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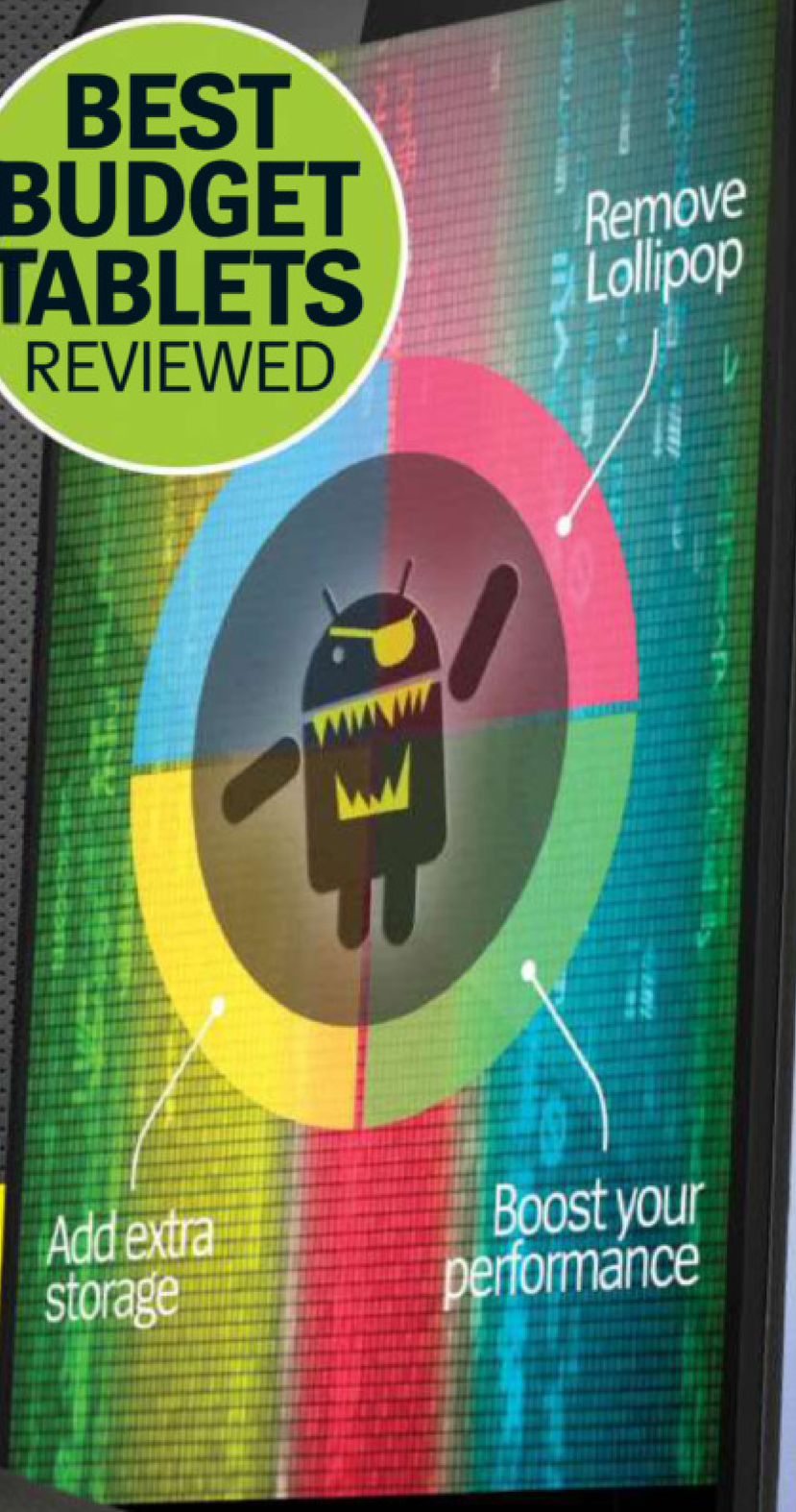
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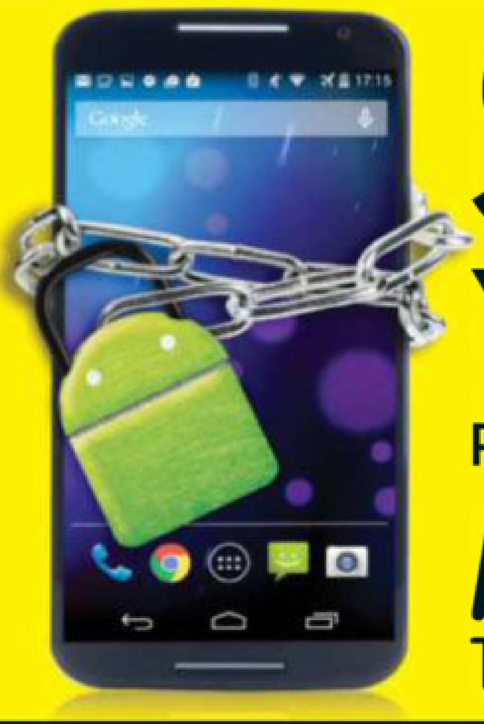
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HACK YOUR NEXUS

Unlock the true power of Android

BEST BUDGET TABLETS REVIEWED





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Protect against malware, theft and more

MASTER MAPS

Tips for Google's new-look app

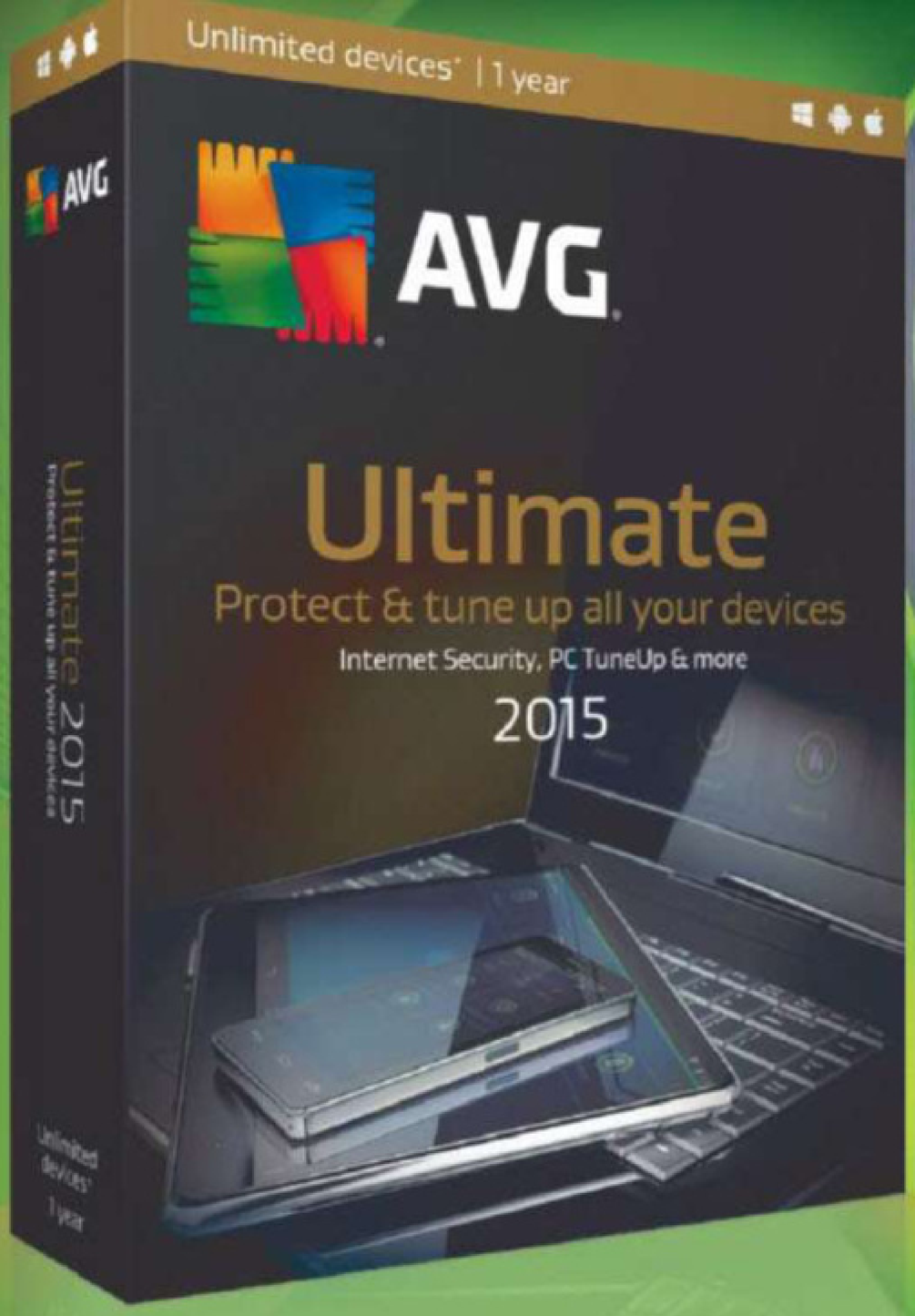


25 ANDROID WEAR APPS

MOTO 360 vs G WATCH R

Leading luxury smartwatch revealed

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ON REVIEW

We've got the latest Android devices on test

Sony Xperia Z3 Tablet Compact

"The game has just been changed"



p76

Amazon Fire TV

"Doesn't feel like an Android device"



p83

LG G Watch R

"The metallic design is fantastic"



p85

Welcome

"Devices such as the Nexus 7 are always first in line for updates, and – until the brand new Nexus 6 and 9 – were always reasonably priced"

MY HOME SCREEN

On (and off) Jack's phone this month...



This month I've been using: Galaxy Note 4

This is Samsung's best-looking phablet yet – but it doesn't offer a lot more than the Note 3

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The Nexus range has always represented Google's gold standard for what each Android update could offer. As well as running a pure version of Android without unwanted apps added by manufacturers, devices such as the Nexus 7 are always first in line for updates, and – until the brand new Nexus 6 and 9 – were always reasonably priced.

However, you only have to look at the clunky Nexus 10 tablet to know that Google's own-brand devices are not without their flaws, with no expandable storage and early reports the Nexus 9 has a tendency to overheat. Fortunately, they are also one of the easiest devices to hack. So head to page 39 onwards to find out how to unlock stock Android's true power and fix these common problems. If you've been having problems with Android Lollipop on your Nexus 7, first head to page 8 for quick troubleshooting. If that doesn't work, head to page 43 to find out how to revert to Android KitKat instead.

If you're not interested in the Nexus 9 but are in the market for a cutting-edge tablet, check out our review of the Sony Xperia Z3 Tablet Compact (page 76). Or if you're on a budget, check out our low-cost tablet group test (page 68). If you'd prefer a smartwatch, find out which of the luxury circular models is better, the critically-acclaimed Moto 360 or new release the LG G Watch R, from page 84 onwards. If you've already got an Android Wear watch, discover the 25 best apps to make the most of your wrist-mounted wearable from page 18 onwards.

Jack Parsons

Jack Parsons
Deputy Editor

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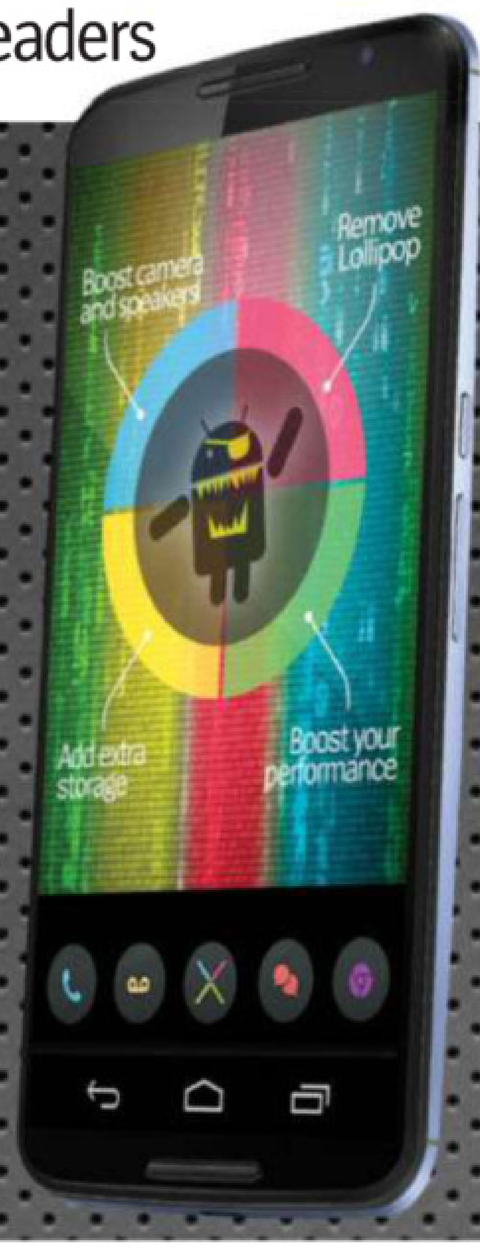


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SECURE YOUR PHONE



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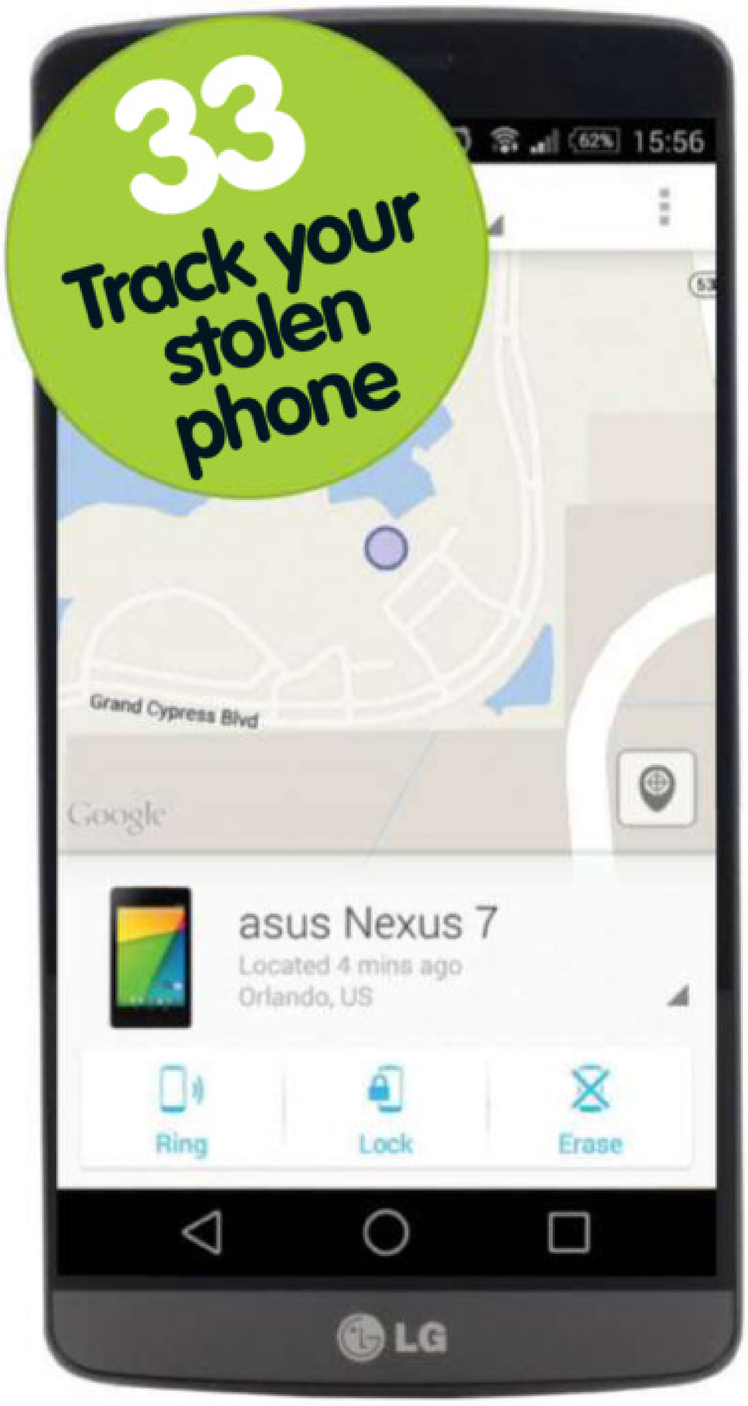


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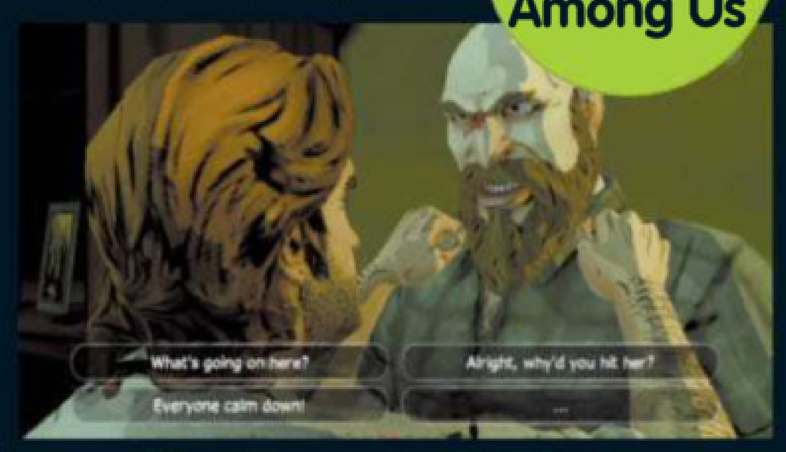
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Google's Lollipop problem

Has Android 5.0's 'unstable' rollout soured Lollipop?

THE big STORY

There are plenty of reasons to be excited about the arrival of Android 5.0 Lollipop: a revamped look, improved security features, lockscreen notifications, a guest user mode, better battery management, and so on. Yet the shine of Google's newest mobile operating system has been more than a little tarnished by persistent problems with the rollout of the software – unforeseen delays, major bugs, bricked devices and user complaints have all been causing headaches for Google and the company's Android engineers.

Built-in bugs

Android 5.0 was officially launched the moment the Nexus 9 tablet went on sale on 3 November, with owners of older Nexus devices expecting to get their updates very shortly afterwards.

However, issues with a severe battery drain bug meant that Google had to wait a couple of weeks before pushing out the new software. The problems didn't stop once the software was finally out in the wild either, with Nexus 5 phones particularly prone to errors: problems with Wi-Fi connectivity, the new flashlight feature crashing phone cameras, stuttering performance and the disappearance of apps built with Adobe Air have all been reported on online forums, in Twitter feeds and via various media outlets. The Adobe Air bug – where apps written with Adobe's software suddenly disappear or starting throwing up error messages – is particularly mystifying, and Adobe has already confirmed in a blog post that it is looking into the issue with Google's help.

Those users with a second-generation 2013 Nexus 7 tablet have experienced a bug where video playback fails across all apps, and the issue has appeared on devices that have received an over-the-air update as well as ones that have been flashed manually. Google, meanwhile, has stayed mostly silent on the issues plaguing Lollipop, though it would be fair to assume that coders inside the company are busy trying to address the teething problems that Android 5.0 has so far experienced. In a number of short statements, the tech giant has indicated that it's "looking into" the issues that are being reported.

"I regret downloading the update," wrote one disgruntled user in the official Android support forums. "My Nexus 7 is laggy, restarts and crashes randomly, takes ages to navigate or open

Get in touch

Have you had problems with Lollipop? Let us know!

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"My Nexus 7 is laggy, restarts and crashes randomly, takes ages to navigate or open pages..."

A disgruntled user, Official Android support forums

pages, refuses to connect to wireless, must restart after that. Sometimes I feel like smashing the tablet against the wall... so frustrating." Plenty of other messages expressing similar sentiments are easy to find on the web.

Worse may be to come, too: over the coming weeks and months, Samsung, LG, Sony, Motorola and HTC will be rolling out their own versions of Android 5.0 Lollipop, which could lead to a whole new set of problems for devices running Google's software. While developers at these companies will be expected to rigorously test their code before making it public, Lollipop's track record so far would suggest that the troubles could well linger for longer.

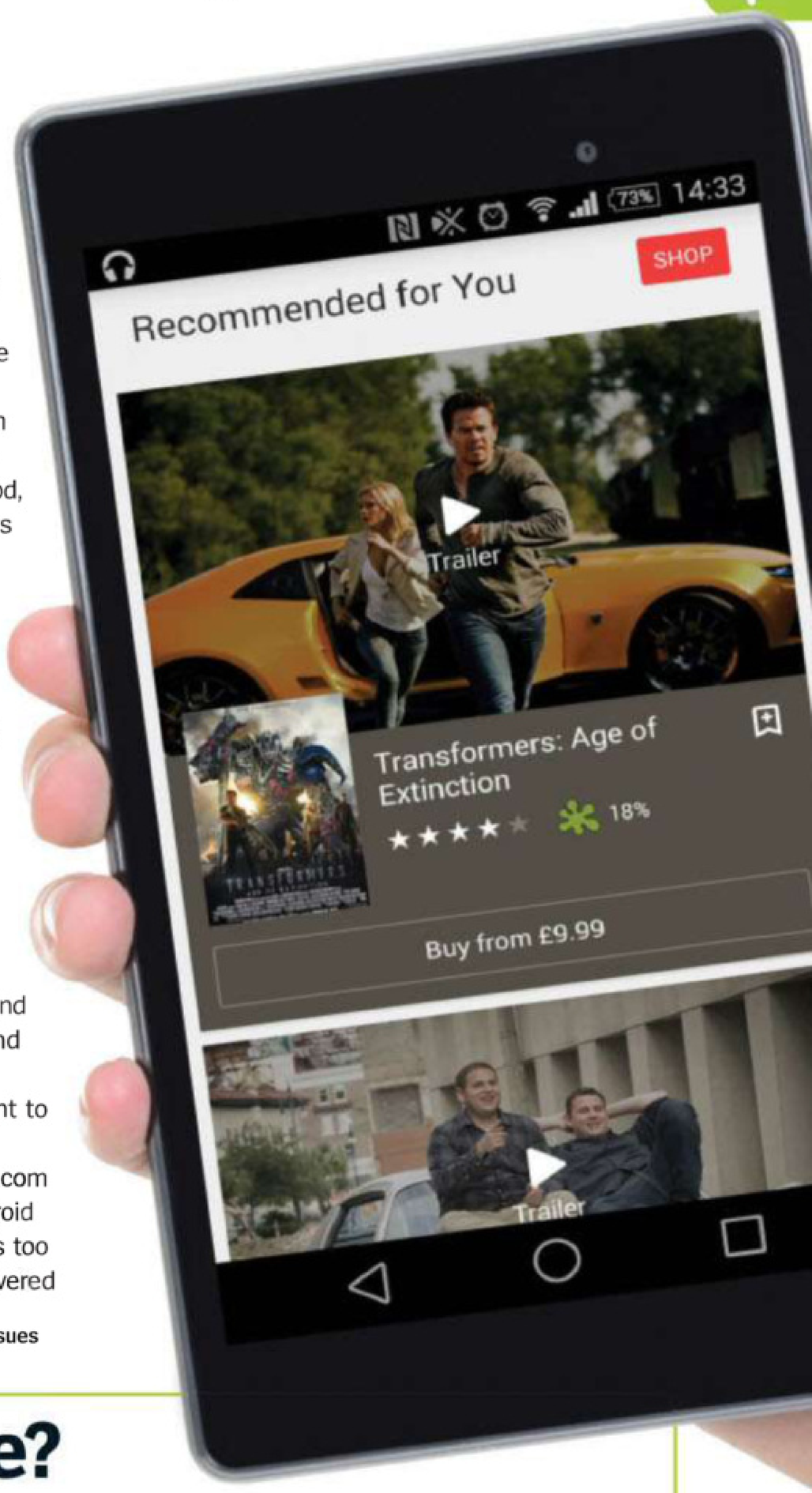
The end of Nexus devices?

If Google needed another reason to ditch the Nexus programme and indeed the idea of stock Android altogether, then Lollipop's unsteady start has surely provided one: the tech giant may well consider this kind of software development and large-scale operating system rollout as more trouble than it's worth and shift the responsibility over to the hardware manufacturers. Google already relies on them to make and distribute Android phones, so why not pass over the software development duties too? Before the Nexus 6 was announced, there was widespread speculation that Google was considering ditching the idea of flagship Nexus devices running stock Android, and Lollipop's problems may have been enough to make its mind up. 'Android Silver', a scheme where the best Android phones are showcased by Google, has been rumoured as a potential replacement for the Nexus approach.

There are downsides to abandoning stock Android, however, not least being the fact that Google would lose more control over the software and how users experience the mobile operating system. At least one market analyst believes that the internet giant will continue to release its own pure version of the operating system for the foreseeable future. "Google has a huge incentive to drive adoption of the full Android version rather than phones using the open source version," says Ben Wood, chief of research at CCS Insight. "Getting users on its services is the lifeblood for Google's advertising business. It will do everything in its power to make sure the latest version of 'full Android' is widely supported.

"Android One is the latest indication of Google's determination to get full Android supported at lower price points," adds Wood. "It's interesting to see Indian maker Karbonn bring Android One devices to the UK for Christmas." Google's efforts in developing nations are another reason why pulling back on development could end up creating more problems than it solves for the company – the likes of Samsung, HTC and other manufacturers have their own apps and portals to promote, from music services to cloud storage lockers, and Google won't want to cede too much ground here.

Technology and mobiles expert at uSwitch.com Rob Kerr also thinks that Google's stock Android efforts are about keeping control – and that's too important to give up. "Whilst Google has delivered



If you have a Nexus 7 tablet then you might have had issues with video playback.

How do other OS rollouts compare?

iOS 6.0

+ Scroll through recent calls and texts. Press the menu icon on the right and select Block.
+ Siri got a substantial upgrade to include Facebook, Twitter and other services.
– Google Maps was replaced by Apple Maps, which didn't seem ready for primetime.
– As with several other iOS launches, Wi-Fi issues were reported by many users.

iOS 7.1

+ The introduction of Control Centre provided a way to manage key settings easily.
+ Multitasking was much improved, both in the interface and behaviour of apps.
– There were widespread reports of excessive battery drain after the update.
– Dropped calls and lost signals plagued iOS 7.1 users even after several patches.

iOS 8.0

+ For the first time, iOS users could install third-party keyboard apps.
+ HealthKit and the Health app marked Apple's move into health and fitness tracking.
– Once again, Wi-Fi connection and dropping issues were widely reported.
– Safari was found to be particularly buggy, with several issues cropping up.

Android 4.0

+ The introduction of interactive notifications that could be hidden with a swipe.
+ Google's search bar became a persistent user interface feature in Android.
– Rollout to the Nexus S was paused while Google investigated user issues.
– Lag and sluggish performance were a problem on several older devices.

Android 4.4

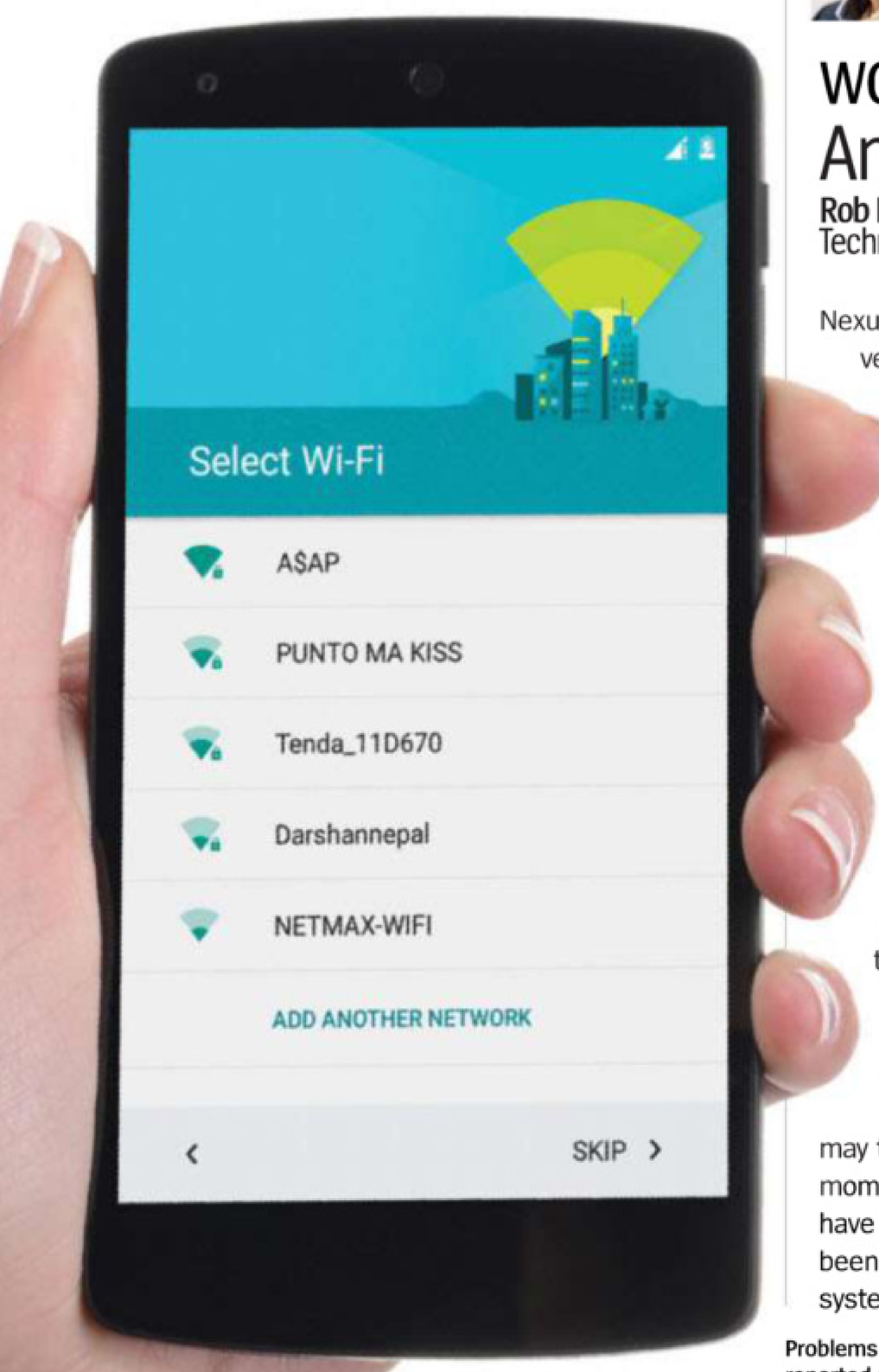
+ A refreshed interface included white status bar icons instead of blue.
+ Apps could access a fullscreen immersive mode for the first time.
– Lollipop's predecessor caused battery life problems for many different handsets.
– Many users found their phones losing signal or switching to Aeroplane Mode.



"Google will do everything in its power to make sure the latest version of 'full Android' is widely supported" **Ben Wood** Chief of research, CCS Insight

a more complete upgrade with Lollipop to Nexus devices, in the long run it still has to work across multiple Android devices and apps," he says. "No two phone setups are identical and the operating system needs to be all things to all men in order to work across a range of Android devices.

"Even Apple, which only has a few devices to get it right for, can get it wrong – just look at the much-criticised rollout of iOS 8, which was followed by four updates in a short space of time," notes Kerr. It's certainly true that Google isn't alone when it comes to having trouble with operating system updates, as launch deadlines, intense competition and rapid changes in technology make development cycles tighter than ever. Android and iOS releases are often timed to coincide with hardware launches or press events, and under that kind of pressure, bugs in the code can slip through.



Unbundling updates

As for Android's future in the long term, Kerr thinks that Google will continue to develop and release a stock version of the software, primarily because the demand is still there. "Some mobile users do prefer Android in its purest form; with less bloatware slowing down the operating system, it tends to be a faster experience, there are less apps to clog up the memory and most important of all, a pure version of Android means that you will receive quicker updates with the next operating system," says Kerr. The fact that



"The OS needs to be all things to all men [...]to work across a range of Android devices" **Rob Kerr** Technology and mobiles expert, uSwitch.com

Nexus devices are guaranteed to get the newest version of Android before handsets from other manufacturers is one of the most appealing aspects for buyers.

Recent versions of Android have gone further in detaching Google's apps from the OS itself. It means Google can update apps such as Gmail and Google Maps independently from Android itself, in theory making development of the operating system more straightforward.

"It's also a smart move for manufacturers," says Rob Kerr. "It means they can unbundle their own bespoke apps, list them in Google Play and roll out new versions of Android quicker, with the apps being updated separately. Most recently, this has been seen by Motorola and HTC, both [of which] have listed apps in Google Play in order to roll out newer versions of Android at a quicker pace."

Ultimately the problematic rollout of Lollipop may turn out to be a blip rather than a watershed moment for Android – and a blip that wouldn't have been entirely unexpected by anyone who's been keeping tabs on the major mobile operating system launches of the last few years.

Problems keeping a Wi-Fi connection have also been reported on Google forums.

LICK YOUR LOLLIPOP PROBLEMS

Is Android 5.0 Lollipop giving your device the blues? Here's how you can try to troubleshoot the issues while you're waiting for Google to roll out a fix...

Wi-Fi issues

Dive into the Settings for your device and choose to forget the Wi-Fi networks you're connected to, then reconnect again from scratch. Uninstall any older apps that haven't been updated for Lollipop and which might be causing problems. Switching wireless channels or rebooting your router might also help fix the issue.

Battery drain

Head to the Battery page of Settings to identify the apps that are causing the problem and uninstall or disable them if possible. As with Wi-Fi, older apps that haven't yet had a Lollipop-ready update might be chewing up battery life unnecessarily. A factory reset might help clear up the issue if nothing else does.

Video playback problems

No one has yet found a surefire fix for this, but you can try clearing the cache of the affected apps (through the Apps page in Settings) as well as disabling the NuPlayer option from the Developer Options page (tap the Build Number seven times in About Phone to reveal this option).

Crashing issues

Some detective work may be required in order to identify the root cause of a performance issue or regular device crashes. Is one app or process primarily affected? If that's the case, uninstall it and check with the developer for any Lollipop-related updates or patches.

Adobe Air apps

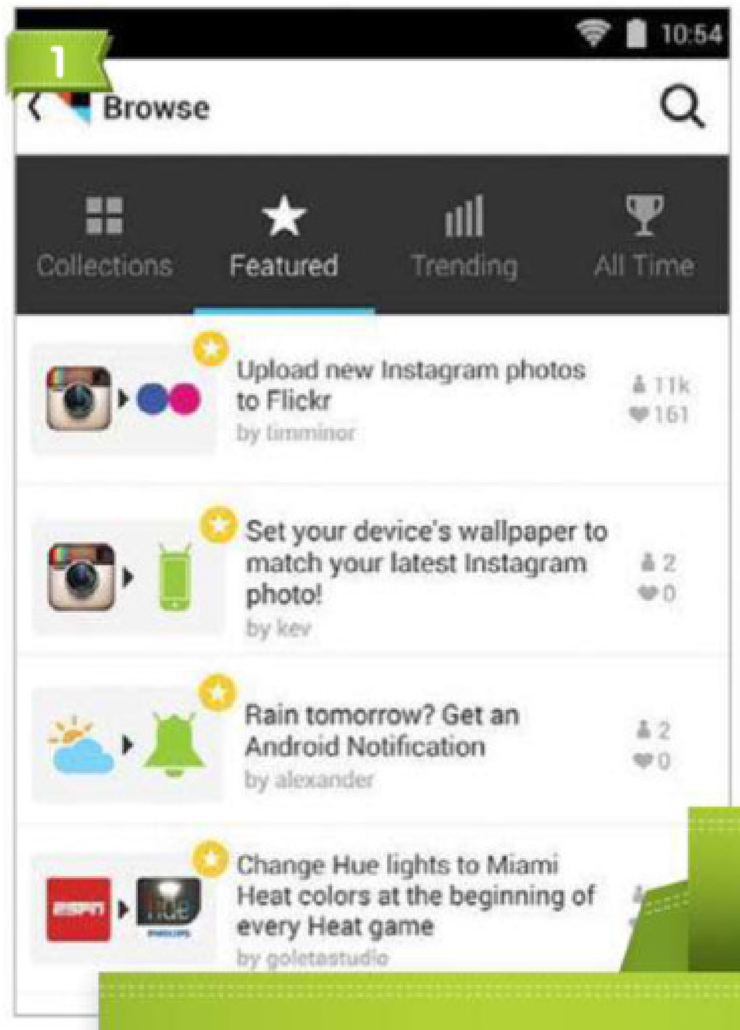
One of the more bizarre Lollipop-related bugs has seen some Adobe Air apps throwing up error messages or disappearing altogether. Adobe has responded to acknowledge the problem, but says there's nothing you can do except sit tight and wait for a Lollipop update.

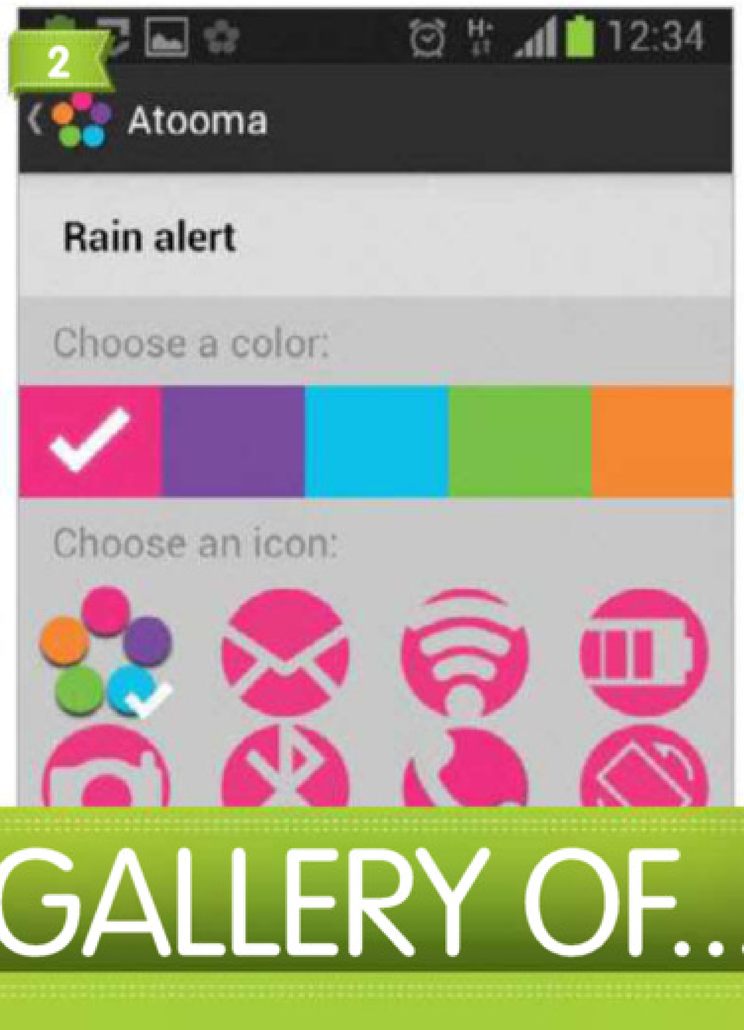
Stay up to date

Catch up with the latest Android news and gossip

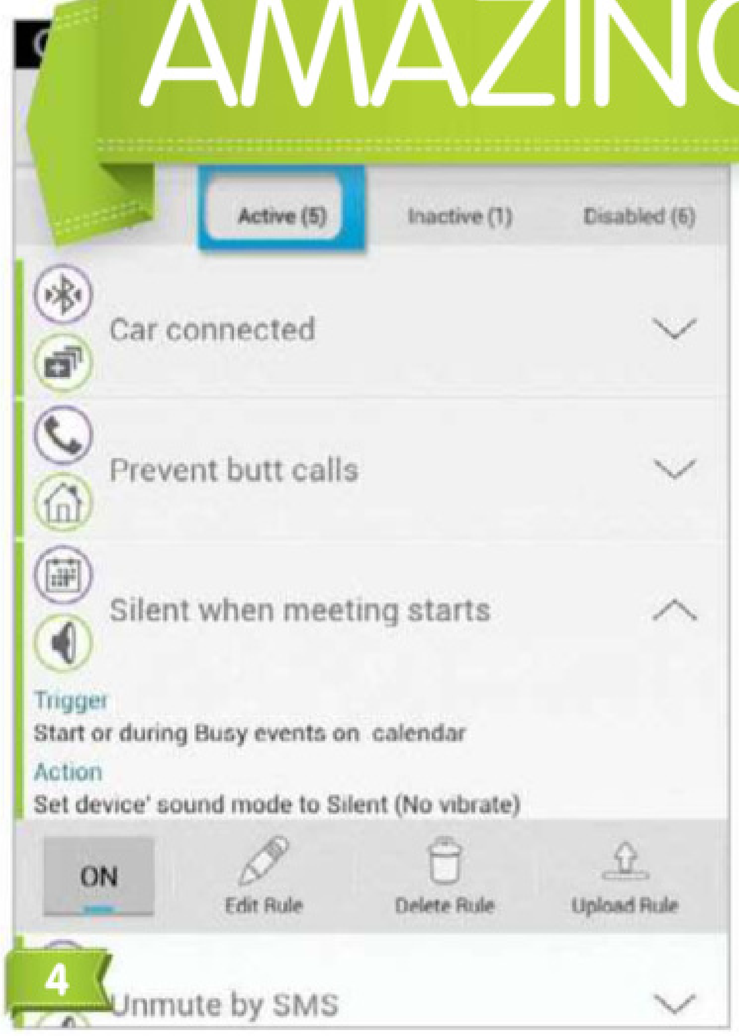
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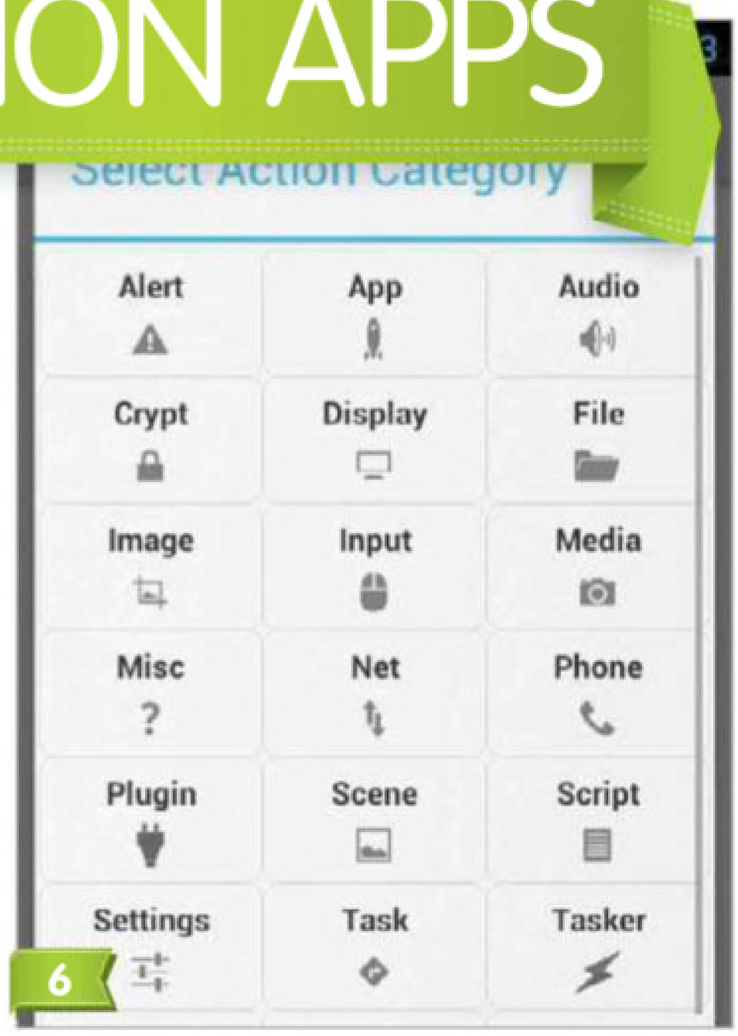












1 IFTTT

One of the biggest names in automation apps, IFTTT is also one of the easiest to use. Best suited to online services, add two of them together to form 'recipes,' such as Instagram and Dropbox to instantly back up your photos.

» **Price:** Free

2 Atooma

If you're familiar with IFTTT, you might also like Atooma. This free download offers greater control of system activities, such as Bluetooth and GPS. It lacks the depth of Tasker, but employs a user-friendly colour-coding system.

» **Price:** Free

3 Dessin

Dessin offers a highly visual way of automating your Android device. It enables you to make notes, draw mind-maps and even build circuits out of nodes representing your handset's features and system activities.

» **Price:** £2.99/$2.99

4 AutomateIt

Sat somewhere between IFTTT and Tasker, AutomateIt's interface is a little dull to look at, but it is packed with lots more features. Navigation is intuitive, with sliders making it easy to jump between the Trigger, Action and Rule menus.

» **Price:** Free + IAPs

5 Condi

Despite the cute Droid icon, Condi has a workmanlike interface. Previously known as Mini Tasker, Condi offers a level of customisation on par with AutomateIt, but with the added benefit of having absolutely no in-app purchases.

» **Price:** Free

6 Tasker

Tasker offers an incredible level of control and customisation. The downside is it's difficult to master, requiring you to set up different profiles for each automation, before adjusting a subset of complex variables.

» **Price:** £2.99/$2.99

NEW TECH | Audio sunglasses

Buhel SOUNDglass

Sunglasses just got smarter

The release of Google Glass helped the wearables industry get a whole lot of attention, but the finished product didn't quite hit the mark with a lot of consumers. Dodgy software, awkward design and a high price tag meant plenty of potential users were left disappointed with it and looked to find a real alternative. However, the SOUNDglass from Buhel looks to breathe new life into the field and takes a more cost-effective approach to eyewear, rather than copying some of the fantastic designs that have come before it.

The SOUNDglass's defining feature is the dual bone-conducting drivers that can be used to transmit a variety of sound. Users can listen to their favourite tracks, while also being able to communicate with a GPS system to listen to voices, traffic and alarms – all without any wires. Alerts will help navigate you through traffic build-ups and also reroute you if necessary. Atellani Projects will re-launch a funding campaign for the Buhel SOUNDglass on Kickstarter in early 2015.





At a glance

» **Product name** Buhel SOUNDglass
» **Available from** www.buhel.com
» **Price** $275

Stylish sunglasses that use bone-conducting technology to help make listening to audio and mapping instructions a completely hands- and wire-free experience.

Q&A

Atellani

John Speed
CEO of Atellani Projects

How did the original idea of the Buhel SOUNDglass come about?

A Our inspiration was safety and ease of use. We were and are concerned when seeing so many people using the phone in dangerous conditions, whether it was while they were driving, or trying to cross the road. The SG05 [SOUNDglass] answers a lot of these worries and keeps the user's hands away from their phone.

It's important to note that we've dabbled in this area before. We've had great success previously with the SG04 glasses. Although a little more basic than the SG05s, they offered a great basis for us to work from.

Did you struggle to pack some much functionality in to such a slender design?

A This was not an easy feat, but with the help of an Italian design firm and lot and lots of prototypes we are quite satisfied with the results. It's obviously important to fit in everything we needed, but it was of paramount importance to make sure that the design was up to the same level. The glasses ultimately ended [up] being as thin as we want and we didn't have to compromise on any of the features we were looking to include.

How does the Bone Conduction Technology in the new glasses work?

A We feature two patented Bone Conduction drivers that optimise hearing. You'll find that most devices only ever use one, so we're especially pleased we managed to get two drivers into the tiny frame of the SG05s. The position and shape of the drivers is also ideal for what we were looking to achieve. It's quite staggering the results we were able to get from the glasses. In particular, we were really impressed with the quality we found in the microphone, which was vastly superior to most smartphone microphones.

What do you think are some of the key differences between the Buhel SOUNDglass and similar products?

A There are really no other glasses on the market that perform like the SG05 do. There are other devices that use bone conduction, but they're usually limited in scope and practicality.

We feel that we combined several functions in one device and for noticeably cheaper than some of the competition that's currently on the market.

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10 things you need to know about... Flexible screens

1 Foldable phones

Following the Note Edge, Samsung has confirmed it will produce a flexible phone by the end of 2015. Lee Chang-hoon, vice president of Samsung's business strategic team, said: "We will secure production capacity of 30,000 to 40,000 [flexible displays each month] by the end of next year".



2 Early experiments

This is not the first we've heard of flexible screens. Samsung showed off similar prototypes at CES 2014. These wafer-thin devices were no more than one centimetre thick, but included a 5.86-inch AMOLED touch screen that could be bent and folded.



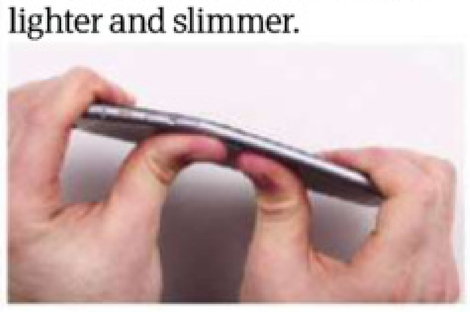
3 Flex vs curve

Flexible phones should not be mixed up with curved displays, such as the Samsung Galaxy Round or (confusingly) the LG G Flex. These devices have contoured displays that make them more comfortable to hold, but still rigid to hold. Flexible phones will actually bend.



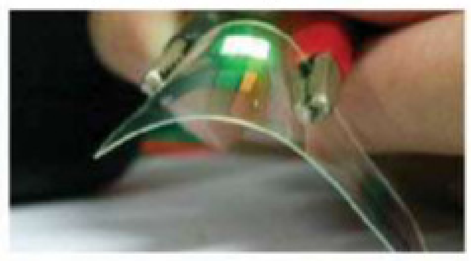
4 Why is this a big deal?

As so many YouTube videos of the iPhone 6 Plus have shown us, rigid devices can snap under pressure. Flexible screens have no glass to shatter and are much more durable when dropped or bumped. Another benefit is that they're lighter and slimmer.



5 How does it work?

Traditionally phones not only have a Gorilla Glass cover to protect the outside, but a layer of glass inside containing the circuitry to control the pixels of the LED. Instead, flexible P-OLED displays use multiple layers of plastic.



6 LG G Flex 2



Samsung is not the only one getting in on the flexible market – LG and Sony have also been working on flexible devices for years. Following on from 2013's G Flex, LG has also said it will be putting out a fully bendable phone in 2015.

7 Flexible wearables



Though the firm has given no timetable as to when to expect it, LG has also speculated that P-OLED screens could be made into wearables. Rather than just having an electronic watch face display, LG says we could wrap flexible screens around our wrists.

8 Bendable batteries

Back in October, Samsung's SDI division, which deals in all things battery related, demonstrated a thin power cell that could be wrapped around a coffee cup and still work. Again, this was a prototype, but perhaps the firm has perfected it for the flexible phone.



9 The future of flex

LG doesn't think flexible tech ends with a slightly bendable screen. From 2017 onwards, the manufacturer plans to be producing flexible screen phones that can be folded in half and tablets that can be rolled up like a newspaper.



10 When can you get one?

Though Lee Chang-hoon has confirmed that Samsung's flexible phone will be available in 2015, no official announcement has been made and we don't expect anything until at least autumn. Fingers crossed.



SECURE YOUR PHONE



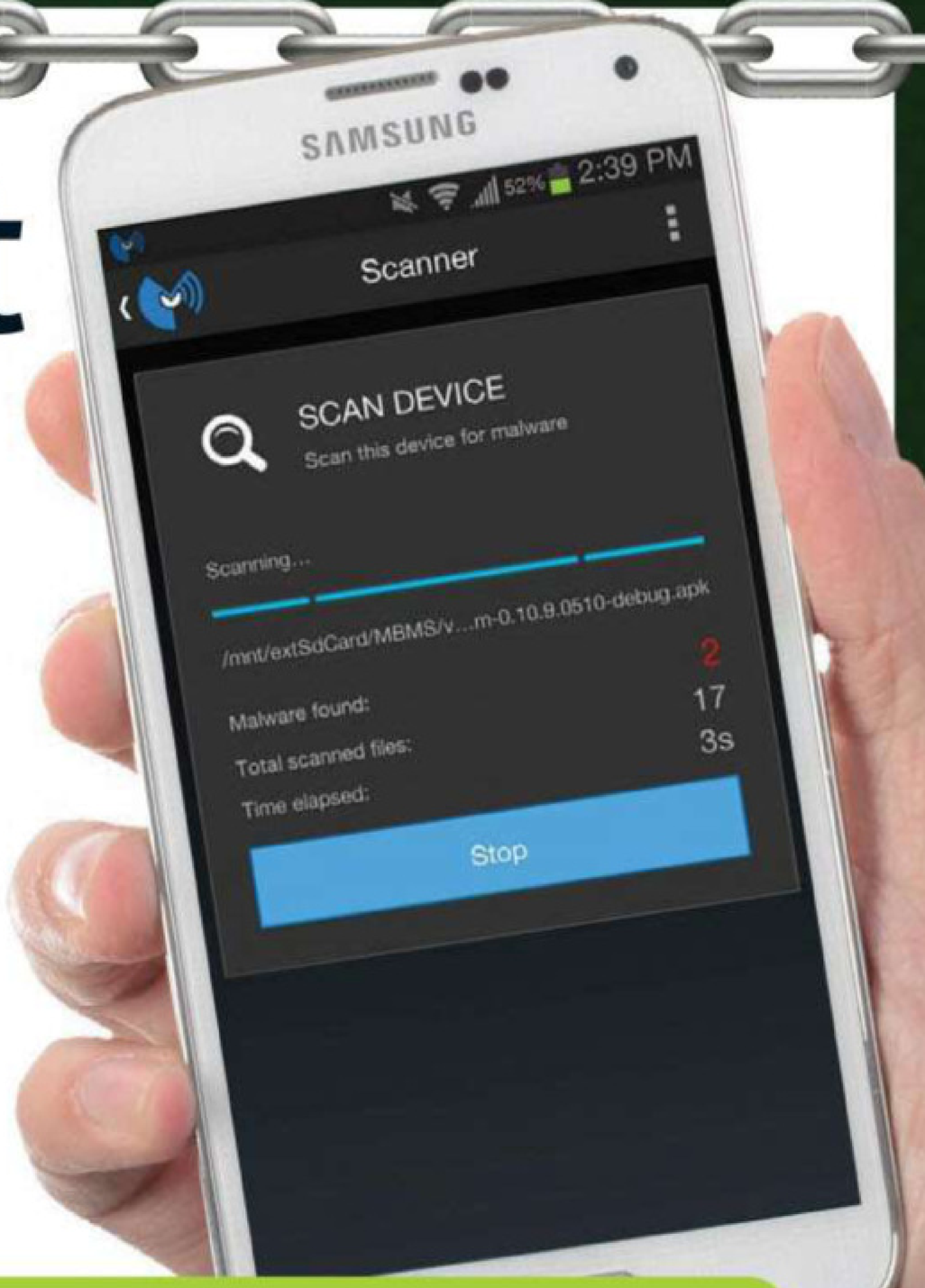
Protect against malware, theft and ensure your privacy with these simple security tips and tricks

We equip our smartphones and tablets with rugged cases to keep them safe and happily pay out to repair a cracked screen no matter the cost, but do we do enough to protect the data stored on our phones? From a dodgy download demanding app permissions, to a phishing scam sent via email, or a virus infecting your device, there's a lot of things that can render your handset useless or steal your sensitive data.

Android users are particularly at risk. As an open system, Android trusts users and its community of developers to do the right thing. However, there are always those that will exploit this for their own ends. Also, if you've rooted your device, you could be at greater risk since you can give programs access to deeper parts of your device's system.

The following pages will outline some of the best practices users should undertake when weighing up their options when it comes to securing their phone. Try them out and your data will remain safe and secure. Let's get to it.

Protect against malware



With 97% of all mobile malware on Android, follow these tips to make sure your device avoids it

Malware has always been a nagging problem that Android hasn't been able to shift during its lifespan. Due to the open nature of the operating system, hackers are constantly exploiting different holes in the system with sophisticated forms of malware, which Google simply cannot keep up with.

Although a recent report by Forbes showed that a shocking 97 per cent of all mobile malware is on Android devices, users can take a number of precautions to keep their phone or tablet safe and save any potential embarrassment if their sensitive data is accessed or stolen.

Most of what a user can undertake to protect against malware is common sense, but with the exploits that hackers find becoming ever more sophisticated and a whole host of scams out there to entice unwary users, we've put together ten essential tips to protecting your phone from malware attacks.

If you've got your own security tip worth sharing, make sure to send us a tweet over at @lgrobot.

1 Unknown sources

Open up the Settings on your phone and disable the 'Unknown Sources' option listed in the Security section. This will prevent any third-party APK files from being installed on your device.

2 Stay up to date

Whenever you get the chance to update your operating system, make sure to do it. Exploits are consistently being found in older versions of the Android operating system and to minimise your chance of picking up malware, it's best to upgrade when possible.

3 Explore encryption

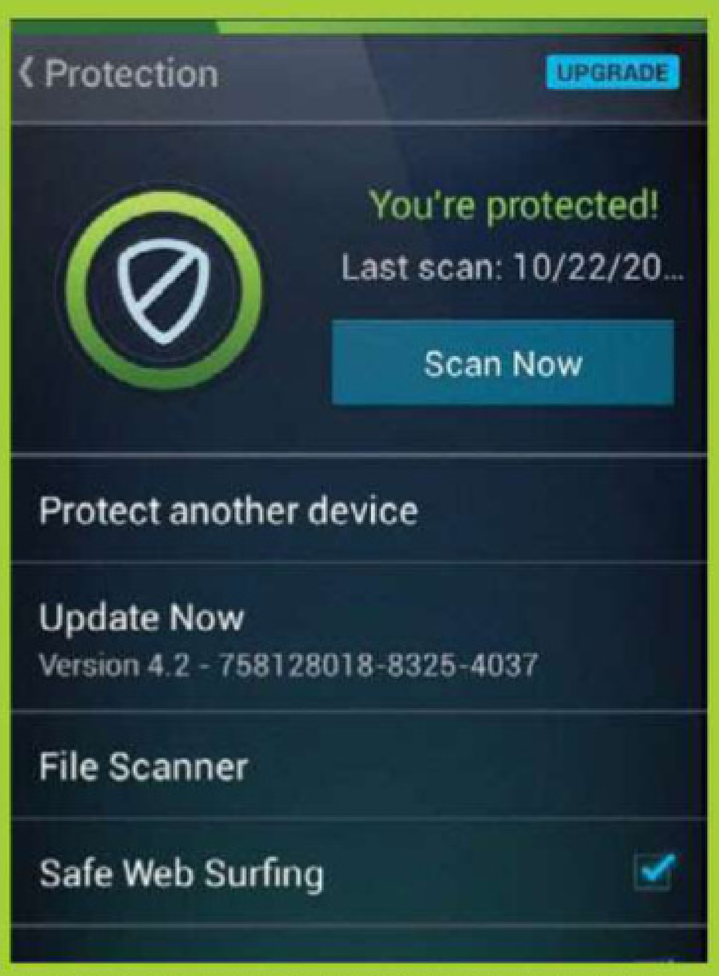
From your files to your contact list, everything on your Android device can be encrypted. If your phone ends up getting infected by malware, then the encryption will ultimately help to prevent the malicious software from accessing your files.

4 Dodgy downloads

Copycat apps – which have similar names to genuine ones – are fairly common on the Google Play store, so ensure you're downloading only from reputable developers. If you're ever in doubt about an app's authenticity, read the user comments at the bottom of each listing.

5 Free trials

Many conspicuous antivirus apps on the Google Play store offer free trials for you to try them out. In some cases, however, this is simply a ploy to get you to download what is actually a malware app, upon which it can then fill your device with various bits of spyware.



Set up scheduled scans using antivirus apps to regularly check your Android for malware

6 Block ads

Although it's been officially removed from the Google Play store, users can still find the invaluable Ad-Blocker app on the web. Installing this app can help stop any pesky pop-up ads appearing in places where you may accidentally press on them.

7 Read permissions

It's important to understand what each app permission does when you download it (more on this later), so make sure to scrutinise every app you download. Does that new farming game you want to download really need access to make calls and texts?

8 Watch out for phishing

If you're an avid email user, make sure not to open up any potentially harmful links contained within some emails on your phone. Phishing attempts are becoming increasingly common and can cause major problems if you enter account login details.

9 Root issues

Unless you're technically savvy, then it's best to avoid rooting your device. Doing so leaves your phone vulnerable to a whole range of potential problems down the road, including malicious software.

10 Connect to PC

If you're transferring files across to your phone via a USB connection, perform a full virus scan on any files before you transfer them, to make sure that they're completely free of harmful data.

Antivirus head-to-head

With so many antivirus apps available on Google Play, which one should you use?

Avast Mobile Security

Price **Free**

» **Available for** Phone and tablet
» **Requires Android** 2.1

McAfee Antivirus & Security

Price **Free**

» **Available for** Phone and tablet
» **Requires Android:** 2.1

Kaspersky Security For Mobile

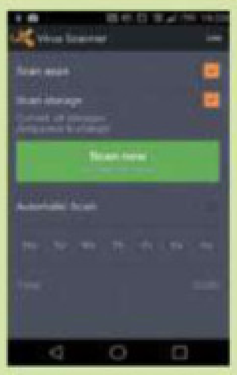
Price **Free**

» **Available for** Phone and tablet
» **Requires Android:** 2.1

ANTIVIRUS

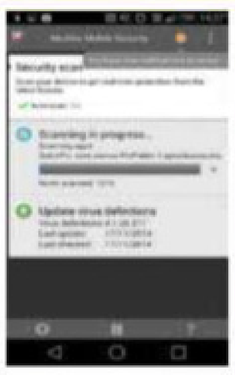
LOSE

Choose to scan certain parts of your device and even set up an automatic scan to appear at specified times. Scans are thorough, but cause some slowdown on your device while in progress.



WIN

Although users can specify to scan certain files, they can instead monitor the exact files currently being scanned through the panel at the bottom of the app. Scans are thorough and complete.



LOSE

Scanning in Kaspersky is surprisingly basic and there's little in terms of customisation here. Scans are remarkably fast, which does make us worry that they aren't as thorough as we'd like.



BACKUP

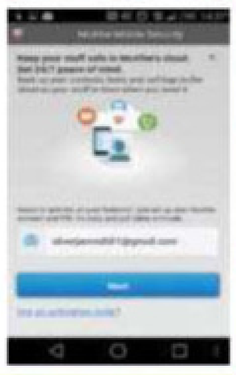
WIN

To get the full benefits of Avast's backup system, users will need to pay out for the premium version. However, the backing-up process to Google Drive is made simple through the app.



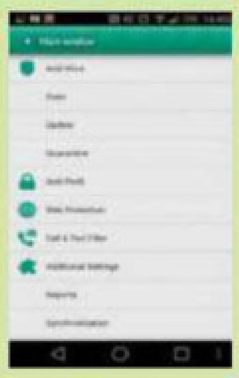
LOSE

For some strange reason, backing up your files takes a lot longer in McAfee compared to the competition. Being able to backup your call logs is a nice addition, however.



LOSE

Through a secondary app that links with Kaspersky, users can choose to upload their entire phone contents in one go, or through individual files. It performs a quick virus scan of each file before uploading.



PRIVACY

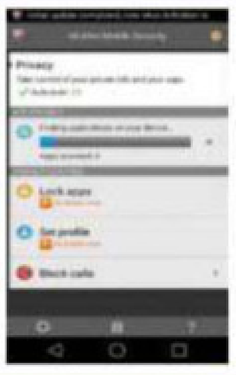
LOSE

Avast has a minimal selection of options when it comes to safeguarding your privacy. The Privacy Advisor feature is useful for identifying problematic apps, but little else.



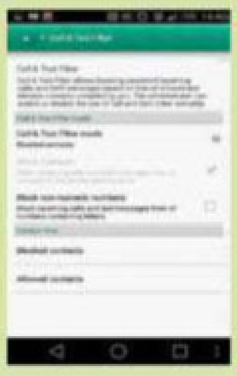
WIN

There are several privacy features to use here. The Lock Apps option is fantastic for blocking access to personal apps, while you can also scan for any apps that have tried accessing your sensitive data.



LOSE

Most of Kaspersky's privacy features come in the form of call and text blockers. Users can quickly move contacts and numbers between their Allowed and Blocked contacts lists.



ANTI-THEFT

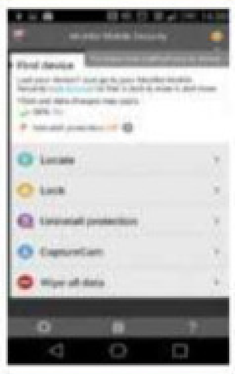
LOSE

Through Avast's unique SMS Control feature, it's possible for a user to text code words to a lost mobile in order to get it to perform specific actions. Make sure to note down those code words, though!



LOSE

The Find Device feature is an invaluable tool here, if a little complicated to set up. Pay close attention to the CaptureCam feature that will take a picture of the thief in action – caught red-handed!



WIN

Without doubt the defining feature that makes Kaspersky a solid choice in this respect is that it contains a SIM Watch feature. This is an excellent way of tracking your stolen SIM card's location.



And the winner is...

MCAFEE

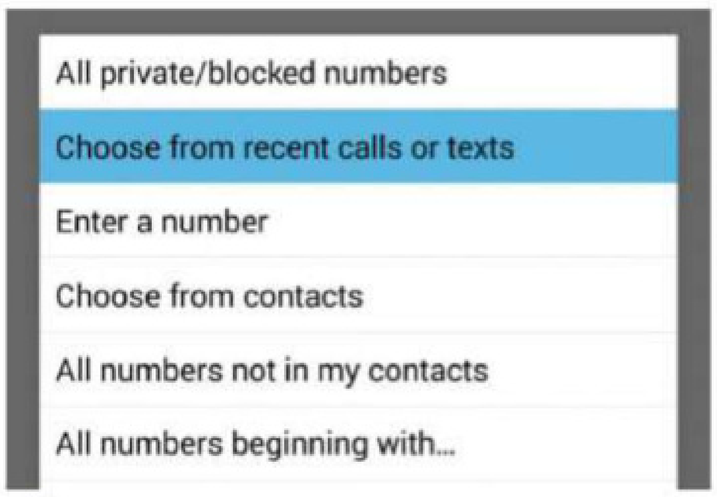
It's the detail that McAfee goes into that makes it stand out. As well as providing a solid virus scan system, it's by far the best choice for adding extra privacy features to block unwanted access on your device. Make sure to use it alongside the desktop client to get the most out of it.

Permanently block spam

Block all phishing attempts made through phone and SMS with Mr Number

There are billions of spam calls made each and every day and if you're one of the unlucky ones to keep receiving them, then blocking them should be your first port of call. Although they aren't a major problem for your device, per se, they can be a big annoyance and now with SMS spam becoming more prevalent, the Mr Number app is more useful than ever before. Using the app, Android users can systematically block calls and SMS messages from specified numbers, while also creating a vault of numbers they want to send straight to their phone's voicemail.

"Systematically block calls and SMS messages from specified numbers"



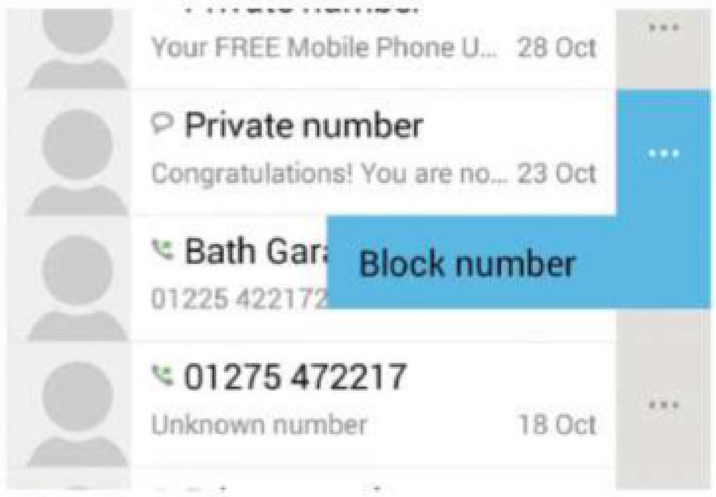
1 How to block

When you first open up the Mr Number app, go to the Blocklist menu listed on the main screen. From here, select the 'Choose from recent calls or texts' option.



2 Find your numbers

Scroll through the list of your recent calls and texts until you come across a number worth blocking. Press the menu icon on the right and then select Block.

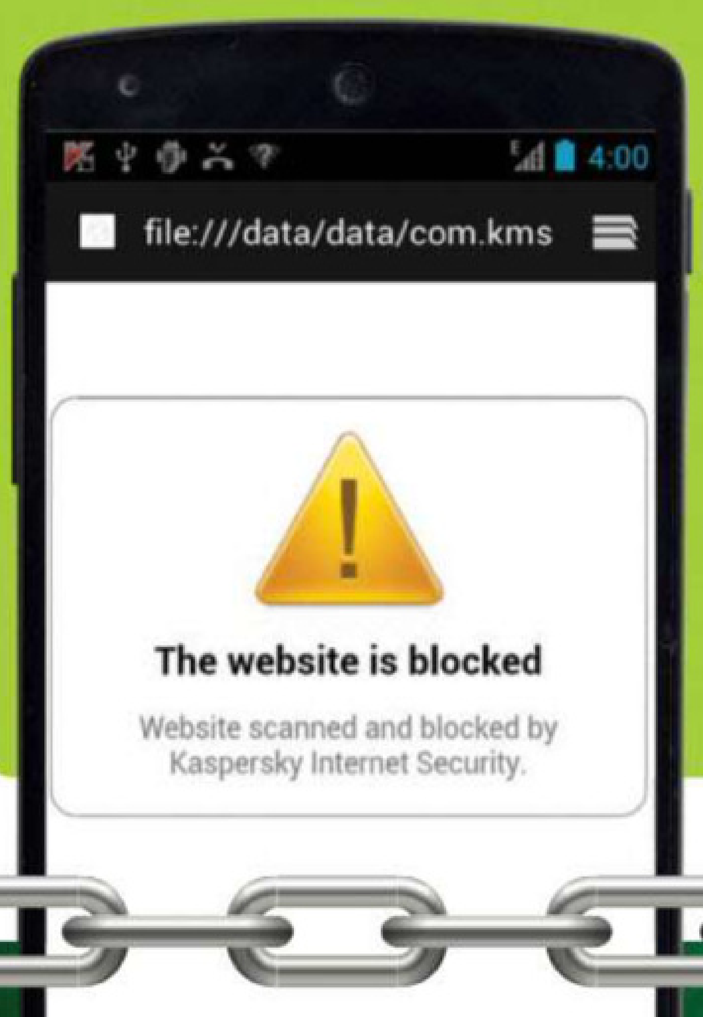


3 Create a vault

As you begin adding numbers, they will start appearing in your Blocklist. You can long-press any of these to remove them from the Blocklist, if you don't want it in there.

Master your online security

Just how secure are you when browsing online?



Although the devices you use may be different, the dangers users face when browsing the web on either a smartphone or desktop computer are very similar. There are unscrupulous websites all over the place that can soon fill your device will mounds of spyware and adware and render your device unusable, so it's of paramount importance to take the necessary steps to keep your device safe and sound. Follow the tips below to make sure you're aware what it takes to keep safe online.

1 P2P and pirated software

Unless you're running an up-to-date version of Ad-Blocker on your Android device, make sure to avoid any third-party P2P services, as these are usually filled with spam. Similarly, pirated software is not only illegal to download, but can also contain a series of viruses.

2 Updated browsers

No matter if it's Chrome, Dolphin or something completely different, make sure to consistently update your chosen mobile web browser to its latest version. The new versions often have the latest security fixes and patch exploits found in previous versions.

3 Suspicious social media

Avoid any online clients that can supposedly be used instead of the standard Facebook and Twitter apps. These sites often just want your email and password so they can then spam your profiles with content. Stay safe by using only the official apps.

4 Use common sense

A large portion of staying safe online simply comes down to using common sense. Avoid clicking on any dodgy links and avoid any sites that are flagged up as potentially being dangerous by your browser. It's especially important not to download any files from these sorts of sites.

5 Don't save passwords

Certain browsers will automatically remember your logins to certain websites, if you give them permission. Although it can save you time having to log in, if your device does fall into the wrong hands you'll leave your accounts wide open for people to exploit.

App permissions exposed

Make sense of what app permissions can really do

✔ Good	Permission	✘ Bad
Only first-party apps from Google will ask to use this permission and use it to make sure that your device can run all the processes that each app requires.	**Access secure settings**	First and foremost, only first-party apps need to use this permission. So any third-party app that requires access to this should instantly be discarded.
Most media-based apps will use this feature to save additional files to your SD card. This is most common in apps that predominantly use video files.	**Modify SD card**	Any app that has access to the contents of your SD card will be able to install malicious content onto it. There's also potential for them to delete stored files.
This isn't used very often, apart from by the likes of Google Maps and other navigation apps. Apps will want access to your location to inform you of nearby places of interest.	**Use location**	Malicious apps will gather information about your location and the places you travel to, to target your device with location-based ads.
The main use of this permission is to read your phone status and identity, which is ideal when accessing various social networks or email accounts.	**Device ID & call info**	This permission also gives access to your phone number, which could be used by a malicious app to constantly send you spam.
This is a common permission for any apps that require you to make voice calls within them, which are separate from the default Phone app on your device.	**Make calls**	Certain apps will use the 'Make calls' permission to dial premium rate numbers. These can cost users up to £2 per minute, which can amount to a large sum.

Stay safe in the cloud

Stop hackers getting access to your uploaded files with these essential tips

Two-factor authentication
By adding two-factor authentication to your cloud account, you'll receive a text with a code needed to access your account. It's a useful system that'll alert you if someone's trying to access your cloud files.

Security questions
It's of paramount importance to keep details of your security questions well away from your cloud account. These questions are often the last gate of security between your files and a hacker.

Beware of public Wi-Fi
Public Wi-Fi certainly has its benefits, but it can be dangerous to use if you plan logging in to cloud accounts. Any transfers over public Wi-Fi aren't encrypted, so hackers can gain access to files fairly easily.

What to upload?
We've all seen the recent iCloud scandal, so it's important to remember that you should be selective with the files you choose to upload. The golden rule is to never upload something that you wouldn't want to see in the public domain!

Phishing woes
Hackers have started sending out emails pretending to be from various cloud services. Although these emails are sophisticated, pay close attention to the email address it was sent from to spot a phishing attempt.

Block automatic uploads
To stop people from potentially intercepting your files as you're uploading them, make sure to disable the Automatic Uploads option from within the Settings menu on your device. Only upload when connected to a secure Wi-Fi network.

Benefits of VPN
If your cloud account is filled with company files, a VPN can be a great way of making sure that no one can track your usage with said files. Download the Hideman VPN app from the Play store to try.

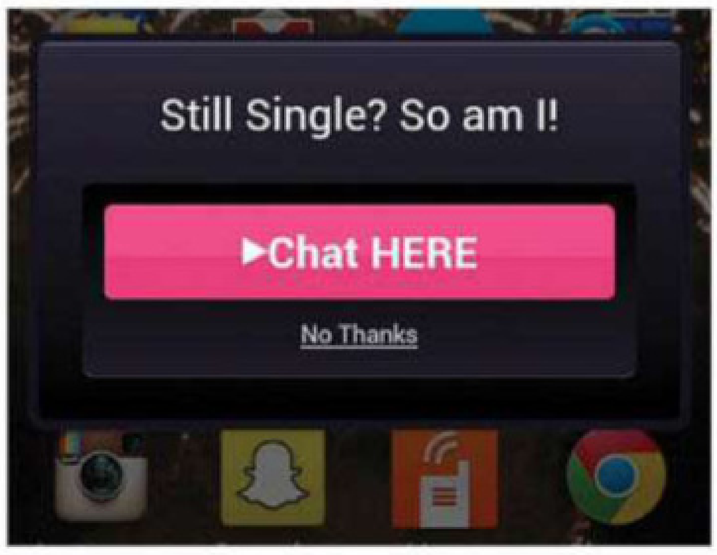
Store your passwords
If you've got a selection of cloud accounts, use an app like PasswordBox to keep an offline vault of all your passwords. You could also use this vault for several offline passwords as well.

Save your device!

You need to act quickly if you discover your device has been infected

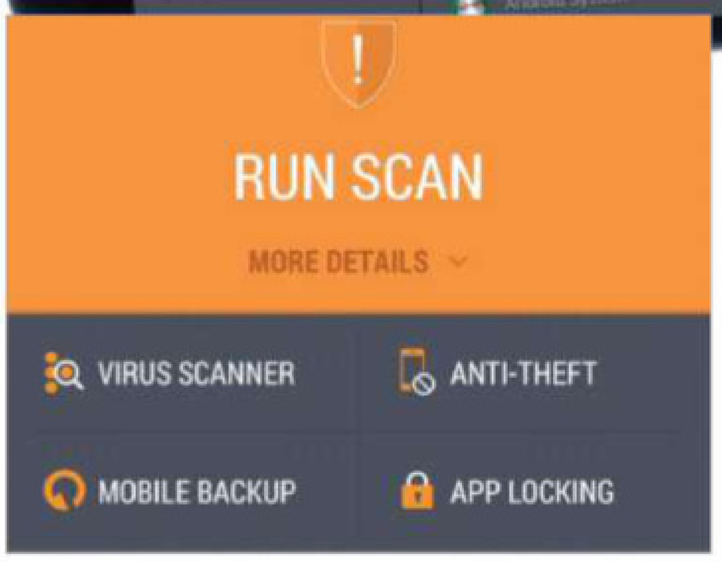
Discovering your phone has been infected with a virus or other bug isn't a nice experience, but by acting quickly you can attempt to save your device. Before taking the necessary steps to permanently remove the problematic apps causing the issue, you first need to evaluate just how badly your device has been affected. Are your passwords compromised? Have you been locked out of certain apps? These are all questions you need to ask yourself before continuing with the steps below.





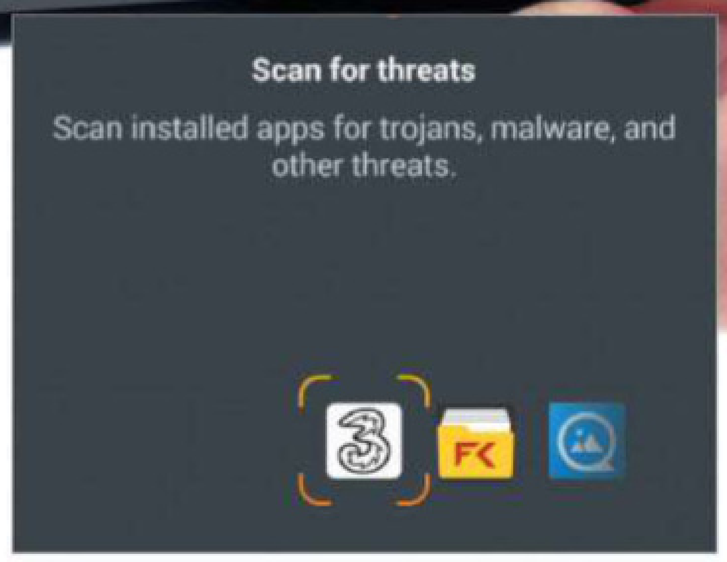
1 Type of infection

Most infections will come in the form of pop-up ads, or simple malware infections. Although not too detrimental to your device, they can cause significant slowdown in all areas of your phone or tablet. Go through your app drawer to find the troublesome rogue app.



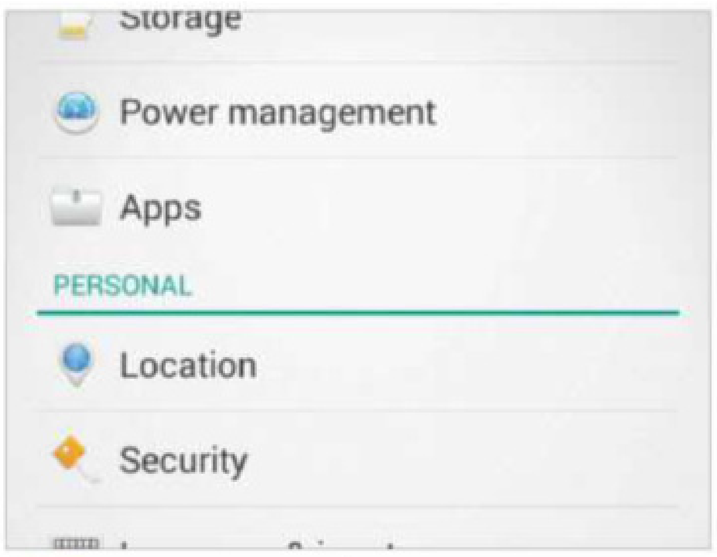
2 Scan for threats

Even when you think you've identified the problem app, it's important to do a full scan of your device to find the real extent of the problem. Download the Avast app from the Google Play store and choose the Run Scan option available on the main screen of the app.



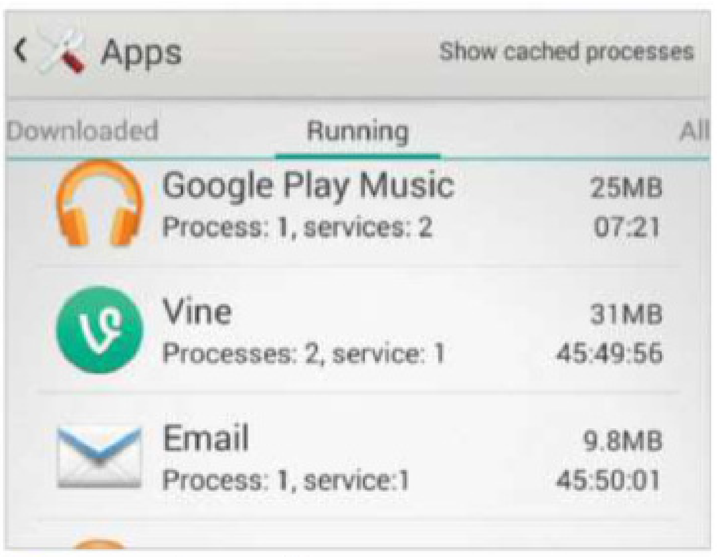
3 Evaluate the problem

Once the scan has finished, you'll be able to see not only the apps that are not only causing the problem but also the files that are affected. It's highly recommended that you now go to each file and permanently delete it from your device to at least stem the infection.



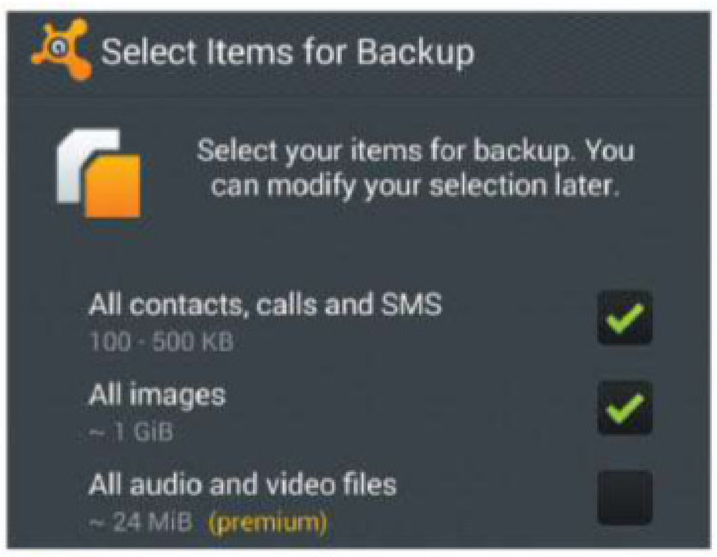
4 Apps section

Open up the Settings menu on your device and scroll down until your find the section named Apps. Depending on how many apps you have currently got installed, and how badly your device has been infected, it can take a few minutes for this menu to open.



5 Uninstall apps

Swipe left on the next screen to open up the Running tab. Here you'll find a list of all the apps currently running on your device. What you should instantly notice is that the malicious apps are also listed here, but by pressing on them and selecting Uninstall you can remove them.



6 Scan and backup

Go back to Avast and perform a second scan to make sure the infection has now been removed. Once done, use the app's backup feature to fully back up your phone's contents to the cloud. This is more a precaution against any subsequent infections that could appear.



The essential apps to supercharge your smartwatch

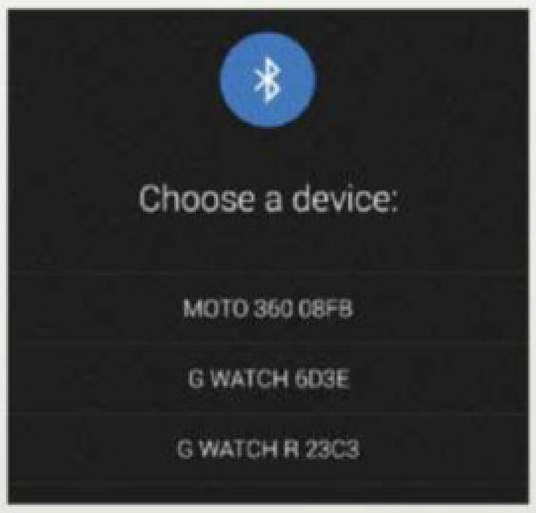
The first Android Wear smartwatches only appeared on the shelves last June, but Google is already reporting that there are "tens of thousands" of apps for the gadgets now available. But don't be overwhelmed! We have combed the Play store so you don't have to find the 25 top downloads that you should be adding to your wrist.

From taking photos remotely to viewing online recipes without getting your hands dirty, we show you how Android Wear can enhance your everyday life. We also reveal the top apps to tinker with your timepiece and add extra functionality, new watch faces and more.

However, for those of you looking for novelty apps, such as Android Wear games and elaborate keyboards, be aware that we have employed the 30-second rule: If you need to use an app for longer than that time, you should switch to your phone or tablet to carry out the task.

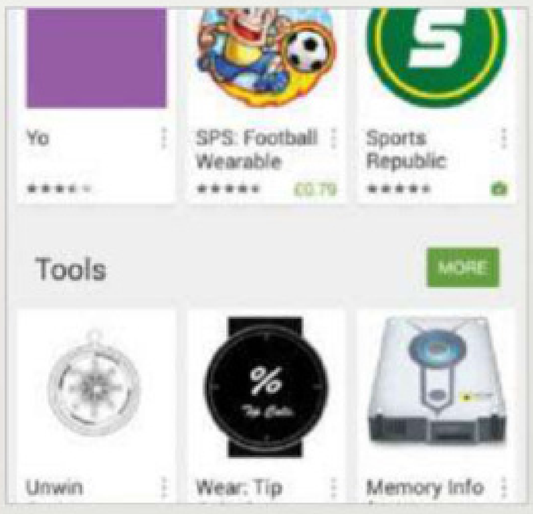
Like what you see here? Turn to page 84 to find out what we thought of the two circular smartwatches, the Moto 360 and LG G Watch R.

How to set up and launch an Android Wear app



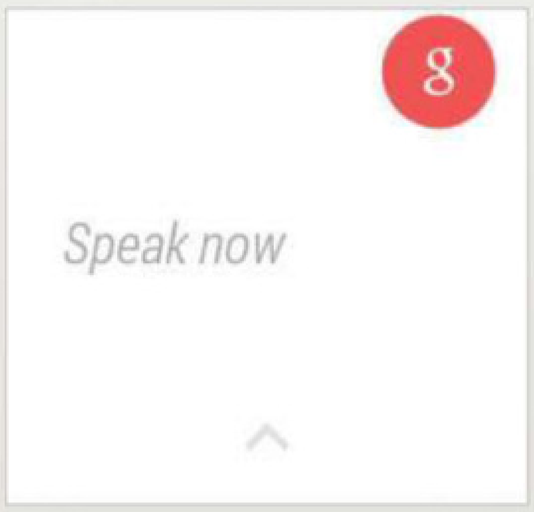
1 Pair your watch with your phone

Download the Android Wear app from Google Play and open it. Go to the app's drop-down menu and select 'Pair new wearable' once you've turned your smartwatch on.



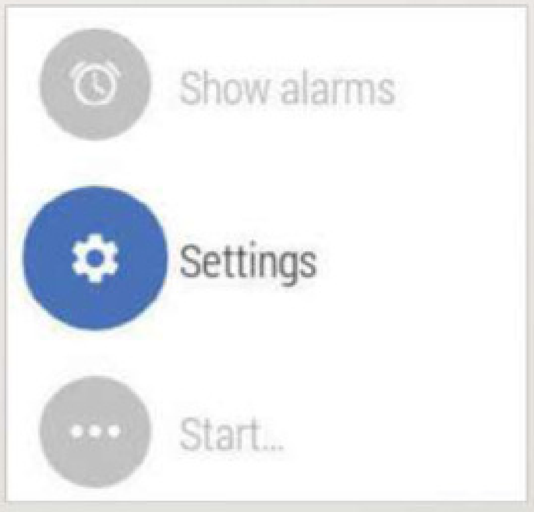
2 Download apps

Back in the Android Wear app's main menu, scroll down to the blue bar that reads 'Browse suggested apps'. This leads to a list of Wear-compatible apps on Google Play. Download your favourites.



3 Launch with voice commands

The default watch face for Android Wear displays the time, but tap on the screen to launch Google Now. From here you can search the web, send messages and open apps.



4 Launch manually

If you'd prefer not to give spoken commands, tap to launch Google Now and swipe up to manually scroll through Android Wear's features. Scroll down to 'Start...' to access the watch's app drawer.



PixtoCam for Android Wear

Google recently updated Android Wear so that it can act as a remote trigger for the stock Android Camera app. However, Pixtocam takes it a step further by turning your smartwatch's LED screen into a remote viewfinder for your phone. Not only does this make you look like James Bond on a covert spy mission, it's a great way to take group shots of yourself and your friends – or if you're using voice commands, taking photos hands-free.

As well as providing a real-time image on your wrist of what your phone can see, for both photography and video recording, you can swipe your smartwatch face to zoom the camera in and out, toggle the flash on and off, choose resolution, as well as set the self-timer. It works particularly well with the Moto 360's circular interface. So throw away those selfie sticks and try this fantastic photography app.

Price **£1.20/$1.99**

"Pixtocam turns your smartwatch's LED screen into a remote viewfinder for your phone. It's a great way to take group shots of yourself and your friends"

Duolingo

Learn a language on the go with Duolingo. While this app doesn't take advantage of Android Wear's voice recognition, it allows you to create flash cards for quick practice.

Price **Free**



Runkeeper

Fitbit, Jawbone, and the Nike Fuelband should be worried. Just as the smartphone replaced a wide range of standalone gadgets, such as the MP3 player and digital camera, the smartwatch will soon make traditional fitness bands obsolete.

Start and stop fitness tracking just by saying "Pause"

Runkeeper is one of those apps that is going to help make that happen. You can view all of your vital statistics at a glance, including miles run, the duration and calories burned. You can even pause/resume tracking with a simple voice command.

Best of all, if you have a Sony Smartwatch 3, you can track your walk or run with just your watch and leave your phone at home.

If you've already committed yourself to a fitness tracker on your handheld, Runtastic and Strava also offer Android Wear apps.

Price **Free + IAPs**

The universal remote

Wear Volume

Price **Free + IAPs**

Whether your Android is the centre of your hi-fi system connected to multiple Bluetooth speakers, or you get up fed up with how loud your ringtone is first thing in the morning, this is a must-have app. Adjust the volume from your wrist without having to reach for your phone.

Find My Phone

Price **Free + IAPs**

Do you regularly put your phone down and forget where you left it? This app will make your handset emit a loud siren to aid your search. Additional features are available through in-app purchase, such as remotely turning on your phone's flashlight so you find it in the dark.

Unified Remote

Price **Free + IAPs**

Already giving you remote control over a desktop PC via your phone, this clever app wants to make these features available on your wrist. Though its Android Wear support is still in beta, its makers say it should be able to do everything the phone app can, via voice commands.

Calc Wear

Price **Free**

While you can always ask Google Now aloud to answer a maths question, that's not always appropriate. Calc Wear makes it easy to solve simple problems, such as adding up a bill or dividing a cheque, with an on-screen calculator. It only works with square displays, however.

Hue Control

Price **Free**

Dim the lights with a touch of your wrist with this unofficial app for Philips Hue light bulbs. The app also makes it easy to quickly adjust their colour, selecting from presets set up on the main phone app. Ideal for setting the mood or turning the lights off at night.

Lifestyle must-haves

Tinder
Price **Free**

The popular dating app's simple gesture controls carry across to the Wear version. Swipe right to like or left to pass on people near you, just as you would on your phone. You can also send messages and view profiles from notifications, and say "Start Tinder" to open the app.

Sports Republic
Price **Free + IAPs**

Rather than constantly fiddling with your phone to check the scores of the big game, get regular updates with a flick of your wrist. The Sports Republic app notifies you of the top stories about your favourite teams, as you've defined them in the main phone app.

Eat24 Food Delivery &Takeout
Price **Free**

Talk about 'fast food': you can order a pizza in 20 seconds using Eat24. Or rather, you can only re-order dishes, as the Wear app only allows you to select from takeaway restaurants you've bought from before. Sadly, Eat24 is also limited to the US.

1Weather: Widget Forecast Radar
Price **Free + IAPs**

Android Wear includes basic weather updates via Google Now, but 1Weather gives more detailed forecasts. As well as regular notifications, 1Weather offers severe weather alerts and both a daily and four-day outlook.

Bunting Price **Free**

While we're still waiting for the big social networks to launch official Android Wear apps, that's no reason why you should have to get your phone out of your pocket to share your thoughts on Twitter. A free download, Bunting allows you to dictate your tweets by speaking into your watch using Google Now.



Level Money

The idea of checking your ATM to see how much money is in your bank is so 20th Century. Level Money displays how much spendable cash you have for the day, according to your preset budget, and receive notifications for every transaction you make. However, the future of finance is currently limited to the US – the wider world will have to wait.
Price **Free**

Wear Mini Launcher

Android Wear is still an operating system in its infancy, so has its kinks. If you don't launch an app using your voice, it involves a lot of digging around in the settings. Until Google solves this problem, installing Wear Mini Launcher allows you to quickly open an app from anywhere. You can also access quick settings with a double swipe gesture, making it simple to adjust the brightness of your watch's display or the ring mode of your handheld. Using the app on your phone, it's easy to customise both the look and feel of the Wear Mini Launcher. You can change everything from the icon size to the app drawer's position on your smartwatch screen.
Price **Free + IAPs**





Music Boss integrates with a variety of music and media apps

Evernote

Beyond receiving notifications and taking down new notes by voice, the app lets you browse your existing notes by category and cross off to-do list items.
Price **Free + IAPs**

Music Boss for Wear

While the Play Music app has recently been updated for deeper Android Wear integration, we actually prefer this premium download. Music Boss offers a much deeper level of control, integrating with a variety of different apps. This makes it easy to switch from playing music through Spotify to listening to podcasts through Player FM or to Audible audiobooks over the course of a day, all the time using the Music Boss controller. It even works with other forms of media, allowing you to adjust the volume of your TV when you're watching YouTube or Netflix via your Chromecast.

You can also tweak the media screen settings right in the Wear app. This includes screen dimming, timeout, night mode and more. Received an SMS, email or other notification? No problem: palm the screen to read it, or configure Music Boss to auto-close when notifications are received.
Price **£1.20/$1.99**

Path Talk



A great way to quickly communicate via Android Wear, you can receive text messages, photos, maps and emoji-like stickers through Path Talk. You can also dictate responses via Google Now or – if in a hurry – tap 'Got It' to let your friends know you've seen their messages.
Price **Free + IAPs**

Cookpad Recipes



Formerly known as AllTheCooks, this free download serves up recipes on your wrist. Created for a multi-device experience, Cookpad Recipes is designed to browse the cooking social network on your phone; then, rather than get your main device dirty, follow the instructions on your watch. All you have to do is tap the 'Open on Watch' button in the main app and it launches automatically.

Every step of your online recipe is split into easily glanceable pages. But to save on swiping, at the end of that list of steps, jump back to the beginning with a clearly marked button.

Cooking is all about getting your timing right, so tap any suggested cooking times that are highlighted in blue and Cookpad will set a timer to remind you.
Price **Free**

Yo

Yo is an app that only allows users to send a message that reads 'yo' to one another. This might sound ridiculous, but what many fail to realise is that Yo is not a messaging app but a notification tool. As well as receiving 'Yos' from individuals – for instance, you can quickly buzz friends to say you're nearby – you can subscribe to alerts.

You get a Yo when your favourite team scores, a Yo when a Starbucks is near your location, or even when a new case of Ebola is diagnosed. Images and links that you've copied to your phone can also be shared via Yo when you long-press on a contact's name. This so-called 'zero character communication tool' lends itself very well to your smartwatch, where voice dictation for text messages often feels awkward – especially in public.
Price **Free**



Tinker with your timepiece

IFTTT Price **Free**

A handy app for any Android user, IFTTT is an automation tool that can greatly enhance your smartwatch's features – from using it to turn the lights off in your home, to silencing your phone while it's still in your pocket, to receiving alerts from your favourite social networks.

Memory Info for Wear Price **Free + IAPs**

Your smartwatch's default settings menu is limited to controlling screen brightness, toggling airplane mode and so on. Memory Info for Wear allows you to dig deeper into the stats to show how much of that 4GB storage you're using, as well as RAM and CPU usage.

Watch Maker

Price **Free + IAPs**

Create your own custom clock faces with the Watch Maker app on a phone or tablet, then view them on your smartwatch. As well as developer tools such as adding text effects and animations to your watch face, you can add widgets for your calendar and the weather.

Wear App Manager

Price **£0.60/$0.99**

This is actually for your phone, but allows you to manage all of your smartwatch apps. Offering more detail than the official Android Wear app, you can see what permissions each app is actually using on your wearable and how much storage space they are taking up.

Toggle Price **Free**

If IFTTT is too simplistic, try Toggle. It allows you to switch Wi-Fi, Bluetooth and other system settings on and off with a tap. For those of you who already use the automation tool Tasker to control features on your phone, Toggle makes it easy to import tasks and run ActionSets using Google Now.

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» masterclass

Advanced navigation

Get more out of Google Maps with these top tips

Google Maps has long been the staple app for anyone needing help with directions or discovering new places while using their Android device. While the latest update, which coincides with Android Lollipop's new material design guidelines, doesn't necessarily have a host of new features, it does refine many of the older and most useful ones instead. Many of the tools to help you get from A to B have been made easier to use, while there's even more integration with Google Now and several other Google apps. This makes it the most complete and thorough update to Google Maps for a while.

In this masterclass we'll be taking a look at some of the older and newer features available in Google Maps. You'll find a practical guide to help you get started with saving some of your favourite maps for offline viewing when a mobile network isn't readily available, as well as using Maps as a great resource for finding recommendations on nearby places. There are also quick guides on setting primary locations with Maps, customising planned journeys to suit your needs and also sharing a location with any contacts stored on your device.

faq

Ask your own question online at **littlegreenrobot.co.uk**

Will prolonged use of Maps significantly drain my battery?

Unfortunately, yes. Google Maps is a battery-intensive app that, due to the power it needs, will go through your battery quickly. It's best to use the app sporadically for the most part and make sure the Location setting isn't constantly activated.

> "While the latest update doesn't have a host of new features, it does refine many of the most useful ones"

1. Use more gestures

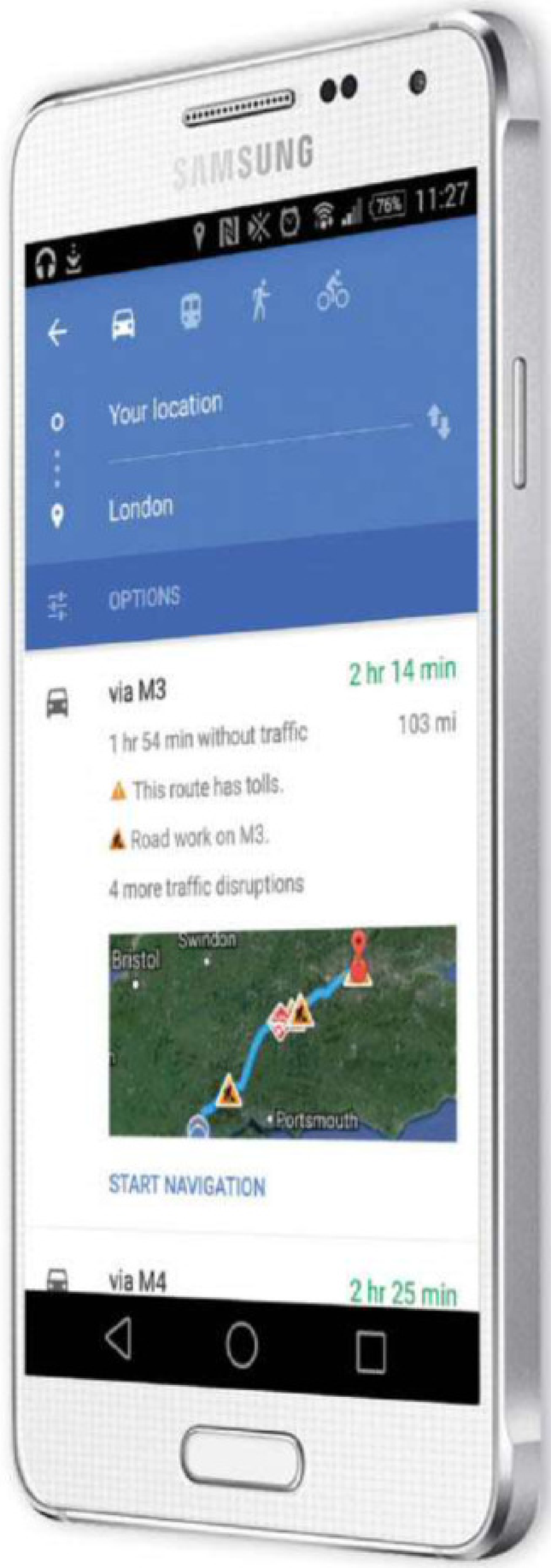
As well as zooming in and out with two fingers, by moving two fingers upwards simultaneously, you can tilt the screen to a certain direction. Similarly, use two fingers in a circular motion to rotate the map.

2. Leave a review

After visiting one of the places you've discovered using Google Maps, make sure to leave a review for it. When you then search for the place using Google, your review will be listed under the reviews section.

3. Control with your voice

When using the navigation feature in Google Maps, don't forget it's possible to use your voice to control certain aspects of your journey. Instead of illegally typing out messages while driving, press the mic icon within the search bar and start speaking to get started.



4. Changing routes

If you've hit a bad patch of traffic on your way to a destination, look for the crossroads symbol on your screen to get an alternative path for you to follow. It could potentially be a more confusing journey, but you should avoid any major traffic build-ups.

5. Distance units

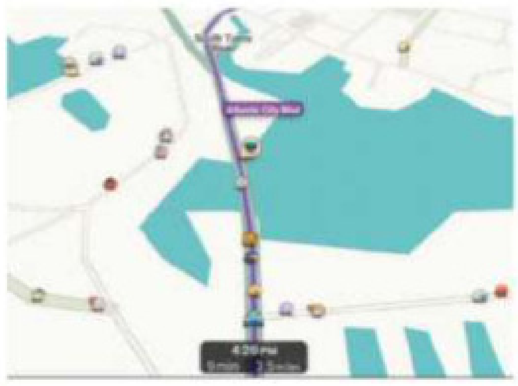
It doesn't matter if you prefer using kilometres or miles, as Maps caters for both. The app calculates in miles by default, but by going to the Distance Units menu within settings, you can change this to kilometres.

3 alternatives to Maps

If Google Maps isn't for you, try these apps out instead

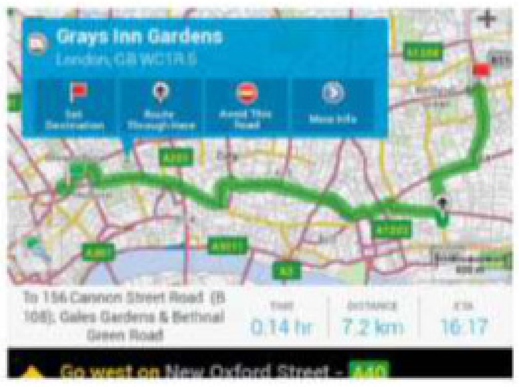
Waze Social GPS **Simple navigation**

What we love about Waze is that it makes it very easy to tailor a journey to your needs. There are also numerous options to help you change your route while driving if you hit a congested stretch of road.



CoPilot GPS **Offline mapping**

Although CoPilot can be expensive if you want to buy various map packs, it remains one of the most thorough GPS offerings on the Play Store. Users can download whole countries for offline use – perfect if you're doing a spot of travelling.



MapFactor **Completely free**

MapFactor plays a big part in community-based mapping, where users can upload details of roads, buildings and other info to help people navigate. It's surprisingly detailed and a great alternative to similar apps.

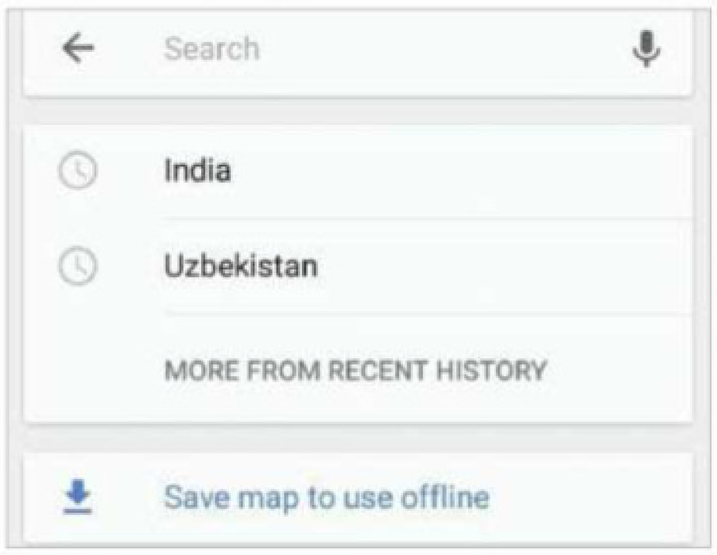


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Save maps for offline use

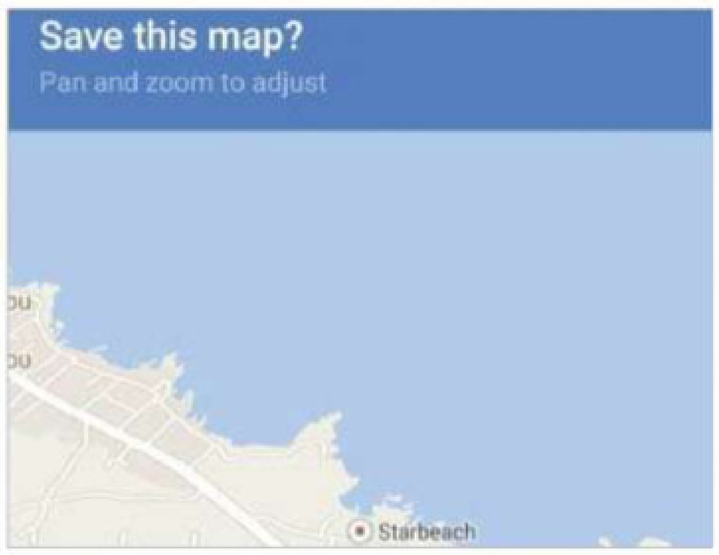
Make sure you can still find your way around even when you're in a signal dead zone

Although Google Maps does need a mobile network to fully navigate, users can plan ahead by downloading selected areas of a map to use when a secure network isn't available. This is especially useful when travelling abroad and you want to avoid costly roaming charges, and all it takes is a few minutes to download and activate. Although a great feature to use, it's important to remember that every time you download an offline map, more of your internal storage will be taken up, so make sure to delete each of the stored maps when you're done with them.



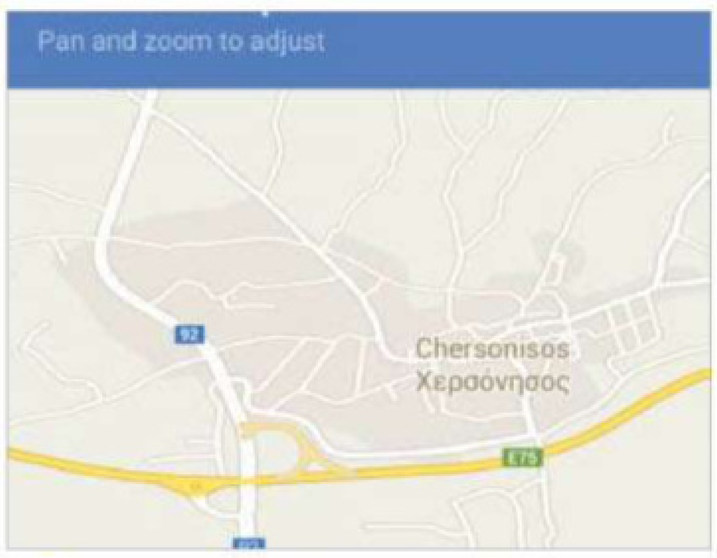
1 Load and search

Use the search bar to find an area that you want to save for offline use. Then press on the search bar a second time and tap the X to discover the 'Save map to use offline' option under the results. Press it and then wait for your designated map to once again appear.



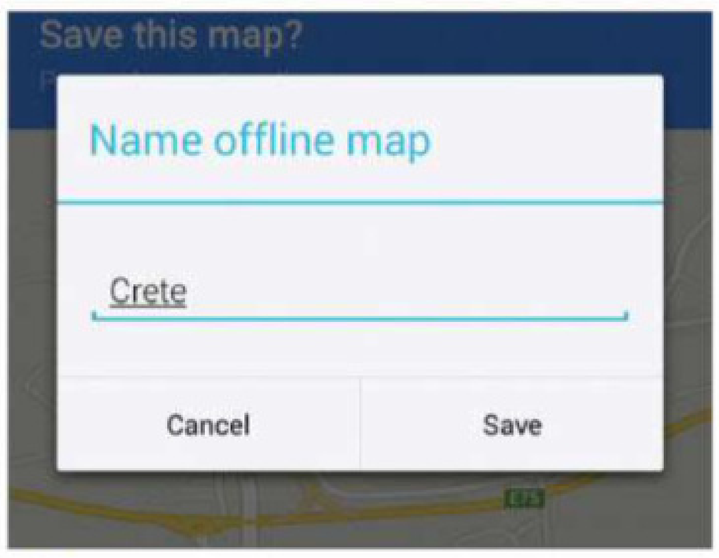
2 Save this map?

Instead of the normal Google Maps interface now appearing, you'll instead have a map with a distinctive blue border, with instructions asking you to save the map you've got selected. Move the map around in your display to find the section you want to save.



3 Resize map

As well as moving the map around, pinch the screen to get a zoomed-in view of the map. This is ideal if you're looking to navigate around a town, or another built-up area. Similarly, drag your fingers apart to zoom out of the map and view a bird's-eye view of roads and local landmarks.



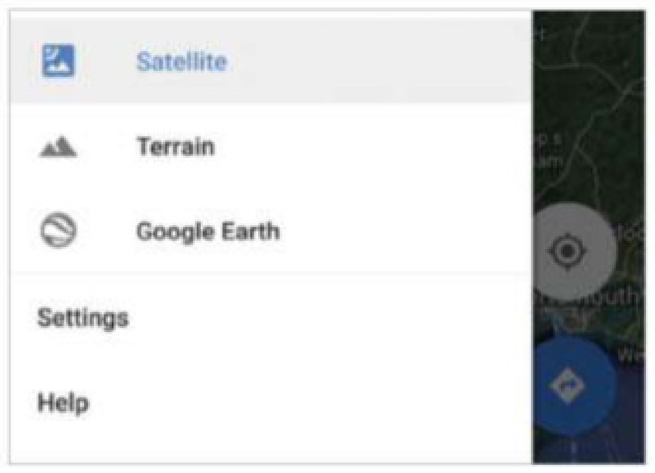
4 Add a name

Press the Save button and now add a suitable name to your selected map. Once finalised, the map will begin downloading on to your device. Depending on the size of the map you selected to download, this can take a few minutes to fully complete.

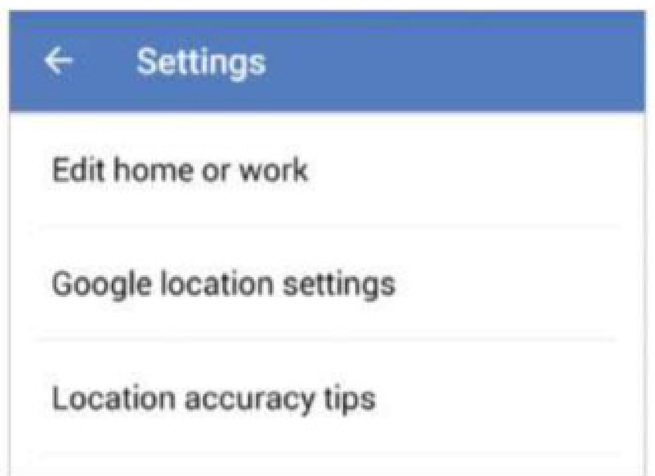
2 min guide

Set primary locations to work within your Google Maps account

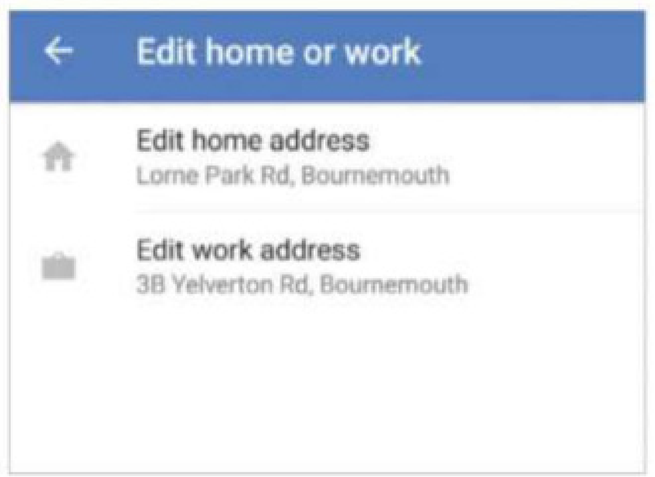
Edit home and work addresses



1 Open the side menu from within the Google Maps app before scrolling to the bottom of the menu and selecting the Settings option that's provided.



2 There are plenty of options for users to customise here. For the purpose of this tutorial, select the 'Edit home or work' option located at the top.



3 You can now edit either your home or work address. Simply press on one of the options and use the provided search feature to add your default location.

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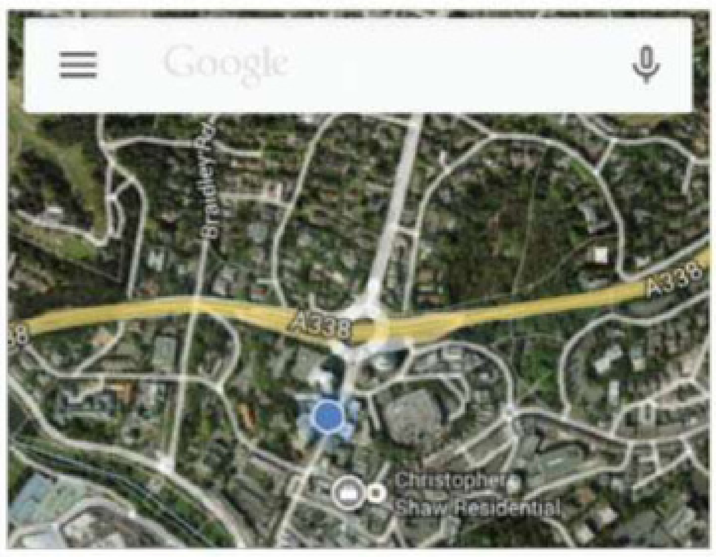
Discover nearby attractions and weather

Explore recommended places in your local area

As well as being the best navigation app available for Android devices, Google Maps does well at providing users with guides, recommendations and general information about the area around them in a clean and well-designed interface. It's a feature that's been included in Maps for some time, but it's only been very recently that the feature has become one of the premier things to check out within the app. With more links to Google Now, this discovery system is now surprisingly in-depth and can help you obtain the information you need for anything from restaurants to the opening times of a local park.

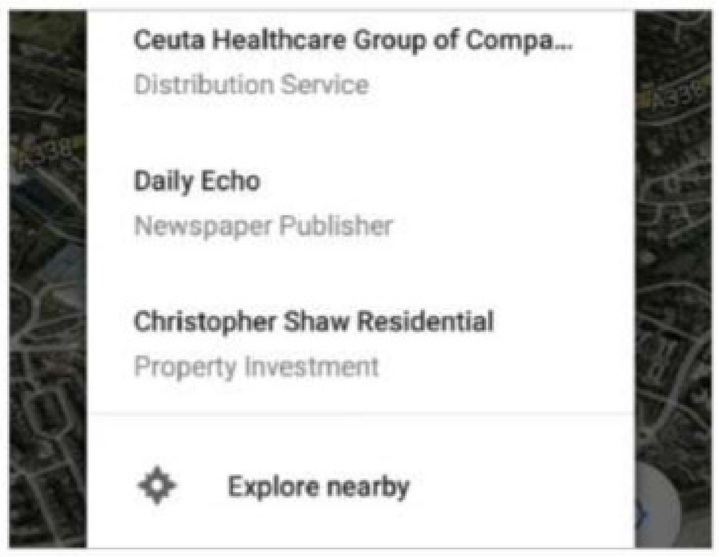
In this tutorial, we'll be looking at how users can initially set up the feature on their Android device and where to find it from the start. Keep reading and we will also point out how you can completely personalise it to your exact needs, while also showing you the best way to achieve even better integration with Google Now.





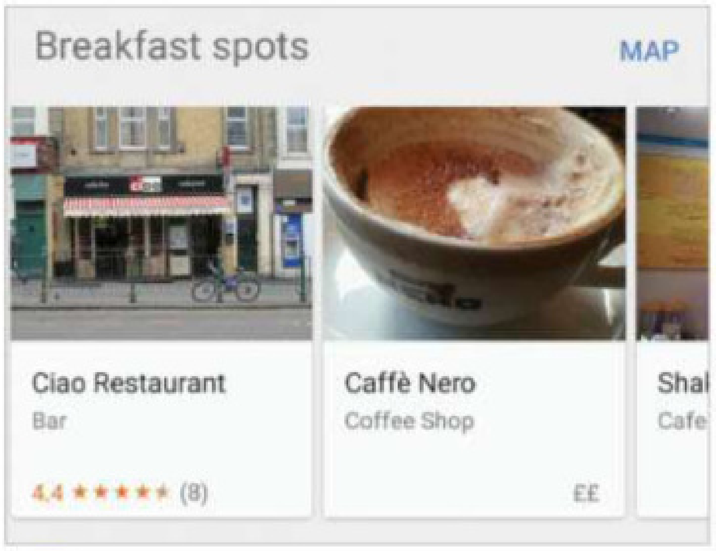
1 Track your location

To initiate the recommendation feature, you'll first need to find your current location. Press on the white tracking icon at the bottom right of the screen so that Map's can triangulated your position. Once located, press on the blue circle that marks your location within the centre of the Maps interface.



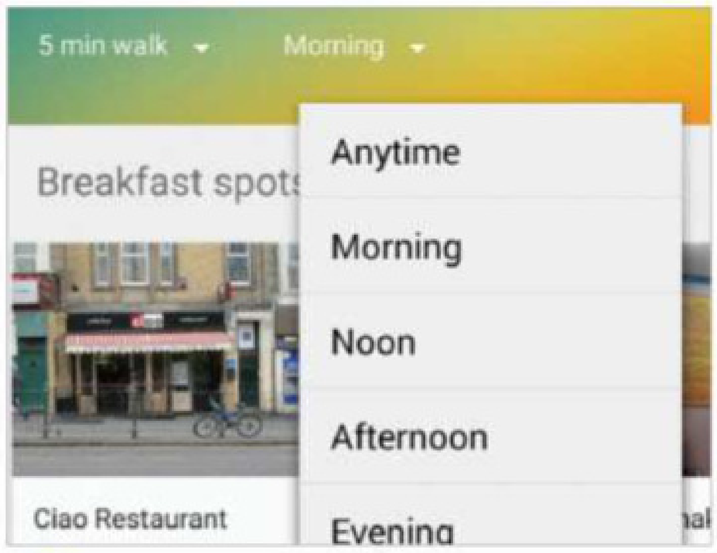
2 Where are you?

A menu screen will appear asking to specify your exact location from list of options – ignore this. Instead you will want to choose the Explore Nearby option, which will sit next to a compass point icon, located at the bottom of the menu, to begin discovering nearby attractions.



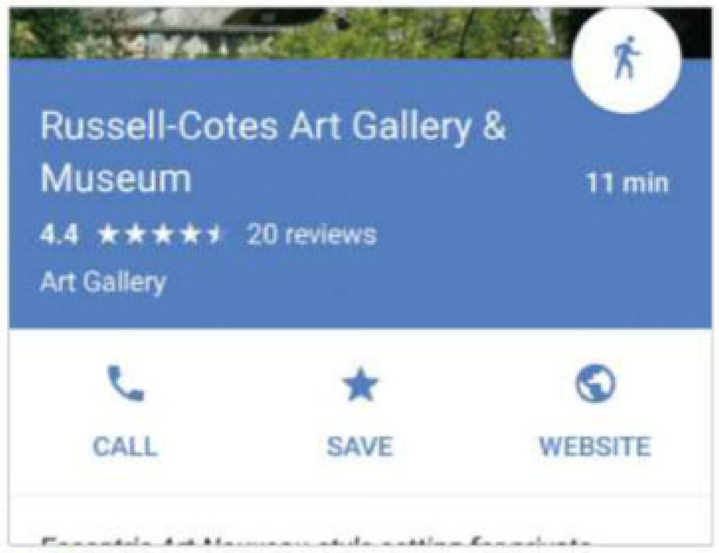
3 Explore your area

Depending on if the weather card is activated within Google Now, the first thing you should now see is a weather report for your local area. Scroll down the list and you will initially see recommendations for local businesses, such as coffee shops, pubs and restaurants.



4 Filter results

Under the weather report, two drop-downs show a distance and time (such as '5 min walk' and 'Morning'). You can change these depending on the time of day and distance you want to travel to alter your results. Once revised, you may find that more local attractions appear.



5 Get more information

Select any one of the results found in the list to take a closer look at that establishment. On each listing you can find general information, such as opening times and contact numbers, as well as a rating based on reviews from other users, and exact directions to the location.

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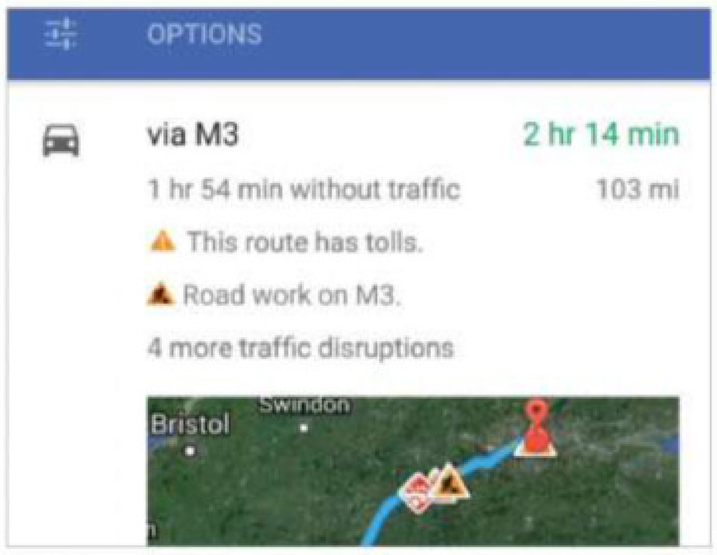
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Works with » Varies with device

Set mode of transport

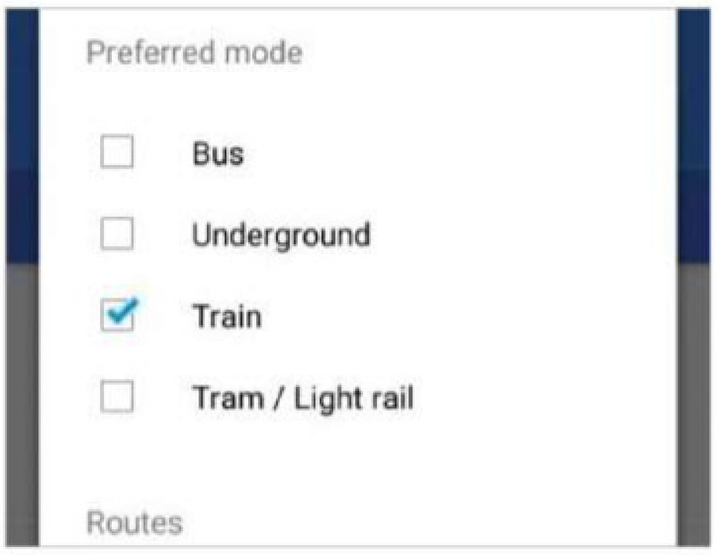
Get directions to walk, drive or ride the rails to your destination

When planning a journey within Google Maps, you'll be presented with a good selection of ways you can get to your desired location. However, some of them tend to be fairly convoluted, and some could simply take a lot longer than you want to spend travelling. But by taking a closer look at how Maps produces your journey itinerary, it's entirely possible to curate your very own journey planner and make the necessary changes to get a journey timetable that best suits your travel tastes and needs. Your preferences will then be set for every subsequent journey you plan within Google Maps. We'll show you how to find and use this screen within the following tutorial.



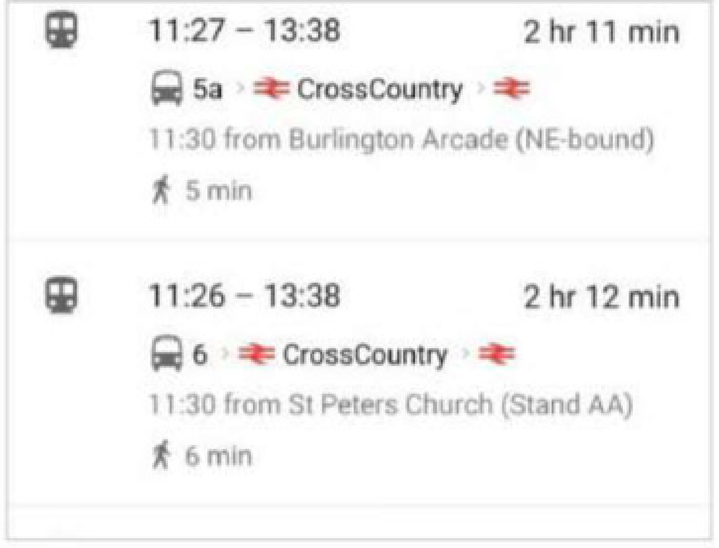
1 Load up travel details

Whenever you plan a journey in Maps, you'll be presented with a various modes of transport you can use to complete it. For longer journeys, you'll obviously want to scroll across to the right for either the train or car options provided, but walking and cycling options are ideal for short city visits.



2 Preferred mode

Press the Options button underneath your travel details to open up the Preferred mode screen. Here you can choose the preferred mode of transport that you require, as well as select the type of route (such as 'fewer transfers') you want to use to get to your destination.

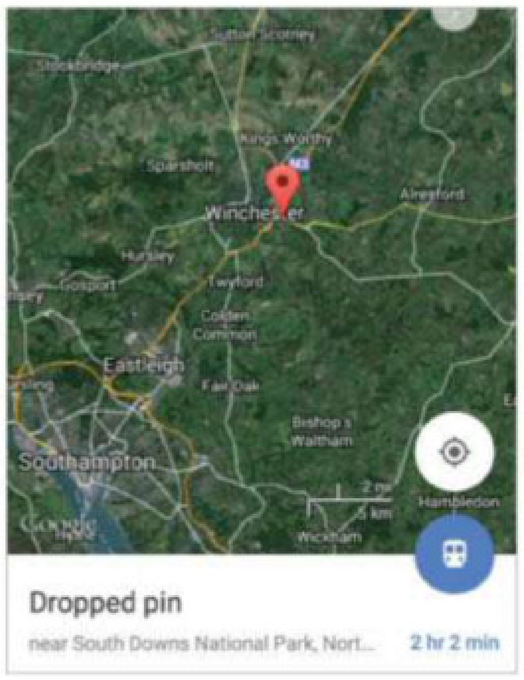


3 Check results

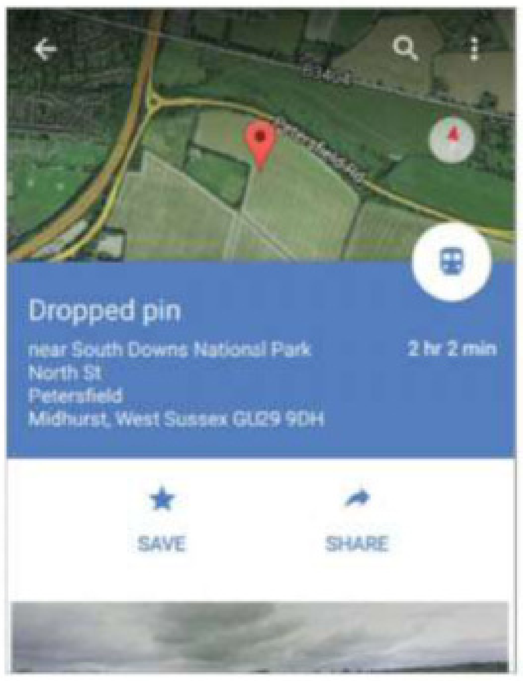
Go back to your travel planner and you should now see refined results for you to use based on your previous selections. By pressing on any one of these options, the new journey will open up within Google Maps so that you can take a closer look at the directions.

2 min guide Save and share your location

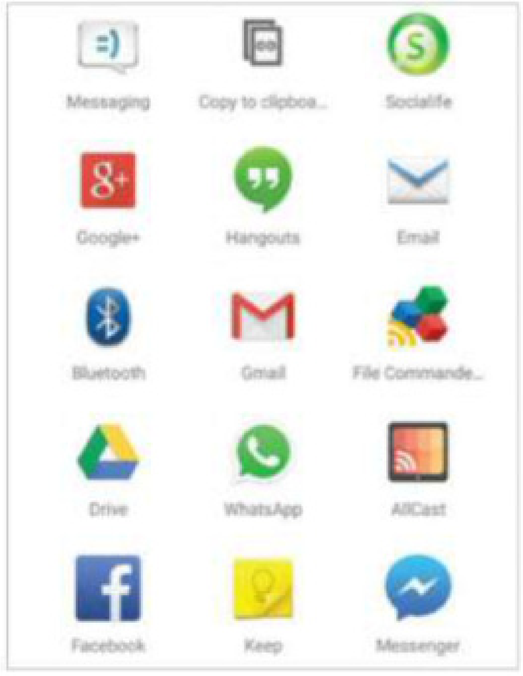
Drop a pin on the map to send that location to a friend



1 Navigate to a location that you want to send details about to a contact. Long-press on the map until a pin appears and is placed on the specified location. To get an exact location, zoom in on the map for more precise positioning.



2 With the pin placed in the desired location, tap on it and an overview screen will appear. This is the screen you'll be able to share with contacts. For the purpose of this tutorial, press on the Share option listed halfway down the page.

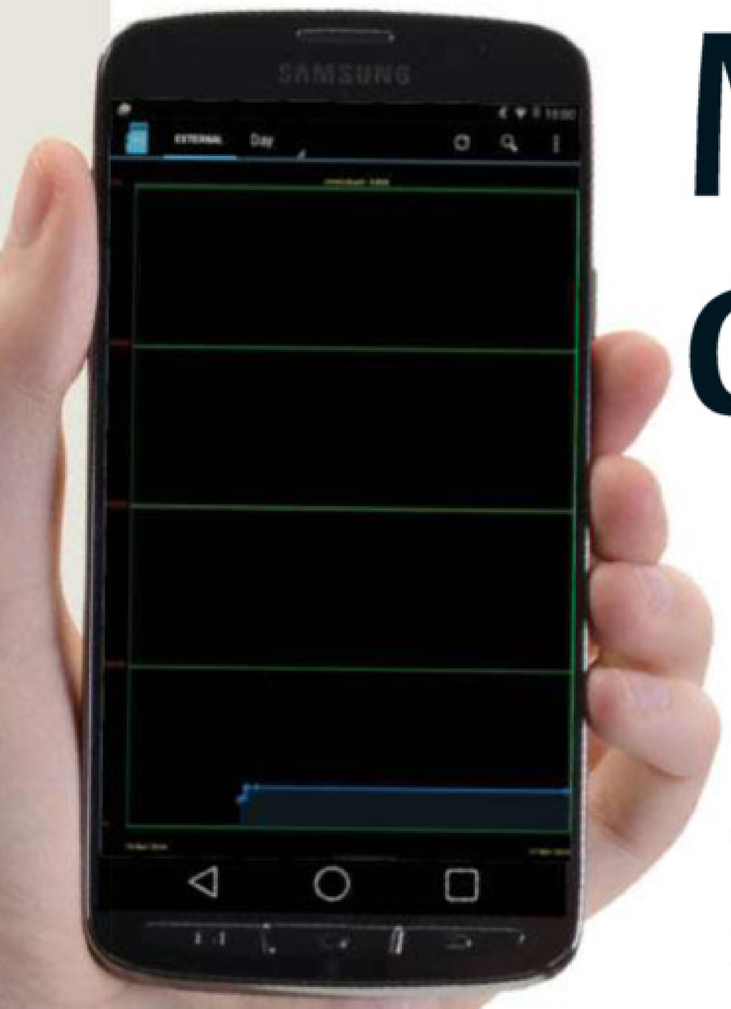


3 Depending on the apps you have installed on your device, there should be a whole host of different ways you can share the details of the location with a contact. Select your preferred method to start the sharing process.



4 One of the best things about this method is being able to send the Street View details of a location to someone. This means the recipient can get a direct link to the Street View, rather than having to search for it manually.

Works with » Android 4.0 and up



Monitor your device's memory

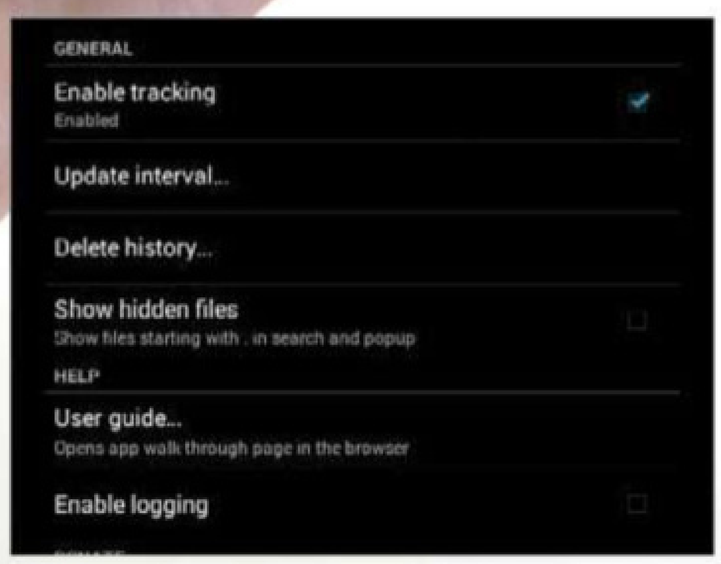
Keep tabs on your storage space and SD card activity with StorageTrac

What have you got stored on your phone? Chances are you have all of your photos stored there, possibly a few videos, as well as all of your apps and games.

For most of us, unless we manually check the remaining capacity from time to time, storage – whether on internal and/or external microSD cards – tends to run out of space with little or no warning. Especially on budget device with only a 16GB or less memory, it can end up being filled up pretty quickly, with no native Android audit.

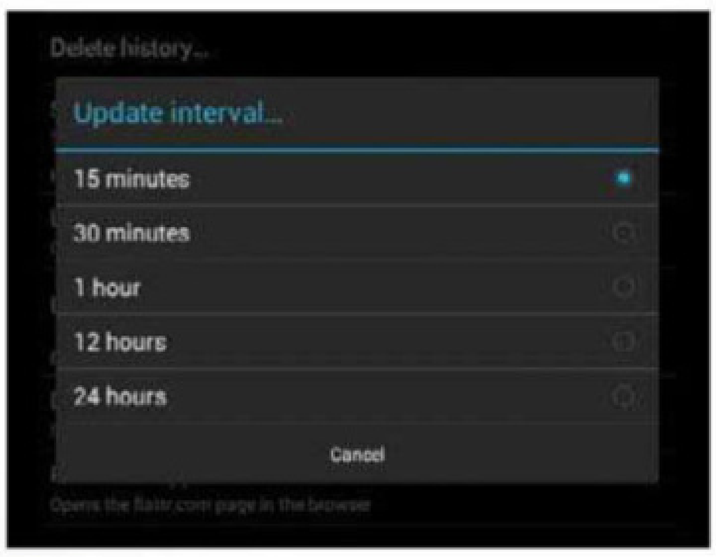
With StorageTrac, you can keep tabs on this information. The app records file creation, modification and deletion on the storage card and collects the data to present it in a chart.

The result is an app that can show you how often your storage is accessed. This can prove useful for seeing how much storage is being used, and how long an external microSD card might last.



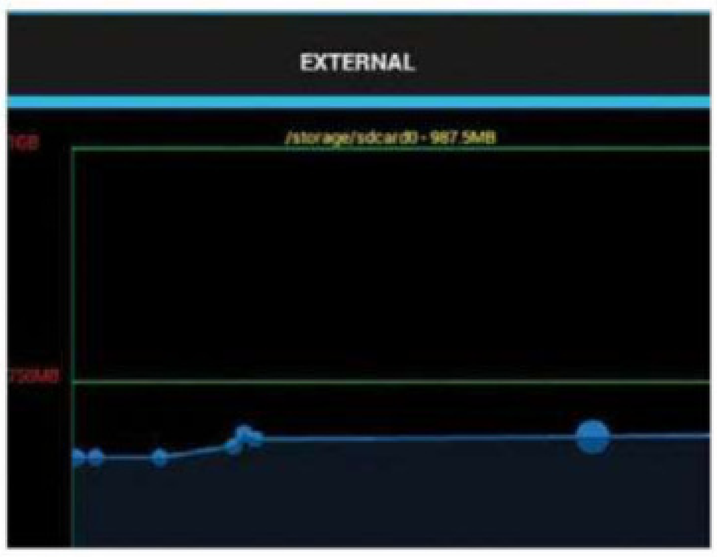
1 Enable tracking

StorageTrac need permission to track your SD card storage status. Open the app, tap Menu > Settings and then Enable Tracking. Once enabled, you'll need to be using the app for a few days – a few hours at least – to get the best results from it.



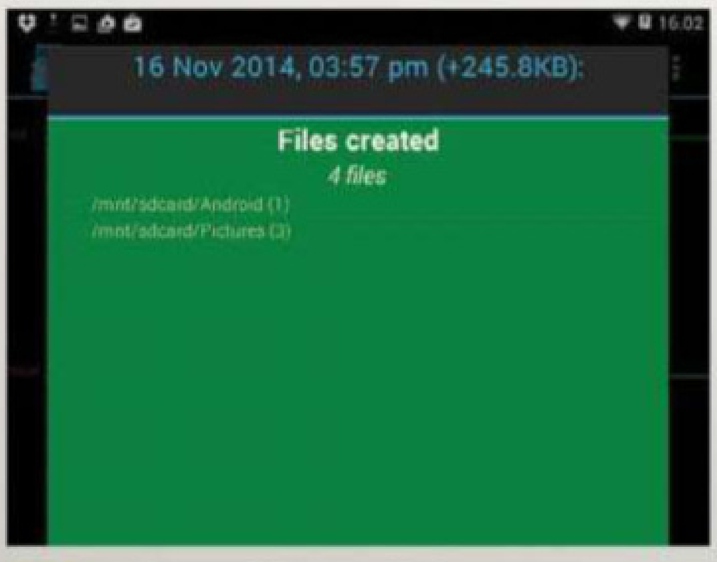
2 Set the update interval

Based on what info you want to collect over a specific period, you should also set an Update Interval. This can be anything from 15 minutes to 24 hours. By knowing what the interval is, shown on the chart, collected data makes more sense.



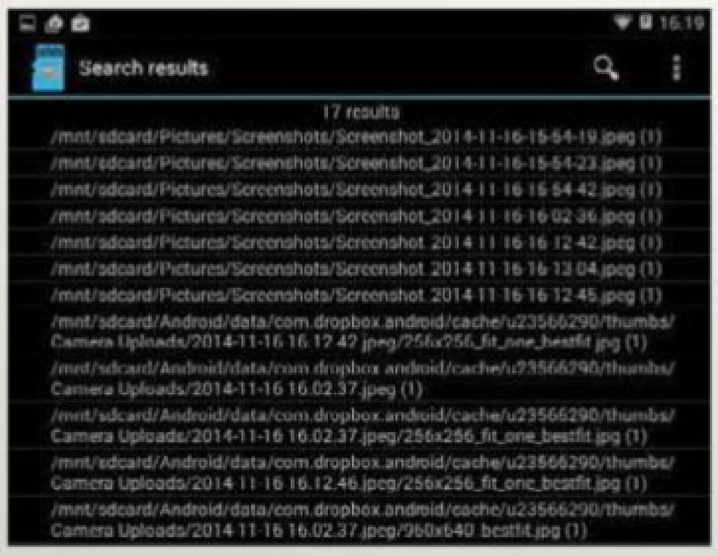
3 View storage tracking

The main screen features the plotted chart based on the amount of data you add and remove from your internal storage. StorageTrac works with your SD card, too. Use the Day/Week/Month/Year menu in the top left to change the view.



4 View file activity

To find out just what is being recorded, and when, tap the chart to view info about the period you're interested in. The first screen lists all files that have been created at that point. Scroll right to see any relevant deleted or modified files.



5 Search for specific files

StorageTrac features a search tool to track the activity of particular file types. For instance, to check how many JPEG images are saved to your device, tap Search and enter 'jpeg' in the box. The results show where the files can be found.



6 Delete old data

To reduce StorageTrac's load on your device, use the 'Delete history...' option in the Settings menu. Four options – Now!, Week, Month and Year – can be selected; tap OK to confirm. Once cleared, tracking logs cannot be restored.

Works with » Android 4.0 and up

Customise how web links work

Save time with link sharing by using gesture controls to open specific apps

Mobile browsing almost always ends up a voyage of discovery, with one or more links that you decide will be best checked in detail later. The usual process is that you will email yourself the link, or perhaps share it to a reading app.

If you're particularly clued up about Android's sharing options, you might have apps like Instapaper or Pocket installed, providing you with the means to catch up with the bookmarks in a single app.

However, if you have too many apps in your Android sharing options, things can end up a little fiddly. The solution comes with TapPath Browser Helper, a simple app that shares links based on how you tap them.

For a single link (perhaps in an email), your browser will open; for a double or triple tap, however, you can launch the link in a preset app of your choice.

Simple settings

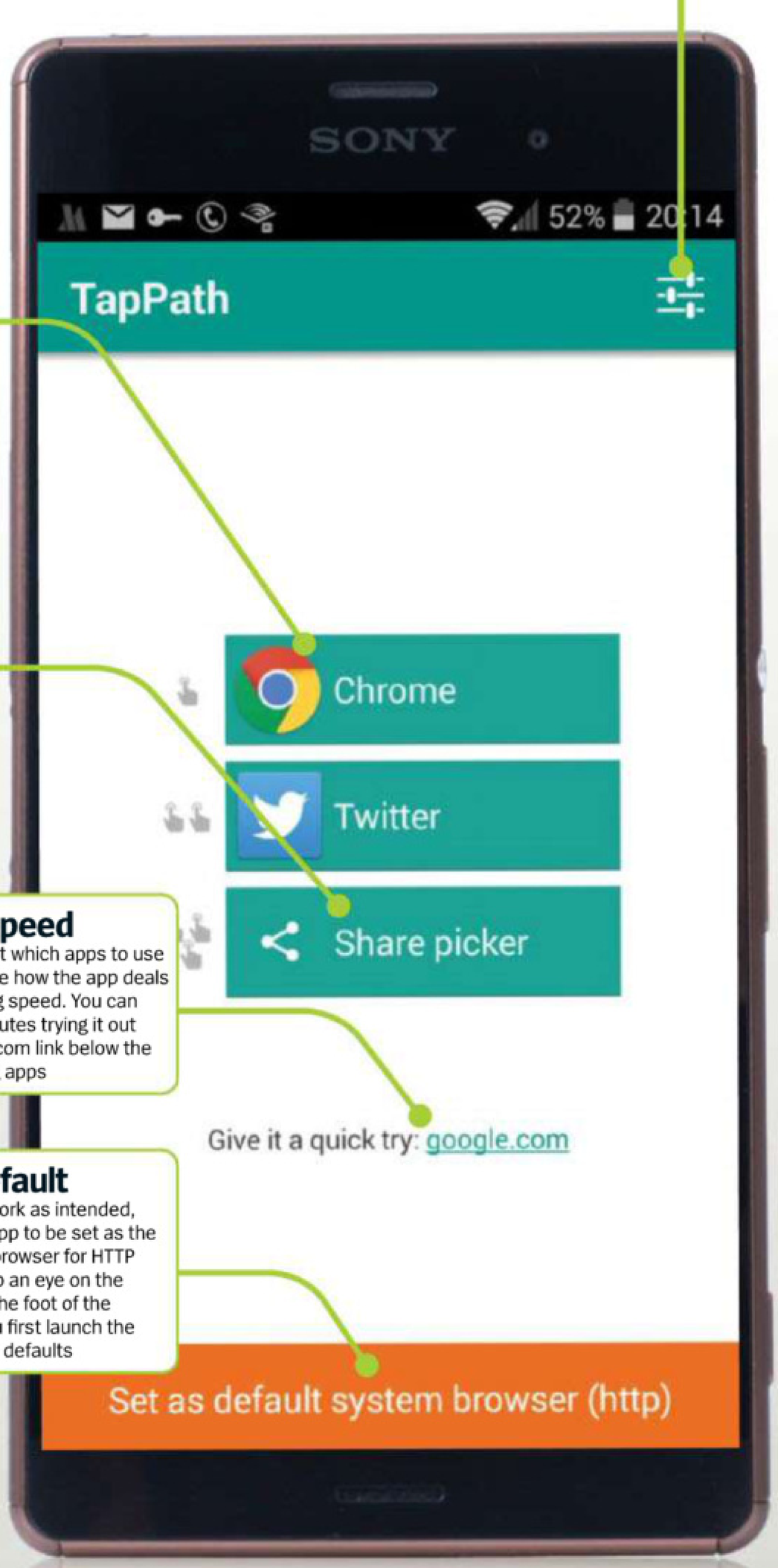
The Settings screen doesn't offer much in the way of configuration beyond a control to adjust the delay in the double and triple tap sensor.
What you will find here, however, is a change log and an FAQ, which can explain any issues with TapPath Browser Help

Custom taps

Up to three taps can be used to launch your preferred app for viewing or sharing links. These can be customised by tapping each box in turn and setting your preferred app. Make sure you leave one selected as a browser, just in case!

Share picker

If you prefer to use your usual Android share picker (perhaps an app won't work with TapPath), simply make sure this option is selected against one of the tapping options. After configuration, you shouldn't need to launch TapPath other than to make further changes



Tapping speed

Before you select which apps to use with TapPath, see how the app deals with your tapping speed. You can spend a few minutes trying it out with the google.com link below the selected sharing apps

Set as default

For TapPath to work as intended, you'll need the app to be set as the default system browser for HTTP and HTTPS. Keep an eye on the orange flash at the foot of the screen when you first launch the app to set these defaults

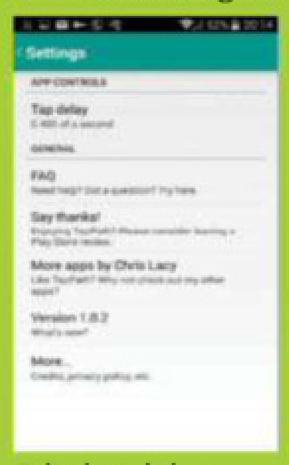
Launch your favourite apps with a tap

You've probably got a couple of apps that you prefer to share links through, perhaps social or reader apps. Configuring TapPath for sharing is simple



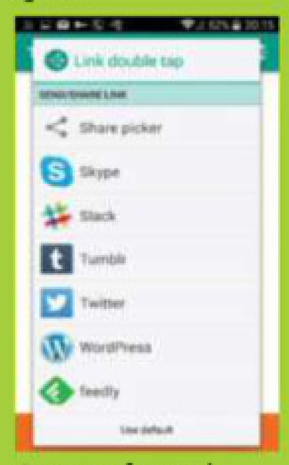
Configure TapPath taps

Upon launch, you'll see a trio of apps, each requiring a successive number of taps to launch. Spend a moment with the default options, tapping once, twice, three times to gauge success opening the apps.



Edit the delay between taps

Open Settings to view the single option: Tap delay. Tap the control to open the slider and adjust based on the speed you're comfortable double- and triple-tapping links. Use the link provided to further test your speed.



Set preferred sharing apps

On the main screen, tap the default options to view a list (grouped into browsers and apps you can share from) of compatible apps. Simply select an app to set it as the option for one, two or three taps.

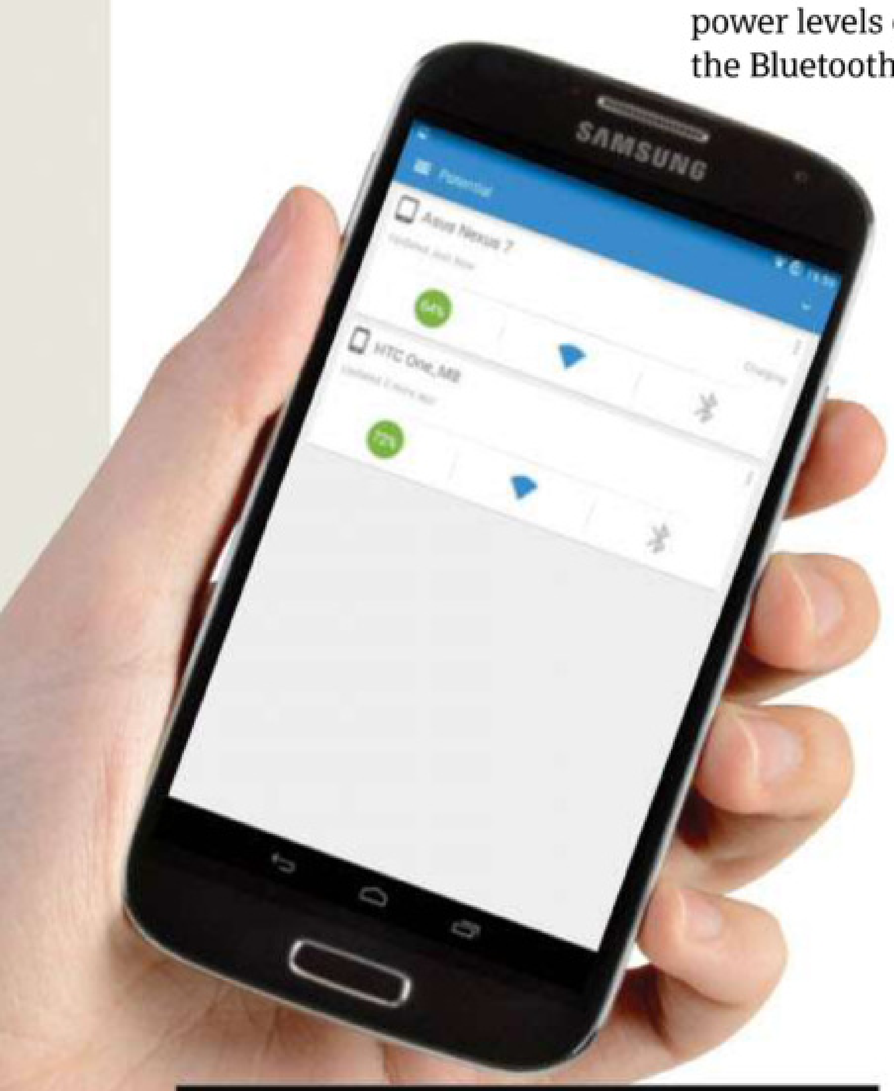
Works with » Varies with device

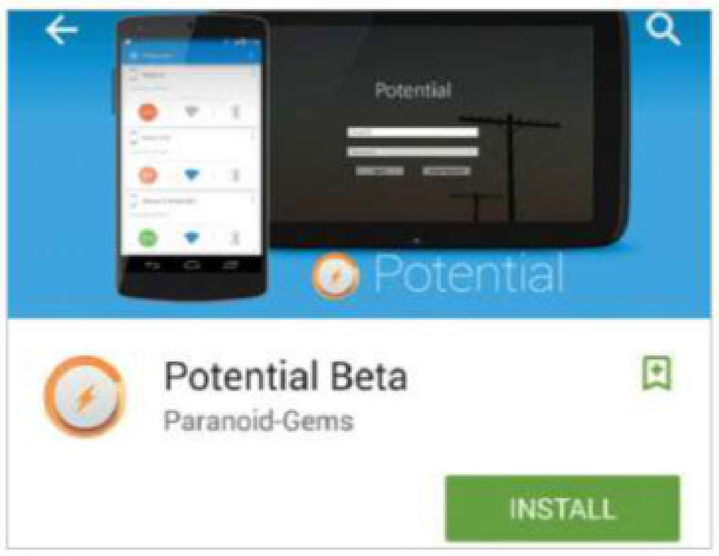
Monitor all your Android devices with Potential

Use this simple app to keep an eye on all of your Android devices at the same time

It's a good bet that if you're reading this magazine you've got more than one Android device. You might have a phone and a tablet, a work phone and a play phone, or any number of combinations, but sometimes it can be a bit of a faff keeping track of the battery levels of those devices. That's where Potential comes in. Not only does it keep you abreast of the power levels of multiple devices, it also lets you toggle the Bluetooth and Wi-Fi connections on and off with a simple tap. It doesn't run through your Google account either, so you're not sharing your sign-in information.

Best of all, you don't need a rooted device to make it work – you simply download the standard Potential app from the Google Play Store to your devices. All you'll need to get it up and running are your Android devices and an internet connection. It shouldn't take more than a couple of minutes, either.





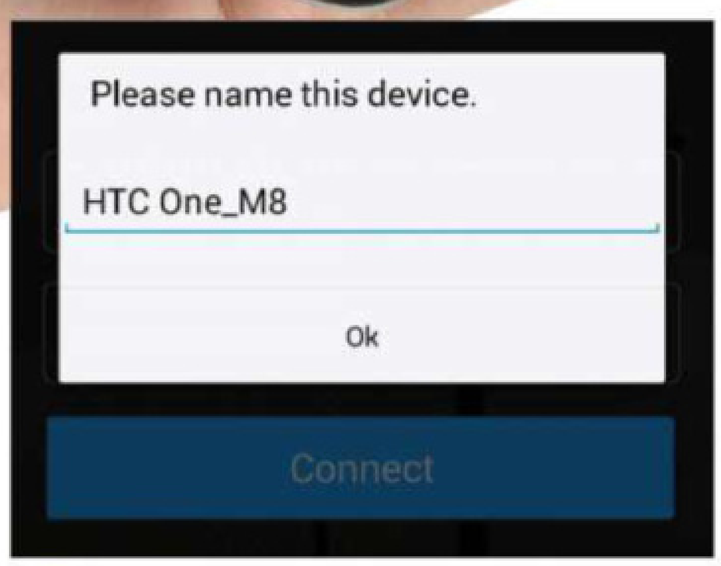
1 Download the app

First you need to install the Potential app onto the devices you want to use it with. It's a free download from the Play Store, but there's an in-app purchase that lets you access more of the functions the app offers. Grab the app from the store and install it on each of your devices.



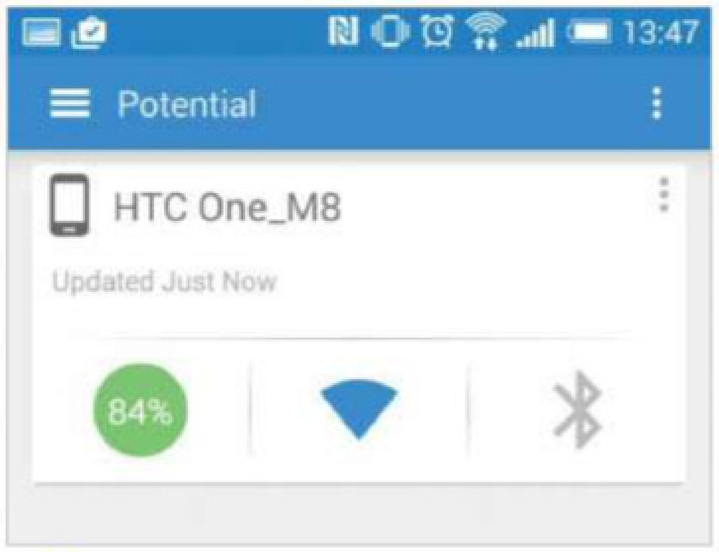
2 Start an account

Now you need to set up a Potential account. It's as simple as entering your email address and choosing a password. Make sure you pick a password that's secure but easy to remember. You'll get an email through asking you to confirm your address; click the link and you're ready.



3 Name your device

Give your first device a name. You'll be asked to do this with all of the devices that you add to your Potential account, so if you've got multiple devices that are the same model, make sure you give them distinct names. When you're happy with the name, tap the OK button.



4 Explore the app

Once you're done you'll find yourself in the app. The UI is pretty easy on the eye and lays out all the information you need. There are three icons, for battery life, Wi-Fi and Bluetooth; tap either of the last two to toggle it on/off. Tap the top-left icon to open the side menu, then select Settings.



5 Check the settings

There's not a whole lot of tweaking you can do here, and anything that you can do involves buying the paid version. Once you've made the IAP, you need to reboot the app to make the changes. When you've done that, head back to the app's Settings screen to have a play.

5 quick tips

Handy hints that should see you getting the most out of Potential

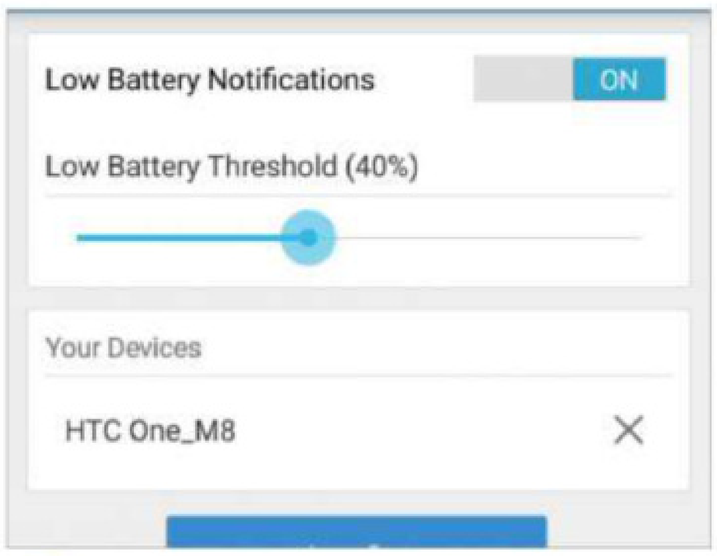
1 Turn it off
Potential saves battery – you can remotely turn the Wi-Fi and Bluetooth off on linked devices.

2 Kill the ads
Buying the IAP will get rid of the adverts displayed along the bottom of the screen.

3 Rename from home
You can rename devices from the menu (tap the three dots) as well as when you first link them.

4 Do you need it?
If you're not juggling more than three Android devices it's probably not worth downloading Potential.

5 Use it wisely
Think about what services you'll be stopping when you turn off the Wi-Fi on a device.



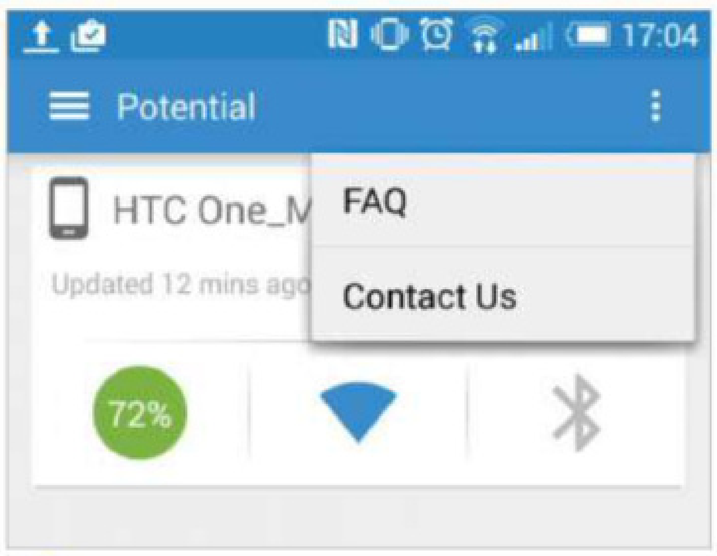
6 Tweak the times

You can now change whether you get low battery notifications and how low the battery needs to get for the app to send one. The notifications will send across all the devices that are signed in to your account, so you'll know if a device is starting to get low on juice.



7 Add more devices

Follow the steps again and you can add more devices to your account. If you've not paid for the extra options you can only add two devices, but once you've made the IAP you'll be able to add as many devices as you want. They'll show up on the devices list.



8 Find some answers

There's a useful FAQ section that you can find in the Settings menu that should clear up any problems you have. It's worth having a little play around on every device you've got the app installed on to get to grips with the little quirks, but other than that you're done.

27 min guide

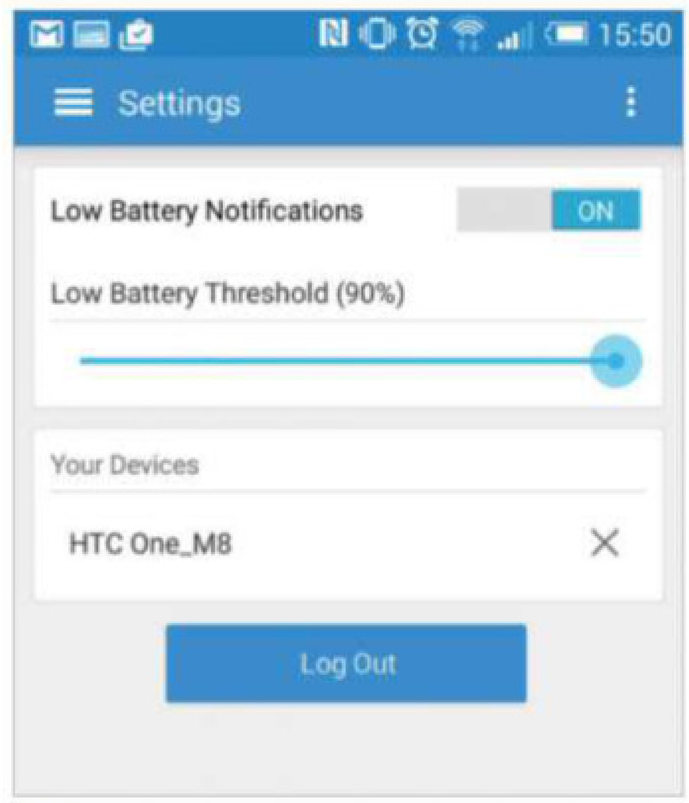
Set the apt battery level for devices

Set the right alert level so you're not getting too many notifications about low battery levels



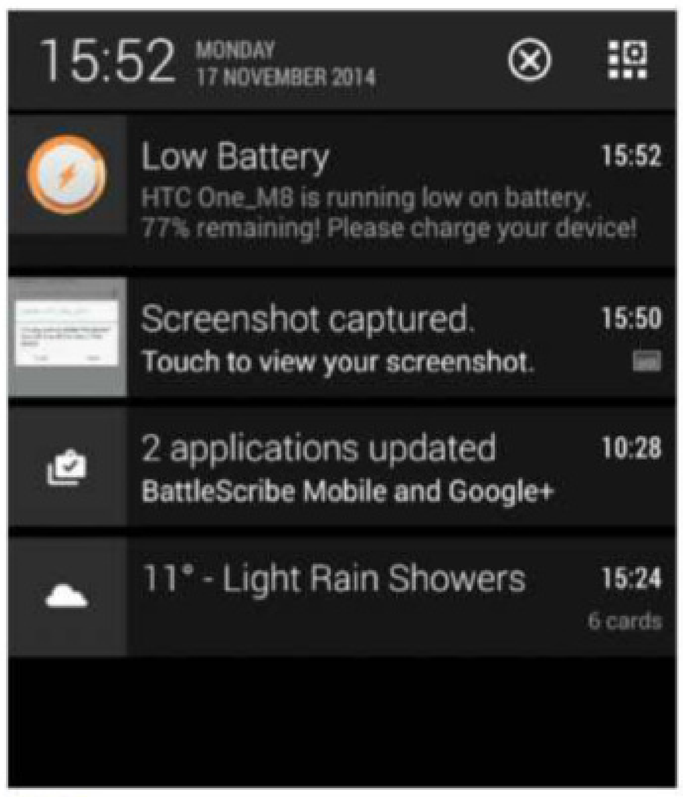
1 Check your usage

Most of your devices are going to have an app/service already installed that shows their battery usage. It's worth having a quick look at these to see how low you usually let the battery run down before you charge it. You want to set your battery rating slightly lower than this.



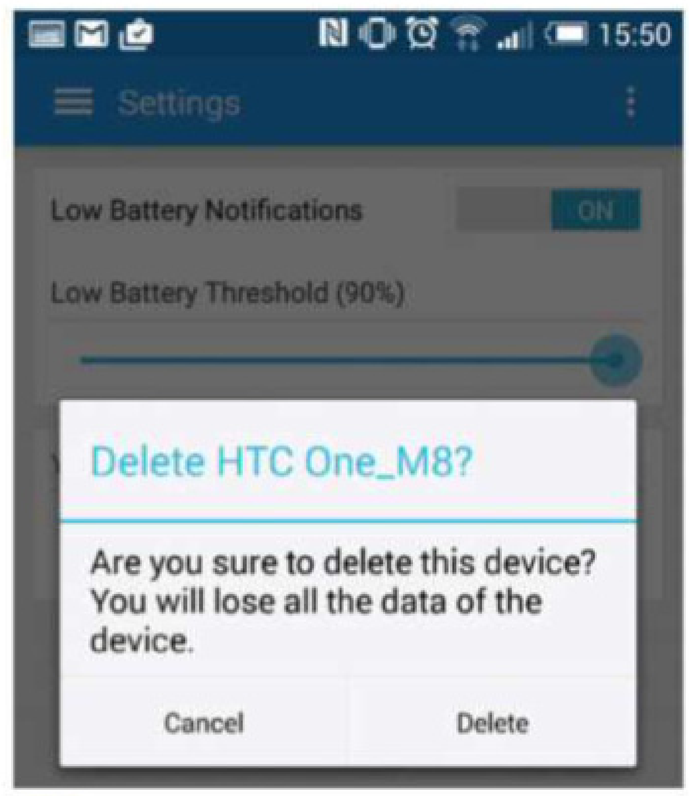
2 Place the slider

Swipe the slider on each device down to just below the level where you usually charge your device. Then set the notification so that it'll send it to you when your battery reaches that level. You can also keep an eye on the level from the main menu device list.



3 Too many alerts?

If you find that you're getting too many notifications, then it's worth tweaking the settings again. You can turn off device notifications if you're getting too many. If you're only getting notifications from your main device, then it's worth turning them off all together, because you know what its battery level is.



4 Get rid of it

If you find that you're not using one of your Android devices, then it's worth deleting it from the list altogether. In order to do that, head into the app Settings, then tap on the X next to the device that you want to delete. Tap Delete and it will be removed from your Potential account completely.

Works with » Android 4.0



Revamp your lockscreen

Turn your Android lockscreen into a quick-glance information centre with Next Lock Screen

Lockscreen apps usually offer the same general functionality – the ability to view email and SMS summaries, calendar notifications and even launch apps.

So how does Next Lock Screen – one of the many Microsoft apps to have launched on Android of late – differ from the norm? It's probably something to do with the way data is presented. Calendar details are clear, the apps you can launch from the lockscreen are customisable (you're still required to enter your unlock code, too) and different backgrounds are available for different locations (such as home and work).

Perhaps most important is the app's attitude to privacy. Certain calendar accounts and apps can be hidden from the lockscreen, as can the contents of SMS text messages.



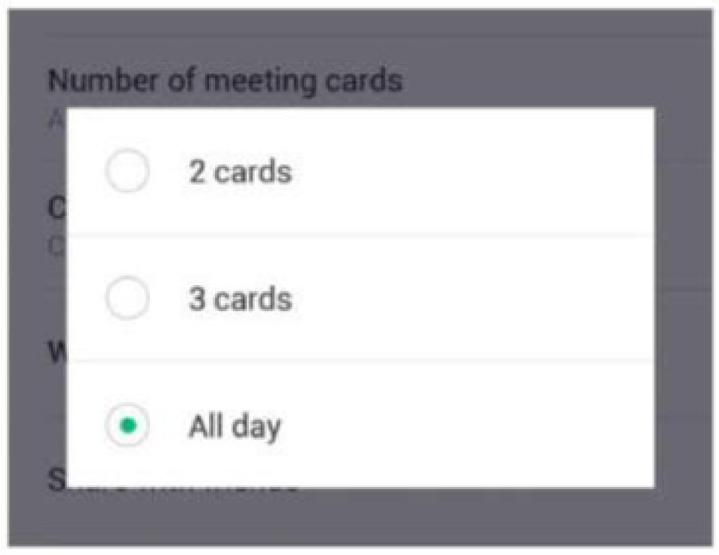
1 Sample Next Lock Screen

Once installed, Next Lock Screen can be viewed by locking the phone or putting it on standby and reactivating the display. Date and time, new SMS messages, calendar events and app icons are shown – tap the arrow above these.



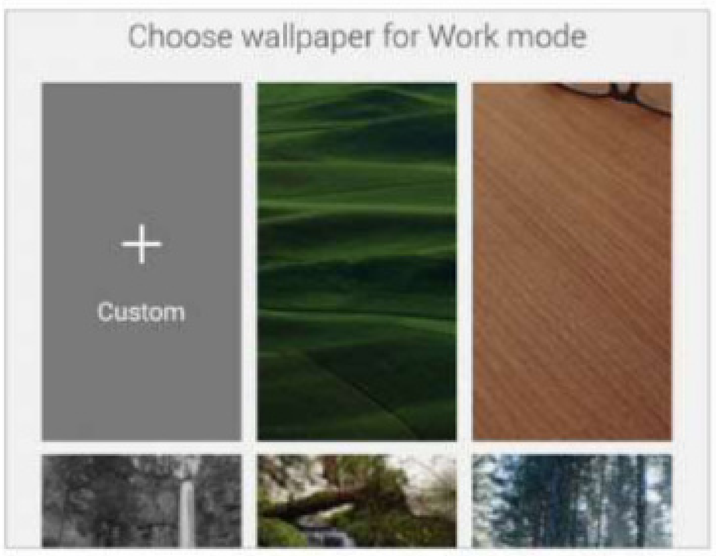
2 Customise the app panel

You can tailor Next Lock Screen to your requirements. Three menus – Work, Home and On The Go – are available and each can be configured to show different apps. To delete an icon, long-press and tap the X. Tap '+' to add an icon.



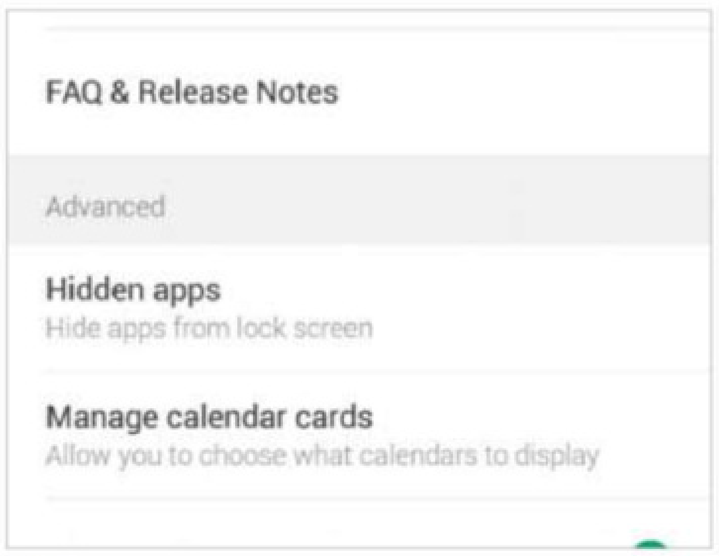
3 Tweak settings

In the lower left corner you'll find the Settings button, which opens a new screen split into Basics and Advanced. In the first section you'll find the Turn On Next Lock Screen switch, as well as the option to toggle the number of meeting cards displayed.



4 Change the wallpaper

Also in the Basics section is the Wallpaper menu, where you can select a trio of wallpapers from 16 designs – plus custom – to apply to Work, Home and On The Go. Switch between these modes on the lockscreen, just above the icon list.



5 Manage privacy

In Settings, tap Hidden Apps, where apps you want to hide from the lockscreen can be added. Use Manage Calendar Cards to set which calendar updates on the lockscreen. You can also toggle Show SMS Content for further privacy.



6 Unlock the device

To unlock your phone, drag your finger down the display below the clock. You will then be prompted to unlock your phone as usual, and this is also true if you attempt to open an app from one of the Next Lock Screen shortcuts.

Works with » Android 4.0 and up

Track down your stolen device

The Android Device Manager app can be used to pinpoint and control your lost device

If you've spent hundreds of pounds on a new or second-hand Android device, it's a horrible feeling to discover that it's been either stolen or lost. Although you should still report the loss at your local police station, there are steps you can take to at least remotely control and wipe your device. Android 5.0 has these features baked in, but if your device can't update to Lollipop, the Android Device Manager app is just as good. It can instantly track down the location of your lost device, whereupon you can perform a series of actions to retrieve it, or wipe your personal data and render it useless if it has been stolen. Follow the steps outlined below to correctly set up the Android Device Manager.

"Instantly track down the location of your lost device, so you can perform a series of actions to retrieve it, or render it useless"

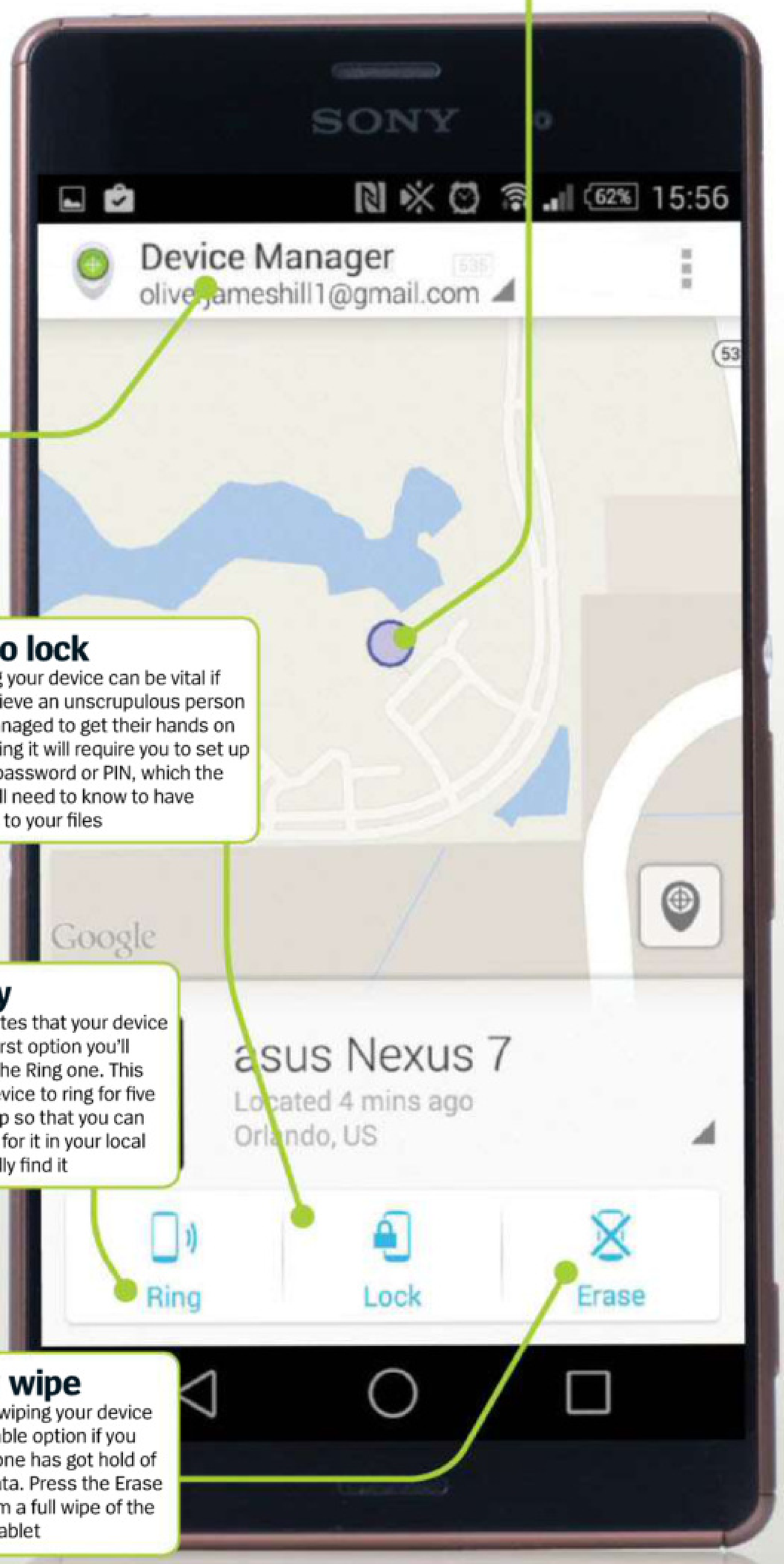
Pinpoint accuracy
The Maps section of ADM will show you the exact location of your device. Although it refreshes every few minutes, you can simply back out and go back into the app to see an updated version of the location

Switch accounts
If you're wondering why your device isn't being listed on the map, make sure that you're using the correct Gmail account. Use the drop-down menu at the top of the app to switch between different Gmail accounts

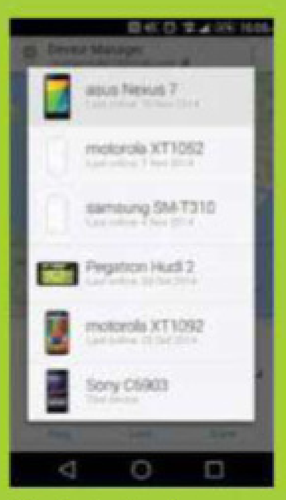
Go to lock
Locking your device can be vital if you believe an unscrupulous person has managed to get their hands on it. Locking it will require you to set up a new password or PIN, which the thief will need to know to have access to your files

Ring away
If the map indicates that your device is close by, the first option you'll want to go to is the Ring one. This will cause the device to ring for five minutes non-stop so that you can simply listen out for it in your local area and hopefully find it

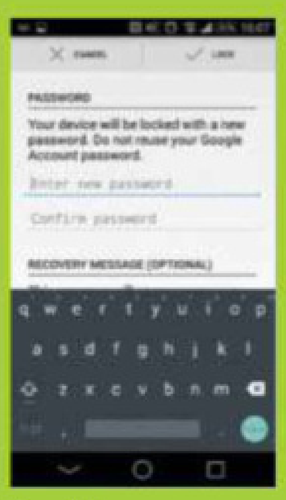
Remotely wipe
As a last resort, wiping your device will be an invaluable option if you think that someone has got hold of your sensitive data. Press the Erase button to perform a full wipe of the smartphone or tablet



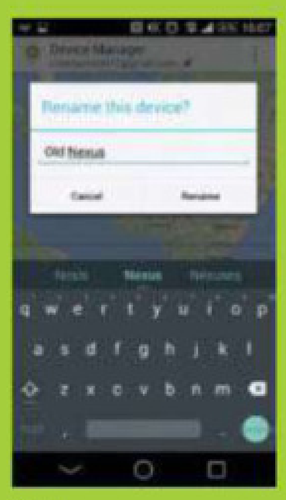
Get more from ADM
Discover some additional features within the Android Device Manager app



Switch devices
The Android Device Manager app is linked in with your Gmail account, so it's possible to link any additional devices you may own to it. Use the arrow next to the device name to switch between devices.



Look to recover
When you set a new password for your device, make sure to add a separate recovery message. This could provide details for someone to contact you if they find the phone. Obviously, don't add any sensitive data.



Set a new name
If you're in the situation where you've got multiple devices of the same model, make sure to add unique names to them to differentiate between them. This makes it a lot easier to track down a certain device.

Works with » Android 4.0.3 and up

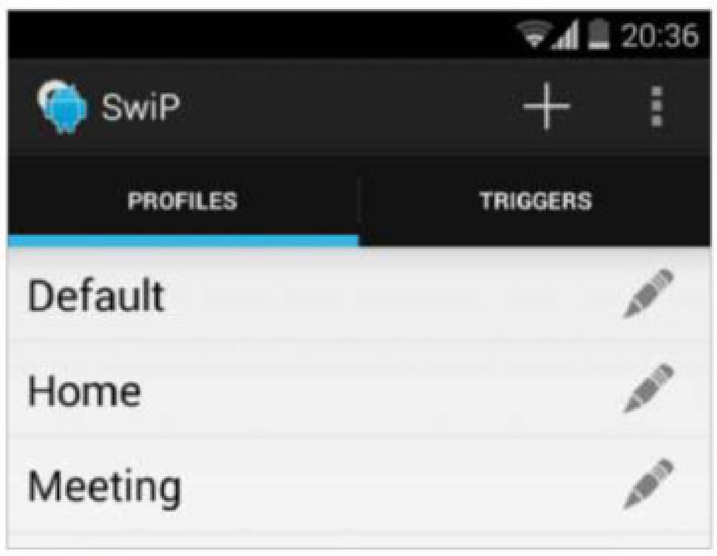
Automate your Android phone with SwiP

Create trigger-based profiles for popular Android tasks, with this open source automation app

Do you find yourself performing the same tasks, over and over again on your Android phone? It may be time try a task automation app. You can use these apps to create profiles of your most commonly used settings, for example a Home profile where your device automatically connects to your home Wi-Fi. Profiles are triggered automatically when certain conditions are met, for example when your Android device's GPS detects that you're at home.

We featured some of the biggest names in automation on page nine, but SwiP is a new release that provides an open source alternative. This means the app's source code is publicly available, so anyone can help develop it. You can download SwiP for free from the Play store, which also contains a link to the app's source code. SwiP doesn't require root, although you can access additional functionality on a rooted device. SwiP currently doesn't work on tablets.





1 Try sample profiles

SwiP comes with three example profiles. Take a closer look at these by tapping their accompanying pencil icons. The next screen contains all the options you can enable, disable or tweak as part of this profile. To edit an option, tap it and make your changes in the subsequent pop-up.

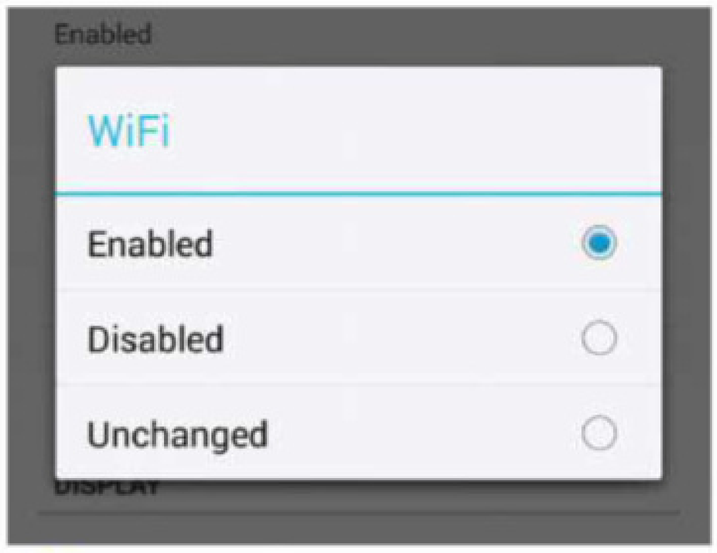


2 Create a new profile

To apply either of these sample profiles, return to the main SwiP menu and tap the name of the profile that you want to activate. The next step is to create some custom profiles of your own. Tap the '+' icon in the toolbar and then give your new profile a name.

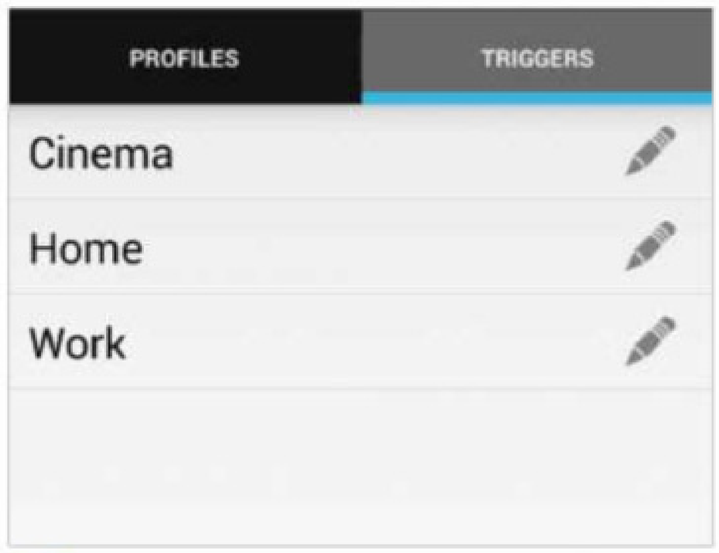
3 Build your profile

By default, every option is set to 'Unchanged.' This means applying the profile won't affect this item's current state – if your Wi-Fi is off when you apply the profile, it'll stay off, and vice versa. Work through this menu, tapping and changing all the options you want to update.



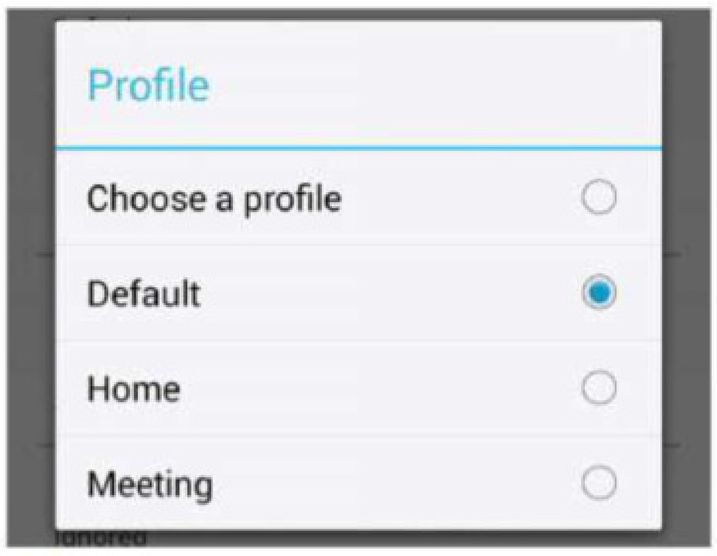
4 Sound, Connectivity etc

This menu is split into sections. In Sound you can set the volume of your notifications, media, ringtone and alarm. In Connectivity you can specify whether mobile data, Wi-Fi and Bluetooth are enabled. In Display you set the brightness of your screen and how long it waits before going to sleep.



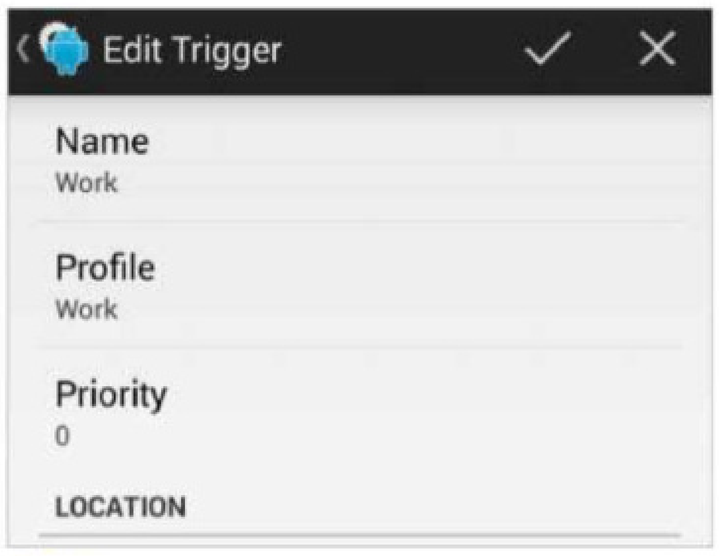
5 Create a trigger

Save your profile by tapping the tick icon in the toolbar. You can manually activate this profile at any point, but you can get more out of SwiP by creating triggers. A trigger automatically activates its assigned profile when certain conditions are met. Tap on Triggers in the toolbar, followed by '+.'



6 Assign to a profile

Give your trigger a name and then work your way down the menu, tapping every option you want to edit. You must assign every trigger to a profile, so tap Profile and then choose a profile from the list. When the trigger's conditions are met, it will activate this profile.



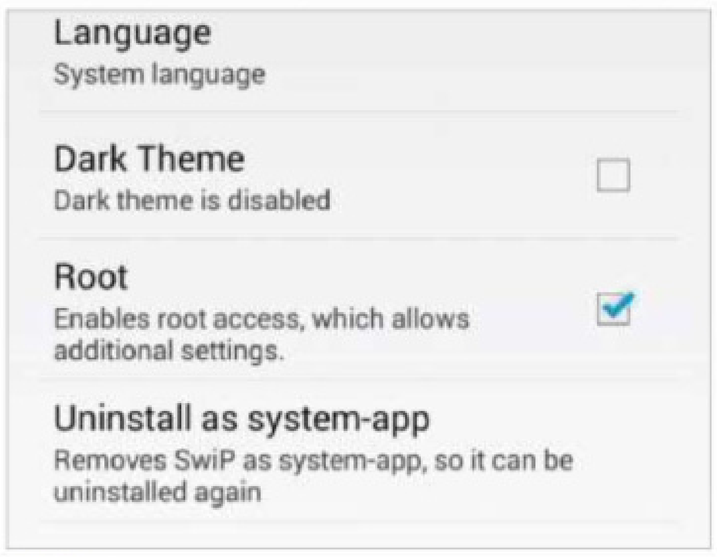
7 Weekday/time triggers

You may want to create triggers that activate your Home and Work profiles based on the time and day of the week. To create these triggers, you need to edit the Start Time, End Time and Weekday options. You can also create location-dependent profiles using GPS information.

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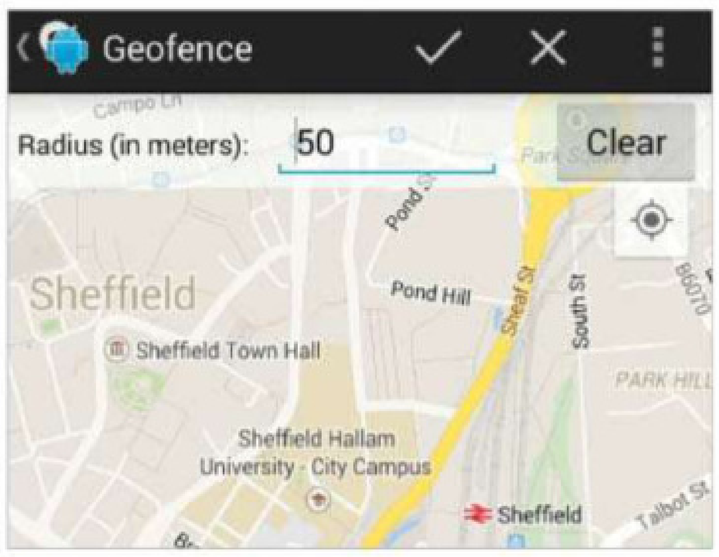
What are some alternatives to SwiP?

Trigger is a beginner-friendly automation app that has useful examples you can build for yourself, although you'll need to purchase Trigger Pro to access most of its features. If you're looking for location-based automation, Llama is worth checking out. You can download both apps for free from Google Play.



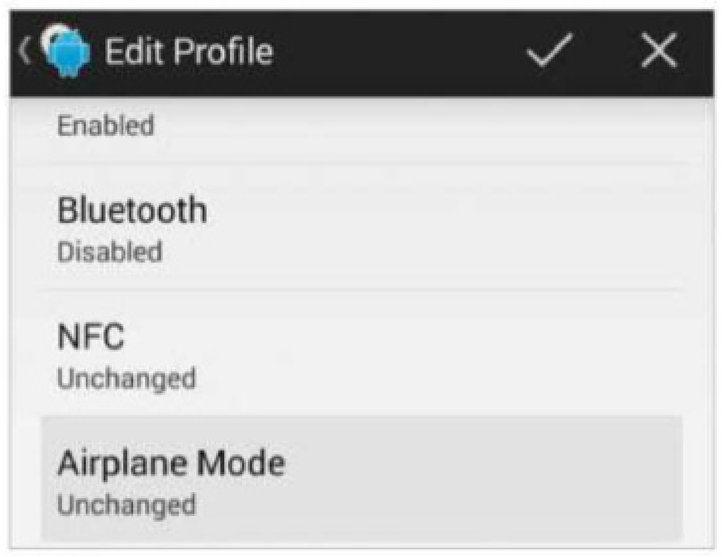
8 Install as system app

Before you can use the Location option in your triggers, you need to give SwiP root access and install it as a system app. On the main SwiP screen, tap the three-dots menu icon, then tap Settings followed by Root and 'Install as a system-app.' Read the warning and tap OK.



9 Create a location trigger

To create a location-based trigger, tap the Location option, find the location you want to use on the map and then long-press it until a marker appears. You can also specify your location's radius by entering a value in the Radius field. Save this location by tapping the tick icon.



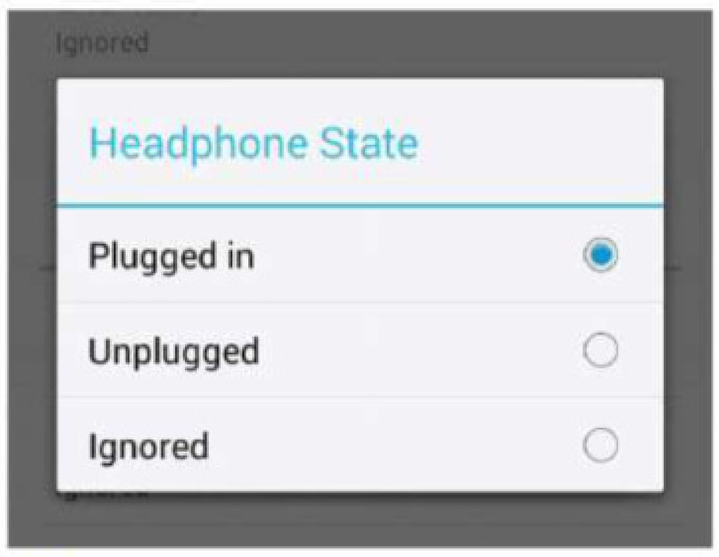
10 Extra root options

Once you've granted SwiP root access, you get two new options to use in your SwiP profiles. These are enabling/disabling Airplane Mode and temporarily bypassing your device's lockscreen. You should only bypass the lockscreen when it's safe to do so, for example when you're at home.



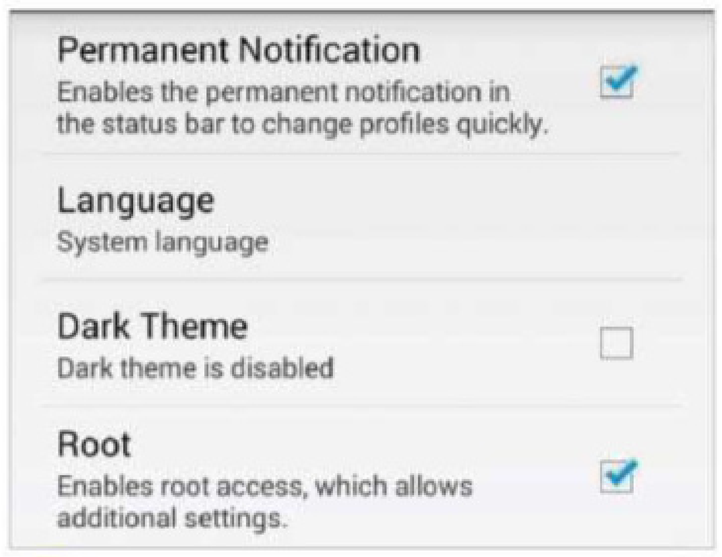
11 Automate your alarms

If you're always forgetting to turn your alarm off at the weekend, you could create a profile that turns Alarm Volume to 0, then link it to a trigger that kicks in at the weekend. You could also use SwiP to automatically turn the volume back up on Monday morning.



12 Control media volume

If you regularly listen to music or watch movies on your device, you may want to use SwiP to automatically change the media volume when you plug your headphones in. Create a profile with the correct Media Volume, then create a trigger, tap Headphone and select 'Plugged in.'



13 Add notification

If you have several profiles you switch between manually, this is made easier by adding a permanent SwiP notification to your panel. Tapping this notification takes you straight to a list of all your SwiP profiles. Add it by opening SwiP's Settings and selecting Permanent Notification.

Works with » Android 4.0.3 and up

Create your own private picture vault

Ensure your photos and videos remain private, by storing them in KeepSafe Vault

Do you have photos on your phone or tablet that you don't want others to see? KeepSafe Vault promises to help keep them safe from prying eyes, in case anyone should borrow, steal or find your device. When you move videos or photos into KeepSafe, they disappear from your device's Gallery, so the only way to access them is by launching KeepSafe and entering your PIN.

There are several ways of making your KeepSafe content more secure. For example, you can add a password to each KeepSafe album. You can also disguise KeepSafe as an app that scans your system and reports any problems. This means that even if someone is snooping around your device, they won't immediately suspect KeepSafe contains private photos and videos. Similarly, you can create a decoy version of KeepSafe that you launch by entering a fake PIN.

KeepSafe doesn't require root access and is free to download from Google Play. Buying





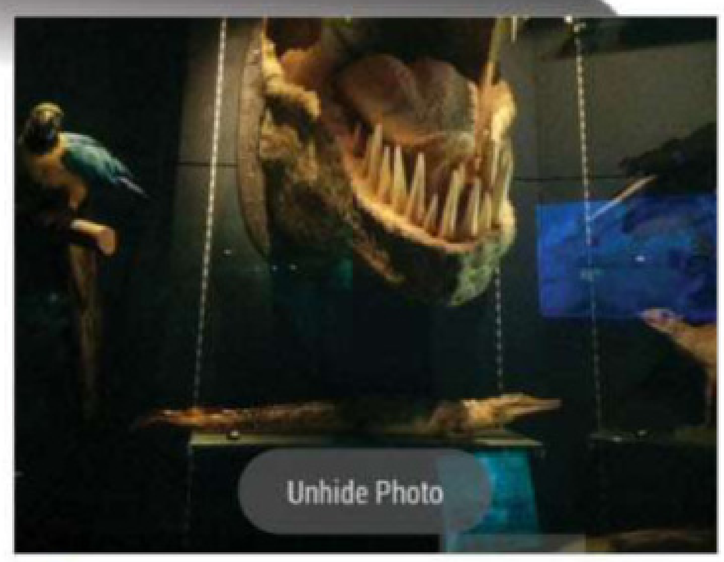
1 Create your PIN

When you first launch KeepSafe, you're asked to create a PIN. Enter a four-digit code, tap OK and then re-enter your PIN. If you forget your PIN, you can recover your account via email, so enter your address and tap Enable. KeepSafe will then send a verification email to this address.



2 Hide your photos

Enter the code from your verification email into KeepSafe and tap Submit. KeepSafe already contains a default album, but you can create more by tapping the '+' symbol. To add photos to an album, open that album and tap the Import Photos icon. Select your photos and then tap Hide.



3 Un-hide your photos

To move photos out of KeepSafe so they reappear in your device's Gallery, find the photo in question and give it a tap so it appears fullscreen. Then, tap the Unhide icon and confirm that you want to move this image out of KeepSafe, by tapping OK.

5 quick tips: Send photos and videos to your KeepSafe account via email

1 Enable Send via Email
In the app's Settings menu, tap Send via Email, followed by Add Photos By Email

2 Take a note
Note down the 'Send To' and 'From' addresses, and ensure Private Cloud is enabled

3 Create your email
To send content via email, create an email using KeepSafe's 'From' and 'Send To' addresses

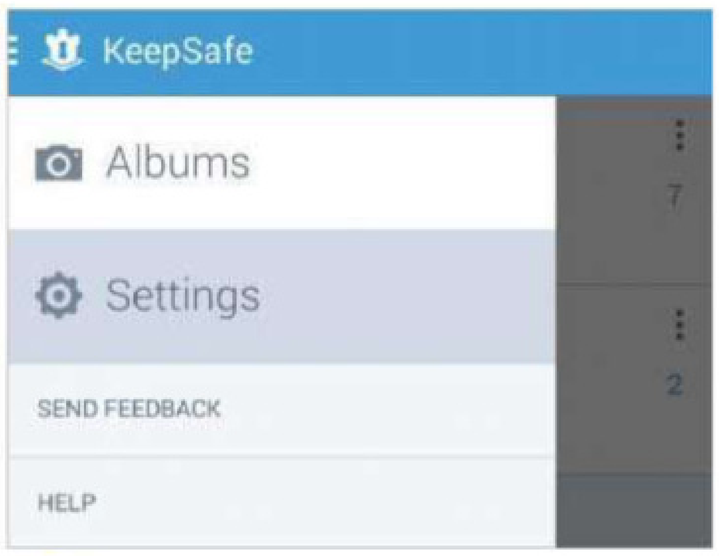
4 Attach photos and videos
Attach your media content to the email message, and then click/tap Send

5 Check your KeepSafe app
Ensure your device has an internet connection and your content should appear in KeepSafe's 'Main Folder'



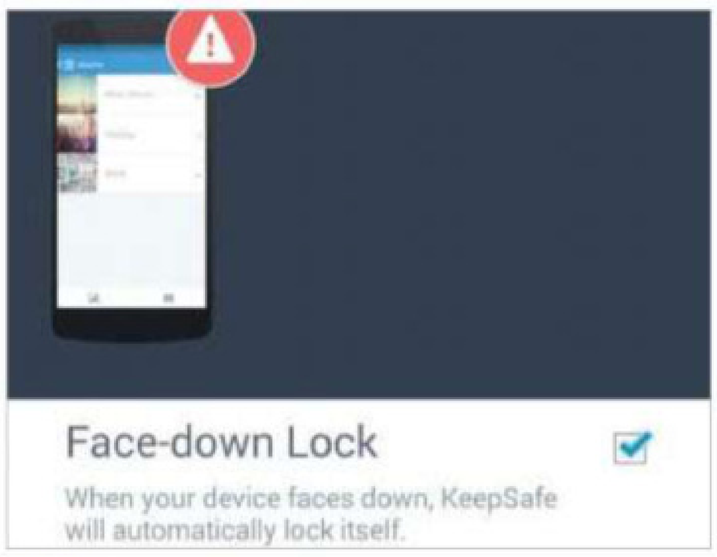
4 Share photos securely

You can also use KeepSafe to share photos in a way that means the recipient can view the image for 20 seconds only. Make sure the photo is stored in KeepSafe, then tap the photo so it appears fullscreen. Tap on Share and choose a channel with which to send your image.



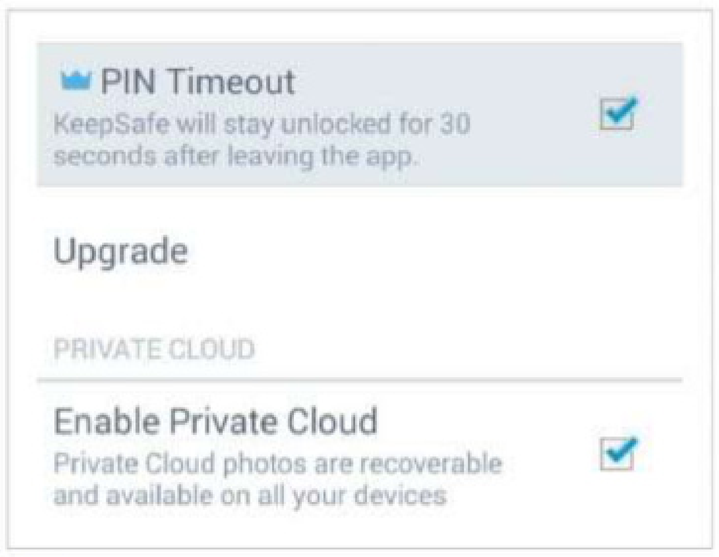
5 Settings menu

On KeepSafe's main screen, tap the icon at the top left, then Settings. Here, you can perform admin tasks such as changing the email address associated with your account, and your PIN. You can also access some extra KeepSafe options, which are covered in the next few steps.



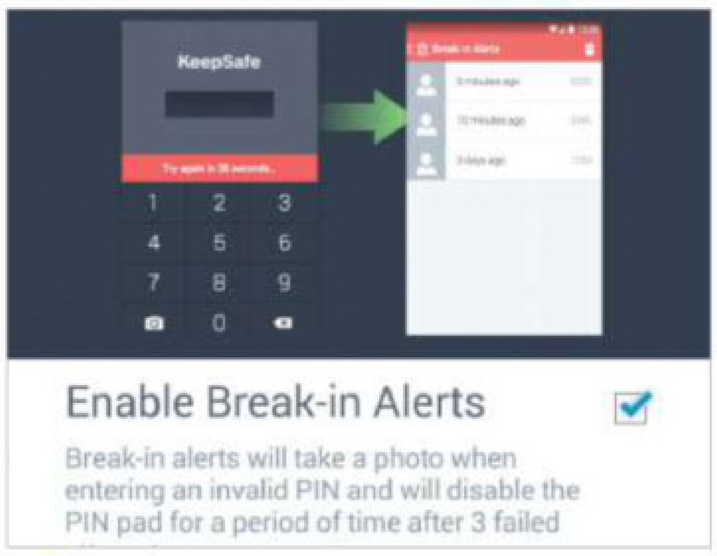
6 Auto-lock KeepSafe

If you need to quickly lock KeepSafe, you can enable Face-down Lock so the app locks automatically when you flip your device upside down. KeepSafe's Settings also contain Pro features, which you can access via a free 14-day trial – to start it, tap any of the Pro features.



7 PIN Timeout

One Pro feature you can access on a free trial basis is PIN Timeout. This keeps KeepSafe unlocked for 30 seconds after you leave the app, so it's perfect if you're fed up of having to re-enter your PIN every time your device goes to sleep or you accidentally exit KeepSafe.



8 Break-in Alerts

Break-in Alerts is another Pro feature. When enabled, KeepSafe automatically takes a photo when an invalid PIN is entered. After three failed attempts, the PIN pad will be disabled for a while. To activate this feature, tap Break-in Alerts, followed by Enable Break-In Alerts.



9 KeepSafe in disguise

You can disguise KeepSafe as a system-scanning app, by enabling Secret Door. Now, launching KeepSafe will simply display a message informing you that the system scan is complete. To launch the real KeepSafe app from this screen, you need to long-press on the KeepSafe logo.

faq

Ask your own question online at **littlegreenrobot.co.uk**

What happens to my photos and videos if I uninstall KeepSafe?

The contents of your KeepSafe account are associated with your email address. This means that if you uninstall KeepSafe from your device, you can always recover your content at a later date by reinstalling the app and logging in with your original email address.

How do I prevent KeepSafe from copying all my hidden photos and videos to Private Cloud?

Private Cloud is the key to syncing KeepSafe content across all your devices. Backing up your content to Private Cloud also means that if your Android smartphone or tablet breaks, you won't lose all the photos and videos in your KeepSafe account. However, if you don't want to back up your content to Private Cloud, you can disable this sync by opening KeepSafe's Settings and deselecting Enable Private Cloud.

Need help?

Got a problem with your Android phone or tablet? Get in touch with us...

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"The source code for the Nexus 6 is available, and respected community developers have already released custom kernels which tweak settings to let the system run cooler"

HACK YOUR NEXUS



Unlock the true power of Android

The Nexus is the ultimate phone for the experienced Android hacker. Aside from the fact that it gets the latest and greatest operating system releases first, it's also the most open to modification, with an easily unlockable (and relockable) bootloader. This means that the hacking community regularly innovates cool tweaks and mods for the Nexus range and that these hacks spring up very quickly after each new Nexus is released – something that often isn't the case for regular Android devices.

Even though Nexus phones and tablets run the purest version of 'stock Android' favoured by Android fans, they can certainly still be improved upon. With our tweaks you can enhance performance, make better use of the hardware and, of course, give yourself root access so you can dig into the deepest, darkest levels of the Android system.

One of the key benefits of a Nexus is that as devices are released, the source code to the operating system appears at virtually the same time. While this is true for other devices when it comes to the kernel, the whole system can be built and flashed on a Nexus, which gives an unprecedented level of customisation to your device.

Prepare your Nexus

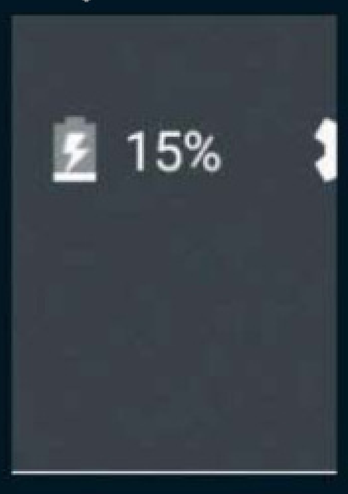
Make sure your Nexus and computer are ready for all kinds of hacks

Lots of different hacks are available for your Nexus devices that require varying levels of expertise. You can smoothen the hacking process by ensuring that your Nexus device and your computer (which is needed for a lot of the hacks) are set up with the necessary changes and have the appropriate software installed. Good preparation will reduce the risk of things going wrong!



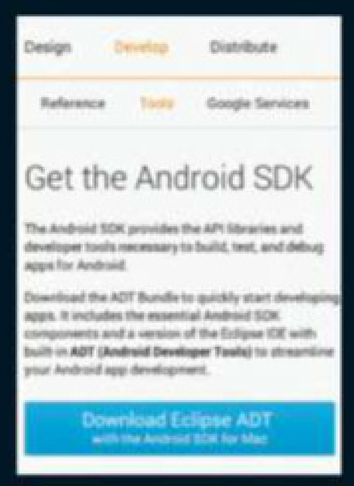
1 Charge the battery

It may sound obvious, but when you are applying hacks to your device they can often take a long time to complete, and it can also be particularly power intensive. For this reason, you should try and start applying your hack with a fully charged battery and ideally with a device connected to mains power.



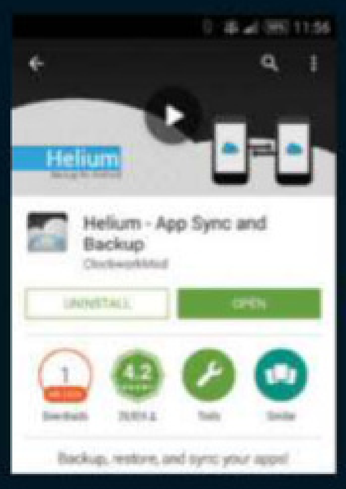
2 Download the latest SDK

A lot of Nexus hacks require the ADB and Fastboot tools for your computer. The easiest way to install these is to visit **https://developer.android.com/sdk/** to download the developer toolkit. This also gives you the ability to auto-update the tools as new versions become available for your Nexus.



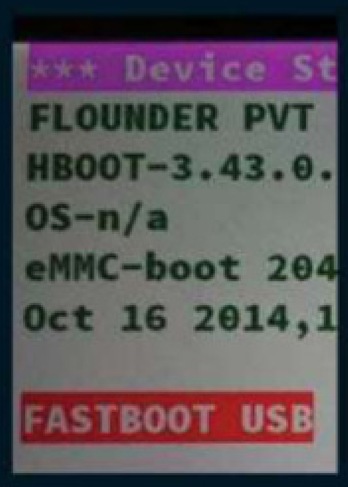
3 Back up your data

Some hacks will wipe your device and some won't, but if things do go wrong then the recovery process will more than likely involve a factory reset. It's a good idea to back up any important data before you start so that you don't lose anything. You can do this by using a tool such as Helium or 'adb backup'.



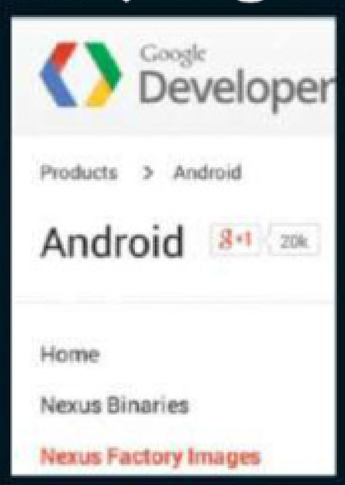
4 Unlock the bootloader

Unlocking the bootloader is one of those tasks that we referred to that will erase your data, so it's a good job you did a backup after all. On Lollipop-based devices you need to check an option in developer settings as well as using the 'fastboot oem unlock' command from your computer too.



5 Download the factory images

If you want to revert your device back to a completely stock version, then you will need to perform a reflash of the factory images. These images are very large downloads for modern devices, so it's worth keeping them to hand so that you can get it back up and running quickly if it is needed!



6 Check connectivity

You should ensure that ADB and fastboot works between your phone and your computer and you will also need to make sure that you've installed any drivers that you might need. Enable USB debugging on your phone and use adb devices, then use adb reboot bootloader and fastboot devices.



Hacking Do's and Don'ts

✔ **DO** read the instructions fully before you get started on any hack. If you read them right through you won't find any nasty surprises and you'll be sure you have everything that you will need!

✔ **DO** check the user feedback when applying a modification from forums. It's useful to see that other people with the same device have succeeded with the hack without any problems before you start.

✔ **DO** remember that no matter what hack you apply, you can always flash the factory images that you downloaded to get back to stock. You can experiment until you find a setup you like!

✔ **DO** be aware that there is an increased possibility of instability when using software hacks. They are obviously not tested as extensively as the factory build, so be on the lookout for issues.

✘ **DON'T** interrupt a flash that is underway on your device. Particularly when flashing full images, this can result in a bricked (unrecoverable) device. If you've done something wrong, let it finish, revert, then start again!

✘ **DON'T** use hacks that aren't intended for Nexus. Hacks are very specific for different phones and tablets – if it doesn't say it'll work on your device then it probably won't!

✘ **DON'T** forget to post feedback if you are using a hack from a forum and you've had a successful experience! It lets others know that the hack is safe to use and it's polite to say thank you to the developer!

✘ **DON'T** expect over-the-air updates to apply on hacked devices. The safest option is to not accept updates, but at the very least ensure you back up first as you may well end up with a boot loop.

Share your tips

Discovered a great hack to use on a Nexus? Let us know!

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Is there anything you'd like to see us cover in the mag? Drop us a line!

Boost performance in Lollipop

The Lollipop version of Android encrypts devices by default, but it does this at the expense of performance

Android devices have supported full device encryption for a number of releases now, protecting user data from even the most concerted of thieves. Android Lollipop, however, takes this a step further with full automatic encryption for all users (much to the chagrin of law enforcement). It even includes a PIN unlock prompt as soon as the device powers on. The downside of this is that the extra processing power required to encrypt/decrypt data when the device is in use slows the read and write speed, meaning there is an overall performance hit. Different Nexus devices seem to be impacted in varying degrees by the change, but generally if you do disable the encryption there will be some benefit.



Back up with a custom recovery

1 The process of removing encryption will wipe your device, so you need to back up first, ideally using an encryption-compatible recovery image such as TWRP. Custom recoveries back up the content of a partition rather than the binary image, and this means that they can be restored later to an unencrypted partition.



Flash a custom boot image

2 Device encryption in Lollipop happens immediately on first boot on a wiped device and is configured using a flag in the boot image. Custom boot images are available for download in forums such as **XDA-Developers.com** that change this flag and are flashed using the fastboot tool.



Avoid accidentally re-encrypting

3 Be aware that on an unencrypted device, if you accidentally flash a normal boot image (either manually flashing an update or by applying an OTA), then the device will automatically re-encrypt itself when booting up and you will have to repeat the process! Only flash updates with similarly patched images.

Nexus updates without OTA

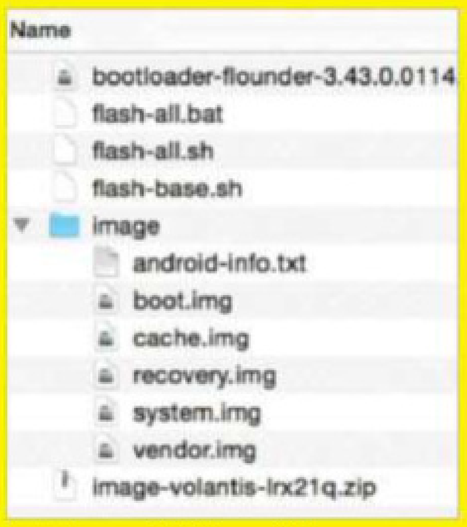
Google employs staggered rollouts for OS updates which can be frustrating, but there is a faster way

One of the key benefits of a Nexus device is that they are normally the first to receive new operating system versions. There is a catch though – as with Play store downloads, Google employ a staged rollout for the updates, meaning that if you are unfortunate enough to be in a late batch, you could end up getting the update weeks later than other Nexus users. Frustrating to say the least! Don't worry though; there is invariably a way to update your device manually, either by manually using ADB and the OTA update file itself or by using the latest factory images. This approach normally wipes the device, but you can prevent this happening by slightly tweaking the flash process.



Download the factory image

1 Nexus factory images are normally updated around the same time as OTA updates first become available. They are available to download from **https://developers.google.com/android/nexus/images** – take care to download the correct image, particularly where Wi-Fi and mobile variants of a device are both available.



Extract the files from the image

2 The factory images are in a tar.gz format and these will contain the images themselves (in a ZIP format) as well as the flashing scripts. As you will be flashing manually without using the scripts, you will need to extract the ZIP file as well as the main archive in order to fully access the bare images for your Nexus.

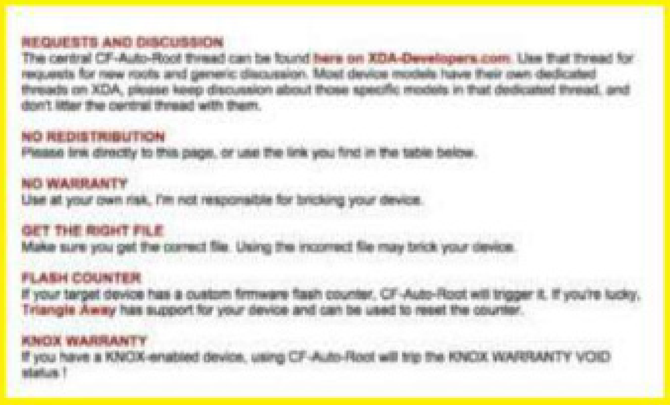


Manually flash the partitions

3 Now that you have your device in bootloader mode, you should flash each partition in turn as detailed in the flashall script. The only step you want to skip here is the 'fastboot format userdata' step because this is the part that will end up wiping your device! Reboot with 'fastboot reboot' when you are done.

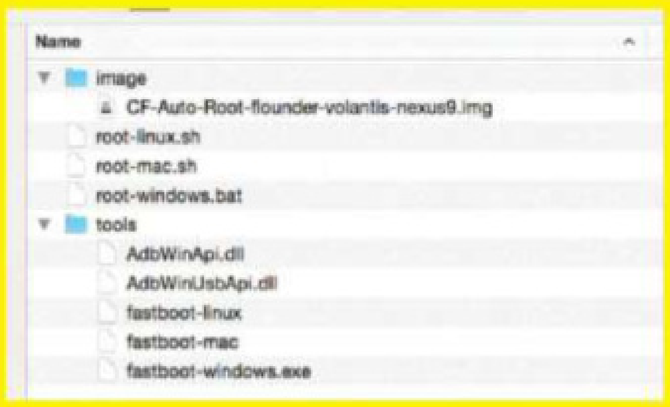
Rooting devices is more complex on Lollipop than on KitKat because it now requires use of a custom boot image

Flash a modified boot image for Lollipop root



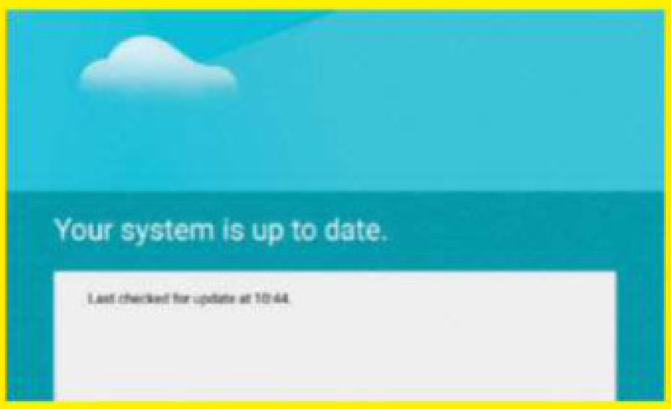
1 Download a rooted boot image for your Nexus

In order to root your device, you need to download the rooted boot image. Community hacker ChainfireXDA has images available with the name CFAutoRoot. Head on over to **http://autoroot.chainfire.eu** to download it.



2 Flash the rooted boot image ZIP

The downloaded image ZIP will contain script files to root your device for Windows, Mac and Linux. Note that running these will wipe your data if you are not already bootloader unlocked!



3 Beware of OTA updates

OTA updates will often either fail to apply on rooted devices or unroot as part of the update process. Don't worry if you do end up being unrooted because you can just rerun the script after updating.

Cool your Nexus 9 with a kernel

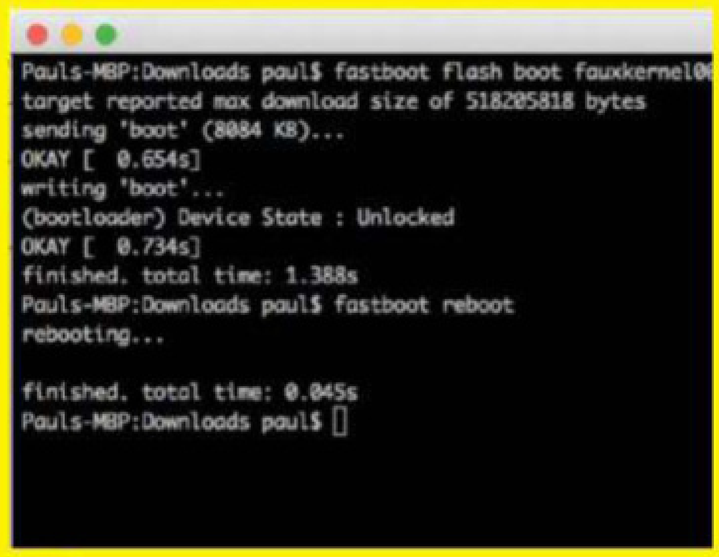
The Nexus 9 gets warm during use – an optimised kernel can help reduce the temperature

The Nexus 9 has a very powerful processor – a 64-bit Nvidia K1 with 192 graphics cores. This power makes for great experiences, especially gaming, but the device does get warm in the top-left corner. The source code for the Nexus 6 kernel source is available from the AOSP repository, and a number of respected community developers have already released custom kernels which tweak settings to let the system run cooler without affecting performance. They also offer a number of other enhancements controlled by kernel companion apps. The kernel is flashed to a device as part of the boot image.



1 Get custom kernels

Nexus devices will generally have a selection of custom kernels available. The best place to look is the Original Android Development forum for your device at **XDA-Developers.com**. Look for kernels uploaded by respected developers such as faux123, flar2 or Franco.



2 Flash the custom kernel

Kernels are contained within a boot image and can either be flashed from bootloader using 'fastboot flash boot filename.img' or booted for a one-time try using 'fastboot boot filename.img'. If you've decrypted your device, make sure you custom kernel is set to decrypted mode too!



3 Install the companion app

Many custom kernels have companion apps available from the Play Store, such as franco.Kernel updater for Franco's kernels. Companion apps help you stay up to date with the latest releases and also tweak the settings of the kernel itself, giving a far greater degree of control.



4 Adjust CPU/GPU clocks

A good way to reduce the device temperature (which will also improve battery life) is by throttling the CPU and GPU clocks. This is best achieved using a kernel companion app if available. Change the values in small increments to find your own optimum settings.

Revert to KitKat on your Nexus 7

Not enjoying Lollipop on your Nexus 7? You can go back!

While Android KitKat is the newest release of the operating system, not all apps work on it today. On older devices, such as the 2012 Nexus 7, some users are reporting a noticeable drop in performance. In addition, some very nice hacks such as the incredibly versatile Xposed framework are currently not compatible.

Updating to Lollipop isn't irreversible – you can flash back to KitKat, but unfortunately you will have to wipe your phone or tablet in the process. You can then choose whether you want to update again manually at a later date when the system is more mature.

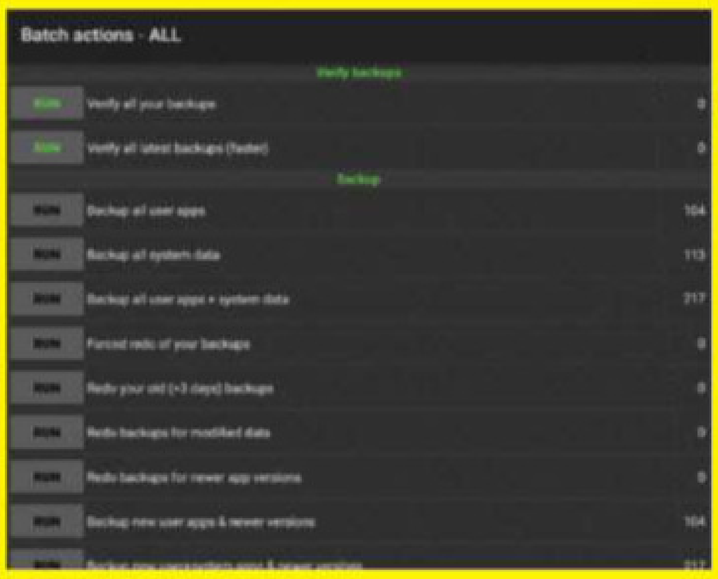


Factory Images "razor" for Nexus 7 [2013

Version	Download	MD5 Checksum
4.3 (JSS15Q)	Link	c2a6413aee5a9737f1bcc3c3fe445e
4.3 (JSS15R)	Link	26e2883d19ad5517f9dc36c6adb7d
4.4 (KRT16S)	Link	5f5a9145ded2ec923ce6fc80152b74
4.4.2 (KOT49H)	Link	f8c9bf847eff964d268b080cb4de80
4.4.3 (KTU84L)	Link	6fe66de2dc355a22f1cdb39068ecc4
4.4.4 (KTU84P)	Link	021d076a64d7263a2f206ce899b99
5.0 (LRX21P)	Link	fd868b03bd00074dd7f70e31ad73b

1 Download a factory image from old versions

As Nexus devices are primarily intended to be developer tools, it's useful to be able to flash back to old software versions for compatibility testing reasons. Google makes this possible via the factory images. Exactly how far you can go back in time will depend how old your device is!



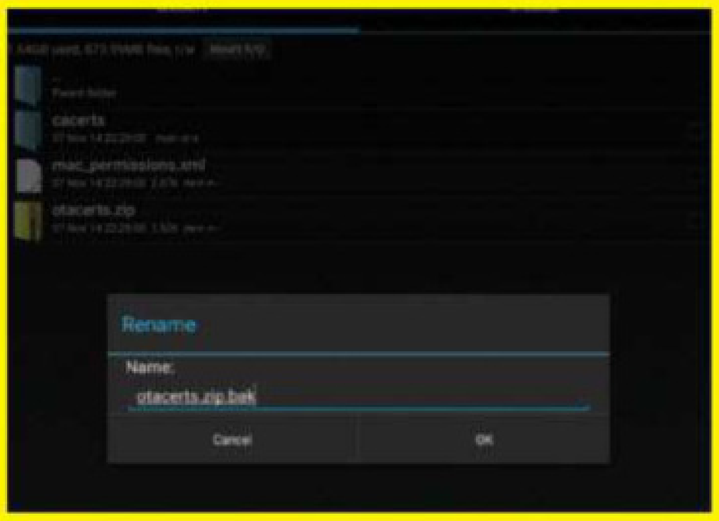
2 Prepare to wipe your data

While ROM version upgrades are designed to be completed without wiping your data, the same doesn't apply when going back the other way – changes in database formats can lead to crashes when you roll back to an older release. For this reason, you will need to wipe your data via the flash script.



3 Flash the image

As we are wiping, the flash script can be used in its entirety. Extract the tar.gz file and you will find a flash-all script that you need to run from the command line, with the device in bootloader mode. Enter bootloader using your device's key combination or a tool such as Quick Boot.



4 Prevent OTA updates

After you've rolled back to the older Android release, your device will still try and update to the current version. Obviously you want to stop this happening or you've wasted your time! You can do this manually or you can rename '/system/etc/security/otacerts.zip'.

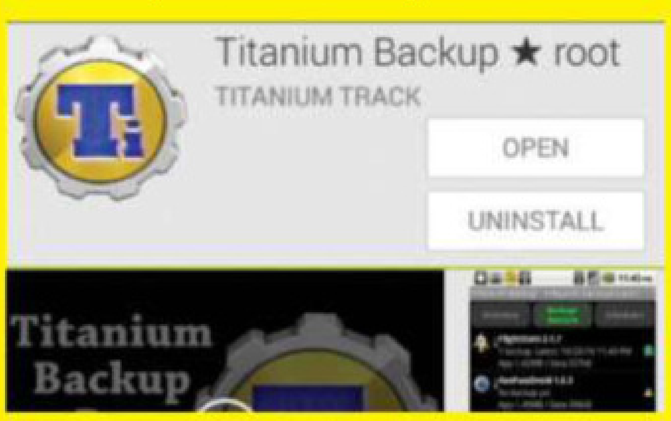


5 Accidentally applying OTA

If you do accidentally apply an over the air update, don't be tempted to interrupt the flash process. If you stop the update at a critical time, you could end up bricking your device. If the device doesn't autoreboot, you may be able to flash the old images again.

Increase limited Nexus storage by updating system apps

Nexus devices often don't have expandable storage, so it makes sense to save space wherever you can



1 Download Titanium Backup

One of the most versatile hacking tools available from the Play Store is Titanium Backup, available in free and Pro versions. It includes a number of useful tools that can be used on rooted devices.



2 Check prerequisites

As well as root, Titanium Backup requires a working version of BusyBox on your device. The easiest way to get this is by downloading a BusyBox installer from the Play Store, such as the one provided by Stericson.

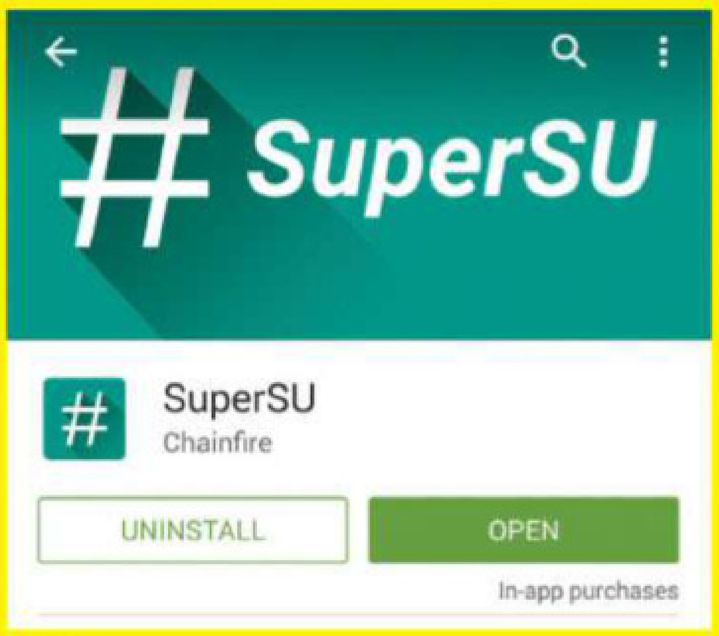


3 Integrate your apps

Titanium Backup moves updated system app APKs from your /data partition (valuable storage) to the /system partition where the ROM resides. Make sure you reboot straight after running the process!

Enable the Nexus 6's secret RGB LED

As with previous Nexus devices, the Nexus 6 includes a RGB notification LED, but strangely it's not an option that is enabled by default - here's how to fix that...



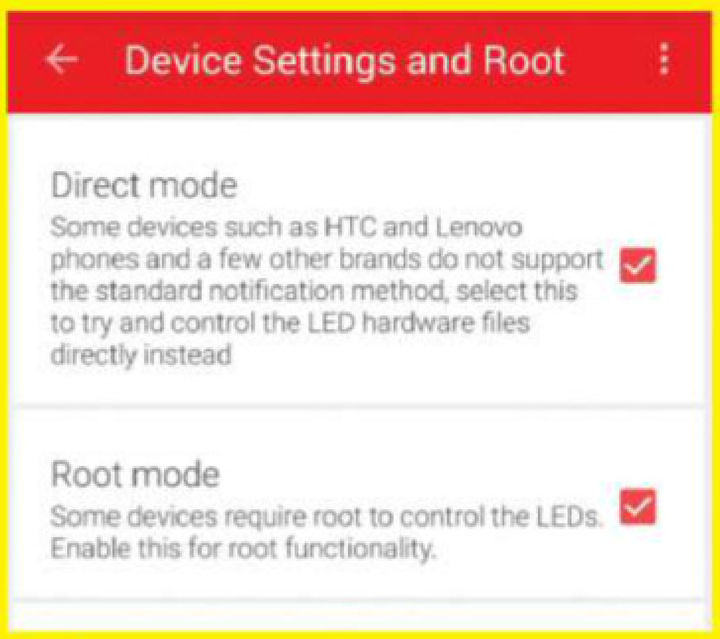
1 Prepare your device

Enabling the RGB LED on the Nexus 6 is straightforward, but you do need to ensure that your device is rooted. This is because Lollipop provides no normal access to the LED – it needs to be controlled using root shell commands sent from an application with notification access, for instance an app like LightFlow.



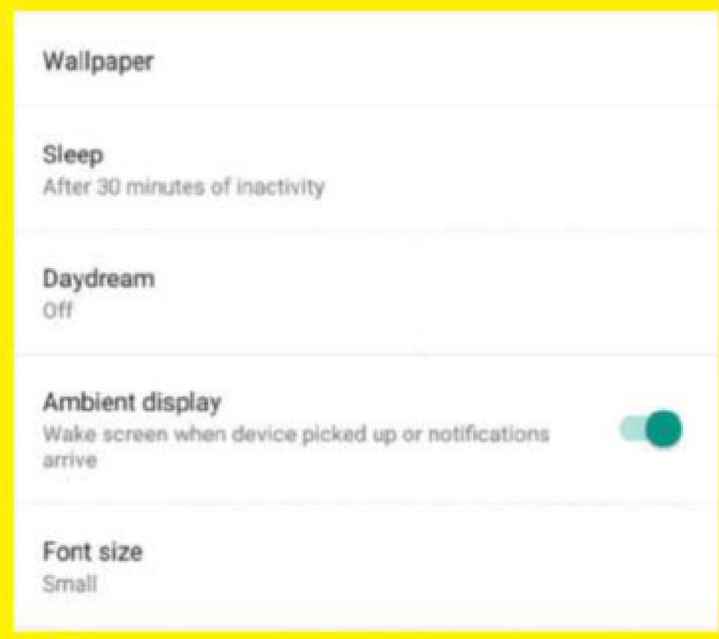
2 Install LightFlow

LightFlow LED & Notifications is a £1.49 download from the Play Store which offers the ability to customise LED notifications on any Android device, enabling you to set the colour and sequence for any app/system event (hardware allowing). It also supports repeating notifications and sleep/charge modes.



3 Enable root mode and the mixer

When you first load LightFlow, it will prompt you to enable notification access. In addition, to support the Nexus 6, you need to enable the Root mode, 'Run every command as root' and Direct mode options. You will also need to ensure you grant superuser access for all requests that pop up.



4 Disable ambient screen mode to save power

The reason the LED is disabled on the Nexus 6 is because it includes Ambient Mode, which displays notifications on the screen when the device is in standby. There is an option in system settings to disable this when using the LED instead, which will improve battery life.

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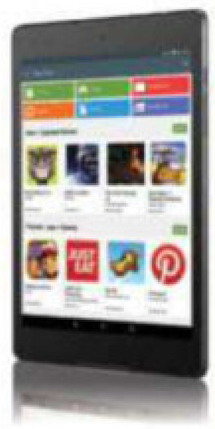
facebook.com/LinuxUserUK twitter.com/LinuxUserMag

Tips & Tricks

status update

Which devices are best for the hacking scene?

Nexus 9



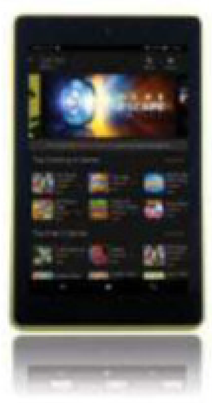
Rooted? Yes
Active Development: High
Google's brand-new device has already been rooted, with hackers eager to exploit the 64-bit architecture.

Galaxy Note 4



Rooted? Yes
Active Development: Medium
While this handset is redundant as a mainstream device, it's low price makes it ideal for first time hackers to practise on.

Amazon Fire HD 6



Rooted? No
Active Development: Low
Amazon's latest tablet has yet to see any significant development on the XDA forum.

Moto 360



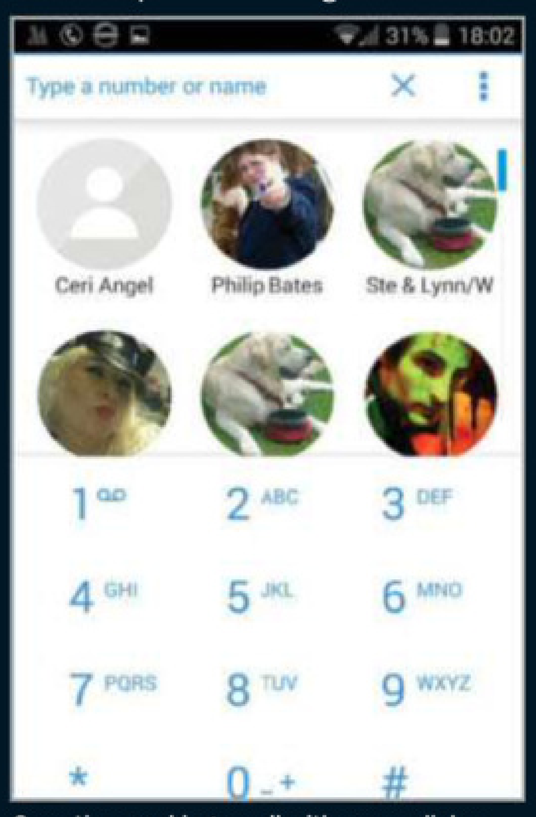
Rooted? Yes
Active Development: High
There are lots of alternate watchfaces and apps available for hacked Moto 360's.

A new dialer for Android

Stock Android dialers are quite capable, but if you're looking to refresh the way in which you integrate with your contacts, make phone calls and quickly send messages via SMS and social networks, you might consider switching to a different dialer.

A strong alternative is Dialer+, a replacement dialer that requires the Contacts+ app – both are available in the Google Play store.

When used together, these apps offer a stylish new integration of contacts and dialer, enabling a fast new way to make phone calls. After all, waiting around as you thumb through your contacts is pretty frustrating, isn't it?



Save time making a call with a new dialer app like Dialer+

Secret feature hack

Staying on the topic of your Android dialer, there are various secret codes that you can use to tweak your phone, all of which can be entered via the dialer.

These codes originate with the old analogue phones; engineers would memorise a list of special numbers they could use for fixing line faults and these codes were later used by phone box hackers to get free calls, in a process known as 'phreaking'.

Codes are usually manufacturer specific, although some exist across devices. For instance, you can check your device IMEI by entering *#06#, which is useful if you're planning to unlock your SIM.

Meanwhile, entering *#*#4636#*#* (for HTC and Samsung) will display a hidden information menu for checking signal strength, forcing data connection and even running a ping test.

Search the web for your device, and find the codes that apply.



Access hidden tools on your phone to troubleshoot connectivity issues

Instagram accounts

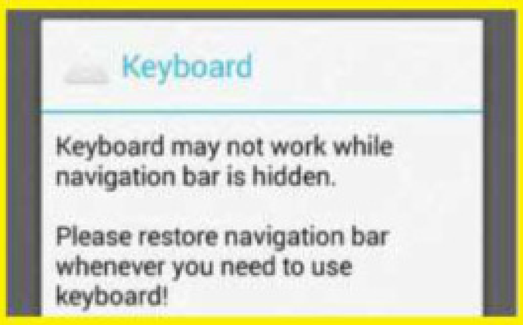
Many people have multiple Twitter and Instagram accounts. For the former, multiple account handling is a native feature, but this is not the case for Instagram.

A workaround exists, however, using an app for Android 2.2 and later called Instwogram. You might, for instance, have a personal Instagram account and one for your blog, or even a separate account that you may run for your employer. Rather than carrying around two phones, this app is the perfect single-handset solution and you can find it by

quickhacks

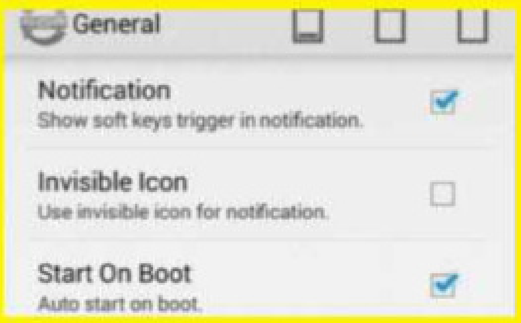
Implement a fullscreen app mode

Android KitKat users probably know about Immersive Mode, an option to display some apps in fullscreen view. It hides the status and navigation bars in all apps when not in use, root-free!



1 Install GMD Immersive

GMD Immersive is free on Google Play and after installing it, you will see a notification telling you that the keyboard may not activate as per usual. For most apps this shouldn't be a problem.



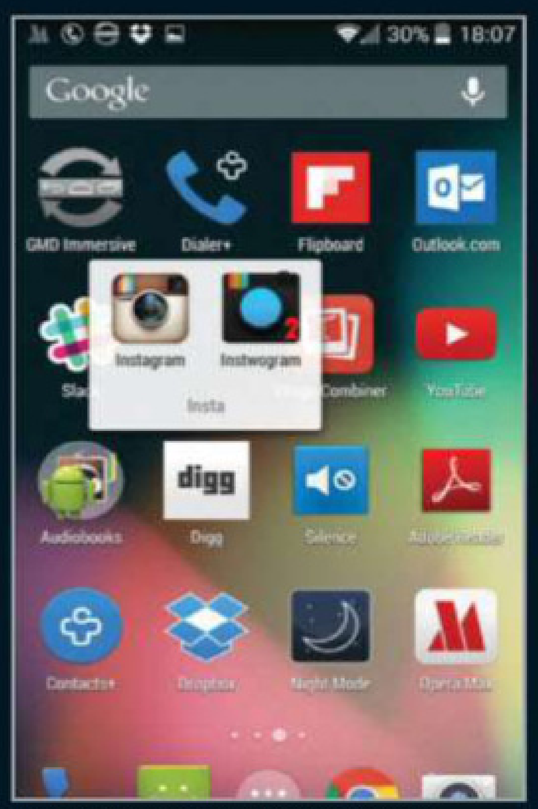
2 Test in fullscreen

To set up GMD Immersive, open General to decide whether to Start On Boot or Disable in Lockwood. You can test the forced Immersive Mode by tapping the buttons across the top of the app.

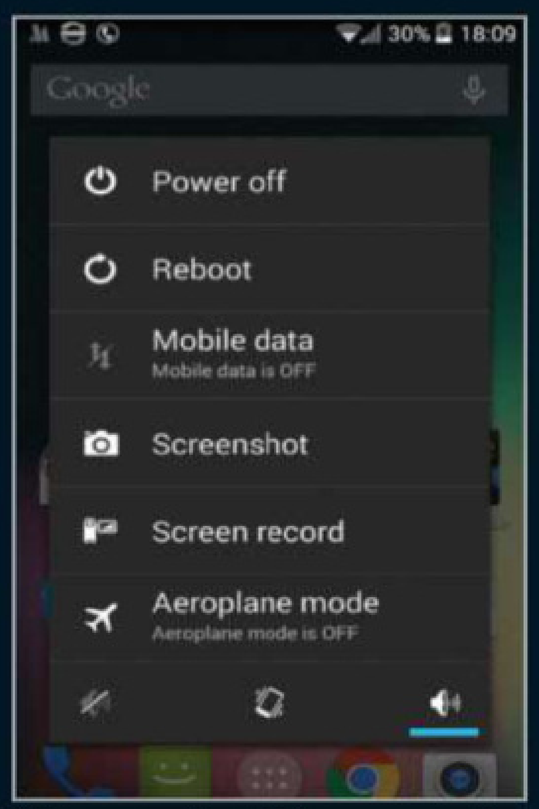


3 Trigger upgrade

The Trigger menu decides Immersive Mode's behaviour. A £1.58 PRO upgrade can establish per application settings, enabling particular apps to be viewed in Immersive Mode.



Upload photos and video to a second Instagram account with Instwogram



Add new menu items to the power menu to save time when its pressed

searching for "instwogram" at **xda-developers.com**

You will need to have Unknown Sources enabled in Settings>Security as the app isn't available in Google Play.

Installing version 5.1.4 is advised at present for the full set of photo and video features (later versions work but without video, so if this isn't required you can use these versions).

Once installed you will need to run the app, which is a clone of the genuine Instagram, and add your account credentials. You will then have the ability to snap and share photos with either of the two Instagram accounts.

Edit your power menu

Shutting down your phone used to be a case of pressing the power button and waiting. In the smartphone age, a bunch of alternatives can be added to the already expansive list of Power off, Reboot and Screenshot.

To expand on the available options on a non-rooted, stock Android release then just open Settings>Buttons>Power menu and activate these options you would like to see added to the power menu.

This is only the beginning of your ower (menu) trip. By flashing a recovery, you should see additional options (when you tap Reboot, the options to reboot into Recovery and Bootloader are displayed). Installing a custom ROM might see some further alternatives, such as toggling mobile data or activating a built-in screen record tool.

An increased selection of options in the Power menu can save time and make your Android device easier to use.

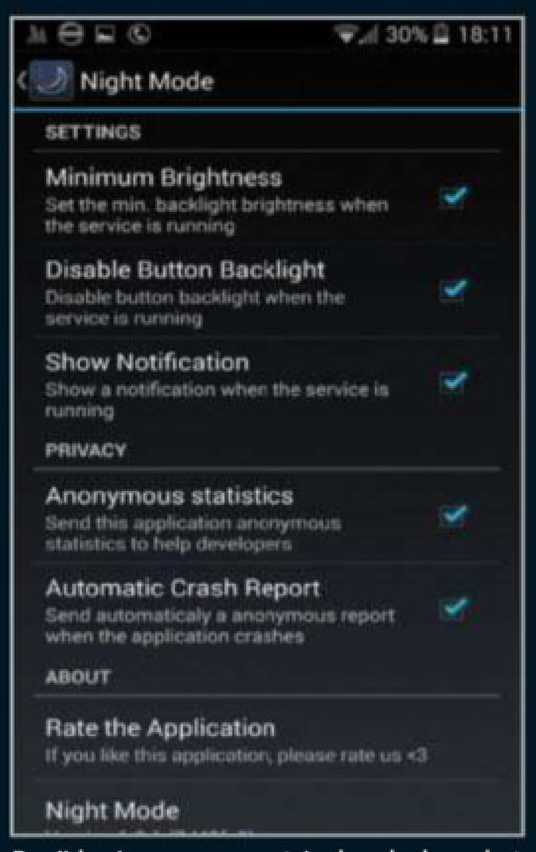
Android use at night

Using your Android device in the dark can prove uncomfortable, especially if you're picking up your phone to answer a call in the dead of night. A bright display can certainly wake you up, but it might also hurt your eyes.

Various tools are available to assist here, but begin by ensuring that your Android display is set to the automatic option in Settings>Display>Brightness.

Next, you might consider a tool such as the free Screen Filter in Google Play, which adds an adjustable software screen filter to your display. It's particularly useful for playing video games and reading eBooks in low-light environments When you use it on AMOLED displays, it will save battery life too.

Finally, Night Mode is a Play Store app specifically designed for using an Android device at night. With the ability to set a minimum brightness and disable button backlights, this is the ultimate tool for configuring Android for use in the darkness without giving yourself a headache.



Don't hurt your eyes or get a headache using Android in the dark

Get the Lollipop look

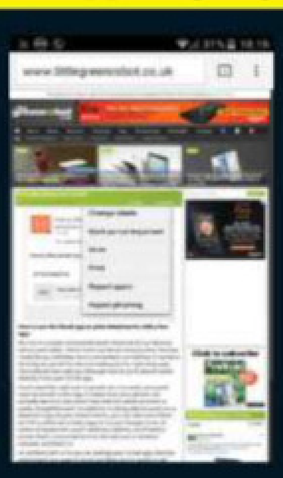
Three apps to give your Android a Material Design makeover



ai.Android L-Lollipop keyboard

Price: Free
From: Play store
Need root? No

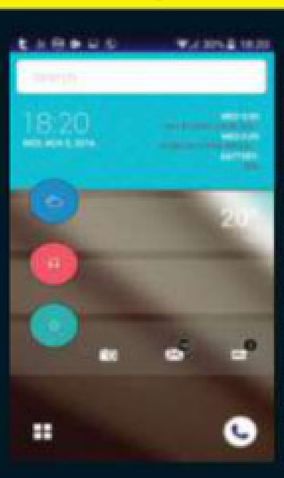
This Lollipop-looking theme will need the free ai-type keyboard theming app, but you will be able to sport Material Design before your update arrives!



Chrome Beta

Price: Free
From: Play store
Need root? No

Enjoy the future of Android browsing, today! Chrome Beta has Lollipop's Material Design slick aesthetic, and using this for just a few minutes will help you adjust to the new look for Android.



L Theme

Price: Free
From: Play store
Need root? No

Using a stock ROM? If you really can't wait for Lollipop, consider this Material Design theme for your home screen and native apps – it requires the free Themer Launcher app (also free).

Jargon Buster

Get up to speed on all the terms you need to know when hacking your phone

OS

Short for 'operating system'. Often the Android ROM will be referred to as the OS – this just means the system files on the Android device that make up your user experience, similar to Windows, Mac OS X or Ubuntu on a desktop computer.

ROM

Stands for 'read-only memory'. In the context of Android, the ROM refers to the files that make up the operating system installed on your device. Gaining root privileges allows for replacement of the standard ROM with a custom one.

Root

'Rooting' your phone gives apps access to parts of the OS that are normally hidden from consumers. This enables you to run more powerful software and install custom ROMs on your phone.

ROM Manager

An app available from the Android Market that enables you to install a whole new version of your OS with a single click. It requires a rooted phone to use and is ideal for those new on the scene.

Titanium Backup

This app from the Market enables you to back up everything on your phone – apps, data, settings and all. It means that you can restore your phone to how it was, even after you've updated or changed the ROM.

Unrevoked

Available from **www.unrevoked.com**, this is a one-click tool that can be used for rooting many popular HTC smartphones.

ADB

Stands for 'Android Debug Bridge'. ADB is mainly used for software development, but it also has some uses for hacking your phone. It can be used to push files onto the system folder, for instance.

Nandroid

You might come across the phrase 'perform a Nandroid backup'. This means using a custom recovery tool to make a back-up image of everything currently on your phone: OS, apps, data, etc. It's very useful should you wish to restore your phone to its previous state later.

Radio

'Radio' refers to the software on your Android device that deals with making phone calls and data connections. Updating your radio version can bring better battery life and signal strength to your device. Some ROMs require the latest radio.

Flash

The storage in your device comprises flash memory, a type of solid-state storage. The terms 'flash' or 'flashing' mean installing new software onto your device's storage.

Works with » Varies with device **Difficulty** » Advanced

Unlock new features for Chromecast

Cast to Chromecast without being on the same network, and enable mirroring on devices that aren't currently supported

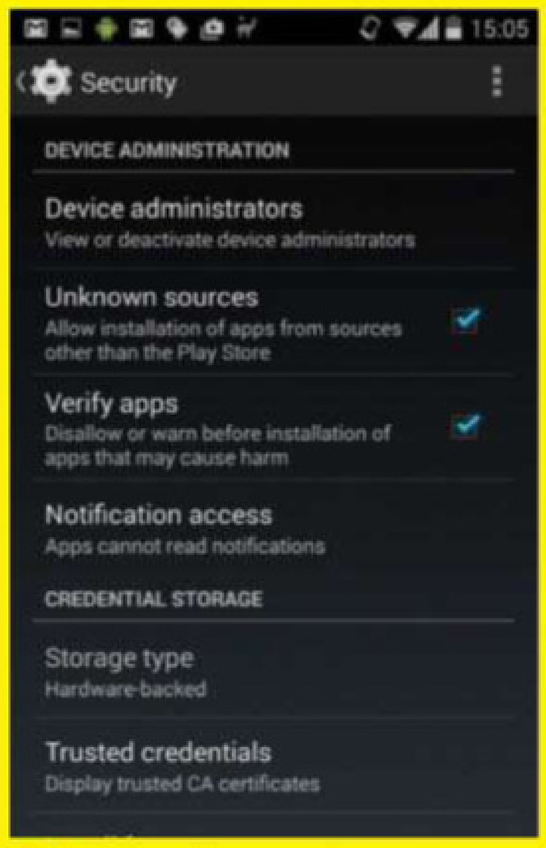


Chromecast is a media streaming adapter from Google that lets you directly stream content to any HDMI-equipped TV, by pairing it with a tablet, smartphone or computer. The only sticking point here is that the controlling device must be connected to the same Wi-Fi network as Chromecast for it to work. This is fine when you're using it on your own, but having to hand out your Wi-Fi password to visitors is an unncessary hassle.

Google has a guest mode planned that will make this easier, but they've yet to implement it. You can enable this guest mode feature early, thanks to the #Configurator for Root app. This app can enable hidden features or settings in certain Google apps, by modifying the overrides table in the gservices.db database. This method requires a rooted Android, but not a rooted Chromecast.

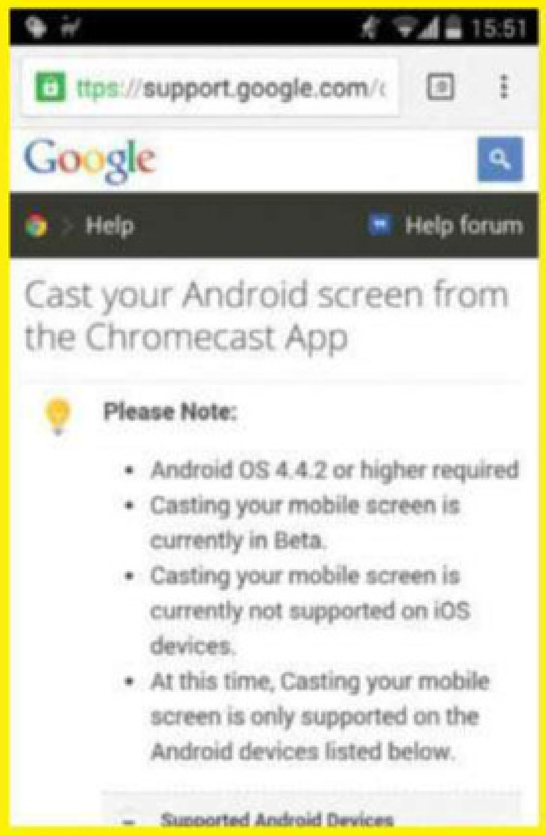
This tutorial will show you also how to enable a second hidden feature: mirroring. Mirroring lets you view the contents of your device onto a big screen by casting your Android screen to a connected TV.

Currently, mirroring is in beta. If this feature isn't available on your device, you may be able to enable it ahead of time via an experimental Mirror Enabler fix. This fix only works on devices running KitKat 4.4.2 or higher.



1 Enable unknown sources

Head over to the Google Play store and download the free #Configurator for Root app. Ensure your Android device is set up to enable apps from unknown sources, by opening your device's Settings and giving Security a tap. If Unknown Sources isn't already selected then just tap to enable it.



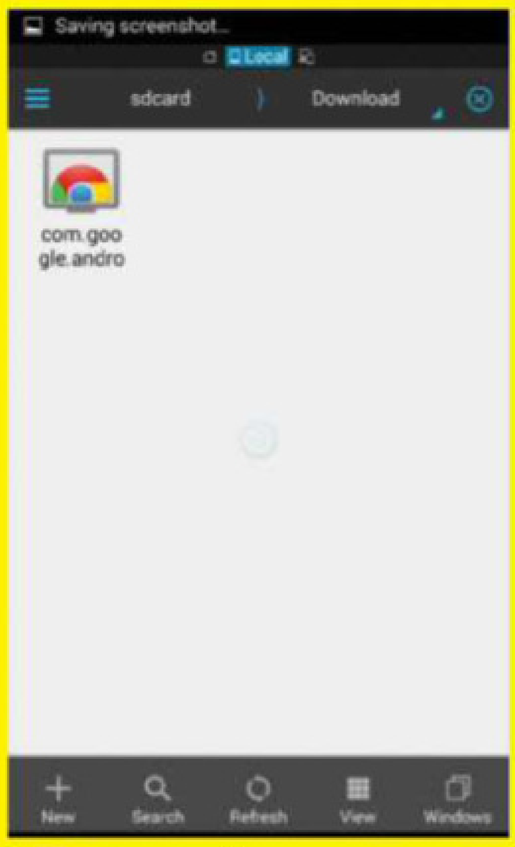
6 Chromecast mirroring

You can use Chromecast's mirroring functionality to cast the contents of your Android screen directly onto your TV. Mirroring is currently only available for certain devices, but if your device isn't on the list (**http://bit.ly/1wlulWl**) you can still access mirroring via an experimental fix.



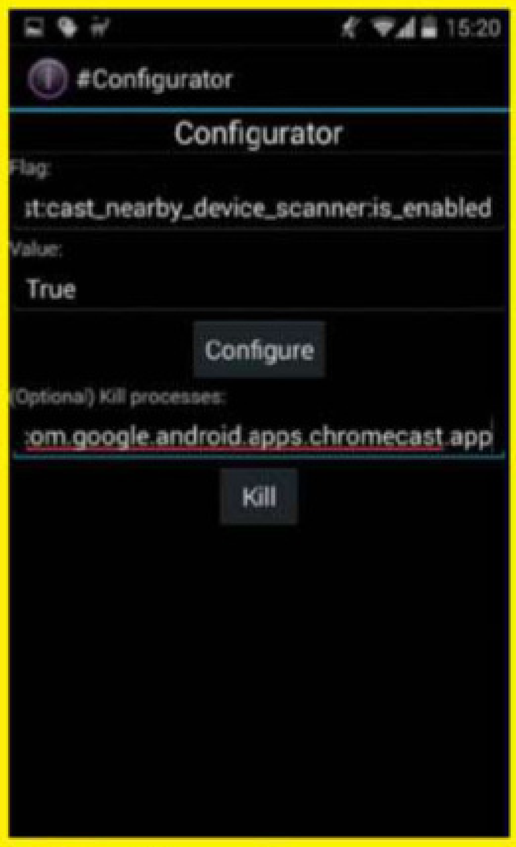
2 Download Chromecast

If you don't already have a file explorer installed on your device then open the Google Play store and search for the free ES File Explorer app. Download it and open your device's browser. Head over to **http://bit.ly/1HW1VM4** and then all you have to do from there is download the Chromecast app.



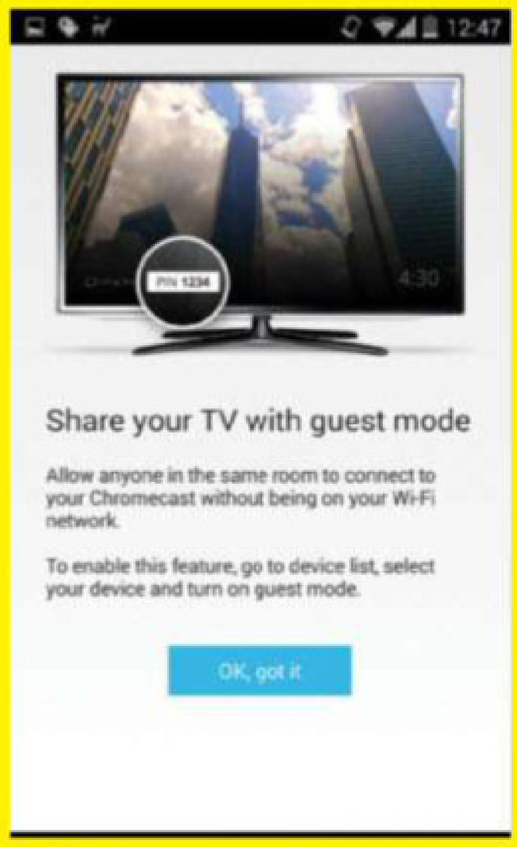
3 Install Chromecast

Once the Chromecast APK has finished downloading, boot up ES File Explorer and navigate to your device's Download folder. Find the Chromecast APK, tap it, and then confirm that you want to install Chromecast. Launch the #Configurator for Root app. You'll see several areas for entering text.



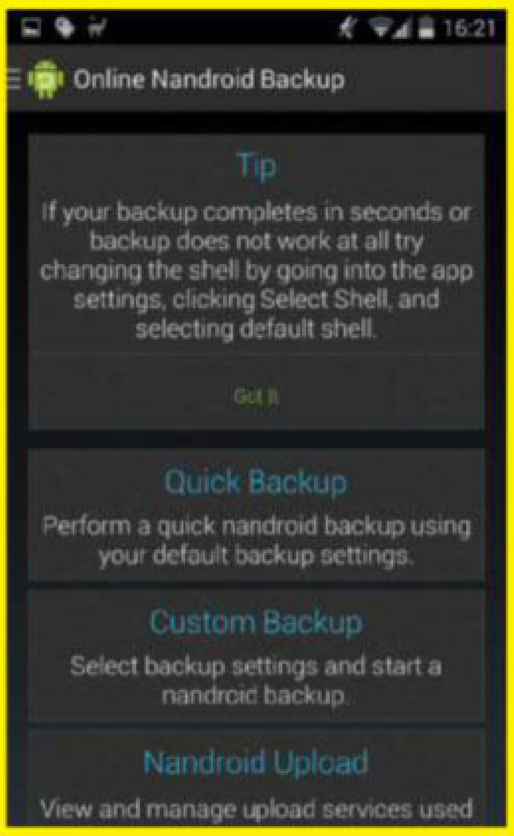
4 Kill option

Tap Flag and enter: **gms:cast:cast_nearby_device_scanner:is_enabled**. Tap the Value field and enter True, then tap Configure. When prompted, grant #Configurator for Root superuser permissions. Tap the Optional (Kill processes) field, and enter the following: **com.google.android.apps.chromecast.app**. Tap Kill.



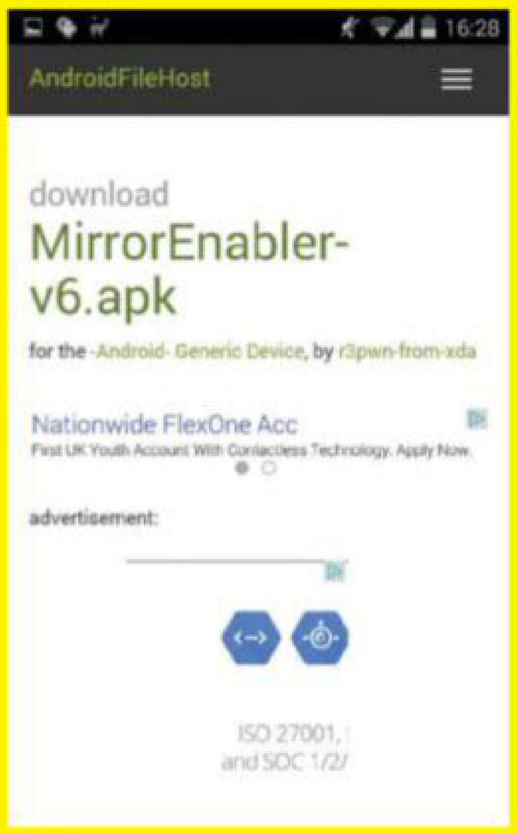
5 Check the guest mode

The first time you launch your Chromecast app after entering this information into #Configurator for Root, you should be greeted by a 'Share your TV with guest mode' screen. Read the on-screen information, then tap 'OK, got it' and you're ready to start using Chromecast's guest mode.



7 Back up your device

This is currently an experimental fix, so make sure your device is fully backed up before attempting it. You should also take the time to read and understand the full list of technical requirements and known supported devices at the XDA-Developers forum: **http://bit.ly/1qFpnat**.



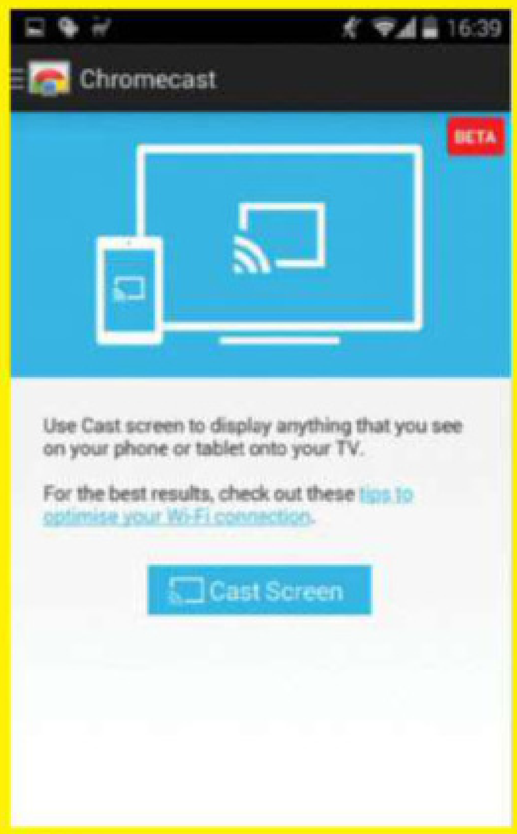
8 Install Mirror Enabler

Launch the browser and head to **http://bit.ly/1vWtFZe**. Download the Mirror Enabler APK. Once it's finished downloading, launch your file explorer, navigate to your Download folder, and give MirrorEnabler.apk a tap. When prompted tap Install to begin installing the app.



9 Enable buttons

Launch the Mirror Enabler app and tap each of its three Disabled buttons so they read Enabled instead. When prompted, grant Mirror Enabler the necessary superuser permissions. But, before your changes can take effect, you will need to reboot your device, so do this now.



10 Cast your screen

You are now ready to start mirroring your device. Just launch the Chromecast app and open its side menu by right-dragging on the screen. Tap Cast Screen, read the on-screen instructions and then you're ready to start mirroring. All you need to do to get started is tap the blue Cast Screen button.

Design a settings menu using one compiled APK

Customise more of your device, by using your own graphics in the Settings menu

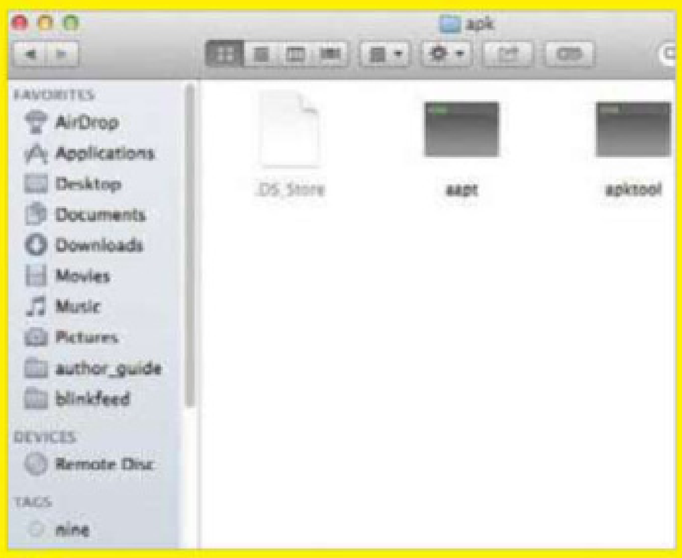
Even with the help of custom launchers and ROMs, some parts of Android have a habit of remaining exactly as the manufacturer intended them. However, with the help of developer tools such as the Android SDK and Android Debug Bridge (ADB), it's possible to customise your Android device.

This tutorial shows you how to change the background of your rooted Android's Settings menu. You can replace the stock background with any image of your choice – whether it's a photo you snapped yourself, or a graphic to replace the stock Settings menu. To make this change, you need to pull an APK file from your device and onto your computer. This is where you can decompile it into separate files and folders, make your changes and then compile it back into a single APK to push to your device.



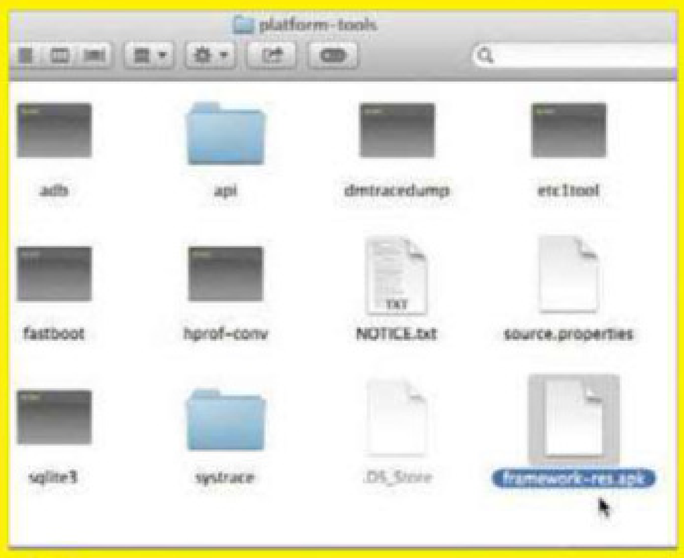
1 Download your files

On your computer, install the Android SDK **https://developer.android.com/sdk/index.html?hl=i**, then visit **https://code.google.com/p/android-apktool/downloads/list** and download apktool1.5.2.tar.bz2 with the helper script for your particular OS. Then unzip the folders.



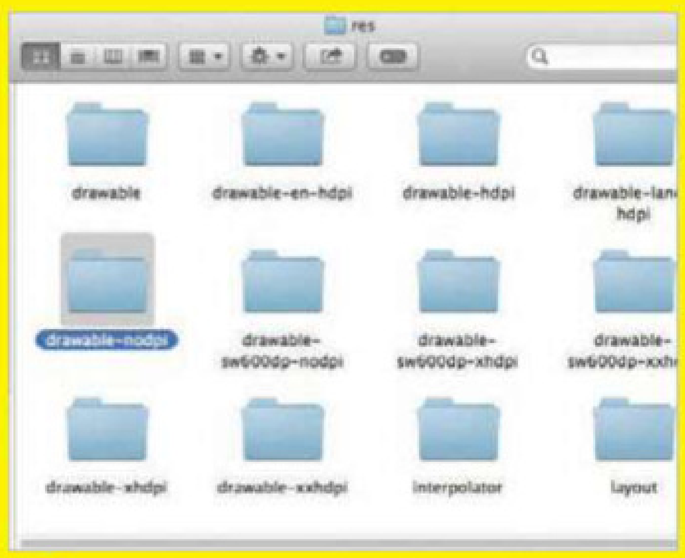
2 Move your apktool files

Create an 'APK' folder on your desktop. Move the contents of the two unzipped apktool folders into this new folder. Attach your Android device to your computer using the USB cable. Launch the Terminal on Mac or the Command Prompt window on Windows.



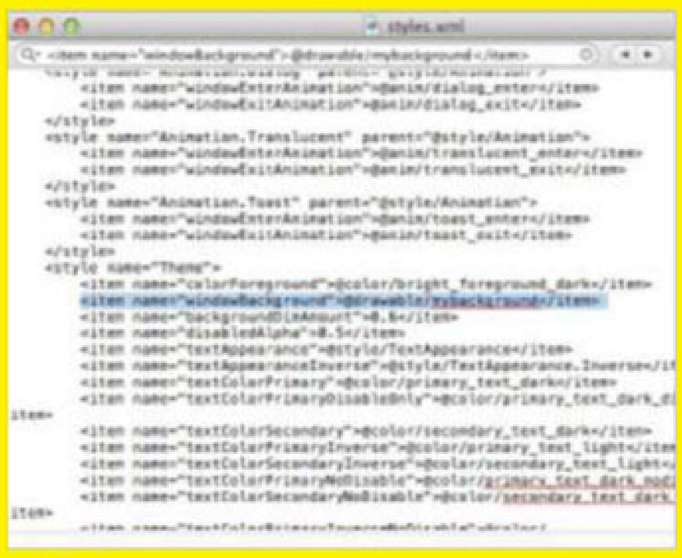
3 Pull Framework-Res.apk

Pull the framework-res.apk file from your device by entering the pull command into the Terminal, for example **./adb pull /system/framework/framework-res.apk**. Go to the platform-tools folder and move framework-res.to the APK folder you created on your desktop.



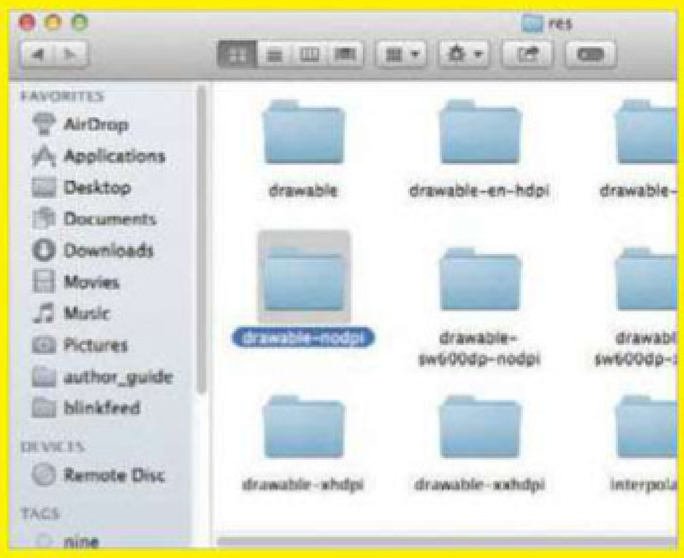
4 Decompile your APK

Update your Terminal to point to APK on your desktop (**cd /Users/username/Desktop/APK**). Now decompile framework-res.apk with **./apktool d framework-res.apk**. Open the unzipped folder, navigate to res/values and open styles.xml using a text editing program.



5 Edit styles.xml

Locate **<item name="colorBackground">@color/background_dark</item>**, replace it with **<item name="windowBackground">@drawable/mybackground</item>** and save. Create a PNG background matching your device's resolution.



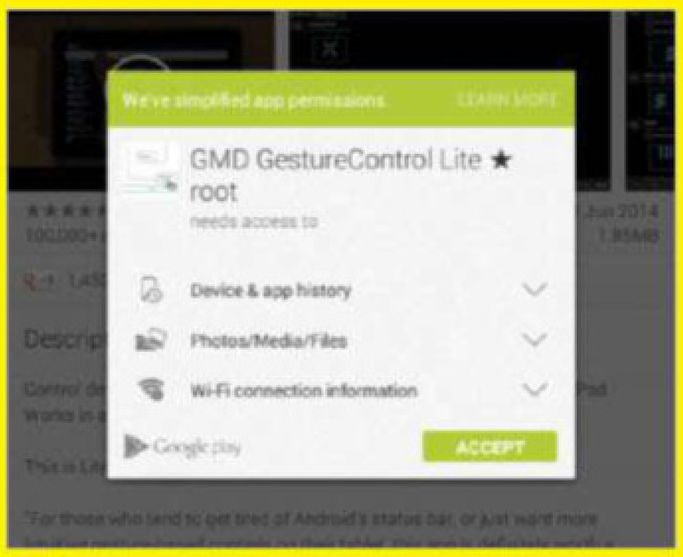
6 Compile your APK

Rename your image 'mybackground.png'. Place this in the res/drawable-nodpi folder. Recompile your APK by running **./apktool b framework-res**. Back up your device then boot into recovery and run **./adb push /system/framework/framework-res.apk**. Reboot and you're done!

Set up touch gestures to control your device

Add iPad style multitouch gestures with Good Mood Droid Gesture Controls

There are some pretty slick things that the iPad and iPhone can do that would be nice to have on your Android device. One of them is gesture controls which involves pinching, swiping and tapping to navigate around your device. With Good Mood Droid Gesture Controls you can add these to your Android device and you can create your own too. It's pretty easy to get to grips with, and within a few minutes you'll be using all sorts of gestures your own way to get around. You'll need a rooted device, and you'll need to download an app from the Google Play store. There's nothing complex here, you won't need to do much more than installing the app on your device and it shouldn't take you more than a couple of minutes to get everything up and running. So grab your phone or tablet, point it to the Play Store and let's get started.



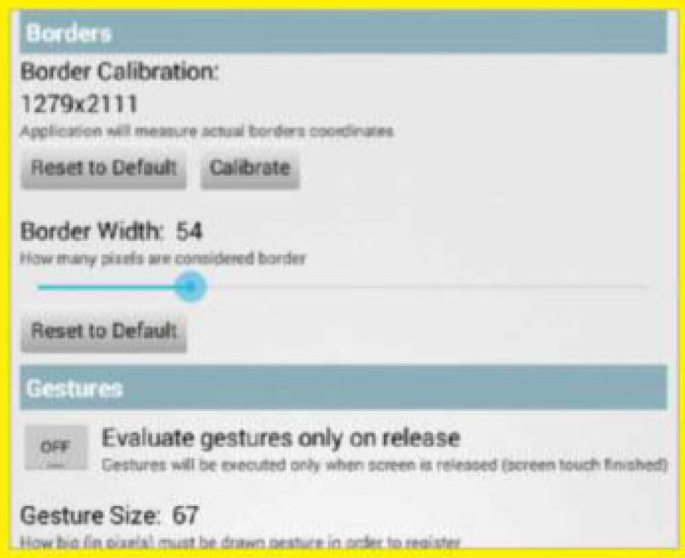
1 Download the app

First up you'll need to search the Google Play store for Good Mood Droid Gesture Controls. Grab the free version first, because, as with all root-only software, there's a chance that it won't work on your device. If you like what you see you can always upgrade.



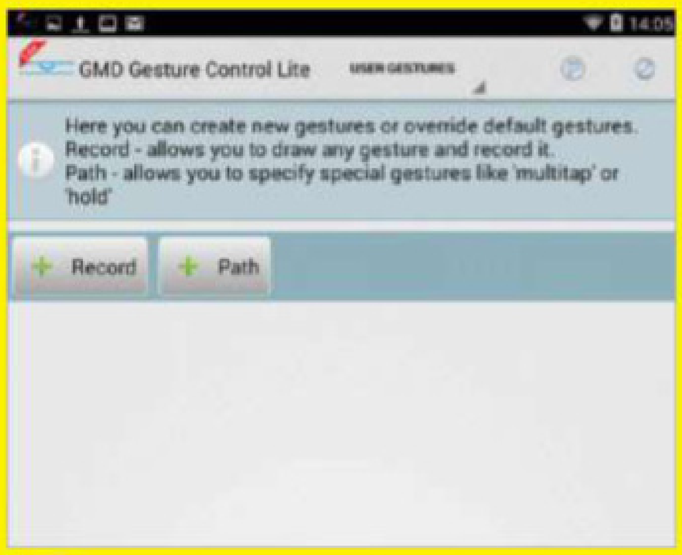
2 Enable access

When you first start up the app, it'll ask you for superuser access. Grant it. If everything goes well that's all the tweaking you will need to do. Your phone or tablet will take some time to process this though, but when it stops you will be good to go.



3 Read the gesture list

First familiarise yourself with the long list of gestures that are pre-installed. Try a few out to make sure everything's working. If anything seems awry, check the settings in the Advanced section of the drop-down menu. When you're happy, it's time to make your own gestures.



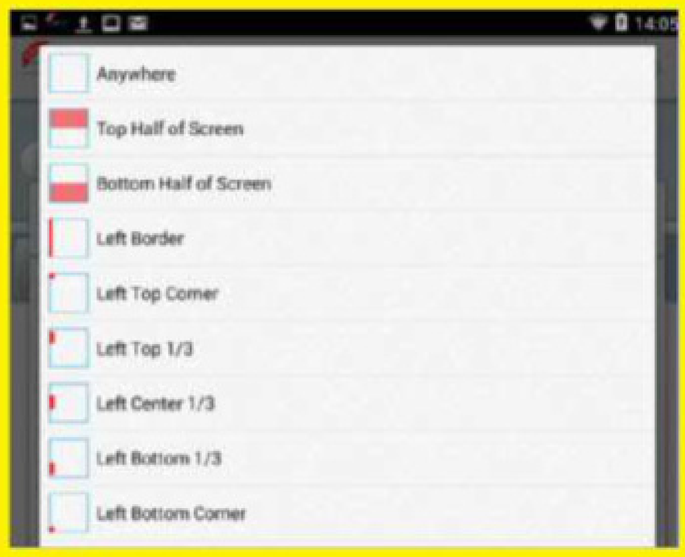
4 Draw your gesture

Go back to the drop-down menu and select User Gestures. This is where you can create your own gestures to quickly access different parts of your phone. To do this, simply tap record and then draw out the gesture that you would like to use.



5 Pick the action

Next you need to choose an action for your gesture. This can be as simple as opening an app or as complex as taking a screenshot. Explore the different options open to you by tapping through the menu that pops up. When you're happy select the one that suits you.



6 Choose the position

You can even pick where the gesture starts, which means you can have a much larger number of gestures than on an iPad. It's easy to play around with the different features and options on offer and create personalised gestures that work for you.

Works with » Varies with device **Difficulty** » Intermediate

Crank up speaker audio quality

Get the most out of your device's speakers with AwesomeBEATS



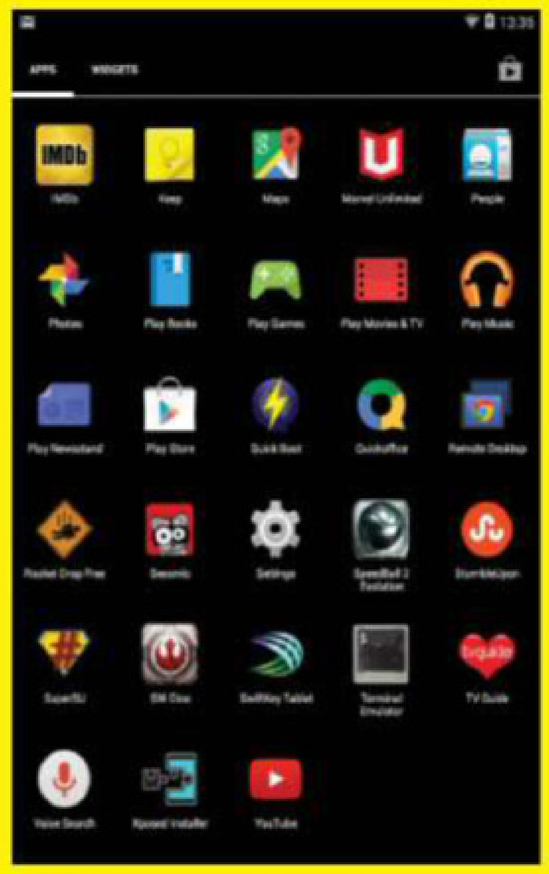
Wouldn't it be nice to have Beats Audio quality on your Android device? Well now you can, sort of. Top mod AwesomeBEATS adds extra controls and boosts to your rooted device's audio settings, letting you make the most of the audio options of Android. It's a slightly fiddly process to get it installed though, and you'll need a couple of apps and processes installed before you even get started to make it work. First off you'll need a rooted device, and you'll need to know what ROM you're running as well. You won't need a computer to work your way through this tutorial, but you should be pretty confident about what you're doing when it comes to playing around with rooted devices, as we're going to be poking around with the Linux-based innards of your phone or tablet using Terminal Emulator.

We ran the tutorial on a Nexus 7 (2012) rooted with WugFresh (**wugfresh.com**) and didn't hit any major snags, but if you don't know how to recover and restore your rooted phone, it might be best to get to grips with that before you try this. If you're using a Nexus as well, get pro tips on restoring on page 40. When you're ready, load up the Play store on your phone or tablet and we can start installing all the extra bits and bobs we need before we start installing AwesomeBEATS.



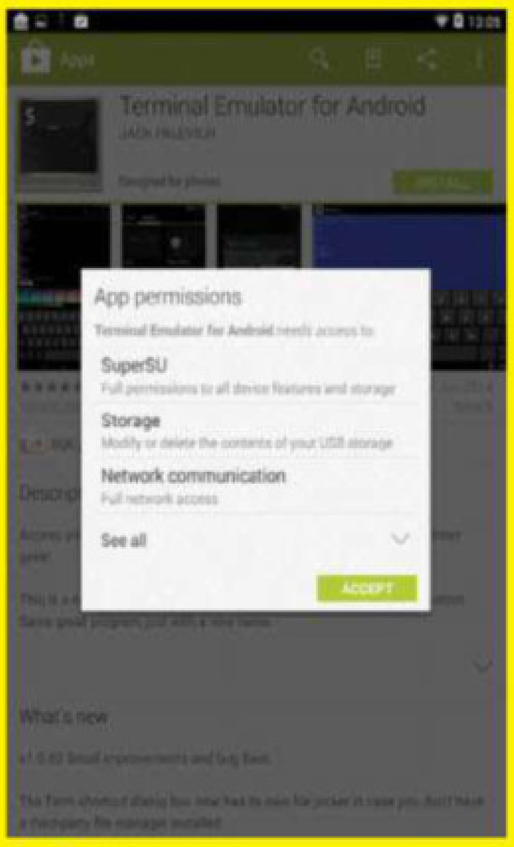
1 Get BusyBox busy

The first app you're going to need installed to your device is called BusyBox. You can get a free or premium version from the Play store (**http://bit.ly/1vRpOiG**). Once it's installed on your device, check that it's up to date by opening the app. You'll need the latest version of BusyBox for this tutorial.



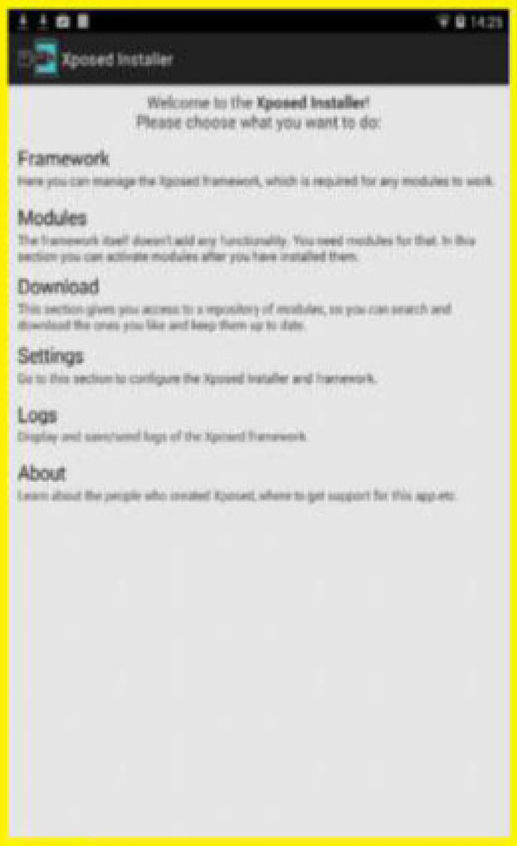
6 Enter the Linux

We're not done yet though. The app might be installed but we will need to mount it to the system. We will do this by using the Terminal Emulator that we downloaded at the beginning of the tutorial. Now's the time to go to your app drawer, find the Terminal Emulator app and start it up so that we can use the terminal.



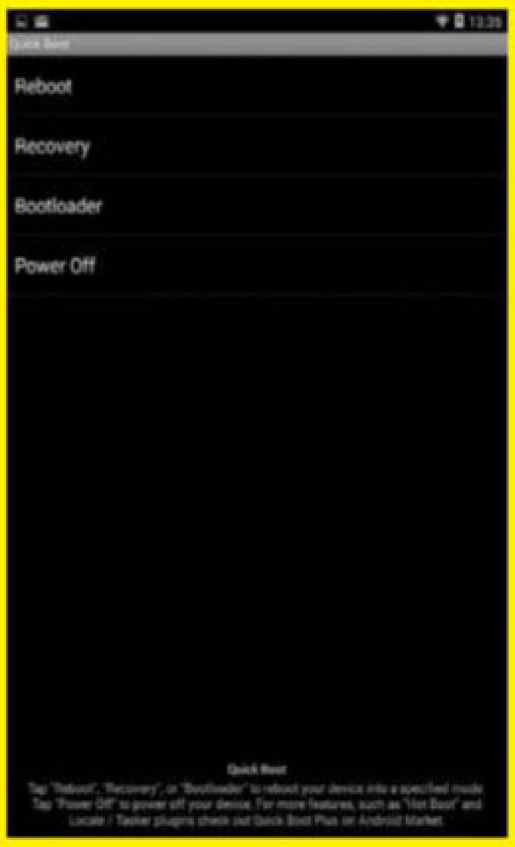
2 Get an emulator

You'll also need to have Terminal Emulator installed. This app lets you access your Android's built-in Linux command-line shell. It's available from the Google Play Store. It's free to download, so grab it. Once it's loaded up on your device you're all set to start installing AwesomeBEATS.



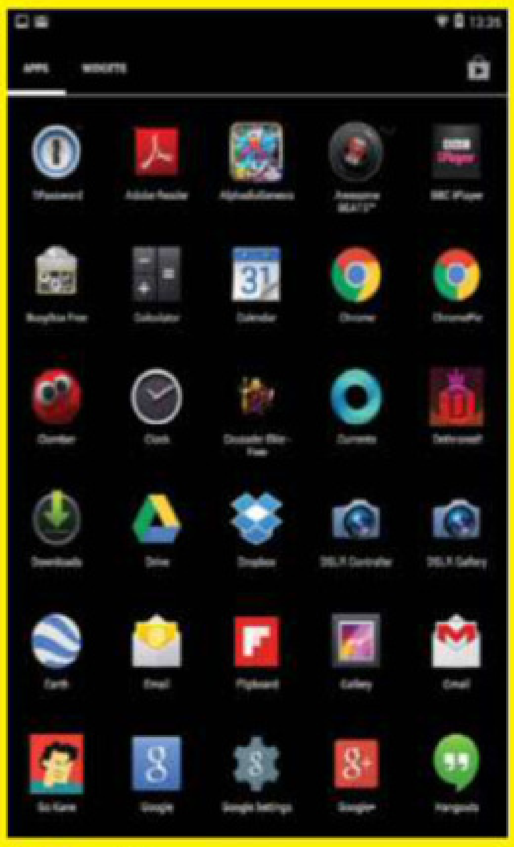
3 Download the ZIP

Now you need to download the ZIP file containing AwesomeBEATS. Head on over to this URL (**d-h.st/L9l**) and download the file. Make sure that you remember where you have saved the ZIP file, because you're going to have to flash it to your device in the not too distant future.



4 Restart in recovery

Now you need to restart your device in recovery mode. We're going to flash the AwesomeBEATS.apk from the ZIP you just downloaded. There are a variety of different bootloaders, so it's best that you're familiar with the program on your device and how it works.



5 Choose your ROM

One step in the flashing process will ask you what ROM you're using. It's important that you make the right choice here otherwise it's likely that the installation won't work. Once you restart the system, you should see an AwesomeBEATS app icon in your app drawer.



7 Get SU access

When the terminal comes up, you will need to gain superuser permission from it. Wait a moment so that everything is loaded and then when you see the chunky cursor, type in SU and push the Enter key. A notification should now flash up telling you that you've now got access.



8 Mount the app

Now you need to tell the system what it actually needs to mount. Simply type in awesome and then push the Enter key. It might take a while but a series of commands will then proceed to flash up on the terminal. After about a minute of waiting the app should be mounted onto the system.



9 Reboot

Last but not least you will need to reboot the system from within the terminal for the changes to take place. All you need to to do is type in reboot and then push the Enter key. This will reboot your system, and after a while you should be taken back to your home screen as per usual.



10 Drop some beats

Head back to your app drawer and go into the AwesomeBEATS app. Now you can start tweaking around with your audio settings to get some impressive sounds out of your device. Just make sure you enable the app for different settings using the check boxes.

Boost your graphics and gaming performance

Squeeze as much speed and gaming performance out of your device as you can with GLTools

The deeper you get into rooting your Android device, the more you'll find to play around with. If you're an avid gamer and you're looking for more control over your graphics settings, the kind that you might get with a PC, then GLTools is definitely the app for you. It lets you tinker with a whole heap of settings that you normally wouldn't be able to. You'll need to know a decent amount of graphics terminology, and you'll need a rooted device to make it all work. You can grab the app itself from the Play store, but it needs root access to play around with the games you've installed on your phone or tablet. It's especially handy if you're running a lower-end device and want to give things a bit of a kick. When you're ready, go ahead and visit the Play store.



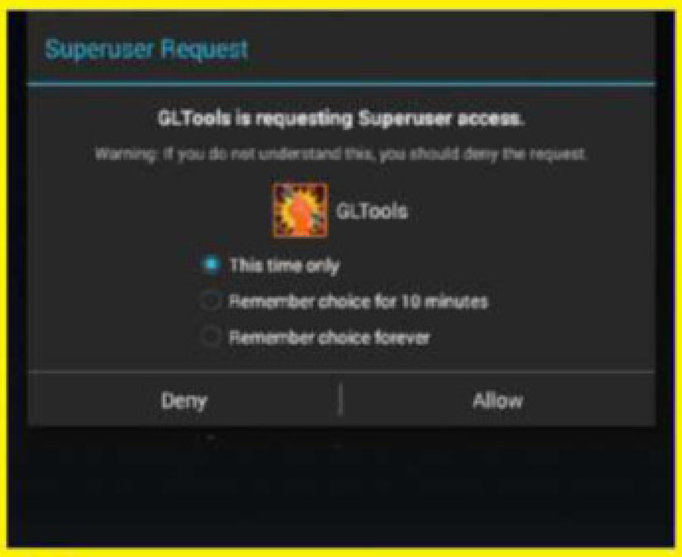
1 Download the app

First up, you'll want to grab the GLTools app from the Play store. The app is not free, so unless you're serious about enhancing your graphics performance, it might not be worth the money. Once it's installed, which shouldn't take too long, find the app's icon and tap on it.



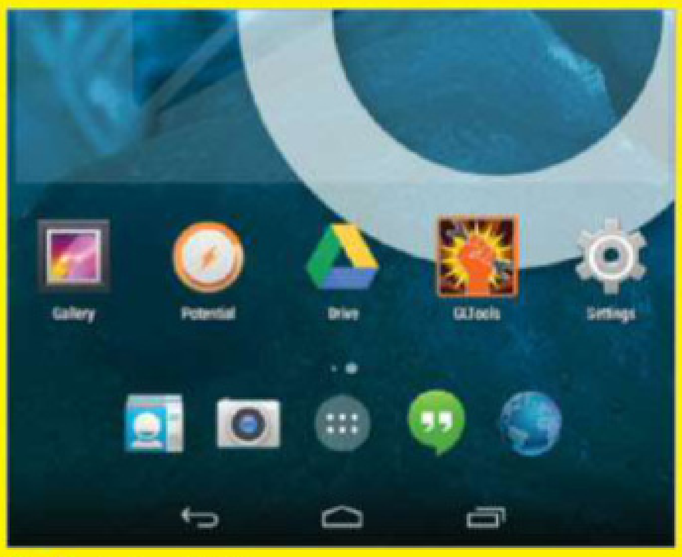
2 Choose your settings

Now choose which plugin to use with GLTools. Tap TEX(DE)coder to select it. This gives you more options than the default and lets you decompress and recompress textures to different sizes. Check the agreement boxes at the bottom of the page then tap Install.



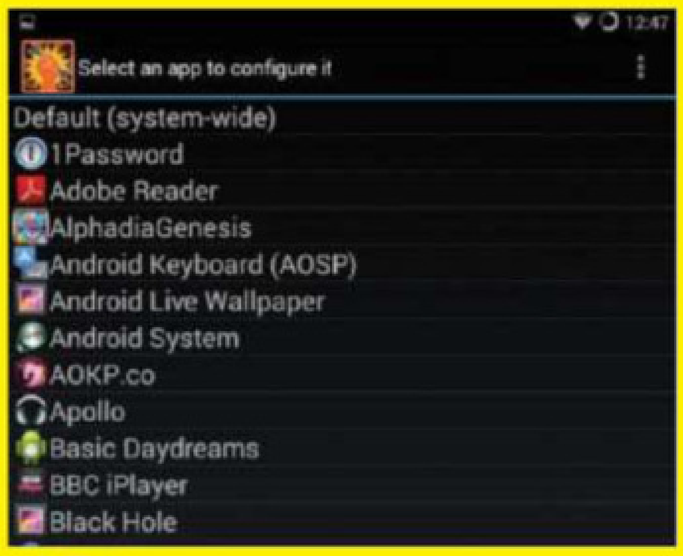
3 Give root access

Next you'll need to give root access to the app so it can install the new plugin in a partition. Just tapping Install works fine, but if you would prefer, you can Install using Recovery. Either way your device will reboot. This will take a couple of minutes to complete rebooting.



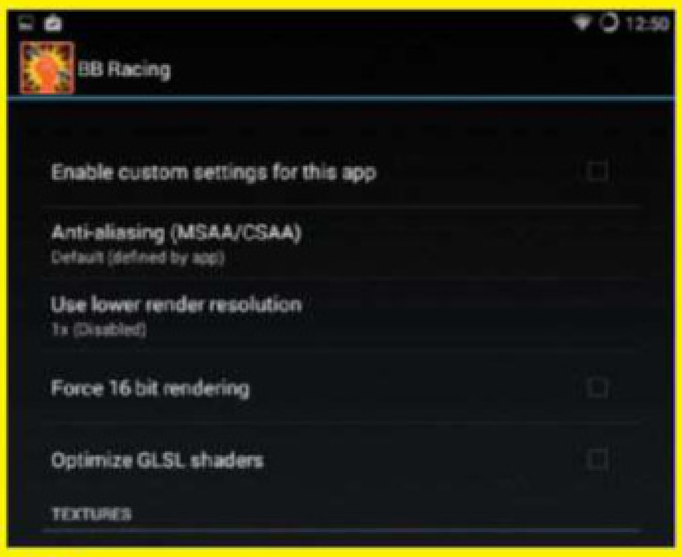
4 Find the app

Once your device has finished rebooting, it's time to find the app and get tinkering. Tap on the icon and you'll see a list of the apps you have already installed on your phone or tablet, as well as an option that enables you to change the default settings.



5 Find a game

Scroll through the big list of app names and find a game you'd like to play around with. Tap on it and you'll see a menu with all sorts of different options. Here's where knowing your graphical terminology comes in handy. Scroll down to GPU Name/Emulation.



6 Fool your phone

Get a better performance on lower-end devices by making it think that you're running a different processor. Tap the check boxes, then tap Use A Template to select a premade template for a more powerful chipset. Turn down graphics options to get more speed.

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Inbox by Gmail

Google's own alternative email app

We've lost count of the number of third-party email apps we've tried, many of which boldly claim to revolutionise the way in which we use email, and now Google itself is getting in on the act. Its new Inbox app aims to streamline your inbox. To this end, it has a few tricks up its sleeve, including the ability to bundle similar messages, add reminders for tasks and snooze emails until a later time.

The app does come with a few restrictions, however, the most obvious being that – unlike the latest version of the Gmail app – it only works with Gmail accounts. And, while you can add multiple accounts, there's no combined inbox view. Also, at the time of writing, Inbox is still in public beta via an invite (although you can email Google to get one).

Once you've got it working, the first thing you'll notice is how the app highlights photos, videos and other attachments in your inbox – a really nice touch that enables you to find them more easily while also making it look less dull. As in many rival apps, you can swipe an email to perform certain actions, although here it's limited to two: marking it as Done or opting to Snooze it. The former archives it to the Done list, while the latter enables you to set a date and time for the email to reappear at the top of the inbox.

Snoozing is a good way to declutter your inbox, as is the clever bundling feature. The app automatically bundles similar messages together into preset categories – Travel, Purchases, Finance, Social, Updates, Forums and Promos. This means, for instance, that all those social network notifications don't clog up your inbox, but are aggregated together into a single message space. The automatic sorting seems very accurate and we didn't notice any mistakes – but if you do see any, you can move a particular message in or out of the category to improve its future accuracy. You can also turn notifications on/off for each category, or turn off bundling altogether for it. In addition, you can create your own custom bundle categories for messages coming from certain email addresses. So it's all very flexible.

So far so good, but now let's take a look at what is probably Inbox's trump card: its reminders system. For any email, you can add a reminder note. While it's not possible to add a particular time for it, this will place your reminder at the top of the inbox and add a pin – simply toggle the switch at the top of the inbox to only see pinned messages. With the Reminders list also accessible from the left menu, this effectively turns your inbox into a to-do list. Helpfully, any Google Now reminders you've set also appear in Inbox's Reminders list, although not vice versa.

While it lacks the sophisticated feature set of the latest Gmail app (including third-party account support), Inbox is a joy to use and works well at streamlining your inbox.

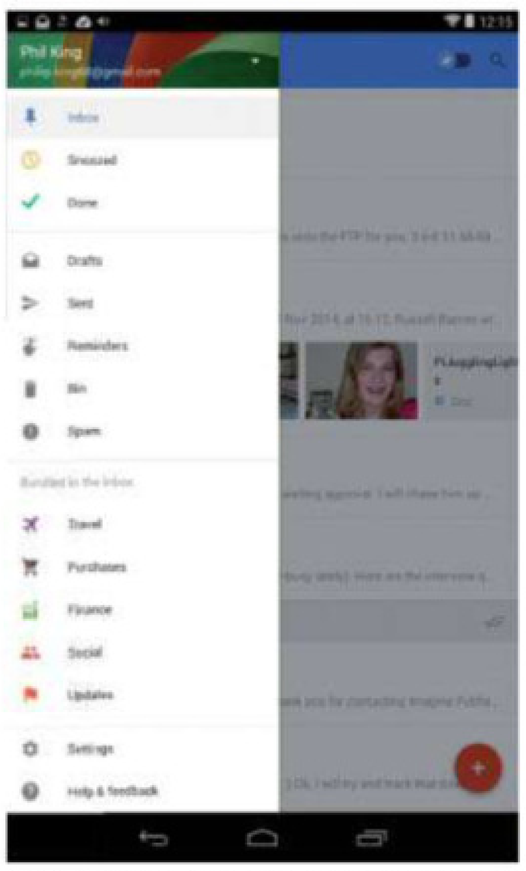
2 hour wonder

Want your money back? You've got 2 hours to decide!

- **0-40 minutes** We love how it highlights all the email attachments
- **40-80 minutes** The snooze and reminder facilities are handy
- **80-120 minutes** No way to add a signature to outgoing emails

keep | refund

Photos and other attachments are highlighted in the inbox



The left menu includes bundle categories for similar messages

The Reminders list will also show any that have been created in Google Now

» specification

Price **Free**

Designed for Phone and tablet
Requires Android 4.1

» verdict

Performance

Design

Value

Missing one or two features, but on the whole it works really well

» best free alternative **BOXER – FREE EMAIL INBOX APP »** This third-party client offers lots of gesture-based actions, plus support for most email accounts

Journeys & Notes

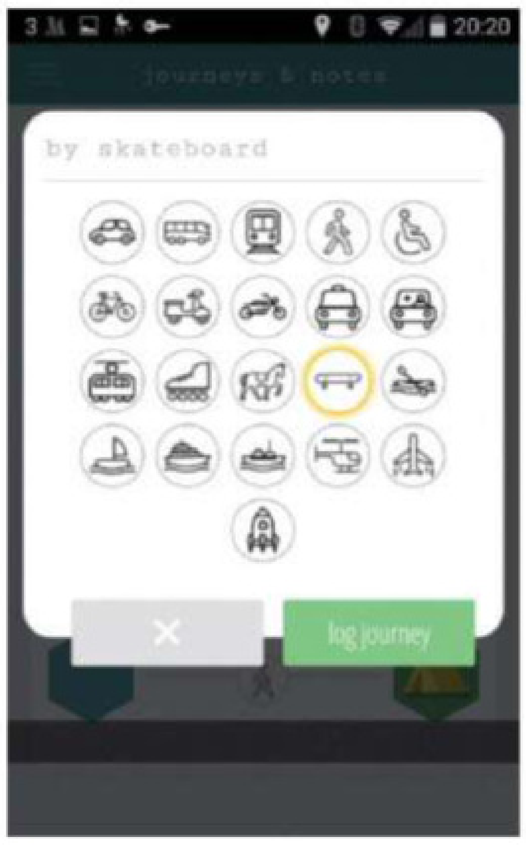
Leave notes for others travelling the same route

Created by Microsoft Garage, this experimental travel app has some similarities with Field Trip and Foursquare. However, rather than checking into places and leaving notes on a map, here you check into a journey. Just tell it where you're going from, your destination and how you're travelling – there are no fewer than 21 options, including on foot, bicycle, car, train, plane and rocket ship! It'll then show you the distance, along with how many other users have taken the same trip and the most popular travel methods employed. There's no map view of the route, however.

» like this? try this!

Field Trip Google's app sends alerts about local points of interest, or browse them via a map

Scroll down and you can see any notes left by other users. If no one has travelled that exact route before (it doesn't seem to aggregate similar trips), you'll be shown as the trailblazer. Either way, you can leave your own notes about the route; it could be an observation about a place or landmark, some travel advice, a story, an opinion, whatever you like. It's perfectly safe since you use a given username – ours was 'brave pigeon'! As there's no pre-moderation of posts, the system could be open to abuse, but there is a facility to flag up anything inappropriate. There's also an option to reply to other people's notes – with your username or anonymously – although as yet no way to follow another user, so the social aspect is currently a bit limited.



There are certainly plenty of travel methods to choose from, including rocket ship!

Overall, Journeys & Notes is a pretty cool idea to build up a community of travellers. However, since it's only just been released, there doesn't seem to be a whole lot of content at the time of writing, at least in the UK. Given time, though, it has considerable potential to build into a treasure trove of useful and interesting observations made by fellow travellers of your route – particularly suitable for scenic walks and bike rides.



Read the notes left by other travellers, with an option to reply

» specification

Price **Free**
Designed for Phone
Requires Android 2.3.3

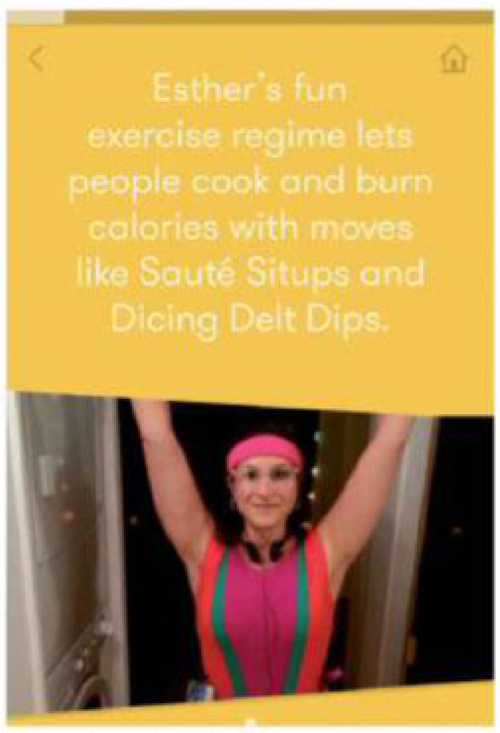
» verdict

Content is a bit sparse so far, but it's an interesting idea with good potential

Primer: Marketing for Startups

Tidbits of advice for new businesses

Starting up your own business? Primer, from Google Learn, offers bite-size lessons to help busy startups with advice on aspects such as content marketing, PR and search engine advertising. Each lesson takes up no more than five minutes and can be accessed offline. They're written in an entertaining and jargon-free style, but the info should prove useful for anyone not savvy about marketing a business online. Both hypothetical and real businesses are used for case studies, helping to explain the benefits of things like blogs and social media so you can connect better with customers. Primer offers some sound advice, and a few interactive elements, although the search engine advertising section is a blatant sales pitch for Google AdWords.



Some of the hypothetical business examples are amusing

» **Price** Free
» **Designed for** Phone
» **Requires Android** 4.3

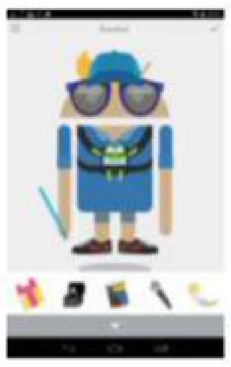
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Androidify

Turn yourself into an animated robot!

We all love Android's little green robot and now with Androidify we can transform it into versions of ourselves, family and friends. First, alter the size and shape of its body parts by swiping them. Via a selection of options at the bottom, you can then alter skin colour and choose from a wide selection of clothes, shoes, hair, beards, glasses, hats, jewellery and other accessories. It's a lot of fun to play around with. Finally, choose from a large range of looped animations and share your creation as a GIF.

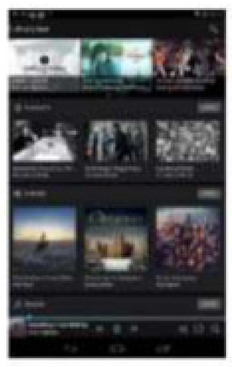


» **Price** Free
» **Designed for** Phone and tablet
» **Requires Android** Varies

TIDAL

High-quality music streaming for audiophiles

For folks who find the tinny sound of MP3s grating, TIDAL will be music to the ears. Using the lossless FLAC format, it streams songs at 1,411kbps for CD-quality sound – best appreciated using headphones. As well as requiring a decent web connection, it's a bit pricey: after a free seven-day trial it's £19.99/$19.99 per month. TIDAL boasts a pretty comprehensive library of more than 25 million tracks, along with over 75,000 HD music videos. The slick app features user playlists, an offline mode and music ID facility.



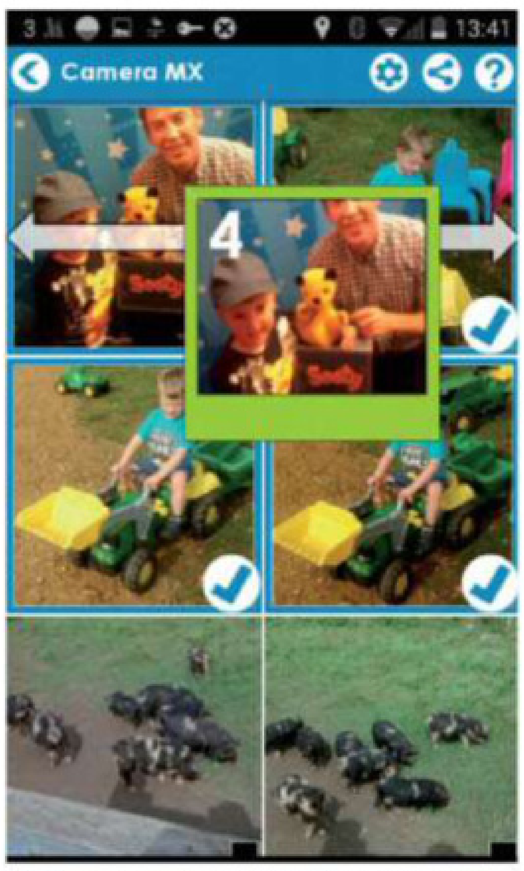
» **Price** Free + subscription
» **Designed for** Phone and tablet
» **Requires Android** 4.1

FotoSwipe

Swipe photos from one device to another

Transferring photos from one device to another can be a bit of a pain, usually involving a workaround such as sending them by email or text message. The FotoSwipe app aims to make the process child's play by enabling you to swipe up to ten selected photos to the edge of the sender's screen and then swiping on the other device to receive them. Since it's cross-platform, it even works with iOS devices.

Helpfully, FotoSwipe arranges your pictures into folders for various camera/social apps and downloads, although sadly it can't access your Google+ Photos gallery. With the app open on both devices, ideally placed side by side, tap to tick the photos you want to transfer, then long-press one and swipe to edge of the screen to send. Now quickly continue to swipe across on the other device to receive the photo(s) in the app's FotoSwipe folder. The process only takes a few seconds per photo, although it'll be longer if you raise the picture quality in the settings. It's a great idea and works pretty well once you figure out its foibles.



Select some photos, then long-press and swipe to the edge to send

» **Price** Free
» **Designed for** Phone and tablet
» **Requires Android** 2.3.3

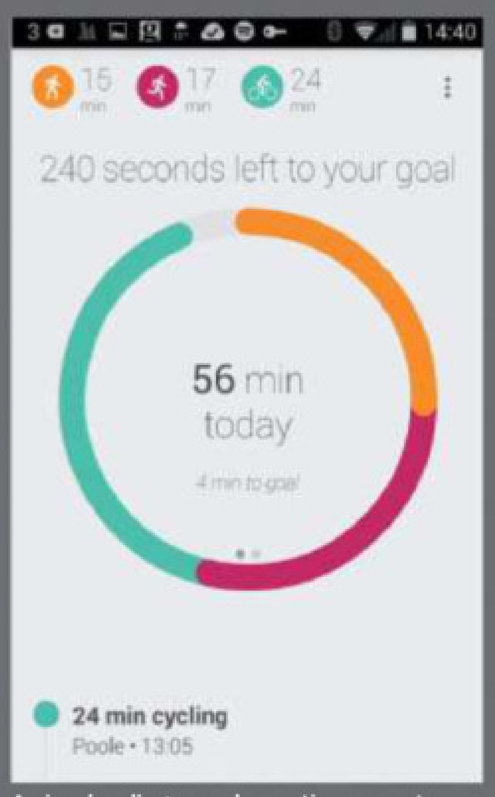
Google Fit

Keep track of all your health and fitness data

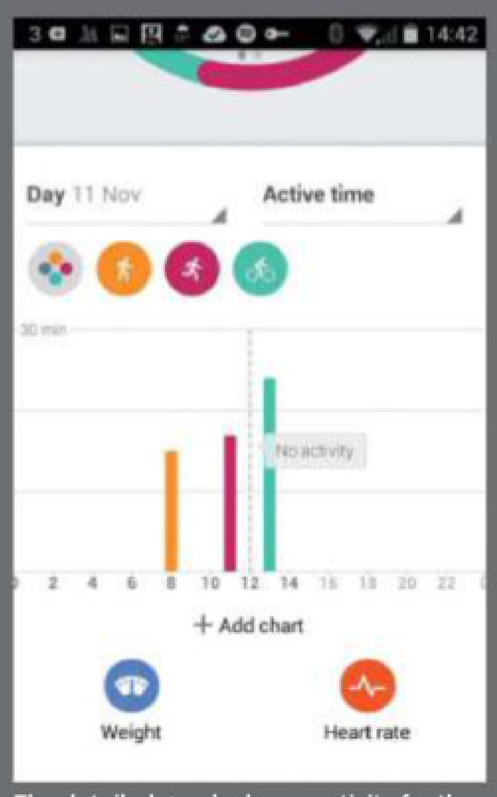
Going head to head with Apple's new Health app built into iOS 8, Google's Android equivalent is a similar hub for all your health and fitness data. However, unlike its iOS rival, which merely collates data from third-party fitness apps, Google Fit also offers its own built-in tracking of three activities: walking, running and cycling. With the phone in your pocket – or Android Wear smartwatch or compatible fitness tracker on your wrist – it detects these automatically and, for walking and running, even counts the steps you make. If you forget to take your device with you, no problem: you can always manually add an activity later, along with figures for your weight and heart rate if you like.

A circular diagram for your daily exercise activity shows how much more you have to do in order to reach the daily goal (in terms of exercise time) you've set. After using the app for several days, it'll suggest further goals for you to help you make progress. All your fitness activity, weight and heart rate data can be viewed on charts – covering a day, week or month – and also accessed via a web portal.

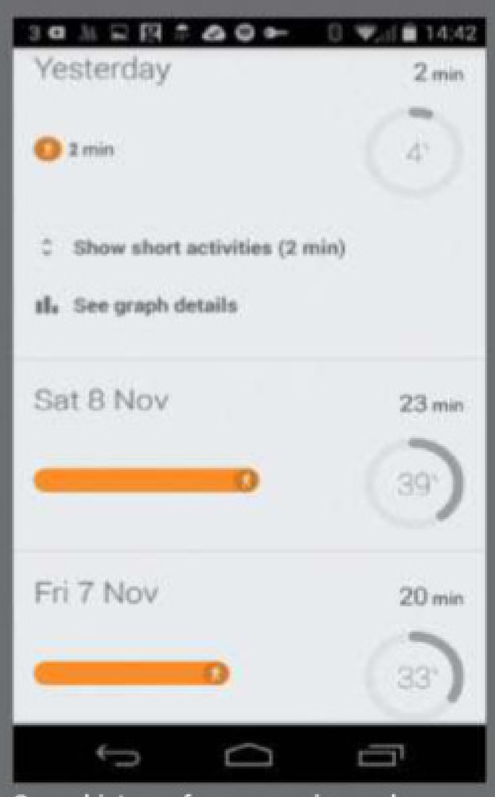
Since the app's built-in fitness tracking is a bit limited, you may well



A circular diagram shows time spent walking, running and cycling



The detailed graph shows activity for the day, week or month



See a history of your exercise and whether you met your goals



Yummly

Get personalised recipe recommendations

Yummly offers a great way to discover new dishes – sourced from various sites – to suit your tastes and dietary preferences. The home menu serves up a scrolling grid of scrumptious-looking photos to browse. Tapping one brings it up in fullscreen, where an upwards swipe reveals a tabbed view of ingredients, nutritional info and directions – the latter can be made fullscreen for easier reading. Tapping the Yum icon for any dish not only adds it to your recipe box (which can be subdivided into collections), but helps the app to make personal recommendations for you. There's also a powerful search facility that allows you to filter results by multiple factors, including preparation time and nutrition (with sliders for calories, fat etc). The only slight downside to a very tasty app is the lack of the iOS version's shopping list feature.

No matter how you tilt the device, the frame stays horizontal

» **Price** Free
» **Designed for** Phone and tablet
» **Requires Android** 4.1

» like this? try this! **BIGOVEN: 350,000+ RECIPES** » Save favourite recipes, add your own, make shopping lists and plan menus on a calendar

want to link it up to compatible third-party apps. So far, these already include some big names such as Runtastic, Nike+ Running, Polar Beat, Withings and RunKeeper. No additional setup is required since any such apps installed on your phone will automatically sync with Google Fit so that you can view all your fitness data in one place. The types of data that can be shared include calories burned, pedalling rate, wheel speed, distance covered, heart rate, height, weight, power generated in a workout, steps taken and elevation, although app developers can also create their own custom types. So it's all very flexible and Google Fit has a lot of potential.



» specification

Price **Free**

Designed for Phone

Requires Android 4.0

» verdict

Performance

Design

Value

A convenient hub for all your health and fitness data, plus built-in activity tracking

2 hour wonder

Want your money back? You've got 2 hours to decide!

» 0-40 minutes It's detecting our steps walked fairly accurately

» 40-80 minutes Syncing with other fitness apps makes it a handy hub

» 80-120 minutes A few extra health-related factors would be welcome

keep refund

» like this? try this!

Nike+ Running
Track your runs, syncing the data with Google Fit, and compete virtually with friends

StuffMerge Clipboard Composer

Copy multiple items to send in a message

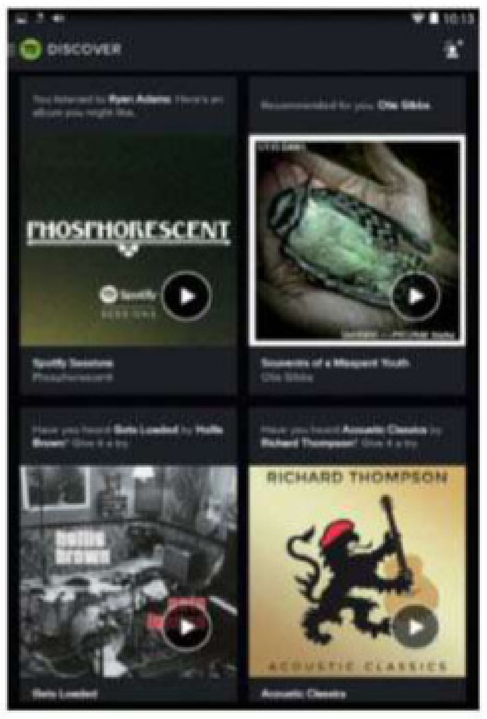


When sending an email or making a social network post, you may well want to include several links, images or chunks of copied text. Having to switch between apps to copy and paste them individually is a pain, which is where StuffMerge comes in. This super-clipboard enables you to copy multiple items to paste into a message. To access the copied items, tap the omnipresent tab on the left of the screen to open StuffMerge. You can then paste them into a message at the bottom, hit Send and choose a method via the Android share picker. While the free version only lets you copy up to three items each to two groups, the Pro app (£0.70/$1.12) allows unlimited items and up to six groups.

» Price Free
» Designed for Phone and tablet
» Requires Android 3.0

» like this? try this! **COPY BUBBLE »** From the maker of Link Bubble, it's a simpler clipboard for storing multiple items

quickhits 5 top apps for... Music discovery



Spotify Music Free

As well as enabling you to stream millions of songs, Spotify is a great way to discover new music – either by using the artist radio feature or tapping the Discover option on the Browse screen.

EDITOR'S CHOICE Android

Soundwave – Chat & Share Music Free

What better way to discover new music than from friends' recommendations? A music-based social network, Soundwave lets you chat and share what you're listening to in real-time.

WhoSampled Free

Heard a sample in a song and want to know where it's from? WhoSampled's vast database has the answer and it can often lead you on a fascinating journey of musical discovery.

SoundCloud – Music & Audio Free

It may lack a lot of major artists, but it's a great way to discover new ones. You can follow friends or artists and also discover new music in your personalised stream.

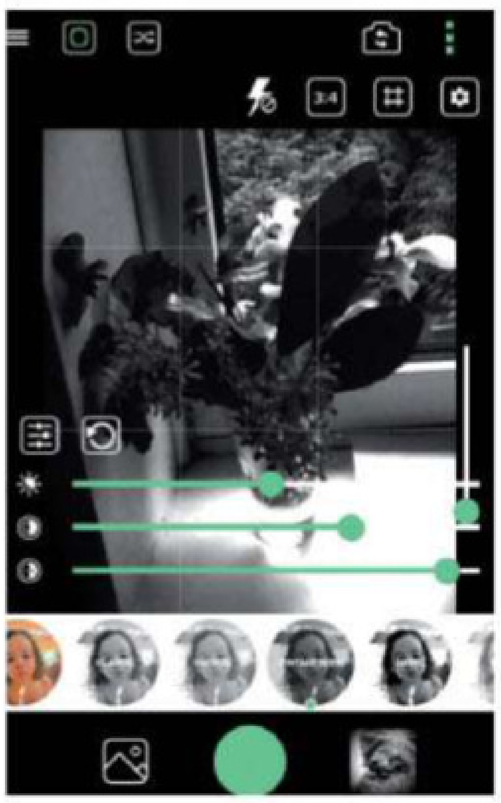
SonarFlow Visual Music Player Free

Worth a look for its interesting visual interface, resembling a word cloud, SonarFlow helps you to find new tracks – and listen to excerpts – based on the music stored on your device.

BlackCam

Shoot some dramatic monochrome photos

A black and white photo can often prove more dramatic than shooting the same subject in colour. However, there's more to good monochrome photography than simply stripping out the colour data; it requires intelligent use of contrast and other settings to obtain the best results. The BlackCam app let you shoot using numerous black and white live filters, some unlocked by upgrading to the ad-free Pro version (£0.93./$1.49). There's a good range of filters, including coloured lenses that highlight a particular shade, while sliders are used to fine-tune brightness, contrast and exposure. Other settings include vignette, aspect ratio and film grain. You can also apply filters and adjustments to existing photos. While other similar B&W camera apps are available, this is one is very easy to use and produces some excellent results.



» **Price** Free +IAP
» **Designed for** Phone
» **Requires Android** 2.3

» like this? try this! **PHOTO ART – COLOR EFFECTS »** Paint colours and effects onto black and white photos to create artistic images

NotiWidget

View notifications on any screen

This nifty widget lets you view and interact with all your notifications on your homescreen, lockscreen or DayDream screensaver. Settings include enabling expanded notifications, excluding certain apps, showing a clock and choosing a background colour (if any). Upon placing the resizable widget, the notifications appear as normal, including actions such as share and reply, plus music playback controls and more. To dismiss a notification, just tap its app icon; or tap its body to open the relevant app. It's particularly useful if you use fullscreen mode a lot, negating the need to double-swipe to pull down the notifications panel. It works similarly on the lockscreen and you can set different options for the latter. It's a neat idea, although we did find the widget didn't work on all of our Android devices.



» **Price** £0.95/$1.95
» **Designed for** Phone and tablet
» **Requires Android** 4.3

» like this? try this! **NOTIFY! »** A customisable widget to display notifications from selected apps on the home/lockscreen

Djay 2

Become a DJ with millions of records

Finally, after lots of success on iOS, Algoriddim brings its popular DJing app to Android. It looks near identical and comes with the same killer feature: Spotify integration. As well as loading locally stored music onto its twin turntables, you can mix any tracks you like from the millions on Spotify – while a Premium subscription is required, a 30-day free trial is also available. It'll even suggest suitable matches for the currently playing song. The DJ tools are impressive, including various audio effects, samples, loops and cue points, plus a waveform view to aid beat matching. As well as manual speed adjustment, you can hit the Sync button for automatic tempo syncing (or Automix to use the app as an automated party DJ). A key-lock/time-stretch facility is currently only available on quad-core Nexus devices. We also experienced some glitching when switching to portrait mode and back. Overall, though, it's an excellent DJing app with the bonus of MIDI control using a Reloop Beatpad.

"As well as locally stored music, you can mix any tracks you like from the millions on Spotify"

» specification

Price **£1.99/$2.99**
Designed for Phone and tablet
Requires Android 4.1

» verdict

Performance
Design
Value

A well-designed DJing app with Spotify integration, plenty of features and easy-to-use controls

» like this? try this!

Cross DJ Pro This fine DJing app boasts an impressive feature set, including key detection and custom sample banks

EDITOR'S CHOICE
Android magazine



Spectral timeline
The coloured sections represent the song structure (verse, chorus etc). Just tap the timeline to move instantly to that part of the track

Turntable control
You can spin and scratch both turntables manually with your finger to achieve classic DJing effects. Tap the red beam to cut the power for a slowdown

Get to know

Hone your mixing and beat-matching skills using Djay 2's impressive array of helpful tools and effects



Spotify integration

Link up to Spotify to access millions of tracks. The helpful Match tab suggests suitable matches for the current song. Recording of mixes is restricted to locally stored music, however.



HD waveforms

The waveforms view highlights similar sounds with similar colours, as well as showing the beat markers for precise matching. The beat grid can also be edited if required.



Sample pads

Switch to the sample player view and then tap the pads (12 in landscape view) to play various samples. Three preset packs are available, but you can't create custom ones.

DJ tools

Tap the settings icon to open this panel, then switch between the sections for EQ, audio effects, loops (including bounce) and cue points

Tempo syncing

Hit the Sync button to autosync the tempo to the other track, or use the slider for manual adjustment. Tap the note below it to lock the song's key

PCMark for Android

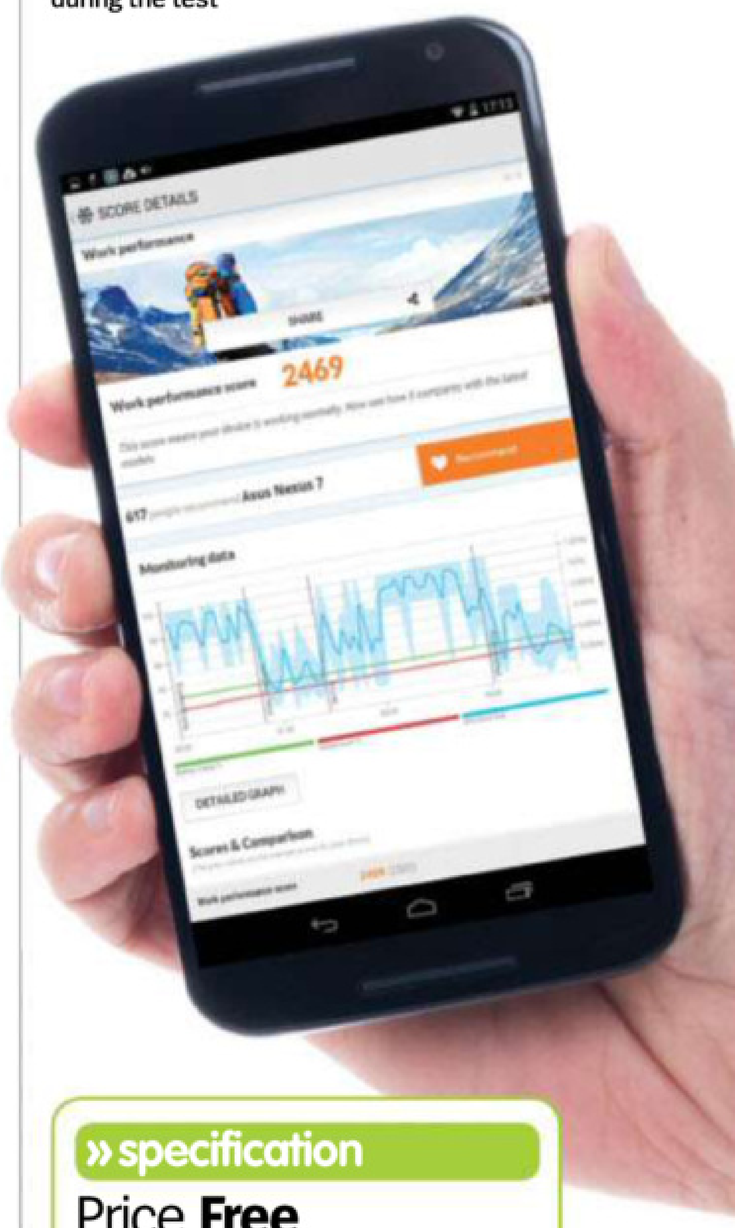
Check if your device is working normally

This free benchmarking tool comes from Futuremark, the developer of 3DMark. But while the latter tests a device's performance in 3D apps (primarily for gaming), this new app offers a more general assessment of your smartphone or tablet. This is done using the one benchmark currently available for the app: Work, comprising tests for both performance and battery life. While this benchmark requires a hefty (430MB) additional download, it does offer two separate tests – for performance and battery life – and both are related to real-world, everyday usage. The performance one sees the app automatically testing web browsing, video playback, writing and photo editing. It then comes up with a score and the average for your device model, so you can see if it's working normally. It could also be a good way of checking the performance of an overclocked device. The battery test requires the device to first be charged above 80 per cent and then measures the time for it to fall to 20 per cent, which can take several hours. Benchmark scores for numerous other Android devices can also be perused, which could prove useful if you're considering a new hardware



Check out the scores for other devices to see how they compare

A detailed graph shows several parameters during the test



» specification

Price **Free**

Designed for: Phone and tablet

Requires Android 3.1

» verdict

A good way to check everyday performance and compare devices

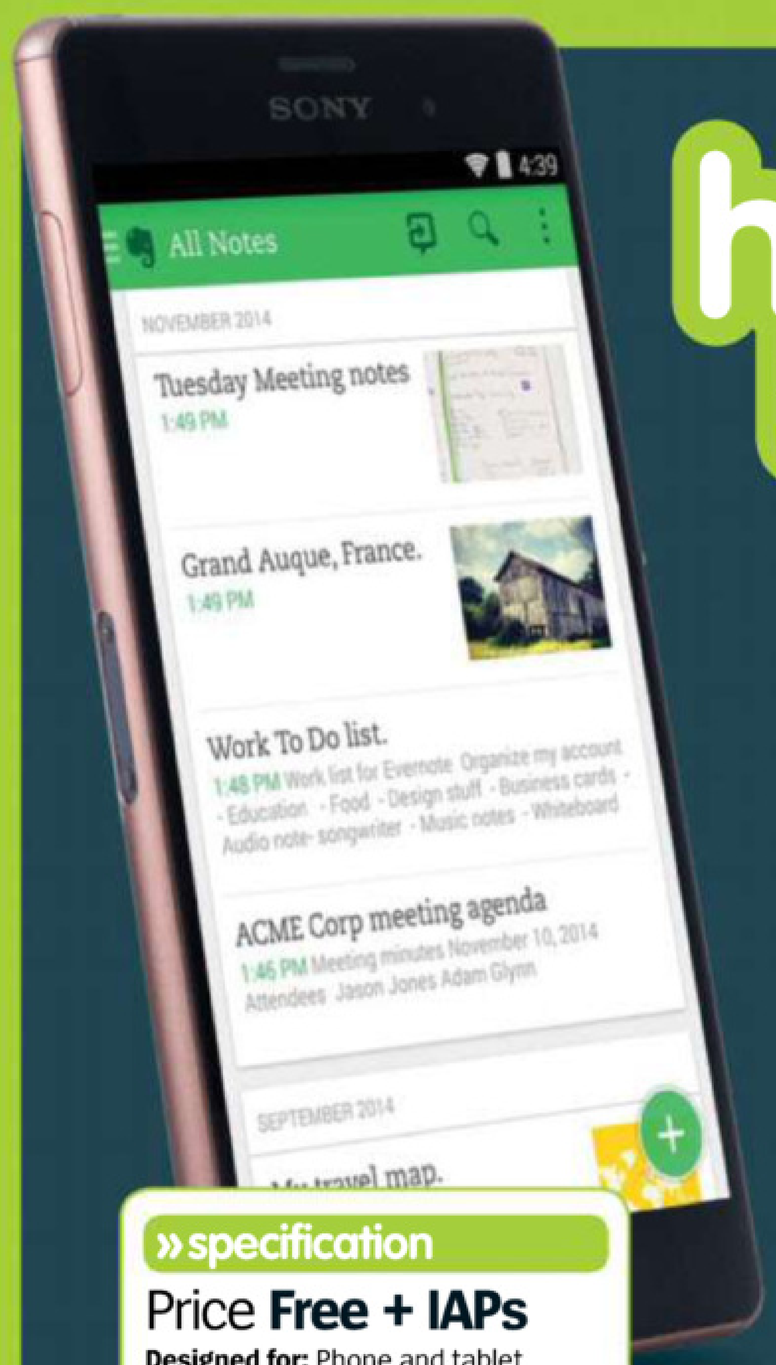
» like this? try this! 3DMARK » Test your device's performance in 3D applications, primarily games, and compare with others

head to head

Lke to jot down ideas on your phone? Take note of these top downloads

EVERNOTE vs GOOGLE KEEP

Evernote is the biggest name in note-taking apps. However, Google has revamped its own-brand app with a Material Design look and new features. Can the flagship filing system compete with Google's search algorithims?

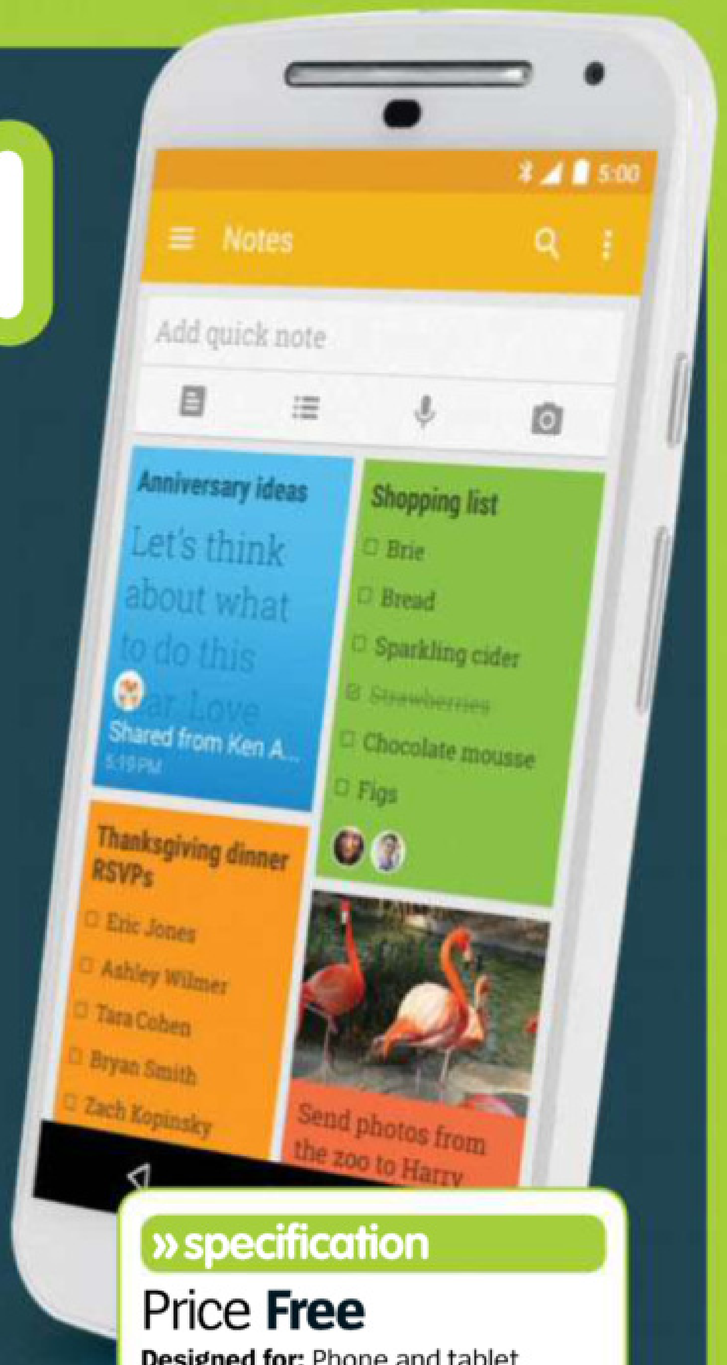


» specification

Price **Free + IAPs**

Designed for: Phone and tablet

Requires Android: Varies



» specification

Price **Free**

Designed for: Phone and tablet

Requires Android: 4.0

Evernote		Google Keep
From saving handwritten notes to audio files and photos, Evernote lets you store them how you like. Text notes can also be formatted as to-do lists and reminders.	**NOTE TYPES**	In Keep notes and lists are separate, so you can't add lists to regular notes. You can store photos, set reminders or record a voice memo and Keep will transcribe it.
As well as grouping notes in Notebooks for easy access, you can give notes keyword tags to make them easy to search for. Search can also read text in images and PDFs.	**ORGANISATION**	You can only colour-code notes to group them and they are displayed on your homescreen or archived. You can search for notes, but Keep lacks a tagging system.
All files are synced between your devices (including non-Android ones), Android Wear smartwatch and browser. The online Web Clipper is useful, plus other Chrome extensions.	**MULTI-PLATFORM**	Between your Android phone, Chrome browser, and Android Wear watch, Keep is as widely available as Evernote. The browser version is surprisingly lacking, though.
As well as being able to store tweets in Evernote, you can share your notes with friends via email and discuss them with colleagues using the 'Work Chat' messenger.	**SHARING**	The recent 3.0 update not only gave Google Keep a new Android Lollipop face-lift, but now allows you to share your notes via email with individuals or groups.
For £4/$5 per month, Evernote Premium will allow you to store your Notebooks offline, apply a PIN code to the app, and boost your upload limit from 30MB to 4GB per month.	**PRICING**	Keep is 100 per cent free with no IAPs. While it doesn't match Evernote Premium's offline or security features, it does offer unlimited storage as standard – with no 'upload limit' either.

And the winner is...

EVERNOTE

While Google Keep has been updated for Android 5.0 with a new look and sharing features, it still can't compare to Evernote's fully featured experience. Even without a premium account – and with arbitrary upload limits – Evernote is still the best free note-taking app out there.

EXPERT Apps REVIEWS WHEREVER YOU ARE

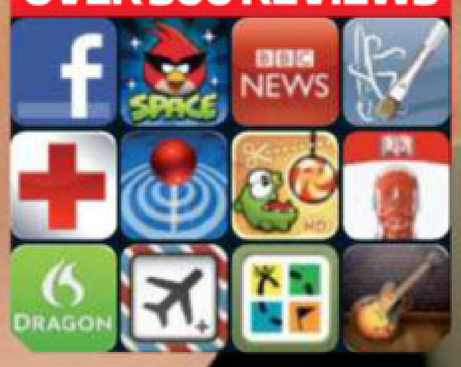
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Icewind Dale: Enhanced Edition

A truly vast RPG with a focus on combat



The real-time combat can be paused to enable you to ponder your tactics

Following the Enhanced Edition of classic RPG Baldur's Gate, it's now the turn of Icewind Dale. A tweaked HD update of Black Isle's classic PC game of 2000, it doesn't offer all that much brand new content: some extra classes, equipment and spells. Still, it does include the Heart Winter expansion pack and it is a vast game, as you might suspect from the hefty 2.63GB download. So, while the price might seem a little high, you do get a whole lot of adventuring for your money.

Set in the Forgotten Realms and based on a modified version of the AD&D ruleset, this is a hardcore, combat-heavy RPG – with less emphasis on exploration and character interaction. While some brief tutorial videos run you through the basics of the gameplay and user interface, it still throws you into the deep end somewhat and RPG novices may well be bemused at first. Even if you take the shortcut of using a preset party of six characters rather than generating your own, you'll need to spend quite some time kitting them out with weapons, armour and items – from a large selection in the shop – before you do any actual adventuring.



You can spend ages just kitting out your characters with weapons and armour

The redesigned user interface works well, including a 'Quickloot bar' to aid item pick-up. The isometric graphics are impressively detailed, featuring the ability to zoom in. Text for menus and character conversations is pretty small, though, and may prove hard to read on smaller phone screens.

Venturing out of Easthaven town, you get your first taste of real-time combat with a band of orcs. Battles are quite tactical, requiring careful positioning of characters and the use of their various abilities, and you may want to pause the action regularly to ponder your next move. If you find it too tough, you can always dial back the difficulty level – even to the point of making your playable character invincible. There's also the option of playing co-operatively with another player online.

» **Price** £6.99/$9.99 + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 3.0

what we've been playing

Radiant
£1.49/ $1.99
Retro space invaders shooter complete with old-school theme tune and graphics, Radiant is always playable and difficult to put down. Also available in a HD version ideal for tablets.

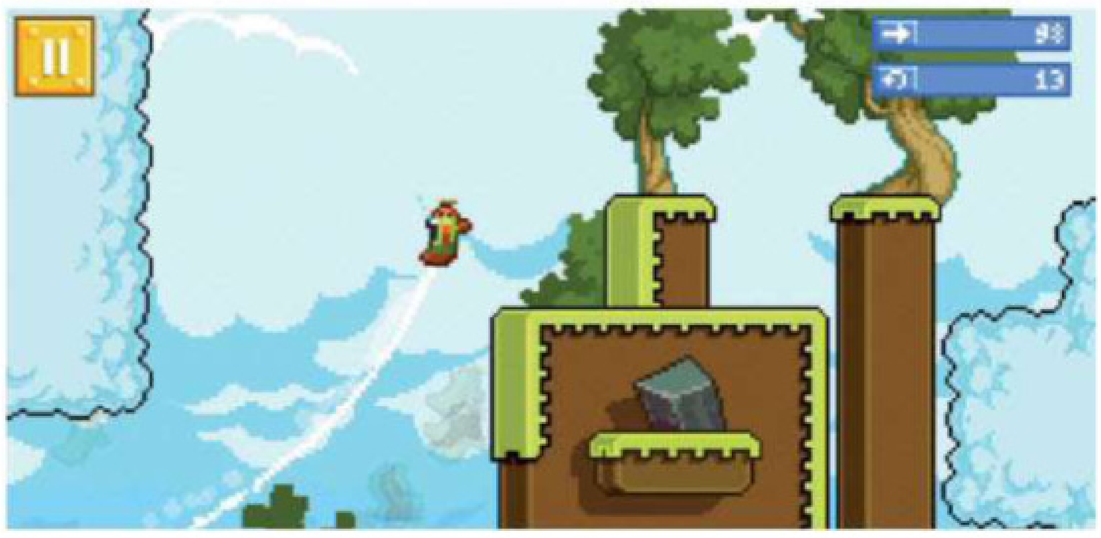
Stickman Tennis
Free + IAPs
One of the better arcade sports titles for Android, Stickman Tennis offers solid controls and a feeling of achievement when you win matches. Not a sim but good fun nevertheless!

Recommend a game...
» twitter
@lgrobot

RETRY

You'll keep coming back

Rovio's retro-style game may drive you 'plane crazy' with its uncompromising difficulty. The control method is very simple: tapping the screen applies thrust to your plane, but also causes its nose to pitch upwards. Keep your finger pressed and it'll even loop the loop. Precision timing is required to manoeuvre past obstacles in each level and we lost count of how many times we crashed, a ghost plane showing the location of each failure. Landing at regular checkpoints helps, but you'll need to spend a coin or watch an advert to activate them.



The ghosts of planes show where you've crashed previously

While collectable, coins – plus nuts for temporary plane modifications – are often placed in tricky positions, so you may well resort to buying some via in-app purchase. Even so, the game is playable without that expense and be warned: it's utterly compulsive and will keep drawing you back for more hair-tearing anguish!

» **Price** Free + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 2.3

The Wolf Among Us

A wolf in cartoon clothing

EDITOR'S CHOICE ★★★★★ Android magazine



From the maker of The Walking Dead, this is another gritty interactive adventure (with lots of violence and swearing), albeit with a very different feel. Based on the Fables comic-book series, it casts you in the anti-hero role of Sheriff Bigby ('Big Bad') Wolf as he investigates a murder in the Fabletown district of New York City, populated by folklore characters. The game adapts to choices made during conversations – including the option of silence – and tailors the story accordingly. There are also lots of Walking Dead-style action sequences, where you follow on-screen taps and swipes. A superb film noir-like atmosphere is created by the moody visuals, voice acting and soundtrack. The first of five episodes is free, but you'll soon be hooked and want to buy the rest – £2.91/$4.99 per episode or £8.74/$14.99 for a season pass.



There is a degree of choose-your-own-adventure gaming to The Wolf Among Us

» **Price** Free + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 2.3



Luke Skywalker uses his Jedi moves to help defend your position

Star Wars: Galactic Defense

Tower defence, Star Wars style



One of the main attractions of this tower-defence game is that you get to play as both Light and Dark Sides. The single-screen action involves setting up gun and infantry-spawning towers to tackle waves of attackers. Scrap metal from defeated foes can be used to create more towers. You can also command up to three champions – Luke, Obi-Wan, Yoda etc – to use their special abilities. It's enjoyable, but we'd welcome a fast-forward option. As you progress through the missions, units can be upgraded using the in-game currency – more of which can be bought via IAP.

» **Price** Free + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 2.3

Battleheart: Legacy

Go it alone in this hugely enjoyable RPG



While offering far more depth than the original *Battleheart* of 2011, *Legacy* is just as easy to control and a gentle introduction to the RPG genre – particularly with its cute cartoon-style visuals. You control a single character as he explores various locations on a world map, battling enemies. Instead of having a set character class, he can gain new abilities relating to various classes. This system offers a lot more freedom and flexibility for character progression while also aiding replay value. The real-time combat is fun, making use of special abilities, while character dialogue is often funny and varied, including the option to negotiate with some enemies.

» **Price** £2.99/$4.99
» **Designed for** Phone and tablet
» **Requires Android** 4.1



Tap the special abilities at the bottom to unleash them in battle

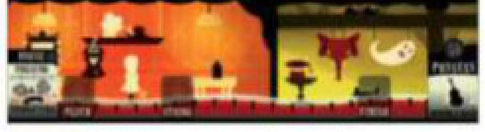
quickhits

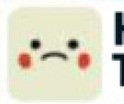




Pako – Car Chase Simulator Free + IAPs

Pursued by the cops, you need to avoid obstacles for as long as possible before the inevitable crash. Fast-paced fun, it benefits from very simple gameplay mechanics and controls.





Haunt The House: Terrortown

£0.59/$0.99

This weird action puzzler casts you as a ghost who possesses various objects to scare folks away from a series of locations. It's quite fun to mess around with, but a little repetitive.



New Words With Friends Free

Zynga's Scrabble-style game has been revamped with a host of new features, including much requested solo play, community matches (nearby opponents) and a searchable dictionary.



Galaxy On Fire – Alliances Free + IAPs

Featuring a great deal of tactical depth, this sci-fi strategy MMO focuses on making alliances with other players to trade resources, exchange intelligence reports and defeat enemies.



Drone: Shadow Strike Free + IAPs

Operate an unmanned combat drone equipped with an arsenal of weapons with which to lay waste to enemy forces. It's fun to play, with a series of missions to test your skills.



Pixel People

Free + IAPs

By splicing cloned residents of your isometric city, you can create new ones with different skills and unlock new buildings. Fun if a bit light on gameplay.

Football Manager Handheld 2015

EDITOR'S CHOICE ★★★★★ Android magazine

"Arsenal's issue is that they try and walk it in..."



Another year and another Football Manager game is set to grace millions of smartphones and tablets up and down the country. This time around there's not a whole lot of changes between the 2015 edition and the 2014 version, but the new additions certainly add to the game's charm. There's a new scouting mode, making it easier to identify prime targets based on their potential, as well a ranking system where you can see how your club stacks up against the rest of the world. There are noticeable cosmetic changes, too, with the 2D match engine looking better than ever and menus being less complex. This year Sports Interactive has also included a range of in-app purchases to extend your FM experience, with challenges being the highlight here. It still lacks the finesse of the desktop version of the game, but this is the best mobile port yet.

» **Price** £6.99/$9.99 + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 2.3

» like this? try this! **CHAMP MAN 15** » Bigger and better than ever, but still not as in-depth as the *Football Manager* series

Five Nights at Freddy's 2

More terror from Freddy and his friends



It was only a couple of months ago that we were being spooked by the animatronics at Freddy Fazbear's restaurant, but the sequel introduces a lot of new changes to stave off the attack of Freddy and his creepy friends.

Players have more cameras to keep an eye on. You are also equipped with a torch to illuminate darken corners and interfere with the enemies' sensors, although this quickly drains its limited battery so you have to be careful.

There are no doors to your office this time around and instead you can be attacked from all angles, so it's incredibly important to keep your wits about you.

Players are given an animatronics head to wear as a disguise if one of the crazed machines gets too close, but you are incredibly limited regarding your actions until they have passed you by.

With several plot twists and scare jumps galore, Five Nights at Freddy's 2 is a sequel worth screaming about.

» **Price** £1.90/$2.99
» **Designed for** Phone and tablet
» **Requires Android** 2.3

» like this? try this! **FIVE NIGHTS AT FREDDY'S** » The original is as terrifying as its sequel, so make sure you try it out

TwoDots

Who knew dots could be so frustrating?

The premise of TwoDots is simple enough: connect dots of matching colours and clear the board in as few moves as possible. There's a lot of strategy to get the dots cleared in the required number of moves, with levels soon becoming tough to complete. Where TwoDots differentiates itself from the competition is by giving the player a set amount of lives to complete each level. It's a sneaky way of trying to get people to purchase more lives using in-app purchases, but it's not essential to buy these.

Currently there are 30 levels to get through and although that may not seem a lot, it's hard to express how difficult some of the last few levels are to complete. It's a task worth taking on, though, as TwoDots is a fantastically fun and engaging puzzler – just try to stay clear of the in-app purchases.

High score

Each level has an optimal way to complete it, which will end up giving you the best possible score. It's not that important, however, and instead you should focus on simply getting through the level

"There's a lot of strategy to get the dots cleared in the required number of moves, with levels soon becoming tough to complete"

The best features of TwoDots

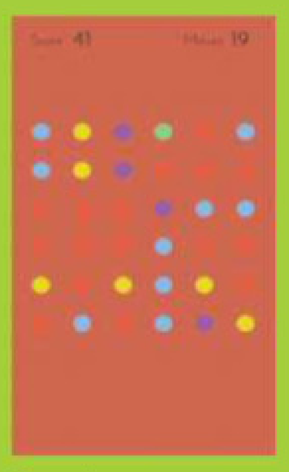
Explore some of the things you must check out while playing through TwoDots



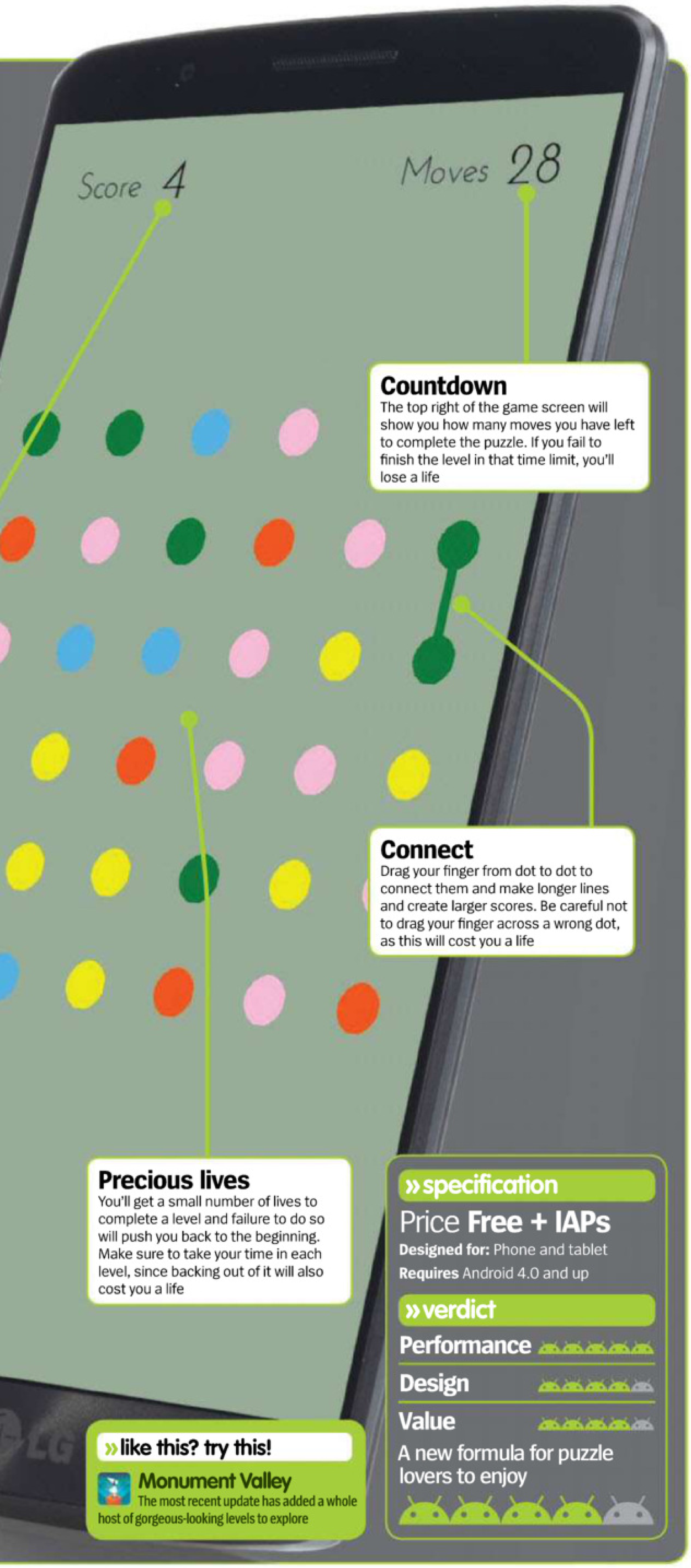
Special moves
On occasion you'll be granted a selection of special moves to use on a level. These include adding to your number of moves, or giving you a hint on your next one.



Level select
The more levels you complete, the further up the mountain you will climb. However, by failing a level you'll drop down the mountain. So try to avoid slipping up.



Create squares
One helpful tip to remember is that connecting squares of same-coloured dots will earn you more points, as well as clearing the board a lot faster.



Countdown
The top right of the game screen will show you how many moves you have left to complete the puzzle. If you fail to finish the level in that time limit, you'll lose a life

Connect
Drag your finger from dot to dot to connect them and make longer lines and create larger scores. Be careful not to drag your finger across a wrong dot, as this will cost you a life

Precious lives
You'll get a small number of lives to complete a level and failure to do so will push you back to the beginning. Make sure to take your time in each level, since backing out of it will also cost you a life

» specification

Price **Free + IAPs**

Designed for: Phone and tablet

Requires Android 4.0 and up

» verdict

Performance

Design

Value

A new formula for puzzle lovers to enjoy

» like this? try this!

Monument Valley
The most recent update has added a whole host of gorgeous-looking levels to explore



Perform combo moves to take down opponents

Soulcalibur

3D fighting at your fingertips



Since making its arcade debut back in 1998, Namco Bandai's one-on-one fighting game has seen several sequels and remakes on various platforms.

This Android version is a faithful conversion of the original Soulcalibur game and keeps the same formula and choice of modes as the classic coin-op. There's the main Arcade mode that pits you against a series of enemies with a tougher boss at the end, as well as Time Attack and Survival modes.

Gameplay variety is pretty good, but with only 19 characters to choose from, you may get a little bored after a while. Each fighter is different and has their own set of moves to master. However, while the original game benefited from the use of a physical joystick (or joypad on console versions), attempting to pull off a nine-button combo with touch-screen controls is near impossible

Apart from this shortcoming, Soulcalibur is a fantastic conversion of the original arcade game, but lacks the depth that some beat-'em-up fans will probably crave.

» specification

Price **£8.57/$13.99**

Designed for: Phone and tablet

Requires Android: 2.3.3

» verdict

A faithful conversion of the classic coin-op, but a little lacking in depth



Each character has their own strengths and weaknesses

» like this? try this! SHADOW FIGHT 2 » A super-stylish fighting game with hundreds of weapons to use and combos to learn

Top budget tablets

Save money on the price of an Android slab, without compromising on high-specs and premium design

Vodafone Smart Tab 4G

You wouldn't necessarily consider Vodafone to be a tablet manufacturer, but the telecomms network has branched out. The Smart Tab 4G is a surprising piece of kit that has a lot going for it.

Gigaset QV830

Though Gigaset are not well known, there's a lot to like about the QV830. It has a predominantly metal fascia and runs a largely unskinned version of Android. However, the odd ratio and square sizing isn't for everyone.



Group test

We're well and truly spoilt as Android users. We've got new tablets coming out on a weekly basis, new updates happening all over the place and more features than you could shake an iPad at. But all of this costs money and many of us don't have the funds to fork out hundreds of pounds on the latest slab. Fortunately, budget tablets are becoming increasingly commonplace in the Android ecosystem and therefore we've taken it upon ourselves to find out which one is worth spending your hard-earned cash on.

The Nexus line has long been the standout contender in the budget tablet category. Although the recent Nexus 9 has been priced nearer the £500 mark, the Nexus 7 has gone unchallenged for a over a year now and it's testament to Google that the device still holds up well today. However, a wave of new tablets in the last six months look to change this way of thinking and now offer a credible threat to the Nexus 7's crown. The Hudl 2, Gigaset QV830 and Smart Tab 4G have all been put under rigorous testing in this group test to find out if any of them can dethrone the Nexus 7.

"A wave of new tablets in the last six months now offer a credible threat to the Nexus 7's crown"

Nexus 7

Google's Nexus 7 has been the king of all Android tablets for sometime now and despite increased competition, we'd still recommend it above most other tablets. However, can it hold off the latest wave of tasty tabs?

Tesco Hudl 2

Although it lacks a premium design, the Hudl 2 makes up for it with its abundance of fantastic features and being ridiculous easy to use. Avid Tesco shoppers will be able to use their Clubcard vouchers to get up to £60 off.



Nexus 7 (2013) information

Price **£169.99**

» More information **play.google.com**
» Supplied by **play.google.com**

technical specs

» Operating system	**Android 4.4.4**
» Processor	**Snapdragon S4 1.5GHz quad-core**
» Memory	**2GB RAM, 16/32GB storage**
» Dimensions	**200 x 114 x 8.7mm**
» Weight	**290g**
» Display size	**7.0-inch**
» Display resolution	**1920 x 1200 pixels**
» Connectivity	**Wi-Fi 802.11 a/b/g/n, Bluetooth 4.0**
» Camera	**5MP rear, 1.2MP front**

»head-to-head

Design

There's no flex in the plastic shell of the Nexus 7 and the rubberised backplate makes it easier to hold for prolonged periods of time. Some will be put off by the large bezels on the front, but it's only a small annoyance.

Performance

The Qualcomm S4 processor is starting to show its age against the competition. It's important to stress that it's not a slow processor by any means, but it can be a bit of a strain doing some serious multitasking.

Camera and video

Both the camera and video capabilities of the Nexus 7 are poor, but the array of editing options for both are fantastic. The front-facing camera is ideal for making video calls over Skype.

Battery life

Even when watching movies, or performing other demanding tasks, you can expect to get close to a full day of battery life without any issues. It's the best battery in the group by a mile, which will be important to some.

»Verdict

The Nexus 7 has certainly stood the test of time and still contains one of the best displays and designs we have ever seen



Stunning screen
We love the display on the Nexus 7 just as much as we did when we first got our hands on it last year. Everything looks crisp and clear things to the impressive 323ppi

Well built
Although most of us are now more inclined to pick a sleek metallic device than a purely plastic one, the Nexus 7 just feels robust and well built with a nice rubberised finish on the backplate

Upgrade to Lollipop
All Nexus devices will be some of the first to receive an upgrade to Android Lollipop, and the Nexus 7 is no exception. The new update has a wealth of changes that all users should check out

Camera woes
If there's one area we can criticise the Nexus 7 about it's the tablet's poor camera offering. The 5-megapixel camera leaves shots looking grainy and washed out

Nexus 7 (2013)

The Nexus 7 has long been the premier budget tablet for new and seasoned Android users alike

What more is there to say about the device that kickstarted the budget tablet craze? The predominantly plastic Nexus 7 feels robust and well made, while the curved edges make it easy to hold for prolonged periods of times. The front of the device is pretty much featureless, with no physical buttons to show, but there's a solitary 1.2-megapixel camera just above the screen. All the usual ports are also taken care of, including a volume rocker, power button and micro-USB, but there's no sign of a microSD card slot, which is fast becoming a defining feature on more modern tablets.

When you turn it on for the first time, you can begin to appreciate the glorious 7-inch display for what it is. At 1920x1200 pixels, the pixel density is 323ppi, which stands up well against many high-end devices nowadays. It makes a massive difference having a high-quality screen like this, as there are no noticeable jagged edges in sight and it's less eye-straining for longer sessions.

Compared to some of the competition, the Qualcomm Snapdragon S4 processor is slowly starting to show its age. It's by no means a slow processor, but it can start to get a little sluggish when undertaking some serious multitasking. However, thanks to the completely stock Android operating system and user interface, it makes general use an absolute breeze. It may be over a year old, but it's also one of the first devices to get the Android 5.0 update, which includes all the latest features and is arguably the fastest Android OS yet.

Neither the speakers nor camera were too good when we first looked at the Nexus 7, something that's even more apparent now. The 5-megapixel camera is basic and although it performs adequately in the daytime, it struggles in low light conditions, while the speakers are slightly tinny for most music you play.

This is still a powerful tablet, without a doubt, but one that certainly is closely matched by some of its competitors nowadays.



Gigaset QV830

Gigaset isn't a well-known brand, but can the QV830 show that the firm can mix with the big boys?

Formerly part of the Siemens group, Gigaset has an illustrious history in landline phones, but the £99 QV830 is a rare foray into the tablet market for the firm. From the get-go you'll appreciate the metal-backed 8-inch frame of the tablet, but the rest of the plastic build is very fingerprint friendly. All necessary ports are located at the top of the tablet, which can be a bit awkward to use considering the square shape of the device. It certainly takes some getting used to, but you'll soon find the benefits of using it in both landscape and portrait orientation.

The QV830 runs a mostly stock version of Android 4.2.2, but we doubt we'll see any update to Android 5.0 here. The Cortex A7 CPU is powerful and makes navigating the tablet an absolute pleasure. It handles multitasking well and has no problems dealing with the more demanding apps on the Play Store. There's only 4.9GB of internal storage available, but users can expand through the microSD slot, if necessary.

It's when you dig a little deeper that the cutbacks start appearing in the QV830. The general camera quality is grainy and colours are washed out. There are some great shooting options available, but the results simply aren't worth it. For some strange reason there's also noticeable lag when you use the camera, but this seems to be solely down to a software fault.

The 1024x768 resolution display is the worst of the group here, though. Lettering and icons have noticeable pixellation and some colours feel oversaturated at times. This is a common cutback for budget devices, but where the other budget tablets in this test shine in this department, the QV830 just can't compete.

Although Gigaset may not be as well known as the competition in this group test, the QV830 is an all-round solid tablet. This metal-backed 8-inch offering outshines most in the design department, but obvious cutbacks have been made in other areas where they really shouldn't have.

Gigaset QV830 information

Price **£99.99**

» More information **www.gigaset.com**
» Supplied by **www.gigaset.com**

technical specs

Operating system	**Android 4.2.2**
Processor	**Cortex A7 1.2GHz quad-core**
Memory	**1GB RAM, 8GB storage**
Dimensions	**200 x 141 x 8mm**
Weight	**328g**
Display size	**8.0-inch**
Display resolution	**1024 x 768 pixels**
Connectivity	**Wi-Fi a/b/g/n, Bluetooth 4.0**
Camera	**5MP front, 1.2MP rear**

»head-to-head

Design

To include a metal finish to the back of a £99 tablet is staggering, so we tip our hats to Gigaset for that. The rest of the device does feel well made, but we don't like how easily fingerprints get picked up on it

Performance

Navigation is smooth since the Cortex A7 is speedy. Multitasking is easy to accomplish and the only hiccups we noticed were when we were trying to open up certain movies within the built-in video app

Camera and video

One of the major cutbacks in the QV830 is with the camera that's on offer. We can't really recommend it at all, and the same goes for the video recording capabilities. Use it only when absolutely necessary

Battery life

With a 3260mAh battery – which is marginally bigger than most high-end smartphones – battery life isn't fantastic on the QV830. Expect to get a solid 6 hours of high usage before reaching for the charging cable

»Verdict

The QV830 has pros and cons. It may be the cheapest of the group, but you can pay out just a little more for a much better experience

Vodafone Smart Tab 4G information

Price **£124.99**

» More information **www.vodafone.com**
» Supplied by **www.vodafone.com**

technical specs

» Operating system	**Android 4.4.4**
» Processor	**Snapdragon 410 1.2 GHz quad-core**
» Memory	**1GB RAM, 8GB storage**
» Dimensions	**209 x 123 x 7.99mm**
» Weight	**327g**
» Display size	**8.0-inch**
» Display resolution	**1280 x 800 pixels**
» Connectivity	**4G, Wi-Fi, Bluetooth 4.0**
» Camera	**5MP rear, 2MP front**

»head-to-head

Design

Everything is a bit bland when it comes to the design of the Smart Tab 4G. The uniform black look is very familiar, but what it lacks in looks it makes up in durability. There's more focus on the innards than the exterior here

Performance

We were a little hesitant that the 1GB of RAM would show some slowdown on the Smart Tab 4G, but we were soon proved wrong. The device is quick and nimble, with the Snapdragon 410 coping well with most tasks

Camera and video

There's nothing amazing about the camera on the Tab 4G, but we do like the images it generates in daylight conditions. Shooting in low light conditions is possible, but the results aren't nearly as good

Battery life

You'll get close to a full day of use with the 4060mAh battery here, but this does lower with more media-heavy tasks. It's noticeably better than the Hudl 2 and Gigaset QV830 in this area, however

»Verdict

No groundbreaking features, but suitable for anyone who wants a solid, well-built and fast device that gets the job done correctly



Unlocked bootloader
Custom ROMs are a definite possibility for the device and users can get the SIM unlocked by Vodafone itself

Quick charge
Unlike many low priced devices, the Smart Tab 4G still includes a charger in the box – and it's a powerful 2A rated model. It charges quickly for a device of its type via the micro-USB port located on the bottom

Video calls
Users will find a single microphone at the bottom of the device to help make Skype calls. Clarity is fairly good when using it

Remote control
The 3.5mm headphone socket sits atop the device next to the IR blaster. Yes, the Smart Tab 4G can also be used as a giant remote control and television guide, powered by the very capable 'Peel' software

Vodafone Smart Tab 4G

4G connectivity is a standout feature in this surprisingly good tablet from Vodafone

The Vodafone Smart Tab 4G is the firm's second ever tablet. Its first, the Smart Tab 4, suffered from poor performance due to its MediaTek processor. While the Tab 4G isn't officially a follow-up to that device, Vodafone has certainly looked to improve its offering this time around. Most noticeably, there's now LTE connectivity, as well as a snappy Qualcomm Snapdragon 410 processor.

There's nothing notable about the design of the Smart Tab 4G. It's a familiar black slab affair, but it's fairly robust and there's little flex in the plastic shell. It's under 8mm thick and is considerably smaller than the 8.3"-screened Hudl 2. While not as clear as the Hudl 2 or Nexus 7, the 1280x800 display on the Smart Tab 4G is still usable in all situations.

The Smart Tab 4G runs Android 4.4.4 and there's a good chance it'll be upgraded to Lollipop. The 1GB of RAM is a little low, but everything runs smoothly. It feels like a tablet built with media usage in mind, but users will need to reach for the microSD slot, as that 8GB of internal storage will quickly be used up.

It's the 4G LTE connectivity that really sets this otherwise fairly standard tablet apart from the rest of the group. Users can take it anywhere and still enjoy a data connection. It is of course locked to Vodafone, but 4G SIM-only deals are cheap enough.

The Smart Tab 4G is a great all-round tablet without being spectacular in any area. We still prefer the Hudl 2 over this, but the 4G connectivity may well be the deciding factor for some.



For the family
The rubberised casing of the Hudl 2 demonstrates how the device is built with the family in mind. It can take knocks, scratches and bumps easily and is also available in an array of colours

Dolby optimised sound
The Dolby Digital optimised sound lends itself well to both listening to music and enjoying movies. Dual speakers on the back of the device offer great clarity as well

Powerful processor
The Intel Atom processor is found in a lot of netbooks and Chromebooks, so the power it brings to a tablet is remarkable. You won't find any lag in any area of this tablet

Parental guidance
Parents can set certain restrictions to apps or websites that they don't want their child to have access to, or create an account to monitor what they're up to instead

Tesco Hudl 2

EDITOR'S CHOICE ★★★★★ Android magazine

The original Hudl was the biggest surprise hit of last year, but does the Hudl 2 maintain the standard?

We fell in love with the original Hudl tablet, which proved that 'budget' never ever has to mean bad. A year on and Tesco has released the second iteration of the Hudl series, and once again it's proven to be a massive hit. The 8.3-inch tablet is covered in a thick rubberised casing, which perhaps isn't as appealing as the Nexus 7, but this tablet is built for the family and all the rough and tumble that comes with it.

As well as the normal array of ports, there's the inclusion of a micro-HDMI output for connecting the tablet to your TV. With Tesco's array of Blinkbox video apps pre-installed, the micro-HDMI port is a fantastic addition for movie and TV watching. Some of the ports are placed quite awkwardly, with the rocker and power button sat peculiarly at the top of the tablet, making them quite difficult to press at times. Around the back there's a large 5-megapixel camera, which takes some of the best images we found in the group.

What will please most users more than anything else is the pure speed of the Hudl 2. The quad-core Intel Atom processor has been clocked at 1.8GHz and it blasted through anything we threw at it. Want to watch HD movies? No problem. Want to download apps and browse the web at the same time? Easy. It's ridiculously quick and trumps the rest of the group by some considerable margin.

There are several pre-loaded apps from Tesco, all of which tie in with the various services the firm offers. We'd have preferred to have a completely stock UI, but this is a small setback nonetheless. With the whole family thing in mind, users can find some great parental systems to help keep their kids safe when using the tablet. Parental controls are easy to set up and it's also simple to create web browsing restrictions.

If the Hudl 2 didn't already sound like a tempting proposition, avid Tesco Clubcard users can get up to a staggering £60 off the £129 retail price of the tablet – a bargain in every sense of the word.

Tesco Hudl 2 information

Price **£129**
» More information **tesco.com**
» Supplied by **tesco.com**

technical specs

» Operating system	**Android 4.4.2**
» Processor	**Intel Atom 1.8GHz quad-core**
» Memory	**2GB RAM, 16GB storage**
» Dimensions	**224 x 128 x 9mm**
» Weight	**410g**
» Display size	**8.3-inch**
» Display resolution	**1920 x 1200 pixels**
» Connectivity	**Wi-Fi a/b/g/n, Bluetooth 4.0**
» Camera	**5MP rear, 1.2MP front**

» head-to-head

Design
The rubberised backing won't be to everyone's cup of tea, but it's important to realise that this is a tablet built with the family in mind. There is a selection of colourful cases to kit the Hudl 2 out with as well

Performance
With the powerful Intel Atom processor within its shell, the Hudl 2 blasts through anything you can throw at it. It's really the best choice when it comes to multitasking or playing the latest triple-A games

Camera and video
There's been a noticeable bump between this and the original Hudl when it comes to taking pictures and recording video. It still lags behind what smartphones can do, but the results are noticeably better than those from most of the competition

Battery life
Tesco has promised a solid 8 hours of battery life with the Hudl 2, but during our tests with it, we found it to be closer to the 7 hours mark. It's not as good as the Nexus 7, but 7 hours is fairly standard for most tablets today

» Verdict

The Hudl 2 sets a very high benchmark for other tablets to follow. If you consider the discount off the RRP, this is an absolute bargain



The Winner...

Tesco Hudl 2

It's fantastic to know that no matter what your budget is for your next Android tablet, there's something available for everyone. For those on a strict budget, you've got a plethora of great options out there, some of which we weren't able to cover in this group test. But when it boils down to it, the Hudl 2 from Tesco is currently at the top of the pile by a considerable margin. The device as a whole is just a pleasure to use. It not only has the power of an Intel Atom processor behind it, but also all the software to keep each member of the family happy. We also really appreciated the level of parental controls that could be set up for children, without it being an overbearing feature taking away from using the tablet as an adult. It does lack the premium design of the Nexus 7, which we still love, but it's a small compromise to make. Above all else, when you consider than if you're an avid Tesco shopper you'll be able to get up to £60 off the £129 price tag with your Clubcard, you really can't go far wrong by picking up a Hudl 2. It's worth checking out the Smart Tab 4G if having that extra connectivity is a deciding factor for you – and for some it will be – but for now, Tesco's tablet is the new king in town.

GROUP TEST WINNER
★★★★★
Android magazine

	Nexus 7 (2013)	Gigaset QV830	Vodafone Smart Tab 4G	Tesco Hudl 2
OS	Android 4.4.4	Android 4.2.2	Android 4.4.4	Android 4.4.2
Processor	Snapdragon S4 1.5GHz quad-core	Cortex A7 1.2GHz quad-core	Snapdragon 410 1.2 GHz quad-core	Intel Atom 1.8GHz quad-core
Memory	2GB RAM, 16/32GB storage	1GB RAM, 8GB storage	1GB RAM, 8GB storage	2GB RAM, 16GB storage
Dimensions	200 x 114 x 8.7mm	200 x 141 x 8mm	209 x 123 x 7.99mm	224 x 128 x 9mm
Weight	290g	328g	327g	410g
Display Size	7.0-inch	8.0-inch	8.0-inch	8.3-inch
Display Resolution	1920 x 1200 pixels	1024 x 768 pixels	1280 x 800 pixels	1920 x 1200 pixels
Connectivity	Wi-Fi 802.11 a/b/g/n, Bluetooth 4.0	Wi-Fi a/b/g/n, Bluetooth 4.0	Wi-Fi, Bluetooth 4.0, 4G	Wi-Fi a/b/g/n, Bluetooth 4.0
Camera	5MP rear, 1.2MP front	5MP front, 1.2MP rear	5MP rear, 2MP front	5MP rear, 1.2MP front
Overall score				

We don't keep secrets



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Sony Xperia Z3 Tablet Compact

EDITOR'S CHOICE ★★★★★ Android magazine

Feature-packed and stylishly slender, Sony's new tablet is a Nexus 9 killer

If you want to buy a premium, small Android tablet, what do you choose? The Nexus 7 (2013) is nice, but not really premium in price or design. The Samsung Galaxy Tab S 8.4 with its gorgeous AMOLED screen? Again, a good device, but it doesn't feel really high quality. In issue 45 we reviewed the slightly larger Nexus 9, giving it a maximum score of 5/5. But the game has just been changed. Enter the Sony Xperia Z3 Tablet Compact.

From the minute you unbox the tablet and hold it in your hand, you know that it's something special. Quite often when we review devices, we talk about the feeling of quality that comes with weight and density. The Nexus 9 is a prime example of this approach: it feels solid and therefore it feels well made. The Xperia Z3 Tablet Compact comes at it from a completely different angle – it's incredibly light, unbelievably thin and exceptionally finished. Not everybody is a fan of the 'OmniBalance' design theme that Sony has been perfecting since the original Z phone, but there's no denying that the Xperia Z3 Tablet Compact offers one of the best implementations of it to date.

Turned on with the now traditional power button on the right of the device in the style of a watch crown (or by double-tapping on the screen when configured), the tablet immediately demonstrates another of its most impressive features – the 8-inch, 1920 x 1200 Triluminos display sitting between front-facing stereo speakers. It has taken a while for Sony to really deliver on its potential when it comes to displays (the original Z and Z1 were particular lowlights), but it finally seems to have got it right. The screen is clear, sharp and, like the Xperia Z3 itself, incredibly bright.

The tablet runs Android 4.4 KitKat out of the box with a Lollipop update promised at the start of 2015. Sony's customisations of Android are subtle

good for... Games & movies
The front facing speakers make the Z3 TC an immersive gaming or movie-watching device

and largely complementary, with the only minor frustration being Sony's custom lockscreen and the fact that it prevents the use of live wallpapers.

The Xperia Z3 Tablet Compact is equipped with a 2.5GHz Snapdragon 801 processor, speedy Adreno 330 GPU and 3GB RAM – it wants for nothing in the power department. As you'd expect, the device is incredibly fast and smooth. As an 8-inch device it is at the upper limits of what is acceptable when it comes to apps that are effectively enlarged phone versions. However, in use, the experience is far superior to that on its 10-inch Z2 Tablet sibling.

The Xperia Z3 Tablet Compact is only 6.4mm thick and it's easy to assume that such slim dimensions would lead to compromises. In reality, it's hard to see where that's the case. The battery is still a generous 4500mAh in size (and courtesy of Qualcomm Quickcharge 2.0 it juices up very quickly) and the device is still waterproof, something of a Z range trademark nowadays. 6.4mm doesn't leave a lot of room for high-quality cameras (particularly as there is no camera bump) and the Xperia Z3 Tablet Compact's 8-megapixel rear camera is only adequate, as well as lacking a flash. The 2.2-megapixel front-facing camera isn't bad – it's certainly good enough for the occasional selfie and for video calls. Is camera quality of paramount importance on a tablet like this? Probably not.

An LTE version of the Xperia Z3 Tablet Compact is available and it has a particularly intriguing feature. Most cellular-enabled tablets offer a data connection only, with SMS also sometimes available. The Xperia Z3 Tablet Compact also has the Phone app installed, so you can use it to make voice calls! You can't hold it to your head (and you'd look silly anyway), but you can use it as speakerphone or with a Bluetooth headset.

Colour choice
The Z3 Tablet Compact is available in black or white, both of which feature a soft touch finish on the back, not unlike the 'sandstone' texture of the OnePlus One. It overcomes the phone range's habit of sliding off things

Play away
One of the headline features of the Z3 Tablet Compact is that, like its Z3 and Z3 Compact siblings, it supports PlayStation 4 Remote Play when paired, using a Dual Shock 3 or 4 controller and the Sony GCM10 mount

Tablet trio
Three versions of the Z3 Tablet Compact are available: 16GB and 32GB Wi-Fi versions and a 16GB LTE-equipped model. The LTE premium is considerable at £100, but it does give you freedom from hunting for Wi-Fi hotspots

Carrying around
At a mere 270g, the Z3 TC really can go in your bag without you realising it's there.

Reading
The 8" screen is exceptionally clear and bright, great for reading books and magazines.

Storing stuff
microSD expansion and USB-OTG support make it ideal if you need lots of storage!

Sony Xperia Z3 Tablet Compact information

Price **From £329**

» More information **www.sony.co.uk**
» Supplied by **Sony UK**

Battery life
Sony somehow managed to fit a 4500mAh battery in the 6.4mm body for very good battery life

technical specs

Operating system	**Android 4.4 KitKat (Lollipop upgrade announced)**
Processor	**Snapdragon 801 2.5GHz**
Memory	**3GB RAM, 16GB or 32GB storage**
Dimensions	**213.3 x 123.6 x 6.4mm**
Weight	**270g**
Display size	**8-inch**
Display resolution	**1920 x 1080 pixels**
Connectivity	**optional LTE**
Expansion slot	**microSD**



Performance
The Z3 TC's processor and GPU are very fast indeed, assisted by the ample 3GB RAM

Design
Sony's 'OmniBalance' design is particularly well executed on this device

Features
With the possible exception of a camera flash, the Z3 Tablet Compact is fully loaded

Value for money
Many cheaper devices are available, but none can match this truly impressive package

» Verdict
The Xperia Z3 Tablet Compact redefines the small, premium tablet market and embarrasses its rivals

Alcatel OneTouch Idol 2 S information

Price **£129**

» More information **www.alcatelonetouch.com**
» Supplied by **www.alcatelonetouch.com**



Battery life



The 2150mAh battery isn't that big, but Alcatel OneTouch's custom skin uses it wisely

technical specs

- Operating system ..... **Android 4.3**
- Processor ..... **1.2GHz quad-core**
- Memory ..... **1GB RAM, 8GB storage**
- Dimensions ..... **136.5 x 69.7 x 7.5mm**
- Weight **126g**
- Display size **5-inch**
- Display resolution ..... **720 x 1280 pixels**
- Connectivity ..... **4G, Wi-Fi, Bluetooth**
- Expansion slot ..... **microSD**



Performance

Slight bit of lag in some areas, but not noticeable with everyday use

Design

Poor speaker placement is the only downside to the stylish design used here

Features

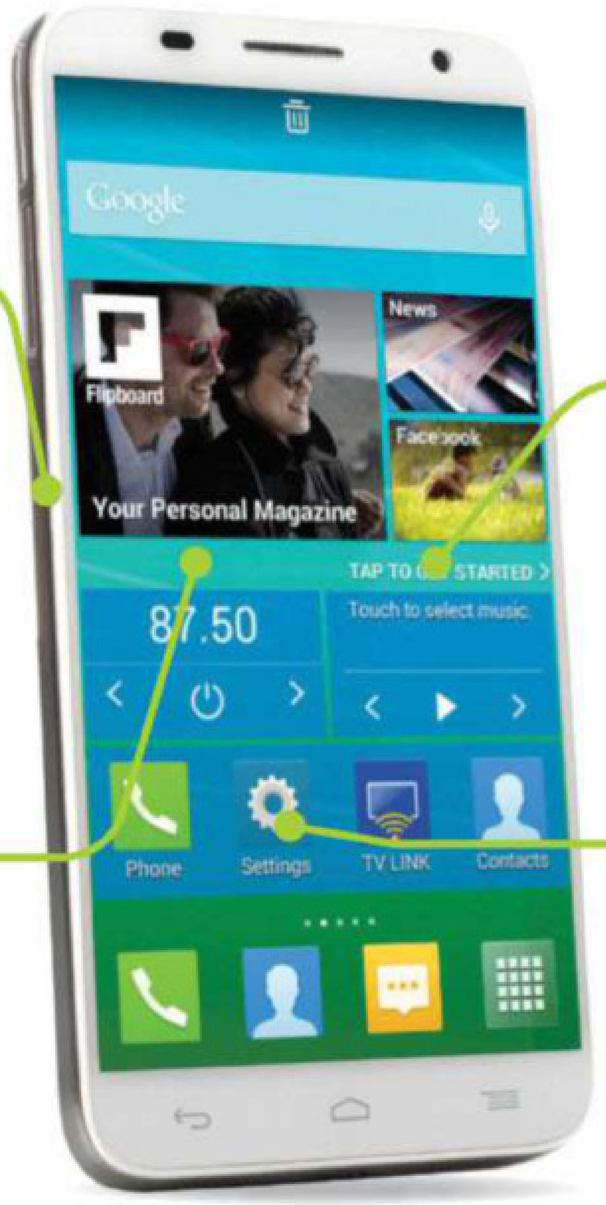
The Idol 2 S offers nothing spectacular, but a solid camera will please most people

Value for money

You're getting a lot of quality for a low to mid-range price tag

»Verdict

This is a seriously good phone from Alcatel, with just a few issues that need to be fixed



Brushed metal

Although predominantly plastic, the metal-brushed rim of the Idol 2 S offers a nice premium feel to the handset. Both the volume rocker and power port also have had the metal finish applied to them

Using gestures

Whether it's generally moving around the interface or using the camera app, a large part of what makes the Idol 2 S so great to use is that there are a variety of different gesture controls you can use to do so

Links to Lollipop

There are a lot of similarities between Alcatel OneTouch's custom skin and Android 5.0. The bright colours and block widgets aren't quite up to Material Design standards, but it's similar nonetheless

Initial lag

When we first started up the device, or any of the core apps, we did find some initial lag. This could be down to a simple processor app, but there was no lag after this initial phase

Alcatel OneTouch Idol 2 S

The Alcatel OneTouch range is growing at an alarming rate, but is the Idol 2 S a worthwhile addition?

We've been impressed with what Alcatel OneTouch is trying to do with its smartphones as of late, so we had high hopes when we got our hands on the new Idol 2 S. We're glad to see that the Idol 2 S continues the manufacturer's recent preference for premium form factor. Its rim is brushed with metal, with the plastic backplate having a nice rough finish to it and only minimal flex. As well as the standard volume and power buttons, there are ports for both a microSD card and SIM on the left side of the phone, as well as a micro-USB port and dual speakers at the bottom. The speakers are powerful, but the location of them on the bottom of the handset means you'll cover them up with the palm of your hand more often than not.

Although Alcatel OneTouch uses its own custom skin for the OS, there are a lot of similarities between it and Android Lollipop. There are some clever gestures to move around the interface, as well as a colourful array of icons and menus. Let's not forget that it's one of the few devices in this price range to also offer 4G connectivity. The 5-inch display is another positive, with everything looking crystal clear, although some of the colours can look a little oversaturated at times. We've certainly seen better quality displays, but they usually have a much higher price tag than a £130.

You've got a fairly standard quad-core processor configuration here, but being clocked at 1.2GHz means everything runs nicely. Setup seemed to take a while and the processor struggled initially, but from there on the device ran without any faults. Alcatel OneTouch has included a plethora of built-in games with the 2 S, but all can be uninstalled to free up some of the 8GB of internal storage.

One area that we've often been disappointed by with Alcatel OneTouch is the camera it uses, but it seems the company has listened to feedback as the Idol 2 S takes great images. The dedicated camera app has an array of different shooting modes and we highly recommend checking each one of them out to see what works for you. Video recording seemed to lag a little at first, but the issue seemed to fix itself during our testing.

We're pleased to say that Alcatel OneTouch is fast becoming a manufacturer to really consider when making your next Android purchase. The mid-range Idol 2 S isn't perfect by any means, and there's still work to be done by Alcatel OneTouch, but a slick design, good camera and 4G make the Idol 2 S a handset certainly worth considering.

Rugged design
It would take a serious impact to impose any sort of damage to the S50. Each port also includes its own plastic door to keep it safely hidden away

Long charge
For a device of its size, battery life is a massive plus here. It'll keep the device going for a number of days without ever needing to reach for a charger

Display woes
Although we liked the viewing angles on offer, colours look dull and washed out no matter where you look on the device. There's some noticeable pixellation on app icons as well

KitKat done well
The integration of Android KiKat is surprisingly well done here. The processor keeps everything running smoothly, and although the suite of pre-installed Cat apps won't be too everyone's cup of tea, there's mostly an unskinned version of Android used here



Cat S50

Rugged, tough and a decent choice for the rough and tumble of the great outdoors

Rugged phones have carved out their own niche in the smartphone market. Although they aren't selling in the millions, they're providing the more adventurous user with a device that can keep up with their busy lifestyle. As with any device of this type, the functional design of the S50 has resulted in a very robust look, instead of it being a good-looking phone. Each part of the device is coated in reinforced plastic, with each port stored under a protective door. All the usual ports are included, along with the addition of a microSD slot. The back and corners of the phone are rubberised, but the camera sensor protrudes a little, which isn't ideal. It's big, chunky and really awkward to hold, but to compensate for this, if you do drop it you won't find a single bit of damage.

The 4.7-inch display has also been reinforced and while viewing angles on the IPS screen are great, the overall quality is average. Colours look dull throughout and there's some very obvious pixellation in parts. This combination doesn't translate well for the 8-megapixel camera either, with both photos and videos tending to look washed out and grainy. Although shooting options are varied, you will soon realise that it's not worth your time exploring them when the results aren't up to scratch.

For its distinctly mid-range price, the Snapdragon 400 processor is fairly standard and the quad-core configuration here keeps things running smoothly. Although users will find several fairly useless Cat apps to look through, there's a largely unskinned version of Android running here. It's not the most seamless integration of KitKat we've seen, but there are no glaring errors to note. We also appreciate the addition of a microSD slot, which many of the bigger manufacturers tend to now leave out.

As it's built for the more outdoorsy type, it needs a battery that can last a while. Fortunately, the 2630mAh offering here is superb. On medium usage, users can expect to get a couple of days without needing to charge. There are also three speakers on the device, with two located on the front and a single enlarged speaker on the back. Sound clarity is mixed and the way your fingers sit when holding the device means the back speaker is instantly covered up.

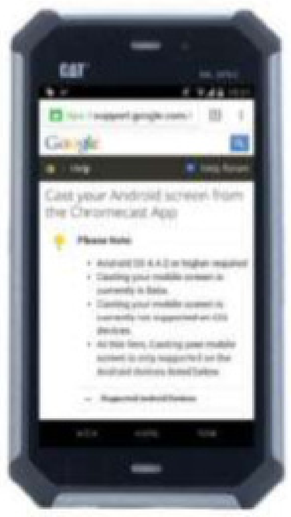
This isn't a phone built for the everyday user. It's ugly, too chunky to easily carry around and the display just isn't up to scratch. But this is a device built to cope for the rough and tumble of the outdoor life and so while it lacks the finesse of a sleek smartphone, it trumps the competition when it comes to providing unprecedented levels of protection out of the box.

Cat S50 information

Price **£330**

» More information
www.catphone.com

» Supplied by
www.clove.co.uk



Battery life



You'll manage several days without needing to charge the 2630mAh battery

technical specs

» Operating system	**Android 4.4**
» Processor	**Snapdragon 400 1.2GHz quad-core**
» Memory	**2GB RAM, 8GB storage**
» Dimensions	**77 x 144.5 x 12.7mm**
» Weight	**185g**
» Display size	**4.7-inch**
» Display resolution	**720 x 1280 pixels**
» Expansion slot	**microSD**



Performance
Everything runs smooth thanks to the Qualcomm Snapdragon 400 processor

Design
Chunky and ugly, but plenty of protection that can take a beating

Features
The suite of own-brand Cat apps are poor and the camera is barely usable

Value for money
Not an impulse buying price, but not overly expensive either

» Verdict

A suitable choice for those needing a rugged phone, but lacks the finesse that most smartphone users want

Amazon Fire HD 6

The most affordable Kindle Fire yet looks to compete against the mighty Nexus brand

What is the perfect size for a tablet? Some would say 7 inches, while others would find 10 inches is best for them. Amazon's latest budget tablet, the Fire HD 6 has a diagonal screen measurement of just 6 inches, which is only fractionally larger than most phablets. Although the diminutive dimensions will please some users, the Fire HD 6 is surprisingly chunky and still not quite small enough for one-handed use. The largely plastic exterior does feel well made and robust, but adds some considerable weight to the frame of the device.

Look around the device and you'll only find a few ports available to users. At the top of the tablet lies both the 3.5mm audio jack and micro-USB connection, but there are noticeable omissions of a microSD and micro-HDMI port here. The sole speaker on the Fire HD 6 sits at the bottom of the tablet and offers great clarity for songs – when you're not covering it up with your fingers, that is – and miniscule cameras on the front and back are the other noticeable additions.

Amazon's latest version of forked Android, Fire OS 4 Sangria, is in full force on the Fire HD 6, and is a noticeable improvement over previous versions. The smaller frame of the tablet helps keep Sangria running nicely throughout, although we would have liked to see a beefier processor than the dual-core offering used here. However, for the £79 price tag Amazon has set for the Fire HD 6, it's a fairly standard cutback to make. If you're an avid user of all things Amazon, then you'll find the Fire HD 6 a pleasure to use. Every form of media is covered here and while the Amazon Appstore's offering is still light years behind that of the Google Play store, most of the essential apps are present. If you've not previously invested heavily in Amazon's ecosystem before, however, then the Fire HD 6 is going to be a device that frustrates. The lack of any real third-party support is disappointing, but something that Amazon is keen to fix.

For a media-oriented device, the display of the Fire HD 6 is fairly impressive. There's no noticeable pixelation while consuming media and although some may worry that the smaller size won't lend itself well to reading and watching movies, we found no such issues during our time with it.

The review unit we tested came with 8GB of storage and with no expandable memory option; you'll be relying heavily on the cloud. Fortunately, every Fire HD 6 owner will have a large amount of

Brash but beautiful

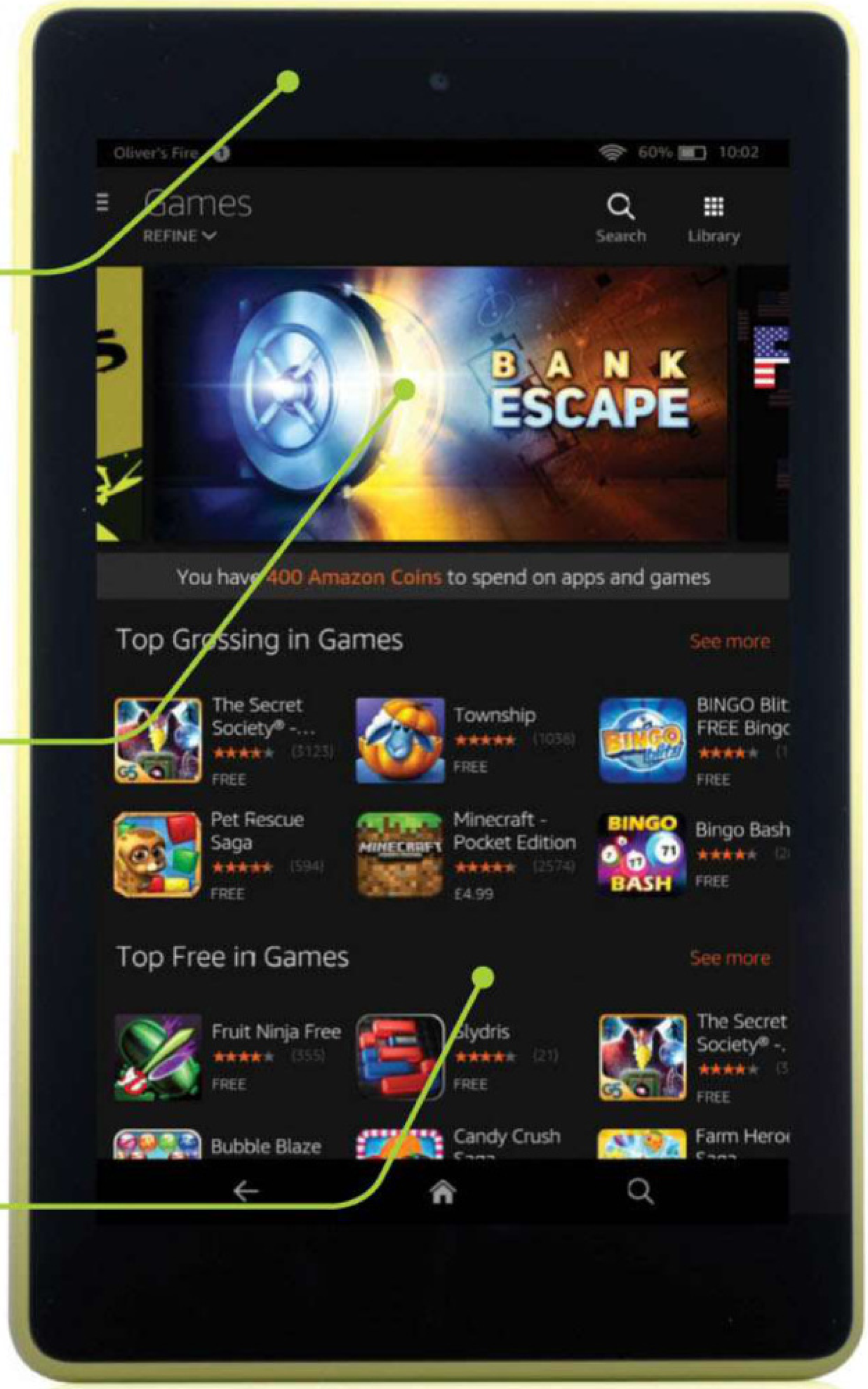
The Fire HD 6 comes in a range of bright neon colours. The citrus yellow version we tested was a welcome break from normally dull, monochrome tablet design

Pixel not perfect

Most won't expect a lot from a tablet's camera, but with standards slowly increasing, the grainy and basic rear-facing camera on the Fire HD 6 is very poor

In the cloud

With only 8GB or 16GB of internal storage available, Amazon has equipped the Fire HD 6 with plenty of cloud storage options





good for... **Media consumption**

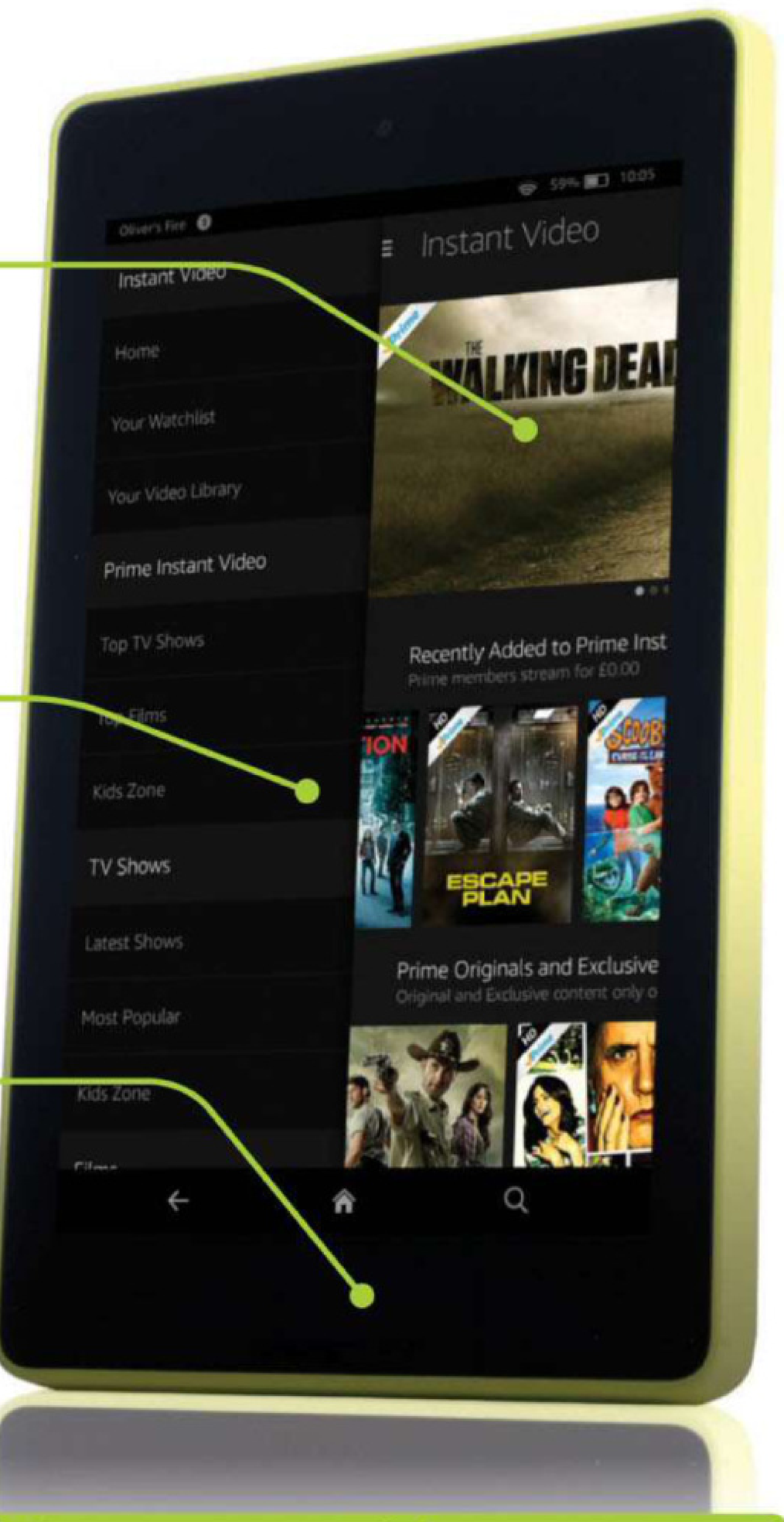
Whether it's movies or books, there's plenty to choose from in the Amazon store

Amazon Fire HD 6

cloud space given to them, with more available for a competitive price. What we especially liked was being able to switch between the apps stored on our device's internal storage and cloud account using a simple toggle within the app drawer.

Photography fans might be tempted to check out the Fire HD 6 for its more portable frame than bigger tablets, but we'll firmly say that this isn't a device for taking photos with. Images taken with the 2MB camera are grainy no matter where and when you take them. Apart from an HDR option, there's also a real lack of shooting options. Even though the practicalities of taking photos on a tablet are debatable, the fact that both the original Hudl and Nexus 7 tablets included numerous camera options means there's little excuse for Amazon to offer such a lacklustre selection in today's tablet market.

The Fire HD 6 is a tablet that will undoubtedly split public opinion. On one hand, you have a device that offers a small form factor perfect for consuming media on the go for just £79, which is even more impressive if you're tied into Amazon Prime subscriber. On the other, you've got a rather chunky tablet that offers a somewhat inferior OS, a lack of third-party options and an awful camera. We appreciate the added portability, but this is a device that could have been so much more than what's on offer here.



Media friendly
Amazon has slowly transformed itself into a digital media powerhouse and this is clear to see in the Fire HD 6. There are thousands of books, movies and TV shows to enjoy

Lack of support
Being tied into Amazon's ecosystem means there's a real lack of third-party apps readily available to users

Budget price
The cost of tablets keeps coming down and the £79 price tag of the Fire HD 6 is one of the lowest we've seen yet

Using the cloud
Apps can automatically be stored to the cloud to save on internal storage

Cheap price
At £79, the Fire HD is one of the cheapest Android tablets on the market

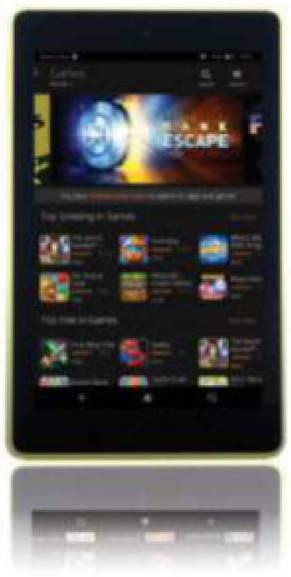
Smaller size
It's a good size for those who find 7 inches too big for a tablet

information

Price **£79**

» More information
www.amazon.co.uk

» Supplied by
www.amazon.co.uk



Battery life



Good enough to get through a couple of days on low use

technical specs

- Operating system: **Fire OS 4 Sangria**
- Processor: **1.5GHz quad-core**
- Memory: **1GB RAM, 8GB storage**
- Dimensions: **170.2 x 104.1 x 10.2mm**
- Weight: **290g**
- Display size: **6-inch**
- Display resolution: **1280 x 800 pixels**
- Connectivity: **Wi-Fi, Bluetooth**
- Expansion slot: **N/A**



Performance
The smaller form factor means the dual-core processor is good enough

Design
Good array of colours available, but this is a chunky and heavy tablet

Features
Plenty of media options for those tied into Amazon's ecosystem. Awful camera

Value for money
You can't argue with the £79 price tag, but some older tablets offer more for less

» Verdict

Avid Amazon users should consider this tablet, but there's an abundance of better options out there

Archos 50b Platinum information

Price **£119.99**

» More information **www.archos.com**
» Supplied by **www.archos.com**



Battery life



It'll last a day of medium usage and can be replaced by a second battery

technical specs

- Operating system: **Android 4.4**
- Processor: **MediaTek 1.3GHz quad-core**
- Memory: **512MB RAM, 4GB storage**
- Dimensions: **73 x 146.8 x 8.3mm**
- Weight: **160g**
- Display size: **5-inch**
- Display resolution: **540 x 960 pixels**
- Connectivity: **3G, Wi-Fi, Bluetooth**
- Expansion slot: **microSD**



Performance
Slow and sluggish, let down by just 512MB of RAM

Design
Remarkably robust and interchangeable backplates are a good addition

Features
Dual SIM and a removable battery are the defining features here

Value for money
You get a much better experience from Motorola and HTC for the same price

»Verdict

There's lot of potential here, but a better display and processor is needed before we can recommend



Plenty of options
Removing the backplate reveals a microSD slot, room for dual SIM cards and even a removable battery. It's remarkable to see all these features in a budget device and some of the bigger names should really take note of it

Solid design
Okay so it isn't metal, but the plastic design of the 50b Platinum feels well put together. It's a little too large to realistically hold in one hand, but those wanting a big-screen device won't mind too much

Dodgy display
The IPS display is a particularly poor effort by Archos and there's noticeable pixelation throughout. Although the bigger screen doesn't help matters, when Motorola is producing better for the same price, there's no excuse here

Not enough power
On paper, the quad-core MediaTek processor would seem good, but it's let down by 512MB of RAM that makes using the device feel slow and sluggish. More power is needed for a device of this size

Archos 50b Platinum

Enjoy a dual SIM, expandable storage and a removable battery for under £120

Although not a household name, Archos has a long history in producing budget-orientated Android devices, but has yet to have a real breakthrough phone. The 50b Platinum is the French firm's latest device and from the outset it's a positive experience. The predominantly plastic design feels robust and there's a range of colourful accompanying backplates that can be interchanged at the user's discretion. It's not too heavy either, considering the 5-inch display, but the slight curved edges of the device make it uncomfortable to hold in one hand.

Removing the backplate shows some of the 50b Platinum's defining features. First and foremost, the 1900mAh battery is removable, and there's also room for dual SIM cards and expandable memory via a microSD card slot. Many of these features are left out of pricier devices, so it's a nice surprise that Archos made it happen here.

The problems with the 50b Platinum start when you first turn on the device. In general use, the phone suffers from some noticeable lag. It's important to note that it isn't apparent in all areas, but multitasking puts the MediaTek processor under severe strain. The 512MB of RAM is considerably low for a device of this size, especially when Android 4.4 is a pretty intensive OS update. The lag continues into the 8-megapixel camera, where although quality is generally good, it's a slow process to not only shoot photos but also edit them. When you do manage to get your images into the editing suite, there's a wealth of options on offer, however.

This isn't a device with a superb display either. Whereas in past time we could forgive budget devices for a low resolution – the Archos 50b Platinum sports a 260ppi display – nowadays when the likes of the £130 Moto G offer phenomenal screens, there are really no excuses.

One area that always proves controversial is where manufacturers put their own custom skin on the Android OS. Archos's offering isn't the worst we've seen, but it's a fairly clunky affair that includes several bloatware apps that you'll never want to use. Fortunately, this can be removed if you so wish – and we'd recommend it, as the 4GB of internal storage will soon be eaten up otherwise.

Sadly for Archos, the time when we could forgive major cutbacks in budget devices has past. Motorola and HTC are constantly striving to bring high-end specs to those on a strict budget, and the 50b Platinum just feels a little too late to the party to compete with the big boys. We applaud Archos for bringing dual SIM capabilities and a removable battery to a sub-£200 device, but it's pointless having them when both the processing power and display just aren't up to scratch.

Soft touch

The Fire TV device and packaging feel premium and the device and the remote both have a premium soft-touch finish. Be aware that there is no HDMI cable included in the package. Amazon does sell one separately, though!

Game pad

While the standard remote doubles a games controller, more serious gamers might prefer the dedicated Fire Game Controller is available. Sold seperately for £34.99, the Bluetooth controller includes dual analogue sticks, shoulder buttons, triggers and a dedicated 'GameCircle' button for quick access to your games



Every port

The back of the Fire TV is packed with all the ports you'd hope for on a device of this type – a proprietary charger, HDMI out, optical audio out, Ethernet (a very useful inclusion) and a full-size USB socket

Remote

The Fire TV remote, powered by two AAA batteries, connects via Bluetooth, which means it works without line of sight. It's simple to use and includes a microphone to enable the voice searching functionality

Amazon Fire TV

The Fire TV comes to the UK – does it deserve a place in your home?

The Fire TV is about more than just a device. Along with the Kindle, Fire tablets and Fire phone, it's intended to draw you into the Amazon ecosystem and away from Google.

With that in mind, the Fire TV is a bit different.

Yes, it runs Android – this is **Android Magazine** after all – and it's built on AOSP, the open source core that underpins all Android devices. But instead of having the Google services available – the Play store, Play Music, Play Movies & TV – it runs Amazon's Fire OS 3.0 Mojito, which adds Amazon Appstore, Amazon MP3, Amazon Instant Video and a number of other Amazon services.

The net result is that when you fire up the Fire TV, it doesn't feel like an Android device. That's not necessarily a bad thing – Android traditionally doesn't run very well on TVs, although whether this will change with the release of Android TV and the Nexus Player remains to be seen.

The Fire TV hardware is extremely well made and the out-of-box experience is second to none. The device comes preconfigured to your Amazon account so after inputting your wireless details (or connecting to an Ethernet connection), you are up and running. Dual-band, dual-antenna Wi-Fi means you should get a good connection in the most inhospitable of living rooms, something that is traditionally a weakness on other media devices such as the Chromecast. The high-spec nature of the Fire TV isn't limited to the Wi-Fi – it has a fast processor, plenty of RAM and high-quality graphics and audio chips. This is important as Amazon sees you using the Fire TV not only for video and music playback, but also for gaming and apps. We would have preferred to see more than 8GB of storage on board for this reason.

Although the Fire TV is Amazon-centric, that doesn't mean you are locked out of other services. The Appstore has a host of alternative options – Netflix, Plex, Spotify Connect… you can get to most things you could need, as long as they are not Google own-brand services.

Navigating the system is straightforward and made even easier by the inclusion of voice search, which uses a microphone built in to the remote. It works surprisingly for launching all types of content on the Fire TV. Text input is a little painful as is often the case with a simple remote, but if you are using apps that require a lot of input then a Bluetooth keyboard can be paired with the device. In general use, the Fire TV always feels silky smooth and runs the most demanding of apps and games with ease.

Amazon Fire TV information

Price **£79**

» More information **www.amazon.co.uk**
» Supplied by **Amazon UK**



technical specs

Operating system	**Fire OS 3.0 Mojito (based on Android 4.2.2)**
Processor	**Qualcomm Snapdragon 8064**
Memory	**2GB**
Dimensions	**115 x 115 x 17.5mm**
Weight	**281g**
Expansion slot	**USB**

Amazon Fire TV



Performance
A capable CPU and plenty of RAM mean that the Fire TV runs smoothly throughout

Design
Premium design and finish mean the Fire TV will fit in in the smartest home

Features
8GB of on-board storage disappointing, but the Fire TV ticks all other boxes

Value for money
The Fire TV delivers a lot for a low cost, with little that can rival its processing power

» Verdict

The Fire TV is a worthwhile purchase if you are looking to consume Amazon content

Moto 360 information

Price **£199.99/$249.99**

» More information **www.motorola.com**
» Supplied by **www.motorola.com**



Battery life



The 320mAh offering really isn't enough to cope with the power-sapping Android Wear

technical specs

» Operating system ..... **Android Wear**
» Processor ..... **TI OMAP 3**
» Memory ..... **512MB RAM, 4GB storage**
» Dimensions ..... **46 x 46 x 11.5mm**
» Weight **49g**
» Display size **1.56-inch**
» Display resolution ..... **320 x 290 pixels**
» Connectivity ..... **Bluetooth**
» Expansion slot ..... **N/A**



Performance
The TI OMAP processor handles tasks without any glaring issues

Design
A superbly built smartwatch, slightly let down by the chunky watch face

Features
Ideal for managing apps and notifications, but Android Wear is far from perfect

Value for money
You're paying a little extra for the premium build materials used here

»Verdict

A good attempt by Motorola, but better integration of Android Wear needs to be addressed for this smartwatch to be a winner





Charge and go

When the time comes to give the 360 a charge, simply place it in the accompanying dock to start the process. Expect a fully charged smartwatch in less than an hour

Wear integration

From managing your music to discarding phone calls, the Moto 360 is capable of so many things. It's the perfect solution for keeping a close eye on any notifications that appear on your phone



Circular woes

From a design point of view, the circular face of the 360 is fantastic. However, it suffers from text being cut off and images not correctly displayed thanks to Google's reliance on rectangles in Android Wear

Adjustable strap

Users can choose between metal and leather-based bands for the Moto 360. Some users have reported sizing issues with the metal bands, so keep that in mind before purchasing

Moto 360

Does Motorola's premium Android Wear smartwatch deserve space on your wrist?

No other wearable has come close to the hype and attention the Moto 360 has received in the past few months. Although the market has been duly saturated with new smartwatches, the Moto 360 has certainly piqued the interest of many potential users who have yet to be persuaded on the need for a smartwatch. Out of the box, the most obvious change between the 360 and early Android Wear watche,s like the LG G Watch, is that it's round. It looks like an actual watch that people would choose to wear, and the whole design has a distinct premium finish. There's a choice of straps to help keep it attached to your wrist, with the leather variant we tested being lightweight and sleek in design. The metallic watch face is well constructed, with the screen slightly raised, but the whole build is chunky and quite obtrusive on the wrist.

A simple long press on the side button turns on the Moto 360, with the smartwatch needing the Android Wear app on your smartphone to connect. The process is easy and pairing can be completed in a few seconds. Android Wear is certainly a great addition to the Android ecosytem and adds plenty of functionality to the 360. Users can send texts, control apps and even use a Wear-dedicated launcher, all from their wrist. It's quick at receiving notifications, and a decent solution to quickly confirming or discarding phone calls. The display is bright and colourful, and we can cut it some slack for the odd bit of pixelation due to its smaller size.

Where the Moto 360 starts to falter is really not the fault of Motorola. Google's intent on using rectangles throughout Google Now and many of its other apps leads to words and pictures often being cut off from the Moto 360's circular screen. It's a bit too apparent in some areas, especially those that the black panel along the bottom of the watch face obscures.

With the Moto 360 capable of so much, it's not been best equipped in the battery department either. The 320mAh offering has undergone a couple of updates to prolong its life, but with so much power required for Android Wear, you'll be very lucky to make it through a single day of use.

Its testament to Motorola's strong design ethics that the 360 is one of only a few smartwatches people would consider wearing, even if it's a little chunky. Although Android Wear works a treat on the smartwatch, its integration is far from perfect and a subpar battery life only looks to make things worse. There's plenty of room for improvement, but this is a good start from Motorola.

Customised for you
What makes Wear such an exciting OS is that you can customise large parts of how your smartwatch functions. Choose from various watch faces, display options and how the watch deals with notifications

Full display
Users can experience the entire screen of the G Watch R – without having a portion of it cut off, a problem found in the Moto 360. This makes moving around the watch's interface a terrific experience

Extra power
The bonus of having a Snapdragon 400 processor means that moving around the watch is very quick. The downside to this added power is that the battery will undoubtedly drain faster

Robust by nature
There's little we can fault in terms of the design here. Everything from the metallic dial to the buckle feels well constructed, but we do think you'll want to pay out a little more for the metal strap







LG G Watch R

While more expensive than most smartwatches, the G Watch R is a surprisingly good device

Although we liked the original G Watch from LG, it seemed a little too basic for the price you had to pay for it. This time around, LG has taken a different path and the G Watch R feels like a totally new project that's separated itself from the original. First and foremost, the metallic design of the G Watch R is fantastic and the build quality is second to none. There's a handy dial around the edge of the 1.3-inch screen, as well as the charging port around the back. It's also circular, a big contrast from the ugly square exterior on the original G Watch, and noticeably more comfortable to wear for prolonged periods of time. Although the leather strap that shipped with the G Watch R is comfortable to wear, you'll almost certainly want to invest in the metal strap to add to the premium feel of this smartwatch.

Connecting to Android Wear is easy enough and, similarly to the Moto 360, it'll take just a few minutes to get up and running. Users can enjoy the G Watch R's entire 1.3-inch display without any area of it being cut off and the 320 x 320 resolution leaves everything crystal clear. Notifications appear from the top and bottom of the app and it's a simple case of dragging them to open them up on the watch. Android Wear isn't perfectly optimised for circular devices as of yet, with several notifications being cut off in the corners of each screen, but it's more of a problem on the Moto 360 than on the G Watch R. Thanks to being able to use every pixel of the screen, responding to notifications and generally getting around the watch is a pleasant experience.

Although we still think smartwatches do require at least 1GB of RAM to keep everything running completely smoothly, a decent Snapdragon 400 processor backs up the 512MB of RAM here. The added processing power does affect the battery life to some degree and although the 410mAh offering here can make it through a day without charging, it depends entirely on just how much you use it on a daily basis.

Smartwatches are fast becoming the must-have device for Android users to invest in. There's still a lot of work to be done and while the LG G Watch R isn't perfect – it needs a slightly beefier battery – it's by far the best smartwatch that we've tested. We'd say the biggest area of improvement that needs to be looked at is ultimately with how these devices integrate with Android Wear, but that's more of an emphasis on Google to get it right, rather than the manufacturers.

LG G Watch R information

Price **£224.99**

» More information **www.lg.com**
» Supplied by **www.clove.co.uk**

Battery life



Good for the most part, but the processor drains the 410mAh battery quickly



technical specs

- Operating system: **Android Wear**
- Processor: **Qualcomm Snapdragon 400**
- Memory: **512MB RAM, 4GB storage**
- Dimensions: **46.4 x 53.6 x 9.7mm**
- Weight: **62g**
- Display size: **1.3-inch**
- Display resolution: **320 x 320 pixels**
- Connectivity: **Bluetooth**
- Expansion slot: **N/A**



Performance
Extra processing power keeps things nippy, but battery life could be better

Design
Without doubt this is a stunning smartwatch that ticks all the right boxes

Features
Lots of customisable extras to explore, but Wear can still be improved

Value for money
Noticeably more expensive than the competition currently on the market

» Verdict

If you want to be an early adopter of an Android Wear smartwatch, this is the device you need

Groov-e Sound Curve Alarm Clock Radio Speaker System

While the Sound Curve is officially an alarm clock radio, it is something of an all-in-one accessory with extra USB ports to charge your mobile devices and Bluetooth integration to stream your music.

The Sound Curve takes its name from the basin-like indent in the top of the device, which houses both the speaker and all of the controls. We found it also made a convenient cradle for our phone when charging it, though this did muffle the otherwise plentiful-sounding 3 watt speakers.

The clock is displayed via LED, but shines through another sheet of plastic, making it look like a hologram or a projection. If you're concerned that the glare of the LED from your bedside table might keep you awake, rest assured. The Snooze button doubles as a dimmer switch, so you can completely turn the clock display off if you choose, or brighten it to full-power levels without turning on the radio or Bluetooth. The display is a rare instance of considered form factor in a device that is otherwise something of a plain white block.

The radio antenna was something of a disappointment. Rather than an aluminium arm that could be adjusted for the best signal, the Sound Curve only offers a loose-hanging wire antenna. It should be stressed we had no problem picking up an FM signal with the alarm clock, which also stores up to 20 preset channels, but it did look ungainly.

Bluetooth pairing was simple and could be toggled on and off as easily as the radio using the Function button.

» **Price** £44.99/$TBC
» **More information** groov-e.co.uk







Cambridge Audio Go V2 Portable Bluetooth Speaker

EDITOR'S CHOICE ★★★★★ Android magazine

The follow-up to the Minx Go has dropped the saucy name, but still flirts with hi-fi quality sound, albeit at a slightly higher price. For £20 more than the original model, the Go V2 boasts aptX Bluetooth for CD-quality streaming and has added NFC support for an Android-friendly alternative.

Available in either black or white, the speaker is quite anonymous – except for a slight curve to the speaker's main grille, which adds a subtle design flourish – and easily blends into any background setting. This is probably for the best because while it's portable in the sense that it can work wirelessly, and at 9.3" x 4.8" it's a convenient size, it weighs a full 1kg and so we wouldn't suggest carrying it around with you.

Five buttons along the top make it easy to adjust the volume and toggle the power, Bluetooth and auxiliary input on and off. A USB connection, auxiliary input and power input are also within easy reach on the rear of the speaker. If you were a fan of the original's kickstand, this has now been removed.

Under that grille, the Go V2 is smuggling twin 50mm speakers and 19mm titanium tweeters, while round the back it has a base radiator. This gives the sound an extra weight that helps it fill the room, while the highs remain punchy and crisp, detecting textures and nuances in voice.

Perhaps accounting for its extra weight, the Go V2 also has an impressive battery life. Our intense use found it lived up to the manufacturer's claim, lasting a full 18 hours, spread over five days.

» **Price** £119.95/$TBC
» **More information** cambridgeaudio.com



Portable power

Top up your phone or tablet with these brilliant battery packs

Kit Power Bank – 6000mAh

GROUP TEST WINNER ★★★★★ Android magazine

» **Price** £30.99
» **More information** amazon.co.uk

The largest of Kit's power packs, the mighty 6000mAh model can hold charge for up to one year left on standby. Rather than a series of lights that go out, an LED display gives you an accurate reading of how much power remains. An awkward shape and notable weight make it less portable, and charging the behemoth takes up to eight hours, but you can't fault the price.

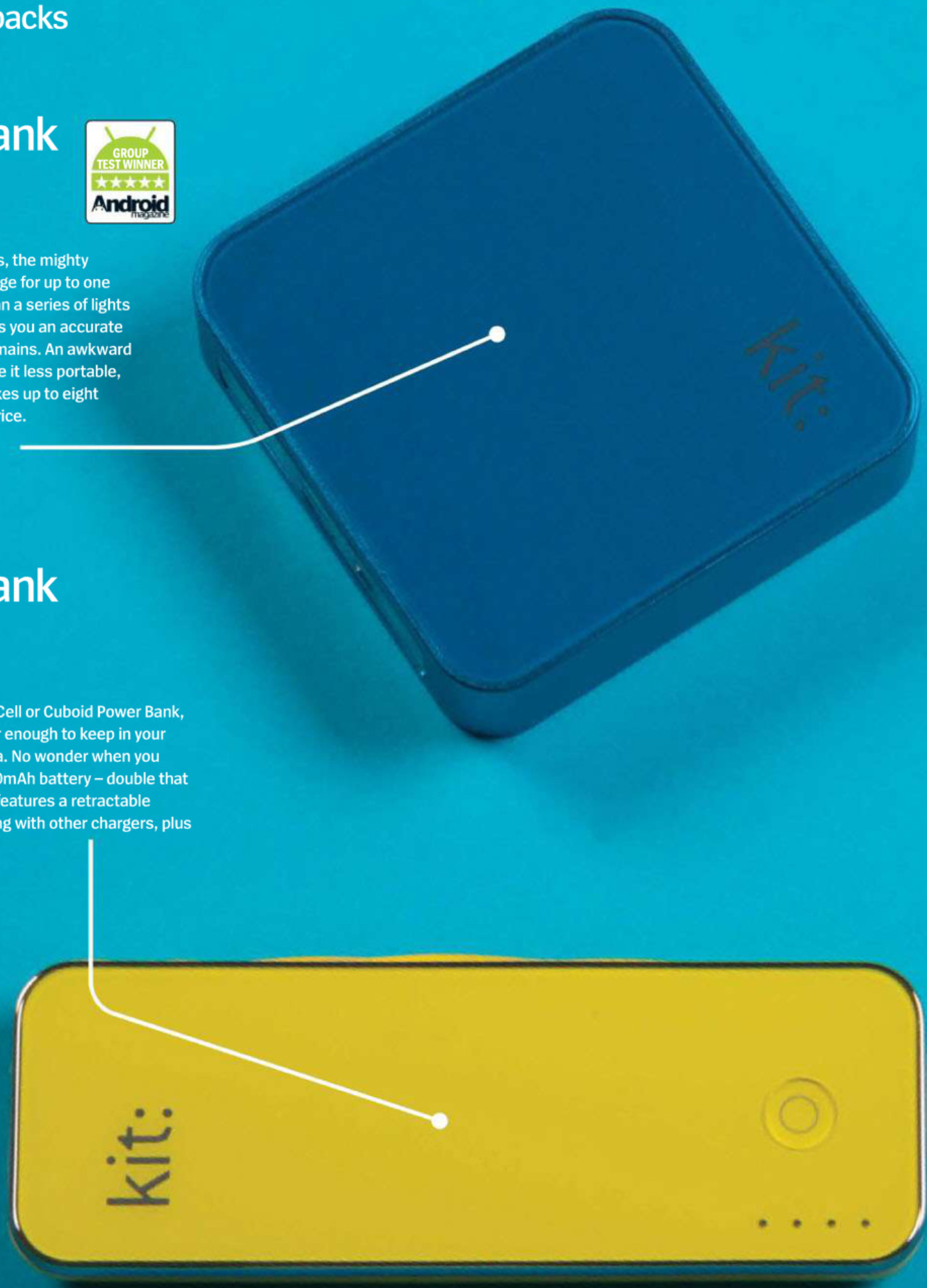
35 hours talk time

Kit Power Bank – 4500mAh

» **Price** £30.99
» **More information** amazon.co.uk

Slightly longer than the PocketCell or Cuboid Power Bank, this battery pack is still slender enough to keep in your pocket, but weighs a little extra. No wonder when you realise that as well as the 4500mAh battery – double that of most smartphones – it also features a retractable micro-USB output for connecting with other chargers, plus a built-in microSD card reader.

28 hours talk time





Innergie PocketCell

» **Price** £59.99/$54.99
» **More information** myinnergie.com

Whereas so many battery packs struggle to fit extra juice for your device into a portable shape, the 90mm PocketCell is no larger than a cigarette lighter and slips easily into your pocket. Its 3000mAh battery promises over 15 hours of power, but this only applies to small devices. During our testing, high use on a flagship phablet lasted 8-10 hours.

10 hours talk time

Native Union Jump Cable

» **Price** £39.99/$49.99
» **More information** nativeunion.com

This Kickstarter success story has a unique feature: when acting as an adaptor so that you can charge your phone from a wall socket or laptop, the Jump Cable will detect when your device's battery is full and automatically begin charging itself. This means that, in theory, it should remain fully charged when you need to use it out and about. However, a full charge of its tiny 800mAh battery only equates to around a 20 per cent boost, or around 2.5 hours extra talk time, which is hard to justify given its price tag is higher than most of the bigger battery packs in this group test.

2.5 hours talk time





STK Cuboid Power Bank

» **Price** £15/$24.99
» **More information** stk-acc.com

This power bank is a similar shape and size to the PocketCell, but with squared-off edges and input and output ports placed on the same face rather than on either end. With a 2600mAh battery, it holds a lot less charge than the PocketCell – or most of the power banks here – but this is a trade-off for the budget price.

13 hours talk time

Android magazine BUYER'S GUIDE

Discover the best smartphones, tablets and accessories to buy in our top ten charts

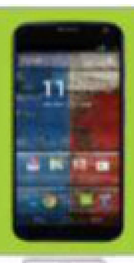


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TOP 10 SUPER SMARTPHONES

THE BEST FLAGSHIP AND MID-RANGE ANDROID PHONES ON THE MARKET

1		**Moto X (2014)** While the previous Moto X had been something of a flagship underdog, the second-gen model has emerged as this year's must-have. A slightly larger screen size at 5.2 inches, metal chassis and the option to completely personalise your handset before you buy with the Moto Maker program, while remaining cheaper than its rivals and with a near stock experience enables Motorola to steal our top slot. The only downside is that the new Moto X still lacks a microSD slot to expand the memory.	£408 See issue 45
2		**Sony Xperia Z3** Despite being made of reinforced glass and aluminium and completely waterproof, the Xperia Z3 is a very stylish all-terrain device and weighs little in the hand. The 20.7MP camera (also waterproof) is one of the best we've seen on a phone and the PlayStation Remote Play feature will appeal to gamers.	£515 See issue 44
3		**LG G3** Pipping Samsung, HTC and Sony to the post to launch the first next-gen device, the LG G3 has won us over with its pin-sharp QHD screen, laser-focused 13MP camera and lightning-fast processor. However, its faux metal plastic casing is disappointing, as is its mono speaker.	£492 See issue 41
4		**HTC ONE (M8)** A combo of a completely chrome unibody and a big, bright screen makes HTC's flagship phone one of the best-looking on the market. A pair of BoomSound speakers, FM radio, infrared TV remote and quick media-casting options result in a powerful and portable entertainment system.	£549.99 See issue 37
5		**Samsung Galaxy Alpha** Mimicking the iPhone's chamfered metal case, there is no denying the slim and sleek Alpha is Samsung's best-looking phone ever. Overall performance is strong and the advanced HDR Live camera feature is a plus; but even with a new set of power-saving tools, the battery is a bit small.	£579.95 See issue 43
6		**Samsung Galaxy Note 4** To look at, the Note 4 is a modest update on the Note 3, with a same-size display and continued emphasis on using the S Pen stylus. However, it has been revamped in almost every area. The TouchWiz interface handles better than ever, it has a 16MP camera, and has an extra-long battery life.	£649.95 See issue 45
7		**Samsung Galaxy S5** A relatively modest update on the Galaxy S4, the S5 is nonetheless an impressive handset. Its range of fitness features and thumbprint scanner give it a unique selling point, while its specs, though high, are slipping behind the latest-gen flagships. A rubber back and metal edging add a premium finish.	£466.80 See issue 38
8		**Google Nexus 5** As a Google product, the Nexus 5 is a long-term investment as it is guaranteed to have first pick of future updates to the Android OS. However, though it still performs well, in terms of specs – in particular the processor, camera and battery life – it's a lot less competitive than it used to be.	From £299 See issue 32
9		**Xiaomi Mi4** While OnePlus is the bigger name in Chinese exports, Xiaomi is selling millions of units in its home country. The Mi4 manages to undercut the OnePlus One on price, while maintaining impressive build quality. Like OnePlus, Xiaomi uses a non-standard OS, but it's equal to KitKat 4.4.	From £200 See issue 44
10		**OnePlus One** This Chinese device offers flagship specs for a budget price. This includes a 2.5GHz quad-core processor and 3GB of RAM so that it can run multiple apps without lag, a 13MP camera and a large screen. The lack of an expandable memory and the CyanogenMod 11S OS will put some off, though.	From £269.99 See issue 41

In case you missed it... Photo-editing apps **Read more in issue 45**



Repix
» **Price** Free + IAPs
Repix's unique editing approach sees you using brushes to paint effects onto your photos in real-time. An in-app purchase is required to unlock a full set of editing tools, but even the lite version is well worth a try.



Afterlight
» **Price** £0.59/$0.99
Afterlight offers an extensive range of tweaks and effects that can be strength-adjusted using easy-to-use sliders. The filters are nice, though it sadly lacks the iOS version's Fusion facility to combine them to create your own.



Snapseed
» **Price** Free
Made by Google, Snapseed has a unique selective adjustment facility that lets you apply edits to just a small area of the image. A host of tools and effects include tilt-shift, retro scratches and an amazing HDR Scape filter.

WINNER



Facetune
» **Price** £1.99/$2.99
Nothing beats Facetune for touching up portrait shots. Its advanced tools make it easy to remove blemishes, brighten smiles and even reshape facial features with a simple swipe.

Buyer's Guide

TOP 10 BUDGET BUYS

IF YOU'RE SHOPPING FOR A SMARTPHONE ON A SHOESTRING, CHECK OUT THESE LOW-COST MOBILE MUST-HAVES

1		**Moto G 4G** The Moto X's budget cousin set new standards for the low-cost phone with support for 4G. While it's made of a cheap plastic, the Moto G has not compromised on screen quality, which is 4.5 inches of sturdy Gorilla Glass 3 and offers 1280 x 720 pixels. The small memory can be boosted thanks to a microSD slot. Running near-stock Android, Motorola has confirmed Moto G 4G's next upgrade will be Lollipop, ensuring future-proofing for some time despite the launch of a new Moto G (2014) model.	From £158 See issue 42	
2		**Moto G (2014)** While the second-gen Moto X has won us over, the Moto G (2014) has fallen short of the top due to a lack of 4G despite the similar price point. However, this is a trade-off if you would rather have the slightly larger 5-inch screen or the useful addition of a dual SIM.	£149.99 See issue 44	
3		**Moto E** Available for under £100, SIM-free and no contract, the Moto E is the ultimate no-strings-attached smartphone. With a sturdy, splashproof case, 1980mAh battery that will go the distance and microSD slot to expand the tiny 1GB memory, the Moto E is an impressive build that won't break the bank.	£99 See issue 40	
4		**Samsung Galaxy Ace 3** While Samsung's high-end handsets get a lot of attention, the company has a much broader range. The Galaxy Ace 3 is now on its third incarnation, and at £174 it sits neatly in the budget to mid-range category. This is a 4G handset with a distinctive Samsung look and features.	£174 See issue 34	
5		**EE Kestrel** Only available from the EE network, its own-brand Kestrel phone is offering 4G data speeds at a very reasonable price. Produced by Huawei, the handset has a curved design, which gives it a unique flair. Good battery life ensures it can handle its quad-core engine and 4G's inevitable drain.	£100 See issue 40	
6		**HTC Desire 510** At 4.7 inches, with a budget price tag and LTE connectivity, this is HTC's answer to the Moto G 4G. However, cost-saving measures such as a 5MP camera and poor screen quality mean it just can't compete. HTC's Sense 6 UI is still here though, offering one of the best custom interfaces for Android.	£165 See issue 44	
7		**Acer Liquid Z5** A good-looking phone with tapered edges, the Acer Liquid Z5 offers a stylish alternative to most black brick handsets. Its innovative Float Apps interface also makes it easy to multitask apps. However, humdrum specs, like a low-res screen, leave it ranking low in the competitive world of budget phones.	£95 See issue 39	
8		**Nokia X** The launch of the slimmer, faster Nokia X2 has driven the price of the Nokia X down, but this original Microsoft-Android hybrid still deserves attention. A bestselling handset in India and Pakistan, it has great build quality with a tough polycarbonate chassis available in a range of colours.	£89 See issue 38	
9		**Alcatel OneTouch Idol Mini** The understated style and low-end specs make the Alcatel OneTouch Idol Mini a great option for first-time or light users. SwiftKey as the default keyboard is a welcome addition; however, it's hard to justify the excessive bloatware on a phone that only has 4GB storage.	£79.99 See issue 39	
10		**Huawei Ascend Y300** While only offering a dual-core processor is going to damn this Huawei in the eyes of many potential buyers, it shouldn't be dismissed quickly. The well-reviewed Ascend Y530 is only a slight spec upgrade on the Y300, but is around double the price. Ideal for young or cash-strapped users.	£69.95 See issue 28	

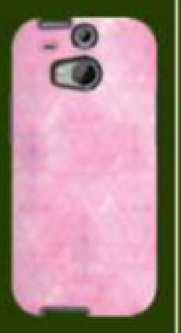
In case you missed it... Stylish device cases Read more in issue 45

LG G3 QuickCircle Snap On



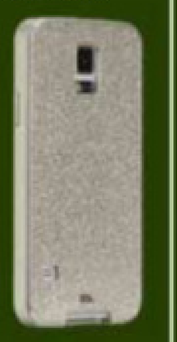
» **Price** £29.99/$48.99
» **Website**
www.mobilefun.com
What we like most about the QuickCircle case for the LG isn't its super-sleek design, but in fact the beautiful clock that appears on your screen when the case is closed. It's like having your very own pocket watch!

Otterbox Commuter Series



» **Price** £24.99/$39.95
» **Website**
www.otterbox.co.uk
The Commuter series is a familiar face from Otterbox, but the newer versions for the HTC One (M8) and the Samsung Galaxy Alpha have been updated with flashy new colours and a smoother feel to them.

Glam Champagne for S5



» **Price** £25/$TBC
» **Website** case-mate.co.uk
Okay, so the Glam Champagne case for the Galaxy S5 is a bit too flashy for most, but it's solidly built and caters for the S5's numerous ports really well – even if the camera window is a little too wide.

WINNER

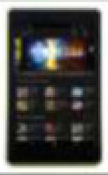
Official Note 4 S View case



» **Price** £39.99/$64.99
» **Website**
www.mobilefun.com
Samsung's official Note 4 S View case is of the customary high quality. A portion of the case has been cut out for users to get the time, or open up the Camera app.

TOP 10 BEST TABLETS

WHETHER YOU'RE LOOKING FOR A SEVEN OR TEN-INCH DISPLAY, THESE ARE THE TOP TABLETS AVAILABLE ON ANDROID

1		**Sony Xperia Z3 Tablet Compact** With its 8-inch screen and premium price tag, Sony is pitching the Z3 squarely at the iPad Mini in a bid to compete against its rivals. Weighing just 270g, it is slim and slender with a stylish minimalist design that belies the blazing processor and 3GB RAM under the hood. Its Triluminos display can give Samsung's Super AMOLED screens a run for their money and works fantastically with Sony's PS4 Remote Play feature so you can enjoy console-quality games on the go.	From £329.99 See issue 46	NEW ENTRY
2		**Google Nexus 9** A mighty Nvidia Tegra K1 processor and 3GB RAM mean that even running the most graphic-heavy games won't slow this 64-bit tablet down. The built-in BoomSound speakers also offer great sound quality, making Google's new tablet an all-round media-consumption device.	From £319 See issue 45	GOING DOWN
3		**Samsung Galaxy S Tab 10.5** Ultra thin and ultra bright, colours look vibrant and details distinct on this powerful Super AMOLED screen. Samsung's iPad slayer also puts many other Android tablets to shame, with a multi-window mode to display several apps at once and octo-core processor ensuring lightning-fast performance.	From £399 See issue 43	GOING DOWN
4		**Sony Xperia Z2 Tablet** Arguably one of the most portable 10-inch tablets available, the Xperia Z2 Tablet is waterproof and can support a SIM card for 4G use. It is also surprisingly thin and light to carry and includes power-saving modes to ensure longer battery life. Reasonably high-spec, it has a whopping 3GB RAM.	From £394.99 See issue 39	GOING DOWN
5		**Google Nexus 7 (2013)** Recently superseded by the Nexus 9, the Nexus 7 still offers a stock Android alternative for the mini tablet market, with the added benefit of running the latest Android OS and being first in line for upgrades. The downsides are its last-gen specs and lack of a microSD slot.	From £199 See issue 29	GOING DOWN
6		**Google Nexus 10** Though it has never had the impact the Nexus 7 had, the larger Nexus 10 still offers a high standard for 10-inch Android tablets. A super-high-resolution screen and powerful processor ensure that it regularly sells out on the Google Play Store, even if it does lack a 3G/4G option or expandable storage.	From £319 See issue 20	GOING DOWN
7		**Tesco Hudl 2** This sequel to the supermarket chain's own-brand tablet can't compete with the premium platers, but sets a new benchmark for budget tablets. Upping the display size from 7 to 8.3 inches, the Hudl 2 also runs Android 4.4.2 KitKat and can handle anything you throw at it thanks to an Intel Atom processor.	£129 See issue 44	GOING DOWN
8		**LG G Pad 8.3** A well-rounded tablet, the LG G Pad 8.3 offers solid specs with a selection of impressive built-in apps. These include Polaris Office so you can write documents on the go, and QPair, which shares your smartphone notifications to your tablet so you never miss important updates.	£199 See issue 40	GOING DOWN
9		**Samsung Galaxy TabPRO 8.4 Wi-Fi** The smallest tablet in Samsung's collection, the TabPRO 8.4 proves that good things do come in small packages. A stunning 359ppi screen puts the Nexus 7 to shame, though we'd prefer higher-quality speakers. However, an 8MP camera and intuitive interface are good compensation.	£369 See issue 38	GOING DOWN
10		**Amazon Fire HD6** Despite only having a 6-inch display and a budget price tag, the Fire HD6 is a decent tablet for watching movies and listening to music. However, the inferior forked OS and lack of third-party app support make the Fire HD6 hard to recommended for regular let alone heavy-duty use.	£79 See issue 46	NEW ENTRY

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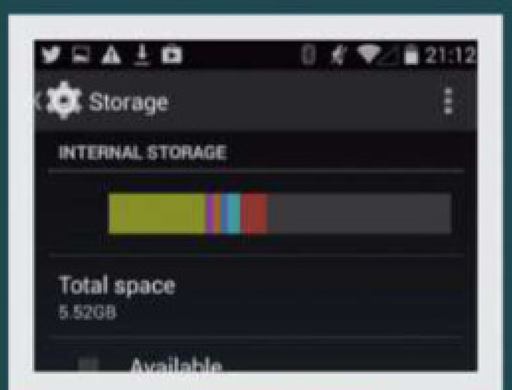
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Did you know?

If you cannot move files to an SD card that is installed in your Android phone or tablet, you should try formatting it in the device itself before you do anything else. This should ensure that the partitioning is set to the exact requirements the device needs for it to work.



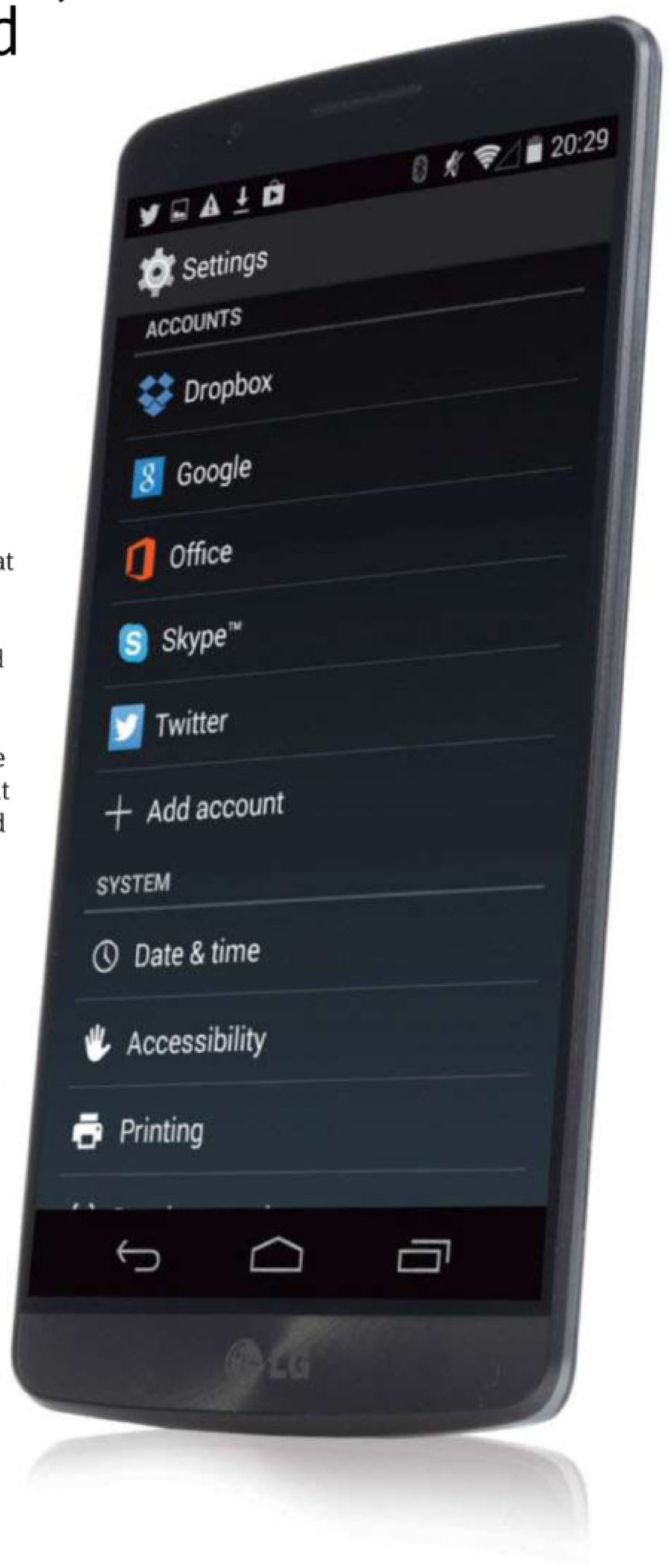
There are lots of apps that can help you restore sanity to your contacts list

Duplicates of duplicate contacts

"I have an LG G3 (love it) and my problem is with the cloud and contacts. When I save a contact and back it up, the cloud duplicates all my contact info. When I open a contact, I find all info duplicated several times"

Thomas Kit

Hi Thomas. This must be a frustrating problem and the solution will either be time-consuming or simple. Unfortunately you haven't mentioned which exact cloud services you are using, but we know of some apps that can cause problems in this area and will hopefully be able to help. If you have the Facebook app installed and running, turn off contact syncing or delete the app entirely while you attempt to find the cause. Also, if by chance Waze is installed, look for 'display all contacts' in the settings and untick the box. Okay, now you need to deal with the contacts you currently have on your device so go to Google Play and download Contacts Optimizer, which will help you to merge contacts and to delete duplicates. Once you have a list that looks as it should, you are in a position to see if something else is causing the problem. Go to the Accounts section in Settings and see what exactly is synchronising data with your device and then choose what to disable. It may take some time to analyse your entire setup, but the end result should be a contacts database which is lean and includes just the information you need. It is likely that more than one app or service is seeing your contacts and synchronising them, but a final option would be to back up your contacts and delete them in the cloud before re-syncing to start from a clean state.



Always check that not too many accounts are syncing your contacts

Ask your questions

Got a problem with your Android phone or tablet?
Send it to us and we'll find the solution

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»email
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Send your questions for our team of experts to tackle

How to turn off predictive text?

"I have to type many specific words and names when typing on my Android phone for work and the auto-correction gets in the way, but when I am contacting friends it is really useful. What's the quickest way to turn it off and on?" *Claire Hamley*

Hi Claire. This is a problem that many of us have faced over time and it is perhaps an area that Android could do better in. Then again, Android is so flexible that there is a way you can set up your phone so that disabling prediction is easy. The trick is to install a second keyboard which allows you to turn off prediction; once done, you will have all you need to effectively disable prediction when you are communicating with your friends. If you are using the default keyboard to talk to friends, you can pull down the status bar at the top and then tap the option to switch to your second keyboard, which you should have set up to not use any prediction. The process can then be repeated any time you like, but you could go further and install an app called Quick Keyboard Switch from Google Play, which will place a shortcut icon on your home screen for one-tap switching. With some careful planning and a small amount of time spent setting up the input methods for your particular needs, you will end up with a system which works perfectly for work and home, and which is easy to jump between whenever you want to. You could also add as many specific words as possible to your Personal Dictionary in Settings>Language & Input, but we recognise that this may take time. Ultimately, however, this would be the most efficient solution.



Pull the status bar down and tap Select Input Method to change keyboards



When you are typing, you should see a small keyboard in the status bar

hints & tips Get more from your Android phone with our handy hints

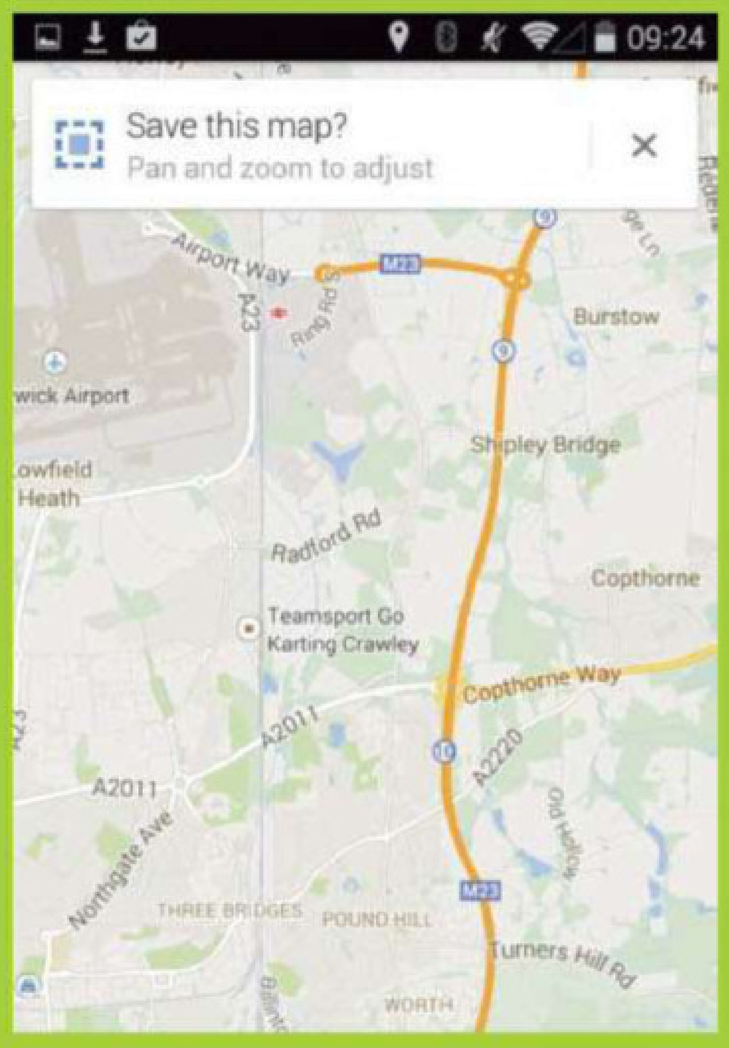
1 Tap to wake

In Android Lollipop, you can tap your screen twice to wake it rather than pressing the power button. Your hardware will need to support the facility, but most modern handsets should work and the power button could soon become a thing of the past.



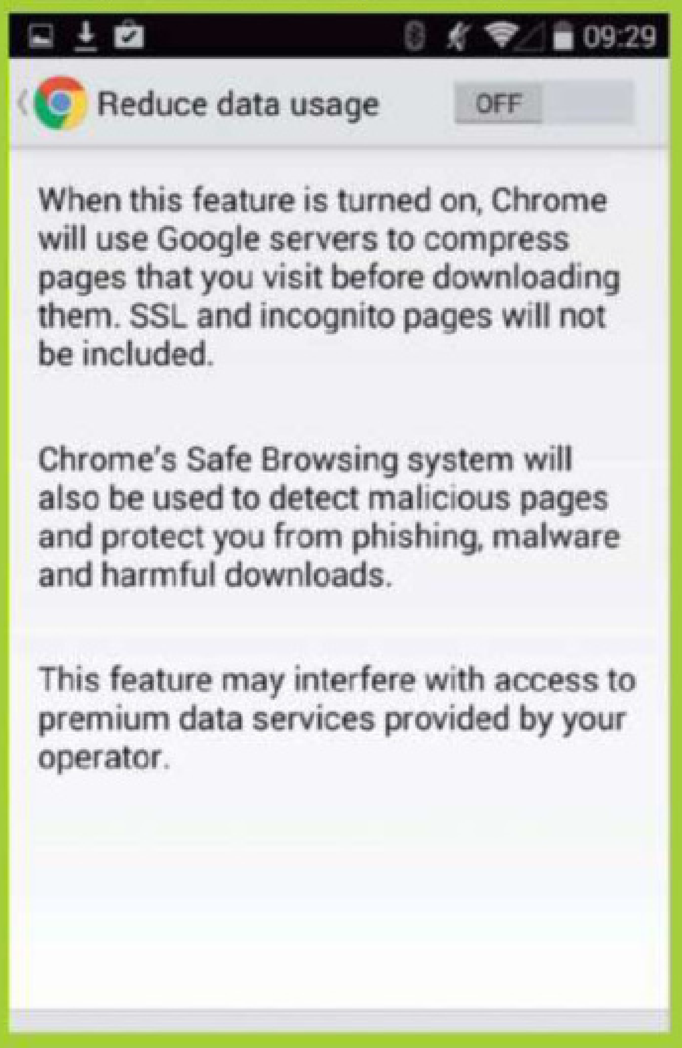
2 Save maps offline

In Google Maps, if you type 'OK maps' into the search box, the app will offer to save the current area you are viewing for offline navigation. This is particularly useful if you are expecting to lose the internet connection in that particular area.

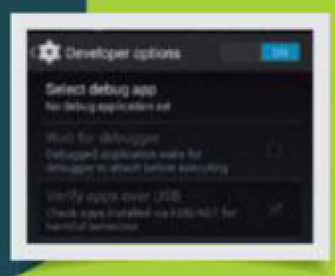


3 Reduce Chrome data use

If mobile data usage is restricted on your plan, you can go to Settings in Chrome and then tap the 'Reduce data usage' option. When switched on, this facility will compress pages before they are downloaded to your device, which could save you money.



DroidSupport



Did you know?

If you have Developer Options enabled, look for an option called 'Verify apps over USB' and ensure it's ticked. This lets Google scan apps that have been installed via the Android Debug Bridge for malicious content or behaviour that can harm your device or data.

Stop Bluetooth audio from stuttering

Since I updated the operating system on my phone, the audio playback stutters quite badly when playing through headphones or over my car stereo. Any ideas as to what is causing this because it is starting to drive me mad?
Dennis Membair

Hi Dennis. This is quite a common problem and different people have to date found different solutions to bring back smooth Bluetooth audio. Go to Settings and then to Developer Options where you should see an option called 'Enable Bluetooth HCL snoop log'. If it is ticked, untick it and this alone may solve the problem. For whatever reason it seems to cause some stuttering, especially when running KitKat, and so it makes sense to disable it anyway. You should also try to make sure that not too many apps are running at the same time because it is possible that the CPU is struggling and so adding to the problem. Finally, try out a couple of the alternative audio players available in Google Play because for some people, third-party apps seem to also help solve the problem.

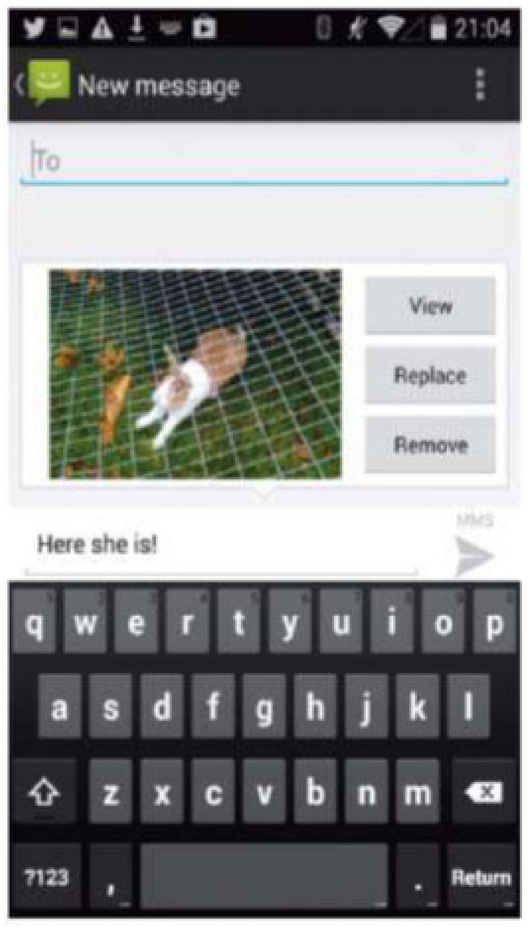


Turning off just one setting can solve a big problem

MMS can be very expensive!

I like to send photos to my friends because they often share them with me, but the cost can be very high. My network provider offers unlimited data, but MMS can run to more than £1 per use, which seems extremely high to me. How can I avoid these charges?
Joanne Simms

Hi Joanne. There is no way in Android to avoid these charges if you are determined to add images to your text messages. MMS has always worked the same way and the pricing has generally stayed high in comparison to alternative methods. The best advice we can give to avoid these charges is to not use MMS at all and to look at alternative options such as WhatsApp, which will let you send images, videos and audio clips using your unlimited data connection. The service is easy to use and if you can persuade those you know to use it as well, you will all save a lot of money. Also, don't forget social networks which allow this as well and many other instant messaging apps which will give you the same facility. Text messages are difficult to ignore because we have become so used to using the service every day over many years, but the fact is that time moves on and the pricing of MMS has not kept up with the trends of the industry.



Sending pictures via text can be costly.

Zoom in to see the detail

I sometimes have to make and receive calls and texts when I cannot use reading glasses. I need to be able to set larger fonts to show caller name or number, text contents and menu options. Can you suggest any? I have tried quite a few without success.
Kit Trew

Hi Kit. We understand your predicament, but we are not sure that a third-party app will be the solution here. Many of the apps concentrate on magnifying what you can see through the camera lens – not useful in this situation – and ones that can increase the screen content to a level that is viewable are few and far between. We also tried a few solutions and came up short, so would instead suggest trying an accessibility setting which should already be built in to your device. You haven't said which phone you are using so we will detail the default method for zooming in and out, and hopefully this will go some way to solving your problem. Knowing the phone you use when answering questions helps us narrow down solutions more effectively. The method we are detailing here is also ideal for quickly turning on and off when you need to, which is a major advantage for most people who sometimes remove their glasses.



Use magnification gestures or 'Large text' to make things easier to read

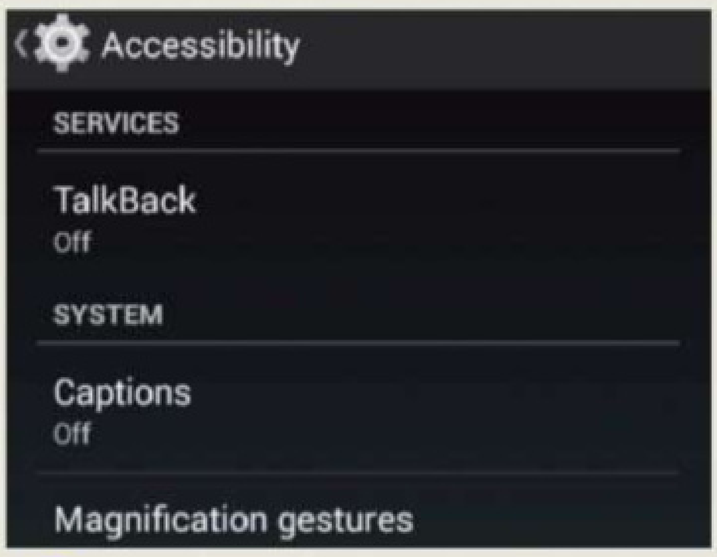
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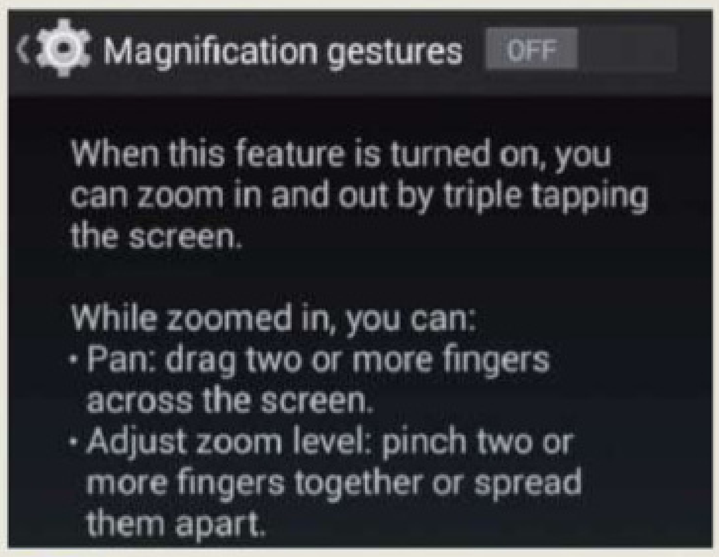
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Discovered anything good about your Android phone? Let us know!



1 Locate the settings menu

Go to Settings and look for the Accessibility section. This can be hidden on some devices, but all Android phones and tablets include these features as they're crucial for some people to use their devices. Accessibility settings are also useful for many other reasons, as they can speed up usage for everyone.



2 Magnification gestures

On the Accessibility screen, simply tap the 'Magnification gestures' option to turn it on. Once this is done you will not necessarily even notice them until you have a requirement to view your screen content in greater detail. So you can turn them on and leave them until needed.



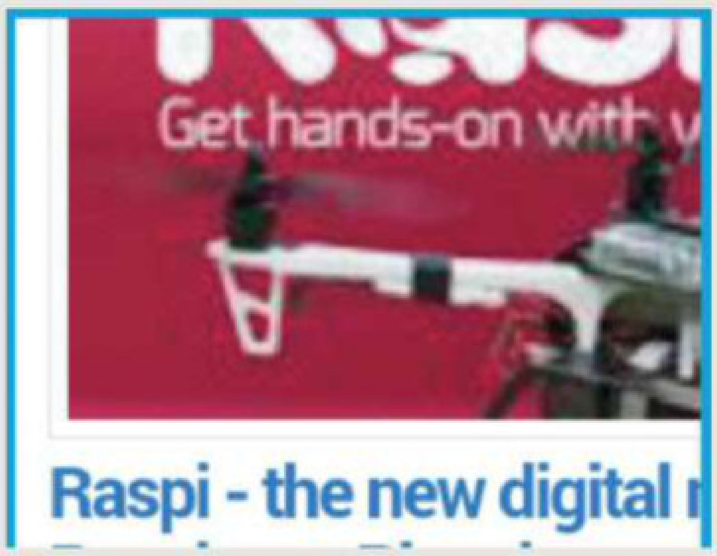
3 Time for the triple-tap

It may sound like a strange gesture to use, but if you tap the screen three times very quickly, the app you are in will be magnified. This will magnify everything you need to see and offers an instant way to view hard-to-read text or small images. It becomes second nature after you've used it once or twice.



4 Turn off magnification

If you exit an app with magnification turned on, it will automatically turn off as soon as you move to another app and therefore you will need to repeat the triple-tap to enable it. This may sound inconvenient, but it is likely that you will not need the magnification turned on all of the time.



5 Magnify for longer

If you need to view some small text and then want to jump out of the magnification setting, you can simply triple-tap and then continue to hold your finger on the screen. The moment you raise your finger, the magnification will stop working and you will be returned to normal mode.



6 Dragging and panning

Once you have triple-tapped, if you drag two fingers around the screen you can pan around the enlarged view. You can also pinch with two fingers, or more if necessary, to adjust the exact zoom level from standard size to an extreme magnification level.

Android magazine

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Android Magazine is available for licensing. Contact the International department to discuss partnership opportunities.
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Subscriptions
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Email: android@servicehelpline.co.uk
13 issue subscription (UK) – £51.90 (CC)
13 issue subscription (Europe) – £65
13 issue subscription (ROW) – £75

Circulation
Head of Circulation Darren Pearce
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Production
Production Director Jane Hawkins
☏ 01202 586200

Founder
Group Managing Director Damian Butt

Printing & Distribution
Printed by William Gibbons, 26 Planetary Road, Willenhall, West Midlands, WV13 3XT

Distributed in the UK, Eire & the Rest of the World by: Marketforce, Blue Fin Building, 110 Southwark Street, London, SE1 0SU, ☏ 0203 148 3300, www.marketforce.co.uk

Distributed in Australia by: Network Services (a division of Bauer Media Group) Level 21 Civic Tower, 66-68 Goulburn Street, Sydney, New South Wales 2000, Australia
☏ +61 2 8667 5288

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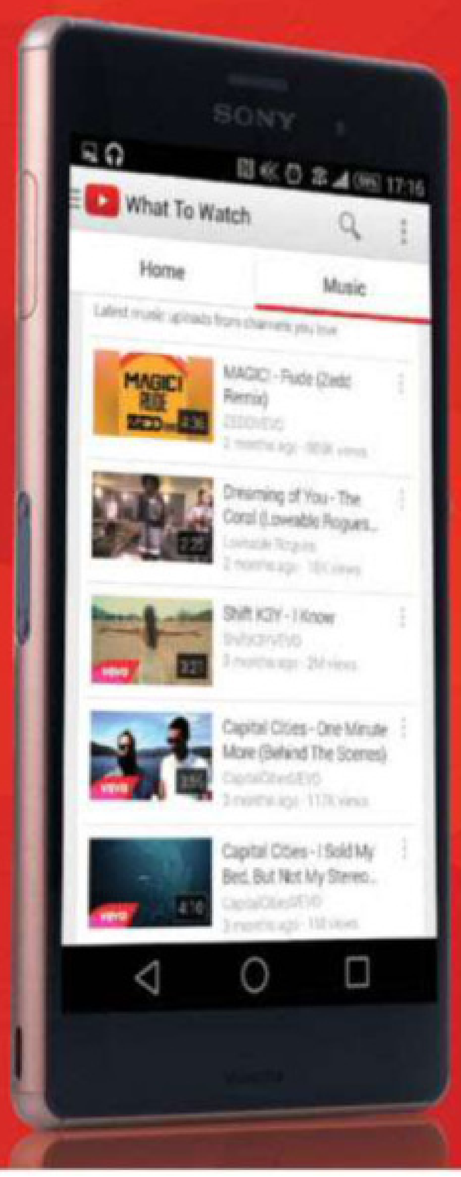
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ISSN 2047-1580

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YouTube Music Key

Bluffer's Guide

(Almost) everything you need to know about the latest tech in the Android world

YouTube Music Key

Why should I pay for music videos?

While YouTube has its fair share of vloggers sharing beauty tips, *Minecraft* walkthroughs and cats playing pianos, 38.8 per cent of all its video views come from music. This is because – whether from legitimate sources or otherwise – it has nearly everything, from official videos, to concert clips, to remixes and more. Music Key will enhance this service by solving every mobile user's biggest YouTube gripe: whether you exit the app or turn your screen off, the music will keep playing. As well as adding background music support for the first time, you will be able to store music videos offline, so you don't have to worry about eating up your data when away from the Wi-Fi. It also removes all those annoying adverts.

Wait, doesn't Google already have a music streaming service?

It sure does, it's called Google Play Music. If you're already a Play Music subscriber, you can access YouTube Music Key for no additional cost, and vice versa: if you sign up for YouTube Music Key, you can enjoy Play Music's 30-million-strong streaming library as well. What this means – and what Google has failed to adequately explain – is that, essentially, these are the same service. YouTube Music Key allows Google to leverage its huge video library as an extra feature to its music streaming service – something that neither Spotify nor Apple's iTunes Radio can match.

How much does it cost?

YouTube Music Key is currently in invite-only beta, but if you sign up now you can enjoy it free for six months and £7.99/$7.99 per month thereafter. However, once the service officially launches in the coming months, it will cost £9.99/$9.99 per month.

What you should say

» Ready-made opinions for you to cut out and keep

The cynic

"The age of the free internet is officially over"

"YouTube's sound quality is much poorer than Spotify's"

"Music Key is not a service, it's more like a feature of Play Music"

"Record companies will crack down on illegally uploaded music on YouTube more than ever"

The supporter

"Goodbye annoying adverts"

"Finally I can enjoy YouTube on my mobile just as I can on my desktop"

"Together Google Play Music and YouTube Music Key are an unstoppable streaming service"

"With six months free for early adopters, YouTube Music Key is a great deal for audiophiles"

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