



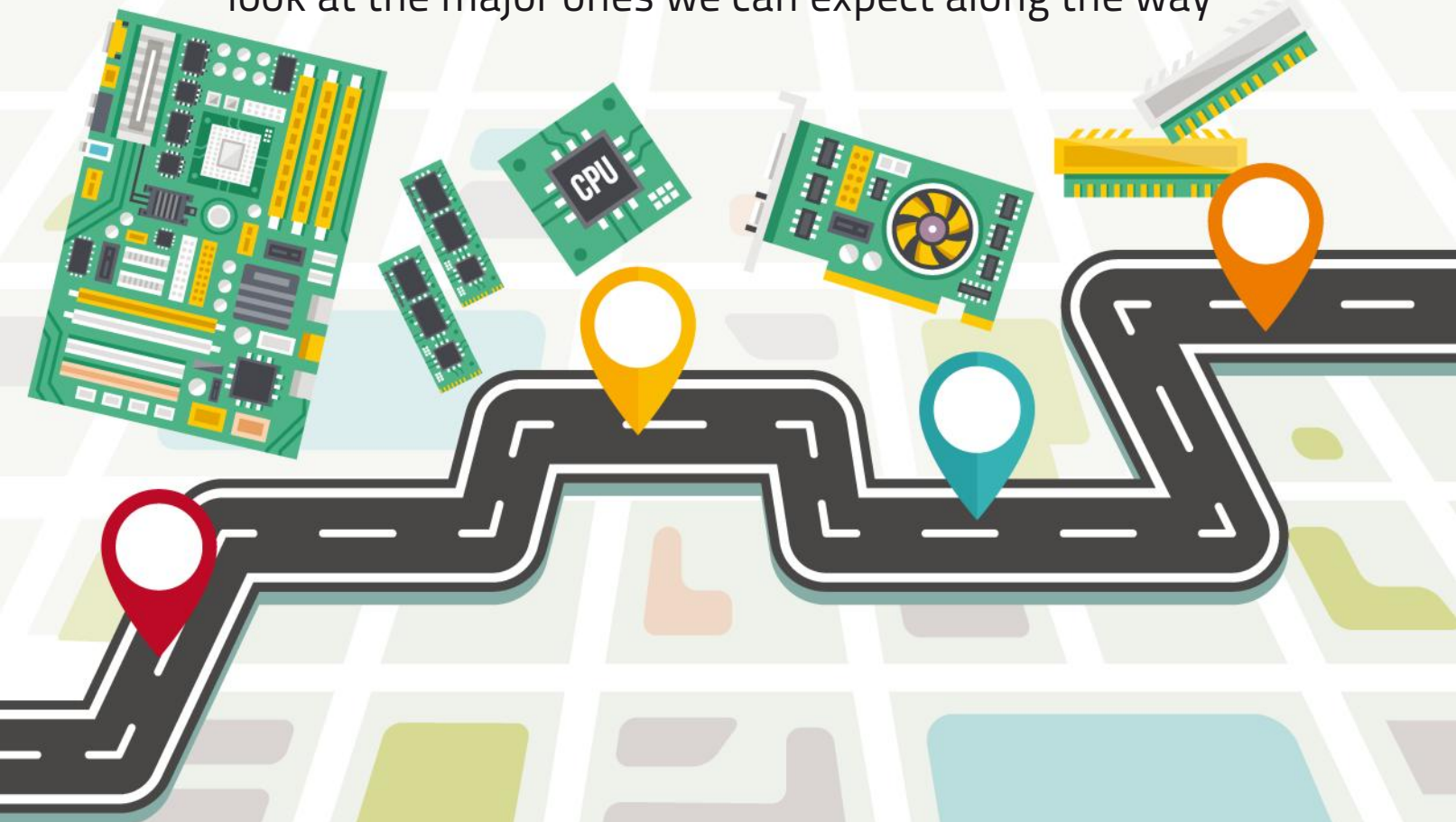
www.chip.com.my

internationally trusted technology magazine

Encrypt Your
Data
Self-Driven Cars
Of The Future
How To Optimise
Your SSD

PC ROADMAP FOR 2017

The PC market is getting a big shake up this year, with new components set to debut in the coming months. We take a look at the major ones we can expect along the way

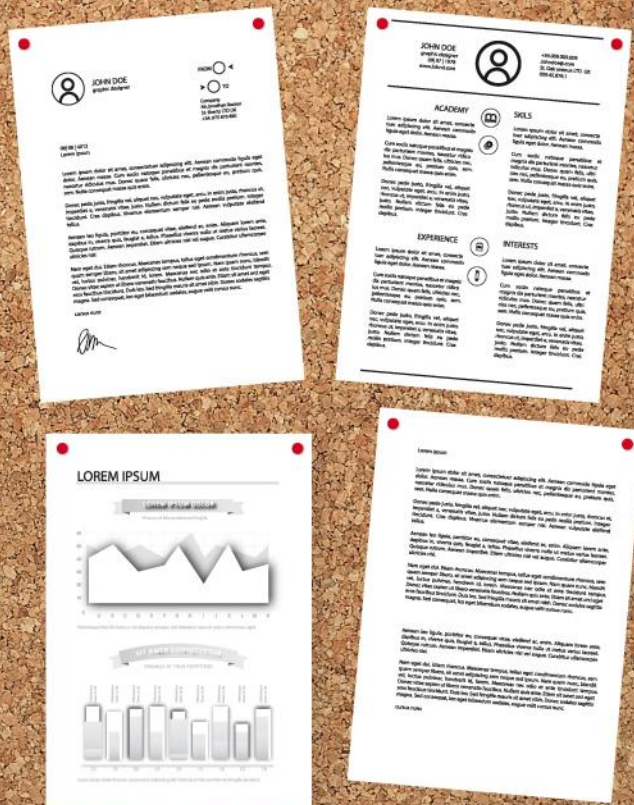


Reviews: ASUS ROG GR8 II, Moto Z, MSI Z270 Gaming Pro Carbon, D-Link DCS-5030L, BenQ ZOWIE XL2540, Sony SRS-XB3, iKBC F87, MSI Prestige PE60



OKI

JAPAN • 1881



MFP

**MB472dnw / MB492dn
ES5162**



Printer

**B412dn / B432dn / B512dn
ES4132dn**

- Fast print speed up to 45ppm
- Duplex and network ready, optional Wireless
- Apple AirPrint and Google Cloud Print ready
- Banner printing up to 1.3m long
- Secure printing to protect confidential documents



High performance A4 mono printer & A4 mono multifunction printer for more demanding user



TOLL FREE NO.:
(9am-6pm, Mon-Fri)

1-800-88-1177

www.oki.com.my

Marching into Q2

Chinese New Year bled into February and proved to be a little disruptive to productivity at CHIP, but we marched on in anticipation for the exciting stuff to come. We're in between major tradeshow at the moment, with Mobile World Congress just around the corner at the time of writing. Of course, we have other content to keep your interest while we prep the follow up news for MWC and the Games Developer Conference.

Things picked up locally with CNY out of the way, but most were minor happenings so far. No doubt, the many brands in Malaysia are gearing up for MWC and the months to come, so look forward to that. Of the bunch, BenQ stood out for us with its launch of a new 240Hz monitor, which we've managed to review this month.

Our cover story this month talks about the PC roadmap for this year, specifically the components that form the heart of our computers. Interestingly enough, AMD has officially released information on its Ryzen chips' specifications and pricing. We're really happy that the prices are as disruptive to the market as they are, because we can now hope for a proper price war in the desktop processor market – a win-win for us.

Aside from that, we have a wealth of features for your perusal this month, ranging from data protection via encryption, to optimising your SSD setup. Do check those out at your leisure.

On the review side of things, we have a pretty good mix of different products this time. Besides the BenQ monitor we mentioned above, we also have another GAMDIAS peripheral, an AIO PC from Acer, and the very interesting Moto Z.

We're not going to spoil everything for you, so we'll end it here and let you get started on our March issue. Cheers!

CHIP Malaysia



Managing Director Noor Azman

Head of Department YK Cheah

EDITORIAL

Senior Writer Matthew Yap

Writer Nixon Ng

Writer Rikco Shim

Contributors Edwin Lee, Christoph Schmidt, James E. Curtis, Caren Stella Geiger, R. Mattgey, Jörg Geiger, Robert Di Marcoberardino, Markus Mandau, Leo Joscha, Fabian von Keudell

Design & Layout Halijah Ismail, Nurul Huda Mohd Dan

Cover Design Nurul Huda Mohd Dan

SALES & MARKETING

Senior Manager YK Cheah

Consultant Muffadzlee Dato' Sufian

ADMINISTRATION

Admin Manager WP Lim

ONLINE

www.chip.com.my

@CHIPMY

CHIP Malaysia

PUBLISHER

Online Dynamics (M) Sdn. Bhd.

A-5-07 Block A, Neo Damansara

Bandar Damansara Perdana, Jalan PJU 8/1

47820 Petaling Jaya, Selangor, Malaysia

Tel: (03) 7727 6554 Fax: (03) 7727 3554

PRINTED BY

Unipress Printer Sdn. Bhd.

117-G, Jalan Tiaj 1/4, Taman Industri Alam Jaya,

42300 Bandar Punchak Alam,

Selangor Darul Ehsan.

Tel: (03) 6038 5578 Fax: (03) 6038 3944

DISTRIBUTED BY

MPH Distributors Sdn. Bhd.

Ground Floor Warehouse, Lot 2, Bangunan TH,

No. 5, Jalana Bersatu, Section 13/4,

46200 Petaling Jaya, Selangor

Tel: (03) 7958 1688 Fax: (03) 7956 5995

© This edition of CHIP is a publication of Online Dynamics (M) Sdn. Bhd. licensed by Vögel Burda Holding GmbH, 80336 Munich, Germany.

© Copyright of the trademark "CHIP" by Vögel Burda Holding GmbH, 80336 Munich, Germany.

No part of CHIP magazine / shall be reproduced without the publisher's written permission.

All views expressed in the magazine are solely those of the writer and do not necessarily represent those of CHIP magazine / the publisher.

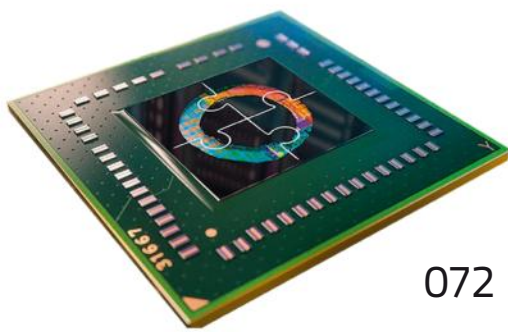
All information in the magazine is provided 'as is' and 'as available' and CHIP magazine / the publisher makes no representations and gives no warranty of any kind, implied, express or statutory as to the accuracy, adequacy, completeness, non-infringement of 3rd party rights, title, merchantability and / or suitability / fitness for a particular purpose with respect to the said information.

Under no circumstances whatsoever shall the CHIP magazine / the publisher be liable for any direct, indirect, special or consequential damages whether in contract or in tort arising out of or in connection with the use of the information made available in CHIP magazine.

All prices, product versions and URLs' are correct at the time of printing.

International Members of the CHIP Family





072



006



050

COVER STORY

NEWS & TRENDS

FEATURES

072 PC Roadmap For 2017

It's an exciting year for PC enthusiasts, with new technologies slated to appear

006 Local News

Coverage of the latest news and events right on our shores

030 World Wired Web

All the latest tech happenings around the world

026 Security Reports

Monthly dose of security news

050 WLAN Beats LAN

Once, the Ethernet cable was king. But that king is about to be dethroned

056 Electromobile For Everyone

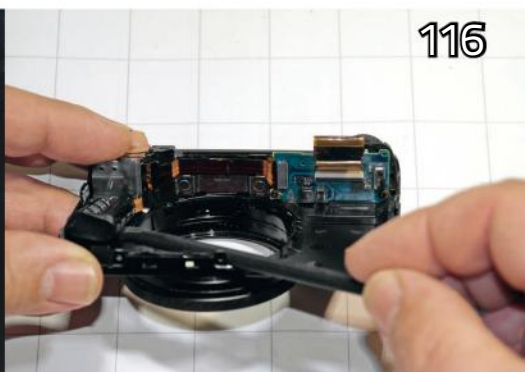
Only the very rich can afford e-cars, or is it really? We talk about one that's aiming to do away with that perception

060 Full Speed For Every SSD

Installing an SSD should be more than about plugging in some cables. Here's how you can optimise yours



108



116



118



056



060



106

TEST LAB

077 Test Lab: The Tools

Test Labs' tools of the trade

078 Test Lab Contents

Take a pick and get started!

086 Reviews

Professionally conducted reviews following our stringent tests and benchmarks

LITE & LEISURE

108 E-Sports Express

What's the latest gossip in the e-sports world?

106 Nioh

Onimusha meets Soulsbourne in an adventure that shouldn't be missed

PRACTICE

116 Restore Sony RX100

Dented your Sony RX100? Here's how you can fix it

REGULARS

001 Welcome Note

118 Tips and Tricks

087



CHIP Downloads March 2017

We're back with our monthly dose of interesting, free and handy tools for you to enhance your PC experience. If you want to know how you can get these files, follow the instructions below:

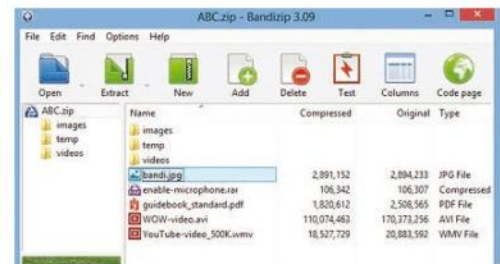
1. Head on our website @ www.chip.com.my and right at the top, click on the "Downloads" tab
2. After that, click on the respective month's post. You will then be prompted for a password. The password can be found on this page monthly.
3. Navigate using the tabs and pick the categories you want to download the files from. Once you find the file you want, just click on it and you're good to go!

And it's as easy as that!

PASSWORD FOR MARCH 2017 - timetoupgrade

Featured Tools Bandizip

Bandizip is a lightweight, fast and free all-in-one zip archiver. Bandizip has a fast Zip algorithm for compression and extraction with Fast Drag and Drop, High Speed Archiving, and Multi-core compression. It handles the most popular compression formats including Zip, 7z, Rar, and so on. There's also an optional archive encryption using ZipCrypto and AES 256.

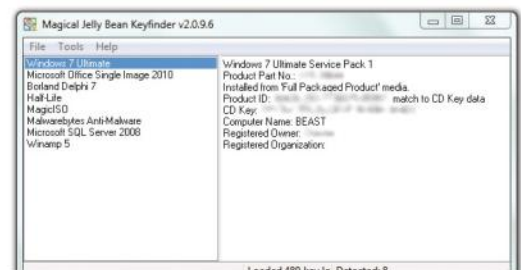


HoneyView

HoneyView is an image viewer support various formats, but its specialty is its ability to view images in compressed Zip, Rar, or 7z files without extraction. Also if an image has GPS information, the location can be viewed on Google Maps. Various display options are available to you that include Fill and Parallel View modes.

Magical Jelly Bean KeyFinder

The Magical Jelly Bean Keyfinder is a freeware utility that retrieves your Product Key used to install Windows from your registry. It also has a community-updated configuration file that retrieves product keys for many other applications. Another feature is the ability to retrieve product keys from unbootable Windows installations.



Essentials

Our list of essentials consists of programs and software such as graphic drivers, browsers, compression software and even Cloud storage software that will improve a PC user's experience. The links on our website won't provide you with the files, instead it will lead you to the developers' official website, where you can find the right file for you.

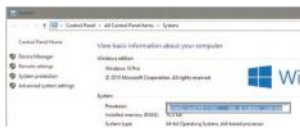


The Monthly Downloads

MailStore Home

Operating system: Windows 7/8.1/10

MailStore Home lets you backup all emails in a central archive, even if they are distributed across different computers, programs or mailboxes. You can do this either on your PC or on a USB drive, this way you'll never lose emails again.



Textify

Operating system: Windows 7/8.1/10

Sensearea is an authoring tool for video object editing and ground truth video annotation, the tool is specially developed for scenario's where you wish to edit or alienate an object within a video.

ReShade

Operating system: Windows 7/8.1/10

ReShade is an advanced, fully generic post-processing injector for games and video software developed by crosire. Imagine your favourite game with ambient occlusion, real depth of field effects, colour correction and more.



Disk Drill

Operating system: Mac OS

Have you ever needed to recover deleted files from your Mac? Or maybe files that have suddenly gone missing? With Disk Drill data recovery is made easy for Mac OS X, and you'll be able to recover your critical business documents, music, photos and videos.

RuckZuck

Operating system: Windows 7/8.1/10

If you need to keep your software and drivers updated, there are many options to try out. So how about you try out RuckZuck, a software package manager for Windows and is a quick way to install and update software on your computer.



OBS MultiPlatform

Operating system: Windows 7/8.1/10

Open Broadcast Software is a free and open source software for video recording and live streaming. It's capable of streaming to the most popular streaming sites such as YouTube and Twitch. OBS works across multiple platforms and allows you start streaming quickly.

NeuralStyler

Operating system: Windows 7/8.1/10

NeuralStyler converts your videos into art works by using styles of famous artists like Van Gogh, Kandinsky, and etc. From the multiple styles to choose from, if you wish to add additional styles there are ways to do so to unleash your inner artist.



rEFInd Boot Manager

Operating system: Windows 7/8.1/10

rEFInd Boot Manager auto-detects your installed EFI boot loaders and it presents a pretty GUI menu of boot options. rEFInd better handles systems with many boot loaders, and gives better control over the boot loader search process, while providing users the ability to define their own boot loader entries.

Snipaste

Operating system: Windows 7/8.1/10

Snipaste is a simple but powerful snipping tool, and also allows you to pin the screenshot back onto the screen. You can also convert text or colour info in the clipboard into a floating image window, which can be zoomed, rotated, made translucent, and even made click-through.





From left to right, Penny Yu, Marcom Manager, Integrated Marketing Communication Dept APAC Region; Gavin Wu, Business Line Manager, e-Sports Monitor, BenQ; Eason Lu, Business Line Manager, Business Line Management Division, APAC Region, BenQ Asia Pacific Corporation; Simeon Sia, Marketing Communication Manager, BenQ Service & Marketing (M) Sdn. Bhd., and Desmond Wong, Sales and Marketing Director, BenQ Service & Marketing (M) Sdn. Bhd.

BenQ Launches New e-Sports Monitors

BenQ launches their new XL-series monitors that are aimed towards providing professional gamers and casual gamers alike, the smoothest and clearest gaming experience

BenQ ZOWIE recently launched their latest e-Sports gaming monitors, the ZOWIE XL2450 and the ZOWIE XL2735. As the latest additions to the XL series of PC e-Sports monitors, the XL2540 introduces increased smoothness in-game and its native

240Hz refresh rate can be fully activated to deliver different levels of gameplay experience, when the computer generates over 240FPS. The XL2450 also comes with a 'Shield' with an adjustable angle and removable design for keeping your screen clear from different environmental conditions.


If that isn't enough, the XL2450 also sports ZOWIE's Black eQualizer that increases visibility in dark scenes without overexposing bright areas. This allows you to play games like DOOM, where the environment is dark, and still be able to detect the enemies and monsters in the darker scenes. Additionally, ZOWIE takes it a step further with the ability to adjust your colour performance with Color



The latest XL-series e-Sports gaming monitors from BenQ ZOWIE

Vibrance settings, with 20 levels of colour settings to choose from.

For those who prefer a larger screen, the ZOWIE XL2735 could be the next best thing. The ZOWIE XL2735 comes with everything that the XL2540 comes with, but the only differences between the two are their screen size, resolution and refresh rate, along with the added DyAc Technology. The XL2735 is a 27-inch monitor and has a screen resolution of 2560x1440p (WQHD), and sports a refresh rate of 144Hz. The exclusive BenQ ZOWIE technology Dynamic Accuracy or 'DyAc' allows the monitor to maintain remarkable clarity during in-game movement, and achieves a smoother experience for users.

For those who are interested in either monitors, the ZOWIE XL 2450 is priced at RM2,399 while the XL2735 is priced at RM3,299. 

zowie.benq.com



The XL2540 and XL2735 were setup at the launch to allow the media to try out the new monitors



Lenovo.

motom

Full-metal design. Full-on performance.
RM 1,199. Available now.



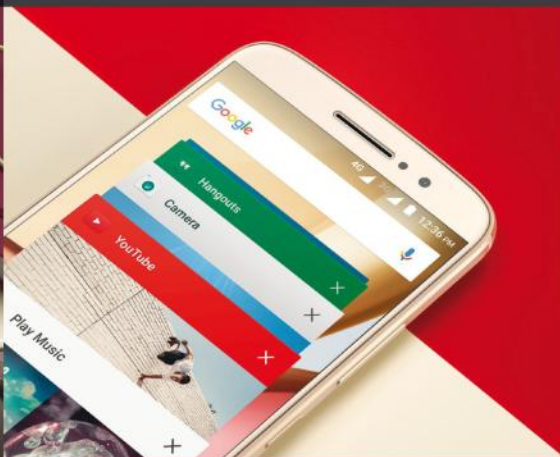
Power meets style



Blazing-fast
octa-core processor



Advanced
cameras



For more information: ☎ 1800 81 7032

🌐 moto.com/my

📱 MotoMsia

Authorized distributor:

©2016 MOTOROLA and the Stylized M Logo are registered trademarks of Motorola Trademark Holdings, LLC. The Lenovo logo is a trademark of Lenovo in the United States, other countries, or both. Certain features, functionality and product specifications may be network dependent and subject to additional terms, conditions, and charges. All are subject to change without notice. Lenovo makes every effort to ensure accuracy of all information but is not liable or responsible for any editorial, photographic or typographic error. All images are for illustrative purposes only. All prices shown are inclusive of 6% GST.
Lenovo Technology Sdn. Bhd. (685098-H)

ECS
ECS ASTAR



Frankie Chan, Business Director for PC Category of HP PPS Sales Sdn Bhd showcasing the HP Spectre x360

The Unveiling Of HP Spectre x360

The HP Spectre x360, a bold and new convertible laptop. Is it all bang and all fun?

HP recently unveiled its new generation of convertible laptop in the HP Spectre x360. Available in 13.3 inches and with a new micro-edge display that cuts down bezel size by almost 10mm, you could experience the Spectre x360 with FHD IPS panel for your optimal viewing enjoyment.

Secured with a newly designed hinge, the Spectre x360 could be used as a fully functional laptop with touchscreen capabilities, or as a tablet. It weighs 1.295 kg and is only 13.79 mm thick, making it undeniably sleek. The convertible is also quite sturdy and comes packaged with a choice between an Intel Core i5-7200U, or an Intel Core i7-7500U. An on-board memory of 8GB DDR3 RAM, optional upgrade to a 256GB SSD, and an Intel HD Graphics 620 are also available, all cooled by dual fans built into the thin design.

The Spectre x360 comes bundled with two USB 3.1 Type-C Gen 2 ports that support Thunderbolt 3, as well as a USB Type A 3.1 Gen 1 for all your latest peripheral needs. In

addition, Windows 10 (64bit) also comes preinstalled.

According to HP, the Spectre x360 has an additional 25% more battery life for up to 15 hours, depending on usage, with its 57.8W battery. In collaboration with Bang & Olufsen, the Spectre x360 sports a set of four speakers instead of the usual two, for that extra bit of oomph for your movies and music.


Other notable features include the HP TrueVision FHD Webcam that provides 12% wider field of view, a FHD IR camera that supports Windows Hello Facial Log-in that allows you to log in securely without typing any passwords, and HP Fast Charge to recharge the battery to 90% in 90 minutes – works only when the power is switched off and when using the provided HP adapter.

At the event, HP took the attendees for a spin in a car driven by professionals on the Elite Speedway Plus Circuit. While in the car, the attendees had to complete specific tasks (some



The Spectre x360 all laid out

questions and riddles) to perform on the HP Spectre x360 with the car speeding around the circuit for three laps.

This convertible laptop further trivialises the need for both a laptop and a tablet, when all you need is just a two-in-one. The HP Spectre x360 is now available for the following prices: HP Spectre x360 (Intel Core i5) – RM 5,199 HP Spectre x360 (Intel Core i7) – RM 5,999  <http://www.hp.com.my/spectrex360>

HOME CINEMA PROJECTOR
EH-TW8300

EPSON
EXCEED YOUR VISION



HIGH DEFINITION HOME THEATRE PROJECTOR WITH ULTRA BLACK LEVELS.



Sit back, relax and enjoy your favourite movies in true Cineplex quality at home – just the way how filmmakers intended. See incredible colours and movements, made possible by Epson's 4K Enhancement Technology.

- Experience 4K Enhancement for unbelievable sharpness & detail
- 2,500 lumens WHITE LIGHT OUTPUT & COLOUR LIGHT OUTPUT
- Stunning picture uniformity and lenses positioning flexibility
- Compatible with latest HDR format
- Convert 2D to 3D for unlimited 3D content



Full HD
1080p



High
Contrast Ratio



2500
Lumens



2 x HDMI



*Compared against similarly priced leading 1-chip DLP® business and education projectors based on NPD data from July 2011 through June 2012 (available from www.npd.com). Colour brightness (colour light output) measured in accordance with DMS 15.4. Actual colour brightness will vary depending on actual usage conditions. 3LCD® is a registered trademark of Seiko Epson Corporation. DLP® is a registered trademark of Texas Instruments, Inc. and its use here does not imply any affiliation with or endorsement by them.

Visit www.epson.com.my/projectors or call 1800-8-17349 (Toll-Free).

EpsonMalaysia @EpsonSEA EpsonSoutheastAsia Epson Southeast Asia

ENGINEERED FOR BUSINESS

Epson Malaysia Sdn Bhd (211204-X) 3rd Floor, East Tower, Wisma Consplant 1, No. 2, Jalan SS16/4, 47500 Subang Jaya, Selangor Darul Ehsan. Tel: 603-56 288 288 Fax: 603-56 212 088
Epson is the registered trademark of Seiko Epson Corporation. All other product names and other company names used herein are for caption purposes only and are the trademarks or registered trademarks of their respective owners. EPSON disclaims any and all rights in those marks. Scan/Print samples shown here are simulations. Specifications are subject to change without notice.

Samsung Pay Launches In Malaysia

Cardholders are able to enjoy safe, convenient and smart payments with Samsung Pay

The launch of Samsung Pay is in line with the government's efforts to transition Malaysia into a cashless society through the implementation and acceleration of e-payments adoption. The collaboration will encourage and support the continued growth in the usage of contactless payments. Malaysia is committed to increase its adoption, with the vision that contactless terminals will make up 30 percent of all payments terminals by 2020.

As of 2016, there was an 83 percent year-over-year growth in contactless adoption with six million merchant locations accepting contactless technology across 80 countries for MasterCard contactless transactions. Malaysia has the potential to be a key market for contactless payments with the heightened focus on elevating contactless technology, availability of well-rounded infrastructure and concerted effort by the payments industry to enhance payment offerings.

The initiative also recognises the importance in the development of new innovations and digital wallets, which can meet the fast-evolving demands of consumers, merchants

and issuers for a dynamic payment ecosystem and with that, positively enhances Malaysia's overall payments landscape.

The MasterCard Digital Enablement Service (MDES) will allow MasterCard credit and debit cardholders to use Samsung Pay. The platform will transform Samsung mobile devices into commercial devices that are able to make contactless transactions, providing a secure, convenient and smart payment experience for users. Every purchase made with a MasterCard using Samsung Pay offers consumers and retailers all the benefits and guarantees of a transaction with the physical MasterCard.

"Samsung Pay is a robust mobile payment platform that not only supports the shift towards digital wallets today, but provides a conducive and future-proof avenue for secure e-payments in Malaysia. As Samsung has done with other markets, we have taken a customised approach to our launch in Malaysia, collaborating with key partners to turn swift and secure mobile payments into reality for our users. We are proud to call leading financial institutions and merchants our partners and



Samsung Pay 3

to introduce Samsung Pay as the most widely accepted mobile payment service in Malaysia. We are working tirelessly to ensure that Samsung Pay is here to stay and this includes our future plans of boosting the service through loyalty programmes," said Perry Ong, Country Manager, Malaysia and Brunei, MasterCard. www.mastercard.com

Simple to use

It takes just 3 simple steps to use Samsung Pay.



Swipe up
to launch
Samsung Pay

Authenticate
with your
fingerprint or PIN



Tap
your phone on the
terminal pay



SHINING A LIGHT ON BUSINESS PRESENTATIONS



Presenting to the business audience can be daunting for most of us.
 Now, by following these tips, anyone can master presentations like a pro!



THE FINAL KEY TO A SUCCESSFUL PRESENTATION - THE PROJECTOR



EASY PRESENTATION TIPS TO MAKE YOUR AUDIENCE GO WOW

Most of us have, at some point, come before an audience to make a presentation. As an effective presenter, it is imperative to hold the audiences' attention and to keep them riveted to your message that is presented.

The key to their attention varies with different audience, and the nature of your presentation determines the appearance of your slides - when to use graphs, attractive visuals and even video clips. It is important to use the right amount of colours and animations to maximize the impact of the information presented. Most importantly, do not clutter the slides with excessive amount of information.

Make no mistake - you are the presenter, not your slides. The slides are visual tools to emphasize your message. Therefore, do not overwhelm your audience by inserting your entire speech into the slides.

To exude confidence and authority on the subject, the right body language is very much needed. Audience are instantly attracted to confident personalities, and with the correct gestures and tone of voice, the audience will be absorbing every word of your speech like a sponge.

To successfully master the skills of good presentation require plenty of practice and preparation. However, many overlook the importance of the projector that is used. As a result, the projector output may sometimes be less than desirable, and as the presenter, we have to apologise to the audience that some important points on the slides cannot be clearly read on the screen. Such awkward moments will inevitably derail all preparations made earlier for a successful presentation.

Recognizing this acute need for reliability, Epson, the world's top projector maker for 15 years in a row, pioneered the 3LCD projection technology to address this need.

3LCD is a sophisticated, innovative technology that utilizes three chips to deliver vibrant, true-to-life and consistent images. This technology offers up to three times more colour brightness and three times wider gamut of colours compared to other projectors, to deliver

dazzling high-definition images, vivid contrast and powerful colour intensity, even in bright ambience and outdoor environment.

3LCD projectors are also highly efficient and much more reliable, as they have no moving parts in the image generation engine, eliminating the risk of mechanical failure. These projectors also use 25% less power than single-chip DLP projectors to reduce operating heat, allowing the lamp in a 3LCD projector to last longer. Epson has also developed high brightness laser projectors in their range of 3LCD business projectors with a laser-light source that can deliver up to 20,000 hours of maintenance free use.

If you've created and rehearsed your presentation with our tips in mind, you can be confident that your Epson high brightness 3LCD projector will deliver mind-blowing image quality and make your presentation the star of the show.



Visit www.epson.com.my/highbrightness or call 1800-8-17349 (Toll-Free).

[f](#) EpsonMalaysia [t](#)@EpsonSEA [v](#) EpsonSoutheastAsia [in](#) Epson Southeast Asia

ENGINEERED FOR BUSINESS



HTC's Management Team officiating the launch. From left to right, Cheong Wah Tong, Country Manager of HTC Malaysia, Chia-Lin Chang, President of Smartphones and Connected Devices Business, HTC Global, and Faisal Siddiqui, President of HTC South Asia

Made With U In Mind

HTC's latest series is all about U, for U, but is it for U?

HTC is in the market again, with their new series of smartphones which they call the HTC U series. On the 16th of February, HTC officially launched the HTC U Ultra and HTC U Play in the local market. With a focus on U, HTC is making this phone with users as its priority. Chia-Lin Chang, President of Smartphone and Connected Devices Business of HTC said: "Our all new line of HTC U devices are designed to grow with you and develop a bond with you, to help realise the potential that comes from being different."

The HTC U is said to have features that utilises the HTC Sense Companion, HTC's revolutionary AI, that will reflect and learn from the user, listening and capturing the best of the user and to provide a whole new level of personalisation. The age of personal AI companions is dawning upon us.

The HTC U Ultra will feature a 5.7-inch display with Quad HD, combined an additional always on second screen that will give users a convenient access to things such as top contacts, app shortcuts, notifications and more. We have yet to know how this would affect

its 3,000 mAh battery.

The U Ultra also features a main 12-megapixel camera, 1.55µm pixels and an aperture of f/1.8, with tons of other photography tools. The U Ultra is powered with a Qualcomm Snapdragon 821, 64-bit Quad-core, 4GB of RAM and an Android 7.0 with HTC Sense. However, it is worth noting that the HTC U Ultra comes with a Type-C USB 3.1.

The HTC U Play features a 5.2-inch Full HD display, only a tad smaller than the HTC U Ultra, and with a Mediatek MT6755 Helio P10 chipset,

and 4GB RAM, running on Android 6.0. The U Play is fitted with a 16-megapixel camera with 1µm pixels and an aperture of f/2.0, while the HTC U Play is powered by a 2,500 mAh battery.

HTC USonic is included in both the U Ultra and U Play, which tweaks the earphones to adapt to a person's hearing pattern by analysing the inner ears of the person, in order to deliver clearer and finer details in music. HTC has also ditched headphone jacks on both the U Ultra and U Play.

The HTC U Ultra and HTC U Play will both be available early March. The HTC U Ultra is priced at RM2,999, while the HTC U Play is priced at RM1,899. 🇲🇾

www.htcmalaysia.com.my



HTC U Ultra

HTC U Play

HIGH BRIGHTNESS BUSINESS PROJECTORS
EB-4000 SERIES/G7000 SERIES/Z SERIES/
L1000 SERIES/L25000U

EPSON
EXCEED YOUR VISION

**LIGHT UP THE WORLD WITH OUR
BRIGHTEST PROJECTORS.**



Introducing the star-studded lineup of Epson high brightness projectors. Powered by proprietary 3LCD technology that is exceptionally brighter and more vivid to bring images to life and deliver a stunning viewing experience indoors or outdoors. Engineered to shine with great reliability and durability by the world's No. 1* projector brand. Get ready for performances that will light up the world.



*Source: Futuresource Consulting Limited



Visit www.epson.com.my/highbrightness or call 1800-8-17349 (Toll-Free).

[f](#) EpsonMalaysia [t](#) @EpsonSEA [v](#) EpsonSoutheastAsia [in](#) Epson Southeast Asia

ENGINEERED FOR BUSINESS

Epson Malaysia Sdn Bhd (211204-X) 3rd Floor, East Tower, Wisma Consplant 1, No. 2, Jalan SS16/4, 47500 Subang Jaya, Selangor Darul Ehsan. Tel: 603-56 288 288 Fax: 603-56 212 088
Epson is the registered trademark of Seiko Epson Corporation. All other product names and other company names used herein are for caption purposes only and are the trademarks or registered trademarks of their respective owners. EPSON disclaims any and all rights in those marks. Scan/Print samples shown here are simulations. Specifications are subject to change without notice.

Canon Marketing Malaysia Celebrates 30th Anniversary

The company pledged to continue providing the best

A decade doesn't feel like a long time these days, but 30 years is a significant milestone. Canon Marketing Malaysia has achieved just that, celebrating its 30th anniversary earlier in February with a weeklong product showcase in Mid Valley Megamall.

"The celebration of Canon Marketing Malaysia's 30th anniversary is an exciting time for our company, and we are grateful for all of the local support and encouragement

we have received over this journey. We are glad to have been given the opportunity to serve Malaysia, and we hope to continue delighting every Malaysian with our products and services," said Andrew Koh, President and Chief Executive Officer of Canon Marketing (Malaysia) Sdn Bhd.

Featured at the product showcase were a variety of Canon's product lineup, including printers like the PIXMA E470, the popular EOS Mark IV DSLR camera, and Canon's new

flagship model for its foray into mirrorless cameras – the EOS M5. Canon Ambassador Janna Nick also made an appearance, to talk about her favourite PowerShot camera and serenade the fans who were there.

Canon Marketing Malaysia has certainly expanded from the time of its beginnings in 1987, growing to a workforce of 600 employees, one head office, seven branches, and a network of more than 3,000 direct channel partners. Since then, it has also been honoured with multiple awards locally and abroad.

"Canon Marketing Malaysia remains committed in providing exceptional customer service through total quality management of our products and services. Through the continuous innovation and advancement of our products, we endeavor to provide end-to-end solutions for our customers and business partners, open communications, total staff involvement and collaboration in working with our business partners to achieve total customer satisfaction," added Andrew. 🇲🇾

www.canon.com.my

U Mobile Launches Power Packed Prepaid Plan

Get more from your prepaid with U Mobile's App-Onz for unlimited data on social media sites



Third from left is Nicole Tan, Head of Prepaid Marketing U Mobile; fourth from left Jasmine Lee, Chief Marketing Officer, U Mobile and first from right Lee Fook Heng, General Manager of Product Marketing, U Mobile, at the launch of U Mobile's latest prepaid plan

U Mobile is kicking off the year with a huge bang, unveiling a prepaid pack that would delight any social media lover. Their latest plan UNLIMITED POWER Prepaid comes with App-Onz, a new service that enables customers to enjoy unlimited data on social media apps like Facebook, Instagram and Twitter. With the launch of this latest plan, prepaid customers will be able to share, upload and view posts on Facebook, Instagram and Twitter without ever having to worry about data.

U Mobile's UNLIMITED POWER Prepaid pack is available starting February and will come with 300 minutes of free calls every month to all U Mobile numbers. Existing U Mobile prepaid customers can switch to the new UNLIMITED POWER Prepaid pack by dialing *118*6*2*3# on their phones.

The launch was also followed by an announcement that App-Onz is available to customers on Hero Postpaid (U28, P50, P70 and P98) and Broadband plans. App-Onz will be activated for existing postpaid customers, while new postpaid customers will get to enjoy the service immediately upon signing up.

Additional details for the U Mobile UNLIMITED POWER Prepaid pack is 200MB of free data upon activation, as well as a total of 300 mins of free calls monthly to all U Mobile numbers, or 12 sen/30sec to all other networks. You can get your SIM Pack for only RM8.50, and it comes pre-loaded with RM5 right from the get go. 🇲🇾

www.u.com.my

AOC

Lethal speed, deadly precision.

Developed for awesomeness

**NVIDIA
G-SYNC™**



**144
Hz**

**1ms
GtG**



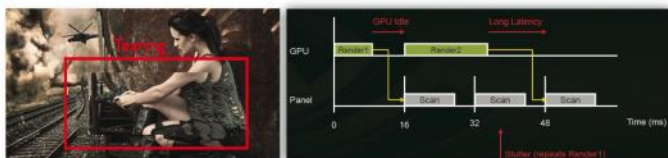
AOC G2460PG 24" (60 cm)

G-SYNC™ Gaming Monitor



NVIDIA G-SYNC Engine

NVIDIA G-SYNC synchronizes the monitor and PC graphics (GPU), resulting in a tear-free, faster, smoother experience that redefines gaming with quicker reactions and less eyestrain.



144Hz Refresh Rate & 1ms Screen Response

**144
Hz**

**1ms
GtG**

Conventional 60Hz monitors can show distracting motion blur when displaying games with rapid movement. Ultra-fast 144Hz refresh rate and 1ms screen response time combine to enable sharper action.



NVIDIA ULMB: Ultra Low Motion Blur

NVIDIA ULMB is a technology that eliminates almost all motion blur associated with LCD displays.

Visibly sharper moving images can be a big advantage in gaming.



Note:
G2460PG does not include NVIDIA 3D kit.
See www.nvidia.com/3DVision for system requirements.

NVIDIA 3D Vision

G2460PG is compatible with NVIDIA 3D kit (shutter glasses).



Adjustable Stand

The 4-way adjustable stand allows the user to change the monitor height by 130mm, swivel left and right, tilt the screen angle, and pivot 90°.



Stay updated with us!



AOCMY



For more information

Service Centre: **1700-81-7872**

Website: **www.aoc.com**

Distributors: **Adventure Multi Devices Sdn. Bhd.**
Eternal Asia (M) Sdn. Bhd.

Tel: **603-7855 7788**
Tel: **603-5869 2200**

Unit No. D-2-50, Block Dahlia, 10 Boulevard, Jalan Cempaka, 47400 Petaling Jaya, Selangor, Malaysia.

©2016 AOC Monitors. All rights reserved. AOC is a registered trademark. All other trademarks are the property of their respective owners.

vision at Heart

A handy Device For All Your Travel Needs

Digi partners up with handy to deliver an exceptional travel experience for tourists in Malaysia

Digi Telecommunications Sdn Bhd announced their partnership with Tink Labs, the creator of handy to bring an up close and personal mobile travel solution

for tourists and hotel guests in Malaysia. handy is an Operating System (OS) that is installed to a phone and it could also come as a phone called the handy T1 Smartphone.




From Left to Right: Praveen Rajan, Digi's Chief Digital Officer, and Wong Yu Hsiang, Managing Director of Tink Labs Limited

It is unclear whether handy will supply local hotels with their own smartphone, or if we will have smartphones that come preinstalled with the OS.

Ultimately, handy devices can be used multiple ways. Firstly, the handy device is a hospitality solution that can be used by hotel guests to enhance their hotel experience. By using the handy device, the guests can communicate directly with the hotel or for hotel services such as F&B, spa, sauna and more.

Secondly, the handy devices can be used as regular mobile phones, even for social media. The devices can be used to make calls, local or internationally. They have unlimited data as well, powered by Digi's 4G plus network. The devices are also curated to local city guides, such as events happening around that area, the best food to eat around them, and best shopping areas around them. The device can also act as a hotspot for other connectivity needs. When out and about, the handy device is connected to the hotel's directory, so room service or helpdesk can still be reached when outside, if the users require some help from the helpdesk.

According to Tourism Malaysia Statistics, Malaysia beckons an average of over 20 million tourists a year. Digi, with the help of handy, would be able to deliver a more memorable travel experience for tourists during their stay in Malaysia. 

www.digi.com.my

The microSD Card That's Not That Small

SanDisk's latest microSD that is sure to please, for a price

SanDisk, the global leader in memory storage, is giving us a new and massively improved microSD card, the SanDisk Ultra microSDXC UHS-I Card, which meets the Application Performance Class 1 (A1) requirements on its 256GB card.

For a microSD card, it certainly pulls more than its weight. By meeting the A1 requirements, the SanDisk Ultra microSD card is optimised for apps, which enables it to deliver faster app launch and performance on our smartphones. The SanDisk Ultra microSD is also capable of managing random read input-

output access per second(IOPS) of 1,500 and write IOPS of 500.


"The microSD card has been an integral part of the digital revolution by providing more options for high performance, high capacity storage for smartphones," said by Peter Mah, the regional director of SanDisk APAC marketing for Western Digital Corporation.

The 256GB storage is more than capable of storing most of our life's moments on camera, on smartphones or even on drones, hassle-free. SanDisk also claimed that the SanDisk Ultra microSD card is capable of transfer speeds



The SanDisk Ultra, with the A1 Certified Logo

up to 95MB/s.

In addition, SanDisk has launched an app in the Google Play Store, called the SanDisk Memory Zone, for users to manage and back up their content on their devices easily with the SanDisk Ultra microSD card. Now you have an added layer of protection for those precious memories. The SanDisk Ultra microSD card can be purchased now from selected retailers, at a MSRP of RM1,099. 

www.sandisk.com

iRetail



Celeron



Fanless



IP 65



PoE



Wide Input Range

Advantech **UTC-510D (PoE)**

**A Multi-purpose
10.1" All-in-one Computer with
PoE Support for Diverse Applications**



Great Performance with Rugged System Design

A fourth-generation Intel®Celeron® N2807 / J1900 processor, fanless design, and IP-65 rated front panel ensure a reliable and stable operation.



PoE Support to Further Increase the Installation Flexibility

The Power-over-Ethernet (PoE) technology eliminates the need for additional conduits and electrical wiring, allowing a more convenient installation.

Wider Input Voltage Range and Operating Temperature

Support a wide input voltage range (12V ~ 24V) and wide operating temperature range from 0 to 45°C for more flexible integration in diverse environment.

Side LED, Rich I/O Ports, and Peripherals to Extend Functionality

Diverse peripherals, side LED, and rich I/O ports to easily extend the system's overall extendibility and flexibility for a wide range of applications.



iAutomation

Acquiring Data as Easily as Using a Mobile Phone
Remote monitoring and control from your own mobile devices

Connected Equipment for Electronics Manufacturing Factories
Get FREE one to one training when you purchase our product.



ADVANTECH

Enabling an Intelligent Planet

Tel : +604 537 9188
E-Mail : buy@advantech.com.my

Penang: No.117 & 119, Ground Floor, Jalan Perniagaan Gemilang 1, Pusat Perniagaan Gemilang, 14000 Bukit Mertajam. Penang. Tel: +604-537 9188
KL: L3-03 / 03A, Wisma BU8, No 11, Lebuhr Bandar Utama, Bandar Utama, 47800 Petaling Jaya, Selangor Darul Ehsan, Malaysia. Tel: +603-77254188 / Fax: +60-03-7728-1571
eMail: buy@advantech.com.my Website : www.advantech.com.my

Oukitel's Back With More C

Oukitel's latest entries into the bargain smartphone market that are turning heads


Oukitel is launching two new models within the C series, the Oukitel C3, and Oukitel C5 Pro with incredibly competitive pricing to blow other entry level smartphones out the water.

First up, we have the Oukitel C3. It comes with several colours, ranging from black to rose gold, with a unique design on the back of the phone. Oukitel calls it the 3D Diamond Design, which as you can guess was inspired by cut

diamonds. The C3 runs on Android 6.0, with a MT6580 Cortex A7 Quad-core 1.3GHz processor.

The C3 has a few tricks up its sleeve. It has a 5-inch HD IPS screen, which delivers clear image quality, as well as an 8-megapixel rear camera for all your photography needs. Aside from that, the C3 is built with a special feature when taking pictures that is catered to selfie lovers. By showing a 'v' sign with your fingers to the camera, it will snap a photo automatically without you having to fumble for the capture button.

Finally, we have the Oukitel C5 Pro. It also features a 5-inch HD display, but this time with only a 1mm bezel. Powered by a MTK6737 Quad-core 1.3GHz processor and running on Android 6.0, it should prove capable of dealing with day to day usage. One of the C5 Pro's selling point is that it is built with toughness in mind. The C5 Pro features an anti-smash screen, that could handle up to 800MPa stress value, and up to 9H on the hardness scale.

Both the C3 and C5 Pro comes packaged with a 2,000 mAh sized battery, which should be sufficient for a day's regular use. As for pricing, the Oukitel C3 is priced at a MSRP of RM299, while the Oukitel C5 Pro is priced at a MSRP of RM399. 

www.oukitel.my



From Left – Right, the Oukitel C3 and the Oukitel C5 Pro

Epson Launches New SureColor SC-P5000 Printer

A printer that meets the needs of proofers, artists and photographers


Epson has launched its new 17-inch SureColor SC-P5000 printer, designed to meet the needs of the proofing, fine art and photography applications. With the launch of the SC-P5000 printer, Epson now offers the full suite of print sizes from A4 to 64-inch, completing its line-up of the Epson P-series printers.

The SC-P5000 with Ultrachrome HDX ink comes with violet HDX inkset to reproduce colours with near-perfect colour matching of 99 percent of Pantone Solid Coated Colour accuracy, suitable for colour proofing. Fine art photographers can use the SC-P5000 to reproduce their artwork with 98 percent

of Pantone Solid Coated Colours. The new Ultrachrome HDX ink delivers exceptional print quality to the prints, with a high print permanence rating for fine art photo prints and improved lightfastness for extremely long-lasting prints.

It prints at a high-resolution of 2880 x 1440dpi, ensuring crisp and detailed results. The SC-P5000 incorporates the Epson PrecisionCore printhead technology with Variable Size Dot Technology, to produce outstanding performance and

long-lasting quality output with ultra-precise control of dot size, shape and placement. The printhead also comes with ink repelling coating for reduced nozzle clogging.

In addition, the SC-P5000 offers an enhanced body that requires less maintenance and comes with new covers and seals that limit dust intrusion, together with an improved automatic nozzle check. The printer will fit seamlessly into any proofing workflow and can be supplied with a SpectroProofer, which can handle colour proof checking. 

global.epson.com



BUILT TO WIN



FAST RESPONSE AND VIBRANT COLOUR
EVERYTHING YOU NEED TO WIN

THE NEW GAMING SERIES FROM VIEWSONIC



VIEWSONIC GAMING
WEBSITE



VX57 SERIES

XG01 SERIES

XG03 SERIES

ViewSonic®

Vinyl With A Twist

Sony's latest turntable has a few perks for the new generation

With glowing reviews from Vinyl fans, the Sony PS-HX500 is finally released in the local Malaysian market. Vinyl is making a comeback. Not from the dead as it was never dead in the first place! Sony is offering vinyl fans a way to listen to their beloved vinyl at home, as well as giving them an ability to rip them into digital format. This enables Sony to appease both the digital and analogue market.


To achieve this, Sony incorporated Direct Stream Digital (DSD) into the PS-HX500. All you need to do is plug the PS-HX500 to a PC via USB, play a record, and it will be recorded via DSD 5.6 MHz native conversion. Included in

the PS-HX500 is Sony's High-Resolution Audio, which then changes DSD-recorded DSF files into WAV or High-Resolution audio files. You can then transfer them to your music player. To do so, you would need to the PS-HX500's PC software, which can be used to edit, cut or combine tracks with ease.

The PS-HX500 is also pleasing to the eyes. It embodies an all-black profile with a see-through smoke cover. From its newly developed tone arm fitted with a stylus tip in the central axis of the arm, to an aluminium die-cast



The PS-HX500 in all its glory

platter that is driven by a two-speed motor, the PS-HX500 is packed with other features that enables it to reproduce the highest quality of sound on the go, or in the comfort of home, without any compromises. Available now, at all Sony Store outlets for RM2,699. 

www.sony.com.my

Honor 6X Now Available Locally

New phablet features a dual-lens system that's becoming increasingly common



Allen An, the E-Commerce Director of Honor Malaysia

The wait almost seemed long for Honor fans, but now it's officially here in Malaysia – the Honor 6X. Honor's latest X-series smartphone has the features of flagship devices, yet priced at an incredibly attractive price.


This phablet comes with a dual-lens camera system with a 12-megapixel and 2-megapixel combo that's able to take photos in wide aperture. The first provides the image composition, while the other is responsible for depth of field information. Combined, the Honor 6X can deliver sharp, detailed photos that you normally wouldn't expect from a phone of this price range, as well as some sweet Bokeh shots. Under the hood of the lens, the Honor 6X is powered by the Sony IMX386 sensor.

Additionally, the Honor 6X comes with 3GB or 4GB of RAM – two variants, each with 32GB and 64GB of internal storage respectively. It also has a 5.5-inch Full HD screen for greater suitability in watching videos, and the sufficiently powerful Kirin 655 octa-core processor to help everything run smoothly.



Honor 6X

One useful feature that millennials would appreciate is the Wi-Fi repeater mode, which allows the device to extend a WiFi network without having to reveal the password.

The Honor 6X is now available at authorised resellers in three colours – Grey, Silver, and Gold – at a price of RM1,199 for the model with 32GB of internal storage, or RM1,399 for the 64GB version. 

www.hihonor.com/my

135 Years Of Printing Innovation

OKI DATA, which prides itself by delivering printing solutions that are dedicated to business customers through a consultative and innovative approach to service, design, manufacture and implementation, just celebrated their 135 years anniversary in 2016. To mark this momentous occasion, the following is a message from its President, Mr. Toru Hatano.

Our Profile and Philosophy

OKI DATA is an operating company within the Oki Electric Industry (OKI) Group which has a heritage of pioneering technology in the telecoms and printer manufacturing industry for over 130 years. OKI DATA develops a range of devices including printers, faxes, multifunction products and related printing solutions. Underpinned by OKI's corporate philosophy of "enterprising spirit" we constantly seek to offer new and unique products and value to our customers across the world.

Core Strengths

OKI DATA's core strengths include its LED and mechatronics technologies. Since developing the world's first page printer using an LED light source in 1981, we have led the field in making LED print heads more precise and compact, and, demonstrating our superiority in this area, we have developed and provided truly groundbreaking printers and multifunction printers that have earned a number of awards, as well as the exclusive title of world's smallest, world's fastest, world's first and more.

Value Provided by OKI DATA

LED printers and multifunction printers are characterised by offering high-speed, high-image quality printing in a simpler and more compact form than other print methods.

OKI DATA has long helped its customers increase efficiency and reduce costs – mainly in the area of office printing – with solutions that are built upon our unique hardware products.

And, going forward, we intend to further solidify our strength in hardware while enhancing software offerings and product line-ups to take on the office solutions and professional printing markets.

In the area of office solutions, we will provide printers and multifunction printers that connect to various devices and operate within software and cloud environments to meet contemporary mobile – and cloud-based needs. Our printers serve as business communication hubs to help customers simply and easily increase their efficiency.

In professional printing – the business of printing itself – we help customers create new business opportunities and lucrative revenue streams by offering products which are compatible with colours, media and processes not possible with conventional printers, in addition to offering the highly precise LED output.

To help our customers further increase business efficiency, we will not only provide our highly durable products but will also offer solutions to simplify routine maintenance tasks, saving our customers both time and money.



*Mr. Toru Hatano
President of OKI Data Corporation*

As a Global Corporate Citizen

OKI DATA is a global company that was founded in Japan but today provides products and services to customers in over 100 countries.

With pride and awareness of this fact, we actively engage in social contributions and environmental protection, along with ensuring compliance with laws and regulations in each country as well as continuing our efforts as a good corporate citizen to making a positive, global contribution to society and the planet.

For more info, visit www.oki.com.my

Grab Launches Carpooling Service In Malaysia

GrabShare allows for more affordable fares to passengers, higher incomes for drivers and less traffic congestion



Grab Malaysia country head Sean Goh (left) and GrabShare software engineer Dominic Widdows (right)

Grab has announced the regional launch of GrabShare, the company's first on-demand commercial carpooling service with its introduction in Malaysia and the Philippines. With GrabShare, passenger demand for rides can be met more efficiently with the existing car supply, which helps to play a role in reducing traffic congestion. In return, passengers enjoy cheaper rides with minimal detours, while drivers earn more by completing two bookings in one trip.

"Grab is all about leveraging big data to develop tailored solutions for solving local transport challenges to outserve our customers. GrabShare gets people to their destinations with a more pocket-friendly fare, while minimising the need for more cars on

our roads by tapping on our pool of commercial GrabCar Economy drivers. We are confident GrabShare will enable us to meet Malaysia's growing passenger demand for ride-hailing especially to cater to first-and-last mile while helping our drivers earn more," said Sean Goh, Grab Malaysia's Country Head.

GrabShare pairs just two different passenger bookings with similar trip routes within a single trip. Hence, passengers will only experience a maximum of two stops before reaching their destinations.

Conceptualised, designed and engineered across Grab's three research and development centres in Singapore, Seattle and Beijing, GrabShare's matching algorithm ensures passengers get to their destinations in the shortest possible time.

The algorithm calculates and determines a match by factoring the closest available drivers, travel time, overlap of trip routes, detour distance and current traffic conditions before intuitively sequencing pick-ups and drop-offs. For drivers, GrabShare focuses on maximising potential earnings by reducing the time and distance spent on a single GrabShare ride, enabling drivers to complete more jobs per hour to boost their incomes and reduce fuel consumption. 🇸🇬

www.grab.com/my/share/

A PGEON That You'll Be Glad To See

A parcel drop and collect service to ease all delivery worries

On the 15th of February 2017, Bison Consolidated Berhad, the operator of one of the largest home-grown convenience retail chain in Malaysia, myNEWS.com, along with EasyParcel, a web-based parcel consolidator and eCommerce shipping solutions provider, announced a partnership dubbed PGEON. EasyParcel was launched by Exabytes in 2014.

PGEON, in a nutshell, is a drop or collect service, which allows postal users to have their parcels dropped-off or collected at any of the 320 myNEWS.com outlets throughout the nation. This service would massively help to

save time of any postal user.

Let's have a scenario played out. You just ordered a brand spanking new pair of shoes online, but you have no one at home to collect it on your behalf. Just use PGEON and have your shoes delivered to any of the myNEWS.com outlets, then collect it from the outlets hassle free. This saves you the time, and the worry of whether you've missed the delivery of your parcel. This is a win-win scenario for both the couriers and the users. Without having the need for the couriers to drop by each house, they can just deliver it to a



Co-founder and CEO of Easy Parcel, Clarence Leong (Left) with Executive Director and CEO of Bison Consolidated Berhad, Dang Tai Luk (Right).

myNEWS.com outlet and cut down on delivery time.

Clarence Leong, co-founder and CEO of EasyParcel, mentions of the need to deliver and receive items quickly, either on time or as same day delivery as the main compelling reason for EasyParcel to strike up a partnership with myNEWS.com. 🇸🇬

www.pgeon.delivery

2017 MAY 23 • MAY 25
TUESDAY - THURSDAY

BASEMENT 2 to LEVEL 5
MARINA BAY SANDS, SINGAPORE

3 DAY
SHOW!

CommunicAsia2017

www.CommunicAsia.com

Network. Learn. Explore.

Asia's most encompassing trade show for the ICT industry will connect you to more than 1,100 international exhibitors!

On the show floor, establish valuable new relationships with industry players and learn from experts at the specially curated seminars and workshops.

**Pre-Register
Now**

@

www.CommunicAsia.com

Entry to the exhibition
is free!



**BORDERLESS
BROADBAND**



**CLOUD &
BIG DATA**



**CONNECT
EVERYWHERE**



**ENTERPRISE
MOBILITY**



IoT



SATCOMM



**SECURITY &
CYBER-SECURITY**



SMART CITIES



#CommunicAsia2017



Hop onto the free shuttle service to also visit BroadcastAsia at Suntec Singapore

Organised by:



ALLWORLD
EXHIBITIONS

Incorporating:

SatComm2017
www.Satcomm-Asia.com

Held concurrently with:

EnterpriseIT2017
www.EnterpriseIT-Asia.com
@ Marina Bay Sands, Singapore

BroadcastAsia2017
www.Broadcast-Asia.com
@ Suntec Singapore

A Part of:



INFOCOMM MEDIA
BUSINESS EXCHANGE

Hosted by:



In support of:



Endorsed:



Supported by:



Held in:



Equipping Our Universities With Cutting Edge Technologies

Microsoft, together with the Ministry of Higher Education is entrusting universities across the country to reach greater heights




K Raman, Managing Director, Microsoft Malaysia with Ybhg. Datin Paduka Ir. Dr. Siti Hamisah Binti Tapsir, Director General, Department of Higher Education, Ministry of Higher Education at the Windows 10 Education Activation Campaign event at Putrajaya

On the 27th of February 2017, Microsoft Malaysia celebrated its Windows 10 Education Activation Campaign, with the help of the Ministry of Higher Education (MoHE), with the purpose of empowering the students and educators in universities across the country to achieve greater heights and do great things.

The Windows 10 Education Activation Campaign acts to serve as a tool to transform local education, alongside the Shift 9 Malaysia Higher Education Blueprint 2015-2025. The purpose of the Blueprint is to leverage ICT to scale up the quality of learning across Malaysia and to increase upon the cyber infrastructure that can be used to support technologies such as videoconferencing, live streaming and Massive Open Online Courses.

The Windows 10 Education Activation Campaign enables students across Malaysia to have access to the latest tools that would benefit their studies and work. MoHE and Microsoft now recognises the Universities that have backed this journey.

The Windows 10 Education Activation Campaign had already started in a few of the universities across the country, UTEM University in Melaka and Taylor's University in Sunway are examples of several universities participating in this campaign. This campaign also gives benefits to students by giving them a chance to upgrade from any version of Windows Home to Windows 10 Education at no cost whatsoever. The campaign will be active starting from the 1st of March 2017 to the 30th of June 2017. 

www.microsoft.com/en-my

Keeping An Eye On Smart Cities And Digital Enterprises

Hitachi's latest Video Analytics Software

Hitachi Insight Group, on the 9th of February 2017, showed in Kuala Lumpur its latest Video Analytics Software, the Hitachi Video Analytics (HVA) in a bid that would provide a better view and experience in enhancing its Smart City and Public safety solutions portfolio.


In a combination of computer vision and advanced analytics, real-time alerts can be provided to cities, airports, campuses,

transportation agencies and business on matters such as, operational and business intelligence that help with the counting of people, detecting the length of queues, analysis of activities and more. It also helps in delivering businesses and other organisations with better insights that would improve their day to day activities that benefits the customer experience, as well as protecting individual privacy, reducing

the risk and liabilities of said business and organisations.

Smarter transportation, traffic and parking management is also a benefit that was raised to help with the counting of vehicles, traffic analysis, the detection of parking space and license plate recognition, which would help ease the day to day commute for residents, customers and commuters.

With real-time alerts on intrusion detection, left-behind object detection, facial recognition and camera tampering would greatly benefit public safety by working alongside public safety departments to keep the public and property safe and secure.

An airport utilising HVA would be able to enhance the safety and cut down on time wastage of its travellers by detecting long queues and optimizing staff, which then enables the travellers to have more time shopping or dining in the airport terminals. 

www.hitachiinsightgroup.com

AMBIL SENASKHAH, POPULARITI BERTAMBAH



WARTA
MINGGUAN WARTA PERDANA

Ambil. Baca. Kongsi.

PERCUMA **TERBIT SETIAP RABU**

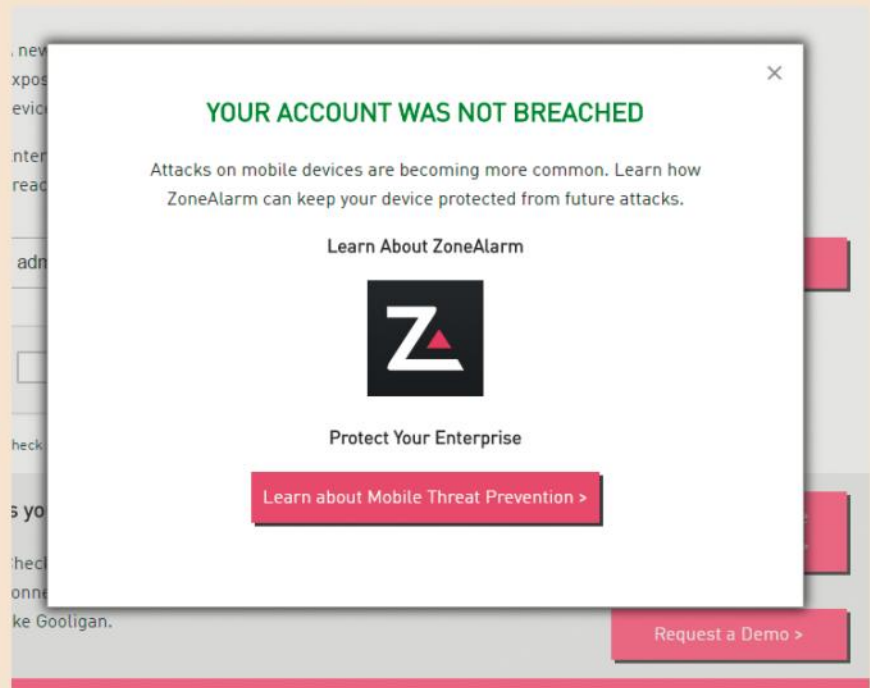
Boleh didapati di stesen LRT berhampiran anda

www.warta.my

Android: Gooligan Steals Google Accounts

The Android malware programme called 'Gooligan' has already annexed more than a million Google accounts. It spreads through infected apps

The security company Check Point is issuing warnings about Gooligan, a malignant Android malware programme that targets Google's security tokens. These are used to log on to various Google services (including Gmail, Play, Drive and Docs). If they fall into the wrong hands, the tokens can be used to bypass security functions like the 2-factor authentication arrangement. Gooligan spreads via infected apps and potential victims either download these directly from the web as APK files, or get them from third-party suppliers. Once the system has been infected, Gooligan contacts a command-and-control server and it then downloads the required data packets in order to use known vulnerabilities to initiate a rooting attempt. If it works, the malware programme gains complete access to all the functions of the Android device. Criminals can also use the control server to execute additional operations, such as stealing important data, or automatically install and rate apps, in order to boost their ranking in the Google Play Store. The malware ability to penetrate the system is so great that the only way to fix an infected device is to completely re-install the Android operating system. 🚩



Has your smartphone been infected by Gooligan? Check Point offers a free tool – at <https://gooligan.checkpoint.com> – that you can use to check your account



Data Theft Of The Month

DAILYMOTION: 87.6 MILLION SETS OF USER DATA PILFERED

According to leakedsource.com, French video platform Dailymotion has been hacked and more than 87 million sets of user data were stolen. Those who have Dailymotion accounts should change their passwords immediately.


MITFAHRZENTRALE & MITFAHRGELEGENHEIT HACKED

The databases of German car-pooling services, Mitfahrzentrale.de and Mitfahrgelegenheit.de, were apparently copied after they were taken offline at the end of March 2016. Criminals have managed to get their hands on more than half a million International Bank Account Numbers (IBAN), 100,000 e-mails and 15,000 mobile phone numbers. The BlaBlaCar portal (which is the successor of the two services) has not been affected by the theft.


GEEKEDIN LOSES EIGHT MILLION GITHUB PROFILES

GeekedIn is a placement service for programmers that apparently use data from the GitHub portal. The back-up of a GeekedIn database was passed over to the security expert Troy Hunt. This database has been running through the internet and contains the data of more than eight million GitHub users, which was collected by GeekedIn. 🚩


Crackdown On Avalanche Botnet

With international assistance, German authorities – including Verden's public prosecution department and ZKI (central crime inspectorate) Lüneburg – destroyed the Avalanche botnet. In addition to providing the technical infrastructure for 20 other botnets, the Avalanche botnet also carried out phishing campaigns and spread ransomware. Five people were arrested. 

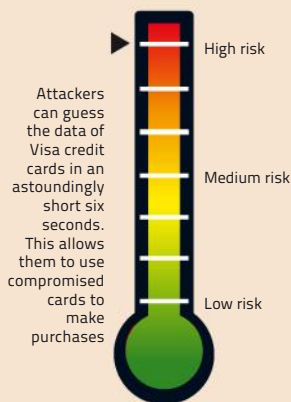
Attack Shows Visa Card Data In Seconds

According to researchers at UK's Newcastle University, attackers can guess the data of legitimate Visa credit cards in less than six seconds. All they need is the 16-digit number, which can be obtained for a few cents on the dark web. First, the researchers claim that the expiry date can be determined within four seconds and the three-digit security number, found on the back of Visa cards, in another two seconds. The technology involved makes use of hundreds of bots, which bombard more than 400 online retailers with queries and use a brute-force method to guess the data. Unlike MasterCard, Visa doesn't use a web-wide monitoring system to detect these attacks, making it a bigger security risk. Therefore, credit card users should pay close attention to their credit card statements and cancel suspicious write-offs immediately. 

Con-Apps Found On Mac App Store

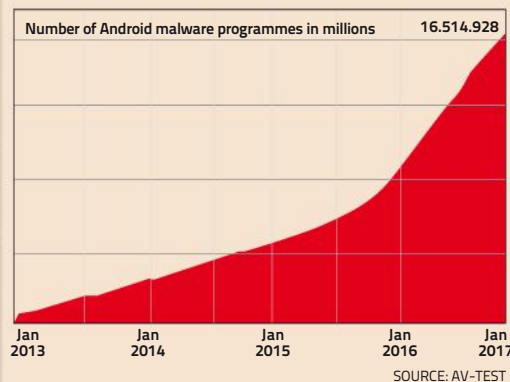
Official App Stores – such as those run by Apple or Google – promise convenience and security. However, this doesn't seem to apply to the Mac App Store. The HowToGeek portal has documented several swindle-apps, which tell users to shell out some money for premium features. Subsequently, they either provide the promised functions in an incomplete manner, or refuse to provide them altogether. Misleading descriptions (e.g. for supposed Microsoft Office products) are especially popular. In many cases, such items contain nothing more than templates, or special browsers that call up Office Online. There's more, as con scams are also run under the name of Adobe and Firefox, so users should always go through the reviews and report fraudulent apps before making a purchase. 

Danger Barometer



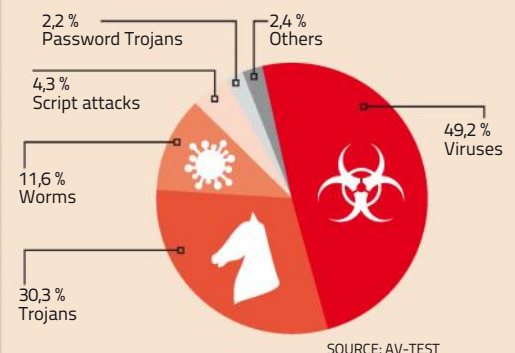
Android under fire from malware

Since Android is the most widely-used mobile operating system, it is a juicy target for criminals who want to accomplish many things with little effort. This is reflected in the number of malware programmes that have been detected.



Viruses making a comeback for Windows

Viruses are more popular among criminals than worms and they are almost always written for 32-bit systems, which means that they will also be able to infect old systems



Number of the Month:

87,600,000

87.6 million sets of user data were stolen from video streaming site DailyMotion

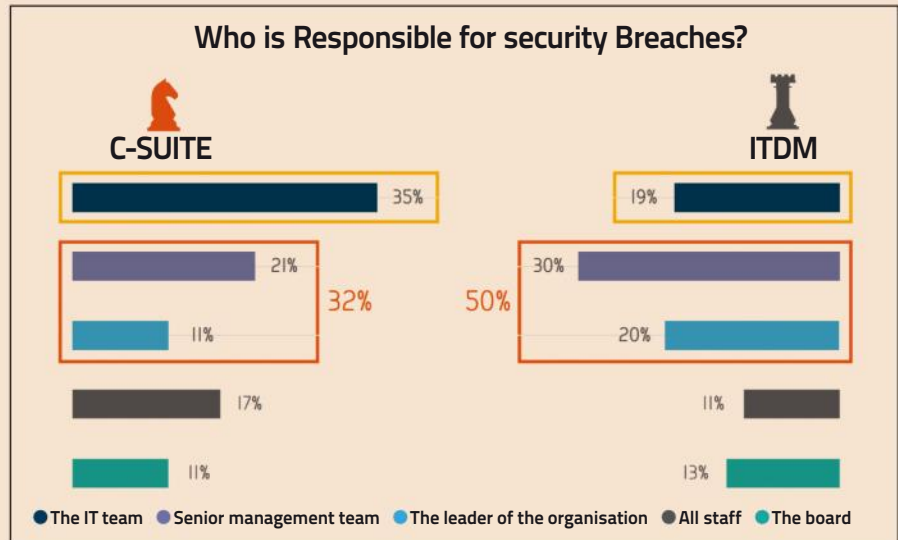
BAE System Releases Research Report For Malaysia

According to BAE Systems's research report, titled 'The Intelligence Disconnect: the 2017 Cyber Defence Monitor', the C-Suite executives and IT Decision Makers (ITDM), for companies in Malaysia and around the world, have rather contrasting perceptions when it comes to cyber security.

The report indicated that boardroom members and IT Decision Makers often point the finger at the other party, whenever asked to own up when the company is breached by a cyber attack. In addition, the boardroom executives tend to estimate the damage caused by successful attacks to be much lower compared to the numbers that their IT counterparts would give.

Moreover, 70% of Malaysian C-Suite executives find cyber security the most significant business challenge, compared to the 42% of IT Decision Makers. And 80% of ITDMs expect to be hit by at least one cyber-attack within the next 12 months, while only 50% of C-Suite executives think it'll happen.

Despite the differences in opinions, both parties believe that the frequency and severity of attacks will increase. Thus, 65% of interviewed suites are planning to dedicate more time and resources to improving their organisation's cyber security.



Goh Su Gim, cyber security expert at BAE Systems Applied Intelligence, said: 'The disconnect in opinions between C-level respondents and IT Decision Makers when it comes to potential threats, accountability and responsibility creates gaps for attackers to exploit. With regulatory fines starting to become a bigger issue, organisations need to plan ahead for incidents and ensure that the C-suite and IT teams are working together to

narrow gaps in understanding, intelligence and responsibility.'

Barry Johnson, Malaysia Country Manager at BAE Systems Applied Intelligence, said: "Perhaps most worryingly for Malaysia, none of our executives are confident that their company has all the skills necessary to deal with a cyber-attack; the lowest amongst all markets surveyed."

www.baesystems.com/cdm

Blacknurse: Firewall DDos For All And Sundry

DoS attacks usually require as many systems as possible in order to be successful. But thanks to the BlackNurse method, a single laptop is now enough for a firewall attack. ICMP type-3 code-3 error messages can be used to overload specific firewall models, causing computing capacity to become exhausted and data packets to start disappearing. With a range of 15 to 18 Mb/s, the volume is at a relatively low level. In comparison, the Mirai botnet can deliver a volume of up to 1.2 Tb/s. However, a similar effect is achieved, because an important component is overloaded in a targeted fashion. This form of attack can be countered by deactivating the ICMP type-3 code-3 support at the WAN interface of the firewall. 📌

Goldeneye Targets Companies

The Goldeneye blackmail software is targeting companies using manipulated Excel files or CVs, so those who open such files run the risk of getting infected. If infected, the malware encrypts data and refuses to release the data until a ransom has been paid. For safety, experts say you should deactivate macros in Windows and create back-ups. Currently, there's no decryption tool available. 📌

New Functions Available For Fortinet Security

Fortinet has recently announced that its Fortinet Security Fabric is getting an extension that will help Malaysian enterprises defend against cyber threats targeting Internet of Things (IoT). Due to the number of IoT devices being used, especially by some verticals, a platform that can provide the visibility, integration, control and infrastructure scale to safeguard them is important.

‘Malicious cyber actors have been increasingly targeting the billions of IoT devices online today, essentially turning the Internet of Things into an Internet of Threats. It is critical that today’s enterprises implement security solutions that can identify, understand, and protect their infrastructures from the massive attack surfaces created by IoT,’ said Michelle Ong, Country Manager for Fortinet Malaysia.


There were cases last year where IoT devices

were taken over and used as a platform to spread malware, or to initiate Distributed Denial of Service (DDoS) attacks. The fact that IoT devices lack basic security built into them is of great concern.

Below are three key strategic network security capabilities that Fortinet has advised in verbatim:

1. Learn – Complete network visibility is critical to securely authenticate and classify IoT devices, build risk profiles, and then assign IoT device groups based on identified trustworthiness. At the core of the Fortinet Security Fabric, FortiOS provides total IT awareness and visibility into every security element and enterprise networking component. This enables IT to identify and manage their IoT devices and traffic at critical points within the infrastructure.

2. Segment – Enterprises need to be able to segment IoT devices and communications into policy-driven groups and grant baseline privileges suitable for the specific IoT risk profile. Fortinet’s Internal Segmentation Firewall enables enterprises in Malaysia to internally segment their networks and devices, allowing IT to apply layered security policies based on the specific device type and network access requirements.

3. Protect – Fortinet’s Security Fabric provides the required capability to correlate IoT security incidents and threat intelligence to deliver a synchronized response to IoT threats. It also ensures that compromised IoT devices can be quarantined and remediated at multiple points within the network to contain threats and ensure that malicious traffic never reaches critical IT systems or enterprise data. 

www.fortinet.com

Hidden Malware Found Breaching Enterprises

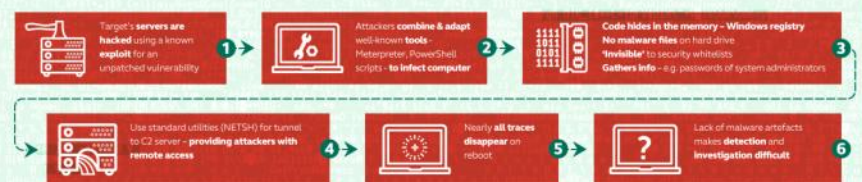
Late last year, Kaspersky Lab was informed by some banks in CIS that the Meterpreter software was found on their servers, where they did not belong.

Commonly used for nefarious purposes these days, the code for Meterpreter was integrated into legitimate PowerShell scripts and other utilities. The malicious code was able to hide in the memory of the servers this way, which allowed it to mine system administrator passwords without being detected. This in turn enables cyber criminals to remotely control these systems. According to Kaspersky Lab, in most cases the goal of the criminals were to gain access to financial processes.

Since the discovery, Kaspersky Lab has been able to find more cases, with more than 140 networks in 40 countries found compromised in the same way.

The culprit responsible has yet to be identified. This is because the attack uses an open source exploit code, common Windows utilities and unknown domains, making it nigh impossible to do so. In addition, the method


Over 140 enterprises hit around the world, including banks, telecoms and government organizations

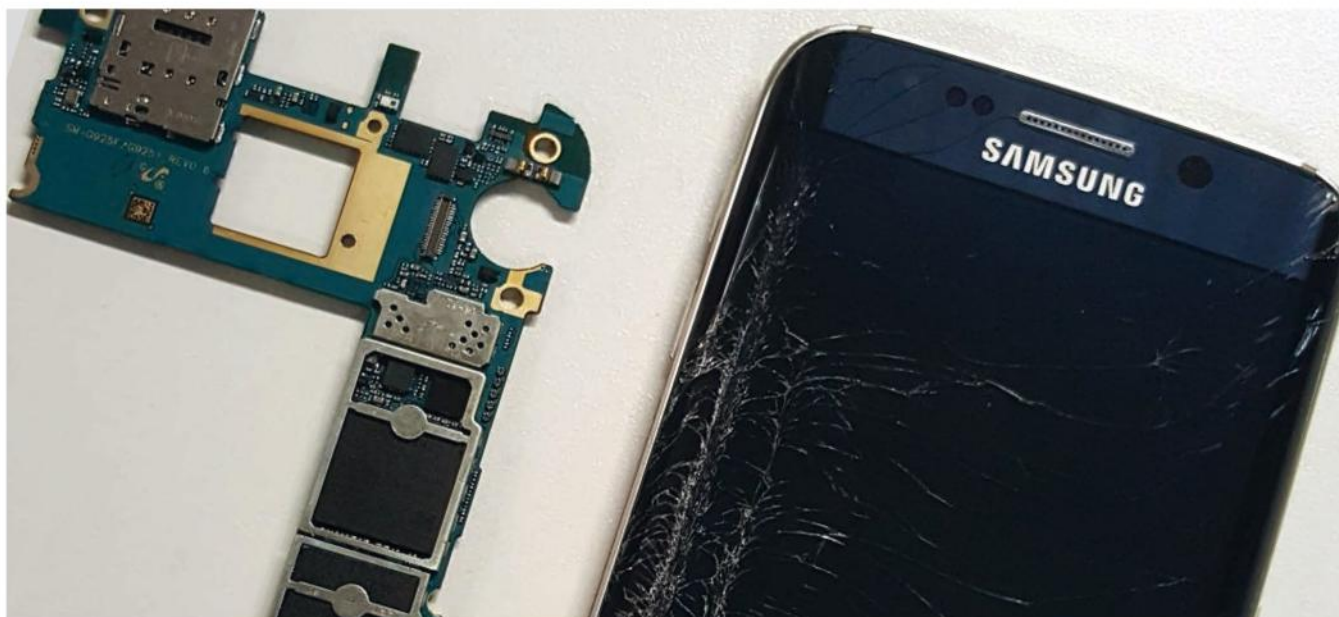


used also makes it hard to trace the details. Typically, investigations by security experts involve an agency that looks for traces and samples that remain behind after attacks. But that's not always easy, as certain details and info are no longer available after the system's reboot. In this bank case, Kaspersky was fortunate to catch the attacker's trail.

‘The determination of attackers to hide their activity and make detection and incident response increasingly difficult explains the latest trend of anti-forensic techniques and memory-based malware. That is why memory forensics is

becoming critical to the analysis of malware and its functions. In these particular incidents, the attackers used every conceivable anti-forensic technique; demonstrating how no malware files are needed for the successful exfiltration of data from a network, and how the use of legitimate and open source utilities makes attribution almost impossible,’ said Sergey Golovanov, Principal Security Researcher at Kaspersky Lab.


According to Kaspersky Lab, the only way to detect such attacks is through the RAM, network and registry, so more traditional methods like signature detection will be useless. 



Data From UFS Chips Can Be Recovered


Owners of Samsung Galaxy S6 and S6 Edge devices can breathe a sigh of relief. Data from damaged UFS chips can now be reconstructed

The Samsung Galaxy S6 and the S6 Edge were the first smartphones to contain a UFS (Universal Flash Storage) memory chip, a type of memory that combines the advantages of the energy-saving eMMC (embedded Multi Media Card) technology with the performance features of SSDs (solid state disks). While the chips are about five times faster than microSD cards, there's a disadvantage: It was impossible to recover data from damaged chips. Or at least, it used to be.

Specialists at the CBL Datenrettung GmbH have now found a way to prevent data lost from Galaxy S6 or S6 Edge smartphones due to damaged UFS chips. 'In every single case, an elaborate procedure – which began with one and a half hours of soldering under a microscope – made it possible for us to flawlessly and completely reconstruct folders, files and contacts,' said project manager Conrad Heinicke. The recovered data is then returned to the customers on a USB stick. The ability to recover data saved on UFS devices will only become more important in future, considering the fact that other mobile phone manufacturers are also likely to start using UFS as a storage medium. 



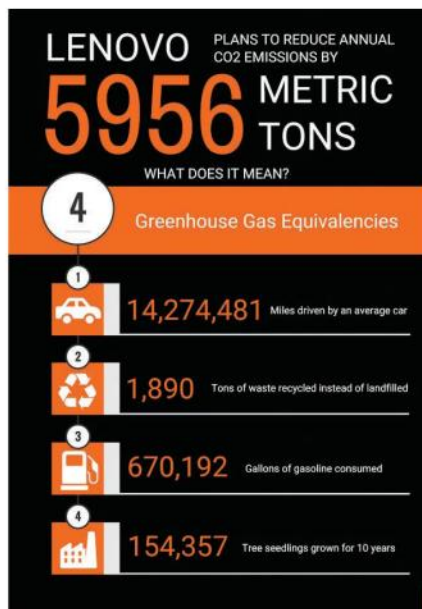
Bluetooth Headphone For Tireless Music Fans

With a runtime of 28 hours, Teufel's Mute BT (est RM945) is extremely impressive in the battery life department. It has an active noise cancelling system that blocks interfering noises and can play CD-quality songs, thanks to the Bluetooth 4.0 facility (which features the aptX codec). The device also comes with a box to store the headphone. 

Lenovo, Saving The World One Process At A Time

A new process in PC manufacturing that reduces carbon emissions by an estimated 35%

On the 7th of February, Lenovo announced a new patent-pending process that was developed to improve PC manufacturing, called the Low Temperature Solder process (LTS for short). The current process, called the tin-based manufacturing process requires extremely high temperatures for it to work, thus consuming more energy and increasing the stress applied on components.



Lenovo's numbers on CO2 emissions

Lenovo wishes to reduce those by introducing its new LTS process, which according to Lenovo, does not only apply to Lenovo products, but it is available and can be universally applied to all electronics manufacturing that involves the printing of circuit boards, at no extra cost or performance reduction.

The LTS process only requires the soldering heat to be applied at 180 degrees Celsius, a reduction of about 70 degrees compared to the previous method. Lenovo found that the LTS process produces significantly less carbon emissions.

Lenovo intends to implement the LTS process on 8 Surface Mount Technology (SMT) lines throughout 2017, which could save up to 35% on carbon emissions. Lenovo also targets there to be 33 SMT lines with 2 ovens per line, which goes to an estimate of 5956 metric tons of CO2 that will be saved annually by the end of 2018. 🇲🇾

www.lenovo.com/my/en

Bluetooth 5 Is Officially Adopted

With a range that is four times more than the previous standard, Bluetooth 5 is expected to speed up the Internet of Things. Doubling the speed and an eight-fold increase in transmission capacity will contribute in making the communication between IoT devices better, while the longer range facilitates better coverage within buildings. Bluetooth 5 is also supposed to minimise disruptions emanating from other wireless technologies and the low power consumption level results in longer usability. The first products featuring Bluetooth 5 are scheduled to hit shelves in the next few months. 🇲🇾

Almost Every Web User Is Afraid Of Data Theft

There are many people that feel uncomfortable when they're surfing or shopping online and with good reason. According to a survey conducted by PricewaterhouseCoopers (pwc) business consultants, one in three people has fallen victim to identity theft before. Most of them (21 percent of the respondents) say their e-mail accounts were misused to send spam mails, while 5 percent of respondents claimed that data thieves made purchases at web shops using their names. The average financial loss suffered by users was about RM6,457. 🇲🇾

Chatbots Will Replace Customer Consultants By 2020

Customer service without employees? Sounds unreal but according to an Oracle study, most big brand suppliers will be using such a model by the year 2020. 78 percent of the companies that were polled plan to use virtual reality in the customer service domain, while most of these companies are thinking about using chatbots (virtual personal assistants). A good 35 percent of brand suppliers are convinced that their customers would prefer to make purchases or complaints, without having to deal with real service contacts. However, such a model will only work if the latest customer profiles are available. 🇲🇾

AMD Has Ryzen

Disrupting Intel's hold on the processor market. How will AMD fare?

AMD has been teasing everyone about a new processor for some time now, but on the 22nd of February, AMD officially announced their renewed venture into the processing market with the AMD Ryzen 7.

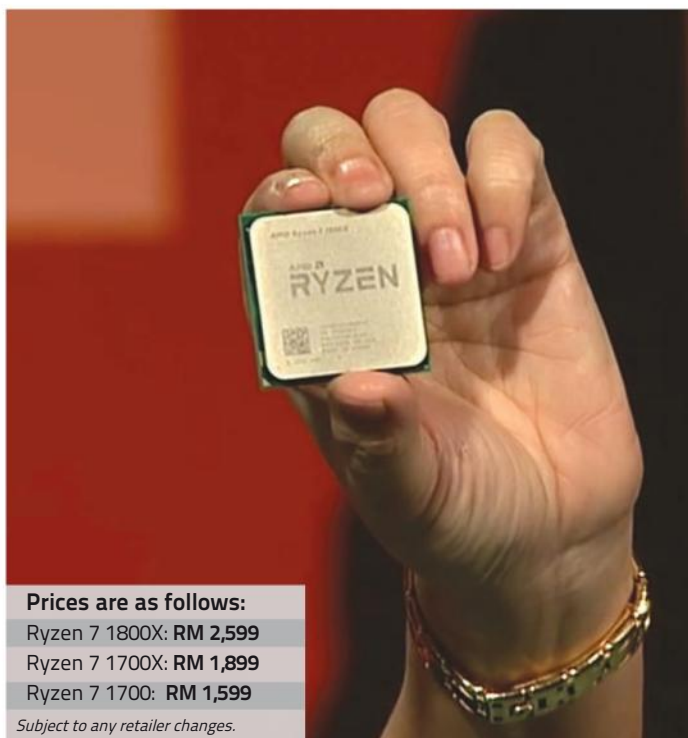
More than 180 online retailers and boutique OEMs have announced that they will be accepting pre-orders for Ryzen. It was also announced that Ryzen will have at least 82 new and compatible motherboards on its release date, ranging from ASRock, ASUS, Gigabyte and more. Along with a release date of March 2, Dr. Lisa Su, AMD's president and CEO mentions that "enthusiasts and gamers around the world will experience 'Zen'..." There are no concrete dates for releases in the local market, but a few of AMD's local retailers have also begun accepting pre-orders.

With the mention of pre-orders, pricing comes to mind. AMD knows this too, so they're releasing the Ryzen at less than US\$500, not inclusive of retailer mark-ups and tax. At the announcement, AMD mentioned that their new processors were designed for gamers, creators and enthusiast with their 8-cores and 16-threads. In the demonstrations and testing, the Ryzen 7 1800x managed to outperform an Intel Core i7-6900K in Cinebench.

The Ryzen 7 will come in three models, the Ryzen 7 1800X, which is quoted to have a base clock of 3.6 GHz, the Ryzen 7 1700X with its base clock of 3.4 GHz, and finally, the Ryzen 7 1700 with a base clock of 3.0 GHz.

At half the price, it would be very difficult for Intel to ignore this bold move that AMD has set, which will shake the hold that Intel has on the market. Ryzen will be powering thousands of computers in the days to come. 🇨🇦

www.amd.com



Prices are as follows:

Ryzen 7 1800X: RM 2,599

Ryzen 7 1700X: RM 1,899

Ryzen 7 1700: RM 1,599

Subject to any retailer changes.

AMD's CEO, Dr. Lisa Su holding up the Ryzen during its Release Announcement



The Razer Blade 14-inch in all its glory

Slice Up Your Opponents With The New Razer Blade

Razer's latest gaming laptop

Razer recently announced their latest iteration of the Razer Blade, the Razer Blade 14-inch gaming laptop. Built in with a Nvidia GTX 1060, a mobile Intel HM175 Chipset, 16GB of DDR4 RAM, and an Intel Core i7-7700 Quad-Core processor, gaming on the go never felt any better.

The display comes with two choices: A matte IPS screen in Full HD, or a 4K Ultra HD capacitive multi touch display. The storage also comes in a few choices of SSD, ranging from 256GB SSD to 1TB SSD.

With a plethora of other features such as: an anti-ghosting keyboard fitted with Chroma backlighting, a Thunderbolt 3(USB-C) and 2 USB 3.0 ports and more. All of this packed into a body measuring 17.9 x 345 x 235 mm, as well as a lightweight 1.86kg for the Full HD version or 1.95kg for the Ultra HD version. And who says that size means everything?

With a targeted worldwide release on March 2017, we could see it coming to our shores in the very near future. Along with a starting price of US Dollars 1,899 (approx. RM 8,437), those who are interested should probably start saving now. 🇨🇦

www.razerzone.com


Gartner Sees Worldwide Sales Of Smartphones Grow In Fourth Quarter Of 2016

Apple finally takes back the number one spot in global smartphone rankings from Samsung

In 2016 overall, smartphone sales to end users totalled nearly 1.5 billion units, an increase of 5 percent from 2015. The fourth quarter of 2016 saw Apple leapfrog past Samsung to secure the number one global smartphone vendor position due to the withdrawal of the Galaxy Note 7 from the market leaving a large gap in its large-screen phone range.

It has taken eight quarters for Apple to finally regain the number one global smartphone vendor ranking, but the positions of the two leaders have never been so close, with only 256,000 units difference. Apple was able to achieve this thanks to strong sales of its flagship phones the iPhone 7 and iPhone 7 Plus, as well as the weakened demand for Samsung's smartphones in mature markets across the world.

On the other side of the world, top Chinese smartphone vendors grew shares by 7

percentage points in the fourth quarter of 2016. Huawei, Oppo and BBK accounted for 21.3 percent of smartphones sold to end users worldwide during the fourth quarter of 2016, an increase of 7.3 percentage points year on year. Top Chinese brands such as Oppo, BBK, Huawei, ZTE, Xiaomi and Lenovo are aggressively expanding into markets outside China, where they will continue to disrupt the top smartphone players this year. 

www.gartner.com

Worldwide Smartphone Sales to End Users by Vendor in 2016 (Thousands of Units)

Vendor	2016 Units	2016 Market Share (%)	2015 Units	2015 Market Share (%)
Samsung	306,446.6	20.5	320,219.7	22.5
Apple	216,064.0	14.4	225,850.6	15.9
Huawei	132,824.9	8.9	104,094.7	7.3
Oppo	85,299.5	5.7	39,489.0	2.8
BBK Communication	72,408.6	4.8	35,291.3	2.5
Equipment Others	682,314.3	45.6	698,955.1	49.1
Total	1,495,358.0	100.0	1,423,900.4	100.0

Source: Gartner (February 2017)

Units sold in 2016 and market share percentage:-

Samsung – 206,446.6, 20.5 percent

Apple – 216,064.0, 14.4 percent

Huawei – 132,824.9, 8.9 percent

Oppo – 85,299.5, 5 percent

BBK – 72,408.6, 4.8 percent


Others – 682,314.3, 45.6 percent

PlayStation VR Sells Through 915,000 Units Worldwide

PlayStation VR records incredible sales along with more content on the way for the upcoming year

Sony Interactive Entertainment Hong Kong Limited Singapore Branch (SIES) has announced that PlayStation VR, has cumulatively sold more than 915,000 units worldwide as of the time of writing. The number of PS VR software titles and experiences reached more than 100 globally, and the number of developers and publishers has increased to more than 360, ranging from smaller independent teams to the industry's top publishers.

'Since its October launch last year, PS VR continues to be well received by people around the world thanks to the high quality, revolutionary VR experiences it offers. With more than 53.4 million PS4 units sold globally, we firmly believe PlayStation VR will take the lead position in the VR market' said Andrew House, President and Global CEO of Sony Interactive Entertainment. He also added, 'We are increasing production to meet demands and will continuously support content developers as they create innovative VR experiences that are only possible on PlayStation.'

Currently there are more than 220 software titles and content in development for PS VR with highly anticipated launches on their way, including Ace Combat 7, Final Fantasy XV, Steel Combat, Tekken 7, Farpoint, Gran Turismo Sport, and more. The PS VR system is also currently available in 64 countries and regions worldwide. 

asia.playstation.com



Moto Z & Moto Mods

You could say that the Moto Mods are the raison d'être of the Moto Z and Moto Z Play. Through interchangeable backs that snap on the Moto Z Play, it uses powerful integrated magnets to fasten incredible mods to the device. Need a portable projector? Snap it on! Need additional battery? Snap it on! Need a speaker or an amazing camera? Snap it on! You'll be getting the best of the best from each mod, coming from some of the hottest names like JBL and Incipio.

By CHIP Team



Insta-Share Projector

Ever wanted to share your pictures, videos or even movies you have on your phone? But there's just too many people around to go around showing on by one. You can transform your phone into a projector using the Insta-Share Projector. Instantly turn any flat surface into a 70-inch big screen on-the-fly. It sports a 1,100 mAh battery so you can run the projector off its own power for an hour before it begins eating power from your Moto Z. There is even an audio output so you can have both visual and audio perfection.



Battery

Moto's longest lasting smartphone battery ever can be found on the Moto Z Play, a 3,510mAh battery that has up to 45 hours of battery life on a single charge. The Moto Z Play also supports TurboPower to give your phone a quick energy boost, giving up to 8 hours of charge in just 15 minutes of charging. If that doesn't provide you with enough battery which it should, you can still attach the Incipio offGRID Power Pack Moto Mod and get even more juice to last you.



Moto Z

JBL SoundBoost

If the built-in speakers of the Moto Z Family just isn't cutting it for you, you can always get the JBL SoundBoost Moto Mod. Giving your Moto Z powerful stereo sound in a single snap. The JBL SoundBoost sports 10 hours of battery life with a 1,000mAh battery, and supports external charging through a USB Type-C cable. With 3W per speaker, you can be sure that you'll get the booms and beats you want and need, right from your little device.



Moto Z Play

Camera

Sporting a 16MP rear camera the Moto Z Play is set to take incredible crystal clear photos. Supporting two types of autofocus technologies, laser and phase detection, you'll never miss a shot because of a slow focus. The front-facing camera on the other hand is a 5MP camera with a wide-angle lens, so you can easily fit your friends and family into the picture. But if the camera still isn't up to standard for you, how about using the Hasselblad True Zoom? This 'Moto Mod' gives you 10x optical zoom, a Xenon flash for low-light photography, and the ability to shoot in RAW format.



Update For Windows Update

For more than 400 million Windows 10 devices, the system's update function is running up against its limits. The new Windows Unified Update Platform will solve this problem

By Jörg Geiger

Whenever a new patchday rolls up, the shivers show up again. Downloads, installations, restarts and that fear of 'Is everything still working?' Normal Windows Updates can get on your nerves to some extent, but things become truly stressful when you're dealing with feature updates for Windows 10. Not only are those updates big, they're also very slow to update and prone to errors. The best example would be last summer's Anniversary Update. Microsoft was unable to give it to all of its customers in parallel, so the update phase lasted over three months. Months later, users are still struggling with the system updates. But in spite of all the issues that have occurred, Microsoft stubbornly decided not to change its new strategy of rolling out frequent system updates.

More than 400 million devices were upgraded to Windows 10 by the end of 2016. And every year, these installations are supposed to be provided with two large feature update packets, which are continuously developed and tested under the 'Redstone' codename. In the past, these large updates made it necessary to download a complete system image and re-install Windows. However, this procedure ignores the fact that a chunk of code from the previous version remains unaffected. The Unified Update Platform (UUP) is supposed to be the solution to this problem. With UUP, the sizes of system updates are supposed to shrink and rolled out faster.

One Update For All Platforms

With Windows 10, Microsoft isn't just developing a desktop operating system. The Redmond-based company is nurturing a kernel system, which is only supposed to be adapted to different devices during the

second phase, and the UUP is to become part of this kernel system. The advantage is that UUP can be rolled out across all platforms, which includes desktop PCs, tablets, smartphones, the IoT (Internet of Things) and HoloLens devices. From a user's point of view, the new update shouldn't catch or require the attention of the user at all. The user interface on the individual devices remains the same, except now it will have the automatic update mechanism for the respective operating systems. Other things are supposed to be readily apparent, because UUP should make updates faster and smaller in size. The key aspect of the new technology involves differential downloads of the new system version, which is supposed to deliver files that are up to 35 percent smaller. Microsoft has also optimised the internal process. First, the PC's Windows Update system sends a report on the PC's current status to Microsoft's update server. On the other side, the Windows Update service on the server then provides the new version. However, it no longer delivers an entire image. Instead, it delivers a customised data packet that's catered to the particular PC requesting for the update.

This is a necessary step, because a comparison (refer to the table on the next page) shows that the size of the system image has increased to more than three GB over the years and the burden on system memory has also increased accordingly. In fact, the older method is no different from reinstalling Windows. But with UUP, the differential update packet only covers the

changes made after the installation of the last update. So, instead of having to download an entire Windows image, users now receive a proper update – one that only amends or add onto the existing installation. It'll also result in smaller file sizes with the updates. For example, instead of a massive 3GB, your next major Windows Update might only be a maximum of 2GB. That's still a lot of data, but as far as update sizes go, Microsoft has essentially shrunk them back to level we see way back with Windows Vista.

Faster Updates

The update process will definitely become faster when the system update downloads become smaller, but UUP is also doing work in another important area. Update queries can also take a long time, something that you can observe when you use a Windows image that is not completely up-to-date for a new installation. Even if you are aware that


there many more updates available, the update request system keeps running its search for a very long time that sometimes even turn out unsuccessful. UUP will help in this regard by speeding up this update process, by making it so that the PC requesting for an update will no longer

have to do the searching of updates. Instead, this function will be taken over by the update service on Microsoft's servers. The devices are relieved of this burden and the Windows update service delivers only the updates that the end device requires.

Windows retrieves update-checks faster

Microsoft servers do most of the work

Updated In A Single Step

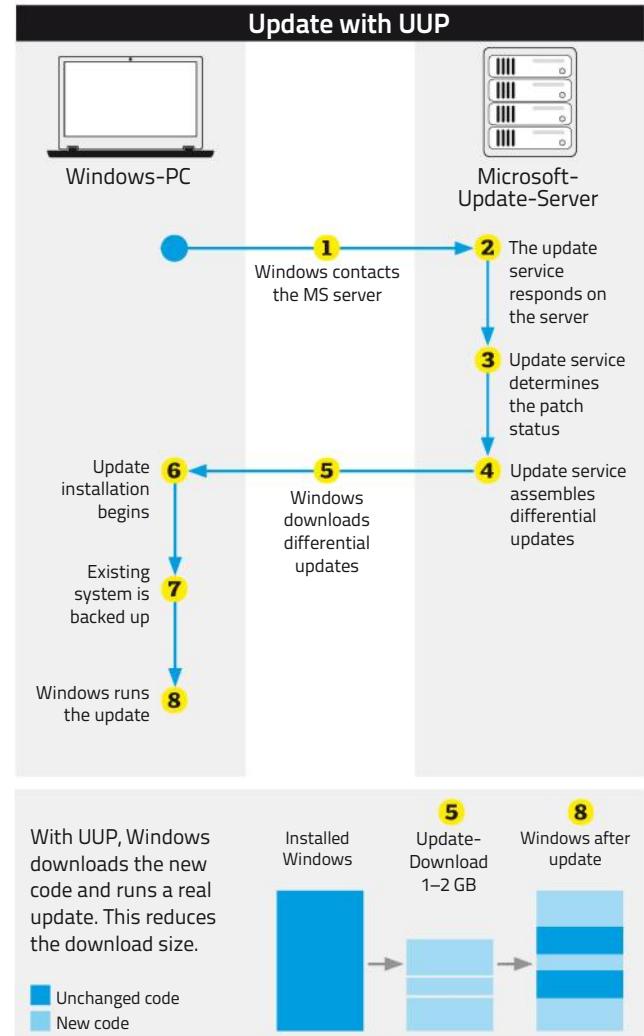
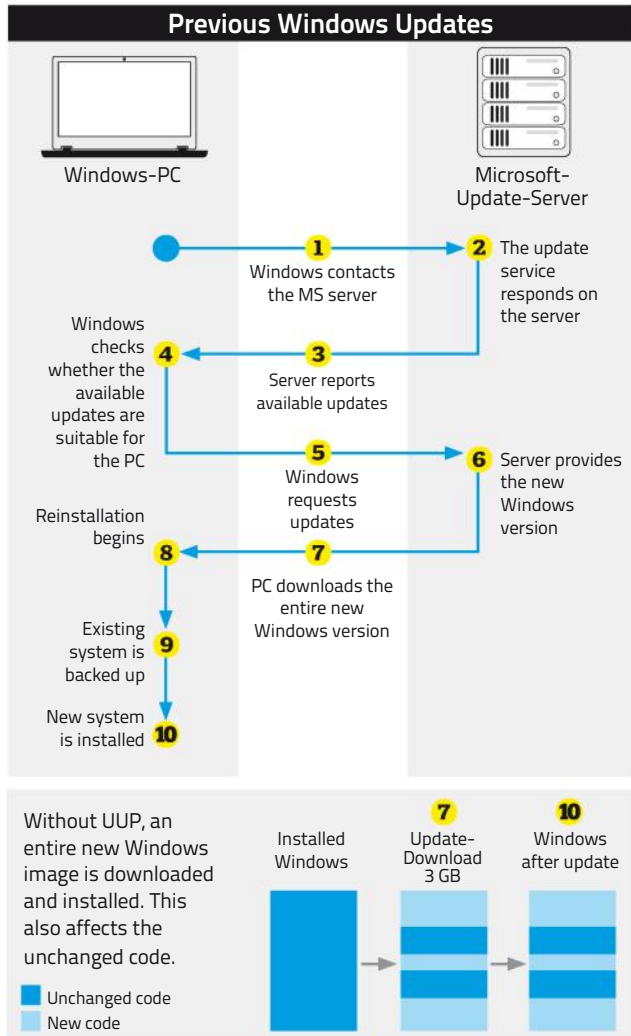
In recent years, desktop systems have gotten newer features and functions from smartphones. Thanks to UUP, it's now going to be the other way around. Large Windows Updates will now make older systems up-to-date in one stroke, so the previous updates are no longer required to carry out the last step that leads to a new build. Before this, it was also necessary to manually install updates one-by-one on Windows Mobile. That's now a thing of the past, because now the user will now fully up-to-date in a single step using UUP. Moreover, the update will be a customised 'patch'. The UUP sub-structure will be distributed in March 2017 with the Creators Update for Windows 10, while the first differential update for end users (Redstone 3) will arrive later in 2017. 

UUP: The new Windows update function

Microsoft is renovating the inner workings of its Windows Updates. The Windows Unified Update Platform (UUP) is initially supposed to speed up large system updates like Redstone, which previously required a full-fledged reinstallation.

Comparing old and new system updates

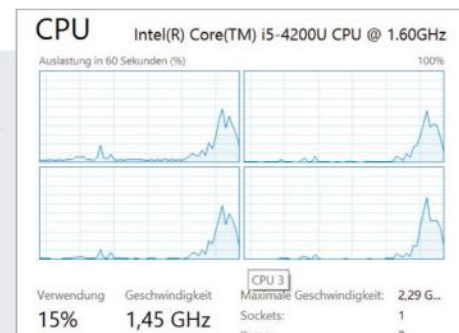
The following diagram illustrates how large system updates are installed. The diagram on the left side depicts a Windows 10 PC's request for the old update pattern, while the one on the right illustrates the new procedure involving the Unified Update Platform. The new update involves fewer steps and significantly smaller downloads



Windows versions are getting bigger

The table shows the growth in the download-sizes of previous Windows versions, from XP to the Anniversary Update

Version	Year of release	Update total size
Windows XP	2001	573 MB
Windows Vista	2006	2.198 MB
Windows 7	2009	2.393 MB
Windows 8	2012	2.332 MB
Windows 8.1	2013	2.950 MB
Windows 10	July 2015	2.941 MB
Windows 10 autumn update	Nov. 2015	3.212 MB
Windows 10 Anniversary Update	July 2016	3.111 MB



Smaller CPU load

The Windows Update function assigns a 15% CPU load during the search process itself. This is reduced significantly by UUP



Encrypt Intelligently

It's becoming easier and easier for hackers and intelligence agencies to get their hands on our data. However, you can quickly and conveniently protect any system if you use the right tools

By Fabian von Keudell

When Edward Snowden started uncovering the secret data collection programmes used by the world's intelligence agencies, he had one goal: To make it impossible to use such a full-take approach in the future. At the moment, it doesn't really look like Mr Snowden has accomplished his mission. In December last year, the FBI received wide-ranging powers to spy on computers located in foreign countries and now many American politicians believe that such agencies will receive wider-reaching powers under Trump presidency. The UK has been leading the way since 29 November 2016, when British intelligence agencies were given legal authority to collect massive amounts of data in accordance with the full-take principle. Mr Snowden called it 'the most extreme surveillance in the history of western democracy'. And he's not the only one who feels that way either, since the European Data Protection Supervisor considers the situation to be 'worse than ominous'.

Proponents of data collection are only too happy to bring the I-have-nothing-to-hide principle into the equation. However, the problem is that if intelligence agencies can burrow through personal data and contacts in a totally unrestrained manner, there will be a risk of misuse. If you store your data in the cloud, it could end up being located in other legal jurisdictions. However, there is a way to reliably protect data and it is one that's recommended by Mr Snowden himself: Encryption. Of course, it's understandable why most users aren't prepared to use this option. The use of encryption isn't very straightforward or user-friendly. However, with our tips, you won't have to choose between security and ease of use. We'll tell you how you can protect data that is on a local computer, in a smartphone or in the cloud with a powerful layer of encryption. Also, we'll

be emphasising on ease of installation, as well as perfect compatibility with the operating system in question. Furthermore, your sensitive information will not only be safe from intelligence agencies, but also from the hackers out there that are just waiting for their next victim.

After all, no web crook is going to be able to decrypt your data if the intelligence agencies can't pull it off.

**"There's a defence
against every
single attack"**

Edward Snowden, Whistleblower
According to Mr Snowden, the most useful thing to do is to share as few private details as possible

Protect The Data On PCs And Laptops

Let's start with Windows. The best way to protect the data on your home computer would be to encrypt the entire hard drive. However, it may make more sense to encrypt individual folders, especially if the computer is quite old. The following section explains both options.

Use Hardware Encryption

The task of encrypting modern hard drives is easier than one might think, because these

devices possess their own encryption method. Hard drives use Opal SSC (Opal Security Subsystem Class) for this purpose. This standard makes it possible to encrypt a drive directly through the controller of the data storage device, with the operating system left out of the process altogether. You can find out whether your hard drive supports Opal by taking a look at the product specifications on the manufacturer's website, which will also provide tools for activating the function (such as the Magician programme for Samsung). Once you have activated it, the hard drive will prompt you to insert the designated password. This actually happens before the operating system is launched. However, there are two things to bear in mind. One, do not use any other encryption system (such as Windows BitLocker) for the hard drive in parallel, because this often leads to problems. In fact, many users claim to have lost data because of that. In addition, you should also make sure to deactivate the encryption before you remove the hard drive, because the decoding

Crypto-algorithms For File Encryption

> AES

(Advanced Encryption Standard)
Successor of DES. The key is considered to be secure from a key length of 192 onwards (AES-192).

> DES

(Data Encryption Standard)
Developed by IBM and the NSA.
Make sure you only use the newer versions, such as 3DES or Triple-DES.

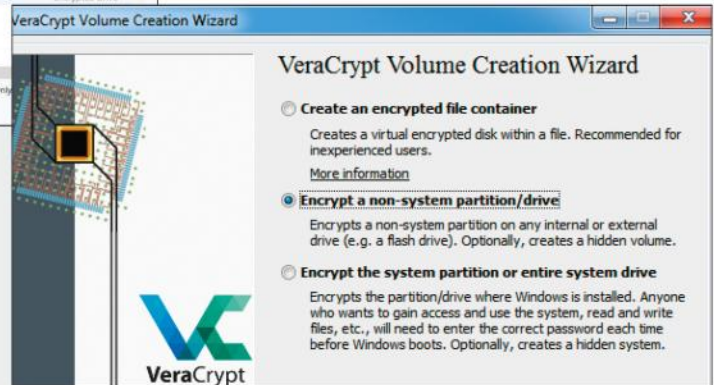
> Twofish

Publicly available as a public-domain key. Considered very secure and free of back doors by experts.



If you use Magician, you will be using Samsung's built-in hardware-side encryption

The VeraCrypt freeware can either encrypt folders or the entire hard drive



software can only function when the encrypted hard drive is used as the boot drive. If you connect the drive to another computer via USB, it will look as if it is completely empty.

Use Software To Encrypt The Hard Drive

Windows also offers an in-house software that can be used to encrypt hard drives – the BitLocker.

However, BitLocker is only available to

Windows 10 Pro and Enterprise. Those who are using Windows 10 Home can try the VeraCrypt freeware instead, which can be downloaded at <https://veracrypt.codeplex.com/>.

After launching VeraCrypt, you should select the option 'Encrypt the system partition or entire system drive'. Click the 'Normal' option in the following window, followed by 'Encrypt the whole drive'. This ensures that all the data on the system partition and all other partitions will eventually be encrypted. The pop-up element that emerges at this stage asks whether VeraCrypt should also encrypt hidden partitions. In principle, you should answer this question with 'Yes'. However, bear in mind that the tool will also encrypt any recovery partition that may exist. Some companies use this partition to ensure that the system boots up from this partition before the actual boot routine is initiated. Lastly, it's highly recommended to create a rescue disk for future troubleshooting. You'll find this option at the end of the installation wizard.

Encrypt Individual Folders

If the situation involves computers that are slow and old, you should refrain from carrying out a blanket encryption process. In such a case, it would make sense to create a so-called 'container'. This involves creating a virtual drive that stores sensitive data. The information is encrypted automatically and stored in a file on your hard drive. VeraCrypt

USB stick with encryption

There are many that still buy USB drives these days. The small devices are quite handy, but they're also easy to lose. If you store sensitive data on such a device, anyone who finds it will be able to view the data inside easily. This problem can be solved by pre-encrypted USB drives featuring AES encryption.

> You can create a drive like that in an inexpensive manner by using an encryption software to encrypt a standard USB drive. However, that means the same software has to be installed on every system that you plan to use the drive on.

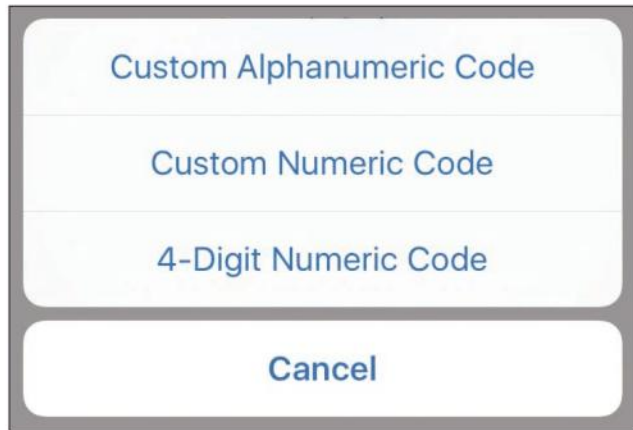
> The most secure option involves drive featuring built-in encryption, such as Kingston's DataTraveler2000. However, with a price tag of more than RM400, these devices are much more expensive than standard USB drives. What's great is that they're very secure, because the only way you can access the data inside is by using the keyboard that is integrated into

the device to enter the password.

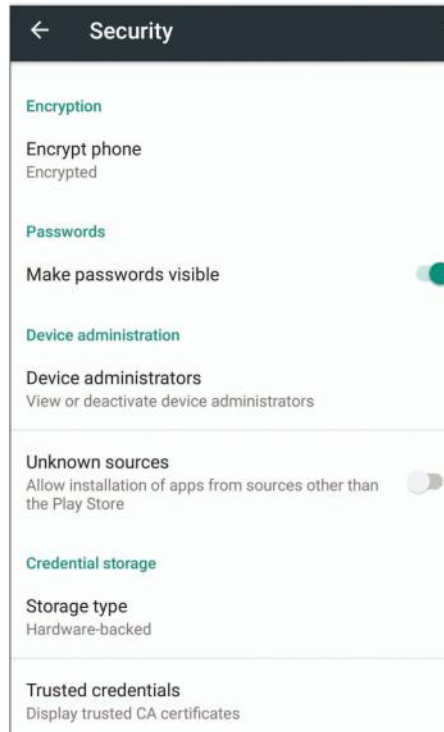
> The highest level of comfort is offered by the BS-Drive AES, which is a USB drive with an integrated fingerprint reader. The drive is also encrypted with a secure AES key and can only be detected by the system once it completes the authentication procedure. However, these secured drives are very expensive and could cost you somewhere around RM1,300 for one.



Under Android, you can use the 'Encrypt telephone' function to completely encrypt the device. However, this does affect the performance



If you want to protect iOS, you should set up your own alphanumeric code, which is the only thing that's totally hack-proof



can also be used for that. To do so, access the 'create' dialogue, then click on the 'Create an encrypted file container' option and follow the programme's instructions.

Optimal Protection For Mobile Systems

Mobile devices are especially vulnerable to data theft, as they contain a lot of personal

data. In spite of this, these devices are often poorly protected. Android in particular is easy to crack on account of its open architecture. As a consequence, it becomes even more important that you protect your data in a comprehensive manner.

Protecting iOS From Attackers

Those using Apple devices cannot encrypt the system by themselves. But they don't need to, because Apple has already done it for them. However, the encryption will only be effective if you protect the device with a passcode. That way, even the FBI would find it extremely difficult to get into the system. In fact, it would become impossible to breach

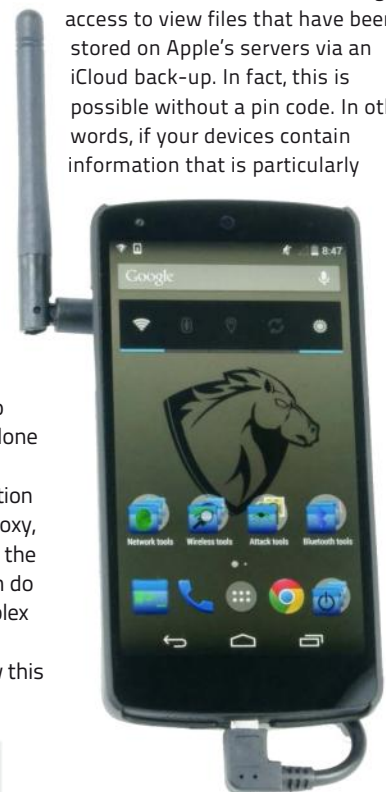
the system if the owner decides to use an alphanumeric code of his own. This can be done by going to the 'Settings' menu, then selecting 'Touch ID & code | Change code'. Next, select 'Code options' and activate the 'Separate alphanumeric code' option.

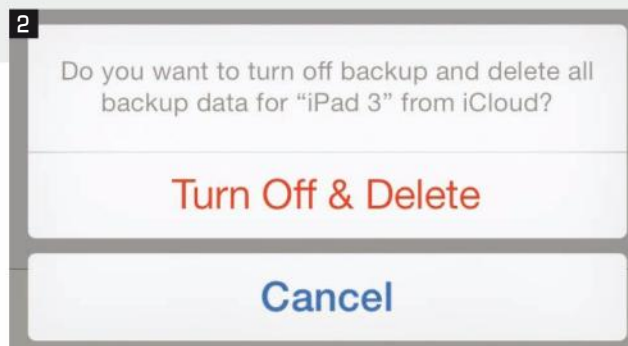
Although this does secure the data on the device itself, the arrangement has a significant disadvantage, as governments can obtain a court order and thus gain access to view files that have been stored on Apple's servers via an iCloud back-up. In fact, this is possible without a pin code. In other words, if your devices contain information that is particularly

This is how nasty the hacker-phone is

In the TV show 'Mr. Robot', the lead character uses a special smartphone and a tool to copy the SIM card of the person he's talking to. TV shows are full of depictions of such hacks, but could some of these be replicated in the real world? Yolanda Smith, chief developer at Pwnie Express, believes that it's possible to copy a SIM card. Pwnie produces the pen-testing smartphone (pwnieexpress.com) that can spy on mobile phone networks. You can purchase this hack-telephone legally and use it, for example, to read network traffic. The device costs about 1000 euros, or approximately RM4,700. However, if you want to crack the

encryption, you will need physical access to the SIM card, or a special stingray box. The authorities and intelligence agencies use such devices to monitor mobile phones. According to Yolanda Smith, this is how she would clone a SIM card: She would use a known loophole in the SS7 mobile communication system to redirect all calls through a proxy, which then allows her to listen in on all the conversations. The only thing users can do to protect themselves is rely on a complex encryption system. The 'Tap-proof telephony' section explains exactly how this would work.





For iOS, you should deactivate the back-up ¹ and delete it from Apple's servers ², otherwise the authorities will be able to view these back-ups

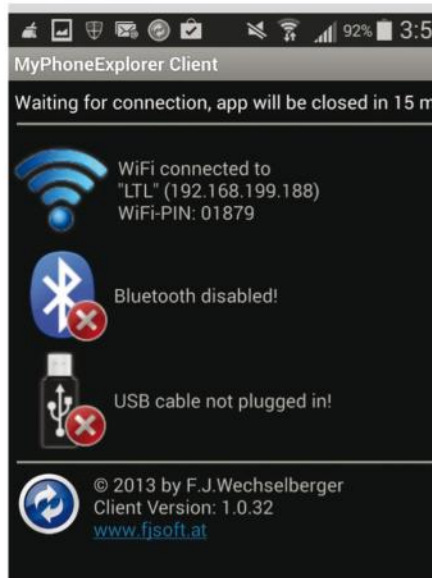
sensitive, you should deactivate the iCloud back-up and only create local back-ups. To deactivate the cloud back-up, look for the options under 'iCloud | Backup' in the settings menu. And to delete a backup that already exists on Apple's servers, go to 'Settings | iCloud | Memory | Manage memory'.

Tap the desired back-up and select the 'Delete back-up' option to confirm. Next, you'll want to create a local back-up with the help of iTunes. Make sure you create a password for the back-up, so that even Apple wouldn't be able to access it.

Protecting Android

Android also has a built-in encryption function. To activate it, click on 'Settings | Security' and select the 'Encrypt telephone' option. However, this function isn't available on all devices. Secondly, using the encryption option can, in some cases, lead to the device's performance dropping. You can go ahead and give it a try once, since the encryption can easily be deactivated.

Unfortunately, this function doesn't provide the type of blanket encryption that iOS does, which makes it more difficult to protect your data. We also suggest that you keep your phone's back-up on a local computer, rather than on Google's server. This can be done with the help of tools like the MyPhoneExplorer software, which can create back-ups for almost all Android devices. You can even use the WiFi network to take care of the back-up. But before you launch the software on your desktop, make sure you've installed the MyPhoneExplorer Android app on your smartphone. Now, access the desktop version of MyPhoneExplorer and establish a link to the smartphone, by clicking the 'File | Connect'



In case of Android, you can use the MyPhoneExplorer tool to create a complete back-up for your device

option. You can now use the 'File | Settings | Multi-Sync' option to select the files that the software is supposed to back up.

Encrypting Cloud Services

If cloud service providers such as Dropbox or Google Drive are hosting your data, third parties may be able to view it. In order to prevent this from happening, you should upload encrypted data.

Boxcryptor

Boxcryptor is a software you can use to do so. It uses a separate password to encrypt the content on cloud service providers like Dropbox. This might sound like it's inconvenient, but that's not the case at all. All you need is for Boxcryptor to be installed on each end device you use. The programme then encrypts and decrypts your data in the background before it wanders into the cloud.

Also, Boxcryptor has no access to the encryption keys, which means that your data will be gone for good if you forget your password.

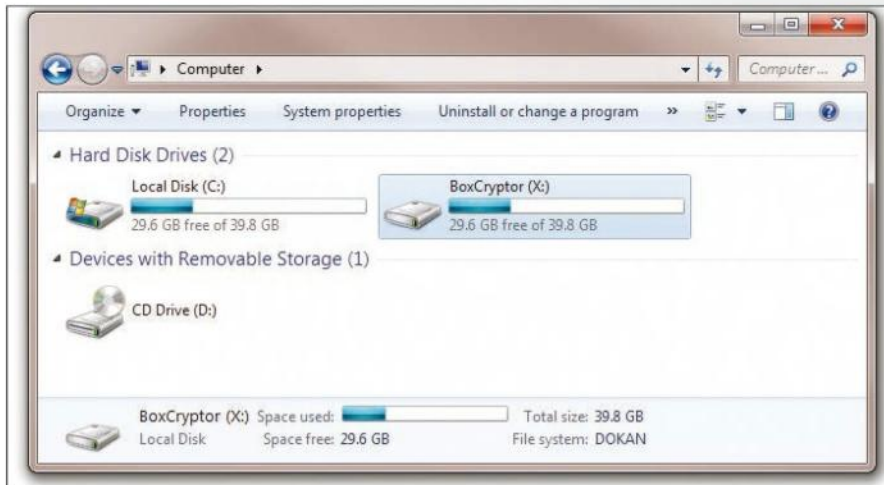
First, you'll need to set up a Boxcryptor account, which will be associated with the encryption of all the data. Install the desktop client and use it to create a Boxcryptor account. Boxcryptor will be set up on your PC in the form of a virtual drive. The software automatically detects all cloud service programmes that have been installed on the system and the virtual drive will create one folder for each installed cloud service. Now, when you place a file in the respective folder, it will be encrypted (if you so desire).

If you want to share encrypted data with another person, you will first have to grant him access permission. This can be done using the 'Manage groups' menu in the desktop application. But this function is not available to free account users. The alternative is to download the file onto your home computer and use an encryption software to encrypt it. You can then place the encrypted file in the cloud of your choice. Now, all you have to do is give the resulting download link to the recipient and send him the password in an encrypted mail.

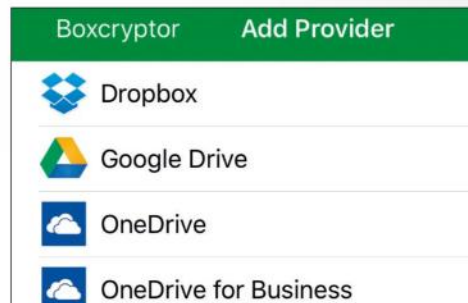
Using A Smartphone To Protect Data

If you want to be able to use your smartphone to access encrypted cloud data, you can install the Boxcryptor app, which is available for all the usual operating systems.

Once the installation procedure is complete, launch the app and use your account to log in. Now, add a cloud service provider by pressing the corresponding symbol and entering your account login data. If you want to send an encrypted file from



Under Windows, the secure cloud drive appears in the Explorer as a Boxcryptor drive



The user interface of the Boxcryptor app allows you to add additional cloud service providers. The tool encrypts the data on the smartphone

your smartphone into the cloud, access the app's main window, select the respective cloud service provider and tap the three points in the upper right portion of the window. You can now select one or more files and folders and Boxcryptor will then ask you whether you want to upload the file in an encrypted form.

If you want to send a file to a third party, tap and hold the entry in question and then use the share symbol that can be found in the lower left portion. Now, select the medium that you want to use to share the file (e.g. e-mail or WhatsApp). However, you should note that Boxcryptor sends the file with no encryption whatsoever, because the app decodes the file before sending it.

Sealing Off Mails And Mailboxes

From an intelligence agency's point of view, e-mails are an extremely useful source of data. Many mailboxes make it possible to track the entire life of a person. Furthermore, e-mail providers do little to protect the accounts. Here, we'll tell you how you can protect your mail accounts and send

encrypted messages with ease. However, you will need a new mail address in order to be able to create the perfect layer of protection.

Create a protected mail account

If you have a mail account with providers like Google (i.e. in the USA), that can be a problem.

This is because US authorities can obtain a judicial decree that gives them unrestricted access to your account. However, according to Mr Snowden, this type of access has even more far reaching consequences. The NSA can even access data without getting such a decree. For example, last year it was revealed that Yahoo secretly provided US authorities with wide-ranging access.

This is how you can protect your web accounts

Access data for important services can get into the wrong hands a lot faster than we think. If you're using the same password for multiple websites, this can happen as soon as one of those websites falls victim to data theft. In the worst-case scenario, your laptop or smartphone could be infected with a data-collecting Trojan. This problem can be solved by a simple two-factor authentication (2FA) arrangement. Using this method, you will have to enter a one-time password, as well as your normal username and password every time you log in. You would normally receive this code on your smartphone through an app, which can in turn be protected using a PIN or your own fingerprint.

> **Many sites support 2FA.** In addition to Amazon, Google, Dropbox, Microsoft and

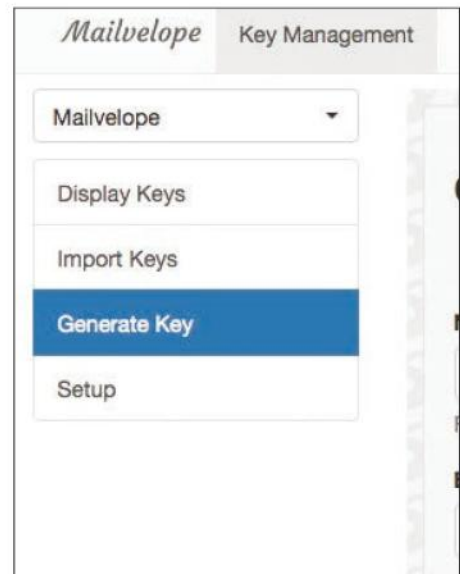
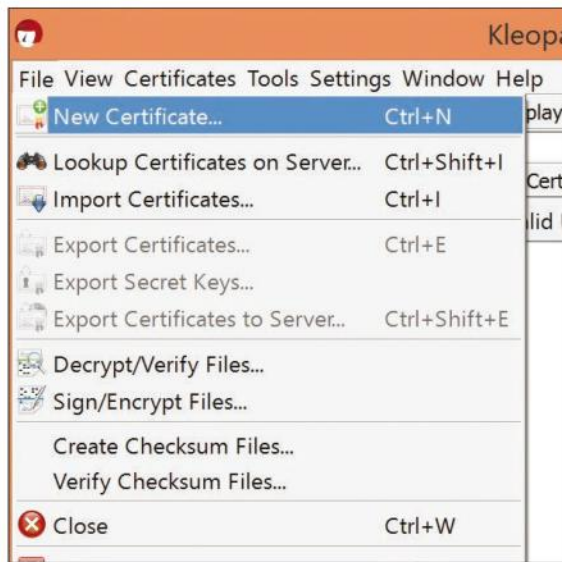


Major websites like Amazon use 2FA to protect your account

more, all offer support for 2FA. A list of all such services can be found at twofactorauth.org. With Android, we would recommend that you use the Authy app. As for iOS, OTP Auth has acquitted itself well. More importantly, you should always use a secure and unique password.



If you're using a desktop PC, you can generate your own PGP keys using the Kleopatra tool



The Mailvelope browser plug-in allows you to integrate your own PGP key set and use it in conjunction with mail providers

You can prevent this type of access by using a provider who encrypts the mailbox, such as ProtonMail. If you create a ProtonMail account, you will have to come up with two passwords. One of them will be for access to the account, while the other one will be for decryption of the mailbox. Make sure to never lose the mailbox password, because if you do then all your data will be lost. You can also add an additional layer of security by prohibiting recovery of the password. This option can be enabled in the settings as soon as you log in. Head to 'Account', then look for 'Allow password recovery' and click 'Disabled'. However, you will have to create a new mail address in order to be able to use ProtonMail. The exception is if you're using your own mail domain. If you are, you can easily redirect it to ProtonMail. The advantage of setting up such a mail domain is that you will be able to retain your address even if you switch over to a new mail provider. This won't cost much either, since you can purchase a domain for about RM40 to RM60 a year. If you decide to use a .com domain (such as YourSurname.com), some providers – like GoDaddy – will allow you to obtain a data protection system. In such a scenario, your identity as the owner of the domain will be kept unknown. Instead, it will be registered through an intermediary.

Sending Encrypting Mails

Once your account and mailbox have been secured, the next step involves encrypting

the messages. The first thing you will need is an encryption key, which will be used to encrypt the mails. You can use the Gpg4win package or the Kleopatra tool contained to this purpose. In Kleopatra, you can use the 'File | New certificate' option to create a new key. Next, you will need the Mailvelope browser plug-in to be able to use this key to send e-mails. You won't have to configure Mailvelope in a complicated manner, as it is already preset for the most commonly-used mail providers. Now, export your keys from Kleopatra into the plug-in. To do so, open the 'My certificates' tab in Kleopatra and select the 'Export secret keys' option. Use the 'ASCII coat' option and save the key. Now, open the options section in Mailvelope and click the 'Key management | Import key' option. If you want to send a message, all you have to do is log into your mail provider's system in the usual manner and the corresponding option will appear automatically when the mail is being sent. The browser plug-in automatically takes care of the decryption process as well.

Making Communications More Secure

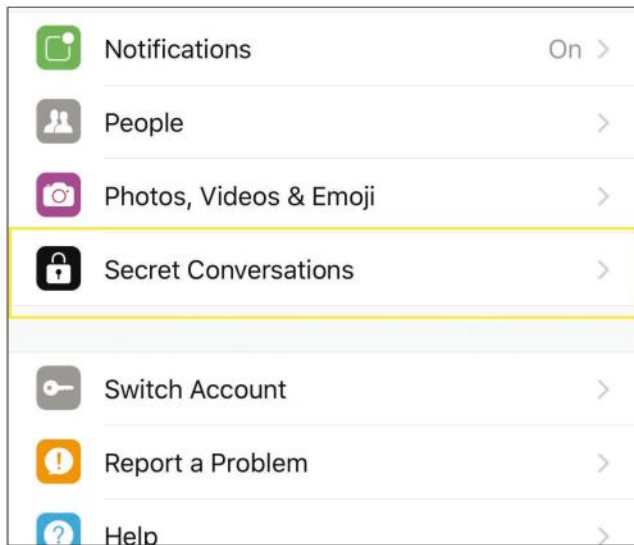
When it comes to sending text messages and having telephone conversations, the

task of setting up an encrypted connection is simpler than you would think. Most messengers are already using an automatic end-to-end encryption arrangement.

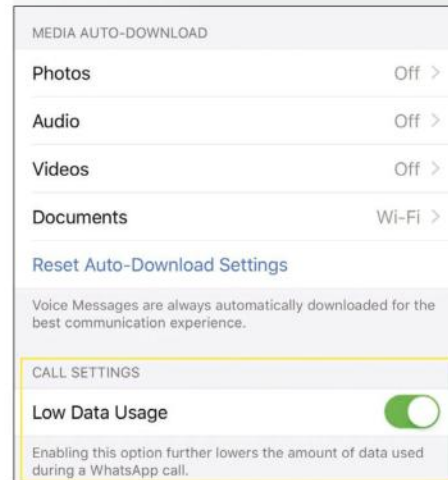
Choosing The Right Messenger

When it comes to messengers, the problem isn't the encryption, but rather the logging of metadata. We have a section in the next page that will tell you exactly which messenger is the best. The Signal app is recommended by none other than Mr Snowden himself. Security researchers working at the Oxford, Queensland and McMaster universities agree with his assessment. An enquiry sent by a US court to Open Whisper Systems (OWS) – the manufacturers of the Signal app – reveals just how little data is logged by Signal. The only details that OWS could disclose are the user's time of registration and the time at when the service was last used. The disadvantage of Signal is that it has hardly has any users. However, the good news is that Signal's protocol isn't just used by the company's own app, but also by WhatsApp and Facebook Messenger. This protocol ensures that data is encrypted from end to end in a secure manner. However, when it comes to Facebook Messenger, you must first enable the feature under 'Me | Secret conversations'. When this is enabled, messages themselves become illegible. However, Facebook does save all the metadata.

In case of WhatsApp, you should at least



In case of Facebook Messenger, you will first have to use the 'Secret conversations' option to activate the end-to-end encryption



Activate the reduced data consumption option in order to minimise the data volume associated with telephone conversations

minimise the amount of data that flows through the company's servers. To do so, access the settings of the app and deactivate all three of the options at the top under 'Data usage'. You should also deactivate the 'Read receipts'. This minimises the amount of metadata that you send to WhatsApp's server.

If you're lucky, you might be able to convince the people you communicate with on a frequent basis to start using the Signal app. It's currently the best thing going in

terms of security and data protection, plus it's available for both iOS and Android. The developers also plan to release a new version, which would be geared towards achieving the same level of user-friendliness as WhatsApp. Unfortunately, many people might choose to stay with more popular options like WhatsApp in spite of all the warnings.

Tap-Proof Telephony

When it comes to the smartphone-to-smartphone telephone conversations that

are carried out on a daily basis, you don't necessarily have to buy a crypto-phone (which inherently encrypts conversations). Most messengers already have a built-in telephone app, which you can use for free. In addition to making it possible for you to make encrypted calls, such apps also allow you to use the telephone functionality for free; the only thing you need is an internet connection. However, bear in mind that you will be using data at the rate of about one MB per minute. If you use this functionality for an hour a day, you would be using about 1.8 GB per month. Therefore, it is advised to use a public WiFi for longer conversations.

However, there is a trick you can use to reduce your data usage: Activate the 'Reduced data consumption' option under 'Settings | Data and memory usage'. Voice quality deteriorates in this case, but you will end up using less data.

Once you have implemented all the tips mentioned in this article, your data will be endowed with a near-perfect shield. In most cases, even intelligence agencies won't be able to get their hands on the data. Of course, there's no such thing as a perfect protection. But at least your data will be extremely difficult to crack, because it will be encrypted in an optimal manner. Hopefully, this means you're your data should be safe from the prying eyes of intelligence agencies, even if they decide to adopt a full-take approach. 🇨🇦

The most secure messenger

> Ever since WhatsApp was taken over by Facebook, the companies' databases have become intermeshed with each other. In the future, the data of all WhatsApp users will automatically be synchronised with Facebook, which will allow the company to create an even more precise user profile. However, the messenger is very secure in principle. The activation of end-to-end encryption for all users and the introduction of video and audio telephony are gratifying developments.

> Signal Signal is currently the most secure messenger. The encryption is perfect and the data protection

profiles are optimal. In fact, the messenger only saves the moment of registration and the moment at which the service was last used. However, the tool has a lot of ground to make up when it comes to user-friendliness.

> Threema Switzerland's Threema messenger is a lot better in this department. Total encryption, a low degree of data collection and a very good user guidance system make it one of the best messenger apps around. But just like Signal, this app doesn't have too many fans. However, that could be changing, because Threema has recently registered a near 40% increase in users after the US election.



As You Like It

To some extent, we now assemble our news ourselves with our clicks and likes. Is this progress, or a dangerous development?

By Daniela Lukaßen

The internet was once described as a window to the world. That role has been taken over – nay, became the domain of social networks, especially Facebook. According to a survey by Reuters named the ‘Digital News Report’, 46 percent of correspondents use social media as their source for news in 2016. That’s way more than the number of people who read printed newspapers these days. To be fair, this isn’t all that surprising, but what is surprising is that the figure also exceeds the percentage of people who visited the websites of news magazines. In particular, Facebook has

become the window to the world for many people, who each end up looking at a different world. This could range from an idyllic world full of cat videos and esoteric mottos or a meaningful one full of discussions about network policy, but it may also be a brutal world of hatred and violence. Facebook is familiar with our opinions and knows what we like to read or watch, along with what the kind of information we search for. Facebook also wants our attention and it’ll do whatever it can to get it. As a result, everything that might make us click somewhere else is culled from our news

stream. The Facebook algorithm keeps buttering us up by showing us only the things that we would probably like, further cementing the news being shown. The algorithm either lulls or incites us, depending on our sentiments, all to create the kind of ‘world’ we like.

Filtering News, Simulating Artificial Worlds

Communications experts talk of the ‘filter bubble’. The term itself isn’t new and was coined by the American Eli Pariser more than five years ago, after the explosion of the Deepwater Horizon oil platform in 2010. At the time, Mr. Pariser asked two of his friends to google the oil company ‘BP’. One of these two people got hits containing investment tips, while the other one received information regarding the environmental catastrophe. Mr. Pariser’s conclusion was that the free internet is an illusion. Instead of the free internet we wanted, we’re getting a filter bubble that only admits news that is designed to cater to our mindsets and opinions. The news items themselves are



A statement that was incorrectly attributed to the politician Renate Künast recently spread very rapidly on Facebook

selected by algorithms.

Professor Hendrik Speck endorses this belief. In his research on social media, which he conducts at the Kaiserslautern University of Applied Sciences, he's come up with the following conclusion. 'Users aren't interested in all the Facebook posts, so the algorithms decide what we're going to see. Consequently, they also make a decision regarding what is or could be of interest to the users,' he said. If a certain post is 'liked' many times (i.e. if people from your list of friends comment on it or share it), user interests and contents converges. When that happens, the post also appears in your own timeline, regardless of whether you have 'liked' it or not.

Those who make the loudest noise get the most attention. That has always been the case with traditional media and is doubly so for social media. Extreme news items spread like wildfire and the more polarising they are, the better the whole algorithm thing works. News that attract attention are then shared with more people, but, of course, this phenomenon also applies to fraudulent information. In this case, false news or information are spread with the express

Web activist Eli Pariser coined the phrase 'filter bubble' to describe the phenomenon in which online algorithms only show us things that we are bound to like



purpose of inciting the populace, sowing division and radicalising views.

Many Likes, More Importance

According to Professor Speck, algorithms are actually more or less mathematics. Nevertheless, they do influence us, along with the manner in which we see the world. 'During our normal lives, we have to deal with other opinions. The scene looks very different in the virtual world,' said Professor Speck. Since the digital world makes it possible for us to quickly find forums and platforms for our own preferences, we rapidly begin to believe that our opinions are totally valid, because our community is full of people who agree with us. 'This automatically leads to our arguments being strengthened – by

none other than ourselves," he explained.

This essentially means that the algorithms play the role of a filter. Marcus von Jordan believes that this also influences our political views on a massive scale. He is one of the founders of the piqd trustee platform, which posts links to texts that are worth reading on the internet. However, as Mr Jordan emphasises, this is done using expert knowledge, not algorithms. 'Facebook is not at fault for political polarisation and radicalisation. While it does contribute to it, saying so would be oversimplifying it.'

The reason? 'Facebook is a domain that is totally devoid of journalistic responsibility.' In a nutshell, this means that anyone who wants to write can write. And most people tend to click on things that excite, polarise or shock. Consequently, the filter bubble keeps expanding in the direction that we specify with our clicks. According to Mr Jordan, this filter bubble doesn't just create a situation in which people are unwilling to make compromises by accepting other people's opinions, but also damages communication skills. 'This would result in a scenario in which we would basically be giving up our ability to sustain a democratic system,' he said. This is also supposed to have been a

	Online	Television	Printed Newspaper	Social Media
2012	72%	72%	38%	-
2013	75%	72%	41%	27%
2014	74%	68%	33%	34%
2015	74%	64%	23%	40%
2016	73%	66%	24%	46%

critical reason why right-leaning parties have been able to do so well in recent elections in the USA and other countries. 'Facebook has a higher reach than all publishing houses put together. It stopped being just a platform a long time ago. The dynamic associated with it is quite alarming.'

Clueless Algorithm

The word 'dynamic' is a near-perfect description of a trend that has been apparent on Facebook for about a year. Real news is being outstripped by fictional news, which is clicked, liked and commented on more frequently. The algorithm is (as yet) unable to distinguish between real and fake, but simply uses the magnitude of social interaction as a gauge of the importance of a piece of news. This simple mechanism is obviously very easy to manipulate and exploit. This was demonstrated quite clearly by the presidential election in the USA, in which dozens of items of fake news were able to spread far and wide. It's not yet clear whether these algorithms essentially paved the way for the triumph of Donald Trump. Regardless, they have definitely led to one positive outcome, with Facebook now working on a system to detect and, at the very least, tag fictional news.

Read First, Then Like

But is the algorithm really responsible for the fact that we remain trapped in our filter bubbles? 'No,' said Hendrik Speck. 'The main problem is that users frequently do not possess a satisfactory degree of media competency. They are not interested in, or are unaware of, how the information is collected for them.' And that is the core of the problem. This is how Mr Speck explains it: 'Algorithms translate popularity into recommendations. It doesn't matter whether the situation involves a well-researched journalistic article, or the neat self-portrait of a 16-year-old. When it comes to platforms like Facebook, all of these things appear within the same digital framework.'

This is also how the situation is seen by Walter Staufer, who is a consultant in the field of target-group-specific offers at the German Federal Agency for Civic Education. 'We have been using the internet for 20 years, but we are incapable of responsibly dealing with something like a filter bubble. The filter bubble only works because youngsters are not given the tools that would enable them to do so.' However, the fact that people end up reinforcing their own views when they are within Facebook's



"Facebook users have no media competency"

Prof. Hendrik Speck, Kaiserslautern University of Applied Sciences, department of information and microsystem technology

bubble is not exclusively a digital problem. According to Mr Staufer, 'Even in the analogue world, I feel good when other people endorse my opinions. I would be in a similar filter bubble if I remained within a circle of friends who share my views.' However, therein lies the real problem. When

it comes to Facebook, people cannot choose which information is going to be shown to them.

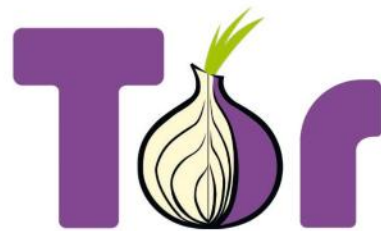
Consequently, the filter bubble problem seems to exist simply because we haven't learned to be critical when we're dealing with the information that has been provided to us. The experts are in total agreement on this matter. After all, users often assume that news items are based on legitimate and trustworthy sources. This leads to a situation in which one would expect them to have the ability to verify sources that a newspaper editor would gain after several years of training. In fact, even newspaper editors frequently have problems with this. The average Facebook user does not have the ability to judge whether a piece of news is reliable, or whether a certain amount of scepticism is called for.

As a result, such news get premature 'likes' or comments, which actually make it quite clear that the writer hasn't even looked at the linked contents. In a perfect world, we can expect users to thoroughly check and verify the contents of every single piece of news. In fact, it would be helpful if the average Facebook user could be made to understand that he shouldn't share every single piece of information that comes his way without a certain amount of research. It would also be great if Facebook started providing tiny pointers to indicate that certain pieces of news might be fake, which would certainly be a step in the right direction. 📌

Popping the filter bubble

In addition to social media, the filter bubble can also be found in the wider internet. However, a few tricks will help you pull the data-plug on the recommendation algorithms.

- Less harmony wouldn't hurt – at least as far as Facebook is concerned. If you occasionally click content that don't necessarily reflect your views, the items in the newsfeed will be more diverse.
- Deleting cookies after each browser session does make surfing a little less comfortable, but it also makes it much harder for data collectors to create a profile for you and pre-filter the list of results generated by a search query.
- Although there is no such thing as 100-percent anonymity on the internet, using the browser's private mode or anonymisation services like



Surfing anonymously cuts off the algorithms' data supply

TOR can conceal surfing traces to an adequate extent.

- You don't necessarily have to send e-mails through freemailers that finance themselves through advertisements. There are paid ones that don't cost much and are free of advertisements, some with encryption available as well.

know the **future**

COVER STORY

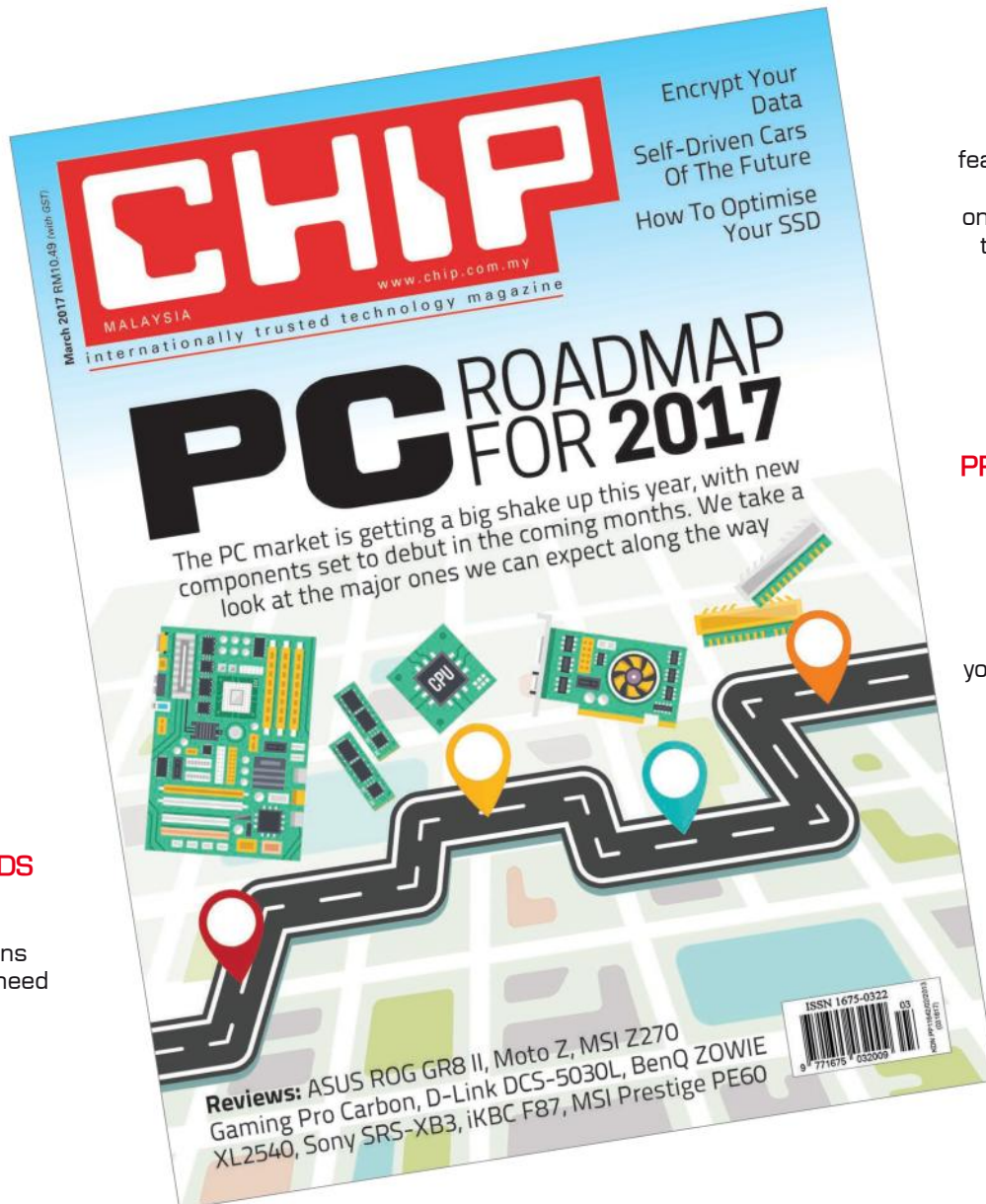
Our main feature of the month which gives an in-depth coverage of today's most exciting technological issues and trends

REVIEWS

Professionally conducted and in-depth in nature, our product write-ups are the only reviews you can trust

CHIP DOWNLOADS

Contains all the useful tools and essential applications everyone will ever need



FEATURES

Incredibly useful and informative feature articles give you the lowdown on the latest IT and technology trends

PRACTICE & TIPS & TRICKS

Our handy guide provides you with the application know-how to further enhance your IT experiences

LITE & LEISURE

Think, Touch, Read, Watch and Play on the lighter side of IT

read **CHIP**

The first word on how technology is changing our world. With professional analysis, latest reports, and informative guides, CHIP remains reputed as the *internationally trusted technology magazine*



To Subscribe or Advertise:
Call 603 7727 6554 or log on to www.chip.com.my

[facebook](#) CHIP Malaysia [twitter](#) @CHIPMY



WLAN Beats LAN

The 802.11ad wireless standard makes wireless networks faster than Gigabit LAN cables and fibreglass. We tried out the high-speed technology

By Christoph Schmidt

The importance of WiFi speeds has never been more important than it is now. With the emergence of 4K videos, the quantities of data that we need to transfer between devices or download via high-speed fibre internet are on the rise. Furthermore, there are more and more tablets, smartphones and compact laptops with fast – but small – SSD storage. The real-time streaming that becomes necessary overwhelms the current 'n' and 'ac' WLAN (wireless LAN) standards, which are already struggling to output the required bandwidth using the available 2.4 GHz and 5 GHz frequency bands. Compatible routers can only attain peak values of up to '5300 Mb/s' under theoretical conditions, which only happens if you could simultaneously use multiple WLANs on a router.

You would only be able to send a higher

number of Gb/s to a client with the help of the 60 GHz band, which is what the 802.11ad WLAN standard uses. This standard offers a much higher speed, but only over short distances. When we tried out the first AD router, we encountered a promising amount of speed, but also experienced some issues.

This Is What Makes Wireless Ad So Fast

In simple terms, the large amount of available bandwidth in the 60 GHz band is what gives ad

WLAN its high speed. A wireless AC (5 GHz) channel has a width of 80 to 160 MHz, while wireless AD can go up to 2.16 GHz and is a system that has much more sub-channels that transport data. Furthermore, on account of the high frequency, it becomes possible to transport a higher number of data packets per second. Theoretically, we're looking at top speeds of around seven Gb/s. To add on to that, there's a reduction in the data transmission delay (latency), which makes the technology ideally-suited for transferring high-resolution interactive screen data. It could, for example, be used to wirelessly stream games and movies to high-end displays or virtual reality goggles.

No previous radio technology has ever used the 60 GHz band, because the oxygen in the air severely muffles signals of this wavelength. This limits the range of wireless AD to up to ten

Photo: Juliane Weber (Aufmacher), Hersteller (Produkte)

VR goggles **1** could benefit from the high bandwidth, low latency and small aeriels of wireless AD, which will also turn laptop docking stations (the image shows a Dell model) **2** for 4K monitors and fast drives into wireless devices.

1



2



metres (within visual range), but it also eliminates the possibility of overlapping channels from other rooms/homes. 802.11ad is supposed to complement the previous wireless standards, so it should work seamlessly on compatible routers. In practice, it should be able to switch over to the 5 GHz or 2.4 GHz band if the ad-connection breaks down. This means that instead of getting disconnected completely, the connection would just become slower as the distance increases. Finally, the short wavelength also results in very small antennas. It would even be possible to accommodate many of these in compact devices. The higher number of antennas leads to better beam-forming and the fact that the signal is aligned towards the remote station in a targeted manner improves the signal quality and efficiency.

'WiGig', the predecessor of the 802.11ad standard, was specified at the end of 2009. However, apart from isolated laptop models with wireless docking stations, this technology was not used on a large scale. The first wireless AD router was made available quite recently, but there are as yet no end devices for it.

It is claimed that the speed of this first wireless AD is 4600 Mb/s. At the same time, it is also supposed to attain a rate of 1733 Mb/s in a 5 GHz wireless AC, as well as a rate of 800 Mb/s in a 2.4 GHz wireless N. In total, this adds up to the marketed overall speed of 7200 Mb/s. This new wireless AD router has also been shown to

feature eight external antennas, which does give it a rather bombastic look. All in all, the device contains a total of 32 aeriels for the 60 GHz band. A multi-user MIMO is supposed to ensure that multiple wireless clients can be fed in an optimal manner. As is usually the case with high-end routers, this model is expected to use a 1.4 GHz dual-core CPU, which will speed up the web interface and data transfers. We used a wireless bridge between two of the new routers to find out just how fast the technique really is.

Layout Of The Ad Test Track

The high-frequency wireless AD was new territory for us as well and proved difficult for us during the setup for the connection between the two routers. Of the two test routers, only the router with the old firmware version 1.0.0 could be connected as a client to the 60 GHz WLAN of the other router, which was acting as the host. The other router had to be used as the host, because its newer version 1.0.10 (neither one of the two routers offered any updates) made it unable to connect to the previous router in the same fashion. In addition, the host router's 60 GHz WLAN must be active, plus its SSID (name of wireless connection) and MAC

address must be known for it to work. This information is all displayed under 'Advanced | Status | Wireless | 60 GHz'.

When it came to the client router that had the old firmware (1.0.0), we selected 'Dynamic IP' as the internet access option in the initial installation wizard. For our tests, we set a different IP address (192.168.0.2) within the same sub-network as the host (192.168.0.1), under 'Advanced | Network | LAN'.

The actual option for installing the 60 GHz WLAN bridge for the access point is well-hidden. To find it, you have to go to 'Advanced | System Tools | System Parameters | 60 GHz WDS | Enable WDS Bridging', which is a lot of layers to find an option. We also had to manually enter the SSID, MAC and WPA key, because the 'Survey' function for scanning available 60 GHz networks wasn't working. After that, we had to deactivate the DHCP server under 'Advanced | Network | DHCP Server'.

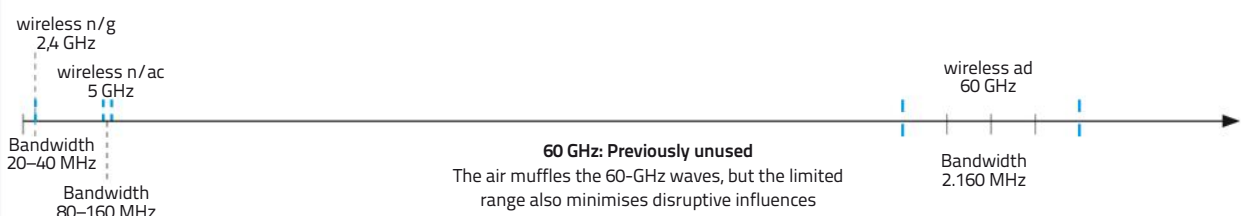
The end result was that we had two computers that were connected to the client router, with the IP address given by the host router and data traffic travelling between the routers through the 60 GHz WLAN. We took our measurements using a PC that was connected to the host router, as well as a laptop that was connected to the client router.

Cable Puts The Brakes On The WLAN

The test arrangement turned the connection between the computers and the routers into a brake, because the routers 'only' support the well-established Gigabit LAN (which was always fast enough in the past). When it comes to cables, since both routers can transport a maximum of one Gb/s, this essentially caps all wireless measurements. In this regard, the measurements consistently indicate that wireless AD is faster than LAN cables. Additionally, when the routers are right next to each other, the measured values are at the level of the Gigabit threshold, which doesn't change for distances of up to several

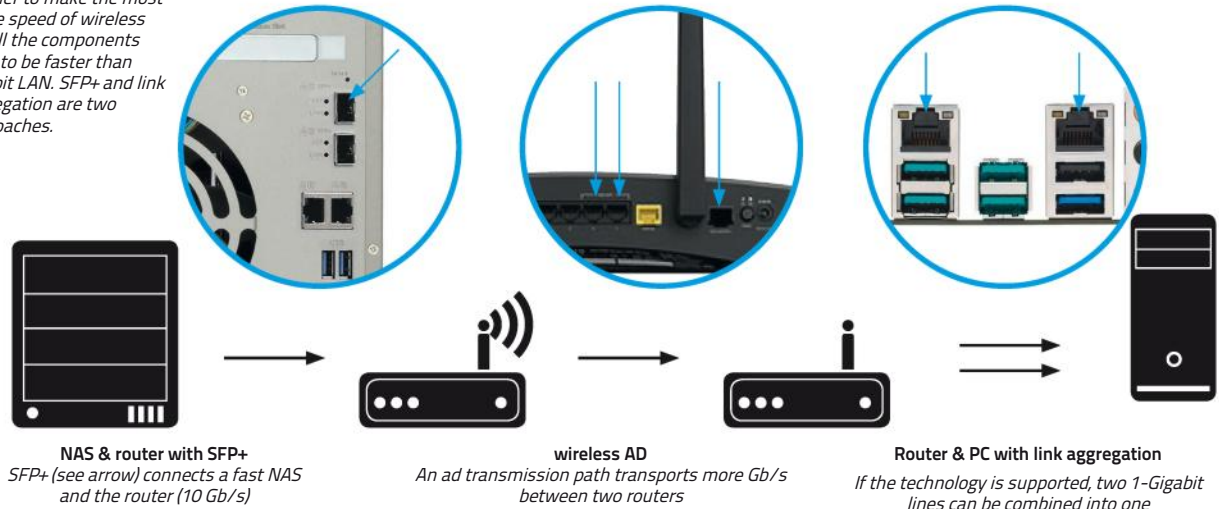
WLAN speed: It's all about the bandwidth

802.11ad uses the 60 GHz band, which ranges from 57.2 to 65.9 GHz. The four channels have a width of 2.16 GHz, which means that they are a lot wider than the channels in the 2.4 GHz (bandwidth: 20-40 MHz) and 5 GHz (80-160 MHz) bands. Consequently, many sub-frequencies can be used to transport data. Furthermore, the high frequency also reduces latency.



This is how the home network breaks the GBit/s barrier

In order to make the most of the speed of wireless AD, all the components have to be faster than Gigabit LAN. SFP+ and link aggregation are two approaches.



metres. The speed only takes a hit if the arrangement involves larger distances or if there are obstacles. However, when it comes to the daily routine, this shouldn't really be a problem for future ad-compatible end devices. After all, PCs and NAS servers that are designed to be used at home have Gigabit LAN connections. Furthermore, even the fastest fibre internet connections can 'only' attain speeds of up to 1000 Mb/s. At the very least, 802.11ad ensures that the WLAN doesn't slow things down.

Infrastructure For Wireless AD

If you want to make the most of the speed available to wireless AD, you would have to completely replace existing network hardware. The AD system will only be able to run freely without any brakes if every single component

clearly exceeds the Gigabit LAN limit. This can be achieved using two technical approaches. Firstly, the use of an SFP+-type port. With this installed, a wireless AD router can transport up to 10Gb/s to other SFP+-capable devices, such as professional NAS storage devices, or a PC with an SFP+ network card. The second approach is to use a 'link aggregation' feature to form a two Gigabit line by interconnecting two regular Gigabit LAN ports, which can help to quickly link multiple NAS models or PCs with two LAN ports. This linking process must be set up on both the router and the end device for it to work. Now, the jump in speed isn't as large as it would have been in case of SFP+ (two instead of 10Gb/s), but there is a larger amount of compatible hardware. Furthermore, normal LAN cables can be used instead of the expensive SFP+ cables.

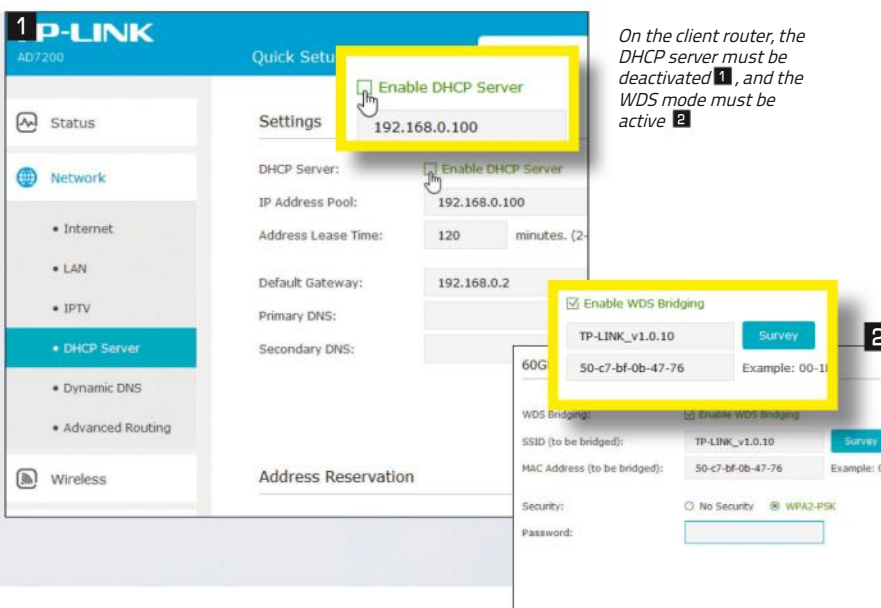
Surprising Test Results

We selected three measurement methods in order to obtain theoretical and practical test results for 802.11ad. The first one involved the iPerf synthetic benchmark, which measures the network bandwidth in Mb/s. Furthermore, we also used the FTP to transfer six files with a total size of 7.7 GB in three simultaneous transfers. For the sake of the conversion process, we specified the FTP speed in MB/s. Finally, we used an internet speed test to determine the ping time for an internet server in milliseconds. This is, for example, important for online gaming, video chats and voice calls. We ran all the tests in conjunction with three different distances.

Our FTP measurements were initially a lot slower in comparison with the iPerf values, with the whole thing showing at about 60MB/s. The sluggish writing performance of the SSD in one of the test computers slowed down the simultaneous transfers, but we were able to reach the limit of the Gigabit-LAN connection when we started using a faster SSD. Which means that to have the kind of fast network that wireless AD can provide, high performance drives are required to keep up with the data transfer rates.

Performance Remains At A High Level For A Long Time

During the initial set-up of the test arrangement, the two routers were only a few centimetres away from each other. This led to results that hit the Gigabit threshold, but it also led to frequent dips in performance. Based on





Speed up to 8 m

We measured the performance using a WLAN bridge between two of the new AD wireless routers. One of the benchmark software we used included iPerf (the image shows the jPerf graphical user interface)

the two-metre table we placed the routers on, the average drop was about 5% of points in performance score. Increasing the distance between the units actually made the connection more stable.

The fact that the AD routers attained the exact speed of their Gigabit LAN connection when in visual range and a gap of two metres wasn't all that surprising. However, we didn't expect the speed and ping time to remain at practically the same level up to a distance of eight metres. Encouraged by this, we then used a location that was within visual range and at a distance of twelve metres. However, the 60 GHz band was completely and totally silent at this location, which proved that it got cut off at some point after eight metres.

A usable connection was established at a distance of ten metres, but its data rates fluctuated drastically. This applied in particular to situations in which there was movement in the room, such as when colleagues passed through the line of sight and between the routers, the speed temporarily and immediately went down to zero. On the other hand, cardboard and paper obstacles had no effect on the system. The specified average values were measured in the absence of such interference.

The iPerf measurements for distances of more than ten metres were just about fifty percent of the 8m results. On the other hand, the FTP transfer procedure – which took almost 23 minutes – suffered a lot more on account of the unsteady 10m connection. To be exact, the results showed that the speed in this case was just five percent of the 8m speed. We believe that the FTP connection collapsed during the transition from eight to ten metres because of a steeply-rising error rate. Consequently, several data packets had to be transferred many times before the whole thing worked properly. We didn't expect the range limit of 802.11ad (which is caused by the oxygen in the air muffling the

signal) to be so selective.

The internet ping times for a distance of up to 8m were no worse than they would have been if a cable connection had been set up with the main router. This strengthens our hope that high-frequency wireless AD would be ideal for online games and interactive network applications.

We then took the same measurements

Measurement results: AD versus AC

At close ranges where it still works, wireless AD is very fast and surpasses AC, especially when it comes to file transfers

	WLAN	Speeds
iPerf: 2 Metre	ad (60 GHz)	937 MBit/s
	ac (5 GHz)	855 MBit/s
iPerf: 8 Metre	ad (60 GHz)	906 MBit/s
	ac (5 GHz)	846 MBit/s
iPerf: 10 Metre	ad (60 GHz)	426 MBit/s
	ac (5 GHz)	841 MBit/s*
FTP: 2 Metre	ad (60 GHz)	113,7 MByte/s
	ac (5 GHz)	32,2 MByte/s
FTP: 8 Metre	ad (60 GHz)	113,7 MByte/s
	ac (5 GHz)	32,1 MByte/s
FTP: 10 Metre	ad (60 GHz)	5,6 MByte/s
	ac (5 GHz)	32,1 MByte/s*
Internet-Ping: 2 Metre	ad (60 GHz)	14 ms
	ac (5 GHz)	15 ms
Internet-Ping: 8 Metre	ad (60 GHz)	16 ms
	ac (5 GHz)	15 ms
Internet-Ping: 10 Metre	ad (60 GHz)	24 ms
	ac (5 GHz)	15 ms*


* 12 m

between the routers with a 5 GHz connection (wireless AC). When it came to the iPerf bandwidth measurement, the 5 GHz network attains values that are somewhat lower than those reached by wireless AD, but it can be used without any speed drops up to a distance of 12 metres (it probably would have been functional at greater distances too, but we ran out of room).

When it came to the AC-based FTP process, even though the measurement procedure was the same as that used for wireless AD (three simultaneous file transfers), the speed was a sluggish 32.2MB/s. When we ran a cross-check with just a single active file transfer (all files successively), we realised that the first few hundred megabytes of each file were only being transferred at the rate of approximately 30MB/s, after which the speed climbed up to 90MB/s. Despite this, the 5 GHz bridge only managed an average rate of 34.1MB/s. In comparison with AC, the higher-frequency AD seems to be better at managing parallel file transfers. Furthermore, if the connection is good, the new standard upscales the transfer speed more quickly.

Bringing Wireless AD Into The Future

Unfortunately, the Gigabit-cable brake prevents the router from taking full advantage of the speed that's made possible using the 802.11ad standard. Nevertheless, there are scenarios in which the router would be useful. For example, if you want to use a laptop/tablet/2-in-1 device to work on files stored on a Gigabit NAS device, then AD will be able to provide you maximum throughput – at least at short distances. That's all the more reason to be excited about some of the new routers that would be coming out this year, which will have features that resolves this limitation, or at least offer some workaround for it. Furthermore, the new routers would be great if you plan to build a new high-speed infrastructure. There are PC vendors that already have plans to release products with wireless AD compatibility in 2017, which is for anyone who's planning to upgrade to look out for.

The killer application of the new wireless standard is already in view. Thanks to high bandwidth and low latency, it will be able to provide data to ergonomic and wireless VR goggles. In addition to this, AD connections may also replace HDMI cables, which in turn would simplify things like office presentations. Until all this happens, 802.11ad will remain just a fascinating technology. But there's no denying that it's exciting news to have a wireless standard that manages to be faster than even the long-serving Gigabit LAN. 



The Race For The Robo-Car

Autonomous vehicles are expected to be ready for serial production in three to four years. However, if the industry doesn't watch its back, the manufacturer won't be Audi or BMW, but Google

By Benjamin Hartlmaier

Autonomous vehicles is easily one of the biggest revolution in the automobile industry since the invention of the Otto engine.

With these autonomous vehicles of the future, computers are going to take the wheel instead of humans. As was the case with other industries, the digital transformation of the automobile industry is being driven by Silicon

Valley. When it comes to any announcements or major breakthroughs, data and technology companies such as Google, Tesla and Uber are setting the rhythm. In fact, Google had recently proclaimed a new milestone in autonomous driving. According to an October 2016 report for the Google self-driving car project, the company was able to teach the computer-controlled test vehicles how to make three-

point turns, which is a relatively complex manoeuvre for a non-human driver.

The fact that this success message came from Google isn't surprising at all. After all, the company can fall back on the use of its gigantic data bank to train its autonomous cars. Ever since the project began in the year 2009, the 58 test vehicles have autonomously covered a distance of about 3.6 million kilometres on public roads.

This makes the progress of German manufacturers look puny in comparison. For example, BMW's test vehicles have been running on the A9 between Munich and Nuremberg since 2011 but only managed to cover a distance of about 25,000 kilometres autonomously. Then there's Audi, which only has one test vehicle – the 'Jack'. This 'A7 piloted driving concept' research vehicle (which is also running along the A9) can track properly, brake, accelerate and overtake, all while running at speeds of up to 130 km/h. In contrast, Google's prototypes can only go up to 40 km/h.

The automobile industry has defined a five-level plan for the path leading to fully-autonomous vehicles (refer to the illustration on the lower right corner of the next page).



With the help of ambitious field tests in Copenhagen and its collaboration with America's Uber, Volvo plans to position itself at the peak of the development of a European robo-car



Mercedes is doing research on autonomous vehicles under the 'Intelligent Drive – next Level' project



Audi's 'Jack' test vehicle is driving autonomously on highway A9

According to this plan, the test vehicles of German manufacturers are currently at level 3. BMW uses the phrase 'eyes off' to describe this level.

At this level, the driver must be able to retake control of the vehicle within a few seconds. Audi and BMW want to install this technology in their production vehicles from the year 2020 onwards.

Volvo's Building The Uber-Car

When it comes to autonomous driving, manufacturers don't just have to deal with competition from Silicon Valley. This year, Volvo is going to launch a pilot project involving autonomous prototypes of the XC90 SUV in the city of Gothenburg (Sweden). What's unique in this project is that the tests are not going to be performed by engineers, but by 100 test customers. In 2018, the project is scheduled to expand and at this stage is expected to cover public roads in London as well. The test is eventually supposed to lead to 'IntelliSafe

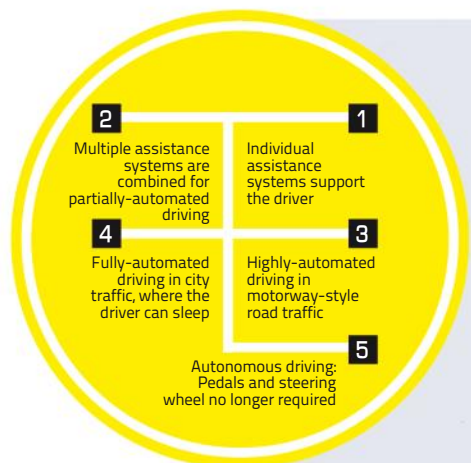
Autopilot', which would be roughly equivalent to level-3 automation. Volvo hopes to start production in the year 2021. As far as planning is concerned, the company is at the same level as German manufacturers like BMW and Audi. However, Volvo could have an advantage on the path leading to a driverless level-5 car. Since 2016, the company has been collaborating with Uber, which has already begun offering autonomous rides in Pittsburgh in USA.

German car companies have also been staying on the ball. Recently, BMW has announced that it's going to operate level-4 vehicles in downtown Munich over the course of this year, with their engineers being inside the vehicles at the same time for monitoring purposes. Tests involving customers are supposed to take place from 2020 onwards. However, when it comes to current production models, the scores are tied. For example, the assistance systems in the new Mercedes E-Class are in no way inferior to Tesla's

'autopilots'. In fact, they are actually better than Tesla's autopilots when it comes to sensor technology. However, the German manufacturers will have to keep making massive investments if they want to continue to stay level with the competition in the future.

The road to autonomy

SAE International has defined five evolutionary steps on the path leading to an autonomous vehicle:



People love to sneer at them, but Google's prototypes have already reached the highest level of autonomy



Electromobile For Everyone

Electric cars are either exclusively for the rich, or don't go very far. But Opel's Ampera-e is supposed to resolve this contradiction. CHIP was given the opportunity to test one recently

By Sepp Reitberger

The area to the north of Detroit isn't particularly attractive. Poor condition of the roads and the pick-up density of the highways are typical of the American Rust Belt. This area is the polar opposite of Silicon Valley, the home of the electric car pioneer Tesla. Given the poor facades of the car factories, it wouldn't make sense to expect high-tech wonders. Nevertheless, a milestone of the

automotive future is currently taking shape in this very area. Set to launch at least a year before Tesla's Model 3, General Motors will have its Chevrolet Bolt will begin production on the production line. Marketed in Europe under the 'Opel' brand name, the European counterpart will be called the Opel Ampera-e. Essentially the same car, Ampera-e is supposed to combine Tesla-like ranges (more

than 500 kilometres) with more affordable prices (around 35,000 euros, or approximately RM165,000 before taxes).

Test-driving The First e-Opel

The first five cars bearing the Opel's thunderbolt logo can be found lined up in front of the Orion plant, which is approximately 50 kilometres away from GM's corporate headquarters. It was interesting that some journalists were allowed to examine and ride along in the cars, but unfortunately, they weren't allowed to get behind the wheel themselves. Nevertheless, it was a good opportunity for us to form a first impression of Opel's electric car.

The first thing that we noticed was the vehicles' acoustics. There was no discernible sound from power steering pumps buzzing after the vehicle started, and there was no creaking or clattering either. Even though these cars are part of the pre-production batch, they seem to be highly-stable, of great quality and

Photos: Santa Fabio/General Motors (blue car), Adam Opel AG (cockpit, det. 2), Sepp Reitberger (det. 1)



Needle-free cockpit

The Ampera-e's dashboard follows the trend of purely digital notifications with large displays. The operations are intuitive

are relatively comfortable.

Despite the use of high-strength steel and the integration of the battery into the load-bearing structure of the vehicle body, the Ampera-e is somewhat heavy for a compact car at 1,616 kg. However, the weight doesn't feel all that apparent when the vehicle is in motion. This is because of the powerful engine (204 HP and 350 Nm torque), as well as the low centre of gravity thanks to the flat design of the battery. Consequently, there is hardly any lateral inclination at all, allowing the vehicle to be very agile and have excellent handling.

Although the displays could have been richer in contrast and brighter, they are quite legible even in the presence of sunlight. However, the displays lack the cheeky design that characterises Korean cars; all it has are information displayed at the centre. It's devoid any bells and whistles, which makes it plain. Of course, that can change in future.

Sharp Brake, Thrifty Supercharger

Opel has come up with a shrewd solution for recuperation adjustments. An example is the electric braking action for the car, which allows you to use an automatic selector lever to engage levels D (weak recuperation) and L (strong recuperation). Furthermore, the left side of the steering wheel also features a shift paddle, similar to the gear selector switch in the latest automatic transmissions. The driver can use this switch to activate maximum recuperation function. This is similar to the

manner in which you would enhance the braking action of a combustion engine by shifting down. Consequently, the task of making optimal use of energy (i.e. letting it run when possible and trying to brake solely through recuperation) doesn't really force those who have no experience with electric vehicles to make any big changes.

Opel's press team stresses that a consumption test drive from London to Paris (470 kilometres) was conducted practically without using the conventional brakes at all.

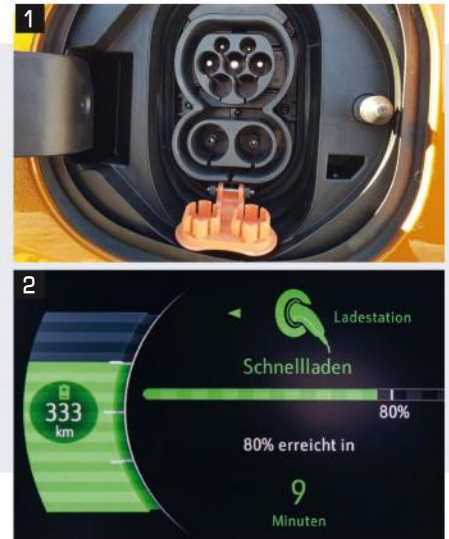
In fact, there was only one instance where it was necessary to use the left-side pedal because of a cyclist in the French capital.

The Ampera-e offers a surprising amount of

feature

Almost full, please

The charging connection uses CCS pillars (50 kilowatts). Unfortunately, the contacts for a three-phase current are missing **1**, so you'll need more than just a few minutes to charge up to 80 percent in your own garage **2**



room. Even though the car is barely larger than a Corsa on the outside, it's even more spacious than an Astra on the inside. With a volume of 380 litres (part of it is under the loading floor), the boot is also quite practical. Since the flat battery completely disappears between the axles and beneath the floor or back seat, the developers had a lot of room left to play with.

We also had a chance to take an on-site look at the charging options available to the Ampera-e. Production models in future will definitely follow the standards in individual countries, but for now, the Ampera-e is equipped with a CCS (combined charging system) connector for DC, which has a capacity of up to 50 kilowatts. This connector provides a



Journalists weren't allowed to take the wheel themselves in Detroit. However, the rides in the pre-production vehicles gave a good impression of the workmanship quality and performance



Full even without a combustor: Although the electric engine in the Ampera-e is only as large as a 5-litre beer barrel, the engine compartment is filled by power electronics, the cooler (for the battery) and the ancillary units



Subsequent use: In GM's battery laboratory, tests are run to see whether weakened batteries from first-generation Amperas can be used as an emergency power supply

fast charge time, as it's capable of juicing up the car for a total run time of 150 kilometres in 30 minutes. The problem is that for regions like Europe, CCS charging stations are still few and far in between. According to reports, these are still in the process of being installed along Europe's highways. As a result, those who want to have the vehicle fully charged before a long trip will have to rely on type-2 charging stations or a home Wallbox. This limits the Ampera-e to a single current phase and 16 Amperes, which translates to a maximum charging capacity of 3.7 kW. This could be further affected by the country or region's plug type. To give an example of the charging speed, you could have started charging the car in your garage at 2200 hours with the car's battery empty and would only get about fifty percent of charge by eight o'clock in the morning. The bigger problem lies in implementation of facilities for superchargers like the CCS Supercharger. Not only are they extremely expensive, they're also not designed for residential garages. In other words, this is not a problem that an Opel customers would be able to solve even if he's prepared to spend a good amount of money; you can't just throw money at this problem and call it a day.

Renault's Zoe demonstrates a method in which residential charging can work. It requires the use of a three-phase current and a capacity of up to 22 kilowatts. For this solution, there will be corresponding Wallboxes available for about 1000 euros (or approximately RM4,724).

However, General Motors and Opel were not prepared to answer the most important question during the Detroit event: pricing. The price of the car for most countries are still under wraps. However, pre-orders have already launched in Norway, with it priced at 300,000 kroner (approximately RM160,525) over there. However, there's one fact that's been made

apparent. And that is in comparison with its competitors, the Ampera-e would qualify as a bargain. Other options are either significantly smaller cars, or are much more expensive.

Visiting GM's Battery Laboratory

General Motors claims to operate the largest car battery laboratory in the western world, a lab we were able to visit. The heart of the Ampera-e is assembled here, which is delivered from South Korea with a charge level of 30 percent. The cell

chemistry and the individual flat cells come from LG, where they are constructed in accordance with the specifications set by General Motors. Developments that followed the five-year old first-generation (hybrid) Ampera is quite evident when it is in a disassembled condition. Like before, the battery packs here are built from flat cells. Each pair of cells is followed by a heat exchanger element, which is then perfused by a coolant. This arrangement ensures that each battery cell is in direct contact with the cooling system, ensuring that each battery cell is kept near optimal temperature. However, due to this cooling element and the overall structure, less than half the volume in the battery module is available for storing electricity.



Advantage through battery technology

Opel's advertisement takes creative liberties when it comes to the bar lengths (the front ends of the cars would be the correct reference points), but the range-related advantage over BMW, VW and Nissan is blatantly obvious.



Ampera battery from within: General Motors increases the density in the battery pack by cooling from the outer sides



The complete battery pack weighs 430 kg. The fully-assembled pack is delivered from an LG facility in South Korea

Space-Saving Cooling System

Since the cells in the Ampera-e have a higher nickel content, they are more tolerant in the temperature department. In terms of cooling, it is no longer necessary to place heat exchangers between the cells. All you have to do is cool the battery stack (which is about ten centimetres tall) from above and below.

This way, the cells only touch the cooling system on the narrow side. In comparison with the first-generation Ampera, the Ampera-e thus accommodates roughly two times as much capacity in the same volume. The entire 430kg battery is delivered in a special transport box, with a very robust casing to prevent the intrusion of foreign bodies and the resulting fires those could cause. It is therefore factored into the vehicle structure as a load-bearing element in order to save weight.

The lab work doesn't end when the car is launched in the market. Climatic chambers and vibration systems are used to create a fast-track simulation of the life of a car (but it still takes months or years), in order to identify potential flaws in the vehicle's structure. What's interesting is that variants of GM batteries aren't the only things that lie disassembled on the table right next to them, but also the ones manufactured by competitors. The reason seems to be due to the automobile sector's strong collaboration, often informing each other about any potentially dangerous flaws they may have found in a vehicles' structures.


Battery-Recycling

GM's battery laboratory also continuously does additional research on old battery types. Among other things, the developers have found a way to re-use batteries that have grown too weak to be used in cars. An example they gave

was of five batteries from first-generation Ampera placed in a large cabinet and interconnected to form an energy buffer. Such a buffer can be used to bridge brown-outs (i.e. voltage drops in the network) in a factory complex, a large residential complex or the power supply facility of a small village. However, potential customers for such a solution might be waiting in vain for GM's first batteries. It has now been four and a half years since the launch of the Ampera (and the structurally identical Chevrolet Volt), but according to the experts in the battery laboratory, there haven't been any cases in which the hybrid batteries would have had to be replaced on account of a flagging capacity, even though the first Volt-drivers in the USA have long exceeded the 300,000-mile threshold. This means that there wouldn't be any old batteries available for such a setup yet.

Genuine Assembly Line Production

At the end of our visit, we were also able to take a look at the production process for the car. Unlike the process through which the BMW i3 is produced at the Leipzig facility, GM's Orion facility employs a thoroughly conventional approach. Between various other GM compact models, a Chevrolet Bolt or Opel Ampera-e currently runs across the assembly line on every third transport frame. The batteries are brought to the respective assembly station by autonomous transport vehicles and are then screwed together manually. The traditional 'marriage' ceremony (in which the engine and chassis are combined with the vehicle body) is carried out in conjunction with the electronic components. The production teams keep switching between conventional and electric drive technologies and the tool change process

is executed in a relatively seamless manner. About 50,000 cars can thus be manufactured every year using a 90-second cycle and two-shift operations. If the component supplies were to be adjusted and the production process were to be limited to e-cars, it would theoretically be possible to manufacture 150,000 cars every year. However, nobody knows exactly when General Motors plans to start manufacturing and selling that kind of volume. At the moment, it's safe to assume that the company is losing money whenever it sells one of these cars. On the other hand, it makes a healthy profit via the Spark and Cruze models that come from the same assembly line. However, as GM president Dan Ammann explained to us at last year's Paris Motor Show, time is on the company's side, because battery technology is getting cheaper and cheaper as the number of units rises. A new round of price rises will eventually happen, likely no later than when Tesla launches its Gigafactory, which is expected to at least double the world's annual production of automobile-compatible lithium-ion cells. Together with the Ampera-e, this fact is bringing the day of mass electronic vehicles closer to reality. 



Ampera-E

TECHNICAL SPECIFICATIONS

Power	150 kW / 204 HP
Battery capacity	60 kWh
Charging capacity: DC	50 kW
Charging capacity: AC	max. 3,7 kW
Acceleration – 0–100 km/h	7,1 s
Top speed	150 km/h
Range	More than 500 km as per NEDC
Dimensions (L x B x H)	417 x 181 x 160 cm
Boot volume	381 litres
Kerb weight	1.616 kg

Full Speed For Every SSD

Whether it's SATA or NVMe SSD, getting the best performance out of your drives comes down to having the optimal settings. In RAID-Combine, two SSDs can achieve unprecedented speed

By Christoph Schmidt

The ascendancy of the SSD is in full swing. Much has been spoken about the flash memory storage drive technology in the past, specifically about its limited capacities. But now, capacities of up to 1 TB have become available and becoming affordable. Also, mid-range and top class SSDs have proven their

durability, further reinforced by the manufacturers via their long warranty periods. Does this mean it's time for you to setup, install the OS of your choice and start using it? Well, it's not as simple as that. To achieve optimal performance and lifespan for an SSD, the correct settings are required. Therefore, in

the first part of this article we will be showing you the settings for the common SSD types.

The biggest difference between the different types of SSDs isn't readily apparent - what differentiates them is the data transport protocol used. Conventional AHCI drives can go up to 550 MB/s read speed, while the newer NVMe can hit a whopping 4,000 MB/s. NVMe drives also have much shorter response times and improved parallel access.

Each of the two protocols are available in different form factors. For AHCI, it can either be a classic 2.5-inch drive, or a M.2 module with the B-Key (has a notch on the left side of the slot). On the other hand, NVMe SSDs are usually M.2 modules with the M-Key (which has a notch on the right side instead).

In the second part of the article we will show you which is the maximum SSD performance currently possible. For this, we have connected two of the fastest SSDs in RAID 0 configuration.

But before trying to make a record, it is first necessary to get the optimal performance from one SSD.

M.2/AHCI

houses the SSD storage in compact shapes. Internally, the data does not run faster than that as seen in SATA, via the AHCI protocol



M.2/NVMe

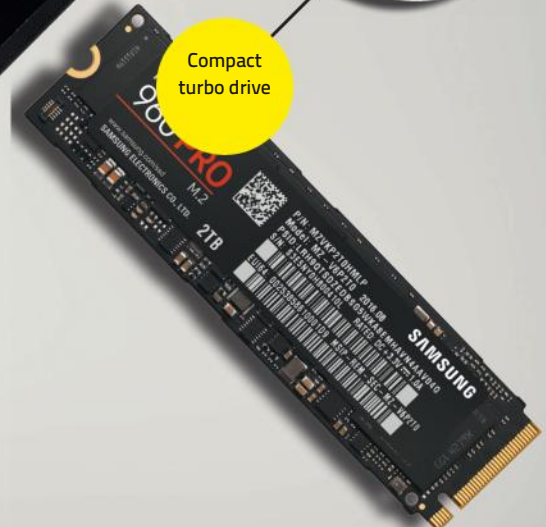
connects the M.2 interface directly with four PCIe 3.0 lanes. The NVMe protocol optimised for this allows data rates up to 4000 MB/s



Upgrade solution for notebooks



Compact turbo drive

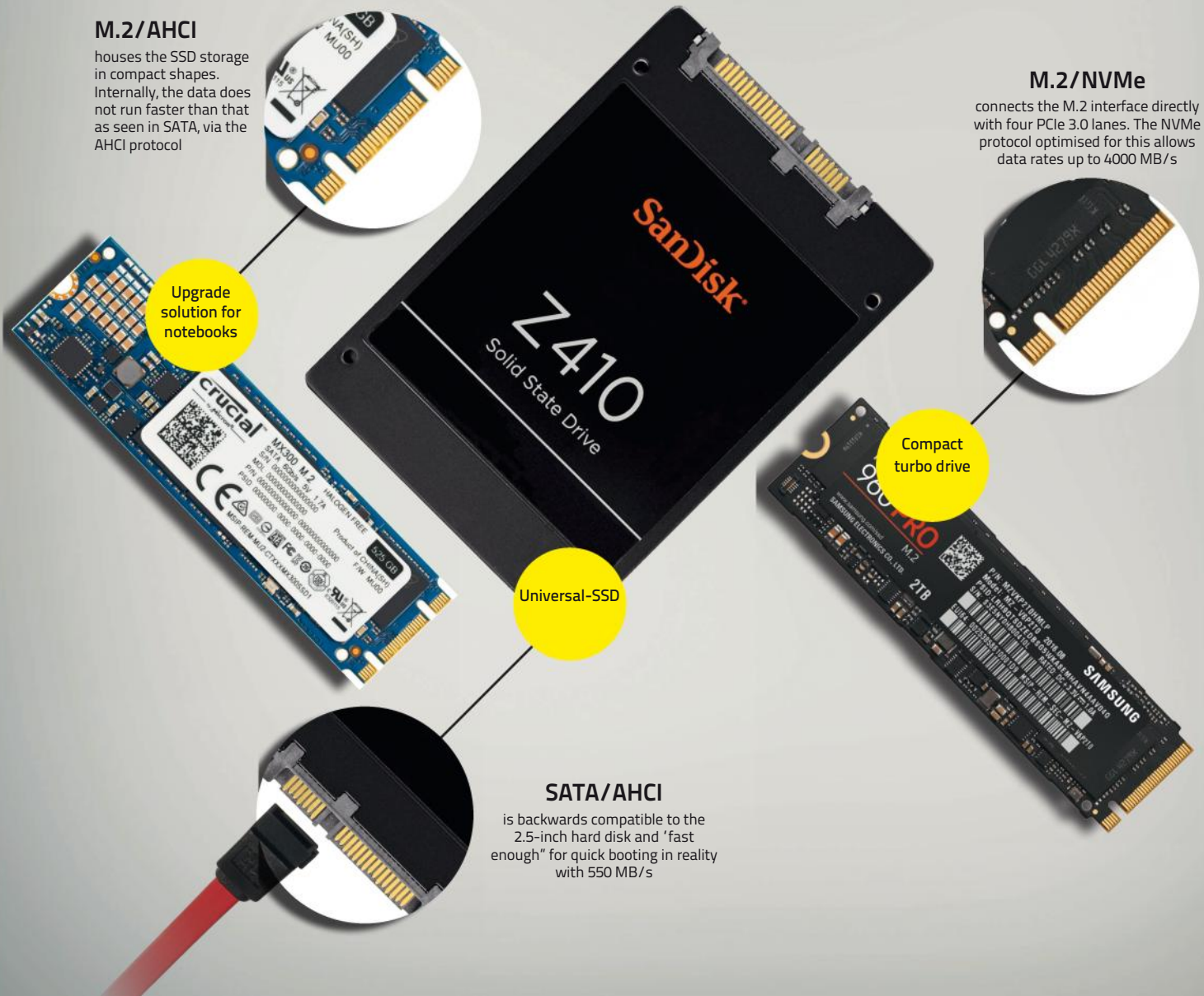
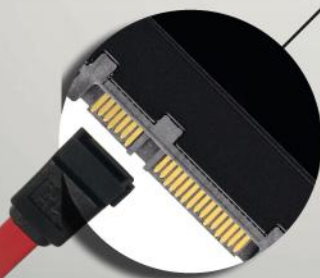


Universal-SSD



SATA/AHCI

is backwards compatible to the 2.5-inch hard disk and 'fast enough' for quick booting in reality with 550 MB/s



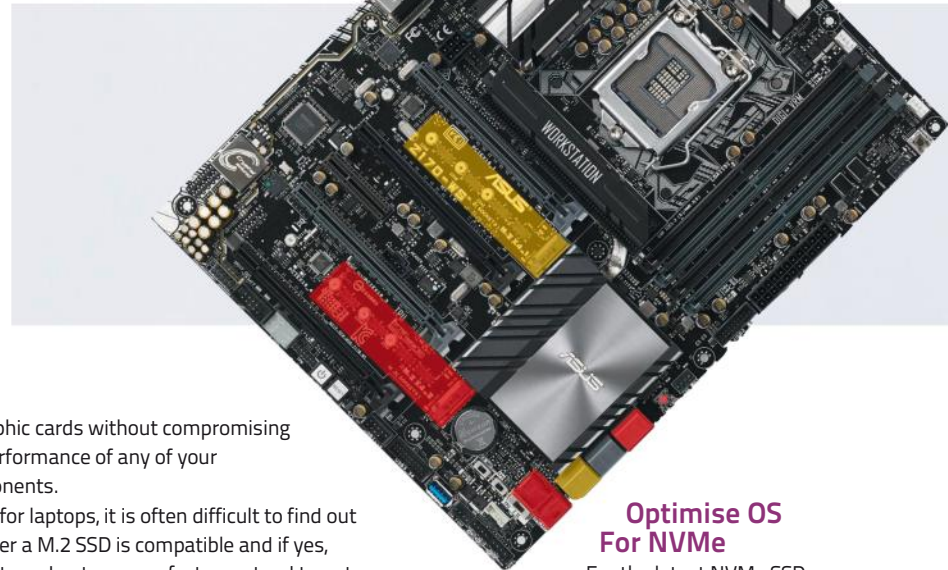
Optimally Use M.2 SSDs

Fast and compact, SSDs using the M.2 form factor (22 x 80 mm) are ideal for notebooks. But M.2 modules are not compatible with all computers. Moreover, there are different protocols with NVMe and AHCI. You need to be aware of which is the optimal SSD for your PC. When it comes to desktop motherboards, the user's guide or manufacturer's website should have information on compatible M.2 SSDs. The M.2 slot for the Haswell/Broadwell platform onwards is usually connected to only two PCIe 2.0 lanes, which limits the speed to 1GB/s. Also, industry UEFI BIOS and drivers are not fully ready for NVMe drives back then, so AHCI-based M.2 or conventional SATA SSDs were still the more dominant choices.

From Skylake onwards, there are four PCIe 3.0 lanes available, which can ensure the full 4GB/s speed. If the PC is running on Windows 10, then everything falls into place for the faster NVMe-based SSDs. However, the USB and NVMe drivers for Intel Skylake are missing in the Windows 7/8 Installer and OS, which complicates the installation process. Another thing that requires attention during the setup process is which data transport lane/interface does the M.2 slot share with. For example, a M.2 or SATA SSD will slow down two of the SATA connections it sharing bandwidth with, or completely disable them. An M.2 NVMe SSD, on the other hand, will eat scrape bandwidth from one of the PCIe slots. To know more, you'll have to refer to your motherboard's manual, so that you'll know where to connect your other drives

Connect correctly

In this motherboard, the first M.2 port (yellow) shares bandwidth with the SATA ports 5-6. If the second M.2 port (red) is used with an AHCI SSD then it scrapes the bandwidth of the SATA port 1-2 – with a NVMe SSD from the U.2 port



or graphic cards without compromising the performance of any of your components.

As for laptops, it is often difficult to find out whether a M.2 SSD is compatible and if yes, which type. Laptop manufacturers tend to not disclose the relevant information, so you will have to search on the internet using model number or name of the computer and „M.2“ as search terms. If the same series with M.2 SSD is available, then you have to check the compatibility. Make sure to purchase an M.2 drive only when you have all the necessary information and have checked the installation slot. It will show the permitted length of the SSD module (42, 60, 80 or 110 mm - the form factors are called „M.2 2242, 2260“ etc.). When in doubt, choose an AHCI-based SSD for your laptop. They can be recognised by the fact that

they also come as a 2.5-inch SATA form factor. For example, the Samsung SSD 850 EVO, Crucial MX300 or SanDisk X400 all have M.2 or 2.5-inch models.

NVMe SSDs work best with the manufacturer driver. You should also set this checkmark in the drive properties of the SSD (Device Manager)

Optimise OS For NVMe

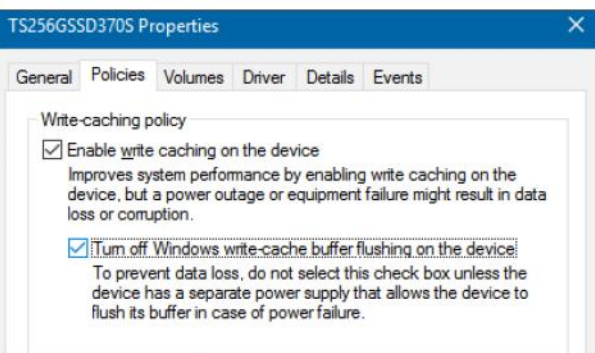
For the latest NVMe SSDs, the OS makes it mandatory to have a compatible driver. Windows 10 has this driver so that the SSD can be installed and used without fuss. For the best possible booting speed and good performance, you must install Windows 10 in UEFI mode. In the Boot menu, select the UEFI mode of your installation medium (instead of USB or SATA).

When partitioning the system, pay attention to the fact that the installer creates a GPT partition table. If Windows 10 is installed in this manner, the options 'Fast Boot' or 'Ultra-Fast' become available. Both can reduce the boot up and login time to the OS by a few seconds.

NVMe SSDs are fully capable of working with the Windows 10 driver. These days, NVMe SSD manufacturers have drivers and software that allow you to unleash the full potential of their NVMe SSDs. This makes it imperative for users to select a NVMe SSD from a known manufacturer with good software support (like Samsung, Intel, Toshiba OCZ) and install their latest driver (see screenshot above). If you're on Windows 7 or 8, install the NVMe driver from the manufacturer during a re-installation.

Shifting To A NVMe Drive

If you want to mirror an existing Windows 7 or 8 system onto a new NVMe SSD, then first connect the old hard disk as a SATA drive to the new computer then boot from the same and make sure to install any missing drivers (motherboard chipset, WiFi, USB controller, etc.) using the Driver DVD or from the



Windows 10 attains its optimal booting speed only when the UEFI runs in Win 10 mode and 'Fast Boot' is activated



Startup Users Details Services

Publisher

Adobe Systems Inc.

Adobe Systems Incorporated

AS SSD Benchmark 1.0.4.17 (64-bit)

SAMSUNG SSD 840

Read: 1,83 MB/s

Write: 505.47 MB/s

Score: 475

Drive health is EXCELLENT!

Your drive health is in good condition and according to current use estimated lifetime is 98 November 30, 2025

Samsung SSD 850 EVO 250GB (Fw: EMTO2B6Q)

Total/free size: 250,0GB / 41,3GB

Work time: 636 hours (26 days 12 hours)

Powered on: 181 times

Trim: supported, enabled

Health: 100%

Estimated lifetime: 9 years 0 month 1 day (T.E.C. date: November 30, 2025)

Last update: November 29, 2016 at 11:48:07; monitoring started: November 29, 2016

Throughput

	Today	Yesterday	Last 7 days	Total
Data written, GB	-	-	-	1021,7

If AS SSD, on top left, shows something other than 'OK' for '1024 K' then you must rectify the partition alignment

If the SMART values of an SSD are no longer perfect, then this may be hint towards reliability or performance problems

Disable speed killer

Unnecessarily starting programs slows down the booting process despite fast SSD. You can disable all the unwanted autostarts in the 'Task Manager' (in Windows 10) in the tool 'System Configuration'

manufacturer's website. If Windows needs reactivation, then do not proceed with this step. Instead, install the NVMe SSD and the NVMe driver first via the manufacturer's website. You can now mirror the current operating system using the migration system of the manufacturer or an image software (like Acronis) on the NVMe SSD. As a precaution, check whether the partition that is setup is compatible with the block variables (see screenshot above). If you don't, you could be impairing the performance and lifespan of the SSD significantly. Activate Windows only when the computer runs on the NVMe SSD without any problems.

Speed Tips For Every PC

If you have recently installed Windows on the SSD, then everything should run optimally. But not if the system has been used for a long time, or has a lot of software installed in it. You might find some programs nested in the autostart and system services, slowing down the boot up process despite being a fast SSD. To clean this up, start the 'System Configuration' of Windows and enable the option to 'Hide all Microsoft services' on the tab 'Services'. Next,

remove the check mark for all services that have nothing to do with your antivirus software or unnecessary for the hardware. Repeat this under the 'System Start' tab. Under Windows 10, this links to a tab on the Windows Task Manager, which then allows you to deactivate any program by right-clicking on it.

For SATA SSDs that are several years old, it's advisable to check the status of the drive with the manufacturer's software (e.g. Samsung Magician, Crucial Storage Executive, Intel SSD Toolbox) or with the tool SSD Life. Depending on the SSD, different SMART values will be shown here, providing you information such as the expected lifespan. You should also take note of parameters like 'Reallocated Sector Count', or things like Fail and Error rates. The values reduce with increasing use of maximum value (100 or 255) up to a threshold value (e.g. 10 or 0) from where onwards the SSD sets the operation. In theory, SSDs can also abruptly fail. SSDs with inconspicuous SMART values and drives with critical values (more than 20 to 30% decline than initial value), can still work for a long time. Nevertheless, such SSDs can be considered as prone to failures and so regular backups are mandatory. It is also worthwhile

to set a benchmark (e.g. AS SSD) and compare the results with benchmarks of the same drives from the Internet. If your SSD is clearly slower or the system, in general, is unstable, then the SSD should be replaced as soon as possible.

On The Hunt For The Speed Record

What's faster than one SSD? Two SSDs in RAID-0 combine. In this setup, the operating system will write and read the data simultaneously on both the drives, which should ideally double the performance. If you enable this hardware RAID configuration in the BIOS/UEFI and the cumbersome Windows installation yourself, you can achieve transfer rates similar to an entry level NVMe SSD by using two cheap SATA SSDs. We set out to pair two of the fastest NVMe SSDs currently on the market using this configuration and managed to set new speed records.

A generation back: Use SSDs with SATA II

A SATA SSD can provide noticeable increase in performance for computers of the Sandy Bridge generation and older - even if the computer only has a SATA II interface. A few points to be noted:

>No more than 300 MB/s. It's not possible for any SSD connected via SATA II to get above 300MB/s. New SATA-III SSDs are backward-compatible, but the old interface slows down

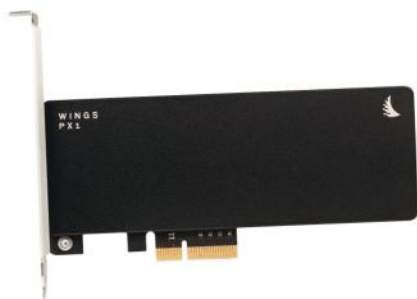
the transfers to 3 GB/s minus overhead.

>The AHCI mode must be active in the BIOS. Older computers that use IDE mode cost SSDs to consume more power than they should. Boot up your system and go into the BIOS and search for the relevant setting, which could be something like 'Peripherals.....SATA Controller'.

>Very old SSDs (e.g. Intel X25-E and older, or

Samsung before SSD 470) do not support the TRIM command as yet.

Thus, the SSD retains the deleted data internally, which leads to severe performance losses after intensive use, usually when it comes to the write access. To make such drives faster again, you can back up the data, reset the drive to factory settings with the help of Live Linux and then re-install the data.



M.2/PCIe Adapter

If your motherboard does not have an M.2 slot, then the M.2 SSD can be set in a PCIe-x4 slot using an adapter card.

Set Up Turbo RAID

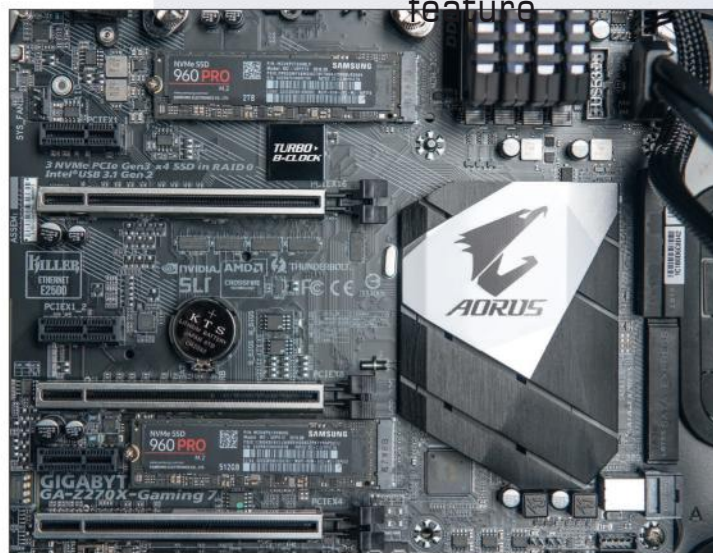
Before setting up a NVMe RAID, the first hurdle is the hardware: You need a motherboard with two NVMe slots. The other option is to pair them using the RAID function of the Intel chipset. You also need to set the system to boot in RAID. Having said that, the first option requires you to purchase pricey motherboards with Intel's Z170 or the newer Z270 chipsets (which also require you to get a Kaby Lake CPU). For this test, we used a Gigabyte Z270X-Gaming 7 and two Samsung SSD 960 Pro. We had to activate the RAID mode of the SATA Controller first before we could connect the two NVMe drives to one RAID 0 via the menu option 'Periphery | EZ Raid', so that it has double the capacity of a one RAID 0 drive. Other than some firmware issues we had to resolve at the start, the RAID was ready after a few clicks. If we chose to install from within Windows 10, a copy of the Intel Rapid Storage driver needs to be loaded on to a USB drive. The system drive has to be selected during the installation, so we uploaded that using the corresponding button. After that, the Intel RAID should appear as the

target disk. However, we went with the UEFI installation method instead, so the system automatically boots from the RAID-combine which can be used as a normal drive in the on-going operation. As the operating system now communicates only with the Intel RAID Controller (instead of directly with the SSDs), the NVMe driver from Samsung that unleashes full potential of the SSD 960 becomes unusable. This results in some performance loss.

RAID 0: Reality And Benchmarks

Our test system boots up in less than ten seconds, once we got the right UEFI settings. It runs amazingly fast when it comes to anything that deals with the fixed storage. For example, installing LibreOffice, in which more than 7000 files are written, took only 21 seconds on our test system. In fact, our benchmarks (see above) show how fast the RAID is and where its limits lie.

Instead of the theoretically possible 100% in increased efficiency compared to an SSD, we



The Gigabyte Z270X-Gaming 7 motherboard offers two M.2 slots, which allowed us to install two Samsung SSD 960 in RAID-0-combine configuration. It doesn't get faster than this

measured 20% more read and 32% more write speed. Using a rather impractical method, we did manage to get higher speeds. This involved installing the second SSD to a PCIe slot via an adapter card. Next, we booted the system from a third SATA SSD and paired the two NVMe SSDs with Samsung drivers under Windows 10 with Samsu drivers under Windows 10. This RAID surpassed the individual SSDs by 43% in read speeds and an amazing 82% in write speeds. However, it was not suitable as a bootable system drive.

Measurements with the simple but faster Atto benchmark have shown that even this combination is limited to a total of 4GB/s.

This is the current limit to the bandwidth of the so-called DMI connection between CPU and chipset. Our little test proves that with the extreme speeds that are now theoretically possible with NVMe SSDs, Intel needs to make it so that the PC platform is structurally robust enough to handle that kind of added speed in data transfers. 🇨🇦

How fast is the Turbo RAID

You can compare these results of the AS SSD benchmark with your SSD (test data volume = 10 GB)

Software-RAID (PCIe-Adapter) 2 x SSD 960 Pro

Read seq.	3.439 MB/s
Write seq.	3.660 MB/s

Hardware-RAID (M.2-Slots) 2 x SSD 960 Pro

Read seq.	2.895 MB/s
Write seq.	2.645 MB/s

Individual SSD 960 Pro 512 GB, M.2 Slot

Read seq.	2.406 MB/s
Write seq.	2.011 MB/s



RAID must be created in the UEFI at the hardware level so that it becomes bootable

The Intel-RAID driver and the Rapid Storage software are best installed under Windows 10





Sales Prohibited?

Android smartphones can't be used without a Google account, but things got worse for some consumers after they sold their Google Pixel smartphones

By Moritz Jäger

About 200 Google users in the USA are in the grip of a terrifying nightmare: Google has blocked their accounts. These users each bought a Google Pixel phone in a state with no or low VAT and then sold it in a state that had a higher level of taxation for some profit. Google sent the users a message pointing this out and then blocked their accounts, which also meant that these users now no longer have any access to Google services.

The sheer magnitude of the punishment only becomes clear when one realises how many services are linked to a Google account.

This list of services includes the Google search engine, Gmail, Google Play, Google Photos, Google Drive, and more. Once your Google account has been blocked, none of these services will be accessible and you will no longer be able to access your data. If you have been using these services for several years, this could translate to a loss of many important e-mails, photos, documents and maybe even your work files. Although the block can be contested, access will remain forbidden until a decision has been reached.

In another case back in July 2016, artist Dennis Cooper found out just how badly such

things can end when Google suddenly decided to block his Blogger website and e-mail account. The website being blocked particularly devastating for Mr Cooper, considering that it has been running for 14 years. He had been using his website to publish numerous works of art - including a book in GIF format - and most of these art pieces were saved on the website, with no local back-up. Essentially, a decade's worth of work had disappeared overnight.

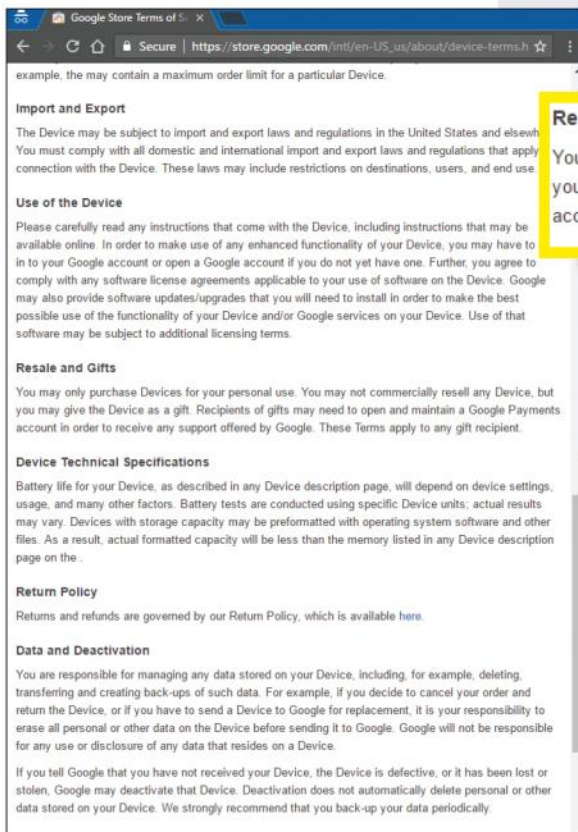
14 years' worth of art deleted

Mr Cooper's 'crime' wasn't even a serious offence. All he did was organise a 'self-portrait day' and ask his users to send him something that they found 'sexy'. Besides having his content deleted, he also lost access to his Gmail mailbox. As a result, he lost all messages he had ever received, as well as access to his primary e-mail account, which was one of his most important channels of communication.

This episode showed just how quickly such a drastic measure can become catastrophic. For many users, Gmail is the hub that leads to all their other accounts (such as Twitter accounts, Facebook accounts, bank accounts), or telephone and internet services.

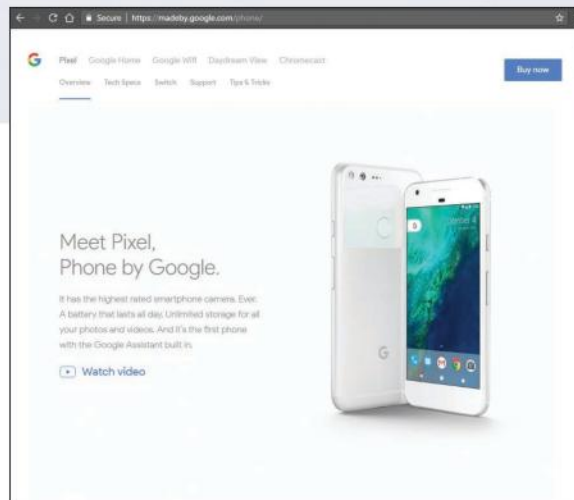
Furthermore, affected users report that messages sent to a blocked address come

Photos: Reuters/Beck Diefenbach (Aufm.)



Resale and Gifts

You may only purchase Devices for your personal use. You may not commercially resell any Device, but you may give the Device as a gift. Recipients of gifts may need to open and maintain a Google Payments account in order to receive any support offered by Google. These Terms apply to any gift recipient.



Google's terms of use specify that Google's new smartphone may not be re-sold. In fact, the company responds quite furiously to any violation

back with a note that reads 'Recipient unknown'. Even if the ban is lifted, the affected user has no way of knowing how many messages he or she has lost during the ban period. He also won't know who tried to contact him.

However, this doesn't necessarily mean that all hope is lost, for Google knows that it's not an all-knowing entity. Each ban notification is accompanied by a link, which allows the user to get in touch with the company and try to get the ban lifted. The process itself is quite simple. All you have to do is declare a valid e-mail address as a contact and express your opinion about the ban. However, bans that are imposed on account of 'suspicious activities' are exceptions. In that case, the company only blocks access to a single account. This could happen if Google suspects that the account may have been hacked. As a user, you will easily be able to re-establish access in such a case if you have provided a telephone number.

Those who don't want Google to have the power to block access to their data should take steps to back-up their data as quickly as possible. An easy method is to go to www.google.com/Takeout to download all the information that has been saved in your account. However, this only works if the account hasn't been blocked. Takeout's back-

up function is extensive, but it has to be activated manually.

Instead, it might be more reliable to switch to alternate solutions for some services. This is easy enough when it comes to documents, with options including Microsoft's OneDrive, SpiderOak and classics like Dropbox and Box. In addition to desktop clients, almost all of these services offer apps for mobile devices, which makes them practically no different from Google Drive. Most of them can even back up smartphone photos. As for apps, the Play Store isn't the only place to find Android apps. You could also opt for alternatives provided by Amazon and F-Droid, which specialises in open-source apps.

Back up and decentralise data

In any event, content creators should back up their blogs or videos on a regular basis. This can either be done at the local level, or with the help of a cloud solution. Having a back-up allows you to move your portfolio to other platforms, such as WordPress or Vimeo. The process can be annoying, but it's definitely better than losing data. However, the situation becomes more complex when it comes to e-mails. Although you can attach an external e-mail account to a Google account, you will still be left out in the cold if your access is blocked. Those who place their entire

digital lives in Google's hands should think about switching over to the fee-based G Suite. Once you pay the monthly fee (charged per user), you will receive the corporate version of Gmail. This option will, for example, allow you to use e-mail addresses in conjunction with your own domains. That way, you 'unshackle' yourself from your Gmail account, so if your access gets blocked, you at least get to keep using your own e-mail account with the help of another service provider.

It's dangerously easy to get lost in a cloud of comfort. The integration of services and the high degree of availability make it hard to imagine a life without Google. However, that's precisely the problem. Only those who brace themselves and look for alternatives in advance can minimise the loss of data in case of an emergency. A solid strategy for back-ups and decentralisation serves to protect your information and strengthen your ownership over your data. Such a strategy also protects you from negative consequences, such as those that arise when your account has been hacked.

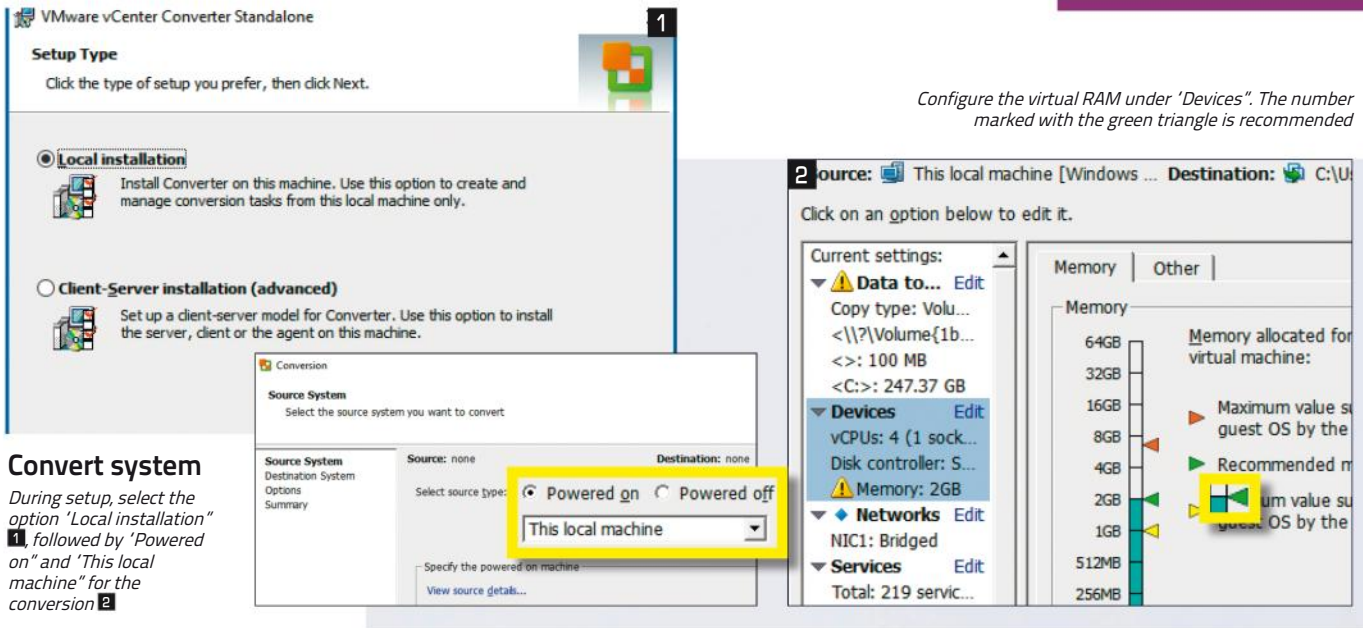
The 200 accounts that have been blocked due to the Pixel re-sales have now been re-activated. However, Dennis Cooper had to bring in a lawyer in order to get his hands on his data, with the account itself unrestored. You don't want this to happen to you. 🚫

A dramatic photograph of a man in a red cape, resembling a superhero, flying over a city at sunset. The sun is low on the horizon, creating a golden glow. The man is looking directly at the camera with a determined expression. His right hand is extended forward, and a semi-transparent Windows logo is overlaid on it. The city below is blurred, suggesting high speed.

Windows: Block All Attacks

Windows remains the primary target of the evil forces on the web. In this article, we want to show you how to protect your system from curious eyes – and seal it up in a virtual safe

By Andreas Th. Fischer



Configure the virtual RAM under 'Devices'. The number marked with the green triangle is recommended

Convert system

During setup, select the option 'Local installation' **1**, followed by 'Powered on' and 'This local machine' for the conversion **2**

Crash, Boom, Bam! And the enemy bites the dust. While this might be amusing in the context of comics, cybersecurity shouldn't be treated as a joke. Experienced Windows users protect their computer against attacks with the help of virus protection and malware blockers, but this isn't always enough for cases like Zero-Day attacks. And when it comes to Windows 10, the OS itself is an enemy. Microsoft mines our user data so extensively that even die-hard Windows fans are worried. Unfortunately, hardly anything works without Windows these days, as it is still the main OS for most consumers.

Is there something we can do? The increasing number of data theft leaves more and more users contemplating Windows alternatives. Many are interested in GUI-based Linux distributions like Ubuntu, but are afraid that they cannot use their beloved Windows programs on it. Why not use both then? By converting your existing Windows into a virtual PC, you can run it under Linux in one window, which is far more secure. This gives you the

best of both worlds: The security and the stability of Linux and the program versatility of Windows. And the best part is that Linux systems are free. If you want, you can also take the opportunity to install a fast SSD in your PC.

Windows-Shift In Four Steps

The virtualisation specialist VMware, with its vCenter Converter, offers a free tool that allows you to convert a Windows system into a virtual PC. With this complete package, you are able to Virtualise Windows, install Linux, and then let the virtualised system run under Linux or control data traffic.

Prepare For Virtualisation

To start, install the vCenter Converter on the Windows computer that you want to virtualise. Next, select 'Local installation' for 'Setup Type'. At the end of the setup, the program will automatically start once you click on 'Finish'.

Start the conversion with 'Convert machine', which opens the 'Conversion' window. In this window, select the option 'Powered On' for 'Select Source type' and 'This local machine' under it. Confirm this step by clicking on 'Next'. In the following dialog, select the option 'VMware Workstation or other VMware virtual machine' for 'Selection Destination Type'. But make sure that the setting for 'Select VMware product' is not changed. If you want, type an individual name for your virtual Windows PC under 'Name'. Finally, enter the location where the virtual PC should be stored. An external hard disk connected to the PC is the ideal choice, since it

will make the transfer later significantly easier. If you're taking the chance to install a new SSD in your computer, then you can skip the use of an external drive. Confirm the step again by clicking on 'Next'.

Set The Virtual System

At this point, you can begin configuration for your virtual PC. The virtual hard disk is automatically shrunk by the software to the capacity it currently occupies. If the free space on the installed hard disk is larger than the occupied one, then the conversion should also work without using any external hard disk.

Next, adjust the virtual RAM. To do this, click on 'Edit' on the right side of 'Devices' and key in the value in GB for 'Memory allocated for this virtual machine', which you'll find under 'Recommended memory size'; this is the recommended RAM size for the virtual PC. Also, reduce the number of virtual network adapters by selecting 'Edit' on the right side of 'Networks' and setting the value for 'Network adapters to connect' to '1'. Confirm with 'Next' and start the actual conversion with 'Finish'. The process could take more than an hour, depending on your PC's performance, but you can view the progress of the conversion under 'Status' in the main window of the vCenter Converter.

With that underway, you can now look to replace your main hard disk with a fast SSD for the Ubuntu installation. This will not only speed up your computer, but also ensure that you can reinstall the old hard disk and revert to your original system. If you don't see a need to fine tune your PC, then you can have the existing Windows installation replaced fully by Ubuntu. In this case, you should first back up important files and documents on an external hard disk.

This works:

>Windows

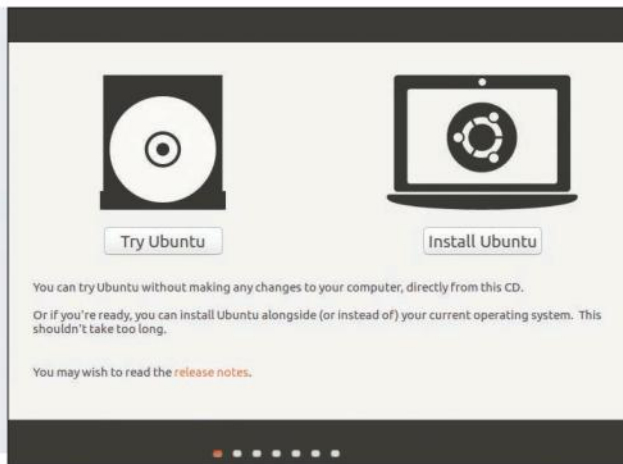
The conversion described here works with the Windows versions 7, 8, 10.

>Virtualisation tools

The vCenter Converter, like the VMware Player, originates from the virtualisation specialist VMware.

>Guest system Ubuntu

The easy to operate Ubuntu 16.10 works as a host on which Windows runs in a window.



Install Ubuntu

Start your PC with a Ubuntu DVD and select 'English' as the installation language. Click on 'Install Ubuntu' and proceed

Do not forget to copy the virtual PC created in the earlier step as well. If you decide to install an SSD then you can search for a guide online with the keywords "how to install ssd", which should show results on how to do so.

Prepare Ubuntu For Windows

In the second step, install Ubuntu on your computer. You can do this either on a freshly installed SSD or as a replacement for your already existing Windows. In the second case, all the existing data will be deleted, so make sure your data are all backed up!

The installation of Ubuntu isn't complicated. Simply follow the installation wizard and set up the operating system on the PC. Next, install the VMware Player, which will help revive your old Windows PC in a Linux window. Open a terminal by pressing [Ctrl]+[Alt]+[T] and key in the command "sudo apt-get install build-essential linux-headers-\$(uname -r)". Download the VMware Player for Linux under the address [vmware.com/go/tryplayerpro-linux-64](https://www.vmware.com/go/tryplayerpro-linux-64) in the "Downloads" directory.

The command 'gksudo bash ~/Downloads/VMware-Player-12.5.1-4542065.x86_64.

bundle" installs the VMware Player. If the Linux command "gksudo" is not yet installed, then you can fetch it later using "sudo apt install gksu". Once that is done, repeat the above command to install the VMware Player and follow the setup instructions given; the field "Enter License Key" can be kept blank. Now, grab the hard disk that contains your virtual PC and connect it to your PC. Then copy the complete folder with the virtual PC to the hard disk with the Ubuntu installation. Dropping it on the Ubuntu "Desktop" is fine. For the next big step, start the VMware Player by clicking on the Ubuntu icon on the top left and then type in "vmware".

When VMware first boots up, the virtualisation program will ask you to register an Email address so that advertisements can be sent to you in return for free use of the software. Once this is done, click on "Open a virtual machine" and go to the directory of your virtual Windows PC. Select the VMX file in this folder and confirm with 'Open' so that it appears in the overview. Now, click on 'Power On' to initialise the virtual PC.

VMware Tools as problem solver

The VMware Tools provide the most important drivers for virtual PCs and can also help if driver problems occur in the virtual machine

>If you encounter any missing drivers, download the VMware Tools for installation at <https://my.vmware.com/web/vmware/details?productId=491&downloadGroup=VMTTOOLS1010> and unzip the download ZIP file. Next, click below the CD icon in the window

bar of your virtual PC and select 'Settings'. Now select 'Use ISO image' and click on 'Browse'.

>Navigate to the folder where VMware tools is unzipped to and go to the subdirectory 'vmtools'. Then double-click on 'windows.iso' and confirm with 'Save'. After that, open the CD drive in the virtual PC and start the 'setup64.exe'. Finally, follow setup wizard's instruction and restart the virtual PC.

Open a terminal windows and type the command show to prepare the installation of the VMware

```
af1@af1-Lenovo-G50-45: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

af1@af1-Lenovo-G50-45:~$ sudo apt-get install build-essential linux-headers-$(uname -r)
Reading package lists... Fertig
Building dependency tree... Fertig
Statusinformationen werden eingelesen.... Fertig
```

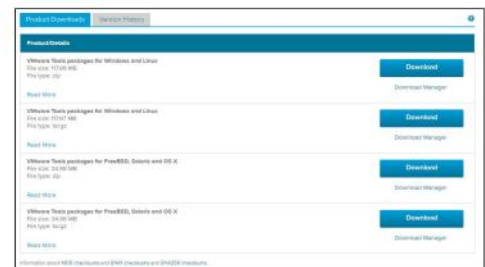


During the setup of the VMware Player, you have to specify an Email address to use it for free

Windows In The Virtual Machine

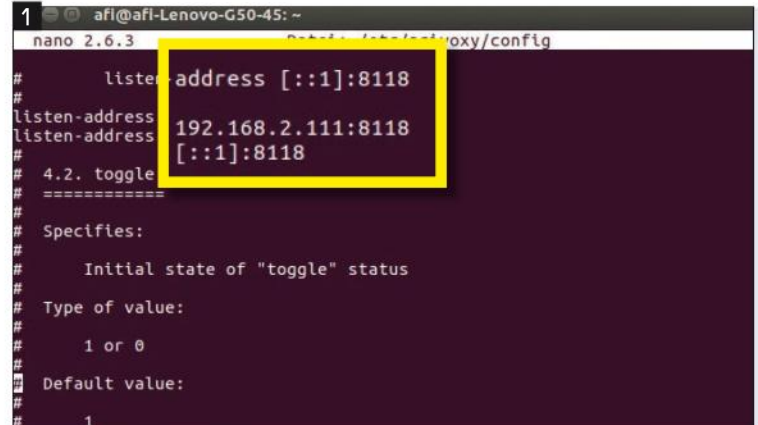
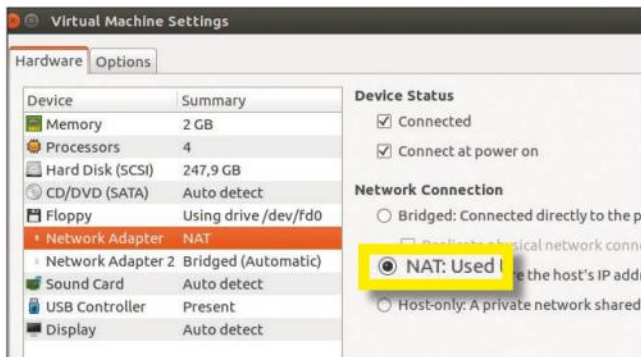
An error may occur during the first startup of the virtual PC under Ubuntu: 'Could not open /dev/vmmon: No such file or directory. Please make sure that the kernel module 'vmmon' is loaded'. In this case, go to the BIOS of your PC and disable the option 'Secure Boot'. The problem occurs because Secure Boot checks to make sure that all Kernel modules used under Linux are signed. However, VMware Kernel modules have not been signed by the manufacturer so they won't boot with this option enabled.

While your virtual PC starts, you will probably see many information boxes appearing. Depending on how the Windows PC was configured earlier, they will inform you about the fact that the 3D acceleration is no longer working, or that specific devices like a webcam can be activated via the



If the automatic installation of the VMware tools does not work, then you can download and install it manually from the Internet

Set the network card of your virtual PC to 'NAT' so that it can communicate with the Internet



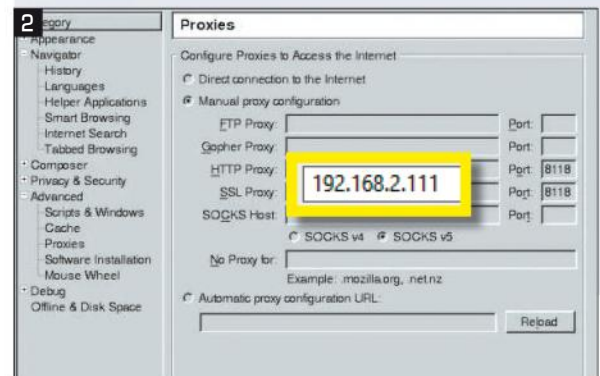
status bar. You'll also probably see a window that will indicate the download and installation of the VMware tools (see below). This will solve some driver problems that may occur due to the conversion of Windows to a virtual PC.

In case of conversion on a Notebook, a problem you may encounter is the keyboard not working. In this case, uninstall the Synaptics driver and restart the virtual PC. If the network is not working, call the 'Virtual Machine | Virtual Machine Settings' and click on 'Network Adapter' and change the setting for 'Network Connection' to 'NAT:Used to share the hosts' IP address'. This is useful as it allows Ubuntu to work as the firewall since the virtual Windows cannot be accessed directly (by outside data) anymore.

Secure Virtual Windows

In the previous step, we showed you how to protect your virtual Windows. However, a virtual machine is still vulnerable to malware and espionage, so you shouldn't disable any of your existing Windows anti-virus scanner. In addition, you should install the filter software Privoxy under Ubuntu and let the data traffic of the virtual PC go through it as

Enter the IP address and the port in the configuration file of Privoxy 1 and then again as proxy in Firefox 2



well. This will help to automatically filter out malware. First, open the terminal window in Ubuntu and key in 'sudo apt-get update' to update Linux. Then use the command 'sudo apt-get install privoxy' to install Privoxy. Now, type 'ifconfig' and note down the IP address of the Ubuntu computer - it will be at the end of the command output behind 'inet'.

Open the configuration file of Privoxy with 'sudo nano -c /etc/privoxy/config', then scroll to row 783 with 'listen-address 127.0.0.1:8118' and replace '127.0.0.1' with the IP address of the Ubuntu system. Press [Ctrl] + [X] to terminate, [J] to overwrite the Config file and [Enter] to retain the current file name. Finally, restart Privoxy using the

command 'sudo /etc/init.d/privoxy restart' to enable the changes. The last command also helps to reenale Privoxy if the automatic start fails to work.

Next, start Firefox in the virtual PC. Then press [Alt] and go to 'Extras | Settings', switch to 'Advanced | Network' and click on 'Settings' under 'Connections'. Here, select 'Manual Proxy Configuration', enter the IP address of your Ubuntu system for 'HTTP-proxy' and '8118' for port. Confirm by clicking on OK. If you're not sure whether it's working, you can go to the page <http://config.privoxy.org> to check. Now your virtual Windows under Ubuntu is complete and you can browse the internet securely without worrying about being tracked. 📌

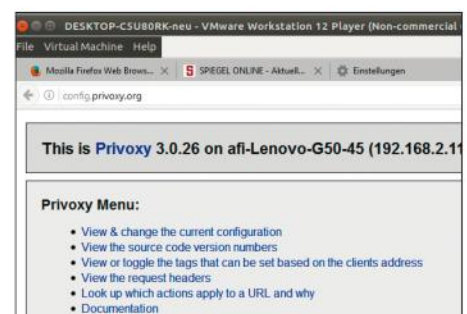
Safe surfing with Privoxy

Privoxy is a protection program that functions as a proxy between your browser and the websites which you want to visit.

>Privoxy blocks all known malware scripts and tracking. Thus, the tool prevents you from being spied when you visit websites, or user profiles of you being created. In the standard configuration, Privoxy already filters most known trackers like

Referrer, browser codes and information about your system. Privoxy protects not only your privacy but also reduces the data traffic and thereby improves your internet browsing speed.

>Privoxy identifies damaging or curious scripts that have no known filters as of yet. The security software searches for typical suspicious features in data flow and filters those before they reach the PC.



The Privoxy options which you change via 'View & change the current configuration', are present under config.privoxy.org in the browser



Close Encounters

Drones are a safety hazard. Their numbers are growing and they often go where they shouldn't be. Let's take a look at what Germany plans to do to regulate them

By Andreas Vogelsang

The drone menace has many faces. Regardless of whether the situation involves inexperienced hobby pilots, negligent threats to air traffic or deliberate attacks against major events, the fascinating technological toys can turn into genuine threats if they find their way into the wrong hands. For example, in October 2016, a clumsy German drone owner flew his 1.7kg drone at an altitude of about 180 metres into Munich's Olympic Tower. The drone crashed, barely avoiding a family of four. According to the projections of the Germany's German Air Navigation Services (DFS), there are approximately 400,000 drones in their country

and some of them illegally take off near commercial airports. The owners apparently want to take spectacular close-ups of passenger planes that are taking off or landing.

Drones Threaten Air Traffic

By the end of November 2016, the DFS had registered 63 sightings of drones from commercial aircraft, up from 14 compared to the previous year. However, the hazardous potential of drones is actually much higher. In February 2016, the office of FC Bayern received an extortion letter, whose sender was threatening to crash a drone above the Munich stadium. According to a survey conducted by

the Statista statistics portal, 77 percent of respondents in Germany believe that drones are likely or very likely to be used in terrorist attacks.

These problems aren't isolated to Germany either. Without a clear set of rules for drone users, these things will continue to be a hazard. The German legislation is just one of few countries taking an active stance to regulate them, some of which might feel harsh or restrictive for the owners. According to a representative of the German model aircraft flyer association (DMFV), Germany's model flight domain will come to a sudden halt if regulations are strengthened. In the plans being drawn up by the German Federal Ministry of Transport, drones whose weight ranges from 250g onwards will be subject to marking, so that it will be possible to identify their owners in case of misuse or accidents.

Is A Drone Licensing On The Horizon?

The demands of the DFS, on the other hand, go much further. These demands were most recently made at the DFS technology conference in the middle of November.


The central elements of these demands encompass the existence of drone licences for devices with a take-off weight ranging from 250g onwards, as well as the mandatory registration of drones. The insurance company

Allianz is taking the same line. Its industrial insurance group (AGCS) is also demanding obligatory registration of drones and their owners (in order to be able to clarify liability issues), as well as pilot training regulations that would, if possible, be framed within a global standard.

Defence Against Drones

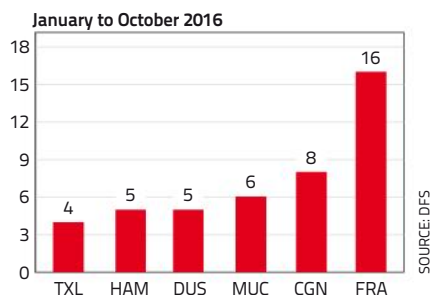
The debate over regulation is still ongoing, but companies specialising in defence against drones are already presenting technical solutions. For example, Germany's DEDrone recently installed a defence system called 'DroneTracker' in Frankfurt's football arena. The system can detect approaching drones from a distance of about 500 metres. 'The system then promptly triggers an alarm and identifies the pilot's location up to a few metres', explained Andrew Han, who was the organiser of the practical test. 'This provides enough time to locate the pilot.'

Other defensive measures are directed against the approaching drone itself. Researchers at the Michigan Technological University have developed a defensive drone that neutralises attackers with a cast-net. Drones can also be forced to land or fly back by disrupting the radio signals (jamming). However, this only works if the devices are programmed to respond in such a manner. If they are not, it could also result in an uncontrolled crash.

This is exactly what the low-tech solution devised by Dutch police seeks to avoid. They recently started using eagles as drone-hunters and it's working. The birds of prey snatch the drones in midair and bring them safely to the ground. France sought to emulate that success by training their own eagles to attack drones, in response to the increasing number of terrorist that are reported to be using the flying machines to spy or enact acts of terrorism. 

Drones at German airports

These are the German airports that reported the highest number of drone events in 2016. Frankfurt/M alone saw 16 such events.



INTERVIEW

"A matter of probability"

Our counterparts in Germany spoke to Prof. Klaus-Dieter Scheurle, chairman of the board of Deutsche Flugsicherung GmbH (DFS) to get his thoughts on the topic

> The number of close encounters between drones and aircraft is rising rapidly. How realistic is the possibility of a genuine incident taking place in the near future?

The number of drones in Germany and throughout the world will rise significantly in coming years. The more drones there are in the air, the greater the risk of collisions, crashes or accidents. If the number of convergences continues to increase, the occurrence of a collision will simply be a matter of statistics and probability. We wouldn't want misuse of unmanned aerial vehicles, or a lack of experience on the part of drone pilots, to lead to a catastrophe. We therefore need clear rules for the use of drones. We are also calling for the issuance of size-oriented drone licences, with a scale that would begin with smaller devices. In addition, a drone registration system should be set up, in order to promote the safe and fair integration of drones into the air traffic arrangement. The more drones we have, the more closely their operational regulations should be oriented towards the regulations for manned air traffic. The German Federal Ministry of Transport is already working on new rules, and a legal decree will soon be adopted.

> Along with private drones, the future will also see more and more commercial drones, such as those operated by Amazon or DHL. How can we prevent private and commercial drones from getting in each other's way?

We will have to develop and use regulations, technologies and procedures that would ensure that transport and hobby drones do not fly through the airspace in an uncontrolled manner. Safe coexistence in the same airspace would necessitate a new regulation and the drones will also have to be developed further technologically. For example, an airplane possesses a transponder, which constantly transmits the flight identifier, directional and speed-related data, as well as an aircraft collision avoidance system. Thus, it should also be feasible to equip drones with comparable avionics systems. Furthermore, it would be relatively easy to programme no-go areas into the drones' map software. The devices would then be unable to fly



through such zones. We are currently looking into this matter. However, we're looking for a Europe-wide approach, not individual solutions, so all the parties have to act in concert.

> Drones can turn into weapons if they find their way into the hands of criminals or terrorists. What would be the best way to organise defence against drones?

Such defences don't really fall into the sphere of responsibility of air navigation services. Nevertheless, there is a research project that could influence this particular topic. We are collaborating with Telekom and other partners like DHL and RWTH Aachen University to work on the visibility of drones. This basically means that we would like to use existing mobile communications technologies to locate drones. We have also filed an application with the Federal Ministry of Education and Research for a project that would try to detect drones in the vicinity of large commercial airports before the devices could get into the control zones. Moreover, we want to be able to see drones that, for whatever reason, do not want to be detected. All of this basically involves the determination of the positions of the drones and the foundation for suitable measures. As you can see, the responsibilities of the different participants are closely intertwined. After all, drones aren't dangerous if you use them sensibly.

PC Roadmap For 2017

It's been a good year so far and it's about to get better for PC enthusiasts. PC hardware is going places this year and we've got a basic idea on when the core platforms will arrive

By Markus Mandau

Evolution – Revolution. The computer sector oscillates between these two extremes with a beautiful sense of regularity. With its previous tick-tock principle, industry leader Intel had adopted a certain rhythm for its processors. 'Tick' stands for the big step, which translates to a reduction in the manufacturing size and a resultant rise in efficiency, while 'Tock' stands for a pure renovation of the CPU architecture. In 2017, Intel broke away from this principle and implemented a second 'tock'. Intel presented this new development at the CES trade show in Las Vegas on 5 January.

As usual, CES rung in the new computer-year. In addition to Intel, important products were also presented by other large IT firms. The products presented at this event usually set the technological pace for the rest of the year. With Kaby Lake and Ryzen, Intel and AMD have unveiled their newest CPU generations at the same time. Several signs indicate that Zen is the first competitive CPU architecture that AMD has produced in a long time. The processors themselves answer to the name of 'Ryzen'.

Kaby Lake Sets The Rhythm

Kaby Lake signifies the launch of a new era for Windows users. Initially, Microsoft made several announcements stating that it would only support new hardware in conjunction with Windows 10, but all of those announcements were swiftly retracted. However, Microsoft is finally going to implement this measure beginning with the Kaby Lake chips. When this happens, Windows 10 will, in addition to Linux, be the sole weapon of choice as far as PC operating systems are concerned. Furthermore, Microsoft hasn't been selling new licences for Windows 7 or 8.1 to OEM retailers since November 2016. This is but one of many

Photos: CHIP Studios (li.); Robert Vigiasky/Netfix (re.)



Intel Kaby Lake S

The year will get started with Intel's new desktop CPUs, which clock at a level that's 200 MHz higher than that of their predecessor Skylake

AMD Ryzen SR3 & SR5

Two Zen CPUs with four and six cores promise enough power for strong PCs

AMD Ryzen SR7

AMD's showing us what its new processor architecture can do. An 8-core CPU will kick things off

nVidia GeForce GTX 1080 Ti

nVidia counters with the fastest barely-affordable graphics card for home PCs

IMFT Optane

The first PC-oriented memory featuring the successor to Flash is expensive, but it's already compatible with Kaby Lake

2017

January

February

March

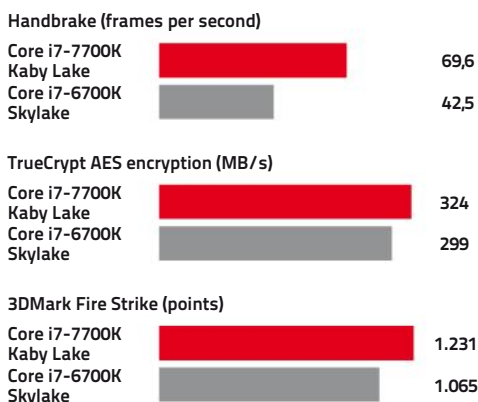
April

May

June

Kaby Lake vs. Skylake: Comparing Intel's most powerful desktop CPUs

Kaby Lake put in a wonderful performance at the CHIP test laboratory, managing to surpass its predecessor in just about every department. Including copy protection, Netflix users will only be able to use their PCs to watch movies and TV series in 4K resolution and HDR-quality if they are using Kaby Lake.



Source: Chip Test Laboratory



methods that the company has employed to increase adoption rate of Windows 10.

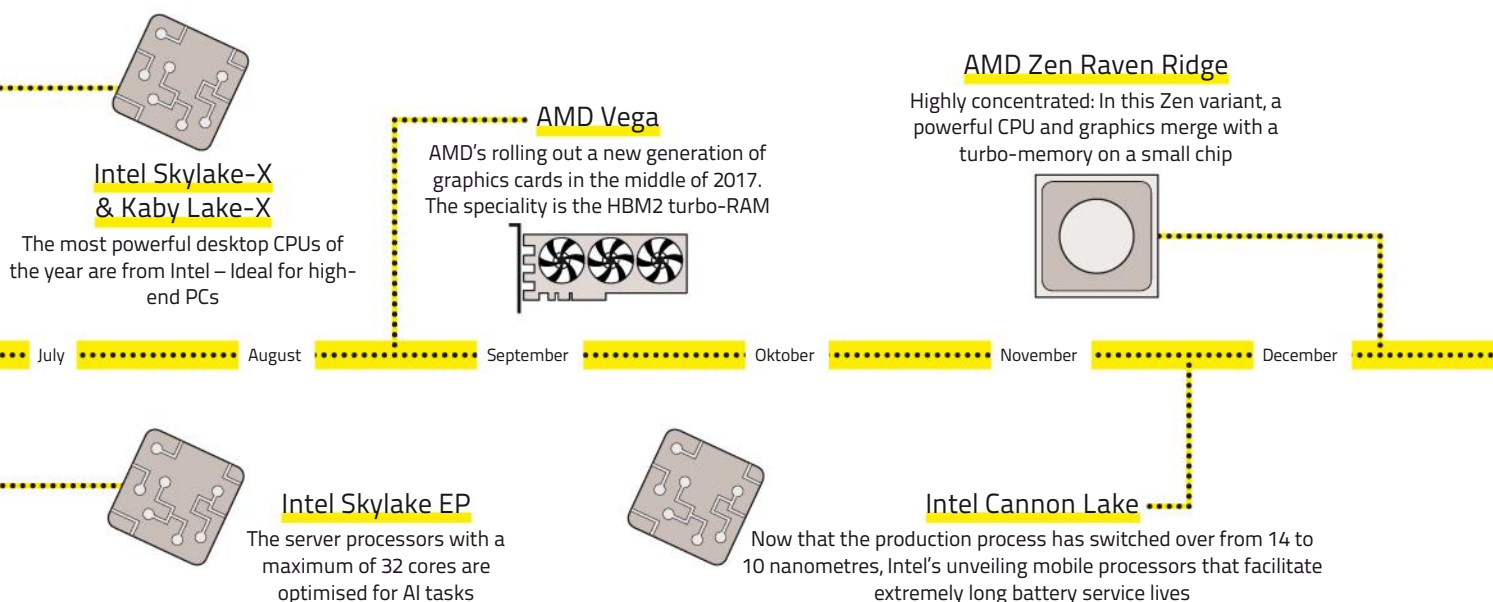
Recently, Netflix also announced that its customers will only be able to receive the highest level of quality if they're using the Edge browser (under Windows 10) and Kaby Lake. Specifically, Netflix customers must do so if they want to watch 4K HDR content. Other streaming services like Amazon are likely to follow suit due to the ability to take advantage of Microsoft's new Play Ready 3.0 DRM system, which will serve to eliminate piracy via the use of a separate processor on the board. That's a lot of tailwind for a CPU whose only major improvement is a higher clock frequency. For context, Kaby Lake CPUs compute at a level that is 200 MHz higher compared to Skylake. This mere chunk of 200 MHz is the result of the second 'tock' optimisation process and is all

that Kaby Lake can achieve, because it's not sporting any major upgrades like smaller transistors (it's still based on the 14nm manufacturing process). It won't be till Cannon Lake before we see more significant improvements.

In recent months, our test lab has played host to the fastest Kaby Lake – the 7700K – and we have tested it extensively. The 'K' in the name indicates that the device can be overclocked in conjunction with a free multiplier. The device is thus the fastest Kaby Lake that can be installed in a PC. And according to our measurements, the process optimisation has borne fruit: The 7700K is only ranked below Intel's expensive and high-end Broadwell-E CPUs in terms of performance and is relatively far ahead of its Skylake counterpart (6700K). When it comes to intensive computing

tasks such as encoding films or encrypting data, the 7700K gets the job done a lot faster as well. The performance of the CPU's graphics unit is also much better than Skylake.

Kaby Lake is accompanied by the emergence of the new generation-200 chipsets, which control the flow of data on the mainboard. In the last few issue, we've tested multiple boards featuring the powerful Z270 chipset. In comparison with its Z170 counterpart, the new platform represents a mere step up. For example, at 2400 MHz, the maximum clock frequency of the DDR4 RAM is barely higher than Z170's 2133 MHz. What the chipset has is support for 24 fast PCIe Express connections, while Skylake only supports 20. However, the device continues to lack USB 3.1 Gen2, which has double the transfer speed to the periphery when compared to Skylake. On the other hand,



AMD's new platform does feature USB 3.1 Gen2.

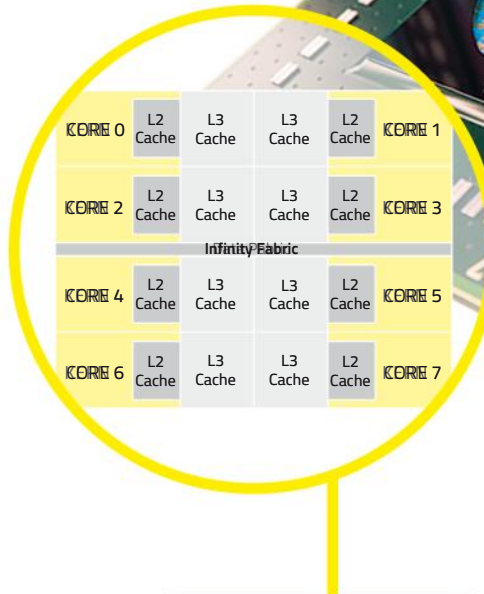
The Zen Master Has 8-cores

Intel's probably looking anxiously over their shoulders now, because the performance of AMD's Ryzen is expected to catch up with that of Intel's best CPUs - at a lower price. It looks like AMD really has taken the Chinese motto, 'a good copy is better than a bad invention', to heart. The chip maker has remoulded its processor architecture and installed features that are generally found in Intel's CPUs, such as hyper-threading. Thanks to its 14nm structure, AMD now stands on equal footing with its rival when it comes to the overall size of the transistors, making it a decisive factor in terms of the effectiveness of a processor. Each Ryzen component consists of four cores, to which additional components (either more cores or a graphics unit) can be connected with the help of the AMD Infinity Fabric.

The first Ryzen processors were teased at CES, but at the time we were unable to obtain any specific details outside of vague SKU categories. When we contacted AMD, the company wasn't prepared to tie itself down to a concrete release date either. All we know at the moment is that the new chips are expected to be released within Q1 of this year. However, if leaked slides on chiphell.com are to be believed, the 4-core, 6-core and 8-core versions of Ryzen are supposed to hit shelves no later than March. At the end of December 2016, AMD caused quite a furor with its Ryzen SR7. When it came to the task of transcoding a video with the help of the HandBrake tool, the device was actually a little faster than Intel's 6900K, while Intel's 4-core 7700K is unable to keep up. The street prices of both processors will probably be around the RM1,650 mark. Unlike Intel's Core-i processors, the SR-Zens do not invest any chip area in graphics units. That shouldn't be a

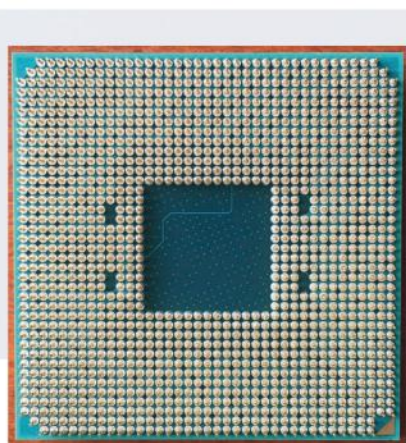
AMD's new power-CPU

AMD's throwing down the gauntlet with the Zen. In terms of performance, the Zen is at the same level as Intel's Core-i. In some departments, it may even be better: AMD's starting the new year with a powerful 8-core device.



CPU-Type	SR7	SR7	SR5	SR3
Cores	8	8	6	4
Threads	16	16	12	8
L2 Cache	4 MB	4 MB	3 MB	2 MB
L3 Cache	16 MB	16 MB	12 MB	8 MB
Energy consumption (TDP)	95 W	95 W	65 W	65 W
Clock frequency	3,4 GHz	3,0 GHz	Unknown	Unknown
Boost frequency	3,6 GHz	3,2 GHz	Unknown	Unknown
Estimated price	USD499 (about RM2,218)	USD399 (about RM1,773)	USD259 (about RM1,151)	USD149 (about RM662)

Ryzen will hit shelves by March with three CPU types, and it will be relatively cheaper (compared to Intel equivalents)



The rear side of a Ryzen CPU is connected to the new AM4 socket with the help of 1339 protruding pins

problem for PC enthusiasts, who would be installing a graphics card anyway.

Sources also claimed that Zen can be overclocked up to 4.2 GHz. However, the actual measurements associated with the energy consumption and overclocking of Ryzen have not yet been released. With Ryzen, AMD is also changing the CPU socket. To date, there are three new chipsets belonging to the AM4 platform, with the most powerful of these - the X370 - designed for those who like to tinker with high-end PCs. In addition to the switch to the DDR4 RAM, the upgrade to the AM4 platform also results in a renovation of ports. For example, support for ultra-fast NVMe SSDs. It will also provide direct support for USB 3.1 Gen2. When it comes to structural options for PCs, X370 boards will provide options that will be comparable to those offered by Intel's Z270.

Cpu-X Overclocks To 5GHz

However, Ryzen's competitor is also

quicken the pace. At the end of January, Intel unveiled a small Core i3 belonging to the Kaby Lake generation (the i3-7350k), which is capable of overclocking. Furthermore, Intel has scheduled its new Skylake EP server processors to appear in June, as well as debut its high-end CPUs (which will position themselves against the 8-core devices of AMD's Zen platform) in May.

While Skylake merely represents a renovation of expensive processors meant for professionals with deep pockets, the price of Kaby Lake-X will probably lie between the prices of the 7700K and the Skylake-X.

When it comes to the Skylake-X, nothing much has changed. The high-performance CPUs (which have six to eight cores) only make maximum use of their capacity when the situation involves special tasks such as video rendering. Although Kaby Lake-X only has four cores, it will probably be quite efficient indeed, as the CPU makes do without a graphics unit

High-end graphics cards at a low price

Thanks to the GeForce 1070, NVIDIA was previously the only company that was equipping a high-end device with a relatively inexpensive graphics card (approx. RM2,100). A leaked benchmark-comparison with an unreleased AMD Radeon Pro 490 suggests that might change quite soon.

3D Mark Fire Strike Ultra

AMD Radeon Pro 490		5.000
NVIDIA GeForce GTX 1070		4.529

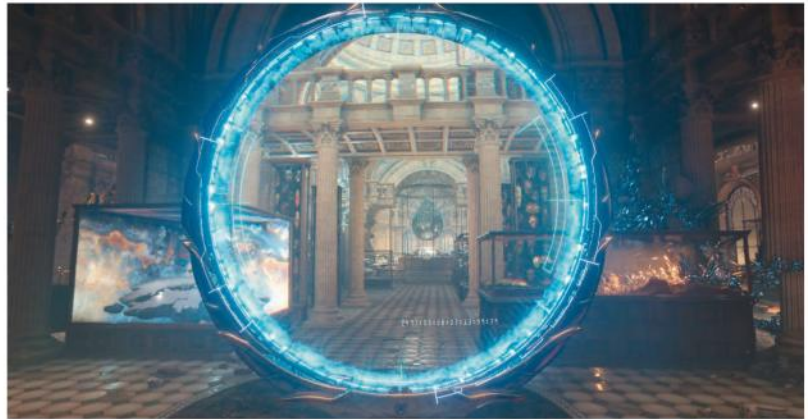
3D Mark Fire Strike Extreme

AMD Radeon Pro 490		9.490
NVIDIA GeForce GTX 1070		8.966

3D Mark FS Time Spy

AMD Radeon Pro 490		6.510
NVIDIA GeForce GTX 1070		5.749

Source: WCCFTech.COM



(just like the SR Zens). It might also run on a clock frequency at around 5 GHz. In addition, both Intel processors will be receiving a new socket (LGA 2066) and chipset (X299). The chipset increases the PCI-Express connections to the level of 48, which should be more than enough for an SSD-RAID and two graphics cards.

Optane Accepts The Flash Inheritance

If you want to equip a high-performance PC with Zen SR7 or Kaby Lake-X in 2017, you can fall back on graphics cards like NVIDIA's GTX 1080 and SSDs such as the Samsung 960 Pro. Many of these were launched last year, so availability shouldn't be an issue. When it comes to both these categories, the year 2017 is going to prove even more evolutionary. However, this doesn't apply to the Optane memory, which has been developed by Intel and Micron. Optane memory is a relatively new technology that doesn't rely on Flash cells. Instead, it makes use of a successor technology

that is based on phase-change memory (PCM). PCM consists of a material that changes its phase and conductivity when it is heated for a brief period of time, allowing to change from an amorphous state to a crystalline one and then back to the previous state. This is ideal for saving the binary values of 0 and 1. In comparison with Flash, the advantages of PCM are longer durability and significantly higher writing and reading speeds. Intel and Micron have done well to develop this technology in the time they have, having started on the project only in July 2015.


Originally called 3D Xpoint, Optane is a brand-new technology, so it's understandable that Intel had to revise its release date and amend its original performance-related promises. As of the time of writing, Optane is theoretically able to achieve a data throughput that is ten times that of an SSD, while its response time (latency) is four times higher. Serial production has begun, which in turn indicates that the product should be released around the middle of 2017. The fact that the Intel Z270 platform has support for Optane memory is proof that Intel is ready to roll the technology to the market.

Vega Graphics With Turbo Memory

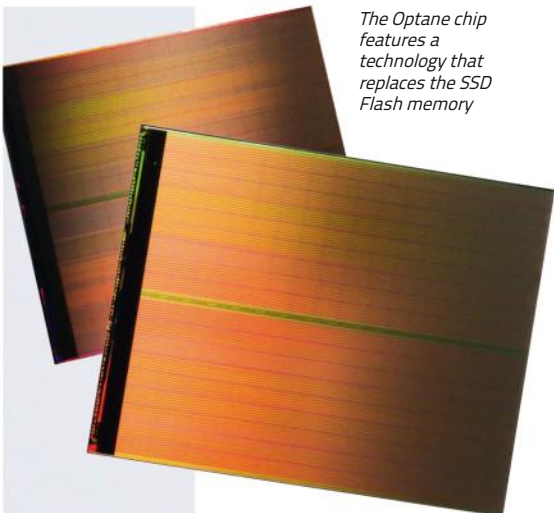
When it comes to graphics cards, NVIDIA and AMD have already switched over from the 28-nm production process to the 14-nm production process in 2016. The results are NVIDIA's Pascal and AMD's Polaris GPUs. The architecture changes provided both brands with massive performance boosts in graphics rendering. Although AMD has not yet released its most powerful Polaris cards, the NVIDIA GeForce 1080 Ti is expected to hit shelves before team Red's cards can. With a price tag of

approximately more than RM3,800, the 1080 Ti will round off NVIDIA's current generation portfolio. On the other hand, AMD's plans are still unknown. In response to our enquiry, AMD denied that a powerful Polaris-based RX 490 would be released in the near future. However, the benchmark figures associated with a Pro 490 have already popped up on the internet, courtesy of Wccfttech.com.

Instead of the rumoured RX490, we're more likely to see AMD's next-gen high-end GPUs come sometime in Q3 this year in the form of Vega. With Vega, AMD will be using its newly developed high bandwidth memory 2 (HBM) turbo memory architecture. In addition to being faster than a normal RAM (GDDR-RAM), it also fulfils the pre-requisites for cards that are both small and extremely powerful.

At the end of the year, AMD will also equip its Ryzen processors with a Vega graphics unit and HBM2 memory. These Raven Ridge APUs are expected to provide massive boosts in graphics performance for notebooks and tablets (compared to previous non-discrete solutions). Furthermore, their compact structures might just be indicative of the PCs of the future: CPU, graphics and memory on a single chip. At the same time, Intel is carrying out its next 'tick' with the upcoming Cannon Lake, which is slated for release at the latter half of this year and will feature a 10-nm production process. This reduction in the transistor size will once again increase the efficiency level of its CPUs. Intel will most likely roll out new chips that target mobile devices and notebooks first, before rolling out its desktop consumer, professional and server counterparts. We'll just have to wait and see whether that'll be enough to enable the company to keep up with the innovations that AMD is rolling out this year. 

The Optane chip features a technology that replaces the SSD Flash memory



**YOUR
FAVOURITE I.T.
&
TECHNOLOGY
MAGAZINE IS
ALREADY
AVAILABLE
DIGITALLY!**



Here's how to order CHIP Malaysia to go :-

Step 1: Download Zinio

CHIP Malaysia will be available on Zinio, one of the most popular digital newsstands on the internet. They have an iOS app as well, which is where CHIP Malaysia is sold.

Tap on the App Store icon on your iPad and search for 'Zinio'. The first entry should be Zinio Magazine Newsstand & Reader. Click on it and wait for it to be downloaded and installed.

Step 2: Creating a Zinio account

You will need to have an account with Zinio to download magazines from its store. Zinio will keep a record of what you've purchased and if you restore your iPad, all you need to do is to re-download your content. The best part of all? Re-downloads are free!

You can create a Zinio account from the app itself or log on to www.zinio.com to do it. All you need is an email address and a password.

Step 3: Download CHIP Malaysia

Launch Zinio and you'll see three tabs at the bottom. Click on the 'Shop' tab and search for 'CHIP Malaysia'. When you see our cover, that means you're close to getting your hands on CHIP Malaysia's iPad magazine.

You have the option to get the newest issue or subscribe to 12 issues. Select an option and pay for it via PayPal or Credit Card.

Step 4: Read

Once that is done, tap 'Library' at the bottom bar and you'll see the cover of the issue you bought. Tap on it and you're done! Zinio will let you read while it downloads the remaining pages. Enjoy!

TEST LAB: The Tools

Here at the CHIP Test Labs, we adhere to the high requirements set by the CHIP International Testcenter standards. This means that everything here -- from our own personal knowledge and to our trusted tools of the trade -- are meant to provide the most optimised, unbiased and comprehensive review to every product that comes through our doors. As thus, our test bed tools are specifically picked to get the most out of every test we perform



Intel Platform

Motherboards

Intel DZ77GA-70K
MSI Z87 MPower

Processors

Intel Core i7-3770K
Intel Core i7-4770K

Graphics Processing Unit

MSI GeForce GTX 980
GAMING 4G

CPU Cooler

Master X6



AMD Platform

Motherboards

ASUS Crosshair V
ASUS A88X-Pro

Processors

AMD FX-8150
AMD A8-3850

Graphics Processing Unit

ASUS Radeon R9 290X

CPU Cooler

Cooler Master Hyper 212
EVO



PSU, Storage & RAM

Power Supply

Cooler Master Silent Pro
Hybrid (1300W)

Storage

Western Digital Black² Dual
Drive
Western Digital My Book
Live Duo

Memory

Kingston HyperX
KHX1600C9D3K4/16GX
Kingston HyperX FURY
HX318C10FWK2/8
Kingston HyperX Predator
HX430C15PBK4/16

Benchmark Software

Operating System

Windows 7 Ultimate
(64-bit)

Futuremark

PCMark 8
3DMark

Industry Standard Benchmark Tools

AIDA64
SiSoftware SANDRA
Speccy
Unigine Heaven

TEST LAB



CONTENTS



1	ikBC C104	086
2	ASUS ROG GR8 II	087
3	ASUS Zenfonev3 Max	088
4	ikbc F87	089
5	ASUS VivoMini UN65U	090
6	Moto Z	091
7	Wiko U Feel Fab	092
8	GAMDIAS Zeus P1 RGB	093
9	ASRock Fata1ty H270 Performance	094
10	HTC One A9s	095
11	Msi Z270 Gaming Pro Carbon	096
12	MSI Prestige PE60 7RD	097
13	D-Link DSC5030L	098
14	Acer Aspire C22	099
15	Aztech Blink	100
16	ViewSonic XG2703-GS	101
17	BenQ ZOWIE XL2540	102
18	Sony SRS-XB3	103

CHIP Awards



CHIP Editors' Choice Award

Awarded to products that receive unanimous endorsement from all CHIP editors for its overall brilliance



CHIP Outstanding Award

Reserved for products that combine astute technical performance with good quality and design



CHIP Recommended Award

Given to products that possess singular quality worthy of a recommendation

Ratings

Each product review is rated on a scale of 1 to 5 for different key parameters:



PERFORMANCE : Refers to the efficiency of execution

FEATURES : Rates the abilities and unique characteristics available

DESIGN : Varies according to product. Finished products - form factor and build quality. Hardware components - layout, size and cooling solution. Software - user interface

VALUE : Calculated from the performance and features of the product in relation to the price



The Drive That Gamers Need

The XPG SX950 SSD was just recently launched by ADATA and is targeted at gamers. It comes with 3 different capacities of 240GB, 480GB and 960GB. Utilising advanced 3D MLC NAND Flash and Silicon Motion SM2258, the XPG SX950 delivers exceptional performance. With reading speeds of up to 560MB/s and writing speed of up to 530 MB/s, as well as random reading and writing speed of up to 90k IOPS. ADATA backs consumers with a hefty 6-year warranty. In addition, this SSD comes bundled with a 2.5mm spacer and a 3.5-inch bracket for easy upgrades. ADATA also boasted that the XPG SX950 SSD could outperform other similar models by providing high TBW of up to 800TB and a long-lasting MTBF of up to 2 million hours.

XPG SX950 SSD

Contact: Achieva Technology Sdn. Bhd.

Phone: (03)-7955 1768

Info: www.adata.com

Honouring The Line Of Succession

Huawei is releasing another iteration of its Honor line. The Honor 6X is packed with a 5.50-inch display, powered by a Huawei Kirin 655, Octa-Core (4x 2.1 GHz+ 4x1.7 GHz), fitted with 3GBs of RAM, and 32GB of internal storage, with an optional microSD card of up to 128GB. Alongside a 12-megapixel camera on the back with an extra 2-megapixel dual set-up, and an 8-megapixel front camera, the Honor 6X has improved from its predecessor. Coming in with 3 sleek colour choices of: Gray, Gold and Silver, the Honor 6X has looks that could kill. Built with a 3,340 mAh non-removable battery, the Honor 6X could last you a day with normal usage.

Huawei Honor 6X

Contact: Huawei Malaysia Mobile Hotline

Phone: 1 800 22 0086

Info: www.vmall.my



Striking From The Right Angles

The MSI Z270 Tomahawk Arctic looks to be an exceptionally sturdy motherboard with its metal plated design around the heatsinks, PCI-E, I/O cover, and golden audio jacks for the extra toughness. Not to be pushed around and bullied by other brands, MSI is coming out to fight for a spot on the motherboard market with dozens of features. The Z270 Tomahawk is a sister of the Z270 Tomahawk Arctic that features a motherboard with less white on the board itself. However, for people who like to colour match with their white case, the Z270 Tomahawk Arctic is the perfect motherboard just for that, as it even has MSI's RGB Mystic Light Sync, which you can then change to a white LED for that all white setup. Snow white has never looked better.

MSI Z270 Tomahawk Arctic

Contact: JW Power Marketing Sdn Bhd, Mediaforte (Malaysia)

Sdn Bhd

Phone: (03)-2148 1307, (03)-7960 6868

Info: <https://my.msi.com>



Turning The Tables Of Your Vinyl

Riding the wave of vinyl revival, Sony decided to unveil the Sony PS-HX500 turntable with High-Resolution recording. With Sony's DSD 5.6, you can turn your old vinyl into High-Resolution Audio file formats without much hassle, so you can enjoy your vinyl on the go without having to carry one around. All you would need to do is plug the PS-HX500 into a laptop or computer, and use a High-Resolution Audio Recorder software and your vinyl could then be recorded into DSD or Wav file. You might have to do some minor editing like splitting the tracks, or cutting them down, but the all-black sleek look of the turntable makes it impossible for vinyl lovers to turn it down.

Sony PS-HX500

Contact: Sony (Malaysia) Sdn Bhd

Phone: 1 300 88 1233

Info: www.sony.com.my



Lighting Up Your Crystals

Cooler Master is at it again, with an entry so ridiculous, that you would think they were joking. Cooler Master has just released a limited edition of their Masterkeys Pro L RGB keyboard, dubbed the Masterkeys Pro L RGB Crystal Edition. Despite being a mouthful, the keyboard does not shy away from taking the spotlight. The Crystal Edition is reskinned with a frosted see-through version of their Masterkeys Pro L RGB keyboard. All the features remain the same, with 3 different Cherry MX switches (Red, Brown and Blue), Anti-Ghosting and an MCU of ARM Cortex M3. This keyboard also features blank legends on their see-through keycaps, worth noting for those who likes to look at their keyboard while typing.

Masterkeys Pro L RGB Crystal Edition

Contact: Ban Leong Technologies Sdn Bhd,

Build Technology Supply Sdn Bhd

Phone: (03)-7956 6300, (03)-7955 3699

Info: www.coolermaster.com

As Slim As A Spectre

The HP Spectre x360 is the newest iteration of HP's line of convertible laptops, the 2 in 1 as they call it. Weighing 1.295kg and 13.79mm thick, this is as light as a primary school textbook. The HP Spectre x360 is a sight to behold. With its choice of i5-7200U or i7-7500U, an 8GB DDR3 RAM, up to 256GB of SSD, and an Intel HD Graphics 620, it is a powerhouse that's capable of packing a punch against other full sized laptops. With four built in speakers by Bang & Olufsen, sound quality would pose no problems. The Spectre x360 is a convertible laptop that is worth considering, if you have the budget.

HP Spectre x360

Contact: Hewlett-Packard (M) Sdn Bhd

Phone: 1 800 22 6998

Info: www.hp.com/my





Shielding You From Distractions

The BenQ ZOWIE XL2735 is a 27-inch monitor designed for the e-sports scene in mind. The BenQ ZOWIE XL2735 features a Shield on both sides of the screen, allowing you to focus on the game without any distractions from the side, and stops opponents from screen cheating. It also has BenQ's Dynamic Accuracy (DyAc) Technology, which helps maintain clarity for a smoother experience while gaming on the 144Hz monitor. Built with a TN Panel, it has a fast 1ms response time. You would easily catch your adversaries slacking, for that fraction of a second could be the difference between winning and losing.

BenQ ZOWIE XL2735 144Hz 27-inch e-Sports Monitor

Contact: BenQ Marketing & Services Sdn Bhd

Phone: (03)-7954 7800

Info: www.benq.com.my

Hitting the Motherboard Market with A Fatality

With the ever-increasing popularity in gaming gear, ASRock decides to join the fray again with their motherboard, the Fatal1ty Z270 Gaming K6. Equipped with a ASRock AURA RGB LED header that allows you plug in a LED Strip, which then enables you to change the colour look and style of your PC, and PCI-E slots that are fitted with solid steel, this motherboard is close to indestructible. Being able to support both 6th and 7th generation of Intel Core, is a huge plus. With more features than we could describe, most people would appreciate the features present on this monster of a board.



ASRock Fatal1ty Z270 Gaming K6

Contact: AMT PC Distributors Sdn Bhd

Phone: (03)-3344 1124

Info: www.asrock.com

Be A King Of Alloy Among Plastics

The HyperX Alloy FPS is another entry in the keyboard market by HyperX, this time aimed at FPS gamers. With FPS in its title and a spokesperson from an e-sports gaming team, it's hard to miss who their target audience is for this keyboard. Featuring a sturdy metal alloy top plate that weighs down the keyboard, the keyboard would stay still when playing frantically. Measuring about 441.56 x 129.38 x 35.59 mm, the keyboard isn't too big and would be a ideal for people who like to have more space on their desk. Red, Blue and Brown Cherry MX switches are options are available. Sadly, the only backlight available to all versions is red, with 6 modes and 5 brightness levels. On the back of the keyboard, there is a USB port that only allows charging of other devices.



Kingston HyperX Alloy FPS

Contact: Amble Action Sdn Bhd, Convergent Distribution(M) Sdn Bhd, Ingram Micro Malaysia Sdn Bhd

Phone: (03)-7955 1768, (03)-5613 5600

Info: www.kingston.com

Live Wide, Live With Pride

With an extra-large 43-inch screen, the Acer ET430K monitor provides wide angle viewing experience, and is especially ideal for corporate presentations, graphic designing or as a home entertainment screen. Its 4K2K (3840 x 2160) Ultra High Definition (UHD) resolution is four times 1080p resolution, presenting a more stunning and higher quality image than ever. It has a Picture in Picture (PIP) feature for productive multi-tasking, built-in 7W speakers for world-class sound, 10bits colour depth to provide vivid colour, and the Super Sharpness technology that makes the image as sharp as possible. Also incorporated is Acer's Blue Light Shield, Flicker-less and ComfyView technology, ensuring a comfortable viewing experience.

Acer ET430K

Contact: Acer Sales and Services Sdn.Bhd

Phone: 1 800 88 1288

Info: www.acer.com.my



The Rise Of Ryzen

The newly launched Ryzen is based on AMD's Zen architecture, with the Ryzen R7 1800X at the top of AMD's new line of processors. The latest processor from AMD features eight cores and 16 threads, a base clock of 3.6GHz and a boost clock of 4.0GHz. In addition, it comes with a new feature that AMD calls the 'XFR', or Extended Frequency Range. XFR automatically boosts the clock speed of Ryzen processors as far as your cooling allows. If you that isn't enough, Ryzen supports the latest in hardware components like NVMe and DDR4 RAM. Other details of the chip include an L2 + L3 cache of 20MB and a TDP of 95W. Be ready to experience an incredibly powerful multi-core processing and ultimate performance.



AMD Ryzen 1800X

Contact: AMD Malaysia Sdn Bhd

Phone: (03) 8316 3512

Info: www.amd.com

Be Sure With Your Colour

The SC-P5000 printer comes with the latest in ink technology, the new Ultrachrome HDX ink. It delivers an expanded colour gamut, outstanding print quality and unparalleled colour matching capabilities for brilliantly detailed images. The printer also incorporates Epson's PrecisionCore printhead technology with Variable Size Dot Technology for outstanding performance and long-lasting quality output with ultra-precise control of dot size, shape and placement. Furthermore, it can deliver precise colours that match exactly and are easy to achieve with a printer that is highly reliable. Photographers, designers and artists can rest assured knowing that their artwork can be reproduced perfectly in the finish print to their demanding standards.

Epson SureColor SC-P5000

Contact: Epson Malaysia Sdn. Bhd.

Phone: (03) 5628 8288

Info: www.epson.com.my





Shine Bright Like A Diamond

The Oukitel C3 is going to make you fall in love on first sight with its 3D Diamond Design. Inspired by the design of a diamond, the C3 gets a 3D designed back cover that resembles a diamond shape. It features a 5.0-inch HD IPS screen that tends to provide a clearer and stunning image for your smartphone. Additionally, the Oukitel C3 has a zinc alloy metal inner frame, ensuring a balanced and solid phone body. Under the hood, there is a powerful Mediatek MT6580A quad-core processor bundled with 1GB of RAM and 8GB of built-in storage and an option to expand with a microSD.

Oukitel C3

Contact: OUKITEL MALAYSIA

Phone: (03) 9191 0899

Info: www.oukitel.my

Its All Just For U

In the pursuit of brilliance, the HTC U Play introduces a new, beautiful 3D-contoured liquid surface design that's designed to reflect the best you. The curved glass construction reflects light beautifully in a unique way, ensuring that it creates a distinct look under any lighting. The HTC U Play truly captures the spirit of individuality with the introduction of HTC's revolutionary system called HTC Sense Companion, a personal AI companion that is always learning from you through the power of machine learning. Not only that, you have HTC USonic earphones that adapt to your hearing pattern by analysing your inner ears with a sonic pulse to optimise the headset for you, and a 16MP camera with super-fast laser focus enabling you to capture every moment with greater precision.

HTC U Play

Contact: HTC Careline

Phone: 1 800 88 9855

Info: www.htc.com/sea



When Smaller Becomes Better

The Fujifilm GFX 50S delivers the world's best image quality by combining an outstanding resolution of 51.4MP with exceptional tones, advanced colour reproduction and high-performance lenses. This level of image quality will surely prove inspiring for photographers. The GFX 50S is developed with the FUJINON GF Lenses series, as a system for photographers that require even higher image quality than ever before. It overturns common perceptions of traditional medium format digital cameras with a small, lightweight body made of magnesium alloy, and equipped with an ultra-high definition detachable EVF that uses a 3.69M-dot organic EL panel. The focal plane shutter is newly developed specifically for mirrorless cameras, capable of achieving a maximum shutter speed of 1/4000 sec and a flash synchronisation speed of 1/125 seconds or less.

Fujifilm GFX 50S

Contact: FUJIFILM (Malaysia) Sdn. Bhd.

Phone: (03) 5569 8388

Info: <http://www.fujifilm.com.my/>



Shining Starts From Within

Having pioneered RGB lighting incorporated into PSU's, Thermaltake now introduces the Thermaltake Smart Pro 650W with an 80 PLUS Bronze rating. The PSU comes pre-installed with a patented 256 Colors Ring 14 RGB fan with 5 lighting modes to choose from. By pressing the RGB lighting button, the fan's colour can be switched among a 256 Color RGB Cycle with variants including Solid Red, Green, Blue, White, and a LED Off mode. The fan blade is designed for high static pressure requirements of demanding applications, optimised to enhance static pressure for an impressive cooling performance. Not to mention, hydraulic bearings for silent operation guarantee ultra-low noise.

Thermaltake Smart Pro 650W

Contact: AV FUTURE LINK SDN BHD (AVF)

Phone: (03) 7783 0011

Info: www.avf.com.my



Be Part Of The Storm

Named after the Goddess of Storm, the T-Force CARDEA utilises the new-generation PCIe Gen3 x4 technology for breackneck speeds of 2600MB/s read and 1340MB/s write sequential performance with up to 180K/140K IOPS in random read/write operations. The T-Force CARDEA's speed brings fast boot-up along with responsive operating systems that loads games and applications faster for a smoother experience with reduced loading times. The T-Force CARDEA also features the first high-performance cooling module for M.2 storages designed for gaming. Team Group's patented cooling module is a heatsink that allows natural convection or directed air cooling to enhance heat dissipation. It also supports the latest NVMe standard, with the system communicating directly via the PCIe bus and connects to the PCIe controller of the chipset or processor.



Team Group T-Force CARDEA M.2 PCIe SSD

Contact: M-Link System (M) Sdn. Bhd

Phone: (03) 6143 0888

Info: sales@mmlink.com.my

Keep Your Breath Fresh

The Acer Air monitor is designed to help people keep tabs on their indoor air quality. Featuring a sleek and simple design, the device allows real-time monitoring of key air quality indicators through a dedicated app for smartphones, and by changing colours of the breathing LED light embedded on the chassis. In addition, home automation based on air quality indicators such as activating an air purifier, can be achieved through IFTTT integration. The Acer Air Monitor is capable of tracking six key air quality indicators including TVOC, carbon dioxide, PM2.5, PM10, temperature, and humidity. The measured data can be easily accessed in real time from a dedicated smartphone app from anywhere in the world through the internet

Acer Air Monitor

Contact: Acer Sales and Services Sdn.Bhd

Phone: 1 800 88 1288

Info: www.acer.com.my



iKBC C104

Price: RM349

Contact: Ultimatch Solution Sdn. Bhd.

Phone: (03) 7931 7187

Info: ultimatchsolutions.com.my

Interface: USB

Keyboard Switches: Cherry MX Brown/Blue/Red

NKRO: Full

Dimensions: 438.5 x 136 x 41.6 mm

Weight: 1.25 kg

Performance:

Features:

Design:

Value:



Excellent Foundations

By Matthew Yap

iKBC may not have the ability to make full-featured software, but it sure knows how to deliver the utmost quality in basic user experience

The gaming peripheral market is starting to feel really crowded these days, but when it comes to such products consumers tend to go for the popular brands. What if you're just interested in getting one that isn't unnecessarily fancy and is suitable for general use? Try iKBC's C104 keyboard.

'Unpretentious' or 'simple' are words we'd use to describe the iKBC C104. This keyboard is like the regular joe of the mechanical keyboard gang, with no backlighting to speak of, let alone chromatic coloured ones. Inside the box is a card with a list of Fn function key combinations and the warranty information at the back. There's also an accessory bag with a keycap puller and alternative keycaps for the WASD and arrow keys.

Of course, that's not to say that plain is bad, far from it. The full-sized iKBC C104 keyboard has a polished, minimalist design, and a plastic body that feels sturdy. It's also surprisingly heavy, so we pried the top cover open and found a steel plate that contributes to the solid build quality. The iKBC C104 has a firm set of rubber feet that keep it from sliding around and has a pair of feet with two levels of elevation, for those who need to adjust the

keyboard's height.

However, what this keyboard really lacks is in features. As mentioned earlier, this keyboard has no backlighting, nor does it come with a software. It also doesn't have a lot of Fn key functions. In fact, it has a grand total of seven Fn key functions and only three of those are multimedia ones for Mute, volume down and volume up. However, it does have n-key rollover, which makes it great for playing games like CS:GO or Overwatch.

While this keyboard lacks in the software department, it makes up for it with features geared towards a better user experience. If you are using the Cherry MX Blue or Brown variant, the tactile feedback is great for typing and the Blue will definitely satisfy those who love that audible click. The ergonomic keycaps are shaped with a curve for more comfortable use and the fact that they are PBT keycaps makes them even better.

The variant we tested is the Cherry MX Brown one and has less of a tactile feedback compared to some other Cherry MX Brown keyboards. But it's also quieter and has a smooth actuation, which is great for typing.



The C104 can be adjusted to suit different preference in ergonomics, thanks to the pair two-step feet



iKBC has included a set of coloured keycaps that can be used to replace the WASD and arrow keys

+ Excellent keycaps
Solid construction

— No backlighting

CHIP CONCLUDES

Great build, lovely keycaps and an enticing price point make this keyboard an excellent choice. It lacks the bells and whistles of fancier keyboards, but the budget conscious would be hard-pressed to find a mechanical keyboard with this kind of value.

ASUS ROG GR8 II

Price: TBA

Contact: Build Technology Supply Sdn Bhd, Servex (Malaysia) Sdn. Bhd., ECS Astar Sdn Bhd

Phone: 03-7955-3699, 03-8024-6688, 03-6286-8222

Info: www.build.com.my, www.servex.com.my, www.ecsm.com.my

Operating System: Windows 10

Processor: Intel Core i7-7700

Graphics: NVIDIA GTX 1060 3GB

Memory: 16GB

Storage: 1x 2.5-inch SSD/HDD, 1x M.2 SSD

Dimensions: 88 x 299 x 281.3mm

Weight: 4kg

PCMark Work: 3,789 points

PCMark Home: 4,501 points

PCMark Creative: 5,134 points

3DMark Fire Strike: 11,866 points

3DMark Fire Strike Extreme: 6,173 points

3DMark Fire Strike Ultra: 3,177 points

3DMark Time Spy: 4,613 points

Performance:

Features:

Design:



Almost A Console

By Nixon Ng

You can now carry your PC around like a console, time for LAN parties to make a comeback

Are you tired of getting huge desktops just to play the latest and greatest games, one you can carry around a desktop in a suitcase or backpack? It's not a laptop we're talking about. We're talking about the ASUS ROG GR8 II mini-gaming PC, which is portable enough to bring to LAN parties yet powerful enough to play your favourite games.

The GR8 II is about the size of a console, like a mix between the XBOX 360 and PS4. Mini-gaming PCs of this size are rare and even if you find one, it would cost you quite a bit. The unit sent to us for reviewing sported an Intel i7-7700 processor. It's a shame that it wasn't an unlocked processor, which would've been a nice addition, but we could understand why due to its small form factor. Nonetheless, the i7-7700 is a powerful processor and when paired together with the NVIDIA GTX 1060, it delivers great gaming performance.

It didn't take much effort to open up the GR8 II which is a plus, since you're actually able to switch or add certain hardware parts. The unit that was given to us for review had a 120GB Intel SSD, but the official retail units should have configurable storage capacities, so don't worry about it. The GR8 II fits a 2.5-inch HDD/SSD up to 1TB and an M.2 SSD up to 512GB, so storage options are aplenty. But like we said earlier, the GR8 II was pretty easy to open up so it'll be a cinch to add extra storage and swap out the smaller drives in the future.

For some real life testing, we ran some games that are popular these days using the GR8 II. Games like League of Legends, Overwatch and Dota 2 were easy for the GR8 II to run. In fact, League and Dota 2 easily had the fps counters hitting the roofs, while Overwatch saw a more humble frame count, but still delivered smooth, fluid gameplay. 🇲🇾



The GR8 II opens up easily, and you can change certain components almost as easily



The GR8 II has all the inputs and outputs needed for VR gameplay

+ Performance
+ Portability

— None

CHIP CONCLUDES

You can travel far and wide and become the greatest LAN party master, or you could just stay at home and game, either is fine because with the ASUS ROG GR8 II you have the performance and portability to do both.

ASUS ZenFone 3 Max

Price: RM 999 (3GB RAM)

Contact: Dynamics Distribution Sdn Bhd., ECS Astar Sdn Bhd

Phone: 03 8024 2100, 03 6286 8222

Info: <http://www.asus.com/my>

Operating System: Android 6.0 (Marshmallow) with ASUS ZenUI 3.0

CPU: 64-bit Qualcomm Octa-Core Processor Snapdragon 430

GPU: Adreno 505

Memory: 2 GB / 3GB LPDDR3 RAM

Storage: 32 GB, with Micro SD Card up to 128 GB

Display: 5.5-inch with Full HD IPS display

Camera: 16-megapixel (Rear), 8-megapixel (Front)

Connectivity: Bluetooth 4.1 + A2DP + EDR, Wi-Fi, Wi-Fi Direct, LTE

Dimensions: 151.4 x 76.24 x 8.3 mm

Weight: 175 grams

Battery: 4,100mAh (non-removable)

Antutu: 44194 points

PCMark for Android: 3297 points (Work 2.0), 10h 17 min (Work 2.0 Battery Life)

3DMark Ice Storm: 9349 points

3DMark Ice Storm Extreme: 5553 points

3DMark Sling Shot Extreme: 288 points

Performance:

Features:

Design:

Value:



Experience The Zen

By Rikco Shim With a cable that allows the ASUS Zenfone 3 Max to act as a portable charger, you will no longer be troubled with running out of battery... for your other devices

ASUS is back with another entry to its Zenfone 3 series of smartphones - the ASUS Zenfone 3 Max 5.5 (ZC553KL, 3GB Version), which features a larger battery than the others in the same line.

The Zenfone 3 Max has a 5.5-inch Full HD IPS display for a 73% screen-to-body ratio, a ratio we find quite pleasing to look at. However, you'll once again notice that some of the design choices were influenced by its predecessors.

What's so special about this Zenfone 3 Max? As we've mentioned, it has a built in, non-removable 4,100mAh battery, a rare sight for smartphones nowadays. Aside from that, ASUS provided an OTG cable you can use to charge other digital devices. This helps those who are usually out and about with more than a single phone in their pocket, or other digital devices like music players. On regular usage, we could get roughly two days worth of battery without charging, so it's more than enough if you're using it for things like messages and e-mails, or

the occasional Candy Crush.

We've also tested the phone's Super Saving mode, which can last up to 30 hours on standby mode with just 10% battery. That's an insane amount of battery life for just 10%; other phones last for maybe five minutes.

With its main selling point out of the way now, the phone does not perform badly at all. We tested its app launching speed and found that it launches and fully loads just a little slower compared to the leading competitors in the market right now. In addition, it has a 16-megapixel rear camera and an 8-megapixel front camera; you honestly can't ask for more, considering the price-point for the phone.

Overall, it's a decent smartphone for those who do not wish to fork out extra for the Deluxe or Ultra editions, while maintaining a flavourful Zenfone 3 experience coupled with the larger battery. ASUS might be on the right track of knowing what the market wants. But with that many shots, could you really miss? 📷



The on-the-go charging cable that's included in the Zenfone 3 Max box



The Zenfone 3 Max in action charging another phone

+ 4100 mAh battery - No quick charge

CHIP CONCLUDES

An altogether long-lasting phone. Worth picking up as a secondary phone for its ability to double as a portable charger.

iKBC F87

Price: RM519

Contact: Ultimatch Solution Sdn Bhd

Phone: (03) 7931 7187

Info: www.ultimatchsolution.com.my

Interface: USB 2.0

Keyboard Switches: Cherry MX RGB Black, Blue, Red, Brown

NKRO: Full

Weight: 1.1kg

Performance:

Features:

Design:

Value:



Time For Tenkeyless

By Nixon Ng

A real contender against the stronger brands out there, the iKBC F87 might just capture the hearts of keyboard enthusiasts before you know it

Do you like to hear the clack of keyboards when at work, or the noisy clicks that would drive a regular person crazy? Without a doubt mechanical keyboards are amazing peripherals. Mechanical keyboards are taking the PC world by storm, with manufacturers and brands all jumping on the bandwagon. But can we blame them? Once you start using a mechanical keyboard, there's no wayway for you to ever go back to membrane keyboards.

Once again we have an iKBC keyboard in our midst, but we're not one to complain especially after our good experience with the iKBC F108. This time we have the opportunity to test out the iKBC F87 keyboard, a tenkeyless keyboard with all the greatness of the F108. The unit we were sent to review sports Cherry MX RGB Red switches and white PBT double-shot keycaps. Across the keyboard there are be side-printed pictures, which serve to guide new-users.

Typing on the F87 is something we guarantee you will enjoy. The switches actuate accurately and smoothly, each downpress is consistent across the

keyboard. It uses cherry stabilisers over costar stabs, which is our personal preference because cherry stabs are easier to remove and reinstall; there's a lot of frustration that goes into reinstalling a keycap on a costar stabiliser. Also, the quality of the stock keycaps are great, texture, feel, printing are all done well.

These keycaps are backlit compatible and iKBC has done a great job with them. When using RGB lights, the keyboard illuminates consistently and clearly through the keycaps. If you love RGB lighting, then this keyboard would definitely catch your eye. There are nine different LED modes to pick and choose from, as well as a comprehensive colour palette to go along with it. Best part of it is, everything can be done straight from the keyboard, so you won't have to install any additional firmware or software.

If you purchase this keyboard we're pretty sure it'll last you quite a while. The keyboard is built with a steel plate mount, keeping the switches in place and adding additional support and durability to the keyboard. There is little to no flex, which further strengthens our opinion that it's built to last.



You can switch between QWERTY, DVORAK, and Colemak at the touch of a button



You have full control of the keyboard, right from the keyboard itself

+ Performance
Durability

- None

CHIP CONCLUDES

If the RGB modes and PBT keycaps aren't enough for you to jump the gun on this keyboard, the durability and typing feel of the keyboard would do it in a blink of an eye.

ASUS VivoMini UN65U

Price: RM2,199

Contact: ASUSTek Computer Malaysia

Phone: (03) 2131 6650

Info: www.asus.com/my

Operating System: Windows 10

Processor: Intel Core i5-7200U

Graphics: Intel HD Graphics 620

Memory: 4GB DDR4

Storage: 1x 1TB HDD, 1x M.2 slot

Others: 4x USB 3.0 port, 1x HDMI, 1x DisplayPort, Bluetooth 4.0

Dimensions: 131 x 131 x 42mm

Weight: 700g

PCMark Work: 3,155 points

PCMark Creative: 3,734 points

PCMark Home: 2,570 points

Performance:

Features:

Design:

Value:



In Your Home, Or In The Office

By Nixon Ng

A PC that blends into the office workspace or home furniture, becoming a seamless part of your environment

A family could always benefit from a mini-PC. Why? A mini-PC not only leaves behind a small footprint, but it also has everything you need to use as a HTPC. In fact, Mini-PC's these days tend to have desktop level performance, so you won't have to compromise performance for portability. This makes them ideal for offices, as well as for digital signage or information kiosks.

The ASUS VivoMini UN65U sports an Intel Core i5-7200U and 4GB of DDR4 RAM. Combined, the UN65U gave us pretty decent benchmarks from PCMark 8. Within our testing period we used everything a normal PC user would use. Such as Microsoft Word, Excel, Powerpoint, PDF readers, and also the occasional media player. The UN65U worked without a hitch and didn't reveal anything that compromised our experience.

Customisation for the UN65U is made easy and all you need is a screwdriver. Just remove the rubber feet, remove the screws and pop out the cover. You'll get instant access to all the modules that will allow you upgrade or

replace your HDD, SSD, RAM, M.2 SSD. Design wise the UN65U does a great job looking sleek and simplistic, while the VESA mount is just the cherry on top allowing for so much more placements to pick from.

The UN65U supports multiple displays and works with a multitude of display options, ranging from TV's to monitors and projectors. Using HDMI and DisplayPort++ you can have up to three displays giving you more screen space to multi-task. Additionally, the mini-PC has plenty of connectivity to ensure you'll always have enough USB ports. Both the front and back of the UN65U houses two USB 3.0 ports, with the front USB 3.0 ports sporting ASUS' BC 1.2 fast charging technology for quicker charging of your mobile devices.

The UN65U is a quiet mini-PC, barely making any noise throughout our review while temperatures stayed low regardless of usage. The 4-in-1 card reader is a welcome addition as well, and will allow families and photographers to show their videos or pictures instantly. 📷



All the connectivity you'll need for a home or office PC



You can never have too many USB ports

+ Size/footprint
Performance

— None

CHIP CONCLUDES

Need a small PC for home use or even for office use? Look no further than the ASUS VivoMini UN65U, a great mix of performance, portability, style and functionality.

Moto Z

Price: RM2,699

Contact: Lenovo Technologies Sdn.Bhd

Phone: 1 800 80 8575

Info: www.lenovo.com/my/en

Operating System: Android 7.0

System on Chip: Qualcomm Snapdragon 820

CPU: Quad-core Qualcomm Kryo

GPU: Adreno 530

Display: 5.5-inch (QHD)

Connectivity: Bluetooth 4.1, WiFi, Moto Mods, USB Type-C

Memory: 4GB

Storage: 64GB expandable with microSD

Camera: 13MP (rear), 5MP (front)

Dimensions: 153mm x 75mm x 5.19mm

Weight: 136g

Antutu: 12,1044 points

3DMark Icestorm Unlimited: 26,248 points

PC Mark Work: 5,132 points

Performance:

Features:

Design:

Value:



Modding The Modular Moto

By Nixon Ng

A phone that doesn't end the moment you buy it, but begins only when you start adding the Moto Mods

What is a modular device? A modular device is one which is made from different components that can be independently upgraded or replaced in a modular design. This allows for easy upgrade of components, lower repair costs, and allows additional features to be added to a device after purchase.

The Moto Z is a modular smartphone with its own set of mods dubbed 'Moto Mods'. These mods can be connected to the back of the device through magnets and connectors for additional functions, such as portable projection, a larger speaker, and even a camera with true optical zoom. All of them can be bought separately from the Moto Z, depending on your needs.

This smartphone is a flagship device that comes equipped with the powerful Qualcomm Snapdragon 820 processor and 4GB of RAM, which combined to max out all the lower-end 3DMark benchmarks. It was also able to get high scores on both PC Mark and Antutu,

further solidifying its title as a flagship tier smartphone. The Moto Z was able to take anything we threw at it, ranging from multi-tasking multiple applications, to ones that require high performance, and still came out strong with no visible lags.

Its 5.5-inch display sports a Quad HD resolution, which has deep and vibrant colours along with sharp and crisp text, while its auto-brightness also well well with adjusting the brightness whether in the dark or under the bright sun. Battery life is immense and could probably last a second day, or even more if it's not used extensively.

For those who love taking photographs and selfies you'll be happy to know that the Moto Z takes excellent pictures. We were able to take good pictures in different lighting conditions, and there's even a selfie flash for taking pictures in dark places. It's also ok to have a trigger happy finger, with 64GB of built-in storage, you can fill the Moto Z with tonnes of memories. 📷



You can attach the Moto Mods to the back, and it latches on using magnets



A peek at the Hasselblad Moto Mod, it allows you to take pictures in RAW format

+ Performance
Moto Mods

— None

CHIP CONCLUDES

The Moto Z is a powerful device capable of satisfying your needs, but you'll have to get the Moto Mods to really get the most out of the Moto Z.

Wiko U Feel Fab

Price: RM799

Contact: Wiko Mobile Malaysia Sdn Bhd

Phone: (03) 2711 2792

Info: <http://my-en.wikomobile.com/>

Operating System: Android 6.0 Marshmallow

System on Chip: MediaTek MT6735

CPU: Quad-Core 1.3GHz, Cortex-A53

GPU: ARM Mali-T720

Memory: 2GB

Storage: 16GB eMMC Flash expandable with microSD

Display: 5.5-inch 720 x 1280 IPS

Camera: 13MP (rear), 5MP (front)

Connectivity: Bluetooth 4.0 + A2DP, WiFi

Dimensions: 154.35 x 77.15 x 10.60 mm

Weight: 201g

Antutu: 27897 points

PCMark for Android: 2387 points

3DMark Slingshot Extreme: 105 points

Performance:

Features:

Design:

Value:



That Fabulous Feeling

By Matthew Yap In a highly competitive market with even midrange devices becoming more expensive, Wiko's smartphones are a breath of fresh air

Having made its debut at last year's IFA, the Wiko U Feel Fab isn't some new kid on the block, but it knows its target audience well.

The well-designed box contains the phone itself, a 2-pin charger with a microUSB cable to go with it, and a pair of earphone, all arranged nicely. In addition, there's also a rubber casing for the phone, a user's guide and the warranty card.

The Wiko U Feel Fab's design isn't anything revolutionary, but there's no denying that it looks good. It has a brushed aluminium back and a matte plastic shell that provide very good grip on the phone. Over on the front is a home button that doubles as the fingerprint reader, which can be assigned to five fingerprints for different functions, a 5-megapixel camera with LED flash, and a 5.5-inch IPS display. Moving to the back, a 13-megapixel rear camera with LED flash and a small grill for the phone's speakers can be found.

At first glance, the phone looks like it has a unibody design and the overall build quality is rock solid. However, the cover is actually removable using a notch at the side. This gives you access to the two SIMs and one microSD slot.

Despite the removable cover, the battery itself is non-removable, so you can't purchase extras and swap them in. Then again, the 4,000 mAh battery should last you at least 36 hours on regular use.

Most midrange phones are great for their cameras and the U Feel Fab is no different. Its camera has relatively fast autofocus speed, good lighting and relatively crisp detail in photos taken.

Fingerprint readers on midrange devices are becoming common and the U Feel Fab has it as well. It's a pretty fast and accurate one too, which makes it great for quickly turning on the screen, or to get the camera up and snapping as soon as possible.



Although the design is nothing fancy, this phone is a rather good looking one. The brushed aluminium back provides excellent grip



The battery is unremovable, which is a shame. But its large 4,000 mAh capacity should keep you going for a full day or even more

+ Excellent build quality
Sharp screen
Decent camera

- Hard to remove cover
Non-removable battery

CHIP CONCLUDES

A good looking phone with even better quality, this midrange device jabs above its weight and does well in a few areas

GAMDIAS Zeus P1 RGB

Price: TBA
Contact: Nation-Tech Sdn Bhd
Phone: (03) 4280 6636
Info: www.gamdias.com

Sensor: Advanced Gaming Optical Sensor
DPI: Up to 12,000 DPI
Polling Rate: 1,000 Hz
Programmable Buttons: 8 Buttons
Max Battery Life: (if wireless)
Dimensions: 127.26 x 72.45 x 40.85 (mm)
Weight: 125g

PCMark 8 Home: 2,287 points
PCMark 8 Creative: 2,295 points
PCMark 8 Work: 2,782 points

Performance:
Features:
Design:



By Rikco Shim

Rain Lightning Onto Your Enemies

GAMDIAS's latest entry into the battle of the mice

At first glance, the GAMDIAS Zeus P1 RGB looks like your everyday gaming mouse. But, do not be fooled by its looks, for there's more under the hood for this Greek God. It has plenty of customisations available for you, provided that you download the software for it.


Out of the box, the lowest available DPI for the mouse is 1,600 DPI. However, it could go up to a whopping 12,000 DPI by clicking the DPI Select buttons. To configure it, you would have to navigate to GAMDIAS's website and download the mouse's software, dubbed the HERA. Once you have downloaded and installed it, a multitude of customisations unravel.

The software has the usual, such as Key Assignments for the eight programmable buttons, Macro Management, setting for multiple DPI shifts, cursor speeds, double click speed, and so on. Let's not forget Mouse Luminance for colour changes to the stripe that's wrapped around the mouse, with up to 16.8 million in colour choices. It comes with different lighting modes, such as breathing,

circular wave and other lightning effects.

Another useful feature is the timer setting, which allows you to configure a timer into a button click. Once the timer is over, an alarm will ring, notifying you that the timer has expired. It's a nifty setting that could be set on the barely used (for some people) side buttons.

On the physical aspect of the mouse, it looks and feels larger compared to your average mouse. For users with bigger hands, or prefer a mouse that fits their hands, this mouse would be ideal. It's great for palm grip users, due to its big size. In terms of weight, the mouse comes along with 125g right out of the box without any customisable weights. The weight feels sufficient, not too much that you would hurt your wrist from trying to inch the cursor on the screen precisely, while feeling heavy enough that it would not be blown away by wind.

The mouse features an ergonomic design, which fits both left and right handed users. You shouldn't have any problems gripping the mouse, because it also features textured rubber side grips to help with any sweaty palms. 



The lighting effects on the strips of the Zeus



The HERA Software showing off the colour customisations

+ Plenty of customisations
 Good size for big hands

— Generic sensor

CHIP CONCLUDES

A great addition to GAMDIAS's Gaming Mouse line-up, big and colourful. Worth a try.

ASRock Fata1ty H270 Performance

Price: RM589

Contact: AMT PC Distributors Sdn Bhd

Phone: (03) 3344 1124

Info: www.asrock.com

Socket: LGA-1151

Chipset: H270

RAM Slots: 4

RAM: 2133/2400 MHz DDR4

Connectivity: Gigabit LAN

Ports: 1x PS/2, 2x Antenna ports, 1x D-Sub, 1x DVI-D, 1x HDMI, 1x USB 3.1 Gen2 Type-A, 1x USB 3.0 Type-C, 3x USB 3.0 Type-A, 1x USB 2.0, 1x Fata1ty mouse port, 5x Audio port, 1x Optical (SPDIF)

Others: 2x PCIe x16, 4x PCIe x1, 6x SATA 6Gb/s, 1x AURA RGB LED header

Size: ATX

PCMark 8 Home: 4329 points

PCMark 8 Creative: 5079 points

PCMark 8 Work: 3752 points

Performance:

Features:

Design:

Value:



Rock Solid Performance

By Matthew Yap

There's no need for extras when the basics are solid, as ASRock demonstrates with this motherboard

Kaby Lake had some time to settle in and many can't wait to upgrade. Of course, most can't afford fancier motherboards, or need features like overclocking. So for them, an option like ASRock's Fata1ty H270 Performance is appropriate.

Although the box lacked goodies, likely to keep the cost down, ASRock went all out with the design. The Fata1ty H270 Performance has a black with red accent design that looks awesome. It even has a black shroud over the back I/O and the Creative SoundBlaster audio chipset, to reduce the amount of electro-magnetic interference from other components.

The Fata1ty H270 Performance is an ATX motherboard with a layout that feels compact. There are four DDR RAM slots available, two PCIe and four PCI slots. In addition, it even supports NVMe SSDs and M.2 WiFi modules with its two Ultra M.2 slots. Lastly, the first PCIe slot is reinforced to prevent it from bending due to heavier GPUs.

There are enough fan headers on this motherboard to keep things cool. Besides the CPU fan header, there's also three fan headers for chassis fans. The third chassis fan can also support a water pump, which can be used with a custom water loop.

ASRock has designed the back I/O set for users with more modest equipment. With three different video inputs for VGA, DVI and HDMI, the Fata1ty H270 Performance can be directly hooked to any monitor you have. It's a little lacking in total USB ports, but there are extra connectors on the motherboard for that. For compatibility with newer hardware or devices, a USB Type-C port is also included, but Thunderbolt support is not available.

Another nice addition is the AURA RGB LED header on the board. Connecting a RGB LED strip to this header allows you to control the strip's colour and lighting effect via a desktop or mobile app, so you can switch your choice of bling on the fly. 📺



The good bits for this motherboard are found on the board itself, such as this onboard Creative SoundBlaster audio chipset



You can sync the lighting and colours of an optional RGB LED strip using a software provided by ASRock

- + Supports older hardware
- + Good performance
- Very little USB ports

CHIP CONCLUDES

Plenty of features for compatibility with a wide range of hardware, including older ones.

HTC One A9s

Price: RM1,159

Contact: HTC Careline

Phone: 1 800 88 9855

Info: www.htc.com/sea

Operating System: Android 6.0

System on Chip: MediaTek MT6755

CPU: Octa-core, Cortex-A53

GPU: ARM Mali-T860 MP2

Display: 5-inch (FHD)

Connectivity: Bluetooth 4.2, WiFi, NFC

Memory: 3GB

Storage: 32GB expandable with microSD

Camera: 13MP (rear), 5MP (front)

Dimensions: 145.75mm x 70.8mm x 7.26mm

Weight: 143g

Antutu: 52,377 points

PC Mark Work: 3,536 points

3DMark Icestorm Unlimited: 11,318 points

Performance:

Features:

Design:

Value:



Be One With HTC One

By Nixon Ng

HTC does it right with the HTC One A9s, a great phone that sits confidently in the mid-range smartphone division

There are budget phones, mid-range phones, and flagship phones. Which one you'll choose would ultimately be up to your budget. But if you're on a tighter budget then mid-range smartphones would definitely float your boat. Sitting in between budget and flagship phones, mid-range phones are an important part of the market, especially for those who want performance while not breaking the bank.

If you don't want a compromise between style and performance, the HTC One A9s could just be the device for you. The HTC One A9s sports a Mediatek MT6755 processor, delivering ample performance required for day to day use. Paired with 3GB of RAM and 32GB of built-in storage, it has the right recipe for success, and indeed it does. Throughout our testing period the HTC One A9s has been a real treat to use. From surfing the internet to play our favourite mobile games like Summoner Wars, there really isn't anything to complain about.

The display is a 5-inch 720p display

protected by Corning's Gorilla Glass. Colours and text are displayed vibrantly and sharp on the display, but the auto-brightness could've been done a little better. We found the auto-brightness to be just a tad dark at times, but if you set your brightness manually this shouldn't matter. The display fits nicely into its thin frame, which is built with a dual-finish all-metal body, giving off a premium vibe that might make others think it was a much more "expensive" phone.

An all-metal body is always welcomed. It might be slightly heavier, but it provides better durability and heat dissipation. However, that also meant that the body gets warm during heavy usage like during gaming. Fortunately, as long as you get yourself a case or sleeve you won't notice the warmth.

Battery life wise it's pretty decent, capable of lasting throughout the day on a single charge on moderate use. But be sure to clear your recent apps often, because as it isn't cleared the battery drain on this device tends to be faster than usual. 🚫



The all-metal body makes it feel more expensive than it is



The phone is slim and easy to hold, and the buttons are placed just right

+ Overall performance

- Recent app drains battery

CHIP CONCLUDES

If you're out there looking for a mid-range smartphone, you shouldn't think twice about getting the HTC One A9s.

MSI Z270 Gaming Pro Carbon

Price: RM945

Contact: JW Power Marketing Sdn. Bhd., Mediaforte (Malaysia) Sdn. Bhd.

Phone: (03) 2148 1307, (03) 7960 6868

Info: my.msi.com

Slots: LGA1151

CPU: Intel Z270

RAM Slots: 4

RAM Type: DDR4

Ports: 1x HDMI 2.0, 1x DVI-D, 2x USB 2.0, 1x USB 3.1 Type-C, 4x USB 3.1 Type-A Gen1, 1x USB 3.1 Type-A Gen2, 5x Audio jacks, 1x S/PDIF

PCMark 8 (Home): 4,033 points

PCMark 8 (Creative): 4,362 points

PCMark 8 (Work): 3,963 points

Performance:

Features:

Design:

Value:



Stronger Than Ever

By Nixon Ng

For those out there who like carbon fibre and gaming, the MSI Z270 GAMING PRO CARBON was made for you

With Kaby Lake coming out earlier this year, Z270 boards began to flood the market from different manufacturers. But there are motherboards which stand out from the rest, the ones with that extra wow factor, that zing and kapow. So if you're a fan of carbon fibre then rejoice, because the MSI Z270 GAMING PRO CARBON will tickle your carbon fibre bone.

The motherboard sporting the latest Z270 chipset still retains the LGA 1151 socket, allowing backwards compatibility with sixth generation Intel core processors. The board is also capable of supporting RAM speeds of up to 3800MHz, and a maximum of 64GB total DDR4 RAM. There's also three PCI-E 3.0 x16 slots where two of them have MSI's Steel Armor. We rarely see users run a triple card setup, so it makes sense for them to omit Steel Armor from the third slot.

This time around even the DDR4 DIMM slots sport MSI's Steel Armor along with DDR4. The silver accent from the Steel Armor blends well with the carbon fiber theme of the motherboard and further improve its looks.

In addition, the motherboard is littered with carbon fibre, from the heatsinks to the covers, as well as MSI's Mystic Light for some RGB shenanigans. Mystic Light can be controlled through the MSI Gaming App on your system or even on your smartphone.

The motherboard uses Military Class 5 components, ensuring that the components are shielded by the best protection. It also helps in maintaining stability when overclocking, providing improved power efficiency, lower temperatures and also a longer lifespan.

When it comes to I/O ports the Z270 GAMING PRO CARBON isn't one to be stingy, providing an ample amount of connectivity. With four USB 3.1 Gen1 Type-A ports, one USB 3.1 Gen2 Type-C port, a single USB 3.1 Gen2 Type-A port, and an additional two USB 2.0 Type-A ports, you can tell that you'll be hard pressed to run out of USB ports to attach your peripherals.

Display connectivity wise it misses out on a DisplayPort, but instead sports a DVI-D and HDMI port which we think is still decent.



A carbon fiber connoisseur's best friend



Look at all those red USB 3.1 ports

+ Carbon theme
Overall performance
Plenty of USB 3.1 ports

- None

CHIP CONCLUDES

If you like carbon fiber and having a plethora of input, outputs and PCI-E lanes, then look no further.

MSI Prestige PE60 7RD

Price: RM5,349
Contact: MSI Malaysia Office
Phone: 1 300 22 1386
Info: my.msi.com

Operating System: Windows 10
Processor: Intel Core i7-7700HQ
Graphics: NVIDIA GTX1050
Memory: 8GB
Storage: 1x 120GB SSD, 1x 1TB HDD
Others: 1x USB 3.0 Type C, 2x USB 3.0, 1x USB 2.0, 1x HDMI, 1x Mini-DisplayPort
Dimensions: 383 x 260 x 29mm
Weight: 2.4kg

PCMark Work: 3,544 points
PCMark Home: 3,401 points
PCMark Creative: 3,575 points
3DMark Fire Strike: 5,565 points
3DMark Fire Strike Extreme: 2,701 points
3DMark Fire Strike Ultra: 1,170 points
3DMark TimeSpy: 1,821 points

Performance:
Features:
Design:
Value:



Be Part Of The Prestige

By Nixon Ng

The Prestige PE60 finds itself close to the heart of those who enjoy stylish technology, yet know that performance should not be compromised

Style seems to go hand in hand with technology these days, especially if it's something you would take out in public. As much as purists would like to argue that performance is the number one priority, there are those out there who are just looking for a working product that suits their taste. Maybe there are better choices out there, but in the end it's the buyer who decides.

Looking at the specs on the MSI Prestige PE60 7RD, they seem good enough - an Intel Core i7-7700HQ is a powerful processor for a laptop. It even has a NVIDIA GTX 1050, as well as 8GB of RAM thrown into mix. This mix of hardware proves to be well thought out, providing a good mix of processing power along with a decent graphic card. The unit we were given to review had 8GB of RAM, but there's probably an option for more RAM. You'll be able to play recent games with a bit of tweaking to

your graphical settings, whereas games like League of Legends and DotA 2 were easily maxed out.

What we like most about the PE60 is definitely its aesthetics, from its silver brushed aluminium finish to its backlit keyboard. The PE60 just exudes style, but it doesn't sacrifice performance or connectivity at all.

The PE60 sports ports for one USB 3.0 Type-C, two USB3.0 Type-A and single USB 2.0. It also comes with an SD card reader, a HDMI port, and a Mini-DisplayPort. For entertainment, the PE60's Dynaudio speakers do a good job in delivering great sound while watching movies or listening to music. With everything else looking great inside and outside, we only have one problem - its price. The PE60 is priced slightly higher than we'd like, but we still believe that the PE60 has great value at that price point. 📺



Has all the ports that you'll need



A beautifully curved edge and brushed silver aluminium look

+ Aesthetics
Performance

— Price

CHIP CONCLUDES

If style's your name and aesthetics the game, then the PE60 7RD would be hands down perfect for you. If you can afford the notebook and you like it, there's no reason you shouldn't choose it.

D-Link DSC5030L

Price: RM449

Contact: Advanacenet Technology Sdn. Bhd., Ingram

Micro Sdn. Bhd., Lab Seven (M) Sdn Bhd

Phone: (03) 8070 3633, (03) 7952 8188, (03) 80758811

Info: www.dlink.com.my

Ports: 1x LAN port

WiFi: Yes

Encryption: HTTP digest encryption

Range: 340° Pan, 120° Tilt

Camera: 1/4" 1-megapixel progressive CMOS sensor

Microphone: Yes

Dimensions: 109 x 133.6 x 116 mm

Weight: 290g

Performance:

Features:

Design:

Value:



I Spy with IP eye

By Matthew Yap

IP cameras still have some ways to go, but D-Link demonstrates that it knows what features are important enough to do well in

Most of the time, home surveillance relies on CCTVs, but what if you want to monitor it remotely? To do so, an IP camera is the preferred choice, as it allows you to see through its lens via the internet. Recently, D-Link sent us one of their models – the DSC5030L and here's what we thought about it.

The DSC5030L's full product name is the 'HD Pan & Tilt Wi-Fi Day/Night Camera', which more or less explains the product's key features. It comes with a mounting kit, the power adapter, an Ethernet cable, quick start guide, and some paper on warranty information.

White in colour and small in size, the DSC5030L is able to stay inconspicuous in most cases, unless the wall it's mounted to has a highly contrasting paint colour. The camera is protected by a dome housing that can pan and tilt to cover a large area. Effectively, this camera can overlook an entire living room, the front of your door, or a toddler's room.

At the back of the unit is an Ethernet port and WPS button, which allows you to connect the camera to your local router via LAN, or through WiFi with the WPS button. The LAN

connection is immediate, but the WiFi pairing takes a few minutes to take hold. Once done, the setup is basically ready. Also note that mounting it to a wall might take a bit more work, since you would have to find a suitable spot and drill some holes.

After connecting the camera to your router and to the internet as a result, you can use the mydlink Lite app to access it locally or remotely. To use it locally, we had to add the pair the camera to a smartphone using the QR code found at the bottom of the camera, while remote use will require a mydlink cloud account. You can also access the camera in the same way via a Windows app.

Being a HD camera, users get 720p visuals here that are decent. Even the night mode, which uses IR to provide you with a monochrome view, has great visual clarity. In addition, the DSC5030L can be set to send you notifications when it detects movement or sound. This provides you the chance to check what's going on through the camera and take security actions, like calling the police if it's a burglar detected, if necessary. However, it does have one drawback in its slow camera movement, so keep that in mind. 📹



A microSD slot is located at the back. Inserting one inside allows you to use it to store recordings



The mobile app can be used to access the camera locally, or remotely using a mydlink Lite account

+ Night mode
Very good range
of movement

- Camera
movement is
slow

CHIP CONCLUDES

Slightly pricey for an IP camera, but highly useful due to its wide range of movement and ability to operate in the dark.

Acer Aspire C22

Price: RM2,399

Contact: Acer Sales and Services Sdn. Bhd.

Phone: 1 800 88 1288

Info: www.acer.com.my

Operating System: Windows 10 Home

Processor: Intel Core i3-6100U

Graphics: Intel HD Graphics 520

Memory: 4GB

Storage: 1TB HDD

Connectivity: Gigabit LAN, 802.11ac WiFi

Dimensions: 496.7 x 338.5 x 8 mm

Weight: 2kg

PCMark 8 Home: 2,232 points

PCMark 8 Creative: 2,263 points

PCMark 8 Work: 2,538 points

Performance:

Features:

Design:

Value:



Getting The Right Basics

Sometimes a good PC just needs to be functional, good looking and affordable. That seems to be the idea that Acer went with here

By Matthew Yap

Despite the convenience and similarity to a Mac PC, there just doesn't seem to be many people that go for all-in-one PCs. So, when Acer sent to us one of its latest AiO PC, we wanted to know if it would be a compelling option for people. Check out our review for the Aspire C22.


It's been a while since we last saw an AiO arrive at our testlab. Measuring 496.7 by 338.5 millimetre and just 8mm at its thinnest point, the Aspire C22 is one of the smallest and slimmest AiO we've seen. It's also incredibly light and can be lifted with one hand. In the box that it's packaged in, there's a basic mouse and keyboard set, as well as a small webcam.

If premium aesthetics is important to you, then you'll definitely like the metal-clad body with its gold colouring. The Aspire C22 has a 21.5-inch screen at the front that's framed by very thin bezels, adding to that sense of slimness. At the back are all its ports, which include four USB ports, the Gigabit LAN port, an audio output and line-in, as well as an SD card reader. Even the stand looks elegant, with its curved solid steel stand, which is strong enough to support the weight of the AiO and also

allows it some degree of tilting.

As with most AiO products, Acer has bundled a keyboard and mouse to go with the Aspire C22. However, they are very basic and look cheap, which is a stark contrast to the main unit's look and feel. Fortunately, the actual build quality isn't too bad and doesn't affect its usability.

The 21.5-inch display outputs at a resolution of 1920 x 1080 with sharp visuals, but brightness and colour accuracy are average. Under the hood of this AiO is an Intel Core i3-6100U and its accompanying Intel HD Graphics 520 for graphics processing, neither of which are particularly good performers by any stretch, so what you can do is automatically limited. It's good enough for light entertainment or productivity, but don't expect to do any professional graphics editing, or to be able to reliably game on it.

What the Aspire C22 is, is a one package solution for basic computing needs and online communication. For its price, you get a PC that has almost everything, including a built-in speaker at the back and a detachable webcam for video conferencing. 



USB ports are limited here, especially when three of the four ports get taken up by the keyboard, mouse and webcam.



For a main unit that looks so good, this keyboard and mouse pair look plain in comparison

+ Small and light
Good design

- No dedicated GPU

CHIP CONCLUDES

While it's not a strong performer, this AiO does the basics well and is more than capable if you require nothing more than a PC for some work, light entertainment and communication.

Aztech Blink

Price: RM649

Contact: Digital Paper Sdn Bhd, Netsis Technology Sdn Bhd

Phone: (03) 5569 2002, (03) 7806 3300

Info: www.aztech.com.my

Video Resolution: 720P HD

Field of View: 110-degrees

Video Format: H.264

Imaging: Full colour, auto white balance, auto exposure

Motion Detection: Passive infrared (PIR)

Dimensions: 71 x 71 x 30mm (Camera), 62 x 59 x 18mm (Sync Module)

Performance:

Features:

Design:

Value:



In The Blink Of An Eye

By Nixon Ng

Have instant security in a matter of minutes with the Aztech Blink

We get interesting things sometimes in CHIP, and this is definitely one of them. You've heard of security cameras, infrared cameras, CCTV's, all that security mumbo jumbo. Some of them are quite elaborate to setup, while others require less of a hassle. The Aztech Blink falls into the latter, as it is by far the easiest and simplest security camera we've ever encountered.

The Aztech Blink originated from a Kickstarter under the same name (Blink), but now they have a partnership with Aztech to bring the Aztech Blink to Asian shores. The Blink comes with a starter kit, consisting of a Blink Sync Module and Blink Camera. You can purchase additional cameras from Aztech if you need to cover a wider area. It's super easy to setup too: All you have to do is plug the Sync Module into a wall, connect it to the Blink app on your smartphone through WiFi and you're half way there.

Next, choose to add a camera on your app and follow the instructions and voila, easy as one, two, three. What makes the Aztech

Blink special is that it records short clips of 1 second up to 10 seconds long, whenever the motion detector trips, with longer durations of recording in the works right now. You will receive a notification on your app when that happens so you'll be able to watch the clip, as well as watch a Live View of the camera so you can see what's happening in real time.

All clips are recorded into Blink's server with a maximum of 7,200 seconds or 2 hours in total. Once filled Blink will overwrite the oldest file with the new ones. You may also adjust the sensitivity of the camera in case you get a lot of false alarms, as well as choose when the camera goes offline and online, meaning you can schedule it to start only when you're out and about.

Additionally, the Aztech Blink has a built-in one-way microphone, so not only do you get to see what's happening, you'll also be able to listen in on it. Currently, the Aztech Blink only works with a smartphone and requires a working WiFi at home, or wherever you plan to place the Blink. 🇲🇾



The ethernet port has no uses as of yet, but it seems Aztech does regular updates for the Blink



Aztech claims with only two AA batteries it can run for two years

+ Performance
Easy to setup

— None

CHIP CONCLUDES

A great piece of security equipment for those who aren't very tech savvy, as well as those who want to keep watch over their pets and such.

ViewSonic XG2703-GS

Price: RM3,299

Contact: Build Technology Supply Sdn. Bhd., Servex (Malaysia) Sdn. Bhd.

Phone: (03) 7955 1136, (03) 8024 6688

Info: <http://ap.viewsonic.com/my/>

Panel Type: IPS

Display Size: 27-inch

Resolution: 2560 x 1440

Connectivity: 1x HDMI, 1x DisplayPort, 1x Audio Out, 1x USB 3.0

Refresh Rate: 144Hz (165Hz overclocked)

Response Time: 4ms

Viewing Angle: 178°(H), 178°(V)

Dimensions: 624.4 x 532.4 x 250.4 mm

Weight: 7kg

Performance:

Features:

Design:

Value:



The stand for the XG2703-GS has everything: An integrated headphone holder and the whole shebang for ergonomics – tilt, swivel, rotate and height adjustment



Besides the input ports, there's also two USB ports that can be enabled by connecting the USB passthrough to your PC

Smooth Visuals

It's still unclear whether so much refresh rate is really necessary, but there's no doubt ViewSonic delivers smooth visual to enhance your gaming experience

When 144Hz monitors first appeared, the visual fluidity it can deliver astounded many. But can our physical eyes tell the difference when the numbers go higher? We're not sure, so we tested ViewSonic's new 165Hz-capable monitor - XG2703-GS - to see how much that extra bit of refresh rate would help.

The XG2703-GS is a 27-inch gaming monitor with relatively thin bezels surrounding its matte anti-glare IPS panel. Most of the monitor's body is covered with a matte surface as well, with only a few plastic parts that add colour (green) and accent. To go with its larger size, ViewSonic has equipped it with 1440p resolution for a crisp video quality.

Physically, the XG2703-GS has fantastic build quality. It has a solid base and sturdy stand, which does make it quite heavy. The stand also has a cut out for cable management, while at the back there's a pull-out holder that can be used to hang your headset. Plus, the stand can actually be removed, which then allows you to VESA mount it instead.

On the XG2703-GS, you get the full range of ergonomics typically found on high-end monitors. Its base allows it to swivel, while the stand makes it possible to tilt, rotate

and adjust its height. As a result, it's easy to adjust the monitor to suit your preference.

For a monitor that has rotation, a feature that some graphic designers and photographers like to use for their work, the colour accuracy for this IPS panel out of the box isn't great. However, it has sRGB colour profile and 6-axis colour calibration, so colour accuracy can be fixed after some tweaking.

Out-of-the-box performance for professionals aside, the XG2703-GS is amazing for games. Not only is 27-inch much larger than the more commonly purchased sizes, the high refresh rate and NVIDIA G-SYNC feature combine to eliminate all forms of screen tearing. In addition, its 1440p resolution provides very sharp visuals for those who prefer video fidelity over the extra frame rates. There's also a built-in speaker that's passable, so you don't need a dedicated desktop speaker.

The buttons for the on-screen display are not in the ideal spot, but are not hard to reach and are easy enough once you get used to them. Using this, features like anti blue light and overclocking the monitor to 165Hz is possible. However, it's very hard to tell if the extra 21Hz makes any visible difference, so your mileage may vary.

+ Very smooth video quality in games
Great build quality

- Must know how to calibrate colours
Expensive

CHIP CONCLUDES

Super-fast refresh rates, high 1440p resolution, and a large screen size makes this an excellent gaming monitor – provided you're willing to break the bank.

BenQ ZOWIE XL2540

Price: RM2,399

Contact: BenQ Marketing & Services Sdn. Bhd.

Phone: (03) 7954 7800

Info: www.benq.com.my

Display Size: 24.5-inch

Resolution: 1920 x 1080

Connectivity: DVI, HDMI, DisplayPort

Refresh Rate: 240Hz

Others: 1x headphone jack, 1x mic jack

Dimensions: 445-515 x 570 x 226mm

Weight: 7.5kg

Performance:

Features:

Design:

Value:



Smoother Than The Eye Can See

By Nixon Ng Built for professional gamers in mind, the XL2540 represents BenQ ZOWIE's passion towards games and those who play them

The world of e-Sports is constantly growing, and as the community grows so will the players. Players are expected to win and to do that they'll need every bit of help they can get. BenQ has been a brand that has been on the frontlines of e-Sports, whether it's PC gaming like CS:GO, or console gaming like Street Fighter, they have been there to provide the best experience to casual and professional gamers alike.

The release of their latest line of monitors targets professional e-Sports gaming and with it, BenQ has introduced gamers to 240Hz gameplay. Using the BenQ ZOWIE XL2540, you can expect to have buttery smooth gaming. Together with a response time of 1ms, it's not only smooth but also fast. For our testing, we used both CS:GO and Overwatch as our benchmarks for real life performance. Using FRAPS we made sure CS:GO was running at 240Hz and indeed we instantly noticed how smooth the game was.

On Overwatch we also noticed the same increase in fluidity. The smoothness and fluidity of monitor definitely upped the fun

factor of the games. We could feel the impact of having high refresh rates within minutes of playing. But refresh rates aren't the only thing the XL2540 has, it also has a Black eQualizer feature allowing you to have better vision in darker areas across games. It also sports our personal favourite Flicker-Free and Low Blue Light technologies. Important features for us and especially for gamers who spend hours practicing their skills and strategies.

The XL2540 also comes with a height adjustable stand that allows you to tilt and pivot the monitor freely. It's an important feature to have in our opinion, because if a monitor is too low or too high, it can have a negative effect on gamers. Increased chance of neck strain or bad posture, are some of the things that could happen. Besides all that, the monitor has additional features like the headphone holder, audio jacks for your headphone and microphone, as well as USB ports. We have absolutely no complaints about its connectivity. The XL2540 has everything a modern PC would need, DisplayPort, HDMI, DVI, the works! 🇲🇾



The ergonomic stand helps gamers to maintain a good posture and viewing level



Quickly and easily control your settings using this remote

+ 240Hz Ergonomic stand — None

CHIP CONCLUDES

For those who want the best, the XL2540 is without a doubt a monitor built to provide the best gaming experience.

Sony SRS-XB3

Price: RM499

Contact: Sony (Malaysia) Sdn Bhd

Phone: 1300 88 1233

Info: www.sony.com.my

Speaker size: Approx. 48mm diameter

Speakers: 2ch speakers + 2 passive radiators

Frequency transmission range: 20 Hz – 20,000 Hz (with 44.1 kHz sampling)

Connectivity: Bluetooth 3.0, Aux-In, NFC

Supported Codecs: AAC, LDAC, SBC

Others: IPX5 Water Resistant

Dimensions: 211x80x83 mm

Weight: 0.93kg

Performance:

Features:

Design:

Value:



Sony's Bringing The Serious Business With SRS-XB3

By Rikco Shim

Breathing new life into your parties with this portable speaker

Sony is no stranger in the audio industry. They're swinging left and right in the market with Headphones, MP3 Players, Wireless Speakers and more. This time we'll be taking a look at the Sony SRS-XB3 Portable Wireless Speaker with Bluetooth.

To start things off, the SRS-XB3 itself looks pleasing to the eyes with its curved edges, non-protruding buttons, and lively colour. We also liked that it's IPX5-rated, which means that while it won't survive a dip in the swimming pool, it would survive and shrug off water splashes. During our tests, the SRS-XB3 had no issues with water splashes, its audio staying crisp and clear throughout.

One of the main selling points of the SRS-XB3 is the EXTRA BASS, which enhances the bass experience. You can toggle the EXTRA BASS on or off with the press of a button. However, during our tests we have noticed some reduction in audio quality when EXTRA BASS is off. This prompted us to question the point of having the button - everything just sounds better with it on.

There is another button on the speaker to

toggle your voice assistants. This helps when you are far from your phone and require a song change, as there are no music navigation buttons.

It is worth noting that for a wireless speaker, the sound quality of the SRS-XB3 is admirable, being able to tackle most genres without any problems. A portable speaker would be useless if it could not provide the room with ample sound. We have tested the speaker in small rooms and in our office, and we could still hear the speaker, even when the volume is not fully maxed out.

The SRS-XB3 can also be paired with another unit easily with just a press of a button, giving you stereo sound. What's more, the speaker's battery could potentially last up to 24 hours. It even has a USB port to charge your other devices, but only when the speaker is on.

During our testing, we have also noticed that on the iOS, the volume buttons on the SRS-XB3 are parallel to the volume buttons on the phone. However, on Android devices, the volume buttons on the SRS-XB3 are not in sync. 📱



The buttons on the SRS-XB3

+ EXTRA BASS
USB charging

— None

CHIP CONCLUDES

Packs a punch for a portable speaker, worth looking at if you are in the market for one.

PLAY

Blast From A Geek's Past

Nostalgia can become a strong emotion when it comes to gaming, so join us as we travel back in time to reminisce and play the games of days long past By Nixon Ng



Mario Golf – Advance Tour

When you hear the name Mario, you think of mushrooms, Bowser, Princess Peach, Yoshi, and of course the titular Italian plumber Mario. Out there is a plethora of games based around Mario and the universe he lives in, but this time around it's based on golf. In Mario Golf – Advanced Tour, you play as either a girl or boy joining a golf club and preparing to become professional golfers. The ultimate goal of the game is to be able to play together with Mario, a mythical golf player who only plays with the best players in the golfing world.

The game plays very much like many golf games but with an added RPG element - the ability to level up. As you grow in levels, you



can increase your prowess on the fairway, gaining more power, spin, and control over your strokes. The world consists of four golfing clubs: Marion, Palms, Dunes and Links. Each club represent a different level of difficulty, with Marion being the easiest and Links being the toughest. Each course also has their own special quirks, such as Palms and their signature palm trees scattered across the course, or the Dunes with their sand bunkers that can take the power out of your shots.

To navigate between clubs and courses, the game applies an Overworld feature. In the Overworld you're given a top-down view of a portion of the map and as you traverse the roads you reveal more of the world and its wonders. Scattered across the Overworld are areas that will test your skill and mettle, while also providing you special gifts should you complete the challenges. Make sure you thoroughly explore each map or you might just miss certain secrets, or experience points that could help you on your journey to pro-hood.

Like we said before, Mario Golf is a lot like other golf games, but lets you play around more with the spin of your ball. For example, applying a 'Super Backspin' to your ball makes it abruptly spin backwards when landing on terrain, while 'Super Topspin' can reach farther, but might cause your putt to turn into a chip if it lands on the fairway wrongly. Although the game is easy to get into, you'll require a lot of consistency to be able to play it well. One wrong swing could cause your game to suffer, so be sure to



practice a lot if you plan to plough through the game.

The game is also divided into singles and doubles golf. In doubles you play the game pretty much the same as when you're playing singles, but your partner will be controlled by an AI, so you'll have to cover for your partner if they flub a shot. Your partner will also be able to gain levels. To

prevent them from becoming a burden, you have to keep their status points up as well. As you play and visit the different areas, you'll come across 'Custom Tickets' that will give you access to special golf sets. These custom golf sets will improve your play in different ways, giving your character more power, spin, straighter shot, and different levels of it. 🇯🇵



Mario Golf – Advance Tour

Genre: Sports game, RPG

Developer: Camelot Software Planning

Info: https://en.wikipedia.org/wiki/Mario_Golf:_Advance_Tour

Platform: GBA, VBA (emulator)

+ Addictive
Different golfing
environments

- Short

Gameplay:

Sound:

Replayability:



Blond Samurai Meets Yokai

The Soulsborne series set a benchmark for insanely hard dark fantasy action RPGs and Nioh adopts many of its mechanics. However, Team Ninja has added its own ideas to the title to ensure that it's a refreshing new experience By Matthew Yap



Completing the trinity of games stuck-in-development-hell-but-finally-released, Nioh launched in early February to great success. The action RPG was touted as a soulsborne clone by some, but many quickly realised that its borrowing of mechanics and gameplay shouldn't detract their enjoyment of a refreshing take on the genre.

Journey to the East

Set in an alternate 16th century Sengoku period where the supernatural are real, Nioh is about William Adams's quest to save his damsel (spirit) in distress and kick the bad guys' collective asses while he's at it. Sounds

simple, right? Not quite.

The prologue of the game was easy enough. Your misadventure begins with a prison break stage that acts as the tutorial for the game. Soon enough, you run into the game's main antagonist, Edward Kelley, who turns the prison's executioner into a demon. If that wasn't annoying enough, he steals your guardian spirit Saoirse (pronounced 'SEER-shuh') and makes off for the land of the rising sun. From then on, the manhunt was on.

Challenging, yet lots of fun

Things start getting real from this point on. Using a combat system that's reminiscent

of Ninja Gaiden or Onimusha, you carve your way through bandits, yokai and oni (Japanese demons) with two swappable melee or range weapons. You can't instantly swap and combo them on the fly, but this system allows you to switch weapons when necessary to battle the different enemies in the game accordingly. The weapons in Nioh can also be used in High, Mid, or Low stance, each with its own move sets, which adds to the complexity. On top of that, you have to learn how to use the games movement system, as well as pay attention to your HP bar, the 'Ki' or stamina bar, and where you're walking. Pitfalls are the enemy, after all.

Combat in Nioh is fast and can be brutally punishing. If you're caught unaware, you die. If you're surrounded by more than one enemy, you die. And if you're bad at learning an enemy's attack pattern, you'll most likely die. Expect to die a lot in the first few hours of the game as you get to know the controls and mechanics of the game. But even when you've learned the basics, the road towards master is steep and the game becomes increasingly difficult later on. Most of the enemies have their own characteristics and attack pattern, which you'll have to learn, and the bosses all have to be fought differently. The good thing is that range weaponry isn't useless here and you use it more than just to poke stuff. Lastly, Ki management is vital in this game and mastering the Ki Pulse mechanic is critical to becoming good at this game.

Supporting mechanics

Once you have gotten used to the combat and beaten the first stage, you're introduced to the world map and the starting point, which is your base. Here, you can use shrine to level up, visit the blacksmith, or access the hidden teahouse for some special equipment. Levelling up requires Amrita, which is acquired by defeating enemies or by interacting with certain objects in the game. You also get to pick and choose the missions you take from this point on. This is when you can start replaying stages to grind for coins or Amrita.

The blacksmith is a major component to the single player experience. At the blacksmith, you can buy and sell items or equipment, forge new ones, or 'Soul Match'




another weapon to a base weapon to increase its level. Soul matching is an important mechanic to raise the level of your weapons, particularly if there's one with skills you like.

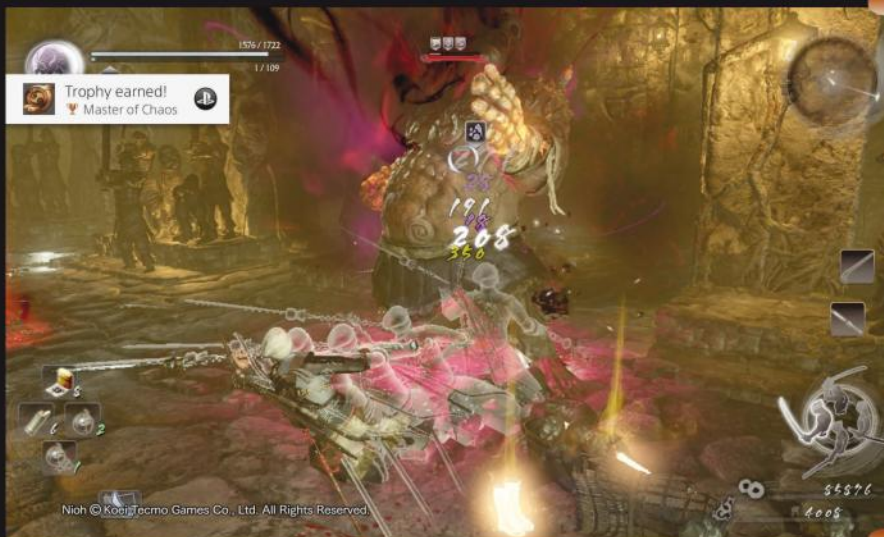
Graphics and sound

So, we've talked about the story and gameplay, what about the rest? Graphically, the game can be beautiful, especially if you used the Movie Mode setting. But aside from that, Nioh has an amazing ambience, level and character design. The user interface is also well designed, although the inventory system can be messy to deal with. Using the sorting feature sort of helps, but that's

assuming you remember details like the item's rarity or level. The audio mixing in the game is also good, with accurate sound placement to help you identify where enemies are, as well as on-point BGMs that enhance the game's atmosphere.

A title to recommend

We definitely had a lot of fun with Nioh. Sure, it's a tough game and you'll feel like pitching the controller in rage sometimes. But its fluid, fast pace combat is exhilarating and the lore is engaging. If you're looking for another challenging game in the action RPG genre, this is the game for you. 



Nioh

Genre: Action Role-Playing

Developer: Team Ninja

Platform: Playstation 4

Info: <https://www.playstation.com/en-us/games/nioh-ps4/>

+ Fast, satisfying action gameplay
Excellent storyline

- Terrible inventory system

Gameplay:

Graphics:

Sound:

Replayability:



E-SPORTS NEWS

Mushi Leaves Fnatic

In a move that is sure to incite polarising opinions from Dota 2 fans, Chai Yee Fung 'Mushi' has parted ways with Fnatic earlier in February. This leaves the Malaysia team with just two members in Khoo Chong Xin 'Ohaiyo' and Kim Yong-min 'Febby'. Mushi expressed that he has no firm future plans yet, but is looking forward to exploring a new environment, which seems to indicate that he wishes to play in a different region. Europe, perhaps? 🇨🇦



The International 7 Might Not Be In Seattle?



Due to the current American political climate, this year's The International 7 might not be held in Seattle. With Donald Trump in the white house, securing visas for players could be an arduous task, one that Valve is reluctant to have to stress over. Teams don't qualify or get invited till 2-3 months before the main event, which might not be enough time for players to obtain their visa, especially if the process is lengthen or complicated. To prepare for this possible scenario, Valve is looking for other options. 🇨🇦



Kiev Major's Main Event Rescheduled




Valve has released an announcement that the main event for the next major, the Kiev Major, has been rescheduled. It's now slated to run from the 27th to 30th of April at the National Palace of Arts in Ukraine. With the gap between the Kiev Major and Dota 2 Asia Championships 2017 widening, it's possible that there would be another minor event being squeezed into what's shaping up to be a busy April for Dota 2 players. 🇨🇦

Twitch Released 2016 Data

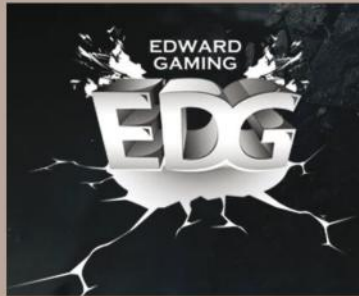
According to Twitch, Twitch users streamed a total of 4.8 billion hours in 2016. In addition, charity streams raised a total of 25.3 million USD (or RM112.5 billion), a significant 48% increase over the year before. This is clear indication that streaming is becoming an increasingly impactful form of medium as the years go on. 🇨🇦




Neymar Interested In League of Legends


Brazilian football player Neymar is said to be interested in investing in a League of Legends team. The interest seems to have been sparked by fellow football player Ronaldo, who has recently invested in CNB e-Sports Club and acquiring 50 percent of the team. It is also reported that Neymar has met with Gabriel 'Fallen' Toledo and the rest of SK Gaming, so could this mean Neymar is interested in Counter Strike: Global Offensive as well? 

EDward Gaming Not Appearing at IEM Katowice



Due to LPL scheduling the team was only able to apply for visas from Shanghai, where by China regulations for visa applications to other countries, applicants are required to apply from the province nearest to their birthplace. The players had to apply for an additional residential status documentation to prove that they now reside in Shanghai instead of their birthplace and the process took a chunk of time to complete. Following that, the team was unable to receive any confirmation from the Polish embassy regarding their visas being granted. 

MightyBear Plays With Tigers

Former Team Vitality jungler Min-soo 'Mightybear' Kim has signed on to world runner-up team ROX Tigers. Min-soo started his career outside of the LCK region, but is now returning to his home country, hoping to bring his new team to Worlds this year. Although the ROX Tigers already have Yoon 'SeongHwan' Seong-hwan as their current jungler, the organisation has not expressed whether either one will have precedence over the starting roster. 

Blizzard Korea Takes Action Against Hackers

Korea is definitely one of the strongest in terms of traffic in Overwatch, but it's also known that Korea is plagued with the most hackers in public play. Korea's culture of gaming in internet café's has led to this issue being widespread. This is due to the fact that players do not actually need to have their own copy of the game, but can instead use public accounts in internet café's. Taking the first step to circumvent the amount of hackers from growing, Blizzard has changed their account policy. Only players who own a copy of the game in their home region, matching their Battle.net account, can play the game. This will prevent players from Korea to create accounts in EU and NA, but play on Korean servers. 



Made Possible By The Masses

Our monthly look at crowd-funded projects that are taking the Internet by storm

By Matthew Yap and Nixon Ng



Solowheel Iota

Dislike walking and exercising, or just want to enjoy moving about your neighbourhood sometimes? The Solowheel Iota is the successor to Inventist's Solowheel and Hovertrax. Currently a prototype, the Iota aims to deliver better e-wheel ergonomics for a more comfortable experience. It's an ideal mode of transportation for last mile commuting from places like the train station to your office, or for quick trips to the convenience store near your house.

<http://kck.st/2jaHJxz>

NOLO

VR is definitely shaping up to be a big trend this year and the only thing stopping most from jumping on this bandwagon is cost. But what if you can play some simple VR games without breaking the bank? Enter the NOLO, a VR set tracker set for mobile VR headsets. With it, you can play simple Steam VR games on mobile VR headsets at about 99 US Dollars, or about RM440.

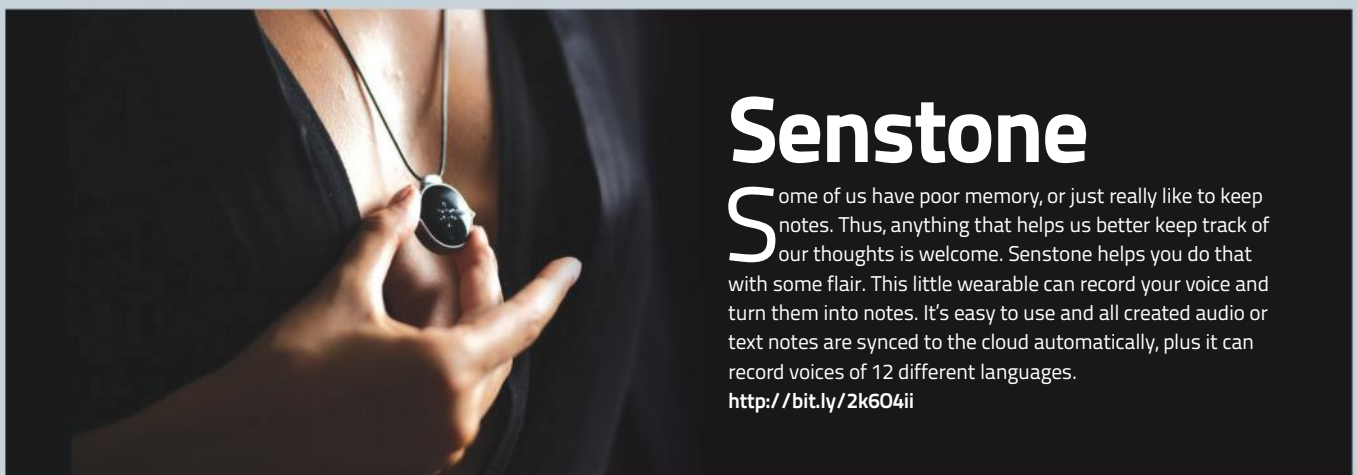
<http://kck.st/2kjC3WI>



Senstone

Some of us have poor memory, or just really like to keep notes. Thus, anything that helps us better keep track of our thoughts is welcome. Senstone helps you do that with some flair. This little wearable can record your voice and turn them into notes. It's easy to use and all created audio or text notes are synced to the cloud automatically, plus it can record voices of 12 different languages.

<http://bit.ly/2k604ii>



Pup – The Connected Pocket Scanner



Paper may be the best for unleashing your creativity, but these days we just need technology. Choosing between paper and computer is just a matter of preference, but now we can have the best of both worlds. The Pup is the first ever connected pocket scanner that is lightweight, smart, mobile, wireless and simple to use. Pick a scenario and you're ready to scan books, pictures, documents fast and easy.

<http://bit.ly/2jFA8eL>

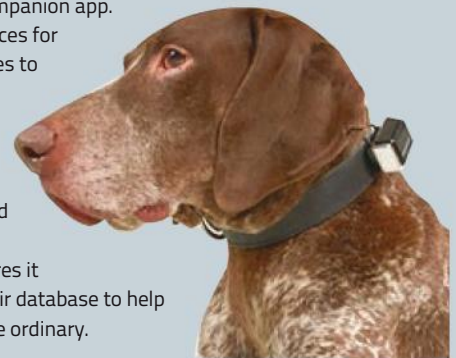


Jagger & Lewis – Smartest Dog Tracker For Every Dog Collar

The Jagger & Lewis smart dog collar device tracks your dog's behaviour and activity, then sends you updates directly through the companion app.

Unlike other smart devices for dogs, the device attaches to your dog's collar and transforms it into a smart collar. Once the app is paired with this device, it records needed data and your dog's behaviour, then compares it with similar dogs in their database to help spot anything out of the ordinary.

<http://kck.st/2jzrWlU>



Scollar Mini – Expandable Smart Collar For Small Dogs & Cats

Scollar Mini is a smart cat and small dog collar built on an open hardware and software platform. It has GPS tracking, no monthly fees, a tappable display, up to 30-days of battery life, expandable functionality and so much more. With the Scollar Mini you can check on your pet's location, or remind yourself to give them medication. 🇨🇦

<http://kck.st/2jyaBmM>



TOUCH

Gaming Apps Of The Month

These are the apps that we have currently installed on our mobile devices. We think they should be on yours too By Rikco Shim

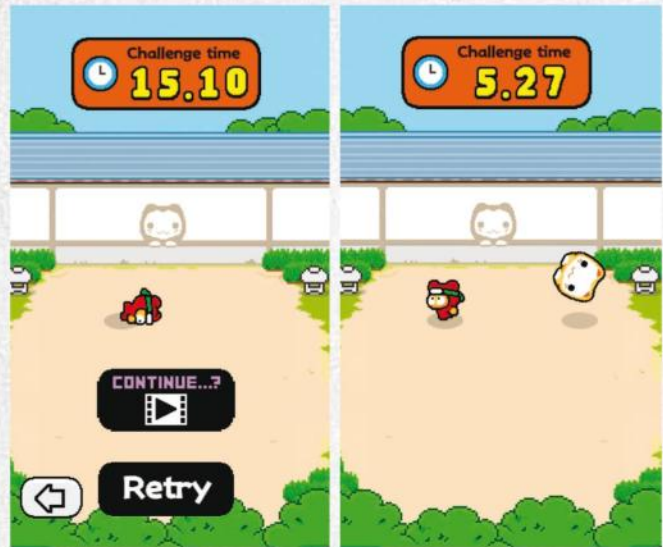
Ninja Spinki Challenges ! ! (Android, iOS FREE)

Well, yet another game from .GEARS (dotGEARS), the infamous developer of Flappy Bird. This time, .GEARS teamed up with OBOKAIDEM, a games company from Japan, to present us with another challenging game that could be addicting.

In this game, you are presented with 6 different challenges, the first level throws you into a screen sized arena, dodging a bouncing catball that is after your blood. The first level is pretty easy: All you have to do is dodge the catball for 10 seconds until the timer ticks to 0. For the second difficulty of that challenge, the game throws you an additional catball and an extra 10 seconds.

If you're feeling lucky, you could try the endless run of that challenge, which pits you with an ever-increasing difficulty challenge. The game itself is just like its predecessors, such as Flappy Bird and Swing Copters 1 & 2, which could be simplified to a few words: Nice and cute to look at, but rage inducing.

And as usual the game is riddled with adverts left to right. However, the ads this time could just be your saving grace. Let's say you are one second away from winning the challenge but died. You are then prompted with a choice to either retry the whole level again, or watch a short ad and be revived, starting off where you left off. 📺



Soul Knight (Android, iOS FREE)

Soul Knight is your average run-of-the-mill roguelike RPG game that could usually be found on the PC or Consoles. It is currently available on both the Android and the iOS. When you load up the game, you are immediately thrown into the action without any explanations whatsoever. There are multiple characters available, but most of them are only accessible via in-game payment, where most mobile games make their money. The Knight is the character that you start the

game with.

If you have ever played other roguelike games such as Binding of Isaac, Enter the Gungeon and the like, this game would just be like that, only on mobile. The game is hectic and a little tough to control on devices with smaller screens unless you have an external controller. And we would wholeheartedly recommend one.

You have four buttons, one to control your movement, one to shoot, one to switch your guns and one to use your skill. The

game does help a little with auto aim, but for most of the game, movement is the most important control to keep you alive.

You also must pay extra attention to your Energy Bar - the blue one below your HP. Some of the guns consume energy and if you have two of them, you'll run out of energy quickly and that's it; you're out of luck and you'll have to punch instead.

At one of our runs, we found a plunger that shoots a very interesting kind of bullet. We'll leave that to your imagination. 📺



Roller Coaster Tycoon Classic (Android RM26.99, iOS RM24.90)

Atari threw us back into the past with this remake/compilation of their ever-popular Roller Coaster Tycoon series. This time, it's on mobile platforms. Mobile gamers everywhere rejoiced, until they saw the pricing that is.

Pricing aside, the game itself is not too expensive for a full and portable version of Roller Coaster Tycoon of 1 & 2. However, compared to other mobile games, this is on the pricier side of things. If you're not one to fret about the prices of your games, then this is most likely the game for you. But it is worth noting that there are also IAPs (In-app purchases) in this game. At this moment, there are three IAPs, two expansion packs and a toolkit for you to edit and design. We have yet to explore those, but the IAPs are totally optional. You could still play the game in full without having to spend any extra on IAPs.

Now onto the meat of things. The game is still amazing, pulling on the nostalgia heart strings of when we first played it on the PC. From our short playthrough, we have not noticed much changes on the mobile version, aside from being mobile and touch friendly. You navigate the map by touching and dragging, clicking menus on the screen to reach specific things.

We also have not noticed any problems from our playthrough, although some people might mention that it crashes often. However, this was patched in previous updates. The game was smooth, and did not crash on us.

For people who have never played Roller Coaster Tycoon, here's a simple summary: You are tasked to manage different parks set with different challenges, which are listed before you choose a park to manage. You can also manage multiple parks, but only on different saves. To overcome the tasks, you have to build, beautify and maintain the park. There are several options for rides available, ranging from gentle rides to gigantic roller-coasters. And as long as there are happy pixel people, you get pixel money. The more you upgrade and beautify your park, the more money you will get, unless you set your entrance fee to £100, which would probably be a little bit of an overkill for just the entrance. Maybe when you have managed a popular park, that could be possible.



You really couldn't ask for a better park management simulator on the mobile now; there are plenty on the PC, but not for mobiles. If you're a fan of management games that can be played in short bursts to kill time, this is definitely a game that can satisfy your overlord needs. For fans of the series, this would take you back to its roots and take you down memory lane. A highly-recommended purchase for those interested. 🇨🇦

Back Issues

Missed a few month's worth of CHIP? Or have a particular issue that you would really like to have? We might not have a time machine to send you back, but we'll definitely be able to get you a copy of our magazine of time's past.

**Only
RM7.42
each!**
(with GST)



PERSONAL INFO (Please write neatly in BLOCK letters)

Name Mr/Ms/Dr

NRIC

Mailing Address

Postal Code

Phone OFF/HOME

H/P

E-mail

PAYMENT INFO (Please ☒ tick ONE of each of the following)

☐ I have enclosed payment of RM _____ payable to **Online Dynamics (M) Sdn Bhd**

Cheque No

Name of Bank

Money/Postal Order No.

Issue Request

Signature

Date

ACK ISSUE VIA CREDIT CARD, KINDLY LOG ON TO
'www.chip.com.my' FOR IMMEDIATE PROCESSING



Conditions: **FORMS INCOMPLETE WILL NOT BE PROCESSED** > Kindly send in forms together with payment in cheque / money order / postal order > All orders must be accompanied by payment, favouring Online Dynamic (M) Sdn Bhd. Please allow 2-3 weeks to process each form.

Contact: **ONLINE DYNAMICS (M) SDN BHD**

A-5-07 Block A, Neo Damansara, Bandar Damansara Perdana, Jalan PJU 8/1, 47820 Petaling Jaya, Selangor Darul Ehsan.

Tel: 603 7727 6554 Fax: 603 7727 3554



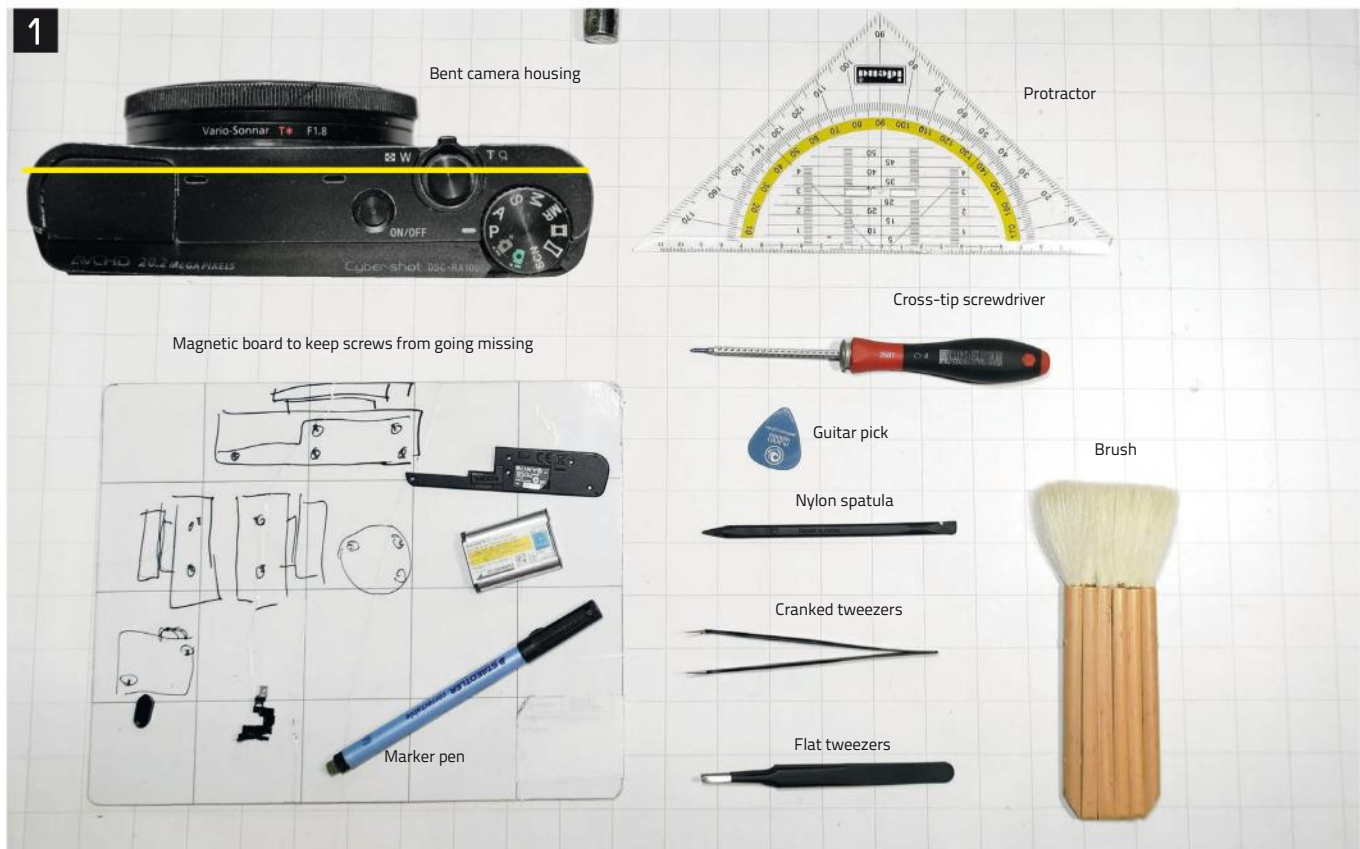
Log on to our website and subscribe to **CHIP** today!

www.chip.com.my

12 issues + 4 FREE issues + FREE gift at RM125.93 *(with GST)*
or
6 issues + 2 FREE issues at RM62.96 *(with GST)*

Why subscribe?

- ✓ Never miss an issue. Every copy delivered to your doorstep!
- ✓ Value for money. Receive free issues when you subscribe!
- ✓ No extra cost. Free postage and delivery!
- ✓ Money back guarantee. Not a happy reader? Write to us within 60 days and we'll refund you for all un-mailed issues!



Restore Sony RX100

An expensive camera like the Sony RX100, that has had its casing deformed due to a fall, can be repaired by an expert. The alternative is to do it on your own By Martin Jäger

Placing the RX100 – one of the best compact cameras ever built – at the very bottom of your office bag, or even at the edge of the writing desk, is a bad idea. Even something minor like the sudden displacement of air due to colleagues running past it is enough for it to lose its balance and fall down. And if a camera like this falls from a height of at least 80cm, its solid metal casing is going to be damaged when it hits the floor. In our sample case, the fall bent the front side (see pic above) in such a way that the lens cannot go into its working position after the camera is switched on. A repair would cost around more than RM1,000, which is too much considering the age of the

camera. On the other hand, it will be a pity to throw away this camera, because of it can still take brilliant pictures. So now the only remaining option is to fix it yourself.

How To Proceed

1 Get The Tools Ready

To dismantle the RX100, you will need a thin guitar plectrum, a nylon spatula, a pair of flat and cranked tweezers, as well as a cross-tip screw driver.

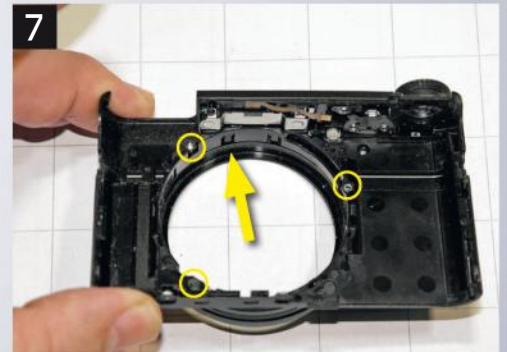
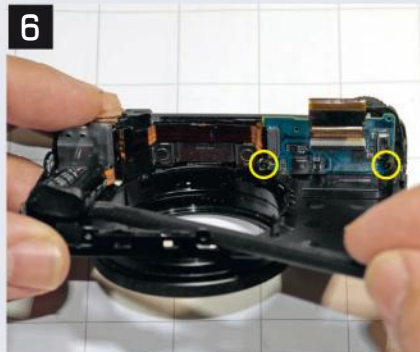
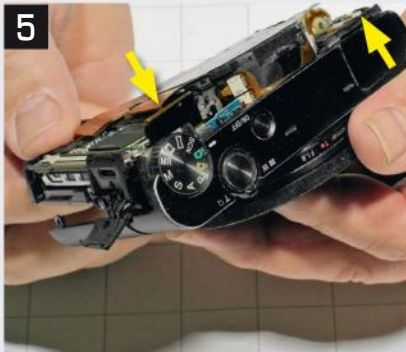
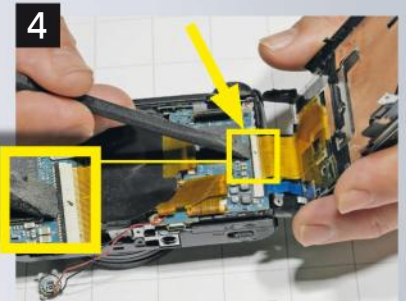
The casing can be bent by hand without using any tool. A ruler will help in the alignment. For rough dents, you will need a light hammer and an anvil or a flat iron. And replacement parts can be purchased from online stores like eBay or AliExpress.com for around RM110. For example, you can search for the front panel using the keywords 'front outer shell', which is about RM360 with free shipping. You should also get an estimate of the delivery time and any customs duties if it is a direct import.

2 Remove Base Plate

Remove the battery and memory card before you remove the five screws (see yellow circles). Now a few small hooks will keep the base plate in the frame. To remove it, move the plectrum to the left – at the narrowest point – under the base plate (see arrow), pull it to the right and lever out the plate.

3 Remove The Backwall

At both the narrow sides, remove two screws each. Then slide the plectrum or the nylon spatula in the gap between the front panel and the display frame and lever up the casing. Use the flat tweezers to pull the microphone from the holder (see figure). Be careful not to damage the fragile solder connections while doing so!




8 Align The Front Panel

Now you can restore the front panel back into shape. While doing so, use the ruler to ensure that it is actually straight. You can remove the dents carefully using a light hammer.

9 Change The Display

If you have to change the display then hold the display frame using your two thumbs and middle fingers, push out the screen with your index fingers from the frame and then set the replacement display into position.

10 Assemble The Camera

Make sure that the yoke of the program selection counter (left arrow) reaches over the camera tabs in the rotary knob (right arrow). Then, plug all the flat cables again. You should use a magnetic screwdriver tip for the screws, so that you don't lose them. 

4 Set The Display

First, pin up the black lock with the brown display cable (see arrow), then remove it with the flat tweezers. The blue flat cable, on the other hand, is not locked and can be easily pulled out of the plug. You can also use the flat tweezers for this.

5 Remove The Lens Block

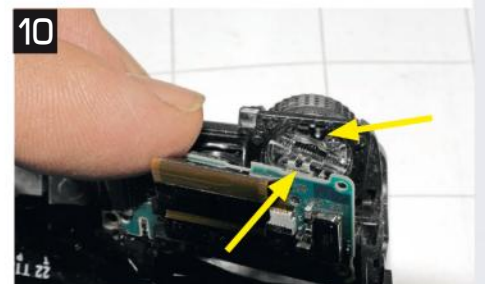
Now unplug a narrow flat cable from the flash unit (right arrow), then unlatch a wide flat cable for the program selection switch (left arrow) and pull it out. Next, hold the front panel at the lens ring with your thumbs, press the lens from below against the lens using your index finger and at the same time, reach for the opened battery slot with a finger on your other hand. If you did it right, you can then lightly pull on it and thus be able to slowly pry the motherboard and lens away from the front panel.

6 Remove The Flash

Loosen the two screws (see circles) on the circuit board of the program selection switch. Now, carefully remove the board using the spatula and pull out the flat cable on the backside (narrow, no lock). You will also need the spatula to remove the two flash condensers from the casing before you pull out the flash with soft pulls using your thumb and index finger.

7 Remove The Lens Ring

First, remove the three chrome screws (see yellow circles). Then hold the lens ring using your thumb and middle finger, before pressing against the front panel using your index finger and loosen the five snap hooks with the help of the nylon spatula in the other hand (see arrow).



Tips & Tricks

MARCH 2017

WINDOWS & OFFICE

01 Windows 10 Deactivate the Touch function and related components

If the Touchscreen function of Windows 10 is not important to you, then you can disable it in a few steps. For this, use the shortcut [Windows] + [R] to open the "Run" window, type "services.msc" and confirm with OK. In the window "Services", search for the "Tablet PC Input", then select it and open the "Properties" by right-clicking on it. You can set the Touchscreen function to "Off" or set the Start type to "Deactivate", either one works. Save the change by clicking on OK.

For the Touch operation, Windows has a few extra functions. However, after deactivating the Touch function, these extras become unnecessary. To disable them, open the Control Panel and click on "Uninstall program" under the category "Programs". In the left column, you will now see the option "Activate or deactivate Windows Features". Click on it and remove the check mark for the option "Tablet PC components" in the window that opens, then confirm the action by clicking on the OK button. After restarting Windows, functions like the "Mathematics input area" or "Handwriting recognition" will disappear. If you wish to use the Touch function of Windows 10 then you can reactivate the disabled Tablet PC features by following the same procedure.

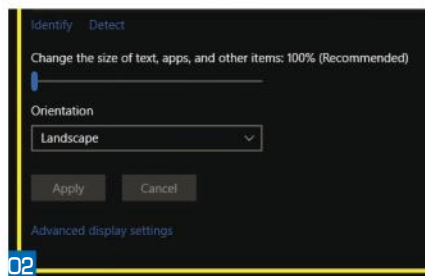
02 Windows 10 Reveal truncated Taskbar clock

A bug in Windows 10 is causing the clock on the Taskbar to appear truncated. There are a lot of solutions in this case.

First, try clicking on an icon on the Taskbar. For example, clicking on the loudspeaker icon should be enough to get the clock to return to its correct position.

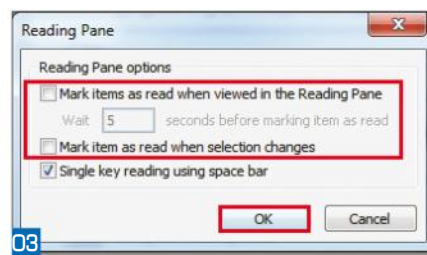
Under certain conditions, an incorrect scaling setting may be responsible for the problem. If that's the case, right-click on the Desktop and click on "Display settings". Move the slider for "Change size of text, apps and other elements" to 100 percent. If the slider is already at 100 percent, then change the scaling and switch it back to 100 percent in a few seconds.

It could also be the function "Fix Taskbar" that's causing the error. In that case, right-click on an empty area on the Taskbar and deactivate the function. You can now manually set the height of the Taskbar, which mostly resolves the problem.



When the scaling of elements is on 100 percent then there should not be any display errors

03 Outlook Avoid marking selected Emails as read



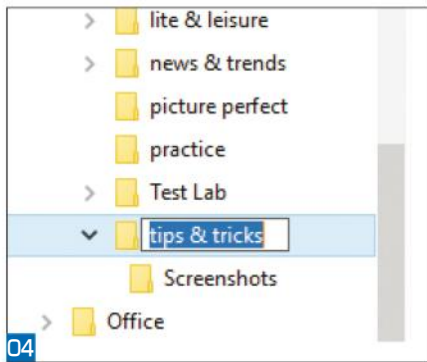
Make Outlook break the habit of marking randomly selected mails as read

Sometimes, you just want to select an Email in your Outlook inbox to have a quick look at it in the preview window, without opening it. However, Outlook's default setting will mark this message as "read", as soon as a new mail is selected. But if it's a work account with high incoming mail traffic, you might miss out on the overview of the read and unread mails rather quickly. To make Outlook get rid of this habit of prematurely marking a message as read, open the "File" menu and click on "Options" in the left column. Then in the "Outlook" options, go to the entry "Email" and press the button "Read Pane..." under "Outlook panes". In the following window, remove the check mark for "Mark item as read when selection changes". Click on OK to confirm the change and exit "Outlook Options" by clicking it again.

Now, messages marked as read will no longer be removed from the list and the file preview can be used without restrictions.

04 Windows Change file and folder names faster using the [F2] Key

Files and folders can be renamed in a jiffy in Windows using a key combination. Instead of right-clicking on the file to be changed and going to the command "Rename" in the context menu, you can quickly achieve your goal faster using the [F2] key. Simply select the file or the folder, press the [F2] key and the file or folder name will already be in the Edit mode, which allows you to rename it. Press the [Enter] key after typing the new name – done.

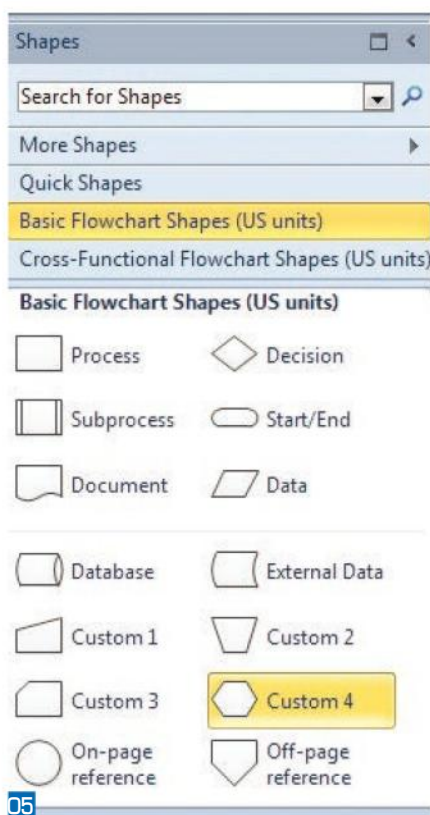


Using the [F2] key, you can quickly set a file or folder name into the Edit mode

05

MS Visio

Create and save drawings in Microsoft Visio



With readymade templates like shapes, you can create drawings with Visio

With the visualisation program Visio from Microsoft, you can easily create your own diagrams. Open "Categories" after starting the program. Here, you will find a huge selection of flowcharts, organisation charts, calendars or even circuit diagrams. Select a drawing and click "Create" to open the drawing plane. On the left margin, you will see the some 'Shapes', which are readymade templates that you can use for

your drawing. You also have the option to create your own Shape. The tools to edit the drawing are located on the upper margin as seen in all other Office programs, while the actual drawing sheet is situated in the middle of the screen where you can arrange the shapes.

Select the suitable shape and drag it on to the drawing sheet using the mouse by keeping the left button clicked. As soon as you have dragged several shapes on the drawing sheet, you can group the individual shapes together using the "Connector". By pressing the combination [Ctrl] + [3], you can select the "Connector". Now click on the shape that you wish to group and keep the mouse key pressed, then go to the second shape and release the mouse key. After you have completed the drawing, save it using the key combination [Ctrl] + [S]. In the next window, you can determine the storage location and choose the Visio drawing's format under "File type". Here, you should use the ".VSD" Visio format so that you can modify the drawing in future. Other formats include ".JPEG" or ".PNG"; You can also export the Visio drawings in AUTOCAD.

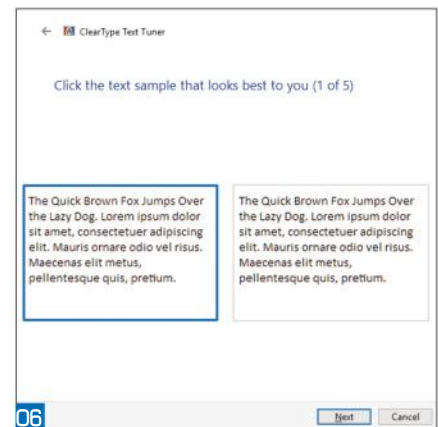
06

Windows

Optimally sharpen of fonts

The larger the screen, the more important it is to adjust the sharpness of the fonts. There's an easy way to do this in Windows, but you should first check the screen resolution. The higher the resolution, the sharper the fonts will look. Right-click on a free area on the desktop and then go to "Display Settings" in the context menu, then click on "Advanced display settings". Here, you will be able to see the recommended value. Select that value and click on 'Apply' to change the resolution, the click on "Keep Changes" to confirm. You will see then a distorted image on the screen. Wait for 15 seconds and Windows will use the new settings. If the font still appears blurred then the first thing you should do is to the check the monitor settings. Windows configures the screen by itself, but manual configuration can yield better results, particularly in case of dark backgrounds. Go back to "Advanced display settings" and click on "Colour calibration". The "Screen colour calibration" will open in the following window. Here, Windows will adjust, among other things, the brightness, the contrast and the Gamma values of the monitor.

In addition, the Anti-aliasing ClearType can be used to sharpen the fonts and with some manual effort, you can get a lot more from this function. Once again, right-click on the desktop and select "Display Settings", click on "Advanced display settings" then select "ClearType text". Now, follow the Settings Assistant, which will keep showing you different sample texts from. You have to pick the sharpest one from each instant to calibrate the font anti-aliasing. Once you're done, Windows will constantly readjust itself to match the finalised type face.

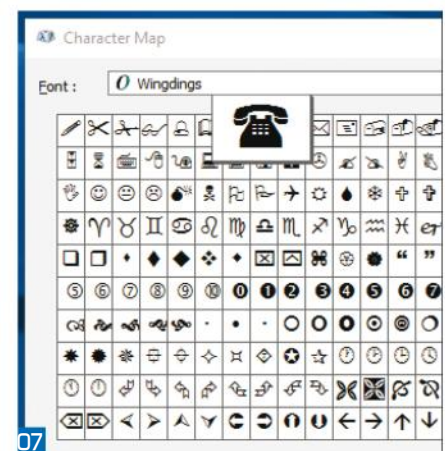


The settings assistant can remarkably improve the anti-aliasing ClearType

07

Word

Insert phone icon in Word document

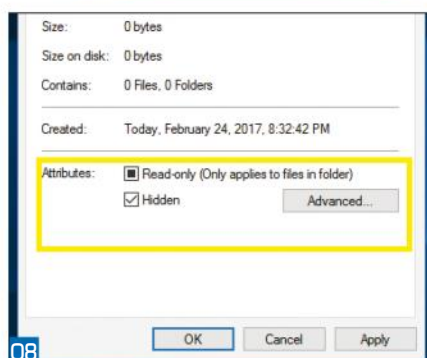


Instrument or handset? The symbol font Wingdings has several other icons for you

Word lets you choose between two phone icons that you can insert into a document when needed. Activate the tab "Insert" in the menu bar and click on the button "Symbol" in the option "Symbol" on the right in the menu group. A selection field of frequently used icons will now open in

the collapsible menu. If the icon you are searching for isn't there to be found, then go to an overview of all the available icons via the link "More symbols". Here, if you set the font to "Wingdings" or "Wingdings 2", then you will see two phone icons in the first line of the overview. Now select the icon which appeals to you and press the button "Insert", or double-click on it to place the phone icon at the cursor position in the Word document.

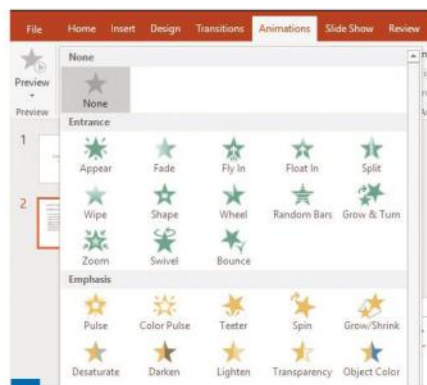
08 Windows Hide folder using built-in resources and a special tool



A check mark before the option "Hidden" in the properties of a folder makes it invisible

Folders with sensitive data can be hidden under Windows in order to avoid curious eyes of those who might want to hack into your password or encryption. Using built-in tools for Windows, you can quickly make these confidential folders disappear. To do this, right-click on the folder and go to its "Properties", then go to the tab "General" where you have to activate the option "Hidden" in the "Attributes:" area. Tick the check box, then confirm the change by clicking on OK, which would make the folder hidden in Windows Explorer. To make this directory visible again, open the "Folder options" in the Control Panel and activate the option "Show hidden files, folders and drives" under "Advanced settings" and "Hidden files and folders". For an easier and more secured method, use the Wise Folder Hider tool, which ensures that folders can be seen only after entering a password. When it restarts, you can define a master password which will protect all folders. To hide a directory, simply drag it in the program window or select it via the button "Hide folder". The folder will then disappear immediately.

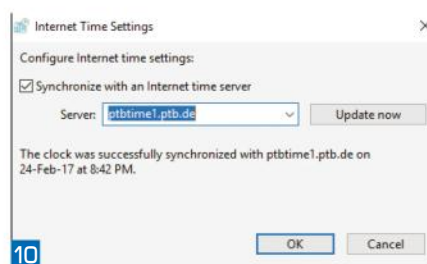
09 PowerPoint Improve concentration through specific display of headings



PowerPoint has many effects for the specific display of key points

In PowerPoint, you can display the key points of your presentation with a mouse click at any time of your choice. This has the benefit of directing the audience to concentrate only on the current point, not the ones that you want to discuss later. After you have written your headings on a PowerPoint slide as always, mark the first point and search for a suitable effect for revealing the key point under "Animations". In the same manner, gradually mark all the headings and add an effect to every point. As soon as you start the presentation after pressing the [F5] key, the key points will be revealed at the appropriate time, accompanied by the effect of your choice.

10 Windows 10 System time from an Atomic clock



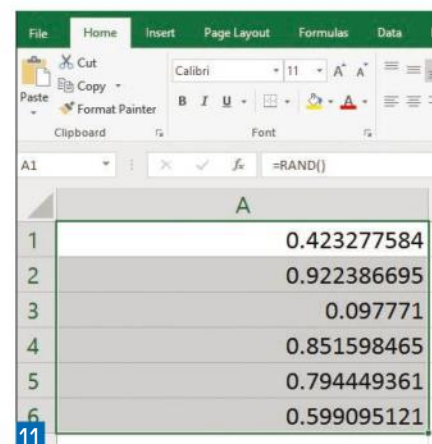
You can configure your PC's time to use an atomic clock; it doesn't get more accurate than this

Windows automatically Windows automatically synchronises the system time with a time server. This synchronisation is done by default, once every week. Here, Windows carries out the synchronisation with the Internet time server time.Windows.

com. But the operating system can also fetch time information from the atomic clock from various sources.

In order to switch over to the atomic clock as your PC clock, open the applet "Date and Time" in the Control Panel and go to the "Internet Time" tab. Next, click on "Change settings" to open the "Internet time settings" window. Here, for example, type "ptbtime1.ptb.de" behind "Server:", then click on the button "Update now" and confirm this action by clicking on OK. Windows will immediately fetch the time from the time server of the relevant source, which in this case is the Physikalisch-Technischen Bundesanstalt (PTB) in Braunschweig. The advantage of atomic clocks is that they have the most precise time of all clocks. Where the popular consumer wristwatches deviate one second from the actual time, which only happens in atomic clocks after a million years.

11 Excel Generate random numbers using an Excel formula

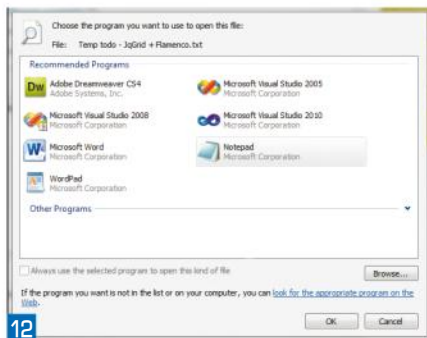


Using Excel formulae, you can quickly generate random numbers – ideal for gamblers

In Excel, there is a formula that you can use to generate a random number. This can be useful in some cases, like if you need to create some lottery draw numbers. The general formula for generating random numbers is: "=RAND()". Here, Excel gives any number between 0 and 1. If you want other random numbers, then you have to edit the formula accordingly. In order to get a random number equal to 0 and less than X, type "=RAND()*X". Simply replace the "X" by any number. If you prefer the random number to range from 1 to X then enter "=RAND()*(X-1)+1". The "X" can be replaced by the highest random number of

your number range, for example, 49, while 1 represents the lower limit.

12 Windows 7 Change default program for a file type



You can change the program linked with a specific file

You have linked a file type, for example JPG files, with a program like Adobe Photoshop for the command "Open with..." and now wish to change this configured default? Select a JPG file and after right-clicking it, select "Open with..." in the context menu. In the next Window, there will be a message stating that the file cannot be opened. Now click on the radio button for "Select program from a list of installed programs". In the following window "Open with", select the option "Windows Photo Viewer" in the "Recommended Programs" section, set a check mark for "Always use the selected program to open this kind of file" and press the OK button. In future, you can quickly open every JPG file in Windows Photo Viewer by double-clicking on it, instead of booting up Photoshop and losing valuable time in waiting for it to open the file.

You can also change the default program in the Control Panel. To do this, click on "Standard Programs" in the start menu of Windows 7 and go to "Set your default programs". Scroll down in the "Programs" list to search for "Windows Photo Viewer", then click on the "Set this program as default" check box and apply the change by clicking on OK.

13 Outlook Make missing Outlook folders visible again

If you cannot find an Outlook folder, you should first open the tab "View" and navigate to the group "Layout" in the menu group. Here, click on "Folder area" and select the option "Normal". The missing folder

should now be visible again. If not, then the wrong filter settings may be the cause of the folders becoming invisible. Stay on the tab "View" and go to the group "Current View", then open the "View Settings" and check whether the option "Off" is selected next to the button "Filters". Otherwise, click on the button and search for the settings in the "Filters" window.

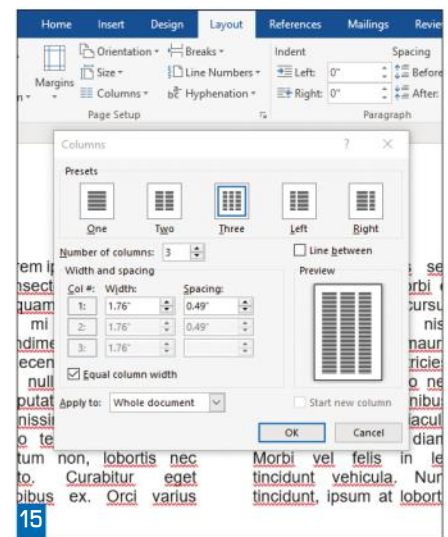


If an Outlook folder is missing then you should disable all filter settings

14 Office Resolve problems during installation of Office packages

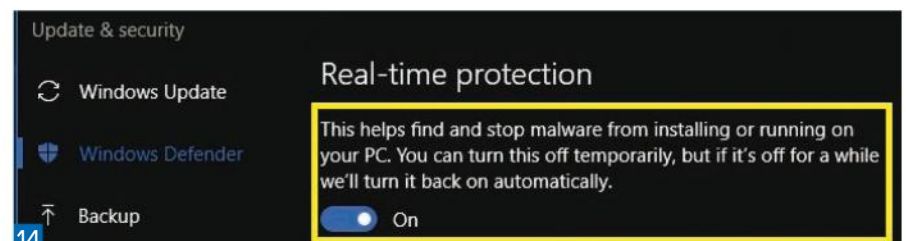
Occasionally, the installation of Microsoft Office could get stuck at 90 percent. This is the case when the Windows Installer is completing other tasks at the same time, which causes Office to remain in the queue. Often times, the Windows Installer is overburdened with the installation of a large number of Windows updates. If that's the case, it's better to just wait for a few minutes. If there's still no progress after some time or the installation has clearly hanged, then open the Task Manager and look for the process "Windows Update Standalone Installer" (wusa.exe). Terminate this process by clicking on "End process", then restart the installation process. If problems occur again, then your virus scanner could be the culprit. If so, open your anti-virus program and disable it. Should the installation still hang, then restart Windows and try installing it again.

15 Word Create a reader-friendly Word document with columns



Word offers several options for the layout of a document in columns

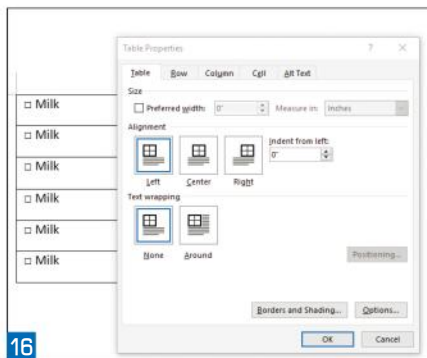
Text are more readable when divided to multiple columns, rather than rows that over the entire page width. In order to divide your text walls into columns, go to the tab "Layout" and click on the button "Columns" in the group "Page Setup". In the drop-down menu, select either one of the preset column layouts or configure your individual pages under "More columns". The dialog field "Columns" offers all parameters that you need to design the layout according to your own settings. Choose one of the presets or set the number of columns manually under "More columns". You have the option to determine the width of the individual columns and their distance to each other via the input fields, as well as disabling the "Equal column width" for variable ones. If you want Word to visually demarcate the columns using the intermediate line, then set a check mark for "Intermediate line". In the drop-down menu "Apply to", you can define for what document area



Temporary deactivation of the virus scanner can rescue a jerky installation

should the settings be applicable. You can choose between the entire document or the section behind the cursor position.

16 Word Make a checklist with checkboxes



16 Prefixed checkboxes make a checklist significantly clearer

A checklist with boxes to cross can be quickly made in Word. Before you start, it makes sense to create a table so that the checkboxes are not connected to the following text. Open the "Insert" menu and create a table with two columns in the group "Tables"; the number of rows depends on the number of boxes. Now place the box icon in the left column. In the "Insert" menu, click on "Symbols" on the extreme right and open the "More symbols" via "Symbol". If the font "Wingdings" is set, then you will find many box icons in the middle of the fifth row from top. Click on the box of your choice and then press the button "Insert" to place it at the start of the table column. In this manner, you can provide every table row with a box. To customise the table to your contents, select the table and after right-clicking on it, go to the context command "Auto-adjust | Auto-adjust contents". Lastly, remove the border of the table. To do this, open the "Layout" menu and click on "Properties" in the "Table" group. After clicking on the button "Borders and Shadows", select the option "Without" for "Borders" and confirm your selection by clicking on OK. For a better overview of the checklist, you can have the "Grid lines" displayed under "Layout".

17 Windows 10 Get access to the BIOS or UEFI

Important computer settings and parameters, like changing the boot sequence,

can be done in the BIOS (basic input/output system). There are reasons why it's not readily accessible, but you can access it quite easily. In order to access the BIOS (or the graphical interface UEFI found in newer PCs), go to the "Settings", select "Update & Security" and go to "Restore". Here, click on the button "Restart now" under "Advanced Start" to get access to UEFI.

Once your computer boots up again, go to the login screen. Instead of typing your password now, press the Power button on the bottom right with the Shift key held and click on the option "Restart". The UEFI will now open.

If Windows 10 is running on a somewhat older PC, then the BIOS can be accessed via a key during the boot up process. The key for BIOS access depends on the manufacturer. Simply try the keys [F1], [F2], [F8], [F10], [Del] or [Esc] after switching on your PC; one of it will be the key you need to press.



17 You can get access to basic computer settings in BIOS or UEFI

HARDWARE

18 Hard disk Determine the model name and technical data of a hard disk

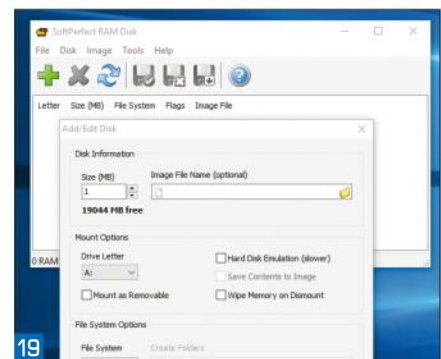
To find out the type of hard disk that is running on your computer, open the "Run" window using the key combination [Windows] + [R], then type the command "devmgmt.msc" and confirm by pressing OK. In the Device Manager, click on the category "Drives" below and Windows will show you all the installed hard disks. If you are also interested in more information, such as the drive's performance or features, then the tool Speccy can help you retrieve that information. After booting up the tool, open the category "Storage" and

you will find all the information regarding your hard disk there, right up to its temperature. For even more information, check out CrystalDiskInfo instead.



18 The tool Speccy can give you every detail about the insides of your computer

19 RAM Optimise computer performance with RAM disk



19 With a RAM disk, you 'loan' a part of your RAM for intense computing programs

You can gain a significant performance boost with the help of a RAM disk, because RAM memory works 10 to 26 times faster than even flash-based SSDs. A special software and a driver will lead Windows to believe that it deals with an SSD when it comes to RAM. The RAM disk is best suited not only for installing programs that need a lot of computing Power, but also for the automatic disposal of Cache and temporary files. The tool SoftPerfect RAM disk can help you create one. Boot up the tool and click on the Plus icon on the top left. Then select size, drive letter and the

file system "NTFS". After clicking on OK, the RAM disk will appear as a drive in Explorer.

In order to permanently use a program that you have installed on the RAM disk, you will need a map of the disk since its contents get deleted at every restart. This map can also be created using the SoftPerfect RAM Disk tool. To do this, click on "Map" and select "Create map". After double-clicking on the RAM disk, you can select the recently created map under "Map file name". If it updates itself after every use of the installed program, then go ahead and enable the "Save content in map" option as well. The tool will save the content of the RAM disk on your hard disk after restarting the computer and will transfer the map automatically to the RAM disk from Windows after the restart.

20 **Play Station** Transfer data from a PlayStation 4 to a PlayStation 4 Pro

With the PlayStation 4 Pro, Sony now has a more powerful version of the PlayStation 4. Considering that all PS4 games also run on the Pro model, Sony has made it so that data transfer from PS4 to PS4 Pro and vice versa is possible. To do this, the PS4 will need the latest firmware version and you will need a LAN cable for data transfer. Connect the PlayStation 4 Pro to a TV and boot up the console. After logging into your PlayStation Network account, the operating system will ask you whether you wish to transfer the data from your old PS4. Hold the Power button on your PS4 – while it's switched on – till it beeps. Now connect



You can transfer your digital files and games to a new PS4 Pro easily, although it takes

both the consoles with the LAN cable and follow the instructions given on the PS4 Pro. The transfer process is flexible, allowing you to select what gets transferred. To end the process, indicate your wish to use the PS4 Pro as the primary system, then the data transfer will begin after that.

21 **Laptop** What to do when the Power button on the laptop has stopped working?

If the Power button on your Notebook stops working, then it is possible to repair it or replace it with a trick. However, we recommend backing up your data to an external hard disk before you start with the repairs.

First, switch off your laptop and unscrew the device. In some models, you can simply remove the cover above the keyboard. Check whether the area around the Power button is dirty and clean it if required. Under certain conditions, you may notice a defect. Leave such repairs to a professional instead of trying to solve it yourself. In many cases, it's a loose contact causing a problem, so you'll have to pay a small cost for some re-soldering work.

The other alternative is a trick that can be used when the computer is running. First, boot to the BIOS and look for a function that lets you start the laptop via a defined key on the keyboard. If you cannot find it then look for 'Power State after power loss'. A desktop computer can be booted up using this option if the power is switched on. This can also work for the Notebook under certain conditions.

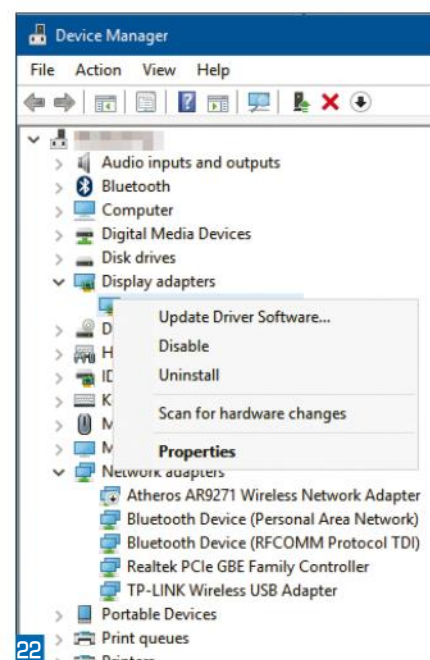
22 **Graphics Card** Disable the onboard graphics card installed on the motherboard

If Windows is using the wrong graphics card, then you can disable the on-board graphics card without any problems and use a dedicated GPU instead. In most of the cases, Windows activates the dedicated



If you cannot start the laptop with the Power button then a BIOS setting will help in this matter

hardware automatically as soon as the on-board graphics card is not power enough, like when playing games. If you wish to always use the installed card, then you have to manually disable the on-board card. To do this, press [Windows] and [R] simultaneously to open the 'Run' command window. Then, type the command "devmgmt.msc" here and click on 'OK' – this starts the device manager. In the new window, open the category 'Graphics Card' and right-click on your on-board graphics card. Now, select the option 'Disable' and confirm your choice with 'OK'.



Disabling the onboard graphics can be done via the Device Manager menu

23 Keyboard The reliable way to calculate your typing speed

How many characters can you type? Calculate your typing speed and find out how fast you are with ten fingers, or via the "hunt and peck" system. You can run a speed test on the website 10fastfingers.com, which lasts for about a minute. Type as many words as possible in that duration of time and the site will show you your typing speed in words per minute (WPM), along with the number of key strokes you've made while typing. You can share your results online on Facebook, or create a screenshot that you can use elsewhere.



23 The website 10FastFingers.com helps you measure your typing speed in Word Per Minute

24 DVD Drive You can do this if Windows does not recognise the inserted DVD



24 If your DVD is badly scratched, Windows might not be able to read it

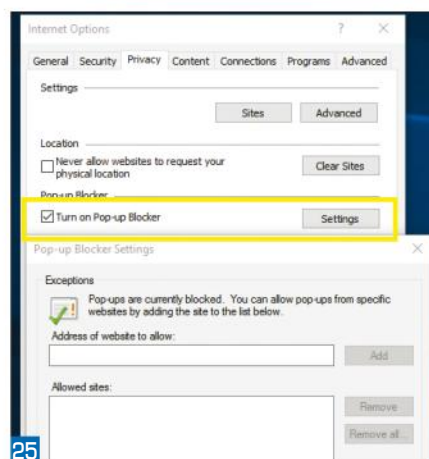
If Windows refuses to read your DVDs, then a few solutions could help. First, go to 'Computer' and see if the drive is shown here. If it is, insert the DVD, otherwise go to the 'Device Manager' via the Start menu. In the list, double-click on the DVD drive and check whether the device is enabled. You can then check for a new driver via the tab

'Driver' and the button 'Update driver'.

It is possible that the DVD is damaged or has scratches. In this case, you should wipe the disk with a fine cloth so that it's clean. If there is a second drive, then you can test whether the DVD or its drive is damaged. If these tips do not help then the only option is to get the DVD drive checked by an expert.

WEB, TOOLS & PHOTOS

25 Internet Explorer Activate and configure pop-up blocker



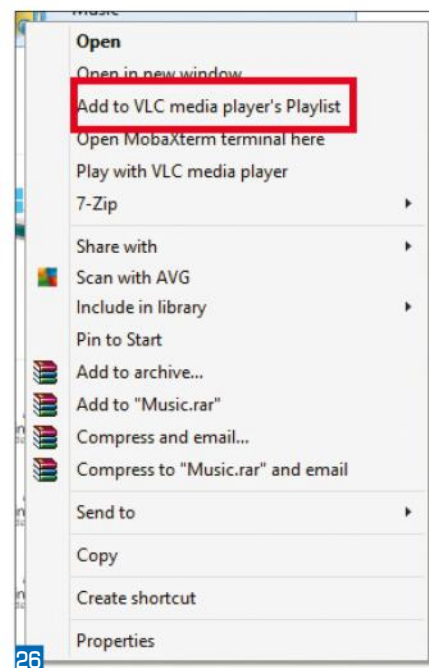
25 Internet Explorer can exclude specific websites from the pop-up blocker

Like every browser, Internet Explorer also has a pop-up blocker to go with it. To install it, click on the small gearwheel icon on the top right and select the option "Internet options". In the next window, open the tab "Data protection"; the pop-up blocker can be enabled or disabled here. On the right, you will find the "Settings" button. This menu gives you the option to specify individual websites like chip.com.my under "Exceptions", which means you'll allow the site to show pop-ups. Set a check mark for "Display notifications bar if a pop-up is blocked" and the browser will inform you whenever it does so. The "Block level" can also be set from "Low (Allow pop-ups from safe websites)" to "Medium (Block most of the automatic popups)", or "High (Block all popups)".

26 VLC Media Player Create playback list for songs or videos

The Open Source player, VLC, not only processes every media format well, but also

gives you the option to create your own audio and video playlist with a little bit of effort. Right-click on any audio or video file and click on the "Add playlist to VLC Media Player" command in the context menu. If this option is missing, then start the VLC Player and simply drag the file to it. Once that's done, you can then add more songs or videos via the context command, or Drag & Drop. If you wish to add several files at once in the playlist, hold the [Ctrl] key while selecting the files. You can arrange the files as you want in the playlist, by simply moving them up or down the list using a mouse. In addition, you can also start or stop playback of media files using the buttons on the lower window margin. One more feature is the ability to pack individual titles into a permanent loop, skip or random start. You can save the resulting playlist using the shortcut [Ctrl] + [Y].



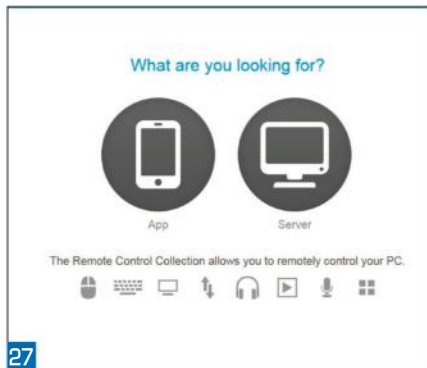
26 Individual audio and video playlists can be compiled in the VLC Media Player

27 Smartphone Remotely control your PC using your cell phone via Bluetooth or WLAN

With the support from some apps, you can use your smartphone as a control centre for your PC. This is very convenient when you want to access the PC from your couch to stream videos or photos to the TV. An Android app called the "Mouse & Keyboard Remote" can do this. After downloading and installing the app on the smartphone,

download the Remote-Control Server to your PC and install it. Ensure that the cell phone and PC, that you are using for this, are in the same network. Note that the Remote-Control Server will show the IP address of the PC that you wish to control. If the program is blocked by Windows firewall, click on "Allow access". Next, start the "Mouse & Keyboard Remote" app on your smartphone. With this app, you can automatically search for the server or add it manually and enter the IP address.

Finally, select "Connect" and set your preferred mode of control. Once that's all done, your smartphone will function as a remote control for your PC, thus allowing you to type text, scroll, zoom, playback songs and control presentations.

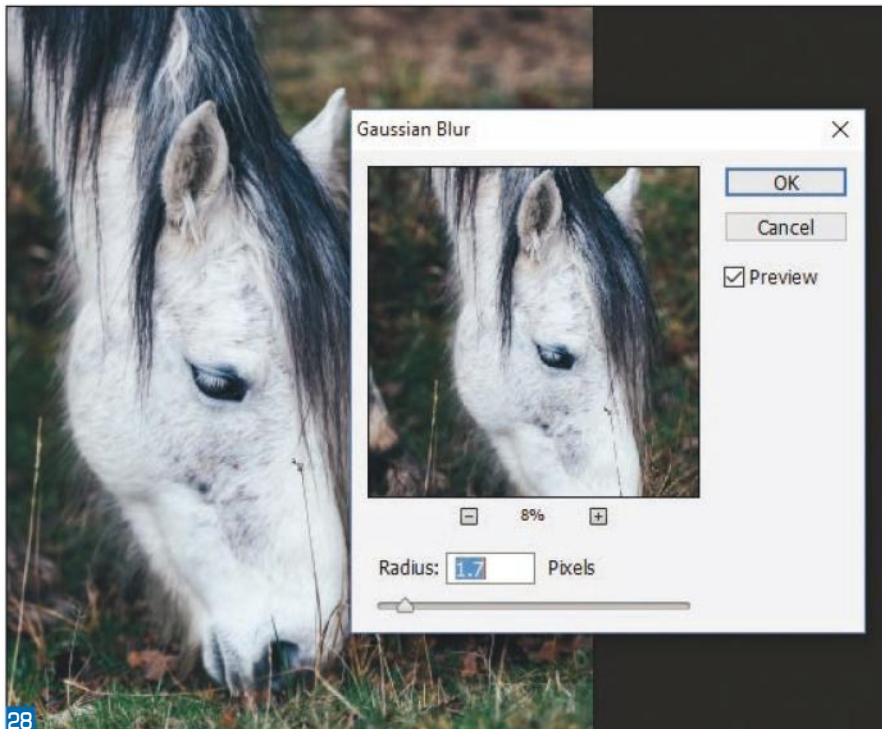


Using an app and a server, you can remotely control your PC via a smartphone

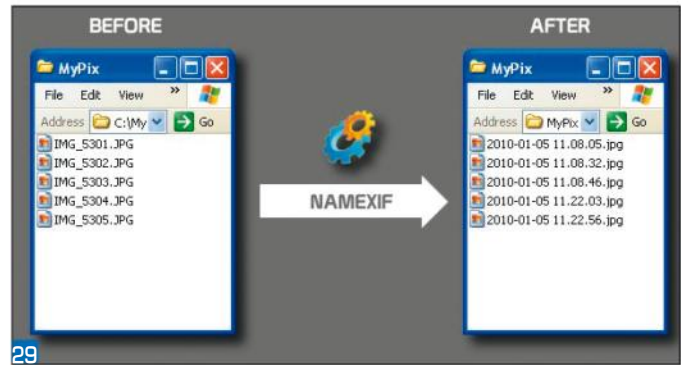
28 Photoshop Optimise portraits using blur

An important element of the portrait retouching Photoshop is the elimination of annoying details like skin blemishes.

To do this, select the "Area repair brush" in the toolbar and simply "paint over" the ugly spots using this tool. An absolute classic in portrait retouching is the use of blurs. Duplicate the layer that contains your image, then right-click on the duplicated layer and go the context command "Convert to smart object". Next, add a filter via "Filter | Blur filter | Gaussian Blur". The amount of radius for the blur depends on the motif and your imagination, so just experiment with it to see what works for you. Once that's done, you will see a smart filter under the layer. After right-clicking on it, select the button "Back" in the properties and you can now paint over the image using a soft white brush. Last but not least, you also have the option to reduce the opacity of the duplicate layer. This allows you to mix both the layers, causing the blur to appear more natural.



Blurring is a typical touch-up trick that has been used for years and it's fairly easy to do with Photoshop



The tool Namexif adds the time of capture in the file name. This eases the sorting

29 Photo management Integrate shooting time in the file names of digital photos

Reading the time of capture in the file name would be of help while sorting photos, something that is made possible with Namexif. Download the tool and then double-click on the .exe file to start it; you have to do this every time you need to use it. After that, you are able to check individual photos with "Add files" or rename an entire folder with "Add Dir", as well as delete all entries from the list with "Clear List". However, do note that you cannot delete individual files. Finally, click on "Next" and set the format of the new file name on the next page. "YYYY" stands for the year, "MM" for the month, "DD" for the day, "hh" for the hour, "mm" for the minutes and "ss" for seconds; you can have the date and time follow the original name of the file or a random name. If the original name also appears in the new file name, then set a check mark for the option "Add original name at the end". If you wish to specify a specific ending, enable the option to "Add name (suffix)" and enter the desired name in the input field. However, make sure that you only use one or the other at any given time, or else Namexif will not generate any logical name.

30 Photography Capture selfies skillfully and distribute them cautiously

Self-portraits using the smartphone are so popular these days that most users feel the need to post them everywhere. However, not every selfie will evoke positive reactions. Here are some important rules before you take those frontal shots.

Look up: It often helps to hold the camera somewhat higher so that you are not in the shadow. Incidentally, your face will appear

slimmer as a result.

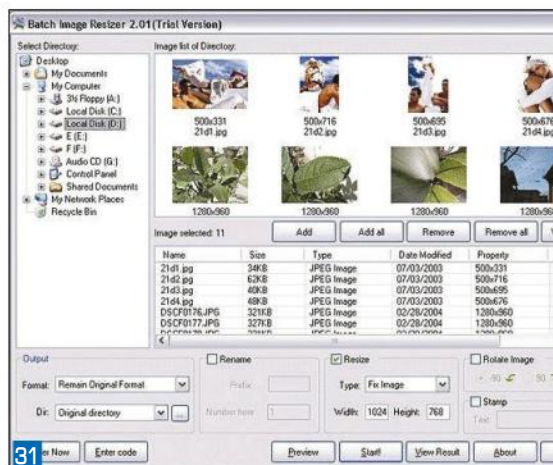
Hold your breath: This helps you to take up a stable position and prevents shaky pictures. Pay attention to the environment: Never take a photo against a bad background or in front of a mirror.

Do not get tensed: You should have a natural smile. Think of something funny. Use the front camera: Despite the higher resolution of the main camera, the front camera is sufficient for a selfie. You can also see the image section.

Avoid awkwardness: There are places that are not suitable backgrounds for a selfie. Places like Holocaust memorials, disaster or accident venues come to mind. Also, ignore that trend of adhesive tape selfies!

Think before you post: Restrict the number of people who are allowed to view your selfies, because you don't know when your employer is stalking your social media profiles with keen interest.

31 Image Editing Resize batches of JPEG images with just a few clicks



A batch resizer will help make the process of resizing multiple images faster

JPEG images can be resized by image editing software, but it's tedious to do so one by one. A free tool, such as Batch Image Resizer or FastStone Photo Resizer, makes things easier. Install the tool you need or use an online, then create a folder with the pictures that you wish to reduce. Start the tool of your choice - for example, Batch Image Resizer - and select the folder with pictures, then choose the output format for the pictures and the size you need. Finally, click 'Start' to begin. This should resize all the images you've selected in an output folder of your choice.



Looking up will avoid shadows and make the face look slimmer

32 GIMP Select pale lips with the Quick Mask and add colour to them

The image editing program GIMP provides a few functions that you can use to add more colour to the lips of your photo models. Open the image to be edited in GIMP and enable the Quick Mask by pressing the key combination [Shift] + [Q]. There will be a reddish area over the image. Select 'White' as the foreground colour and click on the Brush tool. Adjust the brush size such that you can paint the lips well. If you go beyond the edge, then change the foreground colour to 'Black'. You can also paint the smallest of errors, if you want. When you are happy with the result, press [Shift] + [Q] again. The mask will be converted to a selection.

After selecting, you can start colouring the lips. To do this, go to the 'New Layer' under 'Layer', give the new layer a name of your choice, then set 'Transparency' as the layer fill type. Next, select a strong shade of red as the foreground colour, then click on the Fill tool and highlight the selection with the foreground colour. In the Layers window, set the mode to 'Hue'. If you set the mode to 'Colour' you should reduce the opacity a bit in order to slightly emphasize the lips.

33 Camera Find out how often the camera trigger was pressed

If you wish to buy a used camera from

eBay then the frequently asked question by the interested party is: How often has the camera been used? To answer that question, go to the site robo47.net and upload your last photo as a JPEG image; note that the file size must not exceed 128MB. Click on 'Read' and you should then see the web service's analysis of the EXIF data stored in the picture, which includes the number of times the trigger was pressed. You should be able to see the result after a few seconds.

Tip: Do not trust the service fully. Use it only for an image for testing purposes. Sharpness, composition and similar elements do not play any role here.

34 Photography Avoid colour casts in photos by using the correct colour value

In order to avoid colour casts in photos, you have to note a few important things: a setting in digital cameras called 'white balance'. The camera needs this setting to display white colours correctly in the finished photo.

The value of the white balance is specified as a number measured in Kelvin. In closed spaces and in artificial light, you will need a value from approximately 3000K onwards, while a value higher than 6000K is required on a sunny day. If the current Kelvin value is too low then white surfaces will get a blue colour cast. If it is too high then these surfaces will appear reddish. Many cameras have an 'Automatic white balance' or presets for various environments. The former can be rather accurate, but can be inaccurate under artificial light. In that case, using the presets might be more accurate. 📷



14/2/2017 – BenQ has brought in some mean hardware to power their awesome monitors!



13/2/2017 – Janna Nick showing us why she's Canon's Brand Ambassador



21/2/2017 – HP and the Spectre x360 took us for a spin...literally...



16/2/2017 – Did U Mobile call in air support to take care of everyone at Titiwangsa park?

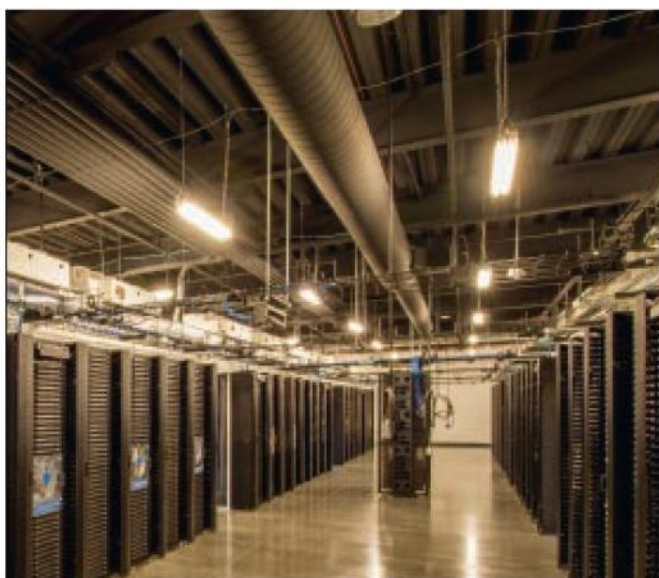


16/2/2017 – "Give us more Likes!!!"... That's probably what they were thinking at the launch of U Mobile's latest plan

Most are tempted to install a WiFi router, use the basic installation wizard, and call it a day once everything is setup. But there's value in optimising your WiFi network, value which we will show you here



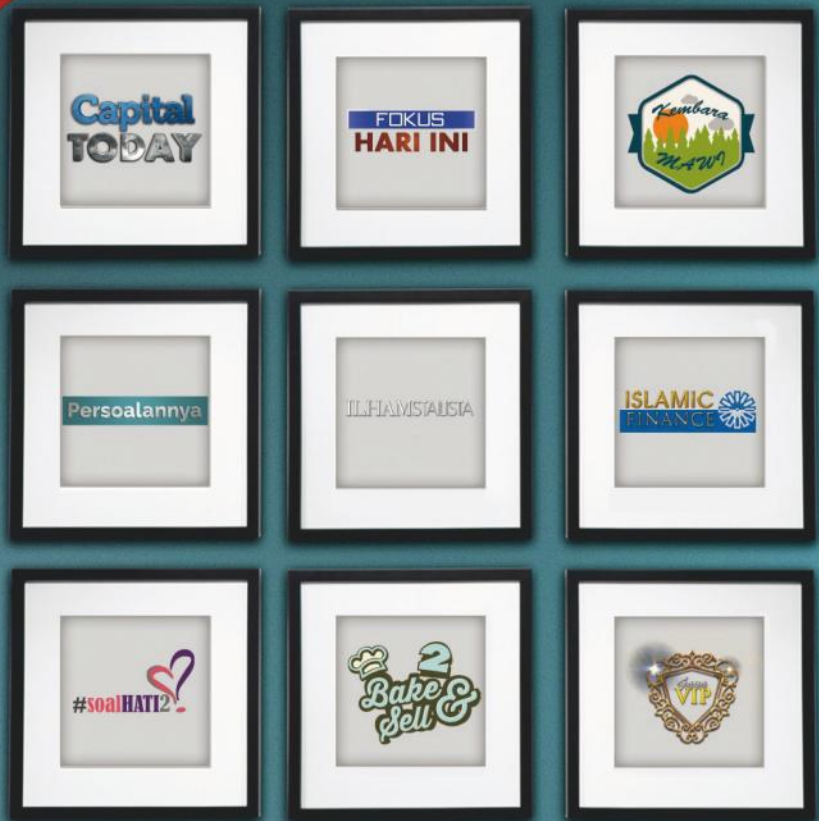
Intel's new generation of CPUs are out and while the performance gains from Skylake isn't much, there's much more it can achieve with the right cooling. We talk about the 'how' and 'what' in this piece



Cyber criminals have always had the lead in the cyber war. However, we can expect Artificial Intelligence to form a new generation of anti-malware protection and make things hard for the bad guys



FULL HD 24/7



INFORMASI INSPIRASI MOTIVASI



EXCLUSIVE AT
CHANNEL 420



powered by **TM**

WRITE. DRAW. DIGITIZE.
THE FIRST TABLET FOR NATURAL SKETCHING AND NOTE-TAKING

Lenovo™



On-demand
Halo keyboard



Real Pen with
endless battery life

YOGA^{BOOK}

THE WORLD'S THINNEST 2-IN-1*



Browse



Type



Watch



Create

INTEL INSIDE®. EXTRAORDINARY PERFORMANCE OUTSIDE.
LENOVO YOGA BOOK IS POWERED BY
INTEL® ATOM™ x5 PROCESSOR.



FIND OUT MORE: 1800 88 7148 www.lenovo.com/my www.facebook.com/LenovoMY www.twitter.com/Lenovo_MY

AVAILABLE AT:

LENOVO EXCLUSIVE STORES: KUALA LUMPUR: Brightstar Computer Sdn Bhd (Plaza Low Yat) • D' Mobile Sdn Bhd (Plaza Low Yat) • FCC Retail Sdn Bhd (Mid Valley) • SNS Network (M) Sdn Bhd (Plaza Low Yat) • SELANGOR: FCC Retail Sdn Bhd (Digital Mall Section 14) • IT Comp Sales & Services Sdn Bhd (One Utama) • IT Comp Sales & Services Sdn Bhd (The Mines) • Pro Trade Marketing (Plaza Alam Sentral) • Thunder Match Technology Sdn Bhd (IOI City Mall) • JOHOR: Grex Multimedia (Danga City Mall) • PAHANG: Core ICT Sdn Bhd (Berjaya Megamall) • PENANG: Mind Maker Sdn Bhd (Komtar ICT Mall) • PERAK: SNS Network (M) Sdn Bhd (Ipoh Parade) • TERENGGANU: Aidea.com Technology (Jln Kampung Dalam, K. Terengganu) and also available at Lenovo authorized retailers.

*Based on Lenovo's internal analysis as of 18 August 2016 of 10" or greater 2-in-1 computers (sold with keyboard) using Windows, Android, Chrome or OSX sold by major competitors shipping >1 million units worldwide annually; measured with keyboard attached in closed position.
© 2016 Lenovo, all rights reserved. Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. Ultrabook, Celeron, Celeron Inside, Core Inside, Intel, Intel Logo, Intel Atom, Intel Atom Inside, Intel Core, Intel Inside, Intel Inside Logo, Intel vPro, Itanium, Itanium Inside, Pentium, Pentium Inside, vPro Inside, Xeon, Xeon Phi, and Xeon Inside are trademarks of Intel Corporation in the U.S. and/or other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. Google and Google Play are trademarks of Google Inc. Every effort has been made to ensure the accuracy. Lenovo will not be liable for any inadvertent error which may occur in editorial or typography in this advertisement. All images are for illustrative purposes only.

Lenovo Technology Sdn Bhd. 0080398-40