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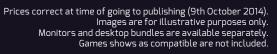
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08Next-generation Tablets

The iPad still rules the roost when it comes to being the tablet of choice, but it's coming under increasing pressure from models that hope to better it, and cheaper devices looking to attract more frugal punters. Here's our pick of the products that could be denting its market share this winter

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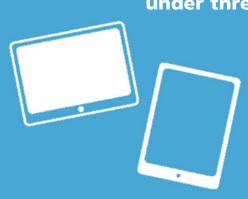
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Is Here

The season of present-buying is upon us and tablet makers are updating their devices. Is the iPad under threat? **David Crookes** take a look,





NEXT GENERATION OF TABLETS

pple's iPad is a rather curious tablet. If we dismiss the Windows Tablet PC (as many a computer purchaser did at the turn of the century), then we can say it was the first to market and the first to attract widespread mirth (basically lots of jokes about sanitary towels and eye protection). It also made a lot of critics eat their words – as of June 2014, it has sold 200 million units – with many an early detractor most likely having bought one in the four years since it made its debut.

What makes it intriguing is that it has, despite being a premium product in a hugely competitive market, sold so very well. At least it did for the first couple of years when, by the second quarter of 2012, it gained a 68.2% market share. Things have not been quite so rosy for Apple in the last two years, comparatively speaking, but the figures are nonetheless encouraging. The iPad has half of the UK market and, while worldwide share has slipped to 26.9%, it is still way above Samsung (17.2%), Lenovo (4.9%) and ASUS (4.6%).

The next-generation of tablets have the ability to push the iPads hard

Those competitors are not standing still, though. The market is still vast and it is growing. This year alone, according to research firm IDC, the market will be 19.4% larger at the end of this year than it was at the start, even if that is far less than the 51.6% growth of 2013. It's a lucrative space for technology companies to exploit and they can only do it with tablets that are either premium models or have just enough features and a low enough price tag to turn the heads of consumers. And so, at the same time as Apple ramps up its range, Google, Amazon and Tesco have been working on or commissioning much improved iterations of their own tablets.

What is stark is that most of these are competing with impressive technology, unique functions and cheaper price tags: a triple whammy of sorts. It is also clear that they have Apple firmly in their sights, either aiming to take sales from the iPad mini or the iPad Air. Just as Android has overtaken iOS to become the dominant mobile operating system, so Apple's rivals are gunning to make the iPad an also-ran. The war, as they often say, looks like it is very much 'on' – so let's take a look at the main players.

Tesco Hudl 2

We start with an offering from Tesco. The supermarket chain surprised the tablet market last year when it released the Hudl, a 7" offering running Android Jelly Bean, which was made in Taiwan by a company called Wistron. Not only was it accompanied by a large advertising push, with banners heralding the device in Tesco stores, it was also well-received by the tech press, not least for retailing at a pocket-friendly £119 (or for as little as £60, if you had enough Clubcard points).

Straight away, it batted away competitors such as the Archos 80 Titanium and and GoClever Tab R974 and it gave the likes of the Asus MeMo Pad HD 7 a run for their money. Its specifications – the 1.5GHz A9 Quad-core processor, 1GB RAM, the 1440 x 900 HD display, 3MP rear camera and 16GB storage – put the Hudl in direct competition with the Nexus 7 and Kindle





Fire and it democratised the tablet market. It also made some amazing in-roads into it, with 750,000 sales, 400,000 of which were shifted before Christmas. A sequel was inevitable.

With the Hudl2, Tesco is looking to prove that its slogan, "Every Little Helps", is entirely true. The second outing costs a fraction more at £129 but it now comes with an 8.3" full HD 1080p screen. The extra screen space makes for a more pleasurable viewing window – one that is larger than the 7.9" of the iPad mini – and while it makes the tablet feel heavier than before, it remains as robust as it ever did. It also comes in eight colours – something that, for some people, is rather important we would guess; what's more, the plastic is soft-touch, feeling great as a result.

As before, Tesco is deliberately targeting casual shoppers and those with children. It has been partnering with Parent Zone, creating filters that weed out unsuitable content – and it allows for up to seven user profiles determined by age to be created. The idea is that this would be an ideal unit for families to give to children. While all other tablets have parental controls, those that shout loudest about them will undoubtedly take a decent chunk of sales from concerned shoppers. You can be sure that Tesco is indeed shouting about this.

It's what is inside the tablet that matters most, though, and here it doesn't disappoint. The Hudl2 improves on the debut tablet in every possible way. It has a 1.83GHz Intel Atom quadcore processor (three times faster than Hudl) and 2GB of RAM. It has a 5MP rear camera and stereo sound. It runs Android KitKat and it allows full use of Google Play. You can't use a 3G or 4G connection, but you can benefit from dual-band wi-fi and Bluetooth. You can also easily expand the 16GB of storage with the use of micro SD cards, giving you up to 48GB of space to play

Casing colours: There are eight different colours for the Hudl2 casing: black, blue, orange, pink, turquoise, purple, red and white

Screen: The Hudl has an 8.3" screen with scratch resistant. anti-smudge glass on which Android KitKat shines

Cameras: As well as a 1.2MP camera on the front, there is 5MP camera to the rear



The T-icon: Tapping the T icon can calls up the built-in Tesco apps including Blinkbox

Google Play: Tesco hasn't gone for its own app store like Amazon, giving buyers full access to Google Play and its millions of apps

around with. And, with those Clubcard points, you can actually get the Hudl2 for £65. It is, to be honest, rather jaw-dropping.

What makes it just as remarkable is that, like before, Tesco has resisted the temptation of plastering the interface with all things supermarket. While you can, of course, access Tesco services through the tablet, this is done via a rather discrete T button in the corner of the screen. Here you will find Blinkbox, a rather useful media app, which offers the chance to buy or rent some of the very latest movies and you can also use Tesco's online shopping service. Tesco is pinning its hopes on users doing both without ramming it down people's throats.

• The Fire HDX 8.9 is an impressive piece of kit

It's an approach that could so easily backfire – there has been talk of the loss-making Blinkbox being shut down if user numbers don't pick up - but analysts are suggesting that Hudl will be Blinkbox's saviour and Tesco's group digital officer Michael Comish expects sales of the second tablet to more than match the first. While the Hudl2 won't be beating iPad mini, never mind the iPad, on specs, hundreds of thousands of sales for Hudl is potentially a loss of tens of thousands for Apple. Hudl is a definite threat, for sure, but it remains to be seen just how much it will trouble Apple.

The Kindle Fires

Tesco is not the only major retail brand delving into the tablet market. Since 2011, Amazon has been selling the Kindle Fire and, like the supermarket, it too has been making some significant updates. One of them, the Fire HDX 8.9 has the potential to directly take on Apple, thanks to a range of impressive, premium specs. These include a display which has 339 pixels-per-inch, a whopping 30% more than the iPad's Retina screen, and a weight that is 20% less than its Apple rival.

As the name suggests, the tablet has an 8.9" screen. It also boasts dynamic light control, which uses automatic adjustment to allow the pages of a book to better resemble paper and it has Dolby Atmos surround sound. On the rear is an 8MP camera for taking hi-res photos and 1080p video; up front is a 720p HD camera. It has a 2.5GHz quad-core processor, which should be lightning fast, and its battery can last for up to 11 hours.

In short, the Fire HDX 8.9 is an impressive piece of kit, the fastest and most cutting edge that Amazon has ever produced. Combined with this is an operating system called Fire OS 4. Unlike the Hudl2, Amazon has deemed it necessary to meddle with Android KitKat to produce its own user-interface and while it works to a degree – it is easy to operate and it has everything you could expect and a lot more besides - it is still inferior to the Android vanilla OS and it can be off-putting to potential buyers who would prefer compatibility with the familiar Google eco-system they've become accustomed to.

One of the problems that results from this bespoke OS is a strong tendency for the Fire HDX 8.9 to push all things Amazon on. It constantly leads the user to Amazon's online store and

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A CUT ABOVE THE REST

Since the TV Bed company was founded in 2003, many other companies have started to produce similar products. However, the original TV Bed remains the best-selling range on the market, and for good reason. Based just north of London, the company makes its beds by hand in the UK, sourcing components from the best suppliers at home and abroad. For example, the motor is German engineered and the hatch hinges are precision-made in Austria to ensure the best glide-up, glide-down performance every time you want to watch TV. Along with highquality wooden frames and upholstery accredited by the UK Leather Association Federation, it's details like these that have set the TV Bed apart from the rest of the market.

EXPERT REVIEW

David Ludlow says 5/5 stars for the TV Bed

David Ludlow at expertreviews.co.uk tested the Azure model in the TV Bed range, assessing it for its entertainment performance but also reviewing it as a key item of home furniture. "Great-looking and incredibly well made, the Azure ships with a high-quality TV for a great price."

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services and it tries to enrich itself by encouraging you to purchase books, music and films. You can feel at times as if you are in a Marrakesh souk and that, with every turn, someone is trying to extract more cash from your wallet. For this reason, if we were to buy one, we'd look at paying more for the 'without special offers' version of the tablet, rather than paying less and having to put up with ads and sponsored screensavers for the entire lifespan of the tablet. We would hazard a guess that this is worth more than the £10 difference to Amazon.

Despite all of that, its designers have included some nifty features. Profiles can be created for two adults and four children, allowing six people to share a tablet and keep their own settings. It will also be possible in the near future to link two Amazon accounts using a function called Family Library. This will let you share games, books and apps. For children, there is a feature called FreeTime 3.0, which will have child-friendly profiles that, like Hudl2, allows parents to control what their kids watch.

If you want to do some serious work with your device you can, however. The Fire HDX 8.9 supports Outlook and Gmail and it has an office suite called WPS Office.

On top of that are some excellent multimedia capabilities. If you want to watch a film, you can take advantage of a system called Advanced Streaming and Prediction (or ASAP). As the tablet becomes familiar with what you like to see, it begins to anticipate your next move, getting new videos ready in advance to reduce buffering when you actually make your choice. There is a second screen feature too. As long as you have a Samsung TV, a PS3, PS4 or an Amazon Fire TV set-top box, you can fling programmes to a big screen television.

The HDX 8.9 also features Amazon's Firefly function, which identifies things in the world around it so you can buy them. The user scans objects or soundwaves using the camera or the microphone allowing Firefly to pick up videos, music, books, email addresses, barcodes, web addresses, phone numbers and QR codes. It is an easy, if potentially expensive, way for users to buy an item and a big development for Amazon.

The Amazon Appstore has 200,000 apps. Google Play and Apple's App Store have millions to chose from

Here is the crunch, though: Amazon insists that you use its own app store rather than Google Play. The Amazon Appstore has 200,000 apps. Google Play and Apple's App Store have millions to chose from.

For those who want something a little cheaper than the HDX 8.9, Amazon has two smaller-screen tablets. One is the HD6 for £79; the other the HD7 for £119 – offering a six and seven inch screen, respectively. They are far less feature intensive than their big brother – 1280x800 HD resolution, a 1.5 GHz quad-core mobile processor and a 2MP rear camera – but they are colourful and fun, even if they do lack the Firefly feature and, on the HD6, stereo sound. For us, the Hudl2 represents far greater value than the HD7, though, and the HD6 is, to be frank, more of a toy or a second tablet at best. There are also better alternatives around.

Rugged Samsung

Which brings us to the new Samsung tablet, or at least one of them. Samsung has a tendency to saturate the market, but the Galaxy Tab Active is a worthy addition. It is a water-resistant, rugged little thing aimed purely at business users (consumers can't buy it). Thin and able to make phone calls, it may only have a 3.1 megapixel camera, but it has an 8", 1280 x 800 screen that will continue working even if you drop it. It comes with a stylus and it offers Samsung KNOX, which keeps personal data separate from your work-related stuff and we can really see it competing with the iPad in situations where Apple's device is deemed too brittle.

NEXT GENERATION OF TABLETS



Samsung has also launched the the Galaxy Note 4 for the consumer market. It uses an evolved S Pen, with the Galaxy Note 4 offering a 5.7" Quad HD (2560x1440) Super AMOLED display and a refined multi-window feature. It has an advanced camera system that is able to reproduce brighter and clearer images, with a 16 megapixel rear-facing camera featuring a Smart Optical Image Stabilizer that counter-balances camera shake and automatically extends exposure time in dark settings. A 3.7 megapixel front-facing camera with f1.9 offers a default 90° shooting angle and up to 120° wide angle so users can take the best group shots with friends. It also has an improved Fingerprint Scanner, to secure personal data and the world's first UV sensor in a mobile device.

Higher up the scale is the pro-consumer Samsung Galaxy Tab S. A stonking Android tablet, it may be a let down in terms of battery life, but its 2.3GHz processor makes light work of making images and movies look brilliant on its super-sharp display. The multi-window option is a head turner, allowing for very effective multi-tasking by splitting the screen down the middle, and the fingerprint scanner ensures added privacy of your data. We're cheating a little with this because it's been out since June – and in the fast-moving world of tablets that could rule it out of being a next-gen machine.

Google's Offerings

The same cannot be said of the yet-to-be-announced next Google Nexus table. Rumour has is, though, that Google will be pinning its hopes on the Nexus 9, having already made the Nexus 7 an established player – a seven-inch screened monster that is packed with cool features for £199 (for the 16GB version at least). All we have seen of the 9, though – certainly at the time of writing – are leaked images of the high-end tablet

made for google by HTC (you can see them here: tinyurl.com/pvolazp) but it seems odds-on that it would come with the new OS Android L and that it will feature Nvidia's Tegra K1 chip. The screen will be closer to 9", to match its name and maybe make life easier for consumers (although it may well replace the ageing Nexus 10, which could be as confusing as Windows' jump from 8 to 10). Suggestions are that its display will be 221dpi with a resolution of 2048 x 1440.

Perhaps most interesting is news that it will have a new aspect ratio, moving away from the 16:9 of the Nexus 7 and heading towards something more square. It will also, some suggest, have up to 4GB of RAM and an eight megapixel rearfacing camera with speakers on the front as is the trend for HTC, it seems. If such rumours pan out, then the Nexus 9 will have Apple executives worried and the iPad really could be under threat.

Or will it? It is hard to separate technology from business when it comes to discussing threats. On the one hand, the next-generation of tablets have the ability to push the iPads hard. On the other, when many of the next-gen tablets are being offered so cheaply, it would be trite to think that, in a technological sense, they are the iPad's equal. Of the tablets we have seen, the Samsung Galaxy Tab S with a 10.5" screen and the Fire HDX 8.9 are the strongest competitors, with the Hudl2 giving the iPad mini a run for its money. The Nexus 9 is shaping up, if leaks are to be believed, into a forerunner too.

When we're talking about threats to the iPad we really have to look at actual numbers, though. There are 12.3 million iPad users in the UK right now; doing the maths, that represents 19.1% of this country's population. It will take something very special to knock it from its perch as tablet of choice. Rivals have to provide a tablet with enough power, at an attractive price with great software features and abundance of apps – and they don't always get it right.

In March of this year, *Forbes* in March of this year suggested the "outlook looks grim" for Amazon's tablets and that "this business contributes less than 5% of the company's value." It estimated that sales of all Kindle devices was 20.1 million by 2012, but that sales actually fell the following year. In revenue







terms, the sale of Kindle devices – and Forbes was lumping eReaders as well as tablets into this bracket – earned Amazon \$3.9 billion but said it was "barely enough to cover its net shipping costs of \$3.5 billion."

So of all of major Apple competitors, Amazon does seem to be in a more precarious position (especially given that its Fire Phone has also been deemed an early flop) and it could well be due to savvy shoppers knowing that the tablet does not allow access to Google Play. Amazon seems to be suffering more from the rivalry of other Android tablets and its impact on Apple is slight. "There is a good chance Samsung, Apple and other companies will continue to dominate the market with their technically superior products and operating systems, that boast of a very large app library as well," Forbes said.

Hudl2 has a greater chance of threatening the iPad's sales numbers, if only because people would, in buying one, decide not to splash out on an Apple product (it is a brilliant product in its own right, though). Even Google is struggling to a degree. Its Nexus offerings, despite positive reviews and impressive hardware, are selling far less than the company would have hoped for. The 2013 version of the Nexus 7 shifted less than three million units last year. That really leaves Samsung, Apple's nearest rival, but even there the figures are sobering. Apple shipped 1.3 million less iPads in 2013, but Samsung gained just 100,000 units.

What this illustrates is that it's the little guys who are making an impact. If you think back to the beginning of this piece when we spoke of the market shares of each tablet, we mentioned Lenovo (a 4.9% share) and ASUS (4.6%). That actually represents a 5% and 13.1% growth, respectively, for the two firms. The threat is not coming from the high-end premium models but from those at the other end of the scale: cheap Android devices which offer Google Play access and decent sized screens. Indeed, it is rather telling that the dominant group of tablet manufacturers worldwide comes under the banner 'Others'.

It makes one wonder whether people really want all-singing, all-dancing tablets, or whether they really care about the specs at all? Perhaps they don't; the tablet market is very different to that of traditional computers. Price-conscious, mainstream consumers simply want the convenience of a tablet – usually to playing simple games, check their emails, shop online and

It is rather telling that the dominant group of tablet manufacturers worldwide comes under the banner of 'Others'

browse the web. That sort of stuff doesn't need immense power, which is why low-end tablets sell so well. What it does, however, is put the established names in their own bracket, competing on rather similar specs for consumer dollars – and attempting to raise the stakes with software features like Amazon's FireFly.

One thing is certain, though: tablets are here to stay as a significant form factor. As the competition continues to heat up, consumers are going to benefit from the race to the top as specs get better, features more plentiful and companies experiment with new shapes and sizes. This race will then, inevitably, breed further developments at the lower end of the market, too. The big winner in this competition is ultimately the consumer – and long may it be that way. mm

How Apple Is Shaping Up

At the time of going to press, Apple had yet to announce its new iPads but given that rumours tend to be very accurate when it comes to the Cupertino-based company these days, we can assume that they have come with faster processors.

Code within iOS 8.1 suggested the next-gen iPads will have Touch ID fingerprint sensors and Apple Pay. A split-screen function was also said to be in the planning. We expected the iPad to benefit from speedier 802.11ac wireless but while rumours of a 12.9-inch iPad Pro surfaced, we would be surprised if such a large tablet was released this time around.



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Back Up Your Omline Life

A lot is said about online backup, says **Keir Thomas**, but what about making personal copies of the data you create online every day?

Il of us create huge amounts of data every day. With each Facebook posting, uploaded picture, online auction or email message, we're adding to an online footprint that can be many gigabytes in size. Yet none of us ever comprehend the degree of trust we're placing in online services to keep that data safe. Disasters are rare, but they do happen: people log into Gmail to find ten years of emails have simply disappeared, with no hope of recovery, and eBay and Facebook accounts are routinely locked by overzealous administrators who are reluctant explain why.

We're encouraged to back up our PC data to cloud storage online, but the opposite might be an equally good idea: making a personal backup to your PC hard disk of the data you put online. Perhaps surprisingly, several online services provide tools to do just this, although others are less helpful. Below we take a look at some of the top internet hangouts – everything from social networking to email – to see what can be done.

It goes without saying that you should already have a backup plan in place for your hard disk data.

Facebook

It might surprise many that Facebook has a comprehensive yet easy to use 'core dump' feature that allows the download of most of the data you've provided it with over the years – everything from pictures, to wall postings and messages. There are some important caveats, though.

Start by clicking the menu icon at the top right of the Facebook home page, and select Settings. Then at the bottom of the General Account Settings list, click the link to download a copy of your Facebook data. Finally, click the Start My Archive button and type your Facebook password when prompted.

Facebook accounts are routinely locked by overzealous administrators



Archiving takes a few moments, but eventually you'll be sent an email with a link to download a zip archive. In my test, the file was just over 50MB, and I've been a moderate Facebook user since around 2009.

Once the zip is unpacked, double-click the index.htm file within the folder. This will open it within your favourite web browser. What you'll see might look like a web page but, of course, it's actually a series of files on your hard disk within the backup folder. There are no links to anything online, even when you click to view your photos and videos.

Links at the left beneath your profile picture take you straight to the various categories of downloaded files or to lists of your usage data.

You'll soon discover that Facebook's largesse borders on being a token gesture. Your friends list is provided, for example, but it's literally nothing more than a text list that's sorted randomly. Wall postings going right back to your very first are provided, including those made by yourself and by others posting on your wall, but any comments made by others by others are absent. Images are stripped out, and the number of Likes is not provided.

Your wall photos are available to view in the Photos section, but you'll see that they've been shrunk considerably for the archive file, which is the case with all photos provided as part of the archive. Shrinking happens anyway when you upload to Facebook (an eight-megapixel is automatically shrunk to 1-2 megapixels) but the images downloaded as part of the archive are smaller still. The same applies

to video files; HD might be an option within Facebook, but the version downloaded as part of the backup archive is even lower than Facebook's standard resolution. To get good copies of both photos or videos, you'll need to view each individually at Facebook and select the Options > Download link (choose the Download HD link for videos, if it's available).

Not only are photos reduced in size, but any captions simply aren't listed, although comments made by you or others are.

Messages are reproduced in the same conversation view as you see on Facebook and are sorted via each friend you've chatted to, but images and some links are stripped out.

In fact, it's even the case that all information about you is provided, as Facebook willingly points out (**goo.gl/FOwznW**). Some data like check-ins, things/people you follow and notes can only be seen by manually viewing the Activity Log, which you'll also find on the main menu within the Facebook home page. To find out some technical details, such as which apps are linked into your Facebook account, you'll need to delve down into the various settings options and then output the page as a PDF (see the DIY heading below).

eBay

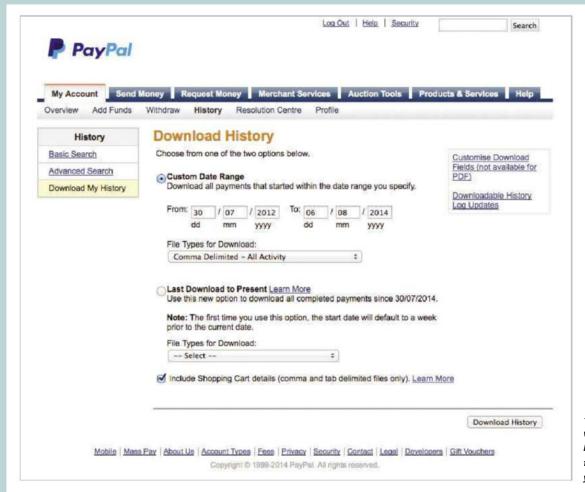
There are a couple of scenarios where backing up eBay data makes sense. The first is if you're a heavy eBay user, perhaps repeatedly selling similar items. You may want to make a backup on your PC of your



▲ Facebook lets you create an archive of all the information it holds about you, but there are some very important caveats



> Apps like the free Turbo Lister let you not only create auctions offline but even feature their own archiving features for safety



≺ You can grab two years'
worth of transaction data via
PayPal's Download History
feature, but more is available if
you manually browse

auction listings, including the all-important product images, for use elsewhere in case your account becomes locked.

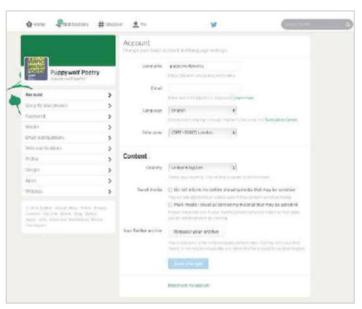
Alternatively or additionally, you may simply want to create a local backup of your purchases and sales for use later when calculating your yearly taxes, for example, or simply for peace of mind.

Unfortunately, with the exception of messages (see below), eBay doesn't provide backup facilities or a way to 'core dump' your account data. It does allow the creation of auction templates for reuse repeatedly, but these are stored as part of your online account, and the purpose of backup is to provide access to data should the account become inaccessible. Similarly, Selling Manager (pages.ebay.co.uk/selling_manager) is the official tool of choice for many advanced-level eBayers but is solely an online tool so will become inaccessible should your account be blocked.

Many less-than-casual eBayers will probably already have a solution in the form of PC software they use to manage their listings, which lets you build auctions on your PC before uploading them. This way you'll always have a local copy. While many third-party examples are available, the free of charge and official Turbo Lister app (pages.ebay.co.uk/turbo_lister) is ideal for the basic-to-moderate eBay user. Simply use it rather than the eBay website to prepare your auctions. The app even includes a backup function of its own – click File > Backup Database. You can restore the database at a later date using File > Import Database. You can also select individual auctions or templates for backing up by clicking them within the list and selecting File > Export Selected Items.

The similar and also free of charge Poster Toaster (www. brothersoft.com/the-poster-toaster-65312.html) offers slightly more features and also includes a backup feature, as does the expensive but professional Auction Wizard 2000 (www.auctionwizard2000.com).

BackupYourltems (**goo.gl/XrDtyA**) is an eBay app that backs up your auction descriptions and photographs every week or more frequently should you choose to make a manual backup. Backups are stored for three months on the server of the app developer, and you can download them whenever you want. The service costs \$3.99 per month. eBay apps run online and are linked to your account so, again, if your account access is limited or revoked, then you might also lose access to your



▲ Twitter lets you download all your tweets en masse, but not things like pictures you've tweeted



I spy with my little eye domains ending in...

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.guru .ink .pub .reviews .press
.social .trade .website .wiki

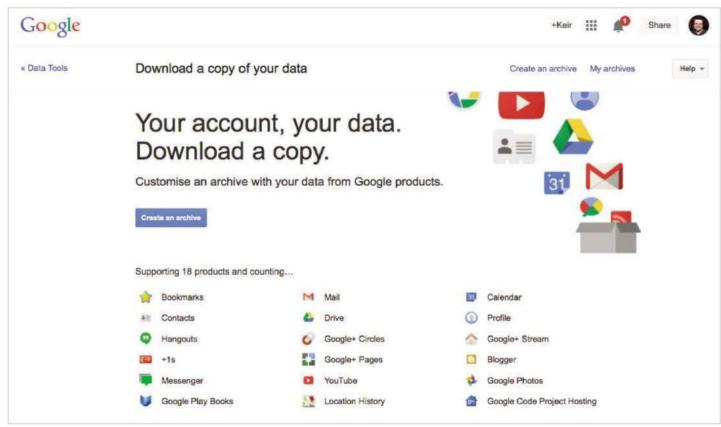




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▲ Google lets you grab virtually all the important data from its services, including your Gmail inboxes

backups. Therefore, you should set yourself a personal reminder to periodically download them.

A slightly clumsy but effective way of making a backup of your purchase and sales information is to ensure you keep the emails eBay sends each time a transaction takes place. Simply create an email rule to filter these into a folder and back them up as usual with your PC backup. However, there might be no need, because it's with messages that there's perhaps the only concession to offline backup offered by eBay: open My eBay, then select the Messages tab, and in the left-hand column will be a Save Your Messages option. This will give you the chance to download all your messages as either HTML, for opening in your web browser or EML, for opening in most email clients. Bear in mind that eBay messages are automatically deleted after six months, however, and some disappear even sooner. Therefore you'll need to do this periodically to keep an up-to-date backup.

If you'd like to back up a list of what you've purchased over the years, the only way to do so is manually: View My eBay, then select Purchase History in the list at the left. Click the Archived radio button, and then select the year from the drop-down list below (only two years' worth of data is available). By selecting 200 items per page at the bottom of the list, you should be able to fit all the items into one web page and can then output the page as a PDF (see the DIY heading below).

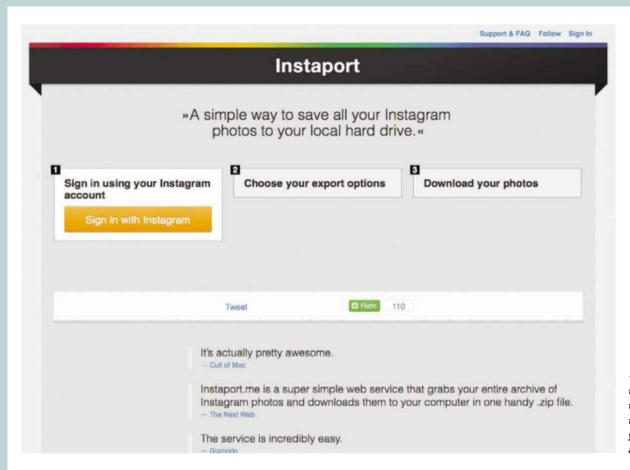
PayPal

Downloading details of your transactions via PayPal is relatively easy, although again there are some caveats. Note that the instructions below are for the 'classic' PayPal interface, which is still accessible even if you've been upgraded to the new look – just look for a link at the bottom to switch you temporarily back.

To generate the transactions data, log in to PayPal, and then ensure the My Account heading is selected. Under the History heading, select Download History. On the page that appears, click Download My History in the short menu at the left, then enter a custom date range, with the From: field being two years before the current date, and the To: field being the current date. This is necessary because only two years' worth of data is accessible in this way. In the File Types For Download list you can select between Comma Delimited (also known as Comma Separated Values or CSV), tab delimited, Quickencompatible files or PDF. CSV will open in most spreadsheet apps. Clicking the Customise Download Fields link lets you add quite a few important data items to the report, and you should also put a check alongside Include Shopping Card Details at the bottom of the window. Once you've made your selections, click the Download History button. PayPal will take a few moments to generate the data.

Another way to access monthly statements akin to those you might get from a bank, which can be useful when attempting to prove a financial transaction took place, is to click the reports entry under the History heading (again ensuring the My Account tab is active). Then click the Monthly Financial Summary link at the left-hand side. Choose a month from the drop-down list in the window that appears or enter a date alongside (the two-year restriction again applies), then click the View Report button. Once the details are shown, click the small Download button at the top right of the table.

To view account data beyond two years old, you must manually page through transaction data in the usual way. Ensuring the My Account tab is active, click the Basic Search option under the History heading. Then select the To and From dates from the fields. Be sure to click an actual date (e.g. 1 June 2009) in each field before clicking the Show button. It might take PayPal a while to retrieve this data, but once it appears, click Next to work through the pages, which will start with the newest transactions. Clicking the Download link at the top right of each page won't work, though, because that's still limited to only two years' worth of data. Therefore, you'll have to manually copy and paste the data into a spreadsheet or similar or save it as a PDF (see the DIY section below).



Instaport is a free third-party service that lets you grab all the images within your Instagram account

Twitter

Twitter offers a similar 'core dump' of user data compared to Facebook. Just log in, click the cog icon at the top right, select Settings, and then click the Request Your Archive button near the bottom of the list of options. This feature works in a very similar way to Facebook in that a zip is offered for download and, when unpacked, double-clicking the index.html file will open it for viewing in your favourite web browser.

All you really get in the archive is your tweets, including anything that you've retweeted. You don't get any images you've uploaded. They might appear on the page you've opened, but it's an illusion because they're actually being fetched from online sources and aren't part of the backup archive. Nor do you get tweets others made mentioning you or any replies to your tweets. This means you can end up with some curiously one-sided conversations within the backup.

On the plus side, you can also click an icon at the top of the screen to view your basic account information, such as your total number of tweets and account blurb.

The tweet data is downloaded in two file formats that contain identical data: JSON, for people like web developers who know what that means, and comma separated values (CSV). The latter can be opened in a spreadsheet or perhaps manipulated via simple databases if you possess the know-how.

Google

Google also offers a 'core dump' in the form of Takeout, whereby you can create an archive of most of the data within various Google services. Google says that 18 products are supported so far, including arguably the most important: Gmail (mail and contacts), Calendar, Drive, YouTube and Blogger.

To access the feature, log into a Google service like Gmail, and then visit **www.google.com/takeout**. Click the Create an Archive

button. You'll then be prompted to choose what you want to download, and clicking the Edit link alongside each will let you configure the file format you wish to use.

Click the Create Archive button when you're ready to go, and you'll then be shown a progress display. You can close this window if you wish, because Google will email you when the archive is ready.

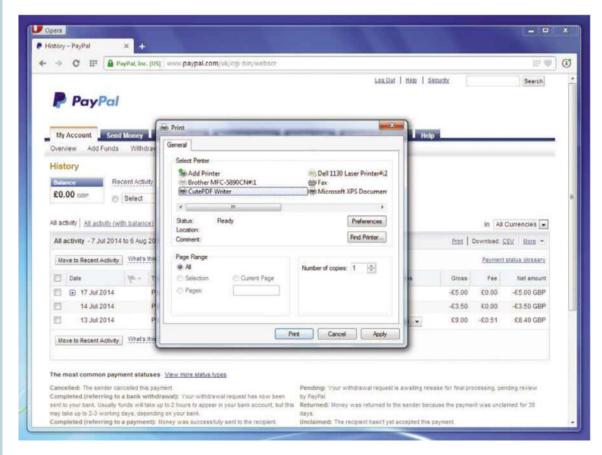
Building the archive took around four hours in my test, and I was offered two files for downloading: a zip file containing most of my actual data (241MB) and a mailbox (mbox) file containing my Gmail (4.68GB). I've been using Gmail heavily and other Google services moderately for around ten years, so this is perhaps average.

Unlike with Facebook and Twitter, the Takeout archive contents are arranged into folders named after each Google service, and there's no useful index.htm to help you navigate through them. However, in most cases it's obvious – any video files you uploaded to YouTube are simply made available in a folder with that name, for example. Google Docs files are all automatically converted to standard MS Office format with the Drive folder.

Regardless of the service, you do appear to get full copies of what's online, with no shrinking of images or videos, for example.

Some data, such as your location history or profile information, is downloaded JSON files, which are a form of XML mark-up used in programming. You can open these files in plain text viewers like Notepad, but they're not supposed to make sense to everyday users. Pasting their contents into a site like **jsonviewer.stack.hu** and then selecting the Viewer tab can make the data slightly easier to read, because it will be arranged it into a tree structure.

Be careful importing your Gmail inbox into your usual mail app if the mbox file is multiple gigabytes in size, because there's a strong likelihood everything will crawl to a stop. It might be better to install a new email app specifically to browse the mbox file, such as Thunderbird (www.mozilla.org/thunderbird). Alternatively,



≺ Sometimes a site won't relinquish your data easily so the only option is to view it as usual then print it as a PDF file

try the Windows Mailbox Viewer app (**sourceforge.net/projects/mbox-viewer**), which simply lets you browse mbox files without having to configure an entire email setup.

Misc others

The instaport.me website offers a convenient and quick way to download all your Instagram snapshots: just sign-in via the website, agree to give the site access to your data, choose the All My Photos option and click the Start Export button. Eventually you'll be offered the chance to download a zip file, and the service is free if you want it to be, but you can also opt to make a donation for its upkeep before downloading. Within the archive you'll find photos arranged by folders named after the date the pictures were taken.

LinkedIn doesn't allow you to export most data, although there's a notable exception: you can export details of all your contacts established within LinkedIn. To do so, log into the service and then visit **www.linkedin.com/people/export-settings**. Contacts are exported as CSV, for importing en masse into a different application or as contact card (VCF) format.

Creating a backup of your notes in Evernote is simple, although you'll need to install the Windows client to do so if you haven't already (**evernote.com/download/get.php?file=Win**). First ensuring all your notes have synced, just right-click the Notebooks heading and select Export Notes. You'll be asked which format you want to use, and arguably the single HTML page or multiple web pages are most user friendly, letting you view the Evernote data in your web browser.

DIY

Sometimes a site doesn't offer the ability to download your data, so the only option is to grab it manually. Arguably the easiest way of doing so is as follows: view the data within the website,

taking advantage of any options offered to show as much data as possible (i.e. listing 100 items per page, rather than 25), and then output the page as a PDF or Microsoft XPS Document. XPS is built into Windows, but apps like CutePDF Writer (www.cutepdf.com/products/cutepdf/writer.asp) add into Windows the ability to output PDFs from any app and work by installing a virtual printer driver. Just select to print the page in the usual way, then select either the Cute PDF Writer or XPS Document Writer from the list of printers.

A slightly more archaic solution is to attempt to create a clone of the site's data using a web spider app. Once pointed at a site, spider apps browse the website in an automated fashion, clicking links and downloading all the HTML and images that are found. They're very similar to the technology used by search engines to build their catalogues, which go by the same name. Spiders don't always work well and can struggle with sites that require logins but are worth a try if a PDF just doesn't grab the info you need. A good example is Simple Web Spider: **sourceforge.net/projects/simplewebspider**.

Grabbing your photos from a less-than-helpful site is easy: ensure you're viewing the high-res version and then right-click before selecting Save Image (or similar, depending on which browser you're using). Depending on which browser, you're using you may be able to simply drag the image straight into a folder or onto the desktop. Grabbing your videos is harder, especially if they play via a Flash widget embedded into the web page. Perhaps the best way of doing this is to use a browser extension, such as Video DownloadHelper for Firefox (addons.mozilla.org/en-US/firefox/addon/video-downloadhelper) or Video Downloader Professional for Google Chrome (goo.gl/3o9Vul). It's even possible to examine the page source to try to find the URL of the video files, which will usually have an FLV file extension, in order to download them manually via a download manager app.



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The **Best** Money Can Buy:

Systems

We look at the kind of pre-built computer systems you can buy if money is no object...

e've spent the last few weeks looking at the kinds of expensive hardware you can buy if you're budget isn't all that limited. We've focused on the more expensive examples of things like CPUs, graphics cards, hard disks, keyboards and monitors. However, what if you're not looking to upgrade or build a new PC, but you're instead angling for a totally new, pre-built system?

Whether you're buying a whole PC because you don't have the knowledge to build one yourself or you simply want the ease of grabbing a ready-to-go system, PC packages are still the most popular method of obtaining a new computer, and there's a vast market of possibilities here, with all sorts of vendors, models and price brackets to go for. There are models for the everyman, business-focused models and systems designed for power users like professional artists and gamers.

Even in the latter category, there are plenty of budget options, with PCs available that won't cost the earth, but in this series that's not what we're looking at. We're looking for the expensive and extravagant, and this week is no different.

We're going to take a look at the kind of PC builds that you may only be able to dream of but would sell a vital organ to get your hands on. And if that's not the case and you have plenty of cash to spare, you'll find some great options for PCs that'll handle anything you can throw at them, and they'll do so with style.

Product: 8Pack Supernova, Price: £9,500

This monster of a PC is a true behemoth, available from **www.overclockers. co.uk**. The site claims that it's the fastest and most efficient production PC available and when you see the specs, you can see why there may be plenty of truth to that claim.

For one, the system comes with a pre-overclocked six-core Intel Core i7 4930K, which runs at a staggering 4.8GHz. This is mounted on an Asus Rampage IV Extreme Black Edition motherboard along with 16GB 2400MHz RAM, three Nvidia GeForce Titan Black Edition 6144MB graphics cards set up in Tri-SLI, two 512GB SSDs, 4TB HDD and a SuperFlower Leadex Platinum 1200W PSU. A custom dual loop water cooling system is included in order to cool all this hardware when in operation.

Make no mistake: this is a very powerful system and one that's sure to make anyone else green with envy. We doubt you'll find many other retail systems, if any, as expensive or as powerful as this.

Product: Yoyotech XDNA Aurum 24K, Price: £7,979

Without a doubt one of the most expensive retail PCs ever made, this striking black and gold system from YOYOTech looks snazzy and is a seriously monstrous PC, with some cutting-edge hardware fitted into the basic but attractive case.

The system is all about extravagance and raw power, and it instantly makes this point with its Intel Core i7 4960X, pre-overcloked to 4.4GHz fitted to an Asus X79 Deluxe motherboard, alongside a massive 64GB of Corsair Vengeance



▲ 8Pack Supernova



▲ Yoyotech XDNA Aurum 24K



> PC Specialist high-end build

Pro Gold 1600MHz RAM. The graphics setup includes two Nvidia GTX Titans in SLI, 512GB Samsung 840 Pro SSD, 2TB Seagate Hybrid SSHD, Seasonic 1250W PSU and full custom water cooling. This is all contained within the modified Corsair 900D case.

It's ridiculously powerful, and there's nothing you could throw at it that it couldn't handle without breaking a sweat. It'll easily play any of the latest PC game releases in 4K resolutions, including 3D, and you'll likely smash any and all benchmarks. It's quite something, but it's also hugely expensive.

Product: PC Specialist high-end build, Price: £5,740

This is a custom-built option from website, **www.pcspecialist.co.uk** and like units from other outlets, such as Dell, this isn't an exact model but one that you customise yourself, picking the components you wish to install into your new system. As we're looking for high-end models here, we picked the high-performance option and selected some of the most powerful components to go in it.

Our system included an Asus Rampage V Extreme ATX motherboard, Intel Core i7 5960X 3GHz CPU, 32GB Kingston Hyper-X Predator quad-channel RAM, dual GeForce GTX Titan Z graphics cards, 1TB Samsung SSD, 2TB HDD, Corsair 1500W PSU, Corsair H100i Hydro Cooler and Creative Sound Blaster ZxR 5.1 audio. This was all slotted into a Cooler Master Cosmos 2 Ultra tower case.

Its quite the list of hardware, we think you'll agree, and it's a PC that's brimming with power and possibilities, which you'd expect to find in a system that costs over £5,000.

Product: UKGC Zeus, Price: £5,180

This is an extreme gaming PC setup from the website UKGC (**www. ukgamingcomputers.co.uk**) and is the top-end extreme PC option the site has on offer. This isn't the standard configuration, though. For this build we've added the very best upgrade the site offers too (except peripherals and aesthetics like lighting).

The system we set up includes a Cooler Master Cosmos 2 case with a custom side window, and inside this sits an Asus ROG Maximus VI Extreme motherboard, Intel Core i7 4770K 3.5GHz CPU, 32GB Corsair Vengeance RAM, three Nvidia GeForce GTX Titan Black 6GB graphics cards, two 480GB Corsair Force GS SSDs, a Seagate Barracuda 2TB HDD, Creative Sound Blaster ZX and a Corsair AX1200i PSU. This is cooled by the popular Corsair H100i water cooling system.

It's another very powerful, custom-built system and one that, like many other expensive models, won't flinch, even at the highest resolutions and detail settings.

Product: Fujitsu Celsius R920, Price: £4,500

Not all PCs on the higher end of the price spectrum are aimed at gamers and extreme PC users, as you might expect. Some powerful PCs are designed with the workstation in mind. When you need a hefty machine to handle your work and one that's reliable when used for prolonged periods of time, the Fujitsu Celsius R920 is the kind of PC you may want to be looking for.

It's a dual Xeon E5-2640V2 system with 32GB RAM and both HDD and SD fitted, at 1TB and 256GB respectively. There's front-mounted cold plug access that makes storage expansion easier, not requiring the usual delving inside the PC. Simply mount the drive to a caddy and slide it in. It also boasts an apparent 'best-in-class' noise emission of only 21db, as well as ISV certification for fast and reliable operation.

It may not look like much on the outside, and because it uses a Xeon CPU setup, it's not for everyone, but this is a powerful workhorse and a very reliable one at that.

Product: Alienware Aurora Milky Way, Price: £3,760

This example is for the most expensive and most powerful Alienware system you can build at the moment, fitted with the best of the custom options Dell allows when fine-tuning your new system. This includes an Intel Core i7 4930 six-core 4.1GHz CPU, 32GB quad-channel DDR3 RAM, dual Nvidia GeForce GTX Titan Z cards, 512GB SSD and 1TB HDD.



▲ UKGC Zeus



▲ Fujitsu Celsius R920



▲ Alienware Aurora Milky Way



▲ Apple Mac Pro Intel Xeon E5

Should you wish, you can also spend a little more to get the system packaged with a monitor, making for a total gaming package and one that has few equals in the mainstream retail PC market. This is a PC that's perfect for gaming, without heading into obscene price territory.

Product: Apple Mac Pro Intel Xeon E5, Price: £3,000

This cylindrical oddity could only come from the design minds at Apple. The Apple Mac Pro Intel Xeon E5 is a very unique desktop workstation PC that uses its design to produce a cool and quiet system, without sacrificing any of the power or versatility.

It does this thanks to the special unified thermal core, which the system is built around. It also incorporates cutting-edge hardware, including the Intel Xeon E5 CPU (models include four, six, eight or 12 cores, with this example having six 3.5GHz cores), up to 64GB RAM, 256GB SSD and dual AMD FirePRo D500 6GB GPUs.

It's a very compact unit, measuring only 25.1cm tall, and Apple states that it's about one eighth the volume of the previous generation. All of this coupled with the quiet and cool running, as well as boasting enough power to edit 4K video at the same time as rendering additional content in the background makes for a tasty computer. Although many home users may not need this type of rendering power, there are a lot of video-editing buffs out there who could make great use of this system, and for that task alone, it's well worth the high price.



Coming via Amazon, this is a beefy gaming system that features a 4.4GHz Intel Core i7 CPU (overclocked), dual 3GB Nvidia GeForce GTX 780 Ti graphics cards, 32GB Corsair Vengeance RAM, 256GB Corsair LX SSD, 3TB HDD and uses an Asus Rampage IV Black as its motherboard foundation.

It's a beast and is all wrapped up in a large, black case that gives ample room for the fitted Corsair H100i water cooling system. Yes, this is a serious gaming machine for serious gamers, and although it's expensive, at the £3,000 mark, the deal we found was actually a bargain, knocking a huge £1,500 off the price. Very nice, indeed.

Product: Gladiator Overlord, Price: £2,000

Coming from **Aria.co.uk**, this is a custom, built to order system that offers a good deal of power and is pre-overclocked for added muscle. It's an Intel Core i7 PC that features a 4.6GHz CPU, 16GB RAM and a 500GB SDD alongside a 3TB HDD. Graphics are handled by an Nvidia GTX 780Ti 3GB. Windows 8.1 comes installed, and Aria puts its PCs through various stress tests to ensure everything works well and according to spec.

What's important to note about this system is the quality of the components used. There are no corner cutting here. Each component is solid, and the bundle will make a great system for a variety of users, including gamers, which the system is clearly aimed at.

Product: Yoyotech Warbird RS2, Price: £1,360

This may be the cheapest PC in our round up and a far cry from the Yoyotech XDNA Aurum 24K, but don't be fooled: the Yoyotech Warbird RS2 is every bit a high-end gaming PC; it's just a lot more affordable than most. It's also one of the best gaming PCs we've seen, ignoring the price difference.

The core specification may not feature the over-the-top craziness of some of our more extravagant options, but it's more than capable of handling any games you want to play. The MSI Z97M-G43 motherboard holds an Intel Core i7 4790K 4.4GHz CPU, 8GB 1600MHz RAM and an Nvidia GTX780 3GB graphics card. There's a 128GB SSD alongside a 1TB HDD, and the whole system is water cooled and pre-overclocked. It even comes with a 23" IPS monitor included in the price.

It's a far more modest system, but the high-quality components, cooling and overclocking, coupled with a stylish case and lower price makes this a superb option for gamers looking for a powerful system that won't require a second mortgage. mm



▲ Vibox Goliath 20



▲ Gladiator Overlord



▲ Yoyotech Warbird RS2

The perfect guide for anyone – from 8 to 88 – on learning to program with the Raspberry Pi



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Your Letters

Identity Theft

Despite being in the Telephone Preference Scheme I get a large number of unwanted telephone calls from 'overseas' sounding salesmen using spoken English that can be hard to understand: this is because the Preference scheme is not vigorously enforced and overseas callers can bypass it easily. It is one of the consequences of the globalization of communications systems which appear to help big companies market their goods and services rather than protecting the identities of the individual customers.

How does one respond to this? This was a subject of conversation round the dinner table. The call being discussed had gone like this: the sales guy with 'overseas' sounding accent said something like "Is that Mr Deakin?"

Without responding to that question I said "Who are you?"

He said "I am James", and then he somewhat hastily identified the data bureau or similar that he was from: I finished the call pretty quickly. Afterwards at dinner time I discussed the call with the family: one of my sons suggested that, when dealing with unwanted overseas sales calls like this, I should respond by calling myself by an overseas name and denying that I was a Mr. Deakin in any shape or form. The subject of the dinner conversation was then turned to whether this

was illegal, politically incorrect or merely inappropriate.

My son argued that if an overseas sales caller could use a British sounding name like James then I should be free to use an overseas sounding name, which was widely used in some places overseas. However, my wife was not convinced: she argued that it bordered on being difficult (at least). My sons, however, argued along the lines of "what is good for the goose should be good for the gander". In other words if an overseas salesman who ignored the Telephone Preference scheme tries to represent himself as British. then I should be free to respond in kind by changing my name to a possibly more overseas sounding identity or any other name that occurred to me at the time. If he was trying to steal my identity, then this would place an obstacle in his way and help to confound a potential theft of information. Or could this. in some circumstances at least, be construed as just 'a bit racist' - or, to use my own word, "culturalist"?

So to get round any hint of this difficulty I thought that I would need to would need to come up with a more British version of a name to identify myself as, which sounded like (the name to be chosen for phone use) but which was not actually written the same.

It could be "transgenderal" or anything like that because this would not offend racial or cultural sensitivities and might even be praised for its "transgenderal" awareness: then it came to me (the name that is!). Yes, in future I thought that when answering these calls I could, potentially at least, call myself 'Rog-anne'; ("Rog"-"Anne") "Rog" being an abbreviation of "Roger" and "Anne" is included here for its compatibility with "transgenderal awareness": so "Roganne" it is: it is a bit of an unusual nam, which could help to obfuscate nicely, but before implementing this change some further discussion may be needed round the dinner table!

Then another call was received the next day at around 9.30pm while we were watching TV. This time it was automated and my wife picked it up. While handing me the phone with the caller still "on" she told me the gist: a transaction needed to be paid into an account and could we press button "9" to proceed further... the voice was female and very credible and professional. We overtalked the call whilst deciding what to do and did nothing: the call disconnected pretty quickly, too quickly I thought for it to be a genuine Bank call.

I watched TV and snoozed for the next few hours mulling over what to do. After waking I decided to ring the bank at around 2.00 am. The night shift at the bank were very pleased to take my call and I was eventually passed to the anti-fraud department. They confirmed that they were no unusual transactions on the account and that the call was probably of the "mass phishing" type. They said I had done exactly the right thing in calling them . The original call had occurred hours before 2am, but at that time of night they were pleased to talk and quite welcoming! They reiterated that I should do exactly the same thing if it happened again. They wanted me to get in touch with them in these circumstances – and, from experience, I know it was a lot easier and quicker than trying to ring during the day.

Harry Deakin

GET IN TOUCH...

By email

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By post

Micro Mart 30 Cleveland Street London W1T 4JD

Online

forum.micromart.co.uk



Component Watch

Looking for a deal on an AMD motherboard? James Hunt has some ideas for you

pgrading a motherboard is a difficult enough process even before you've worried about price. That's why we've picked out a selection of latest-generation AMD motherboards, so you can find the best priced hardware to fit your preferred Kaveri CPU. If you're looking for Intel, don't worry; we'll be covering Haswell boards next week.

Deal 1: MSI A55M-E33 RRP: £34.99 / Deal Price: £26.92

Easily the cheapest FM2+ board around, the micro-ATX form factor means it's a reduced version of the chipset, so you only get two DIMM slots, thee PCI slots and four SATA ports, but even that's enough to comfortably run a mid-range system. Gigabit Ethernet certainly doesn't hurt, and



you still get HDMI-out and six USB ports, though beware: none of them are USB 3.0!

Where to get it: Dabs - bit.ly/1opHqez

Deal 2: Asus A58M-E RRP: £44.99 / Deal Price: £38.99

It's still a micro-ATX board, but the slightly more powerful A58 chipset makes the Asus A58M-E a more powerful proposition, with extra SATA ports, extra USB ports, and the ability to access to 4K output capabilities of the Kaveri CPUs. You still only get two DIMM slots, but gigabit



Ethernet, six SATA ports and HDMI-out mean this board is still a solid, future-proof choice for your new, non-gaming system.

Where to get it: Ebuyer - bit.ly/1rn9Dsh

Deal 3: ASRock FM2A75 Pro4 RRP: £59.99 / Deal Price: £55.19

One of the cheapest full-size FM2+ boards on the market, the ASRock FM2A75 Pro4 has four DIMM slots, HDMI-out, gigabit LAN, seven PCI slots, six USB 2.0 ports and two USB 3.0 ports, so there's little compromise here. It's an A75 chipset, which is really designed for Trinity and Richland chips and therefore

doesn't have full support for Kaveri features (like 4K graphics output), but if you're buying this cheap, that probably won't bother you!

Where to get it: PC Upgrade – bit.

PC Upgrade – bit. ly/1pzWhUc



Deal 4: Gigabyte
GA-F2A88XN-WIFI

RRP: £79.98 / Deal Price: £72.99

Although it's a mini-ITX board, the Gigabyte GA-F2A88XN-WIFI really packs on the hardware. As well as the usual set of Kaveri platform features, you get dual-band wireless AC and Bluetooth 4.0 integrated into the motherboard, as well as



four USB 3.0 ports, four SATA-3 ports, two DIMM slots and dual HDMI-out ports. Ideal for mini-PCs, HTPCs and other slimline form factors. You pay a lot, but you'll get everything you need!

Where to get it: Dabs - bit.ly/1mGe2VW

Deal 5: Gigabyte G1.Sniper A88X RRP: £84.99 / Deal Price: £82.83

Arguably the best FM2+ motherboard on the market right now, the Gigabyte G1. Sniper is broadly the same as any other FM2+ board, supporting 4K HDMI output and gigabit LAN, but it also takes things a little further. You get eight SATA-3 connectors,



four USB 3.0 ports and nine USB 2.0 ports, exceeding the average. The A88X controller also gives it access to the full range of Kaveri features – something that cheaper boards don't have. Pair it with an A10 Kaveri chip and you'll have a decent, affordable system that doesn't require an additional graphics card for gaming.

Where to get it: Dabs - bit.ly/1pQybDN



My Cable's Faster Than Your Broadband

Tesco Unveils Hudl2 Bigger, faster, second-gen tablet

f, as many will tell you, last
Christmas was the moment the
budget tablet really went
mainstream, Tesco has to take a lot
of the credit for that. Its affordable-yetpretty-decent-actually Hudl device proved
to be a bit of a hit with over 750,000
customers, and the company proved that
you don't have to be a tech company to
reach a tech-interested audience.

Now, Tesco is looking to do it all over again for this festive season as it's launching its second Hudl, Hudl2, on the 9th October. Retailing at a not-ridiculous £129 (and potentially much less for ClubCard customers), the Hudl2 is notable for its 8.3" 1920 x 1200 full HD screen, Android KitKat 4.4.2 OS and the fact this all runs on an Intel 1.83GHz quad-core processor. It also it benefits from Dolby optimised audio and a couple of cameras (a 5MP rear-facing and a 1.2MP front-facing, to be pricise).

Eight hours of battery life and 16GB memory make up the key figures while Tesco is keen to push its "market-leading" pre-loaded parental filter, allowing both

parents and kids to use one device safely. The place to buy one is **www.tesco.com**, but then you probably didn't need us to tell you that.



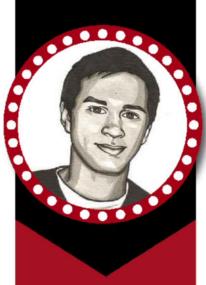
Ofcom research suggests cable is best

able broadband has been given a shot in the arm, with news coming out of Ofcom that web connections in homes kitted out with cable broadband are, on average, faster than those with fibre-based broadband connections.

There is little in it, truth be told, with average cable speeds measuring 43.3Mbps and fibre

measuring 42Mbps and Ofcom has said that this is because many cable customers have upgraded to a faster service since signing up. The most common broadband type remains a lowly 7.4Mbps, however, and Ofcom has also noted a big difference remains between cities and rural areas.

Thankfully, though, that difference is getting smaller according to the regulator.



I've had the same two tablets for a few years now: an iPad 2 and a first-gen Nexus 7, which I only bought because it was for a work project. They're both still going strong, although the iPad has more than its fair share of crow's feet and grey hair, while the Nexus has developed the electronic version of a limp, in the form of a dodgy charging port.

It might, then, be time to think about upgrading. But to what? Another iPad is out of the question, simply because its price laughs in the face of my bank account.

So perhaps another Nexus or a Hudl? Well, no, because I've never really got on that well with tablets of this size. It's not much bigger than my phone, a Samsung Galaxy S5; what I really want is something the same size as the iPad but without the huge price to boot.

Whatever I opt for in the end, there's certainly plenty of choice, as David Crookes highlights this week, and I look forward to upgrading as soon as I can.

See you next time...



Editor

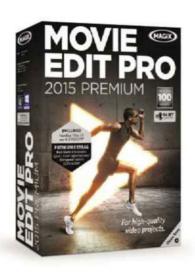
Make More Movie Magic

With Magix...

agix has only gone and jumped the gun a bit and released the 2015 version of its popular Movie Edit Pro package, this time promising native 64-bit support, a totally redesigned user interface and a new Movie Wizard, making video editing woes a thing of the past.

For this year, Magix has turned its attention to optimising the workflow and making the package more intuitive. Clearer shapes and larger buttons may sound like obvious, basic tweaks, but the idea is to provide improved readability and simplified operation, especially on high-res monitors. It's easier to cut, paste and move objects, there's a new audio tool to automatically adjust the volume of differing background music loudness to the same level, and Magix has also thrown in its usual additions for the most-expensive Premium package, with plug-ins worth hundreds of pounds. For example, Red Giant Retrograde simulates 8mm or 16mm film looks, while Red Giant Knoll Light Factory offers adjustable illumination effects.

The Premium package will set you back £100, while the most basic Pro edition costs £60. If either of these pique your interest, you can read more about it over at **www.magix.com**.



Meanwhile... On The Internet...

hile the fallout of the iCloud hacks, that led to the so-called 'CelebGate' crimes, continue (tinyurl. com/Motl1333a) – not least with the news that Matt Smith and Daisy Lowe have been dragged into the whole creepy mess – one of the positive things that has come of a regrettable situation is that the issue of 'revenge porn' (as well as the wider issue of non-consensual sharing of explicit images) has become a matter of considerable public debate, and attitudes towards the seriousness of such things appear to be shifting.

Indeed, it's interesting to note that the UK's Crown Prosecution Service (CPS) is now advising that the most serious cases of this nature – where the images are used to blackmail the victim into further sexual activity – be prosecuted under the Sexual Offences Act, rather than the laws covering obscenity, in order to reflect the "menace and humiliation intended" (tinyurl.com/Motl1333b).

The guidance (the details of which you can read in full at **tinyurl.com/Motl1333c**) does not, the CPS maintains, amount to a new approach, but rather "clearly sets out for prosecutors which laws can be used to bring these cases to court" as if to illustrate that current laws are sufficient to handle such offences, rather than there being a pressing need for new legislation – a move rejected by the House Of Lords in July this year (**tinyurl.com/Motl1333d**), which instead called for social media sites to crack down on anonymity (a questionable request, which seemed to evade the issue somewhat).

Another part of the clarification states that any prosecution should be based on whether "the message or communication is grossly offensive, indecent, obscene or false, not whether the image itself is indecent or obscene", which further focuses the prosecution on analysing impact, rather than content (and, one would presume, could spare the subjects embarrassing, long-winded analysis of the images themselves in court), as well as ringing them under the remit of the Malicious Communications Act 1988.

The headline, though, is that in the most serious, coercive incidents (which would come under the Sexual Offences Act), a range of penalties up to 14 years in prison are available to judges — while in other cases where the release of images "forms part of a course of conduct directed towards an individual", a charge of harassment should be considered. Of course, none of this tackles the psychological effects such malicious acts can have on the victim. Nor will it make the images any easier to remove from the web once they're there (tinyurl.com/Motl1333e) — something that can be virtually impossible if the images are uploaded to image sharing sites outside of UK jurisdiction (tinyurl.com/Motl1333f).

f you've been following the news, and if you tend to get edgy about such things, you may currently be fretting a little about the migration of the Ebola virus from west Africa into the Europe and the UK. If it's something that has frightened you a lot, you probably shouldn't spend too long looking at this simulation and infographic put together by The Washington Post, that shows how quickly Ebola can spread from one person to 100 unvaccinated people compared to nine other contagious diseases: tinyurl.com/Motl1333p.

Spoiler: while Ebola is more difficult to catch than all but one of the others (Diptheria), it is currently the most deadly, causing 58 deaths per 100 infections in 72 days. The article goes into a lot more detail about the nature of the disease, and the work of mathmatical epidemiologists in tracking, and attempting to predict, the spread of infectious nasties like it (tinyurl.com/Motl1333q). Sleep tight, y'all.

ell... no one* saw this coming... According to reports in the *Mail On Sunday* (tinyurl.com/Motl1333g), the police (mis)used the RIPA anti-terrorism legislation to gain access to its phone records in order to reveal the source of stories about then government minister Chris Huhne, even after a judge had ruled that the source should remain anonymous. *The Sun* has also lodged a complaint about misuse of the powers to discover its sources for the 'Plebgate' story (tinyurl.com/Motl1333h).

While it's hard to summon up sympathy for tabloids sometimes, these events have led to the UK 'Interception Commissioner', Sir Paul Kennedy, writing to all the country's chief constables to request details of when their forces have used RIPA laws – which allow surveillance to take place without being signed of by a judge – to gather information on journalists (tinyurl.com/Motl1333i). This move has been lauded as something of a victory for those questioning the application of the RIPA act in this way – like pretty much everyone who has any understanding of the importance of confidential sources in credible journalism.

Considering that the UK is currently facing a day or two in the European Court Of Human Rights already over its mass surveillance policies as exposed by Edward Snowden (**tinyurl. com/Motl1333j**), news like this makes it much harder to get enthusiastic about potential stronger powers for monitoring our communications in the future, as National Crime Agency

top man Keith Bristow has recently suggested (tinyurl.com/Motl1333k) – because if this is how they treat national newspapers, imagine what they do to the general public.

*read: anyone who paid any attention

AVWhy? Videos For Your Eyes... Not Necessarily For Your Brain

We're well aware that there are plenty of Micro Mart readers who cut their computing teeth with a Commodore Amiga. Of course, one of its many charms was the graphics it could generate, wonderfully illustrated by

none other than Andy Warhol in a video taken from the Amiga 1000's launch presentation in New York. During the event he paints Debbie Harry using a very early version of Pro Paint (tinyurl.com/Motl1333n), one of many images he created with the machine (tinyurl.com/Motl1333o).

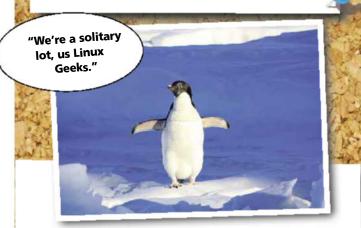


Aaaaaaaand Finally...

Not had enough of data protection and snooping? Step this way... Let's start with the news that Adobe's Digital Editions software is busy recording everything you read using it and then sending it back to Adobe in unencrypted plain text (tinyurl.com/Motl1333l). What could go wrong? Or how about the ongoing war of words regarding exactly how the US authorities managed to track down Dread Pirate Roberts (tinyurl.com/Motl1333m)?



Caption Competition



This Chilly looking chap was the subject of the caption competition in issue 1331, here's the best of your mirth...

- D-Dan: "Most of the world runs Linux they just don't know it."
- JayCeeDee: "What do you mean California Dreamin'? My surfboard would melt!"
- JayCeeDee: "Hi, I'm Arctic Arthur, then I'm Barents Brian, then I'm Canadian Clive, later on I'm Frozen Fred."
- **wyliecoyoteuk:** "Windows 9 introduces gesture recognition to operate the new start menu."
- wyliecoyoteuk: "The new economy internet voting system in action."
- JayCeeDee: "Muummmm, do you like my new surfboard!?!"
- Doctoryorkie: "I'm not antisocial I'm just not user friendly."
- **Thomas Turnbull:** The new Android OS will be called Penguin so p p pick up a penguin."
- Frank Worner: "Okay, okay, I believe you. Global warming IS real."
- **Ritasueandbobtoo:** "Somebody please give him a good bash."

The winner this week, though, was JayCeeDee with "We're a solitary lot, us Linux Geeks", so well done for that!

To enter this week, head to the 'Other Stuff' section of our forum (forum.micromart.co.uk) and say something funny (but not too rude) about the picture below or email us via caption@micromart.co.uk.



Hewlett-Packard To Split In Two

Two companies are better than one?

ccording to reports in The Wall Street Journal, Hewlett-Packard is to split into two separate companies, each roughly the same size. The two companies will be called HP Inc. and Hewlett-Packard Enterprise, the first of which will take on the firm's personal computer and printer businesses, while the second will sell servers and datastorage gear as well as offering consulting and other corporate-centered services.

'Why the change?' you may ask. It's apparently to help it to keep up with "rapidly-changing technology" and stay "nimble", and it's fair to say that investors reacted well to the announcement initially with shares bouncing 5.4% on the morning of trading as the news came out. This is also a move away from what chief executive Meg Whitman has previously stated about the company being "better together".

Will it be better apart, though? Let's see.

iPlayer Shows Extended To 30 Days

Month to catch up on what you've missed

e rather like the iPlayer, it has to be said. One of the better services of its ilk, we're also delighted at the news that the service is to now have a 30-day period to watch a show after it airs rather than just a week.

The idea, according to the BBC, is to take full advantage

of its new autumn schedule, traditionally one of the more popular times of the year for viewing shows.

Director General Tony Hall said: "BBC iPlayer pioneered online viewing. It is recognised as not just the first but the best service of its type in the world." Proud boast indeed, there, and with three billion requests logged in 2013, he may just have a point.

Snippets!

Amazon Launches Kindle First

Amazon has bolstered its Kindle service with the launch of Kindle First, a new programme offering customers access to Kindle books from Amazon Publishing authors a month in advance of their official release date. The programme

(www.amazon.co.uk/ kindlefirst) sees Amazon Publishing's editors selecting titles from popular categories a month ahead of their publication, with customers getting any of the books each month for 99p per title (Prime members get their titles for free). Books can be searched for via the Kindle Store on Amazon.co.uk or directly from their Kindle device.

Bitcoin Value Dips

The value of a bitcoin has dropped to its lowest level for nearly a year when it reached a low of \$290 in early October. The virtual currency lost around 18% of its value over a weekend as a result, and it marks a vast change from when a bitcoin was worth over \$1,100 late last year. The value did rebound a little after hitting this low but it still points to a further decline in the virtual currency, something that's been a feature of its time in 2014.

Samsung Smartwatch **Runs Windows 95**

A teenage programmer over in the States has been using his time productively... to install Windows 95 on his Samsung Gear Live smartwatch.

Using Android DOS emulator aDosBox, Corbin Davenport has been getting up to all manner of things with his device, but getting Windows 95 on it is surely the pinnacle? Mind you, he's also tinkered with it in various other ways, showing off video footage of the Android version of Doom and Minecraft PE and, all in all, it's a sterling effort from the lad. Head to YouTube to see his video 'Windows 95 on Android Wear' at tinyurl.com/po5az44.

Issue 1333

Read In The Bath!

Waterproof eReader from Kobo

h, reading. Still a popular pursuit despite the many alternatives that pass for entertainment these days. Kobo eReaders, which you'll find in WHSmith stores around the country, are one such method of enjoying a good read and the company has decided to expand its line with the Kobo Aura H2O, the world's first premium waterproof E Ink eReader.

Hang on, though. Before you start to think about taking on some serious underwater perusals, bear in mind that this is only waterproof for up to one metre for up to half an hour. Still, that means no worries about damaging the eReader in the rain or while taking a bath.

Also available at kobo.com for £140, the Aura H2O has a 265dpi resolution with a spacious 6.8" touchscreen housing the upgraded Carta E-Ink technology offering high-res imagery. We're not sure how big a deal waterproof reading is to most people, but there will surely be a market for this, somewhere.



G-Pack Promises To Pack Gaming Punch

Kickstarter project to bring games to living room

ondon-based hardware start-up PiixL has turned to Kickstarter to release a gaming machine that sits behind the TV to bring gaming to the living room.

The G-Pack device is quite a slim thing, promising an "invisible" mount to the back of any TV (sized from 37" to 70" in size) via its VESA Flat Display Mounting Interface and offers access to USB ports, so that means Blu-Ray drives or Flash card readers can be connected up. Controlled from a single gamepad using Steam's Big Picture as its primary interface, this means a Steam-powered experience for all.

As for what's powering this, G-Pack promises to "take gaming to an entirely new level" (don't they all?) with HDMI 2.0, Nvidia's Maxwell graphics cards, up to 3TB storage and up to Core i7 processors. The device stays cool thanks to its centrifugal fans providing dualstage cooling architecture to draw in and expel air from the side of the machine, additionally promising thermal isolation from the TV it's attached to. It's going to ship in three configurations, costing from \$1,595 for the Core i3 version to \$2,595 for the Core i7 version. If you want to build your own, you can have the chassis-only option via Kickstarter for \$445.





Yahoo To Invest In Snapchat

Millions said to be offered up

t the time of writing, stories were a-brewing about a possible multi-million investment in mobile messaging service Snapchat by Yahoo. If true, and if that has indeed happened by now, Snapchat will be worth billions.

Where did Yahoo get these investment funds from? From its stake in Alibaba, of course, which had a particularly healthy start on the stock exchange itself. It's been known that Yahoo has been looking into acquisitions and investments for a few months now, but this would certainly represent one of the more significant ones by the company.

As an alliance, the two could certainly work well together, providing Yahoo with another potential money-earner. For Snapchat to have such a big-name backer supporting it going forwards would also, obviously, be a massive story.

Apple Facing Multi-Million Dollar US Antitrust Trial

iPod dominance called into question

US District Judge has given the go-ahead for an antitrust lawsuit against Apple to go to trial. The plaintiffs in this particular case represent various consumers who bought the music devices over a period between 2006 and 2009. The amount being sought? \$350 million.

The case essentially revolves around Apple using its DRM system to 'lock' customers into the company's way of doing things, thus making it expensive to switch to

technology from competitors. As a consequence, so goes the argument, Apple has overcharged customers by tens of millions of dollars and that customers are upset at not being able to play non-iTunes songs on their iPods.

Apple has defended its position in the past, stating no evidence to suggest any harm to consumers regarding its DRM. However, it looks at the moment that this trial will indeed be taking place (quite possibly next month) unless Apple decides to settle.

Auslogics: Your Designated Driver... Updater

New software from optimisation specialists

uslogics is at it again, this time releasing its Driver Updater tool to help PC users with the arduous, time-consuming task of updating device and hardware drivers on Windows.

Driver Updater provides an easy-to-navigate interface to make finding the necessary features and buttons a snip and the program starts off by scanning your PC for any outdated or missing device drivers, then providing a detailed report on

any issues found. Listing release dates of installed drivers and suggestions for the latest updates, you can choose to update drivers individually or all at once with the click of a button.

It also comes with a safety feature for backing up drivers or creating a system restore point prior to any updates and you can trial this now if you like at **www.auslogics.com**. The full program can be bought for £25, with the license covering three PCs at once.



REVIEWS



Asus Radeon R9 280 DirectCU II TOP Graphics Card

AMD's new batch of cards look the part, but can they perform where it counts?



MD/ATI took a bit of backseat when it came to desktop graphics cards in 2012 and the beginning of 2013, the reason being that it was focusing on getting the GPUs right for the then soon to be announced next-generation consoles.

Since then, though, it's started to get back into gear and is starting to roll out its latest offerings in the mid-range desktop graphics categories.

The Radeon R9 280
DirectCU II TOP, from Asus in this case, features a GPU clock base of 874MHz with an increased boost speed of 980MHZ, 1,792 stream processors, 3GB of GDDR5 memory with a clock speed of 1600MHz, a maximum resolution of 2560 x 1600 and a 250W TDP rating.

The DirectCU II portion of the title refers to the thermal design, which involves a 10mm copper heatpipe having direct contact with the GPU. The large heatsink, which spans the entire length of the card, means there's significant cooling and subsequently less noise. The Asus ratings declare this a graphics card that's 20% and three times quieter than other R9 280 cards.



▲ With overclocking, Crossfire and advanced cooling, it's certainly one to consider

Added to this are the dominating two CoolTech fans that feature a twin-blade design whereby the inner radial blades help push the air to the outer curved blades to accelerate the removal of heat.

The cooling elements are essential in this case, as the TOP design means that this is a card that can be overclocked to some degree. Upping the clock speeds to 1040MHz made a slight impact on the performance of the card, while still keeping it reasonably quiet despite the extra 10°C that was added to the GPU. How far you decide to push it is purely up to you, and since we have to hand our test units back, we didn't fancy going beyond the 1040MHz mark in fear of burning it up and having to explain to the manufacturer.

The card is a fairly large 285 x 150 x 38mm, and while this isn't a problem for larger tower cases, those who are thinking of building a more compact under-the-TV setup

may want to double-check their measurements before committing to buy.

Using a Gigabyte GA-78LMT board, with an FX 8320 Black Edition CPU and 8GB 1600MHz RAM, the 3DMark 11 tests scored a more than reasonable 8,140 in the Performance tests. Also, *Tomb Raider* with 4x SSAA at 1080 managed a decent 52.3fps, *Skyrim* at 2560 x 1600 with 4x AA was 70.7fps, and the 3DMark Fire Strike scored 6,795.

The R9 280 is, to all intents and purposes, a rebranded Radeon 7950 Boost, with a higher clock rating – something like 12MHz more. That's not a bad thing really, as the 7950 was the AMD flagship in 2012 and a very good card to have installed in your system despite it being a little too pricey at the time.

This time around, the average price is down from the 7950, costing around the £200 mark depending on where you shop. It's not bad



▲ The Asus R9 280 is a big enough card but has lots going for it

a pounds per performance rating, considering the quiet design, and as an added bonus AMD R9 280s are now being shipped with a voucher card for three free games.

All in all, the Asus R9 280 DirectCU II TOP is a very good mid-range graphics card with plenty of performance and the ability to be tweaked beyond its specifications. It's a little power hungry, at 250W TDP, but that won't put too many people off. A mid-range price, then, for a high performing graphics card.

mm David Hayward

A high performing card at a mid-range price, with plenty of overclocking potential





Jabra Soulmate Max

Everyone needs a mate, but do they need a Soulmate Max?

DETAILS • Price: £241.36 (Amazon) • Manufacturer: Jabra • Website: www.jabra.co.uk/ • Required spec: Device that generates Bluetooth or micro-jack audio

f the Bluetooth speakers I've so far reviewed, the Jabra Soulmate Max is by far the biggest and also most expensive. But (and this is often the case), it's also one of the least compromised by the challenge of delivering transportable, battery-powered audio output.

Jabra makes a small range of these Soulmate devices that includes the original Soulmate, a scaled-down Mini and this monster, the Max.

As the top of the technological pile, the Max has all the features of the smaller offerings but many enhancements that are exclusive to it.

Of these, the really critical one is the playback time, which on this model is a stunning 14 hours. That could easily be undermined by the reality that many smartphoness won't play music for 14 hours on a single charge.

However, Jabra considered that limitation and included a USB power out socket that





allows the battery in the Max to charge a device connected to it. The downside to doing that is that it will reduce playing time, though exactly how that works out will depend on how well charged your phone/tablet is to begin with.

The yin to battery life yang here is that the Max weighs a not insignificant 3kg – ten times the mass of the Mini and five times that of the original Soulmate.

As for sound quality, it's something of a mixed bag

really. There's plenty of gusto (90 w / 110 dB SP) but not much warmth in the midrange tones. Overall, I enjoyed listening to rock music through it, but its take on classical and R&B seemed distinctly flat. At this price, I'd expected it to be spectacular, and it just didn't live up to that billing.

What I did like was the general build quality, the design and how easy it is to get operational. Jabra included an NFC (near field communication) plate that allows an enabled phone or tablet to pair to it just by tapping that location with a device.

That's useful, and it also incorporated into the base a 3.5mm micro-jack cable for dealing with those situations where Bluetooth isn't an option.

An unexpected feature is that these speakers talk to you, so when you attempt to pair a



phone, for example, it tells you how you're doing. As talking devices go, this one is a bit full of itself, but it avoids wondering what that flashing light signifies or if you pressed the right button.

The biggest problem by far is the price, which is at least £100 more than I'd be happy to pay for this tech. As if to underscore this point, I've noticed that you can get the more modest Jabra Soulmate for around £85. That model only lasts for eight hours and has a much lower power output, but it's priced more realistically.

I'll miss the Jabra Soulmate Max when it goes back but not enough to go buy one, unfortunately.

mm Mark Pickavance

The ultimate but expensive beach party accessory



Features

- Bluetooth 3.0.
- NFC for easy pairing.
- Remote control and battery display (iOS) on connected device.
- Speakerphone with built-in mic.
- 14 hours battery life, 130 days standby.
- Weight 30kg.
- Size (W/D/H) 302 x 102 x 138mm.

Kobo Aura H20

Michael has been catching up on his reading with a new product

Price: £139.99 Manufacturer: Kobo www.kobo.com Required spec: n.a.

ew from Kobo is a product that comes with the claims of being the world's first premium waterproof E-Ink reader. This is the Aura H20 ereader.

The Aura H20 is IP67 certified, meaning it can be immersed in one metre of water for up to 30 minutes. It's also capable of being able to ignore water splashes when being used in various locations, so it doesn't matter whether you're enjoying a riverside picnic, frolicking at the beach or relaxing in a bath – the Aura H20 offers to provide your reading material.

With dimensions of 129 x 179 x 9.7mm and weighing 233g, the Aura H20 can be slipped into a pocket or bag without causing an unsightly bulge. The Aura H20 is powered by a 1GHz processor and comes with 4GB of storage, which can be supplemented by a micro-SD card giving up to 32GB. The Aura's 6.8" Carta E Ink HD touch-screen gives you 265dpi at a resolution of 1430 x 1080.

The screen is encased in a compressed rubber material and features a single button flush to the top right of the unit. This is the power button, which can put the ereader in sleep or shutdown mode, depending on whether you apply a short or long press. Located at the bottom of the ereader is a concealed compartment





It can be immersed in one metre of water for up to

30 minutes

holding connections for a micro-SD card, micro-USB port and a 3.5mm jack socket for headphone use. The flap concealing this compartment needs to be closed to ensure the ereader is waterproofed.

The size of the Aura H20 is such that it can be held in one hand while a touch of a finder is enough to move between pages and select options that

include opting for one of the ten fonts with adjustable sizes, line spacing and margins using slider bars. You can also adjust the ComfortLight feature that has its own slider bar to set the screen's brightness in different lighting conditions.

The Aura H20's home screen displays your current choice of reading matter plus recommendations for future

reading and links to your library, the Kobo bookstore and extras. The books in your library can be organised individually or grouped in collections. The Extras section contains stats regarding your reading habits, a dictionary, plus 'awards' to encourage you to read more.

Not only can you purchase books directly from the Kobo bookstore with its catalogue of over four million titles, but vou can also visit one of the Kobo establishments in certain W H Smiths stores. You can also purchase books from other locations as long as the reading material is in one of the formats supported by Kobo. Kobo ereaders support EPUB, EPUB3 and Adobe DRM formats. You can also borrow books from various public libraries.

As well as its various digital reading options, the Aura H20 features chess and sudoku games plus a sketch app and a web browser. These extra items are tucked away in a Beta Features section available from the main settings menu. Maybe because of the beta designation, the web browser, while generally quick, struggled to cope with scrolling graphics displayed on pages.

mm Michael Fereday

A well designed ereader for fans of an aquatic lifestyle





Samsung 850 Pro 128GB SSD

Mark examines what technical goodies Samsung imbued its new SSD range with



amsung has been on something of a roll with SSD technology, because both the 830 and 840 series were both excellent performers and smartly priced.

The new 850 PRO product is a major technical advance for Samsung, being the first to market with 3D vertical NAND modules or Samsung second-gen 86Gbit 40nm MLC V-NAND as it like to call them.

The stacking of NAND wafers, up to 32 deep, allows for much greater density and potential cost savings for manufacturing. The entry level is the 128GB model, reviewed here, and it also offers a 256GB, 512GB and a big 1TB unit.

Depending on which model you have, the amount of cache memory on board has been tweaked accordingly. This 128GB model has 256MB, the two middle order drives have 512MB and the 1TB module comes with 1GB of LPDDR2 memory.



From the outside, they have a rather uninteresting form that emulates a 7mm deep 2.5" drive. The styling of the 850 PRO underlines that what's inside counts, and that's where Samsung focused all its effort.

Enhancements include a new three-core MEX controller, tweaked firmware, AES 256-bit full disk encryption (FDE) and reduced power consumption. But, ironically, the best feature to my mind is one that actually uses something your PC probably already had: lots of RAM.

'RAPID' (Real-time Accelerated Processing of I/O Data) uses system memory to cache SSD operations, and it does it more effectively than Windows' own resource management.

Using Samsung's Magician software, you can allocate up to 4GB of main memory to caching operations, and the benchmarks show that it does make a big difference to how the 850 PRO performs. The catch to using RAPID mode is that it only works when the SSD is the system boot disk and not as a secondary drive.

What's also a major change from the 840 PRO is the quoted lifespan of the drive – an issue that all SSD makers have been trying to address. Samsung chose not to quote a TBW (terabytes written) for the 840 PRO, but is happy to offer 150 TBW for the 850 PRO. It also extended the mean failure period from 1.5 to two million hours and embossed its confidence with a ten-year warranty.

Greater reliability is always welcome, since many people are exchanging very reliable mechanical disk technology for solid-state solutions.

There are two problems with this product, in this

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Seq	529.9	469.0		
512K	376.3	471.7		
4K	37.19	115.2		
4K Q032	273.5	239.5		

writer's mind, the first being that like many SSD products, the smallest module is always slightly impaired. In this case, the 128GB product only offers a write speed of 470MB/s, where the larger ones are another 50MB/s quicker. My benchmarks supported Samsung's quoted speeds, almost exactly.

Another issue is the price, which is on the hefty side. With strong competition from SanDisk, Crucial and even older Samsung devices, the 850 PRO needs to be more competitive than this.

As for the review product, I'd pass this over and head straight to the 256GB model, if you want the full speed that this technology was designed to deliver.

mm Mark Pickavance

A high performance SSD with a premium price



Technical Details

Interface: SATA 6Gbps.
Nominal capacity: 128GB.
Formatted capacity: 119GB.
Controller: Samsung MEX.

Cache: 256MB Samsung LPDDR2.

Memory type/amount: Samsung 32 layer 3D V-NAND.

Endurance rating: 150TB total host writes.

Warranty: Ten years.

Auslogics Driver Updater

Keep your device drivers up to date with this latest product from Auslogics



omputers are complicated beasts at the best of times, but when you start adding all those essential bits of kit to customise it, it can cause compatibility problems. It's fair to say that most software is pretty well behaved these days, and Windows itself has some fail-safes to help you get out of trouble when something goes wrong. Hardware, however, is a different animal altogether, because most devices need a device driver loaded before they will work. Some of these require the driver to be installed before you add the device, whereas others need the device installed first. Yet how many times have you installed a device only to find that it doesn't work, or perhaps if it does, then something else in your system doesn't work anymore?

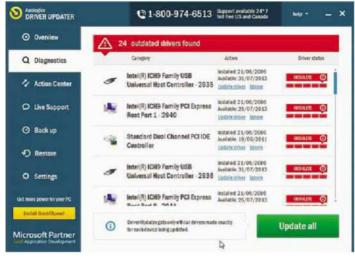
Well, this latest product from Auslogics is said to overcome these problems by keeping your system device drivers up to date.

The program is quite small and takes just a few seconds to install, after which it will automatically scan your system for outdated drivers. This again only takes a few seconds, before you're presented with a list of outdated drivers.

The interface is nice and clean, with tabs down the left-hand side listing the options you have available; they include a System Overview, Diagnostics, Action



▲ The overview screen, after a full scan



▲ The diagnostics screen showing the drivers that need updating

Centre, Backup and Restore. Although fairly obvious by their descriptions, there are other options to consider. For example, the Diagnostics tab will highlight any out-of-date drivers, the display gives very concise details of what they are, the date of the current driver and the date of the new suggested driver. You then have the option to update the driver or click to ignore it. Alternatively, there's a large green button at the bottom of the interface that updates all the drivers with a single click.

Incidentally, it's worth checking the details of each driver, because when tested, it flagged an Nvidia High Definition driver for update, yet the update it proposed was older than my existing driver. Naturally, I didn't allow Driver Updater to change that particular file.

So rather than dive straight in and update the drivers, I would open the backup tab first, and make a backup of your existing drivers, just in case any of the new drivers create a problem with your hardware. This again

is a simple process, consisting of ticking the box alongside the drivers you want to backup or, as I did, tick the box at the top of the dialogue which will back them all up.

The program identified 24 out of 97 drivers on my system that needed updating, so after unticking the one driver that I didn't want to update, I hit the green button and let Driver Updater work its magic. Although the process it pretty much automatic, Windows Security popped up on three occasions warning me of unsigned drivers, which is something of a puzzle, because the system is said to use only drivers from original manufacturers, so I erred on the side of caution and cancelled the installation of the unsigned ones. My motto is 'If it ain't broke, don't try to fix it'.

Finally I should mention the rather blatant attempt by the program to get you to buy even more utilities at every possible juncture. In fact, the Action Centre tab exists solely for that purpose, highlighting six other products that it says are missing and would improve your system. One saving grace is that you can disable these notifications if you want to. mm Joe Lavery

An easy to use utility that does what it says to a point, but it's not perfect





Gauntlet

Simon needs food



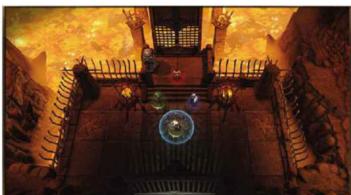
auntlet was an attraction. At Stirchley Ten Pin Bowling Centre in Birmingham, as it was then, it was the arcade games that seemed to have more people crowding around them than the bowling lanes. And once everyone had worked out that Wednesday had been inserted into the game Paperboy just to get you off the damn thing, people gravitated to Gauntlet.

With good reason too. Up to four players, hacking and slashing their way through a maze, with potions, creatures, keys and cash? It's what, er, the 80s were all about.

Gauntlet was followed by Gauntlet II, which did the same thing, only better. However, every attempt to make a new Gauntlet since has, while not fallen on its face, pretty much disappointed. And it's not been for want of trying.

This latest version is wary of that. In fact, it's wary of a lot of things. How far can we stray from the *Gauntlet* formula? How much do we need to do to appeal to the current crop of computer gamers, who weren't frequenters of Stirchley Ten Pin Bowling Centre in the 80s and who didn't hold symbol shift







to run through walls on the Spectrum version?

You can spot the compromise coming from some distance, and while new *Gauntlet* is a decent enough multiplayer game, it's likely to leave neither side happy.

It's still the same conceit, though. Four characters –

warrior, valyrie, elf and wizard, each with their own powers – are available for you to choose from. They've all been given special moves for you to play with now. Thus, the wizard can fire out different spells (although it's a bit fiddly), while the elf can fire arrows and snipe people from afar. Most of the

time, *Gauntlet* remains a game of simple, often very simple, close combat, which rewards quantity of kills more than quality. That's fair enough.

It also integrates the old pick-ups, from plates of meat for food to liberal doses of gold. And there are mazes, of sorts, to work through and a broader range of foes to defeat. What's more, get a few people together, and it's good fun. It's never great, but it's a solid way to entertain people – whether playing over the web or, as *Gauntlet* should be played, huddled around the same screen.

It's just not enough, though. While you can access upgrades, you're still plodding through flavours of the same levels. That was always the case, of course, but it's hardly unrealistic to expect a little more for our money now. There's a bit too much reverence and not enough adventure to lift the new *Gauntlet* above a good, forgettable nostalgia trek, sadly. And that's a shame. There's still stuff to enjoy here, just not really enough of it.

mm Simon Brew

New Gauntlet, but not new enough



Middle-earth: Shadow Of Mordor

Anthony goes orc-hunting in this Tolkien-inspired title



or decades, people have immersed themselves in the works of JRR Tolkien, exploring the exotic realms and intricate languages he conjured up through his writing. However, I'm not one of those people. No, my only real knowledge of his creations are from Peter Jackson's movie adaptions, and even that's limited to *The Lord of the Rings*, having so far shunned the overly long *Hobbit* films.

Now that's admittedly not the best platform from which to launch a review, yet here I am declaring ignorance of what is arguably the greatest piece of fantasy fiction ever written. Why? Simply because it doesn't matter.

Middle-earth: Shadow of Mordor is a game that's jampacked with Tolkien lore, from the characters and the locations, right down to the names of the local fauna, and those with knowledge of the books should be pleased with the amount of detail. But those ignorant of Tolkien's writing won't feel left out and, in fact, they might actually learn a thing or two about this universe and perhaps be inspired to read his oeuvre.

Set between the events of *The Hobbit* and *The Lord of the Rings*, you take on the role of Talion, a ranger of Gondor, whose task





it is to guard the Black Gate of Mordor. He's an ordinary man, living his life in service of mankind, until the garrison is attacked by Sauron's forces, and in the process his wife and his son are both killed, sacrificed in a bid to summon the wraith of elf lord Celebrimbor. Talion is also killed but is resurrected when Celebrimbor's ghost becomes bonded to him, and the two become one.

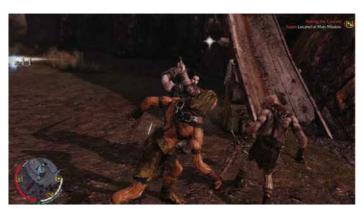
As a result, you're gifted with a number of abilities that would not otherwise be availbe to you. For example, you can enter the wraith world and see the location of enemies through walls. This is merely the start, however, because Celebrimbor has lost his memory, but as he regains it, he is able to learn new skills. That leads to all kinds of fun with mind control, exploding arrows and teleportation. Basically, it's what makes this a videogame.

And what a videogame it is. On the face of it, Shadow of Mordor is a largely derivative open-world fighting and stealth game, which will no doubt draw comparisons with things like Assassins Creed. Indeed, there are similarities, and when you get in a fight, you'll immediately be struck by its resemblance to the Batman games (Arkham

Asylum and onwards). Played with an Xbox 360 controller (recommended), you press X for sword attacks, Y to parry, A to dodge, and tapping the left trigger throws daggers. Imagine those daggers are Batarangs and the sword is Batman's leather-clad fists and they're basically the same game. They're so similar, you might well expect that they're from the same developer, but they're not (although they're both published by Warner Bros.). Arkham Asylum came from Rocksteady Studios, while Shadow of Mordor was developed by Monolith Productions, which was also responsible for F.E.A.R. and its first sequel. Notably, it also produced another Tolkien-inspired game, Guardians of Middleearth, and the online multiplayer shooter Gotham City Impostors.

Of course, Arkham Asylum's combat system is enormously effective, and it's certainly been a contributing factor to the success of the Batman games, so its presence here is not unwelcome. Nevertheless, it's preferable if a game can also offer something









unique, otherwise it just becomes a re-skin of other titles.

Thankfully, Monolith has worked hard not only on producing a huge virtual Mordor for you to explore, with tons of side quests and challenges to complete, not mention plenty of random unsuspecting orcs (well, uruks, to be precise) for you to slay, but it's also introduced a hierarchy for your enemies that affects gameplay.

Unlike many games, where you fight generic grunts, in *Shadow of Mordor*, every uruk you fight will have his own set of characteristics, including strengths and weaknesses. They also remember their encounters with you – provided you don't kill them, of course. This allows them to adapt and potentially grow stronger or gain new skills.

They also have ranks, from the lower-class soldiers to captains and then warchiefs. The higher-

ranked uruks are naturally more difficult to defeat, and that's where the intel system comes in. Without intel, you won't even know where to find captains and warchiefs, and you certainly won't know their strengths or weaknesses, which are vital if you're to defeat them.

One way to gain intel is simply to find it lying around, but this isn't that common. You can also get it from saving human slaves, but the most common method is to grab hold of a uruk and interrogate him. This involves using some of your wraith abilities to enter the orc's mind and take the information you need (before rather mercilessly driving a sword through his eye). Interrogate a lower uruk, and you can gain the identity and location of a higher ranked enemy but nothing else. However, there are other uruks, which you can identify with your wraith vision,

who know more. Interrogate them, and you can learn everything about a captain or warchief. You can also interrogate a captain or warchief (once you've found one) to find out the location of another.

Not only does this system give a sense of personality to your enemies, it also forces you to think about how you attack them. Lower-ranked captains are often so weak you can just go in blindly and defeat them, but the tougher ones will need you to get the tactics right or face defeat - and that comes with a price. No, you don't lose money or anything like that. Instead, the orc that deals the killing blow to you will challenge his superior for their position and will also see their rank increase. That means a seemingly nameless grunt can suddenly become a captain, and enemies who kill you get tougher.

You also have to consider the best way to fight the warchiefs (who you have to draw out into the open through various story missions), because they each have bodyguards. If you go straight for a warchief, you will most likely lose. Far more effective is to target each bodyguard first and take them down in separate missions. Then when you fight that warchief, he'll be alone and therefore much easier to defeat.

Also aiding your progress is a system of upgrades and perks, which isn't exactly revolutionary but, let's be honest, would be missed if it wasn't there. These range from adding certain properties to your weapons to abilities like teleportation strikes and, my personal favourite, riding caragors (huge, four-legged beasts that resemble a really grumpy version of He-Man's Battle-Cat).

It's clear that Monolith worked hard to make *Shadows* of *Mordor* different, and the result is a game that looks great, offers a decent challenge with plenty of do and which adds something genuinely new to this well-worn genre.

mm Anthony Enticknap

Mixes tried and tested gameplay with innovative enemy ranking system



GROUP TEST

Fast SSDs

SSDs are without a
doubt the most effective
upgrade you can
perform on a computer.
Their speeds are
incredible and their
power consumption is
minimal. But which
SSDs offer the best
performance to money
ratio? This is something
David Hayward has been
finding out with these
six disks

Fast SSDs

OCZ Vector 150 120GB

• Price: £74.99 • Manufacturer: OCZ • Website: goo.gl/TSalAL • Required spec: Spare SATA port

CZ had something of a run of poor luck toward the end of last year, so much so that it went bankrupt and Toshiba picked up the company to integrate into its ever expanding group.

The OCZ Vector 150 drives were released before the company went pear-shaped and was essentially the most awarded range of SSDs the fallen company released to date. The models range from 120GB (on test here) to 240GB and finally 480GB.

It has a 19nm multi-level cell flash NAND controller, SATA-3 6Gbps connection and measures 99.7 x 69.75 x 7mm. It's surprisingly heavy for an SSD, weighing 115g, although to be fair it still feels lighter than air in the hand when compared to the a traditional hard drive.

Power consumption is a mere 0.5W when idle, increasing to 2.5W when running at full pelt. The ARM Cortex-based Barefoot3 controller helps improve the power consumption, as well as the longevity and performance of the SSD, and you also get five-year warranty. This warranty, which OCZ labels as an Endurance King, states that the device will function happily and at full performance with an impressive 50GB a day of host writes. This equates to a considerable 91TB of potential write data over this period, so as you can see, OCZ has considerable faith in both the construction of the SSD and controller as a whole.



Needless to say, the OCZ Vector 150 displayed some pretty decent results in the ATTO benchmark test we ran. The sequential read test peaked at 556MB/s, with sequential writes coming in at 440MB/s – both for the 8192KB transfer test. All in all, this isn't too bad an SSD to start this group off with. It's reasonably priced, ranging from around £65 up to £80 depending on where you shop, and its performance levels are certainly more than capable of putting a significant spring in your computer's step. The extralong warranty is a welcome addition and brings a feeling of

66

More than capable of

putting a significant spring in

your computer's step 🮐

Smaller file sizes, as with most SSDs, weren't blistering but still managed a semi-worthy 280MB/s write and 240MB/s read when dealing with a 4KB file size.

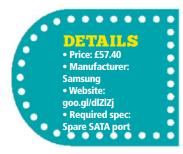
We imagine, though, that with a more powerful system in place, those readings could very well be improved on. The specified performance of the Vector 150 has it down as 550MB/s sequential read and 450MB/s sequential write, using ATTO, so our numbers aren't too far off, with the read beating it slightly.

confidence in the product to the mix, which is something that even today is often felt lacking in an SSD.

All of this, combined with a 256-bit encryption compliant certificate, SMART support and the included benefit of Acronis True Image HD in the package makes for a good, all-round product that's well worth looking into. There's no reason why this drive won't deliver for both the desktop or smaller scale server room SSD solution.



Samsung 840 EVO 120GB



amsung has taken everything it's learned from its first generation of solid-state hard drives and improved on it significantly with this, its second-generation SSD EVO. And along the way, it's also added some extra ingredients, just to make it a tad more appetising for the consumer.

The Samsung 840 EVO range comes in capacities ranging from 120GB, which we have on test here, through 250GB, 750GB and the introduction of a 1TB version. Our drive in particular is a 100 x 69.8 x 6.8mm device that weighs 53g and has within it the potential for some pretty impressive benchmark numbers.

Samsung's patented 3-bit MLC NAND flash memory

claims to store data more efficiently, to increase speed and reliability. This is based on a combined technology Samsung has called TurboWrite, which has, on-paper, improved the SSD performance significantly over the previous-generation 840 drives. The algorithm used here supposedly accelerates and improves the write buffer, and the 256MB cache memory employed within the electronics of the device mean that not only is the data written with speed, but there's also an element of reliability. Also, when used with the Samsung Magician software, there's something called RAPID mode, which again is supposed to enhance the performance by processing data through the use of any free PC system memory. This Shanghaiing of available RAM as a cache has had some notable improvements among the critics, although to be fair, we never really saw any great benefit from its use in our tests.

Power consumption is as low as 0.1W when in use and dropping to an incredible 0.045W when idle, which

makes this drive especially appealing to laptop users. As well as that, there's also a Dynamic Thermal Guard Protection element in place, which closely monitors and maintains the temperature of the drive by throttling back the drive to help drop the temperature. Although this may sound like a good idea, it does makes us think: would this mean that the performance drops when you need it most, since the rise in temperature will only usually occur when the drive is in use?

Our tests with the Samsung 840 EVO proved to be reasonable enough for even the most cynical of performance enthusiasts. The sequential reads at 8192KB were 550MB/s and the sequential writes were 530MB/s. Even the smaller 4KB reads were an impressive 300MB/s, with the 4KB write showing around 280MB/s.

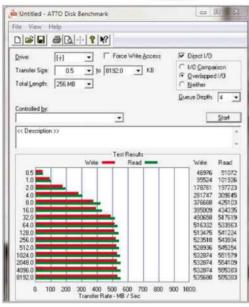
It's fairly obvious, then, that the extra level of caching and the acceleration algorithm for write speed improvements did their job – exceedingly well as it happens. In fact, these numbers are well within the realms of an enterprise level, server grade SSD. And with an estimated 1.5 million hours' worth of MTBF (something like 159 years), the Samsung 840 EVO raises a few eyebrows.

Amazingly all this and with the 120GB capacity, comes to a paltry £60. Even the 1TB version of the 840 EVO is selling for a reasonable £300. This, of course means, that Samsung has the potential here to lead the way when it comes to SSDs. However, the proof is in the user's experience of the product, and as users ourselves, we can say we're pretty impressed.





▲ The Samsung 840 EVO is an exceptionally good SSD



And it's proved itself as being the best all-rounder for speed

Fast SSDs

Intel 730 240GB

• Price: £143.31 • Manufacturer: Intel • Website: goo.gl/t510Id • Required spec: Spare SATA port

he Intel 730 series of SSDs at first appear to be aimed at the more professional, business orientated consumer as opposed to the average home desktop user. But there's a lot going on in the 730 that can greatly benefit the home user, provided they're willing to pay for it.

The Intel 730 series SSDs come in just two capacities: a 240GB version, which is what we're testing in this instance, and a 480GB version. Both are fairly equal in terms of the technology used, although the on-paper specifications of the 480GB version appear to have a far better write speed than the 240GB version.

The 730 series combines a 20nm NAND flash multi-level

cell that comes with a fiveyear warranty and was once a part of the more enterprise class flash drives in previous generations. The drive itself is 7mm thick and fits the 2.5" form factor neatly. It weighs around 80 grams and is designed in a polished aluminium effect case with the Intel logo in one corner and a large robot or Terminator-like skull etched into the remaining three quarters of the drive. The skull represents the Intel Skulltrail platform that was released in 2008, based on the 5400 Seaburg chipset. It's a gaming specific platform but borrows a lot of work previously done in the business, enterprise arena.

Although there's plenty of performance here, the emphasis is on the longevity of the drive. The five-year warranty speaks for itself, with the same kind of confidence in the product that OCZ has with its Vector 150. The Intel 730 series of drives does one better here. Instead of the 50GB a day host writes of the Vector, the 730 offers up

to 70GB of writes per day. That totals, over the length of the warranty, 127TB of write data, which you have to admit is a fairly big number.

In our tests, the Intel 730 240GB scored an 8192KB sequential read speed of just over 559MB/s and a write speed of 290MB/s. The smaller 4KB tests, however, didn't do quite as well, with a read speed of around 93MB/s and a write speed of just over 180MB/s. We did run the tests again a couple more times, as we often do, and at one point the 8192KB sequential read speed topped the 650MB/s mark, but since that was a one-off, we can hardly use it as the yard stick for the rest of the group. Needless to say, the Intel 730 240GB SSD performs fairly well.

Aside from the performance, the 730 series offers other such enticements as a maximum power use when active of 5.5W and 1.3W when idle; full 256-AES encryption support and a two million hour MTBF rating.

Obviously we've tested better performing models and

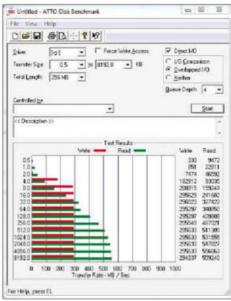
subsequently cheaper models too. The Intel 730 240GB SSD will set you back somewhere in the region of £140, which is quite a lot these days for a sub-500GB SSD. The price is based on the reliability of the drive, but we think it's not that much different from the previously reviewed OCZ Vector, and for the price of this 730 you could have two Vectors running in RAID 0 and hitting the semi-mythical 1000MB/s benchmark numbers.

The choice, of course, is up to you, but Intel does seem to have priced itself out of the SSD market with the 730 series.





▲ The Intel 730 Series Skulltrail branded SSD certainly looks nice



► However, its performance isn't too grand for a so-called rapid SSD



Plextor M6S 128GB

• Price: £54.99 • Manufacturer: Plextor • Website: goo.gl/H9Xeir • Required spec: Spare SATA port

lextor has a few SSD types on the market at the moment. There's the M6e, the M5P and the M6S. There's also a Pro series and a Pro Xtreme series too. It all gets a little confusing in the end, since most people are only after an SSD for their new build or to put some life back into an aging system.

In this case, we're reviewing the Plextor M6S 128GB SSD. The M6S series of SSDs come in 128GB, 256GB and 512GB capacities and feature a Marvell dual-core 88SS9188 controller and a 19nm Toshiba built NAND flash memory.

It measures 100 x 69 x 6.8mm, fitting the 2.5" form

factor nicely and weighs in the region of 60 grams. The design is very similar to the previously reviewed Intel 730 series, with a brushed aluminium effect on the case, but in this instance with the Plextor logo and M6S badge emblazoned across. All in all, it's perfectly sturdy enough and thankfully doesn't feel quite as plastic as other SSDs we often come across.

The warranty isn't quite as good as the previously compared drives, only lasting a mere three years, but there's a 1.5 million hours MTBF, and when all is said and done, three years is generally the average these days for most technical products.

Our tests proved the Plextor M6S to be somewhat slower than the competition so far. The 8192KB sequential read test from ATTO came out at 520MB/s, and the same spec write test was a meagre 330MB/s. The 4KB tests didn't fare all that better either, with the read test scoring 184MB/s and the 4KB write scoring 189MB/s.

These numbers aren't exactly going to set the benchmarking world alight; even a significantly older and cheaper OCZ Agility 3 manages to score 535MB/s read and 480MB/s write over 8MB. In fact, the performance didn't impress us that much at all.

It's an interesting fact, though, that the performance specification as advertised on the Plextor's M6S site are compared to that of a 7200rpm spinner and not another SSD. Obviously this is a drive that's faster than a standard hard drive, but when stood next to the competition, it wilts slightly in the performance stakes.

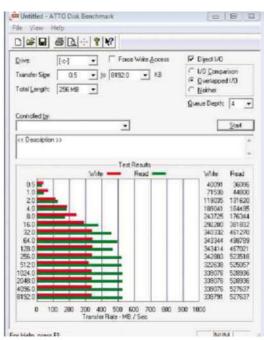
Naturally, this doesn't mean you'd be disappointed with the Plextor M6S, especially if you've come from a hard drive only background. And the Plextor M6S does offer a pretty good power consumption rating of just 0.25W when idle, rising to 2.5W when working at its full potential. So the laptop owner would certainly appreciate the extra battery life available.

The Plextor M6S 128GB costs roughly £55, which makes it a very cheap upgrade for an older PC. However, when compared to the other SSDs on test, it doesn't score too favourably. If it's blistering performance you're after, then you're better off looking elsewhere. If it's a very simple upgrade to give your system a much needed boost in the right direction, then £55 is money well spent. Just be aware that there are better models available for the sake of a tad more spending.





▲ Considering the price, this is a decent enough SSD – just not as fast as it could be



▲ Mind you, if you were pay for two and RAID 0 them, the speeds would be vastly improved

Fast SSDs

Kingston SSDNow V300 120GB



ingston has proved to be a solid force in the SSD market in recent years. Its range of SSDs – the V300, V310, HyperX Fury and HyperX 3K – are all impressive drives that offer the user a combination of performance and value for money.

It's the V300 SSDNow range we're reviewing here, in particular the 120GB model. This drive has an older LSI SandForce 2281 controller that has been customised for Kingston and uses the Toshibabuilt 19nm Toggle NAND flash.

It measures 69.8 x 100 x 7mm, weighs 86 grams and comes in capacities ranging

from just 60GB up to 480GB – although you may be hard pressed to find a 60GB model these days.

The Sandforce controller may be considered as old technology these days, especially with more advanced Marvell offerings giving us higher capacities at better speeds, but it's still a pretty effective workhorse. In this case, the drive offers a one million hour MTBF and a three-year Kingston warranty, which is towards the lower end of the endurance abilities of the other drives on test here but still enough for most home users.

The SandForce controller also gets some stick when it comes to performance. In our tests, the Kingston SSDNow V300 managed to score 556MB/s in the 8192KB sequential read tests and 531MB/s in the same write test. The 4KB tests, where the SandForce technology often left a lot to be desired, managed to score 160MB/s read and 254MB/s write. Overall, the Kingston V300 is pretty fast and

will no doubt keep most home users and enthusiasts quite happy over its lifespan.

Kingston advertises this model as the more affordable solution to blistering speeds, with extra testimonials from people from various walks of life and a stark '10X Faster' label across the packaging. It's fast enough, don't' get us wrong; after all, it's up there with the fastest read and writes of the group so far.

Power consumption on this drive is rated at 0.6W when idle, increasing to 1.4W when reading and 2.05W when writing. Considering it's virtually impossible to tell exactly what an operation is doing, even when you think it's solely writing, there's plenty of reading going on, so we can guess that the overall maximum power usage is upwards of 2W when in full use.

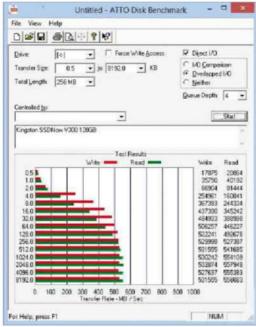
Having said all that, the Kingston SSDNow V300 still represents an impressively fast and very cost effective solution to upgrade from an older hard drive. As with the other drives on test, it's definitely more than capable of speeding the system up and lessening the power use over time.

The Kingston SSDNow V300 120GB is a good enough SSD for most users. It only costs just under £50, and it's fast enough for the desktop user who doesn't do too much gaming. If you want more speed and capacity, though, and you're planning on sticking to the Kingston range of SSDs, then the HyperX 3K will be the model for you.





▲ The Kingston SSDNow V300 is the cheapest SSD so far and too bad speeds either



▲ For a great boost to a flagging system, this is certainly a worthwhile upgrade spend



Corsair Force Series GS 480GB

• Price: £265 • Manufacturer: Corsair • Website: goo.gl/06LYKm • Required spec: Spare SATA port

orsair has recently wowed people with gaming systems built around its Neutron Series GTX range of SSDs. While these drives offer impressive results, they're a little niche, and we couldn't get hold of one either. To that end, we have to make do with the Force Series GS product line, which advertises excellent performance and is second only to the highly regarded GTX.

The Corsair Force Series GS comes is a SandForce SF-2200 controller built around a Toshiba Toggle NAND flash memory. It comes in a range of capacities, from 128GB through 180GB,

240GB, 360GB, and the one we're testing in this instance, the 480GB model.

The performance differs through the range of capacities, but the 480GB version is said, at least on paper, to be the best of the bunch.

This is a 7mm thick drive, conforming to the 2.5" form factor and weighing 80 grams. It's SATA-3 6Gbps and is finished in a glorious red case with a black label adorned with the Corsair Force logo, which we're sure will look suitably impressive when fitted inside an equally impressive system.

Flashy designs are one thing; how it actually performs is something else altogether. Our ATTO benchmark tests scored a read value of 557MB/s in the 8192KB sequential tests, with a write value of 532MB/s. The lower 4KB tests saw a read value of 178MB/s and write value of 269MB/s, which did drop slightly after subsequent tests, probably due to the limitations

of the SandForce controller and its Achilles heel when it comes to smaller file sizes.

Either way, our scores fell just short of the advertised speeds, but are more than enough for even the most hardened of gamer or video editor to work on without having to fall foul of the slow speeds offered through a more traditional hard drive.

Power consumption on the Corsair Force GS was considerably more than the other drives on test. The idle power use was down to 0.6W, but that soon rose to 4.7W when in full use – when we were conducting the benchmarks. For the desktop user this isn't too much of an issue, but for the laptop user it could make quite a difference in battery life.

Again, though, as we said in a previous group review, the power and performance of an SSD is still far better than that of a traditional spinner. And with the Corsair Force

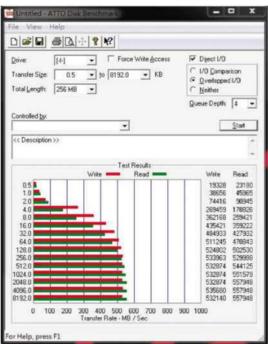
Series GS fitted, you'll certainly notice the overall system speed increase and improved battery life in a laptop.

Despite this being a fast and alluring SSD, though, we think many users will be put off by the cost of the drive. At around £265, this is by far the most expensive drive on test, and it's not all that much speedier than an SSD that costs less than a third of the price. It's good enough for the job at hand, and it will deliver significant performance when you need it, but there are far cheaper solutions around to consider.





▲ it's very red and very expensive



▲ But it's not a bad speed and the extra capacity is certainly good





Samsung 840 EVO 120GB

The Samsung 840 EVO was pretty much the same as the Kingston in many respects. The speeds were nearly identical (apart from the 4K read) and the cost is within £10 or so as well.

With these two in your system, it should zip along nicely.

How We Tested

Each SSD was tested on an MSI Z97 Guard-PRO motherboard, with an Intel G3258 processor, 8GB of 1600MHz RAM and Windows 7 64-bit installed.

We used the latest version of ATTO Disk Benchmark, along with a selection of games and the usual mix of office applications within the OS to test the performance for the average desktop user.

	OCZ Vector 150	Samsung 840 EVO	Intel 730 Series	Plextor M6S	Kingston SSDNow V300	Corsair Force Series GS
Price	£74.99	£57.40	£143.31	£54.99	£49.42	£265
Controller	Barefoot3 M00	Samsung 3-core MEX	Intel based overclocked controller	Marvel dual-core 88SS9188	LSI SandForce 2281	MFC SandForce SF-2200
NAND	MLC flash	Samsung Toggle DDR2	Intel MLC flash	Toshiba Toggle	Toshiba Toggle	Toshiba Toggle
Capacity	120GB	120GB	240GB	128GB	120GB	480GB
ATTO 8192KB Read Speed	556MB/s	550MB/s	559MB/s	520MB/s	556MB/s	557MB/s
ATTO 8192KB Write Speed	440MB/s	530MB/s	290MB/s	330MB/s	531MB/s	532MB/s
ATTO 4KB Read Speed	240MB/s	300MB/s	93MB/s	184MB/s	160MB/s	178MB/s
ATTO 4KB Write Speed	280MB/s	280MB/s	180MB/s	189MB/s	254MB/s	269MB/s

Tech Origins Augmented Reality

David Briddock uncovers how the real and virtual worlds started to merge

he desire to create an immersive experience isn't new. Way back in 1957, Morton Helig demonstrated his Sensorama Machine. The subject sat next to a large arcade-like box to view stereoscopic imagery while feeling simulated breeze and seat vibrations.

But things started to get much more interesting when the real-world was augmented with computer-generated text and images.

HMD

Professor Ivan Sutherland's contribution to an improved immersive experience was the head-mounted display (HMD). Built in his Harvard University lab, it was far too heavy to wear and was instead suspended from the ceiling – leading to the nickname Sword of Damocles.

Despite the size and weight limitations, it was clear to everyone that the HMD concept was a major leap forward.

Going Paperless

The phrase 'augmented reality' (AR) is generally accepted to have been coined in the early 1990s by Professor Tom Caudell. His work involved exploring the possibilities of VR in real-world and real-time situations at Boeing's Computer Services Adaptive Neural System Research and Development centre in Seattle.

One early prototype showed a visual representation of complex wiring and cabling. Targeted at engineers building Boeing's latest aircraft, it alleviated the need for lugging huge paper-based manuals in the tight confines of the aircraft's frame.

A similar idea had struck Steven Feiner, Blair MacIntyre and Doree Seligmann. They'd created a system called KARMA (Knowledgebased Augmented Reality for Maintenance Assistance). Combined with a self-built HMD, it was aimed at manual-free printer servicing. The HMD overlaid the printer with ghost-like 3D images, which showed how to load and service the machine.

Virtual Life Online

The invention of the webcam opened up a new vista of AR opportunities. And in 1994, Steve Mann (**goo.gl/D5azdx**) decided to strap one to his head.

Mann's camera and attached display captured his daily movements for two full years. As the device was also connected to his website, the world could follow along and interact with him via text messages that appeared on his mobile display. All this 20 years before Google Glass.

Another significant piece of technology was the camera phone. Invented by Philippe Kahn in 1997, the ability to capture still and video images from pocket-sized devices was a revelation.

ARToolKit

While AR hardware was improving apace, software was rather lagging behind. That was until 1999, when Hirokazu Kato of the Nara Institute of Science and Technology released his ARTookKit to the open-source community.

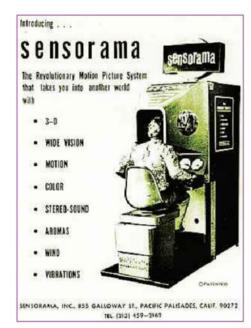
Now developers could capture and track real-world video and combine it with virtual 3D objects on multiple platforms. Even today, most Adobe Flash-based AR software has its foundations rooted in the ARToolKit.

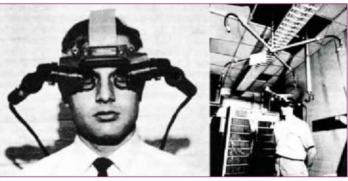
Wikitude

The smartphone was another gift to software developers. AR pioneer Mobilizy released its Wikitude app (wikitude.com) for the T-Mobile G1, an Android-powered smartphone. G1

owners used the built-in camera to see a view of the world augmented by location-specific Wikitude text and graphics. Wikitude was soon ported to the iPhone and Symbian platforms.

A few years later, PRXmobile's Layar (layar.com) app also accessed GPS and compass data to display layered overlays, which incorporated information from online sources such as Wikipedia and Twitter.





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How-to Basics Transferring Browser Settings And Data

New PC? Need all those bookmarks and passwords back in place? Fear not, for we have the solution

ith a new PC comes a variety of issues that don't normally crop up in the usual user's wealth of computing experiences: restoring your browser settings, usernames and passwords.

The new PC will normally go through the update and service pack processes, have all the previous computer's data restored, wallpaper back to normal and other such examples. However, the browser is often more tricky to get back to 'normal'.

Hopefully, then, the following can help you.

Export Everything For Firefox

The first step is to export the bookmarks form the old PC, which is, you'll be glad to hear, extremely easy. Start by opening Firefox, then either press Crtl+Shift+B or by

click on the Bookmarks icon in the top rightcorner and select 'Show all bookmarks'.

When the bookmark library window pops up, click on the 'Import and Backup' button and select 'Backup' from the dropdown menu. Next locate an area on your old computer hard drive and click on the 'Save' button. As you'll see, Firefox has already named the file with the current date, preceded by the word 'bookmarks'. So the end file will look something like 'bookmarks-2014-05-10' or whatever date you do this on.

When that's done, exit the bookmark backup windows and go to **goo.gl/ vuKDt**. This the page for a Firefox add-on called Password Exporter, a rather clever add-on by developer Justin Scott. Click on the big green 'Add to Firefox' button and after a few seconds you'll have the ability to click the 'Install' button in the

pop-up window that's appeared. When the installation has completed, restart Firefox (sometimes it asks you do this, other times it doesn't, but it's for the best to restart with the new add-on).

With the newly restarted Firefox, click on the 'Firefox' button in the top left of the screen and navigate through the menus to Options, and click on the 'Security' padlock icon.

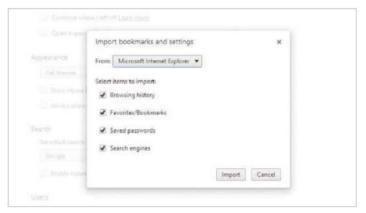
Next in this section, click on the 'Import' Export Passwords' button and you'll get yet another pop-up window, this time one containing several options. There's really not much to it; in the most basic instances all you need to do is click on the 'Export Passwords' button, followed by the 'I Accept' button to the disclaimer. When doing it this way, like the bookmark backup, the Password Exporter add-on will automatically name the exported

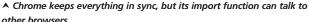


▲ Firefox Password Exporter is a great tool for transferring browser stuff to a new PC



▲ IE is slightly unfriendly when it comes to transferring usernames and passwords, and a jaunt into Regedit is needed







▲ LastPass is a great password management tool. Ask Bob – he knows

passwords and usernames file with the current date. All you need to do is store it in the same location as the bookmarks backup; that way you can easily find it again. When you're ready, click on the 'Save' button.

Additionally, if you require a slight improvement in security, you can tick the 'Obfuscate Usernames/Password' box prior to clicking the 'Export Passwords' button. While this is a handy way to prevent the casual user from viewing your usernames and passwords, someone intent on seeing them will no doubt be able to find a way to get to them. In the interests of convenience and because we're dealing with a set of computers in your own home, we think you'll be okay in this instance.

Now that you have both the bookmarks backup file and the username/passwords file, transfer them to your new computer via whatever means you have at hand (usually through a USB stick, for instance), and store them in a location you'll be able to remember on the hard drive of the new computer.

Next, assuming you've already installed Firefox on the new machine, open up the bookmarks library again, Ctrl+Shift+B, and this time click on the 'Restore' button, followed by 'Choose File' from the sub menu. Point Explorer to the location of the recently stored bookmarks backup file and finish by clicking 'Open'. This has now imported the bookmarks from the old computer into the new computer.

Now, on the new computer, in Firefox, navigate back to the Password Exporter add-on site (**goo.gl/vuKDt**) and go through the installation process again, remembering to restart Firefox if you're not asked to. Open the Password Export add-on through the same method as before (Firefox button > Options > Security > Import/Export Passwords), and click on the 'Import Passwords' button, located below

the export one you used earlier. Point the Explorer window to the location of the transferred file and Password Exporter will start to import all the usernames and passwords held within your old Firefox setup on your old computer.

When it's all done, exit the various windows and browse to a site that requires a username and password from you. You'll hopefully see that the site retains your information by adding the info the login/password boxes. Occasionally, you may need to manually add a username or password, but this is mostly in the case of an ultra-secure banking site.

In Internet Explorer

Bookmarks in Internet Explorer can easily be exported by opening File > Import and Export, then checking the box of the Favourites, Cookies or Feeds and transferring them to a file, much in the same way as above. There's little point in going over it again, as the process is very similar, albeit through a set of different looking windows.

The passwords are a bit trickier due to the way that Internet Explorer stores password information. The best method is to do the following:

- **1.** Start the Registry Editor by clicking Start / Run then type 'regedit' and press Enter.
- **2.** Navigate to HKEY_CURRENT_USER \ Software \ Microsoft \ Internet Explorer \ IntelliForms \ SPW .
- **3.** Make sure you have the SPW folder selected and choose File / Export.
- **4.** Give it a name and export it to a location you'll remember.
- **5.** Transfer the file to the new computer.

To import the data on to the new computer, just double-click (or right-click and select merge) the file you created.

It's not ideal but it works, at least until Microsoft decides to alter the way

LastPass

There is another way to transfer and manage favourites, bookmarks, usernames and passwords, and that's with a decent password manager.

LastPass is one such manager. It stores all your usernames and passwords in a local encrypted file and can auto log you in across a number of devices, plus it has the ability to transfer the settings to and from new PCs. It's quite good and can be found at goo.gl/7fyPg, along with a nice little YouTube video explaining it all at goo.gl/L7hrl.

Internet Explorer interacts with the registry. The moral of the story here is to use a browser other than IE.

In Chrome

Chrome, being almost everyone's favourite browser these days, has a nice 'Sync' feature that keeps all your bookmarks, passwords and so on synced across numerous devices. However, if you're using Chrome for the first time, then your best bet to import the bookmarks, usernames and passwords is follow the steps above for Firefox or IE, then in Chrome open up the Settings page by clicking on the icon on the top right, followed by 'Settings' from the menu.

Once in there, look for the 'Users' section and click on the 'Import bookmarks and settings...' button. In this new window you can then use the pull-down menu to choose the previous browser to import into Chrome from.

Finally

If everything is all okay, don't forget to delete the password files, to keep secure. Enjoy your new computer. mm



David Hayward dons his lab coat and conducts audio experiments on people in his spare time

e were thinking the other day: are expensive headphones really worth the money? Our first instinct was yes, they must be. After all, they often cost over 200 or even 300 pounds, so the technology involved must be of such a high quality that the comfort, sound and so on are well beyond that of a pair that cost just £20.

However, the more we pondered on this question, the more we began to think our train of thought could be way off the mark. So in classic Micro Mart tradition we decided to conduct a little experiment, a kind of blind-taste, Coca-Cola type test, whereby a small group of 'volunteers' are press-ganged, then blindfolded and have six different makes and models of headphones cover their ears.

We picked two high-end, rather expensive, over-ear headphones costing £350 and £397; two mid-range over ear headphones, costing £69.99 and £89.99; and finally two lower-budget, over-ear headphones that when entered at the till would set you back £12.95 and £29.95. These we feel were enough to have a base gauge in this somewhat unscientific test we were conducting.

The volunteers, three of them, were then fed a selection of music, in-game effects and a movie. This translated as the Kate Bush album *The Dreaming* and the Haim album *Days Are Gone*. The in-game effects were courtesy of *Watch_Dogs* and *Assassin's Creed 4: Black Flag*, and the movie sounds came from *Man of Steel* and *Gravity*.

Each volunteer, after listening to the category of sounds, was then asked to guess which set of headphones were the expensive pair, the mid-range and which were the cheaper pair. Naturally, the quality of the sound was on test here, but they were also asked to consider the comfort of the headphones, both on the ear and on the headband; the different frequencies (clarity of voice and higher range frequencies); and to also consider any extra detectable technology such as external noise cancellation and the like.

Are expensive headphones really worth the money?

Finally, before we start the actual experiment itself, it's worth mentioning that this is really only an informal test and not to be taken too seriously. It's about personal tastes, and the volunteers themselves differed in ages (12, 14 and 39), so it's hardly a conclusive analysis of the population's preferences. Also, we're not going to mention the makes and models of the headphones either, purely because we wanted to see if brand names made a difference to someone's opinion of a product. Needless to say, there are several big audio technology names involved here.

The Music Test

First up the music tests. Here we started with the most expensive pair of headphones and fed through them the dulcet tones of Kate Bush and Haim, without the volunteers obviously knowing which set of headphones they were being subjected to.

We started with the expensive pair of headphones, with volunteer 1 commenting on the overall comfort of the over-ear pods and how they ergonomically encompassed the ear and cancelled out much of the outside environmental noise so the audio came through crystal clear. They continued with the excellent quality of the bass and low frequencies but found the higher frequencies to be a little too harsh and in some cases, there was a slight echo in the voice.

Volunteer 2 liked the foam comfort of the ear pods and, being smaller and only 12, also liked the fact that environmental noises were virtually nil when wearing the headphones – something

















HEADPHONE TASTE CHALLENGE

which they added would be good for use in the classroom to help you concentrate without anything being played through them. They also liked the sound quality, but said one set sounded much better than the other, which was in fact the cheapest of the expensive pairs.

Volunteer 3 found them comfortable but said the sound quality wasn't that good from either and that the higher frequencies actually hurt his ears.

The mid-range set of headphones were up next, with some interesting results and comments from our volunteers.

Volunteers 1, 2 and 3 all remarked on how much more comfortable these headphones were compared the last set, and both 1 and 2 mentioned the fact that the noise cancellation was better and, as a result, the sound quality far better too. Volunteer 3 insisted that these were of a superior quality and that the lower, mid and higher frequencies were perfectly tuned.

Finally, in the music test, the cheaper headphones were fitted, and again the results were quite interesting.

Volunteer 1 couldn't discern any real difference between the comfort of these sets of headphones to that of the first set (the expensive pair). However, the noise cancellation wasn't quite as good, and a fair amount of environmental noise could still be heard over the audio.

Volunteer's 2 and 3 agreed on the same levels of comfort of the cheaper set with that of the first and most expensive pair of headphones, but they both said the audio wasn't as clear and they both detected a low buzzing noise from both sets.

The Music Verdict

Interestingly, all three volunteers insisted that the mid-range pair of headphones were the expensive pair and that the expensive set were the mid-range pair. They were right in their assumption that the last set tested were the cheaper pairs.

The Gaming Test

For the gaming tests we swapped the volunteers around a bit and gave them the other pairs of headphones to wear and in a different order, while we played *Assassin's Creed* and *Watch_Dogs*.

We began with the cheap pair of headphones, the £12.95 ones, which volunteer 1 particularly liked in terms of the sound quality, but they did mention that they felt a little uncomfortable after a



few minutes and had to keep adjusting the position of the ear pod and headband.

Volunteer 2, however, really liked the comfort and thought the sound quality was excellent and even went to say how much they could pick up the background noise of traffic in *Watch_Dogs* and animals/insects in *Assassin's Creed*.

Volunteer 3 found these headphones to be too uncomfortable to wear during long gaming sessions, although the quality of the sound was excellent in his opinion.

Next, we tested the expensive set of headphones, the £397 pair, with some mixed and fairly surprising results.

Volunteer 1 liked the comfort of the headphones and said she should could quite easily wear these all day. But the quality of the audio wasn't anywhere near as good as the first pair she tested.

Volunteer 2 didn't think these were as comfortable as the first pair of headphones she tested and didn't think the sound was as good either.



Volunteer 3, on the other hand, thought these were most comfortable headphones he'd ever worn, and that the sound quality in-game was truly amazing.

We finished off the game audio experiments with the mid-range headphones, which in the music tests had been wrongly identified as the most expensive set of headphones, so we thought it would be interesting to see if those results would carry through into gaming as well.

Once more, all three volunteers remarked on the comfort of the mid-range headphones and that they cancelled out the environmental noises substantially, making the sound quality a little better.

Volunteer 1 particularly enjoyed the range of background noises picked up through these headphones (the £89.99 pair) in both games and volunteer 2 added that the main voices were significantly clearer through these than on any of the previous sets tested so far.

Volunteer 3, however, thought there was a little too much bass for his liking, but agreed that the higher range frequencies and the voice was very clear.

The Game Verdict

After much discussion between themselves, the volunteers agreed on the following verdict: the first set of headphones tested, the cheap pair, were the expensive set, the expensive pair were the cheaper set and the mid-range headphones were correctly placed in the middle of the pack.

It's worth noting that volunteer 3 did say that he much preferred the second pair of headphones (the expensive set) tested over the rest, but he was bullied by the others into agreeing with them.

The Movie Test

Our final tests of the unscientific kind involved sitting the volunteers down in front of a couple of Blu-ray films: *Man of Steel* and *Gravity*. Both are saturated in colossal effects, magnificent musical scores and great booming bass, so it should be a pretty good test for a set of headphones, regardless of whether they cost nearly £400 or just £12.



Take into consideration the mid-range and cheaper solutions when next you shop for a pair of headphones

This time around we started the test with the mid-range headphones, which have so far scored reasonably well with the volunteers.

Volunteer 1 once more liked the comfort of the £89.99 pair of headphones, stating that the combination of padded ear pods and padded headband mean you can easily wear these throughout the entire film without having to continually shift them around. Also, the sound quality in both films was astonishingly good through this set, with an excellent balance across all the frequencies.

Volunteer 2 also liked the comfort of these mid-range headphones and, as with volunteer 1, mentioned the excellent sound quality that came from this pair. They even went so far as to comment on the fact that they could hear "the tinkling of glass" over the other sounds in the Superman film during a fight sequence.

Volunteer 3 said the comfort was okay, but he had to adjust the ear pods and headband a number of times during the films to get the best from them. Audio quality was superb, though, and he too agreed that the range of frequencies was well balanced.

Next we tested the cheap headphones, the pair that cost £29.95 in this case

Volunteer 1 said that although they were comfortable, she did have to adjust them slightly every so often, as they seemed to slip from their original position over time. In terms of the audio quality, though, she couldn't really tell that much difference from the previous set of headphones.

Volunteer 2 wasn't too happy with the comfort, because they couldn't be adjusted quite as well to suit her cranial measurements as the previous pair of headphones, especially over the length of



It Also Depends On The Situation

While it's easy to say expensive headphones are better than X or the mid-range are better than Y, you also have to consider the use for

which the headphones will be intended.

For example, a really good mid-range set of headphones is ideal for plugging into a stereo and relaxing on your sofa while listening to C64 Sid tunes, for example. The same can be said for one of the more expensive models too. However, you wouldn't use these for outdoor use such as jogging along in the drizzle.

So while the more expensive headphones may well fare better than the cheaper ones for one situation, they wouldn't necessarily be ideal for another.

And another point worth mentioning is the fact that you're accustomed to what you currently use. Where you currently have a pair of £25 headphones, you may well be suitably impressed by their sound quality and comfort. To some degree then, ignorance is bliss. But when you get to try on a pair of the more expensive range of headphones, you might begin to wonder if you can ever return to your cheaper pair.

HEADPHONE TASTE CHALLENGE

a film. As a result, the audio quality was lost somewhat, and she didn't enjoy it as much as the last pair she tested.

Volunteer 3 said much the same as volunteer 1 but added that the audio quality wasn't quite as clear or as rich as the previous (the mid-range headphones) ones he had tested.

Finally, we came to the expensive headphones, the £350 pair this time, which claimed, according to the blurb on the packaging, to be unmatched when it comes to movie audio.

All three volunteers remarked on how comfortable these headphones were, Volunteer 2 especially, as she could adjust them to suit her needs perfectly. The ample padded ear pods and headband allowed a greater degree of comfort over the couple of hours' worth of movie watching, and the noise cancellation was excellent once again.

However, all three mentioned that the high-frequency tones weren't quite as well balanced as with the previous headphones they had tested. And to add to that, they also found this pair to have a little too much bass for their liking.

The Movie Verdict

In the final verdict, the volunteers came to conclusion that the midrange headphones were the expensive set. The cheap pair were correctly placed, and that the expensive set were identified as the mid-range flavour of headphones.

Conclusions

So what does this all tell us? Well, not a huge amount admittedly, since these were personal opinions (although a review is a personal opinion), and it wasn't conducted scientifically in any way shape or form. But for the sake of argument, we can place the mid-range headphones at the top of the experiment and the cheaper and expensive ones joint second. And it was an interesting experiment to toy around with.

It's worth mentioning, though, that generally you do get better sound quality the more you spend, purely down to the quality of the technology and components used. But not all expensive headphones are created equally, and the price of a pair of headphones doesn't always indicate quality. Then again, low budget





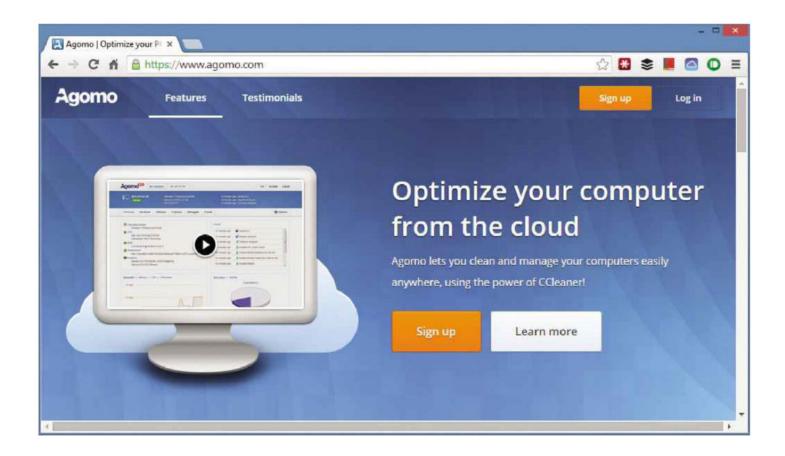
doesn't always mean the headphones in question are going to be bad either.

There are a number of factors to take into consideration here. Noise cancellation can be a big part of creating a better audio experience and, of course, personal taste has a lot of influence as well, as does how well can the headphone audio output be adjusted beyond the technology that it's connected to.

Comfort is also a major consideration, as we've seen here a pair of £12 headphones have proved to be just as comfortable, if not more so, than the set that cost nearly £400. However, saying all that, everyone is different, and some people don't like the fact that all environmental and external noise is cancelled out. Nor do they want to have to forever fiddle around with the settings every time they put the headphones on. And of course, everyone's head is different, and their ears come in all shapes and sizes.

The best solution we find is to take into consideration the mid-range and cheaper solutions when you shop for a pair of headphones and, if possible, bring along an MP3 player or something capable of being plugged into so you can take a moment to sample the product before committing to a purchase.

In the end, though, the question of whether expensive headphones are better is slightly open ended in that yes they are, but it's up to you to decide whether the difference in cost is wholly justified. After all, you can research them, read every review and follow the suggestions of industry audiophiles, but in the end if you don't like them, then they're not worth spending on. mm



Fix Faults Remotely Before They Occur

You can use remote monitoring services to track what happens on your PCs and devices, and solve problems as they occur. Roland Waddilove looks at the options

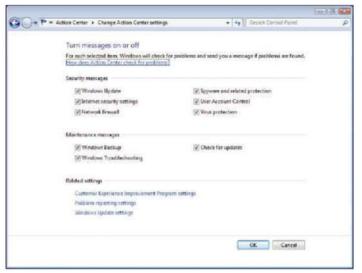
eeping computers and devices running smoothly takes time and effort, and sometimes it seems to take too much. Why is looking after them so hard? Why do problems keep cropping up unexpectedly? Why don't they just work, like the TV or the toaster? The reason is that computers, phones and tablets are much more complicated than those devices, and there are many more things that can go wrong.

If you constantly seem to be fighting fires, you should try a monitoring service that will alert you to potential problems and errors with your computers and devices. If you know that something has a minor problem that needs fixing or repairing, you can fix it before it becomes a more serious problem.

People that have more than one PC will know how time consuming it is looking after them, because adding a second PC will double the amount of time you spend maintaining them, fixing faults and installing updates. Even if you only have one PC, if you're reading this, you're probably a PC expert or at least regarded as one by the rest of your family and friends. You're probably the one they turn to when their computers,



▲ Windows Action Center monitors the system and reports potential problems



▲ Action Center lets you choose which problems you want to be notified about

phones and tablets are faulty. Unfortunately, you become their unpaid technical support. Wouldn't it be useful if you could monitor their computers and devices and see what's wrong or what needs doing before the problems become more serious? A monitoring service can do this.

Even if you have only one PC and no others to support, it can still be useful to monitor your PC, because it can report problems you didn't know existed, and you can then set about fixing them. There are several services, some of which are free, that you can use to monitor computers and devices you own or support. Let's start by taking a look at how Windows monitors itself using Action Center.

Use Action Center

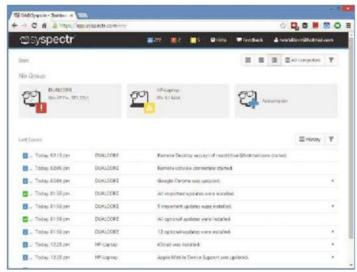
Windows has had a built-in monitoring service for several versions now, called Action Center. It can be accessed by going to the Control Panel, but it also displays notifications on the desktop. When one or more problems with Windows are discovered by Action Center, it displays a flag at the right side of the taskbar, and a message pops up in a bubble above it. It can alert you to a variety of things, such as the firewall being switched off, anti-virus software disabled or missing, Windows Update either disabled or has updates to install and so on.

This is useful information, which is important to know when there's a problem or potential problem like no firewall or antivirus. Open Action Center in the Control Panel and you can immediately see more details on the problems highlighted. It doesn't fix them for you, but there are buttons and links to fix them, change system settings or get more information. Action Center's notifications on the desktop are not always useful, though. Sometimes it can't tell that you have a third-party firewall enabled instead of Windows Firewall, or it thinks you don't have any anti-virus software when in fact you do, or it constantly reminds you to install Windows updates when you'd rather put them off till later or another day.

Those pop-up Action Center messages can become irritating, so some people turn them off. You can do this using the link on the left-hand side: Change Action Center settings. There are 10 types of notification across two categories, and you can clear the tick boxes to hide notifications you don't want to see.

Monitor PCs With Syspectr

Syspectr (syspectr.com) is a PC monitoring service from O&O Software, which enables you to keep abreast of what's



▲ View important events and problems that occur on PCs you monitor with Syspectr



▲ Syspectr accesses information and the status of remote systems, and warns of problems

happening on all your Windows computers. It's free to monitor up to ten computers, which makes it perfect for home users and small businesses. All you need to do to get started is to sign up at the website and then download and install the software on each of the computers you want to watch. It works on all versions of Windows from 32-bit XP up to 64-bit Windows 8.1.

The software runs in the background, and you don't see it on the computers that are being monitored. This is a web service, so to access the monitoring information you log on to the Syspectr website using a web browser. This enables you to view all your computers from anywhere, and you do not need to be using a PC with Syspectr on. You could be at work and see what's happening on your home computer or at home monitoring your work computers.

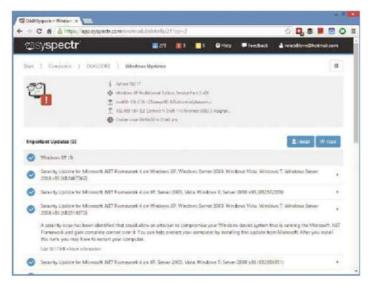
You can schedule a cleanup or defrag of a remote computer, and a handy feature is that it doesn't even need to be switched on

Syspectr shows the same events that appear in Windows Action Center, but this is not the only status events that are tracked, and it does a lot more. For example, it not only shows the current status; it also stores the history, which enables you to look back over time and see events that occurred recently. It shows you whether a computer is running and online or offline or switched off. It records events like new software being installed or software being uninstalled. This is useful, because if a problem arises with a computer, you can look back through the history and see that a certain program was added or removed recently, which could alert you that it could be the cause of a problem.

In addition to recording the software added or removed, it can also comment on it too. For example, it can report that anti-virus software software was added or even that a computer has two anti-virus programs installed, which could then cause problems because they can conflict with each other.

Status messages in Syspectr are put into categories: problems and warnings. A problem status message might report that there are important Windows updates, such as security patches available but not installed. A warning is less severe, and an example is that there are optional Windows updates available that might be useful. The status messages can be filtered, so just problems or only warnings are displayed. You can also choose to have warnings and problems emailed to you as they occur, so you don't even need to go online to see if there's a problem. Your mobile phone in your pocket will chime, and a quick glance will tell you if it there's something wrong with one of your monitored PCs.

A PC being monitored can be selected to display quite detailed information about the hardware, software and status. For example, you can view the hardware details like the processor, motherboard, RAM, graphics card, and so on. The Windows version, service packs installed, and other updates can be viewed along with their version, size and date added. The disk drives and partitions can be viewed as a list showing the



▲ Syspectr shows Windows updates for monitored PCs and lets you install them



A Open a command prompt window or access the desktop remotely using Syspectr

used and free space. Any Windows updates available but not installed can be viewed.

Monitoring PCs remotely is useful, but what's better is being able to repair them when there's a fault. Syspectr provides some help in that direction, and you can view a PC in the web browser at the website and see if there are important or optional updates for it. You can select the Windows updates you want and click an Install button. The remote computer then downloads and installs the Windows updates.

Another useful feature is the ability to block specific programs or to make sure that one specifically runs. This means you could stop potential adware or other problem software or ensure that security software is definitely running. Even better is the ability to open a command prompt or desktop session on the remote computer. This would enable you to check the disk for errors using chkdsk or to check that Windows is okay with sfc (System File Checker) and use other command line tools.

Using the remote desktop facility, the selected computer's screen appears in the web browser, and you can access it as if you were sat in front of it. This enables you to access the Control Panel, run utilities, scan it for viruses, install software,

update drivers, modify the start-up programs and services and so on. Accessing computers remotely is slower than being there, and the screen is a bit fuzzy, but this is typical of remote access software. It's useful in emergencies, though.

This remote access facility could be used to access home computers from work using nothing more than a web browser and without installing any software or to access work computers from home or to repair your family's or friends' computers. If you get to work, for example, and realise that you've left a file you desperately need on a home computer, provided it's switched on, you can remotely access it and get that file (email it, upload it to online storage and so on).

Monitor With AVG Zen

AVG Zen (avg.com/gb-en/zen) isn't quite the same as O&O's Syspectr, because it's designed only for monitoring AVG products. However, if you have AVG security and tune-up products installed on your computers and devices, it can be used to monitor them remotely. AVG provides a variety of free and paid tools that run on Windows PCs, Apple Macs and Android phones and tablets, and they all report their activities and status to Zen.

Zen can be installed for free by installing AVG programs on the PC, such as AVG Protection (anti-virus) and AVG Performance, and there's an app that can be installed on Android smartphones and tablets. You create an account in the Windows program or Android app, and then when it's added to other computers, phones or tablets, you just sign in with the same username and password.

All the computers and devices with AVG software are displayed, and numbered badges indicate the number of problems that each one has. You can also view all of these for all computers and devices in the Messages section.

Unlike Syspectr, the messages displayed by Zen only relate to AVG software, but they're still useful. For example, you can see where protection is lacking on a computer or device, such as the AVG Anti-Theft module not yet installed on a mobile phone or AVG AntiVirus not installed on the PC. AVG PC TuneUp reports PC health problems to Zen or essential maintenance tasks that need performing.

Zen relies on AVG software being installed on everything, so you really have to be a fan of the company. There's a lot to like about AVG tools, though, and the company provides a good selection of free ones and cut-down full products.

Remote Cleaning

Agomo (agomo.com) is a new service from Piriform, the maker of the Ccleaner Windows clean-up tool and Defraggler disk defragmentation utility. Who hasn't got a copy of Ccleaner on their computer? It's one of the best utilities of its type and has been keeping Windows PCs clean and trouble-free for years.

Sign up with Agomo and you can monitor PCs remotely and run Ccleaner and Defraggler remotely on those PCs to clean up, repair and optimise them. This is only a beta at the moment and by invitation only, so I haven't had a chance to try it yet, but it looks like it could be guite good.

Basically, anything you can do with Ccleaner and Defraggler on your own PC, you can do to a remote PC by accessing it over the internet. A small Agomo Agent utility is installed on the remote PCs you want to monitor and maintain, and it works on every version of Windows from 32-bit XP up to 64-bit Windows 8.1.

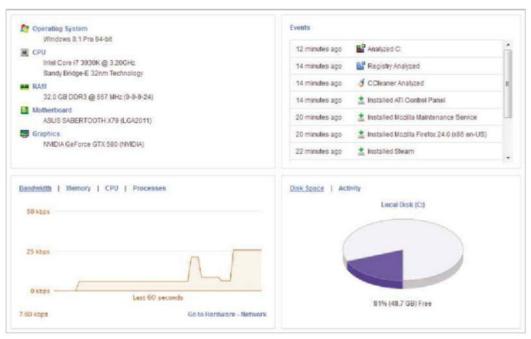
You can schedule a clean-up or defrag of a remote computer, and a handy feature is that it doesn't even need to be switched on. You just select one of the computers you monitor and set the schedule. When the computer comes online, it will perform the action at the scheduled time or straight away if it's missed it because it was switched off.

There are some more interesting features, and you can install software. A selection of software is provided, such as Chrome, Firefox and Java, but you can actually install any software you want if you put it in your Dropbox folder. That is a good idea, and it opens up all sorts of possibilities for clean-up and repair tools.

It's not known how much this will cost, and given that Ccleaner and Defraggler are free, and Syspectr is free for ten PCs, it's quite likely that Agomo will be free for home users with a small number of PCs. However, we'll have to wait until it's finished before casting a final verdict. At the moment, Syspectr is hard to beat. It's packed with great features and it won't cost you a penny. What more do you want from PC monitoring software? mm



▲ AVG Zen running on a Samsung Galaxy S4 monitoring an HP laptop running Windows 8



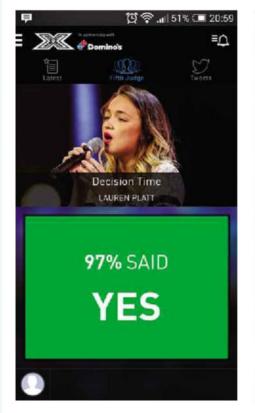
▲ Agomo enables you to clean up, optimise and repair PCs remotely over the internet



What's On The Second Screen?

Sarah Dobbs checks out the extra offerings from TV and games companies for your handheld devices...

SECOND SCREEN







ope, I'm not talking about getting a second monitor. Dual monitors are nice and all, but that's a topic for another day. Instead, I want to talk about the phenomenon of 'second screens': generally, the screens of handheld devices that you can use alongside or in conjunction with another screen, usually your TV.

The idea of the second screen has been knocking around for a few years, but it really seems to have taken off now – probably because smartphones and tablets are now so commonplace. So rather than trying to convince you to pay all of your attention to the whopping great screen in front of you, television and game creators have started to embrace a kind of technological multi-tasking. Let's check out some uses for the second screen, and see whether they have more appeal than, say, your Facebook news feed...

The idea of the second screen has been knocking around for a few years, but it really seems to have taken off now

Chipping In

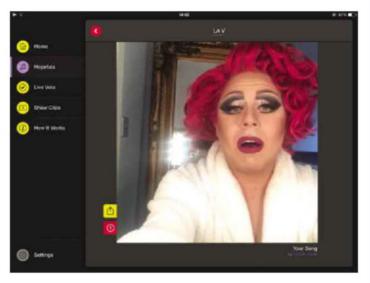
The most obvious place to start is with television tie-in apps. Generally, it's reality TV shows that have really embraced mobile apps. Take *The X Factor*, for instance. The *X Factor* app, available for iOS and Android devices, is impressively comprehensive. The viewer is positioned as the 'fifth judge' and can rate each performance on a scale from 'terrible' to 'amazing.'

The app also throws out questions about the show, including trivia questions about what's just happened or predictions about what's going to happen – what a particular judge will make of a particular audition, for example. There's enough content there that

if you're watching the show and using the app, there isn't really time for much else. Still, the round-ups of what the legions of 'fifth judges' think of each auditionee makes you feel less like you're just watching a TV talent show on your own on a Saturday night.

When the show's not on, the app provides a boatload of extra content – videos, behind the scenes pictures, even regular news articles – to keep you coming back. And thinking about *The X Factor*. And watching adverts while you wait for content to load. It's pretty smart.

The Voice, the BBC's version of The X Factor (with added spinning chair action), also has an app, which can be used on iOS or Android devices or even in a browser as a Flash game. Again, it gives viewers the ability to rate performances and answer trivia questions, and during the live section of the competition, there are Facebook-linked fan walls you can post to or other live questions you can answer. Again, there are videos and articles and other bits and bobs all posted to the app as well as the official website, so if you're a fan, you get plenty to tide you over until the next episode.







Influencing The Outcome

Some apps actually let users influence the show as well as just having an opinion on it. The most recent incarnation of the *Big Brother* app offered videos and articles and all the rest of it, but it also asked viewers to participate in polls that affected tasks in the house – like choosing which housemate should take the ice bucket challenge, for example. Viewers could also use the app to buy votes for each weekly eviction rather than calling or texting to try to chuck out their least favourite housemate.

Probably the most influence an app has given viewers over a TV show came in the experimental talent show *The Singer Takes It All*, though. For starters, to get onto the show in the first place, hopeful singers had to use the app to record themselves singing. If producers liked what they heard, they were invited onto the show, which involved singing on a moving stage (kind of like the moving walkways at airports, but shorter). There weren't any judges watching them, though – no Simon Cowells here – instead, viewers at home voted using the app, changing the speed and direction of the walkway. The goal for the singers was to get into the 'Gold Zone' portion of the walkway, and stay there as long as possible.

It's a little bit Orwellian, somehow – especially because the show was narrated by a commentator only shown as a giant pair of lips – and there were a few technical hitches in the first show that meant it didn't run as smoothly as it should have. Still, being able to press a button on your phone and make the floor under someone's feet move based on how well they're entertaining you is pretty cool.

Gaming On The Move

Putting reality TV shows aside for a moment (though we'll come back to them later), games have also started to play around with the idea of a second screen. But since games tend to be a bit more involved than watching telly, additional screens have tended to be used for slightly different purposes.

For example, Sony introduced the idea of Remote Play with the PS3 and the PSP. If you had both consoles, you could link them together, and the PSP would become a sort of portable version of your PS3, where you could access your downloaded movies and games and play them without having to be sitting in front of your telly. The benefits of that are obvious, especially if you've got kids.

It wasn't a totally successful feature, though, because not all movies could be streamed to the PSP, and not all games worked

either. That was improved with the next generation of Sony consoles: with the exception of games that specifically rely on additional hardware, like the Eye, all PS4 games can be streamed to the PS Vita. So that should cut down on fights over the TV, then.

Nintendo has also experimented with second screens. The DS has two screens, of course, and Nintendo also made it possible to link a DS to a Wii for some functions. But it's the Wii U that has, so far, made the most interesting use of a second screen. The Wii U's gamepad has – along with a microphone, camera, various gyroscopes and sensors – a touch-screen built in, which can display extra info about a game or add multiplayer functionality to a game. Admittedly, so far a game that really takes advantage of the hardware hasn't really come along, but maybe it's only a matter of time.

Other Ways Of Using A Second Screen

There are loads more things you can do with a tablet or smartphone while you're watching telly, of course. For example:

Looking up who that guy is

You know when you're watching a movie and you know you recognise someone but you just can't quite summon their name or where you've seen them before? Once upon a time, you had to wait for the end credits or even wait till you got up to check your computer, but now you can look them up on the IMDB without even moving. Progress!

Show off your cosy evening on Instagram

Snap a photo of your feet, your wine glass and whatever's on telly, and post it to Instagram from your phone. Now you're the envy of your friends (assuming you don't do it too often, or they'll think you never move).

Check the news/football scores/X Factor results

Watching something a bit boring? Haven't finished your film but want to know who won the match? It's terrible and we're destroying our attention spans, but if you haven't used your phone to distract you while waiting for an overlong film to finish, we can't be friends.



Going Multiplayer

There's definitely a growing trend for games using second screens to add an extra dimension to the experience – though they tend to eschew specialist gaming hardware in favour of mobile apps. Need For Speed Rivals, for instance, has a companion app called Need For Speed Network. Available for iOS and Android devices as well as a web app, the Need For Speed Network lets players check in on their friends' games without having to switch on their games console. Various different stats are displayed, showing who's won which event, but there's also a map that shows players moving around in the game world, which is a good way of luring players back in for a quick catchup session. The Need For Speed Network has some legit second screen features too: while playing the game, you can open up the app and check the map on your smartphone or tablet, to see where the collectible you're after is without needing to interrupt your game.

Battlefield 4 is another good example of a game with a companion app: the Battlescreen app is available for iOS and Android devices, and lets players look at maps or customise soldiers from their phones or, if they're using a tablet, even play the game in Commander Mode from a second screen.

Maybe the most impressive game companion app, though, is the *Watch Dogs* app for iOS and Android devices and the Kindle HD. Like other companion apps, it lets you check in on your friends' games from their phones or tablets, but unlike most of the others, it lets you actually join in the game – as a sort of mobile gremlin. Rather than playing the game the way you would on a console, from your mobile you can get into a friend's game and mess with them, changing traffic lights, moving steam pipes and manipulating bridges to try to make them crash. Evil but kind of brilliant, right?

Each of these apps is positioned as an added extra; it's not a compulsory part of the game, and you don't need to buy any extra hardware or download anything if you just want to play the game you've bought, but it's interesting that games manufacturers are now taking into account the fact that most of us have our smartphones glued to our hands at all times.

Tweetalong

Let's go back to talking about TV again to wrap up. While extra peripherals and apps are all well and good, the most common use of a second screen for most of us involves using our phones to talk to our friends while watching telly. A couple of years ago, thanks to on-demand services and devices like the Sky Plus box that can record television programmes to be watched at a later date, it was starting to look like no one was ever going to watch TV as it was actually broadcast ever again. And then Twitter took off. Now, if you're a fan of something like *Strictly Come Dancing*, you either need to clear your calendar every Friday night or accept that you're going to have every episode spoiled by your Twitter friends.

Spoilers are the downside of telly tweetalongs, of course (*Doctor Who* fans probably suffer most in that respect), but there's something brilliant about them too. Watching TV can be a solitary, anti-social activity, but throw Twitter into the mix and suddenly you have hundreds or thousands of other people right there with you, ready to make jokes or share your outrage when something funny or awful happens. Broadcasters have caught on too, sticking official hashtags on the screen at the beginning of pretty much every TV show and even tweeting along from their official accounts.

Thinking about it, people live-tweeting their favourite TV shows is probably the main reason Twitter had to invent a mute button. It has to be worth it, though, if it means you get to see the official BBC One account making *Doctor Who* jokes in the middle of The *Great British Bake Off*. What a time to be alive. mm

Name That Tune

Here's one last music-related app you might want to use on your phone while you're watching TV: Shazam. Start the app and hold it up to a speaker while there's music playing, and it'll identify the music for you. So if you really like the song on a particular advert, you can find out what it is, or if you dig the music choice over the end credits of an episode of *Come Dine With Me*, well, ditto. Handy, right?



Make a date with six of the best swap-in calendar apps for Android, as **Keir Thomas** explains



et's be honest, the built-in calendar app for Android isn't very good, especially when compared to the app supplied with a certain fruit-inspired mobile operating system. There are rumours that the new calendar app coming with Android L will fix things, but that doesn't mean much in the here and now, and it might only be a pipe dream if your hardware vendor doesn't provide an upgrade.

Therefore, finding a good third-party calendar app is a necessity and well worth the effort considering the potential for life organisation at both work and home. The ability to marshal family members via a shared calendar that beeps new appointments onto their phone or tablet is simply too useful to ignore.

Below we take a look at six calendar apps for Android. As usual, all are free of charge to download from the Google Play store, and all were tested on Android Jelly Bean (4.3).

Sunrise

Despite not being compatible with tablet devices (a feature that will be coming soon, according to its developer), Sunrise boasts an impressive feature list for phone users. It can sync with Google and Microsoft Exchange calendars, and even with iCloud, thereby providing interoperability with iOS devices. Additionally, the app can sync with calendar functionality offered via sites like Facebook and link in with the functionality of Linkedln, Twitter, Foursquare and others.

The app defaults to a slightly unusual view when it starts, showing two weeks in a calendar view at the top of the screen, beneath

which are shown upcoming days in Agenda view, in which days are simply listed one after the other along with any events on those days. A handy feature is that weather forecasts are shown alongside upcoming days, provided your device has suitable GPS functionality.

Dragging the Agenda list lets you scroll through it, and doing so moves the day marker on the two-week calendar above. Once you start scrolling, a button appears at the bottom left, the tapping of which allows you to instantly jump back to the current date.

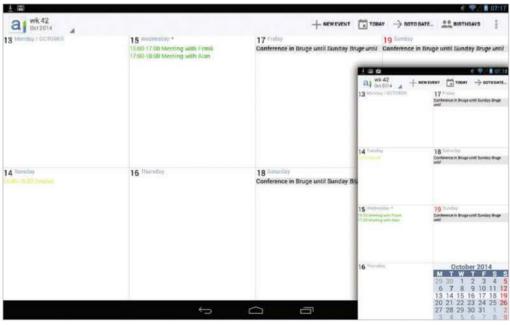
Four icons are shown at the top right. The first, an envelope icon, lets you respond to pending event invitations sent by others. Responding lets you add the event to your calendar and send an RSVP. The second icon lets you switch to week view, which perhaps surprisingly shows just three days in portrait orientation (and the app doesn't work in landscape mode!). Dragging right shows more days, which are shown as vertical columns. The third and fourth icons let you add new events and access the settings panel respectively.

Rather annoyingly, some of the features found on the iOS version of Sunrise – reviewed in these pages last week – simply aren't present on the Android version. One of the most useful was natural language event creation, whereby you can type something like 'Dinner with John at 8pm on Monday' and have the app figure out where and when the event should be inserted. Instead, on the Android version you must enter events manually, which takes slightly longer to do although is helped by an intuitive input screen – and we particularly liked the clock dials that let you set the time. New events can be

CALENDAR APPS FOR ANDROID



A Sunrise only works on phones in portrait view but brings competent event management and the ability to sync with many apps and calendar formats



A aCalendar might be the cut-down rendition of a paid-for app, but it offers core functionality in a fussfree interface

added by tapping the plus icon or by tapping a particular day in the agenda list.

Also apparently missing is the ability to subscribe to useful free calendars, such as sports fixtures for your favourite football team. This might be because we already had an account configured with Sunrise, so didn't run through the new account setup wizard, but blocking off the ability to add these calendars for already registered users doesn't make much sense.

Considering the preferential iOS treatment, Sunrise left us with a slightly bad taste in the mouth, but we have to remember that this app is entirely free of charge and still packs some very powerful features, including providing notifications and a useful at-a-glance home screen widget. Because of this we have to recommend Sunrise.

aCalendar

Apps on Android have a habit of falling into one of two camps and rarely into both: they tend to be either packed with features yet not particularly good-looking or good-looking yet only offering a limited feature set. aCalendar most definitely belongs to the former camp (its interface looks like something from the mid 1990s), but it's perhaps the most feature-packed app on test here.

The app defaults to week view on both tablet and phone, in which seven days are shown as a grid, along with a full-month calendar view at the bottom right-hand corner. Aside from showing the full month, this calendar doesn't do much, although long-tapping it switches you to the current day if you're not already viewing it, and if you are viewing it, then a date picker appears allowing you to jump to any date.

Dragging up and down in week view moves you backwards and forwards in time, while swiping left or right switches to aCalendar's other two view modes: day and month. Day view shows your appointments within an hour-by-hour view, and it also summarises them at the right of the screen as a list while, as you might expect month, view shows your events on a grid of up to 31 days.

In any view mode, creating a new event can be done by tapping the clearly labelled button on the toolbar or by tapping and holding a day square. When tapping and holding, a hour-picker immediately appears, meaning all you subsequently have to type is the name of the event. If using the toolbar icon, you must fill in time and date details too. Events can have a location added to them, but you can't

invite people without shelling out £2.49 for aCalendar+ – something that will also add agenda view (viewing upcoming events as a list) and a host of other minor yet useful features including better event notifications and support for Google Tasks.

One area where aCalendar excels is in the comprehensive configuration and personalisation options, available by tapping the menu button. You can alter the default view mode, for example, should you wish to always open to month view. Week layout can be switched from vertical columns for days to a horizontally aligned view, and you can even alter the style of the date and time picker. A variety of colour themes are available too.

We were very impressed by aCalendar, which offers the core functionality that most of us need and avoids the ugly route of including advertisements in its free version. It really is one of those apps where paying the upgrade fee should be considered, bearing in mind the price and additional functionality – and perhaps also because a percentage of the fee goes to help endangered tapirs!

Jorte Calendar And Organiser

Slightly more ambitious than a mere calendar app, Jorte aims to replicate a personal organiser. It does this by not only offering calendar functionality but also a task manager and a diary (that is, a journal in which you can write about the day just gone and also add photographs).

However, it's the calendar functionality we're most interested in here, and the app opens to month view. During setup, Jorte advises users to switch to its own syncing method, rather than relying on that built into Android tools, with the result that one of the first things you'll need to do is add your Google calendar within the app. This is easily done by tapping the Calendar icon and selecting the option. You can also add Yahoo, Facebook and Microsoft ActiveSync calendars, and also sync with Foursquare, Instagram and Flickr for the diary component of the app.

It's not quite clear whether Jorte has a dedicated tablet mode or whether what you see is simply a larger version of what's normally viewed on a phone. The text and icons are certainly very large when Jorte is used on a tablet, which gives us this impression.

Still, at least this allows for expansive text labels for each event, although any colour-coding of events you might have set elsewhere



A Jorte Calendar & Organiser offers the key functionality we all need, but the interface is just a little too clumsy for everday use

isn't carried across. In fact, Jorte only allows two colours to be set when creating an event: Important (red) and Completed (grey).

On either tablet or phone in portrait orientation, a list of important upcoming events is shown beneath the calendar. This isn't quite the agenda list view available in some other calendar apps, because it only lists events for the selected day, along with items from the task list that are set for that day too. However, by dragging the handle, the list can be expanded to virtually full screen, showing just the current week in calendar view at the top. Alternatively, the list can be dragged to the bottom, allowing more space for the calendar view.

Day and week view are also available by tapping the Display button. Day view shows just the working week (five days) as a calendar view at the top of the screen, while week view shows all seven days in a list, complete with details of any events. A vertical week view is also available, in which five days are shown as columns.

Creating an event is something of a fiddly hassle because the date and time must be set separately, and the time picker uses a calculator-style keypad to manually type the time – there are no sliders or clock faces to make the task more intuitive. However, some handy touches are that you can set an icon for each event (many are provided while more can be purchased via in-app payments), and in addition to the usual repetition choices for events (daily, weekly, monthly etc.), you can also set events to repeat daily Monday-Friday or every Tuesday and Thursday.

There's little doubt that Jorte offers the key functionality needed for a first-class calendar app. Unfortunately, the interface is just a little too clumsy and non-standard for our tastes. There's a huge reliance on tapping the device's back button, for example, rather than showing on-screen buttons, and the user interface is just a little too primitive.

Cal

The name of this app is something of a giveaway for the functionality therein, because everything is kept concise and simple. This isn't an app for which the feature list fills pages or that requires you to work through tutorials.

It works equally well on phone or tablet, and the same principle for switching view modes is used on each device: hold the device in portrait orientation and you'll see a week view, which can be dragged down to show the entire month. If you hold the device in landscape orientation you'll see a month view.

In both cases, appointments for the currently selected day are shown below or to the right of the calendar. No matter which method you use to view the full month, any days with events are shown as having dots or dashes on them, although not full text labels. When in week-viewing mode, you don't even get dots and dashes, so you have



▲ One of the best-looking apps in our group test, Cal offers a host of useful and interesting features but skimps on some basic tricks

no way of knowing at a glance when you're busy other than to tap through each and every upcoming day. Annoying.

In week view, the bottom two thirds of the screen are filled by a picture taken from Tumblr, and you can configure the themes for the pictures using the Settings panel. This looks pretty enough, but why that space is wasted with something so trivial is an irritation and also a mystery. Why not fill the space with an agenda list of upcoming appointments?

Adding an event is quick and easy thanks to rotating dials that let you set the day and the time of the event in just a few taps. There's no way at this stage to vary the notification or alert time, however, other than tapping the Add button and then tapping the relevant icon, which adds time and effort to what should be a simple and quick task. Cleverly, however, the alerts are shown as a series of one-tap options (ten minutes, 30 minutes, one hour, two hour etc.), although you can also set a bespoke time. It's after creating the event that you can also add invitees, add a location, add notes and create a repeating event (limited to daily, weekly, bi-weekly, month and yearly).

According to the developer, Cal gets better the more it's used. It will attempt to predict the attendees of meetings as it learns more about your schedule, and will even suggest locations. It can also import birthdays from Facebook (although it can't sync to Facebook calendars). One of the neatest features is the Heads Up mode that lets you see pertinent details about an event all at once, such as who's attending, the location and so on. From this screen you can also email or message all the attendees, and switch out to Google Maps with the location set as a destination for navigation purposes.

There's much to like about Cal beyond and above it good looks, which leaves most other apps reviewed here looking like they were created for the IBM PC in 1985. However, we couldn't help feeling that the app leans too much towards style over substance, and some key features – such as agenda view or text labels on monthly calendar view – should be considered essential rather than optional.

SolCalendar

Another good-looking app (and, let's be honest, that's important in the world of apps!), SolCalendar is designed primarily for a phone held only in portrait orientation. It'll work on a tablet but only by treating it as a very large phone and stretching everything accordingly.

The app defaults to month view, in which perhaps surprisingly only four calendar weeks are shown, thereby not allowing the whole of longer months like October to be seen. This happens because a toolbar runs across the top, along with a daily weather forecast. However, full month view can easily be achieved by simply dragging up or tapping the X icon at the top left.



▲ SolCalendar looks great and has some unique functionality, although lacks day and week view modes



▲ Designed for young women, Colette Calendar actually packs in a decent quantity of features

An agenda view is also possible, in which days are listed consecutively, along with the events they contain. And that's the limit of SolCalendar's view modes. There's no week or day view, for example, although there are some clever features in both agenda and month views that help compensate. Rather cleverly, the pinchexpand gesture can be used to expand particular days in agenda view to see multiple events. Also, tapping and holding an event lets you edit it, delete it, copy it or cut it for pasting elsewhere. In month view, tapping a particular day splits and expands the calendar so that particular day is viewable, and swiping left and right lets you switch back and forth between days. Tapping and holding a day in month view automatically creates a new event.

Creating new events is simple and can be done with a few taps. Events can have invitees, locations, notes and reminders/ alerts. Usefully, if you work with folks in other countries, the event can also have its own time zone setting. Icons can also be added to each event, although these are referred to as Stickers in the language of SolCalendar. The range of stickers isn't as huge as some other apps, but there are certainly enough to make an event sufficiently distinctive.

The app syncs automatically with the system's Google calendar, but you can also sync with Google, Yahoo, iCloud, Microsoft Exchange and any other server that's been published online.

In addition to calendar functionality, SolCalender also offers a to-do list, which can sync with Google Tasks. To-do items can have their own alerts and repeats.

There's a lot to like in SolCalendar and other apps that aim for simplicity should take a look to learn how simplicity and useful functionality can be combined. If you can live without week or day view modes, then it's definitely worth investigating. Best of all, it's truly free without any nags or adverts.

Coletto Calendar

At the risk of this weekly group test developing an 'And finally...' aspect, the last app we look at this time is somewhat quirky and designed for – ahem – younger women. The main boast on its Google Play page is that it has a pink flowery theme and that in addition to a calendar functions, it also allows users to write diary entries for that day. Users can include in the diary entry any or all the photos they've taken that day.

The calendar defaults to month view, with text labels for events. Unfortunately these are truncated to just four characters on a phone screen in portrait orientation, and the app won't work in landscape mode (and it assumes a tablet is a big phone, stretching the interface to the point of ugliness). Beneath the month view is a list of events for the currently selected day, and it's also possible to switch to List view – known in other apps as agenda mode – to see a complete list of upcoming events. It's here that users can write diary entries by tapping the relevant button alongside the day listing.

New events can be added by tapping the button at the bottom right of the interface, and it might surprise you to learn that the interface is pretty intuitive – days and times can be selected via a simple dial system, and repeating events can even have time limits set on them, so they only repeat for three months, for example.

Icons, wallpaper and whole themes can be used to decorate the calendar, and several examples are available in the Google Play store. Some cost money, of course, and it's possible to argue that this is cynically exploiting the teenagers who'll be attracted to this app, but on the other hand, it's impossible to argue that Coletto Calendar doesn't deliver the core functionality that it should. Underneath the flowers and ribbons, there's a solid app and some serious thought has gone into its features – the diary can be password protected, for example, and there's even a menstruation calendar add-on. mm

Pc Tip Of The Week

Setting Up A Wireless Printer, Part 2



ast week, we looked at the basics of getting a wireless printer set up, at least from the point of view of opening the box and a few pointers based on ours and reader's experiences.

This week, we'll have a brief look at some of the pitfalls associated with wireless printing and how you can overcome them.

Bad Setup CD

If the setup is running extremely slow or has stopped for a good half hour, then there's a pretty good chance that there's a problem with the included setup CD.

You have a couple of options here. The easiest is to go online, find the support and drivers page of the printer in question and download the drivers and software package for your operating system. With the file downloaded, you can go about the setup in the same way as per the instructions, but without the CD. If you can't download, then contact the shop you got the printer from, and they can provide a new CD for you or at the very least provide you with the downloaded drivers for free.

Can't Attach To The Wi-fi Network

There could be multiple reasons why the printer isn't communicating with your network. The first could simply be a fault on the printer, which is difficult to ascertain unless you try and attach it to a different network.

HP LaserJet 1020
series/série/serii/斯列打印机

② (25912-60101 v1.0
www.hp.com
0.2001 meller Refused Consignment Company, 1.8

▲ Most driver CDs can be downloaded from the manufacturer's website

Another reason could be a wrongly entered wi-fi key. It's an easy mistake to make, so check you've entered the wi-fi key correctly. Also, check you're connecting to the correct wi-fi network and not your neighbours.

You may also be in a poor signal area. If it's possible, check the signal strength of the current location via a laptop or on the display of the printer itself. In either case, try somewhere closer to the router.

If the printer setup reads the wi-fi details from your laptop or the computer you're setting up with via the USB and it's still refusing to connect, then it could be reading the wrong information. In this case, opt for the more traditional setup over USB.

Can't Print

If everything is set up and nothing's coming out, check the following:

- You have the paper in the right place, right? Easy mistake to make.
- You've disconnected the USB and are now using the wi-fi. Check that the printer set up on the computer is using the 'Network' version of the printer, not the USB version.
- Check you're not printing to an obsolete printer. Check the default printer in the Control Panel (assuming you're using Windows).
- Ink! You did put the ink in at the beginning?



▲ Before resorting to outright violence, check the possible printer problems first

 You're not trying to print a blank page, are you? Believe us, it happens.

Printing Problems

There's plenty that can go wrong with a new printer, but it's not often it happens. These days the printers are generally fool proof, but there are exceptions.

If you've tried everything you can think of and have worked logically through the problems, then there could be something else untoward. In this case, it's always best to return the printer and get the shop to replace it, if possible. Also check out *goo.gl/SX0s7*, a website from PCWorld, which goes through

Other Things To Check

Other problems that may occur or things to check that can affect the new printer are:

Printer properties: Right-click the printer in the Control Panel and choose 'Properties' to see if something has gone wrong and that the port is correct.

Wrong paper size: Check that the document you're printing is A4 (providing it's an A4 printer, of course) and that the margins haven't been altered to beyond the printer's range.

Printer heads: Opt to clean the print heads via the installed software. This can at times clear a blockage.

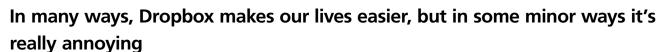
Re-align: Likewise, run the alignment feature in the installed software.

Paper check: Check the paper you're using isn't too thick for the printer or that it's not some kind of specialist make. Consult the printer instructions as to what you need.

Wrong function: Check that you're printing and not scanning. It's a popular mistake to make.

Poor quality: There is the argument that manufacturers' ink is better than a refill or a lesser-known brand. We won't go into that here, but it's worth checking with a known brand if the thing refuses to print.

The Things That Frustrate Us About... Dropbox



ending large files over the internet used to be a massive hassle. Your email provider didn't support large files, your colleague's inbox would be full, and you'd have to sign up for some hideous file-sharing site that was plastered with adverts and only slightly more user-friendly than saving the file to a USB stick and driving it to the other person's house.

Dropbox, then, is a service that makes sharing stuff simple and easy, and also provides a handy way of backing up your files (oh, and here's your obligatory you-need-to-back-up-your-files reminder: you need to back up your files! Go and do it now). Like all things manmade, it's got its flaws. We'll leave security and privacy issues alone for now – we've covered that before – and stick to the minor niggles that get to us on a daily basis...

Nrgh! No Space

Signing up for Dropbox is totally free. Hurrah! You only get 2GB of space with a free accoun, though. That's fine if you're just going to store things in there while you're working on them, but if you want to keep stuff in there long term, or you're working on a big project (like, say, a magazine) it probably isn't enough. As an added irritant, when you share something with someone, it takes up space in their Dropbox as well as yours. So if they only have a free account and you want to share something that's over 2GB with them, they won't be able to sync it up with their account.

Fix it: There are a few ways to fix this. If you need to send someone a file, you don't necessarily need to share it into their Dropbox – you can put it in a public folder and give them the link to download it, which might be the easiest thing to do.

Or you can expand your Dropbox storage space. You can pay to get more space: \$9.99 a month (about £6.50) gets you 1TB of space, which is usually more than enough. Or you can do various things to earn more space for free; following @Dropbox on Twitter, connecting your Facebook account to your Dropbox account, or referring your friends to the service gets you more space. To be honest, it's probably easier to just pay, though.

Wait - How Long?!

This is partly my own fault for not backing stuff up regularly enough, and partly my internet connection's fault for being slow, but it feels like it takes forever to transfer stuff into my Dropbox folder. Worse, it's impossible to know how long it's actually going to take, because the estimated time to completion varies so wildly. Arghgh.

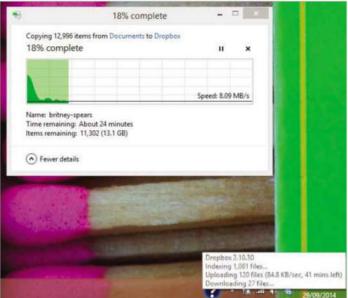
Fix it: Be patient? Or alternately, set stuff synching when you're going to go and do something else and can just leave it doing its thing.

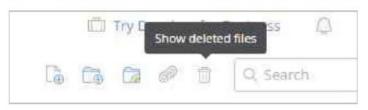
Arghhh! Deleting Files For Everyone

This is kind of a user error issue, but it's infuriating/terrifying anyway. So: if you share files with someone on Dropbox, those files take up space in both your Dropbox and theirs – but THERE'S ACTUALLY ONLY ONE COPY, so if either of you deletes the file the files disappear from both accounts. Which can be pretty awful if you need them.

Fix it: Dropbox hangs on to old versions of files in your account for 30 days, so if you need to access a recently deleted file, open Dropbox in a web browser and you'll see an icon for Deleted Files in every file. Click on it, recover the file you need, and breathe a sigh of relief. mm



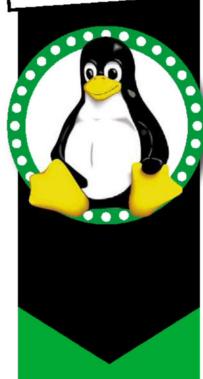








Specialists



David Hayward has been using Linux since Red Hat 2.0 in schools, businesses and at home, which either makes him very knowledgeable or a glutton for extreme punishment

What Could Windows 10 Learn From Linux?

Could Microsoft take something from the Linux world and apply it to better Windows?

e've been toying around with Windows 10, the technical preview, for a few days now, and while it seems to address a number of the things that many people hated about Windows 8, it still leaves a lot of room for potential improvement.

That got us thinking: what could Microsoft take from the Linux world to help make its newest operating system better? We have a few suggestions, but we'd like to hear your thoughts on the matter. What do you think exists that Linux users use daily that could be blended into Windows to make it a more stable, secure and overall better operating system?

For starters, we think the implementation of a package manager would be more beneficial to Windows over the Windows App marketplace thing that it's started to dump on everyone. Take The Ubuntu Software Centre, for example. Okay, it may not be a perfect and shining example of how a

package manager should look and behave, but it's really rather good when you look at the concept a little more closely.

What about, to extend that theory, a software repository? A place where Microsoft programs can be downloaded or bought, as well as any Microsoft approved opensource additions. It could even bundle in extra desktop widgets, Skype add-ons and all that kind of stuff.

Web app integration is something that Microsoft wanted to bypass with the Metro apps it introduced in Windows 8. However (and let's face it), barely anyone actually touches the Windows 8 apps, let alone considers them for real-world working situations. What if, then, Microsoft was to introduce true linuxb-born web app integration? Where an IE user can install the web app for Gmail, Twitter or the like with a click of a button, as with Ubuntu?

Also, what about tabs in Explorer, web search from the Start menu, workspaces,

better customisation, perhaps even a scaled-down free version of Windows (although there are rumours of one being in development)?

The point is: could Microsoft take a leaf from Linux's desktop experiences and create a far better operating system than ever before? Could there ever be a single, unified operating system to deploy onto PC, device, Xbox etc., as per the Ubuntu vision?

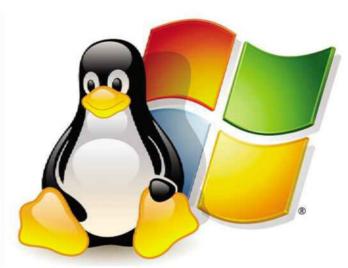
Is It Worth It?

To some people, the topic of Microsoft 'borrowing' technology from Linux is a pointless affair.

After all, Windows is Windows and Linux is Linux. What I'm trying to get at here, though, is what could MS take from the open-source world that has made a real difference to Linux users? And more importantly, is there any point in doing so?

Do you think Microsoft stumbled so badly with Windows 8 that even if it was to adopt a more Linux-like approach to Windows 10, the users are too far gone to even care. Or do the users not care two hoots whether MS has adopted workspaces as long as it works?

Moreover, is Linux so stagnant on the desktop now that no one really cares either way? Let us know what you think.



≺ Could MS be inspired by what Linux has to offer or not?

Amiga News Round-up

Sven Harvey returns with more from the Amiga sector

VoxelNoid 3D

Cherry Darling has returned with its third Amiga release in the form of a voxelised remake of the original Breakout with an obvious homage to Breakout clone Arkanoid. As you would expect, you use your bat to deflect the ball and destroy all the voxel bricks. The destroyed bricks break into lots of voxel debris, which charges your laser-beam when collected by your ball. You then can use your the laser to blast away even those harder bricks that would withstand a hit by your ball.

The game supports two players in a dual, split-screen format, with penalty bricks being sent to your opponent's playfield when you take out two of your own and, of course, two joysticks/joypads are supported.

You can find out more over at goo.gl/J2atUS.

DigiBooster

A new version of the Amiga's premiere music tracker has been made available for AmigaOS 4.x, AmigaOS 3.x and MorphOS both in physical CD-ROM and digital download forms. DigiBooster 3.1 allows you to create music using the traditional tracker method just as musicians did in Soundtracker, Protracker, OctaMED and other programs. As you would expect, it supports ProTracker module imports and can support normal four-track modules all the way up to 32-track multi-channel masterpieces! The application now offers an AREXX command structure as well as autosaving of your work. You can find out more at www.digibooster. de/en.

Adverts

A rather interesting resource has been made available at the Amiga Hardware Database website. It's quite amazing how a series of press adverts can be a window into the past, and the website has offered just that with a gallery of adverts from various Amiga hardware and peripheral producers from the past, including Commodore itself. With adverts from across the world, it's fun to rediscover add-ons you may have forgotten from graphic adaptors to GVP's hard disk/accelerator combo for the Amiga 500 (that boosted it in excess of A3000 performance, at that!) Check out the gallery at **goo.gl/JSTGuX**.



A1200 Acceleration

Not long after the release of the Amiga 1200, users clamoured for processor upgrades to make the most of the machine, especially as some were rather disappointed that the machine came with a 68ec020 running at 14MHz rather than the 68030 that some expected. Of course, hitting the launch price of £399.99 with an 030 was unlikely, to say the least, in 1992. Many companies produced trapdoor expansions that gave the machine a royal kick up the backside in the power department. Memory prices have, of course, tumbled since a 4MB RAM upgrade would cost you hundreds of pounds, with an 030 accelerator with that 4MB on board being £300+.

In recent years, accelerators produced in the 1990s rocketed in value, with eBay auctions ending at silly prices. Fortunately, Individual Computers has been producing A1200 accelerator boards of late, either with 64MB or 128MB of RAM installed as standard (the first 1MB of which is reserved for remapping the Kickstart ROM and speeding up related system calls). The latest of these boards includes a full 68030 processor running at 40MHz, which takes the A1200 to a power level in excess of the A4000/030 (which shipped with a 25MHz 68030. Such an upgrade is well worth popping into an A1200, but we'll go over more soon.

Check out Individual Computers at **goo.gl/6Btmv8** for more information.



Sven Harvey has been our Amiga specialist for over 14 years, drawing on his 23 years of retailing computer and video games and even longer writing about them.



lan is a professional IT analyst, a semiprofessional writer and a pretty amateur electronic musician. He likes gadgetry and loves making gadgets do things they were never designed to do

Causing A Rumbl

Tesco announces the Hudl 2, so Ian McGurren casts an eye over it

he Hudl was one of 2013's success stories not only for budget technology, but for Tesco too – something in short supply for the company at present. Instead of a cynical moneygrabbing and componentwasting exercise (cough MyTablet cough), the Hudl had the audacity to not only be a competent and well-made device, but it was also keenly priced enough – especially when using Clubcard vouchers - to warrant Joe and Josephine Public's attention. Quad-core CPU, 1GB RAM, 16GB storage and a sharp higher-than-HD screen? Suddenly all the 'Tescos Value Tablet' jibes looked quite far of the mark indeed.

Unsurprisingly, it sold like hot cakes (which could also be purchased one aisle over), and it found its way into many a Christmas stocking that year. It may not have been an iPad, but it was just as capable an introduction to the tablet world and far less hard on the wallet. In fact, you could get one for each of your 2.4 children for the price of one iPad Mini Retina.

So it didn't take a wild guess to think that Tesco may well want to repeat the success of the original Hudl. Initially, speculation was around the next Hudl actually being a phone, though Tesco soon abandoned that idea – let's face it, you'd be insane to try to compete with the Moto G, especially as you'll be locking it down to your own network and therefore reducing straight away the size of its success. Wisely, it just opted to try to do the same once again, this time with more of everything.

The headline of the Hudl 2 is its size, moving from the budget standard of 7" up to a more substantial 8.3", and boosting

'functional', especially in lower light.

The Hudl 2 is an all-round more colourful affair too, launching with a ton of different colours (well, eight) and cases that take cues from the Apple iPhone 5C 'Connect 4' style cases. The idea here is you mix and match the device colour and the case colour for a fun combination. Tesco reckons there are some 64 combinations and

It sold like hot cakes

(which could also be

purchased one aisle over)

the resolution from a respectable 1440 x 900 up to 1920 x 1080 full HD. The CPU remains quad-core but is now of the 1.83GHz Intel Atom variety, providing a nice bump in speed for the mostly vanilla Android KitKat 4.4.2 to stretch its legs. That's not to say the device isn't entirely free of Tesco-related apps, but they're easy to ignore and, for the money, you have to expect some sort of trade-off. The camera has gone from 3mp to 5mp, but don't expect a revelation in tablet imaging. There's still no flash and the images are described as

gives them appropriately upbeat names such as 'Rocket Red & White' and 'Perky Purple & Orange'. Coupled with the Hudl 2's pretty slender frame, they can certainly be eye-catching, if it's the eyes of fashion conscious kids that you want to catch.

The Hudl 2 will retail for slightly more than the Hudl 1, at £129. However, both it and its accessories can, like the Hudl 1, be bought outright by doubling up on Clubcard vouchers. So if you're one of those families that has a fair fistful of Tesco dollars, you could get one for a measly £65 worth of Clubcard vouchers. That's a bargain in anybody's book.

Tesco really needs some good news, and while the Hudl 2 won't single-handedly revive its flagging fortunes, it has every chance of replicating the success of its forbear or maybe even proving to be a bigger one. It's a good device, it offers excellent value, and it does the Hudl name no disservice at all. If you want to check one out, it's available now. I think you know where to go.



Horace To The Rescue

It's Horace, but not as we know him

chapter production for the Sinclair ZX Spectrum based on the famous Horace games by Psion Software or more precisely the North American variants of the games, which featured a leaner-looking Horace – on the packaging and promotional material at least. This playable production is called Cousin Horace.

lessandro Grussu has

released an epic multi-

The game has six chapters, including the prelude as chapter zero, which sets the scene of the European Horace visiting his American cousin (also called Horace). The two Horaces are working together to infiltrate and defeat an evil underground network known as the Guardians.

While waiting at the airport, American Horace receives a phone call from his European cousin. It seems that the rotund and boggly-eyed visitor has been kidnapped, and although American Horace suspects a trap, he decides to investigate anyway, which will unites them.

The five playable chapters to Cousin Horace start with an explorer-type platform game in which you must locate and recover a key. After this, there are maze and puzzle games, as well as a scrolling shoot-'em-up. Each chapter is stored on a tape image and must be loaded on completion of the last. But to make sure that you can't skip levels, a passcode is required for each, which is provided on finishing the last game.

Full information is available on Alessandro's website at alessandrogrussu.it/diario-2014-10-01.html. Although the site is Italian, there's nothing that a good translator couldn't handle. The download is complete with an English language version of the

instructions and backstory, and the six game chapters.

Traxtor

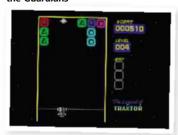
The Legend of Traxtor is a new puzzle game for the old Speccy, which has been released by **usebox.net** and is a conversion of a Nintendo Game Boy 'themed' production, which was entered into the #gbjam 3, the idea behind which is to create a piece of software within the screen limitations of the original Game Boy.

The object of Legend of Traxtor is simple, and that is to rearrange the coloured squares so you create a chain of three matching items or more of the same type. This is achieved by taking in one of the blocks and firing it back out to where it's most appropriate. However, the piece of kit at the bottom, which allows you to rearrange the blocks may only take in up to three blocks at a time. Every so often, another row will appear and this will need rearranging. Each game will end when the play area is too full to add a new row of blocks.

The title screen has some nice 'beeper' music alongside the standard game options, and like many puzzle games, the



A Help American Horace save his European cousin and to defeat the evil underground network known as the Guardians



A Rearrange the coloured blocks in this re-arrange-'em-up for the Sinclair ZX Spectrum

graphics are as good as they need to be but no better. But it's also exactly the sort of game that really appeals to me, and it's fast and very playable, so I highly recommend it, especially to puzzle game fans.

The Legend of Traxtor's author and developer, Juan J Martínez, is a Twitter user and may be tweeted and retweeted at @ reidrac. This game is available to download from usebox.net/jjm/traxtor-zx.

Shaun has a passionate interest in 8-bit computing and gaming and has been finding novel ways to use retro technology since 1994



Games in C

The YouTube user known as Online Professor has released three games for the Commodore 64 written in the language C and using the CC65 cross compiler.

These three productions are quite simplistic in look and feel but are nonetheless playable and show some of what is possible with CC65, with it providing the convenience of a high-level language and much of the speed of a machine code as well as making your code more portable from one platform to another, as the compiler supports over a dozen 6502-based 8 bit machines.

To find out more about Online Professor's work, see his YouTube channel at **tinyurl.com/Online-Professor-C64**, and more information about CC65 is available at **cc65.github.io/cc65**. Happy programming.



Specialists

Ryan Lambie has loved videogames since he first stared up in awe at a *Galaxian* arcade cabinet in his local chip shop. 28 years on, Ryan writes about gaming for Micro Mart. He's still addicted to chips and still useless at *Galaxian*

Gulling

Crowd Burst? High-profile games such as Elite: Dangerous and Star Citizen have made Kickstarter a major part of the industry landscape, but pledges are projected to halve in 2014

This week, Ryan checks out the current state of gaming on Kickstarter, and takes a look at the sinister FPS, F.E.A.R Online...

Plug & Play

Launched in 2009, the crowdfunding website Kickstarter has changed the video gaming landscape to an extent that few could have predicted. The website has, of course, helped get all kinds of ventures off the ground, from new village bus stops to peripherals and art installations, but of the 10 most funded projects across its five-year history, no fewer than four of them were videogame related.

The Ouya console and Keiji Inafune's *Mighty No. 9* – a game that serves as a spiritual successor to his own *Mega Man* series – are but two of them. Then, just outside the top 10, there's *Oculus Rift*, the virtual reality headset which is widely tipped to be on the cusp of changing the face of gaming altogether, or the space trading games *Star Citizen* and *Elite: Dangerous*.

There are signs, however, that things are changing for Kickstarter, at least in the gaming sphere. According to data compiled by the consultancy company ICO Partners, the amount of cash pledged in videogame-related projects is expected to halve this year, with pledges for 2014 projected to amount to \$27,023,480 compared to 2013's \$57,934,417. It follows that the

number of successfully funded projects has also declined, with 446 successful campaigns in 2014 falling to a projected 350 this year – a drop of around 20%.

So how do we account for this decline? ICO has a few theories, the first being that last year's Kickstarter peak was spearheaded by a number of big-name projects fronted by some of the industry's most famous names. David Braben provided the trustworthy face for the Elite reboot mentioned earlier - arguably one of the most esteemed and fondly remembered game of its type from the 80s golden era. Then there was Inafune with his hugely successful Mighty No. 9 campaign, and Ultima legend Richard Garriott with his highly successful Shroud Of The Avatar project.

2013 was the gaming equivalent of (say) Madonna, George Michael and Midge Ure all taking to the platform with music projects in the same year – and 2014 hasn't been quite so full of star names. Then there's competition from Steam's Early Access, which allows developers to accept a continuous stream of funding rather than focussing on what can be raised in 30 days.

Couple all this with the occasional controversy of a game not being delivered on time (or worse, abruptly cancelled), and you have a complex yet logical explanation for the dip. However, while the initial burst of enthusiasm for crowdfunding appears to have passed, it still remains a viable and lively means of getting games made outside the mainstream.

Ocarina Of Time Goes 2D

The Ocarina Of Time is still regarded as the finest entry in the Legend Of Zelda series so far by many of its fans. It's a sign of the esteem in which it's held that a group of dedicated gamers have clubbed together to create a 2D version that turns Link's 3D debut on the N64 look uncannily like the classic A Link To The Past on the Super Nintendo. As you can see from the trailer (youtu.be/F54t8K0af0o), there's been an incredible amount of work put into its design and execution – according to the game's website, it's been programmed entirely from scratch.

You can find out more from the work-in-progress *Ocarina Of Time 2D* at **oot-2d.com**.









A Survival horror shooter F.E.A.R Online goes free to play. Up to four players can battle through its spooky (not to mention gory) campaign mode

Online

For a game that saw players march around with a gun in their hands, 2006's F.E.A.R.: First Encounter Assault Recondid an exceptionally good job of frightening the life out of just about everyone, with its first-person shooter mechanics expertly fused with survival horror atmospherics. Subsequent games didn't quite scale the same heights, but the F.E.A.R. name still lingers on like a terrifying ghoul.

After two years in development, the free-to-play F.E.A.R. Online should be available to download from Steam by the time you read

this. With up to four players able to soldier through the story mode, the game offers the same mix of shadowy corridors and nightmarish creatures to shoot. The Soul King mode from *F.E.A.R. 3* also makes an appearance, which sees players taking possession of enemies and collecting the spirits of slaughtered rivals. The package is rounded off with a standard multiplayer deathmatch mode and a game type which simply arms players with knives.

From what we've seen so far (namely, its latest gameplay footage: **youtu.be/ vXtcl8ZXHss**), F.E.A.R. Online doesn't exactly look like a cutting edge shooter, but then we wouldn't expect a free-to-play game to look guite as polished as the latest multi-million dollar opus from Activision. It does, however, look like a lot of gory fun, with messy gun battles punctuated by decidedly creepy moments of solitude - check out the brief yet spine-tingling moment where you're alone, in a morgue, and all the corpse drawers start opening and closing. And then you're back in the midst of another fire fight again, shooting ghostly soldiers directly between the eyes.

For those with fond memories of the earlier games in the series – particularly the original – F.E.A.R. Online could be well worth a try, and should be available to download from the 17th October.

Incoming

If you're looking for a shooter experience even more retro than F.E.A.R., check out Wrack. Influenced by such classics as Quake and Unreal Tournament, it's described as a first-person arcade shooter by its developers, Final Boss Entertainment. There

are no regenerating health bars, no cover system to speak of, and no convoluted plots about terrorists. Instead, *Wrack* is all about combos and kill chains, a screen constantly peppered with body parts, gore and excitable words of encouragement.

Its cel-shaded graphics give it the look of a Saturday morning cartoon, while its action is pure 90s Id Software. Wrack has already garnered praise from such industry luminaries as John Romero (the father of the firstperson shooter) who reckons it's great, and Keiji Inafune, who describes the game as a "firstperson Mega Man."

We don't see the Mega Man connection (there wasn't this much blood in the platform adventures we battled through), but it does boast a turn of speed straight out of a Japanese console game. It might have guns in it, but Wrack's simplicity is the antithesis of most modern shooters – and let's face it, that's not a bad thing at all. There's even the option to design and share your own maps and mods. A cult shooter in the making?





↑ The spirit of early first-person shooters like Quake and Doom is captured in the turbo-charged, arcade-style Wrack, available on Steam now

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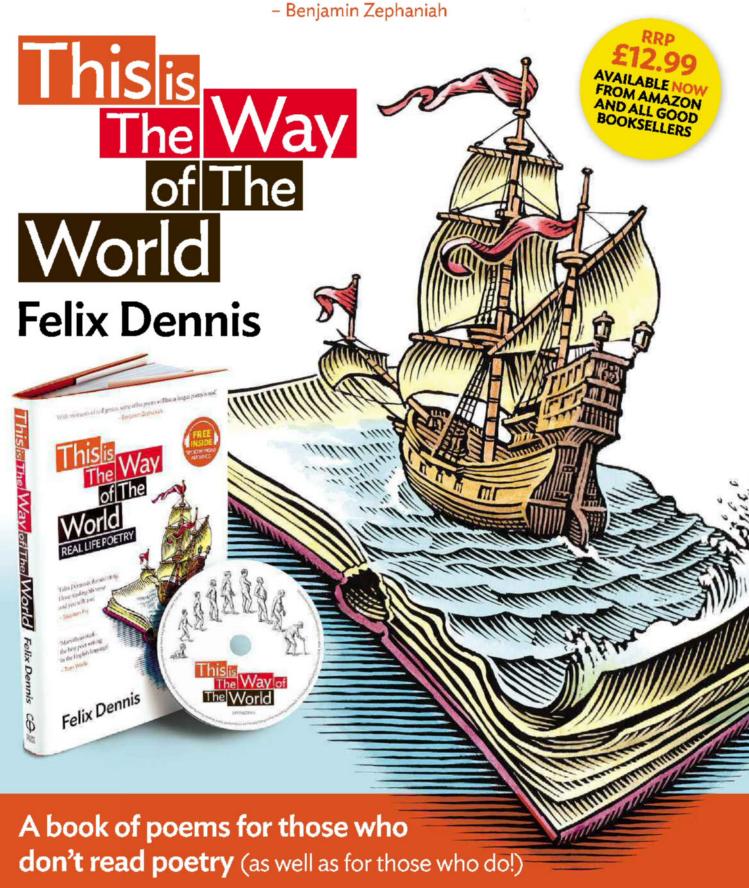


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Lian Li PC-X2000 Computer Case. Supports mATX, ATX, eATX; hot swap SATA drives, six 3.5" & two 2.5"

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Please try to keep your queries brief and limit them to just one question per letter, simply so we can squeeze in as many as we can each week. Please include relevant technical information too.



Home(un)group

I hope that you can help me with a Windows 7 problem. I have three laptops – A, B and C – all running Windows 7 Home Premium and connected to the same wireless network. I have set up a homegroup on laptop A, and then set up laptop B and laptop C. I have shared the files on each laptop and also made sure all the laptops are on the network.

Laptops B and C can connect to laptop A but not to each other. Laptop A cannot connect to either B or C.

My understanding is that all members of a homegroup should be able to connect with each other.

I have run the homegroup troubleshooter and each time, on each laptop, I see a message that says the homegroup needs to be reconfigured and then fixed, but it isn't!

What am I missing?

Frank

Computers that are part of a homegroup should, indeed, be able to see each other on the network, so it would appear that your setup has got a few problems that need addressing. When you first create a homegroup, you'll choose what you wish to share with other machines, and then, when setting up additional systems, you specify the same for each of those. The whole process is easy enough, and instructions are provided as you set up your group. I'm assuming that you've followed these instructions and have done this, and ensured that laptop B and C are on the same homegroup as A. You should have also made sure that the homegroup password is the same on each laptop.

This being the case, we should look at possible problems with the hardware and Windows. There are a few known problems with homegroups, especially on wi-fi connections, that can cause a loss of functionality, and the first step you should take

would be to run Microsoft's Fix it tool for accessing homegroups. This can be found at **tinyurl.com/bvg2mhe**. This is an automated fix that will hopefully help with your troubles. This should be run on each laptop that's having problems.

Homegroup setups are only applicable to home network types, so be sure that your network setting on each laptop is set to home and not work. You should also ensure that you have network discovery enabled, as this is the setting that allows a machine to find other PCs on a network. To check this, go to Start and enter Control Panel. Go into your network settings and then into the Network and Sharing Center so you can change advanced sharing settings. Expand the network profile using the expand arrow and make sure network discovery is turned on. Do this for each laptop.

If you still have problem, and have made sure the homegroup setting are correct, then another place to look would be with your router, as this can also be a cause of homegroup-related faults.

You didn't specify in your mail what type of connection you're using, wired or wireless. If it's the latter, and as you're using laptops, I'm fairly confident this is the case, then you should check your router for an option called Wireless Isolation or WLAN Partition. Depending on your router, this name may vary. If enabled, this prevents wireless devices from finding each other on your network, so disable this if you find it.

Finally, it's a good idea to check for any router firmware upgrades, as older versions of firmware can be a problem. Either check this via your router's control panel or browse the manufacturer website for any relevant upgrades and apply them. Once this is done, check your homegroup again and see if things are working.

➤ Windows' homegroup will only work under home network types





Unlink

I bought a two new computers a week ago, which I had set up for me by the guy in the store. Everything is okay mostly, save for one problem, and that's the hotmail/outlook. com account (Windows 8). This was set up by the computer guy, which I guess was a genuine attempt to set everything up for me to offer a good service. The problem with this is that he set up an account for me on both computers, and as both accounts were the same, it would seem as though the systems are now linked in some way, sharing email and other things.

I've tried to find some way of removing the account from one of the machines, but so far have not been able to locate anything. I'm stuck with two synchronised machines, which isn't good as one of them isn't actually for me. Can you help?

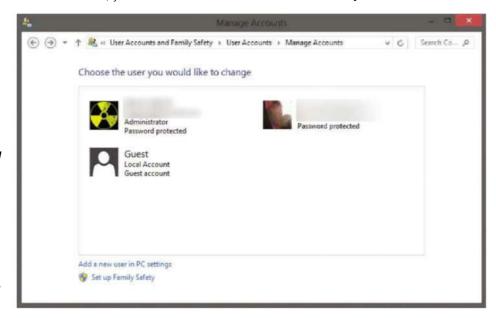
Ed

You can remove Microsoft accounts from a machine, but it's not as straightforward if there's only one account or one administrator, as there needs to be one of these on the PC, so there's no easy option to remove it. This leaves us with a couple of options, one of which is a format, but this is a little bit overkill here, so I wouldn't recommend it.

Instead, you could simply create a new administrator account, and then remove the account with the Microsoft address attached to it while logged on as that. You can create new accounts via Control Panel, and once you've done this, go to 'Control Panel > User Accounts and Family Safety > User Accounts > Manage Accounts' while logged on to the new admin user, and then select and remove the other account. Once this is done, you'll be fine.

Of course, once you've created a new admin account, there's no real need to remove the other account, because you won't be using it. That said, you did mention that one of the systems isn't yours, and in this case, deleting the account would be a good idea in this instance.

∀ A PC needs an administrator account, and you can't remove the only one



Eight To SSD

My PC currently has a normal hard disk drive with Windows 8, which was pre-installed on the system at the time. I've now got a SDD drive, which I want to use as the operating system drive instead, and I plan to use the old hard disk as a storage drive.

As I didn't get an actual Windows install disc with the system, I'm not sure what to do next. I need to be able to transfer Windows 8's installation to the new SSD, but I just can't see how to do this. Can you help?

Jess

The first problem you're probably going to have here is that the old hard disk is likely larger than the new SSD, so your first step is to back up all of your data to another location, such as an external drive, disc or even a cloud storage service. Once this is done, one of the easiest methods to transferring Windows from your old HDD to the new SSD is to clone it.

Some SSD units come with transfer tools, so check this first, as this will likely be easier for you. If you don't have this option, download Todo Backup Free (**www.todo-backup.com**). This is a free cloning and migration tool that can copy your Windows installation from one drive to another, even when the new volume is smaller than the old one.

Once the program has finished, all you then need to do is copy your data to the older, larger HDD, and you're all set.

▼ Todo Backup Free is a useful tool for transferring a Windows installation to a new and/or smaller volume, such as an SSD





Meet Jason
D'Allison, a veteran
of Micro Mart's panel
of experts. He's here
to help with any
technical questions,
including anything
to do with tablets or
smartphones, as well
as PCs

Send your questions to: Jason D'Allison Micro Mart Dennis Publishing 30 Cleveland Street London W1T 4JD

Contact Jason by email at: jason@micromart.co.uk

While we try to cover as many questions as we can, we regret that Jason cannot answer your questions personally, but he'll cover as many as he possibly can each week. Please ask one question per letter and remember to include the full specification of your computer, including its operating system.

Jason

Do You Copy?

I'd like your advice on backing up. What's the best and most reliable method? I've tried the built-in Windows Backup, which is wonderful until you actually need the files you've backed up! I've also tried EaseUS Todo Backup (bit.do/57yM), which backed up great but wouldn't let me install the backed-up files on a new drive.

Under Windows XP, I kept backups of my files by copying and pasting them to a USB-connected drive. Helpfully, any files already copied were identified and I was asked if I wanted to replace them. I usually opted not to, and my new files would be integrated with the old. I'm now running Windows 7, and this seems to treat copy and paste differently. I've actually ended up with backups containing just empty folders!

Nigel, Sky

Your tribulations serve to highlight why many of us simply don't bother with backups (at least until we lose a boatload of important data and then become zealots!). In short, it can be a tremendous amount of hassle. There are usually far more interesting things that take

precedence. Like trying to spot all the innuendos in The Great British Bake Off.

I'm not entirely sure why you're experiencing difficulty with Windows 7's copy mechanism (which is also largely the same in Vista and Windows 8.x). It's streets ahead of Windows XP's. If you're copying (or moving) a file to a folder that already has a file with the same name, you're given the option of overwriting the existing file, copying the new file over but with an auto-modified name (leaving the existing file in place), or abandoning the process. It works pretty well, especially as you can tick a box to ensure that future conflicts in the same copy process are handled the same way without intervention.

I don't want to sound patronising, Nige, but are you sure you've been clicking the correct option? Please see the screenshot I've printed, showing the various options in action.

Regarding specific backup software, I've never got on with the built-in Windows Backup. Some people swear by it, but there are much better tools out there. EaseUS Todo Backup is one such tool, so I'm surprised to hear it's giving you grief. Are we talking about whole-drive

backups here, though? Clones? I believe the Free edition will only restore such backups to a drive the same size as the original. To restore to bigger or smaller drives, you'd need the \$39 (£25) Workstation edition. If it's individual files we're talking about, the Free edition has no real limitations.

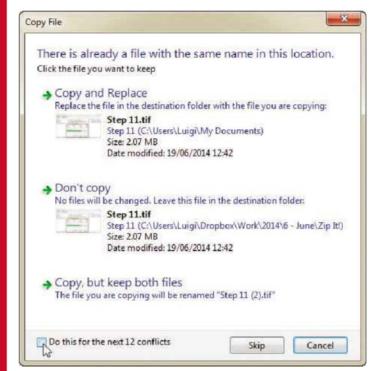
Have you considered backing up to the cloud, Nige? I've been doing that for years, and I'm unlikely to revert to more traditional methods. It's just so easy. Basically, you designate a folder on your PC as your 'store' (you can create subfolders within that, of course). Any file put in there is automatically backed up on the cloud service's servers (you get two copies – the local one and the cloud one).

Both Google Drive (bit.do/ \$7\$T) and Microsoft OneDrive (bit.do/\$7\$t) come with 15GB for free. If you need more, the monthly fees for 100GB are \$1.99 (£1.24) with Google or £1.99 with Microsoft. Seriously good value. Dropbox is another popular option (bit.do/\$7\$ta), but the free storage there amounts to only 2GB, and the smallest paidfor storage is 1TB, though it's a steal at £7.99 per month.

None of these are true backup solutions, however. They're syncing services. For instance, any file deleted from your store will automatically be wiped from the cloud server, so if you delete something in error – worse, if someone nicks your PC and wipes the store – you're shafted.

True backup services do exist, of course. With these, files are typically only deleted if you log into the service online and manually mark stuff off. Merely deleting files from your PC won't delete them from the backup. A few well-known services are Carbonite (bit.do/S7wF), CrashPlan (bit.do/S7wV). Prices tend to start at around £50 per year.

≺ Windows' copy-and-paste mechanism has improved significantly since the days of Windows XP





The Heat Is On

I own a Dell Inspiron 15R laptop (model N5010) that seems to be overheating. This started over the summer, but it's not stopped now that the days are colder. It shuts down at random. This doesn't happen every day, and sometimes not for hours after boot-up, but it's become fairly regular. The side of the machine does get quite hot – not far off too hot to hold your hand there comfortably. Is there anything I can do, or has the machine had it?

Mateusz, Gmail

This isn't the first time we've heard in these pages about thermal issues on the N5010. Loads of CPU and GPU combinations were shipped, but the bottom line was always a Core i3 or i5 and a midrange Radeon HD 5xxx. The machines were potent, and many had a price tag of under £400. Stonking value, and they sold in large numbers. I bought one for my lad in 2011 and it's still chugging away, but that too overheats. Is it a symptom of the price? Maybe, but it's not an uncommon problem on laptops with gaming chops, even models costing twice or thrice the money.

Anyway, Mateusz, there's good news: the overheating can usually be thwarted. Your N5010's fan is doubtless choked with dust, and just cleaning it may be enough. Of course, it may have failed completely, but even if it hasn't, I still recommend fitting a replacement. I also recommend removing the heatsink block and laying down a fresh application of thermal paste (the current stuff is probably baked solid). A new N5010 fan shouldn't cost more than a tenner, and a tube of Arctic Silver 5 can be had for around half that. As ever for such items, eBay is the place.

Some laptops give easy access to the fan and heatsink arrangement, but sadly the N5010 isn't one of them. The only removable panel is for the RAM slots. The keyboard, keyboard surround, upper chassis, hard drive, optical drive, nearly all the screws, even the screen – you'll have to remove the lot. Lastly, you'll need to unscrew the motherboard, allowing you to flip it over.

It's not a hard job, but it requires oodles of patience and a few spare hours. Losing a screw or two in the joins of your laminate flooring is almost a certainty, so get yourself organised. If necessary, take photos to show where everything goes. For an overview of the whole process, hop onto YouTube and search for something like 'N5010 teardown' or 'N5010 cooler replace'. You'll find a metric ton of step-by-step tutorials.

Thankfully, the N5010 appears to be pretty robust. Overheating doesn't seem to have any lasting effect. There are few reports of GPU damage, for instance. Don't leave the problem any longer, though, Mateusz – step lively! If nothing else, the hard drive will be getting frazzled, and a hot hard drive always ends up with lost data. On my lad's N5010, the repair job outlined above did the trick – but only for about twelve months. The heat is on again, so I expect I'll soon be writing off half a weekend to go through the whole rigmarole again...



Taking Note

It's time to upgrade my phone (a Galaxy S4), and I'm very interested in the Note 4 (or the Note Edge, a Note 4 with a wrap-around screen). I want the eight-core model, but all the sites and shops taking pre-orders only have the quad-core model. Is the eight-core model actually going to be released in the UK?

M. Peel, Cumbria

As with most of Samsung's flagship phones, the Note 4 comes in several versions, each aimed at a specific market. As you say, there are two main flavours: one with a Qualcomm Snapdragon 805 SoC, providing a 2.7GHz quad-core Krait 450 CPU and an Adreno 420 GPU; and one with a Samsung Exynos 5 Octa 5433 SoC, providing an eight-core CPU (a 1.9GHz quad-core Cortex-A57 plus a 1.3GHz quad-core Cortex-A53) and an eight-core Mali T760 GPU.

Without doubt, the latter SoC is the best (it's also 64-bit). But as you've surmised, my friend, the Note 4 hitting the UK is the Qualcomm job. And it looks like the Note Edge – also available with both SoCs – isn't hitting the UK at all. Bad luck. If you want this or the Exynos version of the Note 4, it's the same story as it was with the more powerful variants of the Note 3 and Galaxy S4 and S5: you'll have to buy a model imported from the likes of South Korea. I expect some sellers on eBay in the UK will have them.

▼ Look up 'desirable' in a dictionary and you'll find a picture of Samsung's Note Edge



Crowdfunding Corner

Phone and tablet accessories are the bread and butter of many a crowdfunding site. This week, we've got a pair of docks for your smart-device, whatever size it is!

Foaster. A Toaster For Your Phones (And Tablets!)

Most docks on Kickstarter tend to be minimalist, materialsled projects, so it's interesting to see one that's taking a more sentimental approach. The Foaster is shaped like a retro toaster and can charge up to four devices at once, supporting a huge range of Android and iOS devices, including the iPhone 6!

Each of the Foaster's slots charge one phone each, and if you press the lever down, it exposes an additional two slots, which can be used to charge larger devices, like tablets or oversized phones. Although it looks quirky, it's high quality and smartly designed, taking up only one power socket and using internal micro-suction materials so that the hardware remains stable but can still be removed with one hand.

Unlike some other projects, this doesn't come in iOS or Android flavours – adaptors allow any single unit to charge a combination of both iOS and Android devices. The production chain has also been very well established, so they're confident of delivering the Foaster to backers just six months after the project is complete.

Unfortunately, the popularity of the idea means that the early bird tiers have already sold out, but for \$79 you can get the Foaster dock. Shipping outside the US is \$22, and you can pay \$8 for Android attachments or \$5 for Apple 32-pin attachments if you so desire. A final \$10 ensures a UK plug (although you could use your own US-to-UK adaptor!). It's not cheap, but it's much more fun and better-looking than almost any other dock we've seen.

URL: kck.st/1u4XrMR

Funding Ends: Sunday, November 9th 2014

Padestal - Ultimate Tablet Stand

Another format-agnostic dock, the Padestal is more like the sort of thing we'd expect to see on Kickstarter: minimalist, modern and (it should be noted) considerably cheaper than the Foaster.

The Padestal is uniquely designed so that its single-body piece can be used to prop your hardware in a variety of different positions, angles and orientations. No moving parts means it's easy to set up and position, and each position leaves you enough space to charge your tablet while it's in the holder.

Unusually, this Kickstarter isn't for the manufacture of the product but to grow the business around it. As a result, the hardware is already available, and that means you can get your hands on one much quicker than you can get them on the Foaster: the hardware is due to ship in November this year.

Back it early enough and you can get one in your choice of several colours for \$17, which is up to a \$7 saving off the projected retail price. Backing more gives you the chance for additional options like more units or even a custom colour, if you spend enough! At time of writing they're almost halfway to the goal, so there's a good chance it'll get made. Back now if you want to see it!

URL: kck.st/1vwgJce

Funding Ends: Friday, October 24th 2014





Disclaimer: Images shown may be prototypes and Micro Mart does not formally endorse or guarantee any of the projects listed. Back them at your own risk!

App Of The Week

Offtime - Life Unplugged

We take a moment out this week to disconnect

t's a funny thing this modern, always connected lifestyle. In the past you never saw queues of people standing outside phoneboxes or rushing to get to the nearest computer in order to dial up an ISP to see what someone they barely know is currently up to, if such a things existed back then. Why, then, should we do it now?

It's probably because we can. We can check the status of someone in another country to see what they had for breakfast. We can send a message to someone to let them know we'll be home in three minutes. We can call someone up and discuss the same thing that was discussed not ten minutes earlier. It all seems a little bizarre at times.

Time For Offtime

A new app from Berlin-based Offtime studios, a young post-tech start-up, has a solution for all you constantly connected types out there that can help you take a step back and unhook for a while.

Offtime – Life Unplugged is all about taking a moment in your life to simply disconnect, but only slightly, from the ever mobile world around us. To create, as it puts it, "bespoke bubbles of time and space", where you are at ease and in control of the information and communications that are flowing to you.

It's actually not a bad concept. By using the app you get to create different profiles that can effectively block texts, calls and notifications from distracting you. Likewise you're able to restrict certain other apps from communicating with you or alerting you if something has happened.

Moreover, you can do all of this but allow only specific people who are important to you to communicate with you. So while the ever needy co-worker is blocked, your children or spouse can get through.

Being blocked isn't quite as bad as it sounds either. When you block a contact, the app will reply with a friendly message informing the caller that you're off the grid and, what's more, when you're back, an

Features At A Glance

- Block calls, texts and notifications.
- Calls and texts from VIP contacts remain unblocked.
- Send out custom auto-replies.
- Comprehensive list of missed phone activity.
- Restrict your access to apps and the internet.
- Use profiles, schedule and autostart with your calendar and use widgets for fast access.
- Get phone and app usage analytics.

equally friendly message will inform those people that you are now available. There's even an activity log for you to browse through to see what you've missed while you had the Do Not Disturb sign up on your device.

Added to the above is the ability to set Offtime to a schedule, to keep to a 'me-time' calendar. And the analytics tool included will give you insights into your phone and app usage, to help you better identify your communication habits.

All in all, Offtime is designed to help you customise your connectivity and to help you find a balance between communication and private time.

Conclusion

As good as all this sounds, you could just do what we do and switch the thing off. However, that would mean not having access to social media or some other communication with the outside world.

Amazing as it sounds, there are many people who need an app such as this to help them find the right level of communication and non-communication, to allow them to unplug and disconnected from the digital world for even a brief moment in the day. For them, Offtime is the app to get. mm



▲ Take time out and become disconnected for a change



A You can set the times you want to be connected and the times for a bit of peace



▲ Find out which apps take up your valuable time

Logging Office Country of the Countr

his past week I had one of those offerings brought to my door that I really don't care for. I've seen plenty of dead and dying PCs in my time, but this one was truly pitiful on a number of levels. Built around the Foxconn N15235 mainboard, it employed the entirely gutless Pentium E-Series 1.4GHz CPU, 1GB of DDR3 RAM and a 240GB hard drive. It was very heavily contaminated with dust (like always), and it had Windows 7 Enterprise edition installed. Of all the issues it had, though, that last one was a real pain. Because, for whatever reason

(and I'm the last to judge) this install transpired to not be a valid version of Windows.

If Microsoft would like to make a REAL difference to how I feel about Windows, how about as system where they segment the apps and the data from the OS. So you can back up an installation and then put a new version of Windows on it and then bring back the user account and the apps? The alternative (or doing a partial securing of a system), that then demands you spend hours putting back all the pieces of the install is extremely tedious and never 100% successful.

Before I got to that mess, though, I revamped the working part of the PC so it didn't die on me in midreconfiguration. In my parts bin I found a Pentium 3.2GHz LGA 775 that fitted, 4GB of fast DDR2 memory, a Be Silent 350W PSU and some fans that actually rotated. Once these were in place and the rest vacuumed, the system worked nicely.

In the end, sorting out the Windows install was actually rather easy, amazingly. I found a utility that allows you to install Windows 7 (Pro in this case) as an 'upgrade' on any version of Windows 7 or 8. Using this I swapped out the OS without needing to reconstruct the whole system, or reinstall the apps, or the data. Hooray! It did this using an OEM license of Windows 7 that I bought online, so the system is now 'legal' and able to get updates, appropriately.

The only bad part of this was that many of these OEM licenses require telephone activation, a process that some sadist at Microsoft devised. You're asked to enter no less than six numbers nine times into the phone, and then you're given the same number of digits (54) to put back into the system. Should you manage to get 108 numbers right, then you'll get dubious honour of being activated. Only once that was done, could I get on with the 157 updates that have occurred since Windows 7 Pro SP1 was released, because Microsoft just can't be bothered to bundle them into a SP2 release.

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In the end I felt I'd got off rather lightly, given the utter drudgery that I've experienced on previous occasions, and the owner of the PC was suitably pleased. What I didn't reveal was that I'd done most of the hardware upgrades as a tactical plan not to see this machine again soon.

Rather than basking in my temporary success, I would also be better served by turning these jobs away. Because the time, effort and recompense involved don't ever balance even if I'm helping those who can't resolve their own issues.

Mark Pickavance

LAST WEEK'S CROSSWORD

Across: 7 Office Hours, 8 Entity, 9 Malign, 10 Kremlin, 12 Idiom, 14 Agist, 16 Appease, 19 Escudo, 20 Notice, 22 Enrico Fermi.

Down: 1 Moon, **2** Affirm, **3** Acrylic, **4** Rhumb, **5** Euclid, **6** Isogloss, **11** Register, **13** Spin-Off, **15** Square, **17** Extort, **18** Botch, **21** Clip.

DISCLAIMER

The views expressed by contributors are not necessarily those of the publishers. Every care is taken to ensure that the contents of the magazine are accurate but the publishers cannot accept responsibility for errors. While reasonable care is taken when accepting advertisements, the publishers cannot accept any responsibility for any resulting unsatisfactory transactions. In a move that is very unlike us, we ended up at a very civilised concert at the Barbican Centre in that there London this week. Contrary to what we feared, the staff actually let us in and even smiled as we handed them the ticket. What was really strange, apart from everyone sitting down and being quiet during

the show, was that the whole thing was over by 9.30pm. Even after enjoying a post-concert lemonade at the bar and being about the last people in the venue, we were still out on the streets of central London by 10pm and at a bit of a loss as to what to do – so we went home and played Destiny for a while. We think next time we decide to venture out and get a bit of culture, we'll make a proper night of it and get a rock gig in afterwards too. Interestingly, the show in question was performed by Clint Mansell, a man who, the last time we saw him on stage. was the dreadlocked leader of Pop Will Eat Itself but is now a respected composer of film scores. Everyone grows up but us, apparently.

THIS WEEK'S CROSSWORD

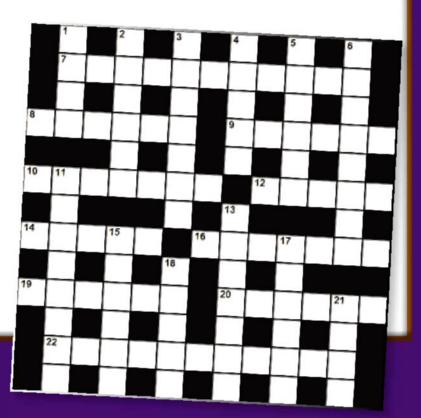
Across

- **7** Used by auditors to identify fictitious populations of numbers; applies to any population of numbers derived from other numbers. (8,3)
- **8** Apple's Web browser built derived from the open source WebKit project. (6)
- **9** A static blogging system used by GitHub. (6)
- **10** Produced by aphesis. (the gradual loss of an unstressed vowel at the beginning of a word) (7)
- 12 Until 2012 this now defunct free online MP3 search engine and download service was said to be largest directly linked MP3 database in the world. (5)
- **14** A bet where the odds of winning are 50/50. (5)
- **16** A device or system for finding something or fixing a position , typically by means of radio signals. (7)
- 19 A conference or short course on
- a particular subject:. (6)
- **20** Little or no chance of a successful outcome. (2,4)
- **22** A building designed and equipped to observe astronomical phenomena. (11)

Down

1 The UK travel trade association for tour operators and travel agents. (Acronym) (4)

- **2** Being talented through inherited qualities. (6)
- **3** This country can proudly boast the smelliest TLD. (7)
- 4 A Japanese professional wrestling promotion and training facility owned and promoted by Taka Michinoku. (1-4)
- **5** An abstract strategy board game for two to four players, invented by Bernard Tavitian and first released in 2000. (6)
- **6** A book consisting of sheets each of which is folded into twelve leaves; hence, indicating, more or less definitely, a size of a book. (8)
- **11** A line of personal computers produced by Hewlett-Packard and introduced in 1995. (8)
- **13** Steve the American computer engineer and co-founder of Apple Computer. (7)
- **15** Abstention from activities and substances regarded as damaging to one's health or well-being. (3-3)
- 17 The brand name applied to a series of x86-compatible microprocessors designed and manufactured by AMD. (6)
- **18** A moderate yellow-orange to orange colour (#CC7722). (5)
- **21** A system by which an employer deducts income tax from an employee's wages and sends the deduction to the government. (Abbr) (4)



In Next Week's Micro Mart*

Laptop special!

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Laptop accessories and batteries

Should you buy a tablet/laptop hybrid?

Plus the usual mix of news, reviews and advice

^{*} May be subject to change

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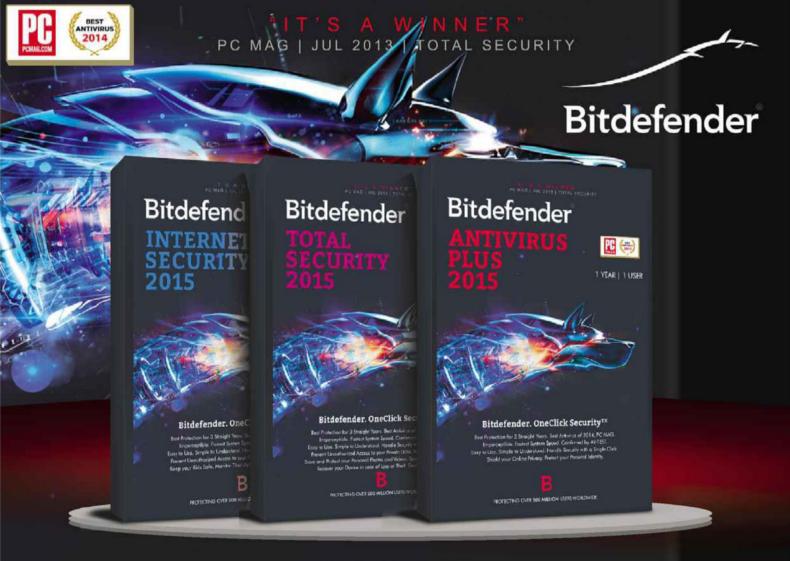
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on a scale of 0 to 6 and 6 www.av-test.org	being the highest prote	
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on a scale of 0 to 6 and 6 www.av-test.org Oversill Score, January 2	being the highest prote	
on a scale of 0 to 6 and 6 www.av-test.org	5 being the highest prote	

Lowest Impact on Performance (on a scale of 0 to 6 and 6 being the lowest impact)

Overall Score, January 2013 - January 2014, AV-TEST

Even the best security is worthless, if it's hard to use. Bitdefender 2015 engages security with a single click.

Install and Forget. Bitdefender's OneClick Autopilot automatically makes the best security decisions for you.

Smart Profiles. Bitdefender automatically detects when you Work, Play or Watch movies, and prevents other apps from slowing you down.

One-Step Online Payments. Wallet simplifies purchases by securely autofilling your credit card details.

Single-Click Tune-Up & Clean-Up. OneClick Optimizer speeds up your system and frees up disk space.



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