



WINDOWS 10
HOW TO MAKE YOUR PC
TOTALLY CRASH-PROOF



HACK YOUTUBE
DOWNLOAD, SAVE AND
PLAY ANY ONLINE VIDEO



STOP SPAM
BANISH JUNK MAIL
ONCE AND FOR ALL



Windows Help & Advice

TAKE BACK CONTROL

Stop apps running
on your PC without
your knowledge

57

PAGES OF
STEP-BY-STEP
WINDOWS
GUIDES!

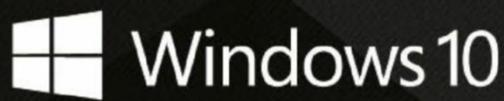
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- ✓ Claim back hard drive space



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Welcome

It seems that no matter what you do, your PC eventually becomes cluttered up with things you don't need, and before you know it it's ground to a halt. So, this issue we've decided it's time to take stock and get your PC back in some sort of order. We'll be showing you how to clear out junk files, remove duplicates, switch to portable apps to lighten the load on your PC and control which apps run and when.

We also have a great guide to upgrading an old PC, starting on

page 62. If you've got an ancient PC sitting unloved somewhere in your house then it could be the time to bring it up to date.

And don't miss our great selection of tutorials in the Explore section, where we cover everything from stopping your PC crashing and getting rid of junk mail to exploring the universe and making the most of your music collection.

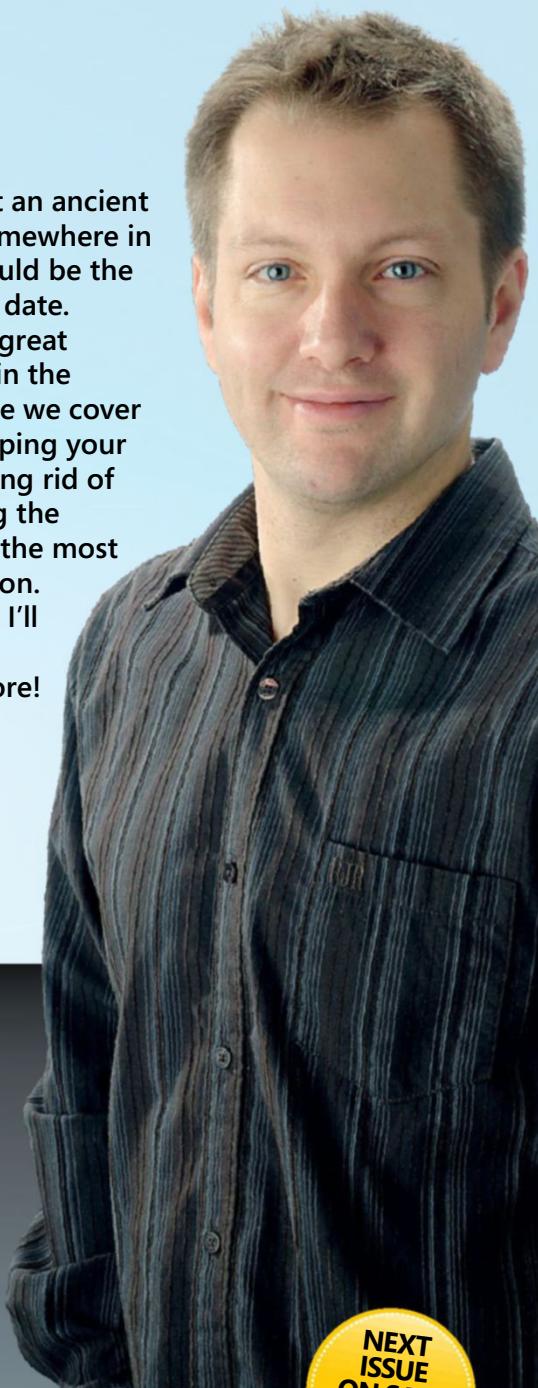
Enjoy the issue, and I'll see you again on the third of March for more!

Graham Barlow Editor-in-Chief
www.facebook.com/windowsmag



SUBSCRIBE TO THE MAG TODAY
AND SAVE – JUST TURN TO PAGE 24!

We pride ourselves in being the only magazine on the shelves to show you exactly how to get the very best from the Windows operating system, whether you're using Windows 10 or Windows 8.1. Also, don't forget to take a look at how you can read the magazine on your laptop, phone or tablet.



NEXT
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3 March
2017

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Windows Help & Advice

FEATURES

14 Spring-clean Windows 10

Pep up your PC with these essential cleaning and optimisation tips

54 Take control of all your apps

Find out how to install, manage and remove programs from your machine

62 Upgrade an ageing PC

Give an old computer a new lease of life with some considered hardware upgrades

REGULARS

8 Discover Razer's incredible 3-screened laptop, the amazing world of audiobooks and the rise and rise of home automation

24 Subscriptions Save up to 46% on print and digital issues

35 Back issues Miss it, miss out! Order previous issues while stocks last

49 Digital issues Get the world's best Windows mag on your phone or tablet

98 Next month Find out what's coming up in the April 2017 issue



EXPLORE

The best PC tutorials



Your guide *Graham Barlow* says...

"If you're looking for better ways to use your home computer, then this is the place to start. We'll show you all the tips and tricks the experts use and more!"

28 Explore distant galaxies with Celestia, the 3D astronomy app

32 Discover the killer features that make Microsoft's Edge such an excellent web surfing tool

36 Find out how to download, edit and convert online videos to create your own remixes

38 Make the most of your digital music collection with MusicBee

42 Free your inbox from spam and junk emails with our guide

46 Stop your PC from crashing: tips, tricks and techniques to identify problems – and fix them

50 How to import, organise and rename your smartphone photos in Windows 10



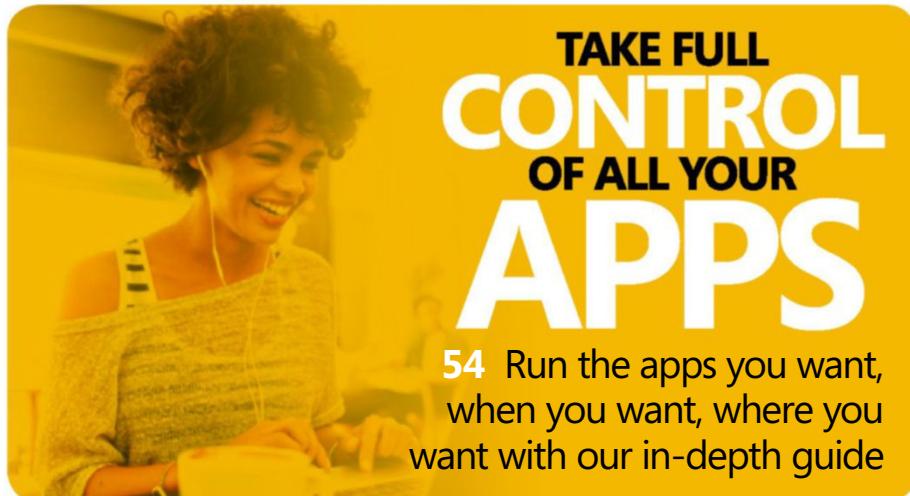
SUPPORT

72 Four pages of expert advice for all your tricky technical queries

A collage of Windows Help & Advice promotional materials. It includes a large horizontal banner at the top with the Windows logo and the text "Windows Help & Advice". Below the banner are several smaller versions of the same banner, each displayed on different devices: a smartphone, a tablet, and a laptop. All the devices show the "Deep Clean" logo prominently. The background of the collage features a blue and white abstract pattern.

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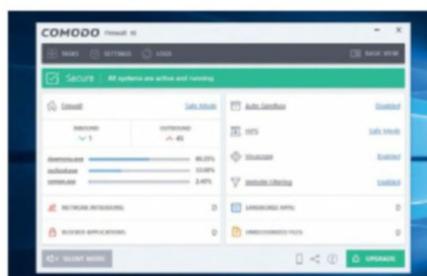
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UPGRADE

85 Our expert reviews

- 86 Dell XPS 13 9365 2-in-1
 - 88 Libratone Q Adapt On-Ear
 - 90 Fitbit Charge 2
 - 92 Laptop backpacks mini test
 - 95 Firewall apps group test



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Audiobooks aren't a new thing. A couple of decades ago, you may well have picked up a few from your local library, enjoying unabridged stories via massive boxes of cassette tapes or, latterly, CDs. But recent developments have made the joy of reading without actually reading more accessible and convenient than ever before, and the quality has grown along with the market.

Audiobooks are now often read by their authors, by renowned voiceover experts, or by celebrities. And there's an absolutely huge range available, in formats that suit most players. Navigating audiobooks – jumping between chapters, winding back to repeat a part you've missed, or even listening at a faster-than-usual speed – is very easy.

The main distributor of audiobooks is Audible, owned by Amazon, which has over 200,000 different titles to choose from. It offers a variety of ways to get hold of listening material – from dedicated apps for Windows, iOS and Android devices to listening on your

PC via its cloud player. Audible audiobooks are also available on a wide range of other services, and will work on most devices, including MP3 players, despite the company's use of a proprietary audio format.

You can subscribe to Audible for £7.99 per month, which gets you a monthly download credit for a book of your choice. Or you can buy titles outright. Unfortunately, this isn't always a cheap option – A Game Of Thrones, for example, is over 33 hours long, but costs

£26.99, compared to £4 for the paperback on Amazon. Luckily, there's a 30-day free trial, too: sign up, and you get that first credit and an

audiobook to keep whether you end up taking out a monthly subscription or not.

Audible isn't the only option though. Check out your local library service; it's possible, indeed likely, that they'll also offer their own audiobook rental scheme. It's just like the old days, except in a digital format – you may have to work with some odd formats and limited rentals, but you could enjoy the latest audiobooks without paying a penny.

You could enjoy the latest audiobooks without paying a penny

LAPTOP MADNESS Three times the screens

Never let it be said that hardware makers are content to rest on their laurels. Razer, which makes some of the most powerful (and expensive) portable machines in the world, recently outdid itself with its Project Valerie concept laptop, which totes three individual screens. It's just a concept for now – the company is looking to gauge public interest – and unlikely to be something you'd want to carry around. But it's an interesting look at the potential future of laptop PCs.



PIXEL PERFECT Each panel runs at 4K – of course – for a combined 11520 x 2160 resolution



TRIPLE VISION The left and right screens use a custom deployment system, which enables them to glide into place in a matter of seconds



POWER INSIDE Project Valerie is more than equipped internally for gaming and serious work

The Knowledge... + | ▶



Lego Boost

What's this?

Revealed at this year's CES in Las Vegas, Boost (www.lego.com/en-gb/boost) is Lego's newest robotics project, which brings the joy of building functional automatons to block-obsessed youngsters, complete with bright colours and easy-to-follow instructions.

What about Mindstorms?

Ah, well. That's not going away, as far as we can tell. Lego's big-boy robot system is made for use with its advanced Technics range of components, and this isn't quite at the same sort of level. Lego Boost is more of a playful way to build robots that interact in both directions, and is aimed towards a younger crowd.

And what about WeDo?

Wow, you know your Lego. Yes, Lego revealed WeDo 2.0, which is focused on primary education and includes all the appropriate curriculum resources to go with it, at last year's CES (www.ces.tech). It's only just coming to market now. Since WeDo 2.0 only recently launched, and is obviously configured for a very specific audience, we can't see WeDo becoming WeDon't any time soon and, again, Boost is a slightly different thing.

How so?

Lego's goal with the Boost system isn't to directly teach kids at all, but to have them learn by doing – much like non-robotic Lego does, in fact. It's meant to feel like a toy. There's a central driving block, motors and sensors that either come with or can be added on to the standard kits, and it's all controlled and programmed via a jigsaw puzzle-like drag-and-drop interface on a tablet. There are even instructions to build something called the Autobuilder, a machine that kids can code to create Lego constructions for them.

What's the damage?

You'll have to wait a little while – Lego won't be making its Boost kit available until August 2017, at a US price of \$189.99 – that's roughly £156. If you want to get hold of a WeDo kit for your kids now, check education.lego.com – prices there start from around £99.

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Everyone's talking about

Smart home technology

Amazon Alexa and Google Home are offering new ways to control your devices – using the power of your voice alone

Virtual personal assistants are taking the world by storm. Whether it's Apple's Siri, Microsoft's Cortana, or the Google Assistant, these conversational robots can and will do just about everything you ask of them. But one 'bot seems to be rising above the others: Amazon's Alexa, which can be found within its Echo and Echo Dot devices. And for good reason: Alexa's willingness to interact with other controllable devices in your home is second to none.

Take the Philips Hue lighting system, for example. Pick up a few bulbs and a controller (a starter kit will set you back around £150) and you can ask Alexa to dim the lights, turn them off, or take more granular control, all without having to touch an app. A smart thermostat like the Hive from British Gas can be told to turn the heat up or down in a flash, or plug any electrical device into a Belkin WeMo Switch (£50) and you can control it with your voice.

Everything connects

These are just the tip of the iceberg, too. A gadget called the Automatic plugs into your

car's diagnostic socket, and you could use it to (for instance) ask Alexa how much petrol is in your tank before setting off for work. You can then open your garage door with the Garageio gadget, whip up a quick breakfast (with full nutritional information) using the Alexa-connected Orange Chef smart scales, arm your Scout DIY Home Security System, and head out the door.

Compatibility with Alexa and competing format Google Home is only going to increase as time goes on – indeed, Amazon

has already invested \$100 million in the companies behind these and other smart products to increase compatibility, and the choice of controller is growing, too. Lenovo, for example, has recently revealed a tastefully-designed Alexa-compatible device, the Smart Assistant, while LG's Echo-like SmartThinQ

hub (launched at CES) also includes Alexa support. Of course, neither Amazon or Google – now firmly locked in competition – are unlikely to be shy about licensing their home automation technology to new manufacturers in the future. Let's just hope your house doesn't go all HAL 9000...



Download this... + | ▶

Radio Garden

<http://radio.garden>

Despite its age, radio remains both widely used and endlessly fascinating. If you're looking to listen to something new, try Radio Garden's literally global selection of stations – drag the map to aim the crosshairs at a station, and it'll start playing straight away.

Developed in co-ordination with the Netherlands Institute for Sound and Vision, Radio Garden's 3D interface is a great way to explore the sounds and language of the world – if you've ever wondered what's popular on the airwaves in Russia, Iceland or Australia, it's never been easier to find out.

Find the right spot and you can even tune in to police or fire frequencies. Radio Garden also includes a few historical broadcasts, an archive of station jingles, and stories from people who've been touched or affected by radio in some way. There's no player to download, no ads, and no awkward interface – just good old-fashioned radio.



LISTEN UP Global radio at the click of a mouse

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THE 60-SECOND QUIZ

Pens at the ready, your time starts now!

1 In a computer, what does 'CPU' stand for?

- A. Central Processing Unit
- B. Carriage Procession Unit
- C. Computer Performance is Unlimited

2 Which of these is used to control the drive in your computer?

- A. HDDD
- B. DRVA
- C. SATA

3 Your BIOS deals with basic input and...

- A. Output
- B. Overview
- C. Onions

4 The first commercial hard drive from IBM had how much storage?

- A. 375 megabytes
- B. 37.5 megabytes
- C. 3.75 megabytes

5 Where might you find IPS technology?

- A. You car
- B. Your monitor
- C. Your fridge

6 What does the 'G' in 'GPU' represent?

- A. Graphics
- B. Government
- C. General

Answers 1A, 2C, 3A, 4C, 5B, 6A

NEXT ISSUE ON SALE

March

3

Friday

Facts & figures

Graham Barlow reveals a host of fascinating digital facts

400lbs

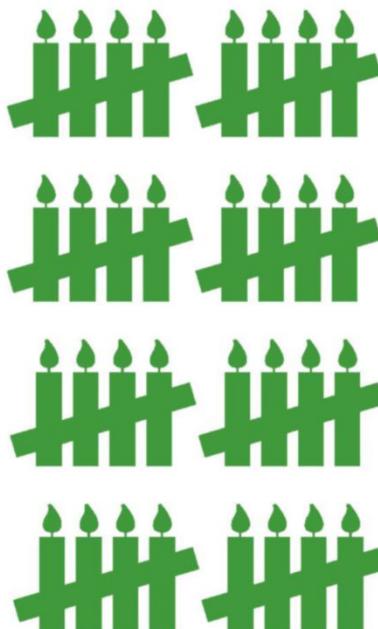
During the presidential debates, US President Trump famously said that the people behind hacking attacks "could also be lots of other people. It also could be somebody sitting on their bed that weighs 400 pounds, OK?". Check out his tweets at <https://twitter.com/realDonaldTrump>

34

The number of office staff made redundant by Japanese insurance firm Fukoku Mutual Life, which is replacing them with IBM's artificial intelligence system, Watson Explorer AI. The system will automatically calculate payouts to policy holders. The firm expects to save about £1 million a year after it's been installed.



In 2017, Kaby Lake became the 7th generation Core CPU from Intel. It's the next new processor to look out for, taking over from the Broadwell and Skylake series. It's out now for laptops and desktops and supports USB-C Gen 2, enabling bandwidth of 10Gbps.



1,500 & 2,000

Is the number of nits (one nit is equivalent to the light of one candle) the new QLED 4K TV from Samsung can achieve. The 75-inch TV uses quantum dot technology – tiny particles that emit different colours of light – and is designed to look like a painting, so it displays art when it's not in use.



>> Incoming

The hottest new Windows hardware on the horizon



Alienware 13

From £1,749, dell.com

If the best things come in small packages, then the Alienware 13 is mighty fine indeed. That's because it packs in all kinds of bleeding-edge technology that gamers love, wrapped up in an incredibly compact 13-inch laptop that's as powerful as it is small.

For the Alienware 13 not only features the same OLED display technology used in smartphones to deliver bright, colourful crystal clear images, but also sports an Nvidia GeForce GTX 1060 graphics card with 6GB of VRAM, making it ideal for AAA titles and Virtual Reality gaming. You can even hook it up to an external monitor to game in 4K Ultra HD glory.

The Alienware 13 is also future-proof. Team it with Alienware's Graphics Amplifier and you'll be able to take advantage of even greater graphical grunt by inserting a desktop graphics card, such as the Nvidia GeForce GTX 1080 or even a Titan X.

Throw in a 512GB SSD drive, Intel Core i5 processor and 802.11ac Wi-Fi and you have a machine that can handle almost anything you throw at it – and then some.

DEEP CLEAN

YOUR PC TODAY



Spring is here and so it's time to take a virtual vacuum to your PC. Every year it's the same story: despite your best intentions, you rapidly lose control of what goes on to your PC, as programs are installed then forgotten about, while gigabytes of files – from documents to pictures and video – are copied multiple times to different places, clogging up your hard drives. The result? A PC that's slow to start, performs sluggishly and is rapidly approaching the limits of its storage capacity.

That's where we come in. In this feature we're going to reveal the tips and tricks you need to clean up your PC. We've split the feature into three sections, allowing you to take your cleaning as far as you

wish. Pushed for time? Our light clean focuses on the quick and easy ways to clean out space using only those tools provided by Windows itself. Feeling braver? We'll introduce tools that go further than Windows does, and tackle the problem of duplicate files, helping you to preserve the essentials while freeing gigabytes of space in the process.

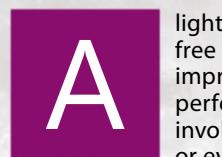
And if you're still not satisfied, try our deep clean, which shows how you can better balance the competing demands of your PC's resources, strip back unnecessary Services and optimise older drives so they perform that bit quicker.

The end is a revitalised PC, one that more closely resembles the lean, mean speed machine you bought, ready and able to face the challenges you'll be throwing at it in the next 12 months.



A light spring clean

Discover how much space and resources you can reclaim armed with nothing more than Windows 10's built-in tools



light spring clean can free up drive space and improve your PC's performance without involving any hard work or even third-party tools.

Your first step should be to check that your storage drive is in good working order. Right-click the Start button and choose Command Prompt (Admin). Then in the command prompt window, type the following and hit [Enter]:

`$ chkdsk /f /r c:`

You'll be told the drive can't be locked (because it's in use), so press [Y] and then when you next restart, Windows will perform a complete check of your hard drive, attempting to correct any errors it comes across. If it finds and fixes any, you may get a speed boost. Repeat for any other drives you have attached – if you get a warning about forcing a dismount, we suggest hitting [N], then hitting [Y] to run the check when you next reboot. Once your drives check out, it's time to begin cleaning.

Remove unwanted apps

Now's the time to go through all the programs and Microsoft Store apps you have installed, cleaning out those you no longer need or use. To do this, click Start > Settings. Select System followed by 'Apps & features'. All installed apps and programs are listed alphabetically – you can, however, sort by size or installation date. Go through the list,

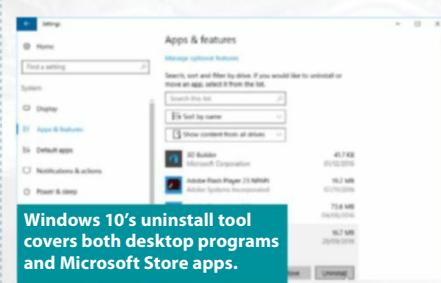


clicking any programs you no longer need then use Uninstall to remove them. Some uninstallers will leave Registry entries and program files behind – for a more thorough way to remove programs, see page 18.

Perform a disk clean

Open File Explorer and select 'This PC' from the left pane to reveal a list of all your hard drives. Right-click your C drive (or the drive Windows is installed on) and choose Properties, then click the Disk Clean-up button. The step-by-step

guide reveals how the tool works – it enables you to quickly clear up all kinds of detritus, from the contents of



Manage backups

Hopefully you are making good use of either File History or Windows Backup to ensure that your critical files are kept safe and sound. Both methods store multiple versions of your backups, giving you the option of rolling back the changes you have made to individual files should you wish to roll back to an earlier version at any point.

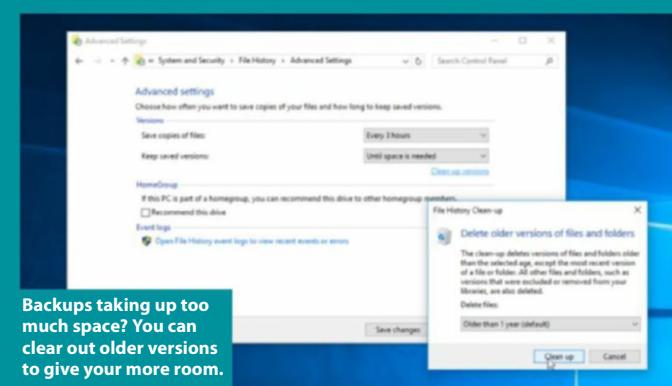
This protection comes with its own price, however, namely increased consumption of drive space. If you're starting to feel the squeeze, you can reclaim some much-needed breathing room by removing the oldest backups. Right-click the Start button and choose Control

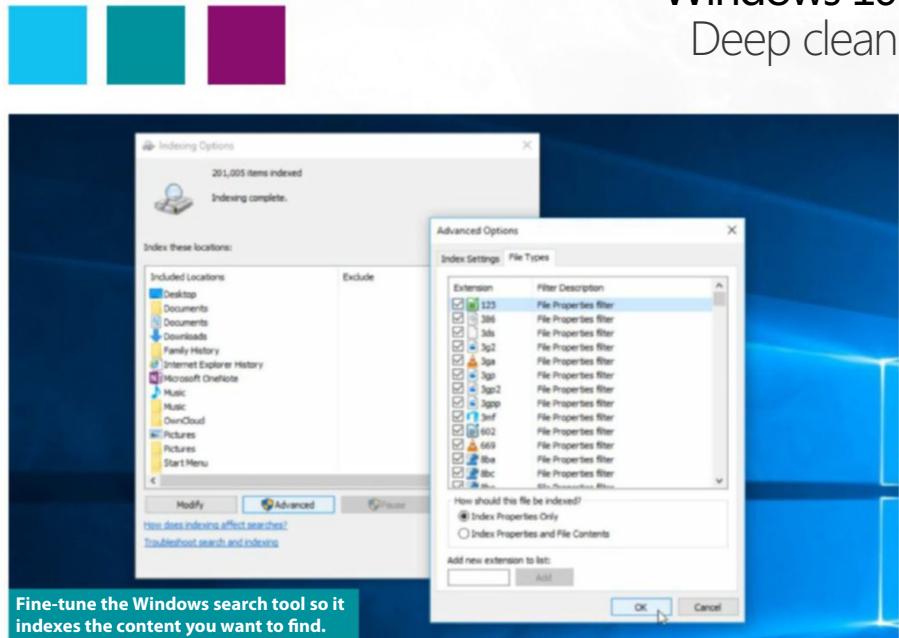
Panel. If you use File History click "Save backup copies of your files with File History", then click 'Advanced settings'. From here you can change the frequency of your backups (to reduce drive consumption going forward), plus set a time limit for how long backups are kept ('Until space is needed' is the safe option, but you can specify your own time). Click 'Clean up versions' to quickly clear out space by choosing what backups to delete (anything from all but the most recent version up to those backups older than two years).

If you use the Windows Backup tool, select 'Back up

and Restore (Windows 7)' and click 'Manage space' followed by 'View backups...' to manually select which backups to remove. Remember that

older backups may contain files you've subsequently deleted, so be sure you've not mislaid any critical old files before cleaning up.





temporary folders to system error logs
and older System Restore points.

It's worth taking pause before simply deleting everything Windows suggests. For example, if you've just upgraded to a new version of Windows, you should find a 'Previous Windows installation(s)' entry offering tens of gigabytes of data for freeing up – don't select this until you're happy you won't be rolling back to that previous version (note Windows will usually delete these files after a set time anyway – typically 30 days).

Recently installed a new driver and not sure if it's causing you problems? Don't touch 'Device driver packages', otherwise you'll lose the 'Roll back' option in Device Manager. Finally, if you're in the middle of troubleshooting a problem using a tool like WhoCrashed (www.resplendence.com), deleting the 'System error memory dump files' is not recommended until you have finished fixing your problem. To cut a long story short, make sure that you read the description of each setting before

“One big PC performance bottleneck is the amount of processes and programs running in the background”

choosing whether or not to delete it. If in doubt, leave it where it is for now.

Trim start-up items

WIN START UPS

One big PC performance bottleneck is the amount of processes and programs running in the background. We look at more extreme ways of bringing these under control later, but for now the most effective way to give your PC a shot in the arm is to review – and clean out if necessary – the programs that are set to start with your PC.

Right-click the taskbar and choose Task Manager. Click 'More details' if necessary, then switch to the Start-up tab. You'll see a list of programs set to load with Windows, complete with

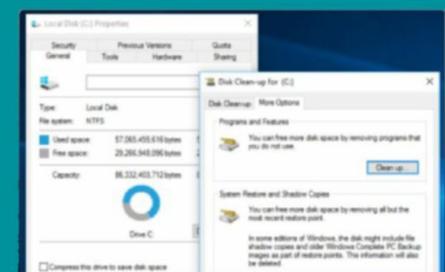
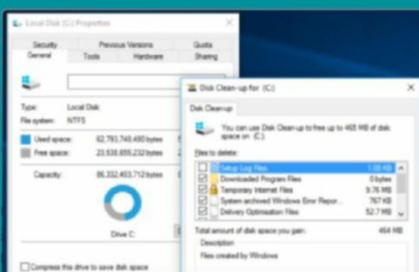
recognise an entry? Right-click it and choose 'Search online' to search the web for the underlying filename. Disabled entries can be restored later, but if you would like to remove them, explore the program's settings or preferences for an option to do so.

More clean-up tweaks

One way to improve performance is to take control of the Windows search index. It normally speeds up searches on frequently accessed folders by scanning them for content and storing them in a database, but you can manage its settings. Type 'indexing' into the Search box and select 'Change how Windows searches'. Click Modify to choose which folders get indexed, or select Advanced to change the index location or switch to the File Types tab to choose exactly which kinds of file you want to include.

If you're left feeling dissatisfied by your light spring clean, turn the page to dig deeper and really start to clear out your PC's clutter.

Free up drive space with Disk Cleanup



1 Do a full scan

The first time that you run Disk Cleanup you'll be prompted to wait while it analyses selected parts of your system. When the scan completes you'll be shown an amount of disk space you can gain. For a more thorough scan, click the 'Clean up system files' button and wait while the scan repeats and completes.

2 Review scan items

2 You should now find Windows has found lots more free space it can clear. Review each item by highlighting it for a description. You can tick or untick boxes to add or remove items to be cleaned – you should see the space gained figure adjust accordingly. Ready to start cleaning? Click OK > Delete Files.

3 Final clean

5 If you have System Restore enabled, you can launch Disk Cleanup again and click 'Clean up system files' for a second time. Switch to the 'More Items' tab and quickly wipe all but the most recent Restore points by clicking the relevant 'Clean-up' button after reading the warnings that appear.

A medium spring clean

Need to free up more space and resources? Armed with the right third-party tools you can give Windows a more thorough clean

N

ow we're going to show you how to take your cleaning efforts further using free third-party tools. As always, caution should be your keyword.

While cleaning out gigabytes of data is satisfying, it soon loses its allure if you have been too hasty and discover that program shortcuts have been removed.

Remove apps thoroughly

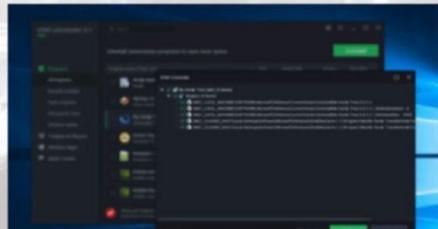
One big issue with standard uninstallers is that they tend to be conservative, leaving detritus behind. While you could use a Registry cleaner, the best time to tidy up is when you remove a program.

Our tool of choice is IObit Uninstaller (www.iobit.com/en/advanceduninstaller.php), which offers to do a "powerful scan" after a standard app uninstaller has finished. This roots out leftover files and Registry entries, which you can then decide whether or not to keep.

During installation, look out for any prompts to install Advanced SystemCare Free – it's from the IObit stable, so safe, but not needed for this feature. Once done, Uninstaller will launch and you'll see a list of programs, along with a number of options – 'All Programs', etc., which will appear in the left pane.

You'll see a bin button appear on the right of each entry – click this and the program in question will be uninstalled. IObit Uninstaller offers to take a System Restore point before uninstalling, which we recommend. It'll then invoke the program's own uninstaller – ignore any prompts to reboot at this point – and then perform its own scan. This roots out potential leftovers in the forms of files and Registry entries – you review the list and decide what to remove. Then you can reboot if necessary.

To remove programs in batches, tick each program you want to get rid of, then click Uninstall. The Programs list focuses on desktop programs only, so select Windows Apps to get a list of



IObit Uninstaller provides you with a powerful scan tool for removing extra leftover elements.

The screenshot shows the CCleaner Free interface. On the left, there's a sidebar with icons for Cleaner, Registry, Tools, and Options. The main area has a title bar 'CCleaner Free v5.25.5902 (64-bit)' and a status bar 'Windows 10 Pro 64-bit Intel Core i5-4460 CPU @ 3.00GHz, 16.0GB RAM, Intel HD Graphics 4600'. Below the title bar, a message says 'These programs are set to run when your computer starts'. The main window has three tabs: 'Windows' (selected), 'Scheduled Tasks', and 'Context Menu'. Under 'Windows', there's a table with columns: Enabled, Key, Program, Publisher, and File. A row for 'DropboxExt' is selected. To the right of the table are buttons for 'Enable', 'Disable', and 'Delete'. At the bottom of the table, there are buttons for 'Save to text file...' and 'Check for updates'.

Use CCleaner to strip back your context menus to make them more manageable.

apps you've installed through the Microsoft Store. You can remove these in a similar fashion. Select 'Toolbars & Plug-ins' to quickly review the browser add-ons you've installed and remove any you don't want or need.

Clean more settings

One of the best free clean-up tools is CCleaner (www.piriform.com). Once installed, the app boasts a number of tools to help you free up drive space. Its main cleaning component searches more than just basic Windows settings, but includes browser settings, and popular programs and apps too. It's tempting to click Analyse and clean out everything it recommends, but you'll end up losing potentially useful settings. The step-by-step guide opposite reveals how to free up space without deleting those files you didn't know you needed.

Outside its primary cleaning element, CCleaner offers seven more clean-up tools, although we recommend that you skip its Registry cleaning component.

Its Startup tool, for example, provides you with a more comprehensive list of programs and items that launch with Windows. This is split into three tabs: Windows, which contains a list of programs, organised by location; Scheduled Tasks, which enables you to review which tasks both Windows and other apps have set up; and Advanced, which details various Windows-related tasks. You should leave these alone, so leave the box unticked after viewing it.

One final tab, Context Menu, is worth exploring. Frustrated at how programs

clutter up the menus that appear when you right-click items in File Explorer? You'll find these items here, referencing Directory (when you right-click a folder), Drive and File (when you right-click a specific file type). Again, disable or delete those you don't want – if they come back, examine the offending program's own preferences or settings to see if you can disable them from there, or use its intransigence as an excuse to remove the app completely.

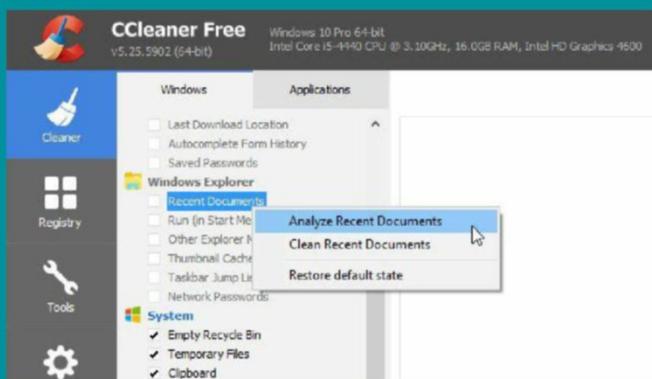
More tweaks

The Browser Plugins tab works in a similar way to IObit Uninstaller's. Skip Disk Analyzer and Duplicate Finder tools for now – we'll look at these overleaf.

System Restore lets you view all the Restore points on your PC. Each one is labelled and you're able to remove them individually or in groups (hold [Ctrl] as you click each one to select it) without affecting other Restore points. The most recent Restore point is always greyed out for safety reasons.

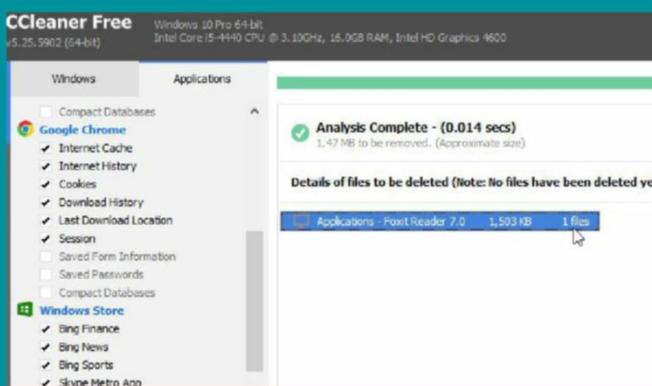
The final tool – Driver Wiper – makes it possible to wipe free space or an entire drive securely. This is a slow process, and should only be followed when you have sensitive data to wipe. You can also wipe free space and mark non-deleted files and folders for secure removal from CCleaner's main Cleaner component – scroll down to the bottom of the Windows tab and tick each box. If you'd like CCleaner to securely wipe all files from its cleaner tool, go to Options > Settings and select 'Secure file deletion (Slower)'.

Clean out your system with CCleaner



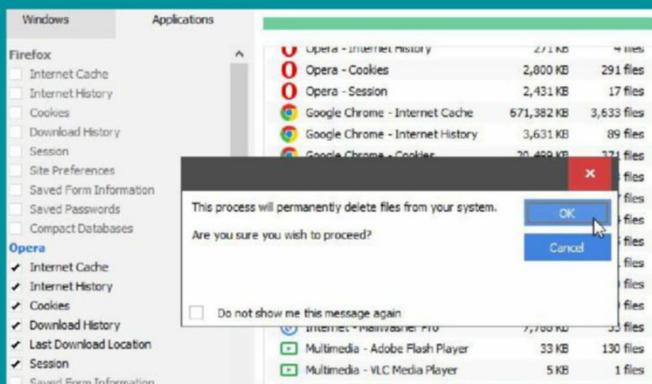
1 Choose what to scan

CCleaner's Cleaner component comes with certain settings pre-selected. It's a good idea to review these thoroughly, unticking those you don't want to lose, and ticking those settings you'd like to clean. Unsure about what files a particular setting might delete? Right-click it and choose 'Analyze...'.



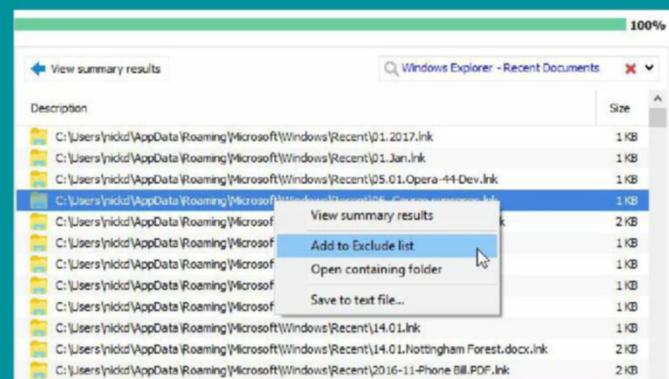
3 Continue checking

Scroll down to view all Windows settings – remember, if in doubt, either perform an analysis on the specific setting or untick it to exclude it from the full scan. When done, switch to the Applications tab to see which programs are supported. Again, scan these in the same way, unticking those you wish to leave.



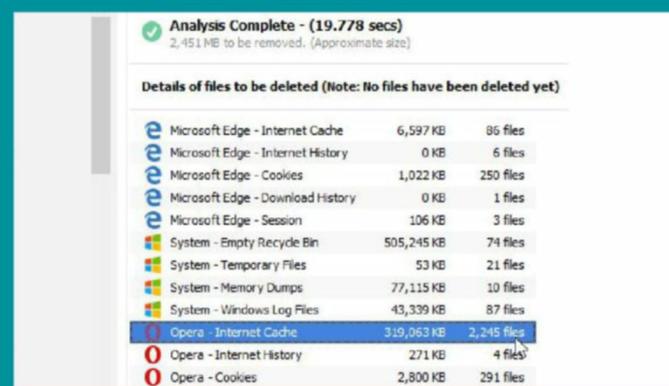
5 Clean up your PC

Ready? Click the Run Cleaner button. A warning dialogue will pop up – this is your last chance to back out (this is because files are deleted, rather than being sent to the Recycle Bin). If you're happy to proceed, click OK and watch as CCleaner effortlessly clears up gigabytes of drive storage, giving your programs, apps and files much-needed breathing space.



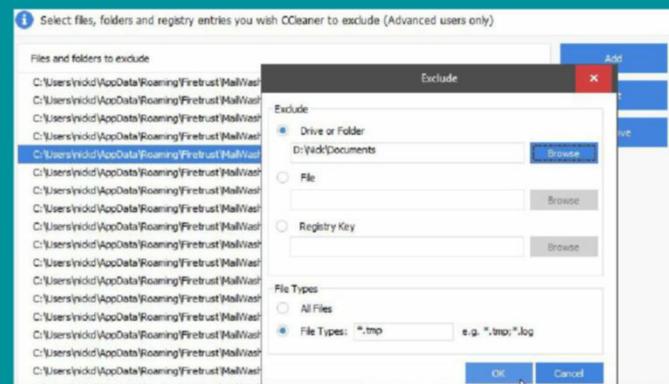
2 Review analysis

CCleaner will perform a limited scan using the chosen settings. To view exactly what it's found, double-click the summary in the right pane (such as 'Microsoft Edge – Download History') and a list of files will be shown. Right-click individual files to exclude them from future scans or open the parent folder.



4 Analyse and clean

Once you're ready, click the Analyze button and wait while CCleaner performs a complete scan. When it's complete, a summary will be shown listing all of the components you've selected, complete with how much space you might save. As before, review individual components by double-clicking them.



6 Manage exclusions

Click Options and select Exclude to review which items are excluded from your scans. You can easily remove files that you've previously placed here ([Ctrl]-click those files to select them, then click Remove), or add additional files, folders, Registry keys (not relevant here) and file types to the list by clicking the Add button to enter their details.

Make your hard drive more manageable

Discover how to bring order back to your chaotic hard drive

Your PC is hopefully now noticeably nippier, but there's still room for improvement. But before we tackle a deep spring clean, let's look at hard drive management. Unless you're very organised, it's likely your filing system is a little haphazard. And if you have multiple hard drives it's likely you have multiple copies of the same files too.

First, see page 21 for some advice on what to look for when finding and removing duplicates. This could save you from deleting the wrong file or files when you come to clean up.

Find duplicates quickly

CCleaner includes a file duplicate finder tool, but it's not very sophisticated. So download and install the free version of Duplicate Cleaner (www.digitalvolcano.co.uk/duplicatecleaner.html) instead.

First, choose what to search for – the default options search files by content. You can also set filters – such as documents, pictures or music – for files to include or exclude, and limit your search to files of a certain size and date. For a system-wide sweep, use the defaults as they are and switch to the Scan Location tab.

Next, elect where to search using the tools provided. If you want to exclude a specific location, add it in the usual way, then right-click it and choose 'Exclude Selected Path(s)'. When you're ready, click the Scan Now button and wait while Duplicate Cleaner does its work

– it's not a quick process, so be prepared to leave your PC on for several hours. If necessary, minimise the scan window while you work on other tasks.

Once complete, you can review the results on the Duplicate Files tab, where they'll be listed in no particular order. Focus on the largest files by clicking the Size column header twice. Go through the list, ticking the duplicates you wish to remove or use the Selection Assistant.

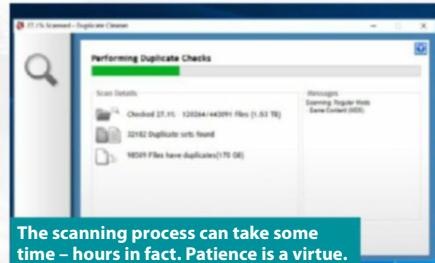
If you have a single folder or location where your original files sit, you can specify that with the 'Select by Location' button, which tells Duplicate Cleaner to target files in other folders for deletion. Once done, you can select all other files by clicking the magic wand button and choosing 'Mark > Select by group > All but one file in each group'.

While using these and other Duplicate Finder tools may be tempting, they may not be accurate enough. Often it's easier, quicker and safer to go through the list by hand, weeding out unwanted files and clicking 'File Removal'. From here you can choose whether to delete a file or send it to the Recycle Bin.

The program can be quite slow and even non-responsive at times. The trick is to be patient. If there's a long list of files to clean, you may want to take a break. Close the program – when you next launch the app, your results will be ready for you to continue processing.

Manage your photos

When it comes to managing photos, we need a tool that can search for similar



looking images as well as identical matches. You'll have to upgrade to the Pro version of Duplicate Cleaner for that, so our favourite alternative is AntiDupl (<http://antidupl.sourceforge.net/english/index.html>). The walkthrough opposite explains the steps you need to follow, but as always it plays to move slowly through each photo in the list, to be sure you've got the right match.

By default, AntiDupl assumes the first folder you added to it is the "master" folder – the one where the files are left untouched. When the search results appear you'll see a preview of each photo on the left complete with basic information confirming the match. Next to each photo you'll see three buttons: taking the first photo, the top-most button will delete both copies, while the second icon will overwrite the second copy with the first. The next button removes the top photo.

Below the two arrow buttons you'll see three similar buttons, with the first one highlighted in red, indicating that the second photo is set to be deleted by default. Below is a button allowing the second copy to overwrite the top one, and the final button – the hand signal – allows you to mark this match as a "mistake", ensuring it'll be ignored.

Click a button and the desired action is performed now and the next item is selected, ready for you to act on. You'll see similar buttons appear under the menu bar – if you select multiple entries using [Ctrl]-click, you can click these buttons to perform the action on all the matches. There's also a "Process selected results automatically" button which applies it to all the results – this is not something we recommend unless you're working on a small set of results.

As you go down the list you'll come to photos that aren't exact matches, giving you the chance to remove similar items. Deleted photos are sent to the Recycle Bin for safety, but once you're done, be sure to empty it to free up drive space.

What to look for when cleaning up duplicates

TIME TAKEN

60 minutes
(depending on your collection)

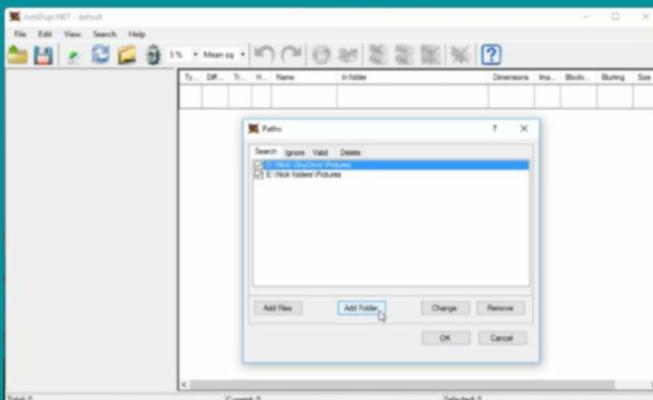
First, backups of critical files are, of course, important, so any file cleaning needs to bear this in mind. Second, you may have renamed a file without changing its content, so a good duplicate finder utility should not simply match files by their names (which could be disastrous if two completely separate files with the same name get linked together), but also by the file's properties too, from its size to the date it was last modified

– that's especially important with digital photos that have been downloaded from different cloud computing providers, with each one naming them differently.

And what about the legions of digital photos cluttering up space on your hard drive? It's not uncommon to take five or more shots to ensure you get one usable one, but what about the rest? You only want to keep the best copy, but manually trawling through all your photos can be a daunting task. Panic ye not, as we're about to show you how the AntiDupl app makes this job that bit simpler.

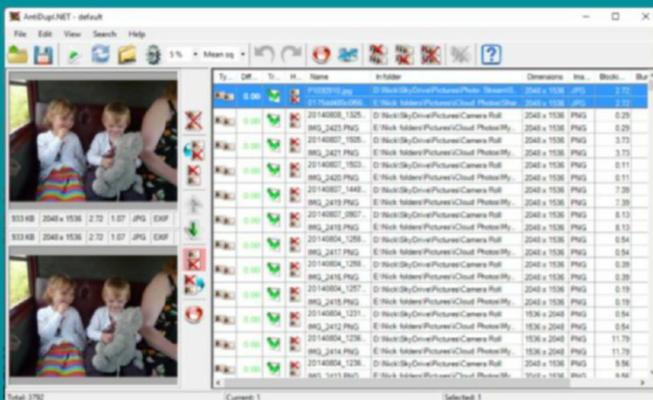
The end result should be this: you have one master copy of your files, plus as many backups as you need. These could be stored as an exact backup copy in one backup folder (which you'll need to identify to make sure it's ignored by the duplicate file finder), or you might have them backed up using a tool such as Windows' own File History, in which case the backup won't be touched by your file weeding. All other copies – or slight variations – are then candidates for removal.

Streamline your photo collection



1 Set search parameters

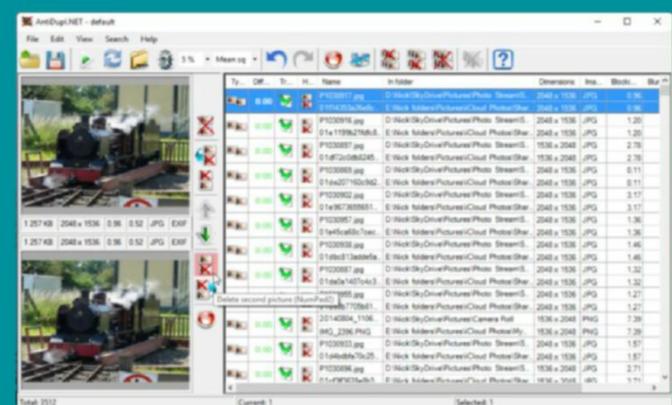
In AntiDupl, go to Search > Options and tick 'Search rotated and mirror image dupls' if you wish. Now select Search > Paths. Click 'Add Folder' to add a folder or drive to search – repeat for as many locations as you need (you can search specific files for duplicates if you want a targeted search). Click OK.



2 Review results

Click the Play button and wait while the folders are searched and compared (click Background Mode to minimise it to the System Tray). When the scan finishes, AntiDupl will pop up listing all found duplicates and similar files. See the main text for advice on choosing what settings to choose for each find.

"The end result should be this: you have one master copy of your files, plus as many backups as you need"



3 Perform cleanup

As you click a button for each result, it'll disappear from the list, and the next item will come into view. Work methodically through the list – you can select multiple items at once using [Ctrl]-click. If you close the program, you can relaunch it later, and the results will be saved, ready for you to resume working.

Perform a heavy duty spring clean

Still need more zip? Then check out these advanced spring cleaning tips...

At last, we reach the final curtain. If your PC still isn't running as smoothly as you'd like, let us take more drastic steps to bring it under control in this last section on cleaning, diving deep to squeeze out every last possible optimisation we can find. We'll also reveal some final tips for optimising drive space to ensure your hard drive doesn't fill up too quickly going forward.

First, you'll notice we haven't included Registry cleaning as part of this feature. Registry cleaners would like you to think they can perform minor miracles when

it comes to performance. They can't. Even if they weren't justifiably shunned for their ability to delete critical Registry entries along with genuinely redundant ones, the act of simply deleting Registry entries isn't enough in itself to speed things up. The fact is, Windows 10 is more than capable of managing and optimising the Registry, so your best bet is to leave it well alone.

Defrag your drive

These days, many of us have SSD drives, which don't require defragmenting (or defragging). Older platter-based (HDD) drives do, however, and it's likely that



The screenshot shows the Process Lasso interface. At the top, there's a graph titled 'ProBalance User' showing '7 ProBalance Restraints. 7 Today'. Below the graph, the main window displays a list of processes with their names, roles, and current status (Normal or High). A sidebar on the left shows a tree view of 'Restrained history' and a 'Restrain' button. On the right, there's a 'ProBalance Insights' section and a 'Restrain' button. At the bottom, there's a log of recent actions and a summary of total restraints.

Use the Process Lasso app to rein in overzealous processes and keep your PC running smoothly.

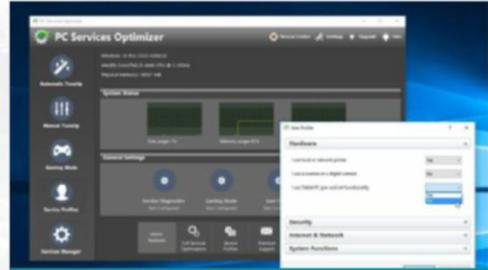
Rein in unruly programs

The act of running multiple programs (never mind numerous background processes) is a delicate one, requiring a finely balanced system to keep everything running smoothly. It doesn't always work, which is why sometimes your PC may seemingly grind to a halt or act sluggishly for a few minutes.

If you're running Windows 10 on an older PC or low-powered tablet/laptop device, you may find it frequently sticks due to the competing demands of different processes. One solution is to scale back what you do – keep open programs to a minimum and trim startup back too. If this doesn't help, then downloading and installing the Free version of Process Lasso (<https://bitsum.com/processlasso>) will, and can even help on more powerful setups too.

When prompted, leave the default options as they are and the main window will open to show you what's running and how Process Lasso is balancing it. Its ProBalanced tool is up and running from the start, ensuring no process can overwhelm the system with its demands. A summary tells you how it's working, while the app's log reveals which processes have been neutered when their demands get too high (click Insights for a handy summary).

You can also tweak things further: open the Main menu and choose 'SmartTrim' to free up physical RAM when it's safe to do so. Select 'IdleSaver' if you'd like to cut energy usage, and choose 'Gaming mode' for those times when you want to play games or perform other CPU-intensive tasks such as ripping or encoding high definition (HD) video.



PC Services Optimizer provides a neat way to streamline your services with no tech knowhow.

you have at least one of these installed, either internally or attached to your PC via USB. Windows' built in defrag tool should be adequate for most people's needs, but if you want to push the boat out further, download and install the free version of Defraggler (www.piriform.com/defraggler).

Defraggler can differentiate between SSD and HDD drives, so it only defrags the latter. Go to Settings > Options > and select the Defrag tab to optimise your drive by moving larger files to the end of the drive, which can help boost performance. It's also possible to analyse and defrag individual files via the File list tab or by right-clicking the file in File Explorer – this handy for a quick speed boost when working with specific large files.

Manage services

Startup programs aren't the only things launching with Windows, extending your boot time and grabbing resources – system (and third-party) Services do too. Luckily, you can manually review and optimise these via the Services management console (type 'services' into the Search box), but for a quick and easy optimisation, download the free version of PC Services Optimizer from Smart PC Utilities (www.smartpcutilities.com/servicesoptimizer.html).

Once installed, launch the app. After visiting Services Manager – waiting while the services list is populated and clicking 'Backup' – select 'Automatic Tuneup'. You'll now be asked a series of questions, which are split into four categories: Hardware, Security, Internet & Network, and System Functions. Click OK and any unnecessary services will be disabled, providing your PC with a minor speed boost.

Gamers should also check out Gaming Mode. This allows you to temporarily

disable services by switching Gaming Mode on to maximise performance for gaming or a similar processor-intensive tasks such as high definition (HD) video editing. Click Preset and experiment with Minimum, Normal or Maximum settings, or manually tick which settings to apply. Don't be surprised if Windows changes its appearance – when you switch off gaming mode, things should return to normal.

If things appear to go wrong after your tweaks, simply click the Rescue Center button and select your backup to undo your changes.

Visualise drive space

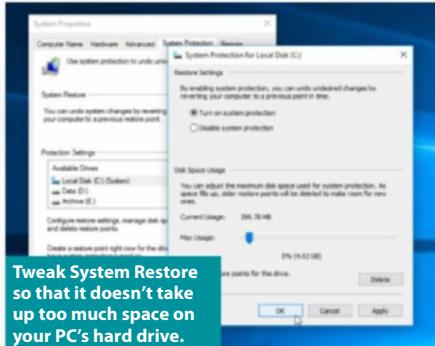
Running out of drive space, but unsure what's gobbling it all up? CCleaner offers a Disk Analyzer under Tools that can provide you with a quick summary for individual or collected drives, split into various categories (such as pictures, documents or everything). When the scan completes, a pie chart divides everything up while the largest files are listed below, complete with a tick box allowing you to select specific files to delete via the right-click menu.

An alternative tool to try is freeware app SpaceSniffer (www.uderzo.it/main_products/space_sniffer/). This portable tool (be sure to right-click it and choose 'Run as administrator' to access all files on the selected drive) provides a visual view based on folder rather than type, giving you insights into where all the space has gone rather than on which types of content are gobbling it up. Click a folder to peer inside it, or double-click to go inside and drill down deeper until you discover what's taking up all your space.

More cleaning tips

Type 'restore point' into the Search box and click 'Create a restore point'. Verify System Restore is switched on – if not, select your system drive and click Configure to do so. When you come to allocate space, consider limiting it to 5GB or 5%, whichever is smallest. This provides a good balance between giving you usable Restore points and not swallowing up too much space on your system drive.

One obvious way to free up space without deleting any files is to compress

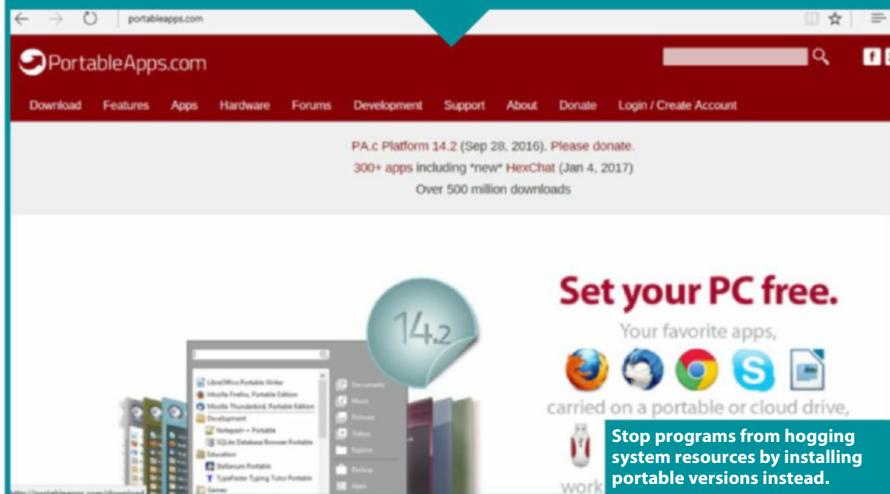


Switch to portable apps

Why let programs take more resources than they need? Instead of installing a program on your PC – letting it scatter itself all over your hard drive and take up valuable space in the Registry – look to see if a portable alternative is available. Portable apps are programs that restrict themselves to a single folder – everything they need to run can be found inside that folder, so not only do you keep them in check (delete the folder, remove the program – completely), you get to choose where they reside too.

Portable apps are a particularly good choice where you have Windows installed on a small system drive – such as a 64GB or even a 32GB SSD. You can store the apps on another drive, and leave enough space for Windows to run smoothly. Not only that, if you have to reinstall Windows from scratch, the portable app (and your settings) survive intact. You can even store portable apps on a USB thumb drive, allowing you to port them – and your preferences – to another computer.

A great place to start for building your own portable app collection is www.portableapps.com. Install the PortableApps Platform tool, which provides a custom Start menu for easy access to your portable app collection, and makes it easy to install and update apps from its own extensive collection. You can add other portable apps – including those portable tools we've covered in this feature – manually by extracting them into folders inside the main PortableApps folder and choosing 'Apps > Refresh App Icons'.



them. One option would be to right-click the file (or folder) and choose Send to > Compressed (zip) folder, but while you can easily browse their contents in File Explorer, third-party apps can't access the content unless you unzip it. Alternatively use NTFS Compression instead, which compresses a selected folder while retaining its content. The resulting folder will be a little slower to process, but is more convenient to use. To do this, right-click the folder and choose Properties. Click Advanced under General and tick 'Compress contents to save disk space'. Remember, though, that this will only work on NTFS-formatted hard drives.

One handy time-saving function are Jump Lists, which appear when you click

'>' next to an application in the Start menu or right-click its taskbar entry. It pays to take the time to manage these thoroughly – click the pin icon next to an entry to pin it permanently to the top of the list, or right-click a redundant entry and choose 'Remove from this list' to get rid of it. You can quickly clear all Jump List entries using CCleaner (look in the Windows Explorer section).

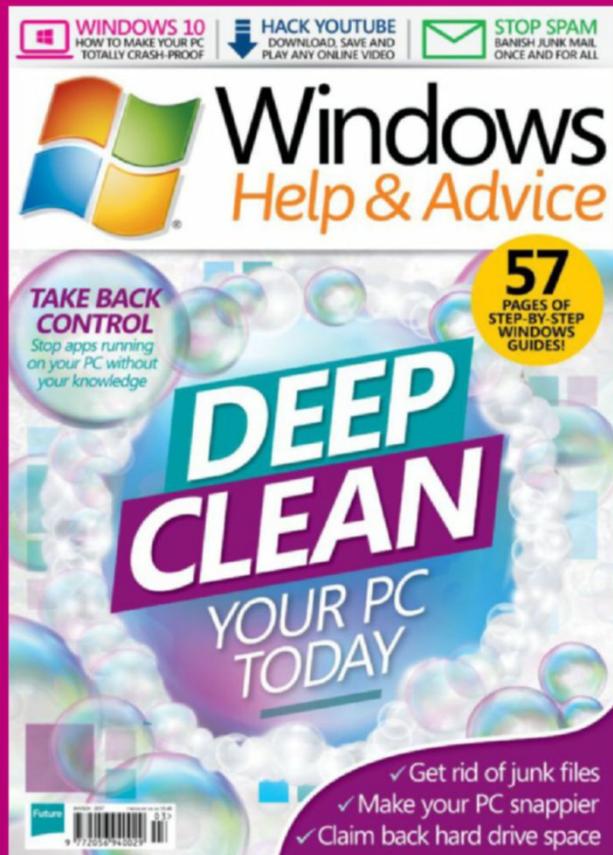
Finally, if you want to take full control of the start-up procedure, try Autoruns (<https://bit.ly/autoruns>). Switch to its Logon tab and you'll find many more startup entries than those provided by Task Manager or CCleaner. Untick an entry to disable it, or right-click it for more options, including deleting it and checking it for possible malware. ■

"Portable apps are a particularly good choice when you have Windows installed on a small system drive"



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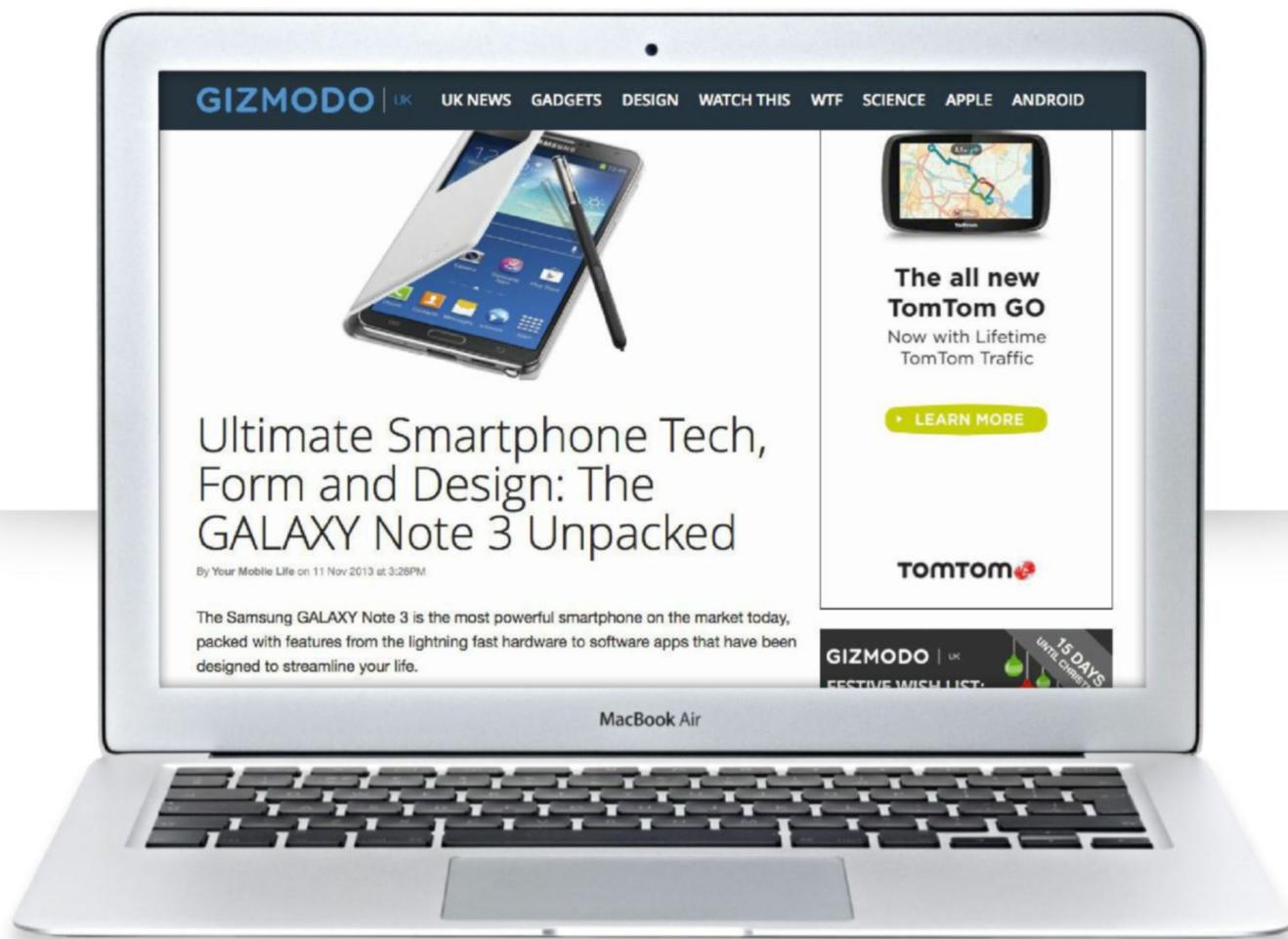
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Explore

► WINDOWS TIPS ► INTERNET ADVICE ► EXCITING NEW PROJECTS

Welcome



In this month's Explore section we're looking at two issues we all have to deal with: one is being deluged with spam and junk emails; and the other is identifying and recovering from PC crashes.

On page 42 we explain the steps that you can take to rid yourself of spam and focus on the messages that matter.

And on page 46 we take on the problem of program and system crashes. We'll help you discover what is causing them in the first place and how you can optimise and maintain your machine so gremlins are less likely to strike in future.

Graham Barlow
Editor-in-chief
graham.barlow@futurenet.com

Full listing...

28 Explore distant galaxies with Celestia, the 3D astronomy app

32 Discover the killer features that make Microsoft's Edge such an excellent web surfing tool

36 Find out how to download, edit and convert online videos to create your own amazing remixes

38 Make the most of your digital music collection with MusicBee

42 Free your inbox from spam and junk emails with our guide

46 Stop your PC from crashing: tips, tricks and techniques to identify problems – and fix them

50 How to import, organise and rename your smartphone photos in Windows 10



Your guide
Nick Odantzis says...
"Discover the wonders of the universe with the brilliant Celestia app"

Turn to page 28 to find out more

Our promise to you...

Get more from Windows, software and all your favourite sites

Packed with informative tutorials

Every issue, we guarantee to pack the magazine with great tutorials teaching you all the best things you can do with your PC. Each article features step-by-step instructions to make learning new skills fast and enjoyable.

Customise Windows to work your way

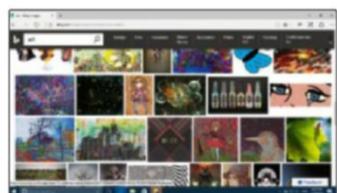
We all know how to do the basics but getting the most from Windows isn't always easy. Our dedication to the operating system means you get the very best tips and tricks for all versions of Windows.

Get more from your favourite websites

We all have our list of favourite sites but often we miss out on great features because they're difficult to use or hidden from sight. We'll show you how to do more online, for a more satisfying web life.

Discover new programs with our help

From speed-up and security software to superb photo apps, there's always something new to try on your PC. The Windows Store in Windows 10 and Windows 8.1 is packed with software to download.



Learn how to...

Travel through time and space



Your guide *Cat Ellis* says...

"Explore the galaxy from the comfort of your desktop with the amazing – and free – Celestia app"

At a glance

Skill level...

► Anyone can do it

Straightforward

Tricky in parts

Suitable for...

Windows 10

Windows 8.1

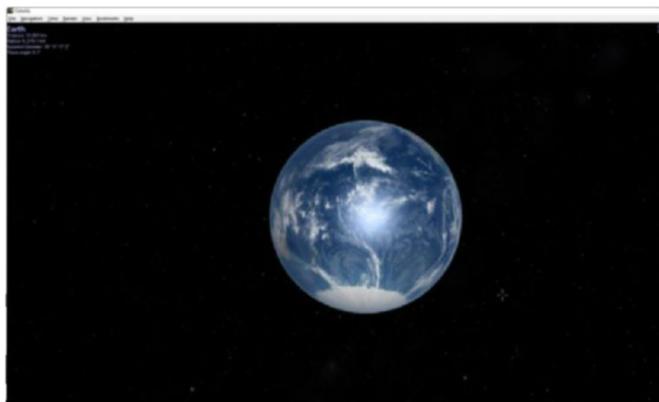
Windows 7

There are a lot of free space exploration apps around, but Celestia (<http://celestia-project.net>) is one of the best. Not only does it let you click your way around the Milky Way with over 100,000 stars to choose from, it also enables you to travel through time to see how objects behave and interact. Whether you want to track an eclipse across the surface of a planet, follow a telescope in orbit, or watch the trajectory of a comet, you're in complete control.

And on the off-chance that you do manage to run out of worlds to explore, Celestia offers a huge range of add-ons, both real and fictional. So if you've always fancied taking a trip to Coruscant, Tatooine or Endor from *Star Wars*, Celestia is the app for you.

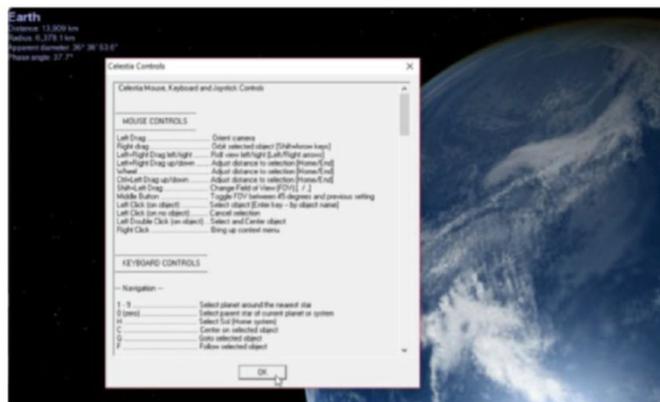
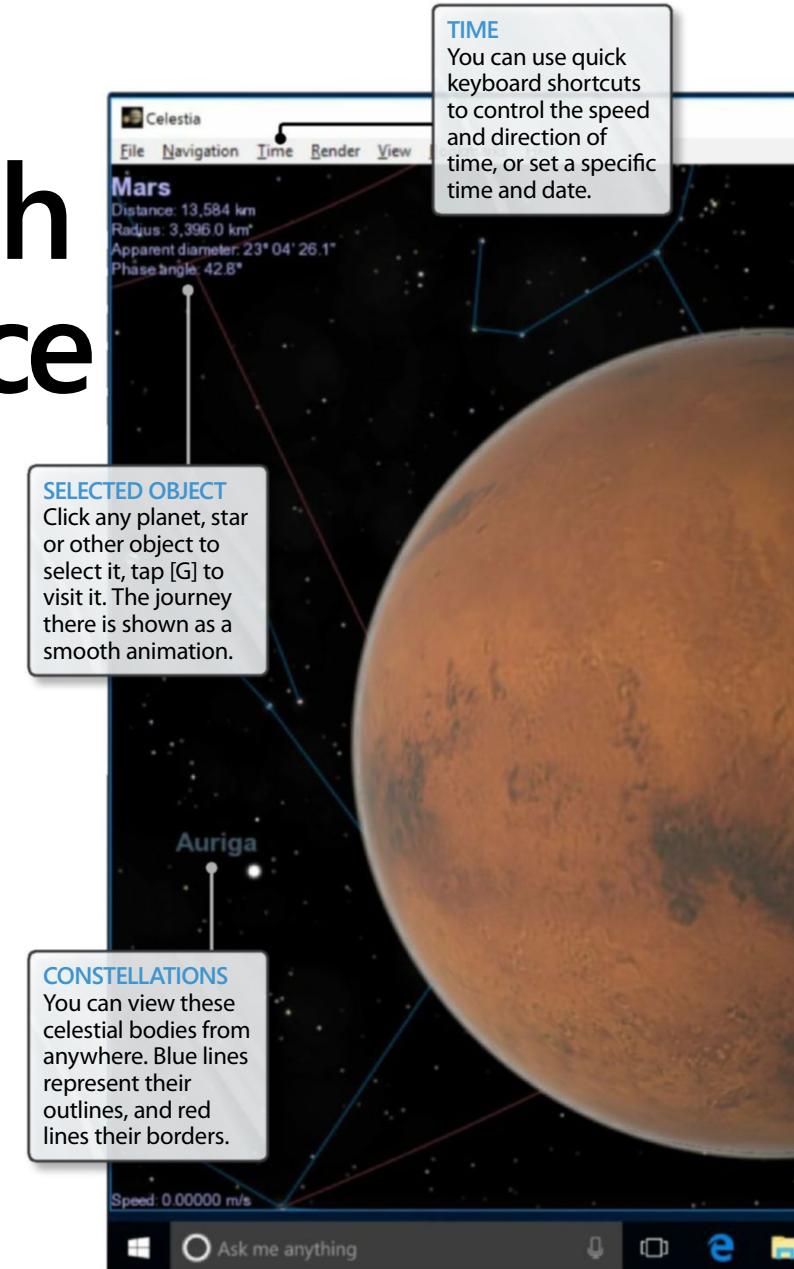
Best of all the app is beautifully realised with stunning 3D animations. Ready for lift-off? Of course you are! Let the countdown begin...

Step-by-step Look up to the skies and see



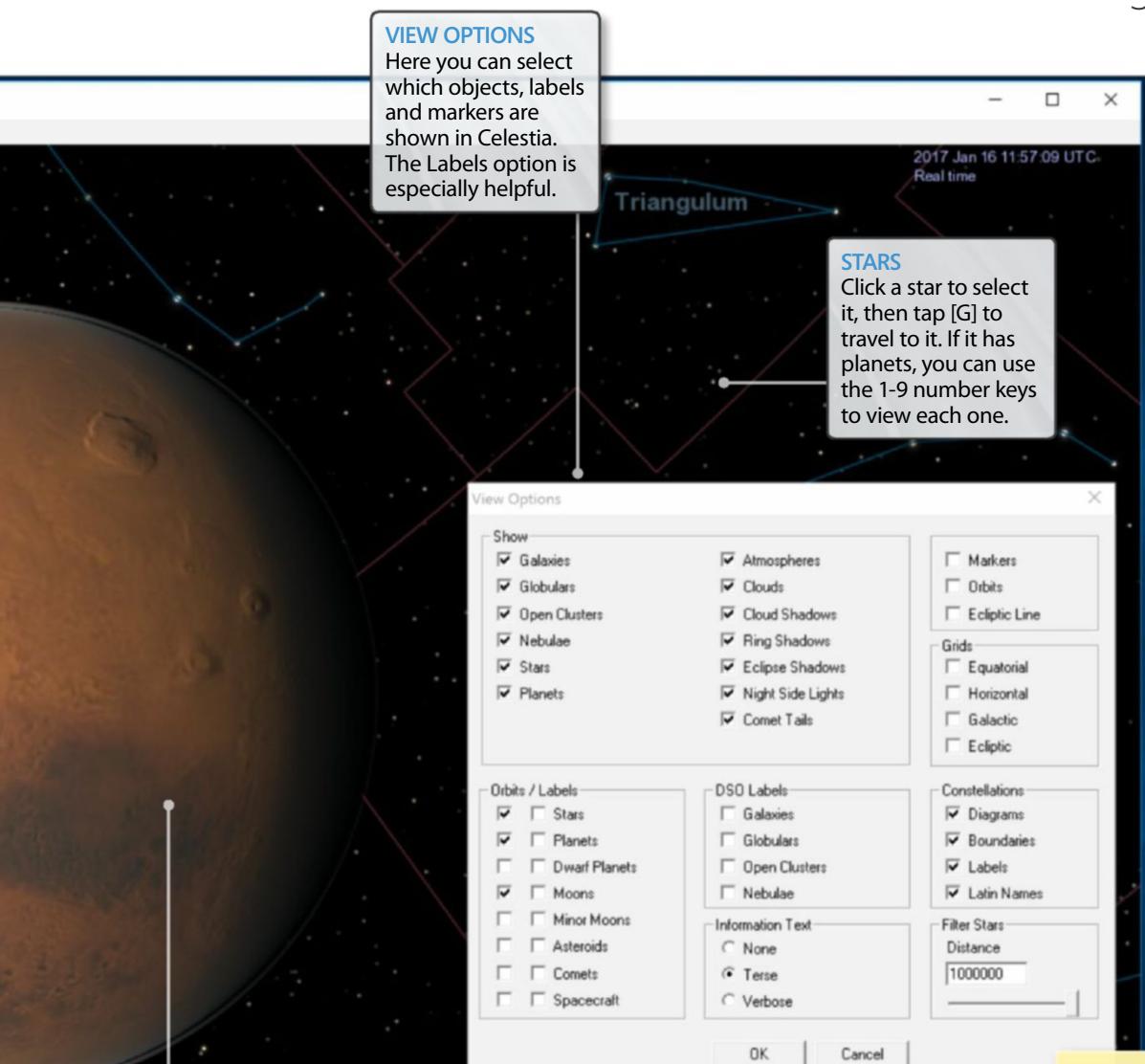
1 Get Celestia

Celestia is available free from <http://bit.ly/2jaDAOv>. Select the file celestia-win32-1.6.1.exe and wait a few moments while it downloads (the file is fairly large). Run the installer and click 'Next' on each step, leaving the default settings as they are. Once it's finished, launch Celestia for the first time and tap [Alt]+[Enter] to access the app's full-screen mode.



2 Learn to navigate

Navigating in Celestia is straightforward. Holding the left mouse button and dragging will move the window horizontally and vertically. Holding both mouse buttons and moving left and right will rotate the selected object, and moving up or down will zoom in or out. Holding the right mouse button and dragging will rotate your view of the object.



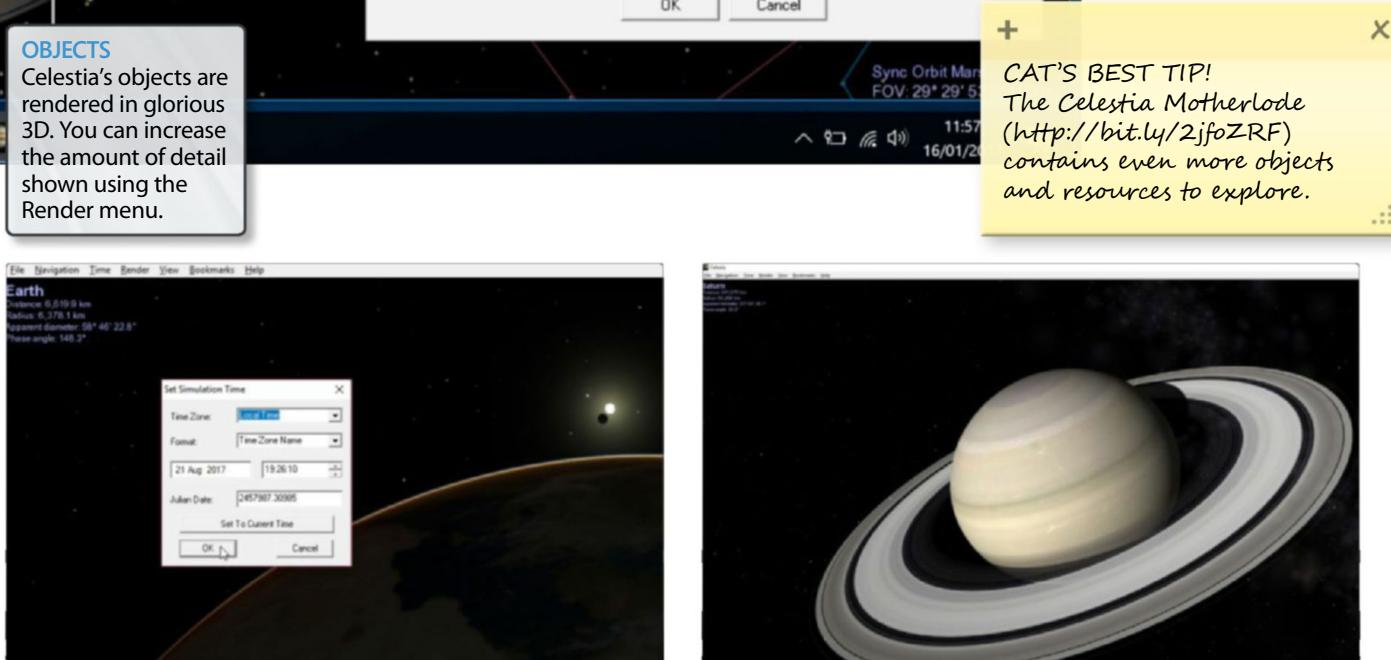
Jargon buster!

► **Strasbourg Astronomical Data Center (CDS)**

An online repository of astronomical information.

► **The Celestia Motherlode**

Archive of add-ons for Celestia, which includes new 3D models and textures.

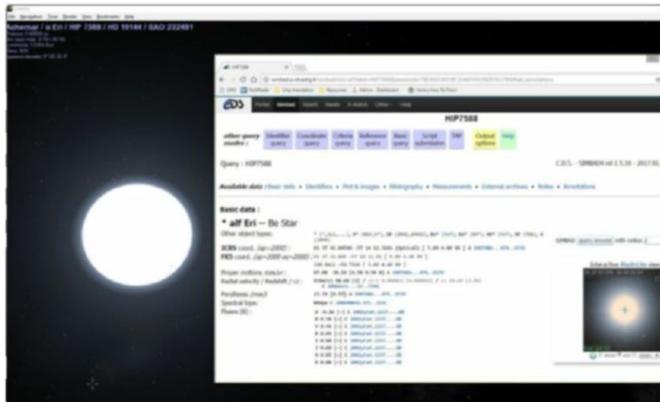


3 Travel through time

Looking at the Earth, you'll notice that its position relative to the Sun and Moon is an accurate representation of the current date and time. Tap [L] to speed up time, [K] to slow it down and [Space] to freeze it, or set a custom time using the 'Time' option in the main menu. There will be a total solar eclipse on 21 August this year – try setting this date to see what happens.

4 Visit other planets

The number keys, 1-9, on your keyboard let you visit other planets in our solar system. Tap [6] to select Saturn, for example, then press [G] to travel there – the animation is superb. Tapping [C] will centre the selected object in your field of view. You can return to our sun (Sol) at any time by pressing [H] for 'home'. Each planet is rendered in gloriously detailed 3D.



5 Beyond our solar system

You aren't limited to the Sol system – click a star or other celestial body and its name will be displayed in the top left. Tap [G] to visit it. Once you're there, right-click the object and select 'Info' to see an encyclopaedia entry from the Strasbourg Astronomical Data Center (CDS). For more information, try searching for its entry on Wikipedia (<https://www.wikipedia.org>).



7 Find manmade objects

Tap [H] [G] [3] [G] to return to Earth. Click 'Render > View options' and take a look at the different orbit and label options. Try checking 'Spacecraft' and 'Orbits', then use your mouse to rotate the planet until you find the International Space Station and the Hubble Telescope. You can see them moving in real time. You'll also be able to see the orbits of planets around their stars.



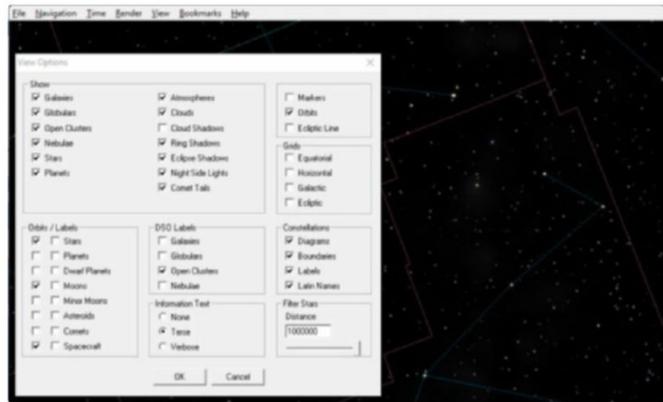
9 See into the Milky Way

Zoom out as far as you can (your mouse wheel is the easiest way to do this), and eventually you'll reach the edge of the Milky Way. Once there, you can pan around and rotate it like anything else. You can also select other galaxies, and there are many more galaxy models (planets, systems and spacecraft) available to download from The Celestia Motherlode (<http://bit.ly/2jfoZRF>).



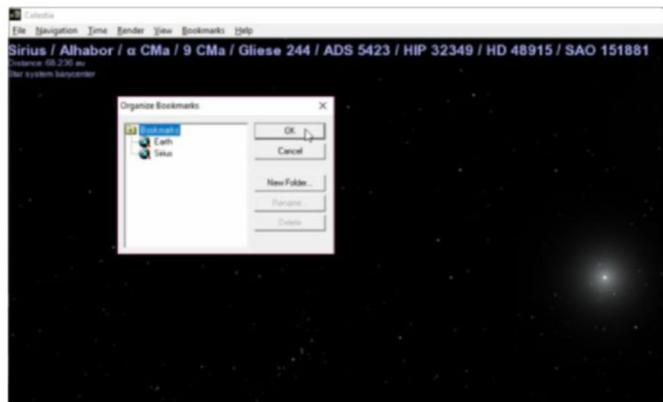
6 Go somewhere special

If you'd like to visit a specific location, click Navigation > Select Object, type its name and click OK. Here we've selected Proxima, the closest star to Sol. Clicking Navigation > Star Browser is another way to visit a particular star, and you can choose to see just those with planets, the nearest, or the brightest. You can use the 1-9 keys to toggle through the planets in any system.



8 Try stargazing

Celestia is also a great tool for learning about constellations. Click 'Render > View options' again and check 'Diagrams' and 'Labels' under the Constellations heading. The names are in Latin by default; uncheck the appropriate box to see them in English. You can see the constellations from anywhere in the solar system by travelling to different planets. Visit their stars by clicking them.

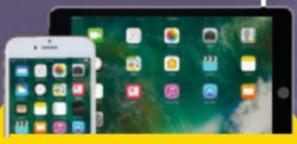


10 Boldly go...

Congratulations, you now know how to explore space with Celestia, learn about stars, planets, comets and spacecraft, travel through time and even visit fictional worlds from your favourite films and TV programmes. If you find something particularly interesting, you can always use the Bookmark menu to mark it for future reference, then revisit it later or look it up online. ■

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Learn how to...

Browse the web with Edge



Your guide [Tim Hardwick](#) says...

"Edge is a modern web browser with a great range of features. Here's how to make the most of it"

At a glance

Skill level...

► Anyone can do it

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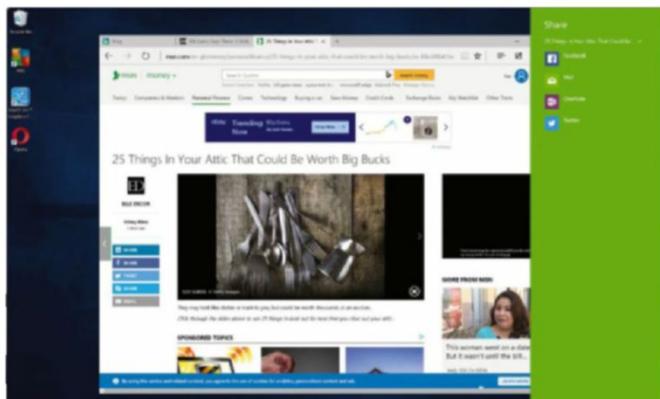
Windows 7

Released in 1995, Internet Explorer used to be the go-to application for browsing the web on Windows PCs. But in March 2015, Microsoft announced that version 11 of the browser would be its last, and that its new Edge browser would replace it on Windows 10 devices.

The change was good news for users – Microsoft's older browser was in danger of being left behind, with the competition offering increasingly viable, feature-rich alternatives, such as Google Chrome and Firefox.

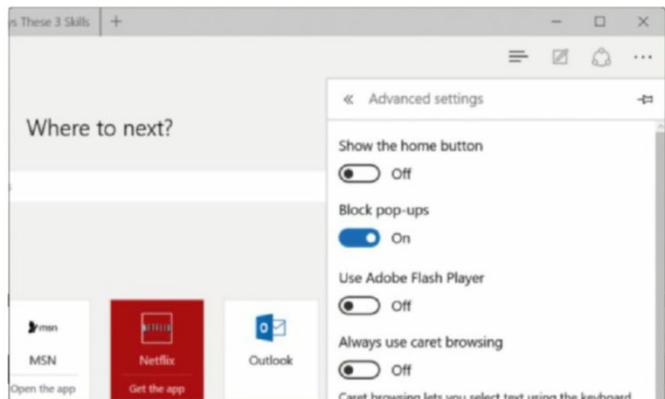
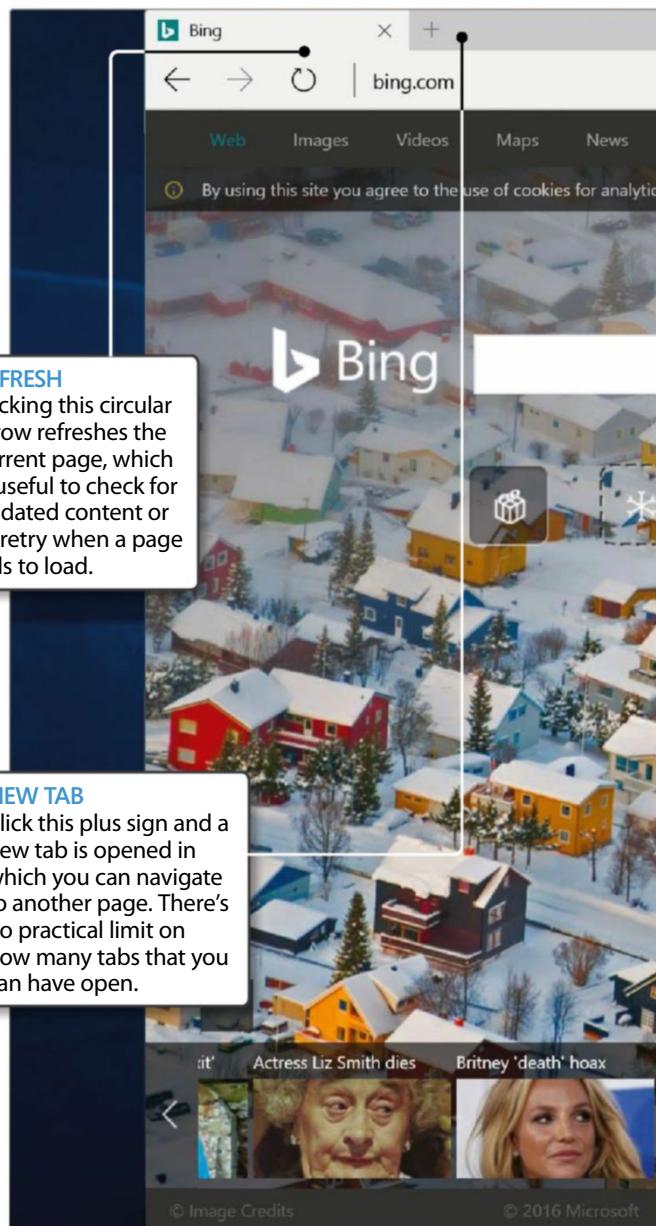
Luckily, Microsoft Edge can hold its own against these browsers, and if you know you're way around the interface, you'll discover just how many tricks it has up its sleeve. Some of Edge's features are unique – such as its built-in toolkit for making web notes and annotating web pages. Check out these essential tips to learn what else it can do...

Step-by-step Get started with Microsoft Edge



1 Share a web page

What if in the course of browsing online you come across something funny, thought-provoking or newsworthy, how do you share it with others? Happily Edge offers straightforward ways to do just that. Simply navigate to the web page you want to share, click the Share button (three circles in a ring) near the top right of the browser window, and select your preferred sharing method.



2 Disable Flash

Flash used to be essential for viewing rich content online, but these days it's not necessary and has become something of a security weak link. To disable it in Edge, click the More button (three dots) in the top right of the window, click Settings, then select "View advanced settings", and turn off the switch below Adobe Flash Player. If a site asks for Flash, simply turn it on again.

Explore

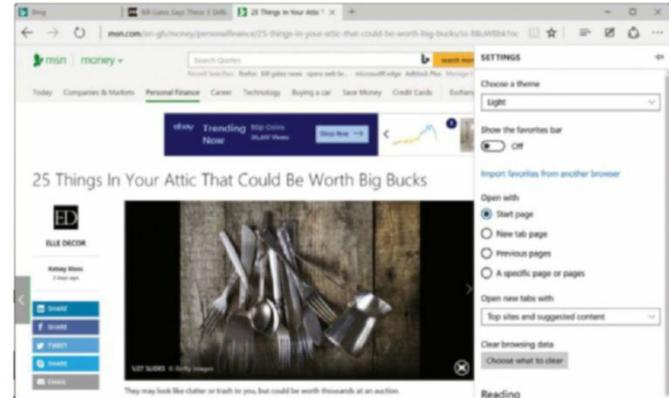
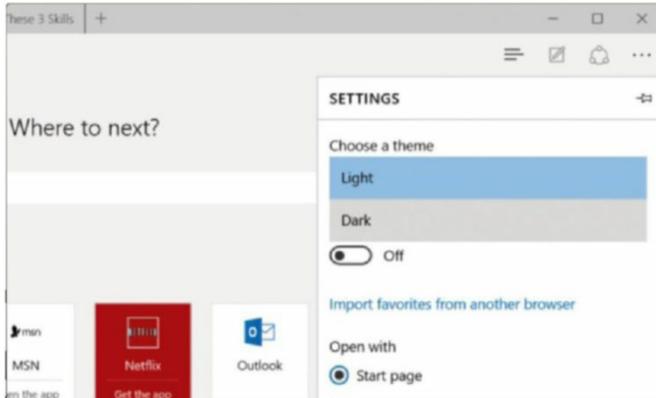
Browse the web with Edge

The screenshot shows the Microsoft Edge browser window. At the top, there's a navigation bar with links to 'Explore', 'MSN', 'Office Online', and 'Outlook.com'. Below the navigation bar is a search bar containing the text 's, personalised content and ads.' with a 'Learn more' link. The main content area displays a snowy town scene. Overlaid on this are several callout boxes with text labels and arrows pointing to specific UI elements:

- SEARCH ENGINE**: Edge defaults to the Bing search engine, which is often the page you see when you first start using the browser.
- STAR BUTTON**: Clicking this button saves the current web page to your reading list, which allows you to view it later without adding it to your favorites.
- MORE MENU**: When clicked, these three horizontal dots open the More menu, home to a wealth of options and settings.
- THE HUB**: Clicking this button opens the Hub, where Edge keeps the things you collect on the web. The Hub is home to your favorites, reading list, and much more.

At the bottom of the browser window, there's a news feed with items like 'Nativity scene found', 'Aleppo graves found', 'Too ill for service', 'Drink driving charge', and 'Assange praises Trump'. A yellow sticky note on the right side contains the following text:

TIM'S BEST TIP!
Change the Reading view style and font size by selecting the corresponding option from the Settings menu.

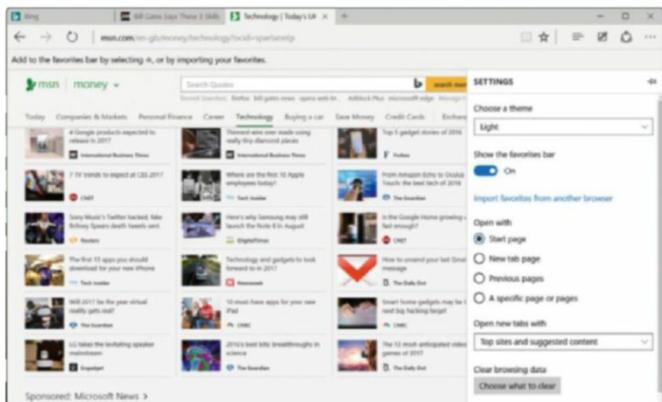


3 Select Dark Theme

Edge lets you change the visual appearance of browser elements to suit your taste, or to tone down the brightness of menus if you feel they're too harsh. Click the More button (three dots) in the top right of the browser window, select Settings, and click the drop-down arrow beneath "Choose a theme", then choose the Dark Theme option. You can switch back at any time.

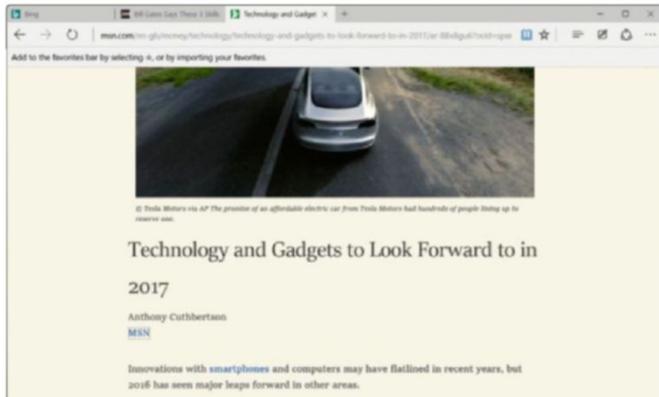
4 Import Favorites

If you're migrating to Edge from another browser, it's possible to bring any favorites and bookmarks you've amassed with you in one fell swoop. That includes users of browsers like Chrome, Firefox, and Internet Explorer. Just return to the More menu (the three little dots), click Settings > View Favorites settings, select the browser to import from, and click Import.



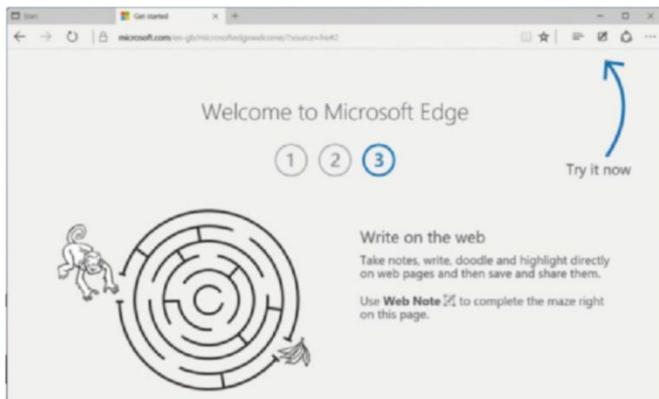
5 View Favorites

Even if you're starting afresh or don't have any favorites to import from another browser, it likely won't be long before you have a few. To be able to access them via links at the top of the Edge window, click the More button, select Settings > View favorites settings, and toggle the switch beneath "Show the favorites bar" to the on position.



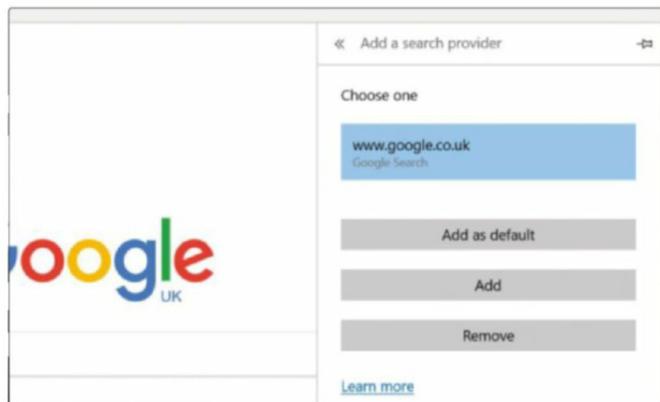
7 Use Reading View

Reading articles online can often be made unbearable by intrusive ads, flashing links and poor web page design, but you don't have to put up with any of it, thanks to Edge's reading view mode. With reading view, all you see is a headline, text, and any related article images. Bliss! Simply click the Reading view button (the open book icon) in the top right of the window to turn it on.



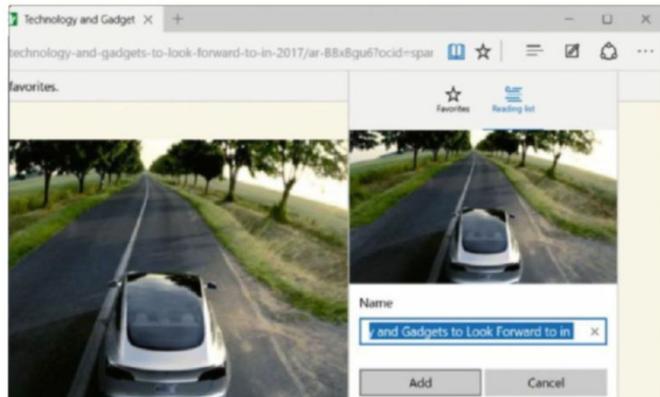
9 Make notes

Web Notes let you highlight text and annotate pictures on web pages. To create one, click the Make a Web Note button (the square with a pencil on it) near the top right of the window, and you can start drawing on the web page by click-holding the mouse button. You'll notice the button you just clicked has changed to a floppy disk – simply click it to save your note.



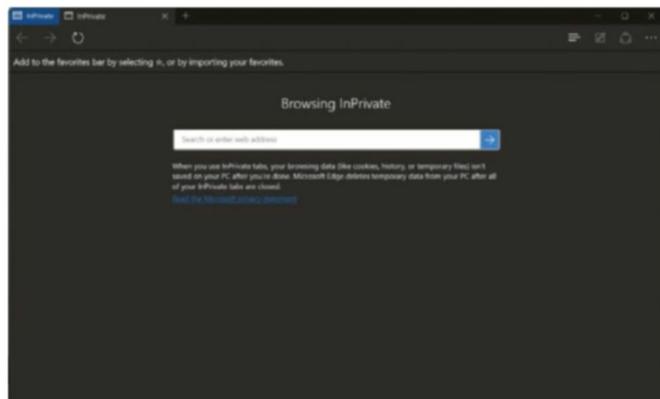
6 Change your search engine

Bing is set as the default search engine the first time you fire up Edge, but you can change this to Google or any others you prefer. To do that, navigate to the site of your preferred search engine, click the More button, click Settings -> View advanced settings, click the Change button under "Search in the address bar with", pick the engine you'd like to use, and select "Set as default".



8 Save articles to read later

Edge lets you save links to articles for later viewing at your discretion. To add an article to the reading list, click the Favorites icon (the star) near the top of the screen, click Reading list, and select Add. To open the article, click the Hub button (three horizontal lines in parallel), click the Reading list button (three lines plus a curl) and click the article in question.



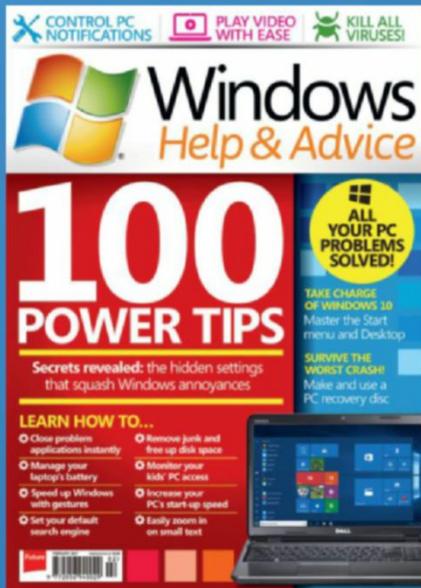
10 Browse privately

Whenever you browse the web, the sites you visit will often use 'cookies' to identify you when you return, for placing targeted ads or to make site login easier and, by default, your web history is saved in your browser. To browse the web without a trace left on your machine, click the More button (the three dots) top right, and click New InPrivate window. ■

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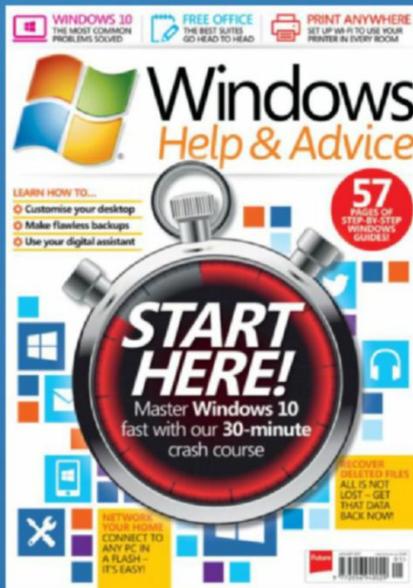
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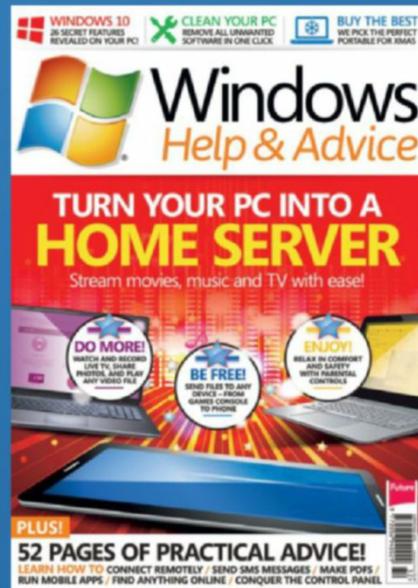
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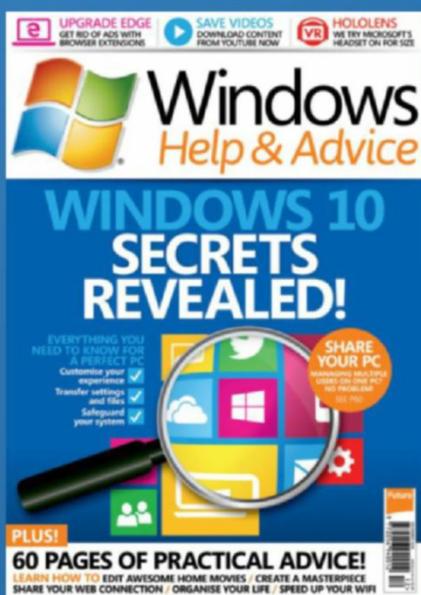
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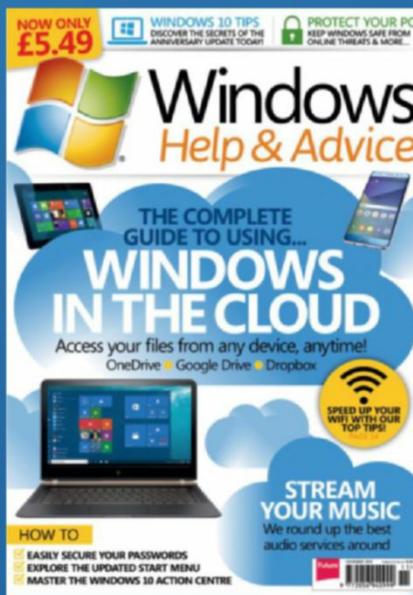
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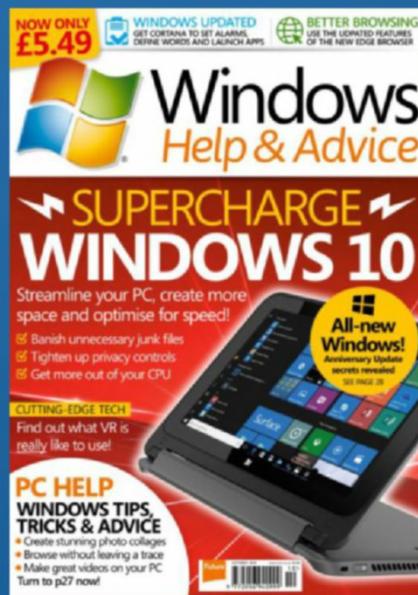
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Learn how to...

Download and edit YouTube videos



Your guide *Cat Ellis* says...

Free Studio is an amazing toolkit packed with everything an amateur film producer needs. Here's how to make the most of it...

At a glance

Skill level...

- ▶ Anyone can do it
- Straightforward
- Tricky in parts

Suitable for...

- Windows 10
- Windows 8.1
- Windows 7

If you like making and editing videos, you need Free Studio. It's an amazing toolkit that contains all the programs you need to download, convert, cut, edit and strip the audio from videos.

Before you start, bear in mind that downloading videos without the copyright holder's permission is against YouTube's terms of service. Only download videos if they are your own, are in the public domain, or you have the owner's permission. You can find public domain videos and music at NoCopyrightSounds (<http://bit.ly/JfgRLw>), Finding Footage (<http://bit.ly/2hTzo3Y>) and Free Stock Footage (<http://bit.ly/1ukg911>).

Here we're exploring Free Studio's videography toolkit, but it can do much more besides. You can expand it with more programs by clicking any of the options that are greyed out and downloading the extra components. Give it a try!

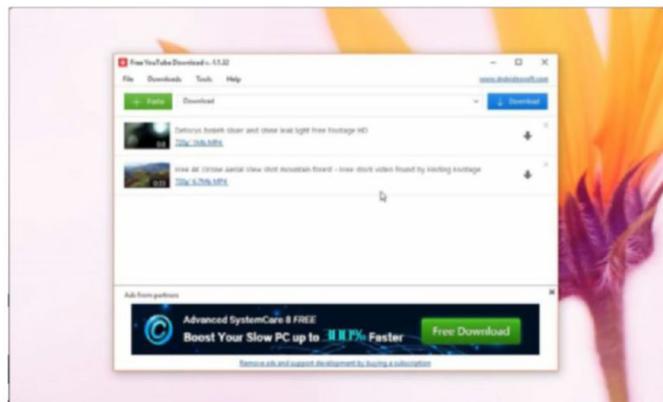


Step-by-step Download and remix videos



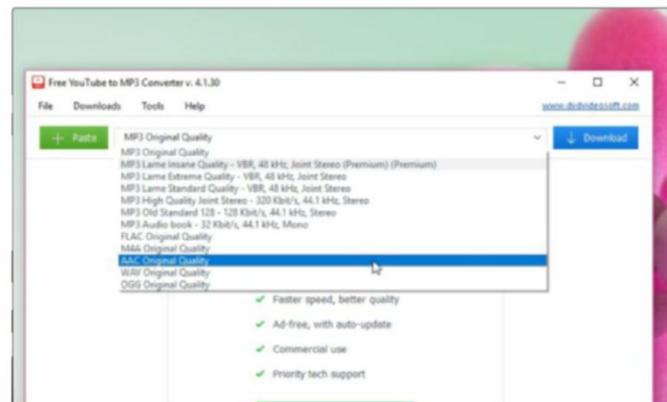
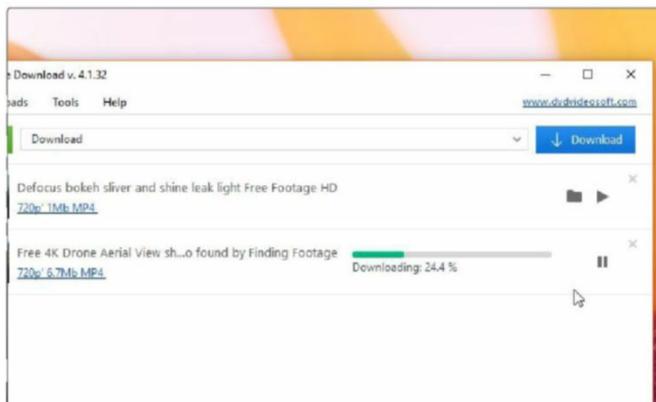
1 Get Free Studio

Download Free Studio from <http://bit.ly/2jzAekn> and run the installer. You'll be asked if you want to create a restore point first; this isn't strictly necessary, but it will enable you to quickly restore your system in the unlikely event that anything goes wrong. Click 'Next' twice and Free Studio will be installed. Once it's done, check 'Launch DVDFab Free Studio' and click 'Finish'.



2 Choose your videos

Your web browser will open at a page showing some of DVDFab's other software, but you can close that tab. Go to www.youtube.com, find a video that you want to download, then copy its URL from your browser's address bar. In Free Studio click the 'YouTube' tab, close the popup window that appears, then click the green 'Paste' button. You can add several videos this way.



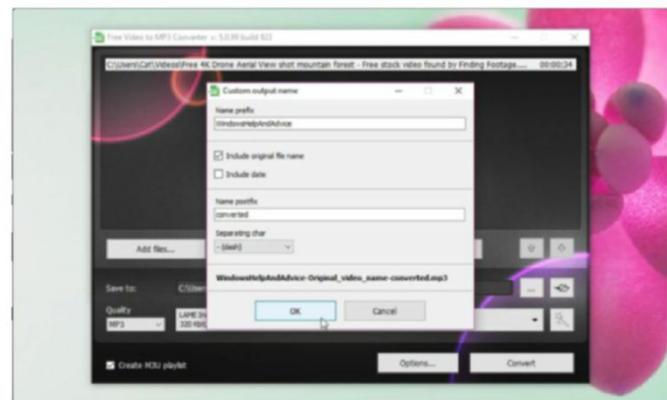
3 Download and save

When you've copied and pasted the addresses of all the videos you want, click 'Download' to save them to your PC. Once they've finished, you can click the play button to watch them in your usual media player, or select the folder icon to see them in Windows Explorer. Close the YouTube downloader and you'll be returned to Free Studio's main menu.



4 Extract the music

If you just want to save the audio from a video, click 'Free YouTube to MP3 Converter'. This works just like the video downloader – simply copy the address of your chosen video, paste it into the box provided and click 'Download'. You can also choose which format the audio should be saved in – click 'MP3 Original Quality' to open a drop-down list.



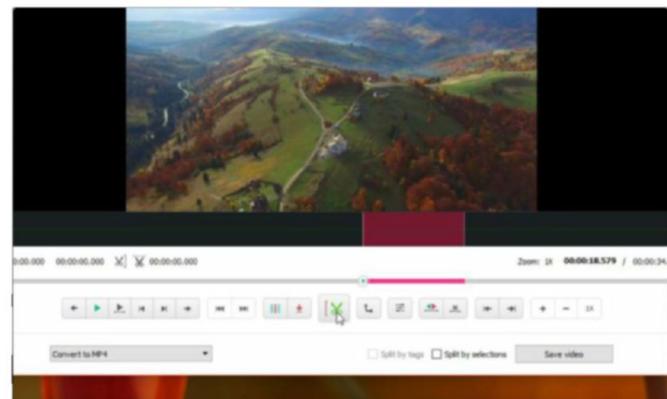
5 Convert formats

Close the MP3 converter to return to the main menu. If you have a video that you'd like to convert to a different format (for watching on your phone, for example), click 'Convert' and select 'Free MP4 video converter'. Click 'Add files' and select the videos from your PC, then click 'Convert'. Note that the free version of Free Studio will add a brief advert at the start of converted videos.



6 Strip and tag songs

If you have a video on your PC and just want the audio, select 'Free video to MP3 creator' from Free Studio's main menu. Click 'Add files', select your chosen videos and then click 'Tags' to add details such as the artist, album name, etc. Your music player will use this information to organise and label the converted files correctly. Click 'Convert' to save the audio to your Music folder.



7 Record from your desktop

You can use Free Studio to record what's happening on your PC screen. Return to the main menu and select Record > Free Screen Video Recorder. In the control window that opens, click the fourth button from the left, then click the red circle to start recording. To stop, select the Stop button from the system tray on your desktop. Recordings are saved in your Videos folder.

8 Edit videos

Want to trim a section from a video, adjust the volume or rotate it? Select 'Edit' from Free Studio's main menu and click 'Free Video Editor'. Open a file and use the buttons under the preview window to cut and edit it. You can select a portion of the video by clicking and dragging the playback bar. Once you're happy, select a file format from the bottom left and click 'Save video'.

Learn how to...

Take control of your music



Your guide [Tim Hardwick](#) says...

"Enjoy your favourite tunes, podcasts and internet radio stations with MusicBee"

At a glance

Skill level...

► Anyone can do it

Straightforward

Tricky in parts

Suitable for...

Windows 10

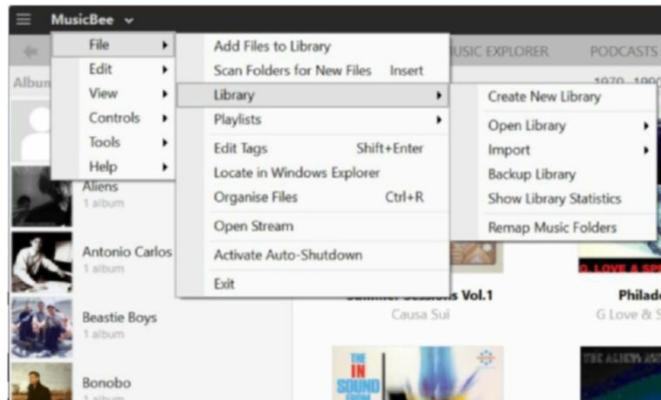
Windows 8.1

Windows 7

Creating, organising and enjoying a digital music collection has become part and parcel of the modern computing experience, and Windows 10 comes with Groove Music built in to help users achieve those aims. Groove is fine as far as it goes, but what if you want more control over your music?

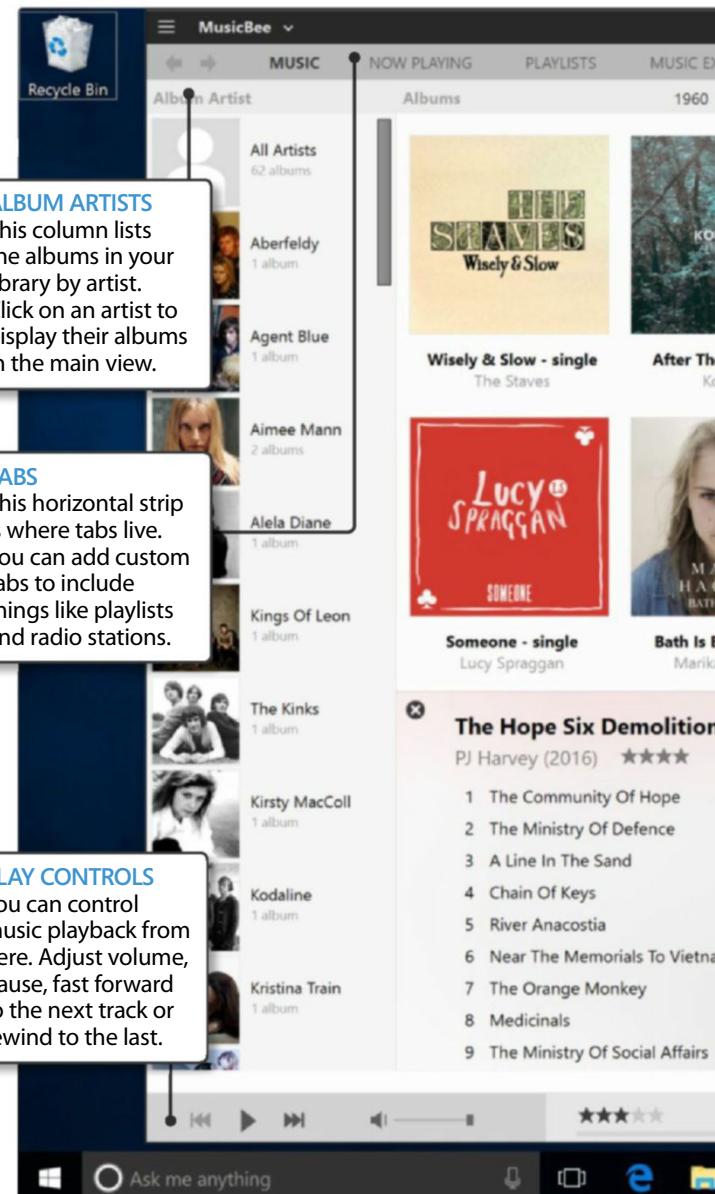
One of the most accessible – and free – alternatives is MusicBee. The app makes it easy to organise, find, and play music files in Windows 10, on mobile devices, and online. It also includes support for podcasts and internet radio stations for a more comprehensive listening experience. To get MusicBee, open your web browser, go to www.getmusicbee.com and click Download at the top of the web page. Click 'Get MusicBee Installer' and select the file to download. When it's done, run the installer and follow the onscreen prompts to complete the installation.

Step-by-step Get started with MusicBee



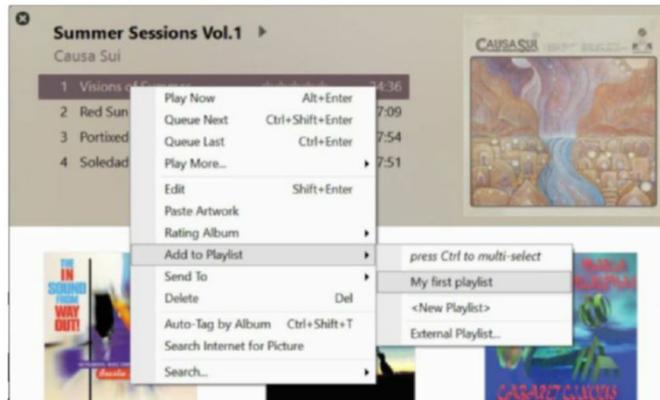
1 Add music

The first thing you should do upon opening MusicBee for the first time is generate a library for your music. MusicBee's File menu, accessed via the downward facing chevron in the top left of the app window, offers the following options: Create New Library, Import from iTunes, and Import from Windows Media Player. You can also Scan Folders For New Files at a later stage.



PLAY CONTROLS

You can control music playback from here. Adjust volume, pause, fast forward to the next track or rewind to the last.



2 Create a playlist

To create a playlist of tracks from your library, select File > Playlists, and choose one of the options. If you opt to create a new playlist, you'll be prompted to give it a name. Once done, click the left arrow to navigate back to your library, where you can start populating the new playlist: right-click an album or track, select Add to Playlist and choose the one you just created.

TIM'S BEST TIP!
You can view music from a specific era by clicking on a year in the horizontal strip above the main window.

Playing Tracks

#	Title	Artist
1.	Humpty Du...	Aimee ...
2.	High On Su...	Aimee ...
3.	Lost In Space	Aimee ...
4.	This Is How ...	Aimee ...
5.	Guys Like Me	Aimee ...
6.	Pavlov's Bell	Aimee ...
7.	Real Bad Ne...	Aimee ...
8.	Invisible Ink	Aimee ...
9.	Today's The...	Aimee ...
10.	The Moth	Aimee ...
11.	It's Not	Aimee ...

Track Information

Humpty Dumpty
Aimee Mann
Lost In Space
2002
M4A 44.1 kHz, 256k VBR, Stereo, 4:01

NOW PLAYING
Skip to any section of the currently playing song by clicking on the progress bar. Click the stars to rate it.

Jargon buster!

DSP
Digital signal processing alters the audio signal and can help reduce noise and distortion that can occur on your music tracks.

Audio bitrate
The bitrate of an audio file refers to its compression. Higher bitrates result in better sound quality, but larger file sizes.

Last.fm
An online music database that builds a profile of user's musical tastes with recommendations for further listening.

PLAYING TRACKS
This window lists tracks queued for playback, that is all the songs in the currently playing album or playlist.

MORE CONTROLS
Below the track info are more advanced playback controls such as the DSP, equaliser and repeat/shuffle.

output:	DirectSound
sound device:	Primary Sound Driver
	Primary Sound Driver
	ASUS PB287Q (Intel(R) Display Audio)
	Digital Audio (S/PDIF) (Cirrus Logic CS4208
	Speakers (Cirrus Logic CS4208 (AB 123))
	Speakers (USB audio CODEC)
on startup:	<input checked="" type="radio"/> do nothing <input type="radio"/> resume playback <input type="radio"/> resu

Radio

MUSIC **NOW PLAYING** **PLAYLIST**

Radio

Title ▲

- ABSOLUTECHILLOUT
- Drone Zone
- Earwaves
- Groove Salad
- Mission Control
- ThistleRadio

3 Radio stations

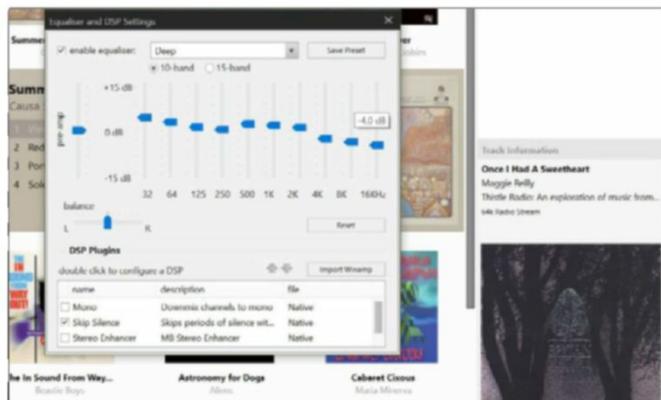
To enjoy online radio through MusicBee, select the Radio tab from the horizontal strip above the main panel. (If you don't see it, create the tab by clicking the + sign). The Radio panel is home to more tabs that list station sources. Click a source and select a music genre, then double-click a station to play it. To add a station to your library, press the Add to Library button.

audio player

output:	DirectSound
sound device:	Primary Sound Driver
	Primary Sound Driver
	ASUS PB287Q (Intel(R) Display Audio)
	Digital Audio (S/PDIF) (Cirrus Logic CS4208
	Speakers (Cirrus Logic CS4208 (AB 123))
	Speakers (USB audio CODEC)
on startup:	<input checked="" type="radio"/> do nothing <input type="radio"/> resume playback <input type="radio"/> resu

4 Troubleshoot Audio

If you're having trouble with audio output, select the Edit > Preferences menu bar option, select the Player pane on the left and check which sound output driver and device MusicBee is set to use. If you're experiencing stutter during playback, increase the buffer size by dragging the relevant slider to the right. You can also control a range of useful sound effects from this pane.



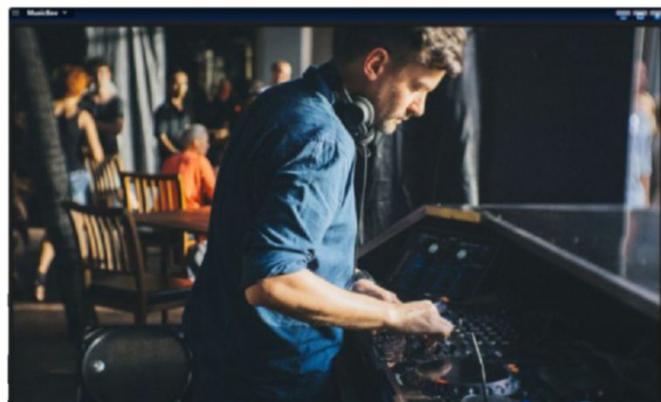
5 Use Equaliser

If you want to adjust the sound of your tracks in MusicBee, check out the equaliser as well as the app's settings to control digital signal processing (DSP). To access these, click the icon in the lower right of the screen that looks like three fence posts. From here you can choose EQ presets for different music genres, set the frequency bands to taste, and enable DSP plugins.



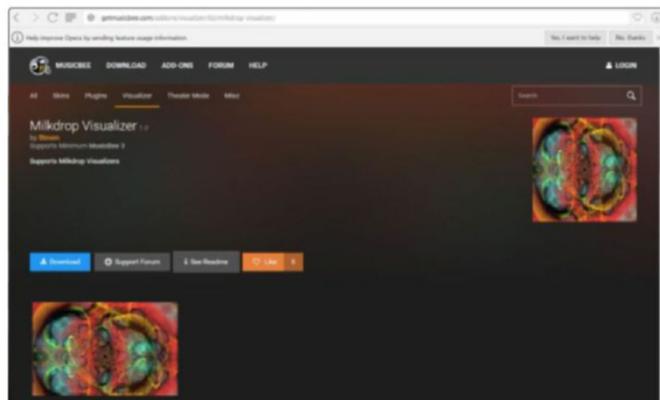
7 Change appearance

To rearrange the layout of panels in the MusicBee interface, click the icon immediately left of the search bar (top right). Here you can make quick adjustments, or click the Arrange Panels... option to dig deeper into the layout preferences. To change the interface 'skin' (its colour), select View > Skins from the menu bar. You can also enable the Mini Player from the View menu.



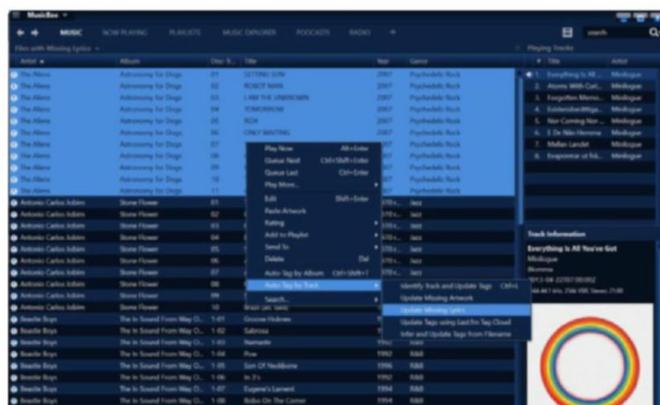
9 Theater Mode

MusicBee's Theater Mode allows you to enjoy your music on your TV and follow along with any lyrics your tracks might have. To activate the mode, select View > Start Theater Mode. You can also access the Theater Mode options from the View Menu, allowing you to change the way MusicBee presents information graphics related to the currently playing song.



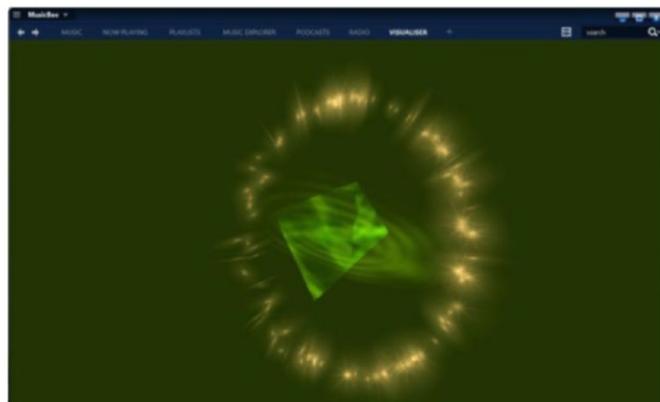
6 Plugins

MusicBee is an extensible audio player, meaning members of the user community are free to create plugins for the app to extend its functionality. Open a browser and navigate to getmusicbee.com/addons/. Each plugin includes instructions. If you download a plugin, unzip the files in MusicBee's plugins folder. Restart MusicBee and your plugin will be enabled.



8 Metadata

Adding metadata to tracks in your library makes it easier to organise, and MusicBee has a few helpful tricks up its sleeve. To find tracks with missing metadata, select Tools > Tagging Tools from the menu bar and choose one of the options. If you opt to Show Files with Missing Tags, for example, by right-clicking the results you can have MusicBee find them online automatically.



10 Visualizer

MusicBee comes with a number of cool visualisers that react to music in entertaining ways. To begin the default visualiser, select View > Start Visualiser. If you don't like what you see, pick another style from the list in View > Visualiser, and if you want to choose between full screen and desktop mode, or select another connected monitor to display it on, open the Visualiser Dock. ■

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Learn how to...

Rid your inbox of junk emails



Your guide **Matt Hanson** says...

"There's little worse than an inbox full of spam emails. Here's how to quickly cut down on the junk"

At a glance

Skill level...

Anyone can do it

► Straightforward

Tricky in parts

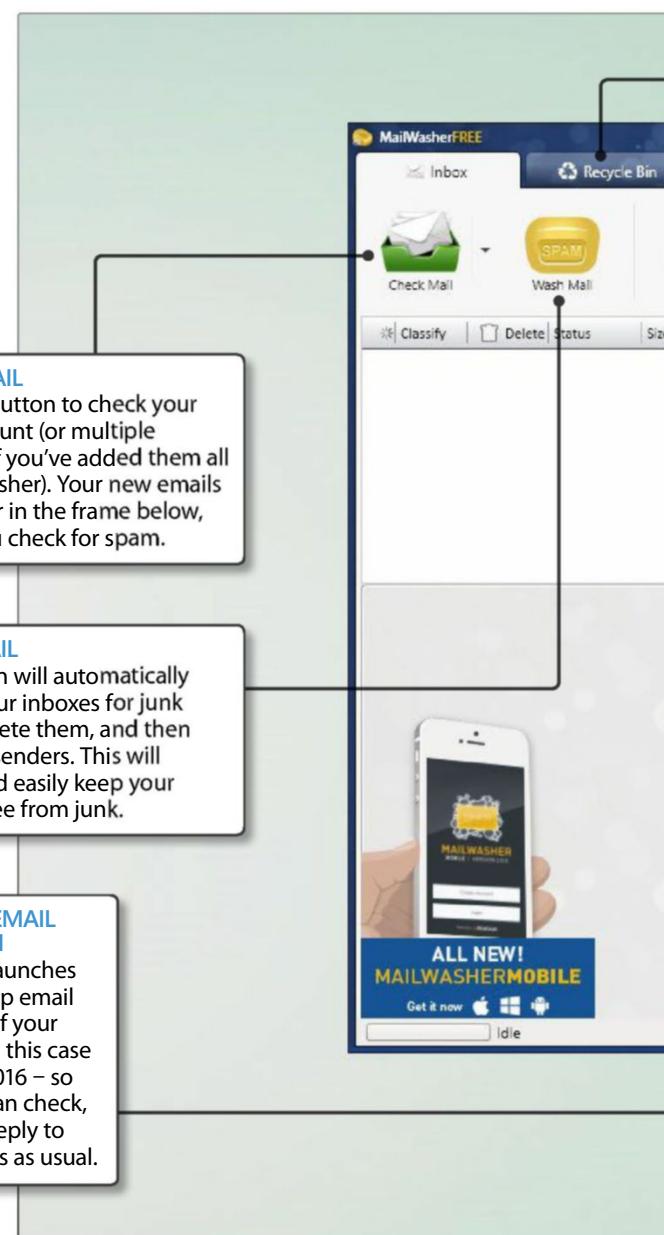
Suitable for...

Windows 10

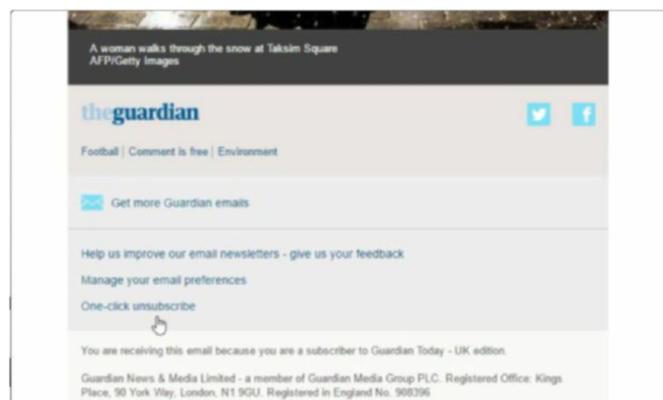
Windows 8.1

Windows 7

Email has changed the way we communicate with people all over the world. However, it has also changed the way we can be pestered by companies, individuals and even malicious users. The longer we have an email address, and the more online services we sign up with, the more our inboxes get inundated with junk emails. An influx of junk email makes it more difficult to find legitimate emails, and there's also a danger that these junk emails can contain viruses and other nasties that can put your computer and your data at risk. In this guide we'll show you how to clear your inbox of junk emails while making sure legitimate emails are left alone. We'll also show you how you can create and configure email filters that will divert junk emails before they even enter your inbox, so you'll only ever see the emails that you need to.

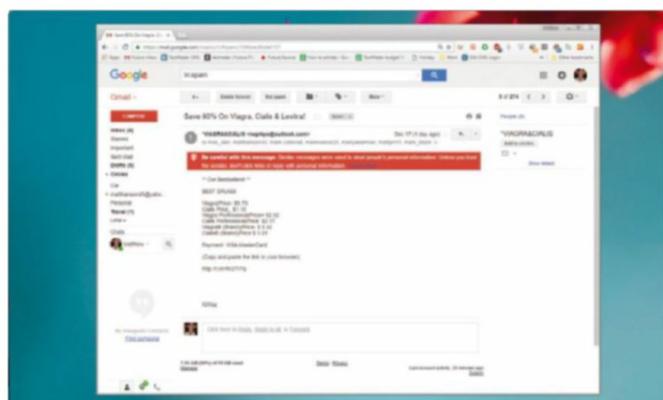


Step-by-step Remove junk emails



1 Unsubscribe

First clear out the emails from websites, services and online stores you've signed up with. Many add you to their mailing list when you sign up for a user account. You may also have handed out your email address to companies in other ways, such as when you've signed up for store cards. Open up your email inbox, and go through the various newsletters and hit the 'unsubscribe' link.



2 Clear out other junk messages

After unsubscribing from the emails and newsletters you've signed up for, you should no longer get any more. However, there will still be junk emails you've never signed up for. These emails won't have any option to unsubscribe, and you should not click any links contained within them (nor download any attachments). Remove them with care and report them to your email provider.

Explore

Rid your inbox of junk emails

The screenshot shows the MailWasher software interface. At the top, there's a toolbar with 'Settings' and 'Error(s)' tabs. Below the toolbar is a search bar and filter options ('Display Options', 'Search emails', 'Arrived', 'Account'). A central pane displays a list of emails. On the left, there's a sidebar with a yellow 'SPAM' button and links for 'What's New?', 'Need Help?', and 'Tips & Tricks'. A 'WATCH TUTORIAL' button with a play icon is also present. A large yellow callout box labeled 'MATT'S BEST TIP!' contains the text: 'Get into the habit of checking your Junk email folder from time to time, as you may find legitimate emails have been sent there by mistake. If you're waiting for an email that doesn't arrive, there's a good chance it's sitting in your Junk folder.' To the right of the main window, there are two callout boxes: one for 'RECYCLE BIN' explaining its purpose, and another for 'SETTINGS' detailing how to configure Mail Washer.

Jargon buster!

► Spam

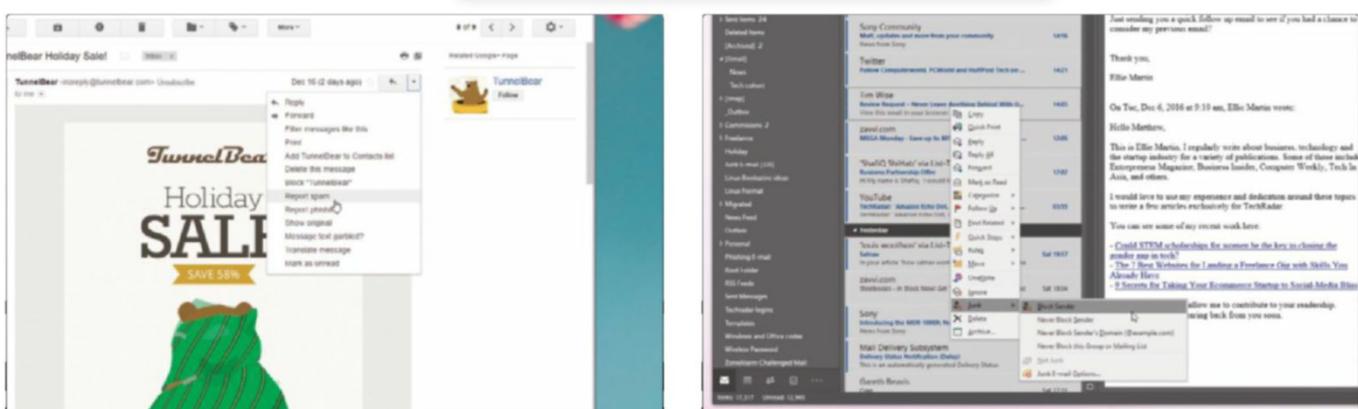
Spam email is another word for junk email. These are unsolicited email messages that get sent to your inbox from various sources, and the more you use an email address, the more spam you may attract.

► Inbox

The inbox is where all your emails arrive. Keeping an inbox free from spam makes it easier for you to read and reply to important emails. Some people, after reading and replying to an email, move the email to another folder, to keep their inboxes completely clean. This is known as 'Inbox Zero'.

► Blacklist

A Blacklist is a list of email addresses and domains that are known to send out spam. If they are on the blacklist, then they will be blocked from entering your inbox. You can also create whitelists, which are collections of legitimate email addresses that will never be blocked.

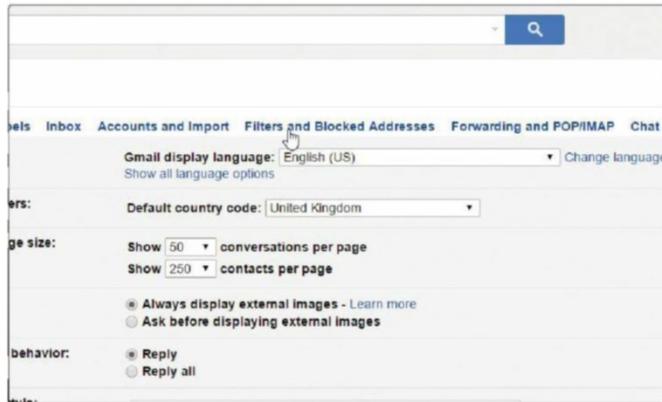


3 Report spam

One of the best things you can do to when you get spam is to report it. This will let your email provider know that spam is being sent from an address or addresses, and they will hopefully take action to block them. The email will be sent to your junk email folder, and you'll be doing a public service as well! To do that, select an email and look for the 'Report' option.

4 Block spam

You can block email addresses that send you junk email, so you shouldn't receive any more. The method for blocking them varies depending on the email provider and the email program you use. Most of the time you can block a sender by opening up the email, then its options and selecting 'Block sender'. In Outlook, right-click the email, select 'Junk' then 'Block Sender'.



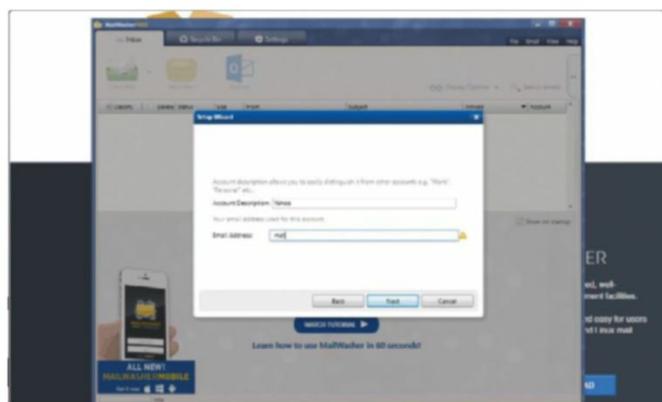
5 Using filters

It's likely that your email provider has filters that identify email from certain addresses, or use certain words or phrases, and send them straight to your Junk folder. You can also create your own in case some junk still comes through. The process varies depending on your provider or program, so go to your email settings and look for junk, filter and blocked address options.



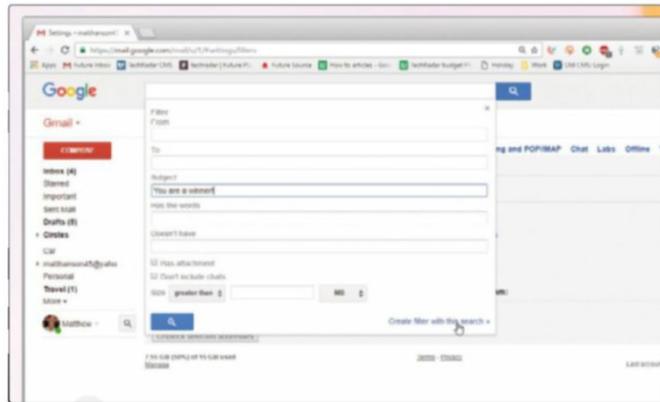
7 Import filters and blacklists

Some email providers and programs, such as Gmail, allow you to import filters. Websites such as Domain Name System Blacklists (www.dnsbl.info) contain ready-made filters that are constantly updated to block spam from email and DNS addresses. Select a blacklist you want to download, then upload it to your email provider using their own instructions.



9 Configure Mail Washer

Add the email accounts you use in the Setup Wizard, and click 'Next'. If you use a popular email provider, then Mail Washer will configure its settings. If it doesn't recognise your email provider contact them to find out their server type and server address. You will also need to select the email program you use, or enter in the web address you use to see your inbox.



6 Create a new filter

For this example we are using Gmail, but the process should be similar for Yahoo, Outlook and other free email services. Click on 'Create a new filter', then enter the address, the subject (such as 'You are a winner!'), or key words and phrases that mark an email as spam. Click on 'Create filter with this search', then select to either send it to your Junk email, or to make it 'Skip the Inbox'.



8 Use a free anti-spam tool

You can also use free software, such as Mail Washer, to keep your inbox free from spam and junk. Go to www.mailwasher.net and click on 'Download' then 'Download' again to get the app. Open up the .exe file that downloads and install Mail Washer, using the 'Standard' installation option. Launch Mail Washer and the program will detect your email accounts and configure itself.



10 Enjoy your inbox!

Congratulations! Your email inbox is now free of junk mail. To keep your inbox from getting cluttered with junk in the future, make sure you're careful to uncheck any boxes that sign you up to a mailing list or newsletter when you sign up for new websites and services. You can also create a disposable email address to keep your inbox free from spam at www.throwawaymail.com. ■

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Learn how to...

Stop your PC from crashing



Your guide **Matt Hanson** says...

"If your PC crashes frequently or becomes unresponsive, follow these steps to fix the problem"

At a glance

Skill level...

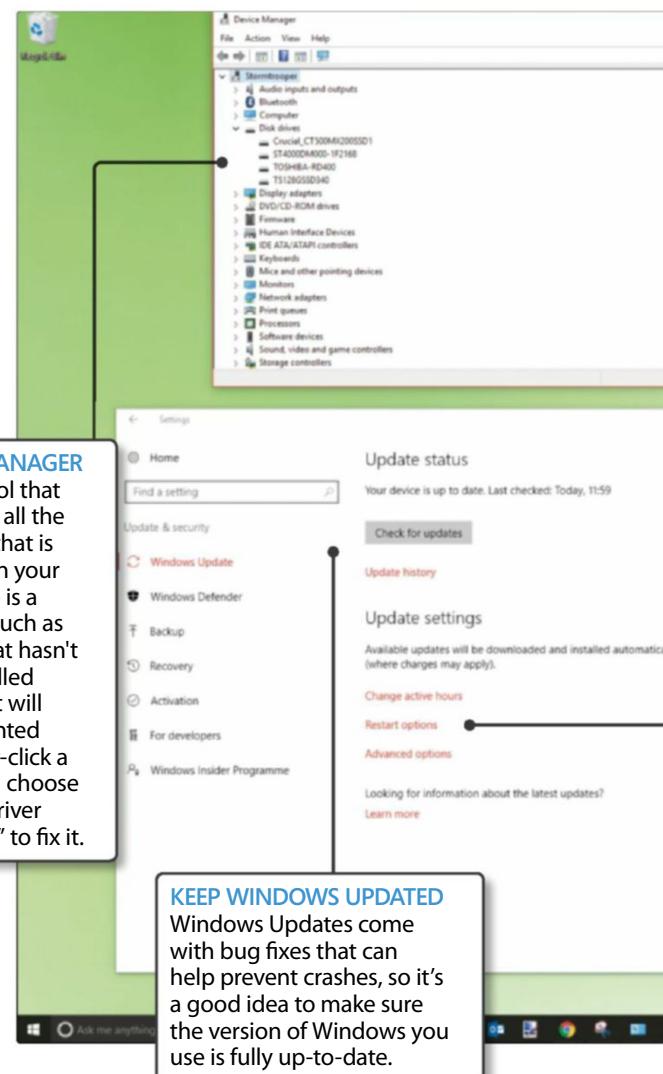
Anyone can do it
Straightforward

► Tricky in parts

Suitable for...

Windows 10
Windows 8.1
Windows 7

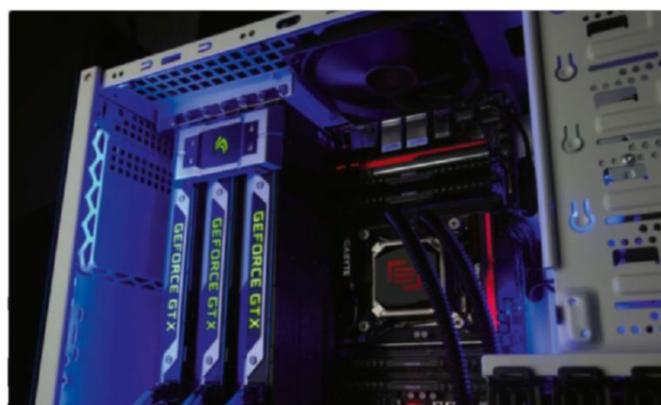
Computers are complicated things and sometimes things go wrong. When they do, the PC, Windows, or the program you're currently running can become unresponsive or shut down without warning. This is known as 'crashing'. Not only are PC crashes annoying and worrying, they can also lead to you losing work if you haven't saved your data before the crash. One-off crashes won't cause too much alarm, but a PC that crashes regularly means that there's something wrong with your machine, and you should fix it. Luckily, there are troubleshooting processes you can go through to find out what's causing the crash. Once you've identified the cause you can fix it, and your PC should return to normal. In this guide we'll show you the troubleshooting steps you should take, as well as general maintenance tips for Windows and your PC to make sure it never crashes again.



DEVICE MANAGER
This is a tool that shows you all the hardware that is installed on your PC. If there is a problem (such as a driver that hasn't been installed properly) it will be highlighted here. Right-click a device and choose "Update Driver Software..." to fix it.

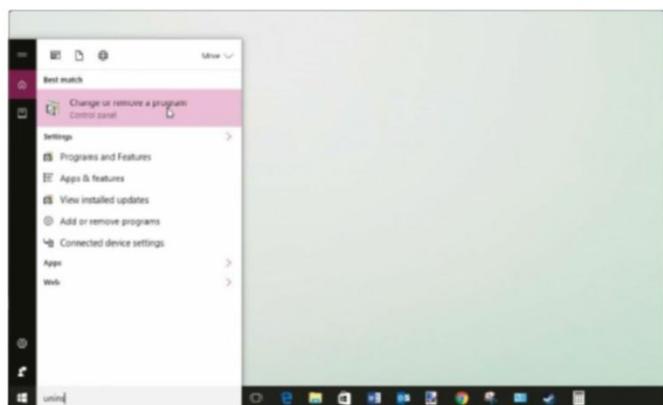
KEEP WINDOWS UPDATED
Windows Updates come with bug fixes that can help prevent crashes, so it's a good idea to make sure the version of Windows you use is fully up-to-date.

Step-by-step Prevent PC crashes



1 Any recent changes?

If your PC's started crashing, the first thing you should do is think about any hardware or software you have installed recently. If the crashes started around the same time, these are the likely cause. If it's hardware, make sure it's properly connected to your PC and the latest drivers are installed. If it's software, check for updates and ensure the app works with your version of Windows.



2 Uninstall hardware or software

If the PC continues to crash, you may need to uninstall or remove the new hardware or software. For hardware, make sure your PC is turned off and carefully unplug it. For software, type "uninstall" into the Start search bar and select "Change or remove software". Select the software and uninstall, then restart your PC. If it works without crashing you've found the culprit.

RELIABILITY MONITOR

This excellent tool can help you pinpoint errors that your PC has encountered that has caused your machine to crash. If you have lots of red or yellow marks on the graph, click on them to see what the problem is.

MATT'S BEST TIP!

The Windows 10 Anniversary Update now includes QR codes in error messages. You can use a QR scanner app on your phone to scan the code and so identify the cause.

Jargon buster!

► Drivers

Device drivers are small programs that enable a device to communicate with Windows. Windows needs to know what devices are attached to your PC to use them correctly, so having the right and up-to-date device drivers for your hardware is essential.

► Blue screen

Known by many as 'the Blue Screen of Death', this is an error message (with a blue background) that displays when Windows encounters a critical error and has to restart. If one occurs, make a note of any information displayed since it could prove useful.

► Crash

A colloquial term for when your PC (or Windows) becomes unresponsive and needs to restart. Occasional crashes are a fact of life, but if your PC crashes regularly, check for errors caused by recently installed applications, updates and hardware.

RESET YOUR PC

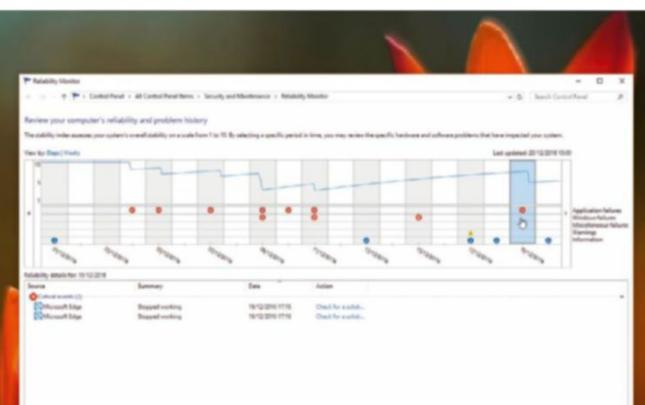
If all else fails then you'll need reset the OS. This reinstalls Windows from scratch, giving you a crash-free system.

GET WINDOWS TO FIX IT FOR YOU

Click on an error and you'll see a breakdown of it. Click on "Check for a solution" to launch a troubleshooting guide that will make Windows search for a fix for you. If successful, this should stop the PC from crashing.

CHECK THE GRAPH

Each error is marked according to date. If you can't remember the date of a crash, click an error. If you see "Windows" as a source, and "Shutdown unexpectedly" that's probably it.

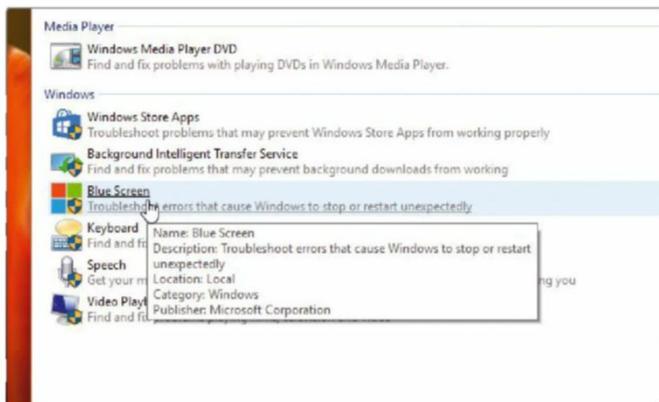


3 Check the Reliability Monitor

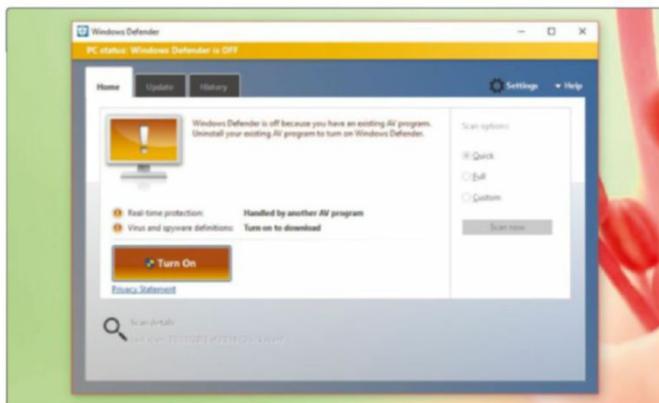
Since Windows Vista, Microsoft has included a helpful tool known as the Reliability Monitor that logs any problems your PC encounters and displays them in an easy-to-understand graph. To load it, open the Start menu and type in "Reliability", then select "View reliability history". Any problems that have been recorded will be marked with a red icon or a yellow exclamation mark.

4 Fix problems through Reliability Monitor

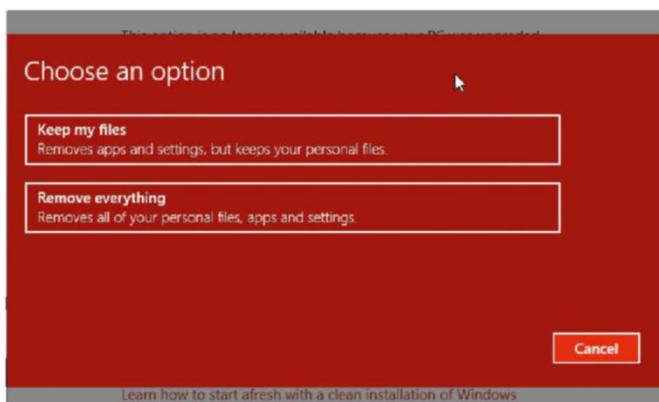
Each icon indicating an error will be displayed on the graph. If an error occurred just before your PC crashed, it's likely the error was the cause of the crash. Click on an error icon to find out more about what the problem is. If it was an application that caused the crash, go to the Action column and select 'Check for a solution'. This lets Windows search for a fix.



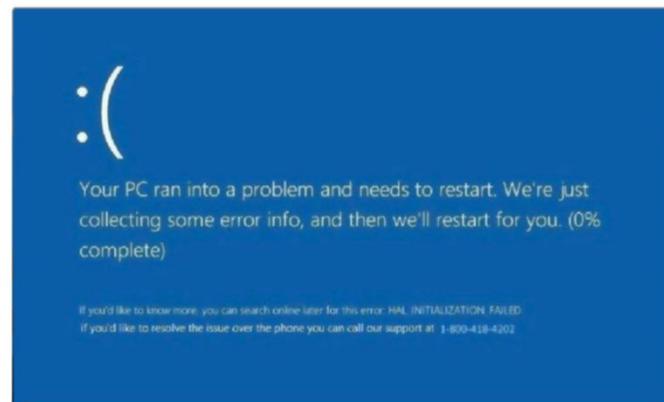
5 Use Windows' built-in Troubleshooting tools
Windows includes a number of troubleshooting tools that can help you identify and fix a problem that is causing your PC to crash. Open up the Start menu and type in "Troubleshooting" and press Return on your keyboard. Click on 'Hardware and Sound', then select 'Blue Screen'. This will take you to tools that can help you troubleshoot causes of the infamous 'Blue Screen of Death'.



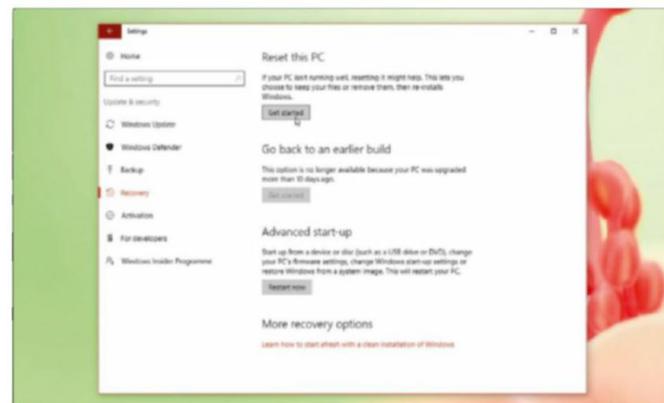
7 Scan for viruses
Some malicious programs and viruses can cause your PC to crash, so it's worth scanning your PC using anti-virus software. Modern versions of Windows have Windows Defender installed. Other free options include Malwarebytes (www.malwarebytes.com) and AVG (www.avg.com). If a virus is found, remove or quarantine it, and hopefully your PC will cease to crash.



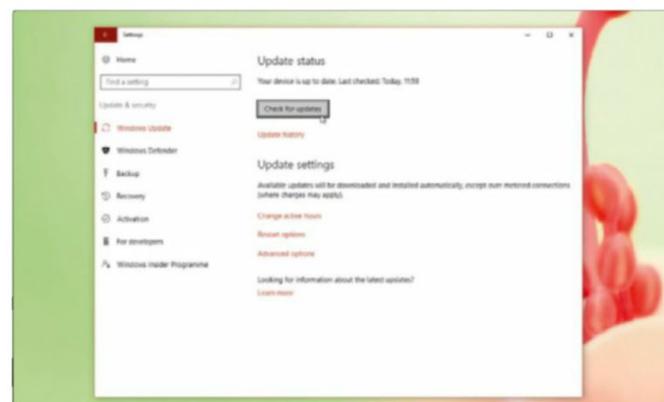
9 How to reset Windows
This is, as you might imagine, potentially quite a destructive process. Even if you keep your files, Windows may not return to 100% form, so back up all your files before you begin. In Windows 10, open Settings and click on Update & Security > Recovery, and choose "Get Started" under where it says "Reset this PC". You'll be asked if you want to "Keep my files" or "Remove everything".



6 Identify Blue Screen of Death problems
If the problem is particularly bad, you may not get a chance to run any troubleshooting tools before your PC crashes. If that's the case you should see a screen appear with a blue background and information relating to the crash displayed. Note down what it says, along with any error codes. On a working device, search for the error code on the internet, as a fix may have been discovered.



8 Refresh or Reset Windows
If nothing stops your PC from crashing, it may be time to refresh your PC. This reinstalls Windows, but gives you the option to keep your files. In Windows 8 you could choose "Refresh your PC" which would keep your files, or "Reset your PC" which would wipe everything. In Windows 10 you just get "Reset your PC", but you are given the option to keep your files during the process.



10 How to prevent future crashes
Your PC should now run perfectly again. To prevent crashes in future, first make sure that Windows is always up to date. To do this, open Start and type "Update" then Return. Click on "Check for updates". Also make sure you have an anti-virus app installed, that it's up to date and that it regularly scans your PC. Finally, regularly use Device Manager to make sure device drivers are up to date. ■

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Learn how to...

Organise your phone photos



Your guide *Nick Peers* says...

"Find out how to copy, rename and better organise your mobile snaps in Windows 10"

At a glance

Skill level...

Anyone can do it

► Straightforward

Tricky in parts

Suitable for...

Windows 10

Windows 8.1

Windows 7

According to Microsoft's advice, the Photos app is the best way to get photos from your phone onto your PC. But if you simply fire up the app expecting to see your photos appear as if by magic you'll be sorely disappointed. But don't worry, because we have everything you need to transfer photos from your phone and properly organised on your PC.

We'll show you how to automatically sync photos from your phone using one of three cloud storage methods, then reveal how to link those folders in with the Photos app – while nudging you towards a better alternative to organising your photos. Finally, we'll show you how to quickly copy and rename your photos when they arrive on your PC so they are easier to identify and organise when using tools such as Photos or Adobe Bridge.

NAME ASSOCIATION
Give your Dropli action a suitably descriptive name to help you identify it when selecting it in future.

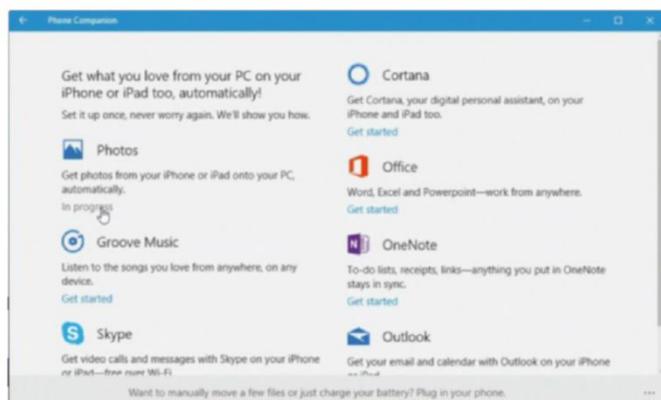
RULES
This section enables you to restrict the action to specific folders, files or file types – click the 'i' button for more help.

ACTION
Select the action you wish to perform – choose 'Copy' to create copies of your photos in another folder.

ACTION PARAMETERS
Select your main folder using the folder button. Add the \ character to the end of the path before adding your sub-folder.

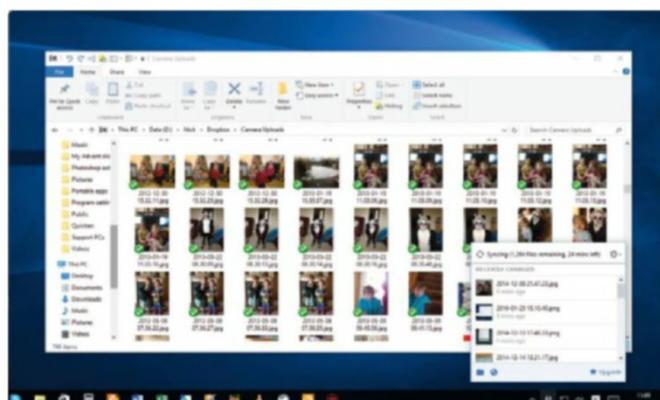
NICK'S BEST TIP!
Quickly hide the floating Dropli icon from view by double-clicking it to move it to the Taskbar Notification area.

Step-by-step Transfer and organise your phone's photos



1 Run the Phone Companion

If you plan to go down the recommended Microsoft route, open the Phone Companion app, select your phone type (Windows, Android or iPhone) and click Get Started under Photos to have your phone sync its photos to your PC via your Microsoft Account's OneDrive storage. This step involves installing the OneDrive app on your phone and switching on Camera Upload.



2 Access via Dropbox

Most cloud providers make it easy to upload photos from your phone to your cloud storage. Dropbox users can open the phone or tablet app and tap the menu symbol followed by Settings. Scroll down and tap Turn on Camera Upload, then choose what to upload. Install the desktop app on your PC and the photos will appear under Dropbox > Camera Uploads.

New Association [Profile: Default]

1. Name:
Copy Dropbox photos
2. Rules:
C:\Users\nickd\Dropbox\Camera Uploads; *.jpg; *.png
3. Action:
Copy
4. Destination Folder:
C:\Users\nickd\Pictures\Phone Photos\%YearTaken%

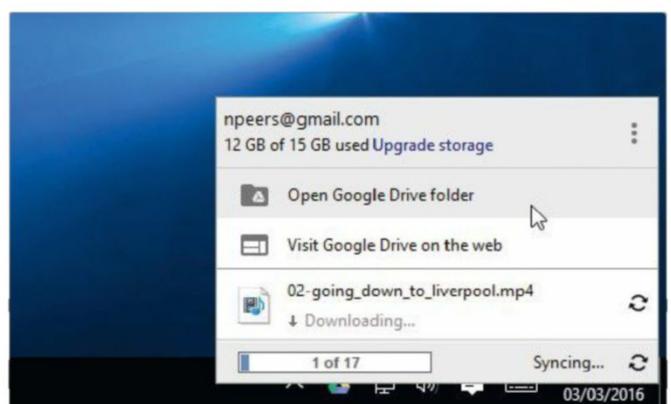
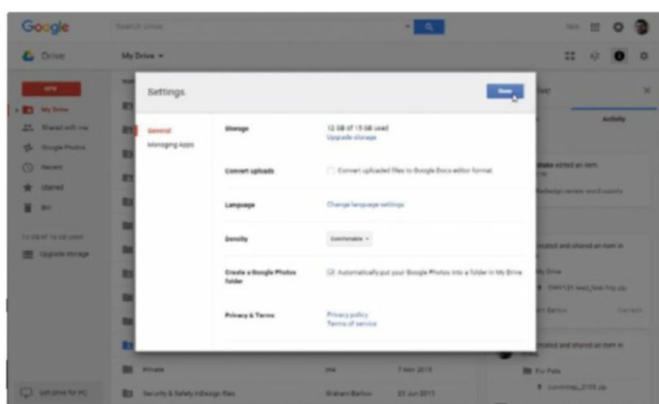
Abbreviations
Special tags that allow you to rename files based on their attributes, such as when a photo was taken.

Association
The name Dropt gives to the actions – such as copy, rename and move – that it can perform on selected files and folders.

Phone Companion
A free Windows 10 app designed to make it easy to connect various aspects of your phone to your Windows PC.

ADDITIONAL FILTERS
Click this button and you can add more filters to the rule based on file attributes such as size and date.

ADD TAGS
Use the Abbreviations button to add useful tags to your folders – we've chosen both of ours from the Taken sub-menu.

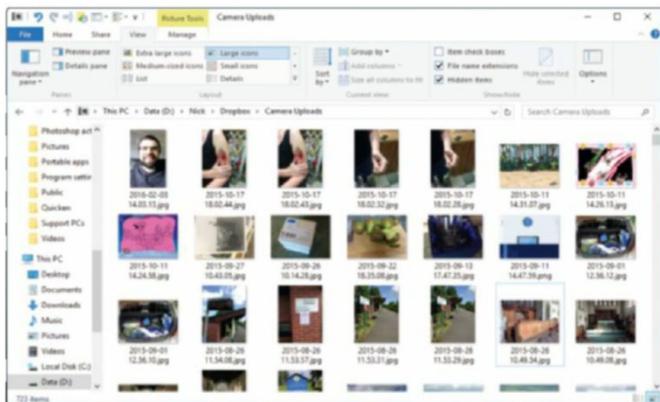


3 Use Google Drive

Another cloud storage provider is Google – its app automatically uploads photos from Android phones, while iOS devices should verify it's been switched on under Settings. Instruct Drive to store photos to access them on your PC. Flick Google Photos Folder switch on in iOS or log on to <https://drive.google.com>, open Settings and tick the box shown above.

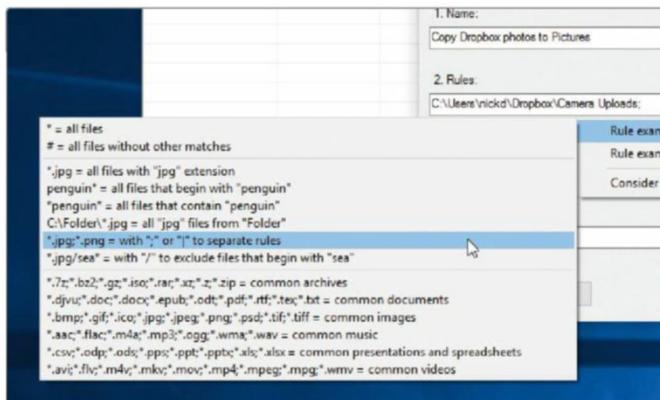
4 Use Google Drive

Once the Google Photos folder is visible, download and install the Google Drive desktop app by clicking the 'Get Drive for PC' shortcut. Once installed and set up, your photos will upload to the Google Photos folder, downloading to your PC shortly afterwards. As with OneDrive and Dropbox, the speed at which they appear depends on your internet connection.



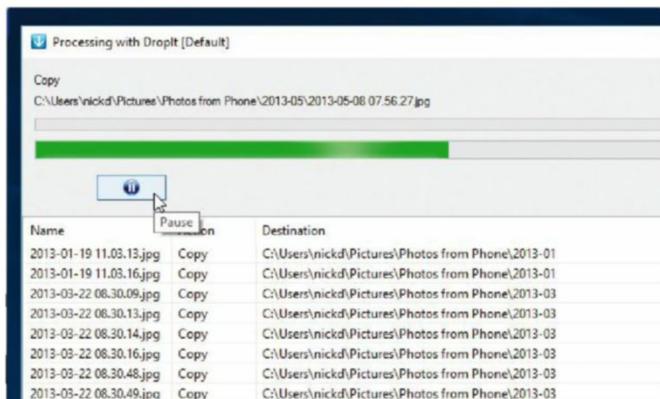
5 Browse your photos

Photos are organised and named according to how the cloud storage provider works – OneDrive and Dropbox dump everything into the Camera Roll folder, while Google Photos organises photos into sub-folders based on the year the photo was taken. Naming conventions differ too – Dropbox is the best, naming each photo according to the date and time it was taken.



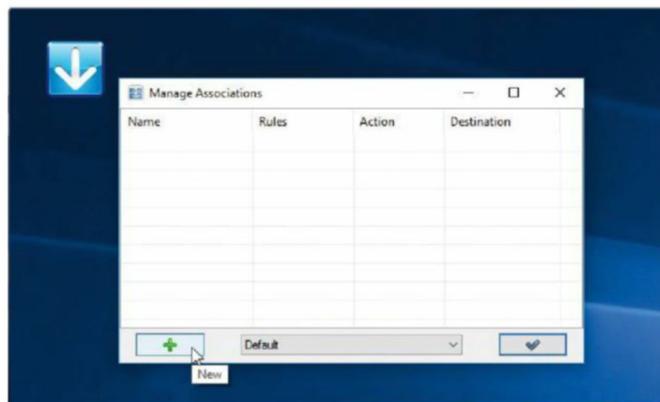
7 Set up copy action

First, we want to copy the photos into designated subfolders inside your Pictures folder. Give the association a descriptive name, then use the annotated screenshot to help you set up a Copy action that will copy PNG and JPG photos from your cloud provider's camera upload folder, organising photos into sub-folders based on the month they were taken.



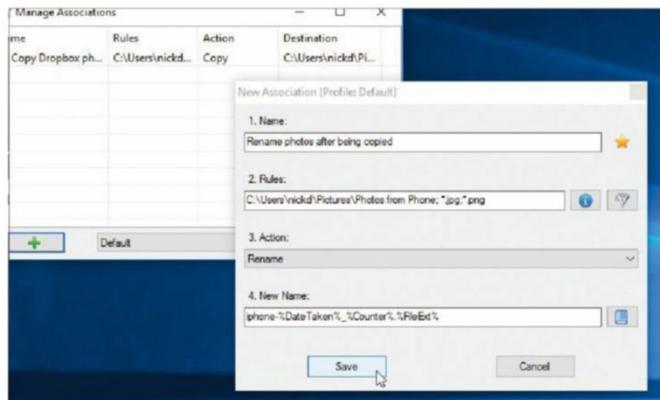
9 Rename files too

Now set up another association, this time to rename your photos after they've been copied. Point the Rules to the destination folder from your Copy action. Set Action to Rename, then explore the naming options – delete the %FileName% part, if you wish to completely rename it. If you're stumped, try something like 'iphone-%DateTaken%_%Counter%.%FileExt%'.



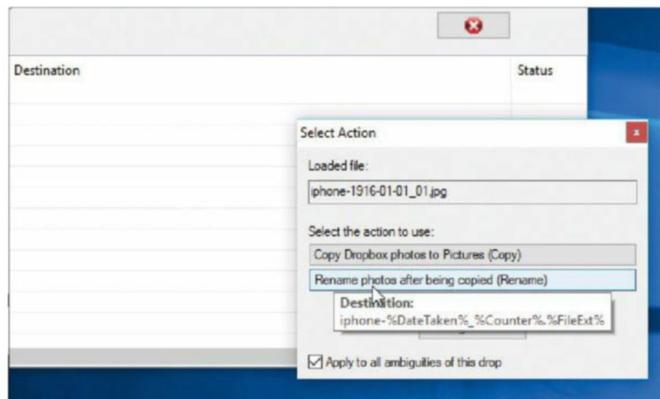
6 Organise your photos

If you'd like to automatically copy and rename your phone's photos to your Pictures folder to make them easier to identify and organise, download and install Droptl from www.dropitproject.com. Once installed, launch the program and you'll see its icon appear on the desktop – drag it into a comfortable spot, then right-click it and choose Associations. Click the + button to begin.



8 Copy files

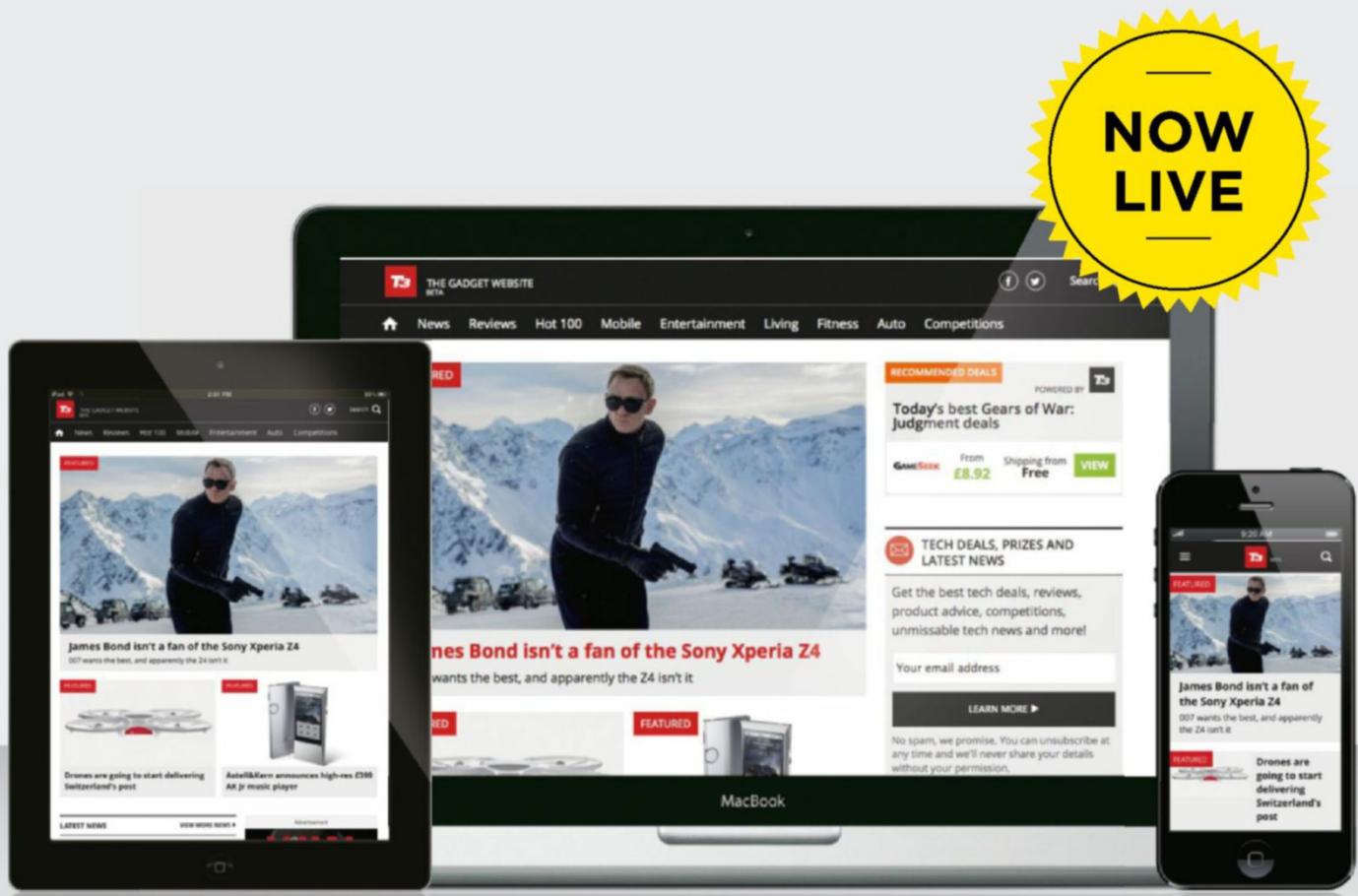
Click Save followed by the tickbox. Right-click the Droptl icon and choose Options. Tick both 'Ignore unassociated files/folders' and 'Use automatic choice for duplicates' (which should be set to Skip). Click OK. Open File Explorer and drag your camera uploads folder onto the Droptl icon and it'll process all matching files. Review its findings, then click the play button to copy them.



10 Job done!

Drag the Photos from Phone folder on to Droptl's icon. When prompted, tick 'Apply to all ambiguities of this drop' and click the rename option. Don't worry about the %Counter% appearing in the previewed filename – this will be correctly numbered when you click play. Congratulations. You've copied and renamed your photos to make them easier to manage! ■

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Showcasing the very best gadget news, reviews and features, now optimised for any screen, anytime, anywhere.

TAKE FULL **CONTROL** OF ALL YOUR **APPS**

Take control of your apps and you take control of your PC. Alex Cox explains all you need to know about managing your installed content

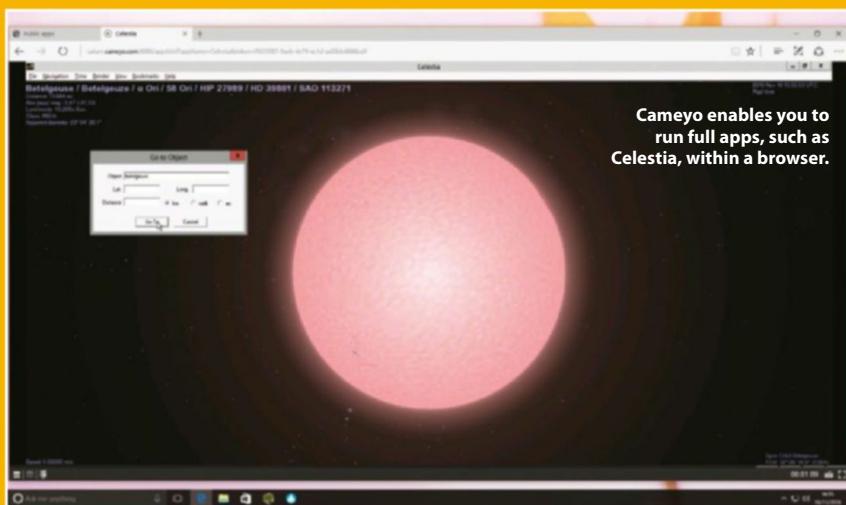




Applications – programs you run on your PC – are a constant. They’re always there. We all use them, and our machines would be dusty husks without them. But they do have a tendency to get a bit out of control, particularly if a system has existed for a long time. An application almost always consists of a bunch of files; the more apps and games you have installed, the more files exist on your hard drive. This isn’t, in itself, a problem, until your drive is filled with ten thousand chunks of goodness-knows-what, and a single search operation takes half an hour because Windows has decided it must meticulously inspect every single thing.

And here’s a quiz for you: What was the last program you installed, and where is it on your hard drive? We’d wager that, in the first count, you’re probably not sure, and in the second, you hammered through the process, let it ensconce itself in goodness-knows-what folder, and have absolutely no idea what other things it scattered over your hard disk.

Going with the flow of program installation is normal and entirely understandable, but it’s not difficult or onerous to get yourself organized, and a well-sorted PC will stand you in good stead for continued use. Unless you use extreme methods, you won’t ever be able to stop the miasma of random files seeping through your PC. But we’ll show you how to seek them out, and how to remove unwanted programs entirely. We’ll even show you new ways of installing software that make it easier to manage, update, and uninstall when you’re ready. And if the thought of installing software is giving you some form of filesystem OCD, we can teach you how to make your own portable apps that don’t need installing in the first place, or how to integrate your favorite apps into a custom build of Windows 10 that starts a clean PC exactly the way you want it.



Create portable apps

Installing isn’t the be all and end all of software. Check out <http://portableapps.com> – you’ll find a vast range of apps that run comfortably from a USB stick without marking your precious PC even slightly. But what if your favorite app doesn’t offer a portable version? Most programs can be made portable using Cameyo (www.cameyo.com), a system that uses the concept of a virtual machine to package up all the components of an application into a single executable file, either on your desktop or, excellently, online. We’re not done with installers entirely,

however; in order to create a Cameyo package, you need to fire it up, run the installer, and tell it when the installation has finished. It detects the changes made to the filesystem, and swallows them into its own virtual environment. When you then run the app, it finds the files exactly where it expects them to be, not even knowing that it’s running in virtual space.

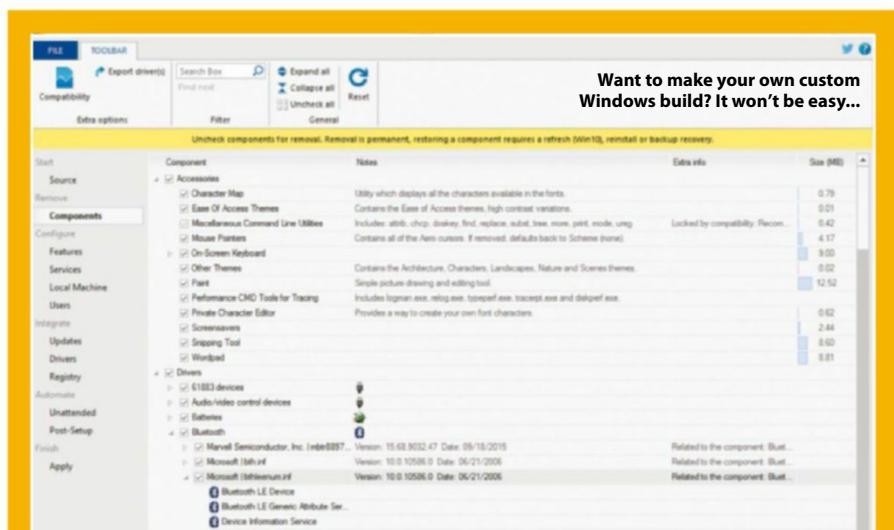
Cameyo’s commitment to portability extends beyond USB sticks full of apps, though. You can run your stuff entirely online with its cloud hosting service

(session time is limited if you’re a free user), or take advantage of its library of portable apps, all of which are ready to go in its online repository. This is especially useful if you’re using a managed PC – at work, for example – where you might be denied access to the software you need. Register yourself a Cameyo account, head to the site, and (as long as your network administrator isn’t wise to it) you’ll gain virtual access to some of the best free applications out there. Nothing to install, no trace left behind. It’s like you were never there at all.

WHAT IS INSTALLING

Once upon a time – and we’re going back some 20 years here – getting a program up and running involved little more than placing a few files in a folder on your PC. That’s all an installer did. Don’t have the right drivers? Tough luck. Find them yourself. Operating system not up to scratch? Go through all the hassle first, and you’ll find out that something’s wrong when you try to run your application. A dark time, but one with benefits: removing a program folder meant, usually, erasing all trace of that software. A simple scheme from a time when, however bleak things might have been, operating systems were less complex, and software depended on little.

Try manually excising a bit of software now, and you’ll not have a good time; the typical modern installer is responsible for more tasks, and spreads the software much wider, and uninstallers are required to scrape off the remains of redundant apps. The installer decompresses large files, which have been archived to ensure an efficient distribution size. It determines whether you’re installing from scratch or upgrading. It places references to program variables in the Windows



Custom Windows install

Installing Windows from scratch, if you're doing it repeatedly, can be an absolute pain. Although we've talked about ways of installing batches of software at one time in the main feature, that's not your only option. If you're deploying a batch of machines, you could do it using a system image – essentially a fully installed version of Windows, with all the software you're going to need, that you copy wholesale on to a new hard drive. Microsoft provides a tool called the Windows Assessment and Deployment Kit to help with this task, which includes ImageX, an application that can deal with the creation and deployment of system images. Find out more

and download the Windows ADK at <https://developer.microsoft.com/en-us/windows/hardware/windows-assessment-deployment-kit>, and make sure you run Sysprep (included with Windows) before making your image, to strip out everything machine-specific, including Windows license keys.

This is all rather complex and, frankly, quite redundant for most users. You'll probably be more interested in having a customized Windows build on hand for those odd occasions when you need to reinstall your operating system. NTLite (www.ntlite.com) is the perfect choice for this; it's a tool that helps you, yes you, create a

custom Windows build, integrating software updates, adding the software of your choice, and even setting it to install unattended. You can use it to remove Windows components, too, meaning you end up with a streamlined install, and you can automate post-installation tasks in order to avoid that tedious early-days rigmarole. The free version is absolutely adequate unless you're looking to use it for those IT manager tasks we're trying to avoid, although don't make the mistake of thinking it's a way of avoiding complexity completely. Building an NTLite Windows package is a task that requires a good few hours and a lot of coffee.

```
[+] 2010 Microsoft Corporation. All Rights Reserved.
C:\Windows\system32>choco install notepadplusplus -y
Chocolatey v0.10.0
Performing the following incomplete install for 'notepadplusplus.install'
Installing the following packages:
notepadplusplus
By installing you accept licenses for the packages.

notepadplusplus.install v7.2 [Approved]
notepadplusplus.install package files install completed. Performing other install file appears to be downloaded already. Verifying with package checksum to detect whether match.

notepadplusplus...
notepadplusplus has been installed.
notepadplusplus installed to 'C:\Program Files\Notepad++'.
The install of notepadplusplus.install was successful.
Software installed as 'EXE', install location is likely default.

notepadplusplus.v7.2 [Approved]
notepadplusplus package files install completed. Performing other installation.
The install of notepadplusplus was successful.
Software install location not explicitly set, could be in package or Default install location if installer.

Chocolatey Install 2/2 packages. 0 packages failed.
See the log for details: (C:\ProgramData\chocolatey\logs\chocolatey.log).

Chocolatey's command-line goodness tastes great.
```

registry, and configures other files to suit your hardware and personal preferences. It downloads, or upgrades, software dependencies – drivers and software frameworks that the program being installed may depend upon to run. And it does even more besides.

To make things even more complex, there's not one kind of installation package, though this won't make a huge difference to the average user. You most regularly come across executables (.exe files), which tend to use some kind of third-party program to get the job done, or Microsoft Installer (.msi) files, which do the same thing using Windows' built-in installation components. Others – the likes of .cub, .msp, and .msm – also use the Windows Installer, and are meant for patching or modifying components. You don't see them often while using Windows on the desktop, if at all, although those who stray into server territory might get more familiar.

For all we've said, a complex installation method isn't strictly required for every app. Many apps have been designed to run in a so-called "portable" configuration, where their content is contained in a single folder and requires no installation whatsoever. While these are few and far between – portable apps are usually small tools, although programs such as LibreOffice are also available in a non-installed format – they're perfect if you want to carry around a toolkit of apps on a USB stick. And you can even make your own, in a roundabout way; see "Create Portable Apps" (see page 57).

We have no doubt that you've installed programs before. Taking you through the ins and outs of clicking "Next" a few times in the course of a traditional software installation would be insulting your intelligence. But, as you may have guessed by the extent of this feature, the standard way is not the only way of going about things. The regular way, perhaps, but not the best in all cases.

You may, for example, have grabbed some of the rare decent software from the Windows Store, Microsoft's poorly-policed den of application iniquity. Whatever your feelings on its content, it has a number of advantages – Windows

Malwarebytes Anti-Malware 2.2.1.1043002

Authors: Malwarebytes Corporation | Maintainers:

Downloads: 64529 Package ID: malwarebytes

Total Downloads: 153278 Summary: Can detect and remove malware that even the most well known anti-virus and anti-malware applications fail to detect.

Created: 2010-09-11 00:00:00 UTC Description: Can detect and remove malware that even the most well known anti-virus and anti-malware applications fail to detect.

Last Updated: 2016-01-16 00:00:00 UTC

Package Size: 3.79 kB

Source Site: License: GPL-3.0+ Support: https://chocolatey.org/packages/malwarebytes

ChocolateyGUI Release Notes Credits

Version: 0.13.2.0

History

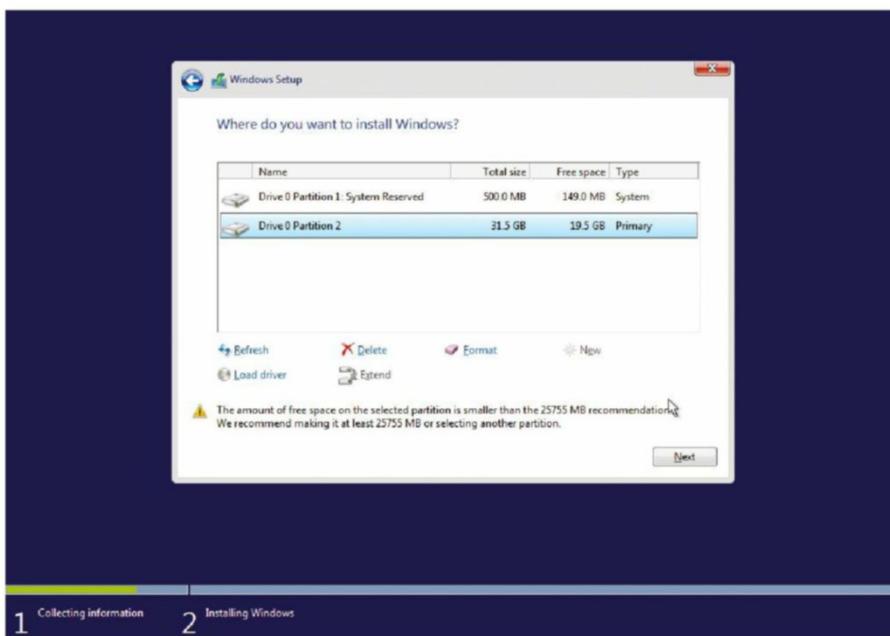
ChocolateyGUI, formerly known as Chocolatey Explorer or Chocolatey PackageManager, was originally created by jason.pisces.be. For information about the original version, you can see the following blog posts:

- [All new ChocolateyGUI](#)
- [Making a chocolatey package for ChocolateyGUI](#)
- [ChocolateyGUI](#)

In 2013, Christian handled over maintenance of ChocolateyGUI to [Serge Boonen](#), who later, under the supervision of [Bob Roth](#) (creator of [Chocolatey](#)), brought the application under the main Chocolatey Organization on [GitHub](#).

Since then, with a set of major contributions from [Jared Dawson](#), ChocolateyGUI has changed from a Windows Forms application to a WPF application, with a much richer User Interface.

Support



1 Collecting information 2 Installing Windows

Partitioning your hard drive when installing Windows can be a wise move.

Store apps run in a sandboxed mode, isolated from the main OS, which means that even if something malicious slips through, it can't attack your PC directly, and installing, removing, and updating Store apps is quick and easy. The technically minded might avoid it, and there are other ways of sandboxing apps you might not know of (see "Sandboxing Applications" on page 61), but don't underestimate its convenience. So that's one alternative, but let's explore some of the other ways of getting software on your PC.

BATCH MANAGEMENT

Sometimes you're starting entirely from scratch with a clean Windows installation that you need to get up to speed in a hurry. Problem is, deploying a new machine can be a massive slog of a job.

Collecting together the items you need is one thing, but running through the individual installation processes of all that software is time-consuming and labour-intensive, particularly if you're dealing with programs that include sneaky shovelware in their installers. One wrong click and you're infested, meaning it's not even a job you can do on autopilot. But there's a tried and tested solution that has been dealing with all that nastiness for a number of years, and it's even applicable if you're not installing a machine from scratch.

Ninite (www.ninite.com) compresses all that work into a single job, then deals with all the effort for you. It installs everything you need, preselected to your specifications, as long as it's in the extensive list of

supported software, without any hassle. Head over to the site, check a few boxes for your desired apps, and click the big button to download the installer. Run it, and Ninite automatically gets hold of the latest versions of your chosen free programs – which range from security and development tools to messaging and creative apps – and installs them in the background. They all end up in their default locations, and Ninite also ensures that those clandestine crapware boxes are never clicked. While you can't use it for automatic uninstallation unless you opt for the pro version (\$20/£16.28 a month, which also gets you the ability to perform network installs), it does support upgrading; an

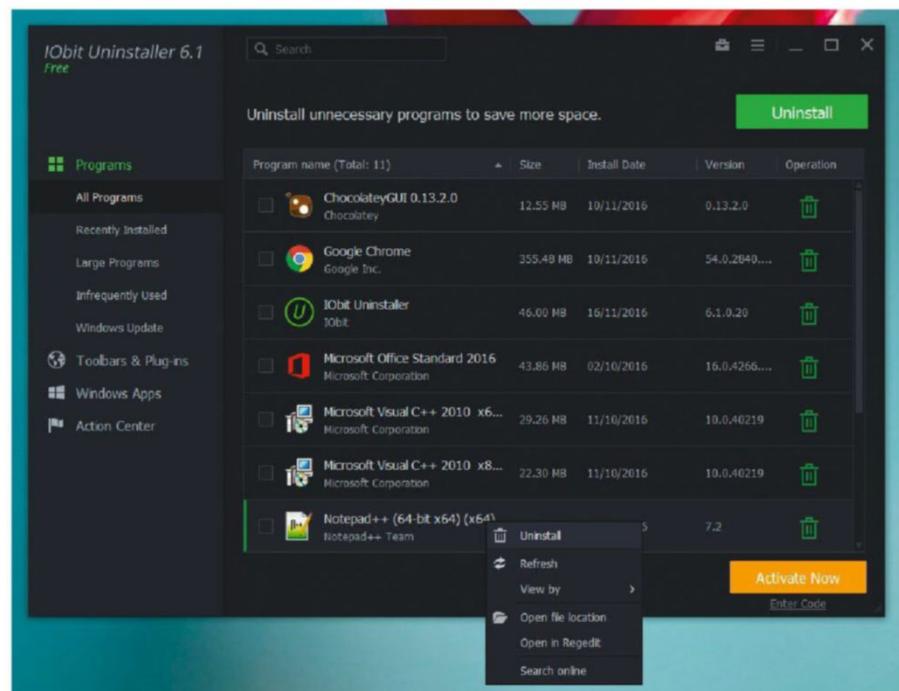
occasional run is all it takes to keep the applications on your system up to date.

PACKAGE MANAGEMENT

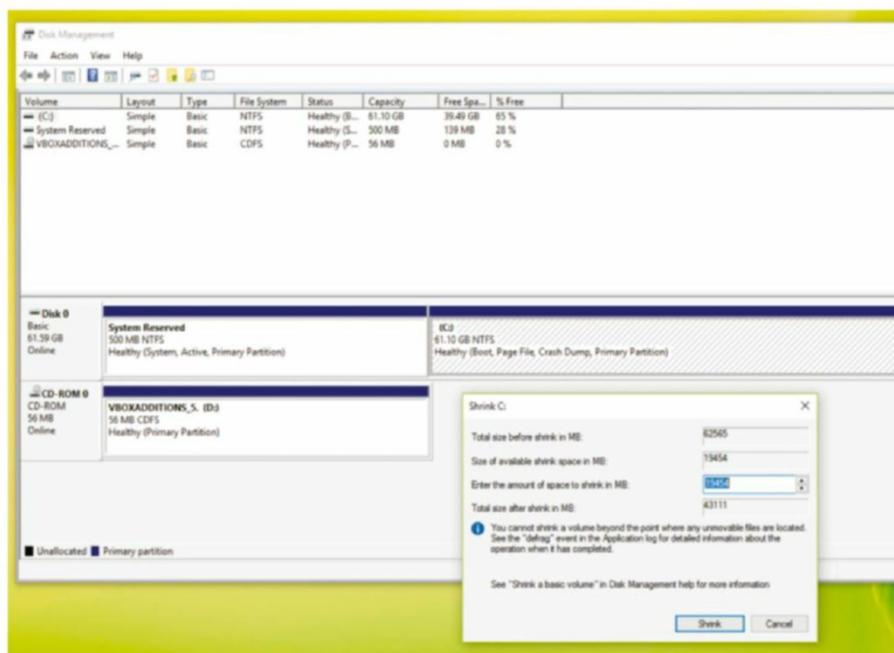
Although this feature is dealing with Windows, it would be a canny move to take a look at what the competition is up to. Most flavors of Linux are perfectly capable of installing software from files that have been directly downloaded – however, that's not the usual method. Linux tends to rely on a disparate group of package managers, small tools that can download, install, update, and remove software – thus dealing with both the hassle of finding it and installing anything else your machine might require to get it running.

Windows has been employing its own under-the-hood package manager for some time, a Powershell app called PackageManagement, which is a fork of open-source downloader OneGet. It is bafflingly complex – mastering it is a task for another day, although if you're intrigued enough to experiment, you can read more about it at <http://bit.ly/2gstsvW>. However, we think it's better to start with something more user-friendly and sweet.

Chocolatey is the delicious-sounding Windows analog to Linux tools such as apt-get, yum, and pacman, and it works in much the same way. Microsoft even uses its framework (which spawned from open-source app NuGet, just to add to the complexity of the software management family tree) as part of PackageManagement, which is a



Uninstalling is easy—and comprehensive—with IObit's tool.



Windows' Disk Management tool can split up any drive.

ringing endorsement. To get the command-line version of Chocolatey installed, open up an administrative command prompt by holding Shift, right-clicking the "Start" button, and selecting "Command Prompt (admin)." Head over to www.chocolatey.org/install, then copy and paste the top install line into your command prompt. Let it run for a while, then close and reopen the window once the C:> prompt reappears.

The first thing to try is, we have to admit, a little recursive. Try typing:

choco upgrade chocolatey

into a fresh command prompt, and you'll see Chocolatey's interface in action as it heads off to see whether there's a new version of itself available. There won't be, of course, because we've just installed it. But if there were, it would download and perform the upgrade autonomously. Let's get hold of something a little more useful now:

choco install notepadplusplus -y

grabs excellent text editor Notepad++ from the Internet, and safely ensconces it on your system, forgoing any standard Windows installer. The "-y" part on the end of that command means you tacitly accept any confirmations that might come up during the install, so it happens in an automated manner. Replace "install" with "upgrade" or "uninstall" to perform those tasks, and check out the Chocolatey docs at www.chocolatey.org to find out more – there's a huge number of ways to use it via the command line.

You may be more comfortable with a graphical version, however; use Chocolatey to install the package `chocolateygui`, and, once it's complete, you'll find it in your Start menu as usual.

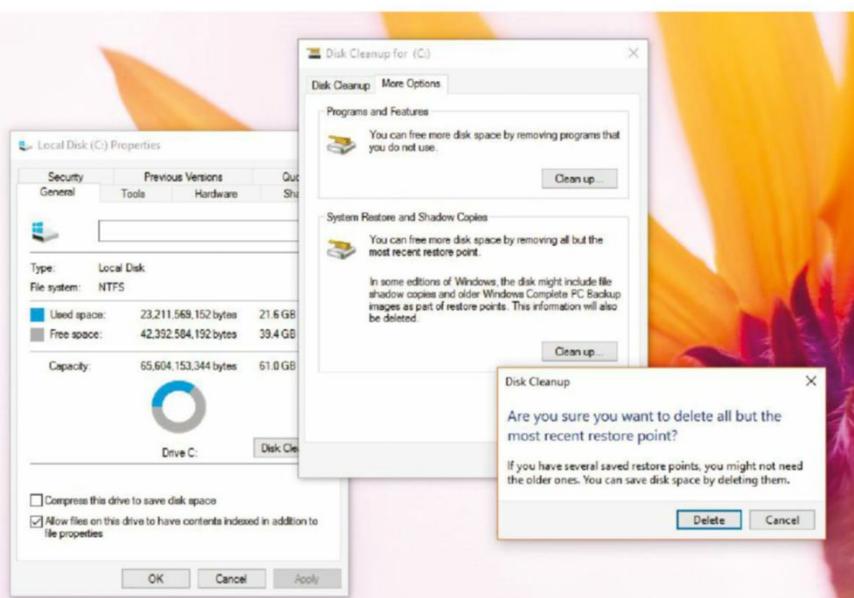
It's an easy interface through which you can manage the packages that you've installed on your system, and clicking the "Chocolatey" tab on the left leads you to the other applications you could have Chocolatey manage for you. The next time you need a piece of software, head to Chocolatey, type the name of the app in its search bar, and we'd wager it'll be there.

SPACE MANAGEMENT

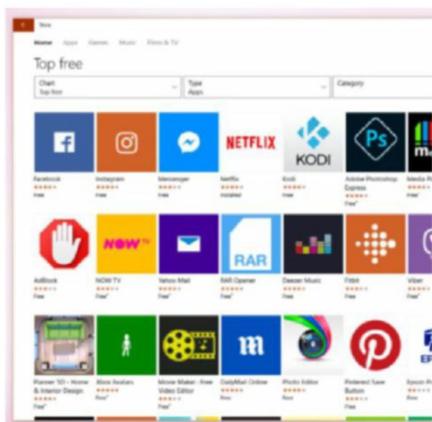
We're spoiled by today's enormous spinning drives and ever-growing SSDs. Space doesn't tend to be an issue. But managing it really

should be, both in terms of what's there and where you're putting it. Yes, Windows search can dig things up quite readily, but despite Microsoft's attempts to improve it, searching on NTFS drives is simply not a quick task. However, if your files are well, er, filed, you may never need to do a Windows search again. Consider, before you do anything rash, changing your default installation directory. By default, most applications you install either nestle in the "Program Files" or "Program Files (x86)" folders, splitting them up between those that run natively in 64-bit (the former) and those that don't. Logically, this makes sense; practically, 64-bit Windows is now the mainstream, 32-bit applications are entirely compatible with 64-bit systems, and there's no reason to split them apart in this way. It's just confusing. But during each program installation (bar those of poorly-coded programs that rely on specific directories to run), you are given a choice as to where you install your software. Setting up your own folder structure – say, a "Programs" folder, with folders within labelled "Music," "Office," et al – is a great way both to neaten up your collection and find out what you have installed when the Start menu begins to get a bit unruly. It's a five-minute manual job that will make life easier in the future.

Desktop Windows isn't nice enough to offer folder quotas for files in the same way its server-focused skew does. Quotas, as you might expect, help control the amount that users are allowed to store. Restricting yourself in this manner is a great way to make sure you're cleaning out the dead wood regularly – if you're forced to make room every time you want to stick a new game or program on your system, those tough decisions suddenly get



Windows' Restore Points can quickly build up. Trash the old ones.



Windows Store apps are safe and easy to work with, if not, necessarily, very good.

much easier to make. As we've said, Windows doesn't naturally support such storage handcuffs, but we can help you get around it with a little cunning and a lot of partitioning.

CHOPPING AND CHANGING

By splitting your drive up into several chunks, you can effectively organise your content and

stifle the amount of it that you allow yourself to hang on to. Why not give yourself a virtual D: drive for your programs, an E: drive for photos, a Q: drive for videos, and so on? There are secondary benefits: You can quickly defragment your OS partition without worrying about the rest of your drives; certain malware only affects a single partition, leaving the rest of your data safe; and formatting your Windows partition to fully reinstall doesn't mean a loss of your files. That said, as we've expounded upon, your installed programs are unlikely to work properly, thanks to the required references that get scattered through Windows whether you like it or not. Copying files between partitions is also slower on spinning platter drives, due to the physical distance the read/write head needs to travel between the split areas of space.

You might think partitioning is something that can only be done to a clean system. That certainly is the easiest way to make it happen. As you run through the Windows installer, early on (if you don't choose the "Upgrade" option) you're given the option of where to install Windows, at which point you can also chop your disk up, and format it as you see fit. We'd leave at least 32GB for Windows itself – if you're running an SSD and a magnetic drive in parallel, use the SSD for the operating system. Doing it this early is beneficial both in terms of instilling an ethos of organisation to your system,



Sandboxing applications

The Windows Store is clever. It shuts its apps away in their own little capsules, protecting your computer from rogues, and from the influence of anything untoward that may be swimming around your OS. Most standard Windows apps, though, don't have this facility. Unless, that is, you add it yourself. Sandboxie (www.sandboxie.com) does exactly this. If you've grabbed something a bit sketchy and need to test it out without risk, you can install it within a sandbox to ensure it doesn't get its tentacles in. Running a web browser on a family PC? Run it via Sandboxie to

prevent your kids from downloading awful PC gremlins, or to stop your mom from inadvertently "upgrading" something she shouldn't. Threats such as CryptoLocker are completely negated by running a sandboxed browser, unless your mother somehow works out how to store her important documents within the sandboxed folder structure – that's behavior you need to curb on your own, though. Once you've set it up, you can open your sandboxes (through the app) as standard folders using Explorer.

Sandboxie can be used for free, though you get a nag screen after 30 days, and miss

out on a few features only available to subscribers – if it's something you use regularly, you can sign up for £22.21 per year. There's a secondary benefit too: Sandboxie tucks all of the data from a program away in a single contiguous chunk of hard drive space, meaning deleting a sandboxed app doesn't leave the same fragmented storage you might get after uninstalling a regular program. It's a very minor thing, and there's every chance you're not even slightly worried by the behind-the-scenes goings-on of your data, but a well-organised drive is a fast drive.

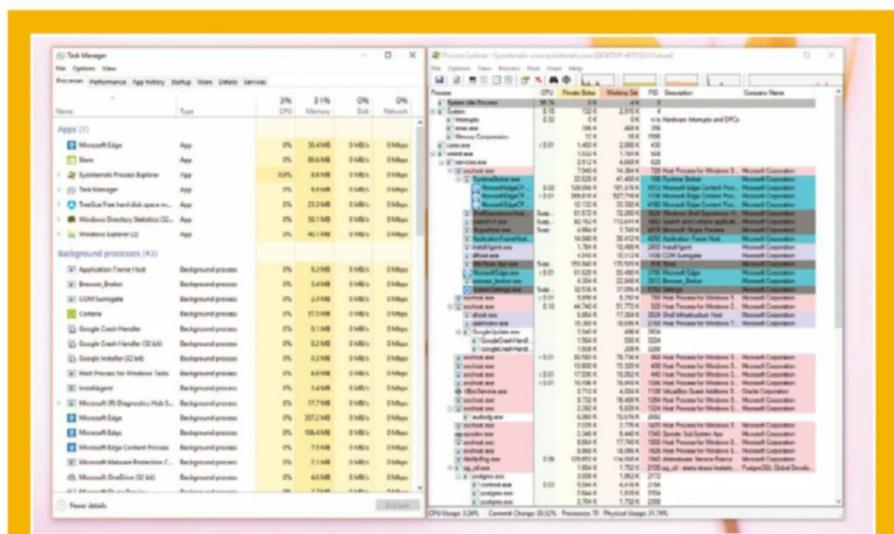
and for speed – your Windows install won't need to shuffle itself around or be defragmented to make space for a new partition.

POST PARTITIONING

It's likely, though, that you're not going into this from scratch. And that's OK; Windows' own Disk Management tool (right-click the "Start" button, and select "Disk Management") is all too happy to slice up the drives of any living system. Open it up, and you may see that what you thought was a simple drive actually consists of several different partitions;

we tried it on a laptop we had hanging around – one that had seen itself upgraded from Windows 8 to 8.1 to Windows 10 to the Anniversary Update – and discovered a host of recovery partitions and other empty space. It might be tempting, seeing this, to ditch this wasted space, but without knowing exactly what's on each partition, we advise that you tread very carefully.

Find your main partition, or a partition you want to split, in the graphical representation. Right-click it, and select "Shrink partition" to begin the operation of creating some empty space. It's here that you'll see just how much you're allowed to shift; so-called "unmoveable" files put a damper on this in a hurry, but this problem can often be sorted by (temporarily) disabling



Finding resource hogs

Although we've mainly had our eyes set firmly on your hard drive in this feature, your applications don't just take up space there. Certain programs can have a disastrous negative effect on the overall running of your system, and might even be running on your system without your knowledge. Task Manager can do a pretty good job of showing you what's going on; hit Ctrl-Shift-Esc to open it, then "More Details" to see a categorised list. Right-click the column headers, select "Type," then click it to sort the apps in the list, and have a look through to see what's running. Keep an

eye out for things that hog your CPU, memory, and disk access, and then look at the "Performance" tab for a graph of the usage of these elements over time. The "Details" tab can give you a bit more of an insight into exactly what everything in the "Processes" tab is actually supposed to do. Do a full reboot of your system, reopen Task Manager, and have a good look at what's running for anything you wouldn't expect to be there had you not opened it yourself. In all likelihood, it's there because of some autorunning application, so head to the "Startup" tab, and disable any items you don't feel you

need. This can often make programs load a little more slowly – they have to load these components at run time, instead of them being ready when you boot your PC, but they can always be enabled again at a later time if you notice a problem.

Spying on running software can get rather addictive, and it's fully possible to delve even deeper than the Task Manager allows. Try Process Explorer (<https://technet.microsoft.com/en-us/sysinternals/processexplorer.aspx>), one of the Microsoft Sysinternals tools, to see what's happening on your system in ridiculous detail.

System Restore or running Disk Cleanup. You can shrink your main partition down to the individual megabyte, but be sure to leave a reasonable amount of space free on your Windows partition in order that it can accommodate system updates and virtual memory. Once the shrink operation is complete, create your new partition or partitions by right-clicking the now unallocated empty space, selecting "New simple volume," and allocating your desired amount of space, repeating the process for each new partition you wish to create.

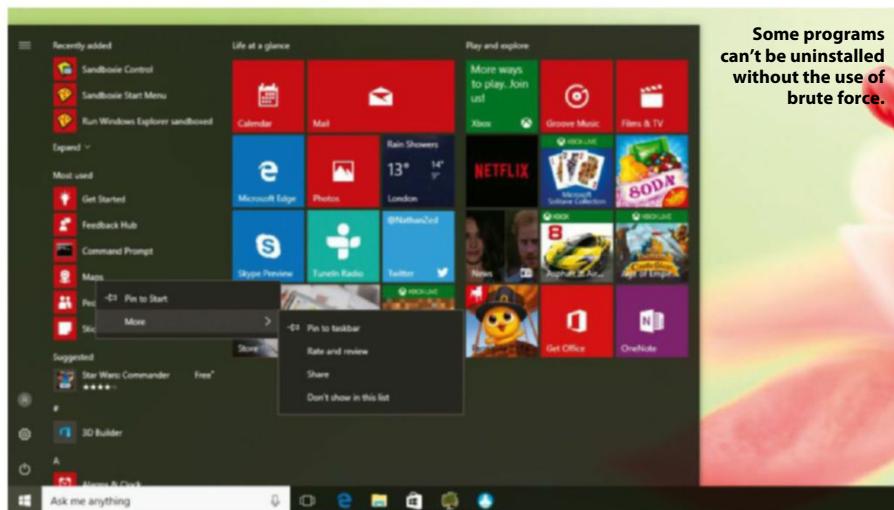
CLEANING UP

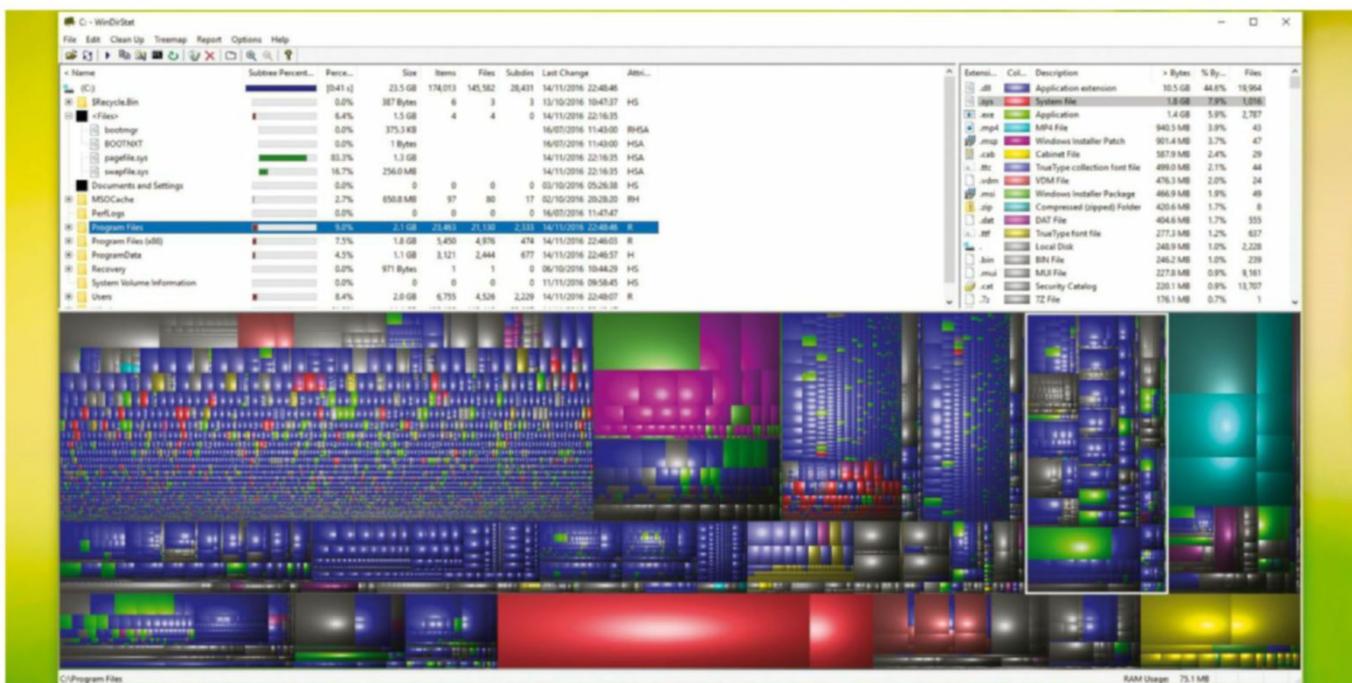
Where, oh where does the space go? An established system tends to eat up hard drive bytes

somewhat mysteriously, and if you're obsessive about watching your drive stats, you may be wondering what's going on. We can't tell you precisely, although there are a few obvious culprits to look for if you're getting too low for that big app install. First, and most prevalent, are System Restore points. These have the potential to be huge on their own, but if you're doing frequent installs, your Windows system may be making loads of them, and keeping a needless archive. Disk Cleanup helps you delete all but the most recent. To find the option, open up an Explorer window, right-click your OS partition (or just your C: drive), select "Properties > Disk Cleanup > Clean Up System Files," then head to the "More Options" tab. Disk Cleanup can also clean up temporary files and the like, although you may not save a vast amount of space this way.

So where are the hogs? The best way to find out is to use a visual method, rather than poking through Windows Explorer poring over file sizes. For this you have two primary choices: TreeSize Free (www.jam-software.com/treesize_free) and WinDirStat (<http://windirstat.net>). TreeSize feels very much like a natural extension of Windows Explorer. Install it, and it runs from a context menu; right-click a folder or drive, fire it up, and it very quickly trawls through, and finds out exactly what's inside, offering you the option of reopening as an administrator if any of your files are locked down. It then lists your folders by their size, with a handy bar graph indicator in the background. Drill down into the largest folders, and you'll find your files – you can right-click them for a standard Explorer context menu, but be careful not to delete anything you don't explicitly know the meaning of.

WinDirStat is a similar tool, but infinitely cooler in that it ramps up the





WinDirStat's rectangular map is incredibly useful for finding gargantuan files.

visual finery to a huge extent. Give it a run, select your drive (or “All local drives” if you want to be unnecessarily thorough), then wait as it laboriously traverses your disk in search of meaty files – it’s certainly nowhere near as fast as TreeSize. When it’s done, though, you’ll see the benefit: a colour-coded map of your entire drive, with rectangles representing the size of files, collected into larger rectangles that represent folders. Click a big file and check the status bar to see exactly what it is, and right-click to find a context menu that will help you open the folder in Explorer or copy its path to your clipboard. Click a folder or file in the top left pane, and it highlights it in the visual view, or use the top-right pane to hunt down files of particular types. They’re listed, by default, in order of the size those files take up, so it’s a good way to discover which culprits are munching up your hard drive space.

TIME TO UNINSTALL

Once you’ve found the monsters – or when you’re simply done with your apps – how do you

remove them? You might be surprised, but we’re going to suggest that the best way to clean up an old app is by using Windows’ own built-in interface, which you can find in the “Programs and Features” section of the Control Panel. Removing files using this tool automatically fires up their included uninstaller (or, in the case of MSI-installed components, the Windows built-in equivalent), which should mean

all trace of the app is wiped away. Make sure, if using this method, that you remember to check any boxes that also remove settings files or equivalent because, while they’re not going to take up much space, any redundant files you leave on your drive slow down indexing and basically irritate you no end.

If you’re a fan of overkill and salting the Windows earth, try a tool such as IObit Uninstaller (www.iobit.com). It’s available as a portable app from <http://portableapps.com> (because if anything should be, it’s a tool that helps you get

rid of installed software), and it’s a great way of making sure every trace of an app is removed. Set the app to work, and it bangs through your registry and filesystem to find the files traditional uninstallers might have missed. If a program doesn’t appear to be installed – as in, it doesn’t appear in “Programs and Features” – you can also point IObit Uninstaller at its executable file, and it does its best to do an automatic uninstall. The app isn’t flawless, but it does a good job of uninstalling those files other uninstallers might miss. ■

Super removal

Uninstalling apps you’ve deliberately added to your PC is one thing. Hacking away the dead wood that Microsoft includes by default in Windows is another. It doesn’t look easy – there’s not even an obvious way to remove those horrible, redundant entries from the Windows 10 Start menu. At least, there doesn’t seem to be, but there’s a sneaky feature built in to Win 10: Right-click an unwanted app in the Start menu list and, if it can be easily gotten rid of, an “Uninstall” option is present in the context menu. But what of the ream of apps that can’t be chopped out in this way?

For this you need Powershell, the super-command line that’s included in Windows. To remove the 3D Builder app, for example, find Powershell in the application list, right-click it, select “Run as administrator,” then type:

```
Get-AppxPackage *3dbuilder* | Remove-AppxPackage
```

This uses Get-AppxPackage to seek out the appropriate program, then pipes its location and information to the Remove-AppxPackage tool; the phrase within the asterisks can be replaced with the specific package names for a host of applications, though these aren’t immediately obvious, so here’s the basic list:

3D Builder:	3dbuilder
Alarms and Clock:	windowsalarms
Calendar and Mail:	windowscommunicationsapps
Camera:	windowscamera
Groove Music:	zunemusic
Maps:	windowsmaps
Movies & TV:	zunevideo
OneNote:	onenote
People:	people
Photos:	photos
Store:	windowsstore
Voice Recorder:	soundrecorder
Xbox:	xboxapp

UPGRADE YOUR PC TODAY!

What hardware to upgrade in your ageing machine, and when



The concept of the upgrade path is at the very core of the hardware enthusiast's philosophy. The notion that you can take a five-year-old system, throw out a few parts, install a few new ones, and have a rig up and running – which almost competes with a brand new build – in less time than it takes for Donald Trump to send a tweet is certainly appealing. But how far does it go in practice? What makes the biggest difference? And what should you upgrade first?

This month, we decided to find out. We took two case studies, two rigs gathering dust in the corners of our office: the first was a gaming system, the other a PC workstation. And then we chose two very different upgrade paths for them both, just to see what makes the biggest difference to overall performance in their respective fields.

The first system was an ageing workstation. Featuring a mighty Core i7-970, this bad boy was Intel's second venture into six-core processors – and coming in at 3.2GHz and £700, it was no slouch. Coupled with a thwomping 6GB of DDR3 1600, a singular 2TB SATA II HDD, and a powerful ATI HIS HD 5870 graphics card, it was a monster in its heyday. Six years on, however, its hard drive is sluggish, the processor on a par with a modern Core i5, and its motherboard support simply laughable.

In the other corner is our gaming rig. Far younger than its sibling workstation, this one had fared a bit better over the years. Featuring an Intel Core i5-4670, this Haswell monster still had plenty of computational power to muster – with 8GB of RAM, a 256GB OCZ Vertex 4 SSD, and a reference Nvidia GeForce GTX 670 pumping those frames, you could still game at 1080p Full HD, even if it did deliver far below the minimum 30fps in most cases.

So, if you're curious about what you should upgrade next, and whether it's worth it, or you just want to take a look at what we did to bring these mature machines back to life, read on.



PC fixes
Upgrade your PC



PRACTICAL ADVICE FOR UPGRADING

There are plenty of reasons why we upgrade. They can range from the essential to the vain, from the aspirational to the vital. An upgrade may allow you to hit better frame rates in your favorite games, or give your system enough raw grunt to tackle a title that it couldn't before. If you use your machine for more serious work, an upgrade may allow you to get more done in a shorter space of time, or even do things that you wouldn't have been able to do with your current system.

A reasonable rule of thumb is: if you find yourself waiting for your machine to finish a task, then it could probably do with an upgrade. Whether that's rendering a video, applying an effect to an image, booting, loading an app or a website – anything at all, really. Your time is precious, so don't squander it waiting for a machine to complete a

task, when technology is there to help. And it doesn't have to be a hardware upgrade that you need; turning to better software, or tweaking the software you're already running, could also be an option – but we'll come on to that shortly.

Of course, there tends to be something holding most of us back when it comes to pulling the trigger on constantly upgrading, and that's the cost. Weighing up the benefits against the price tag is just as important as working out what those hardware updates should be. If your budget can extend to getting the best component in each category, then all power to you, but most of us can't afford to maintain such an aggressive upgrade regime. If you know that you're going to have to change out several vital components, then planning your upgrade path makes sense – buying a graphics card that will

still be relevant when you change up your processor and motherboard later.

Knowing what you want from an upgrade is key, because without that knowledge, you're just chasing the next biggest and brightest thing, without taking stock of whether it actually makes sense. Working out what you want to do also enables you to focus on the component or subsystem that will have the greatest impact. Quite often, only you can really know what that area is.

For instance, we wouldn't normally recommend that you spend your time and money upgrading your memory, because for the vast majority of uses, 8GB is enough (or even 4GB, if you're dealing with a much older machine). However, if you're multitasking a lot, editing multiple 4K images, and messing around with Ultra HD (UHD) video, then doubling up to 16GB or even 32GB could reap real benefits.

PROCESSORS

Your CPU is at the heart of pretty much everything you do, so there's a certain logic in coveting the very latest processor architecture, and seeing that as the magical panacea to all your computing woes. The problem with this train of thought is that more recent CPU upgrades have been fairly subtle in real terms. In fact, the last few generations have seen raw performance increase by just 10 percent. So, if you miss a generation, there's not too much to get upset about.



Aim for a platform, and reap the benefits of the latest technology.

Miss a few generations, though, and those figures add up (such increases are cumulative).

We haven't seen any major shift in core counts for mainstream processors, and the frequencies have been creeping up reasonably slowly as well. So, even if your CPU is a few generations out of date, that's no guarantee that a CPU upgrade will transform your PC. Indeed, as we found in one of our case studies over the page, a decent CPU from quite a few years ago can still stand its ground against newer chips in practical terms.

There is a fairly major caveat here, though, which is that newer processors support newer technologies, aka the chipsets, and in terms of the bigger picture, this could make a CPU and motherboard upgrade (see page 73) a far more attractive option. M.2 NVMe drives, for example, can hit transfer rates of 3.5GB/s, as opposed to a lowly SATA SSD, which sits at a meagre 550MB/s – and you may need to upgrade to take advantage.



GRAPHICS CARDS

If gaming is something that interests you, you need a graphics card. If you want to play the latest games, you need an up-to-date graphics card. That's pretty much the long and short of it. If gaming is lower down on your list, you probably don't need to upgrade – in fact, you might be able to get away with the integrated graphics capabilities of your CPU. As we say, knowing what you want to use your machine for is key.

As ever with graphics cards, you need to keep your target display in mind when looking at upgrades. There's not a lot of point dropping £619 on a GeForce GTX 1080



Graphics cards aren't just for playing games.

if you're happy with the standard HD display you have, and don't intend to upgrade it any time soon. Buy a graphics card that can drive your display(s), it's that simple. We run plenty of graphics card group tests to help you make the decision on what graphics card is right for you, but just as with the processor market at the moment, there's a good

correlation between price and performance – if you're serious about playing games, then it's wise to spend as much as you can to get the performance you need for today's and tomorrow's titles.

There's a proviso, which is to do with using a graphics card for more serious work. Some applications can take advantage of the processing power of a graphics card using CUDA or OpenCL to

improve performance – we're talking about the likes of Blender, Maya, and Sony Vegas, among others. The problem is knowing which applications you use actually take advantage of which cards, using which API, and ultimately to what benefit. Check out the developer's website for the application you're using, to see if there's any advantage to using a specific graphics card.

STORAGE

While PC processors and graphics cards get the most love in any upgrade decision, they're not the only areas of your system that you should be considering. In fact, we would suggest that another component should be the focus of your passions nowadays, and here we're

talking about storage. If you're looking to make just one upgrade to your PC, then upgrading to a modern, speedy SSD will make a very real difference to pretty much everything that you want to do.

Yes, we know that it isn't traditionally the sexiest bit of

computing, but the amount of difference storage can make to how you use your machine can be as obvious as the difference between night and day. This is particularly relevant if you're rocking a spinning hard drive as your main boot device, but also true if you're going from a

first- or second-generation SSD up to a modern NVMe M.2 drive. This in turn may require an upgrade to your system's motherboard, which could lead to a new CPU, new memory, and more, so as ever, it comes back to what you actually use your machine for.



Do yourself a favour: upgrade to a modern SSD.



There's still a place for spinning storage in modern PCs.

CASE STUDY: GAMING

So here she is, our upgraded gaming machine. From the get go, she came packed with a quad-core processor, 8GB of DDR3, a slightly ageing OCZ 256GB SSD, a 1TB hard drive, and the powerhouse that was the Nvidia GeForce GTX 670. Boy, those were the days, huh? Not too old, we know. This machine was pieced together back in 2013, making it, relatively speaking, still fairly new. And it shows – the motherboard at the rig's heart is still sound. There's an M.2 slot offering up to 10Gb/s transfers, plenty of PCIe slots for additional cards, support for up to 64GB of DDR3, and even onboard power buttons.

AIM OF THE UPGRADE

So, the story behind this system was fairly simple: We assumed that the gamer in question was on a tight budget, they didn't have a lot of cash to throw around, and had only managed to save up for the occasional lump of hardware here and there since it had been originally built. The last and biggest bundle being the motherboard, processor, and GPU combo.

The case was old, probably taken from an office PC from years ago, or a long forgotten PC from a back room. The



Double or nothing? Two GPUs can yield benefits, but they also increase your power draw.

power supply was also old, and the storage was somewhat wanting. So, ultimately, we kept it simple and just upgraded the memory capacity and the GPU. Upgrading from Nvidia's GeForce GTX 670 to the GTX 1060 would not only reduce the power draw overhead from the GPU, but also improve frame rates by well over 100 percent.

The Intel Core i5-4670K is by no means the bottleneck in this system – not yet, anyway – but we threw out the old memory in favour of something a little more impactful. So, we grabbed two sticks of 8GB DDR3 to ensure that we could both game and run programs from the desktop without worry.

FREE UPGRADES?

There's a variety of things you can do to eke out extra performance here and

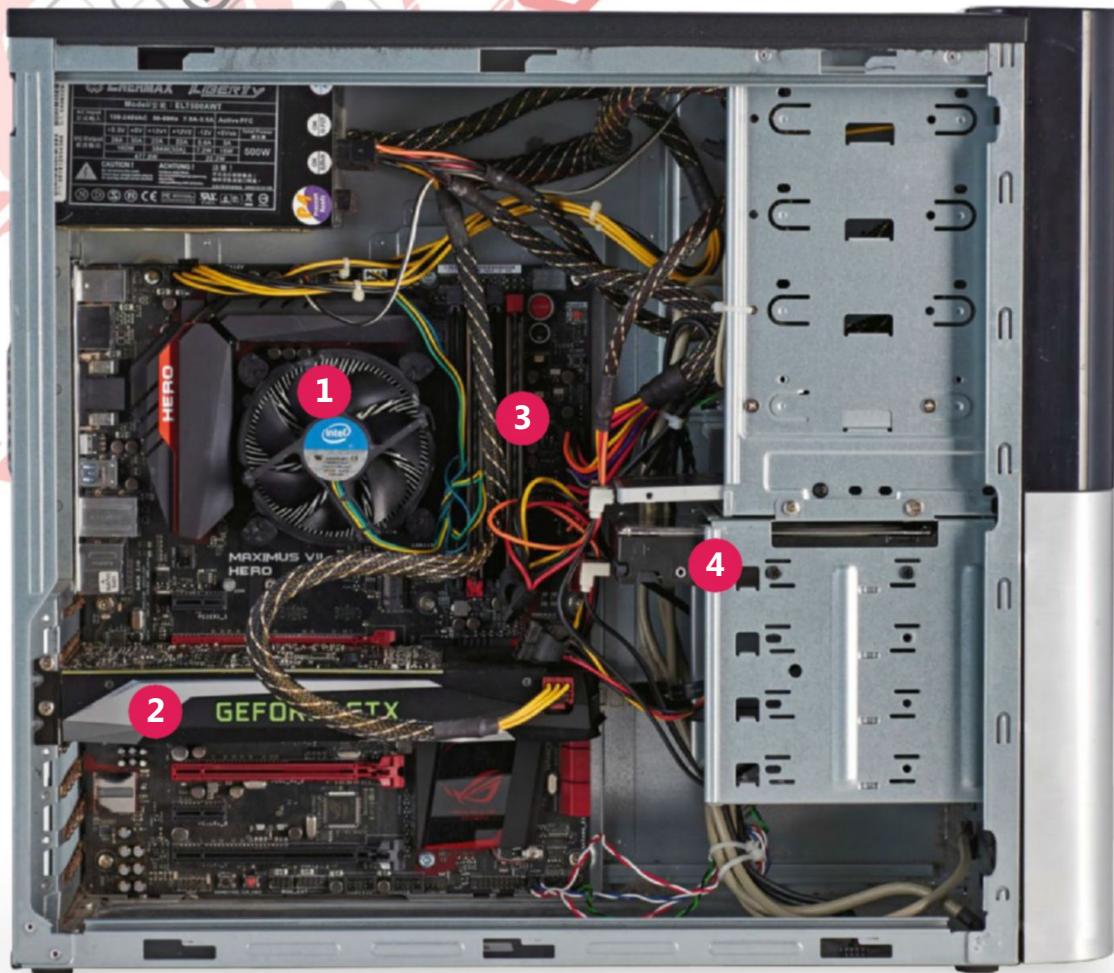
there in a gaming rig like this. Keeping your graphics card drivers up to date is essential if you want to improve system performance. An unoptimised game can benefit by as much as 20–30 percent, purely from a driver pass. Couple that with a gentle GPU overclock, and you can crank those frames back up when you begin to experience problems.

Another cheap fix is to increase the number of fans in your build. GPU Boost 2.0 automatically increases the core clock of your graphics card, dependent on the overall temperature, so throwing a couple of extra fans in the front of a chassis, or even on a ventilated side panel, should help keep your card cooler, and let it overclock higher.

However, if you're concerned that your processor may be holding back your GPU, you can throw the multiplier

SPECIFICATIONS

	Base	Upgrades
Processor	Intel Core i5-4670K	
Memory	8GB (2x 4GB) Corsair Vengeance DDR3 @ 1,600	16GB (2x 8GB) Crucial Ballistix Tactical 1600 (£100)
Motherboard	Asus Maximus VII Hero	
GPU	Nvidia GeForce GTX 670 2GB	Nvidia GeForce GTX 1060 6GB (£275)
Storage 1	256GB OCZ Vertex 4	
Storage 2	1TB Hitachi 5,200rpm HDD	
Cost		£375



1 CPU

Ultimately, we decided to forego upgrading the processor. The Intel Core i5-4670K inside this machine holds more than enough potential to handle any game or program we can throw at it. And if we really need to, we can swap out the cooler for something chunkier, and crank those hertz up.

2 GPU

Swapping from a GTX 670 to a GTX 1060 made a whole world of difference. We opted to go for the 6GB reference variant in the end for this build, but the frame rate difference between that and the 3GB version really isn't catastrophic. We saw an overall increase of almost double in every game.

3 MEMORY

Upgrading from 8GB to 16GB of DDR3 for this build was purely a quality-of-life procedure. Having access to more memory gives us the opportunity to run VOIP clients, Google Chrome, and recording software, all while running some of the more demanding AAA gaming titles out there.

4 HARD DRIVES

All things considered, the storage situation was pretty sound from the start. A 256GB OCZ Vertex4 is still quite a competitive drive, and backed up by that 1TB HDD, it covers all your bases. We would have loved to have changed to a PCIe drive, but for a gaming system, it's not entirely necessary.

up a fraction to see if that can alleviate the problem. If you're running a stock cooler, as we are with this system, we suggest leaving the voltage alone entirely, and adjusting the multiplier by two or three at most.

CROSSFIRE CONUNDRUM

An alternative to purchasing a new GPU is to opt for a second older card instead, usually within one to two years of purchasing the first, if you can find one. This can be a good solution to save a few pounds, but it's not without its setbacks. Firstly, SLI and CrossFire profiles aren't always perfect. Generally speaking, on game launch, most titles simply don't have support for any

multi-GPU configurations. Which means your second card immediately becomes a paperweight. On top of that, it's likely that you'll end up with trouble in the power supply department as well, if you're not careful, because you can easily add an additional 200W of power draw simply by adding the additional card. On the other hand, getting a more powerful card the first time around, or a newer generation of GPU, will lead you to guaranteed better performance, and better power savings in the long run.

THE RESULT

Well, it was always going to be a sure-fire victory for the GPU. The Intel Core i5-4670K is still an extremely

competitive core. In fact, unless you're running anything pre-Sandy Bridge, you're unlikely to reach any bottlenecks with regard to gaming and graphical limitations. If this system was going to be sitting in the office for much longer, we would definitely consider swapping the ageing case for a more modern chassis, and potentially go for a newer power supply and better cooling, too – just to reduce noise and for peace of mind. That said, thanks to the changes we've made, this is a system that is more than capable of gaming at 1080p Full HD and beyond. And that's not bad considering our self-imposed budget limitations and a total spend of just £375. What a bargain!

CASE STUDY: WORKSTATION

This is by far the more interesting build. In fact, its ancient and decaying spec sheet was still far more intriguing than the updates that followed. With one of the world's first six-core consumer processors, 6GB of DDR3 memory, and a prestigious Intel motherboard (yep, it still made them), this system managed to crank out some serious numbers even today, six years on. The hard drive situation was far less desirable – with two SATA II HDDs, it was mostly used as a web server, before finally being retired two years ago. Last week, it was a shelving unit. So, what did we manage to salvage?

AIM OF THE UPGRADE

This was the biggie. We knew we wanted to upgrade to a more modern chipset. But a more modern chipset requires a brand new motherboard, and a new mobo requires a new processor, which requires new RAM. Like a cascade effect, upgrading one part meant that pretty much everything had to change. We opted to replace the rapidly ageing Gulftown processor with an Intel Core



Ensure your PSU is rated to provide about 25 percent more power than your system draws.

i7-5820K – it's cheap, packed with additional PCIe lanes for future upgrades, and supports the latest X99 motherboards. Then we had to decide on the memory, upgrading from a tri-channel 6GB kit of DDR3 all the way up to a 32GB kit of quad-channel Crucial Ballistix Elite.

Motherboard-wise, we decided to go for the EVGA X99 Micro 2. It looks crisp and clean, it performs well, and it fits into our shiny new case well, too. On top of that, it gives us lots of expandability going forward, enabling us to install two add-in cards if needed at a future date. We also fitted a 240GB Kingston HyperX Predator M.2 PCIe SSD – not the fastest of the PCIe SSDs, but it's cost effective, and easily knocks the old SATA II hard disk drives out of the park.

FREE UPGRADES?

There are a couple of free options on a setup like this. We took the old 2TB SATA II hard drives, and configured them to operate in RAID 0 to boost sequential read and write speeds. To do this, go into your motherboard's BIOS settings, find your SATA configuration panel, and change the storage type from AHCI to RAID. Upon restarting, hold Ctrl, and press I repeatedly to get into the RAID menu. Select the drives you want, choose the RAID setup you'd like, and create away. If you are using RAID 0, it should double the potential sequentials; and if you're using RAID 1, it mirrors the data on to the second drive, so if one drive fails, you always have a backup.

Then there's overclocking. This is far more useful for rendering tasks on

SPECIFICATIONS

	Base	Upgrades
Processor	Intel Core i7-970	Intel Core i7-5820K (£399)
Memory	6GB (3x 2GB) Patriot DDR3 @ 1,600MT/s	32GB (4x 8GB) Crucial Ballistix Elite DDR4 @ 2,666MT/s (£250)
Motherboard	Intel Desk Board	EVGA X99 Micro 2 (£234)
GPU	ATI HIS HD 5870	
Storage 1	2TB Western Digital SATA II	240GB Kingston HyperX Predator M.2 SSD (£180)
Storage 2	2TB Western Digital SATA II	
Misc		Case, PSU, CPU cooler (£400)
Cost		£1,463



1 CPU

The CPU was the second-biggest change we made to this system. Jumping forward by five generations of processor technology has helped to push performance up by almost 35 percent in contrast to the Intel Core i7-970 that was originally found in this machine. A very worthwhile upgrade.

2 MOTHERBOARD

And now the biggest change we made: the motherboard. Not only did we opt to go with an X99 board this time around, but we also swapped over to microATX in the process. This means we can choose a smaller, more versatile chassis, yet still retain all of the power of the X99 socket.

3 HARD DRIVES

Another massive change for our workstation is the upgrade from the ageing SATA II hard disk drive to the modern powerhouse of a PCIe SSD. Although it's not the fastest SSD drive out there, the HyperX positively warps space when you compare it to its spinning predecessor.

4 GPU

Simply put, this isn't a system for the gamers – it's a system for the designers, the CAD developers, the artists, the videographers, and the photographers. An expensive GPU simply isn't necessary. Could it be used for gaming in the future? Of course, but for the time being, it's far from essential.

workstations than on gaming PCs, bumping the Intel Core i7-5820K up to 4.2GHz is relatively easy, and shaves off a significant amount of time from your render cycles.

PUMP UP THE PSU

For this build, we opted not to swap out the graphics card. As it's not a gaming PC, but a content creation workstation, it was unnecessary to move away from a high-end card like the ATI HIS HD 5870 to something more modern, at least until we start using CUDA for rendering. That said, we had to consider that our operating requirements were going to change dramatically in contrast to the

old Gulftown rig which, as we've already explained, last saw service as a web server before we prematurely retired it two years ago.

Using Pcpartpicker.com, we specced up the requirements for our new upgraded system (including older GPUs and hard drives), which provided us with a good estimate of what our overall power usage was going to be (471W at peak). You should always look for a power supply (PSU) that provides somewhere in the region of 20–25 percent more rated power than your system draws from the wall. That way, you'll never run the PSU at maximum capacity, and power supplies are generally most efficient when they run at 80–90 percent of their max load.

THE RESULT

As you can see from the benchmarks, the biggest performance increase stemmed from the hard drive swap. Going from SATA II drives to a PCIe SSD, and using the SATA drives as backup storage is nothing short of incredible. Interestingly, after five years of CPU development, Intel's six-core enthusiast chip only beats the Intel Core i7-970 by 35 percent. What's important to note is that the price has plummeted.

Other than that, this upgrade came together nicely. The HD 5870 was still more than enough for all the editing we wanted to do. In the long term, however, it might have been nice to change out to a GTX 1060 or Radeon RX 480 instead.

OTHER TRICKS AND TWEAKS

CASES

You could say that a PC case is nothing more than six panels of metal holding the components of a system together. In reality, it's much more than that. Cases are an essential part of PC building. Whether you build your own, pinch one from an age gone by, or go all-out and buy a £500 affair, it's something that every PC user has. But how much of an impact does it make in the world of upgrades? Is it worth upgrading at all? That depends on what you have. There are a few examples where swapping out to a

newer chassis provides you with more performance.

Graphics cards from AMD and Nvidia come with a new form of technology known as GPU Boost. This is an auto-overclocking feature, which increases or decreases the core clock speed, dependent on the card's temperature. Depending on the size of your case, and the amount of airflow, you can affect the temperature of hardware inside. It's why blower fans and dual and triple dissipation card designs exist. Blowers can draw in vast quantities of air from a

single vent hole, while the dissipation variety spreads the hot air around the chassis. If you're not providing enough cool air inside a chassis, you'll likely cripple your graphics card's overall performance.

On top of that, there's the ease of access of newer cases, with multiple 2.5-inch drives, better cable management, improved airflow, and support for a wider variety of cooling, motherboards, form factors, and more. So, upgrading your PC chassis can be very satisfying – for a whole variety of reasons.



Chassis are slowly turning into works of art.

COOLING

Speaking of cooling, it's always a good idea to evaluate your situation. Ambient temperatures are always going to have a dramatic effect on overall internal temperatures. For instance, if you're stuck in London without aircon, your rig may very easily run at a full 10 degrees higher than, say, someone sitting with the same setup in Edinburgh. With that being the case, you're going to need more efficient forms of cooling than a reference stock cooler to avoid thermals throttling your hardware. You can check a lot of this by running a few simple benchmarks, such as Prime95 and Unity's Heaven, alongside HW Monitor, to register the temperatures your hardware is running at.

There are multiple ways you can help alleviate the



Low RPM fans with high airflow improve temperatures and reduce noise.

throttling situation. Swapping out a reference CPU cooler for something more efficient, such as Cooler Master's Hyper 212 Evo, will help ensure your processor doesn't overheat far better than any stock cooler, and for £30, that's not a bad deal. We also suggest you run at least two intake fans in your chassis to provide sufficient airflow internally, to keep all your components well fed.

If you're thinking about overclocking to boost those

performance figures some more, we would suggest you take a look at watercooling, especially when it comes to Intel's latest chips.

You don't necessarily need something like a custom loop, but a single 120mm AIO liquid cooler, such as the NZXT Kraken X42 (around £120) or Corsair Hydro H60i (around £77), will provide you with ample capacity to overclock any processor, outside of the extreme edition CPUs.

MEMORY

As DDR4 replaced DDR3 with the introduction of the X99 and Z170 chipsets, it failed to impress many hardware reviewers, purely because it added little to performance figures. Indeed, memory speeds seem inconsequential for the vast majority of users.

Improved capacities and lower power draw, though, mean we're seeing overall wattage requirements drop. And if you want to upgrade your memory, we suggest you choose capacity over speed, and get the capacity you need: 8-16GB of RAM for gaming and everyday tasks; 16-64GB for video rendering and 3D modeling. Speed really isn't a necessity.





If you're into gaming, remember to match your screen to your GPU.

MONITORS

If you're not into gaming, upgrading your screen is a relatively painless affair. For professionals and graphic designers, the obvious route is to grab yourself one of those swanky IPS panels. Providing far better colour reproduction, IPS and PLS are exceptionally useful for those looking for colour accuracy from screen to printer. On top of that, there's the argument of resolution and screen real estate. Bumping up the size of your screen in conjunction with resolution, to maintain your pixel per inch ratio

while also increasing screen real estate, makes it far easier to work with multiple applications at the same time. Going from a 24-inch 1080p Full HD screen to a 27-inch 1440p Quad HD (QHD) screen is a joy, and well worth the time of day.

That said, on the other side of the fence, for gaming it's a little more complex. Your screen choice is inherently symbiotically joined at the hip with your GPU. Choosing the right screen is dependent on what graphics card you have, what games you play, and what resolution you

want to achieve. Working backward, if you're looking at gaming at 1080p, the RX 480 or GTX 1060 is a fine combination; at 1440p, the GTX 1070 or Fury X is a

perfect solution; for 4K, you can almost get away with a GTX 1080 with some lower AA settings. For high refresh rates at 1440p, the GTX 1080 is the king.

MOTHERBOARDS

Motherboards are by far one of the most underappreciated components in any given system. And it's not hard to understand why, either. Marketing gurus throughout the PC industry have been actively promoting these "performance-enhancing pillars of computing" for quite some time. If it's not Killer Networking touting a whole 200ns faster speeds than its Intel rivals, it's super-efficient capacitors, cutting-edge gaming technologies, and whatever else the whizz-kids want to slap on to each box to bump up the price tag.

That said, once you've waded through the mire of marketing sludge, and got to the grunt of what makes Intel's constant chipset updates more interesting than most, the whole concept

is actually more intriguing than you would first think.

For it's the enhanced connectivity that really sells it. Take a look at the Intel Z170 (Skylake) chipset, compared to last generation's Z97 (Haswell), and you'll see exactly what we mean. Each generation sees improved support for a wide variety of connection standards. M.2 solid state drives (SSDs), which were so rare two years ago, are now commonplace, providing read and write speeds up to six times faster than any SATA SSD, and Intel accommodated for that.

Marketing spiel aside, higher priced motherboards generally tend to feature improved onboard audio, alongside more efficient VRMs, meaning you can operate higher overclocks and low undervolts on your system with ease. ■



Chipset is still king.

CHIPSET ADVANCEMENTS

	Intel Z97 Chipset	Intel Z170 Chipset
PCI Lanes	8x PCIe 2.0 @ 5Gb/s	20x PCIe 3.0 @ 8Gb/s
USB 3.0 Ports	6	10
USB 2.0 Ports	14	14
SATA Ports	6	6
DMI	2.0	3.0
DDR Support	DDR3 @ 1,600	DDR4/DDR3L @ 2,133/1,600

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support team and we'll
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Windows INSTALLING APP CRIPPLED ANTIVIRUS

Q I wanted to warn you about My Family Tree, which featured in issue 130. When I installed the app on my PC, my installed antivirus (McAfee) had problems – in fact, it disabled a virus-checking scan, which left me with no alternative but to

completely remove and reinstall McAfee. Did something leak from the program end, or was a virus downloaded at the same time that I installed this free program?

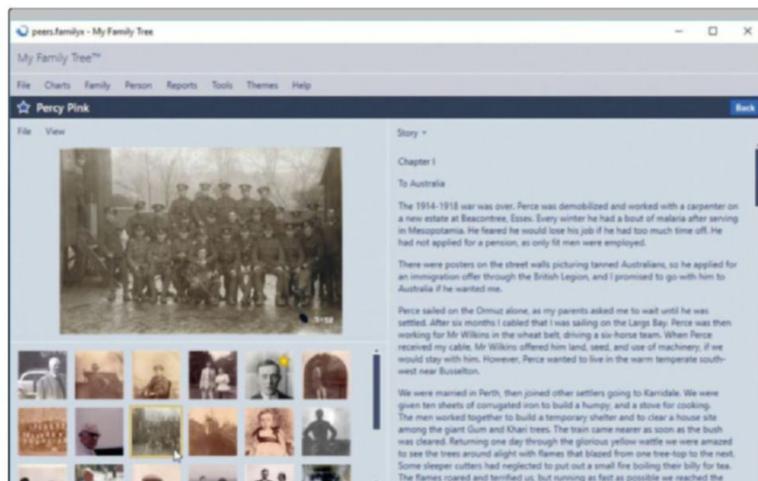
John Reece

Nick P's solution

We've re-checked the My Family Tree website, downloaded both 32-bit

and 64-bit program installers and scanned them with both Norton and Malwarebytes. Both reported the files as clean. We also installed them afresh on our test system with no issues. The fact that McAfee antivirus is working again after being reinstalled would suggest nothing nefarious has been installed. If it had been crippled, the malware would have prevented it from being reinstalled.

John told us he had recently performed a clean reinstall of Windows 10 to correct sluggish performance, but on closer reflection revealed that he'd had problems getting the Anniversary Update in place. We suspect he'd have no further problems with the My Family Tree program if he wished to try installing it again. If not, other free family history programs to try include Ancestris (www.ancestris.org), RootsMagic Essentials (www.rootsmagic.com/Essentials) and Legacy Standard Edition (www.legacyfamilytree.com). All work perfectly with Windows 10 and older systems.



The screenshot shows the 'My Family Tree' software interface. At the top, there's a menu bar with File, Charts, Family, Person, Reports, Tools, Themes, Help, and a user icon for 'Percy Pink'. Below the menu is a toolbar with icons for Story, Chapter, and Book. The main area displays a large historical photograph of a group of soldiers in uniform. To the right of the photo, there's a 'Story' section titled 'Chapter 1' with the heading 'To Australia'. The text describes Percy Pink's service in World War I and his subsequent migration to Australia. Below the story, there's a 'Timeline' section showing a grid of smaller historical photos and documents. The overall layout is clean and organized, typical of genealogy software.

DON'T WORRY
My Family Tree is
perfectly safe to
install on your PC.



CHOOSE CAREFULLY
Nvidia cards are supported for much longer than AMD ones.

Cloud services

CHECK FOR CHANGES WITHOUT LOGGING IN

Q I'm working on a way to collaborate with other people on my genealogy and have started using Google Drive and OneNote as a way of doing so. Can I find out whether changes or additions have been made to documents without having to constantly log in?

Dan Cox



Graham's solution

OneNote should already be configured to send you email notifications of recent changes made by others – you can verify (and tweak) this setting by visiting www.onenote.com/sharenotificationsettings where you can pick and choose which notebooks (if any) are to be monitored for changes.

Unfortunately in Google Drive, you can only monitor changes made to specific documents from within the relevant Google app (Docs, Sheets, or Slides) – select Tools > Notification rules... to set them up. If you wanted to monitor an entire folder, you will need a Chrome plugin such as 'Folder notifications for Google Drive'.

An easier alternative is to use Microsoft OneDrive instead – once logged into the web interface at onedrive.com, select OneDrive Settings > Options and then choose Notifications from the menu on the left to make sure the option to be emailed when 'People make changes to files that we're sharing' is ticked.

Hardware

DISPLAY RESOLUTION PROBLEMS

Q My dual-boot system is exhibiting strange behaviour – the icons in Windows 7 are about a quarter of the size they are in Windows 10. How do I make them smaller in Windows 10?

Jamie Marshall



Mayank's solution

This is a similar problem to one we've answered recently. It suggests the correct display drivers haven't been installed for Jamie's graphics card. He first needs to identify its model in Windows 7 via Device Manager,

"If you want to monitor an entire folder, you will need a Chrome plugin"

Jargon buster!

► Chipset

The electronic components on a motherboard that manage data flow between processor, memory and peripherals.

► Tab stack

Browser tabs that have been grouped for organisational purposes. Currently supported by only one browser: Vivaldi.



Quickfire questions

I'm a big fan of Office Tab, but would like to add tabs to other application windows to reduce screen clutter. Is there anything you can recommend?

Francesca Young

We suggest you try TidyTabs (www.nurgo-software.com). It's a tool that extends tabs to any application windows. Upgrade to the Pro version (around £9) and you can even combine tabs from different programs in the same window.

What's a sandbox?

Diane Alnwick

A sandbox in computing terms is a virtual environment inside which programs are run to keep them isolated from your main PC. Examples include full virtual machines using tools such as VirtualBox. There are also app-specific sandboxing tools, such as Sandboxie (www.sandboxie.com).

McAfee flagged up an error and I've discovered Update KB3201845 hasn't installed.

How can I rectify this?

Dave Robinson

This Windows 10 update had only just been released when Dave emailed us, so we suggested that he wait a few days. Sure enough the affected update installed successfully just 48 hours after he initially emailed us.



then source the latest available driver for Windows 10. This should be easy if the graphics chip is identified as Nvidia or Intel – visit either www.nvidia.co.uk or downloadcenter.intel.com respectively. If it's an AMD chipset, it's likely the card is an older one, not supported by Windows 10 – go to <http://bit.ly/ati-legacy> and download the Software Suite to obtain a Windows 8.1 driver that should still work in Windows 10. If this fails, it's time for an upgrade.

Hardware

WINDOWS 10 WON'T RECOGNISE DVD DRIVE

Q I had no problems upgrading my HP laptop to Windows 10, but since upgrading my three work PCs, we've discovered all three DVD drives won't recognise any discs. Two are generic, one is an LG model. Can you shed any light?

Paul Younger

Alex's solution

We went through everything to try and resolve this problem –

PERSONAL CLOUD

Purchase a NAS drive for the ultimate private network storage.

the drives all continued to appear in the BIOS, but refused to show up in Windows, either in Device Manager or in File Explorer. However, when Ron (Paul's colleague) plugged in an external DVD drive, that worked perfectly. We suspect the issue might be with the motherboard – a Gigabyte GA-MA790FXT-UD5P board with AMD 790FX chipset. We checked online and found it to be seven years old, and no longer supported, so Windows 10 chipset drivers weren't available.

Rather than continue to troubleshoot the problem, our next suggestion was to take a drive image, then try a clean installation of Windows to see what effect that had before restoring the current setup. Both Paul and Ron have since decided to invest in new Windows 10-friendly PCs.

Windows

WINDOWS KEEPS LOCKING ME OUT

Q Over the past few weeks, Windows 10 keeps locking me out of my account every three to

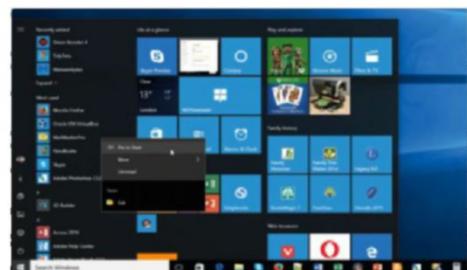
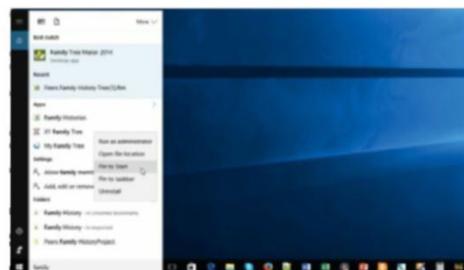
RESTORE MISSING TILES TO START MENU

Q After Microsoft support recently fixed some issues with my PC, they were unable to tell me where many of my Start menu tiles had gone. Can you help me restore these please?

Charles Church

Nick O's solution

Start menu tiles can be added quickly enough from a variety of locations on your computer. This step-by-step guide will help you both restore and manage your tiles into groups...



1 Use search

Click the Cortana or Search Windows box next to the Start menu. Start typing the name of the app you're looking for – if it shows up in the list, right-click its entry and choose 'Pin to Start'. This works for both desktop and store apps.

2 Browse All Apps

Click the Start button and scroll through the list of installed applications on the left. When you find the one you're looking for (if it's behind a folder entry, click that entry to reveal its contents), again right-click it and choose 'Pin to Start'.

Your new source for Raspberry Pi

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PiUser

Issue 01 // Winter 2016

EVERYTHING YOU NEED TO POWER UP YOUR
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Make your Pi into something special

11 AMAZING Pi PROJECTS

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Step-by-step guide to making your own drone!

Make a retro arcade classic
Games are better played on the Pi

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Welcome to... Windows 10

► WINDOWS 10 TIPS ► FEATURES EXPLAINED ► NEW TIPS AND TRICKS

Welcome



Just starting your Windows journey? Confused by the changes Microsoft has made to the

Anniversary update? Or maybe you just want to learn something new about Windows 10. Well, this is the section for you!

There's not enough space to tell you absolutely everything you need to know here, but *Windows Help & Advice* always has your back. In this month's Basics section, we'll show you how to keep younger members of your household safe online and how the Windows 10 Anniversary update has made Cortana more powerful and flexible than ever.

Matt Hanson
Associate Editor
www.facebook.com/windowsmag

Featuring...

78 Keep your children safe with Family Safety

81 Make the most of Cortana's capabilities

TURN TO
PAGE 54 TO
TAKE CONTROL
OF ALL YOUR
WINDOWS
APPS

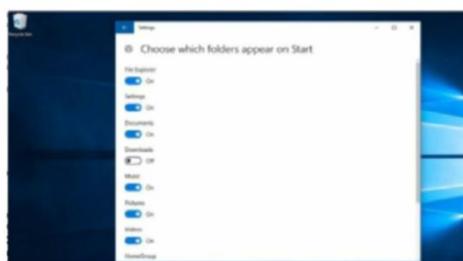


Windows 10 tip of the month

Customise the Start menu

Choose your startup folders

When you first sign into Windows 10, you'll discover that some of your most frequently accessed folders – those you use for storing documents, photos and the like – aren't immediately available for you to view from the Start menu. To change this behaviour go to Settings > Windows Settings > Personalisation > Start. Scroll down through the Preview that appears, then select "Choose which folders appear on Start".



CHOOSE YOUR FOLDERS To have File Explorer, Music and other folders appear, turn the relevant buttons on.



SEE THE CHANGE The folders you selected in the previous steps will now appear in your Start menu.



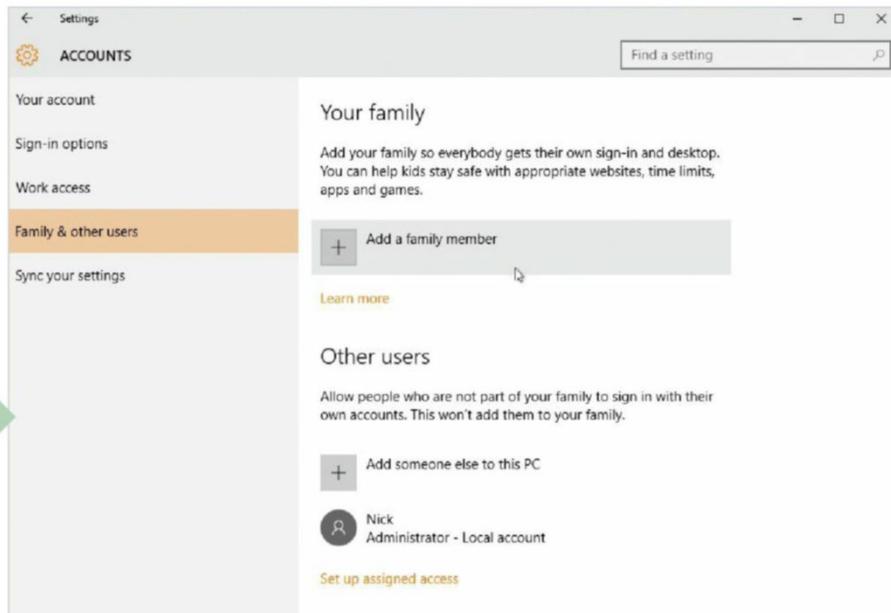
Learn how to...

Set up Family Safety

Keep your younger family members safe when they're online, even if you don't have time to watch them every second of the day

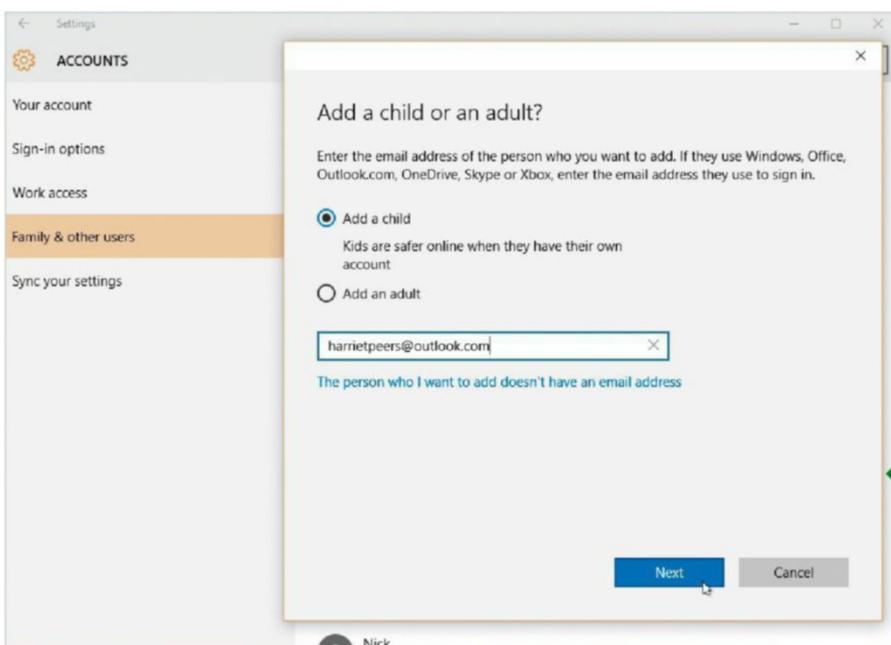
TIME TAKEN

20 minutes



Add users

Before starting with Family Safety, we need to make sure your computer is properly set up. If you're sharing a single user account between your family, it's time to change that and use one account each. Click the Start button at the bottom of the screen and choose 'Settings'. Select 'Accounts' followed by 'Family & other users'. You'll see user accounts are split into two sections – as we're adding younger family members, click the 'Add a family member' button to continue.



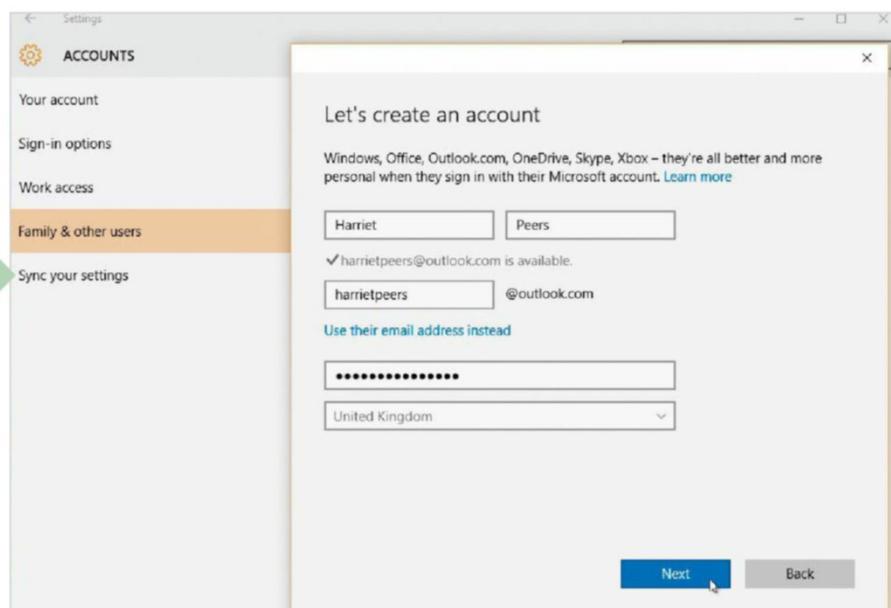
Set up a child user

Select 'Add a child'. Your child will need their own Microsoft account to continue – if it's already been set up, type the email address used to log into it and click 'Next' followed by 'Confirm'. Once the new account has been set up (your child will need to log in for the first time to do so), they should check their email and confirm the invitation in order to allow you to apply family settings to their new account on this device.

Set up a new Microsoft account

If your child doesn't have a Microsoft account, click 'The person who I want to add doesn't have an email address' to set up their account. When filling in their details, click 'Get a new email address' to give them an address with an @outlook.com domain (for example, childname@outlook.com).

When you assign them a password, this needs to be something they can remember, as they'll be using it to log into their own user account from now on. Once done, provide your own mobile number or alternate email address as an additional form of security going forward.



ACCOUNTS

Your account

Sign-in options

Work access

Family & other users

Sync your settings

Your family

You can allow family members to sign in to this PC. Adults can manage family settings online and see recent activity to help kids stay safe.

Add a family member

harrietpeers@outlook.com Can sign in
Child, Pending

Change account type Block

Manage family settings online

Other users

Allow people who are not part of your family to sign in with their own accounts. This won't add them to your family.

Add someone else to this PC

Access Family Safety

You'll see a list of all the children you've added to your device from the 'Family & other users' section – any marked as pending haven't yet accepted your invitation, so aren't protected by Family Safety settings. If you're having a hard time persuading them to accept the invitation, click 'Block' to temporarily prevent them from logging into this PC without family settings in place.

To set up, or adjust, your children's family settings, click the 'Manage family settings online' link to access the settings website from your browser.

Microsoft account | Your

Block inappropriate websites On

Recent activity

Web browsing

Apps & games

Screen time

Adult content is blocked

InPrivate browsing is blocked

Bing SafeSearch is on

Applies to:

Windows 10 PC

Always allow these

Enter the URL of a website you want to allow:

Example.com Allow

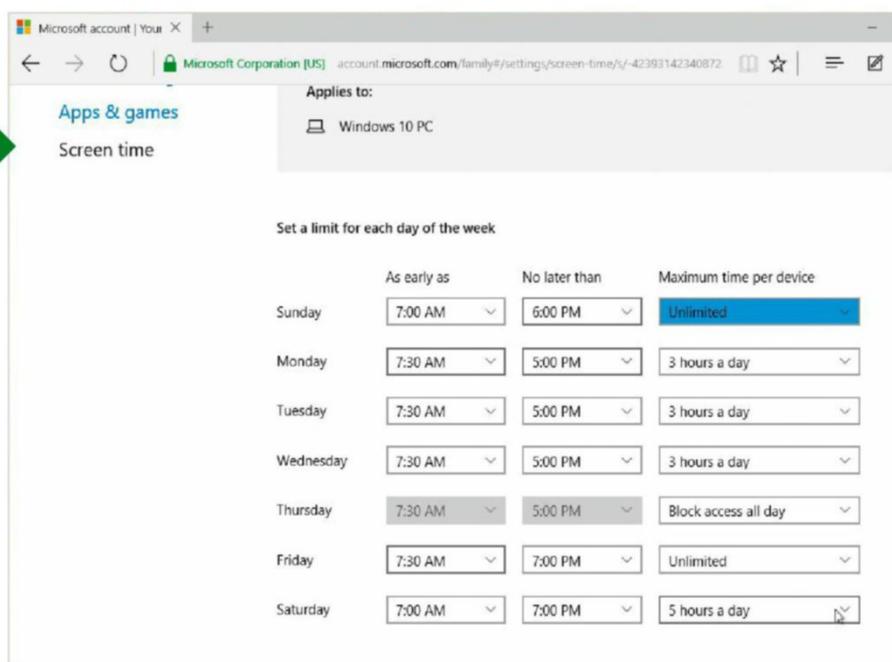
Lock the web

To restrict web access, choose an account name, then click 'Settings' next to Web browsing. Flick the 'Block inappropriate websites' to 'On' to ensure adult content and InPrivate browsing sessions are both blocked, while Bing SafeSearch is on.

Scroll down and you'll find options for allowing specific websites, or alternatively blocking unwanted sites. Just type the relevant URLs into each box and click 'Allow' or 'Block' to add them to your child's white or blacklists.

Set the clock

Select 'Screen time' to limit the time your child has access to this PC. Flick the 'Set limits for when my child can use devices' switch to 'On', then set the earliest and latest times they're allowed to use the computer for each day of the week. You can also set a daily limit within those times to restrict their access further.

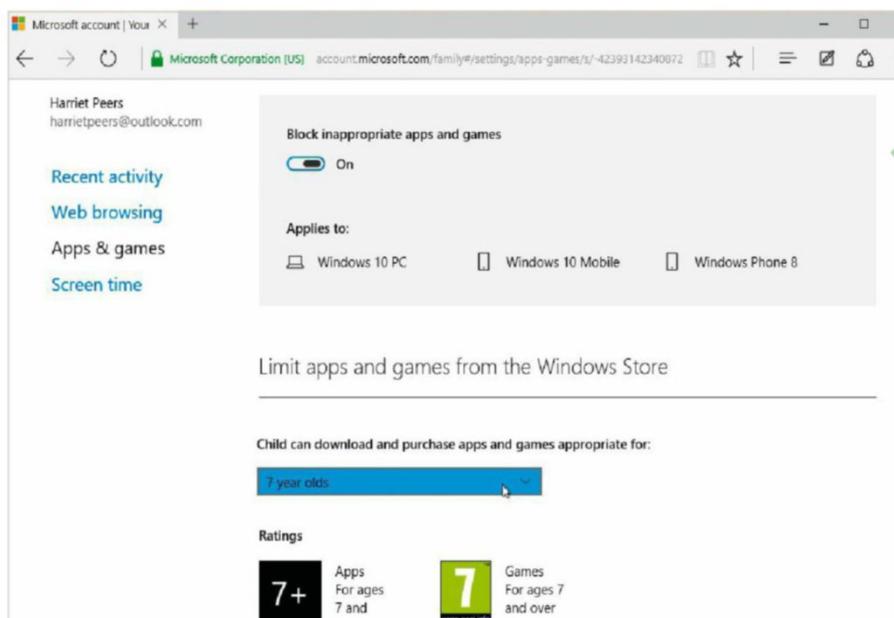


The screenshot shows the 'Screen time' settings for a Windows 10 PC. It allows setting access times for each day of the week. The configuration is as follows:

Day	As early as	No later than	Maximum time per device
Sunday	7:00 AM	6:00 PM	Unlimited
Monday	7:30 AM	5:00 PM	3 hours a day
Tuesday	7:30 AM	5:00 PM	3 hours a day
Wednesday	7:30 AM	5:00 PM	3 hours a day
Thursday	7:30 AM	5:00 PM	Block access all day
Friday	7:30 AM	7:00 PM	Unlimited
Saturday	7:00 AM	7:00 PM	5 hours a day

Restrict apps

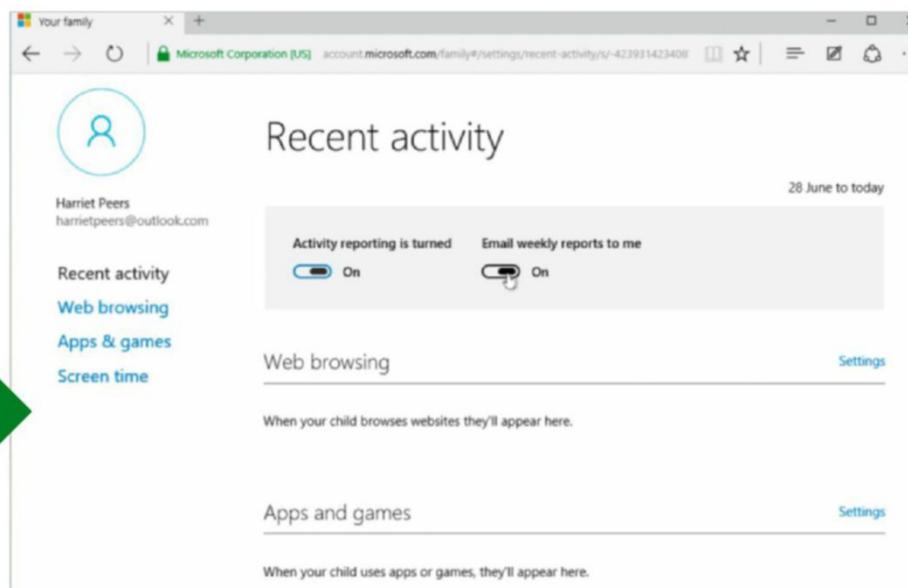
Select 'Apps & games' and flick the 'Block inappropriate apps and games' switch to 'On'. Scroll down and set a maximum age for your child, which allows them to only download and install apps and games in the Windows Store that have specifically been rated as suitable for their age.



The screenshot shows the 'Apps & games' settings. It includes a section to 'Block inappropriate apps and games' which is turned 'On'. It also shows 'Ratings' for both apps and games, both set to '7+'. A note indicates the child can download apps appropriate for '7 year olds'.

Watch the logs

Perhaps the most sneaky part of the Family Safety centre is on the child's main screen. Two switches – enabled by default – let you view your child's activity through this screen and receive weekly email reports of their usage, app installs and browsing habits. If there's something there that shouldn't be, then it's probably time for a little chat... ■



The screenshot shows the 'Recent activity' and 'Logs' sections of the Family Safety centre. In 'Recent activity', activity reporting is turned 'On' and weekly reports are set to 'On'. Under 'Logs', there are sections for 'Web browsing' and 'Apps and games', both with 'Settings' links.



Get even more out of Cortana

The Windows 10 Anniversary Update gives the personal digital assistant an impressive wide range of capabilities

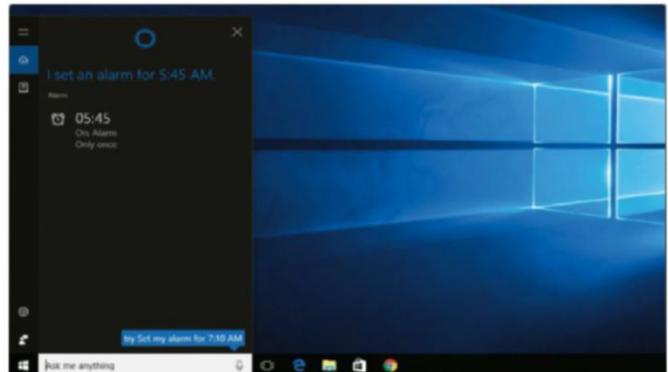
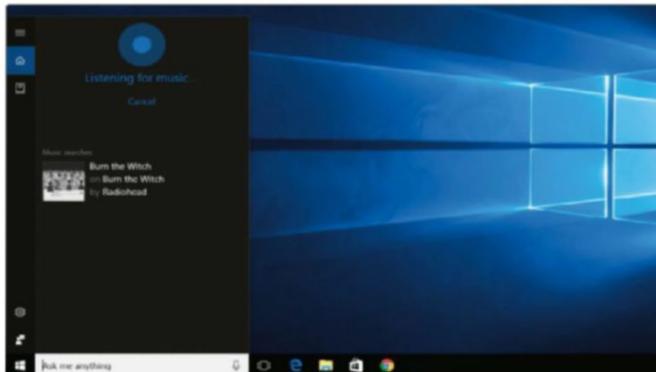
The Windows 10 Anniversary Update improves all kinds of things in Windows 10, but the most exciting improvements are in Microsoft's personal digital assistant, Cortana. Cortana was already impressive

in Windows 10, but thanks to the Update it's developed all kinds of new abilities.

Once you've got Cortana's attention you can then ask it to define words, give you driving directions, set alarms or launch programs, but that's not all it's capable of doing. It can understand commands such as "Send Sue the

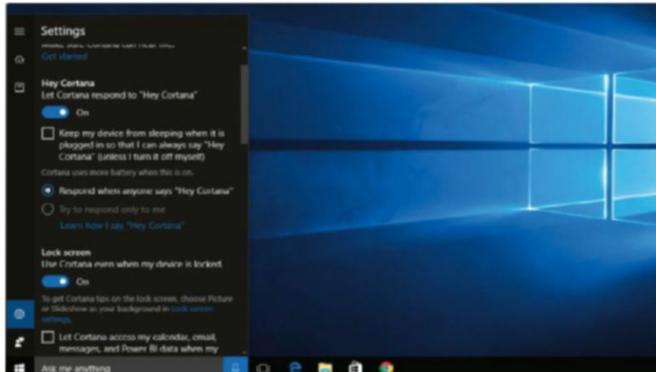
PowerPoint I was working on yesterday", it can scan your emails, calendar and other communications to automatically identify important information, such as package tracking or travel bookings, and it can even tell you what song's playing wherever you happen to be. Let's discover Cortana's best new features...

Get to grips with Cortana



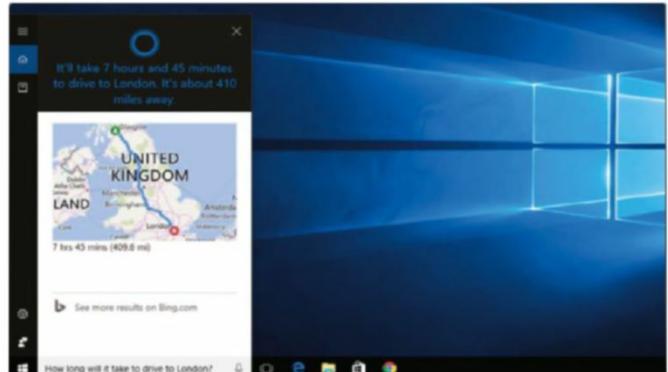
1 Name that tune

One of Cortana's skills is the ability to recognise the music that's playing wherever you are. Just click or tap on the musical notes at the top right-hand corner of the Cortana window and you'll see as Cortana listens to your microphone. Results usually appear within a couple of seconds. Like most of Cortana's best features, song recognition needs an internet connection.



2 Wake me up

Cortana is good at understanding spoken commands. Here we've asked it to set an alarm for 5.45am by saying "set an alarm for 5.45am". When you set an alarm it's created as a one-off event, but you can make it a regular alarm by tapping on the details. You can also specify what time of day you go for lunch to stop Cortana scheduling anything when you'd rather be eating.



3 Break the lock

If you click on Cortana's settings – the gear icon at the lower left-hand side of the Cortana window – you can specify whether it responds to the "Hey Cortana" command or waits for you to click. There's an option to keep your PC from sleeping so Cortana is always listening for your commands. This will have an effect on battery life, though, so it's best for plugged-in PCs.

4 Ask about anything

If you're constantly being plagued by inquisitive kids, let them ask Cortana for answers instead. It can tell you how long it'll take to get somewhere, what the capital of a country is and what state the stock market is in, and Microsoft has enabled developers to Cortana-enable their apps so that it can interrogate them. If your PC can do it, you'll be able to do it by asking Cortana.



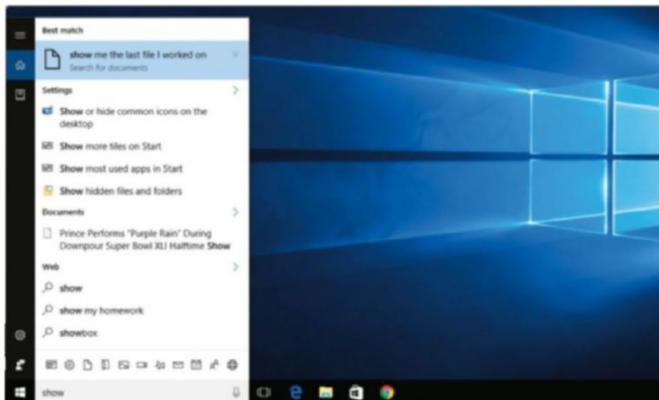
5 What's for dinner?

Cortana comes into its own when it's connected to the internet, because that means it can access online services – not just Bing, but also things such as Yelp, the restaurant review service. If you look in Cortana's Notebook, the icon below the home icon in the top left of the Cortana window, you can see what services Cortana can access. In this example we've asked it about restaurants near our location.



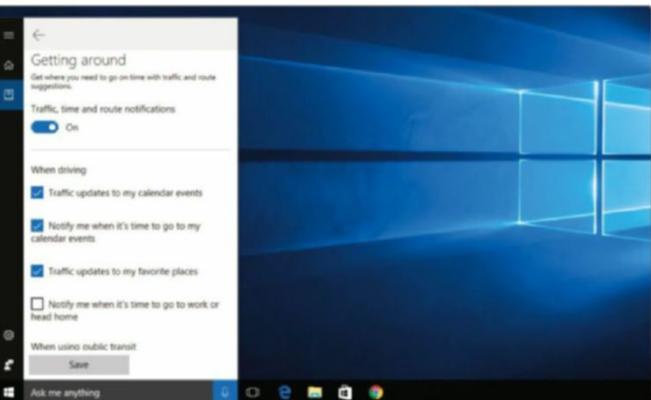
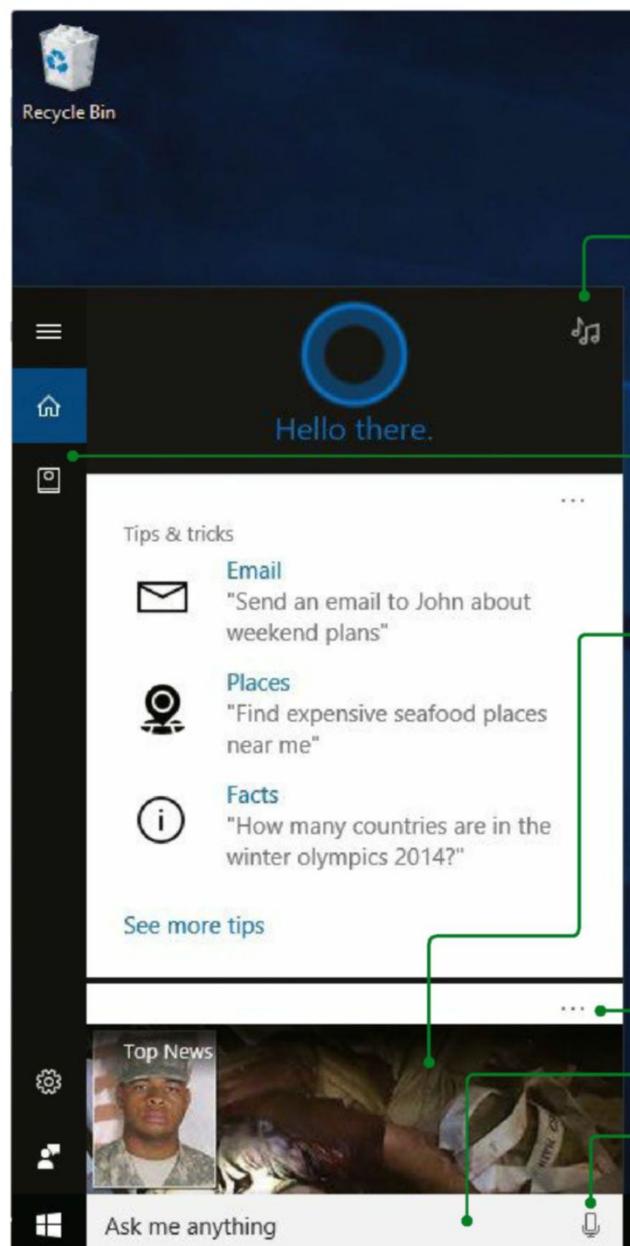
6 Always there

In Cortana's settings you can turn on the ability to invoke Cortana from the lock screen with a quick "Hey Cortana". That's handy for things such as playing music – "Hey Cortana! Play some dance music!" – but it's just as handy for setting alarms and reminders. Once again, Cortana's happy with natural language commands. Here we've asked it about the weather.



7 Plain English

Cortana can understand and perform queries such as "Show me the last file I worked on" or "Show my homework", and it remembers them too – so if you've used our examples, they'll turn up in the suggested results when you search for "show". It'll perform tasks such as "Email Dave the document I was working on yesterday" if Dave is somebody in your contacts book.



8 Edit the highlights

Cortana will offer information such as telling you it's a good time to head for home, and you can tweak its settings to ensure it only tells you about things you want to know, like events in your Calendar. To do that, click on Cortana's Notebook and then on the topic you want to edit. In this example we're fine-tuning the traffic and route suggestions Cortana offers us.



Jargon buster!

► Natural Language Processing

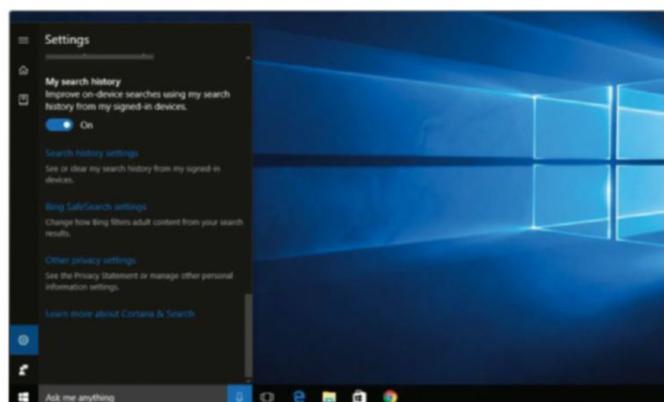
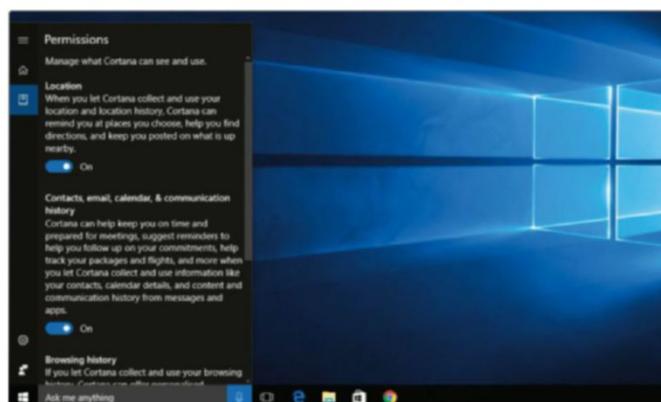
Technology that responds to commonly used phrases instead of limited, specific commands. It's like a duck swimming: it looks effortless but the little legs are doing a lot of work.

► Personal Digital Assistant

Technology, such as Cortana, that gives computers a more human way of working.

► Cross-platform

An app or service that is available on more than one operating system. Cortana is cross-platform.



9 Set some limits

Cortana uses your location history, your browsing history and your contacts, email, calendar and communication history to find out what you like and what you need. For example, it can track packages, remind you about travel bookings and show you interesting things happening nearby. If you don't want it to do that, you can limit its scope in 'Notebook > Permissions'.

10 Embrace every device

To get the most from Cortana it makes sense to let it see what you do on all your Windows 10 devices. By default Cortana will take advantage of your search history on all your signed-in devices, but if you don't like that idea (for example because you want to keep work and home PCs separate) you can change the search and privacy options in Cortana's settings. ■

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Upgrade

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Welcome

Whether you connect to the internet at home, the office or on the go, your PC is vulnerable to attack from those who are desperate to steal your data.

Windows' built-in firewall gives you an excellent level of protection, but in this issue we take a look at four free alternatives, and decide which one is worthy of your time and attention. Also this issue, we look at the new Dell XPS 13 9365, the first 2-in-1 laptop in the XPS line-up; check out the sound of Libratone's first On-Ear headphones and put the Fitbit Charge 2 through its paces. Enjoy!

Nick Odantzis Deputy Editor
windowsmagazine@futurenet.com

Our promise to you...

The Upgrade section is your key to finding out about the latest products, all designed to help you get more from your PC

You can trust our reviews

Our reviewers are 100 per cent independent, with years of experience in the world of computing. Our rigorous testing procedures mean that only genuine, high-quality products are awarded high star ratings. If you see an item of hardware bearing a high score, you can be confident that it is an excellent product.

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Thousands of new PC products are released every year and choosing between them can be an impossible task. Our experts select only the best hardware and software to feature in this magazine. Even better, our star rating system makes it simple to find the best products, giving you a fast, trustworthy guide.

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Our expert reviewers guarantee to test every piece of hardware rigorously and thoroughly, using only acknowledged experts to establish the worth of a product. We always review from the viewpoint of our readers; the day-to-day practicality and quality of a product is paramount.

RATING EXPLAINED ★★★★☆ Superb ★★★★☆ Very good ★★★☆☆ Good ★★★☆☆ Disappointing ★★★☆☆ Poor

This issue's highlights



86 Dell XPS 13 9365 2-in-1

The best laptop in the company's line-up is now even better. Find out why here



88 Libratone Q Adapt On-Ear

Is there more to these noise-cancelling headphones than meets the ears?



90 Fitbit Charge 2

Fitness trackers are all the rage, so how does this latest Fitbit model measure up?



95 Free firewall apps group test

Protect your PC from online threats with our pick of the best free firewall apps



Dell XPS 13 9365 2-in-1

£1,349-£1,699 | \$1,000-\$1,400 www.dell.com

Spicing up a leading laptop all over again

For the past few years Dell's ever-evolving XPS 13 has been seen as one of the darlings of the laptop PC world. And the 2017 version looks to be no exception. That's because for this year's model, Dell has finally created a hybrid version of its leading laptop, and it's as versatile and as beautiful as you'd expect. It comes with the same 11-inch frame, and 13.3-inch size screen as its predecessor, but the 2-in-1 design brings a new wrinkle to the XPS range without totally disrupting it.

In other words, Dell will still keep making the traditional version, so don't worry, purists.

Price and availability

Dell is starting the XPS 13 2-in-1 at £1,349 (\$1,000 USD). That model comes packing an FHD (1,920 x 1,080) touchscreen with a 7th generation (Kaby Lake) Intel Core i5

processor with Intel HD Graphics 615, 4GB of RAM and 128GB of solid-state storage.

From there, you can expect the usual upgrades you've seen from the XPS 13 the past few years: an Intel Core i7 processor (still Kaby Lake), a QHD+ (3,200 x 1,800) touchscreen, up to 16GB of memory and as large as a 1TB SSD. The top spec model costs £1,699 in the UK or \$1,400 in the US with various configurations in between to suits your needs and budget.

Design

Once famous for making sturdy, but rather pedestrian-looking machines, Dell's sense of design has skyrocketed in recent years. And the XPS 13 2-in-1 is a delight to behold. While keeping the same general look and feel of existing XPS devices, this model adds two hinges made of steel and

encased in machined aluminum for additional durability.

The anodised aluminum lid and carbon fibre palm rest make a welcome return, all within the same 11-inch frame as the preceding model. In short, this is the XPS 13 you already know, but with some subtle yet impactful changes.

The base model weighs in at just 1.24kg (2.7lbs) with higher spec models being slightly heavier. All models measure just 8mm (0.32 inches) at their thinnest point and 0.54 inches (13.7mm) at the thickest. All told, that's a shaving to the tune of 2mm, which is impressive considering the laptop's 2-in-1 trappings. The device is easily held in one hand, and the light weight makes adjusting between its hybrid modes that much easier.

The XPS 13's palm rest feels as comfortable and responsive as ever, as do the glass-covered trackpad



KEY FEATURES

Dell XPS 13 9365 2-in-1

Supplier www.dell.co.uk

Operating system Windows 10

Processor 7th gen Intel Core i5 (up to 3.2GHz, 4MB cache) or Core i7 (up to 3.6GHz, 4MB cache), depending on configuration

Storage 128GB SATA SSD, 256GB PCIe SSD, 512GB PCIe SSD or 1TB PCIe SSD, depending on configuration

RAM 4GB, 8GB or 16GB Dual Channel LPDDR3 at 1866 MHz, depending on configuration

Graphics Intel HD Graphics 615

Ports Thunderbolt 3 with PowerShare, DC-in and DisplayPort; USB Type-C 3.1 with PowerShare, DC-in and DisplayPort; microSD card reader; 3.5mm headset jack; Bluetooth 4.2

Weight From 1.24kg

Size 304mm x 8-13.7mm x 199mm

Screen size 13.3-inch

Display resolution 3200 x 1600 (Quad HD+) or 1920 x 1080 (Full HD), depending on configuration

and backlit chicklet keyboard (with a satisfying 1.3mm of key travel) – all carry-overs from the previous models. However, one carry-over we wish hadn't is the webcam, which is still positioned below the display near the hinge.

While Dell has wised up and centred the infrared-equipped 720p HD webcam (hello, Windows Hello), it's still going to show off our double chin during meetings. At the very least, you can orient the device in a tent position so that the webcam faces upright.

goodies. In wired connectivity, you have two USB-C ports (one being Thunderbolt 3, but both can charge), a now-smaller microSD card reader and a 3.5mm headphone socket.

On the wireless front, the XPS 13 2-in-1 comes with the expected 802.11ac Wi-Fi and Bluetooth 4.2 with Miracast and Intel Smart Connect supported.

Now, all of this is powered by what Dell is calling upfront a "lower-power" processor, though both Core i5 and i7 options can

"In short, this is the XPS 13 you already know, but with some subtle yet impactful changes"

The last major feature about the XPS 13 to make it into the 2-in-1 iteration is that beautiful, nearly bezel-free InfinityEdge display. The returning IGZO panel is notched at either 1080p Full HD or Quad HD+ resolutions – depending on which model you choose – but either way, brings plenty of brightness (400 nits), contrast (1,000:1 ratio) and viewing angles (up to 170 degrees).

Specs and performance

In addition to the things you can change about the XPS 13 2-in-1 before you hand over your cash at the checkout, Dell has loaded the machine with plenty of other

reach 3.2GHz and 3.6GHz clock speeds respectively. That said, Dell has devised a dynamic power management system focused on temperature that should work extra well with a laptop cooler when you need that extra oomph.

That power management should also help keep the included 46Whr battery powering the whole system for a little longer. Dell promises up to 15 hours of juice from the Full HD version of the XPS 13 2-in-1, while the Quad HD+ flavour will enjoy a still-lengthy 8 hours and 35 minutes – based on its own tests. Of course, your mileage will vary depending on usage.

Verdict

We may be barely a quarter of the way into 2017, but Dell has already crafted one of the most impressive laptops of the year. With the public perception of 2-in-1 laptops far better than it was even a year ago, it's picked a good time to bring those features to its leading laptop.

The XPS 13 2-in-1 sacrifices almost nothing in achieving its new design, save for a smaller microSD card reader and a standard barrel connector for power. That said, despite its massive improvements and centring (at last), we're still not exactly excited about the webcam beneath the screen.

We were thoroughly impressed by the now-hybrid XPS 13. Dell's managed to bring a new level of form and function to its most pleasing product for not much more cash to start than the traditional version. We can't wait to see what it comes up with next. ■

Dell has done it again, turning its XPS 13 into a potential leader in the 2-in-1 laptop category.

 **Windows Help & Advice**
Verdict





Libratone Q Adapt On-Ear

£219 | \$249 www.libratone.com

Excellent noise-cancelling headphones for fashionistas

When noise-cancelling headphones become the norm, how do you make your product stand out?

For Danish company Libratone, the answer is beautiful design and an intuitive user experience, applying the same principles to its new Q Adapt on-ear and in-ear headphones as it has to its Zipp and ONE Click loudspeakers.

Libratone also offers an in-ear option but, for now, let's look at the Q Adapt On-Ear version.

The design of the headphones is minimalistic, with smooth ear cups containing hidden controls on the bottom of each one. Interestingly, Libratone has gone to the trouble of hiding the Q Adapt On-Ear's four microphones behind the ear cup "forks" for a sleek look that's a

world away from the obvious grilles found on many noise-cancelling headphone designs – and they look all the better for it.

The Q Adapt On-Ear's right ear cup houses Libratone's unique touchpad, which enables you to control volume, play/pause and Siri, the personal digital assistant found on Apple iOS devices.

For some reason, though, the Q Adapt On-Ears don't allow you to switch tracks using the touchpad. A forward and backward swipe would have been intuitive for this feature, but as it stands you'll need to pull out your phone to control the flow of music.

That said, however, we like the intuitive controls of the touchpad, but were sometimes frustrated by unregistered taps to play and pause

music. Thankfully, the headphones automatically pause your music when you take them off.

The Q Adapt On-Ear's touchpad features Libratone's signature bird logo that lights up when the headphones are powered on. You can adjust the volume by dragging your finger clockwise to make music louder, or counter-clockwise to make music softer. You can also put your entire palm on the trackpad to activate Hush mode, which pauses your music and lets you hear the outside world without taking off your headphones.

Noise cancelling

Hush isn't the only unique feature of the Q Adapt On-Ear. On the left ear cup you'll find a button that toggles different levels of active



KEY FEATURES

Libratone Q Adapt On-Ear

Supplier www.libratone.com
Drive units 2x 40mm neodymium
Connectivity Bluetooth 4.1 AptX, 3.5mm AUX input, USB 2.0 charging cable
Battery life over 20 hours playback time, charging time of < 3 hours
Ear cup diameter 60mm
Weight 200g

noise cancellation (ACN), which Libratone calls "CityMix". This is handy for maintaining situational awareness while you're walking. There are four levels of noise cancellation and the one button toggle makes it easy to jump between different settings.

Overall, we found the ANC performance of the Q Adapt On-Ear impressive. At its maximum setting, the headphones drowned out the majority of background sounds, including voices, typing and other people's music.

"You can put your entire palm on the trackpad to active Hush mode, which pauses your music"

However, the headphones exhibit an audible hiss that gets louder the higher the ANC is set. Once you start playing music, you won't notice the hiss, but it's disappointing that Libratone couldn't dial it out.

Compared to the excellent Plantronics BackBeat Pro 2, Libratone's ANC blows the Plantronics out of the water. However, the Plantronics sound better and offer even longer battery life and physical controls that register every time.

The Q Adapt On-Ear is built as good as it looks. Its ear cups are attached to metal rods that slide

in and out of the headband smoothly. They're not notched, so you can get the perfect fit quickly.

The headband is covered in a durable fabric with earpads made from comfortable leather. We had no problem listening to the Q Adapt On-Ear all day, which we can't say for many on-ear designs.

Speaking of all day, the Q Adapt On-Ear is rated for 20 hours of playback, and our testing showed that number to be accurate. These headphones last a very long time between charges. And, in the event

you do run out of juice while you're out on the town, Libratone includes a 3.5mm headphone cable in the box to used in wired mode. You'll lose out on the ANC when using the 3.5mm cable, but at least you can listen to your music.

As for sound, the Libratone Q Adapt On-Ear offer a balanced sound signature with a slight warm tilt. Mid-range sounds are very well represented and bass has satisfying impact. The bass can sound a bit loose at times, but only audiophiles will likely notice. Imaging is good, allowing you to hear instruments around you, instead of having the sound focused inside your head.

Verdict

Libratone has done an excellent job of designing its first on-ear headphones. The Q Adapt On-Ears offer unique styling, good build quality and great sound. The ability to choose different levels of noise cancellation is good, as there are situations in your everyday life where you'll want to be aware of your surroundings.

However, its touchpad is a feature that we both love and hate. We love it for its intuitive controls, but hate the fact that our taps and swipes don't register every time.

If you want a good-looking pair of noise-cancelling headphones, the Libratone Q Adapt On-Ear are a great choice. At £219 (\$249) they're not cheap, but they are definitely worth it if you care about design, sound quality and the ability to adjust noise cancellation strength while listening to your favourite tunes on the go. ■

The Libratone Q Adapt On-Ears are a unique set of headphones that look good and sound great.


Windows
Help & Advice
Verdict





Fitbit Charge 2

£129.99 | \$129.95 (www.fitbit.com)

Reach your health and fitness goals in 2017 with this incredible wearable

Wearing a Fitbit Charge or Charge HR fitness tracker right now? We have both good and bad news: their successor, the Fitbit Charge 2 is finally here, and it's better than both of its stablemates in every way.

First of all, the Fitbit Charge 2 introduces a couple of features we've only seen before on the Fitbit Alpha and Blaze. Secondly, it retains all of the features that made the Fitbit Charge HR so desirable.

Price-wise the Fitbit Charge 2 costs from £129.99 (\$129.95) with a Classic elastomer band, rising to £149.99 (\$179.95) for the Special Edition, the straps for which have a more premium feel. Leather straps are also available separately.

Design

When it comes to look and feel, the Fitbit Charge 2 is much the same as other Fitbit devices. There's a much larger screen here than on the Charge HR – but the device is a fair

bit thicker too, so you may not be a fan if you liked the compactness of the previous version. That said, the non-colour display is still relatively small and uses OLED technology to ensure that it's bright and easy to read. The Charge 2 is also the first Charge fitness tracker to feature a touchscreen, a welcome change.

Having said that the touchscreen can be a little unresponsive. This never gets frustrating, although you may find you need to give the screen an extra tap sometimes.

The only other control is a button on the left side that you use to skip through the menu options, such as steps, time, heart rate and calories; you can also hold this button down to activate certain features.

Fitting and removing the Charge 2's two-part strap is fairly easy. Each part of the strap can be detached by pulling it out of clips on either side of the tracker – handy if you want to swap-in a different one for a style change – although you may

find it a struggle to connect a band at first. Sometimes it can sit a little off the tracker, before eventually working itself into the correct position. Once fitted, the strap is comfortable to wear even when typing, so you won't necessarily have to take the Charge 2 off when using your PC. However, the same can't be said when you go to bed (although Fitbit suggests you keep it on to take advantage of its sleep tracking feature). You'll also want to remove the Charge 2 if you're doing anymore than heading out in the rain or sweating when exercising since it's water-resistant, not waterproof. If you want to take a shower or go for a swim wearing a tracker, buy a Fitbit Flex instead.

Specs and performance

In terms of tracking tech, the Charge 2 is similar to other recent Fitbit wearables. It monitors your step count throughout the day – the default is 10,000 – although you



KEY FEATURES

Fitbit Charge 2

Supplier www.fitbit.com

Battery life Up to 5 days between recharges, depending on usage. Charge time 1-2 hours.

Sensors and components Optical heart rate tracker; 3-axis accelerometer; Altimeter; Vibration motor.

Connectivity Bluetooth 4.0, syncing requires Bluetooth LE and a mobile internet connection.

Water resistance Sweat, rain and splash proof; not waterproof.

Materials Elastomer wristband, surgical-grade stainless steel buckle.

can change this. The Charge 2 isn't limited to step counting either, as it now offers multi-sport tracking too. This enables you to keep tabs on your outdoor running, treadmill running, walking and weight training, as well as bike, elliptical trainer and interval workouts.

The Fitbit Charge 2 can track exercise sessions automatically, so you don't have to start them manually. And it also lets you start, then pause a workout without ending a session. This means you don't need to remember to press

Fitbit has also added a heart rate zone visualisation feature, which allows you to see your heart rate and adjust your efforts from there.

We're also big fans of Guided Breathing, which monitors your heart rate for 30 seconds and then set you a breathing challenge to help you improve your condition. This is the first time Fitbit has offered such a feature and we found it actually does help to calm down your heart rate – making it a welcome change from the more exercise-focused features.

"The Fitbit Charge 2 can also track your exercise sessions automatically, so you don't have to"

buttons when you're exercising – although if you're embarking on a specific workout we'd recommend setting up the tracker to ensure you get the exact readings you want. For the sports-minded, this is a big reason to go for the Charge 2 over one of Fitbit's older devices, although if you're into running you may want to consider a Fitbit Surge or other dedicated running watch. That's because the Charge 2 lacks built-in GPS tracking, although you can use it with your phone's GPS tracker if you don't mind carrying your phone with you when you run.

A real highlight of the Charge 2 is its PurePulse heart rate tracking technology. This constantly takes a reading of your heartbeat without you having to wear a chest strap.

As we said earlier, you can wear the Charge 2 in bed to track your sleep patterns, however this feature can be temperamental: we found that the Charge 2 would record a bad night's sleep when we felt we'd actually slept quite well; and given that the tracker can also be quite uncomfortable to wear in bed we wouldn't recommend buying it solely for sleep tracking. There is, however, a silent alarm mode, which vibrates the tracker on your wrist to gently wake you without disturbing anyone else nearby. It's a neat idea, although it may not be useful if you're a heavy sleeper.

Compatibility

If you own a Windows 10 device, an iPhone 4s or above, or an Android

phone running Android 4.3 or later, the Charge 2 will be able to sync with your phone using Bluetooth. This means you'll be able to receive notifications telling you about calls, messages and upcoming calendar events, but you won't be able to do anything with that information on the Charge 2 – you'll have to reach for your phone instead. One other caveat: while it's easy to connect the Charge 2 to your phone's built-in GPS using the Fitbit app, if you own an Android phone it will need to be running Android 5 Lollipop or later for this to work.

Battery life

Fitbit says the Charge 2's battery should last for up to five days between recharges, although that rather depends on whether you're constantly using its fitness tracking features or not. On average we found that we got around three and a bit days of use from our fully-charged Charge 2; that's not bad, since it means you'd only be recharging the device twice a week. Less welcome is the proprietary charger, which means you can't always connect it to a suitable alternative charging source should you leave its dedicated one behind.

So, should you buy one?

The Charge 2 isn't a huge advance over the Fitbit Charge HR, but if you're buying it as your first tracker rather than as an upgrade it's well worth a look. ■

Better in every way than the Charge HR, with more fitness options and a bigger screen.

 **Windows Help & Advice Verdict**



LAPTOP BACKPACKS

Give your tech (not to mention your back) a break with our pick of the best bags for commuters, adrenalin junkies and fashion-savvy techies



1 Knomo Freddie Tote Backpack

£169 knomobags.com

Ditch the tourist look and hit the beach in style with this spacious, waterproof, leather-look bag, designed in tandem with Ibiza Rocks. There's space for your tablet, smartphone and e-reader, as well as your towel, sun cream, sunnies and other beach essentials. Metal zips keep your gear safe, and there's even a separate padded pocket for a 13-inch laptop if you fancy Skyping home. Wear the Knomo Freddie as a backpack for comfort, or detach the straps to transform it into a handheld tote bag.



2 Samsonite Cityscape Tech Laptop Backpack

£115 samsonite.co.uk

This 34-litre Cityscape bag is the Swiss Army knife for the gadget-laden commuter. It includes compartments for your phone, documents, laptop, tablet and e-reader. If you're concerned about identity theft, stick your bank cards and passport in the anti-skimming, RFID-blocking pocket. A sleeve on the rear enables you to attach the bag to your suitcase if you're travelling further afield, too.



3 Slicks Travel System

£280 slicks.com

Whether you're travelling to a meeting, hitting the leisure centre or heading out on your bike, the Slicks may be the only bag you'll ever need to keep your essentials in one place. This Tardis-like modular backpack features a range of inserts to keep the contents organised. The Slicks Biz package, for example, includes an insert to keep your suit wrinkle-free, ensuring you'll always make a good first impression, while the Tripcover insert is your mobile wardrobe, toiletries stash and laundry bag in one.



Whichever philosopher said it's about the journey and not the destination had clearly never experienced the horror of a commute laden with a gym bag, a laptop case and suit carrier, or a trip to the beach juggling waterproof speakers, e-readers and... Well, you get the picture. Combining function, style and comfort, smart

bags are designed to keep your favourite tech and commuting essentials properly organised and secure, while being comfortable enough that you don't resemble Quasimodo after lugging your tech around all day. So, if you're looking for one bag to rule them all, here are six of the best smart (and stylish) bags you can buy right now....



4 GoPro Seeker

£149 gopro.com

The Seeker is a lightweight, weatherproof pack designed to make it easier to get outdoors and shoot extreme sports, jaw-dropping scenery and epic fails with your GoPro. Mount cameras to the integrated, adjustable chest and shoulder mounts, or attach an extension arm (sold separately) to the over-the-shoulder system for a cool, elevated angle. A dedicated pocket places up to five GoPros, batteries and MicroSD cards within easy reach, and the 16-litre-capacity bag is also compatible with a two-litre hydration pack so you won't go thirsty.



5 Riutbag R15

£99 riut.co.uk

Protect all of your favourite gadgets with Riut's simple security solution: all of the zips sit against your back on the reverse of this 15-litre bag, making them inaccessible to light-fingered thieves. At the base of the Riutbag R15 is a nifty, hidden D-shaped pocket enabling quick access to your wallet or smartphone, without the need to remove the bag from your shoulders, and there's a secure internal pocket for carrying a 15-inch laptop. Plus, there's a chest strap that improves comfort on long days out. The backpack is also waterproof, so it's always ready to go even if you're not.



6 The North Face Access Pack

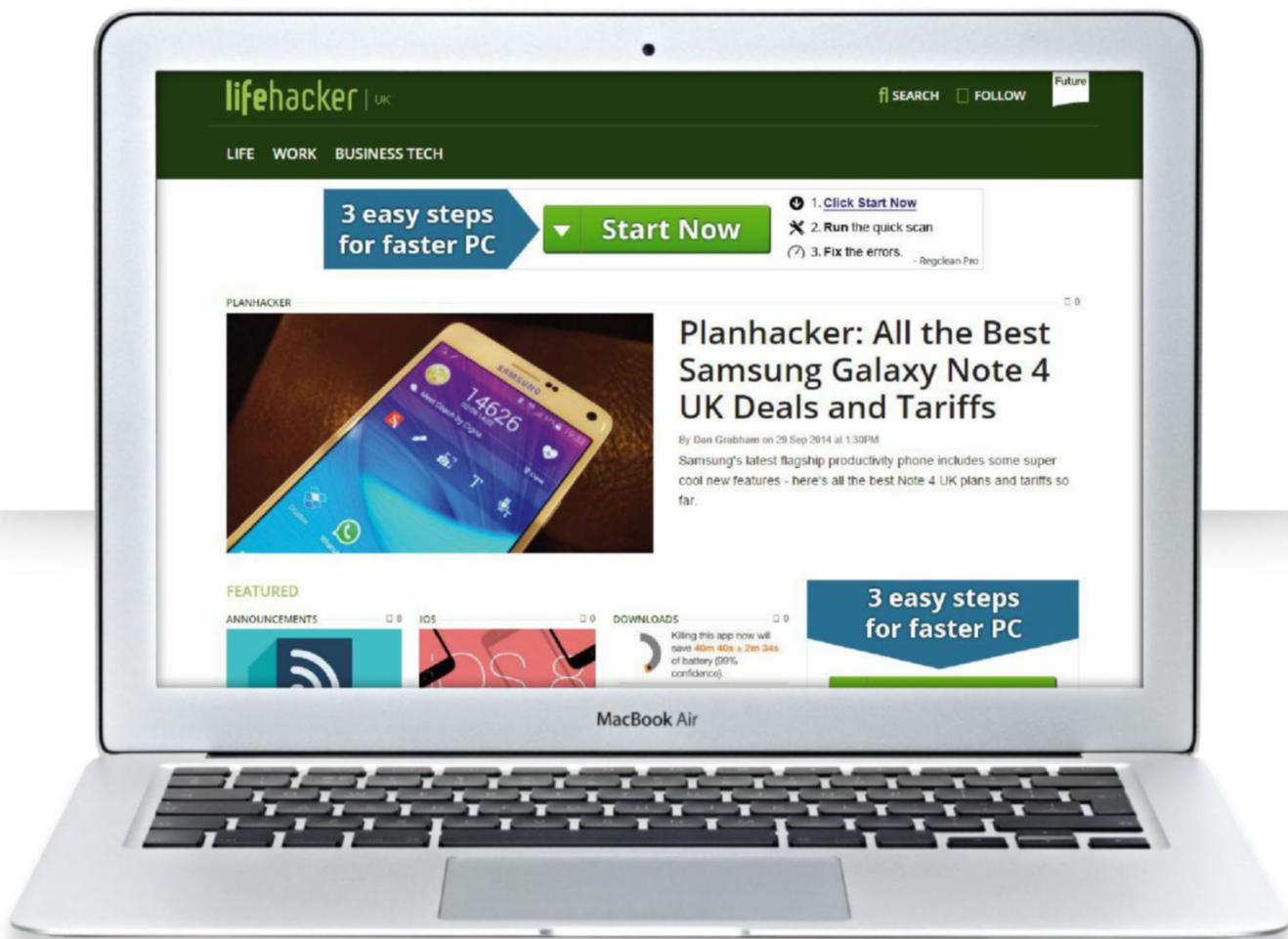
£215 thenorthface.com

The Access Pack is the ultimate time-saver. The North Face has done away with zips to open the main compartment, instead opting for clever one-touch entry. Flick the clasp and the backpack springs open. Inside are compartments for your laptop, phone, power bank and more, with each one featuring an ejector tab so you can quickly retrieve its contents. Surrounding the Pack is a exoskeleton that maintains the bag's shape even when empty, and provides protection for your gadgets.



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THE BEST FREE FIREWALL APPS

Secure your connection and block online threats with our selection of free firewall apps



In the 1990s, Windows seemed to suffer from endless security issues that hackers and other online villains were quick to exploit. One way to fight back was to install a firewall – an app that blocked malicious and/or unwanted network traffic and that could ensure that dodgy software couldn't sneak onto your PC.

One consequence of this was that Microsoft started building its own firewall into Windows, beginning with Windows XP, and

that's still the case today, but attacks can and do still happen and additional software can make your system even more secure.

Collected here are four free firewall apps and tools that can be used with any version of Windows to help you stay safe and secure when you're online – whether you are using your computer at home, at work or (especially) on the go using public Wi-Fi.

Turn the page to find out which one will work best for you...

Next issue:
**THE BEST
FREE APPS
FOR EDITING
PHOTOS**

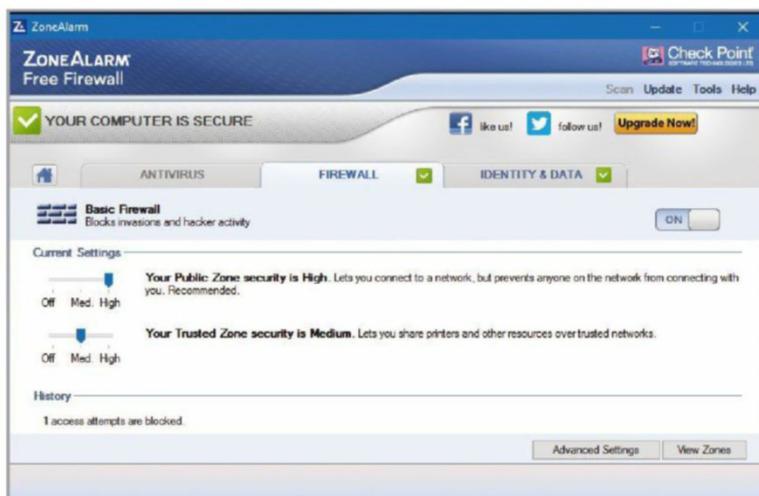
On sale March 3

1 ZoneAlarm Free Firewall 2017

www.zonealarm.com

For many of us, ZoneAlarm Free Firewall, from developer Zone Labs, was the application that introduced us to firewalls in the first place, and it was a must-have app in the bad old days when Windows effectively told the internet "Hack me! I'm easy!"

The 2017 version of ZoneAlarm Free Firewall hides open ports, identifies potentially dodgy traffic, disables malicious programs and connects to DefenseNet, which provides real-time security updates as new threats are detected. It also protects your



computer when you're using public Wi-Fi networks.

The only downside to Zone Alarm Free Firewall 2017 is that it's only been designed to work well with Windows Defender and so doesn't play nicely with other anti-malware programs. In fact, its developer even warns of potential stability and performance problems on your system if you don't uninstall them.

However if that isn't an issue for you, ZoneAlarm Free Firewall 2017 is the best firewall that you can download for free and is compatible with Windows 7, 8, 10 and Vista as well as Windows XP.



RATING

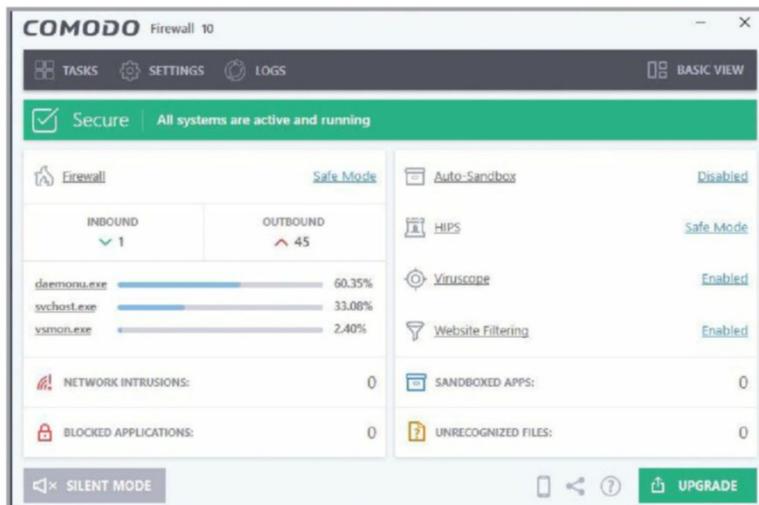


2 Comodo Firewall

www.comodo.com

If you're not a fan of firewalls with lots of pop-up notifications then Comodo Firewall probably isn't for you: it's one of the more vocal free firewall apps we tested, but that's because it's also one of the most comprehensive.

Comodo Firewall is available for Windows 7 or later (not Vista or XP, sadly) and monitors your network, system and programs. It also has a blocklist of more than two million bad apps that it won't let anywhere near your PC.



Comodo's free firewall also connects to a cloud-based system that's updated instantly as threats arrive, and that offers a whitelist of reputable files and vendors too.

Naturally, its maker encourages you to opt for Comodo Internet Security (CIS) Pro, a fully-fledged anti-malware package, which includes Comodo Firewall, Antivirus and 24/7 malware support with prices starting at \$39.99 (£32.91) a year for three PCs. Whether you choose to take up this option depends on your perceived level of risk. If you're in business or use public Wi-Fi, it may be worth it for peace of mind.



RATING



Comodo Firewall can help protect you against over two million known malware threats.

3 TinyWall

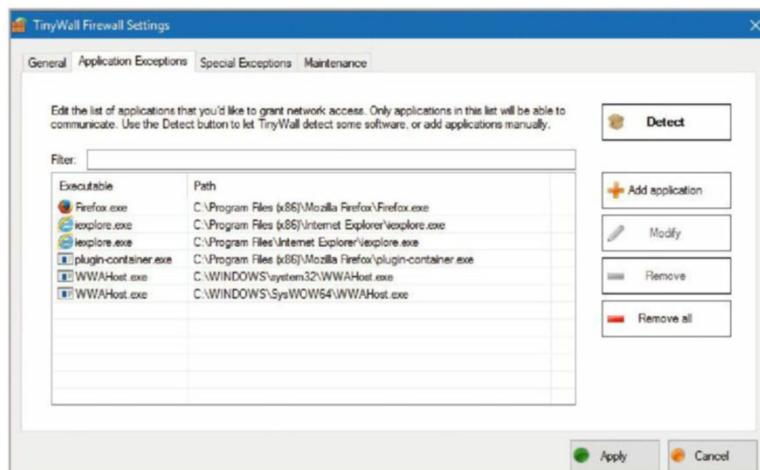
<https://tinywall.pados.hu>

If you prefer to use Windows' own built-in firewall rather than a third party tool, then Károly Pados' TinyWall gives you full control.

TinyWall is better known for what it doesn't do than what it does: unlike some free firewalls (Comodo Firewall, for example) it doesn't interrupt you with pop-up

warnings about what seems to be every second bit of data.

TinyWall is designed to improve Windows' own firewall features without requiring any expert knowledge, and while it offers the same whitelisting features as other packages – to ensure that the apps you use can get online



without any difficulty – it does it through application hotkeys or lists rather than pop-ups.

TinyWall only takes up about 1MB of space on your hard drive, and is a very useful addition if you decide to stick with Windows' built-in security tool. It runs on 32-bit and 64-bit versions of Windows Vista, 7, 8, 8.1 and 10. However, its maker warns that firewall tampering protection isn't active on Windows Vista and that you will also need to install the Microsoft .Net framework 3.5 SP1 or newer for the TinyWall app to work. As it stands, TinyWall is a great little, and free, firewall app.



RATING



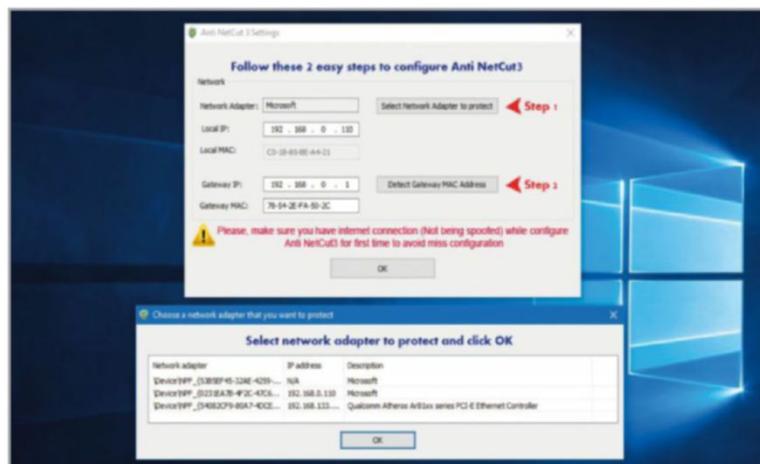
4 Anti NetCut3

www.tools4free.net

If you frequently use public Wi-Fi networks in places such as cafés, pubs or railway stations, your connection to the network is potentially vulnerable to attack from others in your location or elsewhere. Hackers can use a variety of techniques that enable them to either intercept or cut

your connection, and spoof you into thinking you're connected to the public Wi-Fi network when, in fact, you're inadvertently routing all your traffic through them – leaving your PC and your personal data dangerously exposed.

Anti NetCut3 helps you avoid such threats by enabling you to



specify the network adapter it should be monitoring – your wireless adapter or your ethernet adapter if you're connecting to a wired network – and it'll take care of the rest, automatically warning you about any threats, then taking appropriate steps to ensure your internet connection and personal data stay safe.

The interface is rather basic, but Anti NetCut 3 is easy to set up and use and you don't need to be a networking expert to get it up and running. It can help protect you against ARP spoofs and other attacks and works seamlessly in the background once configured.



RATING



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