

iPad & iPhone **user**

FROM IDG

VR

on the
iPhone

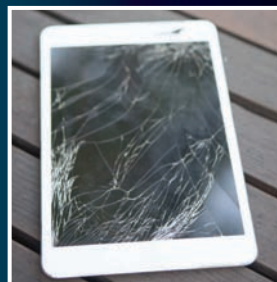
Best headsets,
apps and games



iPhone
turns

10

Repair a
cracked
iPad
screen



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Welcome...

Welcome to the latest issue of *iPad & iPhone User*. Mobile VR may not offer the same premium experience as expensive headsets, but it allows mobile users to enjoy virtual reality on a budget. It relies on your iPhone to provide the display, sensors and brains to power the technology, while the headset comes with special lenses and holds Apple's handset in place. On page 53, we've four VR headsets for iPhone, while on page 59 we round up the best of the App Store's VR offerings.

Smashing your iPad or iPhone's screen is something we all dread. Well, chin up. It's bad, but not disastrous. We reveal the five best ways of repairing a damaged display, and explain the pros and cons of each.

iPods have come a long way since the initial music-only device appeared in October 2001. Now you can buy models that have full access to the internet, play movies, and even make video calls using Apple's FaceTime technology. Our buying guide looks at the various features of each model.

Plus, we've all our usual news, features and tutorials, so you can get the most out of your iOS device.



News: Apple's Q1 results

Records for the iPhone and Services, but the iPad still struggles, reports [Jason Snell](#)

It's fair to say that, from a financial results perspective, 2016 was rough for Apple. Yes, the company still made billions in profit on massive revenues, but Wall Street wants to see growth and the massive iPhone sales of 2015 – when the company introduced the larger-sized iPhone 6 and iPhone 6 Plus – were just too big for 2016 to match.

But it's a new fiscal year, and Apple's latest financial results, announced last month, suggest that the story of Apple in 2017 will be different.

The company took a page out of its 2015 playbook, setting an all-time record for revenue, and provided guidance that it will likely show

year-on-year revenue growth again next quarter. The company broke a bunch of other records, too – for Apple Watch, Services, and the Mac.

To be fair, Apple really does holiday quarters right. (Even the year-ago holiday quarter



was a record.) It's the company's biggest quarter of the year by far, but that means there's than much more at stake. Apple's 2016 holidays were good. Here's a deeper dive into some of the other interesting things we learned as a part of Apple's regular disclosure of numbers and give-and-take with financial analysts about Q1 2017.

The iPhone might be unstoppable after all

Most of the Sturm und Drang about Apple's 2016 involved a fall-off in iPhone sales from the prior year. But the smartphone is still huge. In the holiday quarter of 2016, Apple sold more handsets than ever before, and iPhone revenue comprised a whopping 69 percent of Apple's total revenue. (No other budget line could even manage 10 percent of the total.)

According to Apple CEO Tim Cook, iPhone 7 sales were greater than Apple's own internal expectations, and the company wasn't able to make the 7 Plus fast enough to meet demand until January, after the quarter had ended. According to Apple, the plus model saw "exceptionally strong demand," higher than in previous years as a part of the overall product mix, and set a record for the most Plus models sold in a quarter.

Perhaps buyers were motivated by the phone's two-camera system to step up from the smaller model. Regardless, it's a phone that costs more – and the average selling price of the iPhone went up last quarter.

With great success comes great fear about what comes next for the iPhone, of course. Apple suggests that year-over-year performance

for the iPhone will be similar next quarter as it was for this one, which would suggest that iPhone sales will slightly improve year-over-year, but it won't be dramatic.

Services is a monster in waiting

Apple has been promoting its Services budget line, which includes the App Store, iTunes, Apple Music, Apple Pay, and iCloud, for a few years now, and given its impressive and consistent growth, that makes a lot of sense. The Services line set a revenue record during the holiday quarter, led by the biggest quarter for the App Store ever.

To put the \$7.2 billion in Services revenue in perspective, that's barely less than Apple made on the Mac last quarter, and more than the iPad. The firm expects the size of its Services business to be the equivalent of a Fortune 100 company sometime this year. Apple's systems are driving 150 million paid customer subscriptions, which includes both Apple subscription offerings and third-party subscriptions via the App Store.

That's big, but look at the ambition here: As Apple grows the installed base of Apple products, it expects services revenue to keep growing. In the next four years, according to Tim Cook, Apple expects the Services line to double. That's huge.

Apple feels comfortable with its wearables

Apple doesn't disclose actual sales numbers for Apple Watch, so we're left to dine on the scraps of information that come out during these quarterly financial disclosures. This was a good quarter for the watch, though: Cook said Apple Watch units



and revenue were all-time highs. What's more, Apple found the holiday demand for the Apple Watch so strong that the company "couldn't make enough."

This is a hard time for the wearables market, with Fitbit laying off people and most smartwatches being considered busts. The Apple Watch may not be an enormous product for Apple, but it's clearly successful, and last fall's release of new software and new models helped goose sales to new highs.

But the Apple Watch isn't the only wearable on Apple's list: there are also AirPods, of course. Cook didn't say much about the AirPods, and we doubt very many of them even managed to ship during the quarter. We did find it interesting, however, that Cook discussed AirPods immediately after the Apple Watch, and then noted that Apple sees "huge growth potential for wearables." If you aren't considering AirPods as much a part of Apple's wearable-device strategy as the Apple Watch, you might want to think twice.

The MacBook Pro made a whole lot of money

Last autumn's release of new MacBook Pros had about the effect you might expect: Mac revenues hit an all-time high. Because the MacBook Pro models are expensive, the net result was a major spike in the average selling price of the Mac. It led to this oddity: while Mac revenues were a record, Mac unit sales weren't.

As we tweeted some of these results during the event, we were surprised to find more than one angry person replying to the reports on Mac sales. By now it's no secret that a lot of people were unhappy with the details of the MacBook Pro launch, but we hadn't realised that some of them were really excited about the prospect of watching the roll-out fail, as Apple reported bad Mac sales numbers that indicated that the market had turned its back on Apple's new laptops.

Nope. Didn't happen. Biggest Mac revenue quarter ever. Rightly or wrongly, we don't think Apple is going to look at this quarter's results and rethink its MacBook Pro strategy.



The iPad... exists

Another quarter, another disappointing result for the iPad, which was down a bunch year-over-year, with average selling price taking a big hit. No, the iPad still hasn't hit rock bottom. Given that only one new iPad model shipped all of 2016 – the 9.7in iPad Pro – maybe it's not too surprising that it wasn't a hot holiday item. We wonder if that's a flaw in Apple's strategy of selling older models as lower-priced options; people might be excited by a 'new' iPad, even if it's made out of cheaper or older tech, but if all you give them is a discount on last year's model, will people be motivated to buy?

We don't know. Books could be written on the peculiar journey of the iPad. It's still dominant in the category of tablets priced over £200, which are the only tablets Apple is remotely interested in selling. But as a whole, the tablet market is just not there yet. Maybe we'll get some indication of where it is, someday. But all we know now is that things are still on the decline.





News: Qualcomm head slams Apple's lawsuits

Arguments over licensing explodes, writes [Agam Shah](#)

Senior executives at Qualcomm have slammed Apple for filing lawsuits that allege the chipmaker significantly overcharged it for licensing fees. The spat, which has seen cases filed in California and Beijing, was top of the agenda when it conducted a recent earnings call with analysts. "Apple has been actively driving regulatory attacks on Qualcomm's business in

jurisdictions around the world and misrepresenting facts and withholding information,” Qualcomm president Derek Aberle argued.

The Cupertino-based firm is claiming that the chipmaker retaliated because it cooperated with a South Korean government investigation that ultimately saw the chipmaker fined \$854 million for unfair licensing practices.

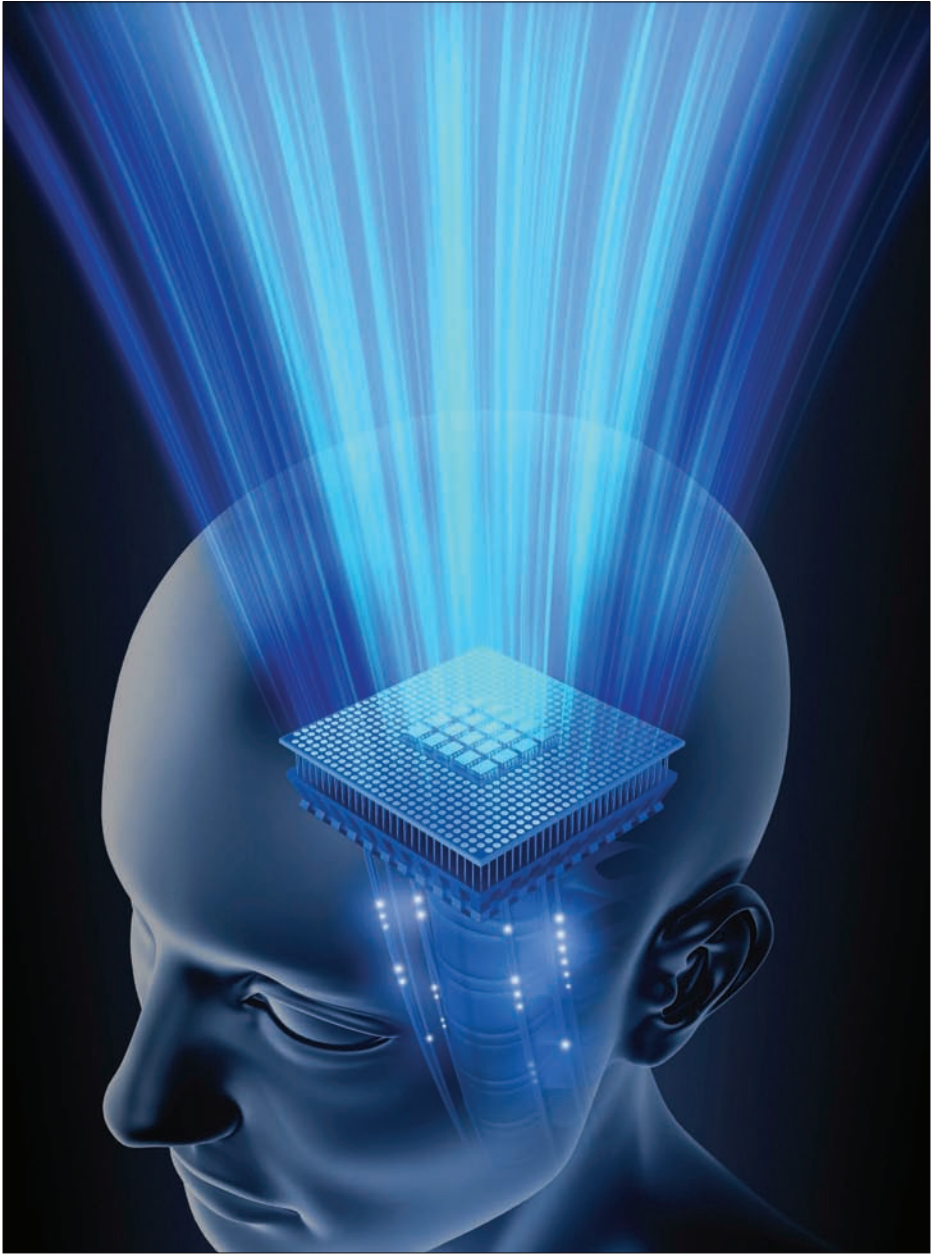
Aberle denied that the firm did any such thing, and the company objected to Apple making false and misleading statements. “We will prove that Apple’s irresponsible claims of extortion are false.”

In the California lawsuit, Apple is seeking \$1 billion in compensation for excessive royalties paid. It argues in its filing that Qualcomm should charge royalties based on the price of the baseband chip in the mobile device, and not a portfolio of technologies.

Aberle said that was inconceivable, and not in line with how chip technologies have been licensed for decades. Licensing at the component level is inefficient, and a device or modem chipmaker would still need to take out licenses for other Qualcomm technologies in smartphones.

Besides modems, Qualcomm has a huge arsenal of intellectual property that also covers technologies such as real-time tracking and mapping, which forms the basis for companies that include Uber. The excess royalties in dispute are paid to Qualcomm by contract manufacturers such as Foxconn, which assemble the iPad and iPhone, and not directly by Apple.

“We hope Apple wouldn’t interfere with those contracts,” Aberle added.



News: Apple joins rivals to advance AI research

Apple joins the Partnership on AI. [Agam Shah](#) reports

Apple has joined rivals Google, IBM, Microsoft, Facebook and Amazon as it takes a step ahead to advance research and development of artificial intelligence. The Partnership on AI was founded in September 2016 to steer debate on best practices on AI. The group believes the technology could help in areas such as healthcare and transport.

Siri is currently Apple's most visible artificial intelligence technology but a larger strategy is still a subject of speculation. The firm will likely implement the technology in its mysterious autonomous car project, so self-driving vehicles can navigate and cruise the roads safely without a human at the wheel.

Beyond the Alexa voice assistant, Amazon uses AI to provide buying recommendations. Google recently said it was providing TensorFlow tools, so users can build a wide variety of AI capabilities into Raspberry Pi 3 and IBM's high-powered cognitive computers.

The group believes artificial intelligence holds tremendous promise and will lead to a big societal impact. The technology's impact needs to be discussed, and companies need to establish ground rules on how the technology is developed and deployed, according to the group.



News: Find My AirPods enters public beta

Anyone can beta test latest mobile OS, reveals [Susie Ochs](#)

Just two days after Apple unleashed iOS 10.3 to developers, members of the public beta program have access to it, too. Anyone who wants to kick the tires of the first public beta can join the beta program by visiting beta.apple.com and signing in with your Apple ID.

Its big selling point is a great new feature for AirPods owners, letting them locate a misplaced Pod by firing up the Find My iPhone app and having the earphones play a sound. This plays if the AirPods are anywhere in Bluetooth range of any of your Apple devices signed into the same iCloud account. If your Pods are out of range or totally dead, the Find My iPhone app can let you know where they were last 'seen' by Bluetooth. It's pretty handy.

That isn't the only thing new in iOS 10.3, though. The Settings app gets a new Apple ID Profile page, that collects all the information and settings tied to your Apple ID in one place, which should make Settings easier to navigate. Also in Settings, you'll see a better explanation of what is taking up your iCloud storage.

As always, be sure to back up your device before you upgrade to the beta. And then be sure to do your duty by reporting bugs with Apple's Feedback Assistant app, which is automatically installed.



News: Apple's plans for manufacturing in India

Executives put the case before officials. [John Ribeiro](#) reports

Apple's plans to manufacture in India made headway as executives of the company presented detailed plans to the country's federal government.

It may be some time though, before Apple gets permission for its proposal to manufacture in India as it reportedly involves a request for deep cuts

in the import duties for components. The meeting is said to have ended inconclusively, according to sources close to the situation.

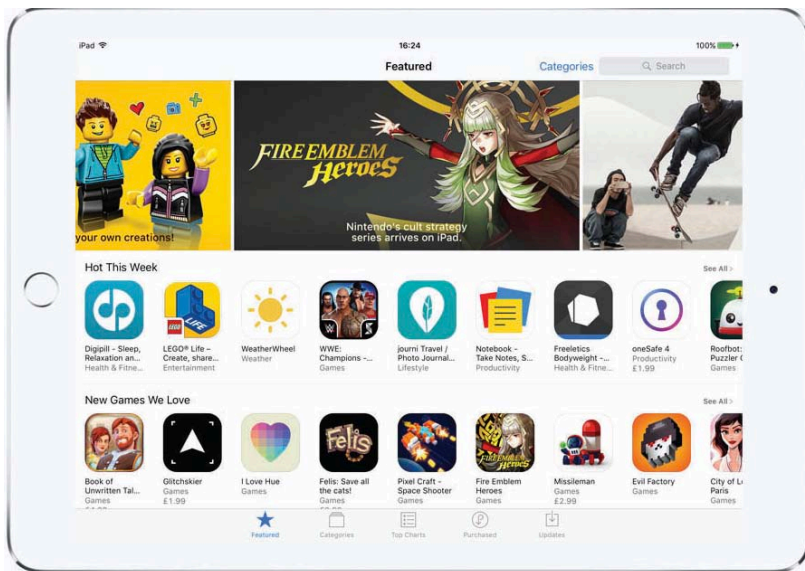
“We’ve been working hard to develop our operations in India and are proud to deliver the best products and services in the world to our customers here,” Apple said in a statement after the meeting. “We appreciate the constructive and open dialogue we’ve had with government about further expanding our local operations.”

India is now one of Apple’s fastest growing markets, with iPhone sales up over 50 percent in fiscal 2016 compared to the previous year. The high growth comes largely from a small user base of its products in the country, but with recent rollouts of 4G networks, the company expects more demand for its devices.

Samsung Electronics, followed by Chinese and Indian brands Lenovo and Micromax, led the Indian smartphone market in the third quarter largely because they are able to deliver their products at various price points, according to IDC.

Apple has previously proposed to India that it would like to import refurbished phones to sell at a low cost to India’s price-sensitive consumers. That proposal was shot down by some sections of government because there were concerns that it could involve end-of-life products, leading to e-waste disposal issues.

Setting up manufacturing in India will also help Apple’s bid to set up wholly owned retail stores in the country. Under Indian rules, foreign-owned, single-brand retailers have to source 30 percent of their products locally.



News: App developers able to respond to user reviews

Change coming in iOS 10.3, writes [Roman Loyola](#)

The user reviews in the iOS and Mac App Stores can be a mixed bag. Sometimes, a user provides useful information to help you make a purchasing decision. But often these reviews are filled with complaints about problems that were encountered while using the software. When a developer addresses those problems in updated versions, the review lingers.

In a future update to iOS 10 (10.3) and macOS Sierra (10.12.4), developers will have a chance to address user reviews in the App Store. The

release notes for iOS 10.3 state that developers will be able to respond to a user review, and the response will be available for others to see. The notes also say that this feature will be available in the Mac App Store.

Apple doesn't provide any information on how the response system itself works. Hopefully, it'll work in such a way to make it easy for the developer to respond. As Many Tricks' Rob Griffiths points out on Twitter, something like a notification system would help. Popular apps get more reviews, and having to manually browse each review could even be discouraging to developers.

The release notes also state that there will be a new API for asking users to review and rate an app while still using the app; you won't be switched over to the App Store app. According to The Loop's Jim Dalrymple, who talked to Apple about the app reviews API, developers will now be limited to three review requests per year, and if a user does leave a review, the requests will stop. Dalrymple also reports that there will be a "master switch" to turn off review notifications from all developers, and that iOS 10.3 will allow you to label a review as Helpful via 3D Touch.

With such a wide selection of software, user reviews play a key role when you need to make a buying decision, but sometimes a review can be misleading, have wrong information, or talk about issues that the developer has addressed. The ability to let the developer respond to a user review should result in a better user experience in the App Store, as well as better customer relations for the developer.



Feature: The iPhone turns 10

Apple CEO Tim Cook promises “the best is yet to come”, writes [Caitlin McGarry](#)

It's tough to remember a time before the iPhone, which ushered in the smartphone era and radically transformed our lives. A decade ago, on Jan. 9, 2007, Apple CEO Steve Jobs took the wraps off a touchscreen “iPod, phone,

and internet communicator” at the Macworld Expo. Little did he (or we) know then just how successful the iPhone would become.

Today, the iPhone is Apple’s biggest seller by far. The company has sold more than a billion iPhones in the past 10 years. A lot has changed in a decade. The iPhone now includes an insanely good dual-lens camera in the 7 Plus, a built-in streaming music service, and we can’t forget about the countless essential apps that weren’t possible on Jan. 9, 2007. Apple built native apps for the first-generation iPhone but didn’t allow developers to create their own. Now the App Store is a thriving industry unto itself with countless essential services.

“iPhone is an essential part of our customers’ lives, and today more than ever it is redefining the way we communicate, entertain, work and live,” Apple CEO Tim Cook said in a statement. “iPhone set the standard for mobile computing in its first decade and we are just getting started. The best is yet to come.”

Rumours about the 10th anniversary iPhone 8 have been swirling since before the iPhone 7 and 7 Plus were announced. Reports indicate that Apple is working on a curved OLED edge-to-edge glass display with the Home button embedded right into the screen, plus wireless charging.

You can’t help but laugh when rewatching the keynote announcement. Jobs was clearly delighted by the device and proud to show it off. “It’s got a 3.5in screen,” Jobs said. “It’s really big.”

“It’s really thin,” he continued. “It’s thinner than any smartphone out there at 11.6mm.”

The iPhone now comes in 4.7- and 5.5in variations, both at 7.1mm. Last year saw iPhone sales slip and Apple's revenues shrink, which led some to speculate that the iPhone's best days are behind it. Apple's Phil Schiller, senior vice president of worldwide marketing, told Backchannel's Steven Levy that the iPhone "is so great that it has many years of innovation ahead."

Apple's competitors are shifting their focus from phones to voice assistants, an area where Apple was ahead with Siri but now lags behind rivals like Amazon.

"Some of the greatest innovations on iPhone over the last 10 years have been in display," Schiller said. "Displays are not going to go away. We still like to take pictures and we need to look at them, and a disembodied voice is not going to show me what the picture is."





Credit: iFixit

Feature: AirPods teardown

Ian Paul looks at the magic and glue that make Apple's wireless earphones work

Sometimes it's just not worth it to peek behind the curtain and find out how the magic happens. That's the feeling you get from iFixit after the teardown champs took on their latest challenge: Apple's AirPods.

These tiny wearables pack a lot of power into a small space. They've got Bluetooth, beamforming microphones, optical sensors, a motion accelerometer, a 93mW battery (we'll get to that), and speakers. It's no surprise there's little room among all those components for grace and an easy entry point.

In fact, the AirPods appear to be equal parts technology and glue. Or as iFixit puts it: "If jamming

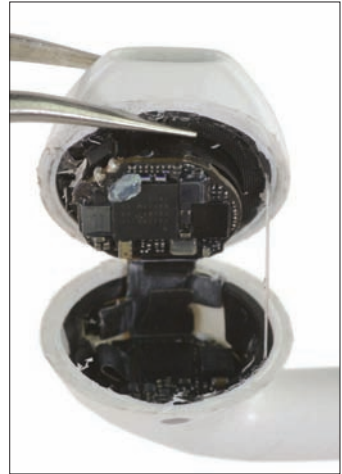
complex components into a small form factor and sealing it with a copious amount of glue were a game, Apple would be winning.”

The impact on you at home: The reality is that if you break either of these little dangly headphones, you won’t be repairing them. iFixit gave the headphones a repairability score of 0 out of 10. That’s not really a huge surprise though, is it? How many types of wired earbuds are repairable save for perhaps snapping them back together if they come undone? Not many. The AirPods are expensive earbuds, but they’re still earbuds.

That means if you break an AirPods you’ll be shelling out at least £65 to replace it. To sum up: AirPods may not fall out of your ears in most situations, but you’ll still want to be careful not to lose or damage them.

Despite waging war with adhesive, iFixit did find some interesting technical points inside the AirPods. For starters, the battery is tiny. It’s not Apple Pencil tiny, but it’s still a pretty small power pack. That’s not such a big deal, however, as those 93mW still give you five hours or more of music playback.

The iFixit teardown also found a technical reason as to why the AirPods look more or less like regular Apple earbuds with the wires cut off. That boom-like extension is there not only to provide balance, but as a home for an antenna in order to deliver better reception.





Feature: How Apple can improve its AirPods

The AirPods look a little funny, but Apple can improve more than just the design, argues [Caitlin McGarry](#)

Apple's AirPods launch wasn't exactly smooth. A months-long delay led to rumours as to why that delay happened – could it be that the Bluetooth accessory Apple designed as the perfect complement to its headphone jack-free iPhone 7 wasn't ready for prime time? But Apple started shipping AirPods in late December, just before the holidays, and has since captured 26 percent of the wireless headphone market. Apple CEO Tim Cook said the earphones are a “runaway success” and that Apple is making them as fast as possible.

We love our AirPods. We wear them to make phone calls, listen to podcasts on the underground, and to listen to playlists while working out both indoors and outside. They fit perfectly and pair seamlessly to my iPhone (and to my MacBook Air and Apple TV). Taking one AirPods out – which pauses whatever we’re listening to in order to better hear station announcements – then putting it back in to resume playback, is pretty delightful. The charging case is magical and travels with me wherever I go. AirPods are, to be honest, a far better product than we expected.

But there are three things we don’t love about the AirPods – three huge areas of improvement that Apple is hopefully working on as we speak.

We need to talk about Siri

One of the biggest selling points is integration with Siri. With a double-tap on one of your pods, Apple’s voice assistant can easily perform a number of tasks for you – at least in theory.

In practice, Siri is very slow to respond, and not more convenient than just performing the task yourself. For instance, Siri can control your music through the AirPods, but when you ask to turn up the volume (because there are no physical volume controls on either pod), you have to play a waiting game – first for Siri to respond, which pauses your music, then for the volume to increase, then doing the whole process again if Siri’s two-notch volume increase wasn’t enough. Siri needs to become faster and more responsive to be truly useful when it comes to music playback, which is mostly what we use AirPods for.



Siri is infinitely more useful in non-music situations, such as composing and sending messages we dictate. It's a shame that Siri is better at texting from my AirPods than music and podcast playback.

More gestures or physical buttons

AirPods could use some physical buttons, or at least another gesture control. Siri's audio controls leave a lot to be desired, but even if they were amazing, AirPods need more gesture controls. As someone who uses public transport every day, we're not calling up Siri to skip songs for us every time we want to get to the next track on a packed subway car. That's just embarrassing.

We don't really expect Apple to add buttons to this super streamlined accessory (though just one would be great), but there is potential to add more gesture response.

Changing the double-tap function, which can either call up Siri, answer a phone call, or play/

pause your music, is definitely convenient (though you have to find and change that functionality in your Bluetooth Settings menu, which isn't exactly intuitive). But we wish there was at least one more gesture that we could assign a function to, like one tap to skip a song.

We've mostly given up on Siri's help with audio and rely on my Apple Watch's Now Playing controls.

AirPods Sport

Like the EarPods that Apple includes free with every iPhone, the AirPods are not rated as water-resistant or waterproof. We work out wearing our AirPods, just like we did with my EarPods, but let's be real: your ears sweat, and sweat on electronics that aren't designed to repel water is generally not going end well.

We weren't worried about EarPod sweat, because those earphones are free. Who cares if they short out? But the AirPods are £159, so we're a little hesitant to recommend them for exercise (despite the fact that they stay in my ears better than some sportier models do). We wish Apple would make a sweatproof AirPods Sport model, perhaps with a heart rate sensor inside, as the company has hinted at in patent applications. One patent even covers AirPod head gesture input, which would be even better than tapping for music playback.

The AirPods were just released, so we're not expecting any major upgrades anytime soon. But this device is already so good that improvements to Siri and gesture control could easily make it a must-have.

Feature: iOS 11 rumours

David Price rounds up everything we know about Apple's upcoming mobile operating system

Over the following pages we sift through all the rumours and historical evidence pointing to the likely iOS 11 release date, as well as its new features and system requirements.

So, what can we expect to see from Apple's 11th major update of iOS? We've scoured the internet for the most interesting rumours regarding iOS 11, which you can find below. We'll be updating this article whenever new information emerges, so make sure you check back regularly for more news and rumours relating to the iOS 11 update.

Release date

iOS 11 will almost certainly be unveiled in June 2017 at WWDC, an annual event where Apple invites developers from across the world to take part in iOS development workshops while showcasing its annual software update. (WWDC is in theory an event for the benefit of



software partner companies, although in practice it is aimed at least as much and probably more at the world's media and users watching at home.) Apple will then release a developer beta version of the software for testing by its software partners.

We would imagine that, as with iOS 9 and iOS 10, a public beta will be made available alongside the private developer beta. This will allow early adopters to trial the software before it's made available to the general public.

Both betas will be updated over the following months and come closer to the finished public version of iOS 11, which be released in September 2017 alongside new iPhones: the 7s and/or 8. (We've heard one prediction that Apple will call its next iPhone the 'iPhone X', but that remains a left-field rumour at this point.)

Updating to the final public version of iOS 11 will be straightforward and free; downloading and installing one of the beta versions will be a little more difficult, and setting up a developer account costs \$99 per year.

A new iOS life cycle

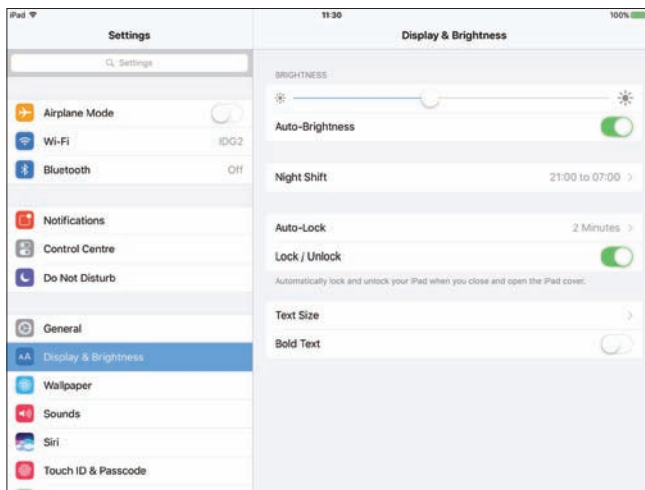
Some while ago, our colleague Dan Moren over at *Macworld US* speculated that iOS 9 would be the start of a new iOS life cycle at Apple. Moren felt that because the iPhone has matured over the years, it's no longer necessary to keep adding major new features on a yearly basis for the purpose of generating interest.

"The platform and the smartphone market as a whole have both evolved considerably," Moren wrote. "To me, the goal now seems one

of sustainability: keeping the iPhone and its users updated and happy, possibly with a steady stream of smaller updates rather than a single major tent pole release every summer.”

Moren used iOS 9.3 as evidence – historically, Apple prefers to save its more interesting updates for numerical updates which, up until now, happened once every 12 months. The release of the iOS 9.3 beta so late in the iOS 9 life cycle was a weird move from Apple, especially as it included genuinely significant new features like Night Shift mode (pictured), Touch ID protection for Notes and a number of new 3D Touch shortcuts, which would usually be considered major additions to iOS.

So iOS 11 might not be the blockbuster release we’re currently expecting: it’s possible that Apple will drip feed new features and interfaces tweaks in point updates throughout the year. We’re not totally convinced by this – iOS 10, after all, had a raft of major new features – but it’s a possibility.



A ‘purge’ of older apps

One thing to be wary of, as speculated first by 9to5Mac, is that the next update of iOS might drop support for older 32-bit apps. On iOS 10.3 beta 1, users tapping on 32-bit apps now are faced with a warning that ‘This app will not work with future versions of iOS’. It’s clear that Apple intends for developers to improve performance of these apps or risk having them cut from the App Store. Sometimes the warnings go further, warning users that the app may slow down your iDevice.

Developers must, since 2015, submit apps with 64-bit support. These legacy 32-bit apps could be cut from iOS 11 if developers don’t improve their performance on newer devices.

Fortune thinks this move could see what it calls a “purge” of tens of thousands of old apps.

Which iPhones and iPads will be able to get iOS 11?

We reckon the iPad 4, iPad mini 2 and iPhone 5 will all miss out on iOS 11 compatibility, but we won’t know for sure until the unveiling at WWDC 2017.

Until we have confirmation, we predict that the following devices will be able to run iOS 11:

- iPad Air 1, Air 2, 9.7in Pro, 12.9in Pro
- iPad mini 3, iPad mini 4
- iPhone 5c, 5s, 6, 6 Plus, 6s, 6s Plus, SE, 7, 7 Plus
- iPod touch (sixth generation)

New features

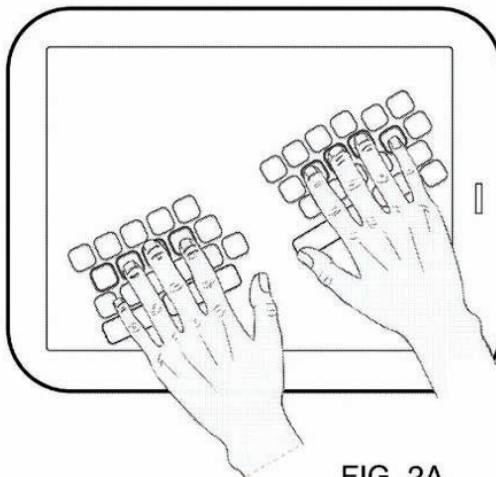
At this early stage we’ve only heard a couple of rumours of new features to expect in iOS 11.

Finger-detecting dynamic keyboard

Apple has been granted a patent covering dynamic keyboard positioning on touchscreens, whereby the individual keys are placed in response to the detected position of the user's fingertips.

United States Patent 9,489,086 (shown below), entitled Finger hover detection for improved typing, describes a concept whereby typing "is improved by dynamically and automatically positioning the desired home-row keys of an on-screen keyboard below the user's fingers while their fingers are hovering above the surface, thus reducing the need for the user to look at the on-screen keyboard while typing".

We wouldn't be surprised if the concept appears in the system-wide keyboard (albeit presumably as an option) in a future update of iOS, although it appears to be targeted at tablets only. This wouldn't be the first iOS feature to be restricted to



iPad use, of course: the most famous example is probably the split-screen viewing modes added to the iPad with the launch of iOS 9.

While the granted patent was published in November 2016, this is in effect a ratification of Apple's acquisition of the patent when it bought Typesoft Technologies back in September 2014; Typesoft's Dryft virtual keyboard uses a similar principle in an effort to enable touchscreen touch-typing, as shown in the following video:

Finally, and aptly if we've got this right, there appears to be a typo in the introduction specifically where the patent is talking about making typos.

"While there have been numerous proposals for disambiguating error-prone user input," reads the last sentence of the introduction, "many such proposals rely heavily on linguistic context and are unable to resolve interchangeable alternatives (e.g., where a user strikes ambiguously between keys T and 'o' followed by 'n' leaving uncertainty whether "in" or "on" was intended)." (Surely that's meant to be 'i' and 'o', rather than T and 'o'? Although we are happy to be corrected.)

'Natural-sounding' Siri

Siri was a figure of fun in the early days (it used to have a fair bit of trouble with British accents), but it gets better and more useful with every passing year. And the word is that Apple wants to make it sound more human, too.

That's what the company is up to in a secret operation "in an unmarked office at 90 Hills Road, Cambridge", according to Business Insider and the "multiple sources" it says corroborate the account.



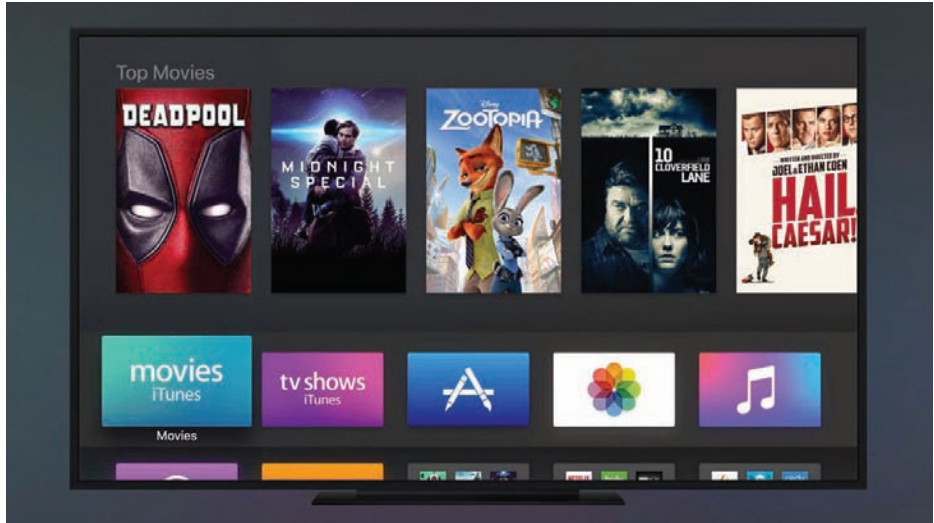
“Those working inside are aiming to make Siri talk more naturally, according to a source that knows a number of Apple’s Cambridge employees,” reports the site.

Part of the reasoning here is that a large proportion of the site’s current staff were previously employed by the voice recognition startup VocalIQ, which Apple acquired in 2015.

At the moment Siri is comparatively limited in terms of artificial intelligence, an area of development that Google, Amazon, Microsoft and others have focused on in recent months; it’s believed that VocalIQ’s tech – which doesn’t appear to have been added to Siri yet – represents Apple’s great hope for this burgeoning field.

Dark Mode

It was widely expected that iOS 10 would feature a new viewing mode called Dark Mode, with black



backgrounds designed to be easier on the eyes when viewing at night. In fact, Apple announced exactly that, but for tvOS instead, and we're still waiting for iOS's Dark Mode. We're pretty sure it'll turn up in iOS 11, if it hasn't been added in an iOS 10 point update before then.

In fact, it's been discovered that Dark Mode already exists in iOS 10, and was there as early as iOS 10 beta 1 released back in June - it just hasn't been unlocked yet. We're unsure why Apple bothered to add the feature if it didn't plan to enable it in the near future, but it may be that beta testing exposed issues with the feature that dissuaded the company from turning it on just yet.

Slide to unlock

Does that sound familiar? It should, because it was the way we unlocked iPhones and iPads in iOS 9 and every previous version of iOS and iPhone OS.

In its most recent incarnation, it looked a bit like the one on page 38.

In iOS 10 Apple got rid of slide to unlock, changing the interface so you just press the Home button (simultaneously triggering the Touch ID fingerprint scanner on reasonably up to date iDevices, so it made more sense, on the whole). But some people aren't happy about this development, and a petition has been formed to ask for slide to unlock to be brought back.

Will Apple give in to popular pressure (well, relatively popular pressure – there are just 1,549 signatories at time of writing, although we've heard this sentiment quite widely) and bring back slide to unlock? We don't think so. Apple fans have had issues with interfaces before, most controversially with iOS 7, but most of us got used to the new look in time.

Multi-user FaceTime calls

According to a report via The Verifier, Apple is said to be introducing a feature long requested by iOS users in iOS 11: the ability to have conference calls via FaceTime video in a similar way to services like Skype. The report doesn't stop there either, adding that Apple is considering making the FaceTime app more of a social experience by adding filters similar to apps like Snapchat and MSQRD that have had huge success off the back of the filters.

It's worth noting that Apple snapped up Faceshift in late 2015, a company whose technology can capture a user's facial expressions and transform the face into a 3D avatar in real-time. Could this technology be integral in Apple's planned overhaul



in iOS 11? We can only wait and see. It's also worth noting that The Verifier, despite the name, has a non-existent track record with Apple rumours and thus, should be taken with a pinch of salt.

Contact availability status

A patent that has recently been granted shows that Apple is considering a new feature that would enable iPhone users to view at a glance whether their contacts are available for a conversation, and where they are.

The abstract of the patent reads: “A command is received at an operating system of a first mobile phone for displaying contact information of a remote user having a mobile phone number of a second mobile phone. In response to the

command, a request is transmitted to a remote server from the first mobile phone over a cellular network requesting an operating status of the second mobile phone.

“The operating status of the second mobile phone is received from the remote server over the cellular network. The operating status of the second mobile phone is displayed on a display of the first mobile phone as a part of contact information of the remote user associated with the second mobile phone, where the operating status includes current locality of the second mobile phone.”

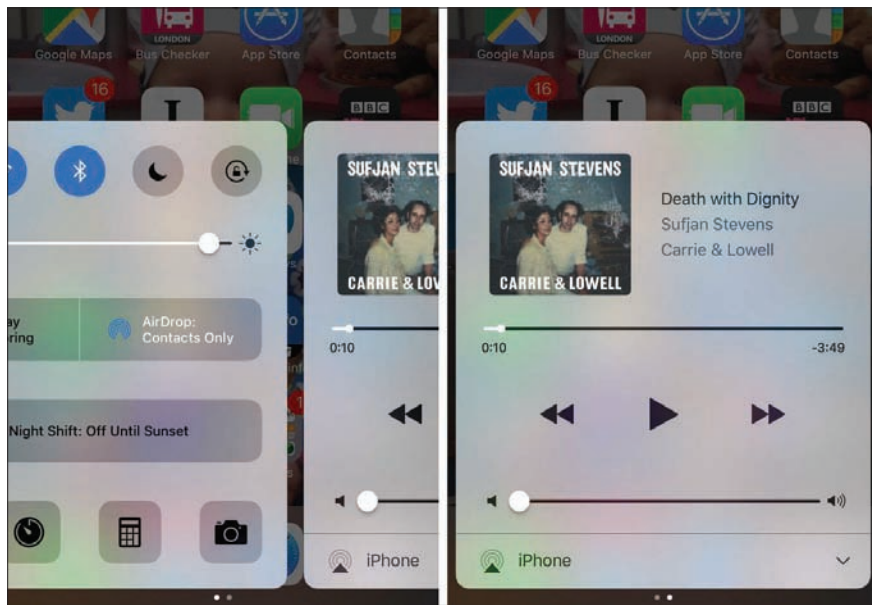
Which sounds complicated, but can be further summarised as a system that detects where your friends are, and whether they’re available and the operating status of their iPhone (such as silent or Airplane mode), and presents that information in the Contacts app. If you’re thinking that has the whiff of surveillance about it – well, it does, but only to the same extent as Find My Friends, and it would presumably be optional for both parties.

New features wish list

Here at *iPad & iPhone User* we put our heads together and thought about some of the features we’d like to see included in iOS 11, from small changes to new ideas. Here are our favourites.

Control Centre

The Control Centre is one of the most underrated features of iOS, enabling easy access to various toggles and controls without having to open the Settings app. The only issue we have is that we



can't personalise any of the toggles, as we'd like to be able to swap out little-used toggles for shortcuts to apps/settings we frequently use. For example, we very rarely use the Control Centre to access the Calculator app – we'd much prefer easy access to Twitter, for example, or to be able to turn on low-power mode.

While on the topic of the Control Centre, we'd like to be able to quickly access the settings of each of the toggles with a hard press on the newer 3D Touch-equipped iPhones. For example, we'd like to be able to force press the Wi-Fi toggle to quickly access the Wi-Fi menu to connect to a new network.

And the multi-page Control Centre design isn't working all that well at the moment: when you try to lower the volume but miss the icon by half

a micrometre you end up swiping to the second page by accident.

Cosmetic/aesthetic customisation changes

In EverythingApplePro's infuriatingly intelligent and well-made video (tinyurl.com/zf8fo7w), it proposes a wide range of changes for iOS 11, among them some radical new options for customising the way iOS looks and the way its interface is organised.

It calls for dynamic animated app icons showing, for example, your current location in the Maps icon and the current weather for Weather; the ability to place icons in any of the free grid slots on the screen rather than having iOS automatically resort it to the free slot nearest the top left of the screen; custom system fonts; and a change to the way Reachability works on larger-screen iPhones, so that it shrinks the interface down to the size of a smaller phone rather than dragging the whole thing down and hiding many of the icons off the bottom.

Smart Wi-Fi

The P9 is one of a number of Huawei phones to offer a feature called Wi-Fi+ (or Wi-Fi+ 2.0). This encompasses a number of elements, such as the prioritisation of stronger connections, but the one we like best is its ability to automatically turn Wi-Fi on or off depending on your location. It remembers the location of known networks and activates in order to join them, but when you leave the area it turns Wi-Fi off to save battery. Given the iPhones' recent difficulty competing on battery life with the top-end Android devices, something along these lines would be a fine addition to iOS 11.

Per-app passcode or Touch ID lock

It's currently possible to lock individual documents in Notes, but not apps – either the entire phone is locked, or all the apps are unlocked. From a data protection and parental control point of view it would be useful to be able to lock individual apps. It is possible to hand an iPhone over to a child and keep them in one app using Guided Access, of course, but this is a bit of a faff and inflexible.

Ability to change video resolution in-app

One of the selling points of the iPhone 6s and 6s Plus is that they're able to record in full 4K resolution at 30fps, as well as the standard 1080p at 60- or 30fps. The only issue we have is that there is no easy way to change between the resolutions from within the Camera app, and we have to exit the app, head to Settings > Camera to be able to change it.

Certain situations, such as filming in low light, require a lower frame rate (less frames = more light captured) and changing it manually takes 10- to 15 seconds, which isn't ideal. We would love a way to quickly change the resolution and frame rate, possibly by tapping an icon in the Camera app.

View Favourites in Contacts app

We'd like to see the ability to view and edit the list of favourites, currently only found in the Phone app. It makes sense to be able to access your favourite contacts from within the Contacts app, and we're not quite sure why Apple hasn't yet added this functionality. Sometimes we want easy access to our contacts for other reasons, not just for calling.



Feature: Ask the iTunes Guy

Kirk McElhearn answers your iTunes questions

When your media library grows, you need better ways to view your content in iTunes. In this month's column, we answer a couple of questions about viewing media. The first discusses a better way to view music by

genre. The second explains why some TV shows aren't separated by season and how to fix this issue. With a little bit of work, you can view each of your media kinds more efficiently.

We also look at a question about how to quickly find Apple Music tracks in the iTunes Store. Plus, we look at The Case of the Noisy Track from a ripped CD; answer a question about funny file names; and look at how iTunes sorts the names of artists and albums that begin with the word 'The'.

A better way to view music by genre

Q: I have a large music collection that includes many genres. I'd like to be able to see all my artists and albums in a particular genre. For example: I'd like to listen to some jazz but I'm not sure which album, so I'd like to be able see at a glance which artists I have to choose from. The current choice seems to be an album cover shot along with a list of songs on the album. This limits the information in the screen to about one album at a time. Is there any better way to view albums by genre?

A: iTunes offers several ways to view your music. You can view it by Artists, Albums, Songs, Genres, or Composers. All of those views, with the exception of Songs, display a column with a list of names. You can then click one of them – say a genre – to see its contents, but you need to scroll a lot to do so.

As you rightly say, this isn't the best way to view music by genre, where you want to see as much as possible.



Viewing my Jazz collection in iTunes using the Column Browser

There is a better way. We generally view our library by Songs (click Songs in the sidebar), with the Column Browser visible (choose View > Column Browser > Show Column Browser, or press Command-B).

As you can see above, we've selected Jazz in the Genres column, and have scrolled the Artists column to choose Bill Evans. If we want to listen to a Bill Evans album, but we're not sure which, we scroll the Albums list to make my choice. We could choose another artist in the Artists list, or we could browse all the albums by all my jazz artists by scrolling the Albums list. Songs view is a bit spartan, but it is great for drilling down in your music collection.

There is another option. Create a smart playlist with the condition Genre is Jazz and browse that to make your choice. You can choose any view you

want for that playlist: you could choose Albums view and just see album artwork if you're the visual type who chooses music based on covers, or you can choose Artists or Songs view to see the music differently. You might not want to make smart playlists for all your genres, but there are probably some where you want to be able to browse more efficiently.

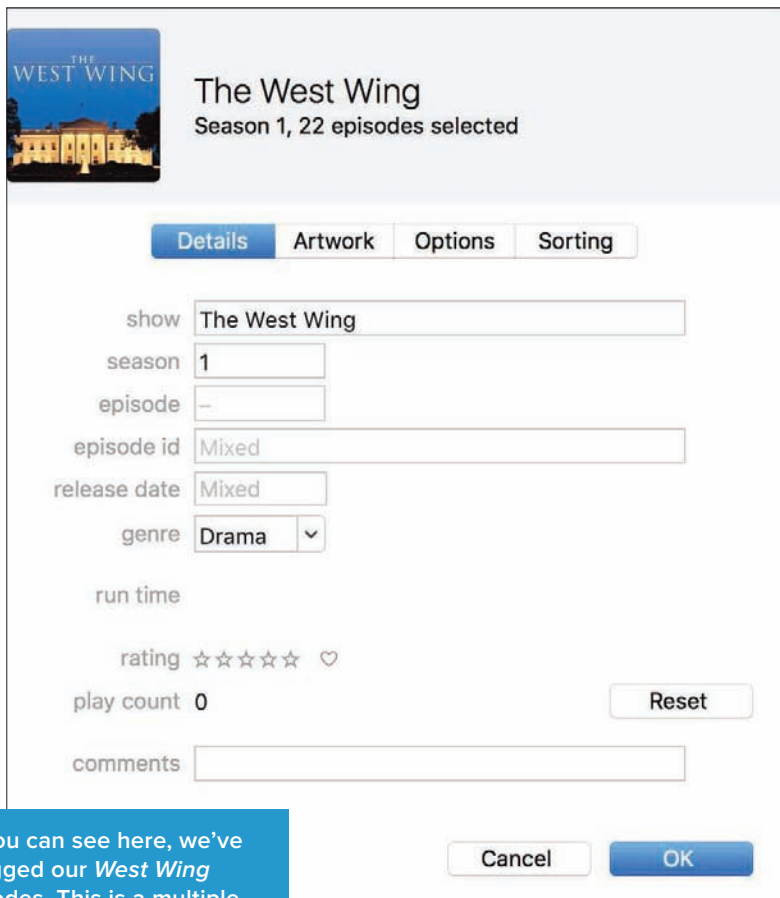
What's the season?

Q: I have several seasons of TV shows that iTunes has categorized as 'unknown' in my TV Shows library. How do I fix them so the seasons display correctly?

A: When you want to watch one of your favourite TV series, it's good to have the episodes sorted by season, so you can easily see where you are in that series' timeline. iTunes does this, if the files are tagged correctly, but we've found that for multi-season TV series that are sold in a 'complete' bundle, and for some other TV series, the iTunes Store doesn't tag them for seasons.

For example, if you buy *The West Wing* from the iTunes Store (it's the only way to get that series in HD) you'll get one big list of 155 episodes plus an extra documentary episode. If you buy *The Wire*, you get 60 episodes, plus three shorts.

When we purchased these series, we had to manually apply seasons to them because the iTunes Store (incorrectly) views them as a long stream of episodes, rather than a number of seasons of episodes. This is easy to do, but it takes some time.



The West Wing
Season 1, 22 episodes selected

Details Artwork Options Sorting

show The West Wing

season 1

episode -

episode id Mixed

release date Mixed

genre Drama ▾

run time

rating ☆☆☆☆☆ ♥

play count 0

comments

Reset

Cancel OK

As you can see here, we've retagged our *West Wing* episodes. This is a multiple item selection of all of season 1's episodes, and we've entered 1 in the Season field

Start by finding which episodes belong to which season; Wikipedia is a good place to get this information. For *The West Wing*, most seasons had 22 episodes, but season 5 had 23 episodes. Select the first set of episodes – those for the first season – then press Command-I. In the Info

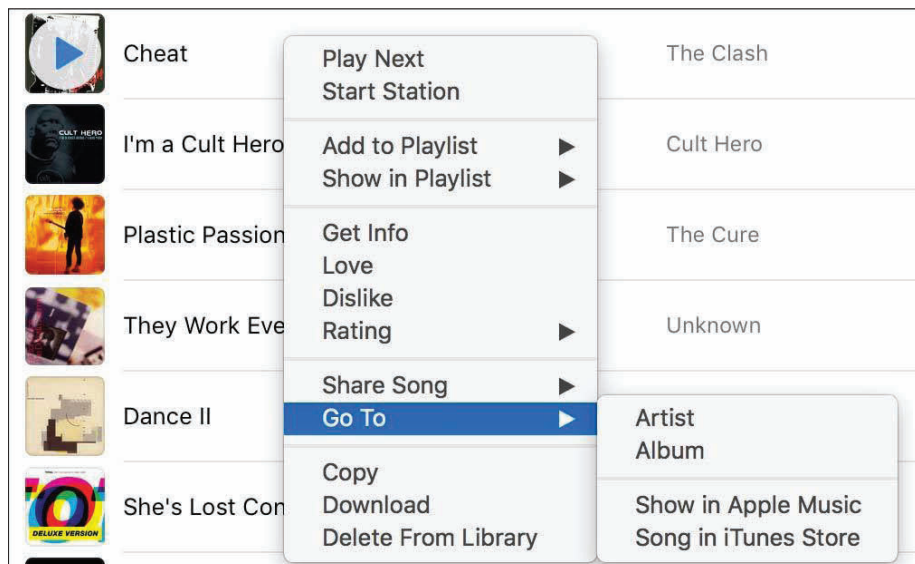
window, enter 1 in the Season field, and click OK. Do this for the other seasons.

If you want to renumber the episodes, so the numbers they display correspond to the season and not to the overall episode count of the entire series, use Doug Adams' Increment Number Tags AppleScript (tinyurl.com/zakj695); it can automatically apply episode numbers to a series of files. After you do this, iTunes will display both the season numbers and the episode numbers correctly.

Buying music from Apple Music

Q: I enjoy listening to music through Apple Music, and regularly come across something worth keeping. I know I can just add Apple Music tracks or albums to my iTunes library and even download them, but I'm old-fashioned; if I'm going to have something in my library and listen to it regularly, I like to own it. There doesn't seem to be a 'Buy This' or even a 'View this in the iTunes Store' option for Apple Music tracks and albums. I end up having to manually search the iTunes store for the same music that I already had open in iTunes (Mac) or Music (iOS). Am I missing something obvious, or is Apple this uninterested in selling me the music it thought I'd like to listen to?

A: It's there, but perhaps not where you'd expect. If you right-click on a track in iTunes, you'll see a contextual menu. Choose Go To > Song in iTunes Store. However, there's no way to do this on iOS. The only suggestion I have is that you create a



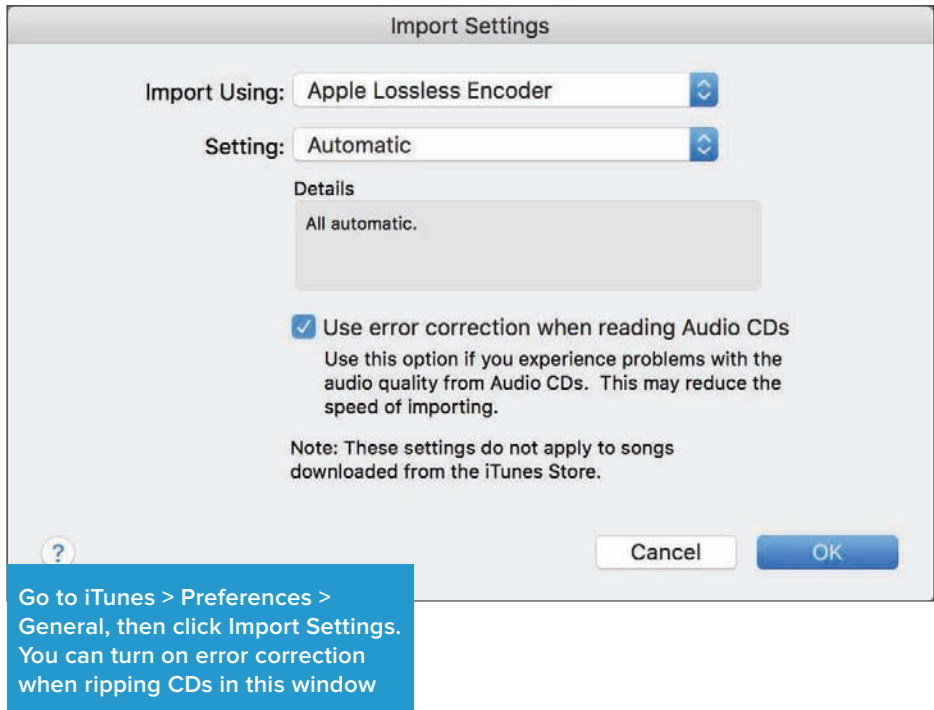
Go to the iTunes Store to buy a song you've heard in Apple Music

playlist for music you want to buy, then add the songs to them on your iOS device. You can then go back to that playlist in iTunes on your Mac and check out the songs on the iTunes Store.

Noisy CD

Q: I bought a used CD and ripped it to add to my iTunes library. The last track has pops and skips. I bought another copy of the CD – it's fairly old and out of print – and the same thing happens. Is there anything I can do to fix this?

A: This is not uncommon with old, worn CDs. The last track of a CD is the one at the outside of the disc, and that area is more likely to be worn



or damaged. When you try to rip a CD like that, you'll get what's called diginoise, those pops and clicks that come from areas where data isn't read correctly. Different drives will react differently, and you may find that one drive can import the file without noise. Also, when you play it on a CD player, you may not hear that diginoise, because of the CD player's error correction. In fact, if you play the CD on a computer, through an optical drive, the same error correction is often used, so you may not hear any noise either.

One thing you can try when importing is to turn on the Use Error Correction setting in the Import Settings of iTunes' General preferences.

We use this all the time, to ensure that there is as little diginoise as possible.

This said, you mention that another CD has the same problem. This suggests that the actual master used for pressing the CDs may have been damaged. There are cases where that happens; we've had CDs that have needed replacing from the manufacturer because of pressing issues. If it's a used CD, however, you won't have many options.

Funny file names

Q: I have noticed that some punctuation marks in a song's title appear as underscores in my song library. And, the semi-colon is not allowed. Why is this?

A: macOS reserves the colon and slash for file path separators, so it, and some other characters, get converted in the Finder. iTunes knows how to display these correctly in song and album names. The semi-colon is not allowed (in the Finder; you can use it in iTunes) because it's used for certain shell scripts. If those characters were in file names, they could break scripts and certain system functions.

Apple has a list of characters that macOS doesn't like at tinyurl.com/hchjzoc. You can use all these characters in iTunes, they just won't show up the same in the Finder.

The 'The' Thing

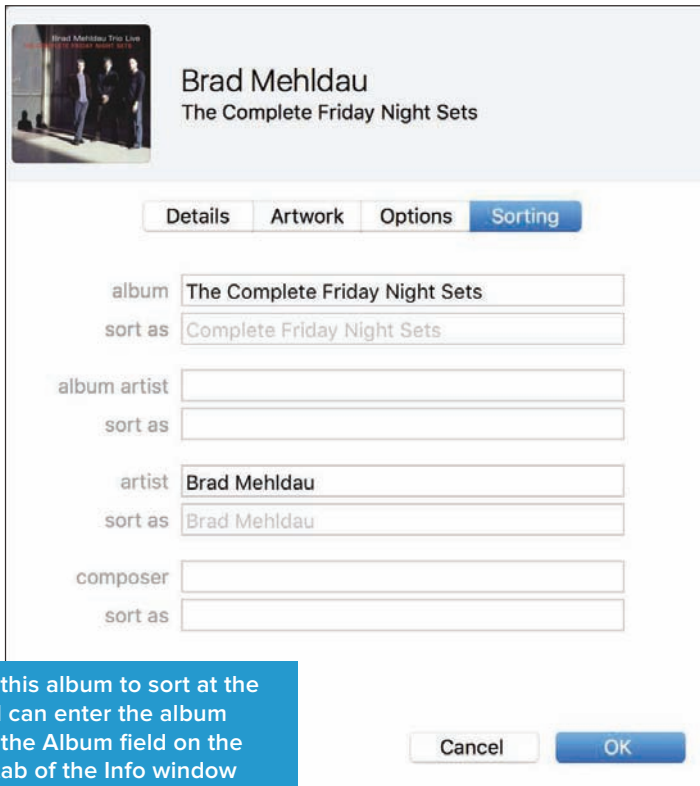
Q: The word 'The' is ignored in a song's title when sorting by Name but is used by iTunes to direct

the Artist's name to be stored with 'The' in its folder in the Finder. Can you explain this?

A: That's the way iTunes sorts; it ignores the The unless you expressly tell it to sort that way. It assumes that you want to see, say, The Beatles at B in your artist list, not at T.

You can select an album, or even all the music by an artist, press Command-I, then in the Sorting tab, type the name with the The.

In the file system, however, nothing is ever ignored when sorting.



The screenshot shows the iTunes 'Info' window for the album 'The Complete Friday Night Sets' by Brad Mehldau. The 'Sorting' tab is selected, showing fields for 'album', 'sort as', 'album artist', 'sort as', 'artist', 'sort as', 'composer', and 'sort as'. The 'album' field contains 'The Complete Friday Night Sets' and the 'sort as' field contains 'Complete Friday Night Sets'. The 'artist' field contains 'Brad Mehldau' and the 'sort as' field contains 'Brad Mehldau'. The 'album artist' and 'composer' fields are empty. A blue callout box at the bottom left explains that to sort by the letter T, the album name should be entered in the 'Album' field. 'Cancel' and 'OK' buttons are at the bottom right.

album

sort as

album artist

sort as

artist

sort as

composer

sort as

If I want this album to sort at the letter T, I can enter the album name in the Album field on the Sorting tab of the Info window

Cancel OK



Round-up: VR headsets for iPhone

VR for Mac is still some way away, but iOS users have a few options. [Lewis Painter](#) rounds up your choices

Mobile VR may not be quite the premium experience that expensive virtual reality headsets provide, but it offers a way for mobile users to experience VR on a budget. Instead of featuring high-resolution displays, sensors and powerful internals in the virtual reality headset, mobile VR relies on your iPhone to provide the display, sensors and brains of the VR, while the job of the headset is to provide special VR lenses and a way to hold your iPhone.

The idea is that you'll load up a VR-enabled app on your iPhone, then slot it into the headset and put it on your head. The app then uses the myriad of sensors already available on the iPhone to replicate your head movements, allowing you to look around a virtual environment. Of course, only using smartphone sensors means that it won't be quite as responsive as premium VR and you may experience a slight lag when turning your head, but it shouldn't be enough to induce motion sickness (an issue that VR manufacturers had to overcome in early development).

Not all mobile VR headsets are budget though; Samsung famously manufactured the Gear VR, which is powered by Oculus, the company behind the hugely popular (and Facebook owned) Oculus Rift. The company uses Oculus technology to provide a more premium VR experience and coupled with the QHD displays of its flagship Galaxy series and a generally well-built, comfortable headset, it provides a great mobile virtual reality experience. The only issue is that the Gear VR is only compatible with Galaxy S6/S6 Edge or newer devices, so iOS users are out of luck. There are other alternatives though, which we discuss below.

If you're stuck for VR app ideas, there's a variety VR-enabled apps already on the App Store, including the likes of Sisters, a relatively short but scary VR experience and Vanguard V, a single level space-shooter. Most VR apps are free, but you may come across a handful of paid, premium experiences too – we've listed our favourite VR apps for iPhone on page 59.



Google Cardboard

Price: £5.29

The cheapest way to experience VR on an iPhone is using Google Cardboard. As you can probably guess by the name, it is primarily made from cardboard, and the instructions on how to build it yourself can be found at tinyurl.com/zvLzpw2. It requires you to source parts like lenses yourself, but these can be easily found online or in high street shops. You can build your own, but if that isn't your style, you'll be glad to know that you can also buy pre-built headsets cheaply – we found it on Amazon for just £5.29. All you need to do is fold the cardboard.

Of course, being made from cardboard, it isn't the most comfortable headset to wear, especially over long periods of time. It's a good starting point for mobile VR users, but if you find yourself still wanting to use VR after the initial novelty has worn off, it may be worth investing in a slightly more expensive (but more comfortable) option.



Homido VR

Price: £47

The Homido VR headset is a good option for iOS users that want a more premium mobile VR experience. The headset is designed with comfort in mind, with soft padding to stop your skin becoming irritated when wearing it, while also doubling up as a comfortable way to combat light leakage. It also has a 100-degree field of view thanks to its specially designed lenses, which should help provide a more immersive VR experience. As well as this, it offers controls that let you adjust the distance between the lenses, as everybody has a slightly different facial shape.

It's great if you wear glasses too, as you can adjust the distance between your eyes and the smartphone. It comes with three options to toggle between – far sighted, near sighted and normal vision. The Homido Center app for iOS features a catalogue of VR-enabled apps available at your fingertips including games and experiences.



Merge VR

Price: £69

If you're looking for something a little fancier, the Merge VR headset may be a good option, fitting the vast majority of iPhones and other smartphones on the market. The Merge VR is a funky looking purple VR headset that offers a sturdier and comfortable experience with ventilation ports and a flexible and extremely comfortable foam body.

The interesting feature of the Merge VR headset is that it includes two buttons on the top of the headset, allowing you to interact with compatible VR apps – this may be used to fire a weapon, toggle different viewing modes, and so on. It also features camera access, allowing the Merge VR headset to be used with augmented reality apps too. The company is also due to release the HOLO CUBE later this year, offering augmented reality capabilities.



Carl Zeiss VR One

Price: \$99 (around £74)

The Carl Zeiss VR One headset is another VR headset that utilises the technology in your smartphone to provide you with a virtual experience. The headset comes with a tray that you slot your phone into, and that slots into the headset itself – you can choose from either the iPhone 6, Galaxy S5 or S6 phone tray when ordering, with the company providing CAD files for you to design and 3D print your own for use with other phones. The headset includes vents that stop the lenses from fogging up and provides an FOV of around 100 degrees.

The VR One also features a see-through front shield, allowing the use of smartphone cameras in augmented reality (AR) apps available for iOS and Android. The performance and graphics vary depending on the power and resolution of your smartphone, so take that into consideration before handing over your money.



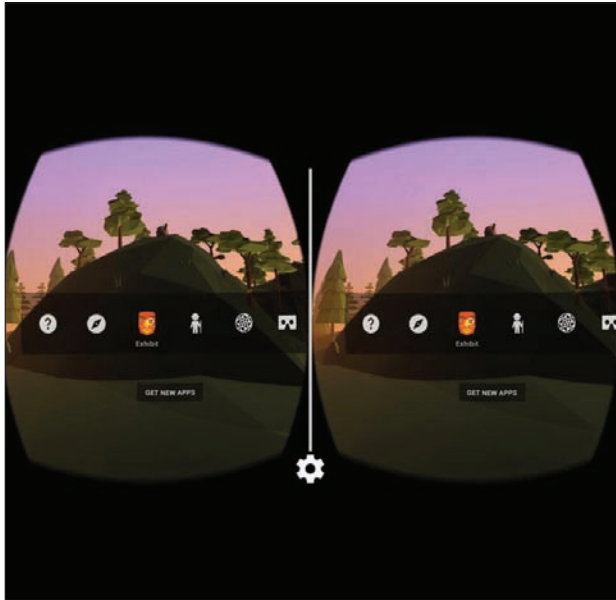
Round-up: VR apps and games for iOS

Lewis Painter showcases best of the App Store's VR offerings

YouTube

Price: Free

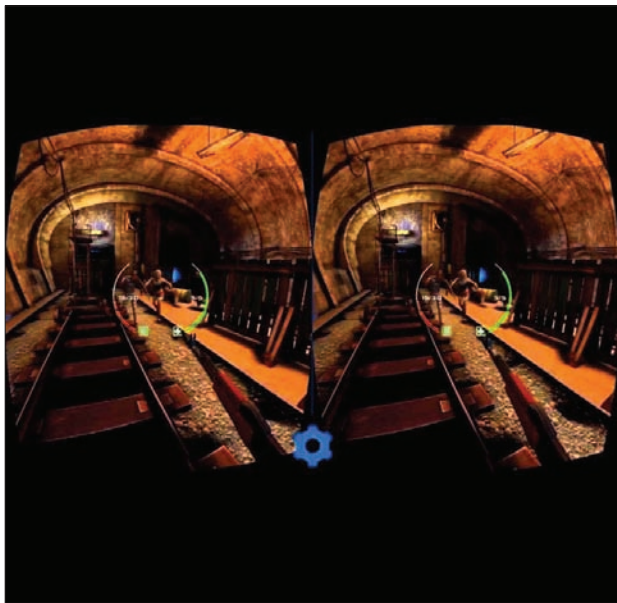
YouTube has a wide range of 360-degree videos that the company can turn into VR experiences with the tap of a button in-app. This offers the ability to browse from a wide range of VR videos, from horror VR experiences to snowboarding and more. The best part is that it's free to use, and you need only tap the Google Cardboard icon on any compatible video to convert it into a VR-ready video.



Google Cardboard

Price: Free

Of course Google Cardboard was going to be included in our list – it's a great place to start for those just starting out in the world of mobile VR. There are several experiences within the app, which should give you an idea of what VR is like. It also lets you travel to various places around the world, including the Great Wall of China and the Eiffel Tower, thanks to Google Maps.



Zombie Shooter VR

Price: Free

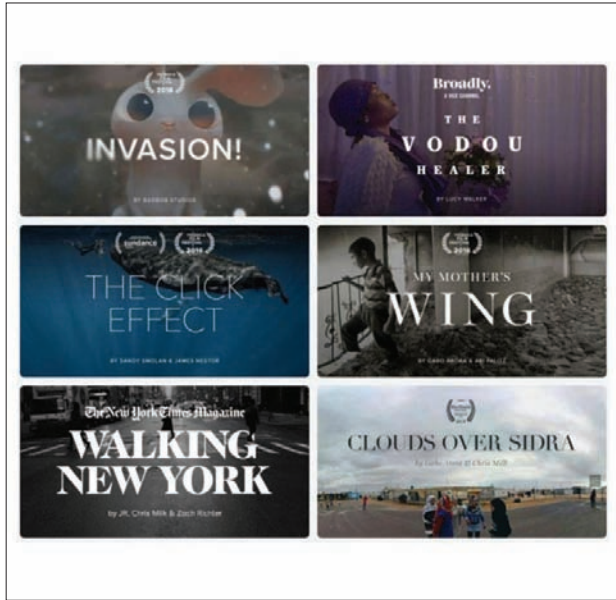
While Zombie Shooter VR used to be a paid app, it has recently been made free to play, suggesting something about the amount of competition in the mobile VR space at the moment. You find yourself traversing a post-apocalyptic subway, fighting off hordes of zombies. The good news is that you don't have to do much to fight them off – simply looking at the zombie will trigger your gun, making this a fun introduction to the world of VR.



VR Horror

Price: Free

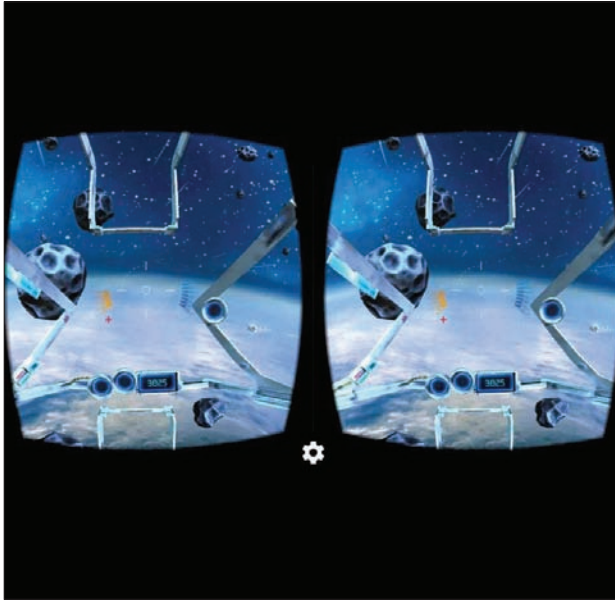
VR Horror is a virtual reality horror game for iOS, immersing VR users in a horrifying world – one step further than any horror film will go. While the game may not be frightening if viewed on television, being ‘in’ the game provides users with something immersive that will get the blood pumping. For a free app the graphics are pretty good, and it’s actually pretty scary, especially with noise cancelling headphones on. So what do you do? We’ll leave that down to you to find out...



Within

Price: Free

Formerly known as Vrse, Within is essentially the Netflix of virtual reality. Why? The company produces a lot of VR content itself, which is showcased via the app, and ranges from immersive VR music videos to investigative journalism reports. If you're looking to experience something a little more high-end than the 360-degree videos you find on YouTube, Within is a great place to start.

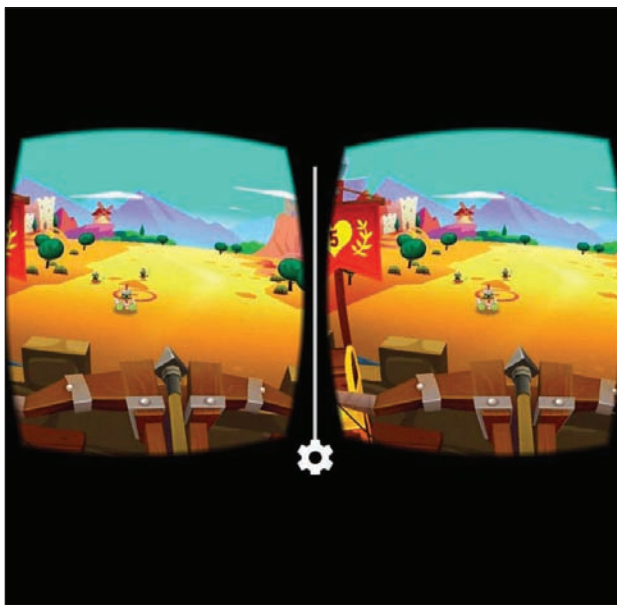


End Space VR

Price: 99p

End Space VR is a must for those that enjoy sci-fi movies, as this gives you a chance to pilot your own space ship (complete with guns, of course) in space, dogfighting with enemy space pilots. In essence, it's a wave-based shooter that allows you to upgrade your ship over time, making it more effective and deadly in combat.

It is one of a small number of mobile VR games that allows you to look and go in any direction as opposed to being on 'rails', and combined with decent graphics and immersive 3D audio, it's definitely a favourite amongst mobile VR users.



Romans from Mars 360

Price: Free

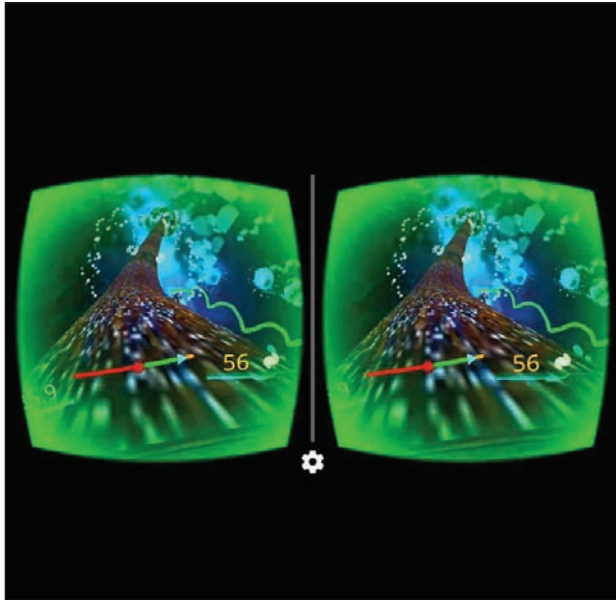
If you like Tower Defence games, you'll love Romans from Mars 360, which puts you at the top of a castle under attack from endless waves of Martians, with the aim of taking over Earth. What else did you expect? The only thing standing between the Martians and a worldwide takeover is you and your crossbow, which can be used to fire arrows, or you could use your elemental powers (Fire, Ice, Earth and Lightning) to take down enemies. You can upgrade your crossbow to do more damage as the rounds go on, giving you an 'objective' of sorts. The graphics are cartoony, but look cool, and for a free game you can't really say no – can you?



NYT VR

Price: Free

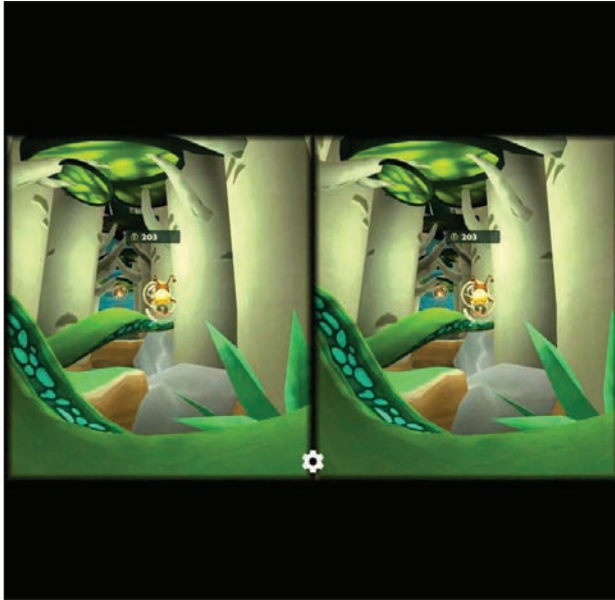
The New York Times is, rather surprisingly, at the forefront of mobile VR, collaborating with Within (Vrse) on a number of projects – this might explain why you'll find some duplicated content across the two apps. You'll find a number of journalist-created VR videos within the app, although these aren't streamed – you'll have to download them before you pop your iPhone into the VR viewer.



InCell VR

Price: Free

InCell VR is the mobile equivalent of the game available for Oculus Rift and HTC Vive, providing an experience not that different to the PC-powered game. The action/racing hybrid has a simple story behind it: your mission, if you choose to accept it, is to be shrunk down and injected into a human body to protect it from within, on a cellular level. Move your head to dodge and collect objects, and don't forget to take in the colourful, psychedelic environment around you.



Lamper VR: Firefly Rescue

Price: Free

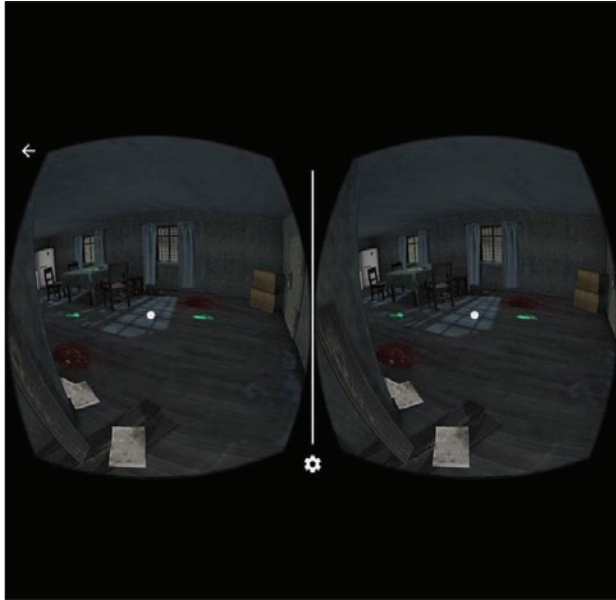
Who said there's no money in VR? Following the popular Lamper VR game, the little firefly is back for the sequel; Lamper VR: Firefly Rescue. Control Lamper using simple head movements and navigate your way through forests and caverns, recruiting firefly friends on your travels. Make sure you collect coins and other power-ups that will let you defeat the various enemies you'll come across on your journey.



VR Sniper

Price: Free

Another game controlled by head movement, VR Sniper puts you in the shoes of a sniper perched on a rooftop with the aim of taking out 10 soldiers strategically placed around you. The intuitive controls make the game easy to play despite being timed, with the only real requirement being a steady gaze. Those that like the first level can part with 99p via in-app purchase to unlock three more levels, more soldiers and of course, to deactivate those annoying ads that pop up now and again.



Haunted Rooms: Escape

Price: Free

Considering that Haunted Rooms: Escape is a free VR game for iOS, it offers great quality content and decent game time before completion. The idea is to escape, rather obviously, from various rooms in a haunted house by interacting with objects and solving riddles that require a bit of brain power to solve. Of course, with any free iOS games, there are adverts that can break immersion, but these can be easily dismissed. Our only gripe is that there doesn't seem to be an in-app purchase to disable them, as is the case with other iOS apps and games.



Buying guide: Apple iPods

Martyn Casserly's guide will help you find the best iPod

If you're looking to buy an iPod, which one should you choose? The touch offers far more than just a simple music player, coming equipped with essentially all the features of a fully fledged iPhone bar the call capabilities. The nano is also a capable device, but small enough to carry anywhere, while the shuffle is simple, inexpensive, and tough – perfect for the gym.

Choosing the best iPod is not an easy decision, although Apple has simplified matters somewhat with the quiet retirement of the Classic in 2014, after seven years of faithful service. In this guide we will compare the various features of each iPod – such as capacity, price, and battery



life – to determine which iPod is the one best suited for your needs.

Compare models

iPods have come a long way since the initial music-only device that magically appeared from Steve Jobs' jeans pocket in October 2001. Now you can buy models that have full access to the internet, play movies, and even make video calls using Apple's FaceTime technology. All iPods are not created equal though, so here we round up the various features of each model.

iPod shuffle: In many ways the shuffle is probably the most true to that original iPod, as it focuses solely on playing audio. The lack of a screen has meant that in the past you had to remember what was on the device, and switching between tracks was a lottery. Now, with the impressive Voice Over feature, the shuffle will read the name of the track, podcast, audiobook, or playlist to you and let you

choose the one you want to listen to with nary a touchscreen in sight. This means you can have multiple playlists on the device without having to return to your iTunes library. It's a simple addition, but it makes the shuffle a far more capable device than past iterations.

iPod nano: The most obvious feature that differentiates the nano and the shuffle is the 2.5in multi-touch display. This enables the nano to have a range of included apps that broaden its appeal. Music is, of course, still the primary function, with the cool ability to create Genius mixes on the fly by tapping a button while a song is playing; the device will then automatically generate a playlist from your library based around that track. A screen also means video, with the nano happily playing any media synced to it from your iTunes account. It's admittedly not the biggest display for Hollywood blockbusters, but for quick fixes on the go, or to entertain the little ones, it does the job.

You can also store photos on the nano, and a built-in FM radio app makes it easy to keep up with the latest music, news or sporting events. If you are a Nike Fitness user then you'll find the bespoke app on the nano a handy addition, as the device doubles as a fitness tracker that can sync up to your NikePlus account with details of your workouts. Bluetooth is also a useful feature, as you can listen to your tunes wirelessly on Bluetooth headphones, or connect to a number of home and car speakers. Unfortunately it won't work with Apple Music.

iPod touch: In the battle of the features, the touch is in a different category to its smaller siblings. As the only iPod to run a full version of iOS, the touch has access to the full App Store, with all the games, productivity tools, social media, and camera apps that you'd expect to find on an iPhone. The touch is also a fully functional internet device, so browsing, chatting, and shopping are all available via its 4in Retina screen. The built-in camera, while not quite up to the iPhone quality, still offers great shots that will go well on Instagram or Facebook – both of which are also available. It's easily the most advanced iPod there's ever been, and with the category declining due to the proliferation of smartphones, it may also be one of the last.

Which iPod is right for you?

The first question you should ask yourself when considering a technology purchase is this: what do I want from the device? It's all well and good buying the latest and greatest gadget, but this will be a waste of money if you only intend to use a fraction of its capabilities. If all you want is some musical accompaniment while you work out at the gym, the touch is probably overkill, although now that it includes the M8 chip for fitness monitoring it might be exactly what you are looking for.

Conversely the shuffle can become a very frustrating device if you like to change the music you are listening to often as it's not very flexible: essentially shuffling the tracks you listen to.

To lay out some of the more basic capabilities of the various iPods available we'll start with the storage capacities of each model.



Storage

With the iPod classic now a distant memory those wanting a large amount of storage on their iPod will find the options rather limiting.

The iPod shuffle is available with a rather humble 2GB of storage, while the iPod nano boasts a more spacious 16GB. It's worth bearing in mind that this means the shuffle can hold around 450 songs encoded at 128kb/s, with the nano's 16GB topping out at around the 4,000 mark.

The only model to go higher than 16GB is the iPod touch which is available in 16-, 32-, 64-, and 128GB variants. While it's not quite the mammoth 160GB capacity of the iPod classic, it should still offer enough room for the vast majority of user, plus as you will see if you read on, it has a lot more to offer than the classic ever did.

And bear in mind that the true storage capacity of an iOS device such as the iPod touch is less than the advertised capacity.

Battery Life

iPods may not have the same always-on nature of smartphones, but battery life is still an important

factor for any electronic device. You might think that the shuffle would win this category due to the lack of a power-sapping screen, its diminutive size though means that it lasts for only 15 hours. This loses out to the nano which goes for around 30 hours, and the touch – which houses the largest battery in the range – holding out for a massive 40 hours of listening time.

If you watch video though, things immediately change, with the nano affording 3.5 hours and the touch reducing to eight hours.

Interestingly, while Apple is claiming the 2015 iPod touch offers improved battery life the figures are exactly the same as previously.

Camera

Only the iPod touch offers a camera. This is an 8Mp camera similar to that inside the iPhone. You'll get the same camera features such as slow-mo video and burst mode shooting (you won't get time lapse though).

There's also a forward facing FaceTime camera for making video calls, or taking selfies. As cameras go it's a good option, allowing you to edit pictures and share them to Facebook or similar as long as you have access to Wi-Fi. And because you can download any apps from the App Store you can make use of any photography apps you like. The iPod touch can also record video.

Video

Both the iPod touch and the nano can play video, but the touch offers a lot more flexibility, and a bigger screen. To watch video on the nano you will



need to copy episodes of your favourite TV shows or films on to the device. The touch, on the other hand, can stream from the iTunes Store or play video via any app you have.

Music

The iPod nano offers an FM radio and will play up to 4,000 tunes you have loaded onto it. The shuffle can store 450 songs encoded at 128kb/s.

The touch has the added benefit of access to the iTunes Music Store, which means you can download tracks onto the iPod, and even stream them from Apple Music (free for the first three months, then a subscription of £9.99 a month).

Colours

All three types of iPod come in the following colours: Silver, Gold, Space Grey, Pink, Blue, Red (for the PRODUCT RED charity).

Price

An important part of any buying decision is knowing your budget. If you really aren't looking to spend a lot on a device, and don't mind a limited

set of functions, then the 2GB shuffle is a very tempting option at £49.

Moving up to a nano will give you a few more advanced features and eight times the storage, but the price jumps up to £149.

For iPod royalty, you'll find four models of touch priced at £179 for 16GB, £229 for 32GB, £279 for 64GB and £379 for 128GB.

iPad & iPhone User's buying advice

Having explored the various advantages and compromises that each model offers, hopefully we've shed a little more light on the subject. There will be some crossover between devices, but we feel that each is distinct enough to occupy its own place on the menu. With that in mind here are a few final conclusions regarding who might benefit most from the various iPods available.

iPod shuffle: We think this one is the best for sports enthusiasts, due to the fact it's cheap, hardy, and can clip onto anything. Those with smaller music libraries will also see the value of an inexpensive device that is still powerful thanks to the VoiceOver feature, and of course people who don't want to spend a lot on a music player.

iPod nano: Due to its size and sandboxed nature the nano would make an excellent iPod for younger children. Those who generally want a svelte device with more capacity than a shuffle will also find the little iPod a very attractive option, and if you do already use the NikePlus fitness service, then the integrated app might well prove a tipping point.

iPod touch: The touch is a very impressive device, but it has a price tag to match. In many ways it strays a bit too close to the smartphone world to make it an actually compelling device for those who already own an iPhone. If you do want an internet capable, iOS device but find iPads a bit on the large size, then the touch will give you a good percentage of that experience, including a Retina screen, for a bit less than the iPad Mini 2. One area where it really shines though is as an entry point to the Apple world for teenagers that want to communicate with friends, watch the latest YouTube videos, listen to their music, and not have ongoing bills for their parents to pay. And the newest models bring a better camera and faster processor. This is also the only iPod that will let you make use of your subscription to Apple Music.





How To: Fix a cracked iPad screen

Broken your iPad's screen? Whether it's cracked or smashed [Lewis Painter](#) reveals your options

Smashing the screen on your iPad (or iPhone or iPod, for that matter) has got to be one of the biggest First World problems. You drop your beloved phone or tablet, reach down and pick it up – of course it landed screen down – and inspect the damage, only to have your worst fears confirmed. The screen is shattered.

Well, chin up. It's bad, but it's not disastrous. You have options. Here we round up the five best ways of repairing a damaged iPhone or iPad display, and explain the pros and cons of each.

Get Apple to repair it

Apple will come to the rescue and repair your cracked screen, but it won't do this for free, even

if you're still in the warranty period as accidental damage isn't covered by the standard warranty.

If you went the extra mile and paid for AppleCare+, then the cost won't be too high. AppleCare+ includes repairs for up to two cases of accidental damage. But there's still an excess fee. While it used to cost users £55 for iPhone SE, 5c, 5s, 6 iPhone 6 Plus, £79 for 6s and 6s Plus and £39 for all models of iPad, Apple has since updated its warranty. Now, users need to pay £25 to fix their iPhone display no matter what model it is, with all other repairs costing a flat rate of £79.

Assuming you haven't got AppleCare+, the cost of your screen repair will be higher. It's best to get in touch with Apple and see what they'd charge in your case, but the company quotes the following prices for screen repairs on iPads not covered by AppleCare:

iPad mini or mini 2: £156.44

iPad 1, 2 or Air 1: £196.44

iPad 3, 4, mini 3, mini 4 or Air 2: £236.44

9.7in iPad Pro: £316.44

12.9in iPad Pro: £506.44

The non-AppleCare costs for iPhone screen repairs, meanwhile, are:

iPhone 7 Plus, 6s Plus, 6 Plus: £146.44

iPhone 7, 6s, SE, 6, 5s, 5c, 5: £126.44

Go to a high-street retailer

The high street. The one-stop shop for all your needs - including iPhone or iPad screen repairs.

The high street is where most of us will go when we break our phone or tablet screen because, generally speaking, people like the personal touch, which is something you tend not to get when using online repair services. Another point for the ‘high street versus online’ argument is that if anything goes wrong with a high-street repair then you know where to go to complain (unlike with most online services).

High-street chain Timpsons (timpson.co.uk) has noticed the growing demand for a local repair service and have added screen repair services at a number of stores – last year they told us that 412 of their 1,409 stores offer this service. To avoid disappointment we strongly recommend either calling your local branch to see if they can help, or using the firm’s store locator with the filter set to ‘Phone and Tablet Repairs’.

This should be a far cheaper option than Apple. We’ve been quoted a pretty reasonable £49.99 for older iPhone models, rising to around £80- to £90 for newer phones; the service starts at £39.99. Speak to Timpsons and get a quote for your device. The firm says it can repair screens on all models of iPad and iPhone.

Screen repairs on iPhones should be carried out the same day, but Timpsons warns that tablet repairs take longer: seven days. In both cases there may be additional delays if the staff have to order in a part, but we imagine that Apple devices are sufficiently mainstream that this would be unusual.

Timpsons isn’t the only high street chain to offer iPhone screen repairs though, as Geek Squad (found within certain Carphone Warehouse stores)

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United Kingdom

also offer Apple certified screen repairs, although only for the iPhone 5s, 6 and 6s. The company offers standard screen replacements for £89, but that's not all – as a fully approved iPhone repair provider, Geek Squad can carry out any warranty repairs just like the Apple Store, completely free of charge. The company only uses genuine Apple parts, meaning your iPhone warranty won't become void by using the service, and the company provides all customers with a 90-day guarantee following any repairs.

The catch? It's only available in a handful of stores at this time: Birmingham, Bristol, Central London, Glasgow, Leeds, Southampton and Stratford. Those interested should head straight into store, no appointment required.

Down sides of high-street screen repairs

High-street retailers are an obvious option, and Timpsons is a well-known brand, but what of the

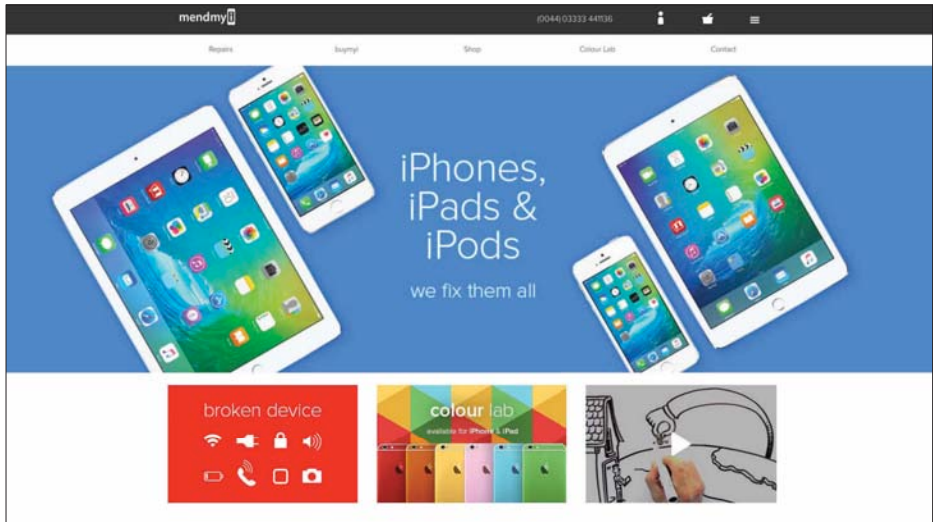
lesser known high-street shops promising to fix your iPhone? Using a high-street retailer could be a risky process because when you leave the store, you don't know who's handling your iPhone or what they're doing to it.

People like to keep their private lives private – and what is at the centre of most people's lives? Smartphones. From email to texts to photos, our digital world revolves primarily around smartphones. When you take your iPhone to a high-street retailer, you're handing over your central hub, so to speak, and there's a small risk that your data could be browsed and even remotely stored. A lack of security regulation in smaller, independent shops could be risky, especially for business users.

Replacement screen parts are fairly easy to come across and can be bought fairly cheaply online. The issue with this is that cheap screens and parts seem to have a tendency to break more often than official Apple parts. What does that result in? More trips to the shop to get it repaired and more money spent. If a high-street retailer charges as little as £40 to replace an iPhone 6s screen, say, you should start questioning how that's possible.

Send your device to an online repair service

The next option to consider is an online repair service, such as MendMyi (mendmyi.com). Such businesses are becoming ever more popular, with people becoming too busy to take a damaged iPad or iPhone to a shop themselves. MendMyi have become a household name for UK iDevice repairs and customisation over the past few



years – even customising Stephen Fry’s iPhone with their Colour Lab service.

With MendMyi being a primarily online service, you have to rely on the postal service. People are often wary about sending their phone off in the post to a company that they’ve found online. What if it breaks? MendMyi offer an additional ‘Express Pickup’ service that insures your iPhone in transit. MendMyi is very active on social media and you can chat to the guys on Twitter before sending your phone off, or alternatively drop it to one of their branches in Haverhill, Cambridge or Sudbury.

MendMyi only uses official Apple parts in the repair so you can be sure that your screen replacement is genuine. The firm also runs a diagnostics test on your phone while it’s being repaired to make sure there’s nothing else wrong with it – a great extra that you won’t find with many phone repair services.

So, what's the down side? When it comes to pricing, MendMyi aren't the cheapest, while an iPhone 5s screen repair costs a reasonable £79, an iPhone 6 screen repair jumps up to £127 and the iPhone 6s Plus is £359. Ouch. iPad pricing is generally in the £100 to £150 range, but the most recent models are absent – the iPad Air 2 and mini 3 are the most up-to-date iPads on offer.

While it may be more expensive than competitors, MendMyi aims to have your phone diagnosed and repaired within one-to-three days and it is couriered back to you shortly afterwards.

Another online repair and customisation service to think about is iSmash (ismash.com), based in London. Similarly to MendMyi, you can select the repairs you need on their website along with your choice of postage, whether it be them sending you a 'Post in Pack' for £5.99 or you directly organising a courier. Their pricing is also similar, with an

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REFURBISHED SMARTPHONES

GRADE A SIM FREE WITH A 12 MONTH WARRANTY

SHOP ONLINE

SMARTPHONE REPAIRS
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TABLET REPAIRS
Expert repairs for all leading brands of tablets & portable devices.

COMPUTER REPAIRS
Dedicated repair centres for laptop, computers and Mac.

REFURBISHED DEVICES
GRADE A refurbished smartphones and devices. All with one year warranty.

iPhone 6 screen repair costing a little less than MendMyi at £99. Interestingly, iSmash only charge £149 for an iPhone 6s Plus screen repair – less than half the price of the same service at MendMyi. Like MendMyi, at time of writing iSmash hadn't updated its site to include the iPhone SE.

One advantage of iSmash, if you're based in the capital, is that the firm has walk-in shops all around London. That means that you can book an appointment, take your Apple device into store and get it repaired on the same day.

Get your device repaired at your home

Some people can't – and won't – wait for days for their iPhone screen to be fixed. What alternatives are there? Depending on your location, there are companies that can come to you and repair your phone or tablet. One such company is Repairly (repairly.co.uk) – they will come to you anywhere in central London and hope to expand soon. They'll take your iPhone and repair it within two to three hours and bring it right back to you when it's done.

Repairly fixed our iPhone 6s within two hours, and we've been using it for months since with absolutely no problems. Communication and emails were great fun and the friendly Repairly representative arrived on a push scooter with a padded box ready to whisk our iPhone away. It was fast and brilliantly hassle-free if a little more expensive than going to some high-street options.

An alternative is Phone Dudes. Amazingly, Phone Dudes claim that once the engineer arrives, your iPhone will be ready to use again within just 10 minutes. That means that you don't have to be

away from your iPhone for too long and it destroys any issues with phone security – the repair is done in front of you. The downside is that the company can't yet fix Apple's newest phones and it doesn't offer fixes for iPads or laptops.

DIY repairs

If your screen damage is more cosmetic than anything, there are other DIY options available. With the internet being the internet, there are a variety of home remedies for scratches (not cracks) on your screen – including, weirdly enough, toothpaste. Other options include car scratch removal creams, such as the 3M Scratch and Swirl remover that apparently works wonders on a scratched screen. Make sure that all ports are sealed before attempting to use creams, as you don't want to add liquid damage to your list of problems.

There's one more option, but it's not for the faint-hearted. iFixit (tinyurl.com/pfLgfzc) provides tutorials on how to repair any part of any iPad (and similar articles for the iPhone). They give clear and easy-to-follow steps with high-resolution images highlighting exactly what you need to do. They're also a one-stop shop – once you've found the tutorial you need, you can buy all the parts directly from them, making it far less likely that you'll buy the wrong parts.

Do pay attention to the difficulty rating of each tutorial, however. You need to be fairly confident with your technical ability, as any unauthorised repairs of your iPhone will void the warranty and Apple won't touch it.



How To: Charge an iPhone 7 and listen to music

Lewis Painter explains how to power up your iPhone 7/7 Plus and listen to music at the same time

The introduction of the iPhone 7 had mixed reviews – Apple fans loved the design, especially the new Jet Black finish, and the dual-camera setup of the 7 Plus. However, not everything was welcomed: the decision to drop the headphone jack disappointed many. While Apple justified its move by supplying a 3.5mm to Lightning adaptor with every iPhone 7 as well as providing Lightning-enabled EarPods, it left potential users asking how they could charge their iPhone and listen to music at the same time?

While Apple suggests using its new iPhone charging dock to listen to music and charge your iPhone at the same time, it isn't a great option – especially if you want to use your phone while charging. It's not the end of the world though, as we at *iPad & iPhone User* have done our research and present you with three different ways to get around Apple's Lightning port issue.

Use wireless headphones

While the first option is fairly obvious, it's still worth mentioning. The best way to listen to music and charge your iPhone at the same time? Use wireless headphones. As most wireless headphones rely on Bluetooth technology, it frees the Lightning port up to be used by a charger without any worry about sharing the port. Sure,

this means that you'll probably have to make sure your headphones are charged up when you want to use them, but decent modern Bluetooth-enabled headphones can last up to 20 hours per charge.

Of course, Bluetooth headphones come in a range of shapes, sizes and most importantly, prices. You can pick up fairly decent sounding Bluetooth headphones for cheaper than you may realise – take the Jabra Move Wireless on-ear headphones for



example. At only £60 at the time of writing, Jabra's headphones offer decent audio quality, battery life and comfort for those that want it. Of course, those wanting something a little fancier can opt for something like the £289 Bose QC35s with active noise cancellation, or Apple's brand new £159 AirPods that are coming in October.

If you're in the market for a pair of wireless headphones/earphones but have no idea where to start, take a look at our selection of the best wireless headphones on the market at the moment.

Make your wired headphones wireless

Apple offers users a 3.5mm to lightning adaptor in the iPhone 7 box, but that won't help users wanting to charge and listen to music at the same time. While the obvious answer is to invest in wireless headphones, this isn't always a viable option. Whether it's because you've got an expensive pair of wired headphones or that you don't want to pay over the odds for wireless headphones, case and accessory maker Griffin has released an accessory that might solve the problem.

While it's still a paid option, it's considerably less than buying wireless headphones, and boasts the ability to enable Bluetooth functionality on any pair of wired earphones or headphones. This comes in the form of the Griffin iTrip Clip Bluetooth Headphone Adaptor, a £20 accessory that allows you to plug in your wired headphones and utilise its built-in Bluetooth 4.1 connectivity to wirelessly connect to your iPhone. It also features media controls for headphones without them, and also a built-in mic for use with Siri and phone calls.

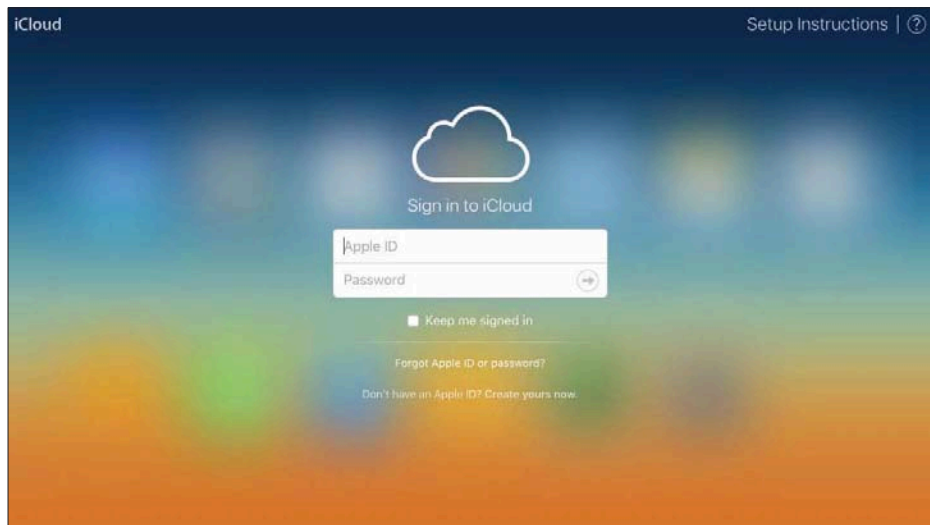
Lightning splitter

Just like the headphone splitter used by many to share the fabled 3.5mm headphone jack, Belkin's Lightning splitter, or Lightning Audio + Charge RockStar as its officially called, offers users the ability to plug two Lightning cables into a single Lightning port.

While the adaptor will set you back a rather costly £34.99, the cable allows you to listen to your favourite tunes and charge your iPhone up at the same time without any effect on charging time, apparently. Belkin claims that the 12W passthrough charging will power the iPhone 7 at maximum speed, despite sharing the port with your headphones. It shouldn't affect audio quality either, as the accessory maker claims that its adaptor supports "the full ecosystem of Lightning Audio Headphones and supports up to 24-bit 48kHz lossless output".



Belkin Lightning Audio
+ Charge RockStar



How To: Protect an iCloud account from hackers

Enhance the security of your Apple ID with two-factor authentication. **Lewis Painter** shows how

While it seems that celebrities get their Apple ID/iCloud accounts hacked on a weekly basis, Apple has implemented measures to protect the masses against these kinds of attacks. However, with both two-factor authentication and two-step verification available for Apple ID users, there's a bit of confusion as to which users should opt for. Here, we explain what two-step verification and two-factor authentication offers, as well as how to set up each on your Apple ID account.

Two-step verification

Two-step verification has been offered to Apple ID users since 2013, and was the first way that Apple users could protect themselves from hackers accessing their content by only knowing their Apple ID password. Those with two-step verification are prompted to verify the account whenever they sign in with their Apple ID or iCloud account, or when making a purchase from a new iOS device.

There are also other situations where users will be prompted to verify the login, and these can be found on the official Apple Support page (tinyurl.com/p88tgcs).

But how do you verify your account? Is it just a case of having to remember two passwords instead of one? No – it's smarter than that. Instead, there are four different options you can choose from:

Push notification to a trusted iOS device: verify

the login by allowing it via push notification on another iOS device.

Text message or phone call to a

registered number: If you have a mobile or home phone linked to your Apple ID, Apple can text you a four-digit number to verify the login. Alternatively, Apple can call you and provide you with the code over the phone.

Offline recovery key: You'll be given a 14-character Recovery Key to keep safe when you set up two-step verification.



It can be used to gain access if you ever lose access to your trusted devices, or forget your Apple ID password.

Application-specific password: If the app you're using doesn't support two-step verification, you can generate an app-specific password from your Apple ID account page to use when prompted.

While two-step verification adds an extra layer of security to your Apple ID, it's not the recommended protection for most people. Apple states on its website that two-step verification is an old security method that should only be used by those that don't own Apple devices, can't set up their devices or "are otherwise ineligible for two-factor authentication".

Set up two-step verification for Apple ID

It's incredibly easy to set up two-step verification on iOS. Go to tinyurl.com/hc5o9dr, sign in to your Apple ID and follow the instructions provided. Remember, this method is only advised for those that either don't have access to an Apple device, can't set up a device or for whatever reason or you can't access the more advanced two-factor authentication we discuss below.

Two-factor authentication

So, what exactly is two-factor authentication, and why is it better than two-step verification? Apple themselves view two-factor authentication as a step up from the two-step verification, and was first released in 2015 alongside iOS 9. The new and



improved security method is baked directly into iOS 9 and OS X El Capitan and later, meaning it can't be used by those with older devices.

So, what makes two-factor authentication special? The methods of authentication differ slightly from two-step verification, with users able to opt for the following:

Push notification to a trusted device: Much like with the older method, Apple will push an interactive notification to all trusted Apple devices allowing you to quickly verify the login.

Text message or phone call to a registered number: Again, this method is identical to that offered with Apple's older two-step verification

process. Apple will text or call a verified number with a four-digit code to input for verification.

Offline code generated by trusted device: This method is specific to two-factor authentication, and enables the generation of codes from a trusted device, even when offline. Simply head to the Settings menu on your trusted device and make a note of the code generated.

As well as the three methods above, Apple also offers a method of verifying logins on its devices running iOS 8 or OS X Yosemite or earlier. When trying to log in to your Apple ID or iCloud account on an unsupported device, you'll need to get a verification mode from a trusted device as noted above, and add that to the end of your Apple ID password. For example, if your Apple ID password is Password and the code generated by your trusted device is 1234, you'd enter Password1234 as your Apple ID password.

Set up two-factor authentication for Apple ID

First off, it's worth noting that unlike with two-step verification, you can only sign up for two-factor authentication via a compatible Apple device (iOS 9 or later, or OS X El Capitan or later). It's also worth noting that you'll have to disable two-step verification before setting up two-step authentication if you've used it in the past.

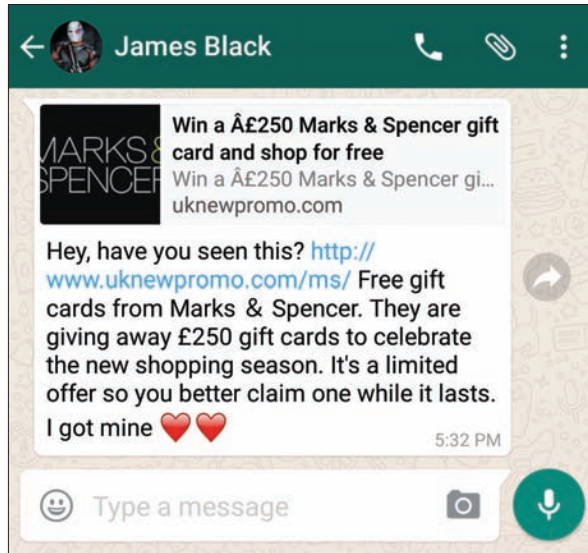
- Open Settings > iCloud and select your Apple ID
- Select Password & Security
- Tap Turn on Two-Factor Authentication



How To: Avoid WhatsApp viruses, scams and hoaxes

Marie Brewis reveals how to stay safe and evade scams

Whatsapp scams used to focus on the idea that you would be charged for the service, but now they offer scam shopping vouchers and dodgy links that download malware. Here are some of the WhatsApp scams you should delete and forget, plus how to avoid WhatsApp viruses, scams and hoaxes.



WhatsApp scam offers free £250 Sainsbury's or M&S voucher

One of the most common WhatsApp scams in January 2017 is one that offers a link with the promise of a free £250 gift card for either Sainsbury's or Marks & Spencer. The M&S version is pictured above.

By clicking on the link you are taken to a survey page that asks you to answer various personal questions. This survey has absolutely nothing to do with the supermarket, and everything to do with stealing your data. Do not fill in the survey and do not pass on the message.

WhatsApp malware threatens to steal personal information

The most recent WhatsApp scam to come to our attention hopes to trick the user into opening a

legitimate-looking Word, Excel or PDF document attached to a WhatsApp message that will actually download malware to their device that can steal their personal information.

All reports so far originate from India, and apparently use the names of the NDA (National Defence Academy) and NIA (National Investigation Agency) in an attempt to get users to open them, but it won't take much for the scam to make its way to the UK too. Only last month a similar message did the rounds in the UK that tried to persuade users to download a £100 Sainsbury's voucher. In reality, the link simply installed cookies or a browser extension on the user's phone that could be used to serve adverts to them.

The easiest way to avoid this scam is to delete the message, and never to download an unexpected document attachment – whether or not it comes from a trusted contact.

WhatsApp is not ending at 6pm

The latest WhatsApp charging scam to catch our attention goes as follows:

“Tomorrow at 6 pm they are ending WhatsApp and you have to pay to open it, this is by law

“This message is to inform all of our users, our servers have recently been very congested, so we are asking you to help us solve this problem. We require our active users to forward this message to each of the people in your contact list to confirm our active users using WhatsApp, if you do not send this message to all your contacts WhatsApp will then start to charge you. Your account will

remain inactive with the consequence of losing all your contacts. Message from Jim Balsamic (CEO of Whatsapp) we have had an over usage of user names on whatsapp Messenger. We are requesting all users to forward this message to their entire contact list. If you do not forward this message, we will take it as your account is invalid and it will be deleted within the next 48 hours. Please DO NOT ignore this message or whatsapp will no longer recognise your activation.

“If you wish to re-activate your account after it has been deleted, a charge of 25.00 will be added to your monthly bill.

“We are also aware of the issue involving the pictures updates not showing. We are working diligently at fixing this problem and it will be up and running as soon as possible. Thank you for your cooperation from the Whatsapp team

“WhatsApp is going to cost us money soon. The only way that it will stay free is if you are a frequent user i.e. you have at least 10 people you are chatting with. To become a frequent user send this message to 10 people who receive it (2 ticks) and your WhatsApp logo should turn blue”

This is absolutely not true, and under no circumstances should you fall for it.

WhatsApp Gold: WhatsApp Premium is a con

The latest hoax doing the rounds is an exclusive invitation to upgrade to a premium version of the app, called WhatsApp Gold. It's complete and utter rubbish: there is no WhatsApp Gold.

“The invitation reads: “Hey Finally Secret Whatsapp golden version has been leaked, This version is used only by big celebrities. Now we can use it too.”

It claims to allow you to delete messages after you’ve sent them, and simultaneously send 100 pictures, among other things. It sounds great, but it’s entirely made up. Click on the link in the invitation and you’re more likely to end up with a malware infection.

WhatsApp virus: How to avoid WhatsApp virus

The latest WhatsApp scam isn’t delivered by WhatsApp itself but through your email app on your Android phone or iPhone. It tells you that you have missed a WhatsApp call or have a WhatsApp voice message, which you should click on the link in the email to access. Rather than your message, you get a virus downloaded to your device. Please don’t be fooled. WhatsApp will never contact you outside the WhatsApp app itself, so if you see this then do not click the link and delete the message.

WhatsApp chain message hoaxes: Is WhatsApp closing down?

One WhatsApp hoax that regularly does the rounds is that which asks you to forward the message to 10 people or the service will close down. WhatsApp has millions of users, and it really won’t notice you sending 10 messages through the service. It is not about to close down, and this is very much a hoax.

Another variation suggests there are too many WhatsApp users, and it will close your account if you don't start using it. The chain message reads:

"Message from Jim Balsamic (CEO of Whatsapp). We have had an over usage of user names on WhatsApp Messenger. We are requesting all users to forward this message to their entire contact list.

"If you do not forward this message, we will take it as your account is invalid and it will be deleted within the next 48 hours. Please DO NOT ignore this message or WhatsApp will no longer recognise your activation."

If you don't act in time, WhatsApp will apparently charge you £25 to reactivate your account, which will be added to your phone bill. Except it won't, because WhatsApp is now a free service.

WhatsApp chain message hoaxes: Is WhatsApp going to start charging inactive users?

The most popular hoax is one that suggests the service will start charging inactive users a certain amount per message, so by sending the message on to 10 users they can prove they are an active member and loyal, and therefore deserving of its free service. Really? Ask yourself how sending that message you don't pay for to 10 people could possibly keep open the company if it was that desperate for cash? If it were skint, it wouldn't have decided to ditch its subscription fees.

One variation of this message claims to come from the app's founder, 'David D. Suretech'. Never

mind that Brian Acton and Jan Koum are the actual founders of WhatsApp. It reads:

"Hello, I. Am DAVID D. SURETECH founder of Whatsapp. this message is to inform all of our users that we have only 53million accounts available for new phones. Our servers have recently been very congested, so we asking for your help to solve this problem. We need our active users to forward this message to every single person in their contact list in order to confirm our active users that use WhatsApp. If you do not send this message to all your contacts to WhatsApp, then your account will remain inactive with the consequence of losing all your contacts.

"The automatic update symbol on your SmartPhone Will appear with the transmission of this message. Your smartphone will be updated within 24 hours, and will feature a new design; a new color for the chat and the icon will change from green to azul. Whatsapp will begin to charge unless you are a frequent user. If you have at least 10 contacts send this sms and the logo will become red on your platform to indicate that you are an active user. Tomorrow, we wil begin to take messages for whatsapp for 0.37 cents. Forward this message to more than 9 people in your contact list and the what's app logo on your will turn blue meaning that you have Become a free user for life."

WhatsApp's response to all such scams is as follows: "Please understand that this is a hoax and there is no truth to it."

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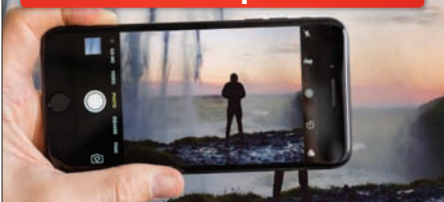
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Why we're looking forward
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