



## Introducing Routers with Voice Controls



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"Alexa, **ask TP-Link** to  
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"Alexa, **ask TP-Link** to  
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# TV STREAMING FOR FREE!

Unlock higher video quality and amazing  
hidden tools (all binge, no whinge!) **p40**

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- ✓ ITV Hub
- ✓ Amazon Prime
- ✓ NOW TV
- ✓ Netflix



**+  
SAVE TV  
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SD CARD**

**PLUS**

**"MY PC IS FASTER  
THAN YOURS!"** **p48**

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## Streaming with your eyes wide open

**A**s someone who is old enough to remember the launch of Channel 4 in 1982, with its exciting schedule of *Countdown*, *Brookside* and *The Paul Hogan Show*, I find the choice of viewing these days both astounding and overwhelming. Just as I think I'm up to date with the latest Netflix shows, it adds every episode of a classic comedy series – or BBC iPlayer chucks on a load of free box sets, or Amazon Prime Video starts streaming the US Open tennis. It's enough to make you close the curtains, mute your phone and never leave the house again.

Even if you're flummoxed by what to watch, you can take control of *how* you watch, using the eye-opening tips we provide in this issue's cover feature. From improving the video quality of your favourite streaming service to adding useful new features and disabling annoying ones, we've rounded up our favourite tricks for making the most of your online viewing, without paying extra.

**Robert Irvine, Editor**  
[robert\\_irvine@dennis.co.uk](mailto:robert_irvine@dennis.co.uk)  
[#webuser](#)



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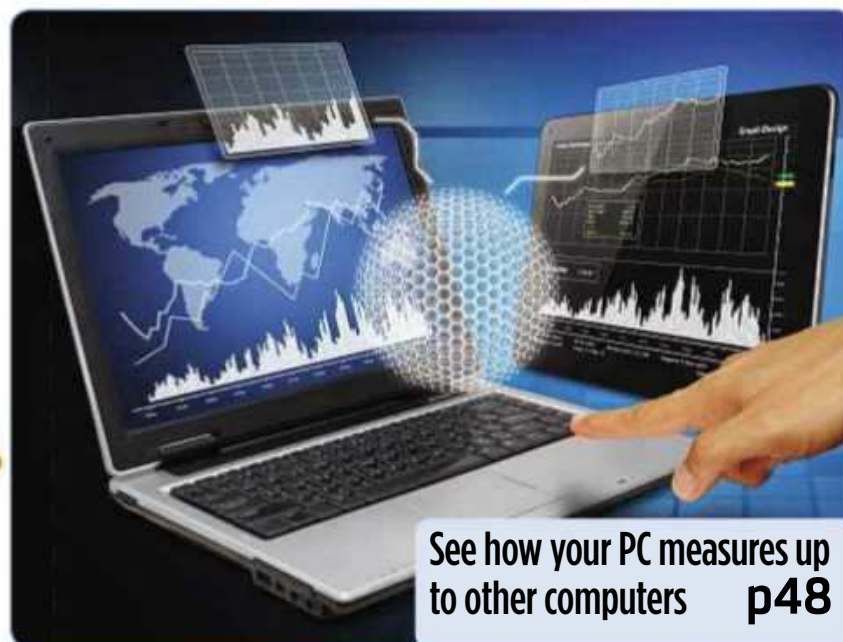
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#### EDITORIAL

Group Editor Daniel Booth  
Editor Robert Irvine  
Technical & Reviews Editor Andy Shaw  
Features Writer Steve Clark  
Art Editor Laurence Hallam  
Production Editor Miki Berenyi  
Editorial Tel: 0203 890 3890  
Visit [forum.webuser.co.uk](http://forum.webuser.co.uk)  
for technical and buying advice

#### ADVERTISING

Tel: 0203 890 3846  
Advertising Director Charlotte Milligan  
Advertising Manager Alexa Dracos

#### ADVERTISING PRODUCTION

Group Production Manager  
Stephen Catherall, 0203 890 4050  
Production Assistant Helina Ozyurt, 0203 890 3827

#### MARKETING

Marketing Manager Rachel Hare  
Marketing Production Manager Gemma Hills

#### MANAGEMENT

Tel: 0203 890 3890  
Managing Director John Garewal  
MD of Advertising Julian Lloyd-Evans  
Commercial and Retail Director David Barker  
CFO/COO Brett Reynolds  
Chief Executive James Tye  
Company Founder Felix Dennis

#### SYNDICATION AND USE OF LOGOS

Syndication Senior Manager Anj Dosaj-Halai  
Tel: +44 (0)203 890 3816  
Email: [anj\\_dosaj-halai@dennis.co.uk](mailto:anj_dosaj-halai@dennis.co.uk)

#### INTERNATIONAL LICENSING

Web User is available for licensing overseas.  
Licensing & Syndication Assistant Nicole Adams  
Tel: +44 (0)203 890 3998  
Email: [nicole\\_adams@dennis.co.uk](mailto:nicole_adams@dennis.co.uk)

#### SUBSCRIPTIONS

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Email: [subscriptions@dennis.co.uk](mailto:subscriptions@dennis.co.uk)  
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# What's New Online

## Play a Chrome game with your voice

**A**ny fan of the classic movie *Blade Runner* will recall the scene in which the bounty-hunter Rick Deckard – played by Harrison Ford – sits in front of a monitor and mumbles “enhance” to clean up an image on the screen. He then proceeds to zoom in, move around and pull back, all in the hope of solving a crime.

You can now try your own hand at being a futuristic detective thanks to a fun but tricky new Chrome game from New York-based coder Nicole He. The aim is to find a secret four-letter code hidden within an image by shouting commands such as “enhance”, “zoom in”, “zoom out” and “move”, then triumphantly declare “the code is” and utter the answer before the time runs out.

You need to grant Chrome access to your microphone and you’ll need to be as clear as possible because the game can have trouble understanding your commands (click Settings to select your accent to see if that helps). But it’s another good example of how voice recognition can be used online – this time, in games – and it perfectly taps into dystopian themes of surveillance.

[www.enhance.computer](http://www.enhance.computer)



## Learn about map design

[bit.ly/carto457](http://bit.ly/carto457)

Aimed primarily at cartography students but fascinating for anyone with a passing interest, this interactive website explores the art of map design and explains cartographic algorithms and mapping principles. It works best in Firefox and Chrome with JavaScript enabled, providing different tasks to reinforce what is being taught. One section, for example, lets you play around with the colours of map features and typography, while another deals with contour lines in topographic maps. The site feels rather academic, but the diagrams and explanations are clear, and there's a multiple-choice and true-or-false test so you can see how much you've learned. You can then click through to the references within each section to further your knowledge.



## Stream video-game broadcasts via Steam

[steam.tv](http://steam.tv)

What could be more fun than playing games? Watching others play, apparently, given the huge numbers who tune into services such as Twitch. Now, the popular gaming platform Steam has joined in by launching a new service, Steam TV. All you have to do is sit back and enjoy the gaming skills on display, or else sign in with your Steam account to comment on the broadcasts or watch them with friends. So far, Steam TV has only broadcast one game – the free-to-play multiplayer online battle arena game Dota 2 (which stands for Defense of the Ancients, if you're wondering) – during the recent International Championships. But it promises to add more titles as it seeks to build a community, and is also offering a Live DVR function that lets you go back and forth through the gaming footage to ensure you don't miss anything vital.



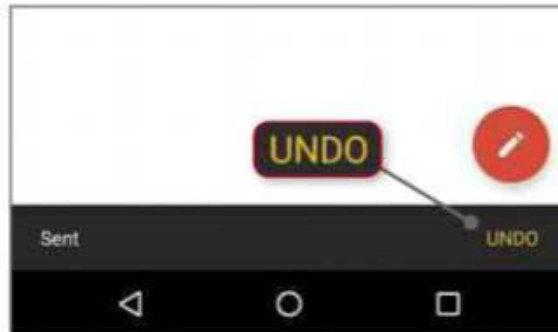


We pick the 10 best things you must do on the web this fortnight

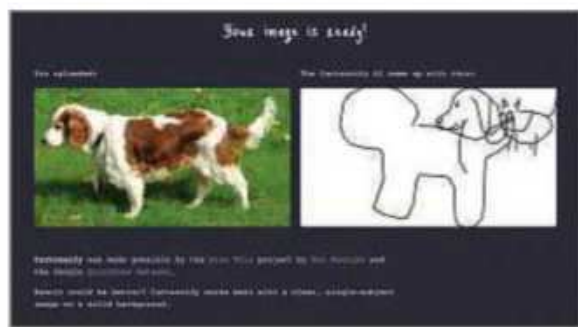
## Unsend Gmail messages in Android

[www.gmail.com](http://www.gmail.com)

Sometimes you regret firing off an email within a second or two of pressing Send, so having an Undo function in Gmail is very handy. Gmail has offered this feature for a while in its desktop and iOS versions, and it's now available on Android. You'll see the Undo button appear for up to 10 seconds after you send an email.



## Turn a photo into a cartoon



[bit.ly/cartoon457](http://bit.ly/cartoon457)

The dataset for Google's Pictionary-style game, Quick, Draw, has been put to good use by a number of developers. The latest to do so is Dan Macnish, who has created an enjoyable experiment that turns your photos into cartoon drawings. Either upload an image from your computer, paste a URL or choose a sample, and a corresponding doodle will be shown on screen. Since the cartoons have been created by humans as part of the game, the quality of them varies (a lot!) but for the best results, try single subjects on solid backgrounds.

## See Tube trains move in real time

[bit.ly/tube457](http://bit.ly/tube457)

As long as the Tube network hasn't ground to a halt due to strike action, you'll find this interactive map is on the right tracks. Yellow dots represent the huge number of trains running on the London Underground network, each showing its direction of travel. By following them, you can see the trains as they move from station to station in real-time and, since the map draws on Transport for London's live-departure board information, you can click any dot to see when the train is due to reach the next station.



## Play AR games in Messenger

[www.messenger.com](http://www.messenger.com)

Facebook's new Messenger games can be played face to face with up to six friends, and you don't even have to touch the screen to take part. The games use augmented reality and face-tracking so you can play Don't Smile by trying to keep a straight face the longest, and Asteroids Attack by controlling a spaceship with your nose. Just start a video chat, press the star icon and choose a game to play.



## NEW VOICE COMMANDS



### Play music on Deezer

You can now use Google Assistant to play songs from music-streaming service Deezer through your Google Home device. Say: "Hey Google, play my [X] playlist on Deezer".



### Request a radio station

With Siri, you can now request a radio station by saying: "Siri, Play Beats 1" or "Siri, Play Radio [X]". Siri will confirm the name of the station and begin to play. Say "Siri, stop" to end.



### Get updated answers

If you ask Alexa a question and it doesn't know the answer, you'll be prompted to enable Answer Updates. If and when Alexa finds the answer, you'll be notified.



### Play HQ Trivia on a TV

[www.hqtrivia.com](http://www.hqtrivia.com)

If you're still playing HQ Trivia, the live interactive quiz show, and you have an Apple TV, you'll be pleased to know that you can now try to win some cash via your television. Simply download the new app from the Apple TV store.

### Design a photobook

[bit.ly/photos457](http://bit.ly/photos457)

Google Photos now lets you select images from your collection and turn them into a professional photobook. Prices start at £11.99 for a 20-page softcover book, and Google even suggests photos based on image recognition.

### Watch stories told in GIFs

[giphy.com](http://giphy.com)

Giphy is now reacting to the day's trending subjects by telling stories using GIFs, posting one story every hour. The content is very 'youth-friendly', and you can copy the links to use them on social media.



# Need to Know

## Google keeps tracking you – even when you tell it not to

### What happened?

Google faces a lawsuit over claims it tracked users of its services even when they disabled location-data collection. The search giant has previously stated that when Android and iOS users turn off its Location History feature, “the places you go are no longer stored”. However, it has emerged that Google *does* still track your location – if you want Google to ignore all your geographical data, you need to disable a second setting. Now, Google faces a class-action lawsuit for tracking users against their express wishes.

In a further privacy misstep, researchers from Vanderbilt University in Tennessee revealed that Chrome users can be tracked even when they’re browsing privately in Incognito mode. Google is not supposed to be watching the sites you visit or gathering cookies from the pages you open – or collecting *any* other tracking data – in this mode, yet the study suggested that this information is still being amassed. The data is held under an anonymous identify code rather than the one linked to your name or profile with the company, but if you accidentally log into a Google site, such as YouTube, it can make the connection.

Google denies using this technique to track people, and called the report

“wildly misleading”, noting that the researchers have previously testified against the company in its litigation with software company Oracle. However, it’s worth noting that Google wasn’t specific about how the research was misleading.



**Turn off Location History and Web & Activity to stop Google tracking where you go**



### How will it affect you?

Google’s location tracking doesn’t just affect smartphones running its own Android OS – it applies to anyone using its services, such as Google Maps or Search, on any device, regardless of the operating system. To turn off the tracking, go into your Google account ([myaccount.google.com](https://myaccount.google.com)) and find ‘Location sharing’ under ‘Personal info & privacy’. Turn off Location History under Activity Controls, and disable data collection in Web & Activity.

Disabling these options means Google can’t make suggestions based on your location or remember where you’ve been – handy when you want to revisit a place. But if you want it turned off, flip the switch everywhere, otherwise the data will still head to Google’s servers.

There’s really no way to achieve true privacy online – not without effort and taking precautions. Google knows what you’re up to if you use Chrome – after all, it’s the vehicle you use to get around the web. But if you’re worried about your accounts being linked to what you get up to in Chrome’s Incognito mode, you have some options. First, make sure you never log in to any Google products or services (easier said than done!) or use a different browser when you need to ensure your privacy. Firefox, Opera, Edge and other browsers all have their own private modes, so use one of those

instead of Chrome when you want to avoid being tracked by Google.

### What do we think?

Google has been slapped for privacy violations time and time again. It was taken to task by regulators for its short-lived social network Google Buzz, which leaked contact details, and for gathering Wi-Fi data when its Street View camera cars drove by, among other complaints. It’s safe to assume that future privacy scandals are likely, because data is how Google makes its money. It’s simply part of the company’s business model to collect and use information about us, be it our location or our browsing behaviour, in return for offering free products and services.

If you’re not happy with how Google operates, it’s possible – though not easy – to ditch the company’s tools. There are alternative browsers to Chrome and rival web services to Gmail, and you can always choose an iPhone over an Android handset. But as previous research has shown, even if we don’t use Google, Facebook or other data-gathering services, they may still create a profile on you to sell advertising.

This isn’t a challenge we can solve on our own – we need regulators to continue taking action to protect our privacy. Google makes billions from our data, so it’s clearly worth something.



What we think of this fortnight's top tech news stories and rumours, and how they affect you

## Microsoft patches Foreshadow flaw

### What happened?

Yet another security flaw has been revealed in Intel's products. Foreshadow, as the latest vulnerability has been dubbed, follows the Spectre and Meltdown bugs revealed earlier this year. Security researchers say Foreshadow affects all Intel products launched since 2015, letting hackers break into a feature called Software Guard Extensions to steal data held there. The flaw applies to any laptop or desktop computer and even business hardware running Intel chips, including its key lineup of Core i3, i5, i7 and M processors.

Like Spectre and Meltdown, Foreshadow exploits a feature of processors known as 'speculative execution', which relates to the page tables of a processor's physical memory. Page tables define which areas of RAM are dedicated to which currently running processes or applications.

### How will it affect you?

Intel was alerted to this bug back in January, and has a fix ready for its products, while Microsoft has also rolled out a set of patches for all versions of

Windows 10 and Windows Server affected by Foreshadow.

This particular flaw only impacts Intel systems since the end of 2015, so if your device is older than that, you needn't worry about this vulnerability. The forthcoming generation of Intel processors will address Meltdown, Spectre and Foreshadow at the hardware level.

Intel has said it hasn't yet received any reports about real-world attacks exploiting the Foreshadow flaw; with the patches in place, this will hopefully remain true.

### What do we think?

Flaws that give hackers access to our data can happen anywhere – and there's little that everyday computer users can do to protect against a vulnerability such as Foreshadow, let alone Spectre or Meltdown.

It's not good that Intel keeps letting these bugs slip through, but it *is* good that the problems are spotted by security researchers rather than hackers. The work they do keeps us all more secure, even when Intel repeatedly fails us.



## Facebook's secret trustworthiness score

### What happened?

After the Cambridge Analytica scandal earlier this year, you may have strong opinions about whether Facebook can be trusted, but it appears that the judgement

is mutual. A report in the *Washington Post* ([bit.ly/wash457](https://bit.ly/wash457)) revealed that Facebook has started to score its users by reputation, ranking their trustworthiness from zero to one. The scoring system was apparently designed to battle 'fake news' and provide a signal that can be used when assessing if a post or link is credible or not. Facebook isn't revealing exactly how it comes up with the score, saying that doing so would make it too easy to game the system.

### How will it affect you?

There's no way to know what your score is, or how to influence it. So long as Facebook doesn't release this information to anyone, there shouldn't be any impact beyond it perhaps improving the news that users see. Facebook told the *Washington Post* that a user's trustworthiness score isn't meant to be an absolute indicator of their credibility, but is just one measurement among thousands of new



behavioural clues that it takes into account.

That said, it's worth knowing that Facebook is constantly judging you and the content that you post on the site. If that information becomes commercially useful to someone, we can only hope that Facebook won't pass it on.

### What do we think?

Facebook is desperately trying to clean up its site, which is being blamed for spreading misinformation that may have impacted votes on Brexit and the US election. We've all got minds of our own, but news and opinions can be more persuasive when they come via our friends and those we choose to follow on Facebook. With that in mind, it's good to see Facebook doing what it can to assess posts more accurately, although it's ironic that the social network is judging our trustworthiness when it's caused so much trouble and has itself lost the trust of many of its users.

Credit: Ink Drop / Shutterstock.com



# Nearly half of world's top websites rated 'risky'

## What happened?

Almost half of the world's most-visited websites are 'risky', according to cybersecurity expert Menlo Security. Its research found that 42% of the world's top 100,000 sites, as ranked by web-traffic monitoring firm Alexa, were either created on or connected to sites that use vulnerable unpatched servers, had been used to spread malware and launch cyber-attacks, or had experienced a security breach in the past year.

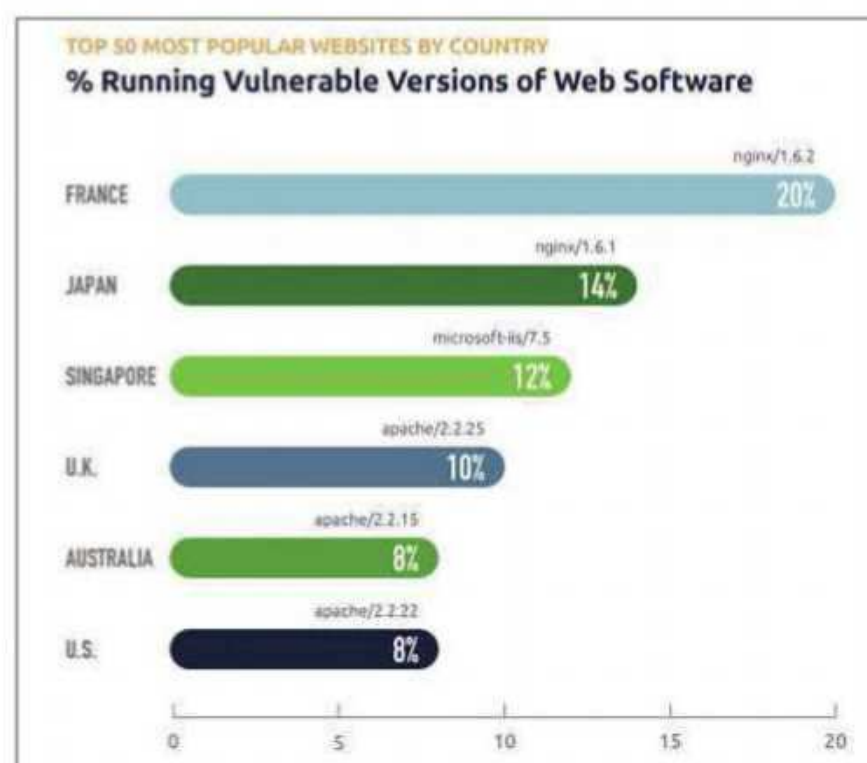
The company analysed the 50 most popular sites in the UK, US, Australia, Canada, France, Singapore and Japan for its biannual State of the Web report ([bit.ly/state457](http://bit.ly/state457)). The leading security risk has been identified as outdated server software. In France, 20% of the top 50 sites run susceptible software; in the US, that figure plummets to just 8%, although one unnamed (and highly vulnerable) American website still runs on software released 11 years ago.

The report highlights the problem of copious website script executions, where attackers can use legitimate "scripting capabilities for iFrame redirects and malvertising links to compromise web browsers". Hackers are also aided by the amount of code downloaded to our browsers, with Australia and the US singled out as the biggest offenders.

Active content, which lets web developers update content on a rolling basis, comes under fire as a major source of vulnerability, with Menlo claiming it "deprives website operators of control". Today's sites pull content – from ads to images – from an average of 25 'background sites' that can be infiltrated by hackers to distribute dodgy software.

## How will it affect you?

Hopefully, it won't – as long as you're armed with reliable, up-to-date anti-virus software, and a degree of scepticism. Of the six countries analysed, Britain ranked well in every category, with the majority of its top websites considered 'safe'. Just 10% of UK sites run on vulnerable software, while the figures for executed scripts and downloaded code were similarly low. The prime area for concern is sites serving active code from suspect background sites, which puts 32% of the UK's most-visited websites at risk.



## What do we think?

At a time of seemingly constant data-security breaches and opportunistic cyber-attacks, it's staggering that some of the most popular sites in the world have yet to strengthen their security and update their server software. While active content and script executions are fundamental to deliver an enjoyable online experience, we couldn't agree more with the report's conclusion: "It pays to have a healthy distrust of even the most popular, trusted websites on the internet".



## FIRST LOOK

### Samsung Galaxy Watch [bit.ly/watch457](http://bit.ly/watch457)

We all knew there was a new Samsung smartwatch in the works and, at this year's Galaxy Unpacked event, the company unveiled its worst-kept secret: the Galaxy Watch.

The company's previous Gear smartwatches were designed with athletes in mind (or, at least, those with a heavy interest in sport and healthy living). Consider this a rebrand: the Galaxy Watch, with its clean, round bezel and unobtrusive buttons has broader appeal; a fitness-tracking timepiece that you can wear at home, the gym or the admiral's annual garden party.

Compatible with Android 5.0+ and iOS 9.0+, the smartwatch bursts with 'keep-fit features' including a heart-

rate monitor, accelerometer and gyroscope – all running on Samsung's Linux-based Tizen 4.0 operating system and a dual-core 1.15GHz processor.

There are two versions of the Galaxy Watch: the Bluetooth-enabled 42mm model features 768MB of memory and 4GB of storage; the pricier 46mm Silver edition is equipped with identical storage but double the memory and a 4G connection, so you can receive texts and calls if you leave your phone at home. Behind the fully customisable face – protected by Gorilla DX+ Glass, of course – the smartwatch houses an NFC transmitter for contactless payments. And, for those risking a swim while wearing a £300



smartwatch, it's water-resistant to 50 metres.

But it's the battery-life claims that really impress. Samsung promises drastic improvements that keep the smartwatch going for several days before you need a power top-up via the Duo wireless-charging unit, which helpfully lets you give your phone a quick boost at the same time as juicing up your watch.

Wearable tech hasn't yet captured the mainstream imagination but – alongside a new push that's seen Google update its Wear OS and Qualcomm announce a much-needed chip upgrade – Samsung's modern, functional Galaxy Watch is helping to push the technology to compete with Apple's market-leading smartwatch.





## WHAT'S THE RUMOUR

## Is Amazon launching a TiVo killer?

Amazon may be expanding its TV services with a new digital-video recording (DVR) device. That's the rumour from an Amazon insider, who claims that the company is developing a set-top box capable of recording live TV or streaming it direct to smartphones. The device, codenamed 'Frank', uses the same wireless technology that allows Amazon Echo speakers to connect to the Fire Stick.

In addition to entering the live TV market, the insider detailed Amazon's plan to update its Fire Stick and place more of its video content directly on new TVs. It's thought that 'Frank' will directly compete with the world's leading DVR manufacturer TiVo, which partners with Virgin Media in the UK. On the back of that rumour alone, TiVo shares dropped 10%.

It's not entirely clear why Amazon has set TiVo in its sights, given waning viewing figures for live TV. Amazon has, so far, refused to comment, but the main draw of DVR is to store TV shows locally and skip commercials. That's led industry watchers to suspect that Amazon will use the device to monitor which ads are skipped, then deliver more relevant commercials on an alleged ad-supported Amazon Prime plan – a rumour that slipped out via a UK job listing for 'Head of Free to Air TV



& Advertising'.

'Frank', then, could mark the next phase in Amazon's ongoing agenda to dominate your living room.

## LIKELIHOOD RATING



While Prime Video offers on-demand TV streaming (see our cover feature on page 40) and the Fire Stick makes even dumb TVs smart, Amazon has so far ignored live TV. That makes 'Frank' the missing component in the company's entertainment package. Further household integration boosts Amazon's coffers, but we wouldn't be surprised to see Amazon use the rumoured DVR simply as a means to eliminate competition from TiVo.



## WEBOMETER



## WE LIKE...

## ↑ Run Windows 95 on any computer

A new program lets you run Windows 95 on your current PC or Mac. The nostalgic free download ([bit.ly/win457](http://bit.ly/win457)) lets you use tools from the classic operating system, change the wallpaper and play Minesweeper.



## ↑ Collaborate on Amazon wishlists

Amazon has launched Collaborative Lists, which let you share and compile wishlists with your friends and family. The feature works on desktop and mobile, and lets users add and remove products, and make purchases.



## WE DON'T LIKE...

## ↓ Fortnite installer had security flaw

A Google engineer revealed that the first Android version of Fortnite had a serious security vulnerability that placed users at risk. The game's installer could have been used to secretly install apps with any level of permissions.



## ↓ West Ham leaks email addresses

West Ham United could face legal action after accidentally leaking the details of hundreds of supporters in an email to confirm matchday tickets. The football club CC'ed the email addresses of up to 200 season ticket holders.



## What's new on Kickstarter

Our favourite new project on the crowdfunding site

## Chroma Chrono

[bit.ly/chroma457](http://bit.ly/chroma457) | From £140

Want to add some pizzazz to your pictures? The Chroma Chrono is the world's first programmable multi-colour camera flash, letting you apply unique psychedelic effects to your snaps without touching Photoshop. Connect the device to the internet and select up to 10 colours and the exposure time for each. Given the price tag – a £140 pledge gets you one camera flash – this is a gadget for photography enthusiasts keen to experiment with taking the weirdest and wildest shots imaginable, but you can pledge whatever you like just to see the project get off the ground.







# Stay Safe Online

News about the latest threats and advice from security experts

## SECURITY ALERT! | What's been bothering us this fortnight

### Amazon fixes Echo hijacking flaw

Hacking experts have found a way to “hijack” Echo smart speakers powered by Amazon’s Alexa technology, reigniting the debate over whether the voice assistant “eavesdrops” on its users. The vulnerability was revealed at the DefCon hacking convention in Las Vegas, where researchers from Chinese tech company Tencent demonstrated how they were able to tap into an Amazon Echo speaker.

The Tencent researchers used “a series of bugs” in Echo speakers to stream real-time audio through the device’s onboard microphone, which Alexa uses to listen for voice commands.

“When the attack [succeeds], we can control Amazon Echo for



eavesdropping and send the voice data through the network to the attacker,” the researchers said. Tencent alerted Amazon before publishing its report, prompting the retail giant to release a firmware update to fix the security loophole.

See our ‘Stop your home spying on you’ feature on page 50 for more about the privacy concerns raised by smart devices.

[bit.ly/alexa457](http://bit.ly/alexa457)

### Security hole discovered in Chrome

Cybersecurity company Imperva has discovered a vulnerability in Google Chrome that could potentially let hackers access users’ computers and gather sensitive information from Facebook and other sites.

The bug researchers used the Blink engine in Chrome

to break into the browser. Although the vulnerability has apparently been fixed with the latest update to Chrome, at the time of writing, 58% of users hadn’t updated their browsers, leaving them exposed to the vulnerability.

“Attackers could establish the exact age or gender of a person, as it is saved on Facebook, regardless of their privacy settings,” said Ron Masas, a researcher at Imperva. “With several scripts running at once – each testing a different and unique restriction – the bad actor can relatively quickly mine a good amount of private data about the user.”

Imperva explained that the security hole takes advantage of hidden audio and video HTML tags to steal users’ data. Google patched the security hole in Chrome 68 after being advised about the potential problem by Imperva’s researchers.

[bit.ly/imperva457](http://bit.ly/imperva457)



## Security Helpdesk | Your questions answered by security specialists

**THIS ISSUE’S EXPERT:**  
**David Emm, Principal Security Researcher at Kaspersky Lab**  
([www.kaspersky.co.uk](http://www.kaspersky.co.uk))



**Q Are older web users being targeted more by online fraud?**

Lydia Waters, Facebook

**A** Recent figures indicate that the older generation is falling victim to a greater number of fraud attacks involving larger financial

losses. Targeting this age group is clearly a tactic that is hugely lucrative for cybercriminals, and seems to be a growing threat.

The responsibility to protect against cybercrime is shared between banks, online providers, the government and web users themselves. We must be vigilant and do all we can to minimise the risk of our personal data being stolen.

Central to this is having up-to-date and appropriate internet security software on all connected devices, installing operating system and application updates promptly, using strong and unique passwords for every

online account, applying caution when using public Wi-Fi networks and not revealing too much about ourselves online.

**Q**

**What’s the best way to keep our kids safe online?**

Ben Dood, Facebook

**A**

Children of this generation are fortunate in that technology enables them to swipe and click to access entertainment and information from a very young age. However, it’s precisely this ease of use that leaves them vulnerable because they aren’t worldly-

wise enough to be able to properly judge the content.

This should raise loud alarm bells for any parent, anywhere. In our efforts to protect our children from harm, we should take cyberthreats just as seriously as we would ‘real world’ threats

Just as with road safety, it’s best to adopt a security culture that will keep you safe in any situation. For example, it’s best never to click links in emails. If you adopt this rule, you never need to rely on being able to distinguish a real website from a phishing link – it’s always safer to type in a web address yourself.



# BEND YOUR REALITY



G2 Rocket League Player  
Cameron '*Kronovi*' Bills likes the  
immersive gaming experience  
on the *AG322QC4*

## AG322QC4

144<sub>HZ</sub>



Shadow  
Control

FreeSync2



QHD



HDR 400



[aocgaming.com](http://aocgaming.com)



@aoc\_gaming



@aocgaming



@aocgaming

[ebuyer.com](http://ebuyer.com)

OVERCLOCKERS UK

SCAN<sup>S</sup>

[amazon.co.uk](http://amazon.co.uk)



# ★ Best New Websites

## Site of the Fortnight

CULTURE

RELAUNCH

### Rolling Stone

[www.rollingstone.com](http://www.rollingstone.com)

The popular-culture magazine *Rolling Stone* has rocked up online with a cool new look and logo. The video-game section has been axed, and condensing the number of options in the main navigation bar has made it easier to steer through the content. The simpler (and faster) drop-down menu provides instant access to the depth of content, and each section is cleanly presented, headed by featured and trending articles, and displaying a simple list of headlines, photos and intros. The columned layouts are pleasing to the eye, and there are lots of well-made videos, insightful opinion pieces and well-shot photo galleries.

Our rating



#### CONTENT

Click the Menu button to browse the site's content in clearly defined sections and subsections



#### VIDEOS

All the main sections show exclusive video content including reviews and interviews



TECHNOLOGY

### Teletext Archaeologist

[teletextarchaeologist.org](http://teletextarchaeologist.org)

In pre-internet days, we punched page numbers into our TV remotes to enjoy the blocky, informative delights of Teletext. But did you know that your VHS recordings captured those pages in the background? Jason Robertson has been busy retrieving the data and is sharing the highlights of his work on this site. It's a bit fiddly (you have to click file names and you're never quite sure what you'll see), but is kept up to date via a Twitter feed of the latest archived pages and the beginnings of an interesting blog. Jason also encourages people to get involved by donating tapes or downloading the software to recover and view your own pages. Now, where's Bamboozle?

Our rating



RELAUNCH

FOOTBALL

### Junior Premier League

[www.juniorpremierleague.com](http://www.juniorpremierleague.com)

Comprising scores of clubs from across England and Scotland, the Junior Premier League's goal is to offer young players better coaching and quality matches in which to hone their skills. It certainly plays well, thanks to a glossy site that not only puts the latest results at the forefront but offers plenty of news to keep you abreast as the season unfolds. With pages for each of the clubs, feeds pulled from Facebook and Twitter, stats, tables and fixtures, it's set to be an invaluable resource. We especially like the gallery, which encourages parents and supporters to submit photos.

Our rating





We review this fortnight's best new and relaunched websites and rate them for content, design and features



**PRO ACCOUNT**  
Access deeper coverage, research tools and insider knowledge with a paid-for Pro account

**CLEAN LAYOUT**  
A tidy layout makes it easy to read lengthy articles. As you scroll, you'll see related content



**RELAUNCH**

**DAIRY**

## Cheshire Cheese Company

[www.cheshirecheesecompany.co.uk](http://www.cheshirecheesecompany.co.uk)

Tweaks to this tasty site for cheese lovers have made it easier to find the goodies you want, with a new left-hand menu, a refined quick cheese finder, better signposting of the Cheese Club and a comprehensive FAQ. It's now simpler to discover more about items and add them to your cart – with top-quality, zoomable images. That said, we miss the product-comparison tool and it's a shame that the handful of recipes are now hidden away under a menu labelled “more”.

Our rating



**RELAUNCH**

**FILM**

## Imagine Entertainment

[imagine-entertainment.com](http://imagine-entertainment.com)

Director Ron Howard co-founded the production company Imagine Entertainment with Brian Glazer in 1986 and this new site seeks to capture the essence of the organisation, starting with an intro of classic movie scenes, then highlighting its current films and shows. As well as projecting the latest news, it gushingly delves into the company's history, with details of its productions and biographies of the founders and the team. However, navigation feels awkward and the details are too brief, though there are links to IMDb, social media and websites for further reading.

Our rating



**NEW**

**GAMES**

## Kosmos Games

[www.kosmosgames.co.uk](http://www.kosmosgames.co.uk)

Created to promote Kosmos' German-style tabletop board games, this new UK site tells you more about each product and where to find local stockists. To that end, it's hugely successful: each game page carries a wealth of information from age range and play time to difficulty and dimensions, and you can find out even more via links to the Board Game Geek website or by downloading the rule book and product images. As a bonus, there are links to iOS and Android ‘helper apps’, which use animations to explain game rules. It's just a shame you can't quickly place an order directly.

Our rating





# BACK ISSUES DISC 2017



**2017 Back Issues Disc**

Our **2017 Back Issues Disc** containing all 26 issues from last year is now on sale from Amazon

For more information, visit [bit.ly/wudisc17](http://bit.ly/wudisc17) or search for 'webuser disc' on Amazon

**You can still buy our 2016 Back Issues Disc from [bit.ly/wudisc16](http://bit.ly/wudisc16)**







NEW

## ATTRACTION

# Green's Windmill and Science Centre

[www.greensmill.org.uk](http://www.greensmill.org.uk)

Restored in 1985, Green's Windmill remains in operation creating organic flour, so it's fitting that its website is also powered by wind, with designer and hosting company, Make Hay, making good use of renewable energy. Even so, navigation can be an effort – for example, clicking Events from the menu requires a second click to view the listings. Likewise, a wonderful page explaining how the windmill works feels buried. There's lots of history, though, for both the windmill and its former owner George Green, as well as downloadable newsletters.

Our rating



RELAUNCH

## GIFTS

# Urban Twist

[urbantwist.co.uk](http://urbantwist.co.uk)

This website specialises in personalised gifts, wedding stationery and artwork, so it's important that the process feels intuitive and leaves as little room for error as possible. Thankfully, it mostly succeeds on both counts, displaying sizeable photos of each item, personalised options that break down any required information line by line and clear product descriptions. We'd like to have an option to verify the information you enter, but the wording is included in your shopping-bag summary and you can add a note to your order, so it's not a big deal. You can also make payments via Apple Pay and PayPal, and read the cheery blog.

Our rating



NEW

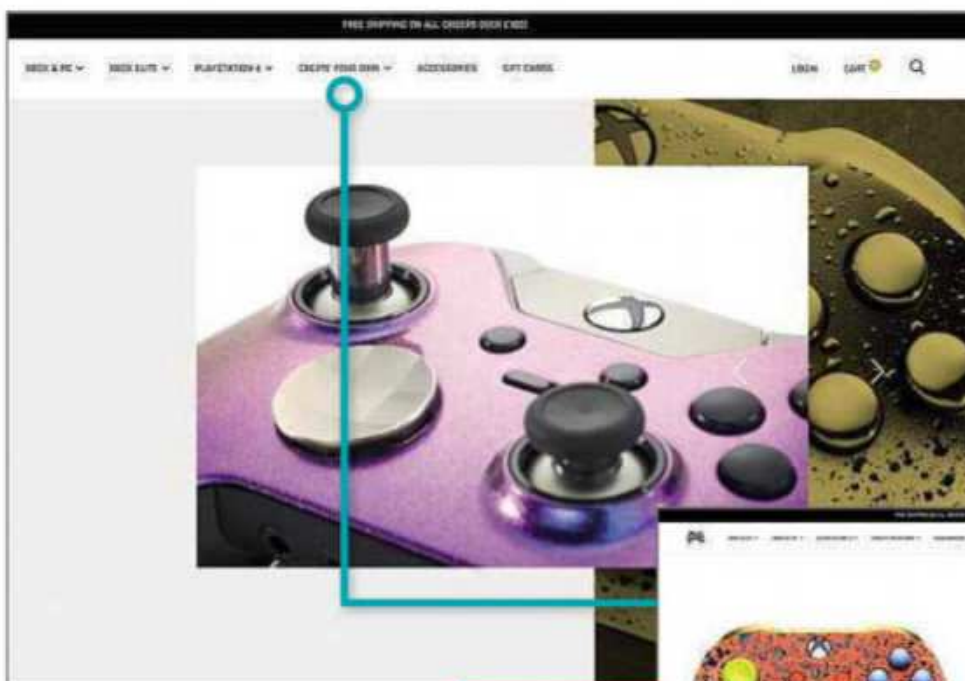
## ARTWORK

# Light Up North

[www.lightupnorth.com](http://www.lightupnorth.com)

If you'd like to light up your home or business, you may want to shine your eyes at this company's wares. It sells artworks made of electroluminescent neon wire that can be fashioned into messages using different fonts and colours and, as well as buying 'off the peg', you can tailor items if you have specific wording in mind. The latter needs to be written after you've added the product to your cart, and the colourful site effectively displays its wares and is generally easy to use. The only items that can't be ordered online are bespoke artworks, for which you need to fill in a contact form.

Our rating



RELAUNCH

## GAMING

# Custom Controllers

[www.customcontrollersuk.co.uk](http://www.customcontrollersuk.co.uk)

If you fancy playing games with a splash of style, then check out these wonderful gamepad designs for consoles and PCs. They're a little pricey (an Elite two-tone edition Xbox One controller costs £169.99!), but the drop-down menus make them simple to find and there's a message facility if you need help. The Create Your Own section lets you select the colours of the case, buttons, D-pads, bumpers, triggers and thumbsticks by working your way through a series of tick boxes, with the pad changing in real-time so you can see what you're buying. They're certainly selling well: a box in the bottom left corner lets you know when orders are being placed.

Our rating



NEW

## HEALTH

# Patients Know Best

[www.patientsknowbest.com](http://www.patientsknowbest.com)

Technology is fast becoming a key part of healthcare so a site that lets you read test results, manage care plans, reschedule appointments and contact healthcare professionals is a great idea. Sadly, the site fails to sell itself well. Currently only being trialled at the Princess of Wales Hospital in Bridgend, the patient-info page starts with a letter from the company's CEO followed by time-consuming videos that try to explain the idea in greater detail. Only then do you get to the sign-up page, which doesn't actually have a Register button.

Our rating





# Build a Better Site

Specialist tips, top tools and practical help

## Top Tips of the Fortnight

### Improve your site search

There is a useful search feature built into WordPress that can easily be added to a sidebar. Go to Appearance, Widgets and drag and drop the Search widget to the sidebar. Now go to your site and try searching – it's great!

To make the widget even better, install and activate Relevanssi through the WordPress Plugins page ([bit.ly/rele457](http://bit.ly/rele457)). Go to Settings in the sidebar, then Relevanssi, and select the Indexing tab. Click 'Build the index' and when it has finished, the WordPress search feature will produce better results. Customise the settings on the Searching tab.

### Spy on other websites

A great way to learn about building websites is to see how others are constructed. One way to do this is by using the Chrome extension WhatRuns ([bit.ly/](http://bit.ly/)

[whatruns457](http://whatruns457)). Install this add-on, then go to a website and click its toolbar button.

A panel is displayed showing how the site was built. Some are custom builds with little information, but often there's useful data available and you can see the version of WordPress, the theme, plugins, widgets, PHP version and more. Try it on [news.microsoft.com](http://news.microsoft.com), for example.



### Deal of the Fortnight

A2 Hosting ([www.a2hosting.co.uk](http://www.a2hosting.co.uk)) is offering lots of money-off coupons for web hosting, with up to 51% off some plans for the first billing cycle ([bit.ly/a2host457](http://bit.ly/a2host457)).

## Web-building Helpdesk

**Q** If I delete a WordPress post, it appears under a Trash heading. I then have to delete the post from the Trash. Is there a way I can delete it in one step instead of two?

Kevin Drake, via email

**A** Yes, but you should bear in mind that WordPress allowing deleted posts to be restored from the Trash provides a temporary safety net. Posts are automatically deleted from the Trash after 30 days, but if you want to change that, access your site using an FTP program or cPanel File Manager and load wp-config.php into a text editor. On the last line enter:

```
define('EMPTY_TRASH_DAYS', 7);
```

Change the '7' to the number of days you want to keep posts in your Trash. The zero option stores deleted posts for 0 days – in other words, they're deleted immediately.

Roland Waddilove, Ask the Expert



## MINI WORKSHOP | Clean the WordPress media library

Media Cleaner: [bit.ly/media457](http://bit.ly/media457) | 15 mins | WordPress website

Reducing the size of your WordPress site can speed it up, so it's worth removing files from the Media Library that aren't used in any posts, pages or widgets. The Media Cleaner plugin makes this a simple task



**1** Go to Plugins in the WordPress sidebar, click the Add New button and enter `media cleaner` in the search box. Click Install Now next to the plugin, then Activate. Go to Meow Apps, Media Cleaner **1** to configure the settings. Tick the boxes for Posts, **2** Post Meta **3** and Analyse, **4** then save the changes.



**2** Select Media in the sidebar and read the text, **1** especially the part about making backups. Use a plugin such as UpdraftPlus ([updraftplus.com](http://updraftplus.com)) to back up everything before continuing with a cleanup. It is unlikely to cause problems, but it is better to be safe than sorry! Click the Start Scan button **2** to find files.



**3** You might need to refresh the page after scanning. Thumbnail images and details of all media files that are not used anywhere on your website are displayed in a list. Tick the box in the top-left corner **1** to select them all, but deselect any you want to keep. Finally, click the Delete All button. **2**





# Ultra Wide-Color

with 4K in an immersive design

Colours like you've never seen before. This brilliant 4K UHD resolution display with Ultra Wide-Color offers the richest and most vivid colours wrapped in an immersive curved design for a your best creations yet.

innovation ✨ you



UltraWideColor



CurvedDisplay



4K UltraClear 4K Ultra HD

40" 4K curved display  
(BDM4037U)

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x Systemax Business

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BT Business Direct

PHILIPS





# What To Watch Online

## Pick of the fortnight

**NOW**TV

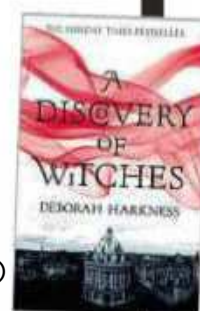


### Be spellbound by *A Discovery of Witches*

From 14 September

*Inspector Morse* meets *Twilight* in Now TV's latest must-see Sky Original. *A Discovery of Witches* is set in Oxford, where the last few witches and vampires live among humans beneath the dreaming spires. Teresa Palmer (*Hacksaw Ridge*) plays Diana Bishop, a professor and witch who discovers a supernatural manuscript and teams up with vampire geneticist (Matthew Goode from *Downton Abbey* and *The Crown*). Despite a ban on "interspecies relationships", the paranormal pair fall in love.

*A Discovery of Witches* is a thumping good story adapted by novelist Deborah Harkness from her *All Souls* trilogy. Her production blog is well worth a read ([bit.ly/harkness457](http://bit.ly/harkness457)). The supporting cast is a who's who of British TV, with Lindsay Duncan, Trevor Eve and Alex Kingston involved. Like Sky's recent hit *Patrick Melrose*, each episode of *A Discovery of Witches* streams on Now TV at the same time as its Sky One broadcast, and will remain online for years to come. You need a Now TV Entertainment Pass, which costs £7.99 a month after a free 14-day trial ([bit.ly/nowtv457](http://bit.ly/nowtv457)). Meanwhile, catch the trailer ([bit.ly/witches457](http://bit.ly/witches457)) and 'first look' teaser ([bit.ly/witchlook457](http://bit.ly/witchlook457)).

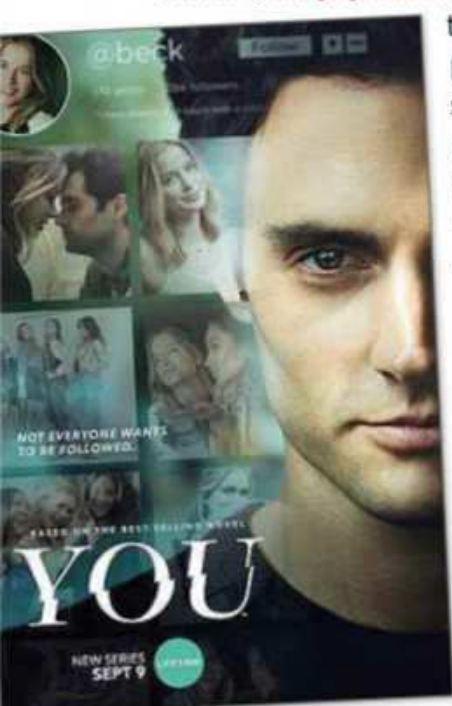


### **N** Set your profile to private for stalker drama *You*

From 10 September

The web takes an unpalatable central role in this new US drama, which sees 20-something Joe Goldberg (Penn Badgley from *Gossip Girl*) manipulate his dream girl (Elizabeth Lail from *Once Upon a Time*) into falling in love with him by stalking her online. "Every account set to public, you want to be seen, heard, known," he leers in the trailer ([bit.ly/youtrail457](http://bit.ly/youtrail457)), as he scrolls through her social profiles. Stalking soon turns to murder as Joe bumps off anyone who gets in the way of true love.

The first episode of this grim 21st-century tale of obsession and selfies airs on 8 September on the US Lifetime network, then arrives on Netflix UK two days later.



### **N** Get back in the saddle with *BoJack Horseman*

From 14 September

*BoJack Horseman* is a cartoon about a clinically depressed celebrity talking horse. But oh, it is so much more than a cartoon about a clinically depressed celebrity talking horse. It's a brilliantly bleak comedy that skewers the human condition as acutely as *Seinfeld*, but through the medium of an animated horse (horse... drawn?).

Will Arnett (*Arrested Development*) returns for a fifth season as the titular equine, and other roles are voiced by Aaron Paul (*Breaking Bad*), Alison Brie (*GLOW*) and Amy Sedaris (*Unbreakable Kimmy Schmidt*). Critics love *BoJack*, with Season 2 and 3 scoring a rare 100% on Rotten Tomatoes and Season 4 managing a still-enviable 97. Keep up the good work, Season 5.

You can watch all four previous seasons, and the latest trailer, on Netflix ([bit.ly/bojack457](http://bit.ly/bojack457)). For a quicker



catch-up, check out 'The Philosophy of BoJack Horseman' on YouTube ([bit.ly/botube457](http://bit.ly/botube457)).

### **N** Watch a new season of *Atypical*

From 7 September

Fresh from playing the self-absorbed mum in *Patrick Melrose*, Jennifer Jason Leigh returns to a much warmer maternal role. In *Atypical* she's Elsa Gardner, mother to autistic teen Sam





## We reveal what's new on Netflix, BBC iPlayer, Amazon Prime Video and other streaming services

(Keir Gilchrist) and his sister Casey (Brigitte Lundy-Paine), and wife to Doug (*Friends* regular Michael Rapaport). Together they negotiate life and love in a world obsessed with 'normal', something none of us manages to be. The show has a smart indie feel (think *Juno* crossed with *Big Bang Theory*) and oozes warmth and wit.

Season 2 has 10 episodes compared with Season 1's eight, and they'll all be available to watch from 7 September. Catch the trailer at [bit.ly/atypical457](http://bit.ly/atypical457).

### Join the cricket fun for T20 Blast Finals Day

15 September

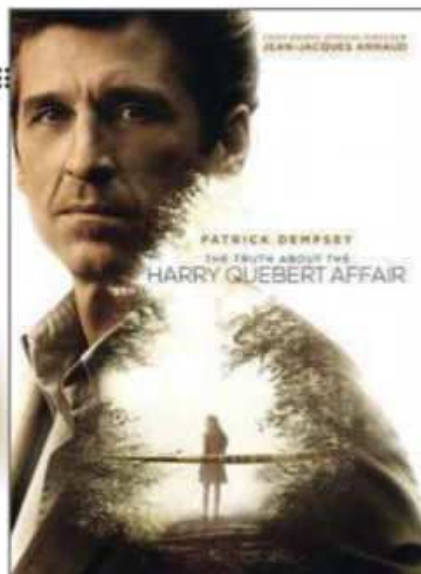
You might not expect cricket to deliver the flashiest fixture on the sporting calendar, but here we are again with T20 Blast Finals Day, when Edgbaston goes Las Vegas. Blast Finals Day is the annual climax of the domestic cricket tournament formerly known as Twenty20, where everyone dresses up in silly outfits and drinks a bit too much. Oh, and there's some cricket.

All the action is broadcast on Sky Sports (all the broadcastable action, anyway) and streamed live on Now TV,



**In case you missed it...**

The first episode of 10-part US thriller *The Truth About the Harry Quebert Affair* aired on 4 September on Sky Witness, with Patrick



Dempsey starring as a New England writer accused of

## Is Netflix introducing adverts?

Netflix had denied that it's adding adverts to its streaming service, after users threatened to cancel their subscriptions following reports that ads would appear between episodes ([bit.ly/netads457](http://bit.ly/netads457)).

"We are testing whether surfacing recommendations between episodes helps members discover stories they will enjoy faster," wrote Netflix in a statement. "A member is able to skip a video preview at anytime."

In other words, it's testing personalised trailers rather than commercials of the kind that make Channel 4's streaming service, All 4, almost unwatchable. Even so, users remained outraged.

"If I ever see ads of any kind, for any reason, I will immediately cancel Netflix," wrote one subscriber on Reddit ([bit.ly/reddit457](http://bit.ly/reddit457)). "Netflix's main selling point has been a totally ad-free experience. I will accept nothing less."

For now, you can switch off the new trailers by disabling Test Participation in your account settings.



where it's then available to watch on demand. You'll need a Sky Sports Pass (£7.99 a day, £12.99 a week or £33.99 a month; [bit.ly/newsport457](http://bit.ly/newsport457)).

Alternatively, wait for free highlights to turn up on the England & Wales Cricket Board's YouTube channel ([bit.ly/cricket457](http://bit.ly/cricket457)).

### Watch Amazon's new sitcom *Forever*

From 14 September  
Saturday Night Live alumni Maya Rudolph and Fred Armisen are great pub quiz fodder: Armisen was married to Elisabeth Moss from *The Handmaid's Tale*, and Rudolph's mother is singer Minnie Riperton ([bit.ly/minnierip457](http://bit.ly/minnierip457)).



More importantly, they're US comedy royalty (type their names into YouTube, then sit back and enjoy) and perfectly cast in Amazon's new eight-part sitcom as married couple June and Oscar who "suddenly find themselves

in a completely unexpected situation". Cue wry indie hilarity.

*Forever's* cast and crew also includes Catherine Keener (*Being John Malkovich*), Julia Ormond (*Mad Men*) and the production team behind *Parks and Recreation*, so you can't fault its pedigree. Episodes arrive weekly from 14 September, and you can watch the trailer at [bit.ly/forever457](http://bit.ly/forever457).

murder. You can catch up online, and stream future episodes week by week, with a Now TV Entertainment Pass ([bit.ly/nowtv457](http://bit.ly/nowtv457)). Watch the trailer at [bit.ly/harry457](http://bit.ly/harry457).

Also from Sky comes a new online-only Premier League show, *The Football Social*. You can live-stream a new two-and-a-half-hour episode every Saturday at 3pm on YouTube footy

channel Football Daily (bought by Sky last year), or catch up at your leisure. Bookmark the playlist at [bit.ly/footy457](http://bit.ly/footy457).

Meanwhile on BBC iPlayer, last year's *Doctor Who* Series 10 – the last featuring Peter Capaldi – has finally materialised ([bit.ly/doctorwho457](http://bit.ly/doctorwho457)). It's available to stream and download until mid-November.





# Product Test

We test and compare the latest products

## Tenda Nova MW3

The Tenda Nova MW3 is the cheapest mesh wireless kit we've seen, offering fantastic value for money if your home Wi-Fi needs a speed boost



**M**esh networking uses two or more nodes (router-like hardware devices) placed around your home to create a stronger, more powerful Wi-Fi network. Each node creates its own Wi-Fi hotspot, seamlessly integrating with the others, usually using a hidden “backhaul” wireless network on a separate radio frequency to avoid interference. The downside is that the kits tend to be expensive compared to similarly specified standalone routers, because you're essentially buying more than

one device.

Bucking this trend, however, Tenda ([www.tendacn.com](http://www.tendacn.com)) has launched a new kit that provides three nodes for an astonishing £92 (there's also a two-node option available on Amazon for £69.99 at [bit.ly/tenda457](http://bit.ly/tenda457)). Tenda has no competition at this price point. Our top-value

alternative would be the BT Whole Home Wi-Fi kit, which delivers great coverage and connection speeds, but at £185 for three nodes it is twice as expensive.

### Design and setup

The MW3's nodes are inconspicuous white cubes, with textured tops to add a

hint of visual interest. They're small, too, measuring just 90mm on each side, so they fit discreetly on a shelf or worktop.

Like most mesh systems, the MW3 kit is designed to replace your router, but it doesn't contain its own modem. The idea is that you connect your existing broadband modem to one of the nodes with an Ethernet cable. If your modem is built into your router, you can leave that in place and use the MW3's nodes as wireless extenders.

Getting set up is a doddle.

“ The Tenda system managed to clear all the Wi-Fi deadspots in our test house with very little configuration ”





Once you've powered up your first node and connected it to your modem, the Tenda smartphone app automatically sets up your internet connection and invites you to specify a name and password for your new wireless network. Then it's simply a matter of moving the other two nodes into different rooms, plugging in each one and waiting a few minutes while they boot up and receive their settings from the primary unit. A coloured LED on each unit will warn you if it's too far away to get a good enough signal.

There's nothing more to configure unless you want to apply custom network settings. However, you can optionally enable an isolated guest network, configure port forwarding and set up simple parental controls, which let you block internet access for specific devices during defined times.

There are, however, a few key features conspicuous by their absence. For one, you can't bind IP addresses to specific devices, which is annoying if you want to precisely replicate your old network. There's also no proper access-point mode: if you connect the Tenda system to your existing router, it'll operate as a separate subnet, which means some devices might not be able to communicate with each other, depending on which network they're connected to.

As well as 802.11ac wireless, each node has two Ethernet

connectors. While that's par for the course for compact mesh systems, it feels a bit limiting, especially since one port on the primary node is taken up by the connection to your broadband.

Performance

Given its very low price, we weren't expecting the Nova MW3 to deliver exceptional performance, especially since its 5GHz radios claim a fairly modest maximum data rate of 867Mbps, which is half the speed of the nodes in the BT Whole Home Wi-Fi system.

What's more, since there's only one radio per unit, your devices have to share that bandwidth with "backhaul" traffic as it's forwarded from node to node. The compact proportions of the nodes limits the size and, therefore, the range of the internal antennae: the three-node kit promises coverage up to 300m², while the BT equivalent offers a much more generous 420m².

In use, though, we found the Tenda MW3 delivered a solid, if not exactly speedy, connection. Having distributed the units along the length of our test house, we were able to download files from a NAS drive to an 802.11ac-enabled laptop at average rates of 9MB/s in the living room, 8MB/s in the bedroom and 7MB/s in the bathroom. That's much better coverage than we'd been getting from an old standalone router: before installing the system, the

signal in the bedroom had been iffy and we'd been unable to get a connection at all in the bathroom.

These speeds, however, are low by mesh standards. The BT Whole Home Wi-Fi system was more than twice as fast in the living room and never slower than 12MB/s anywhere. Frankly, the difference is larger than we'd expected.

A skim of the Tenda's technical specifications revealed an explanation. Alongside lightweight Wi-Fi hardware, the MW3 nodes also use 100Mbps Fast Ethernet ports, rather than the Gigabit type we're accustomed to. That puts a hard speed limit of around 10MB/s on all wired resources – including your NAS drive and your internet connection.

This doesn't have to be a deal-breaker, though. The system was still nippy enough to give us the full speed of a 50Mbps (around 6MB/s) fibre connection throughout our test house.

PRODUCT INFO

Tenda Nova MW3

Price: £91.99  
Buy from Amazon:  
[bit.ly/tend457](http://bit.ly/tend457)

SPECIFICATIONS

- 2 x Ethernet ports per node
- 802.11ac/a/n 5GHz
- Wi-Fi, 802.11b/g/n 2.4GHz Wi-Fi
- WPA/WPA2-PSK security
- Guest network
- 90 x 90 x 90mm

FOR

- ✓ Amazingly cheap
- ✓ Easy to set up
- ✓ Neat and unobtrusive

AGAINST

- ✗ Relatively slow speeds
- ✗ Limited coverage
- ✗ No access-point mode

FASTER NETWORK

BT Whole Home Wi-Fi,  
£185  
[bit.ly/btwh457](http://bit.ly/btwh457)



EVEN EASIER SETUP

Google WiFi,  
£329  
[bit.ly/gowf457](http://bit.ly/gowf457)



OUR VERDICT



If you're looking for superfast downloads or you regularly access big files from a home NAS drive, the Tenda Nova MW3 won't be fast enough for you. However, the system managed to clear all the Wi-Fi deadspots in our test house with very little configuration, creating a connection that was fast

FEATURES	★★★★☆
PERFORMANCE	★★★★☆
EASE OF USE	★★★★★
VALUE FOR MONEY	★★★★★

and strong enough to browse the web, transfer average-size files and even stream 4K video. At this price, it should make a lot of people very happy.



# Microsoft Classic IntelliMouse

A nostalgic new mouse that presses all the right buttons

**B**ack in 1996, Microsoft launched a device called the IntelliMouse. It was something of a refinement in mouse design – with its unique ergonomic shape and innovative scroll wheel – and is still fondly remembered by those who had one. As graphical user interfaces became the norm and the clicky, mouse-friendly world wide web began to appear on our computers, a solid, comfortable, dependable mouse – particularly one that could scroll through web pages – became an essential part of every PC setup.

Fast forward to the present day and little has changed.

Although mobile devices with touchscreens soak up some of our online time, we still need a good mouse at our side when we're sitting at a PC. Fortunately, Microsoft has refreshed the IntelliMouse for a new era, keeping the classic design but adding a good smattering of new technology to keep it up to date.

## Build and performance

The Classic IntelliMouse's overall look is similar to the third-generation IntelliMouse from the early 2000s, albeit with a flair of modernity. The chassis is flanked with black, rubberised sides for added grip, just like the original was, and has a smooth, gun-metal grey finish on the top. Its ergonomic shape remains unchanged and there's a soft



noticeable problems.

The mouse can report its position to your PC up to 1,000 times per second and at

that use your PC, too. There's no wireless model but the 184cm-long cable is perfectly adequate for most PC setups.

At £30, Microsoft's Classic IntelliMouse isn't one of those bargain-bin mice you typically spot at the top of your Amazon search results. Considering its credentials, however, it's very reasonably priced. As a point of comparison, mice with similar specifications from the likes of Razer and SteelSeries tend to start at the £50 mark.

## PRODUCT INFO

### Microsoft Classic IntelliMouse

Price: £29.99

Buy from Amazon:  
[bit.ly/int457](https://bit.ly/int457)

## SPECIFICATIONS

- USB 2.0
- 5 buttons (3 customisable)
- Vertical scrolling wheel
- 1,000 reports per second
- Microsoft BlueTrack
- Works with Windows 7, 8, 10
- 132 x 69 x 43mm
- 100g
- 1-year warranty

## FOR

- ✓ Nostalgic, ergonomic design
- ✓ Packed with modern features
- ✓ Extra customisable side buttons

## AGAINST

- ✗ More expensive than a basic mouse

“Microsoft's BlueTrack technology lets you use the mouse on almost any surface”

blue LED tail light illuminating the underside heel.

Microsoft has introduced a few welcome improvements, most notable of which is the addition of a pair of thumb buttons on the left. These, along with the clickable scroll wheel, can be customised using Microsoft's Mouse and Keyboard Center software. It also has Microsoft's BlueTrack technology, which lets you use the mouse on almost any surface. We tested it on a glass table, which is notoriously tricky for optical mice, and the IntelliMouse worked brilliantly, with no

a maximum of 3,200 DPI (dots per inch), which is more than sensitive enough for whizzing between applications, and good enough for any gamers

## OUR VERDICT



Microsoft has successfully reinvented its beloved mouse from yesteryear, and the sleek and understated Classic IntelliMouse thankfully avoids the flash and gimmickry of its rivals. It's a modern take on a timeless classic and as

FEATURES	★★★★☆
PERFORMANCE	★★★★★
EASE OF USE	★★★★★
VALUE FOR MONEY	★★★★★

worthy a mouse for 2018 as the original was back in the 1990s.





**GB2488HSU | GB2788HS**

Panel	TN LED / 1920 x 1080
Response time	1 ms, 144Hz, FreeSync™
Features	OverDrive, Black Tuner, Blue Light Reducer, Predefined and Custom Gaming Modes
Inputs	DVI-D, HDMI, DisplayPort
Audio	speakers and headphone connector
Height adjustable	13 cm

24" 27" 144Hz Free Sync



RED EAGLE™



**GE2288HS¹ | GE2488HS-B1² | GE2488HS-B2¹ ²  
GE2788HS-B1² | GE2788HS-B2¹ ²**

Panel	TN LED / 1920 x 1080
Response time	1 ms, 60Hz
Features	FreeSync™¹, OverDrive, Black Tuner, Blue Light Reducer, Predefined and Custom Gaming Modes
Inputs	VGA², DVI-D, HDMI
Audio	speakers and headphone connector
Height adjustable	-

24" 27" 1ms



BLACK HAWK™



**GB2888UHSU**

Panel	TN LED / 3840 x 2160
Response time	1 ms, FreeSync™
Features	OverDrive, Black Tuner, Blue Light Reducer, Predefined and Custom Gaming Modes
Inputs	DVI-D, HDMI, DisplayPort
Audio	speakers and headphone connector
Height adjustable	13 cm

28" 4K 1ms Free Sync



GOLD PHOENIX™



**GB2783QSU**

Panel	TN LED / 2560x1440, QHD
Response time	1 ms, 60Hz
Features	FreeSync™, OverDrive, Black Tuner, Blue Light Reducer, Predefined and Custom Gaming Modes
Inputs	DVI-D, HDMI, DisplayPort
Audio	speakers and headphone connector
Height adjustable	13 cm

27" 2560 x 1440 1ms Free Sync



SILVER CROW™





# Web User's Best Buys

Web User and its sister titles test over 2,500 products every year

## HARDWARE

### ROUTER

#### Linksys EA9500 Max-Stream

£224.99 from [bit.ly/lksy456](http://bit.ly/lksy456)

Tested: Issue 456



The EA9500 Max-Stream is a superb router that's packed with features and sensibly priced. It delivers terrific wireless speeds, creates two 5GHz networks on separate frequencies and offers an excellent smartphone app.

#### KEY SPECS

802.11a/b/g/n/ac ■ 8 x Gigabit Ethernet ports ■ 2 x USB 3 ports ■ Guest-network mode ■ DLNA media server ■ 318 x 265 x 67mm ■ Two-years return-to-base warranty

### PHOTO PRINTER

#### Epson Expression Photo HD XP-15000

£251.96 from [bit.ly/epsonexp450](http://bit.ly/epsonexp450)

Tested: Issue 450



Epson's XP-15000 lacks some of the features of a true all-rounder but it prints photos beautifully, all the way up to size A3+.

#### KEY SPECS

5,760 x 1,440dpi maximum print resolution ■ 250-sheet input capacity ■ Double-sided printing ■ Colour touchscreen ■ USB, Ethernet, Wi-Fi connectivity ■ 479 x 370 x 159mm ■ 8.5kg ■ Three-years return-to-base warranty

### SMART THERMOSTAT

#### Honeywell Evohome

£199 from [bit.ly/honevo449](http://bit.ly/honevo449)

Tested: Issue 449



The Honeywell Evohome is a powerful multi-zone smart heating product that lets you control all the radiators in your central heating system. This will save on heating bills, but it may take a while before you recoup the cost of the initial outlay.

#### KEY SPECS

Remote thermostat ■ Battery-powered ■ Hot-water support ■ Individual radiator support ■ Alexa voice-assistant support ■ IFTTT support ■ 13.9 x 2.1 x 10.1cm ■ 898g

### LAPTOP

#### Asus ZenBook UX410

£539.95 from [bit.ly/asuszb447](http://bit.ly/asuszb447)

Tested: Issue 447



This laptop, with its compact aluminium body and impressive design, feels built to last. Performance was middling, though it's fine for everyday tasks, and the screen looks fabulous.

#### KEY SPECS

Dual-core Intel Core i3-7100U processor ■ 4GB memory ■ 128GB storage ■ 14in 1,920 x 1,080-pixels screen ■ USB-C, USB 3, 2 x USB 2 ports ■ 802.11ac Wi-Fi ■ Windows 10 Home ■ 323 x 223 x 19mm ■ 1.4kg ■ 1-year return-to-base warranty

### MONITOR

#### BenQ GL2580HM

£109.99 from [bit.ly/benq445](http://bit.ly/benq445)

Tested: Issue 445



This BenQ monitor's stylish slim bezel and attractive design are matched by its solid performance and good-quality colour display. However, it's not suited to serious gamers.

#### KEY SPECS

24.5in screen ■ 1,920 x 1,080-pixel resolution ■ 16:9 aspect ratio ■ 16.7 million colours ■ 50-76Hz refresh rate ■ 1,000:1 native contrast ■ 2ms response time ■ HDMI, DVI and VGA ports ■ Two 1W speakers ■ 42.6 x 55.7 x 17.5cm ■ 4.4kg

### PC

#### Palicomp AMD Gravity RYZ1

£799.99 from [www.palicomp.co.uk](http://www.palicomp.co.uk)

Tested: Issue 443



This is the best PC we could find for under £800. It's powerful, well built and well balanced, so long as you're happy to use an overclocked processor.

#### KEY SPECS

AMD Ryzen 5 1600 processor ■ Asus Prime B350M-A motherboard ■ 8GB DDR4 memory ■ GeForce GTX 1060 graphics card ■ 240GB SSD ■ 1TB hard drive ■ 475 x 468 x 230mm tower case ■ Windows 10 Home 64-bit



## SOFTWARE & SERVICES

### PHOTO-EDITING SOFTWARE

#### DxO PhotoLab

£99 from  
[bit.ly/dxo455](http://bit.ly/dxo455)

**Tested:** Issue 455

If you're put off by Adobe's subscription costs, DxO PhotoLab is the best alternative for managing and editing your photos. Its interface is streamlined and elegant, and the editing and image quality are exceptional. It's also very simple to use and comes with lots of sophisticated tools.

#### KEY FEATURES

RAW conversion ■ High quality noise-reduction ■ Optical corrections ■ Red-eye correction ■ Advanced light and colour ■ Batch processing ■ Selective tone ■ Full-screen mode ■ Spot-weighted mode



### VIDEO-EDITING SOFTWARE

#### Adobe Premiere Elements 2018

£86.56 from  
[www.adobe.com/uk](http://www.adobe.com/uk)

**Tested:** Issue 453

With its clean interface and sackful of special effects, Elements performs just about every action you'll ever need from a consumer-level video-editing suite. It's a powerful beast and rendering is super-speedy, even when exporting at 4K – but note that it only runs on 64-bit systems.

#### KEY FEATURES

Automatic editing ■ Image stabiliser ■ Surround-sound support ■ Stop-motion capture ■ Variable-speed control ■ Unlimited timelines ■ DVD disc authoring (no Blu-ray support) ■ 4K support ■ Requires Windows 7/8.1/10 or MacOS (64-bit versions only)



### Web User Gold Award winners

#### SYSTEM MONITOR

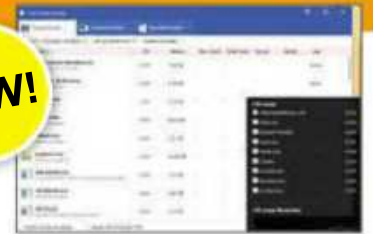
##### Wise System Monitor

**NEW!**

Free from [bit.ly/wise456](http://bit.ly/wise456)

**Tested:** Issue 456

Wise System Monitor has effortless charm – a lightweight tool that performs seriously well, offers lots of useful features and is very easy to use.



#### IOS BACKUP TOOL

##### Air Transfer

Free from [bit.ly/aitr455](http://bit.ly/aitr455)

**Tested:** Issue 455

Air Transfer takes all the fuss out of getting files and photos from your iOS device to your PC. It works beautifully over your Wi-Fi connection.



#### ONLINE DESIGN TOOL

##### Desygner

Free from [desygner.com](http://desygner.com)

**Tested:** Issue 454

Slick and powerful, Desygner lets you create great-looking designs in a matter of minutes, without needing to download any software.



#### TAB MANAGER

##### OneTab

Free from [bit.ly/onet453](http://bit.ly/onet453)

**Tested:** Issue 453

OneTab shrinks all your open tabs to a single page in just one click. It's simple, clean and can be customised.



#### PODCAST APP

##### Castbox

Free from [castbox.fm](http://castbox.fm)

**Tested:** Issue 452

Castbox's smartly designed podcast app offers incredible choice and an excellent search tool.



# WEB USER BACK ISSUES DISCS

Search for 'webuser disc' on Amazon

**EVERY ISSUE FROM  
2014 TO 2017**





# Best Free Software

## UNINSTALLER

### IObit Uninstaller 8

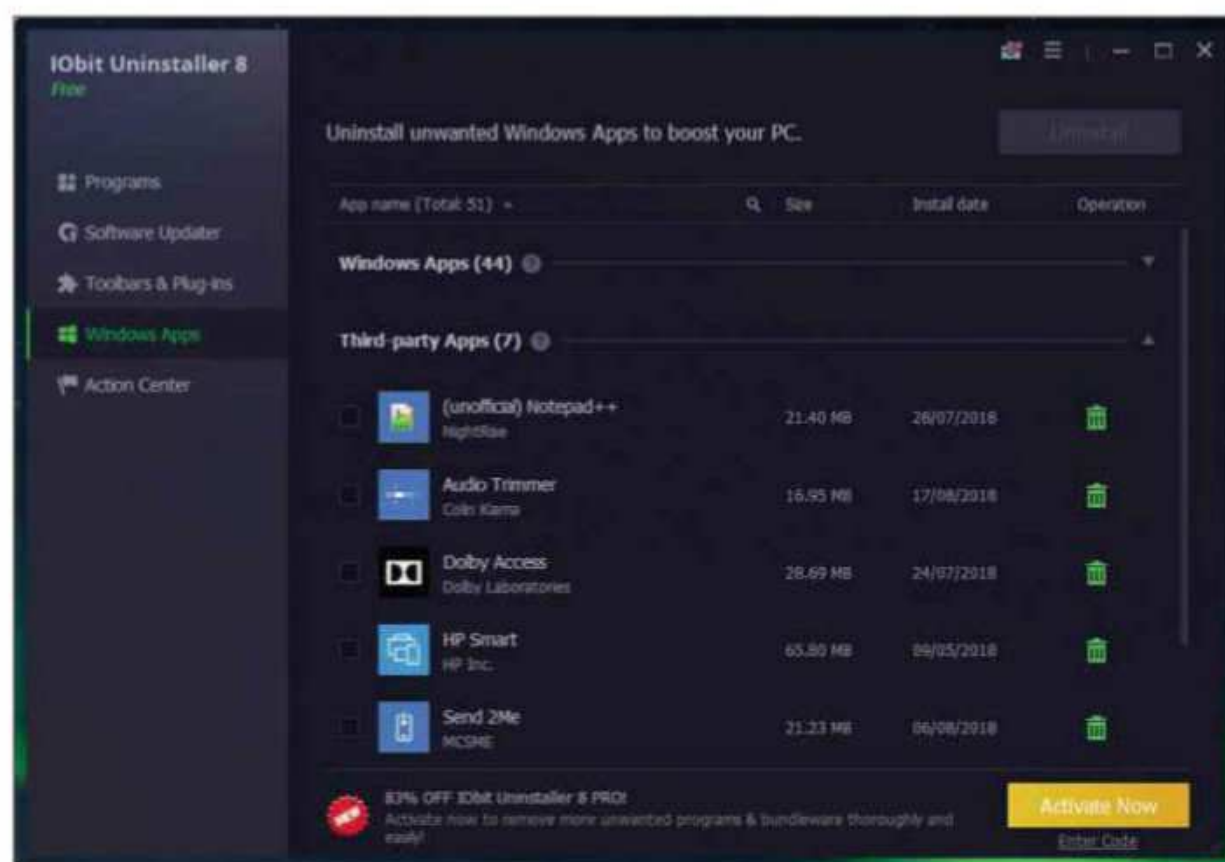
[bit.ly/uninstall457](http://bit.ly/uninstall457)

**Min requirements:** Windows 7/8.1/10

**File size:** 14MB

Windows comes with its own built-in uninstaller, but there are better free third-party options available. IObit Uninstaller not only removes programs you no longer want, but also cleans up after them, eliminating leftover junk that similar uninstallers might leave behind, including temporary and installation files, and Registry entries. It can batch-uninstall software and force-remove broken files and applications, along with hidden and unlisted programs.

IObit Uninstaller's list of installed software can be filtered by All Programs, Bundlware, Recently Installed, Large Programs and Infrequently Used, and you can also reorder the list by Name, Size or Install



Date. Alternatively, you can search for specific items you want to remove. There are additional sections for Windows Apps and Toolbars & Plugins.

The major new feature in IObit Uninstaller 8 is a bundlware uninstaller. The program will now notify you if any bundled junk is detected during installation, and any that gets installed can be found and removed through the new Bundlware category.

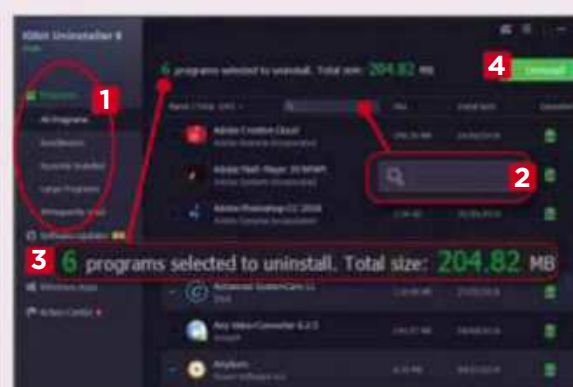
The software also gains a new Easy Uninstall solution that lets you uninstall

a program directly from its opened window, desktop shortcut or system-tray icon. Additionally, this new version expands the Software Updater database, which makes it possible to update five times as many programs as the previous edition. This improvement allows you to keep your more important software up to date with a single mouse-click.

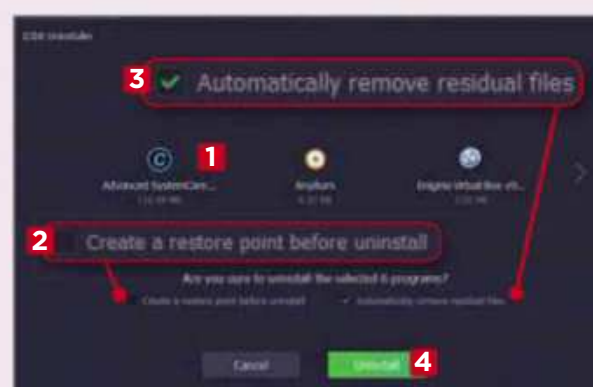
IObit Uninstaller 8's scan engine has been enhanced, too, so it can remove all leftovers more thoroughly.



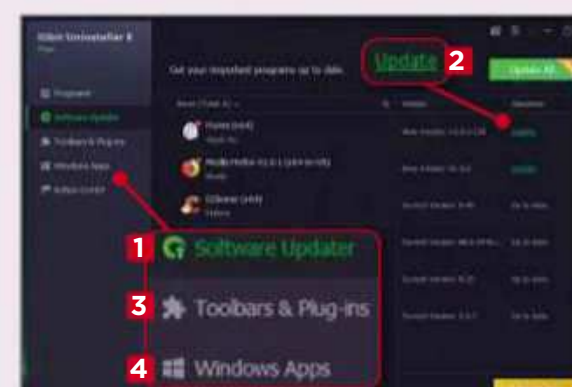
## MINI WORKSHOP | Remove unwanted programs using IObit Uninstaller 8



**1** Find the software you want to remove by filtering the choices in the sidebar. **1** You can also search for a program by name. **2** Multiple items can be removed in sequence by ticking the box next to each one. The number of programs selected and their total size is shown at the top. **3** Click the green Uninstall button **4** to begin the removal process.



**2** The page displays the programs that are due to be uninstalled. **1** IObit Uninstaller can create a restore point, so you can roll things back if problems occur. **2** It will also automatically remove residual files afterwards, unless you untick this box. **3** Click the Uninstall button **4** and the selected software will be removed.



**3** The Software Updater **1** lets you install the newest version of programs on your PC. Just click the Update link next to an item. **2** Make your browser more lightweight by removing any toolbars you don't need in the Toolbars & Plug-ins section. **3** Windows Apps **4** lets you remove unwanted applications, including ones installed with Windows 10.



This fortnight's top new software downloads to help you make the most of your PC, and they're all FREE



## NETWORK MONITOR

### WiFi Network Monitor 5

[bit.ly/wifinet457](http://bit.ly/wifinet457)

**Min requirements:** Windows XP/Vista/7/8.1/10 **File size:** 3.9MB

WiFi Network Monitor can remotely scan a wireless network and discover all the devices connected to it, which is useful for identifying neighbours who are piggybacking on your connection. It's very easy to use, and will automatically scan your Wi-Fi network, although you can switch to manual mode if you prefer. In the case of the latter, you need to specify the start and end of the IP range to scan.

This is a major update and improves the network-monitoring features.



## WEB BROWSER

### Pale Moon 28

[www.palemoon.org](http://www.palemoon.org)

**Min requirements:** Windows Vista/7/8.1/10 or Linux **File size:** 38.1MB

The first major update of the Firefox-based browser since the 2016 introduction of a number of big – mostly under-the-bonnet – changes. In this version, the layout and Goanna rendering engine gets an update, as does the SpiderMonkey JavaScript engine. The browser is now better at handling media and WebGL2 is finally supported, allowing for enhanced graphical experiences in 2D and 3D.



## SCREENSHOT TOOL

### CloudShot 6

[cloudshot.com](http://cloudshot.com)

**Min requirements:** Windows XP/Vista/7/8.1/10 **File size:** 4.9MB

This screen-capture tool lets you grab any window or region, edit the image and add captions. You can then share the screenshot via cloud services such as Google Drive, OneDrive and Imgur. The new version gains a new tray menu and reintroduces the program's Instant Shot (Shift+PrtScn) feature. You can now save local copies of screenshots and preview recent ones, and record and share screen activity.

## New Windows Apps

### Foto StackR

[bit.ly/foto457](http://bit.ly/foto457)

**Min requirements:** Windows 10

**File size:** 14.83MB

Foto StackR lets you merge a series of identical (or near-identical) photos into one, to remove defects or create special effects. The app works with JPEG and TIFF images.



### Concepts

[bit.ly/concepts457](http://bit.ly/concepts457)

**Min requirements:** Windows 10

**File size:** 70.25MB

Originally only available for iPhone and iPad, this design and sketching application has now arrived on Windows 10. It lets you draw, design and take notes, with a number of brushes on an infinite canvas.



### Videotape

[bit.ly/vt457](http://bit.ly/vt457)

**Min requirements:** Windows 10

**File size:** 49.71MB

Videotape is a simple but fast media player for Windows 10 with a minimal design that puts the focus on the playing video. It offers keyboard shortcuts, subtitle support and picture-in-picture mode.





## PASSWORD GENERATOR

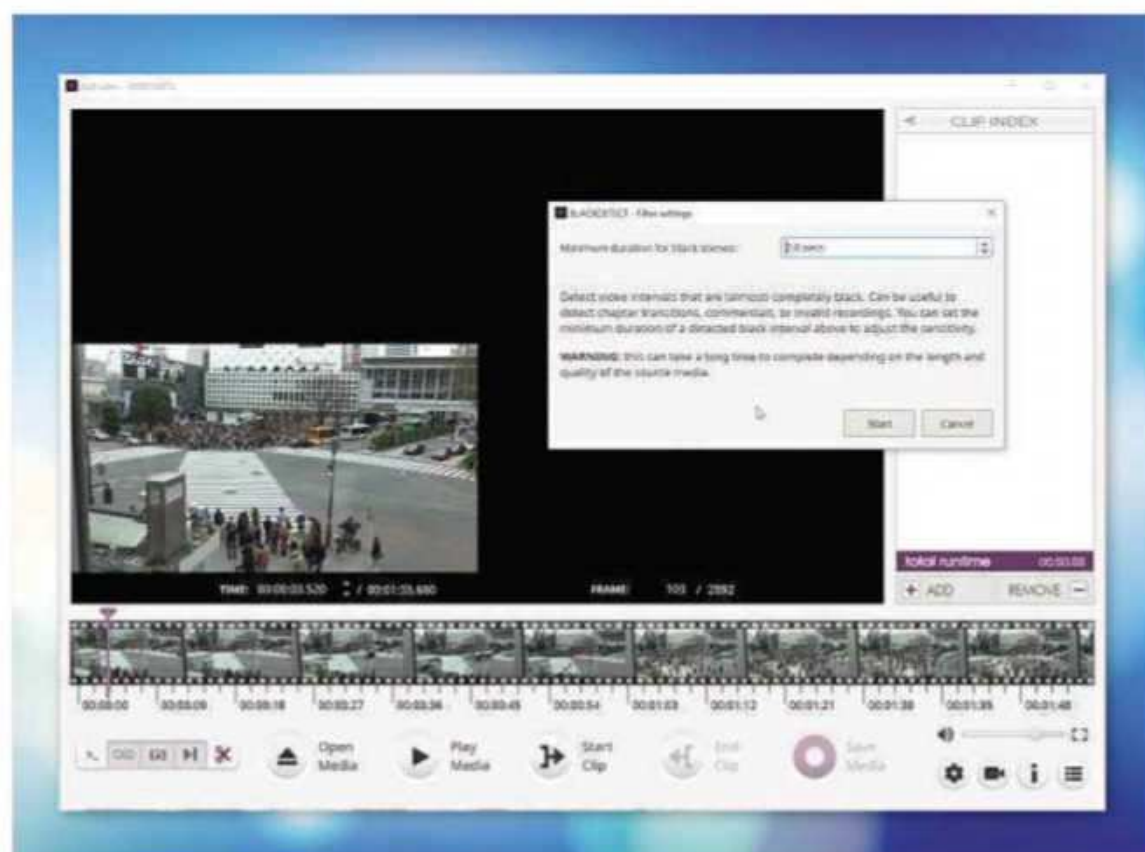
### Sordum Random Password Generator

[bit.ly/rpgen457](http://bit.ly/rpgen457)

**Min requirements:** Windows XP/Vista/7/8.1/10

**File size:** 361KB

It's important to create strong passwords and avoid reusing them across different sites, but thinking up multiple logins that won't be guessed is far from easy. Sordum Random Password Generator is a portable tool that can quickly create random passwords using whichever options you select. Just tick the type of characters to include – upper- and lower-case letters, numbers and special characters – and optionally specify any characters to avoid, then enter the required password length. The tool can automatically copy the new password ready for pasting, and can also create passwords directly in the Windows Command Prompt.



## VIDEO TRIMMER

### VidCutter 6

[bit.ly/vidcut457](http://bit.ly/vidcut457)

**Min requirements:** Windows 7/8.1/10, MacOS or Linux **File size:** 66.5MB

VidCutter lets you trim the best scenes from your videos and save them with no loss of quality. To use the program, drag your videos into VidCutter's main window and make any required edits. Clips can then be reordered and combined into a single MP4 file.

The new version of VidCutter gains a video-filters menu. The first filter, Blackdetect, automatically creates clips in your index based around intervals when the picture goes black. You can now easily edit chapter names and manage the creation of automatic chapters in a list.

A number of bugs in the previous version have been fixed, too.

## WINDOWS INSTALLER

### WinToHDD 3

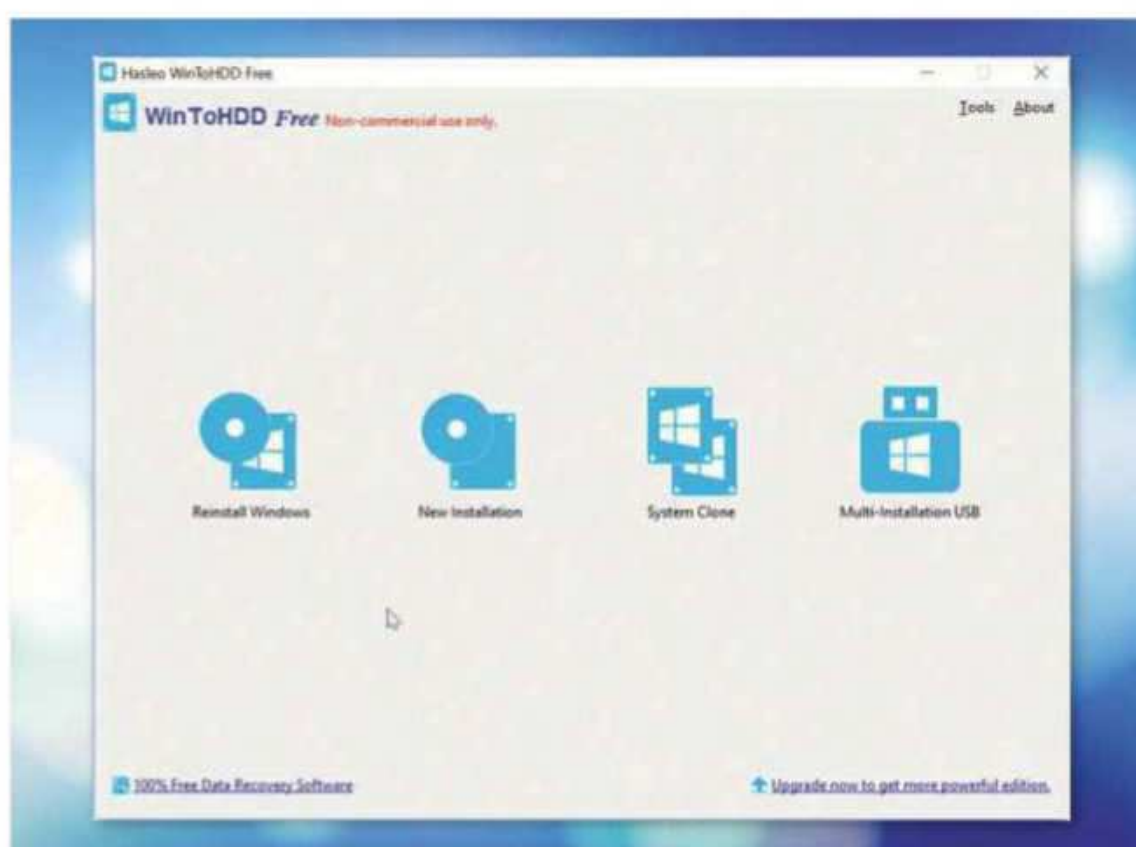
[bit.ly/w2hdd457](http://bit.ly/w2hdd457)

**Min requirements:** Windows Vista/7/8.1/10

**File size:** 8.8MB

If you need to install or reinstall Windows, but don't have the CD or DVD it came on to hand – or an optical drive to access the content – then WinToHDD can help. It can install the operating system from an ISO, WIM or ESD image file (which you need to add yourself), or clone Windows to a new drive. It also lets you create a multi-installation USB flash drive that you can use to install different editions of Microsoft's operating system.

This new version of WinToHDD improves the cloning tool and now lets you 'hot clone' Windows without needing to interrupt other running processes and restart the source computer.







## GAME

### Office Hustle

[bit.ly/hustle457](http://bit.ly/hustle457)

**Min requirements:** Windows XP/Vista/7/8.1/10

**File size:** 126MB

The aim of this quirky game is to sneak around an office, stealing papers without getting caught. You play as an intern aiming for promotion and must hide from your colleagues or use items to distract them. The game works best with a game controller, but you can use it with a keyboard if you prefer. Watch the video on the site for instructions on getting through the menus.

## Don't install...

### LookDisk

[www.fxsearch.com](http://www.fxsearch.com)

**Min requirements:**

Windows XP/Vista/7/8+/10

**File size:** 4MB

This clunky search tool looks like something from Windows 95, but it does have a couple of useful features, including a Find Duplicate Files button. Although it's reasonably fast at searching, there are no previews of results, and LookDisk's inability to search for specific words and phrases makes it feel a bit pointless.



## ...Install this instead

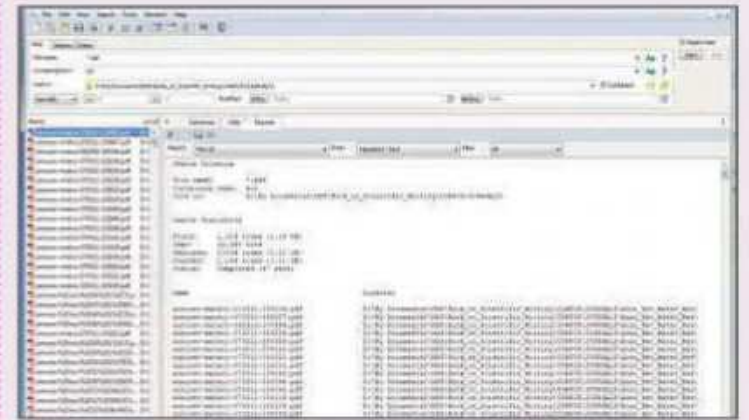
### Agent Ransack

[bit.ly/ransack457](http://bit.ly/ransack457)

**Min requirements:** Windows Vista/7/8+/10

**File size:** 14.9MB

Agent Ransack may look basic but beneath its underwhelming exterior, you'll find a tool that offers one of the best ways to quickly find files on your computer. Searching is simple, using 'File name', 'Containing text' or a combination of both to zero in on the elusive item. If you're searching for a particular file type, you can just as easily enter the extension in the search bar and watch the main pane fill up. You can also filter your results by size and modification date, and switch from Expert to Basic mode, to make the program even easier and faster.



## UPDATED | New tweaks and fixes for your favourite free programs



## SYSTEM TOOL

### WhySoSlow 1.5

[www.resplendence.com](http://www.resplendence.com)

**Min requirements:**

Windows XP/Vista/7/8.1/10

**File size:** 2.8MB

If your PC is running slower than it used to, WhySoSlow will help you identify and overcome the possible causes. This update lets you adjust the displayed processor temperature, and fixes incorrect page-fault measuring and other issues.



## PDF TOOL

### PDF Shaper 8.5

[www.pdfshaper.com](http://www.pdfshaper.com)

**Min requirements:**

Windows XP/Vista/7/8.1/10

**File size:** 8.4MB

PDF Shaper is a collection of tools that allow you to convert, split, merge, protect and watermark PDF files, and more. The latest version updates the installer and improves OCR reading, PDF-to-image conversion and text extraction. Be sure to decline the bundled junk during installation.



## SYSTEM TOOL

### Windows Repair 4.1

[www.tweaking.com](http://www.tweaking.com)

**Min requirements:**

Windows XP/Vista/7/8.1/10

**File size:** 35.3MB

Windows Repair helps you fix common problems with Microsoft's operating system, including Registry errors, file permissions, issues with Windows Update and Firewall, and more. This release updates the default Registry and file-permission settings for Windows 10, and improves performance.



## UNINSTALLER

### BCUninstaller 4.7

[bit.ly/bcunin457](http://bit.ly/bcunin457)

**Min requirements:**

Windows XP/Vista/7/8.1/10

**File size:** 3.7MB

BCUninstaller (which stands for Bulk Crap Uninstaller!) can batch-remove unwanted programs and clear away leftover junk. This release can read hidden uninstall strings, makes it clearer when an uninstallation task finishes and improves the detection of app names. ■

**GET FREE SOFTWARE FIRST** subscribe to Web User at [subscribe.webuser.co.uk](http://subscribe.webuser.co.uk)





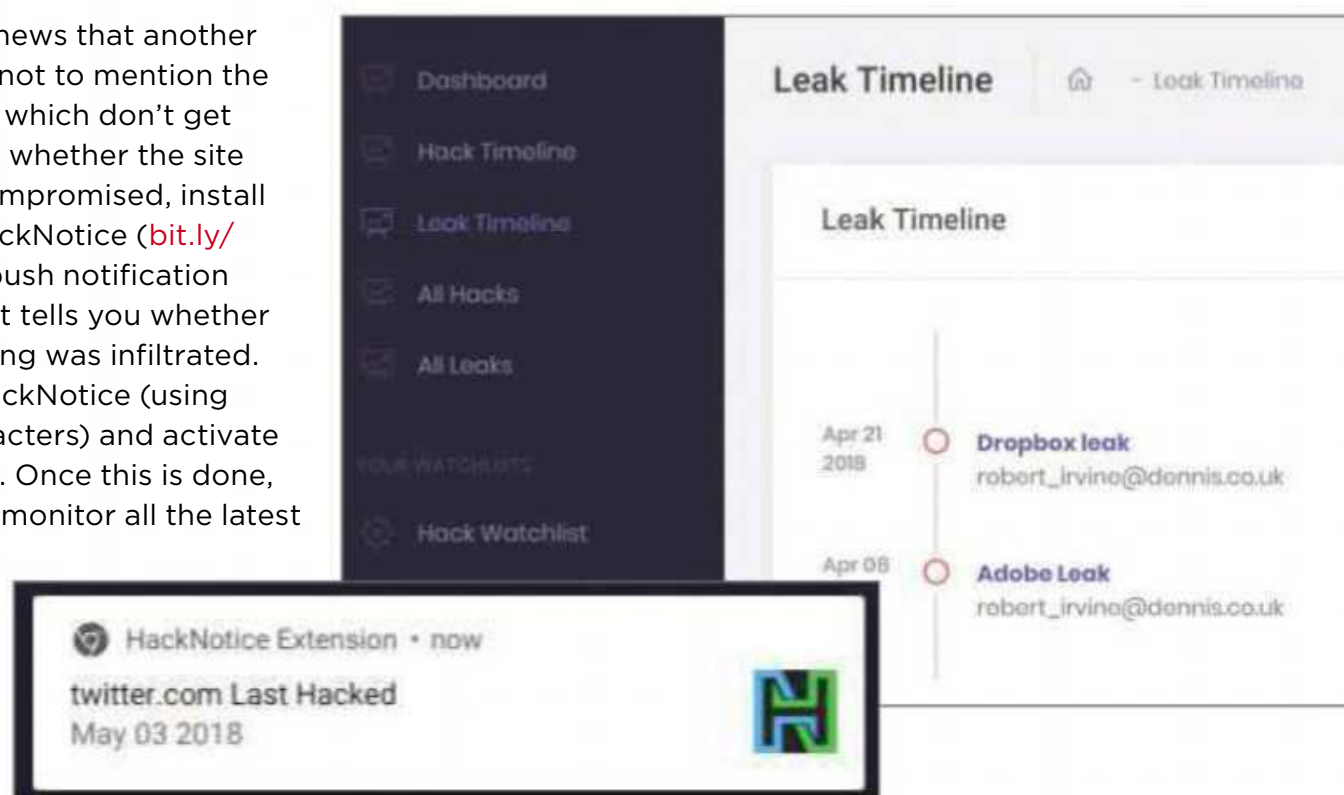
# Best New Browser Tools



## CHROME

### Check if the current site has been hacked

Nary a week goes by without news that another big website has been hacked, not to mention the many attacks on smaller sites, which don't get reported. If you want to check whether the site you're visiting was recently compromised, install the new Chrome extension HackNotice ([bit.ly/hacknotice457](http://bit.ly/hacknotice457)). It displays a push notification in the bottom-right corner that tells you whether and when the site you're viewing was infiltrated. You need to register to use HackNotice (using a password of at least 14 characters) and activate the add-on using a unique key. Once this is done, you can use the dashboard to monitor all the latest hacks and leaks; create a watchlist of favourite sites, apps and companies to keep an eye on; and receive alerts when your own email address is compromised in a breach.

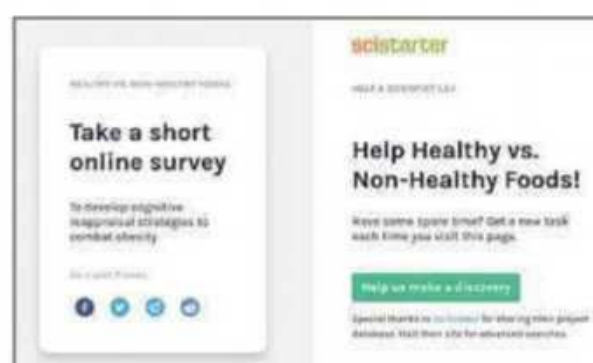


### Decorate your browser with plants

There are countless Chrome add-ons that adorn your browser with animals (mainly cats), but if your tastes veer more towards flora than fauna, then you'll love More Plants ([bit.ly/plants457](http://bit.ly/plants457)). This extension makes browsing the web more interesting by adding greenery to every page when you click its toolbar button. Use the slider to choose the number of plants you want to appear – from one to 100 – and enjoy more than 70 varieties, including ferns, cacti, sunflowers, orchids and many more. The vegetation appears at the top and bottom of your browser, and can be dragged aside if a plant is blocking something, or rearranged to create the perfect window display!

### Help scientific research on your new tabs

Back in issue 450, we rounded up our favourite citizen-science projects, which harness your PC's processing power to help further scientific research. A new Chrome extension called Help a Scientist ([bit.ly/scientist457](http://bit.ly/scientist457)) brings the same functionality to your browser's New Tab page via the citizen-science hub SciStarter ([scistarter.com](http://scistarter.com)). Every time you open a new tab, the add-on suggests a project for you to participate in – for example, helping to map the human microbiome, discovering how climate change is affecting insects, tracking mosquito-bite activity and combating obesity by developing “cognitive reappraisal strategies”. Click the ‘Help us make a discovery’ button to learn more about each project and the tasks it involves – some of them require



only the negligible effort of completing an online survey.

### Speed up and slow down online videos

If you're short of time or you just want to make every clip look like a Benny Hill chase, Video Speed Controller ([bit.ly/speed457](http://bit.ly/speed457)) lets you speed up and slow down HTML5 web videos using keyboard shortcuts. It works on any website – not just YouTube – and by default accelerates or decelerates playback by 0.10x every time you press the D or S key. You can also rewind and fast-forward videos by pressing Z or X, and specify your preferred playback speed in the add-on's settings. Video Speed Controller even lets you whizz through tedious ads and can be customised to use the keyboard shortcuts of your choice.





This fortnight's most useful tips and add-ons to help you get the most from Chrome, Firefox, Opera and more



## FIREFOX

### Get recommendations for what to read next

The latest tool from the Firefox Test Pilot site ([testpilot.firefox.com](https://testpilot.firefox.com)) recommends interesting articles for you to read online, based on the content of the current page and your browsing history. Advance ([bit.ly/advance457](https://bit.ly/advance457)) displays its recommendations in a sidebar on the left-hand side of the browser, and these update every time you open a new page. The more you browse, the more accurate the suggestions become (in theory, at least), although this does entail sharing your browsing activity with the recommendation service Laserlike, which powers the tool. You can close the sidebar when it's not required or move it to the right-hand side of the browser, and switch to Compact Mode to squeeze in more recommendations. Advance also lets you view your feed on your Firefox homepage, stop Laserlike searching for content when you want to browse privately and receive a daily digest of recommendations via email.

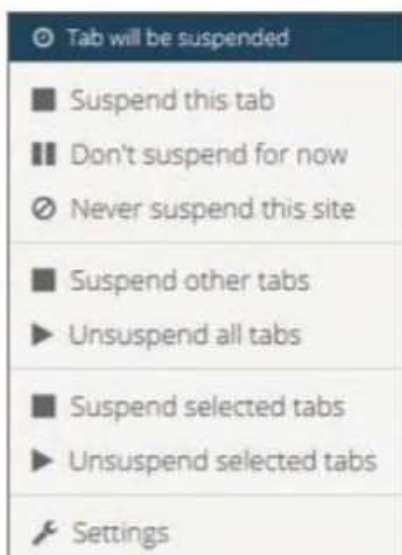


### Reclaim memory by suspending idle tabs

In our roundup of Chrome tab managers in Issue 453, we described The Great Suspender as having "the best name of any Chrome add-on ever", and now this terrific tool is available for Firefox, albeit

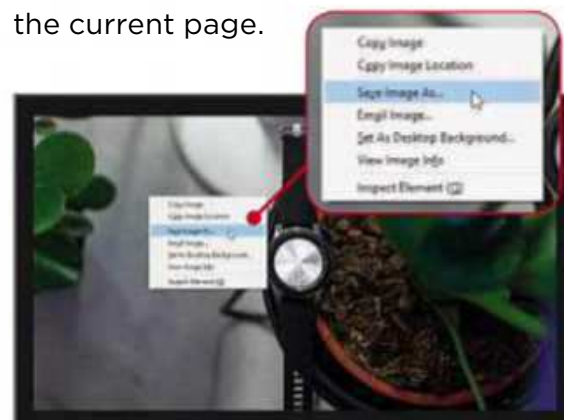
through an unofficial 'port'. As with the Chrome version, The Great Suspender Port ([bit.ly/suspend457](https://bit.ly/suspend457)) offers an easy way to free up browser memory by 'suspending' inactive tabs until you need them. You can

set the extension to suspend a page automatically after a set period of inactivity, and ensure that certain tabs – such as those containing form data or streaming audio, or sites you add to your whitelist – are never suspended. Tabs can be unsuspended individually or all at once, either by clicking the toolbar button or using keyboard shortcuts.



### Save the largest image from the page

If you regularly download images from the web, you'll know that some sites make it deliberately difficult for you to do so, by presenting pictures as links rather than downloadable files. A new Firefox add-on called Largest Image ([bit.ly/largest457](https://bit.ly/largest457)) solves this problem by instantly isolating the biggest picture from the current web page when you click its toolbar button. The image is displayed against a black background, free of distracting layout elements, and can be easily downloaded by right-clicking and choosing Save Image As, or set as your desktop wallpaper. You can also press Ctrl+[comma] to show the largest image from the current page.



## OTHER BROWSERS

### Learn a new word every hour

Browsing the web needn't be a passive activity – you can learn useful stuff, too. Just try the new Opera add-on Word of the Hour ([bit.ly/word457](https://bit.ly/word457)). As its name suggests, it teaches you a new word every hour, complete with dictionary definitions. It also translates the word into French, German, Italian, Spanish and other languages, so you can gradually build up your foreign vocabulary. Although we're not entirely sure when we'll get to use the Esperanto term for 'fermentation' (*fermento*)!

#### English: fermentation

1. the process of undergoing an effervescent change, as by the action of yeast
2. a state of agitation or excitement, as of the intellect or the feelings
3. in a wider sense (physiol. chem.), the transformation of an organic substance into new compounds by the action of a ferment, either formed or unorganized; it differs in kind according to the nature of the ferment which causes it

### Apply a dark mode to Edge

Microsoft Edge has a built-in dark theme, which you can activate in its Settings by choosing Dark from the 'Choose a theme' menu. However, this option only darkens the browser itself, not the backgrounds of web pages, which means it does little to protect your eyes when you're browsing at night. For a proper dark mode, install the extension Turn Off the Lights ([bit.ly/lights457](https://bit.ly/lights457)), which offers a customisable Night Mode that you can switch on and off by clicking its toolbar button to make pages gentler on your peepers.







# Best Free Apps



## App of the Fortnight

### BROWSER Waterfox

[bit.ly/water457](http://bit.ly/water457)



The Waterfox project's aim is to produce (in its own words) a "100% fresh, free-range, ethical browser". And if that sounds a bit woolly, then perhaps "private, fast and flexible" (in our words) might help to increase its appeal.

The desktop version of Waterfox (available from [www.waterfoxproject.org](http://www.waterfoxproject.org)) has been in development since 2011 and continues to improve with every release.

The Android version, meanwhile, has been updated with a number of very interesting features and abilities.

As the name suggests, the browser is largely based on Mozilla's open-source code, but the new version of Waterfox also adds a number of privacy-based features that set it apart from Firefox and its ilk. Tracking protection is enabled by default, for example, while Mozilla's telemetry and data collection is disabled until you turn it on. Pocket, the 'save for later' tool that's deeply embedded in current versions of Firefox, has been completely removed.

Waterfox's developers have also integrated patches from the Tor browser that help to limit online tracking via browser fingerprinting. In addition, Waterfox keeps its Android app permissions to the bare minimum without compromising functionality and removes Google Play Services integration altogether. The browser is so privacy-conscious that it even blocks screenshots and mirroring.

The key difference between Waterfox and other privacy-driven browsers, though, is that its Firefox origins allow users to install a wide variety of Firefox-compatible add-ons, making it an infinitely customisable experience, as well as a private one. We explain how to find and install add-ons in our Mini Workshop, right.

In our tests,

Waterfox never felt laggy, zipping through many common sites at pleasing speeds. It's easy to use, too, especially for existing Firefox users, who will find it instantly familiar.

UPDATED



### MINI WORKSHOP

#### Browse privately on Android using Waterfox

**1** Waterfox enables several privacy features by default, including tracking protection. But if you're concerned about prying eyes, there are even more settings you can use to lock down your browser. Press the three-dot menu, select Settings and tap Privacy.

Here, you can enable 'Do not track' by tapping the switch. **1** You can also tick the box next to 'Clear private data on exit', **2** then tap Set.



**2** One small oversight in how Waterfox works is that the browser is set up to use Bing as its default search engine. Bing, like Google, can track your searches but, luckily, it's very easy to change your default search engine to a more private one. Press the menu button, select Settings, then tap Search. Tap DuckDuckGo in the list, **1** then tap 'Set as default'. **2**



**3** Waterfox supports all Firefox extensions, so you can install ad blockers, password managers, themes and more. To see what's available, press the menu button and select Tools, 'Add-ons'. Any add-ons already installed are listed. **1** To install more, tap 'Browse all Firefox Add-ons', **2** then search or browse, and when you find one you want, tap it, then tap 'Add to Firefox', Allow.

Our rating





## This fortnight's top free and paid-for apps for Android and iOS phones and tablets

### TOOLS

**Inware**  
[bit.ly/inware457](http://bit.ly/inware457)  
 (varies)

If you're the sort of person who likes to know their device inside out, then Inware – currently Android-only – is an essential tool to have installed. Very simply, it presents all the most important information about your device – its hardware, OS version, camera, memory, network connection, battery health and much more besides – all in one place. The tabbed interface is very easy to navigate and the Settings menu allows you to customise the interface by selecting alternate themes and designs or by hiding unavailable data.



Our rating



NEW



### HEALTH

**Google Fit**  
[bit.ly/fit457](http://bit.ly/fit457)  
 (varies)

Google has significantly updated its fitness app, improving its overall appearance and adding new features. It's no longer just about your daily steps: the new version encourages you to achieve multiple goals, including Heart Points (rewards for moderate and intense cardio exercise) and Move Minutes (the amount of time you're physically active). Both of these features work best when you have a connected fitness band or Wear OS device, but can also be used without. The new interface also uses concentric rings to show your progress at a glance.



Our rating



UPDATED



### GAME

**Fortnite**  
[bit.ly/fortnitedroid457](http://bit.ly/fortnitedroid457)  
[bit.ly/fortniteios457](http://bit.ly/fortniteios457)  
 (varies)  11

The most popular game in the known universe finally makes it to Android – sort of. It's still in beta and only players with supported handsets (see [bit.ly/fortnitefaq457](http://bit.ly/fortnitefaq457)) can board the Battle Bus. Also, it's not available via Google Play, but Samsung owners can get it from the Galaxy Apps store. Everyone else needs to go through the process of sideloading it from Epic's website (linked above). The updated iOS version now features motion controls, new locations and more.



Our rating



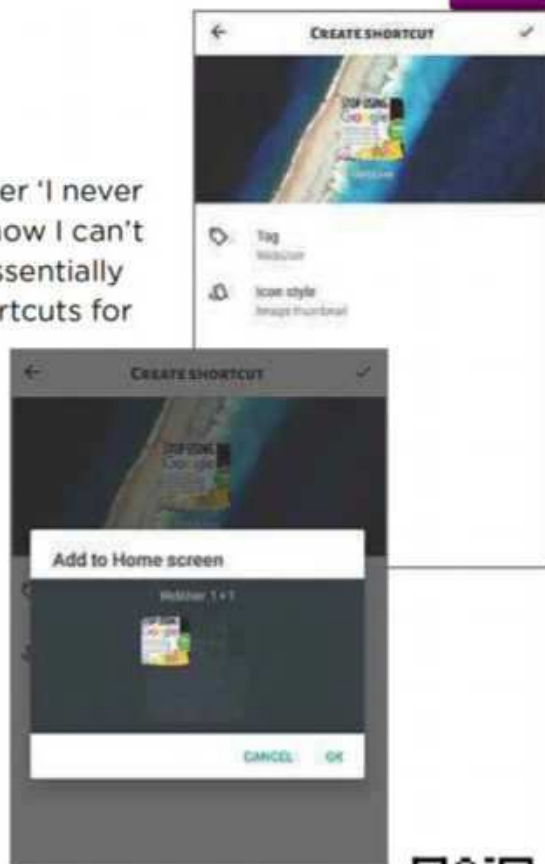
NEW



### TOOLS

**Shorty**  
[bit.ly/shorty457](http://bit.ly/shorty457)  
 8

Here's an app to file under 'I never knew I needed this but now I can't live without it'. Shorty essentially allows you to create shortcuts for almost anything on your Android device's home screen, and it's amazingly easy to use, too. Find something you want to create a shortcut to – for example, a web page, photo or document – then tap Share and select the Shorty icon. You'll then get some options – you can change the tag text that appears under the icon, for instance, as well as the icon style. Press the tick icon, then tap OK to send the shortcut to your home screen.



Our rating



NEW

### WEATHER

**Dark Sky**  
[bit.ly/darkdroid457](http://bit.ly/darkdroid457)  
[bit.ly/darkios457](http://bit.ly/darkios457)  
 (varies)  10.3

Dark Sky is one of the best weather apps around – thanks, in part, to its 'hyperlocal' predictions which provide forecasts accurate to your precise location, rather than just a general area. The latest update brings a completely overhauled interface that displays 24-hour and 7-day forecasts in a redesigned graphical view. A dark theme has been added, along with Day-Night Mode, which switches themes automatically. Dark Sky is free on Android, though an annual subscription fee of £2.99 unlocks more features including down-to-the-minute forecasts, temperature in your status bar, notifications and more. The iOS version has a one-off cost of £3.99.



Our rating



UPDATED



# 5 NEW APPS WORTH PAYING FOR

## TOOLS

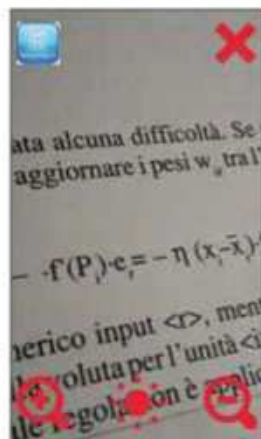
### Zoomify

[bit.ly/zoomify457](http://bit.ly/zoomify457)

**Price:** £2.79 (Android)

 **4.1**

Zoomify is a very straightforward but extremely useful tool for magnifying small text that would otherwise be hard to read. A handy lamp option lets you illuminate text in darker environments.



## ACCESSIBILITY

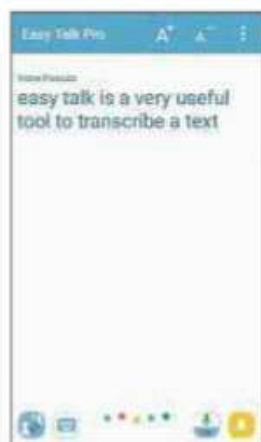
### Easy Talk Pro

[bit.ly/easytalk457](http://bit.ly/easytalk457)

**Price:** £1.79 (Android)

 **4.2**

This easy-to-use tool lets people with deafness or hearing impairments communicate via instant transcription. There's a free 'Lite' version if you want to try before you buy.



## GAME

### Noch Mal!

[bit.ly/nochdroid457](http://bit.ly/nochdroid457)

[bit.ly/nochios457](http://bit.ly/nochios457)

**Price:** Price: £3.59 (Android), £3.99 (iOS)

 **4.0.3**  **8**

This mobile version of an



addictive German board game is fun to play in both Solo mode or against another player on the same device. Roll the dice and complete columns to earn points.

## EDUCATION

### Insect Identifier

[bit.ly/insect457](http://bit.ly/insect457)

**Price:** £4.79

 **5**

Ever been scared witless by a creepy crawly you don't recognise? Now you can point your camera at the unidentified flying (or crawling) insect and get interesting facts from this app.



## GAME

### Holedown

[bit.ly/holedroid457](http://bit.ly/holedroid457)

[bit.ly/holeios457](http://bit.ly/holeios457)

**Price:** £3.99

 **4.2**  **8**

Dig yourself to the planet's core by shooting balls and breaking blocks. It sounds easy but Holedown limits your shots, so you'll need to be strategic if you want to delve deeper.



Zoomify



Easy Talk Pro



Noch Mal!



Insect Identifier



Holedown



## Don't install...

### Cool It

[bit.ly/dontinstall457](http://bit.ly/dontinstall457)

An overheating phone can be a problem, but take care when installing apps that claim to cool down your device or you could end up with one like Cool It, which basically just kills all your apps and shuts off the screen when your device reaches a certain temperature. Not only that but it looks awful, hasn't been updated in three years and is frustratingly difficult to uninstall once you realise just how rubbish it is.



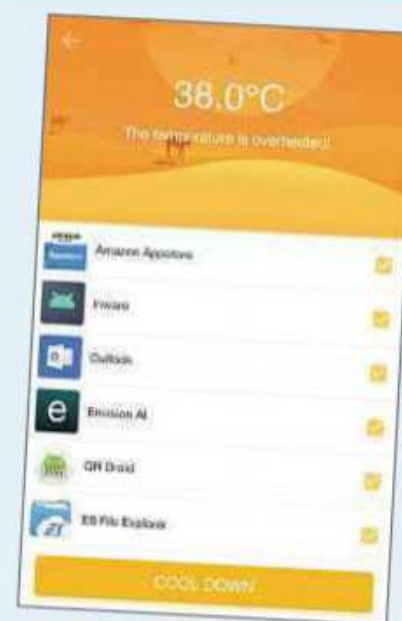
## ...Install this instead

### CPU Phone Cooler

[bit.ly/installthis457](http://bit.ly/installthis457)

 **4.1**

Provided you don't mind the adverts, CPU Phone Cooler is actually one of the better phone-cooling tools available on Google Play. Tap Quick Scan and it will check to see which background apps are using your device's processor. Tap Cool Down and the app will safely terminate these apps, reducing the strain on your processor and theoretically lowering your device's temperature. Oddly, the app includes a lot of slightly irrelevant tools, such as a VPN. More usefully, it actually seems to work and the one-tap 'Cool down' shortcut it adds to your home screen makes it easy to lower your device's temperature whenever needed. ■







# Take a Screen Break

Give your eyes a rest from your browser by taking our fiendish fortnightly challenges. Can you guess our 70s-song emoji and our web year?

**WIN A  
WEB USER  
2017 BACK  
ISSUES DISC!**

Email your answers to  
[webuser@dennis.co.uk](mailto:webuser@dennis.co.uk)  
- one correct entry  
will win a disc



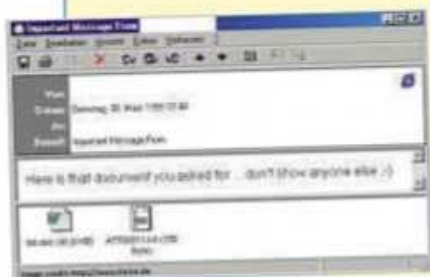
## CAN YOU GUESS THE 1970s NUMBER ONES FROM THE EMOJI?

- |   |   |   |   |
|---|---|---|---|
| 1 |     | 2 |     |
| 3 |     | 4 |     |
| 5 |     | 6 |     |

## GUESS THE TECHNOLOGY YEAR

Can you work out which year the following tech news stories occurred in? No cheating!

**1** The Melissa virus infects millions of computers all over the world in a matter of hours, causing an



estimated \$80m in damage.

**2** The Recording Industry Association of America sues the music-sharing service Napster for large-scale copyright infringement.



**3** Jeff Bezos, the founder and chief executive officer of online retailer Amazon is named 'Person of the Year' by *Time* magazine.



**4** Pyra Labs launches the free blog-publishing service Blogger. It is bought by Google four years later for an undisclosed sum.



**5** Home entertainment changes forever with the arrival of the TiVo digital video recorder, which stores TV shows on a hard drive.



## COMPETITIONS

### WIN 1 OF 3 KitSound Kinetic Bluetooth Neckband headphones

Built for movement, KitSound's Kinetic headphones have a neckband that supports the earpieces, which feel weightless and will never fall to the floor, no matter how strenuous your exercise. To enter, email your address to [webusercomp@dennis.co.uk](mailto:webusercomp@dennis.co.uk) with 'kinetic' in the subject line. For more information, visit [www.kitsound.co.uk](http://www.kitsound.co.uk) and follow @KitSoundUK on Twitter.



**WORTH  
£49.99  
EACH**

### WIN 1 OF 6 PhotoMirage

Corel's new PhotoMirage software for Windows blurs the line between photo and video, letting you transform a single still image into a beautifully animated photo. It's easy to export these, then share with friends. To enter, email your address to [webusercomp@dennis.co.uk](mailto:webusercomp@dennis.co.uk) with 'photomirage' in the subject line. For more information, visit [www.photomirage.io](http://www.photomirage.io) and 'like' [www.facebook.com/ThePhotoMirage](https://www.facebook.com/ThePhotoMirage).



**WORTH  
£49  
EACH**



# ? FAQ

Everything you need to know about the most interesting new technology trends and events



## Android 9 Pie

Hungry for a slice of Android Pie? **David Crookes** takes a look at the ingredients in the latest version of Google's mobile operating system

### Is this another tasty Android update?

Yes, but aren't they all? Just like Oreo, Nougat, Marshmallow, Lollipop, KitKat, Jelly Bean, Ice Cream Sandwich and all the others before it, Android Pie ([bit.ly/pie457](https://bit.ly/pie457)) follows the long-running trend of Google naming major versions of its mobile operating system after sweet treats. As with previous versions, Pie claims to be the best yet but the proof is in the pudding, so to speak.

### Is it very different to Oreo?

Pie is certainly a bigger leap forward than Oreo was in comparison to Nougat. Google has added lots of new, head-turning features while giving the user interface a visual refresh that emphasises practicality. Indeed, the priority this time appears to be on making your phone or

tablet much easier to use, not only by streamlining the amount of swiping and button-pressing needed to navigate the OS but in the way it uses artificial intelligence to help you speed through your daily tasks.

### How does it use AI?

AI is baked into Pie, with Google drawing on the expertise of its machine-learning arm DeepMind. The idea is that the OS learns how you use your phone each day and adapts itself to suit. One way it does this is by anticipating which apps you are likely to use next, so it can prioritise the battery for them while restricting resources for your lesser-used apps. It also works out your optimal brightness

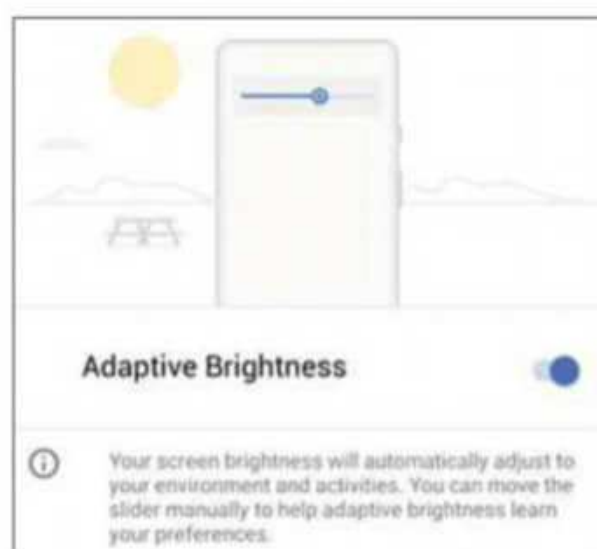
preferences in different surroundings, using algorithms to automatically dim or brighten the screen to suit, with the bonus of reducing energy use.

### Will it mean less charging?

That's the hope, especially given the complaints about battery drain in Oreo. By providing less power to background apps and adapting to your changing use, Pie should let you keep using your device for longer. It's worth bearing in mind, however, that you won't see the effects straight away because Pie needs to learn what you do and don't do with your device. Google is also at pains to point out that DeepMind won't be able to pry into the content of what you're doing because the algorithms work entirely on your device.



*Android Pie promises to help you get more from your phone by using fancy AI*



*Android Pie adapts the brightness of your screen to suit your surroundings*



*The Adaptive Battery feature stops apps wasting power in the background*



## Can it make suggestions based on my activities?

Yes. There's a feature called App Actions that analyses what you're doing in the context of your day. So if it recognises that you're getting ready for work on a weekday morning and that you normally look at your route, it will suggest checking a map for any traffic hotspots. Likewise, plug in your headphones and it

will resume streaming the playlist you were last listening to.

Hooking into this is another feature called Slices. This isn't out until the Autumn but it will highlight small but useful chunks of information

*Pie's Slices will show info from relevant apps in your search results*

from your apps when you perform a search. Android cites ride-sharing service Lyft as an example, explaining that you'll be able to type Lyft into Google Search and instantly see how much it would cost you to get home and when a driver may pick you up, within the results.

## So Android 9 is as easy as pie?

Well, that depends on how married you are to the old OS because Pie has introduced a few tweaks that change the way key features are used. The most noticeable is the removal of the trio of navigation options at the bottom of the screen, which have been replaced by a single Home button that works in different ways depending on your gestures. By swiping up from the bottom,

*Pie ditches the three navigation buttons*

you'll see the newly designed Overview, which displays the app you last used and lets you scroll left and right to look at other open apps. Another swipe up shows the app drawer, while tapping takes you home and long-pressing calls up the Google Assistant. You can go back to the traditional three buttons by re-enabling them in Settings.

## AM I SPENDING TOO MUCH TIME ON MY PHONE?

Probably, but don't worry because we all are.

Recognising that, Android 9 Pie is rolling out software called Digital Wellbeing this Autumn and the features include a dashboard that shows you how many notifications you're receiving each day, and the amount of time you're spending on your apps and phone.

You'll also be able to set daily time limits with the app icons greying out when you get close to cut-off point. Meanwhile, the phone will fade to grey and turn on Do Not Disturb at night to prevent the colourful display of the handset and the constant pinging of notifications from disrupting your sleep.



## What else will I notice?

The clock has moved to the left of the notification bar and the dock now has a semi-transparent background, while the interface has rounded corners and there are new transitions for switching between apps or activities within those apps. The volume slider has been redesigned, too, and you can easily rotate the phone's display at the press of a button. Additionally, Google has finally added a dark mode to Android and you can even get your device to work out when to switch from light to dark.

## Have any of the menus changed?

Yes. The Quick Settings menu has a new interface that Google says provides a "more consistent user experience". The big addition here is a screenshot button that means you no longer have to wrangle your fingers to simultaneously press the power and volume-down buttons to capture your display (you can still do this but it's easier to hold down the power button and tap Screenshot). Pie also lets you draw on, annotate and crop your screenshots – a feature it appears to have borrowed from iOS 11.

## Will it be easier to communicate with my friends?

Suggested 'smart replies' can now appear in message notifications, so you don't have to tap to open a messaging app to reply to someone. Images can also appear in notifications, again avoiding

the need to launch a message app.

And if you're getting too many notifications, you can let Pie know which ones you'd rather not see.

## Does Pie enhance Android's security and privacy?

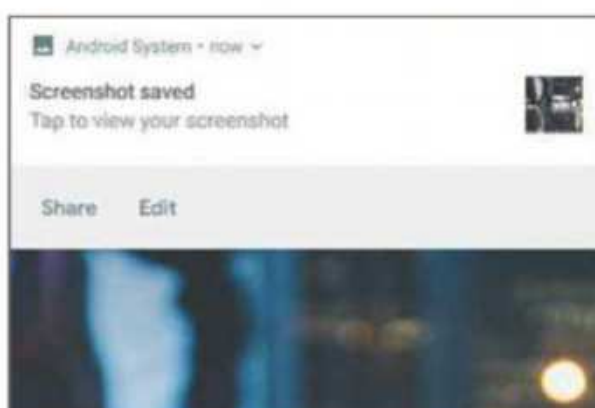
There are some subtle background changes in Pie that help protect your data. One of these is a new permissions category called Call\_log, which forces developers to seek permission to access your call data. HTTP connections are blocked in favour of HTTPS-only and unscrupulous developers won't be able to work out your location by performing a Wi-Fi scan. On top of that, apps running idle in the background can't access your microphone, camera or SensorManager sensors. Also, Pie supports hardware that protects sensitive data such as credit or debit card information, and you can use its Lockdown feature to disable the fingerprint sensor or voice-unlock option.



*You can disable your fingerprint sensor if you lose your phone (or your finger)*

## How do I get Android Pie?

Android 9 Pie is currently available for Google Pixel phones and anyone owning one will have received a notification. The new OS is also available for the Essential Phone, but if you have a different make of Android device, you'll have to wait for the manufacturer to push out Pie. Phones high on the list for the update include the Nokia 7 Plus, OnePlus 6, Oppo R15 Pro, Sony Xperia X72, Vivo X21, Vivo X21UD and Xiaomi Mi Mix 2S. But it's bad news for Nexus phone owners – Google says those handsets won't be supported.



*Android Pie makes it easier to capture, share and edit screenshots*



**Get better...**

# TV STREAMING FOR FREE!

**COVER  
FEATURE**

Don't let poor picture quality, on-screen annoyances and limited features spoil your streaming. **Robert Irvine** reveals secret new tricks to boost your binge-watching experience



**A**ccording to recent research by Ofcom, more people in the UK now watch video-streaming services such as Netflix and Amazon Prime than pay for TV channels from Sky, Virgin Media and BT ([bit.ly/netflix457](http://bit.ly/netflix457)). The quality and quantity of TV shows and films now available on streaming services, and the flexibility of how, when and where you can watch them, has encouraged 15.4 million of us to change our viewing habits - and save a lot of money every month.

In this feature, we reveal how to get more from your

preferred streaming services by unlocking hidden settings, adding useful new tools and fixing annoyances that impede your viewing pleasure. We've rounded up the best tips and tricks for Amazon Prime Video, Netflix, Now TV and BBC iPlayer to improve the quality of streaming across your devices, without paying a penny more. This means that when this Autumn's new season of programmes begins, you'll be better placed to enjoy it than anyone else. Be sure to stay abreast of the latest TV shows and films with our regular What to Watch Online section (page 20).



## NETFLIX

### Always stream Netflix at the highest quality

The resolution at which Netflix streams video to your computer, TV or mobile device depends on the plan you pay for: Basic only offers standard definition; Standard offers HD; and Premium goes up to Ultra HD. However, the service also adjusts your streaming quality based on the speed of your internet connection, your device's capabilities and your playback settings, which are worth configuring if your picture looks ropey or you're not getting the quality you pay for. In your desktop browser, click the down arrow next to your profile picture and choose Account, then 'Playback settings'. Select High or Medium (if High is greyed out) and click Save, but bear in mind that the higher the quality, the more data you'll use (Ultra HD consumes up to 7GB per hour) and that the change can take several hours to take effect.

You can also try forcing Netflix to stream at 1080p HD quality using the Chrome extension Netflix 1080p ([bit.ly/hdnetflix457](http://bit.ly/hdnetflix457)), which overrides the service's default settings on your computer (provided your hardware can handle it). For Firefox, try the similar Force 1080p Playback for Netflix ([bit.ly/force457](http://bit.ly/force457)).



**Change your playback settings if Netflix's streaming quality isn't good enough**

### Speed-test your Netflix connection

If you suspect that your poor Netflix streaming quality is caused by a slow internet connection, you can run a quick speed test. In your desktop or mobile browser, go to Fast.com ([fast.com](http://fast.com)), let the Netflix-powered speed test run and note the result. Alternatively, in the Netflix smart TV or console app, select Settings or the cog icon on the home screen and choose 'Check your Network' to verify and speed-test your connection. Netflix recommends a



**Run a speed test to see whether your connection is affecting picture quality**

connection of at least 3Mbps for standard-definition quality, 5Mbps for HD and 25Mbps for Ultra HD, so you should change your playback settings to suit your speed.

### Hack Netflix to stream the way you want

For a paid-for service, Netflix offers very few options to customise the way you stream – even YouTube has more – but there are plenty of unofficial add-ons to enhance your viewing experience. Our favourite is Super Netflix ([bit.ly/super457](http://bit.ly/super457)), which lets you speed up and slow down playback to suit your current concentration level; adjust the picture to make it brighter, darker or black-and-white; and change the audio and video bitrates to improve sound and picture quality. You can also opt to skip programme intros automatically, so you don't have to sit through repetitive opening credits; control the streaming volume using your mouse wheel; and blur thumbnail images and episode descriptions to conceal spoilers when browsing Netflix.

We also like FindFlix for Chrome ([bit.ly/findc457](http://bit.ly/findc457)) and Firefox ([bit.ly/findf457](http://bit.ly/findf457)), which makes it easy to access Netflix's hidden categories and quirky subcategories, such as 'British dramas based on a book from the 1970s' and 'Coming of age animal tales'.



**Super Netflix adds useful new tools such as speeding up playback**

### Disable dubbing for foreign-language streaming

Dubbing has come a long way since the cringeworthy days of the original *Monkey* series, so Netflix now offers many foreign-language TV shows and films, including the acclaimed Hindi series *Sacred Games* and German sci-fi thriller *Dark*, in English-dubbed versions. However, if you find the mismatched mouth movements distracting, you can revert foreign content to its native tongue. Simply click or tap the speech-bubble icon, choose the original language from the Audio menu and select English from the Subtitles list.



**Watch foreign-language Netflix TV shows and films as they were intended**

### Turn films and TV shows into audiobooks

Whether you're partially sighted (or someone you know is), or you just want to get on with something else while streaming, Netflix's Audio Description feature is one of its lesser-known but more useful tools. As with similar accessibility options offered by UK on-demand services (by law, as of last year – see [bit.ly/audio457](http://bit.ly/audio457)), this narrates the action that's occurring on-screen,



**Turn on Audio Description to have Netflix shows and films narrated to you**



so you can follow the story without watching the images. To activate this feature in Netflix, click or tap the speech-bubble icon at the bottom of the screen and choose 'English - Audio Description' from the Audio menu. Sadly, fewer than 50 Netflix titles currently offer this option in English. Those that do include *The Crown*, *Better Call Saul* and *Star Trek: Discovery*. See [bit.ly/english457](http://bit.ly/english457) for the full selection.

## Control Netflix using keyboard shortcuts

Netflix has several handy keyboard shortcuts that let you stream more easily on your desktop without unnecessary mouse-clicking. Here are some of our favourites:

**F** – Switch to full-screen (and back)

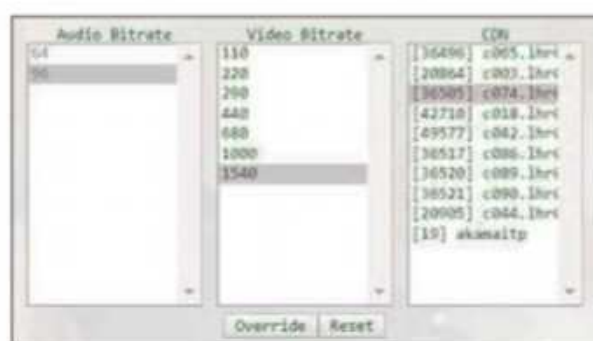
**Spacebar** – Pause and resume playback

**M** – Mute (and unmute) the sound

**[up and down arrows]** – Raise and lower the volume

**Shift + [left arrow]** – Rewind by 10 seconds

**Shift + [right arrow]** – Fast-forward by



Use a keyboard shortcut to open Netflix's secret control panel

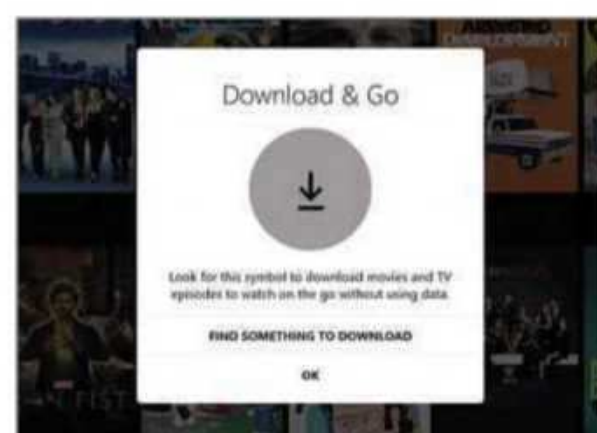
10 seconds

**Ctrl+Alt+Shift+D** – view statistics about your stream

**Ctrl+Alt+Shift+S** – launch control panel to fix buffering

## Stream through the Netflix app on Windows

When you're using your PC or laptop, it might seem logical to watch Netflix via its website, but it's actually much smarter to stream to the dedicated Netflix app for Windows 10 ([bit.ly/netflixapp457](http://bit.ly/netflixapp457)). This offers higher quality streaming than is possible in your browser (up to 4K); supports Cortana,

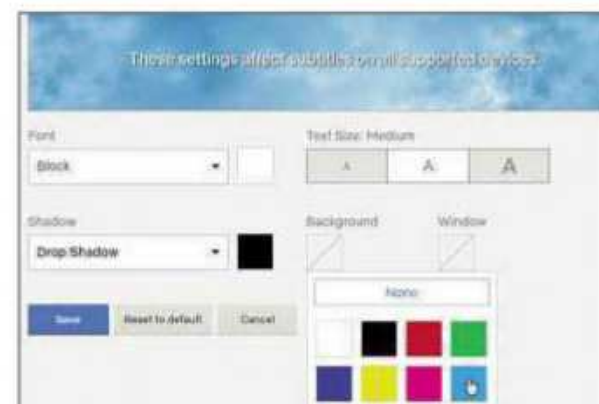


The Netflix app for Windows 10 offers better-quality streaming than the website

so you can find, play and pause shows using your voice; and, best of all, lets you download selected Netflix shows and films to watch offline – a feature that's otherwise limited to mobile devices. The app is free to install, though naturally you need a Netflix subscription.

## Make Netflix subtitles easier to read

By default, subtitles for Netflix TV shows and films are displayed as white text with a black shadow, but it's easy to customise them to your viewing preference. In your browser, hover over your profile picture and choose Account from the drop-down menu. Click 'Subtitle appearance' and choose your desired font, text size, subtitle colour and shadow type, and whether to use a coloured background. Click Save to apply your subtitle changes across all your Netflix devices.



Change the colour, size and font of Netflix subtitles to suit your preference

## UPGRADE YOUR NETFLIX PROFILE PICTURE

If you have several Netflix profiles set up on your PC, TV or mobile device, you're probably bored of seeing the same bland pictures representing you and your family members – unless you like being a green square with a wonky mouth! Acknowledging this, Netflix has just introduced more than 100 new profile icons, which you can use to better reflect your streaming personality. Options include characters from popular Netflix shows such as *Stranger Things*, *Marvel Defenders* and *Lost in Space*, set against colourful backgrounds. Just select the pencil icon on your current profile picture to enhance your streaming image.



Improve your streaming image using Netflix's new profile-picture designs

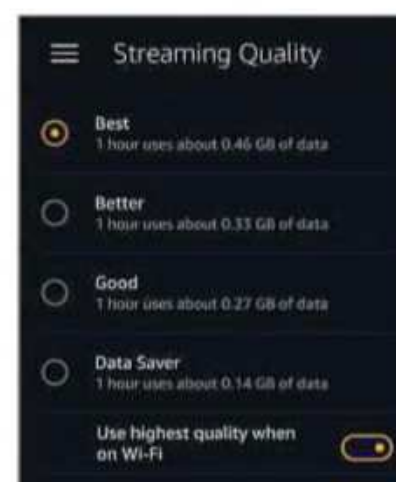


## Stream and download at maximum quality

By default, the Prime Video app streams TV shows and films at 'Good' quality to avoid guzzling your mobile data, but if you have a speedy, unlimited plan or you're using Wi-Fi, then you can opt for the highest quality possible. Press the menu in the top-left corner of the app, tap Settings and select Stream & Download. Tap Streaming Quality and choose Best – this equates to around

0.46GB of data per hour – and turn on the option to 'Use highest quality when on Wi-Fi'.

If, on the other hand, you're worried about breaching your monthly data cap while binge-watching, either select Data Saver (which uses only 0.14GB of data per hour) or go back to the Stream & Download screen and select 'Stream on Wi-Fi only' (the option 'Notify When Streaming on Mobile Data' should already be enabled).



Boost your streaming and download quality in the Prime Video app



On the same screen, tap Download Quality to increase (or decrease) the size and resolution of the video files you download, or just leave the app set to 'always ask'. It's also worth choosing to download videos to your SD card, so you don't run out of space on your phone or tablet.

On the Prime Video website, you can adjust video quality simply by clicking the Options cog and selecting Good, Better or Best (which uses 6.84GB of data per hour in your desktop browser).

## Learn more about what you're streaming

Prime Video's X-Ray feature is invaluable when you recognise an actor in the show or film you're viewing but can't remember their name. Just hover your mouse over the video player or tap your screen and the names of the actors and characters in the current scene will be listed on the left. For more information, select View All and X-Ray will pull data from IMDb (which is owned by Amazon) about each member of the cast, along with character biographies, details of the music used and interesting trivia about the production.

Best of all, X-Ray lists all the individual scenes in the episode or movie, so you can jump straight to a particular moment, just like good old-fashioned DVD scene selection!



*X-Ray provides facts about TV shows and lets you jump to specific scenes*

## Stream Prime Video to your Chromecast

You can enjoy Prime Video on your computer, smart TV, games console, mobile device and Amazon's own Fire TV box and stick, but if you want to stream content to your Chromecast, then you're out of luck because the Prime Video app doesn't support Google's rival device.

Happily, you can get around this restriction using the Chromecast's screen-mirroring option. On your desktop, open the Prime Video website, then either right-click the page or click the three-dot menu button and choose Cast. Select your Chromecast from the 'Cast to' menu to stream the current tab – including any videos you play – to your

## WATCH ITV WITHOUT ADVERTS FOR A WEEK

ITV Hub is better than the broadcaster's previous video-on-demand service, ITV Player, but its app is still pretty glitchy and it suffers from a surfeit of adverts that your ad blocker is powerless against. The only way to remove ads is to subscribe to ITV Hub+ ([www.itv.com/hub/plus](http://www.itv.com/hub/plus)), which offers ad-free streaming (on catchup, at least) on multiple devices and programme downloads on iOS. It costs £3.99 per month, but you can try it for free for seven days. If you're a Prime Video subscriber, you can save hassle by choosing ITV Hub+ as an add-on channel ([bit.ly/itvhub457](http://bit.ly/itvhub457)), which offers the same ad-free content but also lets you download to Android devices via the Prime Video app (which is less frustrating than ITV's).



*Subscribe to ITV Hub+ through Prime Video for ad-free TV streaming*

Theoretically, you could combine a free week of ITV Hub+ with a free month's trial of Amazon Prime for seven days of ad-free bliss – just remember to cancel both subscriptions before they start charging.

TV. Make the player full-screen to get the best viewing experience.

On your Android or iOS phone or tablet, install the Google Home app ([bit.ly/home457](http://bit.ly/home457)) if you don't already have it, open it and choose 'Cast screen/audio' from the menu on the left. Select your Chromecast and the screen of your device will be mirrored on your telly. You can now open the Prime Video app and start streaming/casting – the orientation of your screen should automatically switch to horizontal.

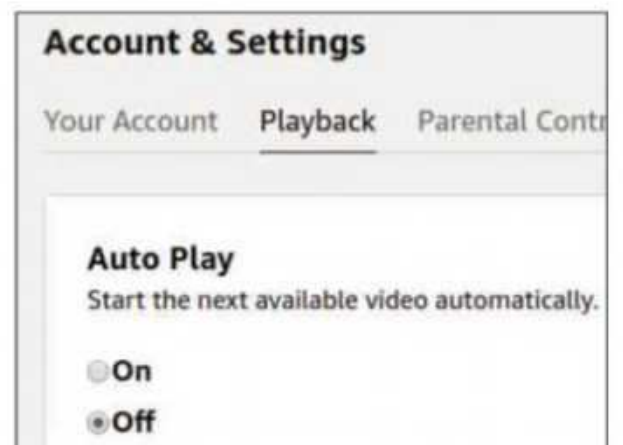
If casting fails on your Android device, go to Settings, Apps, Google Play Services, choose Permissions and ensure Microphone is set to 'on'.



*Stream Amazon Prime Video to your Chromecast by mirroring your screen*

## Stop Prime Video autoplaying TV shows

Prime Video boasts lots of great original TV series including *The Grand Tour*, *The Man in the High Castle* and the new *Tom Clancy's Jack Ryan*, and its autoplay feature entices you to binge-watch episodes. However, when you want to stop streaming and go to bed, or you're trying to conserve data, autoplay is more of a hindrance than a help. Fortunately, it's easy to turn off the option: on the Prime Video website, click Settings in the top-right corner, choose Playback and set Auto Play to Off. In the mobile app, tap the main menu, select Settings and turn off Auto Play there.



*Stop Prime Video automatically playing the next episode of a series*

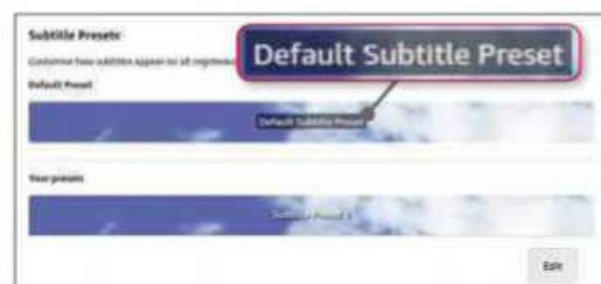
## Customise your Prime Video subtitles

Prime Video's default subtitles can sometimes be difficult to read but, as with Netflix (see opposite page), you can customise how they appear, and Amazon has generously provided three additional styles. Go to Settings,





Subtitles and click the Edit button next to a preset to view the available options, which include changing the text size, colour and opacity, and the background and window colour. Annoyingly, the font choices are rather limited, but with four presets to choose from, you can select the subtitle style that best matches what you're watching – just click or tap the speech-bubble icon in the top-right corner and choose Subtitles Settings.



Choose from different subtitle styles to suit what you're watching



## Stream BBC iPlayer shows in Ultra HD

The 2018 World Cup gave the BBC the perfect opportunity to test its Ultra HD technology, and stream all its matches in pin-sharp 4K technology. Previous UHD experiments involved the FA Cup final in May, live coverage from Centre Court at Wimbledon and the breathtaking wildlife series *Blue Planet II*, and there are sure to be more to come before mega-resolution streaming becomes the norm. To get ahead of the crowd, visit [bit.ly/uhdBBC457](http://bit.ly/uhdBBC457), click 'Keep me updated' at the bottom of the page and enter your email address to be notified next time a UHD programme becomes available.



The BBC plans to follow *Blue Planet II* with more 4K iPlayer streaming

Note that 4K streaming is only available on compatible smart TVs – you'll find a list at the link above – and the trials so far have been on a 'first come, first served' basis. If you're lucky enough to get in there, you'll see a prompt to switch to the BBC's "best ever picture quality". The other catch

## Share your streaming with someone else

If you often squabble with your partner or housemate over what to stream next, why not share your Prime Video account with them so they can go to another room and watch whatever they want? That's one of the main benefits of Amazon Household, which lets you share a Prime membership between two people, so you can either split the £79 cost or one of you gets the perks for free. This means you can stream two different Prime Video shows and/or films to two different devices at the same time, although you can't stream the same content to separate devices simultaneously.

To set up Amazon Household, go to [bit.ly/household457](http://bit.ly/household457), click 'Add an Adult' and sign into your Amazon account. The



Avoid streaming arguments by sharing your Amazon Prime Video account

person you want to share Prime with then needs to log into their own Amazon account (or create one), and you can both decide how you want to manage the payment and which Prime features you want to share.

is that, as well as the TV, you'll also need a fast enough internet connection. The BBC recommends at least 40Mbps for the full 3,840-pixel Ultra HD resolution, along with a wired connection rather than over Wi-Fi.

## Stop iPlayer autoplaying programmes

BBC iPlayer automatically streams the next episode of a series once you reach the end of the current one, and – more annoyingly – sometimes autoplays a show it thinks you'll like, based on its recommendation system. Although you have 15 seconds to stop this happening when the episode's end credits roll, you may prefer to disable autoplay altogether.

In the iPlayer mobile or smart TV app, open the main menu, choose Settings and deselect Auto Play. On the iPlayer website, click the 'Turn Autoplay off' link below the video player.

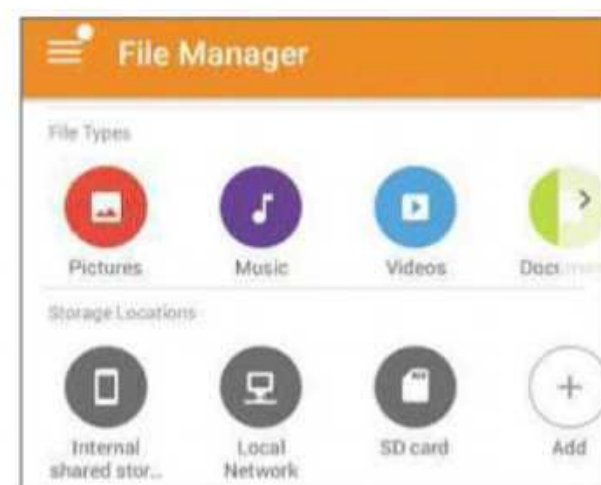
## Store iPlayer downloads on an SD card

Unlike Netflix and Amazon Prime Video, the iPlayer app doesn't let you download programmes to an SD card because of the BBC's "obligations to rights holders". As a result, you can soon run out of space on your phone or tablet – especially if you're downloading in HD. However, there is a workaround using a file-manager app that lets you reclaim storage without deleting the shows you've paid for (through your licence fee).

Install one of these, such as Astro ([bit.ly/astro457](http://bit.ly/astro457)), open its File Manager

section and create a new folder on your SD card called, for example, 'BBC' (you may need to grant the app permissions to access your storage). Download a programme in iPlayer, then return to the file manager, go to Internal Storage, Android, Data and tap the folder 'bbc.iplayer.android'. Open the subfolders Files, Downloads and you'll see a numbered folder for the show you just downloaded. Press this and select Copy. Now, go back to the BBC folder on your SD card and choose Paste to copy the file there – this can take a while.

Once this is done, delete the original folder from your Downloads folder via the file-manager app but *not* from within the iPlayer app, and you'll regain at least 100MB of space. When you want to watch the show (remember, you only have 30 days), use the file manager to copy it back to its original location. Because programme-download folders only have numbers, it's worth making a note of what each one relates to.



Use a file-manager app to temporarily store iPlayer shows on an SD card

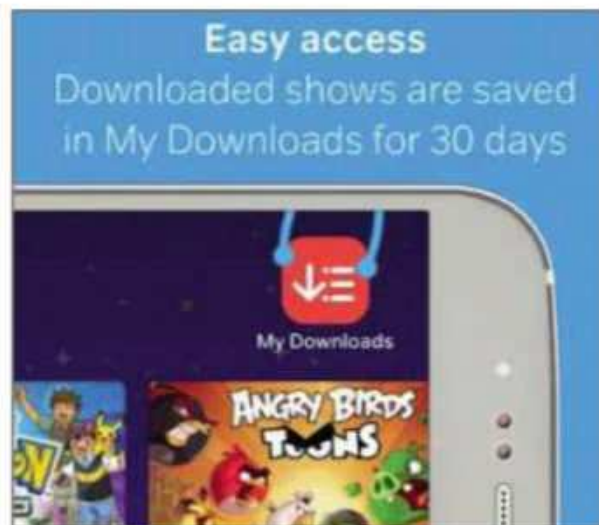


## NOW TV

### Download kids' shows to watch offline

Unlike the other big streaming services, Now TV doesn't let you download its films and TV shows to watch offline, although it does plan to introduce this option "in the next few months - watch this space". The exception applies to its Kids Pass, which earlier this year started offering downloads of on-demand programmes from its six children's channels. You can download selected shows to your Android or iOS device to keep young 'uns entertained when you're travelling, on holiday or otherwise without an internet connection, and keep them for 30 days.

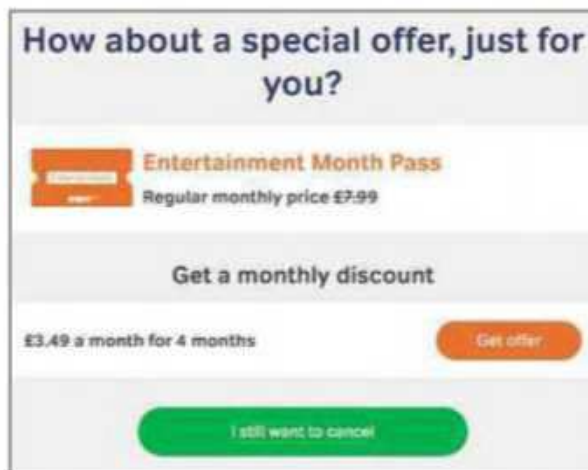
The Kids Pass costs £3.99 per month, with a 14-day free trial so you can stock up on viewing without paying.



You can now download kids' TV shows to watch offline on your mobile device

### Save 56% on your Now TV bill

If you're an existing Now TV customer, you may be irked by the free trials and special offers available to new signups, but there is a trick that could cut your streaming bill by more than half - at least for a few months. Log into your account on the Now TV website, go to

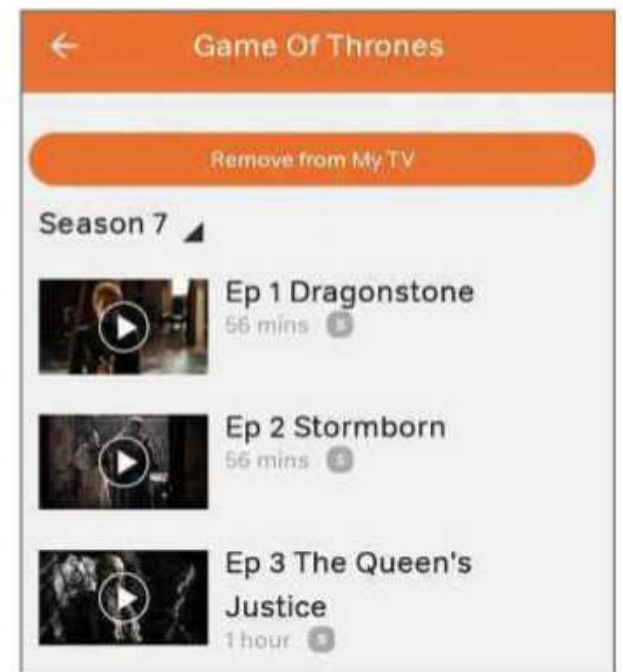


Try to cancel your Now TV pass and you'll be offered a better deal

the Passes & Vouchers page ([account.nowtv.com/passes](http://account.nowtv.com/passes)) and click Cancel next to your existing pass. Choose the reason 'I can't afford it' and Now TV will try to persuade you to stay, by promoting its great value and content. Keep clicking 'I still want to cancel' and it will make you an offer you can't refuse - in our case, reducing the cost of our monthly Entertainment Pass from £7.99 to £3.49 for four months (a 57% discount). Even if you end up cancelling accidentally, it's easy to resubscribe. If only all haggling was as simple!

### Turn on subtitles for Now TV shows

Subtitles are one of Now TV's weak points: on its Help page ([bit.ly/nowsub457](http://bit.ly/nowsub457)), it admits that "due to technical difficulties", it's taken longer than expected to add them to its on-demand programming. However, subtitles are provided for the latest films on the Sky Cinema Month Pass and "more than 20" shows on the Entertainment Pass, including the most recent season of *Game of Thrones* and selected episodes from previous seasons. To turn on subtitles (if available



Game of Thrones is one of the few shows on Now TV to offer subtitles

- look for the 'S'), either press the asterisk (\*) button on your Now TV remote or select the speech-bubble symbol in the bottom-right corner of the screen. You can automatically activate subtitles whenever they're available by choosing Settings on your home screen and setting Subtitles to On.

### Pause and rewind live TV channels

BBC iPlayer has long offered a Live Restart option that lets you 'rewind' a live programme that you've missed the beginning of. Thanks to an update in July, you can now do the same thing in Now TV. When you're streaming on the Now TV box or stick, this option lets you pause the current show and rewind the channel for up to 30 minutes using your remote control. Ironically, the Beeb's own live-restart function doesn't work on certain Now TV (and Roku) devices - see [bit.ly/restart457](http://bit.ly/restart457) for details. ■

## NEXT ISSUE

on sale Wednesday 19 September 2018

# VPNs ON TEST

We reveal the best tools for accessing blocked content and staying anonymous online

10SEC.

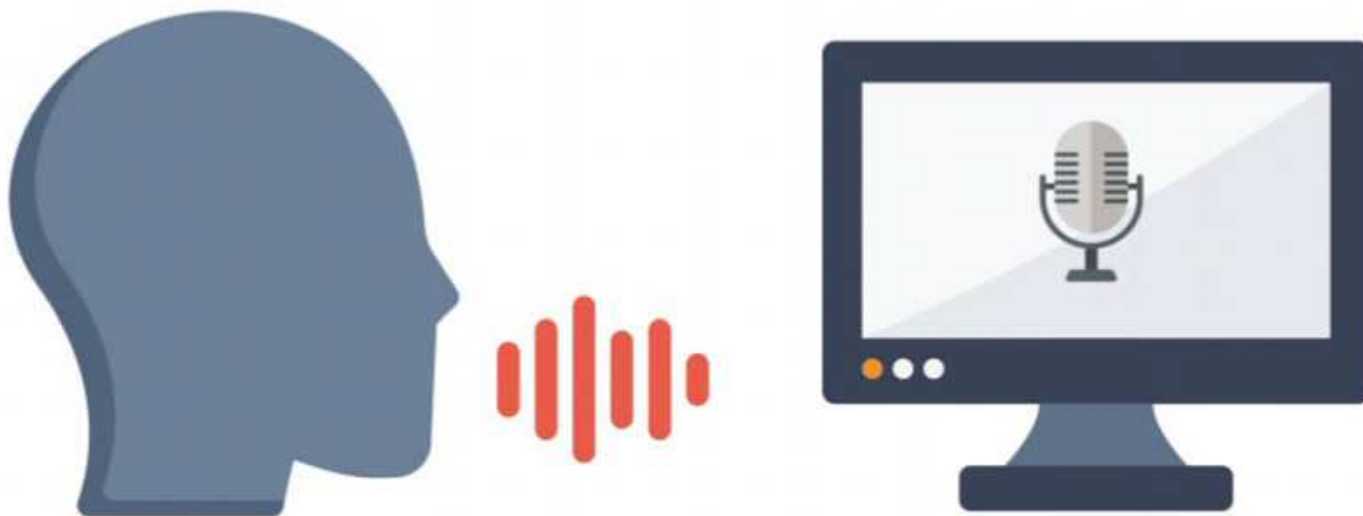
## PLUS...

- ✚ **GOOGLE'S 20TH BIRTHDAY**  
We pick the highlights and low points of its first 20 years
- ✚ **HACK WINDOWS SOUNDS**  
Personalise the way your PC beeps, dings and chimes
- ✚ **RECORD YOUR SCREEN**  
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# Best free speech-recognition software



Give your fingers a rest using free software that lets you quickly dictate notes, create documents and control your PC using your voice. **Steve Clark** compares six hands-free tools

**Google Voice Typing** | [docs.google.com](https://docs.google.com) | ★★★★★  
FEATURES ★★★★★ PERFORMANCE ★★★★★ EASE OF USE ★★★★★



## What we liked:

Getting started with voice typing in Google Docs is as straightforward as you'd expect from a company whose homepage is a white screen with a search bar: once you've opened a document and selected 'Voice typing' from the drop-down Tools menu, just click the on-screen microphone and speak.

The tool is reasonably fast – there's a slight lag because it uses cloud processing to figure out exactly what you're saying – but after a second or so, your words, punctuation and even formatting appear on the page. And Google is, by far, the most accurate of all the contenders in this roundup.

We tested each tool by reading the opening paragraph of Raymond Chandler's *The Big Sleep* five times, using both built-in and external microphones. Out of 84 words, Google Docs scored an average of three errors – typically, two typos and a dropped word.

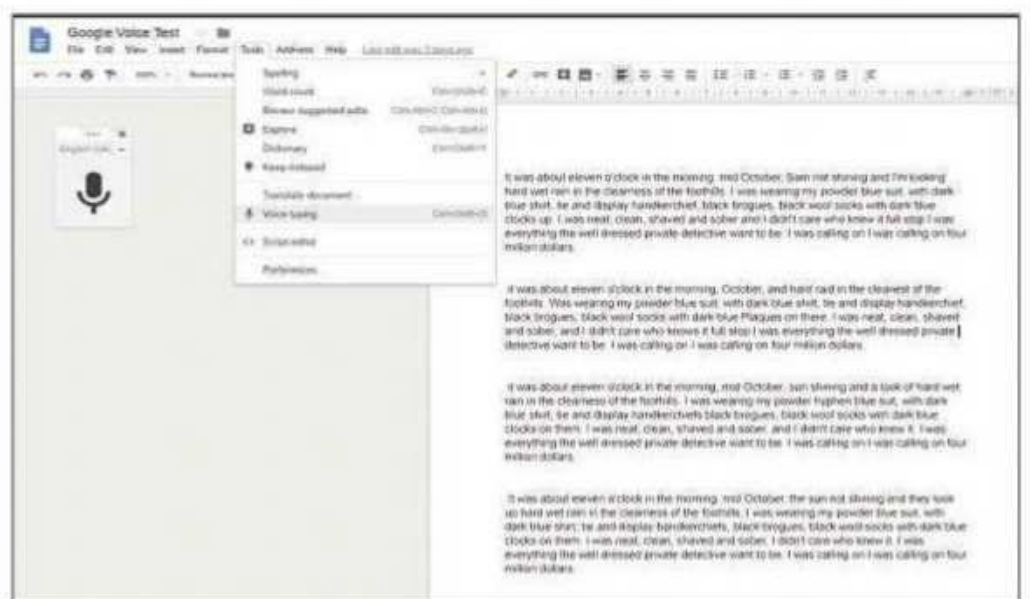
With any free voice-dictation software, it's recommended you go through the content afterwards, manually correcting mistakes. Google Voice Typing's impressive accuracy

makes this job a lot easier, especially since right-clicking underlined words displays possible suggestions for misheard words. You can also use the 'Delete [word or phrase]' command to make corrections on the fly.

There's more to Voice Typing than actual typing. You can highlight words, insert tables and shift around the page by ordering the cursor to relevant sections. This helps maintain your flow, rather than breaking it as you pause to grab the mouse. Visit [bit.ly/gtips457](https://bit.ly/gtips457) for the full list of voice instructions.

## How it can be improved:

The biggest irritation is that Voice Typing is locked to Chrome. Try to access the option in any other browser and you'll find it greyed out. Currently, the tool is only available for Docs and



for adding speaker notes to Slides. We'd like to see speech recognition rolled out to other Google products – it seems a logical evolution, considering the rise of smart speakers such as Google Home.

## OUR VERDICT

Google Voice Typing delivers an effortless and impressively accurate speech-to-text experience. Despite being unavailable on non-Chrome browsers, its sleek presentation and admirable performance make it far less frustrating than other similar tools, and a joy to use.



## Microsoft Dictate | [dictate.ms](http://dictate.ms) | ★★★★★☆ FEATURES ★★★★★☆ PERFORMANCE ★★★★★☆ EASE OF USE ★★★★★☆



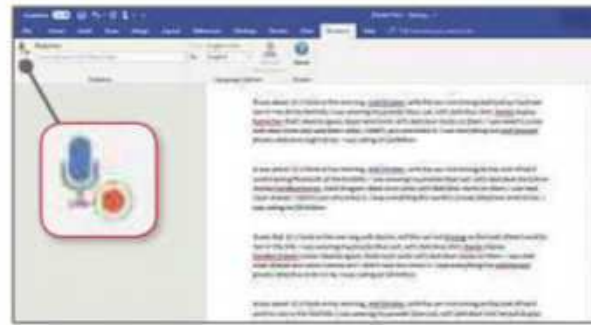
### What we liked:

You'd be forgiven for thinking that Dictate – a Microsoft Garage project created by developers in their downtime – is an unnecessary add-on. After all, Windows already builds

Speech Recognition into various Office products. But this voice-recognition tool, which is compatible with Word, Outlook and PowerPoint, harnesses the might of Microsoft's Cognitive Services, the online AI that powers Cortana and Translator. That means Dictate does what Speech Recognition has always struggled with: recognising speech.

Selecting the Dictation tab on the ribbon opens a sparse interface with a Start/Stop button. Click this and your spoken words whip along a Response bar, processed online and appearing onscreen without too many mistakes; an average hit-rate of 80 out of 84 words.

Elsewhere, you'll find an option to switch to manual punctuation. But the stand-out feature is the translator that converts speech into all major languages as you speak.



### How it can be improved:

Dictate isn't the quickest horse in the stable, though it's fun to see your words gallop across the page three seconds after uttering them. There are some peculiar word choices and, like Google, it occasionally typed 'comma' and 'full stop' in full instead of the punctuation marks. The real deal-maker-or-breaker is that, in running on Microsoft Cognitive Services, Dictate only works online.

### OUR VERDICT

**Dictate is so good, you'd think it was a fully fledged, Microsoft-supported product. Translation integration is expertly done and needs to become a built-in Office feature.**

## Braina Lite | [bit.ly/braina457](http://bit.ly/braina457) | ★★★★★☆ FEATURES ★★★★★☆ PERFORMANCE ★★★★★☆ EASE OF USE ★★★★★☆



### What we liked:

Braina Lite – the free version of an otherwise paid-for tool – is an AI-based virtual assistant capable of opening files and programs on your computer. It falls short of Google

and Cortana, but that's down to poor design rather than performance.

The tool barely stumbles when transcribing. Faster than its rivals, Braina Lite delivered the same overall accuracy as Google. But the tool is flawed because you need to copy and paste captured words into your word processor separately.

Dictation mode should let you directly dictate into third-party software such as Word, but the software demands a full purchase to use this feature – along with several others. At least if your microphone isn't up to scratch, you can grab the Siri-style app (iOS and Android). This easily connects to a computer on the same network, and includes a virtual keyboard and mouse, should you need to give your jaws a rest.



### How it can be improved:

We rarely come across software that so completely locks down the menu bar; almost every button at the top of the screen is out of bounds in the free version. Instead, you need to manually type such commands as 'Dictation mode on', which is stunningly counter-intuitive for a voice-controlled tool.

### OUR VERDICT

**Braina Lite's voice-activated control is a breeze and more responsive than Windows Speech Recognition, but the constant nag to buy the product sours its excellent features, and the free version is too limited.**

## BEST OF THE REST

### Windows Speech Recognition

[bit.ly/msspeech457](http://bit.ly/msspeech457)

Built into various Microsoft Office products, Windows Speech Recognition offers voice typing and lets you entirely control your computer. However, it takes time to train the tool to learn your vocal idiosyncrasies if you want to get the most from it. Our experience was hit-and-miss – although it never failed to deliver the correct punctuation, plenty of the words were horribly garbled.



### Speech Notes

[speechnotes.co](http://speechnotes.co)

This browser-based speech-recognition tool is powered by Google's own back-end servers, but the only similarity with Google Voice Typing is the requirement to use Chrome. Elsewhere, you can expect poorly transcribed words and a disdain for proper grammar.



We found it worked okay if you speak slowly, pausing after each sentence – but at this point it's probably quicker and less frustrating to simply use a pen!

### Speech to Text Converter

[bit.ly/speech457](http://bit.ly/speech457)

Speech to Text Converter does what it says on the tin. Available from the Microsoft Store, it's a no-frills, no-nonsense app. The simple interface, which imitates the dark Windows 10 theme, features nothing



more than a text box, Start button and an option to clear text. It's perfect for making a quick note that can be pasted into a word processor, but the overall accuracy just isn't dependable enough.





# Benchmark everything for free

Benchmarking tools accurately test your devices' capabilities and compare their specs to other people's. **Steve Clark** picks the best free tools for discovering how your tech measures up

## Compare your PC's speed

Exploring what makes your computer tick is easy – just search 'About your PC' in the Start menu. But a proper benchmarking tool tells you what it's really capable of, and how it compares to other machines. Userbenchmark ([userbenchmark.com](http://userbenchmark.com)) and Geekbench ([geekbench.com](http://geekbench.com)) are two of the most popular – they test your processor, graphics processor, internal drives and memory, then rank your benchmarking score against other users.

Userbenchmark categorises results by purpose – so it tells you whether your components are up to the task of a gaming PC; or if you use your machine for work, you can check the desktop and workstation stats to see improvements that can be made (or, as its cutesy nicknames would have it, transform your 'Destroyer' into a 'UFO'). See our Mini Workshop, opposite, on how to get the most from Userbenchmark.

Geekbench's results are less transparent but, as a cross-platform

tool, it's one of the few that lets you compare your PC with, say, a Mac or smartphone. It's easy to find out where your computer ranks but you should bear in mind that the tool's benchmark baseline uses a powerful computer, so your machine may come up short.

You can find similar stats using the friendly tool Novabench ([novabench.com](http://novabench.com)). After running the tests, create an anonymous profile to compare results, then read Novabench's tips checklist to improve performance.

## See how your computer graphics stack up

If you own a gaming PC or use graphics-heavy programs, you can assess your computer's graphical prowess by using Cinebench ([bit.ly/cine457](http://bit.ly/cine457)) or 3DMark ([bit.ly/3dmark457](http://bit.ly/3dmark457)). Frame-rates, rendering, graphics-card speeds and even physics tests are all benchmarked – then it's just a case of clicking the Compare button. 3DMark also lets you run dedicated graphics tests depending

on whether you own a high-performance gaming PC or a basic notebook.

While you're at it, it's worth testing your monitor's overall quality using PassMark MonitorTest ([bit.ly/passmark457](http://bit.ly/passmark457)), which runs a series of high-resolution images that let you check for problems and dead pixels.

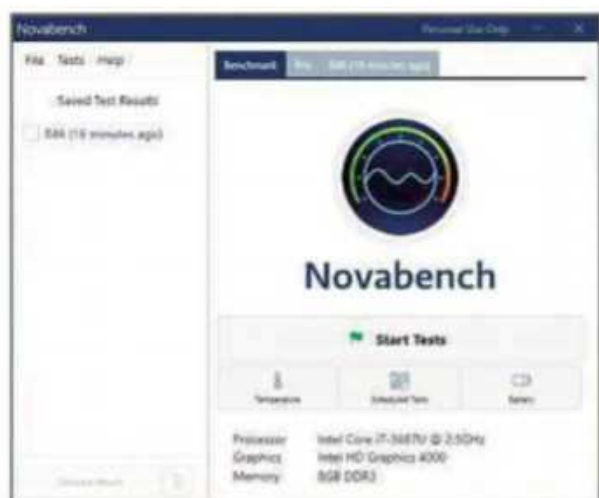
## Stress test an overclocked processor



**Stress-test your computer by maximising its processing power**

If you overclock your computer – forcing the processor to run at higher than normal speeds – you need to know it can perform under pressure. Prime95 ([bit.ly/prime457](http://bit.ly/prime457)) pushes your processor

to the absolute limit in what it calls a 'torture test'. This involves running an intensive stream of complex mathematical computations until an error occurs, at which point the software terminates. Once that happens, you can assess computer stability and address any overheating issues. Be patient, though, because it's not a quick procedure.



**Novabench lets you test, compare and improve your computer**



**Cinebench fires up Hollywood animation software to check your graphics**



## Make sure your internet speed is what you pay for

If your browsing seems sluggish even after a clean-up, and you suspect that your ISP rather than your computer is at fault, search speed test in Google or Bing and press the Start or Run Speed Test button at the top of the results box.

The online tool reviews your ping, upload and download speeds – you want your upload and download numbers to be high, and your ping to be low.



**Speedtest compares speeds from multiple server locations**

Speedtest ([speedtest.net](http://speedtest.net)) remains a favourite for

quickly checking internet speeds, since it's available on almost every platform, including smartphone apps. What it lacks, outside of global reports, is a true comparison chart. To see how your ISP stacks up against your neighbours, sign up to the Which? Broadband Test ([bit.ly/which457](http://bit.ly/which457)).

## Find out if your browser is fast enough

Ensure your browser is the best one for your computer using Power Board's Basemark ([bit.ly/basemark457](http://bit.ly/basemark457)), which studies your browser's CSS and HTML5 capabilities, page loads and overall responsiveness across 20 brief tests on mobile, desktop or tablet devices. There's also a desktop launcher that delivers more detailed results, which you can then benchmark on its website.



**Basemark helps you determine the fastest browser for your PC**

A similar tool, BrowserBench ([browserbench.org](http://browserbench.org)), features four advanced tests, from benchmarking JavaScript speeds to web-application responsiveness. But for basic speed testing, try Google's Octane 2.0 ([bit.ly/octane457](http://bit.ly/octane457)) or Speed Battle ([speed-battle.com](http://speed-battle.com)). For benchmarking purposes, Speed Battle helpfully includes a table that collates all users' Best, Average and Poorest results.

## Benchmark your phone's specs

It's not just your computer that can be benchmarked – Antutu Benchmark for Android ([bit.ly/abdroid457](http://bit.ly/abdroid457)) and iOS ([bit.ly/abios457](http://bit.ly/abios457)) shows how your smartphone compares to rivals. Test the colour bar, LCD, grayscale and multi-touch functions, as well as sensor support. Results are less than clear but, essentially, the higher the number, the



**The Geekbench app tests your phone's performance**

better the score.

Geekbench's own app – free on Android ([bit.ly/gbdroid457](http://bit.ly/gbdroid457)), with a paid-for iOS edition ([bit.ly/gbios457](http://bit.ly/gbios457)) – brilliantly replicates the desktop experience, but runs fewer individual tests compared to Antutu. After running Geekbench's tests, tap Single-Core, Multi-Core or Compute Comparison to see your device's score benchmarked against similarly specced smartphones.

## Check your phone usage against others

Worried you're spending too much time thumbing through your phone? Then benchmark your usage with Antisocial ([antisocial.io](http://antisocial.io)). If you don't mind being constantly monitored, this smart Android app logs how long you use each app, then compares findings to other, similar profiles. You'll



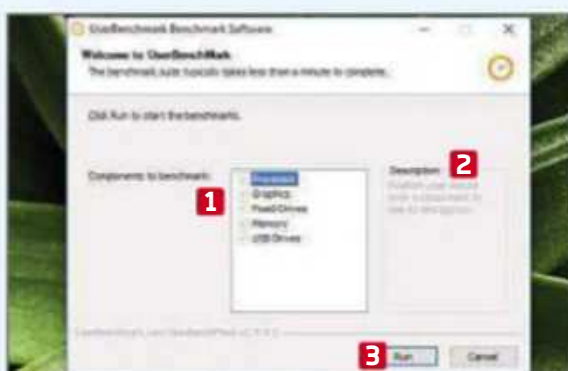
**Antisocial offers insights on how you use your phone**

need to share some personal info, such as gender and age, and grant Antisocial access to your apps. And data isn't delivered instantly: it needs time to figure out statistics such as how many times you unlock your phone each day or how long you spend on social media.

Like all good benchmarking tools, Antisocial can improve performance – by setting time limits or schedules that block 'blacklisted apps'.



## MINI WORKSHOP | Test all your computer specs using Userbenchmark



**1** Userbenchmark opens with a list of components that it benchmarks, from CPU to USB. **1** Greyed-out tick boxes stop you selecting and testing individual components. Hover over each one to read a brief description of what the software benchmarks, **2** then click Run to begin benchmarking. **3** This may take several minutes.



**2** Once that's done, a fresh browser tab opens showing three main icons – Gaming, Desktop and Workstation – with percentages indicating how suitable your computer is for each function. **1** Below this is an informative round-up of specific results **2** and, further down the page, you can explore how your components measure up to others. **3**



**3** If your results aren't great, click Add To PC Build. Tab between the different components **1** and change each baseline via the drop-down menu. **2** This lets you swap components virtually – for example, changing to a faster processor or a GPU built for 3D gaming. Compare the improvements against your existing build. **3**



# Stop your home spying on you

The walls aren't the only things to have ears in your home. **Wayne Williams** reveals what data your smart devices collect about you and how you can put a stop to it



## SMART TV

Smart TVs can spy on you in a couple of ways: if they allow voice commands, then they could be listening in on you; but they are also likely to track your viewing habits. Exactly what data gets collected depends on the make and model of your TV and which operating system it's running. Newer sets, from the past couple of years, are less indiscriminate than their predecessors and will no doubt have warned you about their data-gathering methods when first set up. Hopefully, you paid close attention!

### How to stop it

Do you really need a smart TV? If you have a set-top box from the likes of Amazon, Roku, Apple, Sky or Virgin Media, the chances are it offers all the on-demand services and viewing features that your TV does, so you could just as easily dumb down your smart telly and disconnect it from the internet. Alternatively, you can check the Settings or Options to manage what – if anything – the telly tracks.



## SMART SPEAKER

Smart speakers, such as the Amazon Echo and Google Home, are listening all the time, waiting for you to ask a question or issue a command. Earlier this year, following a series of unfortunate events, an Echo recorded a couple's conversation and sent it to one of their contacts without their knowledge. Amazon has since tweaked how Echo and its voice assistant Alexa work to avoid a repeat of this mistake – but even so, spying remains a worry. When you have a smart speaker, you've essentially introduced a listening device into your home.

### How to stop it

Most smart devices have a microphone button that you can toggle on or off, and there might be a command you can use to stop the device earwiggling on sensitive conversations. For example, with Google Home you can say "OK Google, turn off the microphone". You can also unplug the device at any time

if you want to be certain it's off.

You can see what data Alexa has recorded in the Amazon Devices section of the Alexa app. Select your Echo and go to Manage Recordings. If you regularly wake your Echo by accidentally saying "Alexa" (or words that sound like it), you can change her name to something more obscure. Go to [alexa.amazon.com](https://alexa.amazon.com), select Settings, choose your Echo and select Wake Word.

To see what data Google has collected about you via Google Assistant, go to [myactivity.google.com](https://myactivity.google.com).



## HEALTH TRACKER

Fitness trackers record all sorts of personal data – when you're active, when you're sleeping, how many calories you've consumed, where you've been for your morning run and so on, and this data often isn't as well protected as you might like. Earlier this year, the fitness-tracking app Strava inadvertently revealed the locations of secret US army bases ([bit.ly/strava457](https://bit.ly/strava457)).

### How to stop it

You can check to see what data is being gathered, stored and shared in your fitness app's settings, and turn off anything that worries you.







## THERMOSTAT

Smart thermostats are a great invention. You can control the temperature of your home from anywhere, and they intelligently adjust the heating for you while you're out. Although you might be worried about an attacker taking remote control of the thermostat and cranking the heat up to maximum, this isn't especially likely and there are other concerns to be worried about. In the past, thermostats from Heatmiser and Hive were found to be susceptible to 'man-in-the-middle' attacks, whereby user data – including login details and programmed schedules – was sent unencrypted across a network, where it could be intercepted. If someone has access to your heating schedule, they could identify when you're not at home and use that information to break in.

### How to stop it

Make sure your thermostat is set to automatically install the latest security patches (most will be) because this will protect you from a lot of threats. Also check that the app that connects to the thermostat is similarly up to date.



## SECURITY CAMERA

If you have a security camera that connects to your network and saves recorded footage to the cloud, there's a danger that someone could access it. They might be able to view what's being recorded, and even move the camera so it's pointing somewhere else. Consumer champion *Which* recently found security flaws in an app for an IP camera from ieGeek that allowed the researchers to access more than 200,000 passwords and device IDs, view live feeds and talk to other users via the built-in microphone.

### How to stop it

If your camera has a default password, be sure to change this and make it something that's very, very hard to guess. You should change it from time to time, too, just to be on the safe side. It's important to ensure that your wireless-network password is equally strong, and change your router login as well, for the same reasons. If the camera is controlled and managed using an app, make sure this is up to date, too.



## SMART KITCHEN APPLIANCE

All manner of kitchen appliances connect to apps or go online these days, including refrigerators, coffee machines, toasters and cookers. Although the information they potentially leak about you may seem trivial, such as what food you have in the fridge or when you enjoy your first coffee of the day, there's also the risk that a hacked appliance could provide a gateway to your wider home network. An unsecure smart fridge could even be used as a node in a DDoS (distributed denial of service) attack, and used to steal data from other people.



### How to stop it

Make sure that the apps for your smart appliances are up to date, and that your default usernames and passwords are changed. Keep the software on the devices updated, too – check the manual or the manufacturer's website if you're not sure how to do this. ■

## IS YOUR ROUTER READING YOUR LIPS?

Your router can easily be hacked, giving snoopers access to your network and connected devices, so it's important to change the default login details. That's not the only way your router could spy on you, though. Researchers have found that people walking around in a room can disrupt the wireless signals that are all around us – being sent and received – and it's possible for routers to use this to accurately recognise people, and even tell what they are saying by "reading" their lips.

In 2016, Kaveh Waddell, writing for *The Atlantic* ([bit.ly/atlantic457](http://bit.ly/atlantic457)), explained: "a group of researchers

led by a Berkeley PhD student presented technology at a 2014 conference that could "hear" what people were saying ([bit.ly/ieee457](http://bit.ly/ieee457))



by analysing the distortions and reflections in Wi-Fi signals created by their moving mouths. The system could determine which words from a list of lip-readable vocabulary were being said with 91% accuracy when one person was speaking, and 74% accuracy when three people were speaking at the same time.

More recently, a research team was able to use Wi-Fi to accurately "see" people through walls and track their movements ([bit.ly/wifiview457](http://bit.ly/wifiview457)). It's not something that most of us have to worry about at the moment, but it does provide a fascinating, if disconcerting, glimpse of the future.





# Practical WebUser

16 pages of workshops, tips, projects and problem solving

## Draw on any device using Autodesk SketchBook

Autodesk's superb drawing program is now free for all platforms. Here's what you need to know

Autodesk SketchBook: [sketchbook.com](http://sketchbook.com) | 15 mins |

Using your mouse to draw is very tricky – it's far easier if you have a pen tablet or a stylus and a touchscreen. If you're serious about sketching, it pays to have the right software, too. Autodesk SketchBook, previously priced at \$85 (£67) per year, is now entirely free for individuals, and is available on all major platforms including

PC, MacOS, Android and iOS, so you can use it on any device, anywhere.

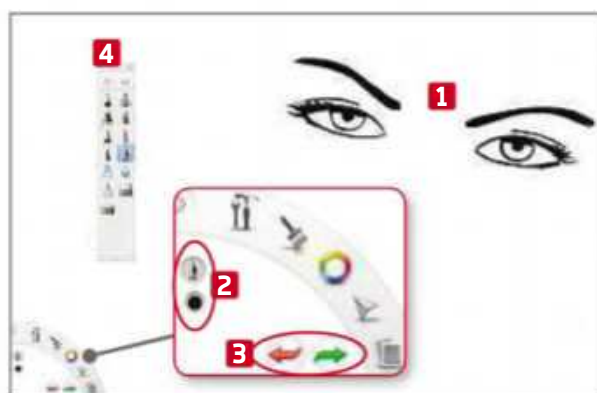
It's packed with powerful features including fully customisable brushes, unlimited layer support, layer effects, perspective guides, flood fills and more. You don't need to be a great artist to use Autodesk SketchBook, although a bit of talent certainly helps!

### BRUSH AND COLOUR PUCKS

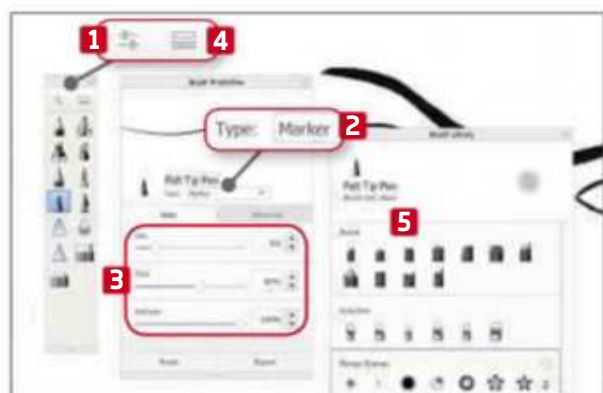
The Brush Puck lets you quickly change brush opacity and size, and open Brush Properties. Select a new colour in the Colour Puck



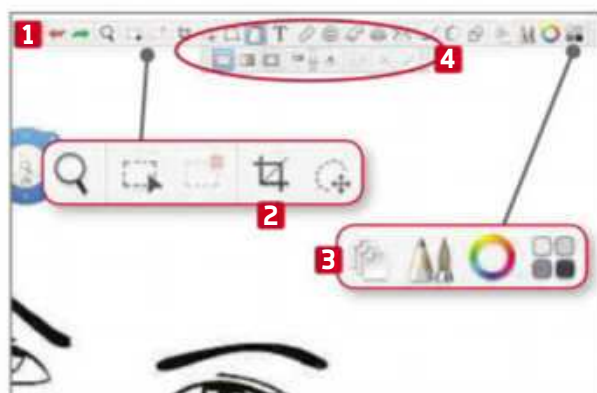
**1** During installation, choose which – if any – graphics formats to associate with the program (TIFF, JPEG, PNG and so on). When the program starts, you can create a free Autodesk account, **1** though you can use the software without one for seven days. Click Start Drawing **2** to create your first sketch.



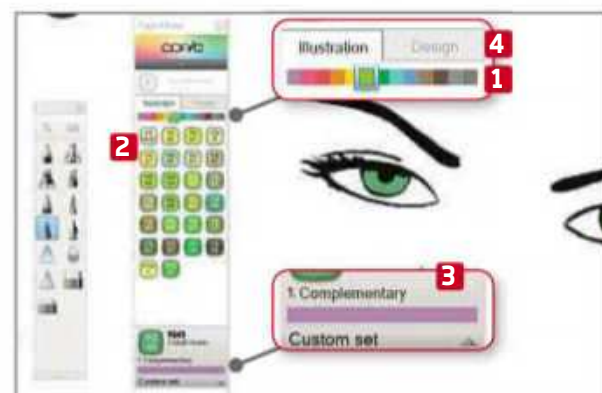
**2** Start sketching on the canvas. **1** The current tool and colour are shown in the bottom-left corner, **2** next to the undo/redo options. **3** Click the brush you're using to open the brush palette. **4** From here, you can select a different tool to draw with, such as a pencil, airbrush, marker or ballpoint pen.



**3** Click a brush to switch to it. You can also open the Brush Properties window, **1** where you can change the type, **2** size, flow and more. **3** The exact options depend on the brush. You can also open the Brush Library from here. **4** This lets you choose from a wealth of additional drawing tools. **5**

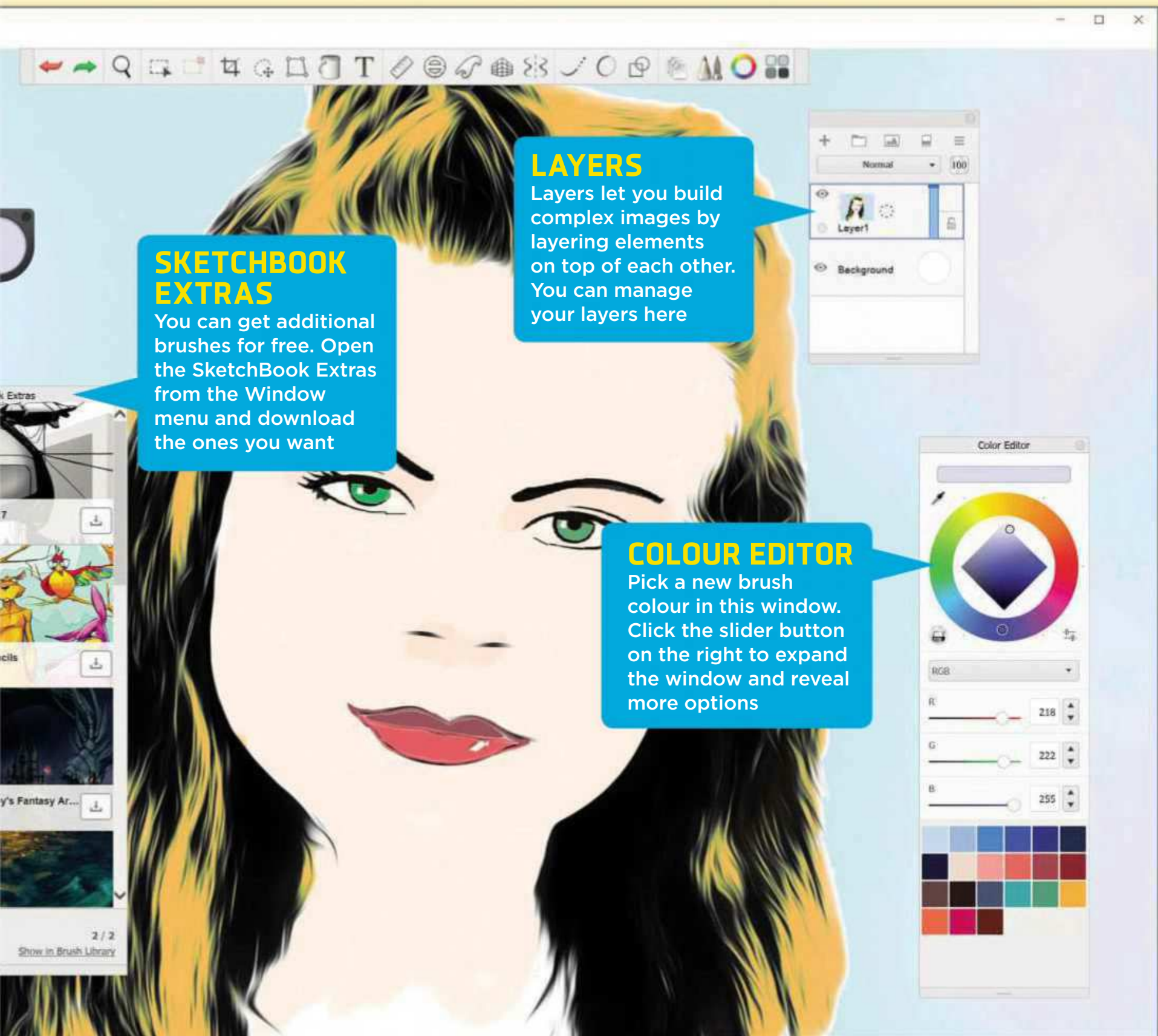


**4** The top bar **1** gives access to more tools, including Zoom, Rotate, Move, Select, Crop, **2** Flood Fill, Add Text Layer and Steady Stroke (which makes it easier to draw using a mouse). You can also open the Layers, Brush Palette, Color Editor and Copic Library windows. **3** Select a tool to open its options below. **4**

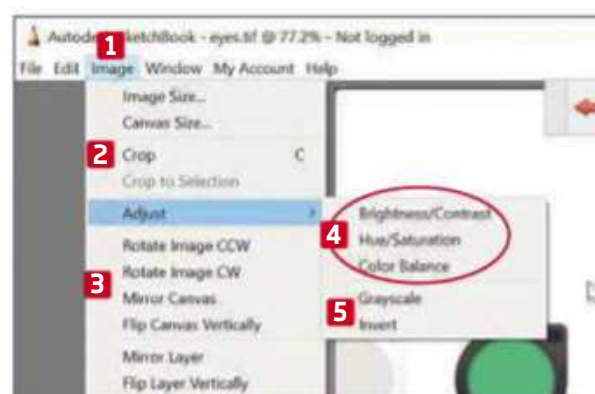


**5** The Copic Colour Library lets you choose from a number of preset colours. Use the slider **1** to pick the colour type and select one of the choices below. **2** Complementary colours are shown underneath. **3** You can switch between colours for illustration and design. **4**

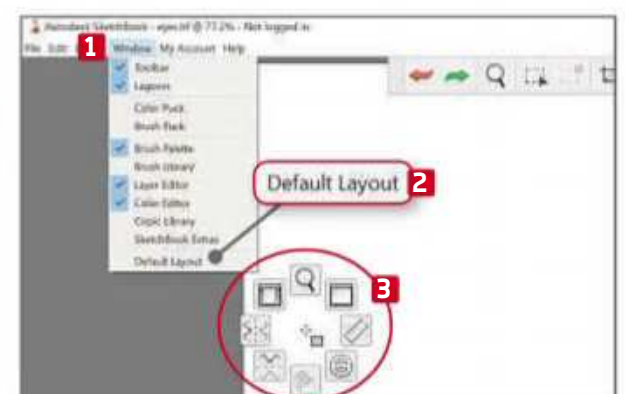




**6** The Lagoon **1** in the bottom-left corner provides access to all the important tools. Click one to bring up all the options for that tool. **2** Select the one you want and you can start using it immediately. The option at the far left **3** lets you customise the look of the interface.



**7** The Image menu **1** lets you crop your drawing, **2** or rotate, mirror or flip it. **3** From this menu, you can click Adjust to tweak the picture's brightness/contrast, hue/saturation and colour balance. **4** You can also make the image greyscale (black and white) or invert all the colours. **5**



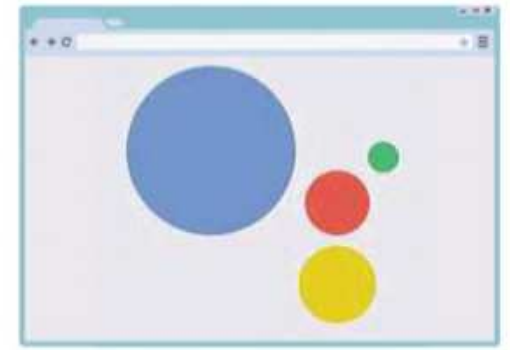
**8** The Window menu **1** lets you choose which windows to have open, such as the colour and brush pucks, and layer and colour editors. You can revert to the default layout **2** if things get messy. Right-click anywhere in the program to summon up the context menu **3** and quickly access useful options.





# Create your own actions for Google Assistant

Actions on Google: [console.actions.google.com](https://console.actions.google.com) | 20 mins | Web browser



**B**ack in Issue 444 of *Web User* ([bit.ly/webuser444](https://bit.ly/webuser444)), we showed you how to create your own skills for Alexa, Amazon's digital assistant, using a third-party web app. In this Workshop, we do much the same thing with Google Assistant. What's great about this voice assistant is that you don't need to own one of Google's Home speakers to use it, and the tool works on Android phones, tablets and watches, Chromebooks, some TVs and other devices.

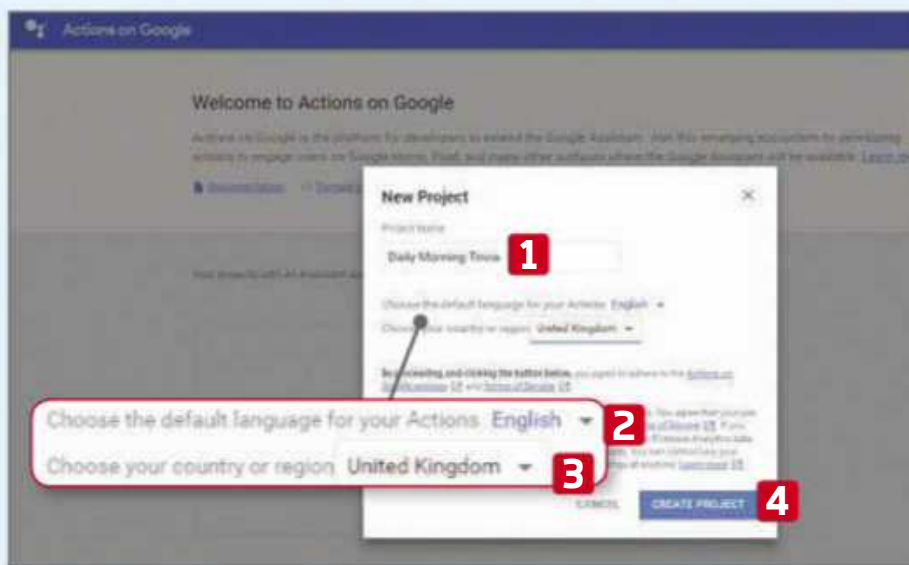
Google provides everything you need to create an action in its own developer console, Actions on Google, and you can repurpose an existing task or build your own creation from scratch. You can create almost any kind of task with Actions on Google. For this workshop, we're designing a simple trivia quiz.



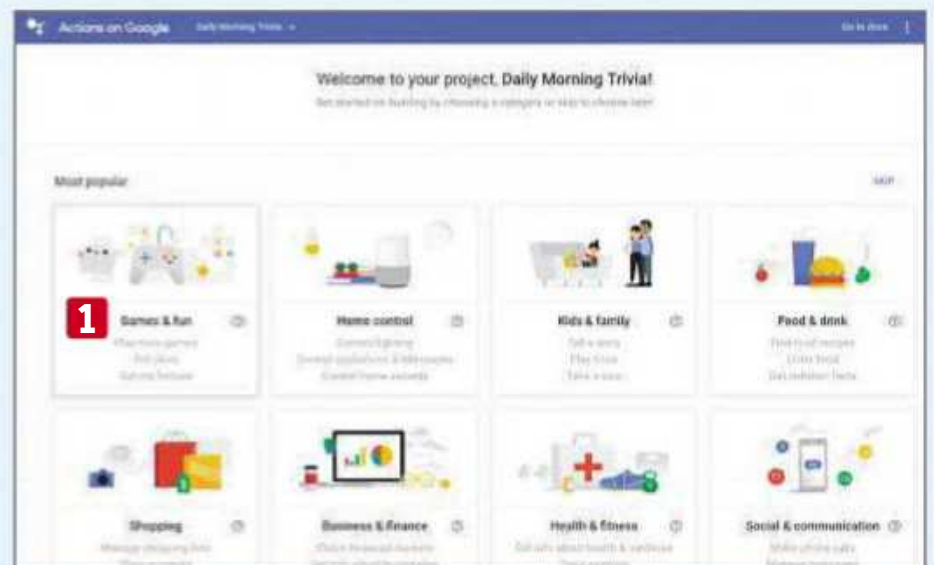
## EXPERT TIP

### Wayne Williams says

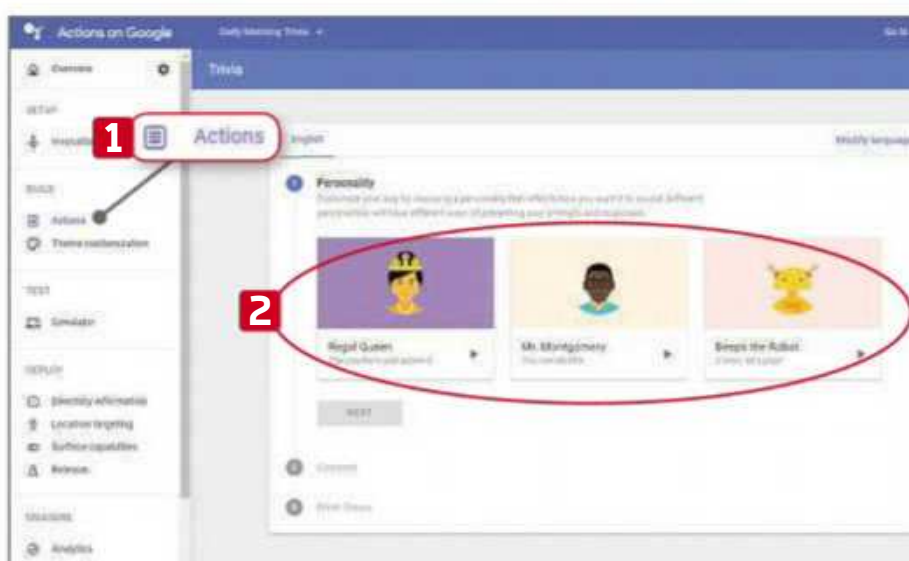
To get ideas for Google Assistant actions, check out the Assistant Actions directory ([assistant.google.com/explore](https://assistant.google.com/explore)), which contains a list of skills created by other people, sorted into categories including What's Trending, What's New, 'Find Food and Drink', Control Lighting and Make Phone Calls. You can view full details of each action, see what other people think of it (which may suggest ways you could improve it) and try it yourself.



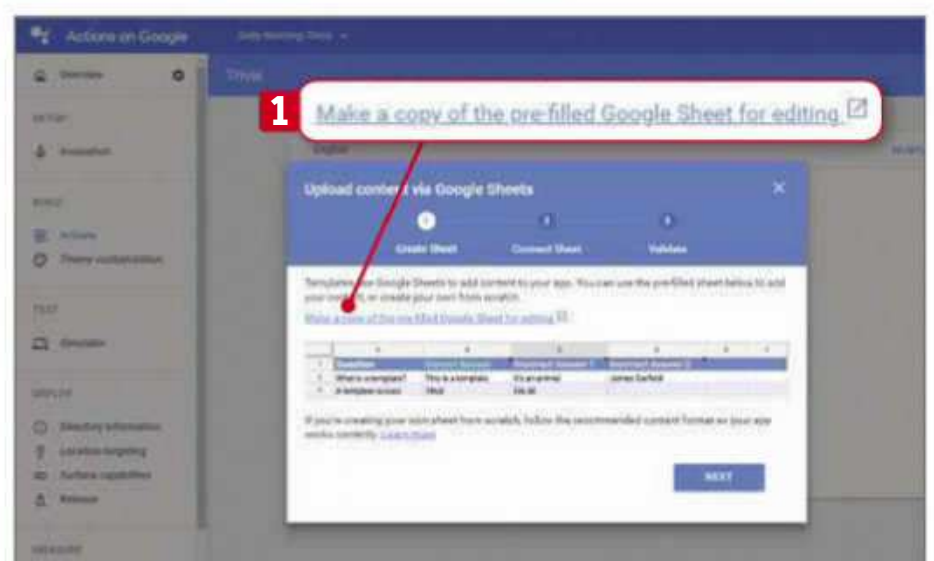
**1** Go to [console.actions.google.com](https://console.actions.google.com) in your browser and log in using your Google account credentials. Click the Add/Import Project button and enter a name for the action you'll be building. **1** Ours is called Daily Morning Trivia. You can change the default language **2** and region. **3** Click the Create Project button **4** to continue.



**2** Actions on Google will now start creating your new project. You'll be informed that this might take a few minutes, but it should actually be ready quite quickly. You'll now be presented with a page of categories to choose from. We'll select 'Games & fun'. **1** On the next screen, we'll choose Trivia.

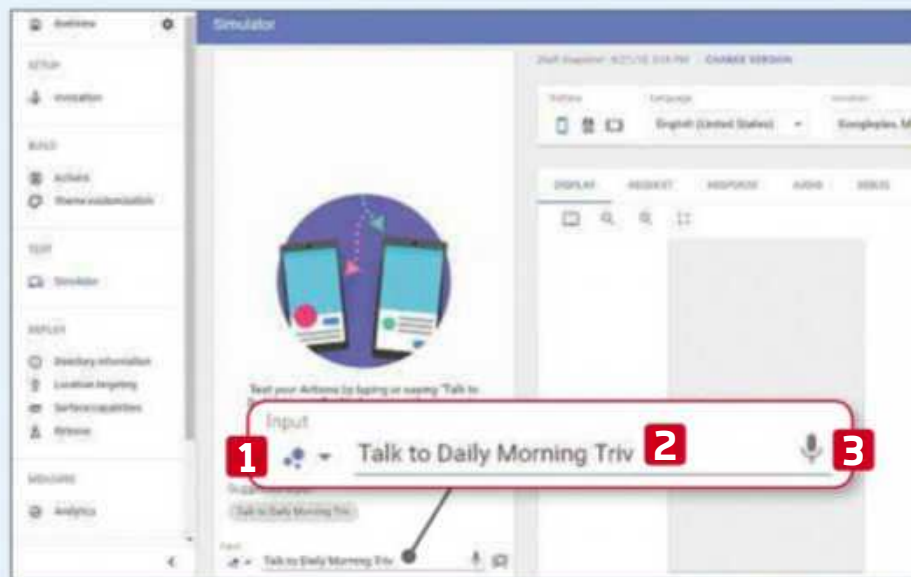


**3** Click the 'Decide how your Action is invoked' link. Enter a display name – the prompt that people will say to begin interacting with your action. Choose the Google Assistant voice to use, then click Save. Once that's done, click Actions in the sidebar. **1** Pick the personality for your creation. **2**

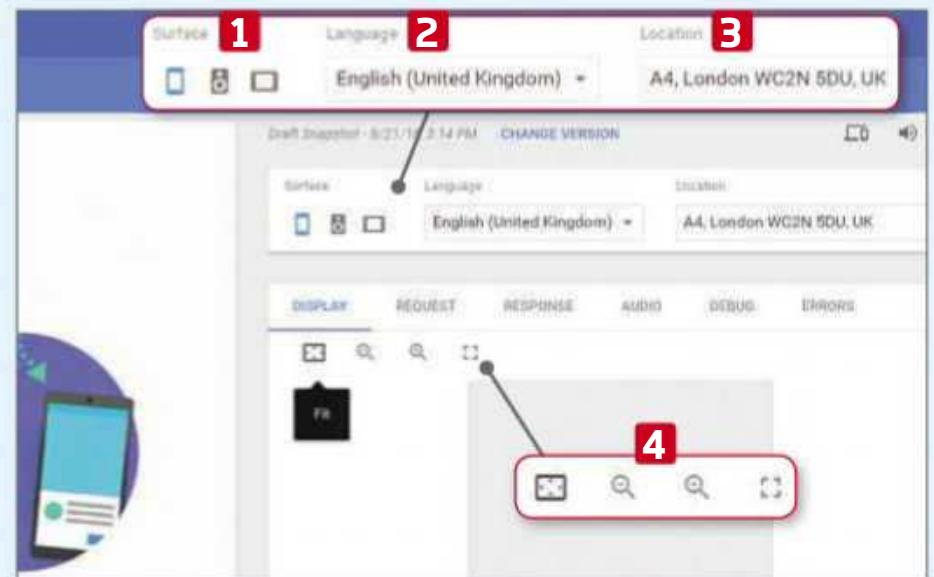


**4** Click Next. The content for the trivia is accessed through a Google Sheets spreadsheet. Click the tile for this, then upload your content. For speed, we'll make a copy of the pre-filled sheet, **1** click Next, paste in the URL of this copy and click Upload.





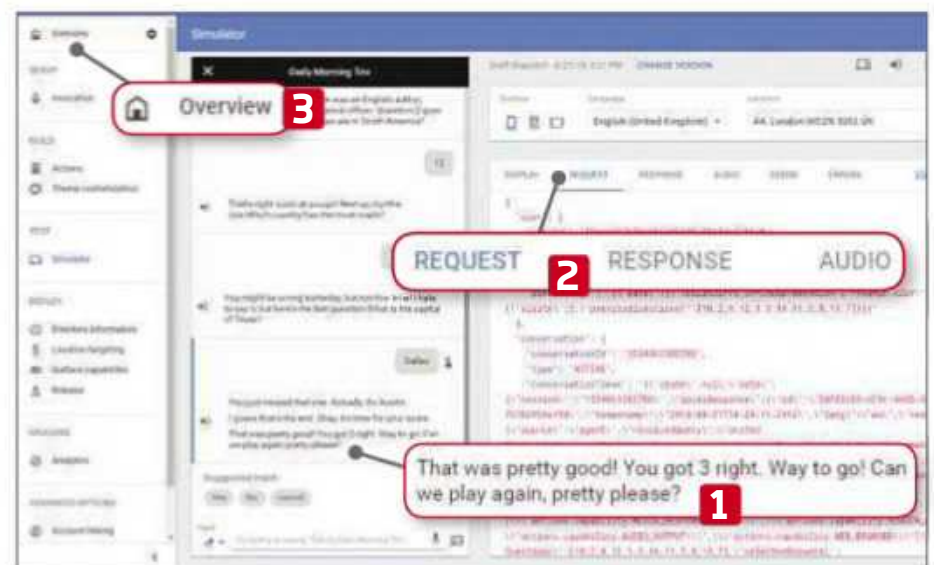
**5** Once the upload has been validated, click Create App and wait for it to appear. You are now ready to test your action. Click the Test App button and the Simulator will load, suggesting the input required to start interacting with your action. You can either click the input, **1** type it **2** or speak it. **3**



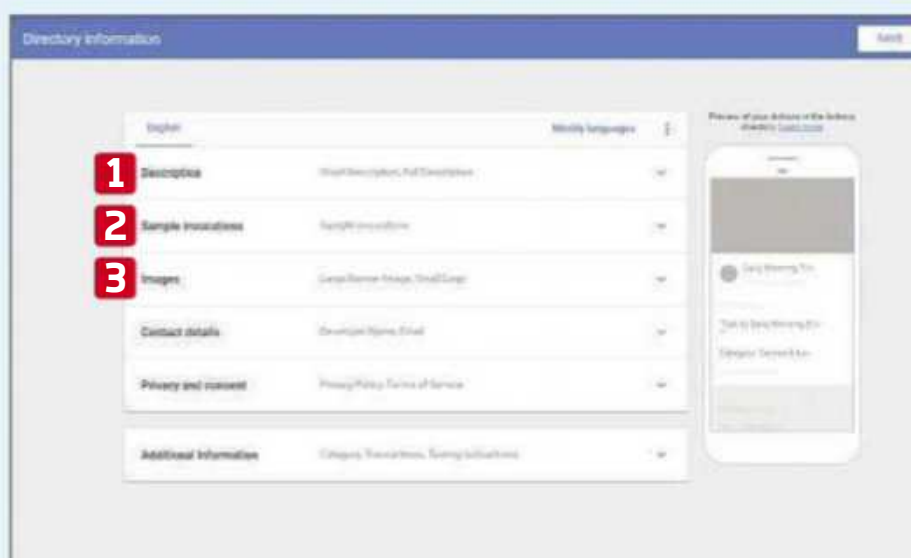
**6** Under Surface, **1** you can choose a version of the Google Assistant to test your action on - Phone, Speaker (meaning Google Home) or Smart Display. For the purpose of this workshop, we'll stick with Phone. You can change the language **2** and location, **3** and zoom in and out of the display by using the controls. **4**



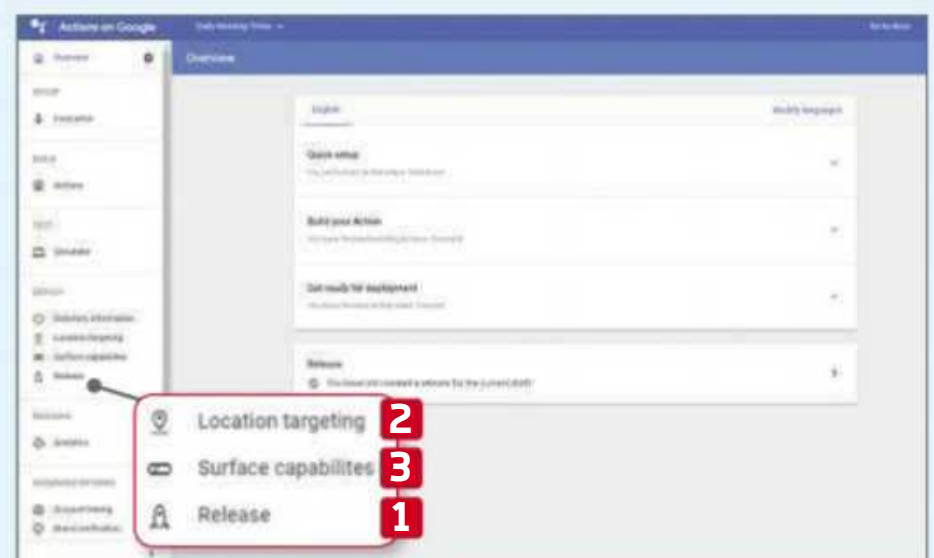
**7** When you start the test, the first question will appear on screen **1** and also be read aloud. You can select one of the suggested inputs, **2** or type or speak something different **3** to see how it responds. In this example, we've flummoxed the assistant. **4** Typing repeat **5** will give us another attempt.



**8** Get the answer right (or wrong) and you'll move on to the next question. At the end, you'll be given the chance to play again. **1** You can see how the action is coded by clicking the Request, Response and Audio sections. **2** When you've finished testing, click Overview **3** in the sidebar.



**9** You're now ready to deploy the app. Click the link to 'Enter information required for listing your Action in the Actions directory'. Fill in the description, **1** and choose the sample invocations **2** that can be used to summon it ("Ok Google, Talk to Daily Morning Trivia"). You can add images **3** and other details.



**10** Click Save. You'll be prompted to add any required information you've missed. You can now click Release **1** and submit your action so all other Google Assistant users can enjoy it. To manage which countries the action goes to, click 'Location targeting'. **2** You can also set which surfaces (devices) it runs on. **3**



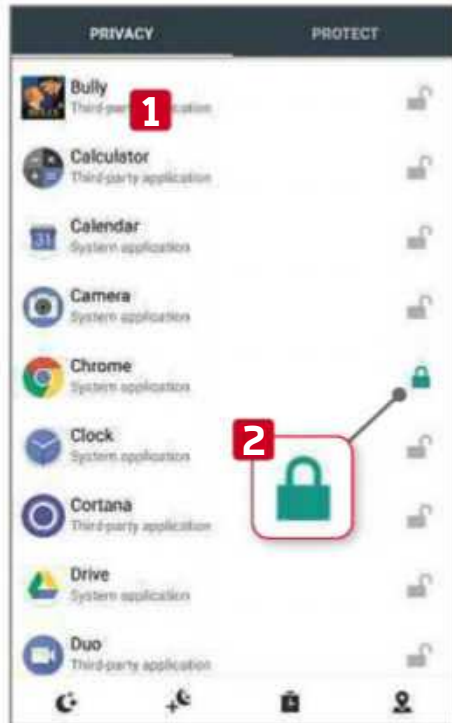


# Protect your private data from prying eyes

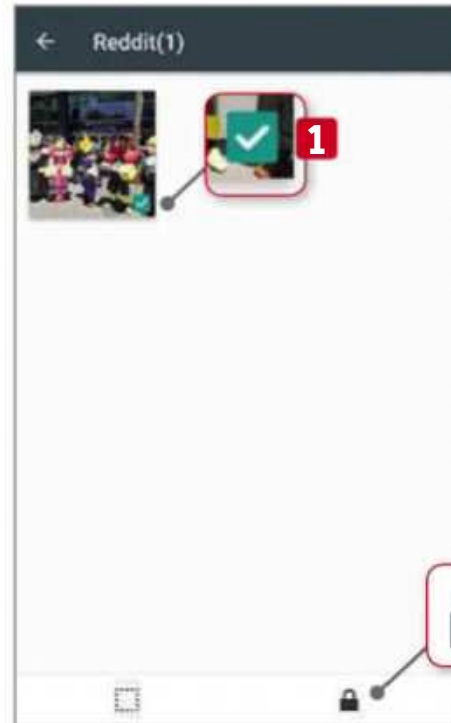
With so much private data stored on your phone, it's essential to keep it locked, like a safety-deposit box in your pocket. Sadly, beyond a simple PIN or pattern lock, most phones are hopelessly insecure. By installing

**AppLock: [bit.ly/lock457](http://bit.ly/lock457) | ⌚ 10 mins | 🤖 Android**

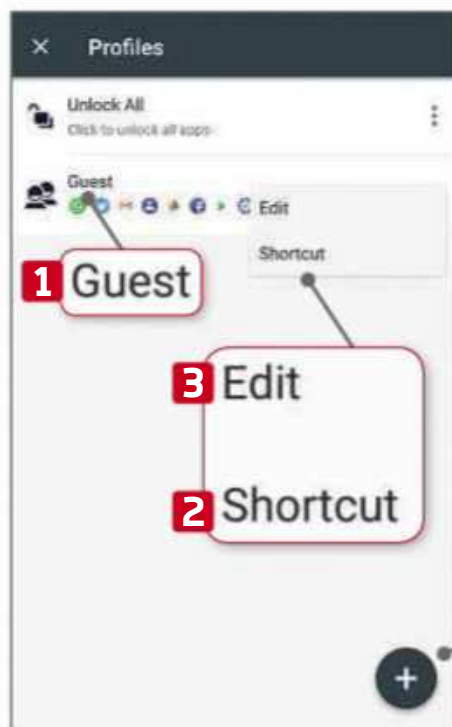
AppLock, you can prevent anyone who accesses your phone from reading your emails, peeking at your photos or posting on your social-media accounts.



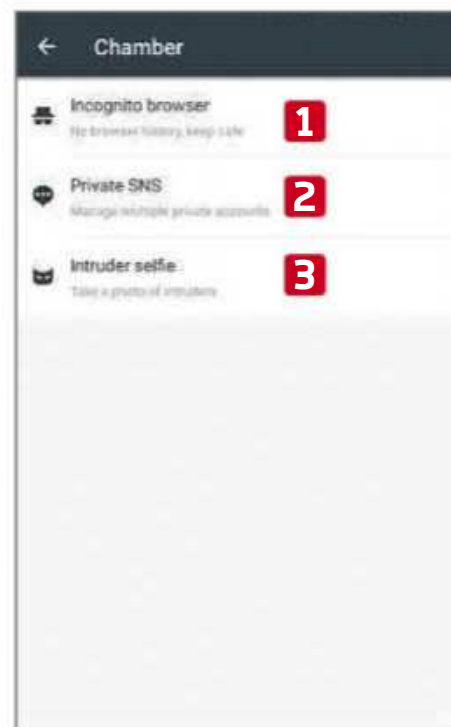
**1** The first time you open AppLock, you create a pattern lock. Make sure you can remember it! Once inside, you can scroll to view all your apps, **1** each of which has an accompanying padlock icon. If you want to hide your browsing history, for example, click the padlock **2** to lock the browser. Access is now blocked unless you enter the secret pattern.



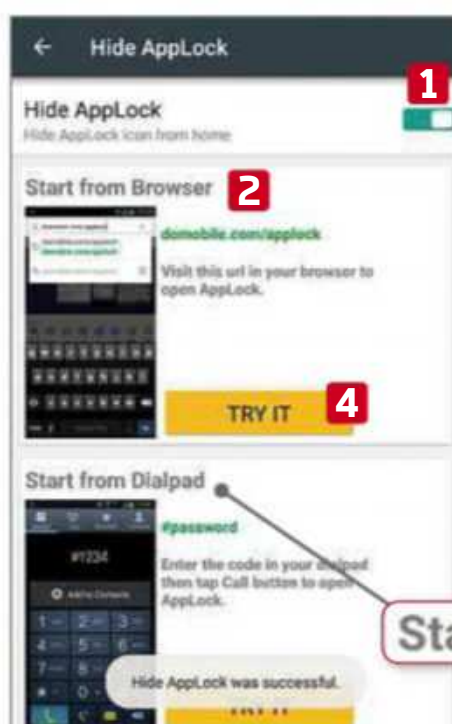
**2** Now hide private photos and videos in a vault that only you can access. Select Vault, then choose Photo or Video. Press the plus icon and tick the files you need to lock away, **1** then tap the Padlock icon **2** to stop the items showing up in your Photos app. To remove items from the vault, select them, then tap the unlocked Padlock icon.



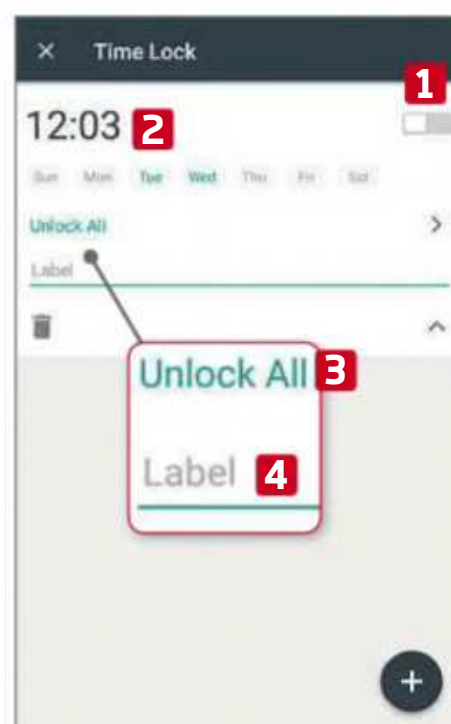
**3** You can also limit other users to specific apps. Tap the crescent-moon icon on the home screen, then press Guest **1** and confirm activation. The three-dot menu lets you add a shortcut **2** or edit **3** the list of apps your guest can use. To create multiple user profiles, tap the plus icon. **4** Give each profile a name, lock down the apps and press Save.



**4** Press Chamber at the top of the app. From here, you can open the in-app 'Incognito browser' **1** for discreet browsing or secretly sign into multiple social networks using Private SNS. **2** A particularly useful feature is 'Intruder selfie'. **3** Click this, then toggle the switch to On. The app will photograph anyone who enters your phone's main password incorrectly.



**5** From the home screen, swipe left to the Protect tab and Tap Magic. Choosing Hide AppLock conceals the existence of the app by removing it from the app drawer. Toggle the switch to On **1** and from then on you can access AppLock through your browser **2** or your phone's numeric keypad. **3** Press Try It **4** for a demonstration of how it works.



**6** Locate Time Lock on the home-screen strip. Toggle the switch to On **1** and set times and days. **2** Choose AppLock's response at the specified time - whether to Unlock All **3** or just profile-specific apps. Give the unlock action a name. **4** Location Lock works in a similar fashion, unlocking and locking apps based on nearby networks.



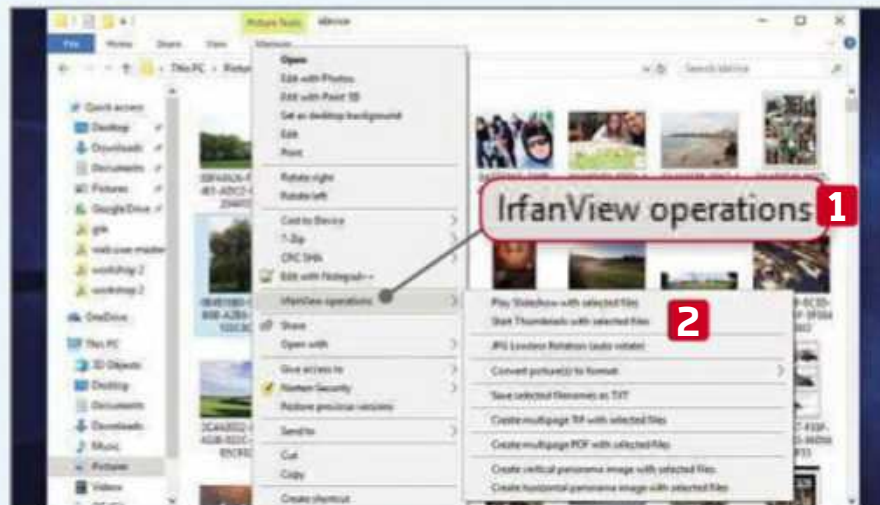


# Edit images from your right-click menu

We've been big fans of the free image viewer, editor, organiser and converter IrfanView ([www.irfanview.com](http://www.irfanview.com)) for years, because it's a compact and speedy way to work with your photos. Now, with its Shell Extension

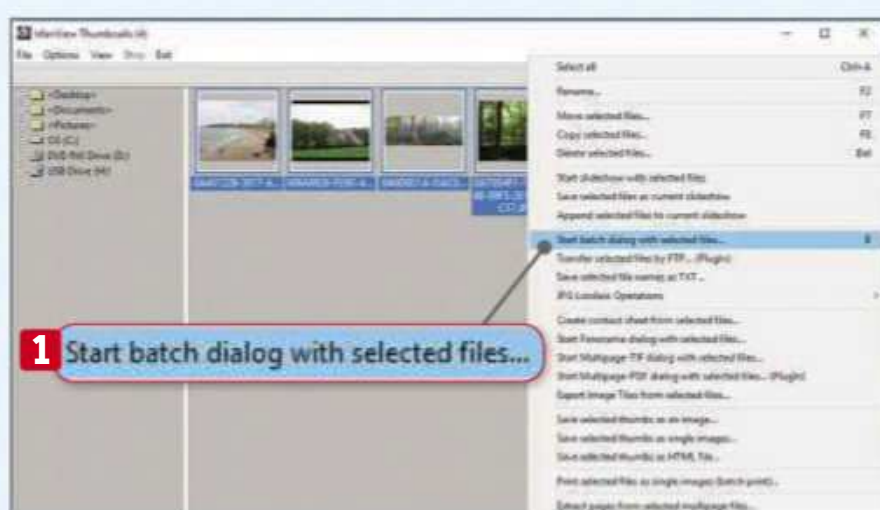
**IrfanView Shell Extension:** [bit.ly/irfp457](http://bit.ly/irfp457) | 10 mins | XP, Vista, 7, 8, 10

plugin, you can use a selection of its useful tools directly from File Explorer, without even opening the software.



**1** Download the plugin from [bit.ly/irfp457](http://bit.ly/irfp457) by scrolling down to the 'Special Plugin: IrfanView Shell Extension' section and clicking the first link, labelled Installer. As soon as it's installed, you can right-click an image and choose 'IrfanView operations' **1** to see the full range of available editing tools. **2**

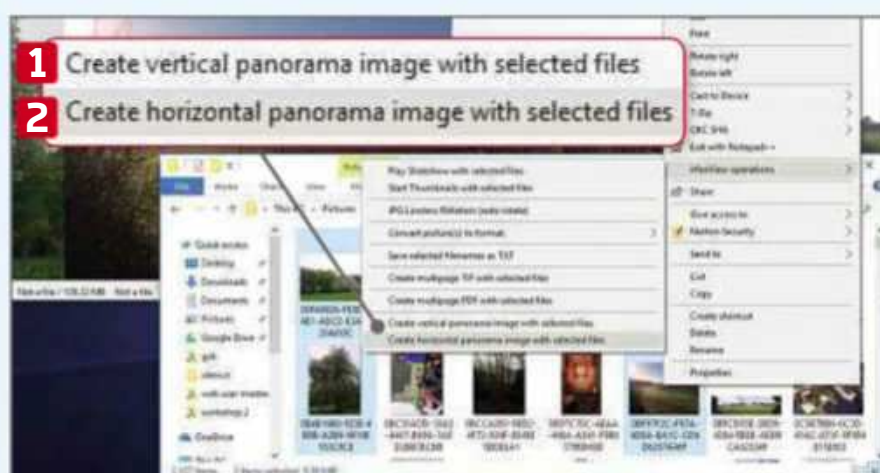
**2** To use Slideshow, select a group of images in File Explorer and, in the right-click IrfanView menu, choose 'Play Slideshow with selected files'. To lose the green file name overlay, click Options, **1** 'Properties/Settings', 'Full screen / Slideshow' **2** and untick 'Show text'. **3** Click OK. **4**



**3** Instead of showing a whole directory's content in IrfanView's file viewer, Thumbnails, the add-on lets you see only selected images by right-clicking a subset and choosing 'Start Thumbnails with selected files'. It's a great shortcut to Thumbnails' additional batch-processing tools. **1**



**4** Create files containing pages with more than one photo by selecting the images and choosing one of the 'Create multipage' options. **1** The PDF version **2** needs the basic IrfanView plugin, available from [bit.ly/irfp457](http://bit.ly/irfp457). Make sure you download the correct version (32- or 64-bit).



**5** Smartphones take great panorama shots and you can use IrfanView's dedicated tool to arrange a horizontal or vertical strip of your photos. Select the files and right-click them, then – from the IrfanView menu – choose whether you want a vertical **1** or horizontal **2** strip.



**6** To convert images from one file format to another, click the option **1** and choose the format from the list. If you want a list of all your photos, you can save the file names of any selected images to a text file, **2** which is created in the same directory that the selected files are in.



# Weekend Project

Get to grips with some serious tech tinkering to boost your computer and other devices



How to...

## Add USB-C connectivity to your computer

USB-C offers faster data transfer and device charging, but it's not available on many PCs. **Wayne Williams** explains how to get it



**T**he most irritating problem with traditional USB connectors is that you have to fiddle about to make sure you're connecting them the right way up. It can take several goes, and is exacerbated by ports being hidden round the back of screens and devices. USB-C (also known as USB Type-C) does away with this hassle because it has a symmetrical connector that can be plugged in either way up. It's designed to replace older USB-A (and USB-B) connectors and

cables, and its speedy transfer rates and fast charging provide some extra future-proofing.

At the moment, USB-C devices are still relatively rare, but the situation is changing rapidly and many new smartphones – such as the Samsung Galaxy S9 – use the new interface.

If your laptop or desktop system doesn't support USB-C, it's easy enough to add it, as we demonstrate in this issue's Weekend Project.

### What you need

There are lots of different ways to add USB-C to your PC, and it really depends on what type of system you have – laptop, desktop, Windows tablet or whatever. It also depends on what you plan to use USB-C for. If you just want to connect a smartphone, then you might not need to do anything because the device will have probably come with a USB-C to USB-A cable, which you can

plug straight into your computer's existing old-style USB port.

Alternatively, you can use a converter, which works in the same way.

If you need to connect two or more devices at the same time, or you think you will in the future, then you might want to install an expansion card (or an adapter panel) to your desktop computer, or go the whole hog and replace the entire case.

### Choose the right cable

They may look the same, but not all USB-C cables are equal. Some very cheap USB-C to USB-A cables only support the older USB 2.0 standard so should be avoided – unless you only plan to use them to charge a device (slowly).

If you've got other purposes in mind, such as transferring data, you'll need a USB 3.0 or – better yet – USB 3.1 cable. The latter type is viewed as being fully





featured and can transfer data at up to 10Gbps, whereas USB 3.0 cables can only transfer at up to 5Gbps (USB 2.0 is limited to 480Mbps).

In case you're wondering, the number (2.0, 3.0, 3.1) refers to the Universal Serial Bus revision.

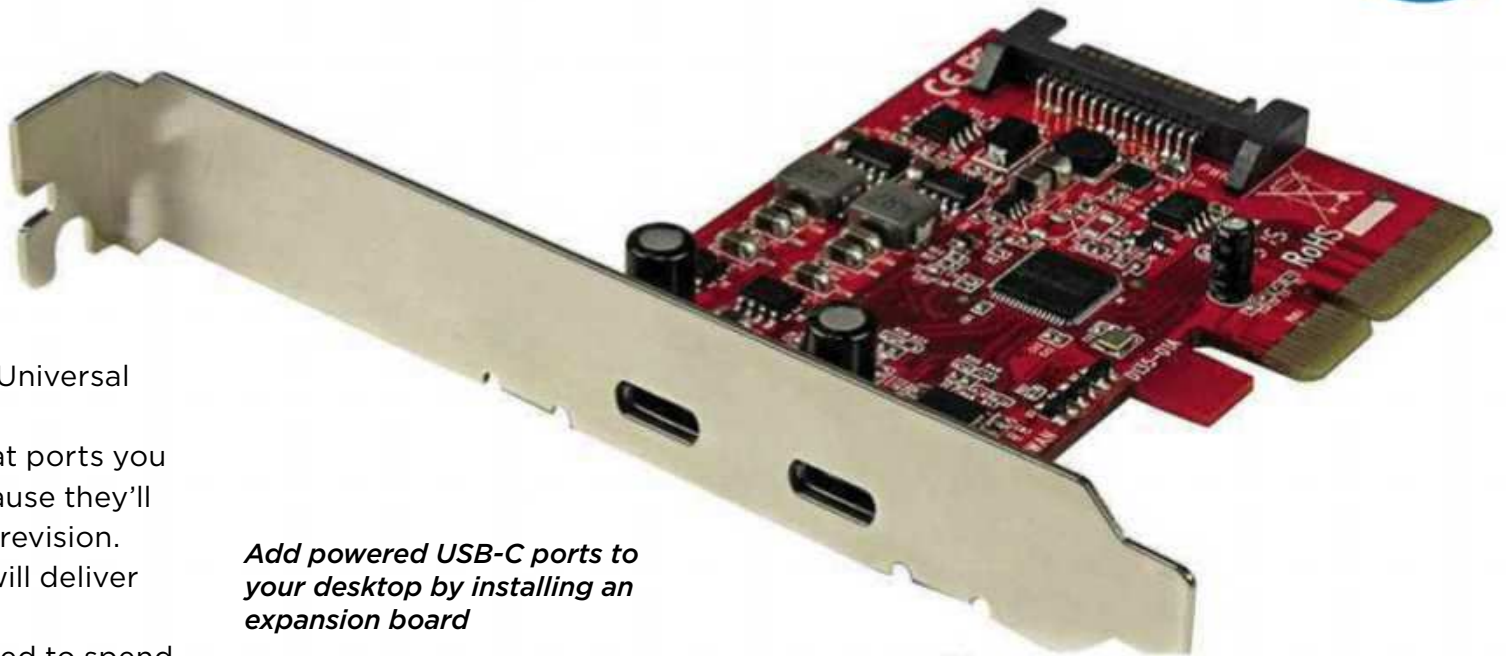
You'll want to check what ports you have on your PC, too, because they'll need to support the same revision. A 3.1 cable into a 3.1 port will deliver the best results, naturally.

You don't necessarily need to spend a lot of money on a cable, but you do need to check the specifications carefully to make sure you're getting one that offers good transfer rates and charging speeds. That's the other thing to note – while most will support quick charging of phones, some will deliver a maximum charge of 2.4A, while others will go up to 3A.

One cable that's worth considering is Belkin's USB 3.1 USB-C to USB-A Cable, which offers 3A charging and currently costs £11.12 on Amazon ([bit.ly/belkin457](http://bit.ly/belkin457)).



*Belkin's USB 3.1 USB-C to USB-A Cable is one of the better cables you can buy*



*Add powered USB-C ports to your desktop by installing an expansion board*

### Get an adapter

If you have a USB-C to USB-C cable, but your PC doesn't have a compatible port, the best solution is to use an adapter – they cost around £7 on Amazon. The one to look for has a female (inwards) USB-C connection on one end, and a male (outwards) USB-A connection on the other – you just plug the latter end into your PC, then connect your USB-C device and cable to the other. The idea is much the same as using an A-to-C cable, so you'll want to use it with a USB 3.0 (or above) port where possible.

This adapter can be used on your desktop or laptop PC, and plugged in and unplugged as required. It's a tiny thing, though, so a good way to ensure it doesn't get lost is to leave it attached to the end of your USB-C cable.



*You'll want a USB-A (male) to USB-C (female) adapter like this*

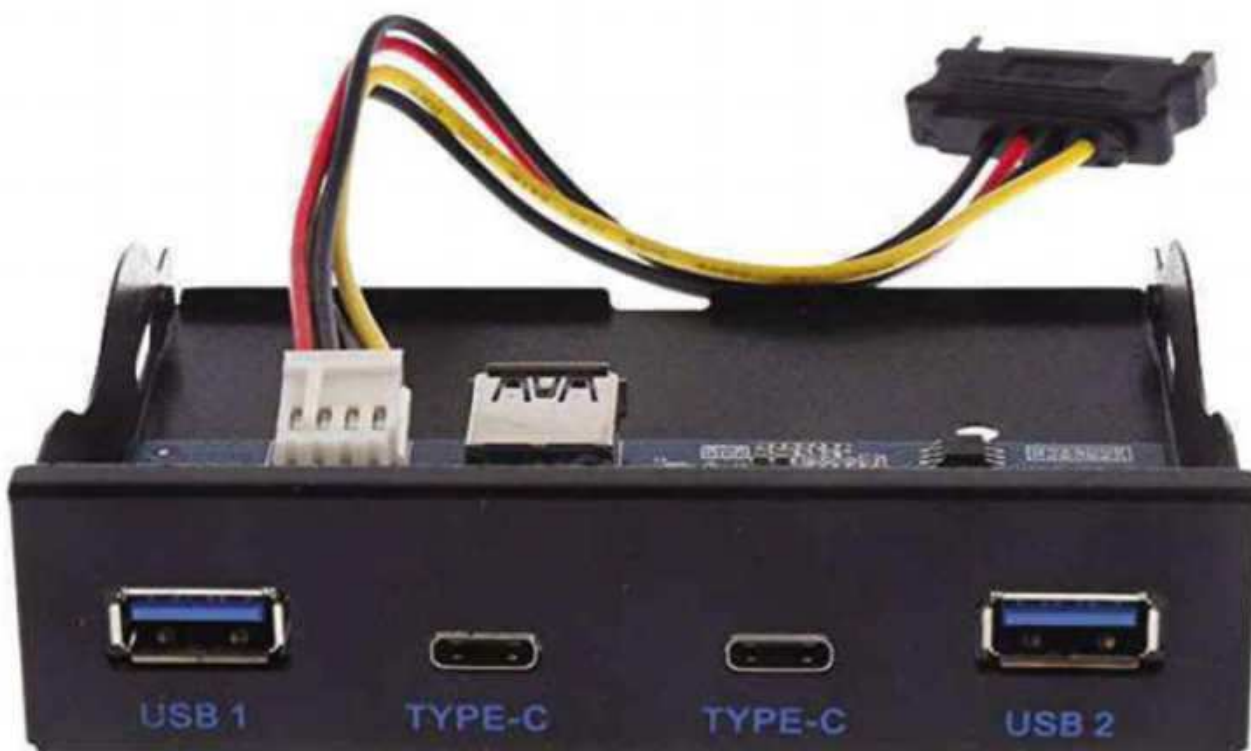
the best solution is to use a hub. These are most often designed to plug into an existing USB-C port via a cable attached to a unit containing additional ports (sometimes a mix of USB-A and USB-C). If your PC only has USB-A ports, you can combine a hub with an adapter.

### Install an expansion card

If you want to add some modern USB-C ports to an older desktop system, then the easiest option is to install an expansion card that introduces the ports to the rear of your PC. You can pick up a suitable PCI-Express card for between £20-£40, depending on what you need. Most allow you to attach a SATA cable to provide the power needed to quick-charge compatible devices, such as your phone. The process of adding a new card is very straightforward and should take less than five minutes. See our Mini Workshop on page 61 for instructions.

### Try a front-panel USB hub

Most desktop PCs have spare bays at the front of the casing. These were originally designed to install a floppy drive (3.5in) or a CD or DVD drive (5.25in), but you can use them to add other features, such as a panel hub of additional USB ports (Type A and C) at the front of your PC. You just need to remove the existing







*The MagiDeal Front Panel USB Hub fits in a 3.5in floppy drive bay*





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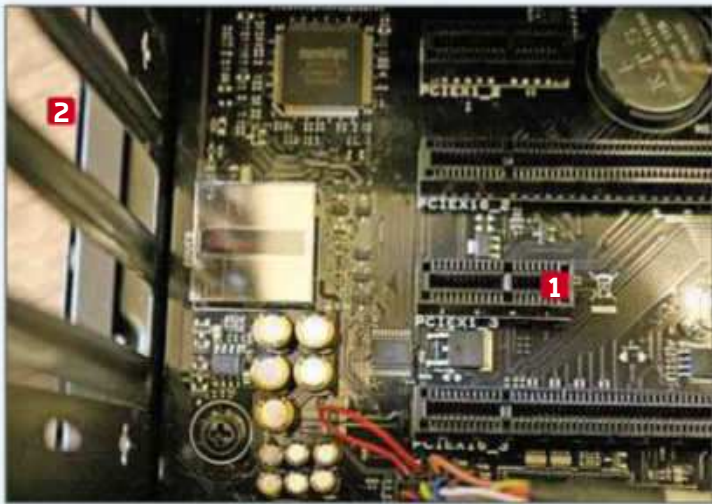
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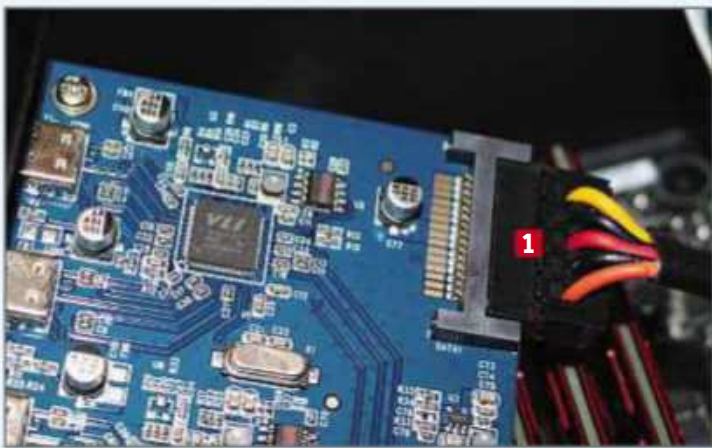




## MINI WORKSHOP | Add a USB-C expansion card to your desktop PC



**1** Start by turning off your PC and opening the case. Locate a free PCI-Express (PCIe) expansion slot. **1** Make sure there is enough space for the new card to fit comfortably – there should be because the cards are quite small. If it's a new slot that hasn't been used before, you might need to remove the backplate. **2**



**2** Most USB-C expansion cards will let you connect a SATA cable **1** to add power to the ports, so you can charge phones and the like. Insert the new USB-C expansion card into the spare slot and push down until it clicks firmly into place. Screw the card plate to the case.



**3** We now have four USB-C ports on the rear of our demonstration PC **1** and can put the case back together and power it up. The new card should be recognised and work immediately. If it isn't recognised, the next step is to install any drivers that came with the card.

plate, insert the new panel and connect the relevant cables.

It's important to note that these front-panel hubs come in different sizes, so make sure you don't buy a 3.5in model if you only have a spare 5.25in bay. If your case has a 3.5in floppy drive bay that's doing nothing (because who uses floppy disks these days?), you can pick up the MagiDeal Front Panel USB Hub ([bit.ly/magi457](http://bit.ly/magi457)) from Amazon for just £19, and gain two USB-A 3.0 and two USB-C 3.1 ports at the front of your PC.

## Upgrade to a new case

Modern desktop cases come with

USB-C ports built in (usually at the back but, sometimes, also at the front), so if you want permanent and fuss-free access to them on your computer, then it might be worth replacing your existing case. New cases aren't that expensive, although moving all your PC's components from one to another is time consuming and fiddly (and you'll need to make sure the case suits your current motherboard layout).

If you want to combine changing your PC's case with an upgrade, you could pick up a new motherboard with built-in USB-C ports at the same time.



You can buy PC cases with USB-C ports built in

## ADDING USB-C TO A MICROSOFT SURFACE TABLET

Microsoft's range of Surface notebook replacements are designed to be cutting edge, yet for some strange reason, most don't offer the latest USB standard (the new Surface Go does, but it's the exception). If you have an older, more powerful Surface model, you will need to buy an adapter to add USB-C support. Microsoft has its own Surface Connect to USB-C Adapter for Business, which plugs into the tablet's Connect port. Unfortunately, it costs \$80 (about £62) and isn't currently being sold in the UK. That might change in the future, but Microsoft has yet to announce plans to expand the device's availability.



*Surface Connect to USB-C Adapter for Business lets you add the new connection type to older Surface tablets*

## NEXT ISSUE

**How To...** Choose and fit a new graphics card

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# Web User Masterclass

## Customise your Windows desktop

### Experiment safely

**W**indows is easy to customise. You can give it a completely new look and modify it in all sorts of ways by adding skins, gadgets and other features. But will you be able to undo your makeover if you decide you don't like it? If you worry that you might mess up your Windows installation, try experimenting in a virtual machine instead.

Your PC needs plenty of memory for this, but if that's not a problem, go to [bit.ly/msvm457](http://bit.ly/msvm457), select the version of Windows you want, select VirtualBox, download the zip file and extract the contents. If you don't already have VirtualBox ([www.virtualbox.org](http://www.virtualbox.org)), install it, then use File, Import Appliance to load the Windows file. Select it and click Start. Your virtual machine runs in a window and if you mess up its Windows installation, you can simply delete it in VirtualBox and import it again. The login password is Passw0rd!.



*Use VirtualBox to run Windows and experiment with customisation tools*

### Change the theme

Installing new themes lets you customise Windows by changing the way the desktop looks. A theme contains a collection of wallpaper images and sometimes sounds, mouse cursors and colour schemes. Everything is bundled into a file that you download and install to transform Windows.

You'll find a large collection of Windows themes at [bit.ly/msth457](http://bit.ly/msth457). Select a category, browse the

thumbnails and click Download to select a theme. Double-click the theme file to install it.

If you have Windows 10 installed, open the Store app, click Apps, scroll down to the bottom and click Personalisation. There are dozens of themes covering almost every topic you can think of. Click the Get button to download and install a theme.

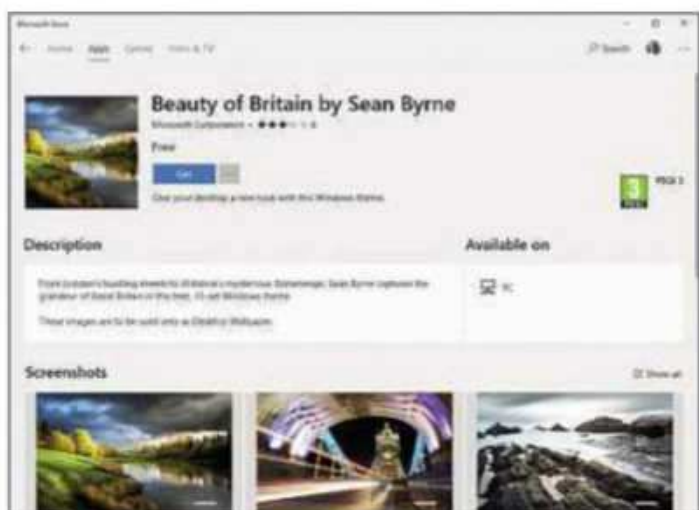
### Use animated wallpaper

DesktopHut provides software and videos that let you display fantastic animated desktop wallpaper. Categories include nature scenes, technology, abstract designs and cars, and all the wallpapers are live and animated. The process is a little confusing the first time, but easy once you know how it works.

Go to [www.desktophut.com](http://www.desktophut.com) and click Software in the top-right corner, then Windows. Download DesktopHut and run it. This starts an installer, which downloads the

real program and extracts it to a folder in Downloads. It will try to foist some optional extras on you, too, so watch out for those and make sure you decline them. It also installs Opera without asking, but that's never hurt anybody – just don't be surprised to see its icon appear on your desktop. You can uninstall the browser if you don't want to keep it.

Back on the website, select a wallpaper category, then click a thumbnail. Clicking the Download Now button on the wallpaper page saves an MP4 video to your hard drive. Open the DesktopHut App folder in Downloads and run



*Give your desktop a makeover with one of Microsoft's beautiful themes*

**If you see words that look like they've been typed in a typewriter, follow the instructions and type them exactly as they appear, paying close attention to spaces and punctuation.**





### Use DesktopHut to install animated desktop wallpaper

DesktopHut.exe to start it. Click Select Live Wallpaper and choose the MP4 video you just downloaded. Click Play and minimise the Desktop Hut window. The wallpaper runs in a never-ending video loop.

To open DesktopHut, click the up arrow on the right side of the taskbar and double-click the DesktopHut icon. You can then select new wallpaper, stop the animation or quit the app. Click the Close button to quit.

### View website updates on your desktop

Also available on the downloads page of DesktopHut is the free tool Plastuer, which lets you use web pages as live desktop wallpaper. You could, for example, add a series of news pages from one or more news-based websites. It then cycles through these web pages and turns them into desktop wallpaper. While you're working in Windows, the desktop shows the latest news stories, which it updates throughout the day.

Download the app and run it to save the program as a zip file – but pay close attention and make sure you opt out of any extras. Unzip the file, open the Plastuer folder and run Plastuer. Click the monitor when the window appears. Click Create Playlist, then copy the URL of a web page from your browser. Paste it into Pastuer and click the Add button. You can add more web pages by pasting their addresses.

When you have all the web pages you want, click the Save button and select a schedule – from changing every 30 seconds to once a day. Click Save and the first web page will appear after a few seconds.

When you've finished, you can close Pastuer and the desktop will continue to change according to your schedule. To stop it or change it, run the program again and click Disable Wallpaper. To use a playlist you have created, click Select File and choose one from your hard drive. The playlist files are saved in plain text, and you can load them into Notepad to edit them if you want.

## TAKE IT TO THE NEXT LEVEL

More advanced tips for when you're feeling brave

### Add desktop widgets

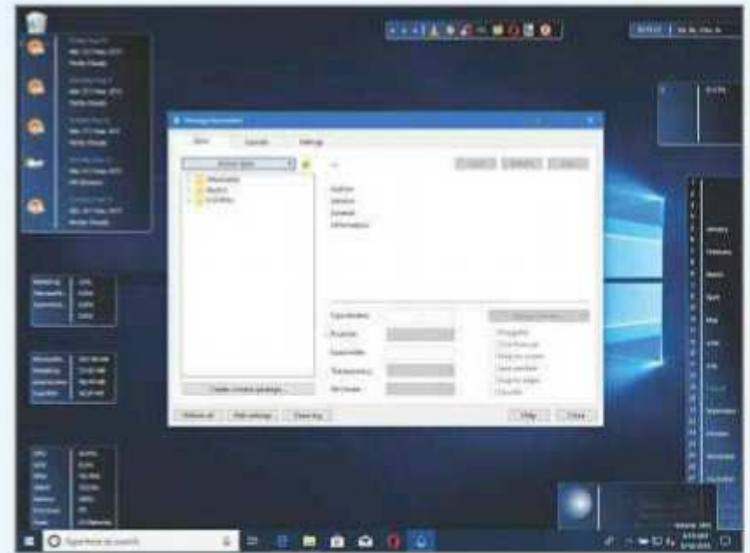
Android phone users will be familiar with widgets – the little software tools that appear on your home screen. Rainmeter is a utility that does the same thing for Windows desktops, offering a choice of widgets – called gadgets – that show useful information and link to actions, such as opening programs.

Download Rainmeter from [www.rainmeter.net](http://www.rainmeter.net) and run it. This adds an icon to the notification area, which opens the main Rainmeter window. A selection of desktop gadgets will appear, showing information such as time, drive usage, CPU, RAM, swap file use, network activity and more.

Expand the 'illustro' skin, then expand Disk, and you'll see two variations of the disk information widget: '1 Disk.ini' and '2 Disk.ini'. Select one and click the Load button to show it on the desktop. Expand every section in the theme and select each item, then load or unload items to determine whether or not they appear on the desktop. If you have a choice, try out each option to see which you like best.

Each gadget has a number of settings, such as its coordinates on the screen, what happens when the mouse hovers over it, transparency and so on. Experiment with the settings to see what works best.

Gadgets are bundled into skins. Rainmeter comes with one skin, but there are many more available – for example, go to [bit.ly/darm457](http://bit.ly/darm457), select the Gallery tab and click Skins on the left. There are 17 categories of skins on offer, such as 'Time and Date', Weather, System Monitoring, 'Notes and Quotes', VU Meters and many more. Find a theme you like and click the Download button, then open the Downloads folder and double-click the '.rmskin' file you downloaded. This installs



### Use Rainmeter to add useful information gadgets to the Windows desktop

and activates the skin, and the desktop gadgets appear.

Right-click any gadget to access a menu that lets you unload the skin or customise it without opening the main Rainmeter window.

### Install non-Microsoft themes

Microsoft collects and distributes themes for Windows, which makes it easier to browse and install them. However, there are some great themes available elsewhere online. For example, go to [www.deviantart.com](http://www.deviantart.com) and search for 'Windows 7 theme' or 'Windows 10 theme'.

To install a non-standard theme from the internet, go to [bit.ly/uutp457](http://bit.ly/uutp457), install UltraUXThemePatcher and restart Windows. Next, download a theme, unzip it and move the files to C:\Windows\Resources\Themes. To change themes in Windows 10, open Settings, click Personalisation, Themes and click a theme.

In Windows 7, right-click the desktop, select Personalise and then select a theme.



### Transform the way your PC looks by installing non-Microsoft themes such as this one in Windows



# Ask the Expert

**Roland Waddilove**, computer programmer and PC journalist since 1981, answers all your technical questions. Email us for help at [webuser@dennis.co.uk](mailto:webuser@dennis.co.uk)



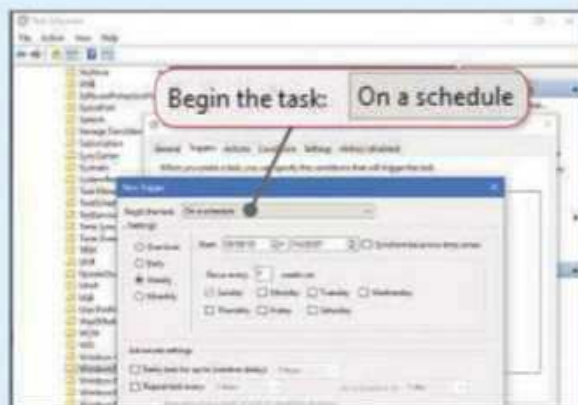
## SECURITY

### Schedule Windows Defender scans

**Q** I use Windows Defender for internet security, and sometimes it displays a notification that says it didn't find any malware in the last scan. I didn't initiate a scan, so this must be automatic, but I can't find any mention of scheduled scans in Windows Defender. How do I check or change the schedule? Ideally, I'd like weekly scans but I can't see how to set them up.

**Alan Carson, via email**

**A** Windows Defender performs scans automatically, but it doesn't have a schedule facility. Instead, it uses the Windows scheduler. Click Start and type **schedule**, then click Task Scheduler in the search results. In the sidebar, expand Task Scheduler Library, Microsoft, Windows, then select Windows Defender.



#### Create a schedule to perform malware scans with Windows Defender

Double-click Windows Defender Scheduled Scan to open Properties, and select the Triggers tab. The 'Begin the task' box should be set to 'On a schedule'. Other options include scanning on startup or login.

Under Settings, you have a choice of 'One time', Daily, Weekly and Monthly. Select the one you want, then choose which days of the week to run the scan. You can set a start time to avoid working hours when you are using your PC. Tick the Enabled box at the bottom and click OK.

which you can find for as little as £5 if you search online. This will allow you to plug the new SSD into a USB port on the laptop.

With both drives connected, you can use software to clone the laptop's hard drive to the SSD. This is a common feature in disk partitioning and backup software, such as Macrium Reflect 7 Free Edition ([bit.ly/mrf457](http://bit.ly/mrf457)) or EaseUS Todo Backup Free ([www.easeus.com](http://www.easeus.com)), to mention just two examples.

Once you have cloned the drive, swap the old one for the new one. This is easier said than done, however. Go to YouTube and search for 'replace X laptop hard drive' where X is the make and model of your laptop. There are many video guides that show how to take laptops apart to change the drive, keyboard, memory and other components. If you can't find a video for your specific laptop, searching for a similar model from the same manufacturer may suffice.

## ONLINE STORAGE

### Don't lose your OneDrive files

**Q** In Issue 453, you said that files expire after one year of inactivity in OneDrive. As a user of Office 365, I was slightly perturbed that I may lose files. Do you mean if I have 1,000 files and I use only 999 of them, I will lose the one I haven't used? Or is it simply that all the files will expire if I use none of them?

**J Ballinger, via email**

**A** It's more accurate to say that your OneDrive account expires after a year of inactivity. You don't have to use every file on OneDrive, and using just one is sufficient to keep it alive. There are several reasons why someone might stop using OneDrive – perhaps because they've switched to a different service, or even because they've died! Microsoft won't keep files forever if your account slips into inactivity.

OneDrive is built into Windows 10, and your computer accesses it every time you switch it on. This alone is enough to stop OneDrive or any of the files stored in it expiring.

## HARDWARE

### Upgrade a laptop with an SSD

**Q** I want to replace my laptop's mechanical hard drive with an SSD. I seem to remember that you published an article in *Web User* describing how to do it. My problem is that I can't find the article, despite trawling through back issues to 2012. If you did publish an article on this subject can you please tell me where I can find it?

**Ged Pearson, via email**

**A** The article was a Weekend Project in Issue 389 ([bit.ly/webuser389](http://bit.ly/webuser389)). It was published over two years ago, but little has changed since then. If you don't have the issue, you can buy a digital copy for £1.99 from the web address above.

The procedure isn't complicated, however. In brief, you need to connect the new drive as a second drive, so you can copy everything from the old hard drive to your new SSD. You can then swap the old drive for the new one.

There are several points to consider. The first is how easy it is to remove the old drive. Some laptops are very difficult to take apart, so before you start this project, check to see if the drive is easy to access.

Another problem is how to connect both drives to your laptop at the same time, because they typically have only one connection for an internal drive. You'll need a USB-to-SATA cable,



*Upgrading a laptop's hard drive to an SSD will make it run faster*





## GENERAL PC

### Share folders on networks

**Q** Could you please clarify how I can share a password-protected folder over a local network? I want to give specific users access to specific folders.  
**Br/IT Department, via email**

**A** You can set up Windows to allow anyone on your network to connect to a PC, allow only people who have accounts on that PC, or both. First, check the current sharing settings and change them if necessary. Open the Control Panel and, in small-icons view, click 'Network and Sharing Centre'.

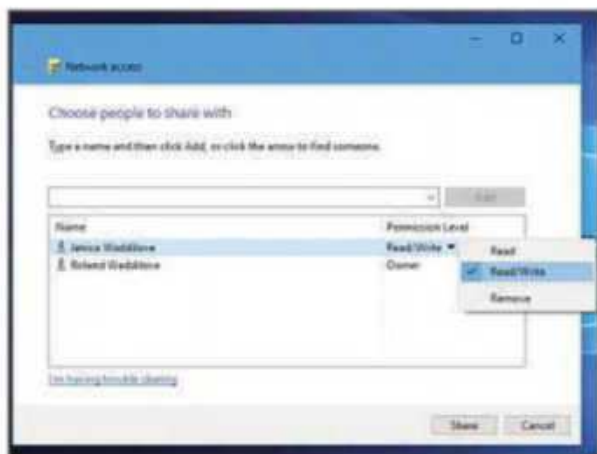
Click 'Change advanced sharing settings' on the left, then expand the Private section. This is used on home or work networks but not public Wi-Fi. Select 'Turn on network discovery' and 'Turn on file and printer sharing'.

Expand the All Networks section. You'll see two options under 'Public folder sharing': 'Turn on sharing so that anyone...' and 'Turn off Public folder sharing...'. Opt to turn on sharing. Under 'Password-protected sharing', select 'Turn on password-protected sharing' and save the changes.

Home users don't usually need password protection, and sharing the Public folder with everyone in the home is the easiest way to share files, but let's continue.

Open User Accounts in the Control Panel and click 'Manage another account', followed by 'Add a new user in PC settings'. Create a user account for each person who needs access to the PC. Now open Explorer, right-click the folder you want to give access to and select 'Give access to'. Select the user from the drop-down list and click Share. Note down the path that appears, which will be something like this: \\WINDOWS-PC\\Users\\YourName\\Folder.

You also have the option to email the path or copy it to the clipboard so you can save it and send it another way.



**Give users access to folders by adding their accounts and setting permissions**

When someone wants to connect their PC to your shared folder, they right-click This PC in the Explorer sidebar and select Map network drive. They should ignore the Browse button and type the path noted down earlier. This connects their PC to the shared folder. Once they've entered their username and password, the shared folder appears in Explorer's sidebar and other applications when opening or saving files.

## SECURITY

### Get Kaspersky working with the latest updates

**Q** My PC runs Windows 7, which I keep up to date with Microsoft's patches. Since the latest round of updates, Kaspersky Internet Security ([www.kaspersky.co.uk](http://www.kaspersky.co.uk)) throws up warnings every time it tries to load. Also, my copy of the game Bookworm no longer works. I've tried updating the graphics card drivers, but to no effect.

**David Bray, via email**

**A** If you can get Kaspersky to open, check for updates to the program because this may fix the problem you're having. Also, go to Windows Update in the Control Panel and check for and install any updates that are available. These can also fix problems by improving compatibility.

If your problems persist, uninstall Kaspersky but use the option to keep your settings and registration details. Restart the computer, download the latest version of the software from the Kaspersky website and install it again.

We're not sure which Bookworm you're referring to but if it's the original PopCap game from 2003, it's 15 years old and may no longer be compatible with Windows. If you have the original files, try uninstalling and reinstalling it.

There are many games just like Bookworm, and a web search will turn up other free online games that you can play in a browser, such as [bit.ly/bwfl457](http://bit.ly/bwfl457) and [bit.ly/bwat457](http://bit.ly/bwat457) (both require you to enable Flash in your browser).

## GENERAL PC

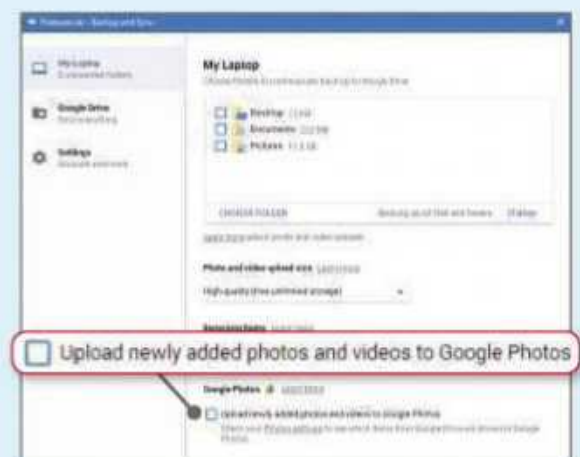
### Share photos on PC and Mac

**Q** I have a Windows PC but my wife uses an Apple Mac. I take photos and transfer them to my PC, and my wife's photos end up on her Mac. We would like to be able to access each other's photos to view and, if possible, edit. What do you recommend?

**David Forster, via email**

**A** There are several options. One is to install iCloud on your Windows PC ([bit.ly/icl457](http://bit.ly/icl457)) and use it to log into your wife's Apple account. You can use Explorer on your PC to access photos in the Mac's Photos app if the Mac is set up to store photos in iCloud. To set this up, go to System Preferences, iCloud. You may need to pay a subscription to increase the 5GB of free storage, because that will soon fill up, but 50GB of storage costs just 79p per month.

Alternatively, install OneDrive ([onedrive.live.com](http://onedrive.live.com)) on the Mac and log in with your account. Both you and your wife can store photos in the OneDrive Pictures folder and share your photo collection on each computer. OneDrive's apps for iOS



**Google Backup and Sync has options to store photos online on PC and Mac**

and Android devices upload photos automatically, although again the 5GB free space won't be enough. At £1.99 per month for 50GB, OneDrive's is more expensive than Apple's storage.

You could also get Google Backup and Sync ([drive.google.com](http://drive.google.com)) for PC and Mac, which automatically backs up photos to Google Photos. There's an option to show Google Photos in the Google Drive folder on your computer. You could share an account or have separate accounts but share Google Photos albums. Storage is free and unlimited for images of less than 16 megapixels, and phone apps are available, too, so it is a great option. If you prefer to keep full-size images, you can upgrade Google's storage to 100GB for £1.59 per month.



This fortnight Roland has been checking out the new laptops in his local computer shops. He's saving up for a new one!



# Your Top Tips

Our pick of the best advice from our readers. To get help or offer it to others, visit [forum.webuser.co.uk](http://forum.webuser.co.uk)

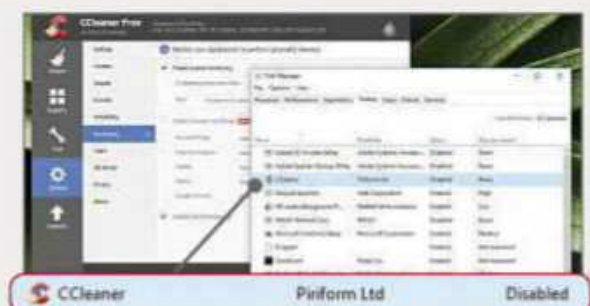


## TOP TIP

### SOFTWARE

## Disable CCleaner's Active Monitoring

In light of the current CCleaner brouhaha, I felt other readers might like to know that in the offending CCleaner 5.45, it's not possible to disable Active Monitoring. Using other versions of the app, you can deactivate both System Monitoring and Active Monitoring by going to Options, Monitoring and unticking the boxes. This is not the case for the latest version, but I think I've found a solution if you don't want to uninstall the tool. Launch Task Manager and click the Startup tab. Click CCleaner and change the status



### Stop CCleaner 5.45 spying on you

to Disabled. Once you've finished manually running CCleaner, remember to then kill the process in Task Manager to prevent further active monitoring.

**Darcie Greenfoot, via email**

Back Issues disc winner



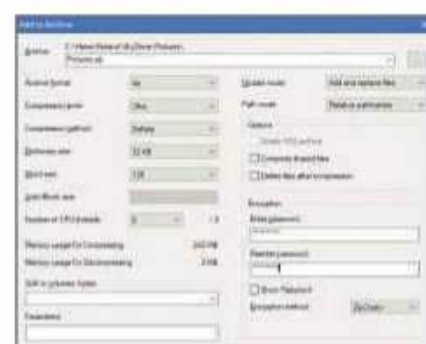
### SOFTWARE

## Password-protect zip files

You can right-click files and folders and send them to a zip archive, but if there's a way to add a password in Explorer, I can't find it. Before zip archiving was built into Windows, there was always an option to password-protect zips, so you could only extract the files if you had the password. I don't know why Microsoft never added this option.

If you want to email files or send them over the internet some other way, you need to use a standalone zip-archiving tool. I use 7-Zip ([www.7-zip.org](http://www.7-zip.org)) to protect zips. It opens a file browser and you can go to a

folder, select files and click the Add button. It then has an option to add a password and provides two encryption methods, ZipCrypto and AES-256, although



**Password protect zip files with a third-party tool such as 7-Zip**

Windows only recognises ZipCrypto.

Another useful tool is the compression setting. There are five ranging from Store (none) to Ultra (maximum). I use Ultra, to make the archives as small as possible.

**M Rodd, via email**

### GENERAL PC

## Resize columns automatically

A feature that's common to many programs that use columns is an auto-resizer, to get the column sizes just right. Whether you're using Excel, Google Sheets, Explorer in Details view or something else, move the mouse over the vertical line between two header row columns and, when it turns into a double-headed arrow, double-click. The column is automatically resized to the minimum width necessary to fit its contents.

**John Mathers, via email**

when you have several tabs open, you can right-click one to get a menu. From here, you can close all other tabs except this one or close all tabs to the right of this one. You can refresh all tabs, which could be useful if you have a collection of news or other sites open that regularly update. A tab can also be duplicated, and you can reopen closed tabs.

**Larry Freedman, via email**

### OFFICE

## Use Word Online's Notes tool

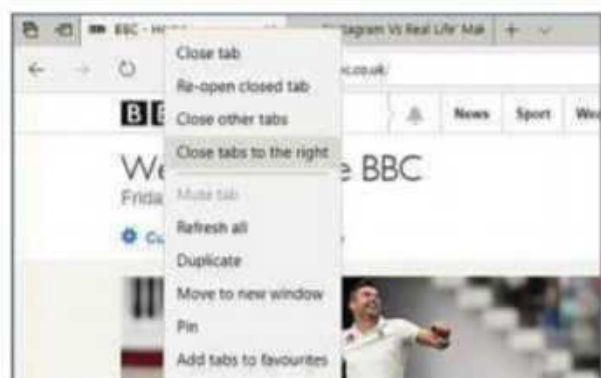
I've been writing an ebook in the Word Online web app ([office.live.com](http://office.live.com)). A useful tip is to create each chapter as a separate Word file so you can open two documents in separate browser windows side by side. I like to write in one window and have a previous chapter open in another for reference. I use the Comments tool to store notes (from the Insert toolbar, choose Comment) such as links to web pages with related information and so on. Another tip is to write the word 'End' on the last line and add your comment to it. Clicking a comment always jumps to that text, so attaching it to the last line stops it jumping back to the start, which means my notes follow me as I write.

**Ron Grange, via email**

### BROWSERS

## Refresh all tabs in Edge

I don't use Edge in Windows 10, but keep checking it for new features and it seems like it's steadily improving. For example,



**Right-click a tab in Edge to access lots of useful tab functions**

### WINDOWS 10

## Create a shortcut to Device Manager

If you've tried and failed to create a Device Manager shortcut in Windows, here's how: right-click the desktop and choose New, Shortcut. In the pop-up prompting you for a location, type the Run command `devmgmt.msc`, then rename your shortcut (funnily enough, I called mine 'Device Manager'). Your new desktop shortcut is now available.

**Jason Perez, via email**

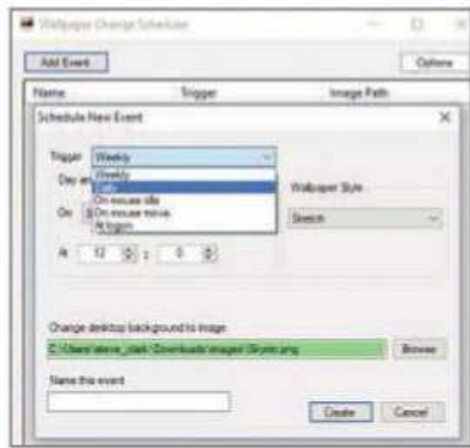




## WINDOWS

## Make your Windows wallpaper dynamic

If you're looking for a Windows-based Dynamic Desktop like the one Apple brought to the Mac, there's an app for that – or a free program, at least, called Wallpaper Change Scheduler ([bit.ly/wallpaper457](http://bit.ly/wallpaper457)). It lets you set new wallpapers that changes depending on



*Give your Windows desktop a facelift*

the time of day. It was developed for Windows 7, so it's not much to look at, but runs perfectly on Windows 10, and should be OK on Windows 8, too. Just add an event that triggers daily,

add your images and set the time you want your wallpaper to update.

**Andrew Moore, via email**

## WINDOWS

## Disable Windows' skinny scroll bars

I was greatly troubled when Microsoft stripped out permanent scroll bars in one of those never-ending Windows 10 updates. It's meant I've had to faff around pointing the cursor at the edge of the app just to scroll down. I thought other *Web User* readers would like to know there's a way to turn this off. Press Win+I to open Settings, then navigate to 'Ease of Access' and switch off the option to 'Automatically hide scroll bars in Windows', so you never have to fiddle with skinny old scroll bars again.

**Rebecca Keller, via email**

## WINDOWS

## Change the size of your desktop items

What I love about Windows 10 is that there are plenty of ways to configure your desktop, such as pinning icons or even (bonus tip alert) turning off the 'Align icons to grid' option by right-clicking your desktop and going into the View settings. I also think it's useful to alter the spacing between your desktop items, but this is a bit more difficult as it requires tweaking the Registry. Start by opening the Registry editor (press Win+R, then type `regedit` in the Run box). Navigate to 'HKEY\_CURRENT\_USER\Control Panel\Desktop\WindowMetrics', then locate and change the IconSpacing and IconVerticalSpacing values. My defaults were -1125 (remember to make a note of your defaults, should

you wish to go back to the original spacing), but you can change either value to any number between -480 and -2780.

**Ronald K Bridger, via email**

## WINDOWS

## See Mac-like previews in Windows 10

Apple Mac owners often have the edge over us Windows 10 users, but at least we've now got a way get our hands on one of the Mac's handiest features: previewing files just by pressing the spacebar. To do this on a Windows 10 computer, download the QuickLook app from the Microsoft Store ([bit.ly/quicklook457](http://bit.ly/quicklook457)). It's a lot better (and faster) than Windows 10's built-in preview pane, because pressing Enter on your preview will also launch your file.

**Alf Mitie, via email**



*View files before opening them just by pressing the spacebar*

## WINDOWS 10

## Centre your taskbar icons

It annoys me that the Windows taskbar fills up from left to right – I prefer centred icons. Falcon ([bit.ly/falc457](http://bit.ly/falc457)) is just the tool for this. It's not exactly lightweight, but if you have the Microsoft .NET framework installed, you can open Falcon and see three options: Center Taskbar Icons, Center Windows Button and Hide Taskbar. Check the boxes you want and it instantly takes effect. My desktop looks so much neater now.

**Michael Gunther, via email**

## GOOGLE

## Set Gmail's high-priority notifications

If, like me, you're tired of all those notifications clogging up your phone, this might help: you can choose to see Gmail notifications only from those deemed 'high priority'. To switch this on, tap the three-line hamburger menu, go to Settings, then select the email account you want. So long as you have the latest version of Gmail on your phone, you should see 'Notification level' under the Notifications section. Click into this and select 'High priority only'. That should save you getting constantly distracted by every email you receive.

**Kieran Sanderson, via email**

# BLUNDER OF THE FORTNIGHT

## WINDOWS 10

## Download Windows 10 without the Media Creation Tool

I needed to download a copy of Windows 10 for my HP Stream. I duly visited [bit.ly/wiso452](http://bit.ly/wiso452) and opted to download the Media Creation Tool, but every time I tried, my laptop informed me that it needed more space. As anyone with an HP Stream knows, there's precious little space on the laptop and, frustratingly, no way to download the Media Creation Tool to any drive other than internal storage.

No amount of uninstalling unused apps, deleting temp files or any of the usual tricks seemed to work. After about the fifth attempt, I discovered a tricky way to directly download the Windows 10 ISO: open the page in Opera, press the Opera logo, choose Developer, then 'Developer tools'. In the dev pane, click the mobile and tablet icon in the top-left corner.



*Here's a trick to quickly get the Windows 10 ISO*

This forces the site to emulate a mobile phone screen. Above the page is the word Online. Press this, and change to 'Low-end mobile'. Refresh the page and confirm which version of Windows 10 you need. When you reach the screen that offers 32-bit and 64-bit Windows, right-click your chosen ISO and select 'Save linked content as'. You're now able to save the disc-image file to an external USB.

**George Boniface, via email**

**Have you managed to fix a PC-related disaster?**

If so, please send your story to [webuser@dennis.co.uk](mailto:webuser@dennis.co.uk)





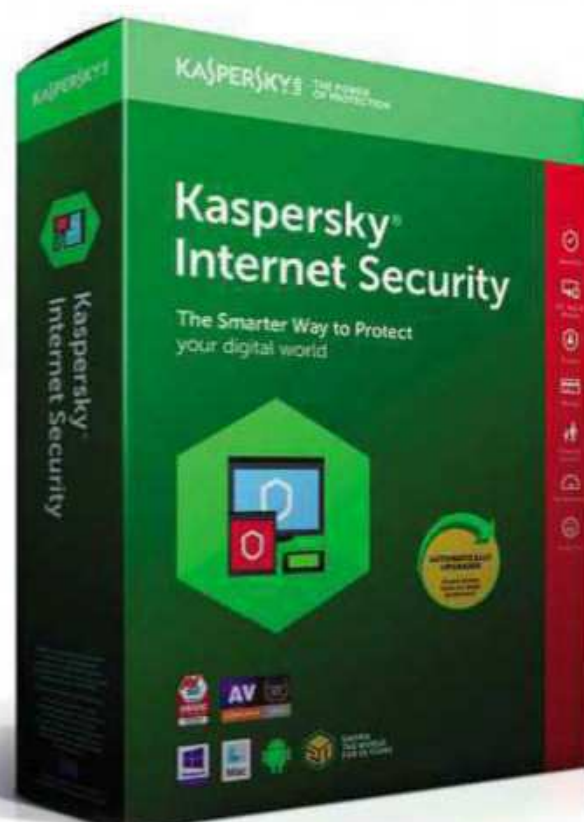
## OFFER OF THE FORTNIGHT

### Kaspersky Internet Security 2019 - on sale now

Our sister title *Computeractive* is now selling the new and improved 2019 edition of the multi-award-winning antivirus Kaspersky Internet Security at a special discount for readers

#### WHAT'S NEW IN KASPERSKY 2019:

- ✓ Finds and removes dodgy browser extensions
- ✓ Identifies software that needs to be updated
- ✓ Gives you more control over which adverts are blocked
- ✓ More advanced options to keep malware off your PC



**SINCE WINDOWS 10 LAUNCHED 18,642 READERS  
HAVE BOUGHT KASPERSKY SOFTWARE  
FROM THE SOFTWARE STORE**

**One PC for one year NOW ONLY £19.99\***  
Normally £34.99

Buy it from our Software Store at [bit.ly/kaspersky1pc](https://bit.ly/kaspersky1pc)

**Three PCs for two years NOW ONLY £39.99**  
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ANTIVIRUS TESTS**





# Readers' Helpdesk

Our pick of the best solutions posted on our reader forums. Visit [forum.webuser.co.uk](http://forum.webuser.co.uk) – it's friendly and free!

## WINDOWS

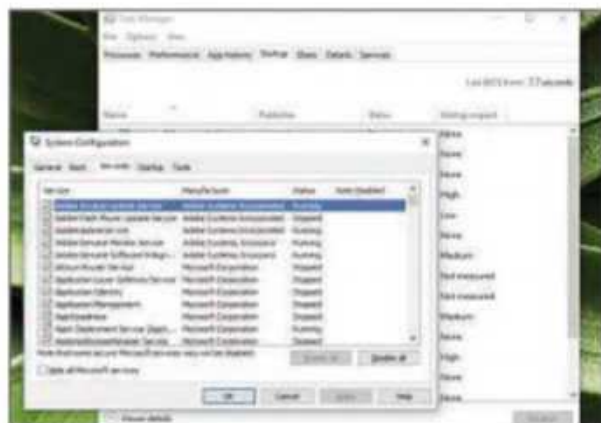
### Speed up a slow Windows 7 computer

**Q** I'm not sure how it happened, but my Windows 7 computer is very slow – slow start up, buffering issues, jittery scrolling. Another thing is, when logging into my bank account, I enter the information, then wait 30 seconds for it to propagate. Sometimes the page times out and I select 'wait'. It's been happening for a while and doesn't seem to be restricted to individual websites.

**golden, Web User Forums**

**A** Bring your programs and drivers up to date, then scan the computer with Malwarebytes ([bit.ly/mwb457](http://bit.ly/mwb457)). If a website lags, see if it happens in Safe Mode with Networking or after a clean boot. For Safe Mode with Networking, tap F8 (usually) as you switch on and use the cursor keys to select 'Safe Mode with Networking'. In this mode, all third-party programs are isolated.

If this improves the situation, restart and type **msconfig** in the Start bar. Under the Startup tab (you may need to do this part via Task Manager), click 'Disable all', then Apply and OK. If the situation hasn't improved after a restart, go into **msconfig** and check the box to 'Hide all Microsoft services' under the Services tab. Now, choose 'Disable all', and apply the change. This is a clean boot. If there's an improvement after disabling non-MS services, then go back and enable a couple at a time, checking



*To cure a sluggish PC, try a clean boot by disabling all non-Microsoft services*

## BROWSERS

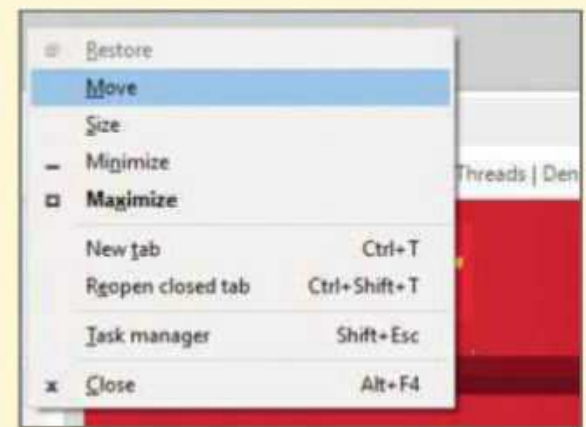
### Move or resize windows using your keyboard

**Q** I'm trying to fill in a holiday listing on [transfertravel.com](http://transfertravel.com) but when I log in and upload my booking confirmation, I can't scroll down to the next section to complete the form. I'm using Firefox but have tried Chrome, Opera and Edge, so I think it's most likely my laptop settings, rather than the website. I've tried all sorts, including holding down Ctrl and tapping the '-' key to reduce the page size, but I can't access anything besides the first section.

I don't know what else to try. Any help would be very much appreciated!

**BarbaraT, Web User Forums**

**A** I don't know if this will be helpful as it resizes a window rather than a



*If your mouse isn't doing the trick, use your keyboard to control open windows*

particular web page, but I recently read that you can move or resize a window using your keyboard. Start by pressing Alt+Spacebar to open the system menu. To move a window, type the letter M; to resize it, type S. Now, you can use the arrow keys to re-adjust the window's size and position.

Also, if you're using any add-ons in your browser, temporarily disable them, then restart your browser to see if that makes any difference.

**Madeline, Web User Forums**

performance after each reboot.

When you find what's impacting performance, go back into **msconfig** and uncheck those boxes. You can also clear the temp folder files by going to Start, and typing **%temp%**. Finally, empty the Recycle Bin.

**Cantrel, Web User Forums**

## HARDWARE

### Reinstate sound on Windows 10

**Q** I have a laptop running Windows 10, and got the latest update today. Suddenly, I have no sound at all. I've checked Spotify and even VLC, and there's nothing. Any help, please?

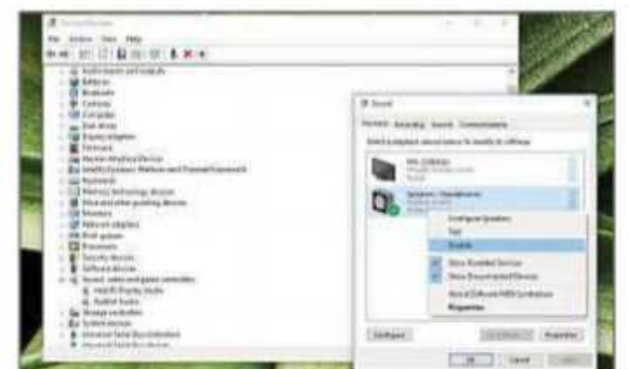
**buster2, Web User Forums**

**A** Type **Sound** into the Start menu, and open the Sound control panel. Check the Playback and Sounds tabs, right-clicking listed speakers to check they're Enabled. Also, check the speaker volume along the taskbar and make sure it's not muted. No joy? Then find out what sound

chip you have installed, and visit the Realtek website ([bit.ly/realtek457](http://bit.ly/realtek457)) to download the Audio Manager.

It may also help to run AdwCleaner ([bit.ly/adwcleaner455](http://bit.ly/adwcleaner455)) and manually reinstall audio drivers, then open Device Manager and expand 'Sound, video and game controllers'. Right-click the vendor's sound adapter and click 'Update driver', then choose 'Browse my computer for driver software' and select the driver. Install that, then check to see if your audio has been reinstated.

**Bedstor & Cantrel, Web User Forums**



*If you're having audio problems, check to make sure your speakers are enabled*



## Star Email

### Beat phone scammers by playing along

**A**bout six times a year, I receive a phone call – supposedly on behalf of Windows, Microsoft or BT – purporting to want to help me rid my computer of malware. Several of your readers say that on receiving such calls, their first reaction is to immediately hang up, but I have an alternative suggestion that should not only provide good entertainment but also waste the callers' time: play along with them.

I normally start by putting on an elderly, slightly timid but grateful voice. The conversation then continues: "Is it my computer? Oh, I am so glad that you have called because it is getting slower and slower. Do you think that it is due to this millware [sic] that you

mention? What is on the screen? Well it's a photograph of Stonehenge in the evening, which Hilda took on our coach trip. Oh, you want me to press the Windows key? I cannot see a key that says Windows. It's got four squares on it? Ah did you mean the one marked F4? I will press that..."

And so it carries on until I pretend to get upset because the caller is shouting at me. I then start sobbing down the phone and explain that I am too upset to continue the call as the



caller seems angry.

Of course, the whole conversation takes place while I am preparing a meal, reading a magazine or even watching TV. If I can waste 10 minutes or more of their time, that is 10 minutes that they have lost trying to con someone into giving the fraudsters control of their computer. If we all did this when we receive such calls, it would surely help thwart the heartless fraud that these lowlife creatures perpetrate.

*Ian A, via email*

### Slavery did flourish in the 18th Century

Ian Clements' claim in Inbox, Issue 455, that slavery was never legal in Britain, is incorrect. By the 18th Century, the slave trade had become a major factor in the prosperity of cities such as Bristol, Liverpool and Glasgow, who were engaged in the so-called "triangular trade"; exchanging goods taken to West Africa for slaves, transporting them across the Atlantic to be sold for labour in plantations and returning to Britain with the products of slave labour, such as sugar and rum.

It was not until the Slavery Abolition Act 1833 that slavery was finally abolished, albeit on a gradual basis. British owners of land in the British West Indies received compensation totalling £20m for losing their unpaid workers, while the slaves received nothing.

Therefore *Web User* was quite right to state that "to Britain's shame, slavery flourished in the 18th Century".

*Martin Archer, via email*

### Report phishing emails to this address

I refer to the letter from Alan Wood in Issue 455 about being unable to find an easy way to report phishing emails to Action Fraud. There is a direct email

address to do just that and I use it frequently to forward scam emails. Action Fraud will acknowledge receipt of your message by return. The address to forward to is: [nfibphishing@city-of-london.pnn.police.uk](mailto:nfibphishing@city-of-london.pnn.police.uk).

I fully agree with Alan that there should be a standard



method of reporting for all cybercrime organisations and perhaps Action Fraud or the Information Commissioner's Office could be encouraged to implement one.

*Paul Wilgress, via email*

### 'Live restart' is pointless and intrusive

In *Webometer* in Issue 455, one of your 'We like' entries is 'Restart live BBC shows on your TV' by pressing the green button. This is possibly one of the most annoying things that the BBC has come

## Quiz Answers: Issue 456

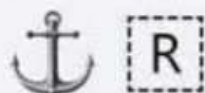
1 **Kabul**



2 **Stockholm**



3 **Ankara**



4 **Manila**



5 **Taipei**



6 **Tokyo**



## WINNER!

Well done to **Alex Walsh** who wins a *Web User* Back Issues Disc



TECH YEAR

**2015**





up with. It appears on every programme, even if you are only a few seconds late joining it, and it is usually a totally

pointless invitation because so much content is repeated anyway. I rarely use the iPlayer and would be happy if the BBC was a subscription service, as

I struggle to find anything worth viewing.

I have contacted the BBC about a fix for permanently removing this intrusion, but the BBC rarely responds to criticism by us plebs.

*Raven, Web User Forums*

## Google, Facebook and censorship

I applaud your magazine's stance on privacy and its frequent criticism of the likes of Google and Facebook in that regard. I was also interested to read your recent news story, 'YouTube steps up the war against fake news', although the title made me laugh out loud at YouTube's hypocrisy.

YouTube (owned by Google) will almost certainly

follow the same corrupt policy as Google and Facebook who have, for the last several months, waged a censor's war on any organisations, journalists and websites whose views do not fit their own worldview. Google has even been accused of blocking results from – particularly – left-wing sources.

*John Lockett, via email*

## Much ado about viewing

I noticed the comments about switching to Netflix (What you say, Issue 455). I have Amazon Prime so I am not sure why I should pay for Netflix as well.

I already got rid of Sky. We watched, in the main, only three channels that were not available on terrestrial TV, for about six hours a week. I was considering Freesat, but although the box only costs the equivalent of paying for six months of Sky, it offers little more to watch than Freeview. YouView, meanwhile, is basically Freeview that costs money.

I believe the BBC should be slimmed down or privatised, except for the news channel and BBC 1, 2 and 4, and the licence fee should be scrapped.

*Martin Fletcher, Thorpe Hesley*

## What you say...

### DO YOU AGREE WITH JEREMY CORBYN THAT FACEBOOK, GOOGLE AND AMAZON SHOULD BE TAXED TO PAY FOR PUBLIC JOURNALISM ([bit.ly/tax457](http://bit.ly/tax457))?

Overcomplicated. Just alter the law so they pay a reasonable amount of tax for the size of the business done in the UK.

*Iain Kenworthy-Neale*

No, a good news (journalism) organisation will provide good news coverage that will sell itself without the need of 'public' investment.

*Anthony Higham*

Yes, that's exactly what we should do – just tax all the successful companies. The prehistoric BBC starts bleating that they aren't competitive with the other channels, but those companies aren't gifted £3bn a year in licence-fee money, yet they still manage to make profits and create shows.

*Cunningham Hutchison @MrChutchy*

### DO YOU SHARE YOUR TV-STREAMING PASSWORDS?

Yes, I pay £9.99 a month for the four-user version of Netflix, but I share it only with my family. If this was stopped, so would my subscription because I don't use it enough to warrant even the basic membership.

*Steve Ellis @gb022621*

I share any account I can, and set up a monthly standing order for half the cost of the account. Why pay for a full account when you can halve the cost?

*Andrew Wakeman*

I pay Netflix my monthly fee. In that fee, I have a limit to the devices I can stream to. I share my details with my

family, but within the limitations set by the company.

*Bruce Lauderdale*

### AMAZON WANTS ALEXA BUILT INTO CARS ([bit.ly/alexacar457](http://bit.ly/alexacar457)). WOULD YOU USE IT?

No, there are way too many things distracting people from driving as it is!

*Heather Husler*

Absolutely not. It's the one thing I'd take out straight away and bin. Don't need that rubbish.

*Gerrit Max*

Nope. I think people look silly talking to a lump of plastic with wires. Not only that, it kind of looks like a grown up version of an 'imaginary friend' to me.

*Liz F Lambeth*

But does it have Turbo Boost?

*Christopher Arkle*

### MICROSOFT IS ADDING A DARK THEME TO FILE EXPLORER ([bit.ly/dark457](http://bit.ly/dark457)). WILL YOU USE IT?

Yeah I like it. I use dark modes on Twitter and YouTube. I prefer it.

*Lettera @Lettera2222*

I use it everywhere it's available, including ebook readers, podcasts and Twitter.

*IT Tech David @ITTechDavid*

Yes, absolutely. Got dark themes on everything. It's easier on the eye and looks good. Thumbs up from me.

*Jason 'Boz' Bowyer*

Nah, white works for me – has done since Windows 3.11.

*Si Mellor*

I use the dark theme with the Start menu, but I won't consider using it for File Explorer. I'd find it too dark for my eyes.

*Brian Brown*



# ! Page 404

Barry Collins argues Google should be taking Chrome OS to Windows users, not vice versa



## Windows would be better running Chrome OS

**A**s I write, rumours are swirling that high-end Chromebooks will soon provide the option to boot into Windows. It's left me scratching my head so hard that I now have a bald spot.

The whole point of Chromebooks is that they are *not* Windows. No viruses, no half-hour waits while the operating system updates, none of the baggage of the big, unmanageable "hairball", as former Sun Microsystems' chief Scott McNealy used to call it.

Chromebooks offering Windows is like a six-pack of Coca Cola coming with a free can of Pepsi or a macrobiotic burger: it's the thing they're not supposed to be. Is the Pope Catholic? I'm not so sure any more.

In my opinion, Google has got this completely back to front. It shouldn't be adding Windows to Chrome OS, it should be adding Chrome OS to Windows. If you point your web browser in the direction of [www.neverware.com](http://www.neverware.com), you'll come across an operating system called CloudReady – one that's been covered several times in this very magazine. It basically allows you to turn any laptop into a Chromebook, either by dual-booting alongside Windows or running as the laptop's sole operating system.

CloudReady is great for turning an old laptop into a quick-and-easy web terminal. I have it running on an old ThinkPad Carbon X1 that used to be my day-to-day machine. I've just switched it on for the first time in months and I'm browsing within 10 seconds. If that was Windows, it would take 30 seconds to boot and spend the next two hours

“ Chromebooks offering Windows is like a six-pack of Coca Cola coming with a free can of Pepsi ”



downloading the 86 security patches and updates I've missed.

CloudReady is far from perfect, however. It's built on the same open-source operating system as Chrome OS, but it doesn't have some of Chrome OS's proprietary features. You can't play Netflix videos without applying a convoluted workaround, it won't locate you on Google Maps and you can't use screen-sharing functions or Google Hangouts. And unlike some of the fancier Chromebooks, you can't run Android apps from within CloudReady.

Google could solve most – if not all – of these problems at a stroke by making Chrome OS available to install on your own computer. Right now, the only way to get Chrome OS (legally) is to buy a Chromebook, but if it provided a CloudReady-like installer, Windows laptop owners could get the best of both worlds: a lightweight Chrome OS

to use when they want a quick browsing session or to breathe new life into a tired machine; the full-blown Windows when they want to play games, edit some photos or do any of the hundreds of other tasks that require full-fat Windows.

My bet is that this would do more to boost Chromebook sales than bolting Windows onto Chromebooks. I'd imagine a good proportion of dual-booting users would soon realise that they spend most – if not all – of their time in Chrome OS.

The next time they came to replace their laptop, why would they bother with a more expensive Windows machine when they can get all they need from a cheap, easy-to-maintain Chromebook? Especially if the Chromebook offered support for Android apps, which are often much closer to full-blown Windows apps than web apps.

Adding Windows to Chromebooks is like bringing the mountain to Mohammed. Why is Google making life so difficult for itself?

Illustration: Andrew Torrens



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