Cooler Master SK650 and SK630

PRICE SK650, £110 inc VAT; SK630, £140 inc VAT
SUPPLIER www.scan.co.uk

The SK650 and SK630 are slim-profile mechanical keyboards with the perfect balance of "work and play". Featuring Cherry MX low-profile switches that provide a reduced travel distance and actuation point with the same signature durability and precision as a standard red switch.

AOC 22P1

PRICE £130 inc VAT
SUPPLIER www.stonegroup.co.uk

The AOC 22P1 is a practical 21.5in Full HD MVA display with high contrast, multiple inputs (including DisplayPort and USB), integrated speakers and a 130mm height-adjustable stand. It's the ideal desktop display for education.

Dynamode USB3.0 Type-C Dock Station

PRICE £43 inc VAT
SUPPLIER www.scan.co.uk

Bought a lovely slimline laptop only to discover it lacks ports? This inexpensive docking station plugs into a USB-C slot and gives you everything you need, from two old-style USB ports to an HDMI out, from a physical Ethernet jack to a microSD slot. And thanks to a power passthrough, you can use it to power your laptop at the same time.

Dell Inspiron Chromebook 14

PRICE £599 inc VAT
SUPPLIER www.dell.co.uk

A brilliant everyday laptop that's both great-looking and practical, with the star of the show being a high-quality 1080p 14in screen. The stylus tucked into the chassis makes it easy to scrawl down notes in classes or lectures, while a Core i3 processor ensures Chrome OS feels nippy.

Philips 241B8QJEB

PRICE £155 inc VAT
SUPPLIER www.xma.co.uk

Get your best work done with the Philips 24in Full HD monitor. A crisp and vivid high-resolution image gives you the space and clarity to see your work. Features such as height-adjustment, Flicker-free tech and LowBlue mode make work easy on the eyes. And it's easy to switch between the DisplayPort, HDMI and VGA connections thanks to Philips SmartConnect.

Kingston DataTraveler Locker+ G3

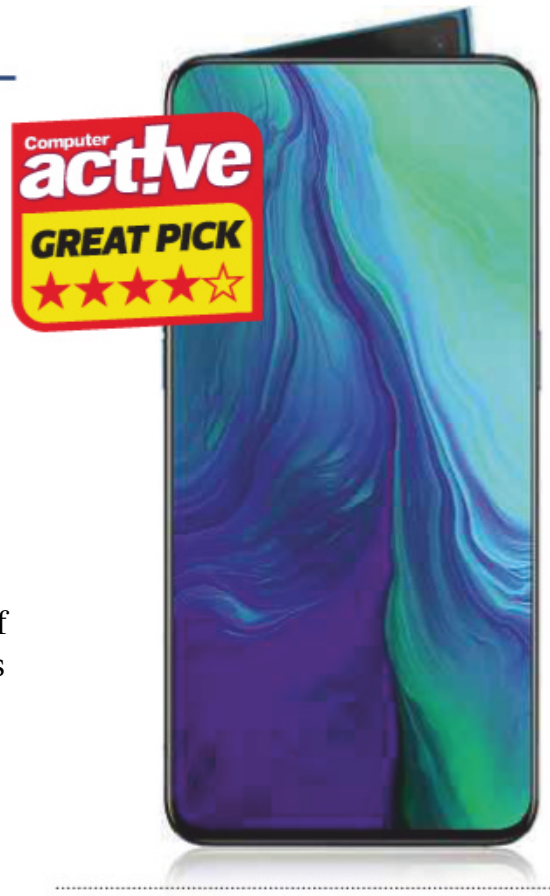
PRICE 32GB, £35 inc VAT
SUPPLIER www.ebuyer.com

Put a lock on your personal data with Kingston's DataTraveler Locker+ G3. It's both a safe and convenient way to secure receipts, bank statements and other sensitive documents with hardware encryption and password protection for a double layer of data security. The DataTraveler Locker+ G3 offers cloud backup as an optional feature to access your data anytime, anywhere. No application installation required.

PHONE | **£700** from Carphone Warehouse www.snipca.com/32462

Oppo Reno 10x Zoom

Close to the best



Most smartphone brands rely on Chinese manufacturing, which couldn't ask for a better showcase than this eye-popping new phone from the market-leading Guangdong Oppo Mobile Telecommunications Corp. A huge AMOLED screen fills the whole front, with no notch. Want a selfie? The motorised camera flips up at a jaunty angle, only to retract when you've finished or, indeed, if you drop the phone. That's a nice touch, but you'll still want to avoid accidents considering this is an all-glass device, available in black or green. Although some of the detailing is a bit fussy, it's a gorgeous piece of hardware.

On the back (pictured below) is a standard wide-angle camera with a bright f/1.7 aperture, an ultra-wide f/2.2 and an f/3 5x telephoto. These have, respectively, 48, 8 and 13-megapixel sensors, but all photos are stored at 12 megapixels (unless you switch to an awkward 48-megapixel mode). The '10x zoom' in its name means 5x optical plus 2x digital telephoto. Still, we were very happy with the pictures, and even 5x zoom on a phone is very practical, even if image quality can't quite match Huawei's P30 or Google's Pixel phones.

Oppo's ColorOS version of Android is cluttered, but everything runs smoothly on the top-end Snapdragon 855 chip. Considering this is a relatively big and heavy phone, we expected good battery life, but 22 hours 30 minutes in our video-playback test was exceptional. The screen, with built-in fingerprint scanner, isn't the brightest or sharpest, and neither its regular nor HDR modes are particularly colour-accurate, but for most purposes, indoors, it looks amazing.

The Reno 10x Zoom is only *officially* available in the UK from Carphone Warehouse, at £700 or on contract. Amazon sellers are knocking around £50 off this and offering a version for £100 less with 128GB of storage and 6GB rather than 8GB of memory, which should still be plenty. This looks a good deal, especially with a microSD slot to add more storage. These imports should work fine in the UK, but we can't vouch for them, although Oppo's warranty is worldwide.

SPECIFICATIONS
6.6in 2340x1080-pixel screen • 48, 13 and 8-megapixel rear cameras • 16-megapixel front pop-up camera • 256GB flash storage • MicroSD card slot • 802.11ac Wi-Fi • Bluetooth 5 • 3G/4G • Android 9 • 162x77.2x9.3mm (HxWxD) • 215g • One-year warranty www.snipca.com/32463

VERDICT Overlook the slightly dim screen, gimmicky styling and customised version of Android, and this is a great camera phone

★★★★★

ALTERNATIVE OnePlus 7 Pro £649 A superb screen and similar camera setup, but only 3x zoom – and ultra-wide pics look distorted

WHAT SHOULD I BUY? We solve your buying dilemmas

Which PC do you recommend for video-based tasks?

Q I'm thinking of replacing my five-year-old desktop PC. I don't play games but do quite a bit of video editing, video conversion and DVD burning. So I would appreciate some advice on choosing a unit with plenty of storage and processing power, a DVD writer, and Windows 10 on SSD.

Tony Pritchard

A The 720p resolution of DVD is low by today's standards: most people are shooting and watching in 1080p, moving to 4K. To stay future-proof, consider a recent Intel i7 (i7-8 or i7-9) or Ryzen 7 (2700 or 3700) processor, though an i5 or Ryzen 5 could be adequate for 1080p. A separate graphics card (GPU) can help with adding effects and rendering playback as you work, but if you do a lot of conversion, go for a fast CPU plus an adequate GPU. Working off a second SSD will speed up editing. Any PC builders will quote for a suitable system, but using PC Specialist's configurator we built a PC with an i7-8700, 16GB memory, 4GB GTX 1650, 240GB SATA and 256GB M.2 SSDs, 2TB hard drive and DVD/Blu-ray writer for £1,069 (www.snipca.com/32475). A similar setup from Overclockers with a Ryzen 7 2700 came to £927 (www.snipca.com/32476, pictured with Raijintek case).

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

MINI PC | **£527** from BT Shop www.snipca.com/32403

Acer Chromebox CXI3

Pillar box

Google's Chrome operating system is much less demanding than Windows, so PCs capable of running it can be built much more cheaply. That means we're used to seeing Chromeboxes at the bottom end of the market, starting at a couple of hundred quid with a basic Celeron processor. If you use one of these regularly for more than just online shopping and checking your email, however, the slow performance can get annoying, and as a home-cinema centre or for games from the Google Play Store, you might need a bit more processing power.

> "If you only need a glorified browser, this is compact and quicker than previous models"

At over 500 quid, this Intel i5 version of the CXI3 is straying into proper PC territory, but it's still relatively affordable and has the advantage of being extremely compact – more like the size of an external hard drive than a PC, and with the option of sitting it flat, standing it up or VESA-mounting it to a monitor or HDTV set. A hard drive is one thing you won't find inside – this model has a 64GB SSD: much too small for a Windows 10 PC, but fine for Chrome OS, which is based on the assumption that you work in the 'cloud'. You can keep files and even some apps on the internal storage rather than accessing them online if you prefer, but a machine installed at home will normally always have internet access anyway.

In our multi-core tests, the laptop-class quad-core i5-8250U processor, accompanied by 8GB of memory, was more than five times as fast as the Celeron 3865U chip used in the cheapest configuration of the CXI3 (£255 from www.snipca.com/32405). That model comes with half the memory and 32GB of storage in the form of slower eMMC, not an SSD. A version with the old but still popular dual-core i3-7100U processor, otherwise similar to the i5, costs £432. We found the i5's integrated Intel UHD Graphics 620 more than good enough for compatible games.

Internal expansion is obviously non-existent, and there are no ultra-fast external ports, but you do get a total of five USB 3.0 and a USB-C, HDMI, and a microSD slot for more storage. Audio is limited to a mic/headphone jack. Fast Wi-Fi is built in, or there's Gigabit Ethernet if your router is nearby.

See our Cover Feature on page 50 for more on mini PCs.

SPECIFICATIONS

1.6GHz Intel i5-8250U quad-core processor • 8GB memory • 64GB SSD • 802.11ac Wi-Fi • Bluetooth 4.2 • 5x USB 3.0 ports • USB-C port • MicroSD slot • HDMI port • Gigabit Ethernet • Chrome OS • 40x151x149mm (HxWxD) • 2kg • One-year warranty
www.snipca.com/32403

VERDICT The best Chromebox we've seen, but pricey for a non-Windows system with average performance

★★★★★

ALTERNATIVE Asus PB60 £598 For £70 more with a six-core i5-8400T chip and 128GB SSD, this mini PC runs Windows 10 Pro

WHAT YOU CAN DO WITH CHROME OS

Chrome OS is still basically a glorified web browser, so to judge how useful a Chromebox would be to you, try spending your whole day in the Chrome browser app on a PC. With services like Google Docs and web app versions of Microsoft Office now available, as well as creative tools like Google Photos and Pixlr, there's quite a lot you can do. But it's not Windows, and many advanced tasks aren't possible. For gaming, Chrome OS is more like a mobile platform, and compatible with Android games, although how playable they are is pot luck.

Chromeboxes will also work with Google's Stadia console subscription service when it launches later this year.

The CXI3 comes with a mouse and keyboard (pictured), but they are rubbish. You could add better ones and any HDMI monitor to complete your system, but Chrome supports multi-touch gestures, so you might want to consider a touchscreen or touchpad. For a living-room system, something like Logitech's K400 Plus Wireless Touch Keyboard would be practical (£18 from Amazon www.snipca.com/32404, but its trackpad is only for cursor control, not gestures.

PC MONITOR | **£408** from Amazon www.snipca.com/32408

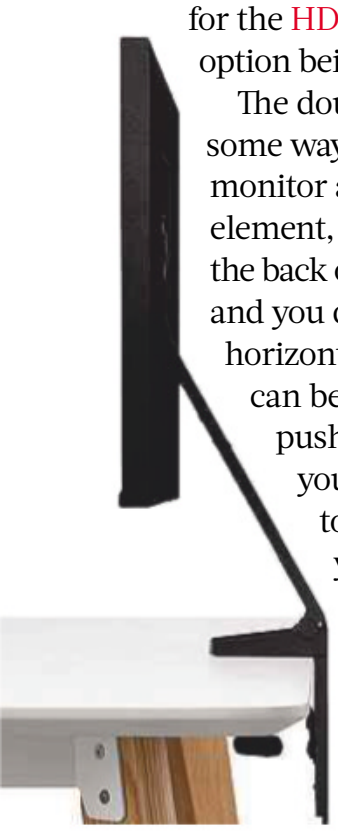
Samsung SR75 4K UHD Space Monitor

A giant leap?

Disappointingly, the Samsung Space Monitor isn't South Korea's answer to the US's Space Force. It's just a PC screen that comes on a desk clamp instead of a stand. This is the 32in version, with 4K resolution to take advantage of all that space. There's also a 27in (£330 from www.snipca.com/32409) with 2560x1440 pixels but a higher 144Hz refresh rate for gamers. The 32in's 60Hz refresh rate is perfectly fine, though, and you get a huge area for your Windows desktop or your favourite films.

> "Saves desk space while adding Windows desktop space"

With 40 per cent more square inches, the larger model makes the most of Samsung's design concept: to minimise the impact of a big screen on your desk space. A slim, square-edged case with extremely narrow bezels minimises its apparent size. It's hinged to the Space clamp on a minimalist metal arm into which you can neatly tuck the cables. A combined power and data cable is included for the HDMI 2 port, the only other option being a mini DisplayPort input.



The double hinge is flexible... in some ways. Unlike with traditional monitor arms, there's no swing element, so you can only clamp it to the back of your desk, not a side edge, and you do need a substantial horizontal lip to clamp it to, which can be up to 90mm thick. You can push the monitor away from you and it'll sit perpendicular to the back of the desk; as you pull it towards you, it gets lower. Whether the height is right when the distance is right depends on the depth of your desk. There's some tilt adjustment too, but that's not really enough. You can't pivot the screen to portrait, and although you can bring the bottom edge right down to the desktop, you can't tip it back very far, nor is it a touchscreen.

At about £70 more than other 32in 4K screens, we hoped for better than average image quality. Our meter found the SR75 could display a wider range of colours than sRGB, but hadn't been calibrated to use this effectively. Accuracy was fine, not great, with a washed-out look that we could only improve by adjusting the gamma setting, which threw the colours further off. With brightness also dropping off up to 18 per cent at the corners, this is a decent screen for general use but not ideal for photo or video editing.

SPECIFICATIONS

32in VA LCD • 3840x2160-pixel resolution • HDMI and mini DisplayPort inputs • 557x625x391mm (HxWxD) • Two-year warranty www.snipca.com/32410

VERDICT It's only slightly overpriced, but the arm isn't as versatile as we'd have liked and it's a shame picture quality isn't better controlled

★★★★★

ALTERNATIVE Samsung LU32J592UQUXEN £340 A similar screen, though not as elegant, with FreeSync; you could replace the plastic stand with an arm

DO I REALLY NEED...

Alexa on everything?

What does it do?

Alexa is Amazon's voice assistant, competing with Apple's Siri, Microsoft's Cortana, Google's Assistant and Samsung's Bixby. She's embedded in the Echo range of smart speakers, but lives in the cloud, on Amazon's servers.

Why would I want it?

Alexa can answer questions, check the weather or sports results, and control 'smart' lighting, heating and security systems. Amazon licenses other companies to offer Alexa 'built in'. Note the distinction between products that can be controlled by Alexa and those that hear your instructions. The latter include some phones and laptops, the Sonos One speaker (see Issue 524) and Orbi Voice, a £279 add-on unit for Netgear's Orbi mesh Wi-Fi.

Despite not having an in-car display solution like Apple's CarPlay or Google's Android Auto, Amazon has also persuaded some car makers to integrate Alexa and recently announced Echo Auto (pictured) – a $50 (probably £50 inc VAT, if it comes to the UK) box that adds Alexa to any vehicle.

What's the catch?

Alexa has a lot of support, but isn't quite as smart as Google Assistant. Who knows which will be the best option in the future? It's annoying to have to pick specific hardware. Sonos promised its One speaker would support Google Assistant as well as Alexa, letting buyers hedge their bets. This may happen by Christmas.

So can I do without it?

Yes: install the free Amazon Alexa app on your smartphone, and you can talk to her there – you just don't get the 'always on' advantage. On some recent Android phones, an Assist App option in Settings lets you make Alexa the default voice assistant. We'd like to see a free choice on all devices.

SECURITY CAMERA | **£279** from Safe www.snipca.com/32487

D-Link mydlink Pro DCS-2802KT

Double sentry

Like Netgear's Arlo, the mydlink Pro wireless security camera requires a separate hub to connect it to your broadband. This kit includes a hub and two cameras, and if you shop around it's no pricier than some standalone units. You can add up to two more cameras at around £135 each.

> "Crystal-clear results and handy home-storage options"

The original Arlo is now cheaper (£230 for the hub and three cameras from Amazon www.snipca.com/32488), but it only shoots at 720p resolution, compared with the mydlink Pro's crystal-clear 1080p with 7.5-metre night vision. That makes the mydlink Pro more comparable to the newer Arlo Pro 2 (£450 for hub plus two cameras from www.snipca.com/32490).

In both cases you can place the cameras inside or out and run them from their rechargeable batteries, with no wiring required. The Arlo Pro 2's batteries can be removed for charging, or if used indoors you can leave them connected to the mains. With the mydlink Pro, you have to pop the camera off its mount and charge it via USB every three to six months (about twice as long as with the Arlo Pro 2), depending on how much use it gets.

These cameras normally record only when they detect motion or noise. Unlike the Arlo Pro 2, the mydlink Pro can't ignore a specified area, such as a pet's cage. You then get a notification in the phone app and can watch live. You could watch at any time, but peeking regularly would quickly run the battery down. You can also trigger a 100-decibel alarm or talk to the intruder over the camera's speaker.

Recordings are stored online for two weeks courtesy of a free Premium subscription, which runs out after a year. After that, clips are only stored for 24 hours. Increasing that to seven days costs a reasonable £2 a month, with options ranging up to £9. Alternatively, you could rely on recording clips to your phone when alerted, or – a useful option – add a microSD card or USB drive to the hub and record to that. Although a burglar might see a camera and steal or smash it, they're less likely to think of the hub.

SPECIFICATIONS

1080p camera with mic, speaker, motion detection and alarm • Infra-red night vision • Hub with microSD card slot and USB • Supports Alexa, Google Assistant, IFTTT • Requires Android 4.4 or iOS 9 or higher device • Requires Wi-Fi connection • Camera 85x66x85mm (HxWxD) • 240g www.snipca.com/32486

VERDICT This isn't the most advanced Wi-Fi security camera, but if you want more than one it works out good value

★★★★★

ALTERNATIVE Netgear Arlo Pro 2 £450 It's much pricier to buy, but seven-day online storage for up to five cameras is included indefinitely

GADGET GRAVEYARD

Devices that never caught on

Sony Clié

What was it?

Launched in 2000, the Clié (pictured) was Sony's range of Palm OS personal digital assistants. At the time, several makers were licensing the operating system originally created for the PalmPilot PDA, creating a market comparable to Android today – but much smaller, because the primitive apps and fussy interfaces of these early pocket computers, with awkward stylus and button input, limited their appeal. Sony gave its Clié devices an edge by adding photo, video and audio features.

Why did it die?

Clié handhelds were still based on tiny, unresponsive screens, and with neither Wi-Fi nor cellular data built in, accessing the web or email required a slow and unreliable Bluetooth connection to a mobile phone. Syncing to the user's PC was a major feature, but it didn't help that Sony chose not to support Macs, a popular choice among affluent users. The rise of Windows Mobile also helped to push Sony out of PDAs. Ironically, the last Cliés looked much like a modern smartphone. The arrival of the iPhone in 2007 quickly kills off PDAs.

NEXT ISSUE

On Sale Weds 11 Sept

PC Specialist Inferno R1
Brand new Ryzen chip and GTX graphics in a £1,199 PC

Dell OptiPlex 7060 Micro
Tiny PC from a big name, from under £500

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Buy It

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Our pick of products that have won the Buy It award

LAPTOP

HP Envy 13
£799 from www.snipca.com/29555
Tested Issue 539

The combination of an eighth-generation quad-core i5 chip and MX 150 graphics makes this an excellent all-round laptop, let down only by the poor colour reproduction of its Full HD touchscreen. Seven-hour battery life is adequate, and it's nicely made.

ALTERNATIVE Dell XPS 13
This premium laptop starts at £1,200, but the best deal is with the brand new quad-core i7-8550 and QHD touchscreen. £1,280 from www.snipca.com/26796

DESKTOP PC

Palicomp AMD Abyss (RYZ6)
£700 from www.snipca.com/30754
Tested Issue 549

With a decent 8GB RX 570 graphics card and a stonking Ryzen 5 2600X processor, this all-round PC shows what Intel and Nvidia have to worry about. Expansion isn't great, but there's a 512GB SSD and 1TB hard drive.

ALTERNATIVE PC Specialist Vulcan S1
An older i7-8700 six-core CPU and new GTX 1660 Ti graphics, plus 16GB of memory add up to solid performance. £999 from www.snipca.com/31779

APPLE iPAD

Apple iPad 9.7in (2018)
£319 from www.snipca.com/27670
Tested Issue 527

Now with a faster processor and supporting Apple's Pencil stylus (£89), this is a brilliant full-size tablet at an unbeatable price. Has 32GB and no microSD slot, so also consider the 128GB version at a still reasonable £409.

ALTERNATIVE iPad Mini 4
At much the same price for 128GB (the only version), the smaller and slower Mini lacks Pencil support. £399 from www.snipca.com/27671

ANDROID TABLET

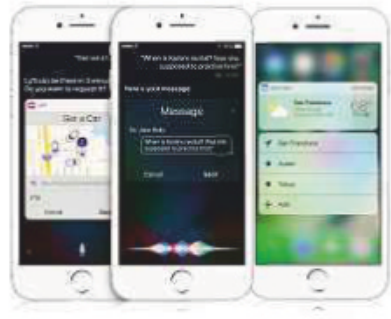
Samsung Galaxy Tab S3 9.7
£397 from www.snipca.com/30707
Tested Issue 501

Now discounted and with a stylus included, this full-size HDR tablet is a better deal than the new Tab S4 (see Issue 540). Apple's faster £319 iPad with optional £89 Pencil is superior, but lacks microSD expansion.

ALTERNATIVE Amazon Fire HD 8
Fewer apps work with Fire tablets, but you get the essentials plus hands-free Alexa. £80 (16GB) or £100 (32GB) from www.snipca.com/29340

APPLE iPHONE

Apple iPhone 7
£449 from www.snipca.com/29359
Tested Issue 486



Two years old but great value at this price, held back only by the mean 32GB of storage, which can't be expanded. An extra £100 gets a huge 128GB. If you want a dual camera, the 8 Plus is a better buy at £699 with 64GB (www.snipca.com/29358), but the XR is superior overall.

ALTERNATIVE iPhone XR
Lacking only the dual camera, this is a fantastic phone that's much more affordable than the £999 XS. £749 from www.snipca.com/29361

ANDROID PHONE

PRICE DROP

Motorola Moto G6
£140 from www.snipca.com/27965
Tested Issue 530

The Moto G line returns to form with this distinctive Gorilla Glass-backed 5.7in phone. Screen quality and processing power may not be top end, but the dual camera is excellent and it feels like a lot of phone for the money.

ALTERNATIVE OnePlus 6T
A high-end phone with incredible battery life and innovative in-screen fingerprint reader at a sensible price. £529 from www.snipca.com/29844

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INTEL i7 SUPERNOVA (COF6) £1599.99

INTEL Core i7 9700K | ASUS PRIME Z390-A | 16GB DDR4 3600Mhz RGB | INTEL 1TB 660P M.2 NVME | SEAGATE 2TB Sata3 HDD | NVIDIA RTX2070 8GB | SilverStone 650W PSU | Windows 10 or 10 Pro

AMD ABYSS (RYZ6) £699.99

AMD RYZEN 5 2600X | ASUS TUF B450-Plus | 8GB DDR4 2400Mhz | INTEL 512GB 660P M.2 NVME | SEAGATE 1TB Sata3 HDD | AMD RX 570 8GB | FSP 450W PSU | Windows 10 or 10 Pro

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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 Aura H2O This 8GB waterproof reader is a good alternative but can't play audiobooks. £150 from www.snipca.com/24473

SECURITY SOFTWARE

Kaspersky Internet Security 2019
£16.99 from www.snipca.com/21532
Tested Issue 516

Kaspersky Internet Security has won our past nine antivirus tests and the 2019 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, three-device licence for just £34.99.

ALTERNATIVE Norton 360 Deluxe Almost as good as Kaspersky, but blocks more legitimate software. £15 from www.snipca.com/32069

PHOTO EDITING

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

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

ALTERNATIVE Xara Photo & Graphic Designer For all-round design and drawing plus photo filters, this affordable app has a lot to offer. £40 from www.snipca.com/26514

PC MONITOR

AOC Q2778VQE
£187 from www.snipca.com/25508
Tested Issue 468

It comes with no extras, such as built-in speakers or a USB hub, but this 2560x1440 panel gives you a full 27in screen with excellent contrast and colour accuracy at a very reasonable price. It's a little laggy for gamers, but there's no ghosting on motion.

ALTERNATIVE Philips Brilliance 241B7QPJKEB With a great picture, stylish design, speakers and webcam, this 24in Full HD IPS is an excellent smaller screen. £185 from www.snipca.com/26850

ROUTER

D-Link DIR-882 Exo AC2600
£79 from www.snipca.com/30708
Tested Issue 534

There are faster routers with more features, but this simple, compact unit covers the basics (without an ADSL modem) at a bargain price. USB 2.0 and 3.0 ports let you share drives, and media streamers are supported.

ALTERNATIVE Synology RT2600ac Comprehensive sharing features (including USB 2.0 and 3.0 and SD card), controls and plenty of add-on apps complement excellent long-range performance. £220 from www.snipca.com/30710

PRINTER

Canon Pixma TS6150
£124 from www.snipca.com/28430
Tested Issue 533

Modest speeds, no ADF and higher than average running costs are among its flaws, but crisp scans and excellent print quality on all types of documents – photos, plain text and solid-colour graphics – make this a great choice as a do-it-all home printer at a fair price.

ALTERNATIVE HP OfficeJet Pro 6960 Decent speeds, plenty of features (including automatic document feed) and reasonable running costs make this a solid buy. £69 from www.snipca.com/28483

COMPETITION

Win a...
Netgear Orbi Outdoor RBS50Y Wi-Fi extender

Winner of a *Computeractive* 'Great Pick' award in Issue 555, Netgear's Orbi Outdoor RBS50Y extends your Wi-Fi into your garden, giving strong signals outside your home and works with every router. It has excellent specifications, with six antennas and is rated AC3000 for its of 400Mbps and 866Mbps networks (on the 2.4GHz and 5GHz bands respectively).

The Orbi performed exceptionally well in our tests, hitting speeds over 450Mbps, much faster than we've seen with other equipment.

If you add the RBS50Y to the three-box Orbi Ultimate Whole Home Mesh Wi-Fi RBK53 system (£410 from Amazon, www.snipca.com/31687), you'll guarantee an extremely fast signal throughout a large property.

To enter, email your home address to **cacomp@dennis.co.uk** with 'Orbi' in the subject line by midnight 10 September. Good luck!

You can buy the **Netgear Orbi Outdoor RBS50Y Wi-Fi extender** for £250 from Amazon (www.snipca.com/31688). For more information on Netgear's products, including its Nighthawk range of routers, visit www.netgear.co.uk and follow @NETGEAR_UKI on Twitter.

NETGEAR

MESH ROUTER

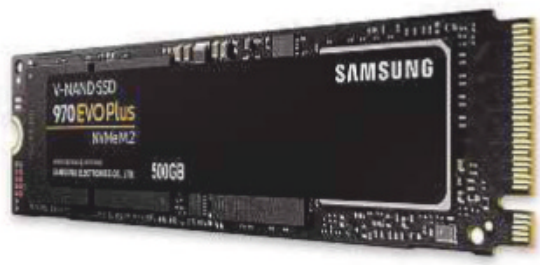
BT Whole Home Wi-Fi
£160 from www.snipca.com/26990
Tested Issue 496

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 Google Wifi
It's technically less powerful, and two dishes cost more than BT's three, but this system works well and has a great app. £129 from www.snipca.com/26989

SOLID-STATE DRIVE

Samsung 970 Evo Plus 500GB
£100 from www.snipca.com/31265
Tested Issue 552

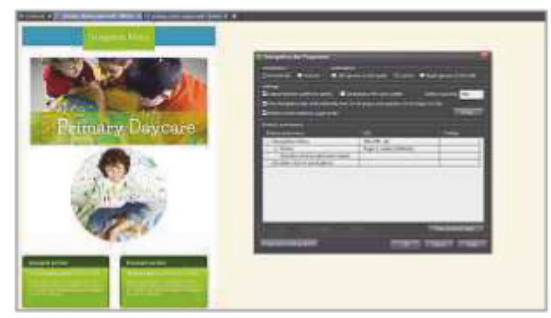


Although its price has fluctuated since we tested it at £99, this is a very fast (over 3GB per second) M.2 SSD unfazed by tests that make others slow to a crawl. Also consider the Adata XPG SX8200 Pro if you find it a bit cheaper.

ALTERNATIVE Crucial MX500 500GB
As fast as an SSD can get in the traditional 2.5in SATA format, this is a great-value upgrade. £61 from www.snipca.com/30188

WEB DESIGN

Xara Web Designer Premium
£70 from www.snipca.com/29294
Tested Issue 453



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

ALTERNATIVE Incomedia WebSite X5 v13 Evolution It may feel basic, but this program outputs efficient HTML code and responsive pages. £39 from www.snipca.com/31179

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Issue 561

Workshops & Tips

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

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HOW TO...

Add USB-C support to your PC

by Nik Rawlinson

What you need: USB-C adapter or expansion card
Time required: 30 to 60 minutes depending on your option

The world is moving to USB-C, and if your computer is a couple of years old, it's already falling behind. USB-C (also known as USB Type-C) is between 830 and 6,600 times faster than the first-generation USB plugs and cables. Even the so-called SuperSpeed+ USB 3.1 standard, which seemed inconceivably fast when launched just five years ago, only runs at a quarter the speed of USB-C.

Of course, if all you're doing is connecting your phone to charge it, you might not notice how fast it's working. But if you're streaming video from an external drive or editing a home video, you can enjoy higher resolutions without stumbling or stuttering. Even Windows should feel more responsive when using USB-C because it won't need to wait for large files, like complex spreadsheets or multi-layered images in Photoshop or PaintShop Pro, to finish writing to a drive and free up system resources.

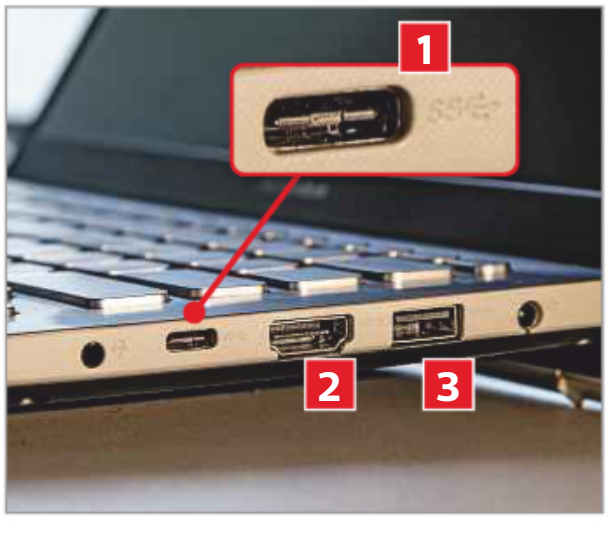
In this issue, we'll show you how you can add USB-C to your existing PC, so you can use the latest tech today, without having to buy a new computer.

At the same time, however, don't panic: your existing devices aren't going to become obsolete overnight, so don't rush out and replace them any time soon. You'll still be able to use your external hard drive, and wired keyboards and mice for years to come, but it makes sense to look to the future. It just means any devices you do buy will be built to the latest specification, and have the potential to last far longer, ultimately delivering better value for money.

1 Check whether you already have USB-C

USB-C is distinctive. Where USB 1.0, 2.0 and 3.0 plugs were roughly half- by quarter-inch rectangles with four connectors inside, USB-C is an oval (see main image above), around half the size of its predecessors, with 24 pins around the edge, facing the centre.

Like previous USB standards, it can charge connected devices as well as carry data but – and this is a real bonus if you're constantly fiddling around behind your PC – the pins are rotationally symmetrical. This means it's impossible to plug it in upside down. Whichever way you insert it, it will fit.



USB-C ports are oval and reversible, letting you plug in cables whichever way you're holding them

Better yet, the same plug appears at either end of the cable which means, as it becomes more common, you'll need to keep fewer cables to hand for plugging in different devices.

So, do you have USB-C already? Check the sides and back of your laptop, or the ports on the front and back of a desktop PC, for an oval connector, 8.4mm (0.33in) by 2.6mm (0.1in), with a horizontal tongue at its centre. You may see a forked USB symbol beside it, possibly accompanied by the letters SS (for SuperSpeed). Our photo shows an oval USB-C port 1, plus bigger ports for HDMI 2, and USB 3.0 3.

2 Buy a USB-C adapter

If you don't already have a USB-C port, adding one is as simple as using a converter. You can buy a USB 3.0-to-USB-C adapter on Amazon for less than £6 (www.snipca.com/32308) and, with USB 3.0 plugs being compatible with sockets that conform to earlier standards, it should work on any of your existing ports (pictured below).

Another solution is to buy a USB 3.0-to-USB-C cable, which has a regular USB plug on one end and a USB-C plug at the other. This will be particularly useful if the USB-C device you want to connect didn't come with its own cable in the box.

When connecting either of these, if you have a range of USB ports on your computer, check each one and note the colour of the plastic connector inside the sleeve. If it's blue, you have a USB 3.0 or 3.1 port; anything else is older, and slower. When using an adapter, you'll never achieve the full speed potential of USB-C because you'll be limited by the maximum speed of the port you're adapting.

To give you an idea of the difference your choice of port makes, we hooked up a 500GB Kingston SSD using a variety of internal ports, and an adapter. We then ran a series of speed tests using CrystalDiskMark (www.snipca.com/32315), reading and writing data in 1GB blocks, and repeating each test five times to gauge average throughput in each instance (see table below for our results).

Buying an inexpensive adapter is a simple way to add USB-C support to your PC

As you can see, while the write speed when connected to a USB-C port was only slightly faster than when connected to 3.1, they were both much faster than USB 2.0. The differences in read speed are even more significant with every advance in technology, even when using an adapter. There was a 500 per cent improvement from USB 2.0 to USB 3.1, and an almost tenfold increase with USB-C direct.

So, while these are the simplest solutions – and may be your only option if you have a laptop or all-in-one computer – they're not necessarily the smartest, as without a dedicated USB-C port you won't enjoy the full speed benefits afforded by the new interface.

SPEED TEST: USB 2.0/USB 3.1/USB-C

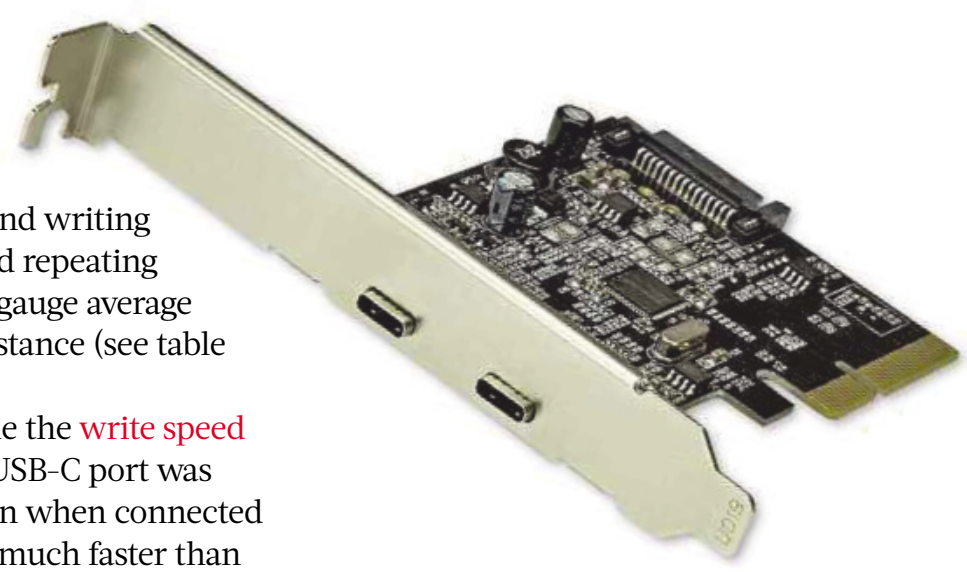
	READ SPEED Megabytes/sec (MB/s)	WRITE SPEED Megabytes/sec (MB/s)
With adapter connected to a USB 2.0 port	42.25	45.14
With adapter connected to a USB 3.1 port	225.20	320.50
Using USB-C port without adapter	384.20	322.80

How I use USB-C

I split my time across three different platforms: an Asus laptop running Windows 10, a Mac mini running macOS and a pair of Raspberry Pis running Raspbian. While all of the work I do on the Raspberry devices is saved to the web, I frequently need to swap large files between the laptop and Mac, for which an SSD connected via USB-C is by far the fastest option, as both the Mac and the laptop have USB-C ports built in. I do have a USB-C-to-USB 3.0 adapter, which I could theoretically use to connect the drive to the Raspberry Pi 4 (the first model to integrate USB 3.1 ports). But it would probably be overkill because I use the Pi primarily as a little writing gadget for accessing Google Docs and Sheets.

Nik Rawlinson

What difference has USB-C made to your computing? Please let us know: letters@computeractive.co.uk



You can add USB-C support to your PC by inserting StarTec's dual-port card

3 Add a USB-C expansion card

If you have a regular desktop computer with a removable cover, which gives you access to the motherboard, you can take full advantage of USB-C's maximum potential speed.

A dedicated USB-C expansion card, which connects directly to the motherboard, doesn't have to use a slower USB port as an intermediary. You'll need a spare PCI Express slot with external access, a screwdriver, and a budget of around £40, which will buy you a dual-port StarTec card (which has earned favourable reviews on Amazon: www.snipca.com/32313, pictured above).

The card comes with both high- and low-profile brackets for full-size and half-height PC cases, but before buying, open your computer and check that you have the requisite slots. From top to bottom, the image above right shows PCI Express x4 1, PCI Express x16 2, PCI Express x1 3, a second PCI Express x16 4 and a conventional PCI Express port 5.

To install the StarTec card, you need at least a PCI Express x4 slot, although

18+

WHAT IS AVAXHOME?

AVAXHOME-

the biggest Internet portal, providing you various content: brand new books, trending movies, fresh magazines, hot games, recent software, latest music releases.

Unlimited satisfaction one low price
Cheap constant access to piping hot media
Protect your downloadings from Big brother
Safer, than torrent-trackers

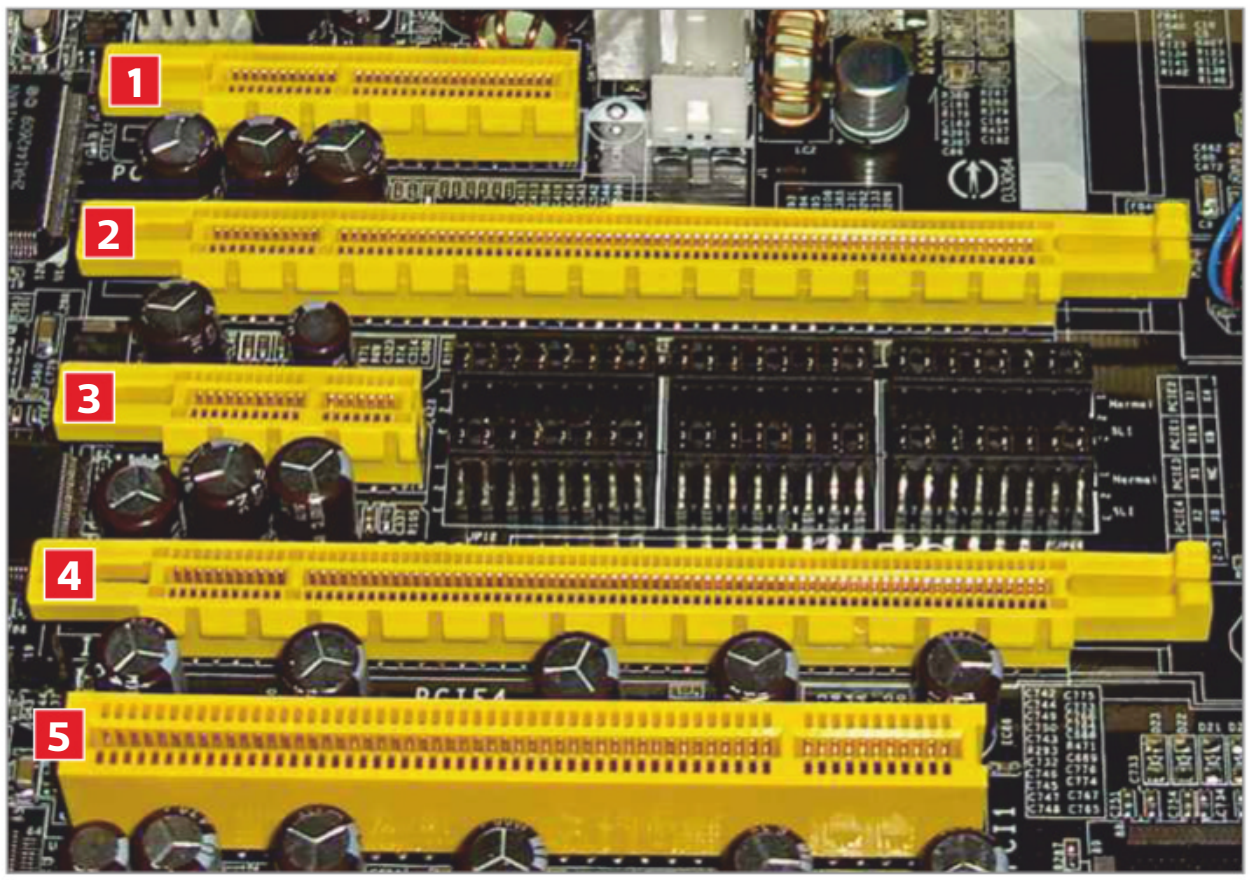
18 years of seamless operation and our users' satisfaction

All languages
Brand new content
One site

AVXLIVE.ICU

AvaxHome - Your End Place

We have everything for all of your needs. Just open https://avxlive.icu

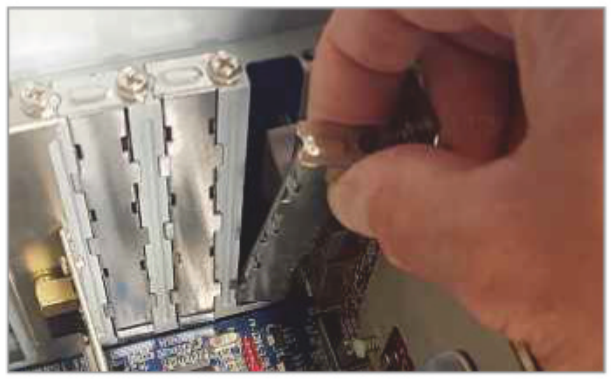


This motherboard has five different kinds of PCI interface onboard, three of which can handle a PCI Express x4 expansion card

if your motherboard is similar to the example pictured above you could install it in the first (x4), second (x16) or fourth (x16) slots. Only the first and fifth would be incompatible. This will be welcome if any cards you already have installed are blocking easy access to your PCI Express x4 slot, because it will save you the job of rearranging your PC's internal components.

Before handling anything inside your PC, or pressing the card into place, earth yourself by touching a large metal object for several seconds. Furthermore, make sure your PC is switched off, unplugged and cool: internal components can become very hot in use.

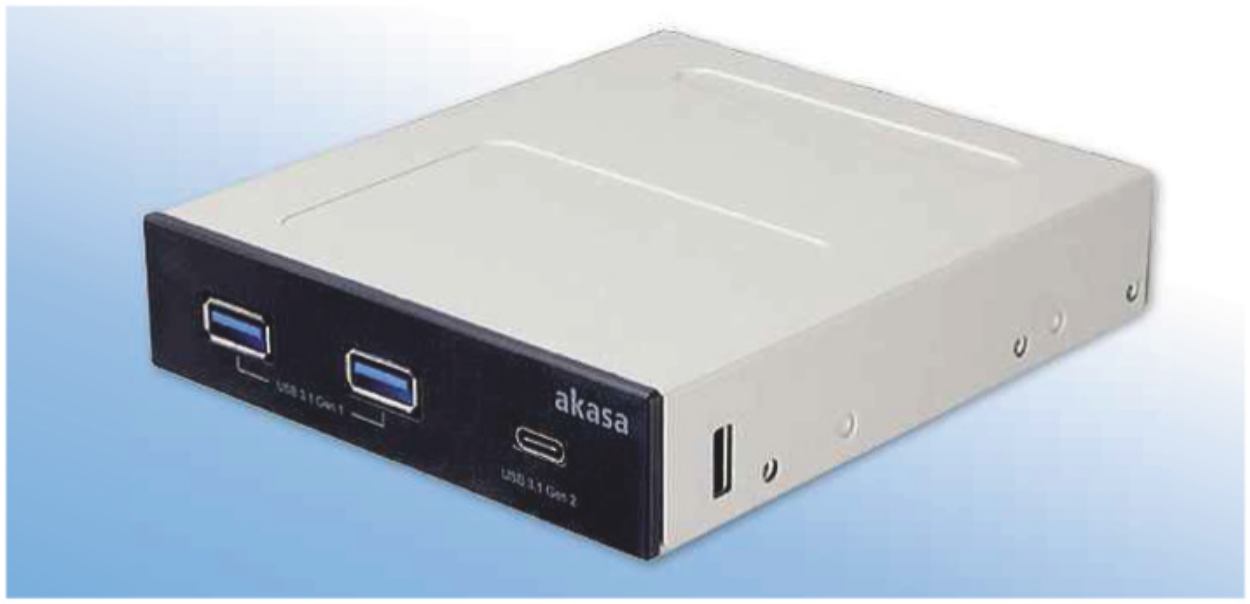
You'll need to remove a blanking plate from the PC's case beside the slot you plan on using (see photo above right).



Remove the blanking plate beside the slot you're using for your expansion card

Keep hold of this so that you can replace it if you ever remove the card, or you'll be left with a large opening through which the computer's fans can suck in dust.

When seating it, be firm with the card, but don't force it if it doesn't want to settle into the slot, as any difficulty suggests you have it in the wrong position. Settle the folded-over portion of the metal bracket, through which the ports protrude, on to the framework of the case, and use the screw that previously secured the blanking plate to hold it firm. This last point is particularly important for any expansion card hosting sockets, because frequently inserting and removing external devices can stress the motherboard connection if it's not secure, potentially unseating the card or shorting the contacts.



The Akasa AK-ICR-32 sits in your PC's hard-drive bay to provide a USB-C port at the front as well as two ports compatible with USB 3.1

4 Add USB-C to the front of your PC

Alternatively, if you have a spare hard-drive bay, you can use this to supplement your existing USB ports, while keeping your USB-C connectors within easy reach. USB front panels with support for USB-C are still few and far between, but if you want to head down this route you can pick up the Akasa AK-ICR-32 for £19 on Amazon (www.snipca.com/32317).

WHAT SHOULD WINDOWS 7 & 8.1 USERS DO?

Windows 10 has supported USB-C since day one, but it's not available on previous versions. However, third-party drivers make it possible to add USB-C support to earlier versions. StarTec claims that the expansion card we mention on page 36 is compatible with Windows 7 and later.

If you're using an older operating system, we'd recommend holding off on upgrading to USB-C until you're ready to buy your next PC, because you may have trouble finding a device that supports your current configuration. You're also less likely to enjoy the speed benefits that USB-C offers when using an external adapter because your integrated ports may comply only with the USB 2.0 standard or earlier.

When Windows 7 launched nine years ago, it initially lacked support for USB 3.0, even on computers that sported the necessary hardware. This means any PC on which Vista or an earlier version of Windows was preinstalled will also have lacked support for the standard.

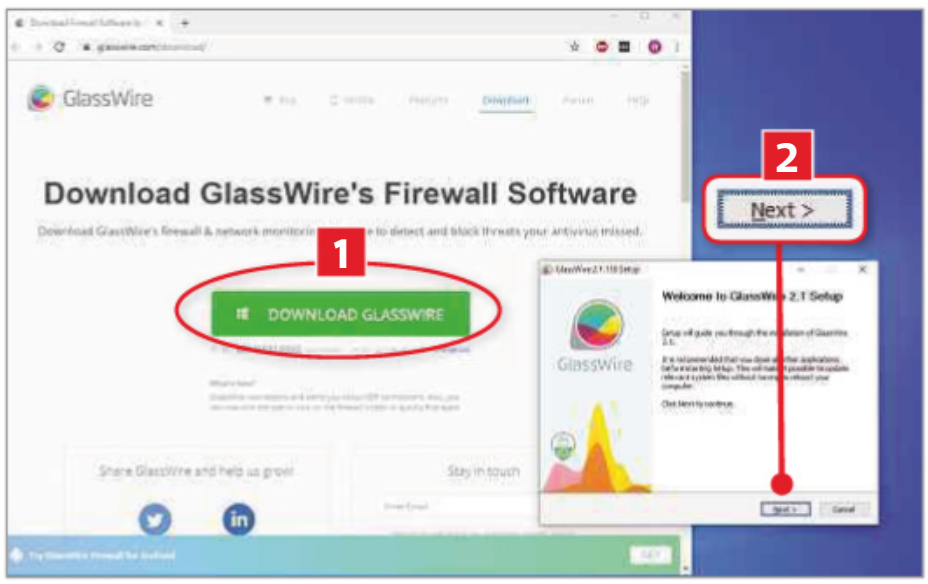
Block programs that secretly use your internet

What you need: Windows 7, 8.1 or 10; Glasswire
Time required: 20 minutes

Some programs on your computer will use your internet connection to communicate with their developers – a process known as 'phoning home'. This is usually the program just checking for updates or sending anonymous usage data (most programs let you turn this off in their settings). Less reputable software, however, may carry on using your connection, even if you tell it not to – sometimes to target adverts at you. Here's how to identify these rogue programs and stop them phoning home.

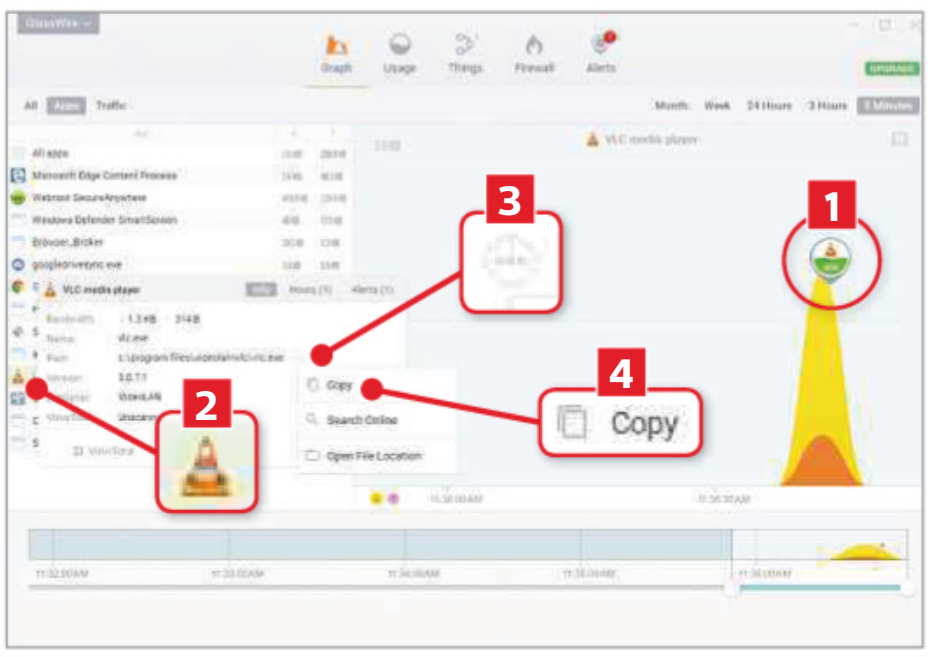
STEP 1

There are several tools that will help identify which programs are using your internet connection. Our favourite is Glasswire because it's free and has a clear, unfussy design. Glasswire also includes a firewall that can block programs, but as Windows has its own, very capable firewall, we'll use that to block them once identified. First, download Glasswire 1 from www.snipca.com/32442, then follow the installation instructions 2 and open the program.



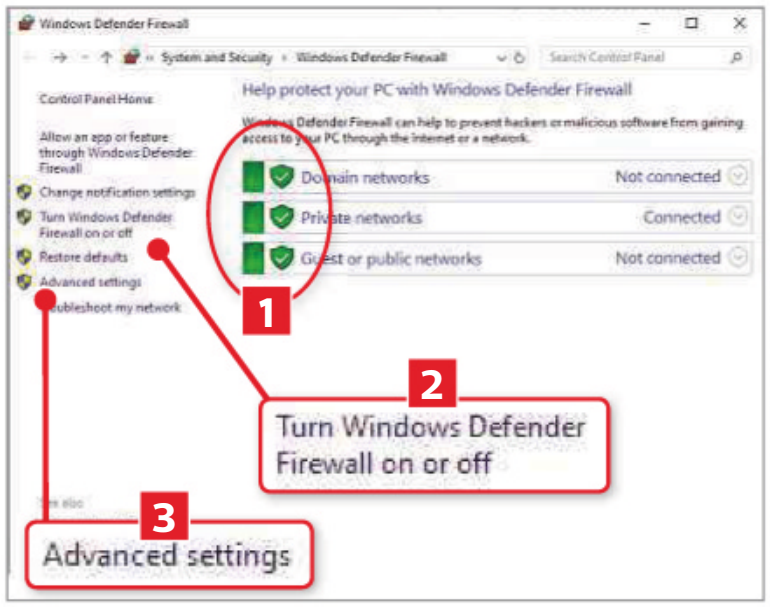
STEP 2

Select the Graph option 1. Any activity in the graph indicates that your internet connection is being used. Windows tools frequently use it to check for updates, so to narrow the results to just programs, select the Apps filter 2. All software currently using your connection are displayed in the left-hand pane 3. Use the buttons top right to change the graph's timescale - selecting '5 minutes' 4 shows a real-time view of all activity. When Glasswire detects a program using your internet connection for the first time, it displays an alert at the bottom right of your desktop and in the graph. You can also view all alerts byclicking the Alerts option 5.



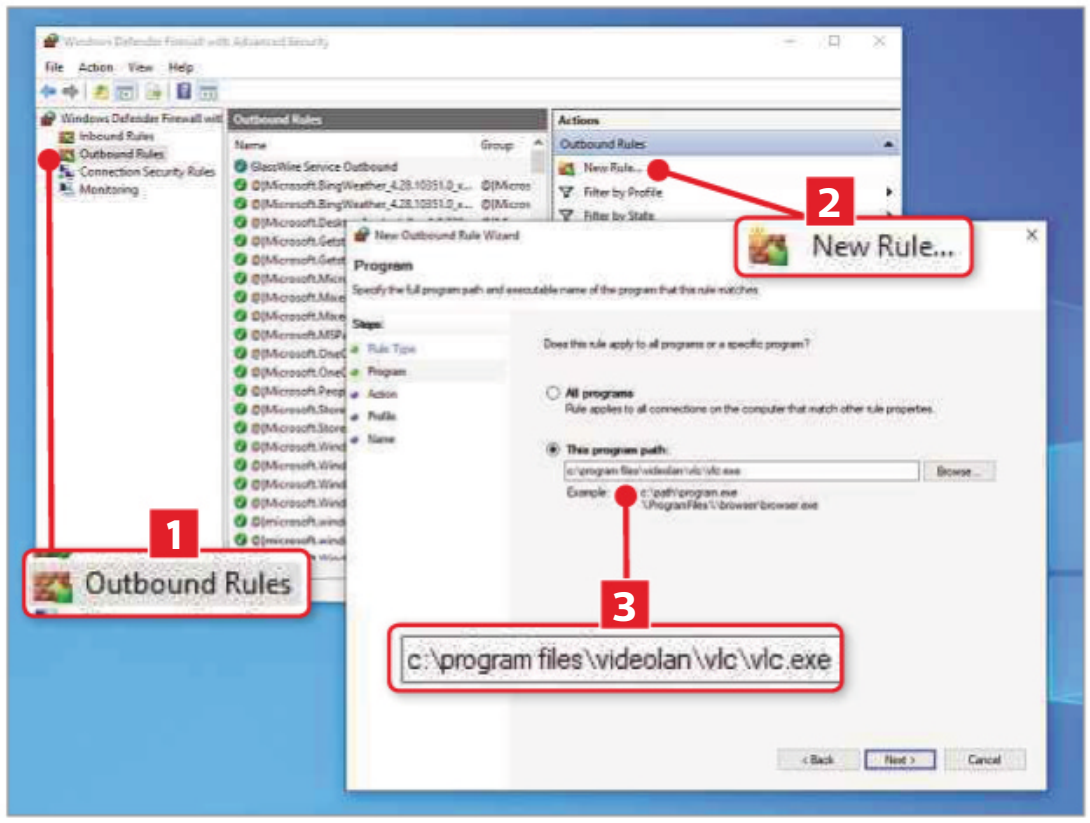
STEP 3

For our example, we've installed and run the open-source video player VLC (www.videolan.org). Within a few seconds, Glasswire shows an alert 1, indicating that VLC is accessing the internet for the first time (VLC checks for updates periodically). Helpfully, you can switch this off in VLC's settings, but not all programs let you do so. We'll show you how to block VLC using Windows Firewall. First, we need to find the location of the VLC executable (exe) file. Hover over the VLC icon 2, click the three small dots to the right of the Path entry 3, then select Copy 4.



STEP 4

Click Start, type windows firewall, then select Windows Defender Firewall in the list of results. The green tick in each of the network types 1 indicates the firewall is switched on. If any show a red cross, click 'Turn Windows Defender Firewall on or off' 2, then select 'Turn on Windows Firewall' in each of the network types. To create the new firewall rule, click 'Advanced settings' 3.

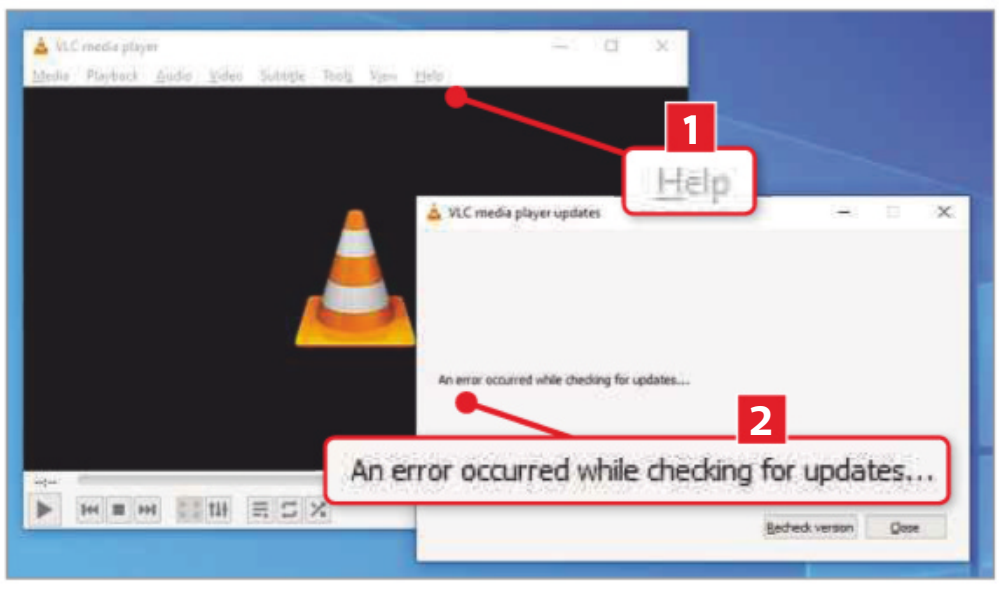


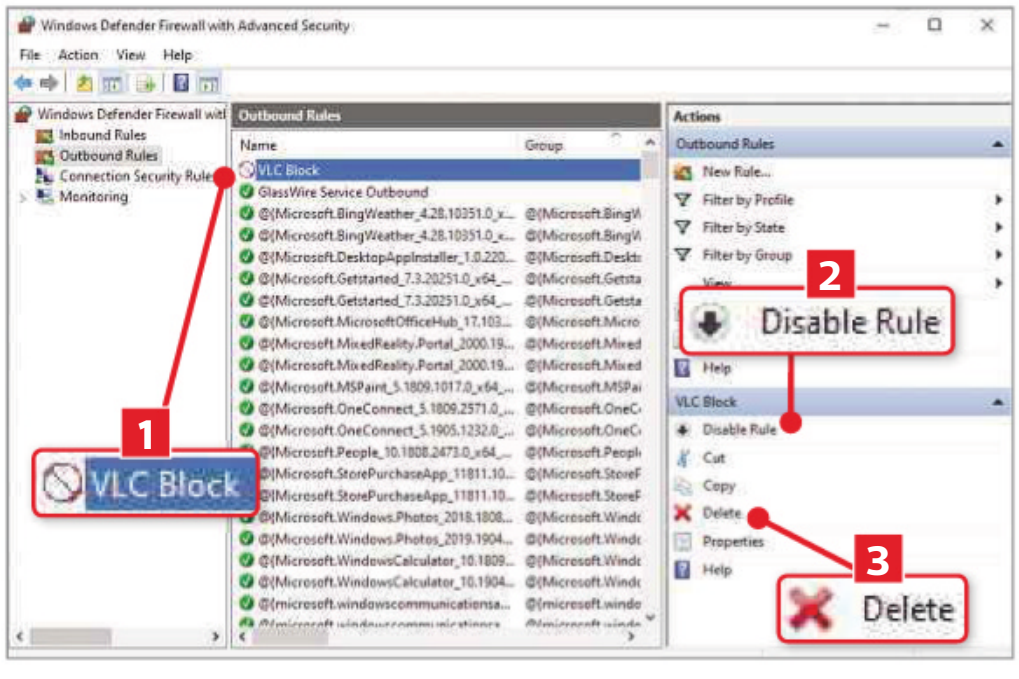
STEP 5

In the window that opens, select Outbound Rules 1 on the left, then 'New Rule...' 2. The New Outbound Rule window will open. Leave the rule type set as Program, then click Next and, in the 'This program path' box 3, press Ctrl+V to paste the program's folder path as copied in Step 3, then click Next. Leave the next option set as 'Block the connection', then click Next twice, give the rule a name (in this case, we chose 'VLC block'), then click Finish.

STEP 6

To test that the new firewall rule is working, return to the Graph view in Glasswire. Next, run VLC as before and keep an eye on the activity in Glasswire. Unlike earlier, you shouldn't notice any internet activity from VLC. To further check, switch to the VLC window, click Help 1, then 'Check for Updates...'. You should now see a message telling you an error occurred while checking 2. This indicates the firewall rule successfully blocked VLC's attempt to use your internet connection.





STEP 7

If you decide you no longer want to block a program (for example, if this stops it working properly), you can turn off the firewall rule. Return to the Outbound Rules section of Windows Defender Firewall (see Steps 4 and 5), then locate the rule you created. It should be at the top of the list - VLC Block in our example 1. The red circle with a line through it next to the entry indicates that it's currently active. Click once on the rule to select it, then click Disable Rule 2 in the Actions pane. Alternatively, if you want to remove the rule permanently, select Delete 3.

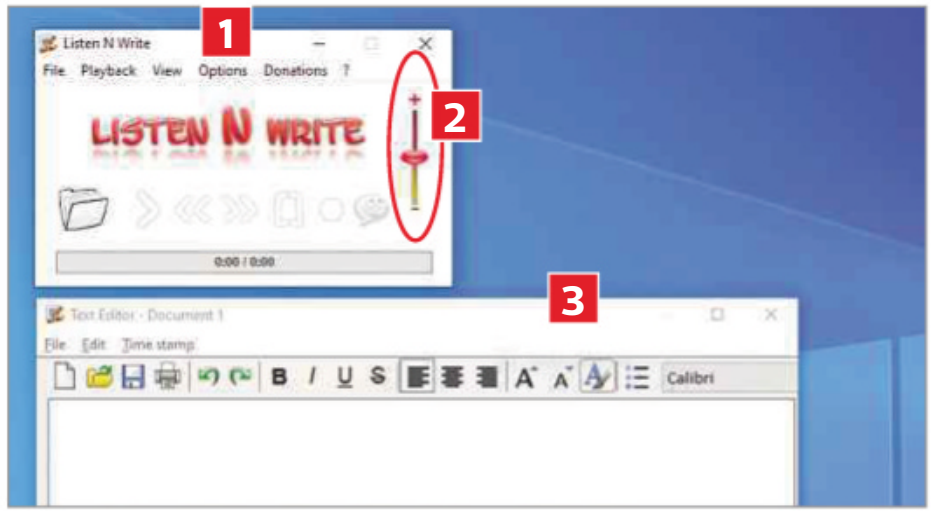
Quickly transcribe long audio recordings

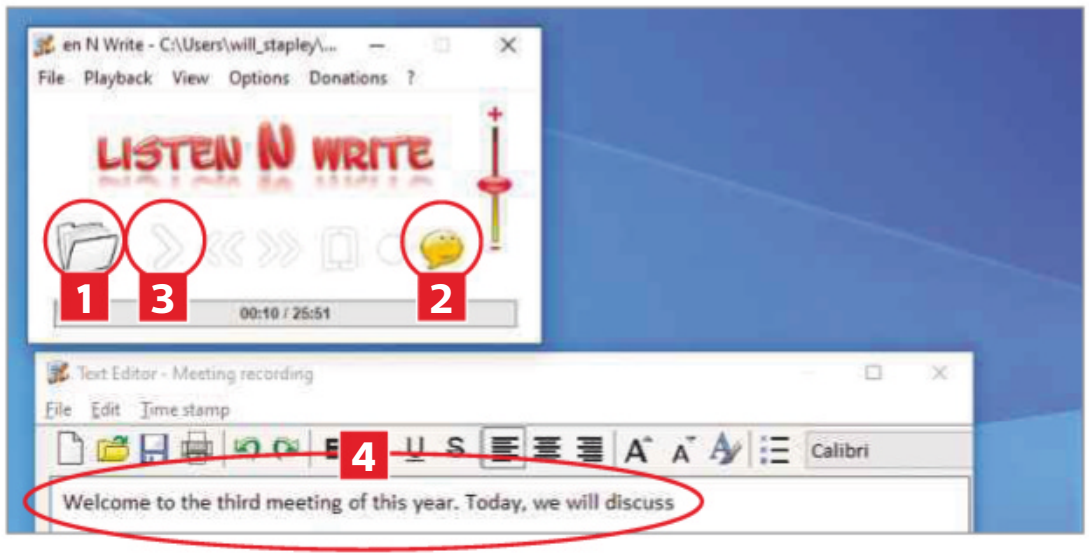
What you need: Windows 7, 8.1 or 10; Listen N Free
Time required: 5 minutes (plus transcription time)

Whether you want to transcribe detailed instructions from a podcast or create minutes from a recording of a club meeting, trying to keep up with the audio while typing is never easy. Tools like Google's new Live Transcribe (see page 60 for more on this) provide a quick way to turn whatever is said in audio recordings into text, but if the sound quality is poor errors can creep in, meaning you'll have to correct the transcription. Listen N Write is a small, free tool that makes it easy to transcribe recordings yourself by pausing the audio as you type.

STEP 1

Download Listen N Write from www.snipca.com/32411. Open the ZIP file, extract it to a folder on your PC, double-click the exe file, then follow the setup instructions. Once open, Listen N Write displays two windows. The audio player window 1 lets you play and pause the audio recording and change other settings (including the volume 2). The second window 3 is a basic word processor, in which you type your transcription. Once you've finished, you can simply copy and paste your text into a program of your choice.



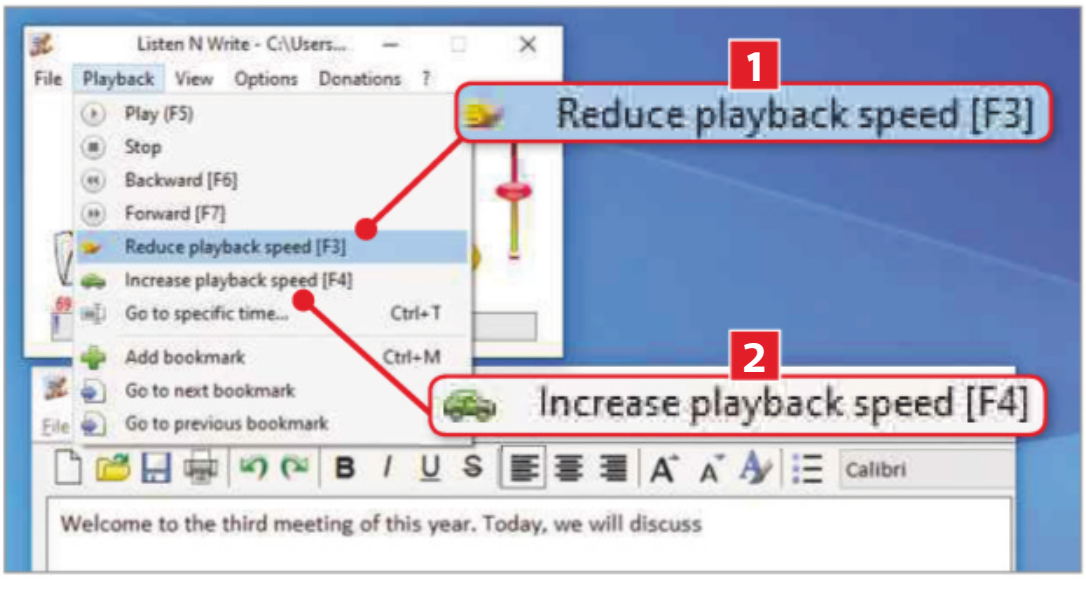


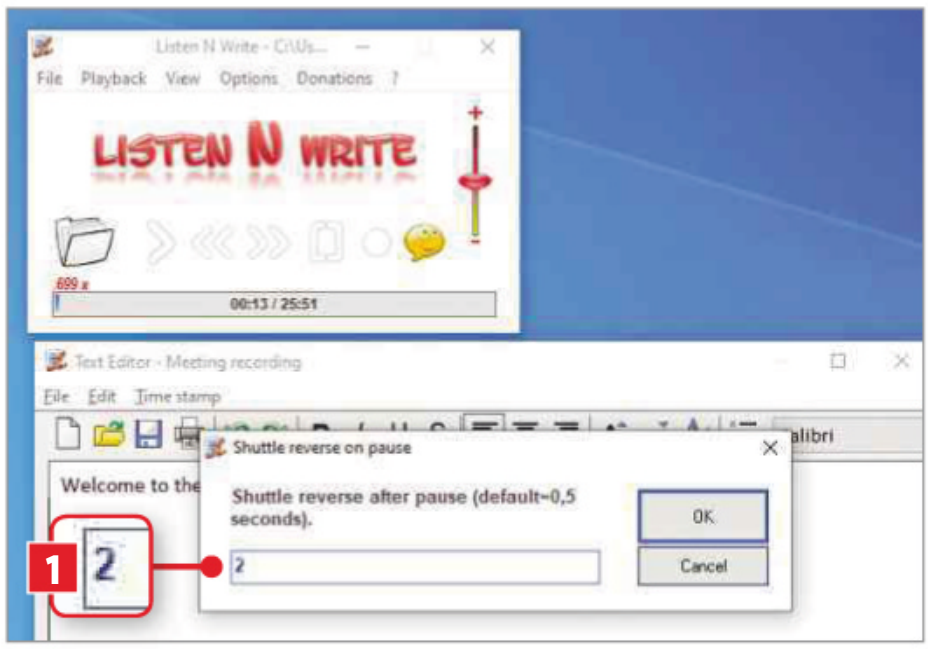
STEP 2

Next, click the folder icon 1 and navigate to your audio recording. Make sure Dictation mode is turned on by ensuring the speech bubble 2 is highlighted yellow (if it's not, click it), then click the Play button 3 or press F5 to start playback. As soon as you start typing in the word processor window 4, Listen N Write will pause the audio. When you stop typing, it will restart playback, and so on.

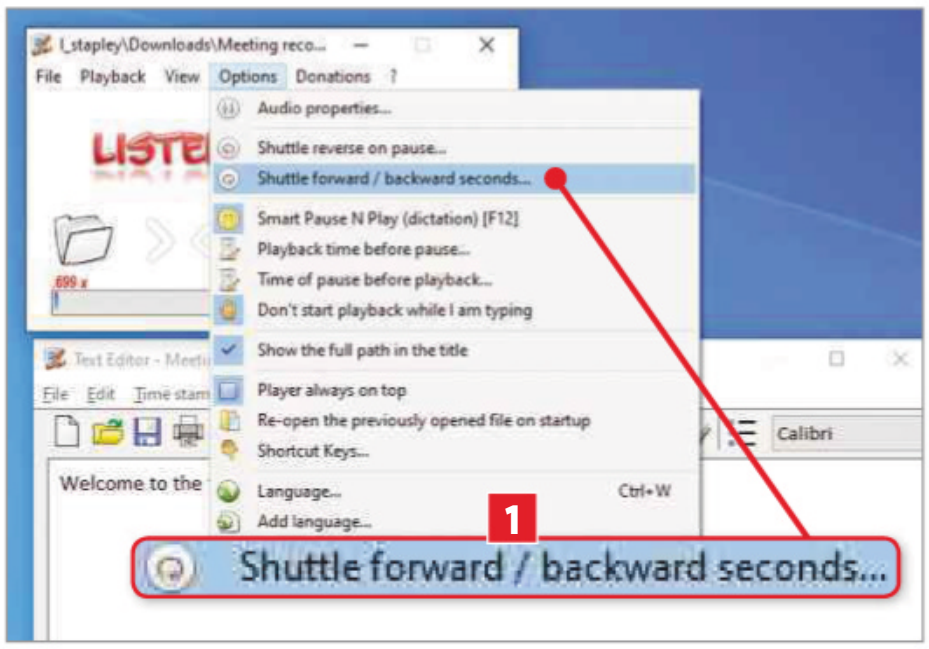
STEP 3

If the person in your recording speaks fast or is difficult to understand, try slowing the audio down by clicking the Playback menu then selecting 'Reduce playback speed' 1 or by pressing F3 (repeat this to slow down the audio further). Alternatively, if you're a fast typer, you can increase the speed of the audio by clicking Playback, 'Increase playback speed' 2 (or pressing F4).

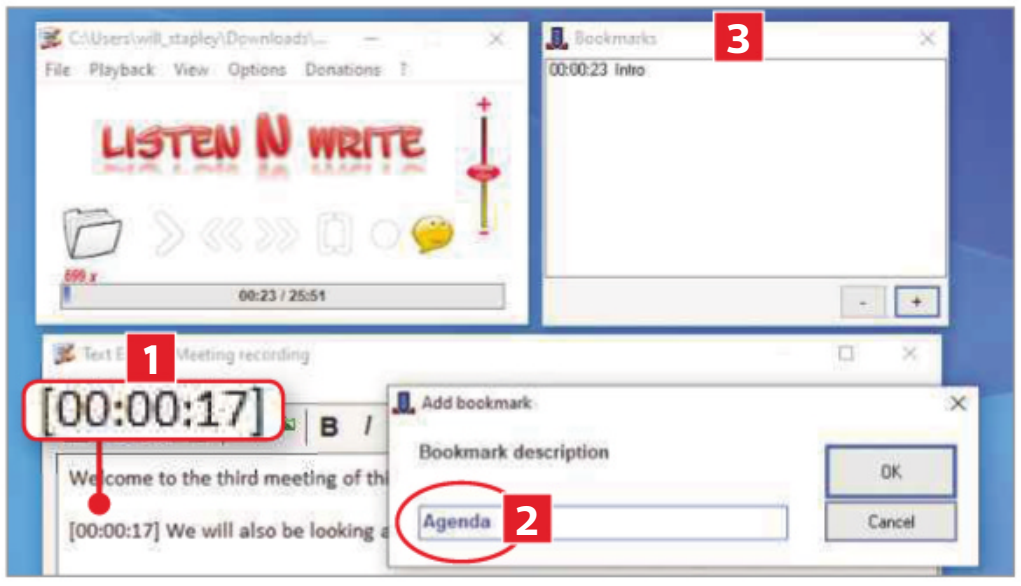




STEP 4 By default, when you stop typing Listen N Write rewinds the audio by 1.75 seconds before restarting playback – this overlap is designed to help you keep track of where you are. If you find this is too short, click Options, 'Shuffle reverse on pause...', then enter the number of seconds you want the audio to rewind. We found increasing this to 2 seconds **1** worked best for us, but try a few different settings to find out what suits you.

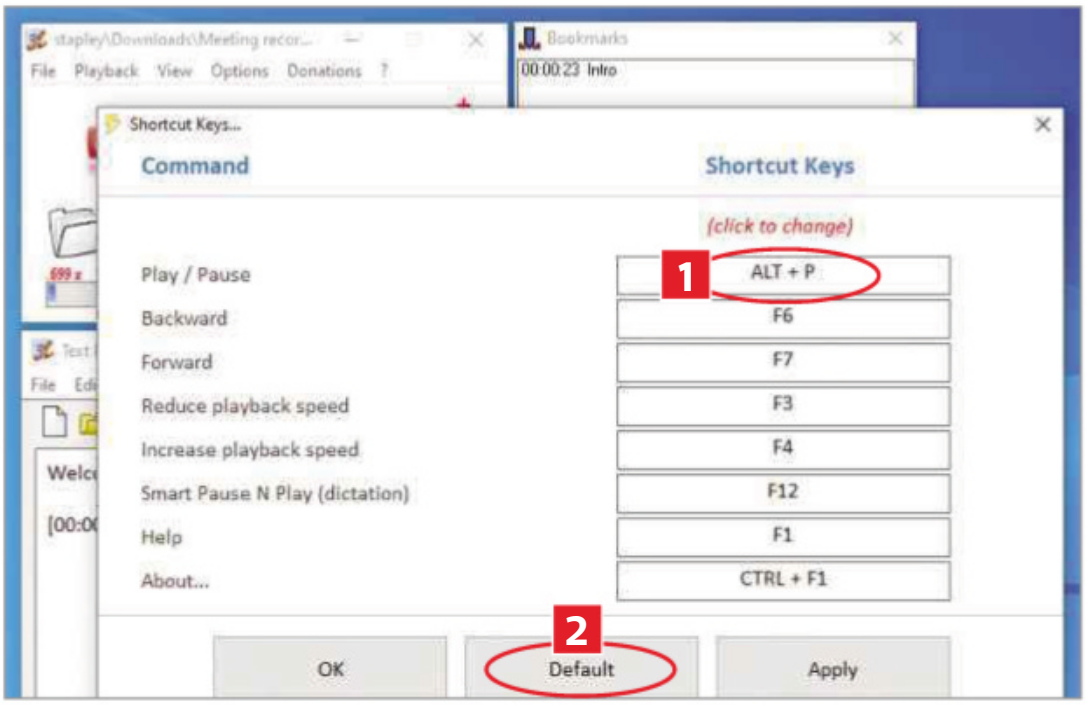


STEP 5 If you only want to transcribe certain sections of an audio file, you can quickly navigate to the relevant points using the '>>' (forward) and '<<' (rewind) buttons in the audio player window (or press the F6 and F7 keys respectively). The audio will move forward or back by 3 seconds – to change this, open the Options menu, select 'Shuttle forward / backward seconds...' **1**, then enter a new value in seconds. You can also jump to a specific point in the recording by pressing Ctrl+T and entering the time point.



STEP 6 You might find it useful to mark your text with timestamps (for example, to highlight sections where you're not completely certain what has been said and where you may need to relisten to the audio). Press Alt+T at any point, and the current time point of the recording will be displayed in minutes and seconds **1** in your typed text. Alternatively, you can create a bookmark that lets you jump directly to that section of text. Press Ctrl+M, then enter a name for your bookmark **2**. A new Bookmarks window will now appear **3**. To jump to a bookmarked section of text, simply double-click its entry in the list.

STEP 7 Listen N Write offers keyboard shortcuts for most of its tools to make life easier. To view all the shortcuts, open the Options menu then click 'Shortcut keys...'. If you want to change a shortcut, click it, type your chosen shortcut key(s) (you can use key combinations, such as Alt+P **1**), then click OK. To reset shortcuts to their original settings, click Default **2** followed by OK.



Readers' Tips

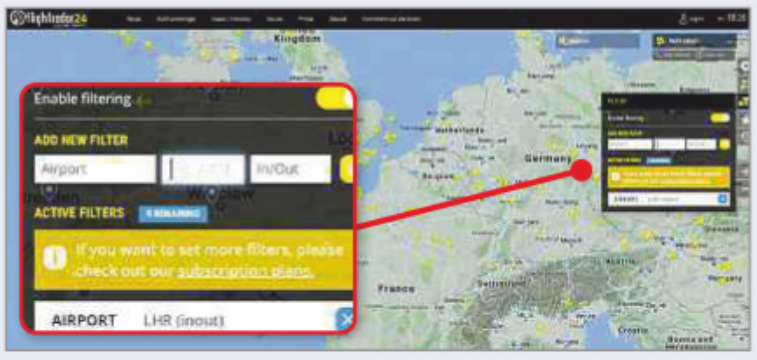
TIP OF THE FORTNIGHT

Add filters to Flightradar24's aeroplane map

I'd like to thank Jane Hoskyn for her brilliant feature on British maps in Issue 560. It's already kept me busy for a few days, and will probably entertain me more in the days to come.

She mentioned Flightradar24 (www.flightradar24.com), which is probably the website I spend most time on. It's great, but it certainly knows how to tempt you into paying for more advanced tools. For example, you're only allowed to apply one filter to specify the types of plane you want to see. Once you've done that, you have to pay a monthly or yearly fee to use more filters.

I eventually succumbed to the



temptation, and now pay $9.99 a year (around £7.90) for the Silver package. This lets me choose other filters, such as type of aircraft, speed and altitude. My favourite though is airport, showing planes arriving at and departing from a particular airport. Here for example is a screenshot of the Heathrow filter.

To apply a filter, you need to click the Filters icon (it looks like a funnel) on the right. Next, choose your filter from the dropdown menu. On the Silver package you're allowed 10 saved filters, which is enough for me. The Gold and Business subscriptions give you even more (compare them at www.snipca.com/32342). My next favourite Silver feature is adding real-time weather to the maps.

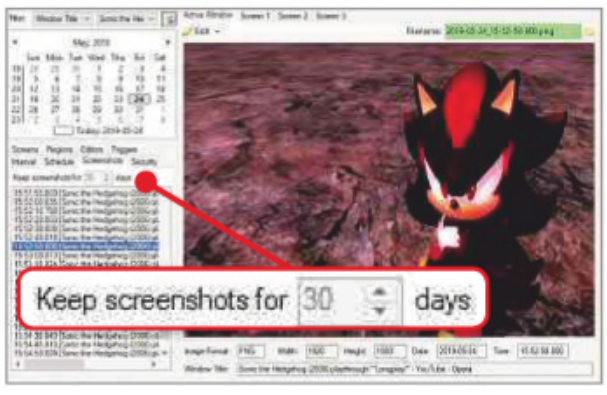
Oliver Bowden

Oliver wins a copy of our 2018 Back Issue CD **Buy it on Amazon www.snipca.com/30307**

SCREENSHOTS

Delete your screenshots after set number of days

Thanks for introducing me to the screenshot software Auto Screen Capture (Issue 558, page 19, www.snipca.com/32061). There's a new tool in version 2.2 that you didn't mention – deleting screenshots after a period of time. It stops your PC becoming a dumping ground for screenshots you no longer need.



After taking a screenshot, choose a filter at the top left, such as Image Format or Window Title. You'll see your screenshots in the bottom-left corner. Use the 'Keep screenshots for' setting to delete them after a certain number of days. In the screenshot I've provided (left), I set it for 30 days. The maximum is 365 days.

Tony Bunkall

OFFICE

Uninstall trial version of Office 365 to get Word back

Normally I've been able to load a Word attachment in Office 2010 by clicking it. But things changed on 14 July. Whenever I clicked a Word attachment in an email, Office 365 opened and demanded that I sign in and buy a subscription. The only way I could open attachments in Word 2010 was to first save the file on my computer.

I posted my problem on the Microsoft Community forums (https://answers.microsoft.com), and was told that I must have a trial version of Office 365 installed on my PC. I checked and found out it was installed on 14 July, when I upgraded to the latest version of Windows 10. I have since uninstalled the trial version and loading attachments using Word 2010 is back to normal. It may be useful to tell your readers how to deal with this latest Microsoft stunt of pushing Office 365.

Martin Wilkins

Why I stopped using...

Windows Notepad

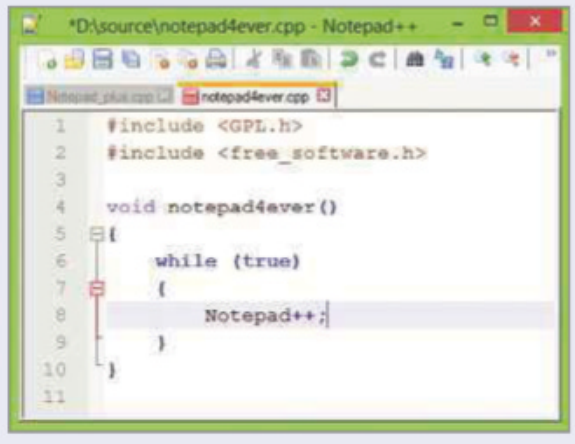
I stopped using Windows Notepad not because I disliked it, but because I suspected there were alternatives that had more sophisticated tools. It always seemed very one-dimensional to me.

And what I use instead...

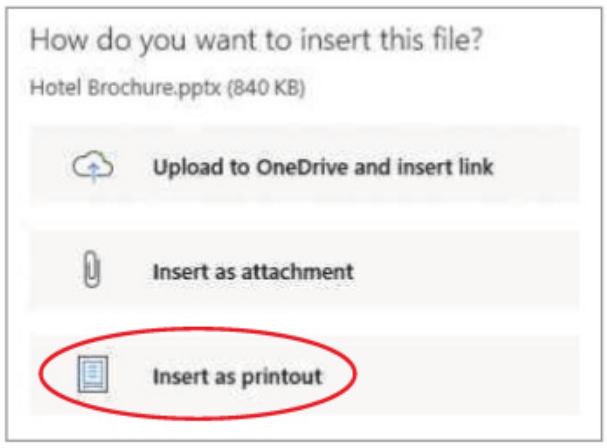
As the plusses after its name suggest, **Notepad++** (https://notepad-plus-plus.org) adds loads of functions to Notepad. The one I find most useful is tabs (see screenshot). I've become so used to flicking between tabs when browsing online that I now look for software that replicates this experience.

Another great tool is the spell checker, while the line numbers help to keep everything in order. You can easily zoom in and out of the text, and install plug-ins to add even more useful tools.

Henrietta Swinton



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



ONENOTE

Copy and paste text from a PDF

I have just discovered a really useful feature of OneNote. When you have a document such as a PDF that you want to edit, you can drag it across into OneNote where you will be asked how you want to insert the file. Click Insert, File, then choose an Office file to insert. Next, click 'Insert as printout' (see screenshot above), then right-click the image and select 'Copy Text from Picture' to copy the text into your PC's clipboard. You can then paste this into a text editor, such as Notepad.

If the document is large, the menu item may not be immediately available. In that case simply wait for OneNote to do its thing and try again.

Michael Cornell

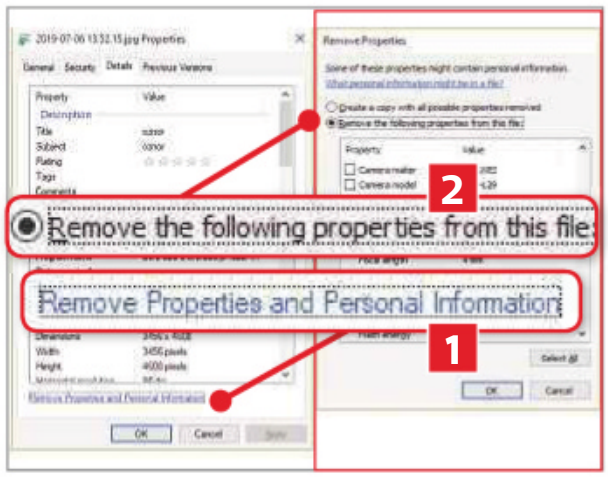
PHONES

Uninstall Android Accessibility Suite to fix problems

In Issue 558 David White reported having problems with his Moto G4 phone randomly switching itself off. My Motorola E3 phone recently started to suffer from the same problem. I solved it by uninstalling the Android Accessibility Suite (www.snipca.com/32343), part of the Android operating system.

I've experienced problems with this suite several times in the past. Hope this helps.

Bob Knighton



Reader recommends...

RunAsXp email client

Free from www.runasxp.com

I'd like to recommend RunAsXp to Jonathan Parkyn, who in Issue 558's Named & Shamed (page 21) said he's still looking for an email program to replace Windows Live Mail (WLM).

His search is at an end! RunAsXp is an up-to-date, modified version of Outlook Express (see screenshot), and works perfectly with Windows 7, 8/8.1 and 10. At the end of the installation you're asked for a small donation, and you're then sent three installation keys. Only one is needed, with the other two as spares.

Having tried WLM, eM Client and many others, I can say that RunAsXp beats them all. The developer gives superb assistance with quick replies to emailed queries, and there is a support forum as well. Highly recommended!

Also, I've fully tested the free version of OE Classic 2.9, which is very much like Outlook Express. It's also excellent, and can be downloaded by clicking the big green button from www.oeclassic.com/download.

Colin Culpitt-Smith

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

METADATA

Remove location info from photos within Windows

In Issue 558's Cover Feature on avoiding PC mistakes, you suggest that readers can remove metadata (such as location info) from JPEGs using the website Exif Purge (www.exifpurge.com – page 52). However, Windows 10 lets you do this directly, without the need to use a website.

Open File (Windows) Explorer in the Details tab and at the bottom choose 'Remove Properties and Personal Information' (1 in our screenshot below left). You can then remove all the metadata 2 and create a new file, or just delete the properties you want and save to the same file.

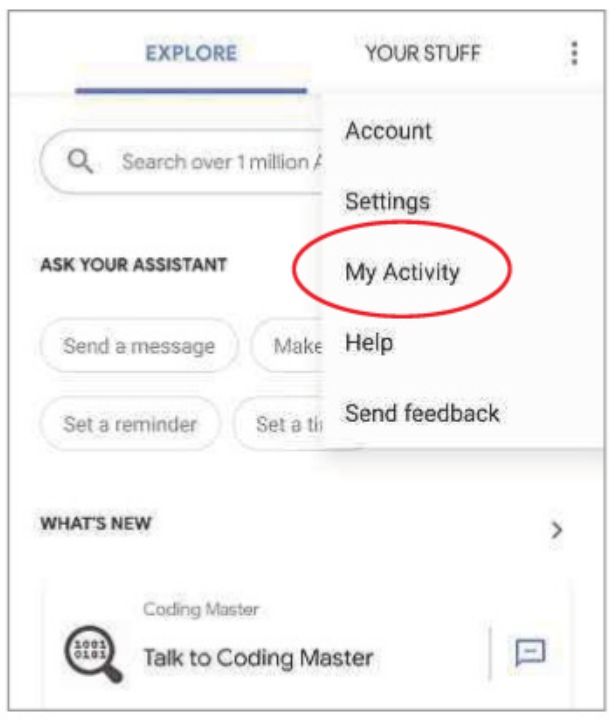
Rob Sedgwick

VOICE CONTROLS

See what you've asked Google Assistant

Jane Hoskyn's column in Issue 559 (page 74) on setting up Google Assistant was her funniest yet. Her comment about it becoming a second husband made me laugh so much I almost choked on my morning coffee.

If Jane persists with Google Assistant and ends up using it a lot, she may like to know how to check her activity with it. I like doing this every few weeks to remind myself what 'conversations' I've had with it.



First, launch Google Assistant by long-pressing the Home button, then press the compass icon in the top-right corner. Next, tap the top-right menu icon in the Google Assistant window, then tap My Activity. This will launch Chrome, Google's browser, showing you what you've asked Assistant.

On another note, the first thing I say to Assistant every morning is "Tell me something good". It means I always start the day with a good-news story.

John Blackford

Phone and Tablet Tips

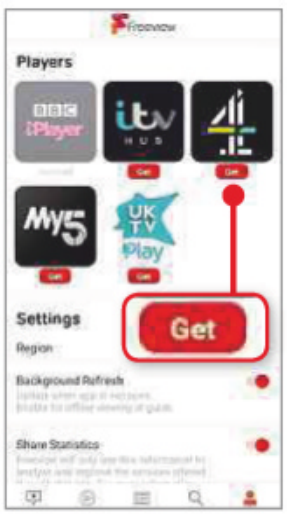
ANDROID & iOS

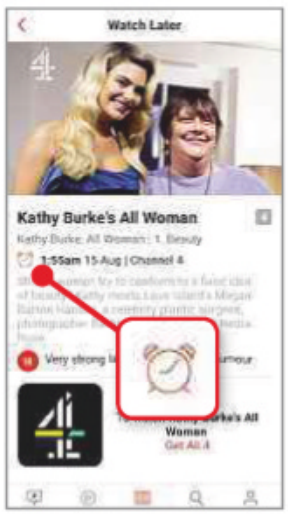
Stream and download Freeview TV shows to watch anywhere

Freeview has finally launched an Android app (www.snipca.com/32464), six months after launching on iOS (www.snipca.com/32465). Both are free to download and you don't even have to create an account – just install the app and dive straight into streaming live and on-demand TV shows.

Well, almost. Freeview is a gateway to all the major UK networks' streaming services, namely BBC iPlayer, ITV Hub, All 4 (Channel 4), My5 (Channel 5) and UKTV Play (Dave, Really, Yesterday and Drama). They're all free to watch, but you do need to have their apps installed in order to stream and download their shows. The Freeview app then acts as a one-stop gateway.

The new app avoids the need to trawl through app stores to get the broadcasters' apps. Tap My Freeview, then tap 'Get' under an app that you don't yet have (see screenshot below far left). You will then need to sign up with those apps, but after that they'll launch automatically from the Freeview app.





Tap What's On to browse all shows that are currently on air, and launch any of them with one tap; tap On Demand to browse catch-up shows in various categories; tap Guide to see what's coming up over the next fortnight; and tap Search to find a specific show.

To add a channel as a 'favourite', double-tap its grey icon on the Guide screen. You can also set reminders for shows: go to Guide, tap the programme you don't want to miss, then tap the alarm clock under the title (see screenshot below left). You'll then see a notification when it's about to start.

The app even has a built-in coverage checker that reveals which channels are available in your region. Tap My Freeview, Freeview Coverage Checker, then enter the first part of your postcode.

ANDROID & iOS

Search for text on a web page

Ctrl+F, which highlights words and phrases within a long web page, is one of those web-search tricks we can't live without – but it doesn't work in mobile browsers. Or does it?

There are equivalent tricks. In Chrome, open a page, tap the three-dot menu, 'Find in Page', then type in the box (see screenshot above right). You can jump to highlighted matching results using the bar at the side. In Firefox, tap the three dots, then 'Find in page'. In Safari for iOS, use the search bar at the top of the page and then tap On This Page, or tap the Share icon, then 'Find on Page'.

iOS

Stop Apple storing your Siri voice recordings

Apple's staff were recently found to be "monitoring" people's private voice commands to the iOS assistant, Siri. Apple says it will no longer let human workers listen in (www.snipca.

BEST NEW APPS What you should install this fortnight

Space Weather Reporter

Free

Android www.snipca.com/32468

Extreme weather doesn't just happen above your house. Discover the geomagnetic storms, solar flares and – wait for it – 'coronal mass ejections' taking place far above the Earth's atmosphere. Tap an event type with a red dot to see what's happening. It's dry scientific data, so we hope it adds more colour with future updates.

Squarespace

Free (plus £10+ subs)

Android www.snipca.com/32470

iOS www.snipca.com/32471

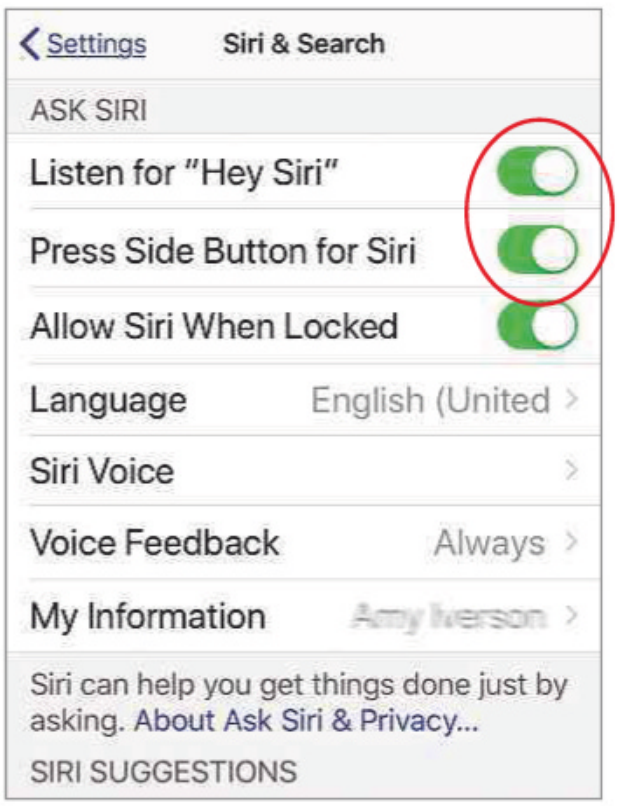
Website builder Squarespace has a proper app at last, so you can create a website on your tablet without having to go via your mobile browser. It's not the cheapest option – £10 per month minimum after a free trial – but it's the most slick, with drag-and-drop tools for building superb-looking pages for your club, event, small business or hobby.

Post-it

Free

Android, iOS www.snipca.com/32469

3M's Post-it app has taken its time arriving on Android – five *years* after launching on iOS. Capture real notes through the in-app camera or create them in the app, then organise them into colour-coded boards such as shopping lists and DIY measurements. Export them as PDF, Excel spreadsheets and more.



com/32492), but it still saves your voice data on its servers. And the only way to stop that is to disable Siri. To do that, go to Settings, 'Siri & Search', then tap the sliders to switch off all the Siri functions – mainly 'Listen for "Hey Siri"' and 'Press Side Button for Siri' (see screenshot above).

That doesn't delete the recordings Apple has already stored, however. Amazon and Google both have privacy websites where you can wipe your data from the companies' servers. Even Facebook makes it easier to delete your data than Apple does. Apple is way behind the crowd on this.

Some reports claim that switching off Enable Dictation (in Settings, General, then Keyboard) deletes your voice data, but Apple won't confirm this. Your best bet is to disable Siri and stop any future voice-gathering.

ANDROID

Control apps safely with Android Auto when driving

The Government is considering a ban on all phone calls when driving - hands-free included (www.snipca.com/32491) - but Google's Android Auto service pre-empts that by letting you automatically send calls to voicemail while you're on the road. And a new update makes it safer than ever.

Android Auto comes pre-installed on many new cars, where it lets you control notifications and apps via your car's dashboard screen (list of supported cars: www.snipca.com/32478). This built-in version of Android Auto has just been updated to launch directly to your last-used navigation app (such as Google Maps or Waze) and your last-used audio app on the same screen (see photo right). It even automatically launches the last radio station, music, podcast or whatever was playing last time you were in the car.

The built-in version of Android Auto now integrates with Google Assistant, so you can use voice-control to ask it to play the next song, direct you to the hospital, check notifications and so forth without even touching the screen. To configure voice control, tap Settings, then '"Ok Google" detection'.

If your car doesn't have Android Auto, you can still use the service by downloading the free app (www.snipca.com/32467), then securing your Android device to a dashboard mount. This

'standalone' version of the app doesn't have the latest update (it's coming in the next few weeks), but it does still let you control apps from a single big-button screen, making it safer than fiddling with a car radio and satnav. Tap the app's menu then 'Apps for Android Auto' to see which apps work with the system.

BEST APPS FOR... Photo prints

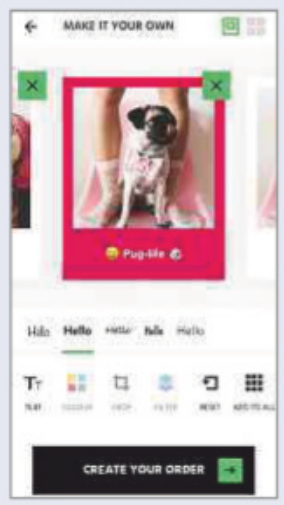
PixPax

Free

Android, iOS https://pixpax.app

Newcomer PixPax is the UK's first photo-printing app to use only recycled paper for its matt 4x3in prints, with printed frames and captions if you want - and it lets you place unlimited free orders. So how does it make money? You only get 18 free prints per order (£3.99 delivery), and 'top up' prints and hanging kits cost extra.

Best For: Eco-friendly photo snaps



FreePrints Photobooks

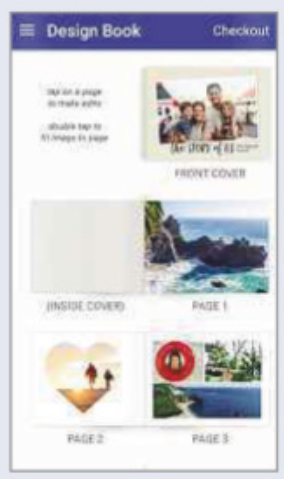
Free

Android www.snipca.com/32473

iOS www.snipca.com/32474

First came the magnificent FreePrints (www.snipca.com/32495), with its un-refusable offer of 45 free 6x4in prints every month (£1.49 delivery). Now here's FreePrints Photobooks, which sends you a 20-page 7x5in softcover photo book for free every month (£5.99 delivery). They're fantastic quality and make brilliant gifts.

Best For: Photo albums



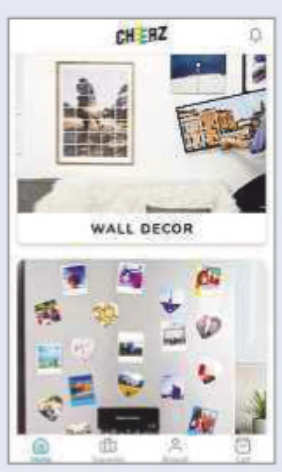
Cheerz

Free

Android, iOS www.cheerz.com

Turn your device photos into canvas prints, fridge magnets and memory boxes. Prices are reasonable (and you get free prints when spending over £20) and the app is particularly good at guiding you through the process of making your chosen photos look great on the finished product.

Best For: Turning your photos into gifts



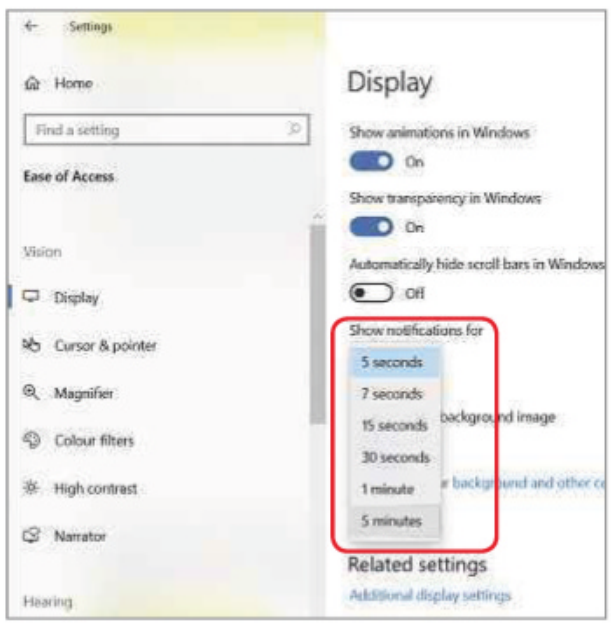
Make Windows Better

Expert tips for every version

WINDOWS 10

Make notifications appear for longer

Windows notifications (the small boxes that slide in from the bottom right of your screen) warn you if there's something wrong with your PC, alert you to incoming emails and more. However, as they only display for five seconds it's easy to miss them. You can click the square speech-bubble icon at the right of your taskbar to view recent notifications, but having to constantly check this is a pain. Alternatively, you can make the notifications stay on screen for longer. To do this, open Settings via the Start menu, then go to 'Ease of Access' and select Display on the left. Scroll down the settings on the right until you reach 'Show notifications for'. Click the box below this to change the notification timeout to up to five minutes (see screenshot below).



WINDOWS 7, 8.1 & 10

Add a recycle bin shortcut to your taskbar

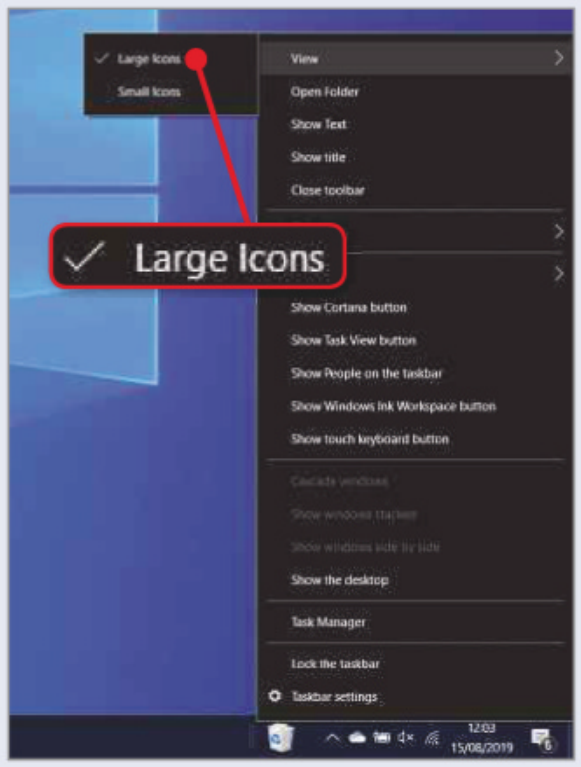
Curiously, Windows doesn't include the option to add a recycle bin shortcut to your taskbar. Fortunately, there is a workaround.

First, right-click an empty portion of your desktop, select New, then Folder. Give the folder a name, such as 'Recycle Bin', then drag the recycle bin icon on your desktop into it; this creates a recycle bin shortcut within the folder. Next, move the folder to wherever you want to store it (for example, in your Documents folder) - make a note of this location as you'll need it in a moment. Now right-click an empty section of the taskbar. If 'Lock the taskbar' is ticked, click it once to unlock it. Right-click the taskbar again, click Toolbars, 'New toolbar...', then navigate to the new folder you just created and click Select Folder.

You'll now see the name of the folder on the right-hand side of your taskbar, next to the system-tray icons. To change this so it displays the recycle-bin icon, right-click it, then untick Show Name and 'Show title'. You'll now see the icon, albeit a miniature version. Right-click just below the icon, select View, then Large Icons (see screenshot) to make it full size.

Finally, right-click the taskbar and select 'Lock the taskbar'. You can now open the recycle bin by clicking its new icon on your taskbar, as well as dragging files and folders you want to delete directly on to it.

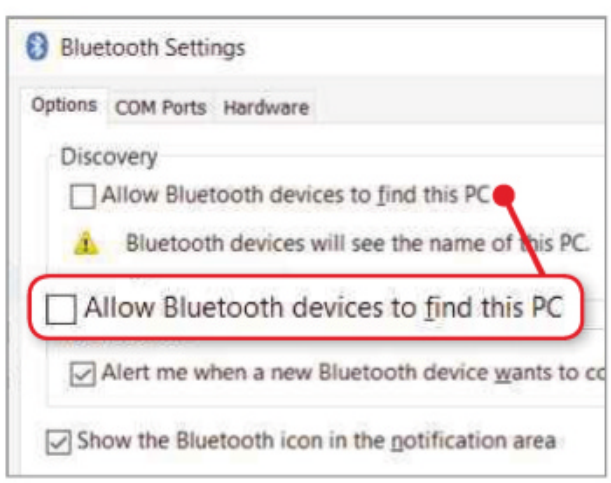
If you want to remove the icon, right-click the taskbar, click Toolbars, then Recycle Bin.



WINDOWS 7, 8.1 & 10

Make your PC more private

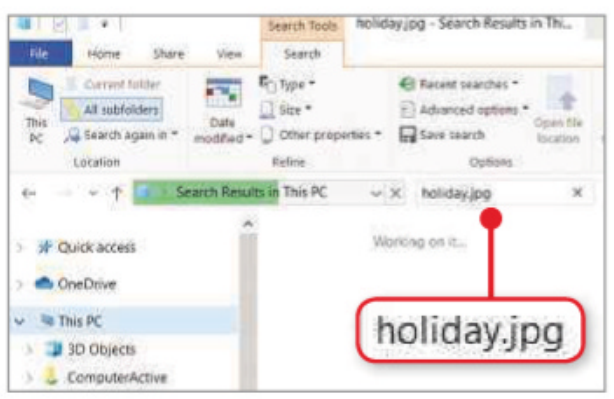
If your PC has Bluetooth (most laptops do), it may be broadcasting your computer's name to other Bluetooth devices. If you don't want other people seeing your PC's name (for example, when they scan for nearby Bluetooth devices on their phone) you can turn this feature off. Click the Start button, open Settings, go to Devices, then 'Bluetooth & other devices'. Next, click 'More Bluetooth options' (located on the right of the window or at the bottom). In the Bluetooth Settings window that opens, make sure the Options tab is selected, untick 'Allow Bluetooth devices to find this PC' at the top (see screenshot left), then click OK. To connect your PC to a new Bluetooth device, you'll need to turn this option back on temporarily.



WINDOWS 7, 8.1 & 10

Make File Explorer easier to use

Constantly reaching for the mouse when using File Explorer can really slow you down. It's far quicker to make use of keyboard shortcuts for most common tasks. For example, pressing Alt+Enter displays the Properties window for the selected file (pressing Escape then closes this window). And if you want to quickly move to the previous folder you were in, perhaps when moving files from one location to another, simply press Alt+left arrow (repeated presses moves you further back through your folder history), while Alt+up arrow moves forward. Finally, if you need to quickly find a file, press Ctrl+F to jump to the search box in File Explorer (see screenshot below).

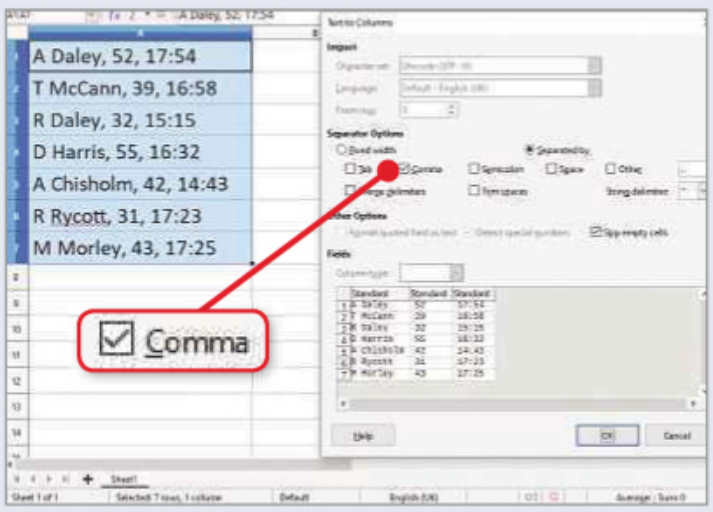


OFFICE CALC & MICROSOFT EXCEL

Split text into separate cells

Paste the contents of a text file into a spreadsheet and it will often be inserted as cells within a single column, which isn't ideal. For example, if you paste the results from a running race, you may end up with each runner's name, age and finishing time all in a single cell. In both LibreOffice Calc and Microsoft Excel you can quickly split the text in each cell, allowing you to better manipulate the results, such as ordering the list by finish time.

In Calc, highlight the column that you want to split, then click the Data menu at the top and select 'Text to Columns'. In the window that appears, select the 'Separated by' option, then choose how you want the text in the cells to be split. In our example,



commas separate the name, age and time in each cell, so we ticked the Comma box (see screenshot). If your spacing character isn't listed, tick Other and enter it there.

As you make changes to these settings, you'll see how they will split your data in the preview section at the bottom. When you're happy with the results, click OK to return to the spreadsheet.

The process is similar in Excel, but follows a wizard approach. Click the Data tab at the top, then 'Text to Columns'. Choose Delimited as the type, then click Next. As with Calc, you can now choose the character at which the text in your cells should be split. If the preview box at the bottom shows empty cells being created, these can usually be removed by ticking the 'Treat consecutive delimiters as one' option at the top. Click Next and you'll have the option of applying formatting to each of the newly created columns (such as formatting columns as dates).

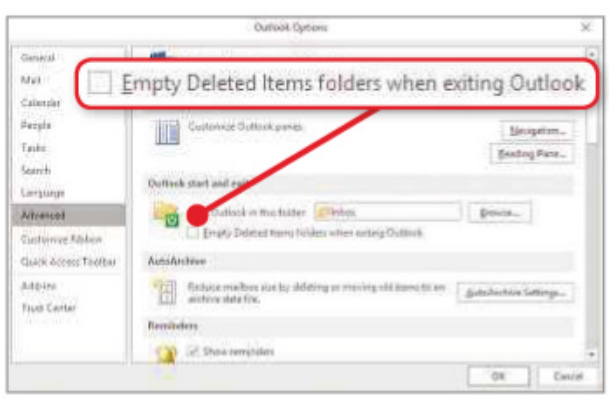
Leave this set to General if you're unsure, then click Finish to return to your spreadsheet.

MICROSOFT WORD

Stop Outlook deleting your emails

When going through your inbox, it's easy to accidentally delete an email and only realise your mistake later in the day. Depending on how you've got Outlook set up, you may find that the email has been permanently deleted when you re-open Outlook to retrieve it.

To make sure this doesn't happen, open Outlook, then click Files, Options. Now click Advanced and, in the 'Outlook start and exit' section on the right, remove the tick from the 'Empty Deleted Items folder when exiting Outlook' box (see screenshot below). This prevents Outlook from permanently deleting messages, but also means you'll need to periodically empty the Deleted Items folder yourself. To do this, right-click the Deleted Items folder within Outlook, then select Empty Folder.



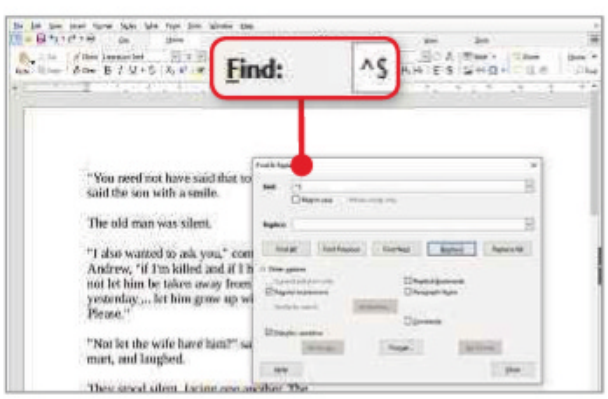
LIBREOFFICE WRITER

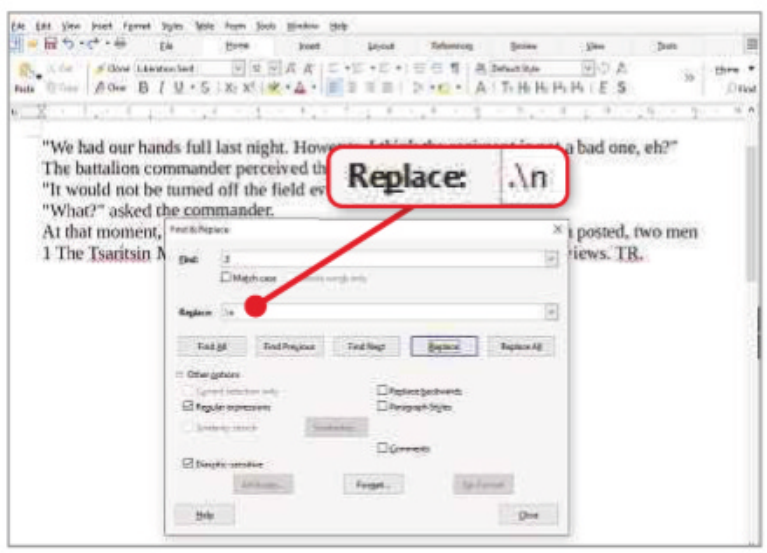
Remove empty lines in documents

If you've got a long document with lots of unwanted empty lines between paragraphs, having to go through the whole thing removing them is a frustratingly slow process.

In Writer, there's a much faster way. With the document open, press Ctrl+H to open the Find & Replace box. In the 'Find:' section, type ^$ (press Shift+6 for the '^' symbol – see screenshot below).

This tells Writer to search for all empty lines. To remove them, leave the 'Replace:' section blank, then repeatedly press the Replace button. Alternatively, press Replace All to remove all empty lines in one go.





LIBREOFFICE WRITER

Add spacing between paragraphs

In contrast to the previous tip, you can also use Writer's Find & Replace tool to *add* spacing between paragraphs.

As before, open Find & Replace by pressing Ctrl+H in the document you want to add the spacing to.

In the 'Find:' section, type .$ – the '$' tells Writer to only search for full stops and the end of paragraphs. In the 'Replace:' section, type .\n – the '\n' adds a carriage (hard) return after the full stop (see screenshot above).

Next, click Replace All to make the changes or, to make the changes one by one, click Replace.

In The Club

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

Update your club's details on Google Maps

If your club has a website, you may find that Google has used the contact information on it to create a business listing for your group in Google Maps. Although usually fairly accurate, Google can sometimes misinterpret details on a website, publishing incorrect opening times or placing your club in the wrong location on its map. It's therefore a good idea to check whether your club *has* been added and, if so, whether the information provided is accurate.

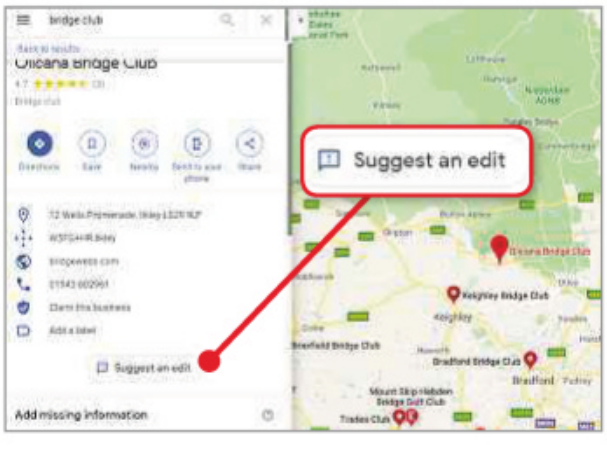
First, open Google Maps (www.google.co.uk/maps), then either search for your club by name and location (such as chess club bakewell) or simply by browsing the map. If you spot your club, click its marker on the map to bring up its details in the right pane.

Suggest edits

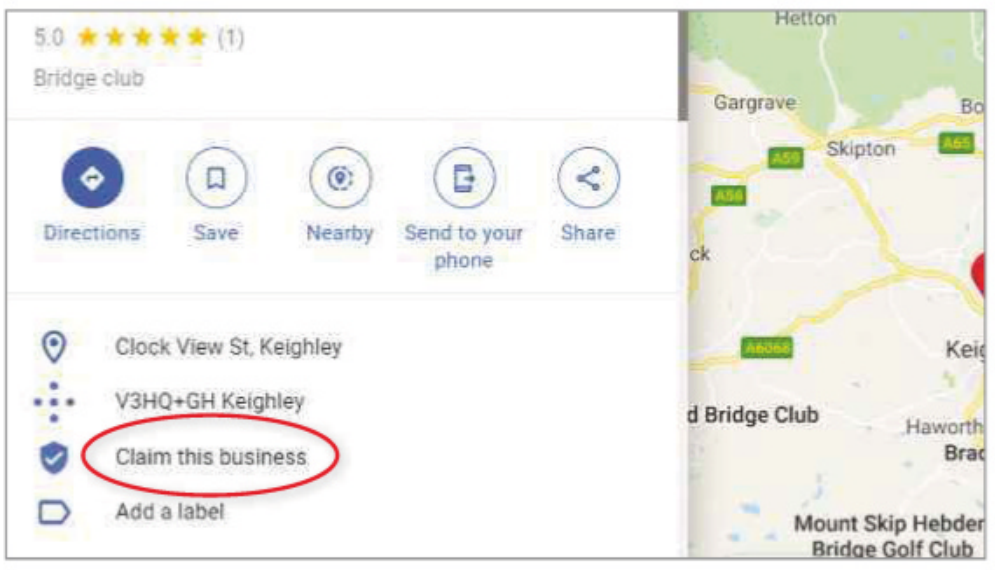
If you find any inaccurate information in your club's listing, click the 'Suggest an Edit' button located under the opening hours (see screenshot below), then choose 'Change name or other details' - if you're not already signed into your Google account, you'll be prompted to do so.

You can now edit the name, category, opening times and more. If you want to change the assigned location on Google Maps, click the 'Update location on map' button, then drag the marker to the correct location. Once you've finished making any changes, click Send.

Bear in mind these are only suggested edits. Before going live, Google will verify your changes. If Google deems the edits invalid for whatever reason, they will be ignored. You can keep track of that status of your suggested edits' by clicking the menu button in Google Maps (three horizontal lines, top left), Your Contributions, then the Edits tab.



To make changes to your Google Maps listing, click 'Suggest an edit'



Verify yourself as the listing's owner to make editing your listing easier

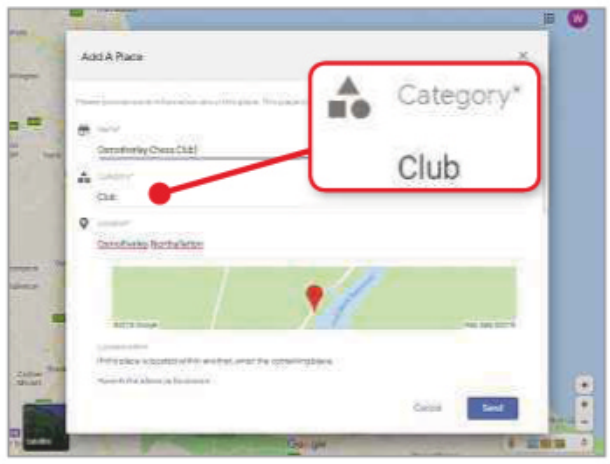
Claim a business listing

If you don't want to wait for your edits to be verified, you could try registering yourself as the listing's owner. Click the 'Claim this business' option (see screenshot above) within the listing (if you don't see this, it means someone else has already claimed it). You'll then be directed to a verification page. Depending on the listing type, you may be able to verify yourself as the owner using a code sent to you via a phone number associated with the listing. In most cases, however, you have to request a code be sent via post to the registered address. Once you have this code, you can make any changes via the Google My Business site (www.google.com/business – details on how to use this are provided when you verify a listing).

Even once you are recognised as the owner, other people will still be able to suggest edits to the listing as detailed above, but you will be notified by email.

Add your club to a map

If your club *isn't* listed on Google Maps, you can request it be added by right-clicking its location on the map, then selecting 'Add your business'. You'll be asked to provide details, before choosing a verification method.



You can add your club to Google Maps without going through a verification process

Alternatively, select 'Add a place' after right-clicking the location. This lets you notify Google of your club's details, without having to verify it as *your* club. Enter your club's name, choose 'Club' as the category (see screenshot above), then scroll down to enter other information such as opening hours, website address, and so on. If accepted, the listing will appear in Google Maps within a few days. Because you didn't claim it as your business, it will have a 'Claim this business' option, as described above.

Remove your club from an online map

If your club has been added to Google Maps but you'd rather it wasn't, you can request it be removed by selecting it in Maps, clicking 'Remove this place' then supplying reasons why it should be removed. As with other edits, this request goes through a verification process, which can be lengthy and isn't always successful.

Next issue: Set up a projector for club meetings

What's All the Fuss About...

ELIoT

Internet access at the speed of light

What is it?
A new EU-funded project to maximise the potential of Li-Fi.

Sorry, I think you mean *Wi*-Fi.
No, it's definitely Li-Fi. The 'Li' comes from light, and refers to a method of sending data through the light spectrum, rather than the radio spectrum that Wi-Fi uses.

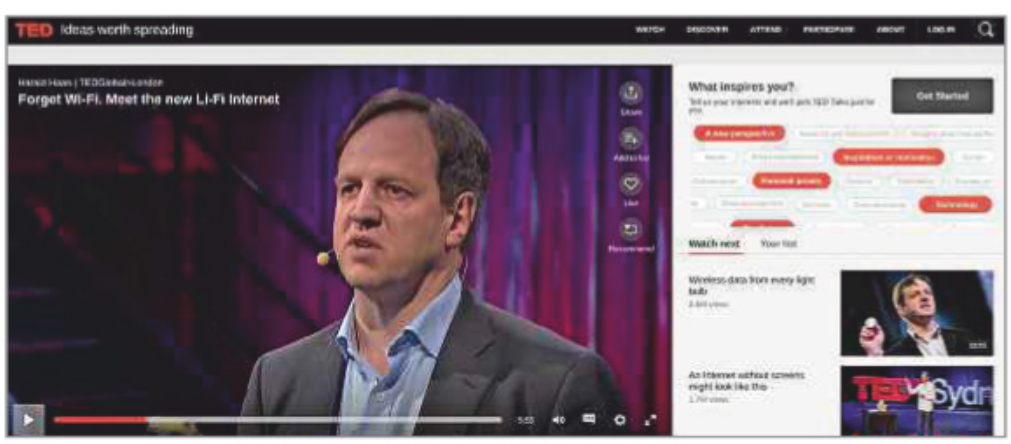
Oh. How does that work?
By changing the brightness of LED light bulbs at extremely high speeds. The speed of these changes are interpreted by detectors and turned into data. Zeroes and ones don't literally fall from bulbs, as the picture depicts, but you get the idea.

So if my light bulb flickers, it could be sending a video?
No, that means you've got dodgy electrics. The changes in brightness occur too fast for anyone to notice, otherwise they'd be too distracting. It's been described as a form of morse code that's too fast for the human eye.

Is it faster than traditional Wi-Fi?
Tests carried out in 2017 showed that it could hit speeds of 40Gbps (40,000Mbps), almost unimaginably faster than today's Wi-Fi. But a more significant advantage is that it has a virtually limitless range of frequencies (around 500,000GHz), while Wi-Fi is restricted to around 5GHz. This vast capacity means it could cope with almost any number of users, transmitting any amount of data. By contrast, Wi-Fi can quickly slow down when lots of people use the same network simultaneously.

Great. So why aren't we all using it?
Because there's a serious drawback. Light can't penetrate walls, so Li-Fi's range is much shorter than Wi-Fi's (although this does make it safer because hackers would need to be in the same room to intercept the signal). Also, it's expensive to install, and can't work without a light source, which limits where it can be used.

Ah. So is ELIoT going to help solve these problems?
That's the aim. The consortium, which includes Oxford University, Nokia, Deutsche Telekom and Eindhoven Technical University in the Netherlands, will examine how the technology can be used commercially. Li-Fi was first demonstrated in 2011 by Professor Harald Haas from Edinburgh University, sparking hopes that it would soon be a viable alternative to Wi-Fi (watch him explain it at www.snipca.com/32400).



Harald Haas's bright idea might give us web access through light bulbs

ELIoT will try to work out why it hasn't caught on since then. One reason is that it took until 2018 for the IEEE (Institute of Electrical and Electronics Engineers) to approve the first global standard for Li-Fi.

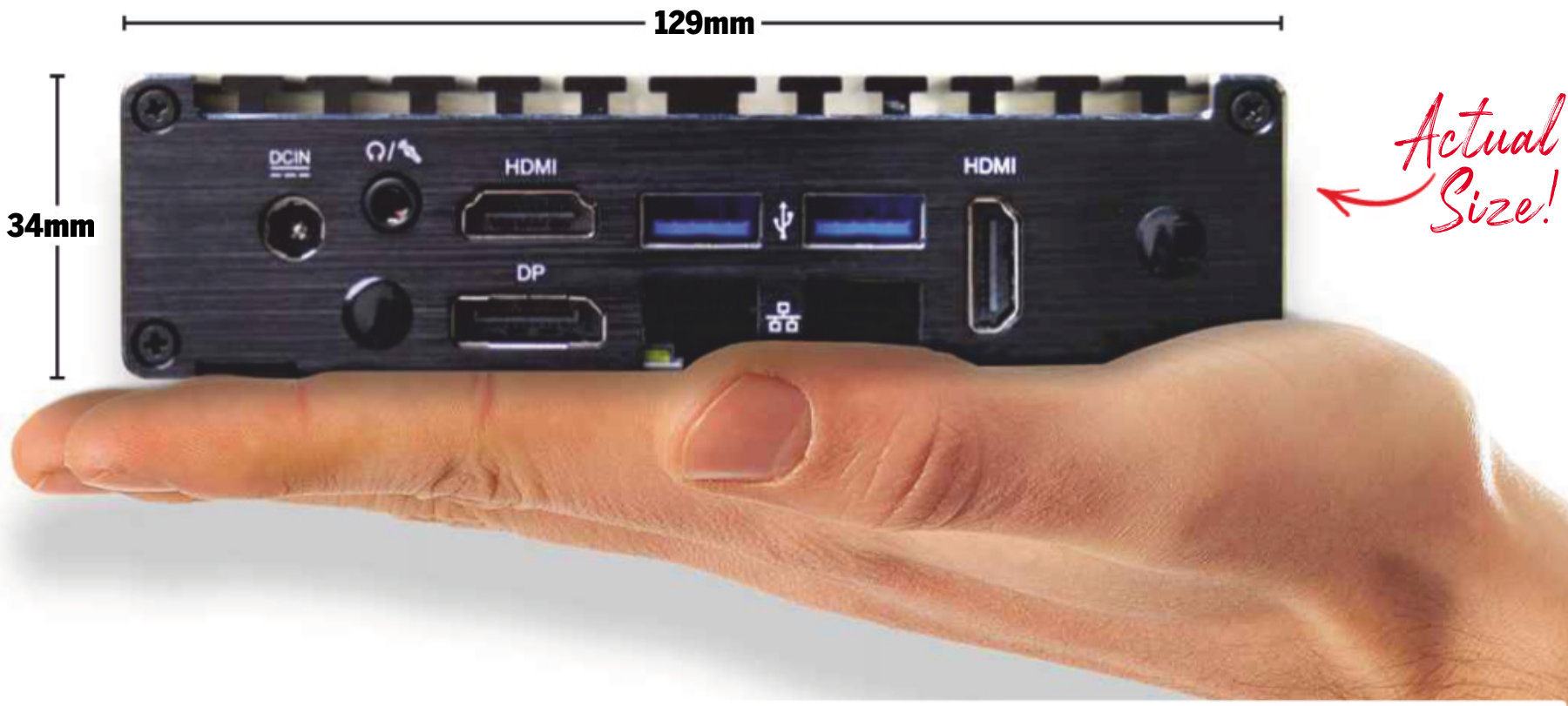
What ideas does ELIoT have?
One is connecting people outside through streetlights, or lights on rooftops. It could also provide internet access in controlled environments, like hospitals and aeroplanes, where some radio frequencies are not possible or allowed. This helps to explain its acronym.

Yes, I was wondering about that. What does it stand for?
Enhance Lighting for the Internet of Things. The Internet of Things is a ghastly name given to 'ordinary' household items that connect to the web. These are 'smart' fridges, TVs, thermostats and doorbells, not computers, phones and tablets. In hospitals, it could allow doctors to use web-connected medical equipment.

Will it eventually replace Wi-Fi?
We think that's unlikely. With a 20-year head start, Wi-Fi is a mature technology with well-established standards, making it easy for manufacturers to develop devices for. But there's no reason why the two can't work together, each compensating for the other's drawbacks. Lwi-fi, perhaps. You read it here first.

WHY YOU MUST BUY A MINI PC

Why splash out on a socking great desktop PC or expensive laptop when a cheap mini PC could be all you need? Jonathan Parkyn explains why you should think small when buying your next PC



If you're thinking of buying a new computer, one of the first questions you'll probably ask yourself is whether you should get a laptop or a desktop.

WHAT YOU'LL LEARN

- How to install Windows orLinux on your mini PC
- How to create your own all-in-one computer
- Connect a mini PC to your lounge TV for streaming and Skyping
- Turn any monitor or TV into a PC wherever you travel

But what if there was a third option? What if there was another type of computer that combined many of the benefits of both laptops and desktops into one brilliantly tiny package? Welcome to the world of mini PCs – computers that are not only physically small, but also quiet, cheap to run and often cheap to buy. You can plug them into almost any screen, even converting your TV into a full-blown computer if you prefer.

Mini PCs aren't a new idea. In fact, they've been around in one form or another since the early 2000s. But recent advances in technology and lower prices mean that these diminutive devices are now more powerful, versatile and affordable than ever. They're perfect for streaming video, great for browsing the web, and, with prices starting at as little as £200 for a model with a quad-core CPU, a cheap and easy way to get yourself a second computer.

Bear in mind that the term 'mini PC' tends to be applied to a wide range of devices, from barebones, build-it-yourself circuit-board PCs like the Raspberry Pi up to fully-functioning Windows 10 computers from big brands such as Asus and Lenovo. In this guide we'll be explaining more about the different types available, discussing their pros and cons and explaining why a mini PC could be ideal for you.

MINI PCs: EVERYTHING YOU NEED TO KNOW

What exactly is a mini PC?

As the term suggests, mini PCs are fully-functioning computers that have been designed to fit inside smaller cases. This often means they can only use components found in laptops – low-powered CPUs and smaller SO-DIMM RAM modules, for example. Most modern mini PCs eschew mechanical hard drives in favour of SSDs to save space and keep noise and heat to a minimum. Graphics abilities are usually rather limited, so they're not an ideal choice if you're looking for a tiny gaming system. However, mini PCs usually offer a decent array of ports and connections, including multiple USB sockets, HDMI, Ethernet, audio jacks and more.

How do they differ from laptops and desktop PCs?

While mini PCs often have laptop-level components, their lack of a built-in display or battery gives them the feel of a desktop PC when in use. Most are designed to be static, rather than portable – though there's nothing stopping you from taking one with you on your travels and connecting it to another screen.

Like desktop PCs, mini PCs are usually easy to open up if you want to upgrade individual components. Unlike desktops, however, mini PCs have a tiny space requirement. And if you choose to mount your mini PC on the back of your monitor (as pictured below left), it'll take up no space at all (see page 53). Most mini PCs are bundled with VESA-compatible mounting brackets for precisely this purpose.

Hide your mini PC by attaching it to the back of your monitor or TV

What different types are there?

As we mentioned earlier, the term 'mini PC' is applied to a wide range of devices. The Raspberry Pi is often classed as a mini PC, for example, but for the purposes of this guide, we won't be covering it here in too much detail – though we've included it in our round-up of mini PCs on page 56.

The majority of the mini PC models covered are based on cut-down versions of standard, full-size (305x244mm) ATX motherboards. These smaller motherboards range in size from 170x 170mm (Mini ITX) to 100 x 72mm (Pico ITX). One good example of a PC based on a Mini ITX board is Shuttle's SH370R8 cube-shaped PC (www.snipca.com/32457), which shares many characteristics of a desktop PC, such as PCI Express slots for expansion. At the smaller end of the spectrum, the Jetway JBC420 (www.snipca.com/31789, pictured below) is built around a Pico ITX board and can fit in the palm of your hand. We take a closer look at both of these models on pages 56 and 57.

The compact nature of the components used in mini PCs allow for a wide variety of chassis shapes and designs. Some mini PCs have squat, flat cases, while others are slender and upright. If a lack of space in your home office is a problem, you should find a model that fits in somewhere.

Fancy a PC on a stick? Try Intel's incredibly small Compute Stick, which even comes with Windows 10

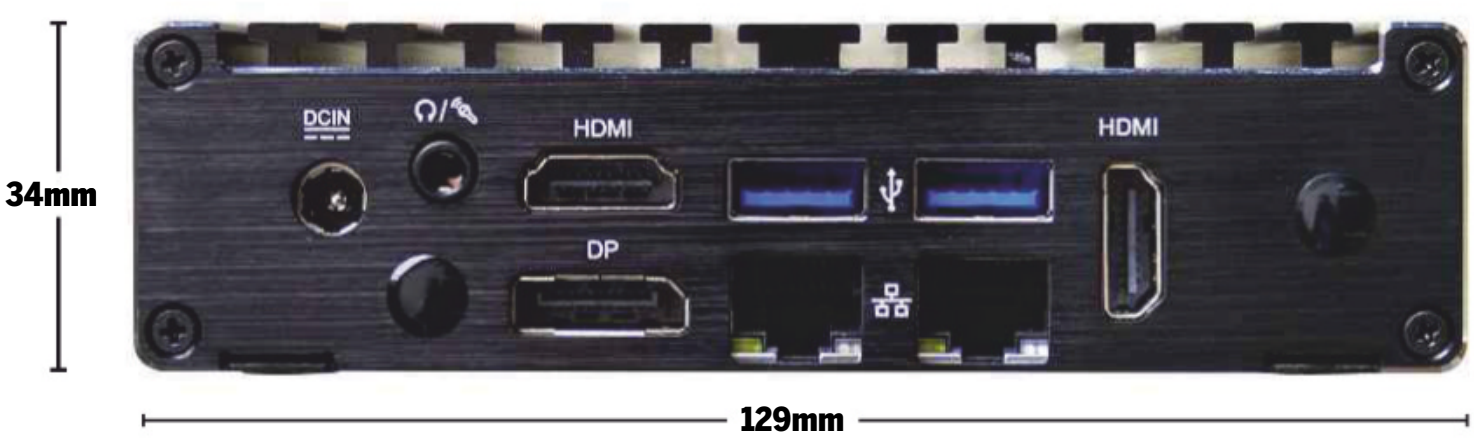
Alternatively, you could go for a mini PC on a stick, which resembles an oversized USB stick. Instead of plugging into a PC via USB, these devices plug straight into your TV or monitor via HDMI. Intel's Compute Stick (from £120, www.snipca.com/32416, pictured above) is one example.

What are the benefits?

Beyond the obvious space-saving aspect, mini PCs have a number of other advantages. They are often cheaper – though like any tech you'll pay more for higher specifications – and more energy efficient than their full-size counterparts, meaning they're cheaper to run. Lower power also means lower noise levels. Fan-less models, such as the Jetway JBC420 – which stays cool by having a chassis that doubles up as a heatsink – make virtually no sound at all. This makes them perfect for use in a living room (who wants a noisy PC drowning out your TV?).

Are there disadvantages?

Mini PCs aren't as versatile as laptops, which you can use independent of peripherals while you're out and about, and then plug into a desktop PC monitor when you're back at your desk. Also, the low-powered components used in many mini PCs make them less suitable for demanding tasks, such as video editing



At just 129x34mm, you'll barely notice this Jetway mini PC (pictured actual size)

** Thanks to mini-itx.com for providing the Jetway*

and gaming.

And just because they're physically smaller than conventional computers, it doesn't follow that mini PCs *always* cost less to buy. Prices range from just over £100 up to £1,000 and beyond.

Which operating systems do they run?

Most ITX-based mini PCs can run Windows 10 but don't assume that this – or any operating system (OS), for that matter – will come pre-installed. Many, including the Jetway JBC420, are sold as barebones PCs – in other words, a motherboard inside a case. There is usually the option to pay more to have a CPU and memory thrown in when you buy - the advantage being you get to choose exactly what components you want and avoid paying for any you don't.

You could also add software – including the OS – to your mini PC package. You may opt for open-source OS Linux, which is free and less demanding on system resources. This could mean smoother performance on low-powered devices compared with Windows 10.

If you're set on Windows 10 you'll need to factor this into the overall cost (£120 for Windows 10 Home or £220 for Pro). Alternatively, you may be able to use a Windows product key from an old computer you no longer use (see page 53 for more on this).

Custom-build computer companies such as PC Specialist (www.pcspecialist.co.uk) let you configure your mini PC to suit your needs, including the option of having Windows 10 preinstalled. For example, PC Specialist's cheapest Intel NUC I3 mini PC can be ordered with W10 (£470) or without (£388).

Most mini PCs come with at least two USB ports – if you need more, you can use a cheap USB hub

If you're less inclined to tinker, you'll be pleased to hear that there are plenty of mini PCs designed to be used straight out of the box. Intel's impossibly small, insanely cheap Compute Stick (see photo on page 51) comes with a full copy of Windows 10 installed and ready to go and all for just £120 – the same price as Windows 10 itself. Windows isn't your only option, either. The cheapest configuration of the Asus Chromebox CXI3 (see page 27), for example, comes with Google's ChromeOS installed (£255, www.snipca.com/32405).

What else do I need?

In most cases, mini PCs will be sold without accessories, meaning you'll need to supply your own keyboard, mouse and monitor. You might already have these, though you may want to consider buying a wireless keyboard and/or mouse – for example, Logitech's MK270 Wireless Keyboard and Mouse Combo (£17 from www.snipca.com/32421) if you don't want unsightly USB cables spilling everywhere.

Some basic models may not come with Wi-Fi built in – if not and you don't intend to connect your mini PC to your router via Ethernet cable, you'll need an external USB Wi-Fi adapter, such as the TP-Link TL-WN823N (£7 from www.snipca.com/32418, pictured left).

If your mini PC doesn't come with wireless built in, insert a Wi-Fi adapter, such as this one from TP-Link

If you're planning to mount your mini PC on the back of a monitor or TV, check to see whether your model is supplied with a VESA mount. If not you'll need to buy this separately – they usually cost around £10 online (like this model at www.snipca.com/32441). You should first make sure that your monitor or TV is VESA-compliant. Most are, but if yours isn't, you'll need to consider alternatives to mounting it.

There's no room for optical drives in a mini PC, so you'll need to buy an external USB disc drive (such as this Asus model, £21 from www.snipca.com/32422) if you want to play or burn CDs or DVDs. Your mini PC's internal storage will probably be relatively limited, so you may also need to buy an external hard drive at some point – for example, the Seagate 1 TB Expansion USB 3.0 Portable (£41 from www.snipca.com/32419).

And if you find yourself running out of USB ports for all these accessories, you should consider a USB hub – preferably an independently powered one, such as Atolla's USB 3.0 Hub Powered 4 Ports Multi USB Hub Data Splitter (£18 from www.snipca.com/32420, pictured above). Alternatively, you could store bulky files online using services such as Google Drive, which provides 15GB of free storage (www.google.com/drive).

Bear in mind that the more external devices you add, the less 'mini' your mini PC setup will be, but you can detach these when not in use.

What are they best used for?

The most obvious reason to opt for a mini PC is to save on space. Many companies, for example, mount mini PCs to the back of monitors to maximise an employee's workspace.

But mini PCs are also great for any situation where you want the power of a standard desktop PC without its bulk. If you've ever wanted a PC in your living room – to stream Netflix or Spotify, for example, or to Skype friends and family from your TV – then a mini PC is ideal. They are also a great option as a second household PC – if, for example, the kids need one for their homework or simply as a backup should your primary home computer break down.

Over the next couple of pages we demonstrate some brilliant uses for these petite powerhouses.

BEST THINGS TO DO WITH YOUR MINI PC

Install Windows

As we've already mentioned, many mini PCs are sold without an operating system. One option is to install Windows 10. To do so, you'll need an 8GB USB stick, a copy of Windows 10 and a valid Windows product key.

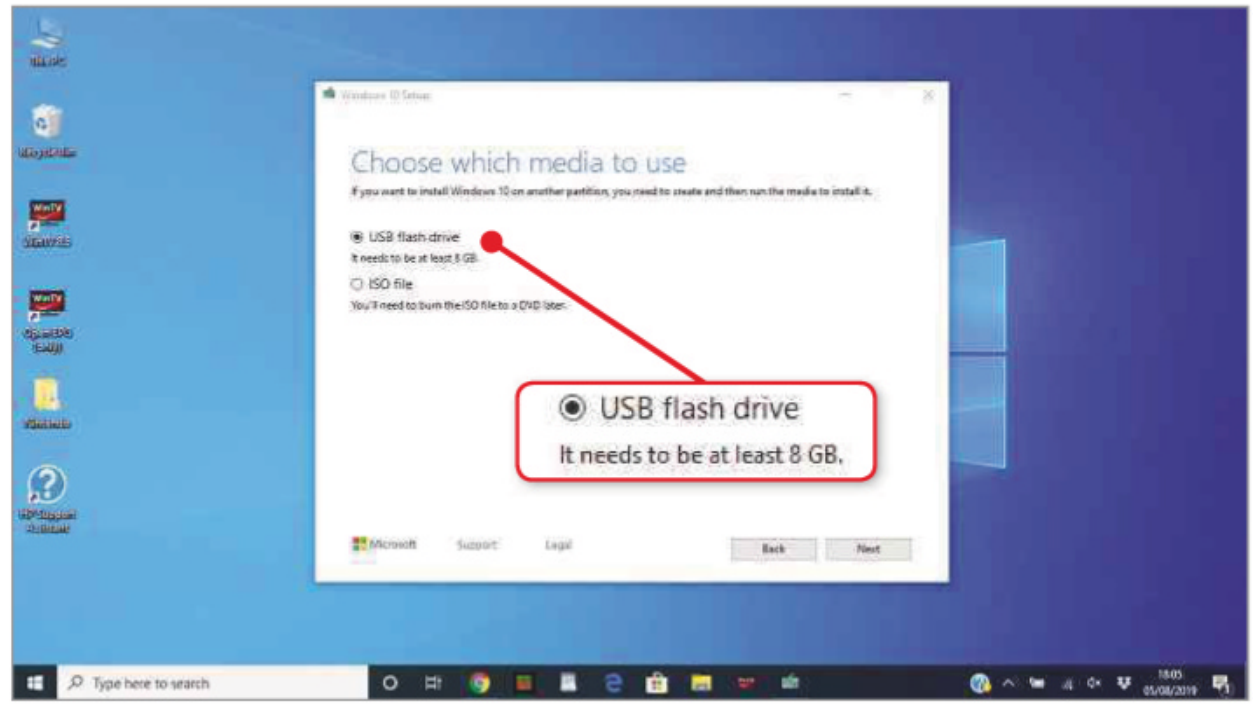
First, plug the USB stick into a PC that's already running Windows and download Microsoft's Media Creation Tool (www.snipca.com/32429). Run the tool and, when prompted, select 'Create installation media' and work through the remaining screens, selecting 'USB flash drive' (see screenshot right) and choosing your USB stick at the relevant prompts. Click Finish and remove the USB stick when you've finished.

Next, you need a product key. You can buy one from Microsoft by going to www.snipca.com/32430, selecting the edition of W10 you want (Home or Pro), then selecting the Download option. Once you've paid for the OS, you'll be given the product key. Make a note of this.

Alternatively, if you have a copy of Windows installed on a PC you no longer use, you could extract its product key and use it to activate Windows 10 instead. You can also activate Windows 10 using a Windows 7 or 8 product key. Bear in mind you can't use the same product key on more than one PC. The quickest way to extract a product key from an old PC is to download a free tool called ProduKey from Nirsoft (www.snipca.com/32431). Run it on your old computer and note down the product key listed for Windows.

Either way, insert your installer USB stick into the mini PC and start it up. The installer will launch automatically, so click through the initial screens. When prompted to activate Windows enter your product key, then click Next. Work through the remaining screens, choosing the 'Custom: install Windows only (advanced)' option when prompted, then select your mini PC's hard drive when asked 'Where do you want to install Windows?'.

If you're lacking a product key, click 'I don't have a product key' on the Activate Windows screen during installation – you'll be allowed to install and use Windows 10 seemingly indefinitely, as long as you're prepared to put up with a few on-screen nags to activate the OS. You can activate your copy at any point by clicking Start, Settings, 'Update & Security', then Activation.

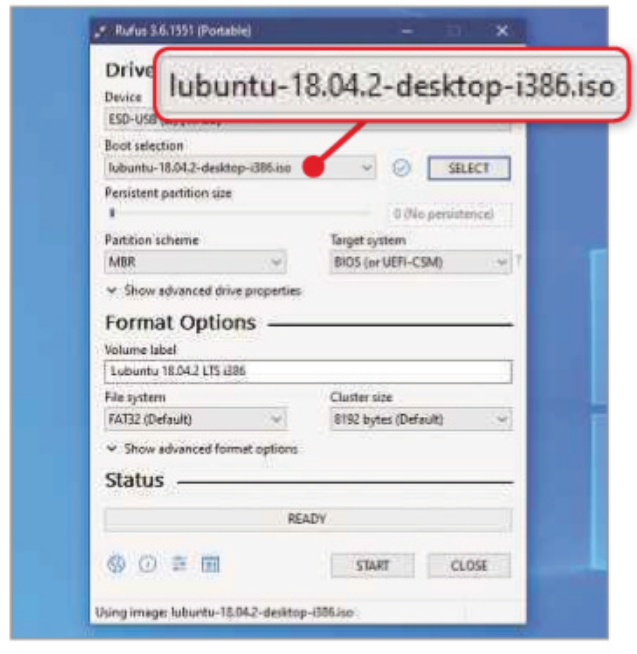


Download the Windows 10 installer from Microsoft, then select the USB stick option

Install a free OS

Linux is a free operating system and comes in different versions (known as distributions, or distros), such as Linux Mint and Ubuntu. The downside is that Linux is not as easy to use as Windows. However, it's very secure and provides access to plenty of free open-source software, including office suites, media players, utilities and more. If your mini PC is relatively low powered, consider a lightweight Linux distro, such as Lubuntu (https://lubuntu.me) or Mint (www.linuxmint.com).

The great thing about most Linux distros is that you can try them out on your mini PC before installing them. To try Lubuntu, for example, download the latest 'stable' Desktop version (currently v18.04) from https://lubuntu.me/downloads on another PC. The OS will arrive as an ISO file that you need to burn to a USB stick. To do this, plug a spare USB stick (with at least 2GB free) into your PC, then download a tool called Rufus from https://rufus.ie. Select the portable version, run it and make sure your USB stick is selected under Device. Click Select, then navigate to the Lubuntu ISO file (see screenshot below left) – double-click it, then click Start. Click Yes if you see a 'Download required' alert, then OK.



Use Rufus to create an installation USB stick for the free Lubuntu operating system

Once the process is complete, plug your USB stick into your mini PC and switch it on. Click 'Try Lubuntu without installing' when prompted and the OS will launch. If you like it, double-click the 'Install Lubuntu 18.04' icon on your desktop and follow the instructions. From now on you can boot your mini PC without the USB stick.

Convert a monitor into an all-in-one PC

All-in-one PCs – which are basically a monitor and computer in one – look neat, but tend to be expensive. However, you can build your own using a mini PC, a monitor and a VESA bracket.

First, flip over your mini PC and look for a pair of screw holes on its underside. Line these up with the corresponding holes in the middle section of your bracket, then attach one to the other using the screws supplied with the bracket. Now, look on the back of your monitor – you should see four screws in a rough square arrangement on the back panel. Unscrew these and keep them somewhere safe, then line up the holes with the outer screw holes of the bracket. Attach the bracket using the screws you removed from the monitor earlier (as

Computer active

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To create an all-in-one PC, screw the VESA mount attached to your mini PC into the rear of your monitor

shown in the photo above).

Many TVs also come with VESA mounts, so you could turn your lounge TV into an enormous all-in-one PC. You could also attach your mini PC to walls, ceilings or inside a cupboard.

Skype family and friends using your TV screen

Connecting a mini PC to one of the HDMI sockets on your TV opens up all kinds of possibilities. If you don't have a smart TV, for example, you could use your mini PC to stream content from Netflix or iPlayer, browse the web and more. Or why not convert the biggest screen in your home into a video phone for face-to-face calls with friends and family?

Windows 10 comes with Skype preinstalled, so all you need is a suitable webcam plugged into the PC and mounted on the top of your TV set – for example, the Logitech C270 HD Webcam (£16 from www.snipca.com/32432), which has a built-in noise-reducing microphone and a clip for easy attachment.

If you attach your mini PC to the rear of your TV (see previous tip) and you don't fancy using a wireless keyboard and mouse, you could instead use a remote control. The W10 GYRO air remote (£27, www.snipca.com/32433) lets you control Windows 10 from the comfort of your sofa. It has what's known as a 6-axis gyroscope air mouse that lets you control the cursor simply by moving the remote control, as well as a tiny backlit QWERTY keyboard on its rear (pictured below left).

The W10 GYRO remote lets you control your mini PC from your sofa

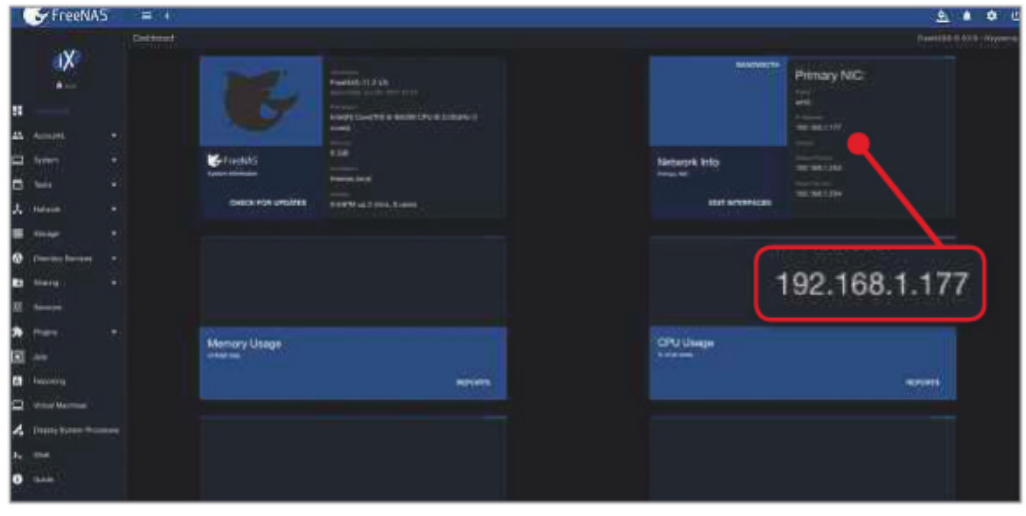
Build a cheap NAS

NAS devices are great for backing up PCs over your home network or for using as a media server for all your photos, music and films. But they can be expensive. With a mini PC, a free OS and a large external USB drive, however, you could build your own – potentially for as little as £240 if you use a cheap mini PC such as the £200 Jetway (see page 51) and £40 Seagate Expansion drive (see page 52).

The OS you'll need to do this is FreeNAS (www.snipca.com/32434), which is Linux-based and comes as an ISO file, so follow the steps on page 53 (see 'Install a Free OS') to burn the ISO file to a USB stick, then boot your mini PC with the stick plugged in and select the Install/Upgrade option when prompted. Next, choose your mini PC's hard drive as the destination and follow the remaining on-screen instructions.

Most mini PCs have limited storage, while NAS devices tend to need large amounts of space. If your mini PC has less than 1TB of drive space, we'd recommend getting at least one large (1-2TB) external drive. Attaching two 1TB drives is even better, as this will let you set up your storage in a RAID configuration, which stores your data on both drives, meaning you'll still be able to access it even if one of the drives fails.

With the drive(s) plugged in, boot your mini PC and FreeNAS will launch. You won't be able to access the OS from the mini PC itself. Instead, an IP address for the web user interface will be shown on the Console setup screen (192.168.1.177 in our screenshot below). Enter this IP address into a browser's address bar on another PC on the same network, and



Install FreeNAS on your mini PC to use it as a NAS device and access it from any PC

This foldable, wireless keyboard is perfect when travelling with your mini PC

you'll be able to set up your storage, configure sharing and add plug-ins, such as a Plex media server (www.plex.tv). The idea is that you now control your NAS remotely from another PC. FreeNAS has lots of options and tools to play with, so go to https://freenas.org/getting-started for more information on setting up and configuring your system.

Take your mini PC with you wherever you go

If you do a lot of travelling, a small mini PC could be just what you need. Plug it into any TV screen – in your caravan, hotel room, self-catering accommodation or a friend's guest bedroom – and you'll instantly turn it into a PC. Not only is this handy for browsing the web, checking emails and uploading holiday snaps from your digital camera, but pre-loading it with your own films or using it to connect to streaming services, such as iPlayer or Netflix means you can also avoid dodgy campsite TV reception and costly hotel pay-per-view charges.

Sure, laptops have their own built-in screens, but even the lightest laptops are bulky compared to a palm-sized mini PC. The only other things you'll need to carry with you are an HDMI cable to connect to the TV and some kind of input device, such as the Jelly Comb B-003B folding Bluetooth keyboard, complete with a built-in trackpad (£26 from www.snipca.com/32435, pictured above).

OUR PICK OF THE BEST MINI PCs

Mini PCs at a glance – all shown to scale

Gold award

Jetway JBC420

£234*

www.snipca.com/32455

129x112x35mm

Verdict: A versatile, silent PC that's both small and cheap

Silver award

QuietPC UltraNUC Pro 7 Fanless

£625

www.snipca.com/32456

117x207x61mm

Verdict: A good mix of size and power

Bronze award

Shuttle XPC SH370R8

£320*

www.snipca.com/32457

217x340x197mm

Verdict: Great for recycling old PC components

Build your own, cheap mini PC

If you plan to do little more than browse the web, stream films and carry out basic office tasks, there's little point splashing out on an expensive mini PC that you'll never use to its full potential. The **Jetway JBC420** (our Gold winner, above) is a prime example of a solid, low-cost mini PC. Its Intel Celeron processor isn't powerful enough to play games and will struggle with more demanding tasks such as video editing, but it's fine for general, web-based activities and the projects we outline on pages 53-55.

It comes with 2GB of memory, but there's no hard drive as standard. The JBC420 uses mSATA drives, such as a 120GB SSD that costs £50. We recommend upgrading the memory to 4GB - this costs just £12 when purchasing and will make the computer run much smoother. To keep costs down, Windows 10 isn't included. As we discovered (see page 53), this mini PC is far more suited to running a lightweight version of Linux, which is free.

The low-powered Jetway doesn't need internal fans to keep it cool, with the metal case silently dissipating what little heat it generates. The case is also home to a wide selection of ports, including HDMI, DisplayPort, two USB and two Ethernet. Wireless isn't included, though.

When purchasing, we recommend paying an extra £20 to have the system built for you (as opposed to the components being supplied separately), because this means you also get a two-year warranty.

If you feel confident building your own PC, consider the **ASRock DeskMini 310** (pictured far right), which only comes with the case, motherboard and power supply. We're not aware of any PC suppliers who will custom-build this for you, so you'll have to source and fit the other components yourself, such as the processor, memory and hard drive.

Be careful when buying these components because with space inside the case so limited, not all will fit (the ASRock website provides full specifications – www.snipca.com/32446). The benefit, however, is that at £142 you're getting a low-cost platform for building a mini PC to suit your needs.

Re-use old PC components

Another way to save money is to repurpose old PC components you no longer use.

While the **Shuttle XPC SH370R8** (£320 for a barebones unit, our Bronze winner above) looks huge compared with the other PCs covered here, it's still far smaller than any desktop PC and the extra size lets you add components such as up to four 2.5in (laptop-size) or 3.5in (desktop PC-size) hard drives, including any you may have from an old PC or laptop. While its two PCI Express slots let you recycle an old graphics card, for example.

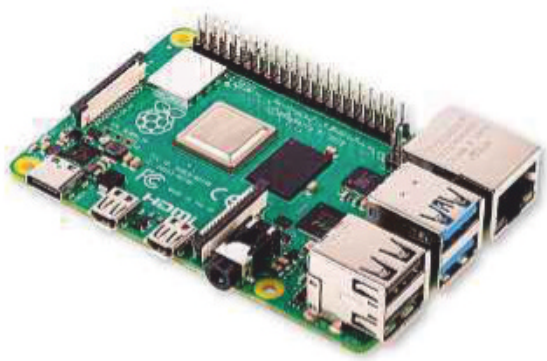
However, we found these slots disappointingly fiddly. To add a PCI card

Raspberry Pi: the mini PC for under £50

Aimed at enthusiasts and hobbyists, the Raspberry Pi can't really be classed as a PC (its low-powered components mean there's no chance of it running Windows 10), but it's most certainly mini, measuring just 20x85x56mm.

The latest model, the Raspberry Pi 4 (see our review in Issue 559, page 26), costs £34 for the 1GB version, but you'll also need a USB-C power supply (£7.50) and, ideally, a case (around £8.50). The Raspberry Pi 4 circuit board includes four USB ports, letting you add a keyboard, mouse and other peripherals, while a couple of microHDMI ports mean you can attach two displays simultaneously.

The official Raspberry Pi website (www.raspberrypi.org) gives full instructions on



how to get started, including installing the Raspbian operating system using an 8GB microSD card. Once you get to grips with it, you can use the 40-pin GPIO connector to attach external devices and control them using the Pi. You'll find lots of ideas and projects to try out on the website, along with a forum where you'll find helpful advice if you come unstuck.

*Barebones system (requires additional components)

QuietPC AMD Sentinel Fanless
£1,105
www.snipca.com/32458
240x260x111mm
Verdict: A powerful complete system, but also expensive

Shuttle DH370
£276*
www.snipca.com/32459
116x192x46mm
Verdict: Reasonably small, but limited upgrade options

ASRock DeskMini 310
£142*
www.snipca.com/32460
80x155x158mm
Verdict: Cheap, but you'll need to build it yourself

you need to push a screwdriver into each cover and twist it back and forth until it eventually gives way and snaps off. If you remove the PCI Express card later, you'll need to buy a blanking plate to avoid dust getting into the PC (see page 37).

There's no processor included, so you'll need to factor this into the price (one of the cheapest compatible processors being Intel's Core i3, at around £135). Unless you're comfortable fitting the processor, it's best to buy through a reseller who can fit it for you. Ambros (www.ambros.co.uk), for example, sells this Shuttle mini PC with a Core i3, 500GB hard drive and 4GB of memory for £647 (www.snipca.com/32493).

If you don't need multiple hard drives or a dedicated graphics card, consider the cheaper **Shuttle DH370** (pictured above right). It only has room for a single 2.5in SATA drive and there aren't any PCI Express slots, but this means it's much smaller than the SH370R8 and costs around £44 less for a barebones unit.

Be aware that both of these Shuttle PCs are noisy. With two fans working hard to keep the internal components cool, neither are ideal for your living room.

Buy a complete system

If all this talk of adding components to a barebones system sounds too much like hard work, you should consider buying a complete unit such as the **QuietPC UltraNUC Pro 7 Fanless** (our Silver winner, above left). For £625, you get an Intel Core i3 processor, 4GB of memory, 120GB SSD and Windows 10.

If you want to save just under £100, you can leave out Windows 10 and instead install a free copy of Linux (see page 53). As its name indicates, this PC has no fan and is therefore silent. However, it can't match Jetway's PC for size, at nearly twice the height.

The **Acer Chromebox CX13** (pictured above right, see our review on page 27) is another complete system option and is modelled around Chrome OS, which is designed to be used with Google's range of online services.

Replace your desktop PC

If you're looking for a mini PC that can effectively take over from your desktop PC, there are options – albeit expensive ones. The **QuietPC AMD Sentinel Fanless** (pictured above left) is similar in design

The Acer Chromebox CX13 is a great mini PC straight out of the box

to the QuietPC UltraNUC Pro 7 Fanless, but much more powerful. It comes with a 3.2GHz AMD Ryzen 5 processor, 8GB memory, AMD Radeon RX Vega graphics and 500GB SSD – which combine to create a mini PC that can do the work of most desktop PCs. It's also the only model here to squeeze in a DVD writer. This high specification comes at a price (£1,105) and it's also bulkier than most other mini PCs.

If you need even more power, you can custom-build the Shuttle SH370R8 with anything up to a powerful Intel Core i9 processor and top-of-the-range Nvidia GeForce graphics card, but the price will quickly stretch beyond £1,500. ca

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STEP 2 Choose your subscription term and tap twice on the 'price' box

STEP 3 Choose whether to create an optional PixelMags account

STEP 4 Enter your Apple ID password to confirm

Download on the App Store

...on a Kindle Fire

Kindle Fire subscriptions come with a FREE one month trial.

STEP 1 Tap 'Free Trial Subscription' in the ***Computeractive*** library

STEP 2 Chose your subscription term from the drop down menu on the popup that appears

STEP 3 Tap 'Subscribe'

available on kindle fire

...on an Android device

STEP 1 Open the Google Play Store homepage and navigate to the Newsstand section using the tabs at the top

STEP 2 Search for ***Computeractive*** using the search icon in the top right of the screen

STEP 3 Click the 'Subscribe' button and pick your term

STEP 4 Enter your Google password to confirm

android

...via the Zinio app

STEP 1 Search for ***Computeractive*** via the search box in the Shop tab

STEP 2 Tap the 'Subscribe' button

STEP 3 Choose whether to create an optional Zinio account

STEP 4 Enter your Apple ID password to confirm

Subscribe to *Computeractive* today and save on the single issue price

Google's best NEW secret tools

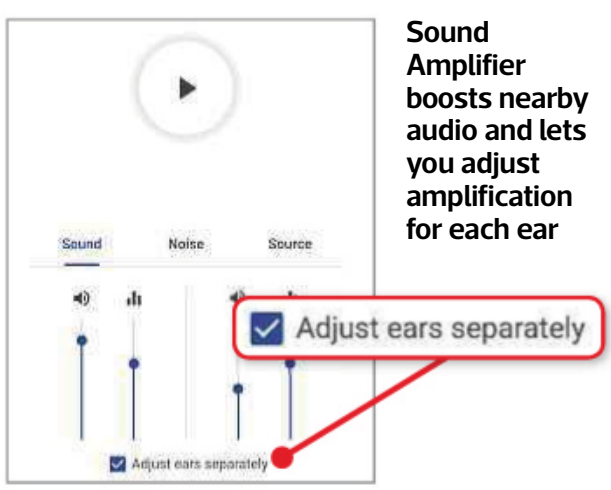
With Google debuting new tools at a blistering rate, it's hard to keep up. **Nik Rawlinson** highlights 10 of the best recent releases

Turn audio into text

Live Transcribe is a great idea. It's also very simple: using your phone's built-in microphone, it converts speech to text, which is displayed on your screen. A great aid for deaf or hearing-impaired users, it can also help when speaking a foreign language, where seeing what's been said written down will give you a few seconds more to decode it without resorting to an embarrassed "je ne comprends pas". If you have a Pixel 3 phone, Live Transcribe is built in: open Settings, tap Accessibility, Live Transcribe, then the switch beside 'Use service'. Other phones running Android 5 or later can download it from www.snipca.com/32427.

Give your ears a boost

Sound Amplifier (www.snipca.com/32415) adds a new accessibility feature to Android that turns your phone into an ad-hoc hearing aid. Once installed, plug in a set of wired headphones (it doesn't work with Bluetooth) and open Settings. Tap Accessibility, Sound Amplifier, then the switch beside 'Use service' to activate it. It's smart enough to boost quiet sounds while reducing loud noises, which should help you converse in noisy surroundings, hear the TV without deafening everyone else, or reduce distractions while studying. Tick the 'Adjust ears separately' box (see screenshot below left), and you can adjust the amplification for each ear.



Sound Amplifier boosts nearby audio and lets you adjust amplification for each ear

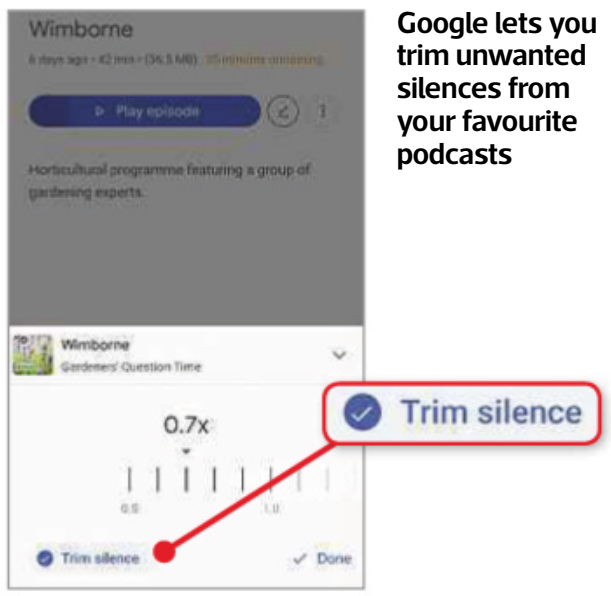
View photos without using data

The Google Photos app is a great for editing, organising, and sharing snaps taken on your phone, but it's dependent on a web connection and can grind to a halt if you're not online. And if you have a mobile contract with limited data, its constant data usage can result in extra charges.

Enter Gallery Go (currently Android only - www.snipca.com/32412), a slimmed-down version of the Photos app that still includes features such as intelligent albums and image editing, but works completely offline. Not only can you tweak a good sunset to make it look great – you can also quickly find shots of your relatives or friends, locations, meals and more without ever eating into your data allowance. It's also smaller than Google Photos (just 10MB).

Discover new podcasts

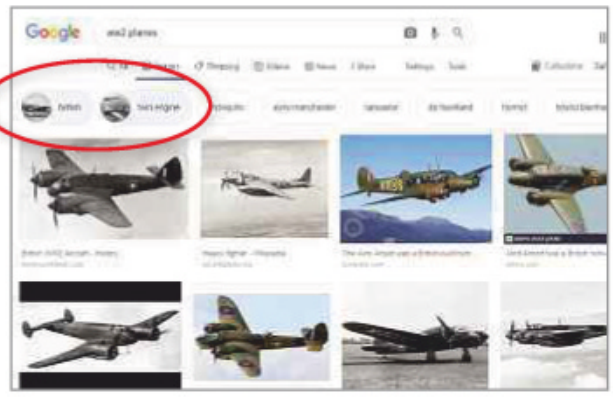
Google Podcasts (www.snipca.com/32413, Android only) launched quietly last year. Unlike some other podcast apps, it keeps things impressively simple – streaming or downloading podcasts, as well as suggesting new podcasts based on your listening history. It also lets you change the playback speed and can even cut out silences (see screenshot above), which is particularly useful when you've slowed playback down and want to avoid the subsequent annoying gaps in the audio. Google has also started showing podcast episodes in search results, letting you play them without clicking through to the podcasts page. It works in the US only at the moment, but will hopefully arrive in the UK soon.



Google lets you trim unwanted silences from your favourite podcasts

Control what people do with your emails

If you want more control over what people do with sensitive emails you send them, try Gmail's new Confidential mode. When activated, it prevents



Narrow your image searches using Google's new filters

recipients from copying, printing or forwarding your email. To use it, click the padlock icon (to the right of the Send button), then choose when the message should self destruct.

Never forget important emails

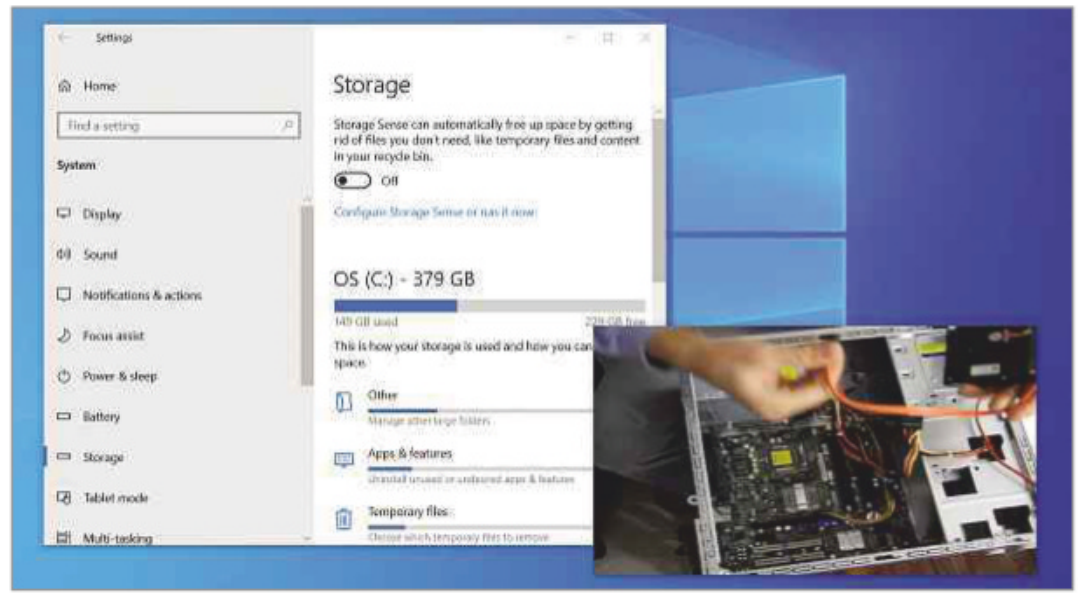
You're just going out when an important email appears in your Gmail inbox. Instead of reading and forgetting about it, right-click it, select Gmail's new Snooze option, then choose a date and time. The email will then reappear at that time.

Search images better

Google's image search tool (www.google.com/images) now gives you a helping hand by suggesting appropriate filters. Start with a broad search term (we chose 'WW2 planes'), then use the circular filter buttons above the images to narrow the search - we selected 'british', then 'twin engine' (see screenshot above). Google suggests additional filters each time you select one, and you can click as many as you like.

Free up space on your phone

Buying a lower-capacity phone can save you money, but space can soon get tight. The Android-only Google Files (www.snipca.com/32425) can help by transferring files to an installed SD card to free up internal space, deleting old photos from chat apps, removing duplicate files and uninstalling apps you no longer use. It can move files to Google Drive and even rival online storage services. Plus, if you and a friend both use Files, you can share photos, documents and more by connecting your phones wirelessly, without Wi-Fi or a mobile-data connection.



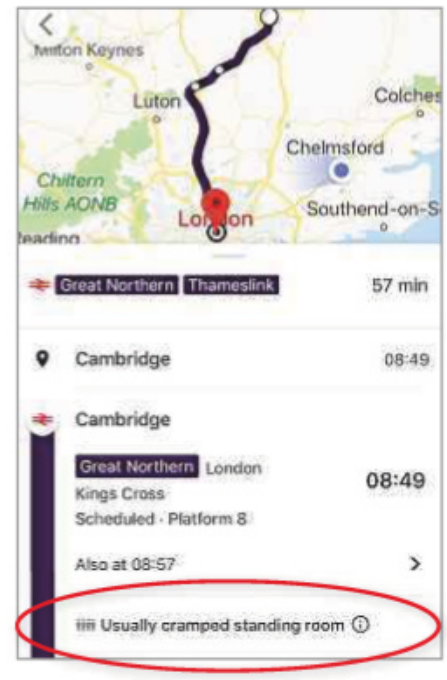
Press Alt+P when watching a video in Chrome to have it appear in its own borderless window

Get warnings when your passwords are compromised

Have your passwords ever been leaked? Stories about hacked or lost data are now so common it's difficult to keep up with them, but the Password Checkup extension for Chrome can help, by noting which sites you use, checking them against lists of known breaches, and advising you to change your password if it finds a match. It's great for giving you peace of mind as no news – and thus no alert – is almost certainly good news. Install the extension by using a Chrome browser to visit www.snipca.com/32426.

Play Chrome videos in a pop-out window

Need to keep an eye on a video while doing something else on your PC? Install Chrome's Picture-in-Picture extension (www.snipca.com/32428), set the video playing and press Alt+P, and it will break out of the browser window (see screenshot top). You can drag it to wherever is most convenient and it will stay on top of any other apps you're using. Perfect for browsing other websites while watching the news, or following a YouTube tutorial on your PC. The video will stay on top of all other windows, and you can move or resize it using your mouse.



Google Maps now tells you whether your trip on public transport is likely to be standing room only

Avoid crowded public transport

Google Maps has provided public transport directions for several years now, on Android, iOS and the web. To access them, click or tap the blue Directions icon (a diamond road sign), enter your origin and destination, then tap the train icon. These have recently been enhanced, not only with details of delays and diversions but, for several major UK cities, a projection of how busy a mode of transport is likely to be. As you can see from the screen shot above, the 08.49 service from Cambridge to London is "Usually cramped standing room", so you'd be well advised to avoid it. The 08:25, on the other hand has "Usually a few empty seats", which would be much more pleasant.

Currently, these projections only appear in the Android and iOS versions of Maps, but we expect them to appear when using Maps on a PC soon. ca

You DON'T have to use Google search

Google isn't the only search engine – or even necessarily the most appropriate for you. If privacy is your main priority, check out DuckDuckGo (www.duckduckgo.com), and if you're using Edge on your PC and haven't switched away from Bing, you can use Bing on your Android phone, too.

Open the mobile Chrome browser and tap the three dots to the right of the address box, followed by Settings. Tap 'Search engine' at the top of the Basics section, and set your preference.

At the moment, that does nothing to change the provider for the search widget on your Android home screen, but a ruling from the EU looks set to change that. Google is signing up rival providers and, as of early next year, you'll be able to switch to the search engine of your choice. We'll let you know as soon as it goes live.

Best ways to use your Windows lock screen

The Windows lock screen is more than a security tool. **Will Stapley** reveals how to unlock its best hidden features

Personalise your background

With striking images of everything from the night sky to ancient monuments and rugged landscapes, it's hard not to be impressed with the Windows lock screen backgrounds. Served up by Microsoft's Spotlight service, they also provide handy information about the picture. Hover over these snippets to read more, or click (before you sign in) to be directed to a related website.

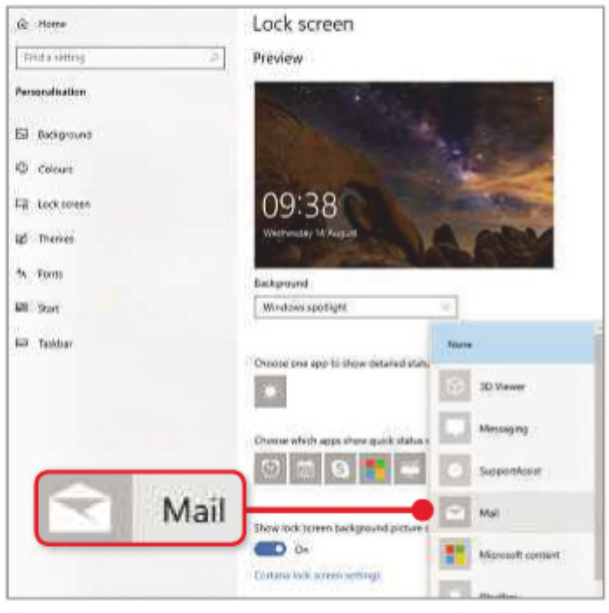
However, Spotlight's stunning images aren't your only option for your lock-screen display. To personalise things, click Start, Settings (cog icon), select Personalisation, then click 'Lock screen' in the options on the left. Under the preview image on the right, click the box then select Picture. Next, either choose from the five thumbnails of recently-used images, or click Browse and select from any image on your hard drive.

Alternatively, if you want a series of images sliding across your lock screen, select Slideshow from the box, click 'Add a folder', then navigate to where your photos are stored. Note that any images stored in subfolders of the location you choose will also be displayed.

To see your new background in action, you can go straight to the lock screen by pressing Windows key+L.

Choose lock-screen apps

The lock screen can also display updates from selected Windows apps, such as Mail, Calendar and Weather. In the 'Lock screen' settings window referred to above, you can select one app to show what Windows calls 'detailed' information. Choose Weather, for example, and you'll see a brief forecast for your current location, while Calendar will display any upcoming appointments. You can also show 'quick updates' for up to seven additional apps.

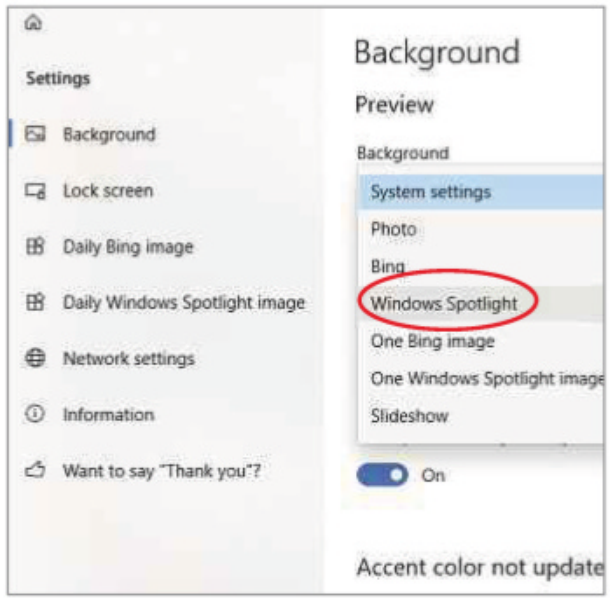


Select which apps show updates on your lock screen

Select Mail (see screenshot below left) and you'll see a small envelope icon with the number of unread emails you have in your inbox.

Use Spotlight images on your Windows desktop

Curiously, Microsoft doesn't provide a way to use its impressive Spotlight images as your desktop background. However,

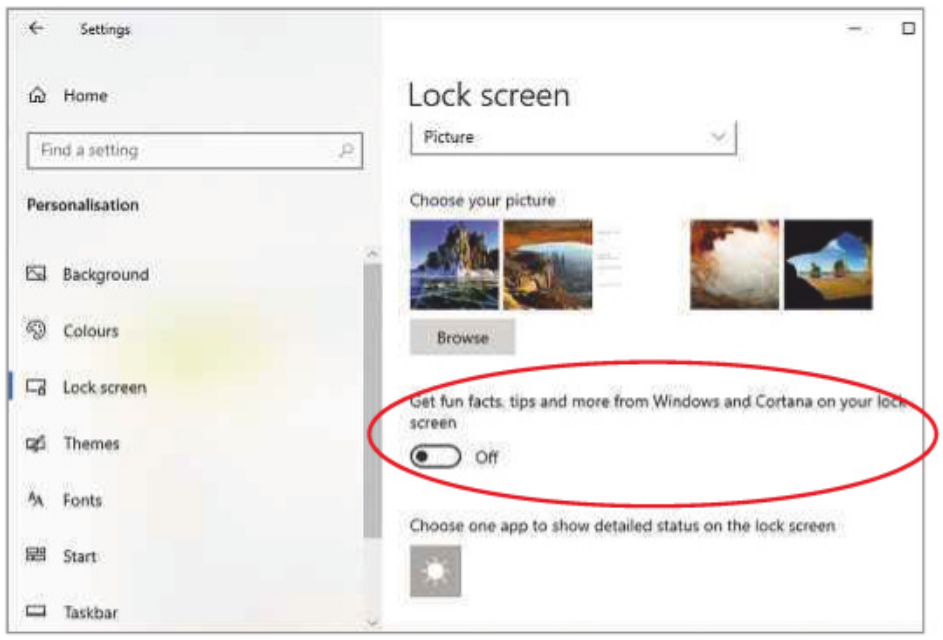


Use Dynamic Theme to change your desktop background to the current Spotlight image

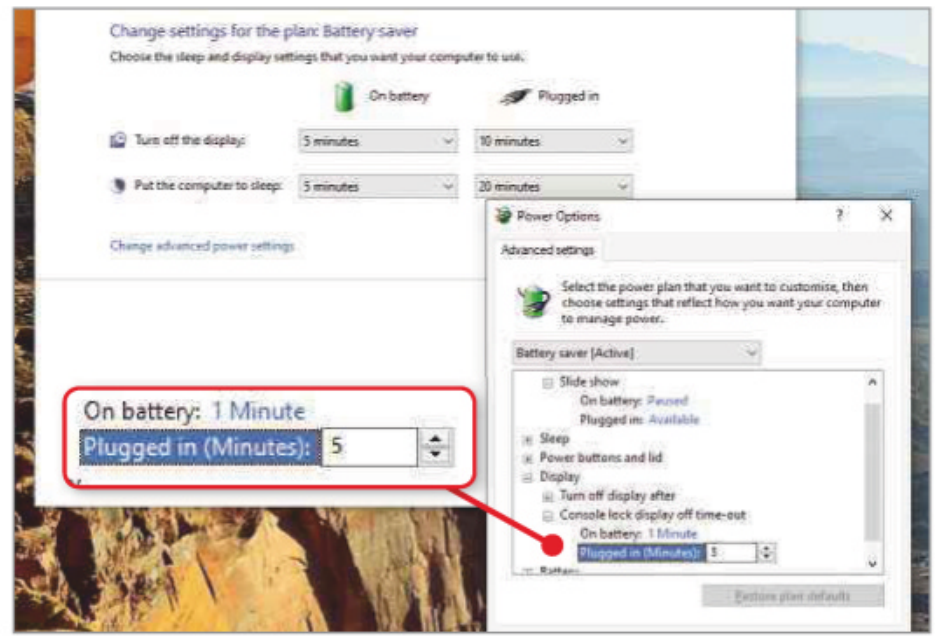
there is a workaround using a program called Dynamic Theme. It's a Windows app, so open the Microsoft Store (by clicking Start and typing microsoft store), then search for 'dynamic theme'. Install the app, then run it and select Background from the options on the left. In the Background section on the right, click the box to change the background from 'System settings' to Windows Spotlight (see screenshot below left). Your desktop background will now change to the current Spotlight image.

Remove lock-screen adverts

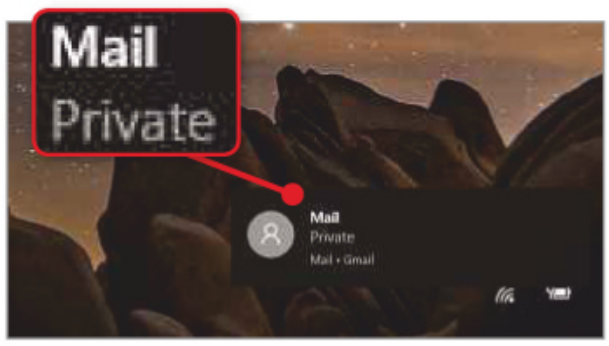
When it launched Windows 10, Microsoft caused a stir by sneaking small adverts on to the lock screen (mostly for new Windows apps or other Microsoft services). You can put a stop to this nonsense by going to Settings, Personalisation, 'Lock screen', then switching off the slider next to 'Get fun facts, tips and more...' (see screenshot above right). Sadly, this option isn't available if you've selected Spotlight as the background type.



Stop Microsoft from displaying adverts on your lock screen



With a quick registry tweak, you can display your lock screen longer



Make lock-screen notifications, such as email details, completely private

Customise notifications

As we mentioned earlier, your lock screen can show notifications, such as for new emails or upcoming calendar events. To enable and customise these, go to the Settings home page, select System, then Notifications. Next, make sure 'Show notifications on the lock screen' is switched on. Any notifications will then slide in from the bottom right of the lock screen, much like when you're signed into Windows.

In some apps, it will show additional information with the notifications. If you receive a new email, for example, you'll see who it's from, the subject line and the first few words – not ideal if you prefer to keep your emails private. To change this, scroll down the list of apps and click the one you want to change (in this case, Mail). In the next screen, tick the 'Keep notifications private on the lock screen' option at the top. Windows will now hide personal information from notifications - so when you receive a new email, the notification will simply display the word 'Private' (see screenshot left).

Hide your email address

If you use a Microsoft account to sign into Windows, your email address will be displayed for all to see in the lock screen. This isn't a big problem on your desktop PC at home, but you might not want your email address displayed on your laptop when in a public place, such as a library.

Go to the Settings home page, then select Accounts, 'Sign-in options'. Scroll to the Privacy section at the bottom, then click the slider under 'Show my account details...'. From now on, only your Windows username will be displayed when signing in, not your email address.

Keep your lock screen displayed for longer

Once you've put time and effort into getting the lock screen just as you want it, you might not appreciate it when it automatically turns off one minute after it appears. One way to change this timeout is by selecting Slideshow as the lock screen background type (see 'Personalise your background' tip), then clicking 'Advanced slideshow settings' and changing the slideshow timeout at the bottom.

However, you can also use a hidden setting that lets you keep the lock screen visible for longer regardless of which background type you're using. It involves editing the WIndows registry, so we recommend you first back up your personal files.

Open the Registry Editor by clicking Start, typing regedit, then pressing Enter. Next, navigate to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Power\PowerSettings**, open the folder that begins with '7516b95f', then open the folder that begins with '8EC4B3A5' (alternatively, copy the text from our Pastebin account at www.snipca.com/32484, then paste it into the navigation bar in the Registry Editor and press Enter). In the left-hand pane, you'll see an entry called Attributes. Double-click this, then change its value to 2.

Next, click Start, type edit power plan, then click 'Change advanced settings'. In the window that appears, double-click the Display setting, then 'Console lock display...'. You can now change the lock screen timeout as you see fit (see screenshot above). ca

Remove your lock screen for easier access

As useful as the lock screen is, there will be times when you'd prefer to avoid having to re-enter your password every time you return to your computer. To turn the lock screen off, go to Settings, Accounts, then 'Sign-in options'. Scroll down to the 'Require sign-in' section on the right, then choose Never under 'If you've been away...' (see screenshot). From now on, whenever your display turns off or your PC goes to sleep, you'll be able to leap straight back into what you were doing by moving your mouse, pressing a key or – if it's gone to sleep – pressing the power button. The lock screen (with password prompt) will only appear when you restart your PC.

This does mean anyone will be able to walk up to your PC and start using it. An alternative is to change your settings so the lock screen is bypassed if your display turns off (for example, after five minutes of inactivity), but is activated if your PC goes to sleep (such as after 30 minutes). To adjust these settings, click Start, type edit power plan, then change the 'Turn off the display' and 'Put the computer to sleep' settings.

Problems Solved

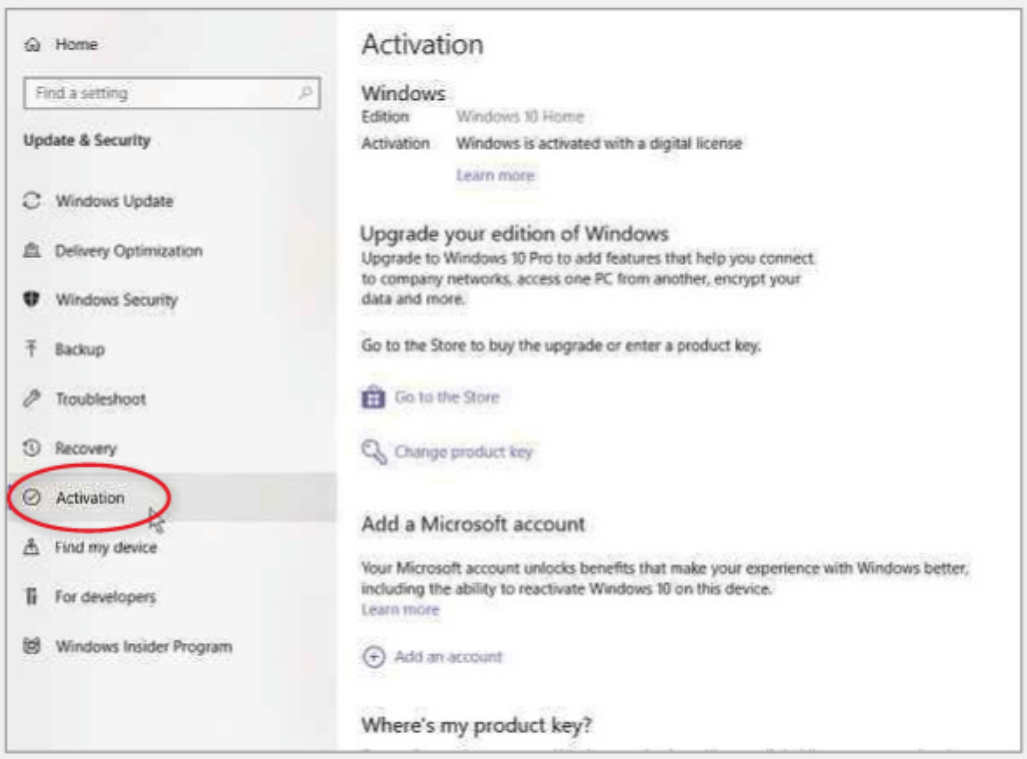
Our experts solve all your tech problems

PROBLEM OF THE FORTNIGHT

Can I boot from my clone drive?

Q I consider *Computeractive* most excellent, so have subscribed. I won't bore you with the details of some recent problems, but the bottom line was that I had to do a reinstall of Windows 10. To head off a similar situation, I've purchased an SSD that's identical to the one in the computer. On to this, I make regular clones of the main drive, using EaseUS Todo Backup (www.easeus.com). So, my question is would it be safe to assume that, if an update goes wrong, I should remove the messed-up drive from the machine and replace it with the clone drive and just pick up from there?

Dave Triffid



If you need to reactivate Windows 10, go to 'Update & Security' in Settings

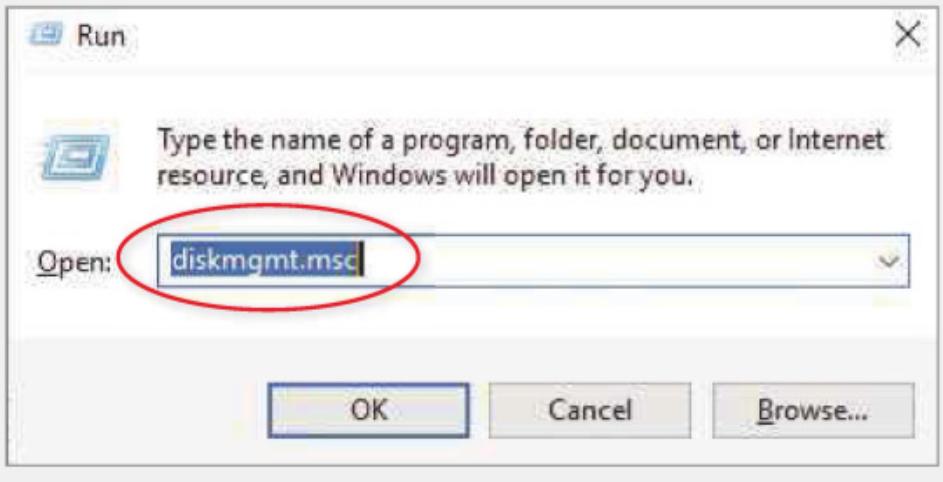
A Welcome aboard! There's a short answer and a longer answer to your question.

The short answer is that, all else being equal, then yes – you could just remove the duff drive, put the clone in its place and off you go.

There might be a hiccup with Windows 10 detecting a hardware change and demanding reactivation. However, that's easy to deal with. First, click Start followed by the Settings cog, and then 'Update & Security' followed by Activation (see screenshot above). Follow the prompts in the right-hand pane – these vary depending on your Windows 10 licence type, and whether or not you've previously linked a digital licence to a Microsoft account.

However, the operative phrase here is 'all else being equal'. You told us that you've bought the same make and model of drive, but that's not actually necessary to create a clone – it's important only that the destination drive is the same capacity or greater than the original. What matters is how your backup drive is prepared, and how you create the clone. The chances are that you're doing everything just fine currently, but it's as well to check because, as any cub scout will attest, it's best to be prepared.

Begin by checking what partition style is in use on your PC's original boot drive. To do this, press Windows key+R, then type diskmgmt.msc and press Enter: this launches the Disk Management tool (see screenshot below). Here, right-click the relevant drive (almost certainly 'Disk 0') and choose Properties. Now click the Volumes tab and note the entry next to 'Partition style'. It'll be either the older Master Boot Record (MBR) type, or the new GUID Partition Table (GPT). Your clone drive needs to be set up to match.



To check that your backup drive is prepared correctly, you should first launch the Disk Management tool

In Disk Management, your clone drive will most likely be listed as 'Disk 1'. If setting up for the first time, right-click Disk 1 (or the relevant drive) then choose Initialize Disk, then select the relevant partition type and click OK. Alternatively, to check where you're at now, right-click Disk 1 (or the relevant drive) and choose Properties followed by Volumes.

If you find you need to convert from one partition type to the other, then return to Disk Management, then right-click Disk 1 (or the relevant drive) and choose 'Convert to GPT Disk' or 'Convert to MBR Disk', as appropriate. Note that a drive must be free of partitions for these options to be available so, having ensured you've backed up anything you need to keep, right-click any that exist and choose Delete. Now use EaseUS to produce your clone, as you already know how to do.

Why won't my graphics card work?

Q I built my first PC rig last year. All was well until recently, when my Nvidia GeForce GTX 750 graphics card started putting out really bad visuals. I tried to launch the Nvidia Control Panel but it wouldn't open. So, after a trip to Device Manager, my graphics card was showing up as Microsoft Basic Display Adaptor. Despite many driver updates and a fresh Windows install, nothing seems to change. Any ideas?

Dermot Fixter

A If even Device Manager isn't recognising the presence of your graphics card, then at this juncture we'd have to say that you're most likely facing a hardware fault. However, before you call in the digital funeral director to dispatch your graphics card, there are a few things to try.

First, have you tried physically removing and reseating the card in its PCI Express slot? We ask because your problem could be as simple as a bad connection. Considering yours is a home-built system, this is certainly not beyond the realms of possibility.

So, if you haven't already, open up the PC and then use firm thumb pressure to push the card home. In additiion, if you cut a time corner by not using a retaining screw, fit one now: a hefty double-width card like the GTX 750 really does require one, especially if the orientation of your PC means the card sits horizontally, because the sheer weight of the thing can dislodge the connection.

Alternatively, though admittedly a bit less likely, it could be the PCI Express slot that's at fault. If you have a spare slot, then shift your graphics card left or right one position to see if Device Manager will pay attention to it. As noted, the GTX 750 is a double-width card, so you might need to shift other expansion cards around to make room. Also, while inside, use the opportunity to get busy with a can of compressed air, focusing your cleaning efforts on PCI Express slots and the card's contacts, plus the card's cooling fan.

Check that your Nvidia GeForce GTX 750 is securely connected

If all this doesn't work, then we'd guess that your card is simply faulty. We don't know your specific card make and model but the 750 chipset was introduced in 2014 so, even if you've retained the receipt, any guarantee that might've come with it is likely to have expired.

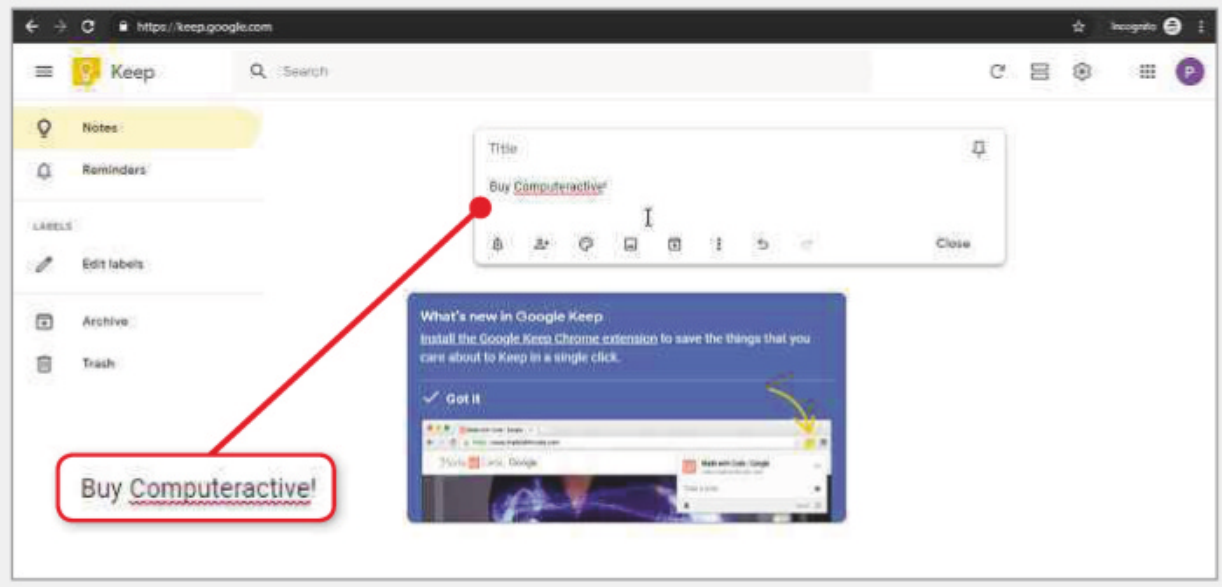
How do I convert PDF to text?

Q I can connect my Samsung Note 3 tablet to my laptop, but can only produce PDF files. However, my laptop has Microsoft Word. How can I convert my Samsung's PDF files to Microsoft text?

Peter Stern

A There's quite a lot wrapped up in your short question. We don't know for certain what app you're using, and why you can produce only PDFs. The default Samsung Notes app has limited export options, including to PDF and JPEG, but there are any number of other apps you could install and use, allowing you to save directly to text – including, say, the free Google Keep app (www.snipca.com/32274).

Storing your notes with this would have the added benefit of not needing to faff with connecting your tablet to your PC to transfer the text. Instead, you could just visit https://keep.google.com, log in and – abracadabra! – all your notes will be there, to copy, paste, save or whatever. Just click a message (see screenshot), press Control (Ctrl)+A to select all of it, then press Ctrl+C to copy it to the Windows clipboard and, finally, Ctrl+V to paste it into Microsoft Word.



Google Keep is an efficient app for keeping notes that can be pasted into Microsoft Word

Regardless, if you're set on the PDF route, then the easiest option would be to use an online conversion service, such as the popular Zamzar (www.zamzar.com). Just click the Add Files button, select your PDF, then click Choose Format and pick doc or docx from the dropdown menu. Finally, click Convert Now, then wait for a while before clicking the Download button to receive the converted file.

Problems **Solved**

How do I check my Asus laptop?

Q I have an Asus Pro P2520L laptop. I've become aware of a problem with Live Update, which I see you covered back in the News section of Issue 552. As per your article, I would like to ensure that I have version 3.6.8 – but I've hit a brick wall! The problem is that I could not find a Live Update icon anywhere on my PC. I did some research on the internet, which suggested looking in 'Programs and Features' within Control Panel, but no relevant entry was there. Finally, I tried a live chat with Asus support but basically got nowhere, as it related only to customers in the US or Canada! What should I do?

Keith Sandars

A You should stop worrying, is the good news. While the communication from Asus has been poor in terms of hard facts, we can say that if your model doesn't have Live Update installed, then it is not affected – because it is Live Update that is the problem. Or rather, it was the Live Update servers to which Live Update connects.

The company says it has since fixed the problem at the server end and only a few machines were ever affected. As yours never had Live Update installed, it was not at risk. However, if you want reassurance, then download the free diagnostic tool published by the company, at www.snipca.com/32275.

Launch the tool, then click OK followed by Check (see screenshot below), and then wait a moment for the results.

You can use Asus's online diagnostic tool to check Live Update

Is the BBC being ageist?

Q I seem to be permanently logged into the BBC website, perhaps from my iPlayer registration years ago. I use this but I never make comments on BBC stories. As such, my 'problem' isn't really a problem – but I'd love an explanation.

Recently, I clicked a link on the BBC news website to an article (about Area 51, if it matters). At the bottom of that page I noticed the usual Your Comments section looked a bit different. Instead of a box asking for my comment, there was a message saying I wasn't the "right age" to comment. Why is this? I'm nearly 80!

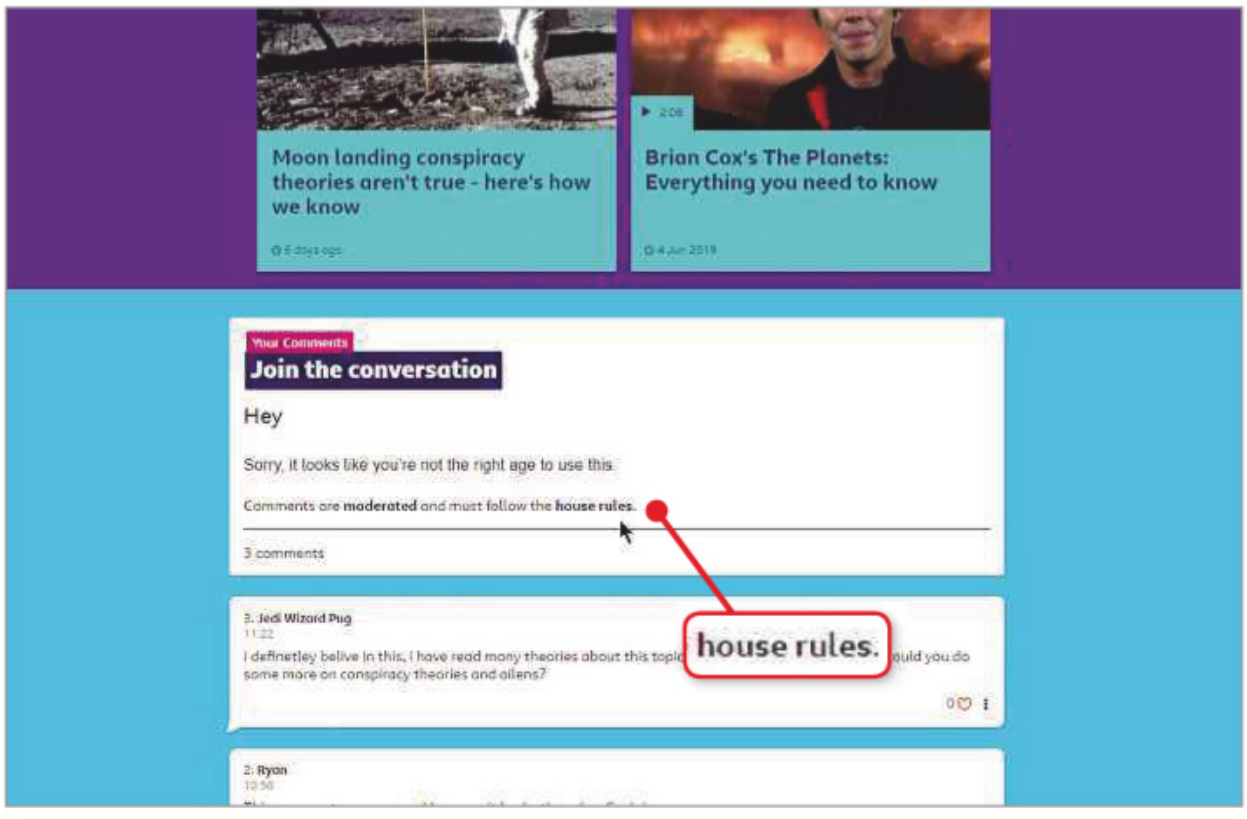
John Harper

You must be aged 15 or younger to comment on the BBC's Newsround site

A Yes, your login is tied to your iPlayer registration. And, as the Beeb knows your date of birth, it's being intentionally ageist.

Why? Well, Auntie has swathes of websites aimed at younger audiences, including the likes of CBBC and Newsround. For well-intentioned reasons, commenting on these forums is restricted to those under 16 years of age (see screenshot above).

We found an article about Area 51 on the Newsround website, so we guess that's where you found yourself. The BBC is happy for over-16s to view these pages, but older visitors cannot interact – that's the long and short of it.



BBC sites like Newsround, which cater for a young audience, have strict house rules

Q: How do I check my broadband dropouts?

A: Issue 536, page 68 – find it on our 2018 Back Issue CD

Buy it from www.snipca.com/30307

Why can't I text some numbers?

Q I don't know if this counts as a computing problem but it does involve my smartphone and, being a long-term *Computeractive* reader, I have seen you address smartphone questions numerous times before – so I'm hoping you can help with mine!

I've never had any problem using my iPhone to send and receive text messages to various friends. Recently, though, I found myself tempted by a TV competition.

To enter, one had to send the word WIN to a particular number. I've tried this repeatedly over several days, but each time after a few minutes my phone displays a 'Not Delivered' message (see screenshot).

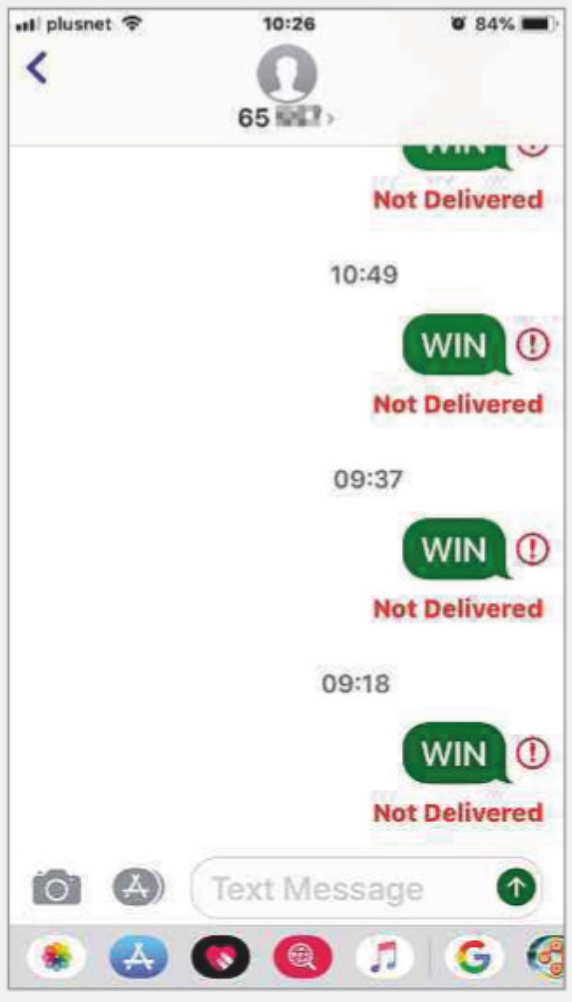
Then, a few days later, I had a text requesting feedback on the service I'd received from my boiler company. When I replied, the same thing happened repeatedly. Do you have any idea what's going on here?

Brian Fine

A Yes. The services to which you're seemingly denied access employ what are known as short codes – literally, short numbers that are easier to remember than long ones. Some services that use short codes charge premium rates, like the competition you attempted to enter, while others will cost you no more than a standard text message.

It's that first fact that's the problem here: to avoid customers unwittingly racking up enormous bills, or falling foul of short-code scams, some mobile phone networks or specific deals – usually of the pay-as-you-go (PAYG) variety – will by default block access to these particular services. So, in order to make use of such services you'll need to contact your contract provider and ask to opt in.

However, we should say that access to short-code services is not universal. BT's popular Plusnet mobile subsidiary, for example, does not support short codes at all. So, if you're a customer of this firm and wish to make use of these services, the only option is to switch providers.

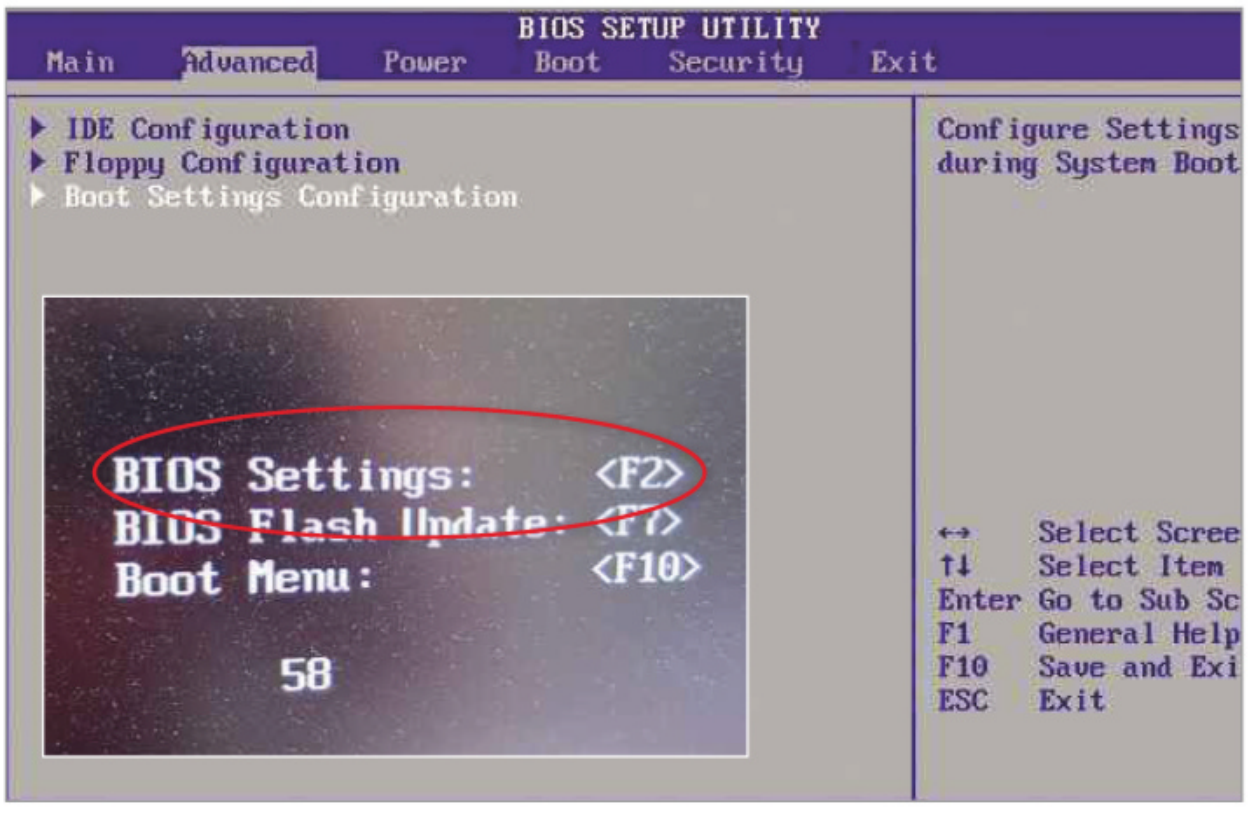


Undelivered messages are sometimes blocked to prevent short-code scams

Why must I wait a minute to boot?

Q I've had a PC running Windows 7 Professional since about 2011. Viglen changed the motherboard and updated the BIOS about five years ago under a guarantee. Since then, I've had no problems. But recently, I've noticed that the booting process hangs for a minute before starting Windows. After this, all appears OK. Previously, this boot screen flashed by before I could read it, let alone press a button during it. I'm not that savvy about computers, and fear that something drastic is about to happen. I'd be grateful if you could explain or help me rectify this situation.

Nigel Farrant



Press function key F2 to enter the motherboard's BIOS settings and change the Boot Timer

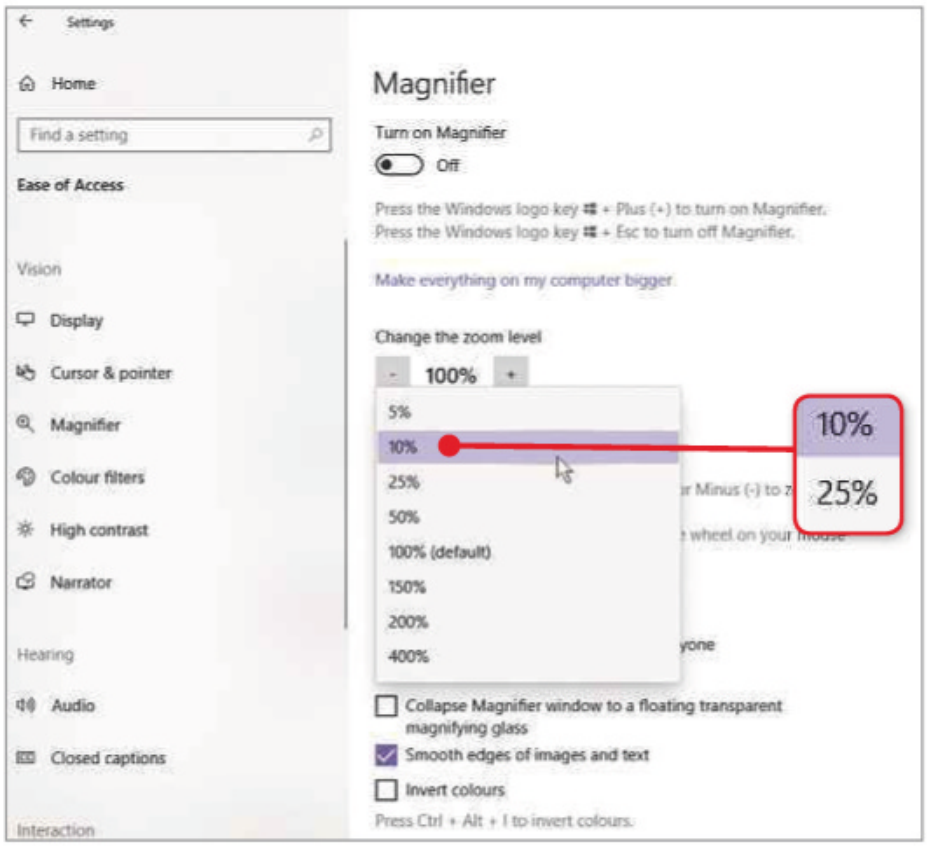
A You sent us a grainy photo of your display that, if nothing else, told us there's nothing to worry about. We can't say how it happened but a pre-boot BIOS menu has been enabled, with a 60-second countdown timer. This ticker's intent is to give you time to press one of the buttons corresponding to the displayed options – F2 for BIOS Settings, F7 for the BIOS Flash Menu and F10 for the Boot Menu (see screenshot).

We don't know the specifics of your PC but based on your photo we can say that, if you tap F2, you'll enter the motherboard's BIOS. From here, you'll be able to use the cursor (arrow) keys to navigate the menus. Look for a Boot Settings or Boot Configuration option (or similar). Within this, you might find an option like Boot Timer (or similar). Use Enter and the cursor keys to set this to a lower figure. Press Escape (Esc) to exit, select Yes to confirm (or tap Y), and press Enter. That should be that.

Can I make my old app full screen?

Q For more than a decade I've been using Magix Audio Cleaning Lab (ACL). I consider it a brilliant bit of software and, despite the many new versions of Windows that have been inflicted on me, it keeps working. My only criticism is that it's not possible to maximise it to fill the whole screen. This makes using it that little bit more fiddly. Any solutions?

Gervais Sawyer



Use the Magnifier tool to change the zoom increments by, say, 10 or 25 per cent

A Well, no. But also yes – after a fashion. We can't fix the design decisions made by developers of a program that's over a decade old. The version of ACL you're using simply doesn't have an option to maximise its window, and there's no solution to that – that's the way it was (badly) designed.

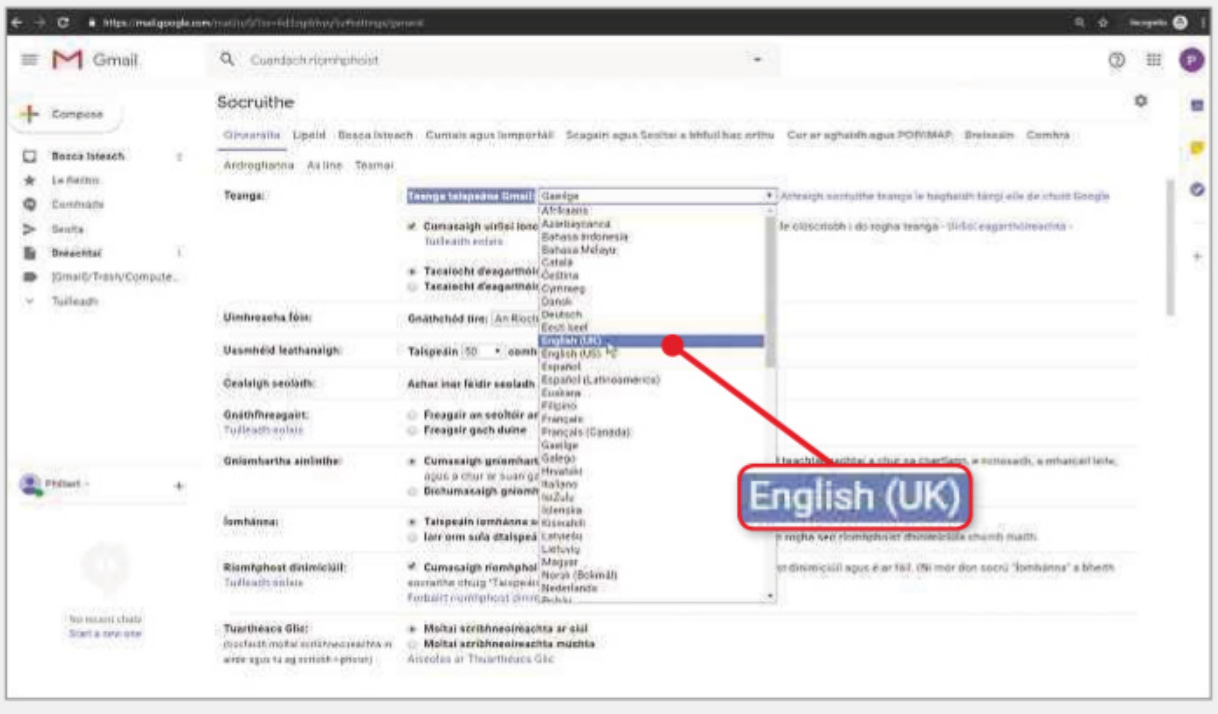
However, Windows 10 has some great accessibility features that could be put to good use here. Specifically, we're talking about using the Magnifier tool to zoom in to the ACL window to make it effectively full screen.

To do this, click Start followed by the Settings cog, and then 'Ease of Access' followed by Magnifier. Next, under the 'Change the zoom increments' heading, click to open the dropdown menu and choose a low figure – say, 10 or 25 per cent (see screenshot). Now, you can zoom in and out of a Windows 10 view by holding down the Windows key and tapping plus ('+') or minus ('–'). Do this a few times to effectively make ACL full screen, and you're good to go.

Why is Gmail speaking in a foreign language?

Q For some reason my Gmail switched to a foreign language. For example, at the top it now says, "Tá do Phríomhbhosca folamh", whatever that means. I closed the tab with all the unreadable text, but it came back the same when I opened it under new tab. Help!

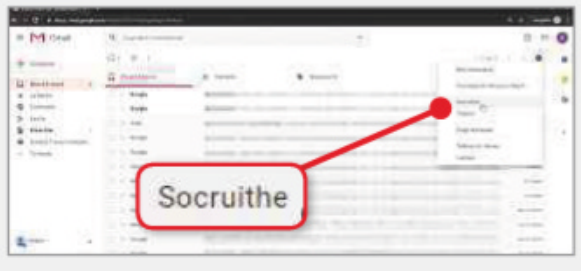
Emily Munro



Alongside 'Teanga' (Language) you can choose English (UK)

A Somehow or other the default language for your Gmail account has been switched to Gaeilge (Irish). We'd say it's 'easy' to switch it back but that 'easy' is made rather more difficult unless you can read the language. No one on the *Computeractive* team is sufficiently multilingual but, with a little help from Google Translate (https://translate.google.com), we've painstakingly worked our way through the process in Gaeilge, so we can tell you how to switch back to English.

First, log into email as normal. Next, click the Settings cog at the top right, followed by Socruithe (Settings, see screenshot right). Then, click to select the Ginearálta (General) tab, and then, alongside Teanga (Language), click to open the dropdown menu. Here, choose 'English (UK)' (see screenshot above), and then, scroll down to the bottom of the page to find and then click the Sábháil Athruithe (Save Changes) button.



To change Gmail's language from Gaelic to English, first select 'Socruithe' (Settings)

What's the difference between... USB hubs?

Q My laptop has only two USB sockets and, with both an external keyboard and wireless mouse dongle attached, it's therefore already at its limit.

The machine's hard drive is also getting full, so I want to add an external drive for storing photos. Because of this I went online to Amazon to first buy an extension hub thing.

Simple enough, I thought, but the choice was quite overwhelming. I saw numerous 'powered' hubs, that plug into the mains, alongside the very many more that apparently don't need to do this.

So my question is: what's the difference between a powered hub and one that isn't? Would a powered hub be faster, say? I really can't see why I'd want to plug something into the mains unless it's really necessary, so I'd appreciate any help you can offer.

Matthew Finch

A A mains-powered hub would be no faster than an equivalent non-powered. For example, a hub that promises USB 3.0 connectivity and speed should deliver those regardless of whether or not it's plugged into the mains. Indeed, some mains-powered hubs – such as the pictured Atolla model (around £20, www.snipca.com/32263) – can be used without actually being plugged into the mains.

However, power can become important depending on the equipment you're connecting. A USB keyboard and wireless dongle won't draw much power, but other devices might demand more. More devices means more power, basically.

Specifically, the addition of a portable hard drive that doesn't have its own mains adapter – like the Maxtor 1TB (around £40, www.snipca.com/32264) – might result in more power being sucked from your laptop's USB sockets than they're capable of supplying. We're not saying that's definitely the case but

A powered USB hub, like this Atolla model, can supply several demanding devices

it's in such situations where a powered USB hub reveals its mettle: when you need extra juice to drive more demanding devices, you can just plug into the mains to supply them with all the power they need.

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

Why won't my BlackBerry PlayBook activate?

Q I love my BlackBerry PlayBooks – all four of them! I've just purchased another, with the previous owner claiming to have performed a factory reset.

However, when setting up the device I get a message that says the tablet can't be activated, displaying a 132353 error code.

I've tried the Retry button multiple times, connected the PlayBook to the BlackBerry Desktop program and downloaded the latest operating system, but I always end up with the same error.

I have also tried phoning BlackBerry, but had no luck. Various online searches suggest that a lorryload of PlayBooks were stolen, in the USA, and were subsequently blocked from being activated. Do I now own a brick?

I love the magazine, incidentally, and have been a fan since almost the start of publication.

Ed Morgan

The 132353 error code on a BlackBerry PlayBook is usually seen on a blacklisted device

A You bought four PlayBooks and recently obtained a fifth? That's some loyalty! With a few more customers like you, BlackBerry might be where Apple is today. Still, that's all academic, and we sense that you already know that your device is not recoverable.

It's true that back in 2011 some 5,000 PlayBooks were stolen in transit, literally from the back of a lorry (www.snipca.com/32273). RIM, the company that owned the BlackBerry brand at the time, subsequently blocked these half-inched devices from being activated. It's certainly possible yours is one of them, because that's the error message that results from trying to activate a blacklisted PlayBook.

You might expect BlackBerry to be able to assist or at least advise. However, today's BlackBerry is a shadow of the original, the brand having been passed from venture-capitalist pillar to asset-stripping post – so the current mob's interest in supporting an eight-year-old device that was a commercial flop is zero. In short, we're afraid it's a dud.

Next Issue

ON SALE Weds Sept 11

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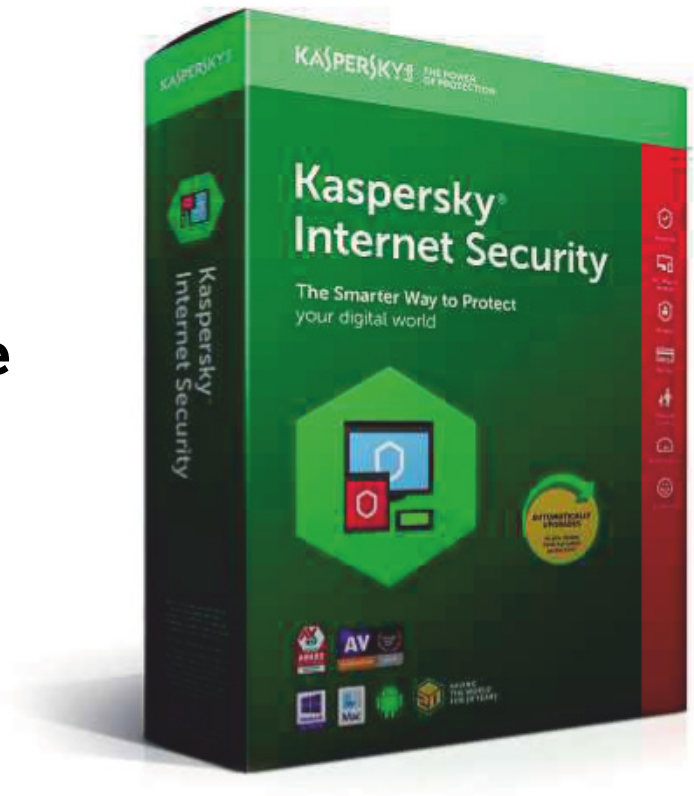

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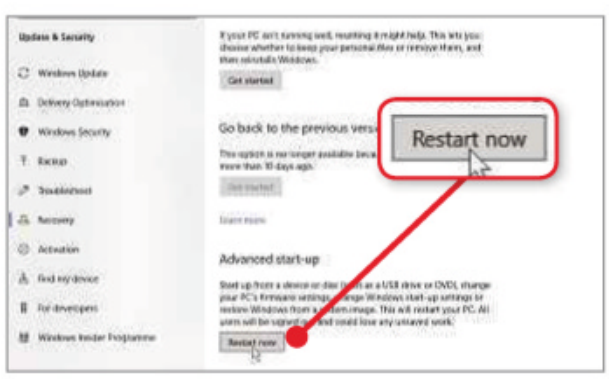
Why can't I change VirtualBox settings?

Q First, thanks for your excellent and informative magazine. I tried to follow the virtualisation How To feature (Issue 555, page 35), which went well until I tried to create the 'vm shared' folder. Am I supposed to create this folder in Windows 10 *and* the Windows 7 virtual PC? That aside, in VirtualBox an error appears informing that hardware virtualisation is enabled in the system settings on the Acceleration tab, and should be disabled as the host platform doesn't support it. However, this area is greyed out so cannot be changed. I tried looking for solutions online but no luck. Could you advise?

David Robinson

A Let's start with the error, which is happening because you're trying to launch a 64bit edition of Windows on a PC that doesn't support hardware virtualisation or doesn't have the feature enabled in its UEFI or BIOS. If the former then the only fix is to set up VirtualBox with a 32bit edition of Windows – because VirtualBox requires hardware virtualisation in order to run 64bit editions.

If you know your PC *does* support hardware virtualisation, or think it does, enable it in the UEFI/BIOS. First, on power up, look for a button – such as F2 or Delete (Del). Alternatively, in Windows 10, click Start, the Settings cog, then 'Update & Security' followed by Recovery. Next, under 'Advanced startup', click 'Restart now' (see screenshot below), followed by Troubleshoot. Finally, click 'Advanced options', UEFI Firmware Settings, followed by Restart.



Carry out an advanced start-up to enable hardware virtualisation

In the UEFI/BIOS, use the arrow keys to navigate the menus. You're looking for a section headed Virtualization (or similar). Select this, press Enter to view the settings, then use the arrow keys to select Enabled or On. Next, press Escape (Esc) to exit, and select Yes (or tap Y) to save the changes.

Finally, the 'vm shared' folder is just for the Windows 10 PC. Once created, you access that shared folder from 'within' your virtual Windows 7 PC.

Can I keep using WhatsApp?

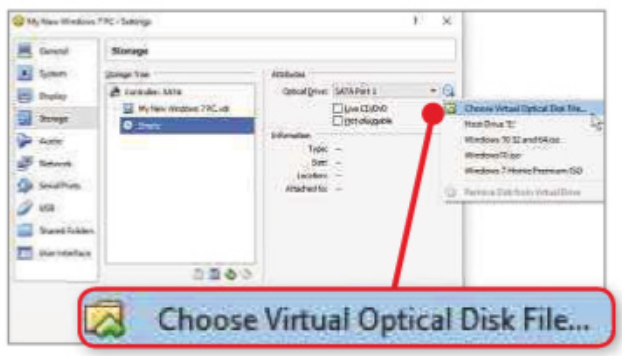
Q Issue 556's 'Problem of the Fortnight' (page 64) gave me hope that I could stick with my Lumia 950 Windows 10 Mobile phone. However, I recently received a message from WhatsApp saying that the app will be unsupported and stop working on 31 December, 2019. My wife and I both use WhatsApp to picture-message friends and family in the UK and overseas. Can you suggest a workaround? Also, what happens to everyone on old Android or iPhones? Thanks for the brilliant mag. I've been subscribing for many years now.

Andy Poulton

A We're afraid there's no fix for the WhatsApp problem. For its own commercial reasons, Facebook – WhatsApp's owner – has decided to cease development and support of the Windows 10 Mobile app (with immediate effect), and operation of the service itself on the same platform from the end of 2019. You can read its explanation at www.snipca.com/32337.

However, it's still possible to send pictures via your phone. Sending images sent as email attachments is one route, but if you wanted a more WhatsApp-like service, then Windows 10 Mobile's own Messaging app should still work after December 2019, even though Microsoft is withdrawing support for the platform itself.

The messaging app uses the traditional SMS (text) message technology that's still widely supported by mobile phones and networks. It also lets you send pictures, via MMS (Multimedia Messaging Service). The availability of the latter is down to your network provider, but be warned that most charge a pretty penny for sending picture messages this way – up to 40p a pop – so check the costs.



Click the DVD icon labelled 'Empty', then select 'Choose Virtual Optical Disk File...'

Where's VirtualBox start-up disk?

Q I tried several times to set up a virtual PC, as explained in Issue 555's How To section. However, when I get to the bit where I'm supposed to select a start-up disk, I'm stumped. This just does not seem to exist on my Windows 10 laptop. Please help!

Don Jay

A We're not sure why that box isn't appearing, but there is another way to attach a start-up disk before launching the virtual PC.

First, in the list of virtual machines on the left, click to select yours, then, at the top, click the Settings cog. Next, on the left, click Storage then, on the right, under Storage Tree, click to select the DVD icon, labelled 'Empty'. Now, under Attributes on the right, click the DVD icon then 'Choose Virtual Optical Disk File' (see screenshot above). Finally, navigate to your downloaded ISO file, click to select it, then click Open. Now return to the Workshop to continue following the instructions after the 'Select start-up disk' bit.

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Jargon **Buster**

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.

4K Video with a resolution of at least 3840x2160 pixels.

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

AMOLED Active-Matrix Organic Light-Emitting Diode. Alternative technology to LCD for flatscreens.

Aperture Opening that controls the amount of light entering a camera lens.

ATX Advanced Technology eXtended. A motherboard and power-supply specification developed by Intel in 1995.

Biometrics Using measurable personal characteristics, such as fingerprints, for identification.

BIOS Basic Input-Output System. Software built into every PC that connects the vital components.

Calibration The process of checking that colours are accurate on a monitor.

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.

DisplayPort A new socket for connecting monitors.

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

DSLR Digital single-lens reflex. A digital camera that uses a moving mirror so its viewfinder looks out through the lens.

eMMC Flash storage commonly found in cheap laptops and tablets.

f/17, f/2, f/3 Size of aperture. The lower the number, the wider the aperture.

Factory reset A software restore of an electronic device to its original system state.

False positive When an antivirus program wrongly detects a malware infection.

Firmware Software stored on hardware to control its operation.

FreeSync AMD's technology for varying the screen's refresh rate to avoid two frames being shown at the same time.

GEDCOM Short for Genealogical Data Communication. A file format used by genealogy programs.

GHz Gigahertz. A measure of how many instructions a chip can process per second.

Graphics card A component that produces the image on the monitor.

HDMI High-definition media interface. Connection that transmits high-definition video and audio.

HDR High-dynamic range. A camera that takes more than one photo with different levels of colour and contrast.

Heatsink A block of metal used to dissipate the heat from a PC chip.

Hotspot A public area covered by a Wi-Fi network that allows you to access the internet.

HTML Hypertext Markup Language. The language used to write most web pages.

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

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

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

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

MicroHDMI Miniature version of HDMI often found on smartphones.

MicroSD card A small type of memory card.

mSATA A smaller version of the SATA interface, used for connecting SSDs in laptops.

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

Mini DisplayPort A type of port for connecting a monitor, TV or projector to a computer.

NVMe Non-Volatile Memory Express. An interface that lets solid-state drives work faster.

OLED Organic light-emitting diode. A thin-film organic light-emitting diode used in PC screens.

Open source Software that can be modified by anyone, rather than just by the employees of the company that created it.

Partition A large hard drive can be split into two or more partitions or 'virtual' drives.

PCIe Peripheral Component Interconnect Express. A faster version of PCI – a slot on the motherboard for expansion cards.

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

Product key A unique serial number issued by software companies that must be typed in by the user before a program will launch for the first time.

PUP Potentially unwanted program. A program that may not be desired, despite the user consenting to it being downloaded.

RAID Redundant array of independent disks. System for storing data and automatically backing up hard drives.

RAM Random-access memory. The computer's working area, used for data storage while the PC is switched on.

Ransomware Malware run by hackers who lock PC files and demand payment to release them.

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

Render How a website converts digital code into an image.

SATA Serial ATA. Connects hard drives and disc drives to a PC.

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

SODIMM Small Outline Dual Inline Memory Module. The memory chips used in laptops.

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.

Thunderbolt A very fast port for connecting external storage to a PC.

UEFI Unified Extensible Firmware Interface. A modern replacement for the BIOS.

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.

VESA Video Electronics Standards Association. A standard mount for attaching monitors to stand/walls and mini PCs to the back of monitors.

Virtual PC A Windows tool that enables you to run a second 'virtual' operating system on a PC, such as running 7 in a Windows 10 computer to use older programs.

VPN Virtual private network. Keeps all internet communication safe and private.

White balance Adjusts the balance of colours in the image to produce natural-looking images.

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 can contain a number of compressed documents or files.

Easy when you

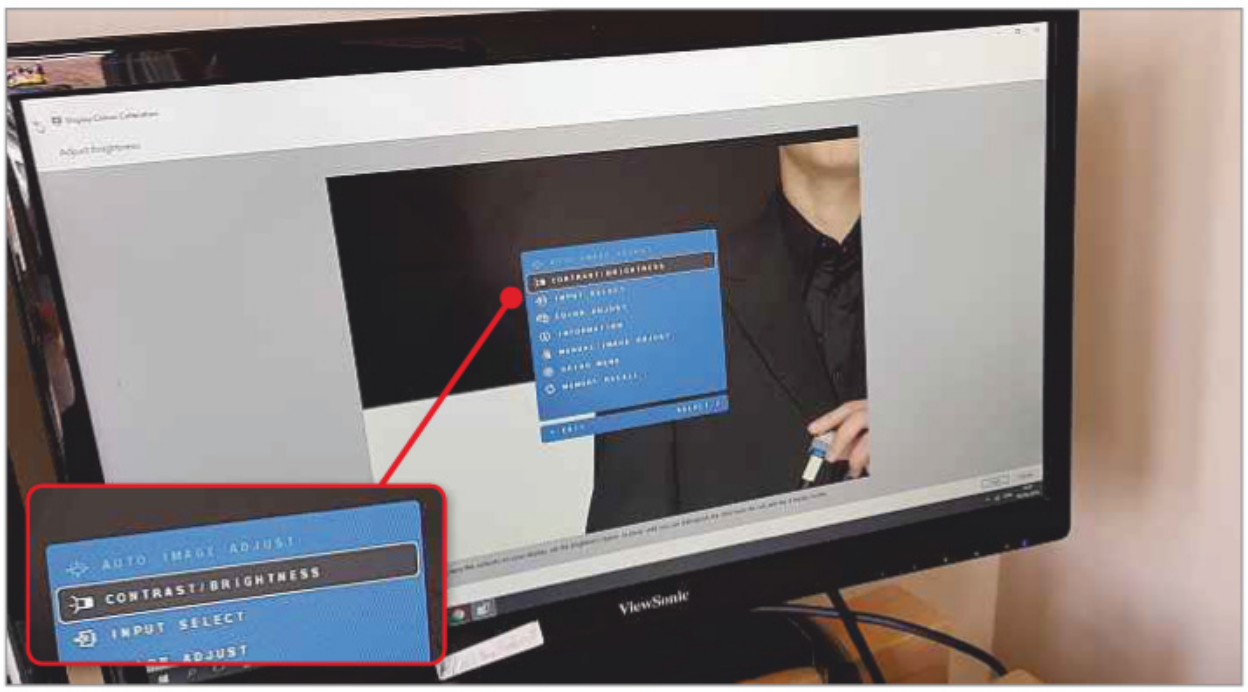
Know How

After years of her computer screen turning all her photos a funny colour, **Jane Hoskyn** finally agrees to...

Calibrate her PC monitor

Calibration. Calibration, mm-hm. Calibration's what you need, 'specially if you wanna print your photos, yeah. So sang Roy Castle in *Record Breakers*. I think.

Anyway, that's what we're always told. I always thought my display looked just fine thanks. Then I bought a second monitor, and next to its shiny white background my old monitor's 'white' desktop was pink. Fuzzy, low-contrast pink. No wonder the decade's worth of photos I'd edited carefully looked a bit weird when printed. It seems my monitor had been about as well-tuned as Les Dawson's piano.



This is not a monitor – it's a *photo* of a monitor. Calibrate it by twiddling its buttons and display menu

> It seems my monitor had been about as well-tuned as Les Dawson's piano

In my defence, it looked OK because my brain works properly. It automatically "corrects" things I see. Look at this photo on Twitter: www.snipca.com/32436. It's black and white, with a few widely spaced coloured lines plonked on top. Our brains see it as a colour photo. Mine does, anyway. And so clearly I'm susceptible to optical illusions. Hence my utter failure to see how far my old monitor was feeling off-colour.

Calibration, that's what I need.

You can buy all manner of fancy-pants calibration devices such as the X-Rite i1 Display Pro or Spyder5 Elite, or use free web tools such as Photo Friday (www.snipca.com/32443), a kind of black-and-white test card. Or just grab a piece of white card then twiddle your monitor's buttons until you're no longer seeing red.

But white balance isn't the only setting at stake here. There's also brightness, contrast and 'gamma' (a brightness-contrast mashup involving shadow brightness, apparently). This time, the best tool to use along with your monitor buttons is Windows Display Colour Calibration wizard (search for 'calibrate' in the Start menu), which displays patterns and pictures of a besuited man to help you get the right balance.

Thus began my very own game of tones. Words aren't the ideal medium for explaining the process, so I took a screenshot to illustrate - and that didn't work either, because my monitor's settings menu doesn't show up in screenshots. So I took a photo of it (above). The photo, of course, looks brighter and more contrasty depending on which monitor, device or image-capture tool I view it in. It'll look even more different on this printed page.

And therein lies a fundamental problem of display calibration. One calibration does not fit all. Very high-contrast photos look great on phone screens but too hard-edged when printed, for example.

Artist Rene Magritte made the point that "this is not a pipe" (ceci n'est pas une pipe), this is a *painting* of a pipe (www.snipca.com/32444). These days, it's a digital display of a web page of a photo of a painting of a pipe. Which image is the right one? And does it really matter? Do you see what I see anyway?

Windows does have an answer to this philosophical conundrum. Assorted answers, in fact (this is Windows 10, which has five tools where you only need one). The Colour Management tool lets you switch between different calibration settings and even guides you to the right ones for your needs (photography, graphs, 'business graphics' and so forth). Display Settings lets you switch quickly between your monitor's default calibration and the setting you saved in the calibration wizard. And there's even a text-tuning tool called ClearType that's a little like a sight test without the massive bill at the end.

So while my pink monitor may have been 'incorrectly' calibrated, it was only wrong some of the time. It's actually perfect for reading text on screen late at night. In calibration as in life, it's what you do with it that counts.

Need help calibrating your PC monitor? Let us know: noproblem@computeractive.co.uk

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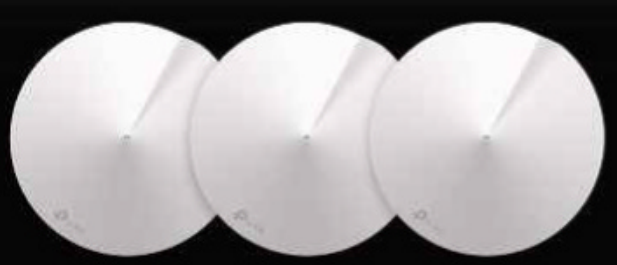
STREAMING WITHOUT LIMITS



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