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Macworld

SEPTEMBER 2019 IDG

REVIEWED:

MacBook Pro

and

MacBook Air

Apple's best ever laptops

How to get macOS Catalina beta

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Apple's Q3 2019 results

During Apple's call, Tim Cook walked a careful line on China, and teased us about future releases. **Jason Snell** reports

Apple's latest quarterly results are in, and they're just what you'd expect: the portrait of a company that's massively profitable and successful, but whose main product is lagging behind while new product lines are growing just fast enough to make up the difference. I guess we yawn at $53.8 billion in revenue these days – that's a record for Apple's sleepy third fiscal quarter, but up only 1 percent over 2018's record Q3.

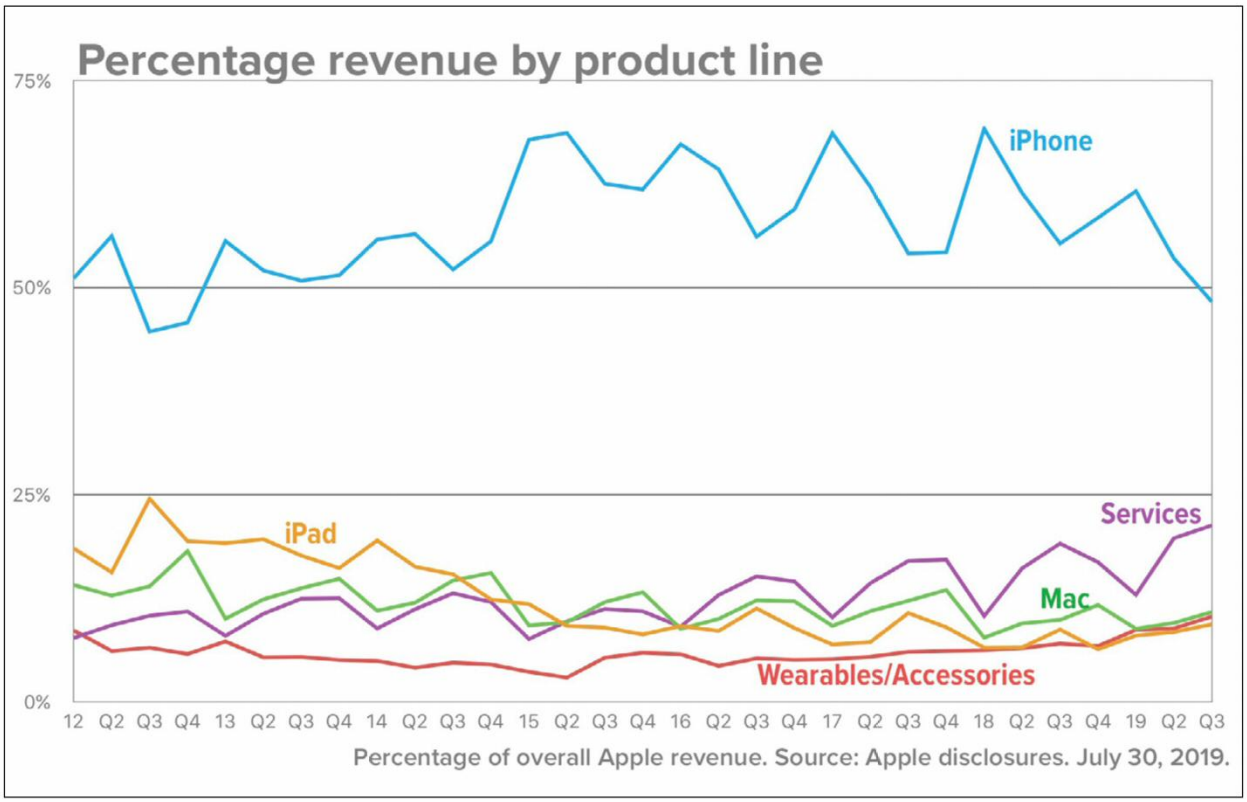
As always, the devil's in the details – and fortunately for us, Apple CEO Tim Cook and CFO Luca Maestri spend an hour on the phone once a quarter to provide a few little details – or as they like to say on these calls, "more colour" – that can help us understand the current state of Apple's business, or at least how Apple executives want to characterize that business.

iPhone dips under 50 percent

If there's a single number to walk away with from this quarter's results, it's that the iPhone represented less than half of Apple's overall revenue for the first time in seven years. The rest of the business is booming – revenue for the quarter was up 17 percent if you don't include the iPhone, which is not something you should really do.

Apple's executives would like you to notice that this quarter iPhone sales were only down 12 percent versus the year-ago quarter, as opposed to last quarter's 17 percent drop. So iPhone sales are down, but less down than they were? It's not the strongest story.

The truth is, the iPhone is now looking like a cyclical business, where sales shoot through the roof when there's a major change in design, and then sales just glide downward until three years later when there's another major change. Now, keep in mind that Apple still generated $26bn in iPhone revenue – even with sales sliding, the iPhone is an enormous, profitable business. But it's such a huge part of Apple's business that it

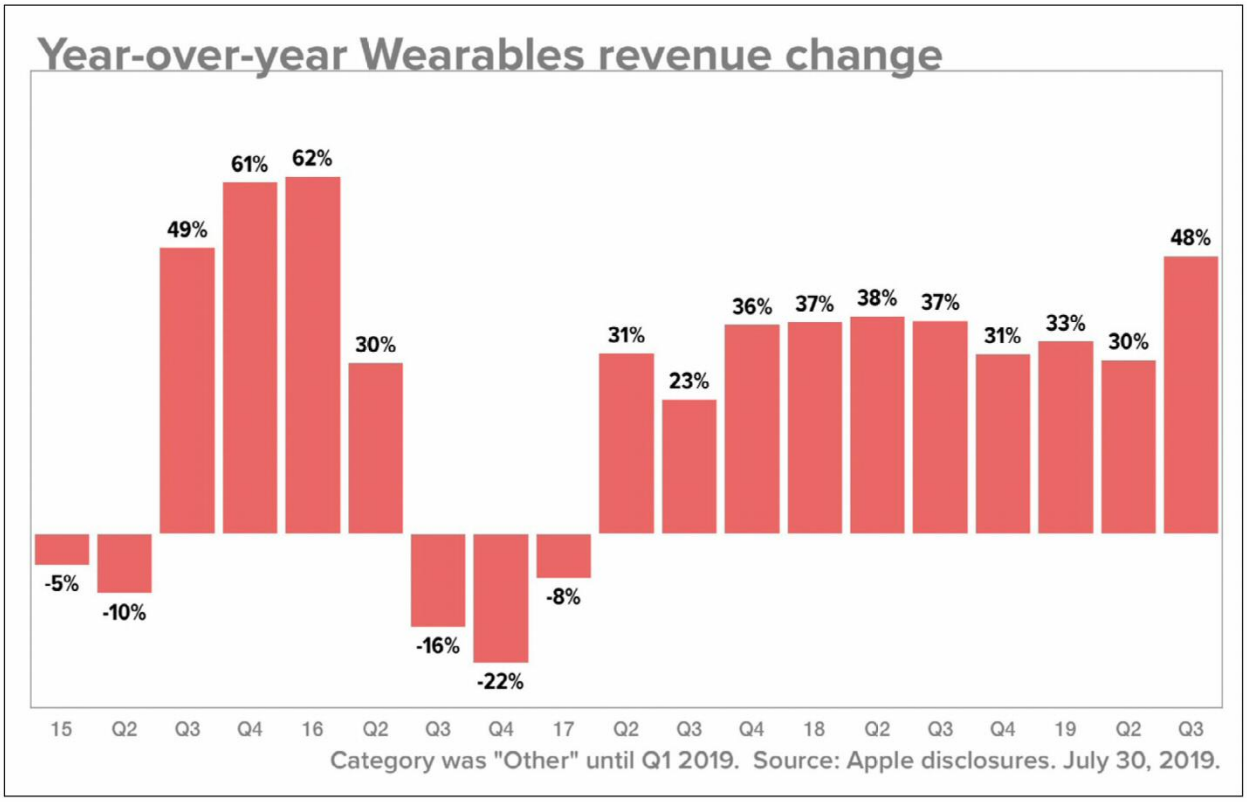


dominates how the company is evaluated. And barring a massive change in iPhone design this year or next, this is likely to be the way things are for the foreseeable future.

The rise of the rest

For the past few years, Apple has been talking to everyone who would listen about the totally amazing growth rate of its nascent Services category. And so it's worth talking about the fastest growing part of Apple's business… Wearables?

Yes, it's true. While Services is still growing rapidly – it was up 13 percent over last year's quarter – it's not the fastest mover in Apple's portfolio. That's the category formerly known as



Other, and recently relabelled as Wearable/Home/Accessories. The home of Apple Watch and AirPods has seen 10 straight quarters of double-digit percentage growth. After seven straight quarters with growth percentages in the 30s, the category revenue shot up 48 percent this quarter.

Apple says that the wearables portion of the business was actually up “well over 50 percent”, and that Apple TV (also in the category) also saw double-digit growth. Wearables/Home/Accessories represented 10 percent of Apple’s overall business, making it larger than the iPad and almost as large as the Mac.

Cook couldn’t resist crowing a little bit about how successful wearables has been for Apple,

During the earnings call, Tim Cook said the Apple Card would launch in the US in August

when many companies tried to take on Apple and the Apple Watch in particular. “We stuck with [wearables] when others perhaps didn’t… and are in a very good position today to keep playing out what’s next there,” he said.

Meanwhile, yes, Services has become an enormous business for Apple, counting for 21 percent of total revenue. Apple didn’t produce any data about how its newest service, Apple News+, is faring so far, which isn’t surprising, but also suggests that they couldn’t figure out any number to disclose that would make them look good.

Apple CFO Luca Maestri did warn analysts that it may take some time to grow revenue from its new subscription businesses, which include the forthcoming Apple Card, Apple Arcade, and

Apple TV+ services. “Keep in mind for all these services, there’s a trial period up front, there’s going to be different trial periods, we’ll see what they look like. So the road to monetization takes some time,” he said.

Apple said its total number of paid subscriptions is now more than 420 million, which includes Apple’s services as well as subscriptions fulfilled via the App Store. Third-party app subscription revenue grew 40 percent during the quarter.

What trade war?

As you will have heard in the news, there’s currently a lot of friction between the US and China regarding trade. Apple was mentioned specifically by President Trump recently, which suggests he doesn’t look too kindly at the firm building so many of its devices in China.

When asked about it during the analyst call, the ever-careful Cook didn’t take the bait. “I know there’s been a lot of speculation around the topic… I wouldn’t put a lot of stock into those, if I were you,” he said. Cook made it clear that he is a true believer in the global supply chain. “The vast majority of our products are kind of made everywhere…. Largely, I think that will carry the day in the future as well.”

However, despite reports that Apple plans on making the new Mac Pro in China, Cook said that Apple “wants to continue” making the Mac Pro in America. “We’re working and investing currently in capacity to do so, because we want to continue to be here,” he said.

The upcoming Mac Pro: Made in the USA?

It's a fascinating line that Cook has to walk, because Apple is both an American company with lots of operations and an international company with a global supply chain. How to thread the needle so that he gets the President trumpeting all of Apple's American jobs and investments in new campuses in the US, while also getting the concessions he needs to continue assembling products in other parts of the world?

It's a tricky situation, as Cook's careful language shows. He is showing confidence in the global supply chain while also dangling the possibility of assembling Mac Pros in the US is quite a move. We'll see what happens next.

Tim Cook likes to tease us

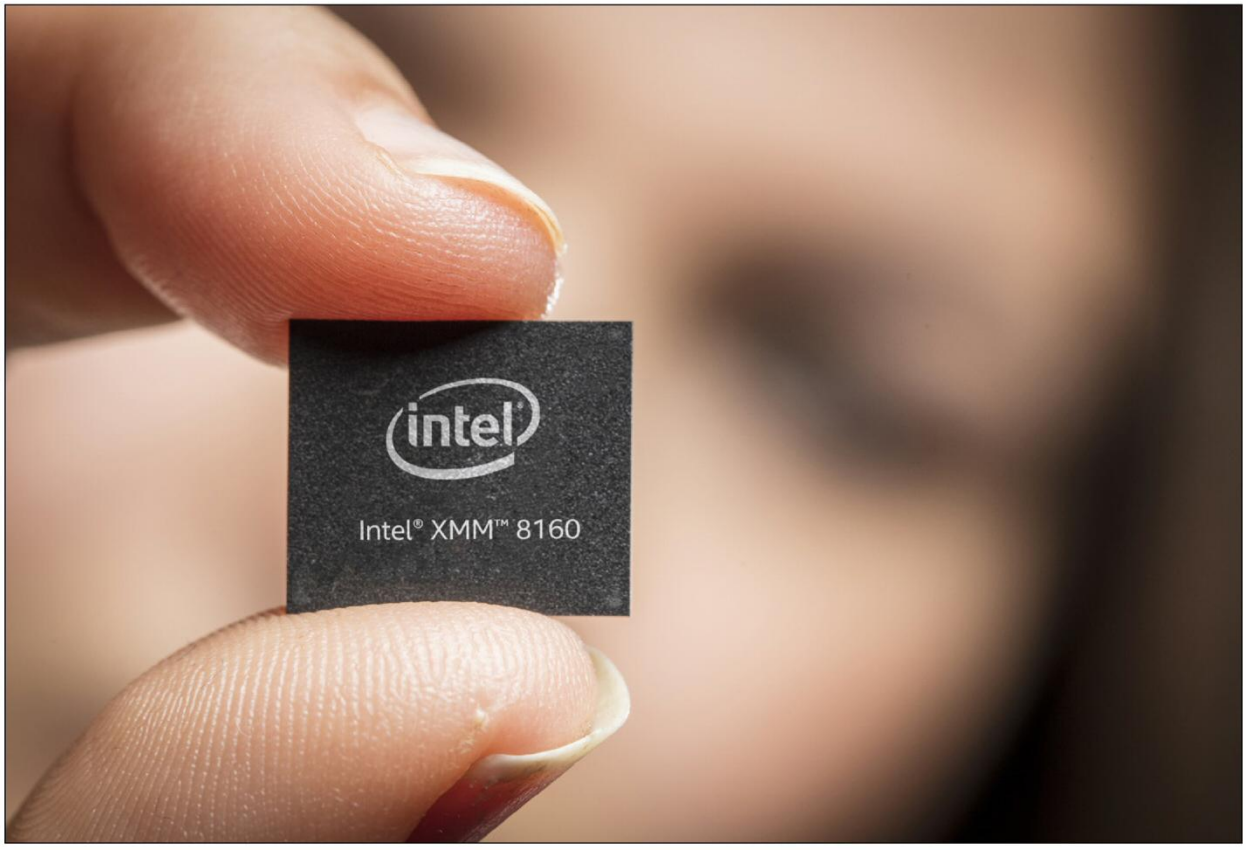
One final thought about Cook: he knows very well that everyone, from the most high-flying Wall Street analyst to your everyday person in the street, wants to know what Apple is doing next. Try to ask him a question about a future product and he'll bat you down. An analyst wanted to ask about the future of the iPhone in a 5G world and Cook immediately broke out a "we don't comment on future products" before saying that we're currently in "the extremely early innings" of the 5G transition.

Sometimes he can have fun with it, though. At the very end of the prepared statement that started the call, Cook – who said he was suffering from an allergy and was coughing and clearing his throat throughout the call – all of a sudden spoke with a rush of friendly energy. "And without giving too much away, we have several new products that we can't wait to share with you. Until then, thanks for joining us today," he said.

New products, eh? I guess we'll see you in September, Tim.

Apple's $1bn Intel purchase

The deal provides a huge boost to Apple's wireless patent portfolio. **Jason Cross** reports



Apple has announced that it plans to buy the "majority of Intel's smartphone modem business", following recent rumours to that effect. The deal will cost Apple about one billion dollars, and should close in the fourth quarter of this year, subject to regulatory approval. For the price, Apple will acquire approximately 2,200 Intel employees along with intellectual property, equipment, and leases. The deal will greatly boost

Apple's patent portfolio, taking the company to over 17,000 patents related to current and future wireless technology.

Apple is only acquiring Intel's smartphone modem business, however. Intel will still be able to develop modems for non-smartphone applications such as PCs, smart cars, or IoT applications.

Intel CEO Bob Swan painted this as a win for its company. "This agreement enables us to focus on developing technology for the 5G network while retaining critical intellectual property and modem technology that our team has created. We have long respected Apple, and we're confident they provide the right environment for this talented team and these important assets moving forward. We're looking forward to putting our full effort into 5G where it most closely aligns with the needs of our global customer base, including network operators, telecommunications equipment manufacturers and cloud service providers."

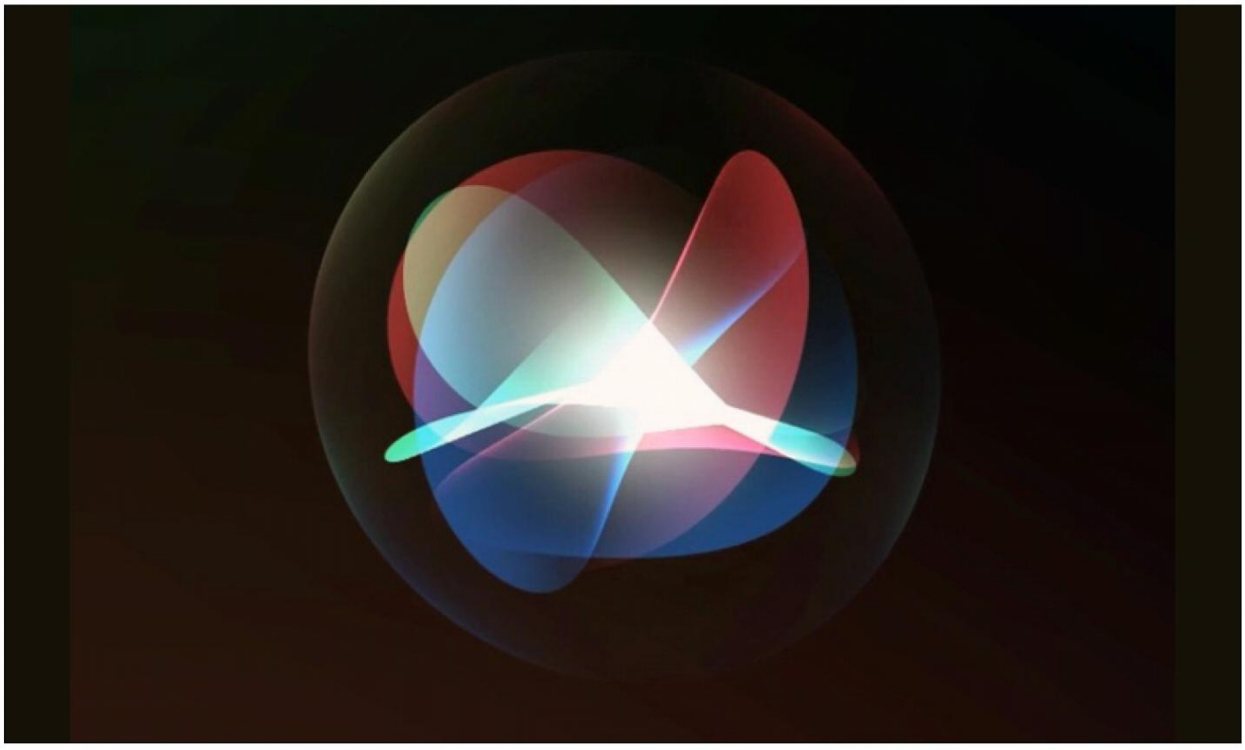
Apple's senior VP of Hardware Technologies, Johny Srouji, is quoted as saying, "Apple is excited to have so many excellent engineers join our growing cellular technologies group, and know they'll thrive in Apple's creative and dynamic environment. They, together with our significant acquisition of innovative IP, will help expedite our development on future products and allow Apple to further differentiate moving forward."

While this is good news for Apple's plans to build its own cellular modems for iPhones and iPads, it doesn't mean we should expect Apple-designed

modems in them soon. The firm recently settled its long-standing feud with Qualcomm and, as part of the settlement, agreed to a six-year chip licensing deal, including a 'multi-year chipset licensing agreement'. It's possible that Apple may start to provide some modems for some of its products, but the company is locked into buying Qualcomm modems for multiple years.

Apple announces halt to Siri ‘grading’ programme

The right response. **Michael Simon** reports



In the wake of backlash over a *Guardian* report that exposed employees who were tasked with analysing Siri recordings for accuracy and quality, Apple has announced it is temporarily suspending the programme as it decides how to proceed.

In a statement to TechCrunch, an Apple spokesperson said the company is “committed to delivering a great Siri experience while protecting user privacy. While we conduct a thorough review, we are suspending Siri grading globally.” Apple

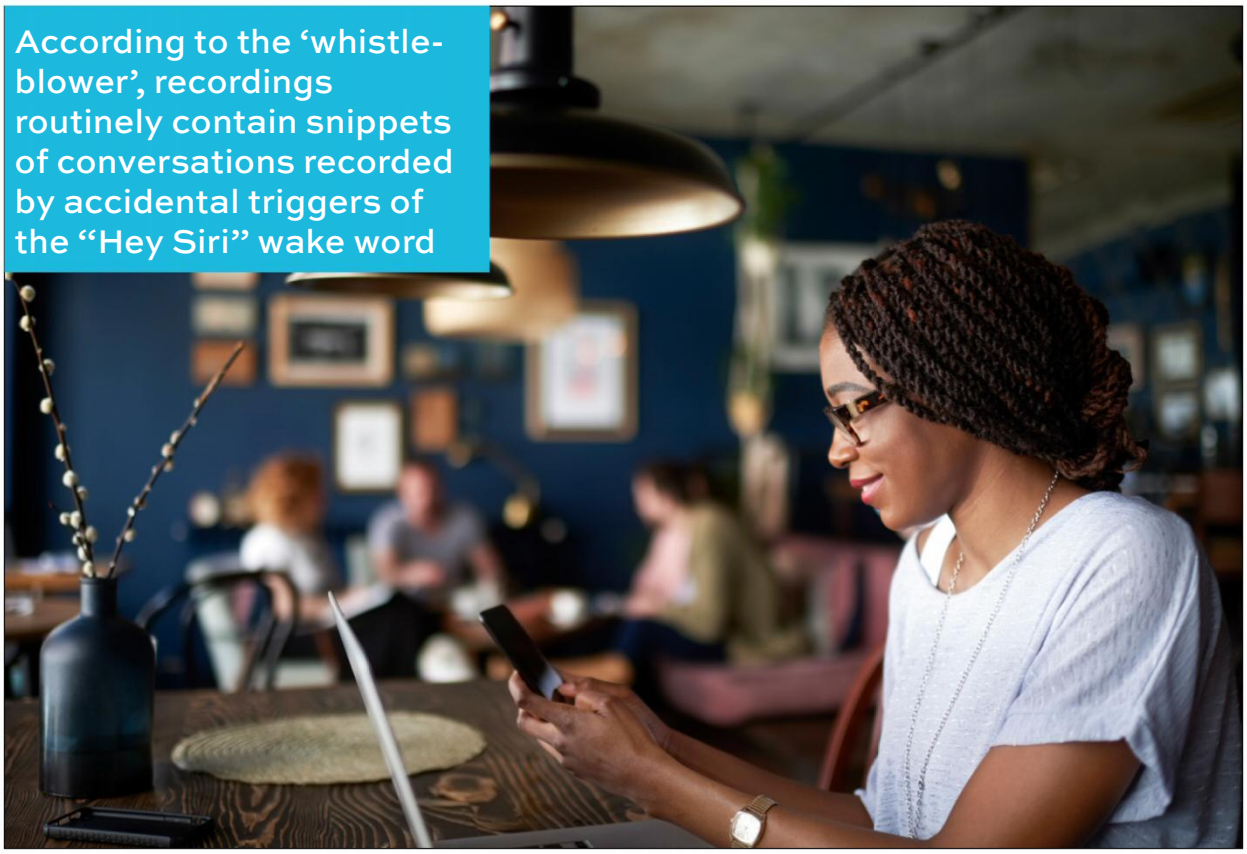
added that users will have the ability to choose whether they want to participate in the programme as part of an upcoming software update.

The Siri grading process was exposed in July when one of the contractors contacted *The Guardian* claiming that they "regularly hear confidential medical information, drug deals, and recordings of couples having sex" as part of their job. Apple explained to *The Guardian* that the data collected "is used to help Siri and dictation… understand you better and recognize what you say".

Apple also said the recordings are anonymized and represent less than 1 percent of daily Siri activations. It added that recordings were "not associated with the user's Apple ID", though the employee said they "are accompanied by user data showing location, contact details, and app data".

According to the 'whistle-blower', recordings routinely contain snippets of conversations recorded by accidental triggers of the "Hey Siri" wake word. It's unclear whether these recordings are supposed to be deleted before they reached the employee's ears. It's also unknown how long Apple has been running the grading programme.

But while the practice might be necessary, the seeming secrecy of it is alarming. Nowhere in Apple's privacy policy or Siri setup is it mentioned that recordings may be used for quality control, nor is there a toggle that lets you opt out of data collection. According to the statement, Apple will presumably be rectifying both of these issues once it reinstates the programme.



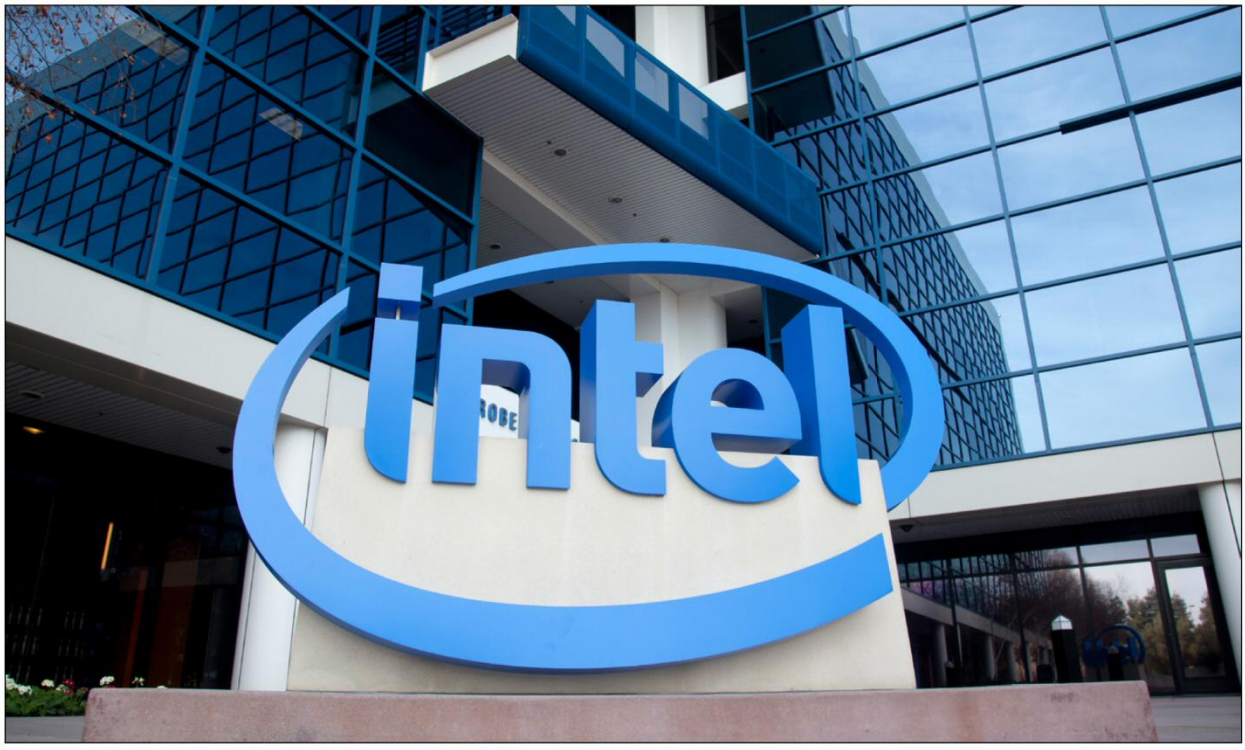
According to the 'whistle-blower', recordings routinely contain snippets of conversations recorded by accidental triggers of the "Hey Siri" wake word

That's the right response. Customers should be aware that their Siri recordings may be listened to, and part of Apple's privacy push should be the ability to keep your data to yourself. We'd also like to see an easier way to see and delete your Siri history, as well as a better way to filter out accidental recordings, but for now, a toggle is a good start.

NEWS ANALYSIS

Why Apple acquired Intel's mobile modem business

Other than the iPhone, that is. **Michael Simon** reports



The race to 5G just added a new lane. Following a report in the *Wall Street Journal*, Apple confirmed that it will be acquiring the majority of Intel's smartphone modem chip business, which went belly-up earlier this year. The transaction is valued at $1 billion and is expected to close in the fourth quarter of this year, Apple said in a press release.

Intellectual property exchanging hands between industry giants isn't exactly earth-shattering news,

but this deal has significant ramifications. Just four months ago, Apple and Intel were partners on the development of the iPhone's 5G modem, but that abruptly ended in one fell swoop when Apple and Qualcomm settled their long-time court case and Intel "announced its intention to exit the 5G smartphone modem business and complete an assessment of the opportunities for 4G and 5G modems in PCs, Internet of Things devices and other data-centric devices".

That assessment apparently led to a sale, which in turn led to Apple's purchase. While it's not entirely clear why Intel decided to exit the mobile modem business, conventional wisdom suggests that its chip development hadn't advanced far or fast enough.

So on the surface, it would seem like there's nothing to buy, especially for the presumed price of a billion-plus. But Apple wouldn't be buying Intel's modem scraps. Rather, it would be investing in years of work (and patents) by one of the largest semiconductor manufacturers as it looks to develop an in-house 5G chip for future iPhones that can rival Qualcomm's. It's not going to happen anytime soon, since Apple and Qualcomm inked a six-year licensing agreement with a multi-year chipset deal in April, but Apple's playing a long game here.

But while the iPhone is clearly the main impetus behind this deal, I don't think Apple's motivations are limited to the handset. 5G looks to impact every sector of Apple's product lines, and acquiring Intel's smartphone modem chip business – even

The iPhone is important, but it's not the only reason why Apple would want to buy Intel's smartphone modem chip business

unfinished – could have far-reaching implications within both Apple and the industry. Here are three ways the Intel purchase could seriously impact Apple and the industry at large.

1. Apple Watch

Perhaps even more important than the engineering work would be the people behind the work. The *Journal*'s report specifies that in addition to Intel's portfolio of patents, Apple would also be acquiring an infusion of talent from the team responsible for the development of the chip. That alone could be worth billions. It's no secret that tech companies' most prized assets are the engineers who work

for them, and bringing a ready-made team of chip designers into Apple Park for work on the A14 processor and beyond would save Apple years of hires and reorganization.

But it's not the iPhone that could stand to benefit the most from an integrated 5G modem. A more efficient S chip, which powers the Apple Watch, is key to the future generations of Apple's wearable, especially as power-hungry 5G arrives. With an integrated 5G modem, chips will be smaller and more power efficient, two areas of intense focus for Apple. As it stands, the modem and main processor are separate entities and will continue in the vein as long as it continues to buy its modems from Qualcomm. Integration is one of Intel's strongest suits, and it will be even more important when 5G starts taking off.

2. Patent trolls

As 5G phones and devices proliferate over the next few years, there is also sure to be an uptick in lawsuits. Apple, Samsung, Intel, and any other tech giant are all susceptible to so-called patent trolls, companies that scoop up patents with the sole intention of using them to sue other companies that may infringe on them. It's impossible to say what patents are included in this deal, but you can bet that they would be used for frivolous lawsuits in the wrong hands. It's probably not the primary motivation for Apple's purchase, but it wouldn't be the first time someone snatched up a bunch of patents to keep them out of the wrong hands.

3. The next MacBook

While Apple has yet to release a notebook with LTE connectivity, that's probably going to change with the advent of 5G. It's not just the speed – as iPadOS gains more Mac features, a new device is likely on the horizon that sits between the iPad Pro and MacBook Air. We don't know what this device would look like, but I'm willing to bet on two things: it will be powered by an Apple chip and feature 5G connectivity.

We're likely years away from such a device, and I don't think it's a coincidence that the reported Intel deal and the retirement of the MacBook are coinciding. Sometime within the next three to five years, I think we're going to see a brand-new device from Apple that solves two long-standing problems: the iPad's inability to replace the Mac, and the Mac's lack of a touch screen. With a 5G modem, the next MacBook will be the ultimate road machine, combining the power of a Mac with the portability of the Mac in a thin and light package, and Intel's modem business could be the thing to get the ball rolling.

13in MacBook Pro

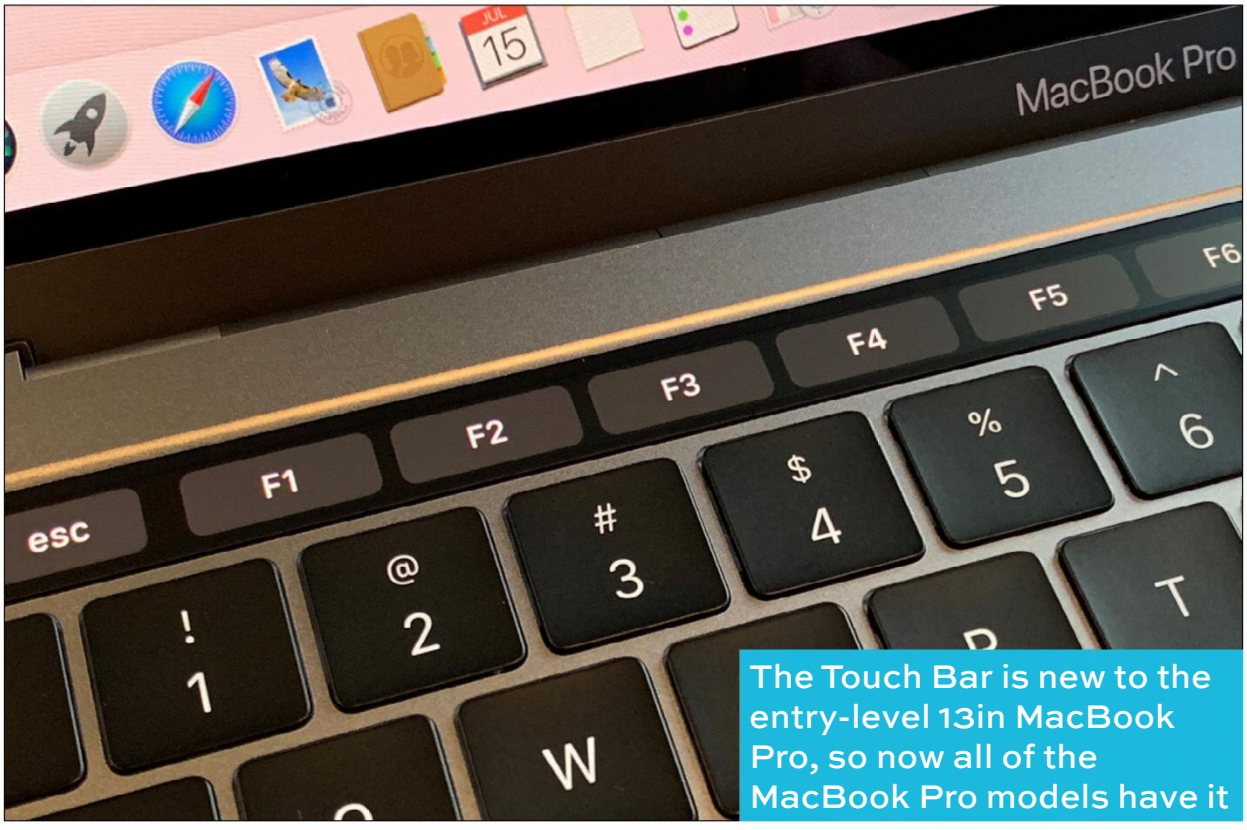
RATING: ★★★★☆

Price: **£1,499 (inc VAT)** from **fave.co/2YRP6Db**

Apple's recent revamp of its MacBook line-up makes it a lot easier to understand the target audiences for Apple's laptops. And with the release of the new 13in 1.4GHz Core i5 MacBook Pro, Apple also made it easier to pick a 13in model.

It's easier now because you don't have to decide if you're willing to sacrifice any features when picking an entry-level model over the higher-end ones. Before the newly-updated base model was released, there was a division within the four 13in models. Apple offered two entry-level models without the Touch Bar, and two high-end laptops with it. (The entry-level editions were lacking some other features, as well, but the main missing feature was the Touch Bar). So when it came down to picking a 13in MacBook Pro, you had to consider whether you were willing to give up some features for the lower price.

The Touch Bar-less models are no more – they now have the Touch Bar and those other



The Touch Bar is new to the entry-level 13in MacBook Pro, so now all of the MacBook Pro models have it

missing features at the same prices as before. Now, it basically comes down to processor speed, storage capacity, and price.

Apple last updated the entry-level 13in MacBook Pro in 2017. If you have an older MacBook and have been holding out on an upgrade because you've been waiting to see what Apple does with these models, you won't be disappointed – unless you don't care for the Touch Bar. The new 13in 1.4GHz Core i5 MacBook Pro offers an attractive performance boost over its predecessor, especially with software that takes advantage of multiple processor cores. Combine the performance and the new features, and you have a laptop that now feels like a true member of the MacBook Pro family.

Introducing the Touch Bar

Apple introduced the world to the Touch Bar in the 2016 MacBook Pro, but left it off the two most affordable 13in models. In case you're not familiar with the Touch Bar, it's a strip of touchscreen that replaces the top row of Function keys you find on a typical keyboard.

The interface options that appear on the Touch Bar change based on what you're using on your Mac. If you're in Safari, for example, you may see buttons of your Favourites, and pressing a button will take you to that particular website. If you have several Safari tabs open, they'll appear in the Touch Bar, and you can switch between them by pressing each one. The Finder, Mail, Maps, other Apple apps, and third-party apps show interface

One of differences between Apple's two laptop lines: the MacBook Pro (left) has the Touch Bar, while the MacBook Air (right) has Function keys

options on the Touch Bar. It can be a useful way to navigate your Mac.

Or you may find the Touch Bar excessive. Many users would rather have the Function keys than the Touch Bar, because those keys are important to their daily use. With this in mind, Apple made it so you can customize the Touch Bar so it shows the keys you want in the apps you use. You can also go into the Keyboard System Preferences and adjust the Touch Bar so that it always shows, for example, Function keys. Apple even has a support document to show you how you can customize the Touch Bar (**fave.co/2YqEfA**).

I hesitate to declare the Touch Bar either very useful or useless, because each person has a different way of using the Mac. I can say that it's not a part of my regular Mac usage, which involves touch typing while I look at the screen almost all the time. I can't make myself look down at the Touch Bar and use its interface when the same options are available through keyboard shortcuts or a few mouse clicks. Developers, in particular, lament that the Esc key is a little out of place and has no tactile feel.

I don't find the Touch Bar to be the UI innovation it's touted to be. But perhaps the opposite is true for you; maybe you love it, or if you haven't used the Touch Bar before, will discover that your love it.

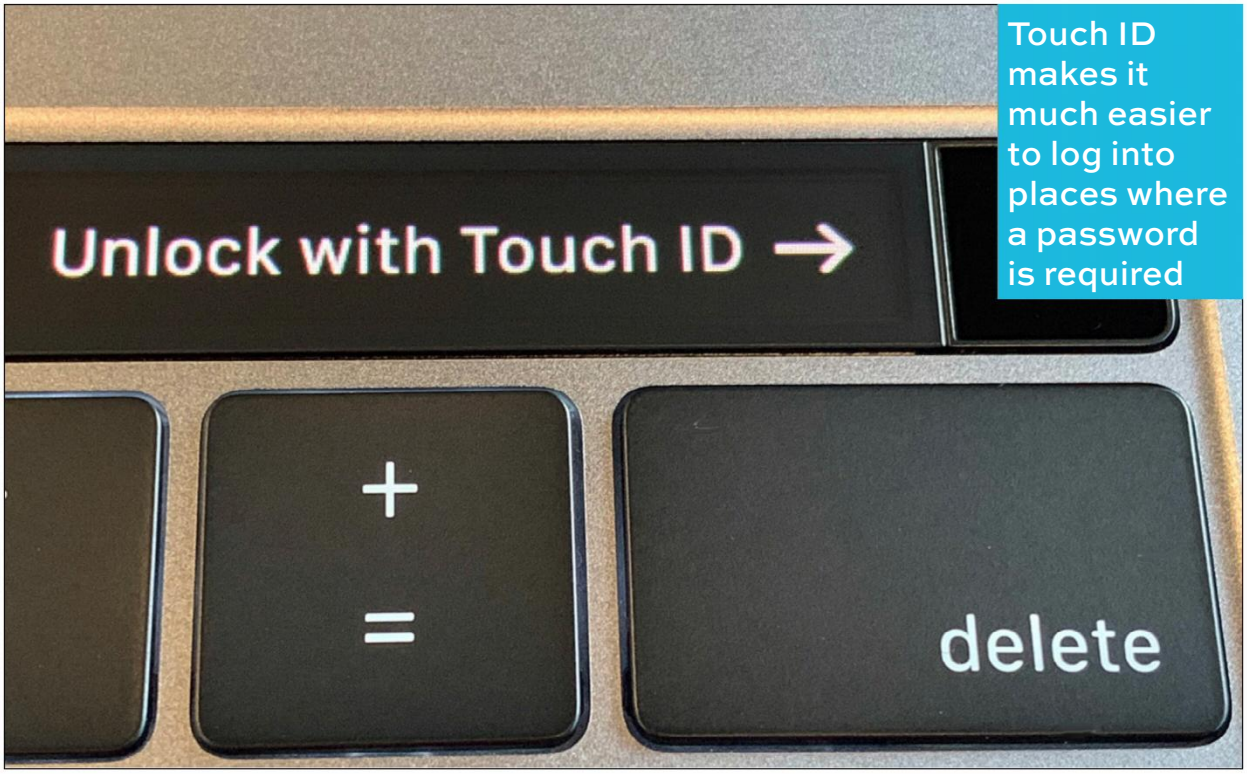
Touch ID and T2

Besides the Touch Bar, the entry-level 13in MacBook Pro now has Touch ID, a fingerprint sensor located on the right end of the Touch Bar. It was already available on the other MacBook Pro models, even the MacBook Air.

If you've used Touch ID on the iPhone or iPad, then you'll be right at home with it on the Mac. You can use it whenever you need to enter a password, like when you're logging back into your Mac after putting it to sleep, when you're shopping online, or when your Mac asks you to authorize a change. (When you first log into your Mac after turning it on, you're required to type in your password. After that, you can use Touch ID for the rest of that use cycle, until you shut down your Mac.)

When Touch ID first became available on the Mac, I didn't think much of it. I use a password manager and quickly access it though a menu bar icon. Most of the time, this is a fast, easy way to access and enter passwords when needed. But the more I used Touch ID on the Mac, the more I have come to appreciate it. For example, when logging into a website, clicking on the username box triggers a pop-up that shows the recorded user names that are logged into Keychain. If there's a fingerprint icon, you can use Touch ID. Press the Touch ID button, and you're in. It's a more efficient way than using my password manager – it's only saving a few seconds, sure, but it's very satisfying.

Touch ID is managed by the T2 coprocessor, which provides a secure enclave for your



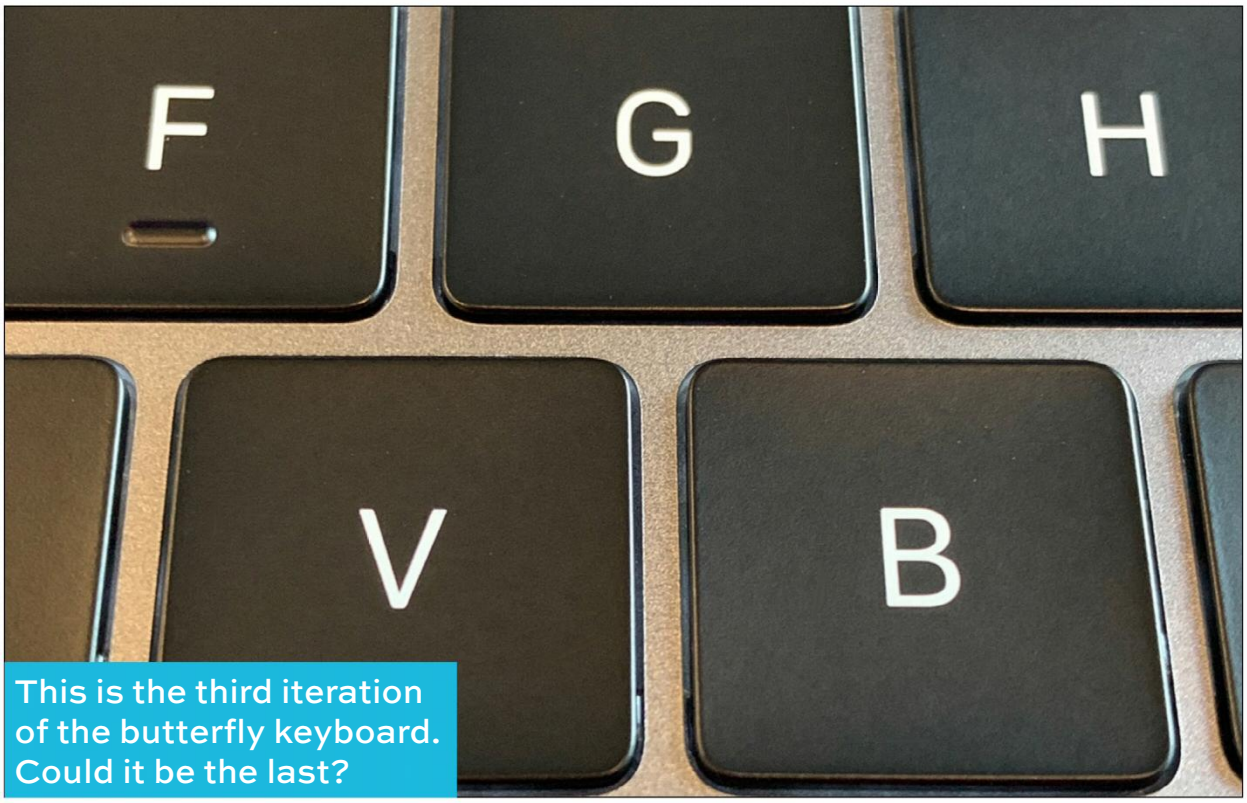
Touch ID makes it much easier to log into places where a password is required

fingerprint data, and also handles several other security features. The T2 handles disk encryption (**fave.co/2YNLZMa**), and support's Apple's Secure Boot (**fave.co/2ZBaUjw**) feature, which checks to make sure you are running a legitimate, trusted Mac or Microsoft Windows operating system. The T2 also handles the image processing of the MacBook Pro's built-in FaceTime HD camera, which is still at a disappointing 720p resolution.

Keyboard and Thunderbolt 3

The new MacBook Pro has the third-generation butterfly-switch keyboard that's found in the other MacBook Pros and the MacBook Air. This version of the keyboard has a silicone membrane to help keep dust out and to help dampen the sound the keys make as you type.

The third-generation version is a definite improvement, as least when it comes to noise suppression. It's not as loud as the previous keyboard, but it's still very loud, which tells you that its predecessor was really loud. I never experienced mechanical problems with the old keyboard, so I can't definitively say that the third-generation is better in this regard. But there have been numerous reports of issues, and while Apple has said that a vast majority of its customers enjoy the butterfly keyboard, the company does have a Keyboard Service Programme (**fave.co/2Yq94VR**) that will replace the keyboard for free if a laptop is eligible. (Yes, the new 13in MacBook Pro is included in the eligibility list.)



This is the third iteration of the butterfly keyboard. Could it be the last?

My main problem with the keyboard (besides the noise) is that it's uncomfortable to type on. There's not enough key travel for my liking and it feels like I'm banging my fingers on a hard table. Sometimes my knuckles are a little sore after extended use. There's something about the key spacing that doesn't work for me, either. I make more typos using this than I do with other keyboards.

Rumours have been floating around that Apple may be developing a new scissor-switch keyboard for MacBooks in the near future. So if you want to take a wait-and-see approach towards a new laptop with a keyboard change, you'll have to wait a while.

A key differentiator between the entry-level models and the two high-end 13in laptops is the

number of ports. The £1,299 and £1,499 MacBook Pros have two Thunderbolt 3 ports on the same side, while the £1,799 and £1,999 models have four (two on each side). Having only two Thunderbolt 3 ports could be a problem if you're using the laptop in a production environment and you need to connect external storage, a display, a power cord, and other devices. The only other port on the laptop is a headphone jack.

If you think £1,799 is a steep price to pay just because you need the additional ports, remember that the £1,799 model also has a faster processor and a slightly better graphics processor. You could also consider buying a Thunderbolt 3 dock.

Inside the £1,499 13in MacBook Pro

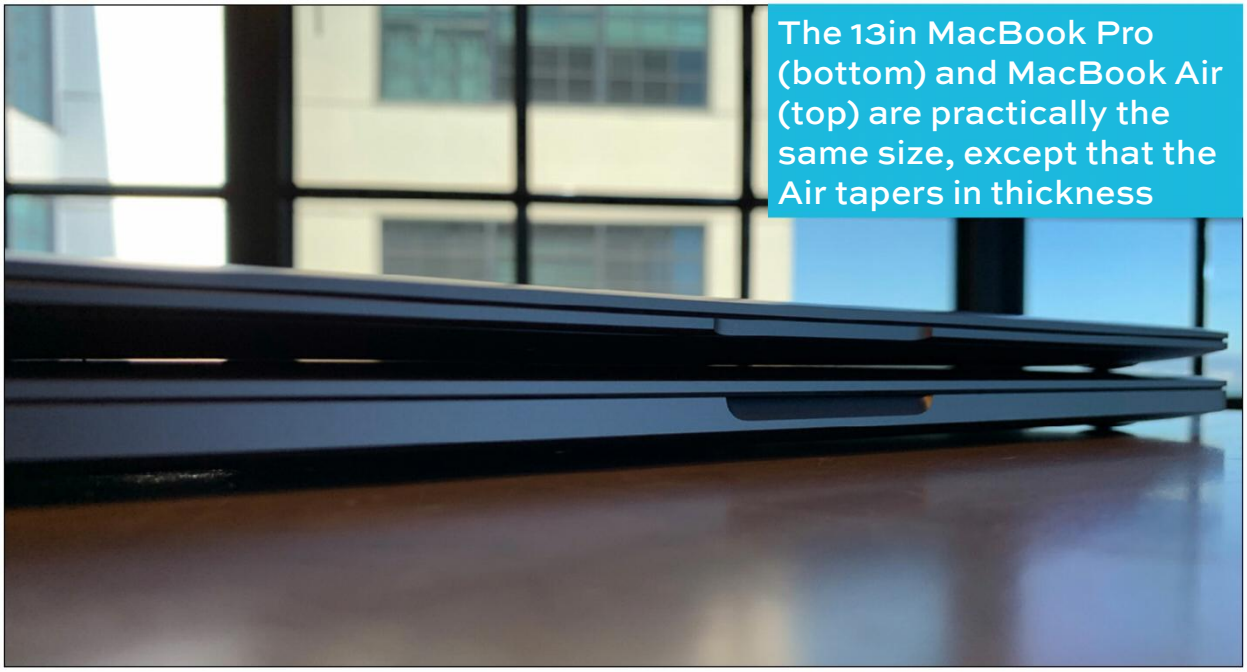
The entry-level 13in MacBook Pro has an eighth-generation 1.4GHz Core i5 processor. Its predecessor has a 2.3GHz Core i5, but keep in mind that it is not only an older chip, it also had only two cores. The new 1.4GHz processor now offers four cores. And as we'll see in a bit, the lower base clock speed doesn't mean slower performance, as boost speeds are similar.

Apple also upgraded the graphics in the new laptop that drives the new True Tone display. It is going with an integrated Intel Iris Plus Graphics 645 subsystem, which replaces an Intel Iris Plus Graphics 640. The 645 uses a 128MB cache, a boost over its predecessor's 64MB, though that is shared with the main memory. The model in this review is the laptop outfitted with a 256GB SSD,

which sells for £1,499, £200 more than the baseline model that has the same processor but comes with a 128GB SSD. If you can afford the increase in storage, I recommend it. You can fill 128GB quickly and it can't be upgraded later.

Another thing iFixit points out in its teardown is that Apple seems to have trimmed a heat pipe inside the new laptop in order to fit in the new Touch Bar and T2. Could there be issues with the new laptop running hotter than usual? During testing, I didn't encounter any heat-related performance issues and didn't notice anything unusual during regular daily use. But it's something to keep an eye on in the long term.

According to Apple's specifications, the battery in the new laptop is slightly bigger than the one in the £1,799 and £1,999 13in MacBook Pros. The battery in the £1,299 and £1,499 models is rated



The 13in MacBook Pro (bottom) and MacBook Air (top) are practically the same size, except that the Air tapers in thickness

at 58.2Wh, a 0.2 increase over its pricier brethren. Apple's runtime estimations for all of the 13in MacBook Pro models are the same, though: 10 hours of wireless web or iTunes movie playback, and 30 days of standby time.

Performance

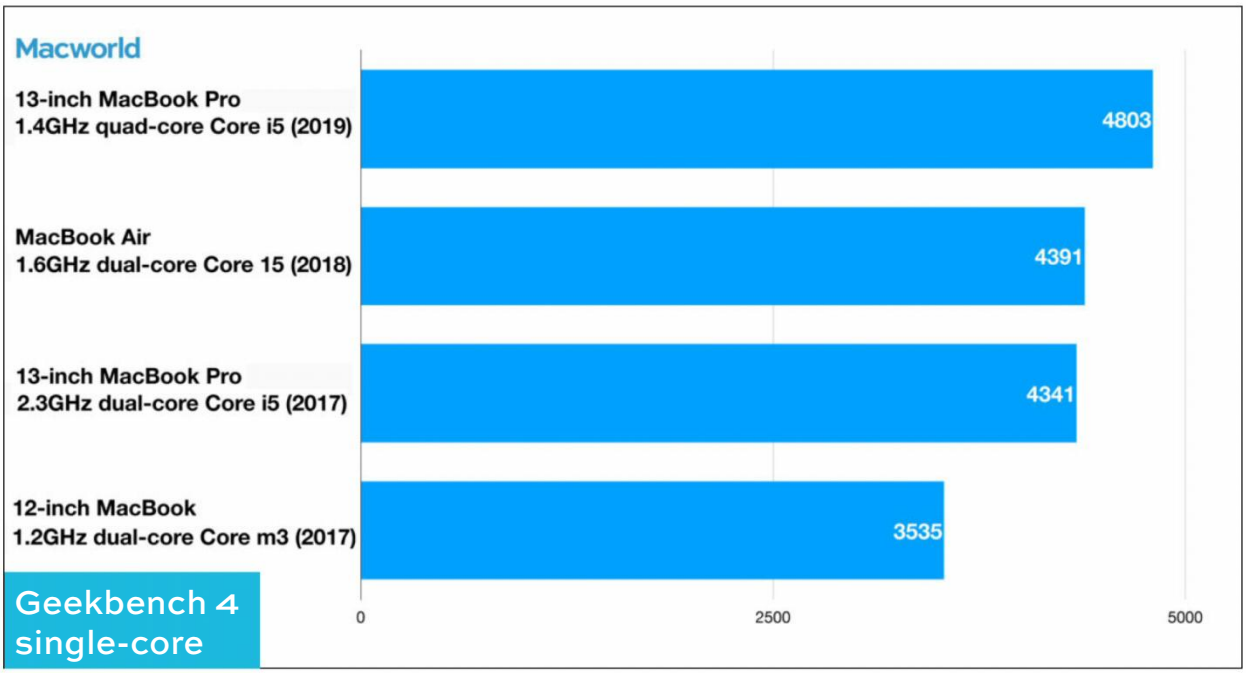
The dual-core Core i5-7360U processor that was in the older entry-level 13in MacBook Pro has been replaced by the quad-core Core i5-8257U. For reference, the current MacBook Air uses a 1.6GHz dual-core Core i5-8210Y, and the now-discontinued £1,299 12in MacBook used a 1.2GHz dual-core Core m3-7Y32.

In single-core performance, the new MacBook Pro is about 10 percent faster than its predecessor. The results are similar when you compare the new MacBook Pro to the MacBook Air. One interesting note about the new MacBook's Core i5 processor: it has a 6MB cache, while the old MacBook and the current MacBook Air have a 4MB cache. That difference in cache could be part of the reason why the new MacBook Pro is faster. The difference is much bigger when you compare the new MacBook Pro to the 12in MacBook, though the Core m3 in the MacBook was never known as a speedster, so the 30 percent difference isn't surprising.

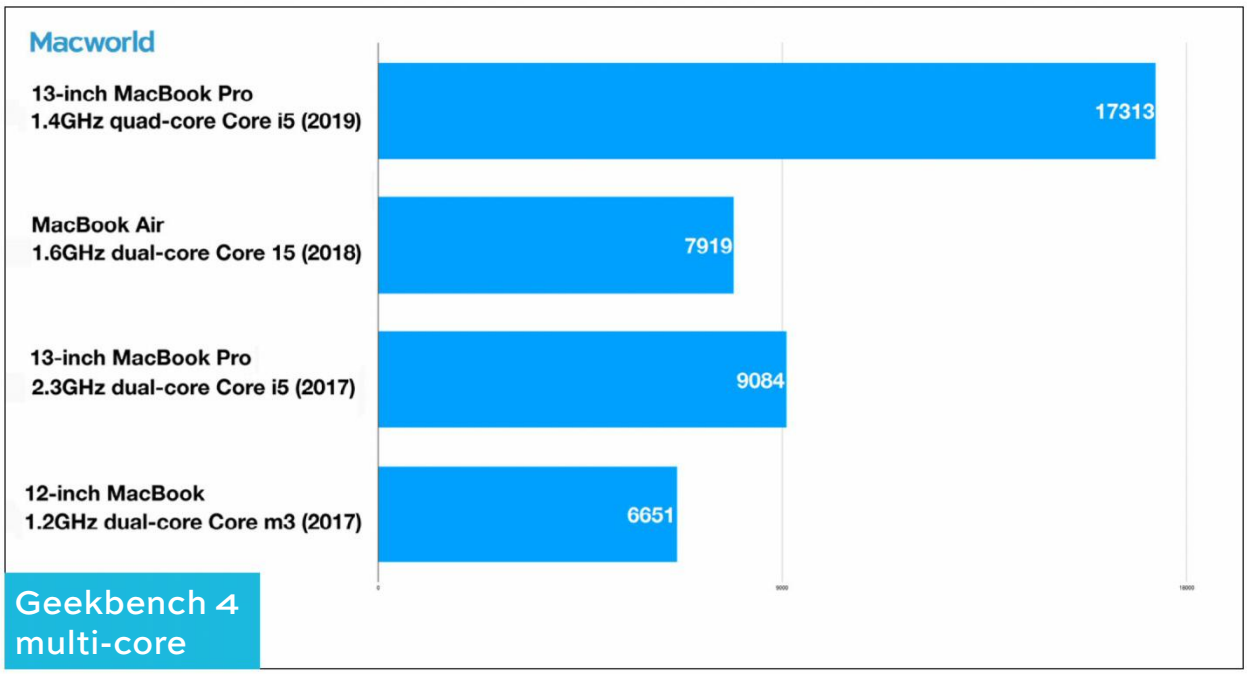
Multi-core performance is where the new 1.4GHz Core i5 MacBook Pro stands out. It has twice the processing cores of its predecessor, and so it's not surprising to find that it nearly doubles performance. The new MacBook Pro also offers

more than double the performance of the current MacBook Air, which has a dual-core processor.

We ran several other benchmarks tests on the new MacBook Pro, and compared the results to



Geekbench 4 single-core

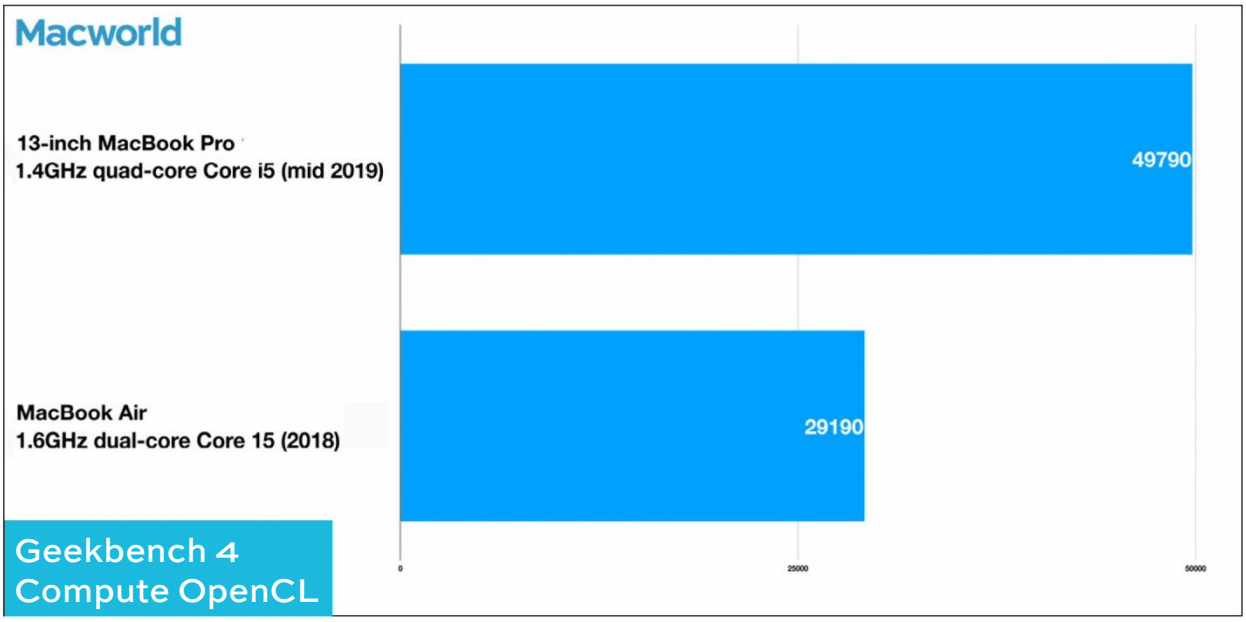


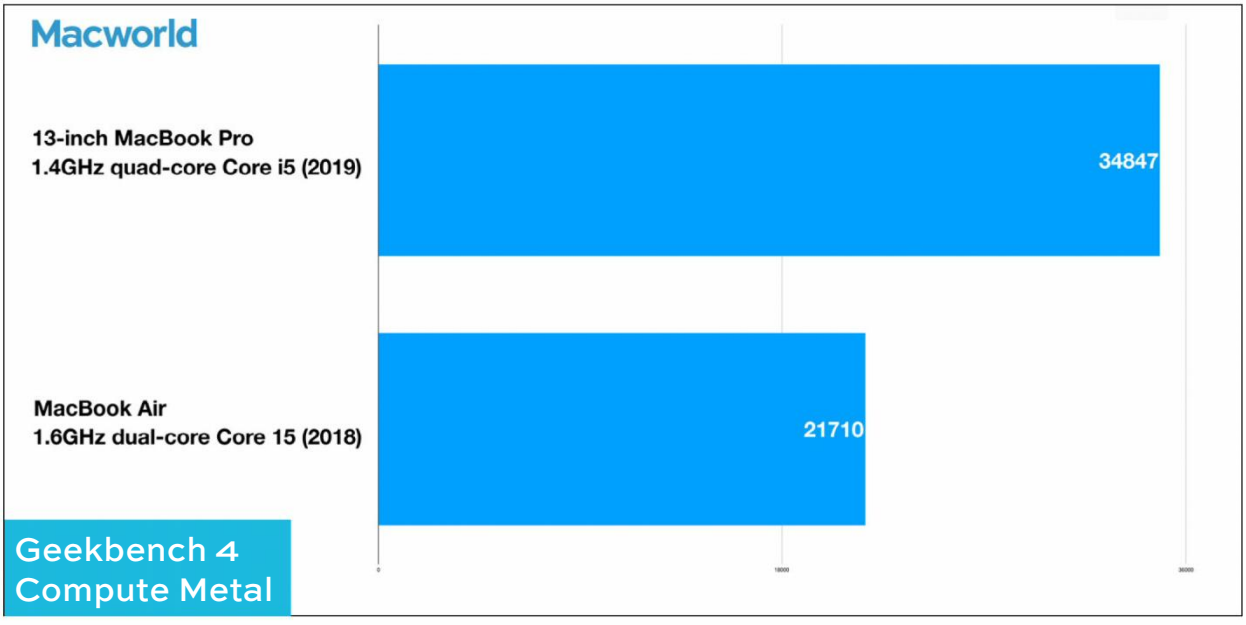
Geekbench 4 multi-core

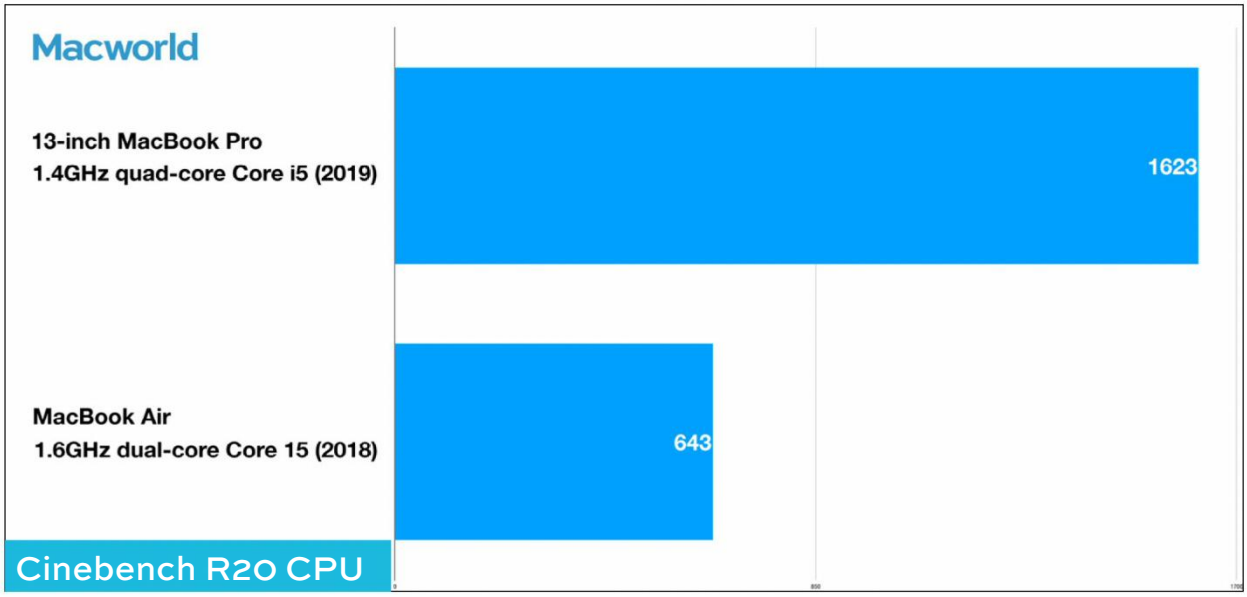
the current MacBook Air. You can see those results opposite, below and overleaf.

Verdict

It's clear from the benchmark results that the people who will clearly benefit from the update to







the entry-level 13in MacBook Pro are those in a production environment who rely on apps that take advantage of multiple processing cores. The jump from two to four cores without a jump in price is significant and makes the new laptop an attractive investment. The modest increase in single-core performance might make owners of more recent vintage MacBooks decide to wait, especially if your daily use involves using productivity apps, Internet access, and other office-type work.

Overall, it's good to see that the entry-level MacBook Pro now mirrors the features of the pricier models in the same line. It no longer feels like you're missing out on anything just because you need to save a few pounds. **Roman Loyola**

Specifications

- 13.3in (2,560x1,600; 227ppi) LED-backlit display with IPS technology

- macOS Mojave
- 1.4GHz quad-core 8th-generation Intel Core i5 processor
- Intel Iris Plus Graphics 645 GPU
- 8GB 2,133MHz LPDDR3 memory
- 256GB SSD storage
- 802.11b/g/n/ac Wi-Fi
- Bluetooth 5.0
- 2x Thunderbolt 3
- Headphone socket
- Stereo speakers with dynamic range
- 720p FaceTime HD camera
- 3x microphones
- Backlit keyboard – British
- Touch Bar with integrated Touch ID sensor
- 58.2Wh lithium-polymer battery
- 304.1x212.4x14.9mm
- 1.37kg

REVIEW

MacBook Air (2019)

RATING: ★★★★☆

Price: **£1,099 (inc VAT)** from **fave.co/2YoskDq**

There are updates, and then there are updates; and the new MacBook Air for 2019 is more iPhone XS than Mac Pro 2019. Not all that much has changed since the previous generation – which isn't necessarily a problem, because (like the XS) it's still an excellent device, but it's unlikely to tempt many one-year upgraders.

In our review we put the 2019 Air through our rigorous lab tests to see how it performs in terms of processing speed, graphics power, battery life

and more, and test out things like its keyboard and new True Tone screen tech. We also rate its design and pricing to help you decide if this is the best laptop for you.

Price

Apple has finally dropped the older (and cheaper) Air model with 2015 processors. To partially compensate for the loss of this budget option, the company has lowered the price of both starter configurations:

£1,099: 1.6GHz dual-core, 8th-gen Intel Core i5 processor, 128GB SSD
£1,299: 1.6GHz dual-core, 8th-gen Intel Core i5 processor, 256GB SSD

Both of those feature 8GB of RAM and Intel UHD Graphics 617. More detail in the specs section.

You can upgrade your specs in a couple of respects: going up to 16GB of RAM costs an extra £180, and you can get 1TB of flash storage for £400 on top of the 256GB spec above. You cannot change the processor.

Design

The MacBook Air is a true Goldilocks of form factors. The 13in screen and full-size keyboard feel big enough to work on pretty comfortably – the trackpad is enormous, too, as we'll discuss in a moment – but it's contained within a chassis that's slim (4.1mm at the thinnest point) and portable

(1.25kg). The MacBook Pro is comparatively bulky, and the (now discontinued) 12in MacBook can feel cramped, but this is just right.

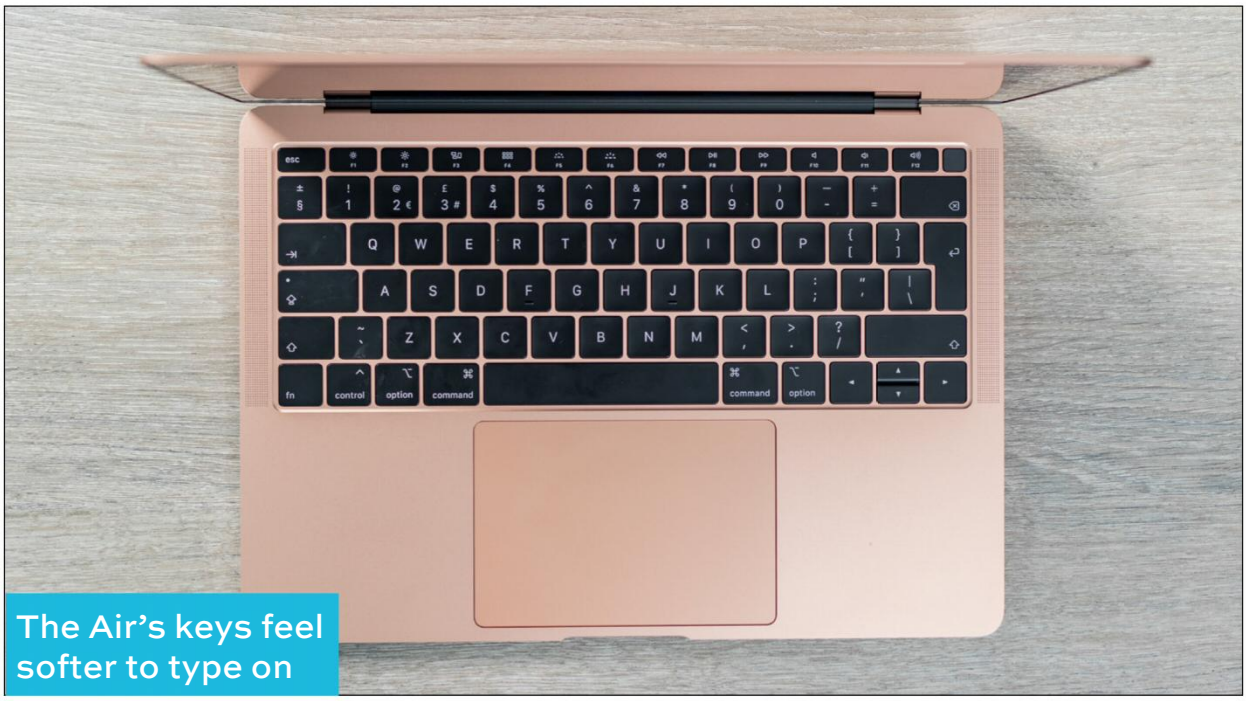
The Air comes in silver, gold and Space Grey. The latter is particularly smart, but we're also fond of the gold finish which we tested. As is standard on Apple products, we're talking about a bronzey, reddish gold that's easy on the eye.

Now, this will be of interest only to those contemplating an upgrade from a recent MacBook model, but it's worth noting that all of the above is the same as last year's model. In classic Air fashion the lines are sleek and minimalist and the lid opens with exactly the right amount of pressure, but Apple hasn't updated the design at all – except for the keyboard, which we'll talk about next.

Keyboard and trackpad

Apple, that creature of habitual mystery, has been coy about the changes it's made to the 2019 Air's keyboard, and about whether or not it's different from the keyboard in the 2019 Pro – the firm refers to it only as "the latest-generation keyboard". This has left prospective buyers wondering if Apple has managed to fix the numerous problems that have bedevilled the keyboards on all three MacBook models in recent years.

The company has confirmed that the 2019 keyboards contain "new materials", but this is a tweak to the butterfly mechanism rather than the wholesale return to the old scissor switch style that has been predicted for the near future. The scissor



The Air's keys feel softer to type on

keys take up more space but have deeper travel and better feedback when typing.

The irritating tappy noisiness of past generations has been noticeably toned down, and (presumably linked to this) the keys feel softer to type on. Whether the modifications will translate into a cure for the ddouble-lletter inaccuracies that users reported with previous generations remains to be seen, but our sample at least has shown no signs of the issue during our time with it. And it's reassuring to note that Apple has extended its keyboard repair programme to include the 2019 MacBook Pro and, now, the 2019 Air.

On the downside, we will note that the arrow keys are still squeezed into a tiny space, with almost no space between the keys to guide the fingers (and literally none between the up and down

keys). We sorely miss the more spaced-out arrows on our 2015 MacBook Pro. The keyboard in general is cramped and typing accuracy is poorer than on a more expansively laid-out keyboard, although this gets a little better with practice.

The trackpad is immense – 120x82mm – and offers the additional benefits of Force Touch, meaning you can do deep presses to trigger secondary functions such as dictionary checks on words. It should also be more reliable than a conventional trackpad because it has fewer moving parts: it doesn't actually click downwards, instead simulating a click with a small haptic buzz.

Touch ID

The Touch Bar still hasn't made its way across from the MacBook Pro, but there is a Touch ID fingerprint sensor next to the F12 key (again, this is not a new feature for the Air line). This is terrifically useful for login, as ever, with one extra benefit that you wouldn't experience with Touch ID on iOS devices: you are automatically logged in to the correct user account when you tap down a finger.

However, we haven't yet been able to replicate an additional neat feature that we observed on the 2018 Air and, previously, on the 2016 Pro. On those devices, if you tried to tap in straight after startup, or at any other time when a password rather than a fingerprint was required, Touch ID would do the next best thing – it would bump you to the password-entry field for the correct account. That doesn't appear to work on our 2019 Air.

Display

At last! We've found a substantive and quantifiable difference from the previous generation. The 2019 MacBook Air gets Apple's adaptive True Tone technology, which adjust the screen's intensity and colour output to account for ambient lighting conditions and should mean your subjective experience is consistent regardless of daylight, electric lighting, and so on.

We're big fans of True Tone, having grown particularly fond of it on the iPad and iPhone range – although it may be worth pointing out that the more portable a device is, the more likely it is to be used in a wide variety of lighting conditions. The Air is more portable than most computers, of course, but will still be toted about less than a phone.

And funnily enough we didn't totally love the True Tone experience on this machine. Sitting in

This is a sharp, bright and vibrant display

front of the 2019 Air and a 2017 12in MacBook in the gathering dusk, it occurred to us that the orangey tint of the machine with True Tone might be more restful than the stark white one without, but it's also a bit, well, sleepy. That stark whiteness feels a lot clearer to use... although it's probably saturating our brains with sleep-ruining blue light, and that will serve us right.

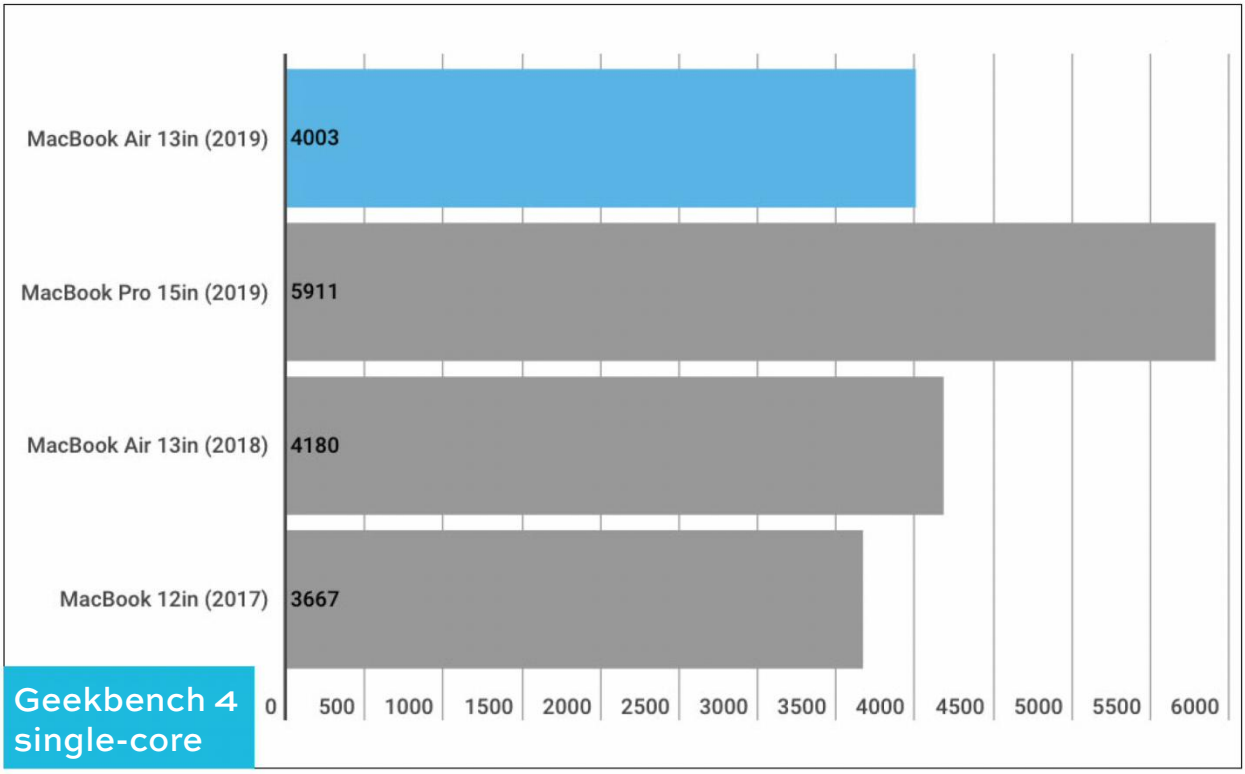
On that front, you also have the option to use Night Shift – here are the differences between True Tone and Night Shift – but that's available on older machines, too.

At any rate you won't normally have a second laptop right there to make the difference so obvious (in general it's a subtle effect), and it's easy to turn True Tone off if you're not keen. Indeed, one of the charms of True Tone is the thoughtful way macOS shows you what the screen looks like with and without the effect during setup, so you can make an informed decision.

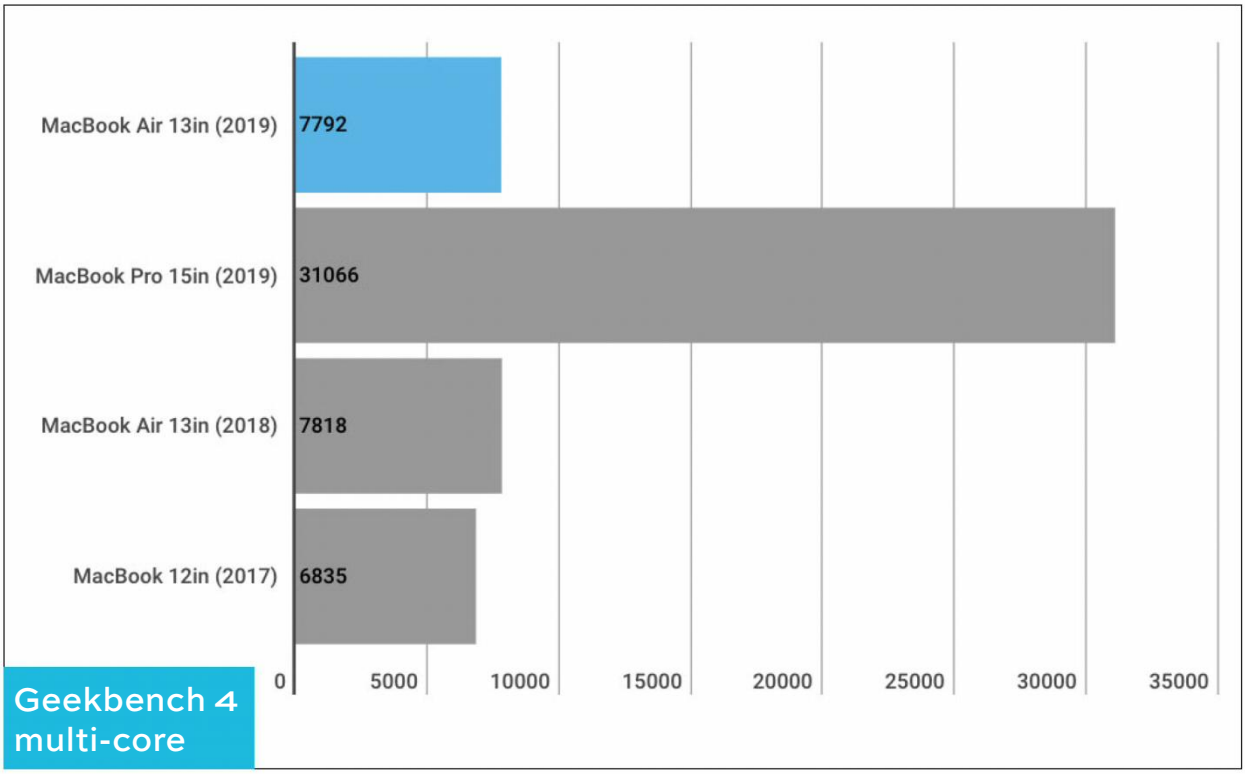
And aside from the novelty of True Tone, this a good-quality if 'more of the same' display. With a resolution of 2,560x1,600 at 227ppi, it's sharp, as well as bright and vibrant. But no, it's not a touchscreen display, and we're starting to wonder if Apple will offer this feature on a MacBook.

Performance

The Air comes with a 1.6GHz dual-core Intel Core i5 processor and 8GB of RAM: a solid rather than spectacular offering, and on paper no different from the previous generation.



Geekbench 4 single-core



Geekbench 4 multi-core

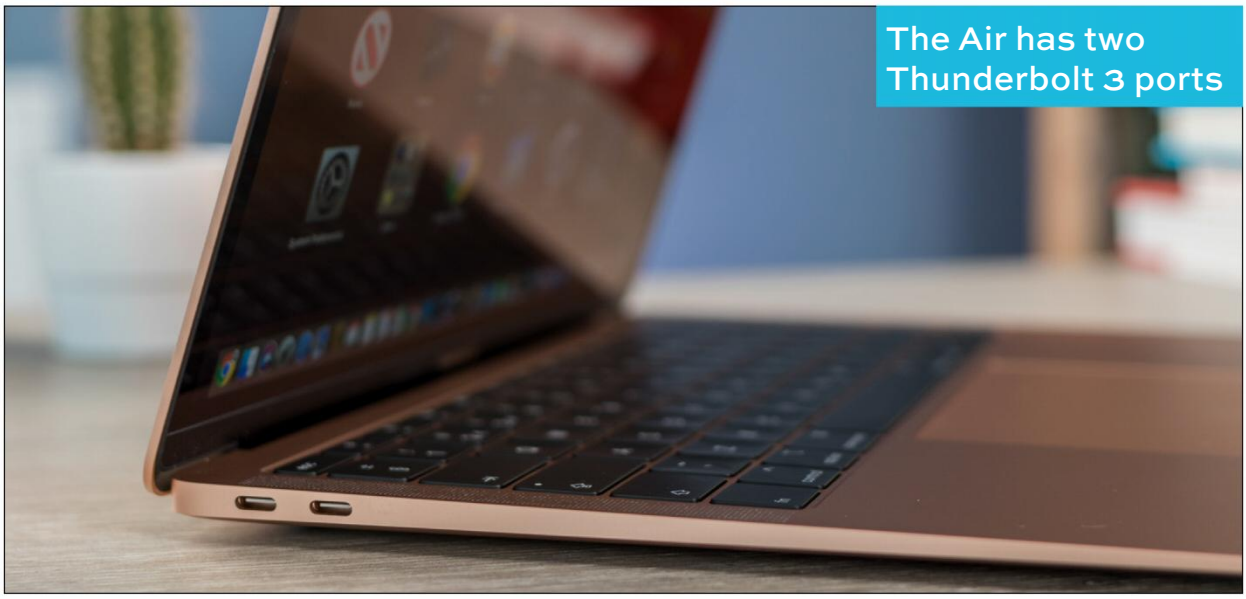
In fact, lab tests showed that the 2019 Air is actually a little slower than the 2018 model, which we believe is related to the use of slower flash storage – a theory that's borne out by the new model also recording significantly slower disk read speeds.

In the Geekbench 4.4.1 CPU test, the 2019 Air averaged 4,003 points in single-core and 7,792 in multi-core. That compares to 4,180 and 7,818 respectively for the 2018 model and is therefore a tiny bit disappointing.

For wider comparison, a 2019 Pro kitted out with an 8-core i9 and 32GB of RAM scored 5,911 and 31,066, whereas the last 12in MacBook model – from 2017 – scored 3,667 and 6,835. A roughly equivalent Windows laptop, the Huawei MateBook 13, scored 3,806 and 12,956.

In the Cinebench R20 rendering benchmark, a test that warmed the machine and set the fans going, the Air averaged a score of 666, which is on the low side; the MacBook Pro 2019 scored 3,222. And the Air recorded an underwhelming score of 241, with an average frame rate of 5.8fps, in the Unigine Valley stress test.

This is not a superfast machine, then. For most prospective Air buyers, however, speed benchmarks will not be a major issue. It's not a machine that's being marketed towards creative professionals, gamers or other Mac users who need major processing welly. For checking email, browsing the web, a little light work and the odd graphically undemanding game, it will do just fine.



The Air has two Thunderbolt 3 ports

Connectivity and audio

There are stereo speakers either side of the keyboard, two USB-C/Thunderbolt 3 ports on the left-hand side (one of which will have to serve as a power point if you want to use it while charging), and a headphone port on the right. That second USB-C port is crucial, in our view: having just one was a major headache on the 12in MacBook.

The speakers are decent by laptop standards, with respectable volume when cranked up to the maximum. The stereo effect only really works when you're not just using the laptop but leaning forward, however, and don't expect much of a bass punch.

Battery life

The MacBook Air is known for its battery life, and the 2019 version keeps up that proud tradition. In our looped-video test, with the screen set to 120cd/m^2 brightness and True Tone turned off, it

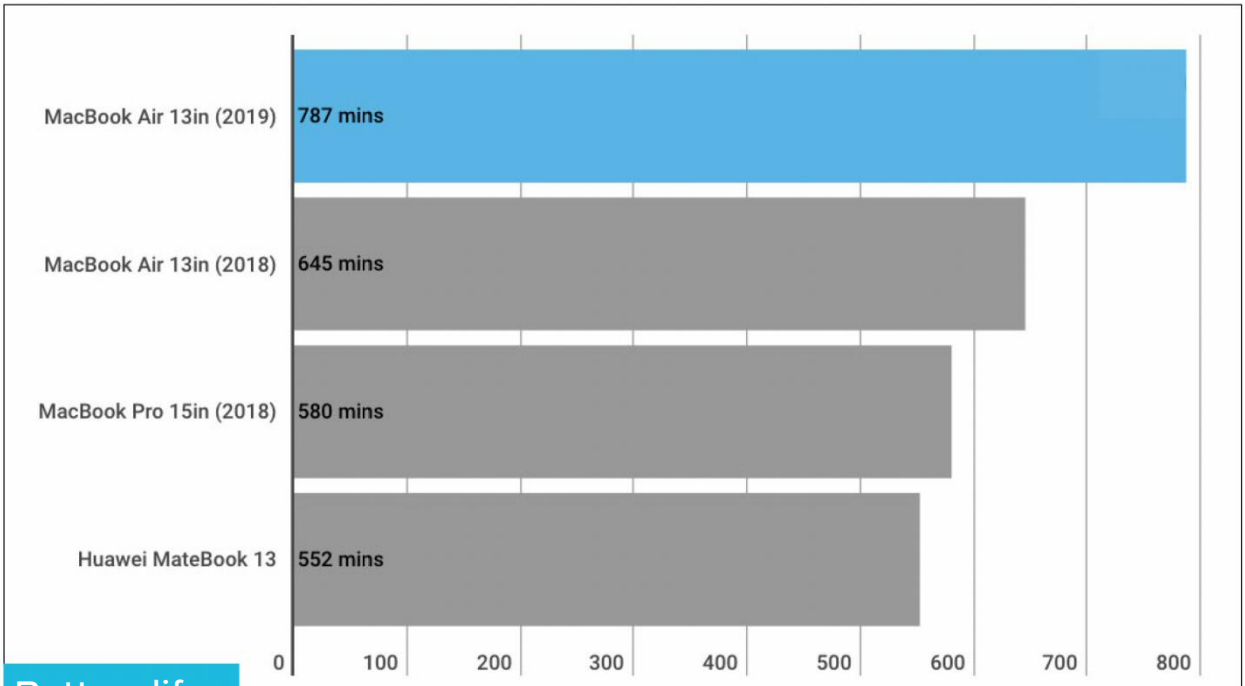
lasted 13 hours and 7 minutes. That's a serious effort, and almost exactly tallies with the "up to 13 hours iTunes film playback" that Apple estimates.

For comparison, the 2018 Air lasted 10 hours and 45 minutes, while a 2018 Pro with a six-core i9 processor managed just 9 hours and 40 minutes.

The laptop comes with a 30W USB-C mains charger. With this the Air went from 0 to 25 percent power in 30 minutes, so it's capable of charging up nice and quick. Faster charging speeds still should be possible if you spend extra for a 61W charger or even the super-powered 87W model.

Verdict

Now available at a lower entry price of £1,099, the MacBook Air is an appealing if little-changed laptop. The big news for long-time Air enthusiasts



Battery life

is that the keyboard is... well, still not perfect, but at least better. The depth of travel remains uncomfortably shallow and the keys are cramped (the arrow keys are barely fit for purpose), but the typing noise has been muffled, the keys feel less rattly to type on and our review sample at least shows no sign of those pesky double letters.

Other than that this is largely the same as last year – which is to say, it's an excellent light laptop for light use, with a beautiful portable design, excellent battery life and lovely trackpad. Speed, which on paper should be unchanged, seems fractionally down on last year, but not so you'd notice in Air-typical usage.

Finally, Apple's True Tone screen tech has arrived on the Air. This is an acquired taste, but it's nice to have the option and should ensure more consistent colour output. **David Price**

Specifications

- 13.3in (2,560x1,600; 227ppi) LED-backlit display with IPS technology
- macOS Mojave
- 1.6GHz dual-core Intel Core i5 processor
- Intel UHD Graphics 617 GPU
- 8GB 2133MHz LPDDR3 memory
- 128GB SSD storage
- 802.11b/g/n/ac Wi-Fi
- Bluetooth 4.2
- 2x Thunderbolt 3
- Headphone socket
- Stereo speakers with dynamic range

- 720p FaceTime HD camera
- 3x microphones
- Backlit keyboard – British
- Integrated Touch ID sensor
- 49.9Wh lithium-polymer battery
- 304.1x212.4x15.6-4.1mm
- 1.25kg

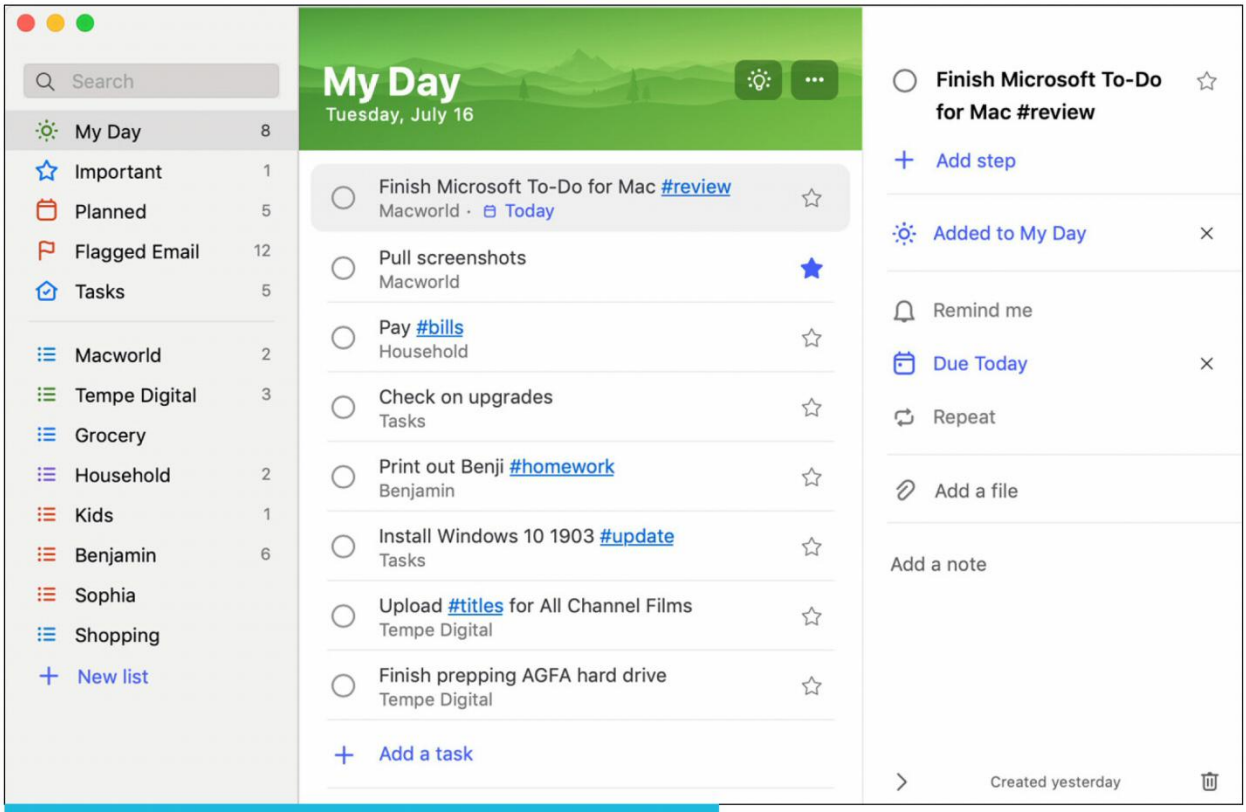
Microsoft To-Do

RATING: ★★★½☆

Price: **Free** from **fave.co/2Zx8imp**

It's been four years since Microsoft scooped up Wunderlist (**fave.co/2Zy6tG3**), the popular cross-platform to-do app. Although that software has thus far received a stay of execution and remains available, the introduction of Microsoft To-Do two years later with no native Mac app in sight had many longtime users adding 'Find a new to-do app' as a new task.

For those who made do with just iOS and web apps over the past couple years, Microsoft To-Do

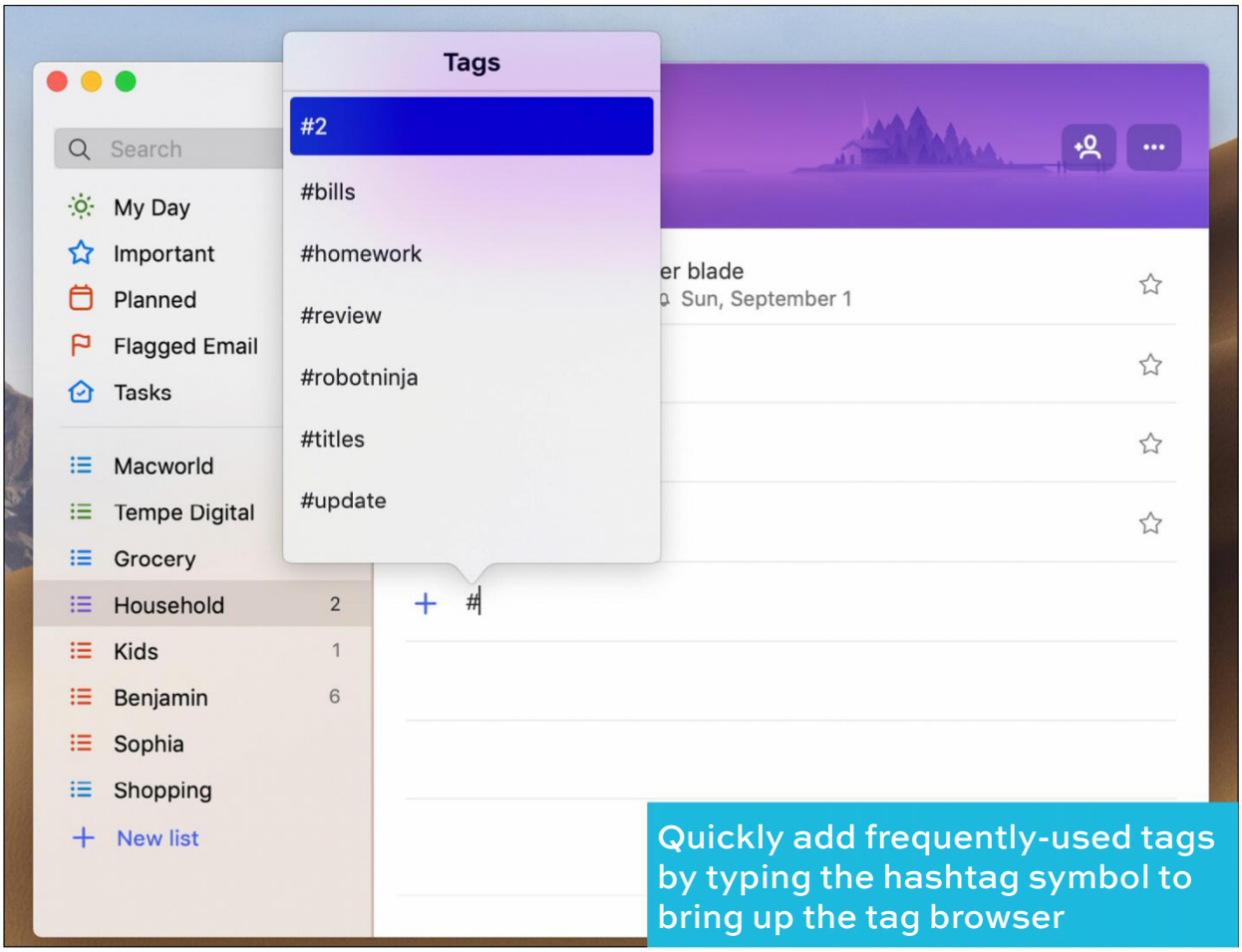


Microsoft To-Do finally arrives on the Mac, with a My Day view that keeps your most important tasks front and centre

has finally arrived in the Mac App Store. Overall, the free app is a faithful port from Windows, although those who prefer the dark theme found in that edition will be disappointed to find it missing here, nor does the Mac version currently support Mojave's built-in dark mode.

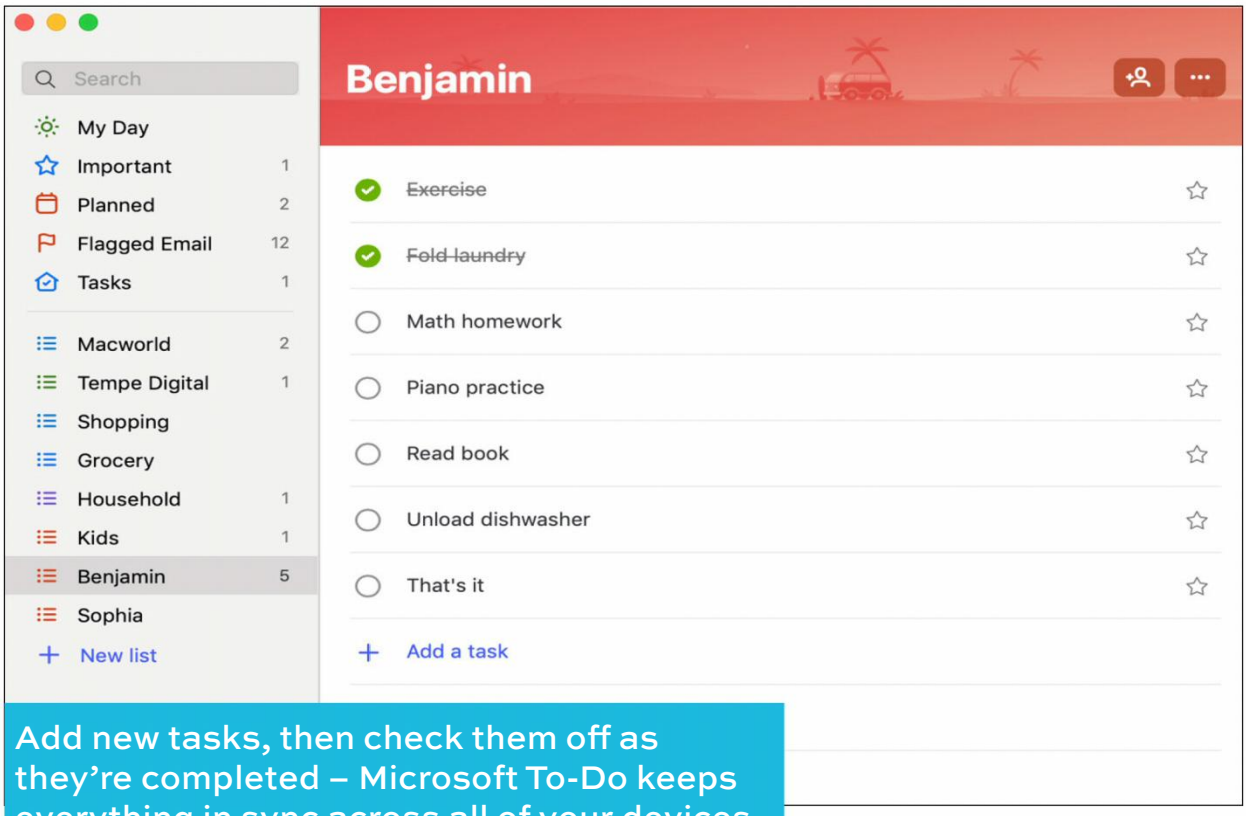
Made for Mac

Those familiar with Microsoft To-Do know what to expect, but Wunderlist users will also feel right at home. Current day tasks are presented front and centre in the My Day view, with smart lists



Quickly add frequently-used tags by typing the hashtag symbol to bring up the tag browser

for Important (starred) and Planned (due date) tasks, which can be disabled or auto-hidden when empty via preferences. Outlook users have the option of displaying flagged emails as well, with a unified Tasks view and custom user lists occupying the rest of the sidebar at left. To-Do for Mac includes the same handful of colour themes and scenes available on other platforms, which can be assigned to individual lists. Although a more bountiful palette would be welcome, the included scenes provide enough variety for all but those with a huge volume of to-do lists.



Add new tasks, then check them off as they're completed – Microsoft To-Do keeps everything in sync across all of your devices

Making the list

Microsoft To-Do may be chock full of the stuff that made Wunderlist a cross-platform darling, but the Mac app hasn't achieved feature parity quite yet. For example, there's currently no way to duplicate a list, nor print or export data from this version. Wunderlist users can import data via the web app, but it took several tries before we were successful at doing so with our very sparse account.

On the plus side, sync was blazingly fast. Adding new tasks to the My Day view in the Mac app updated immediately in the web app (and vice versa), with only a brief delay on our iPhone X. Version 1.61 also now syncs Microsoft Planner

tasks, which was missing from previous Mac releases. Speaking of integration, clicking Open in Outlook from flagged emails unfortunately launches the web app, rather than the native Mac application.

There are a couple nice shortcuts baked into Microsoft To-Do. Although the UI is already quite compact, Command-2 reduces the window to a 'minified' view sans sidebar, while Command-1 restores everything to normal. Those who frequently use tags will love the pop-up menu as you type hashtags, allowing one-click entry of previous tags, or to view every task with that tag applied across all lists.

Verdict

Despite the lack of dark mode support and the fact that Microsoft To-Do may not be a feature-by-feature replacement for Wunderlist just yet, the long-awaited Mac debut checks off the most important features on our wish list. **JR Bookwalter**

System requirements

- macOS 10.13 or later
- 14MB free space

How to install the macOS Catalina public beta

Join the Beta Software Programme and you can get access to the macOS Catalina Public Beta. **Roman Loyola** reports

Want to run the next version of macOS? You can if you join Apple's Public Beta programme, which is available for anyone willing to try the new OS before it is released.

Getting started

To install, the 10.15 Public Beta, you must enrol in the Public Beta programme. Then, you can install

the update through macOS's Software Update (About This Mac > Overview > Software Update.)

What is it?

MacOS Catalina is the current version of the Mac operating system. Apple makes a public beta version of Catalina updates available for people to try out, test against their favourite software, and report bugs to the company.

Since this is beta software, there's a good chance it could cause problems on your Mac. You may encounter frequent freezes and crashes, or your apps may not work. Don't count on it being stable enough to use all the time.

Should you install the public beta?

You should not install the beta on any Mac you depend on and need to keep running. If you're worried that a beta flaw will prevent you from using your Mac, don't install it.

What should you do before installing it?

Back up your Mac. You can use Time Machine or whatever backup setup you already have. You need a backup you can use that you can revert to in case you need to stop using the beta and need to restore your system.

How to get the macOS Catalina Public Beta

Sign up for the public beta programme online at **fave.co/2YL7Zr9**. You will need to use your Apple ID to sign up.

Compatible Macs

MacBook (2015 or newer)
MacBook Air (2012 or newer)
MacBook Pro (2012 or newer)
Mac mini (2012 or newer)
iMac (2012 or newer)
iMac Pro (2017 or newer)
Mac Pro (2013 or newer)

How to uninstall the beta

If you try out the beta and decide later that you don't want to use it anymore and want to go back to macOS Mojave, Apple has instructions on How to unenroll from the public beta (**fave.co/2MGg9KQ**) and how to restore your system (**fave.co/2YLyPiQ**).

What happens after the final version ships?

You can continue to use the public beta. You'll get beta version of Catalina updates when they become available. If you want to get rid of the beta and install the final version, you can by downloading the macOS Catalina installer in the App Store.

Install the Catalina beta in its own APFS container

You can have your Catalina and still be Mojave fresh. **Glenn Fleishman** reports

With the public beta out for macOS 10.15 Catalina, you might be a thrill seeker and want to test out the in-progress version. But maybe you'd like to hedge your bets. In the past, you'd need to partition your startup drive, which could turn into a lot of effort, or get an external drive – preferably SSD – and install and boot from that. However, there's a better way to have your Catalina and boot it, too. It's even a path Apple documents and recommends.

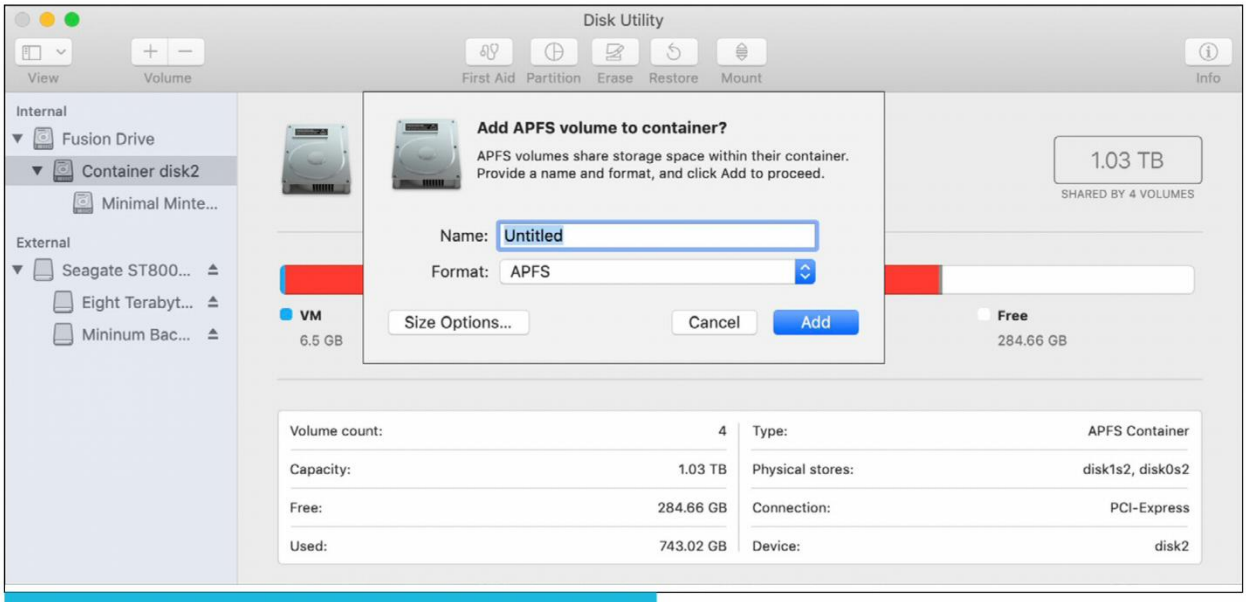
With Apple's not-quite-so-new APFS file system that replaces the long-running HFS+, drives are no longer organized into partitions, but volumes and containers. A container gets a pool of a fixed amount of storage on a drive when it's configured, but containers can have multiple volumes. Volumes share all available free space within the container without requiring any other rejigging – they grow and shrink automatically.

(Think of this like having a measuring jug with a litre of water in it and a set of 250ml jars. You can divide that measuring cup's water in any way among the cups, including putting all the water into just one cup or pouring it from any cup back into the measuring container.)

The way this works to your advantage with Catalina is that if you have enough spare in your main container to handle Catalina – a few tens of gigabytes, but preferably more – you use Disk Utility to add a value into your main container, then install Catalina into that volume. You can then use the Startup Disk preference pane to swap among your volumes without involving an external drive at all. This can continue to be useful after Catalina is released if you want to keep a Mojave volume active for 32-bit apps that no longer run in Catalina. I'll describe a strategy below for that.

How to add a Catalina volume to your main container

Warning! Any time you make changes via Disk Utility, bad things can happen unintentionally. Make



Disk Utility lets you add volumes within containers to share free space

sure and have an up-to-date clone or back up your drive before proceeding.

1. Launch Disk Utility.
2. Make sure View > Show All Devices is selected.
3. Select your startup drive's main container in the drive list at left. It may be named something like 'Container disk2'.
4. Click the + (plus) sign above the Volume button at the top of the screen.
5. Name the volume something descriptive, leave other options alone, and click Add. This should take just a moment to complete.

Now you can go through our steps for installing the public beta of Catalina (page 56). When you get to the drive selection stage, it's absolutely critical

you are sure you are selecting the new volume just created. When I tried this the first time, that volume didn't immediately appear. I needed to click Show All Disks, but also retry the installation a few times before I could pick my new volume. It's unclear why, but it worked in the end.

After Catalina has installed and you've set it up with a new account, you should return to your previous macOS installation, as you will want to unenroll that system from the public beta so it's doesn't try to install Catalina updates.

1. Open the Startup Disk preference pane.
2. Select your previous macOS startup volume. (You may need to click the lock at the lower-left corner and enter your password.)
3. Restart.
4. In your older system, open the Software Update preference pane.
5. Under the note that say your Mac is enrolled in the public beta, click the Details button.
6. Click Restore Defaults and follow prompts.

Keep Mojave active after Catalina's released

Normally, when a new OS comes out, you run the update process, and it upgrades system files in place. When it finally restarts, the older version of macOS has been wiped away.

With the container and volume approach, however, you can migrate within the container, and have the advantage of retaining your old Mojave

With the container and volume approach, you can retain your old Mojave installation for backwards compatibility with older apps

installation for backwards compatibility with older apps. (Some people used to rely on virtual machine software to run old versions of macOS, and that's still a viable option, especially if you see yourself needing to run the older version for several years.)

This approach benefits from how the container shares free space among its volumes. When Catalina is released, you update your Catalina volume, and then migrate Mojave-associated applications, files, and settings from the Mojave volume to the Catalina one.

Then you can delete all the Mojave apps, files, libraries (like Photos, iTunes, and iMovie), and other settings you no longer need there. That space then becomes freed up in the container, and available to your Catalina installation. But you can still boot into Mojave as needed, and use apps not compatible with Catalina.

If you have enough storage to duplicate everything through migration, you can just start up with Catalina, run Migration Assistant, and use the Mojave volume as the origin. Delete unneeded files in Mojave when you're done.

If you don't have enough storage to duplicate all your Mojave files and the like, you need to first make a Time Machine backup or clone of the Mojave installation to an external drive, then delete the files you no longer will need in Mojave to free up space for the migration to Catalina, and finally use Migration Assistant in Catalina to pull from the Mojave external drive.

How to use the new features in Safari 13

New features make it easier to manage multiple windows and tabs. **Roman Loyola** reports

Safari is probably the most frequently used app in macOS. Fortunately, with the upgrade to macOS Catalina, Safari gets a few helpful new features. Here's a look.

Start page

The start page has a new way to help you get to the websites you want to visit. It still shows Favourites and Frequently Visited websites as in previous versions, but now there's a Siri Suggestions section

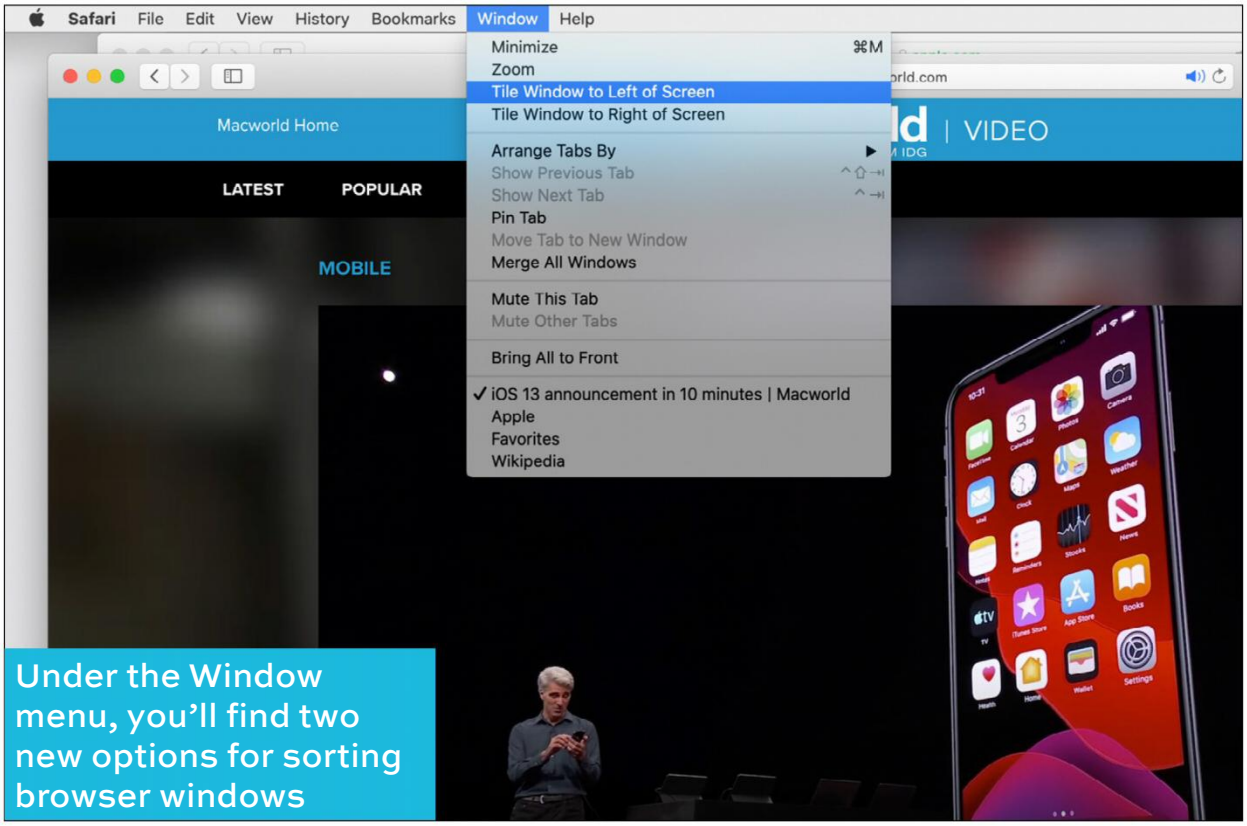
that lists recently-visited sites, Reading List links, iCloud Tabs, links sent to you via Messages, and more.

Tab switching

When you type in a URL, if that website is already open in another tab, Safari will display the option to switch to that particular tab. Not only should this help cut down on the number of open tabs that you have, it can also help you find the tab you want.

Move Window to Left/Right of Screen

Under the Window menu there are two new options: Tile Window to Left of Screen, and Tile Window to Right of Screen. These help sort your Safari



Under the Window menu, you'll find two new options for sorting browser windows

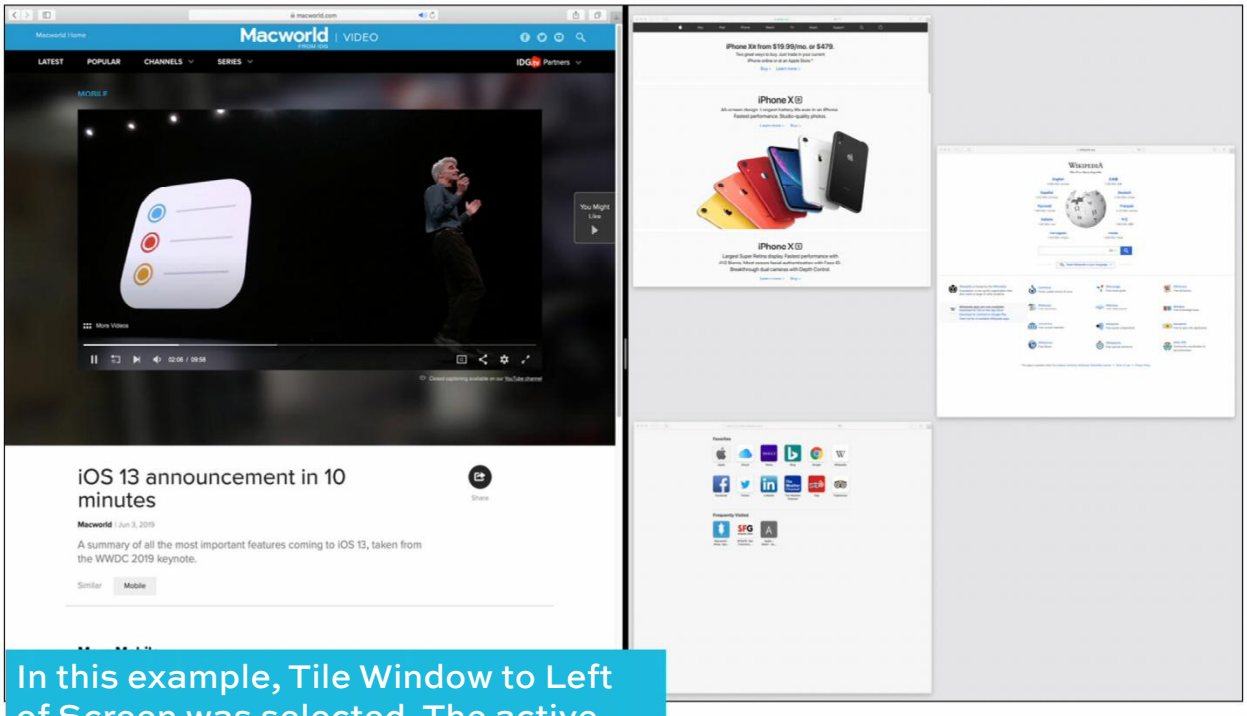
windows. When you select one of these options, the active Safari window moves to the left or right of the screen (depending on which option you selected), and tiles of the other open windows are shown on the opposite side.

If you click on the big web page, Safari expands it to take up the whole screen. Press the Escape button on your keyboard to leave full-screen mode.

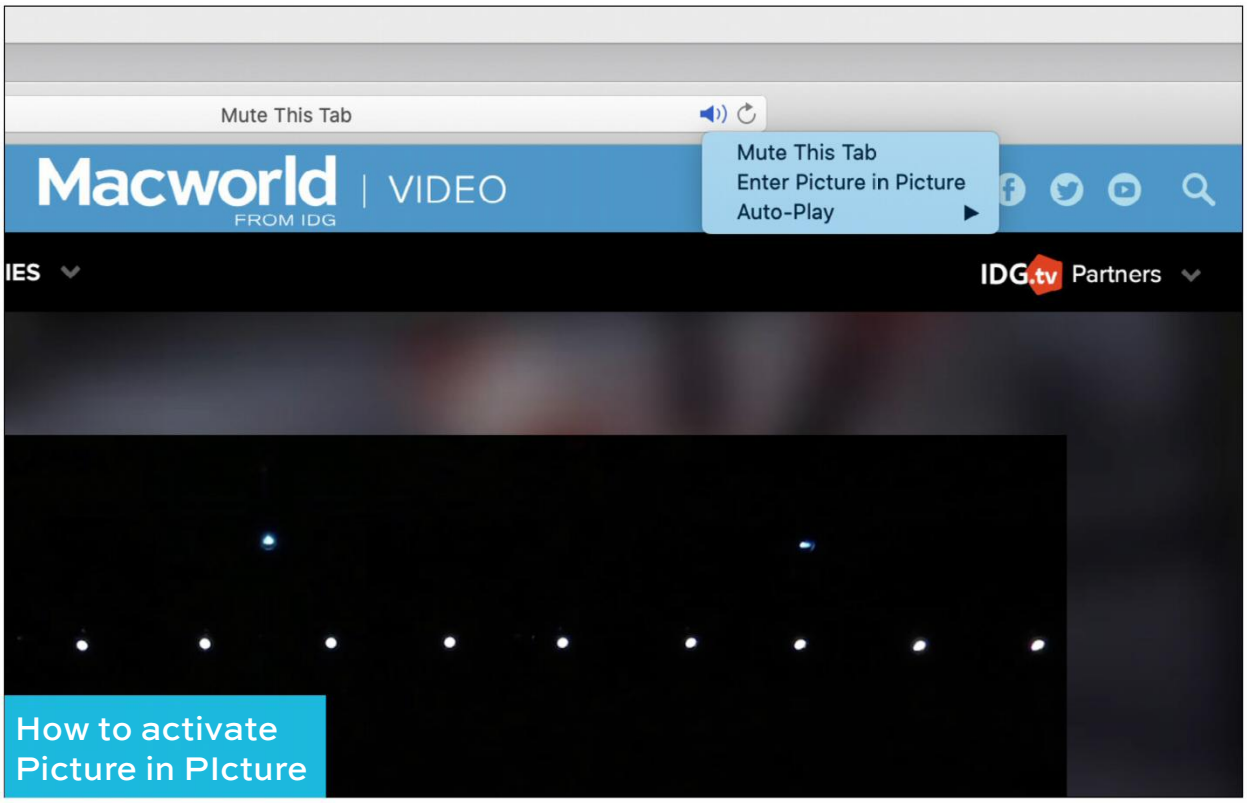
If you click on one of the tiled windows, it expands to fill the rest of the space next to the main active window.

Picture in Picture

When you're watching a video, you can pop the video out from the web page into a separate



In this example, Tile Window to Left of Screen was selected. The active browser window is on the left, and the inactive windows are tiled to the right



window. To do this, look in the URL box for the Audio icon. Then click and hold. A pop-up menu will appear, and one of the options is Enter Picture in Picture.

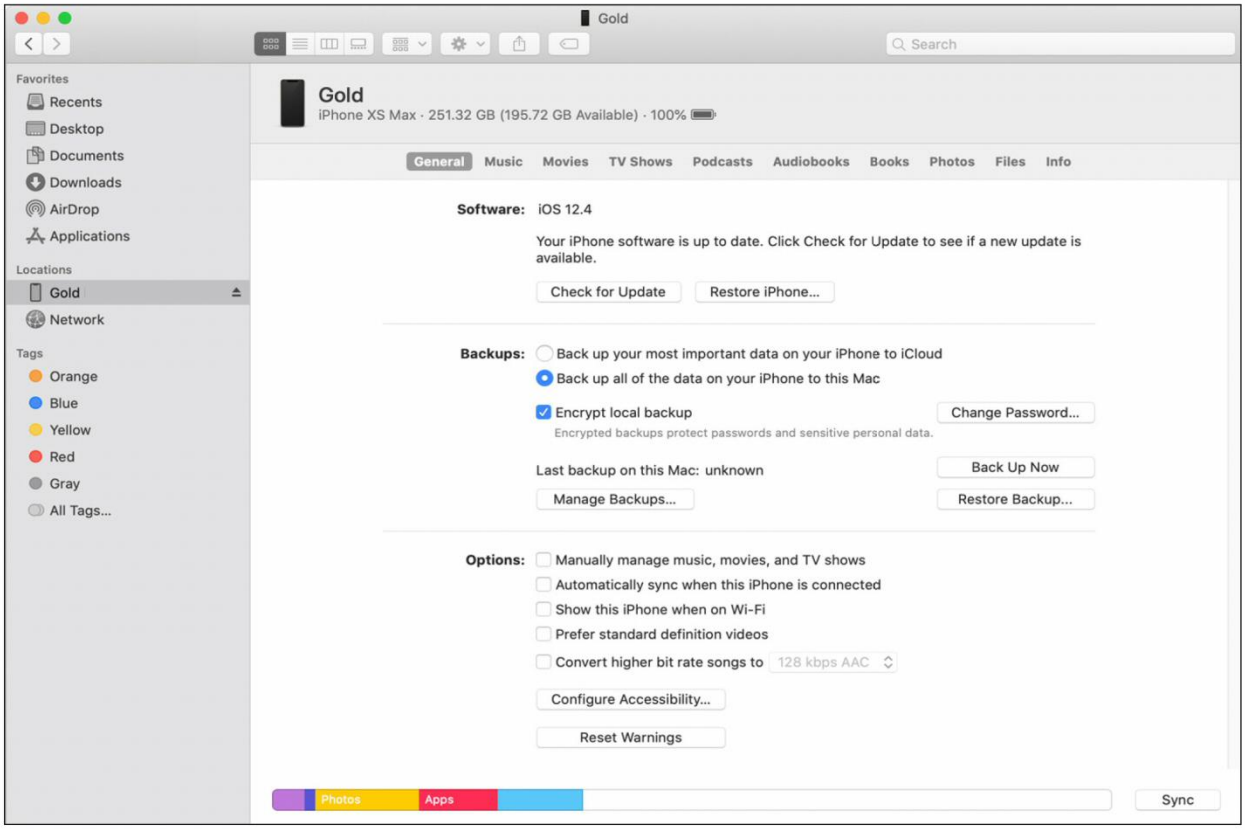
To exit Picture in Picture, you can click on the close windows icon (the X button) in the upper left corner of the video pop-up window. Or you can click and hold on the Audio icon in the URL box and select Exit Picture in Picture.

Weak password warning

Safari will flag weak passwords and help you make a stronger one when you're creating an account online.

How to back up an iPad or iPhone in macOS Catalina

The iTunes app may be gone, but you can still back up your iOS device to your Mac. **Roman Loyola** reports



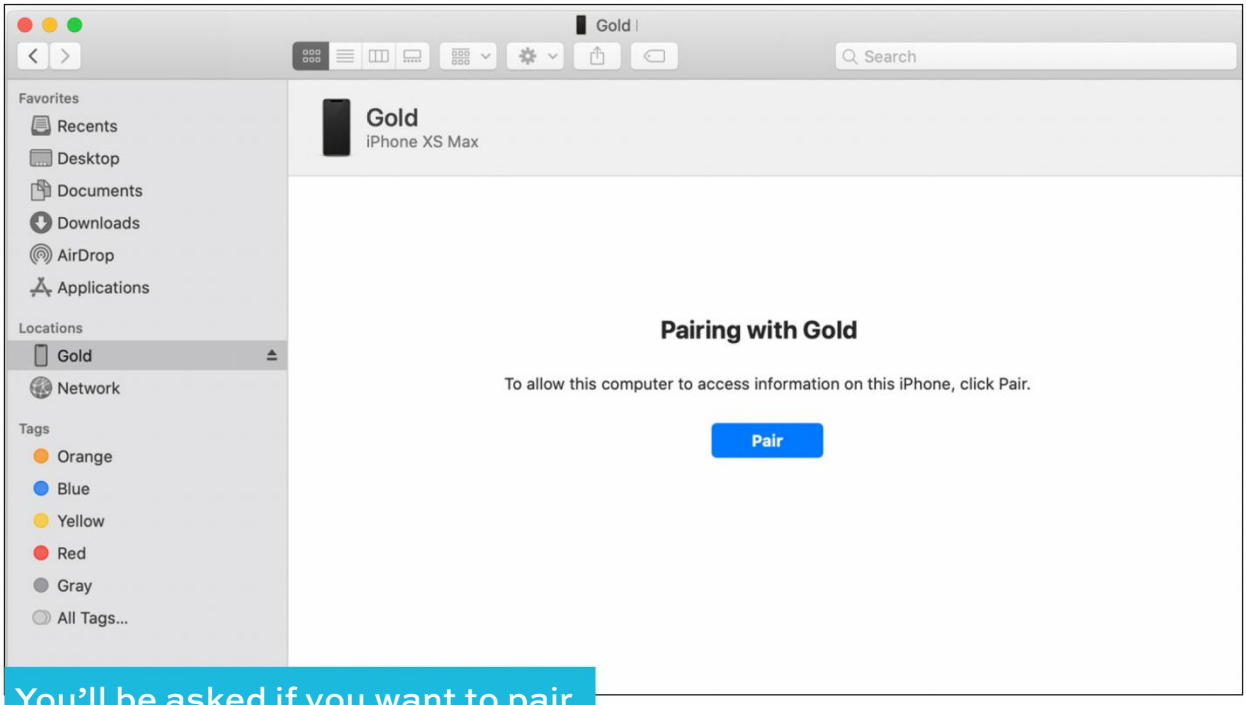
For iPhone and iPad users who still connect their devices to a Mac for syncing and backups (and there are a lot of people who still do this), there are changes coming in the next version of the Mac operating system. In macOS 10.15 Catalina, the iTunes app is gone. Now you use the Finder, similar to how you see a hard drive or a

server. Here's how to use your device in the Finder and how to back it up.

Your iOS device in the Finder

When you connect your iPhone or iPad to your Mac using a Lightning cable, it will appear in a Finder window. In the macOS Catalina Public Beta, your device is in the left column in the 'Locations' section. (If this is the first time you are connecting the Mac and iOS device, you will be asked to pair the two on the Mac, and you'll have to trust the Mac on your iOS device.)

When you click on your iOS device in the left column, the window will fill with some information that looks a lot like the information you used to see in the iTunes app.



You'll be asked if you want to pair your device if it's new to your Mac

How to back up your iOS device

1. Connect your iPhone or iPad to your Mac using a Lighting cable.
2. Open a window in the Finder (Command-N).
3. In the Locations section in the left column of the Finder window, look for your device and click on it.
4. Information about your device should appear in the right side of the window. Click on the General button near the top of the window if it's not already active.
5. Look for the section labelled Backups. You have a few options to consider:
   - You can choose to back up 'your most important data' to iCloud, or you can back up all your device's data to your Mac.
   - If you want to encrypt the backups on your Mac, check the box for 'Encrypt local backup'. You will need to create a password.
6. When you are ready to back up your device, click the Back Up Now button. You can also click the Sync button at the bottom of the window.

How to restore your iOS device

If you need to restore your iPhone or iPad using a backup on your Mac, here's how it's done.

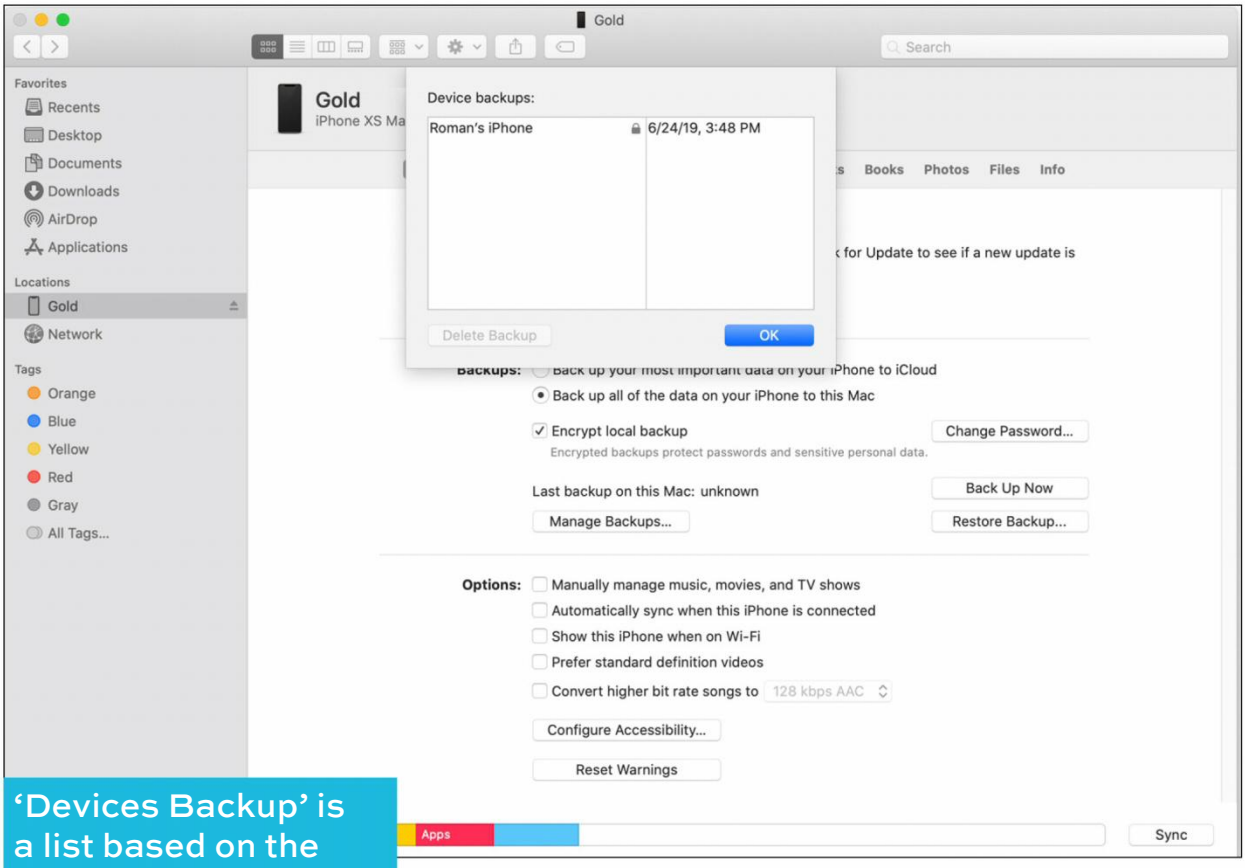
1. Connect your iPhone or iPad to your Mac using a Lighting cable.
2. Open a window in the Finder (Command-N).
3. In the Locations section in the left column of the Finder window, look for your device and click on it.

4. Information about your device should appear in the right side of the window. Click on the General button near the top of the window if it's not already active.
5. Look for the section labelled Backups. Click on the Restore Backup button.
6. A window will appear where you pick what backup to use to restore. If you click the pop-up menu labelled 'backup', you can pick which backup to use. Pick one.
7. Enter your password in the Password section.
8. Click Restore to start the process. This will take a few minutes to complete.

How to manage your iOS device backups

When you back up your iOS device to your Mac, it doesn't always replace the previous backup. This is handy in case you want to restore from a different point in time. But each backup takes up storage space. Here's how you can delete backups you don't want.

1. Connect your iPhone or iPad to your Mac using a Lighting cable.
2. Open a window in the Finder (Command-N).
3. In the Locations section in the left column of the Finder window, look for your device and then click on it.
4. Information about your device should appear in the right side of the window. Click on the General button near the top of the window if it's not already active.



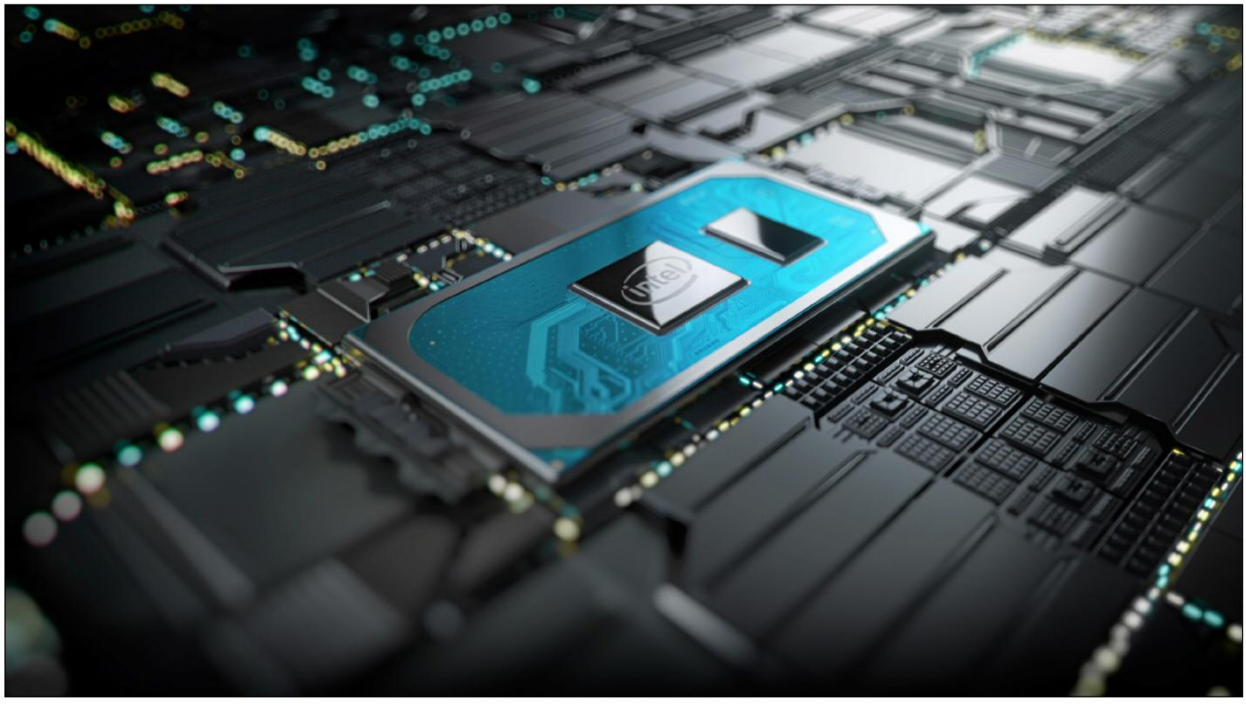
'Devices Backup' is a list based on the names of the devices that are backed up

5. Look for the section labelled Backups. Click on the Manage Backups button.
6. A list called 'Device backups' will appear. They're labelled based on the name of the device that was backed up, and the date. You can select one of these, and then click Delete Backup if you want to delete it.

FEATURE

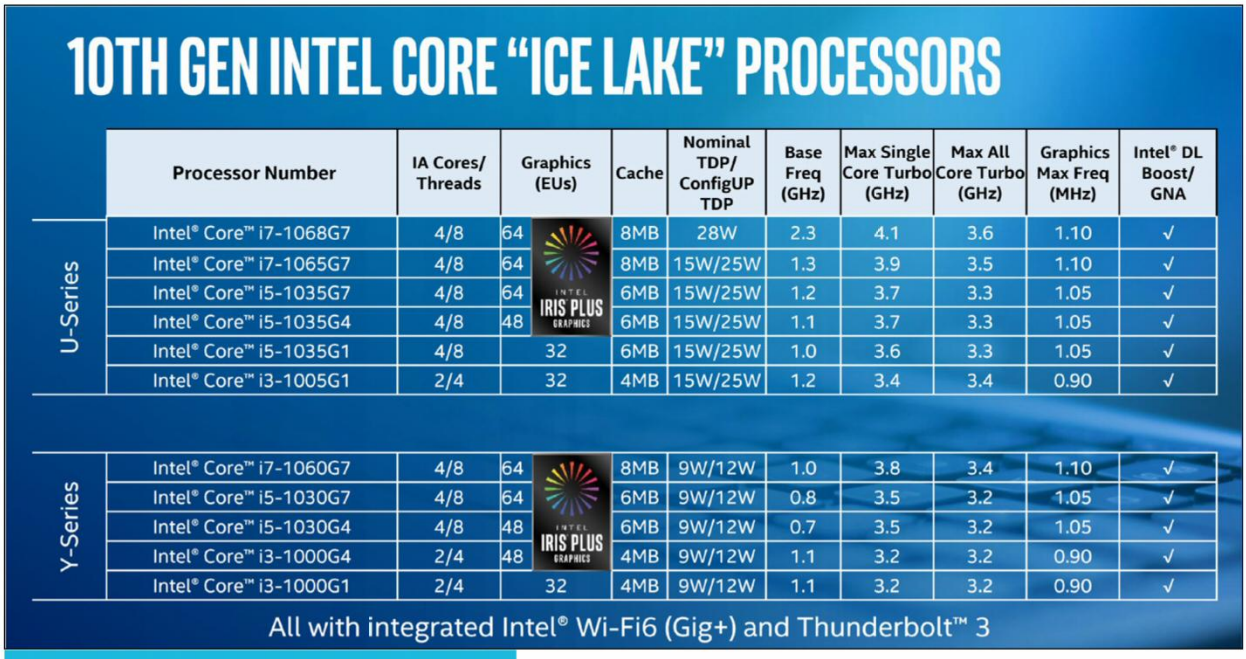
What Intel's Ice Lake chips could mean for MacBooks

Intel has launched its latest mobile CPUs. Here's what you can expect if Apple puts them in its laptops. **Jason Cross** reports



When it comes to the performance of Mac laptops, it's safe to say that Intel is in the driver's seat. Unless Apple shows some sign of either switching to AMD or producing its own laptop processors, the MacBook line will be inextricably linked to Intel's CPU releases.

That's why the launch of Intel's 10th-generation Core processor (formerly known by the code name Ice Lake) is so important to Mac users. It's the company's first truly high volume chip on its 10nm



	Processor Number	IA Cores/ Threads	Graphics (EUs)	Cache	Nominal TDP/ ConfigUP TDP	Base Freq (GHz)	Max Single Core Turbo (GHz)	Max All Core Turbo (GHz)	Graphics Max Freq (MHz)	Intel® DL Boost/ GNA
U-Series	Intel® Core™ i7-1068G7	4/8	64	8MB	28W	2.3	4.1	3.6	1.10	√
	Intel® Core™ i7-1065G7	4/8	64	8MB	15W/25W	1.3	3.9	3.5	1.10	√
	Intel® Core™ i5-1035G7	4/8	64	6MB	15W/25W	1.2	3.7	3.3	1.05	√
	Intel® Core™ i5-1035G4	4/8	48	6MB	15W/25W	1.1	3.7	3.3	1.05	√
	Intel® Core™ i5-1035G1	4/8	32	6MB	15W/25W	1.0	3.6	3.3	1.05	√
	Intel® Core™ i3-1005G1	2/4	32	4MB	15W/25W	1.2	3.4	3.4	0.90	√
Y-Series	Intel® Core™ i7-1060G7	4/8	64	8MB	9W/12W	1.0	3.8	3.4	1.10	√
	Intel® Core™ i5-1030G7	4/8	64	6MB	9W/12W	0.8	3.5	3.2	1.05	√
	Intel® Core™ i5-1030G4	4/8	48	6MB	9W/12W	0.7	3.5	3.2	1.05	√
	Intel® Core™ i3-1000G4	2/4	48	4MB	9W/12W	1.1	3.2	3.2	0.90	√
	Intel® Core™ i3-1000G1	2/4	32	4MB	9W/12W	1.1	3.2	3.2	0.90	√

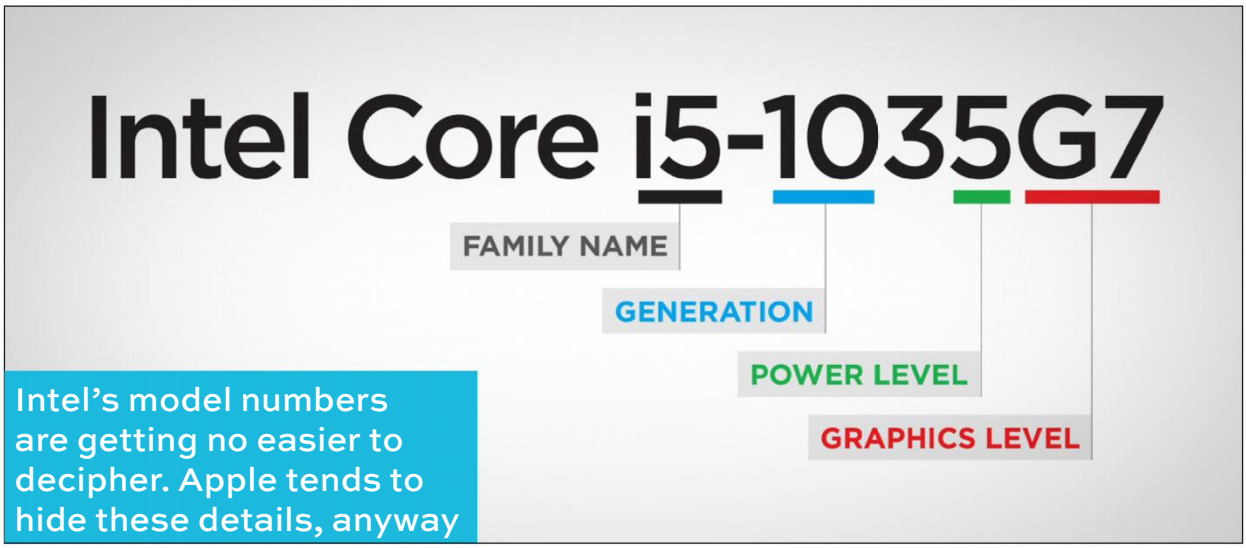
The complete 'Ice Lake' 10th-generation Core line-up

manufacturing process, and the first to use the new 'Sunny Cove' processor core design.

CPU: lower clocks, but better performance

Intel launched 11 new 10th-generation processors. Five are Y-series processors, with a nominal TDP (thermal design power) of 9W. Note that this is an increase from the 5W TDP of earlier Y-series processors, though the only MacBook to currently use one, the MacBook Air, comes with a Core i5 8210Y that has an unusual TDP of 7W. Still, if the MacBook Air were to get a new processor, it would almost certainly be a Core i5 variant of one of these Y models, with 4 cores and 8 threads.

There are six U-series processors, with a TDP of around 15W (save for the top-end Core i7 1068G7



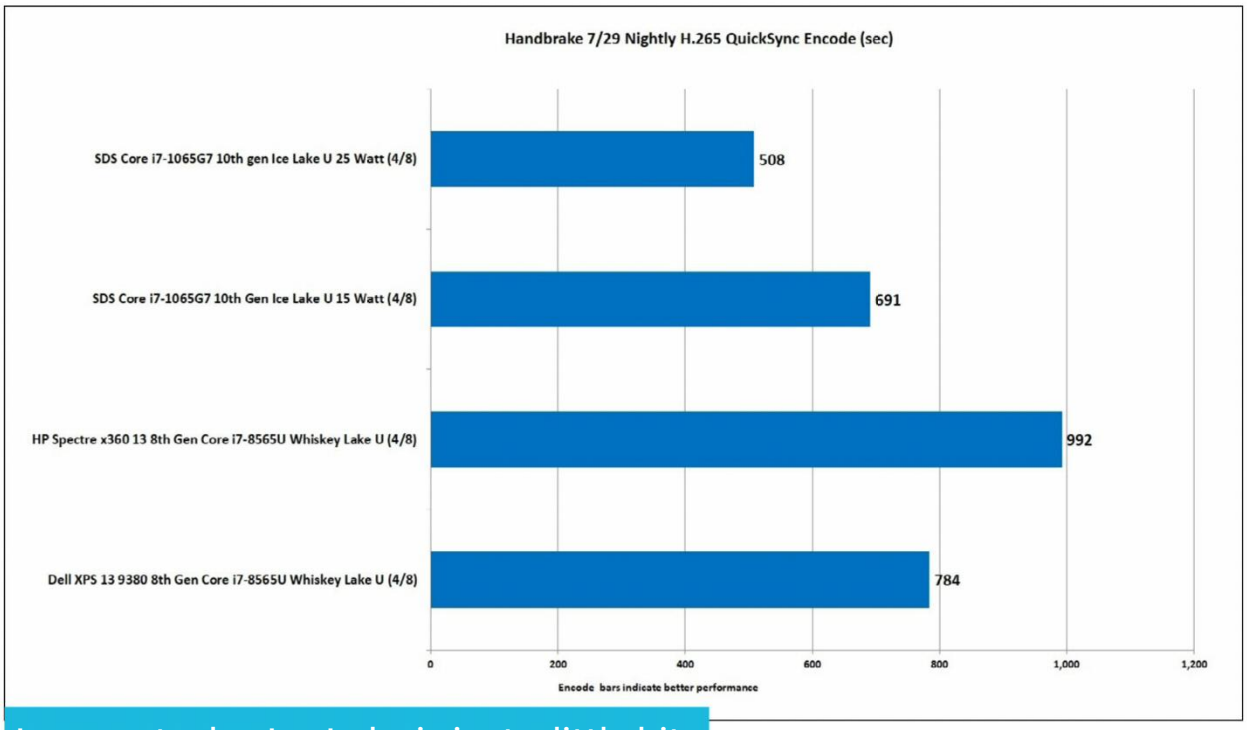
Intel's model numbers are getting no easier to decipher. Apple tends to hide these details, anyway

model with a 28W TDP). This is the class of chips that ship in 13in MacBook Pros.

Intel's new Sunny Cove CPU microarchitecture features a number of improvements over the Skylake microarchitecture found in its CPUs for the past few years. It's designed to be 'deeper and wider' with new instructions to speed up cryptographic and large vector operations, as well as larger caches and buffers.

Intel says to expect an overall 18 percent improvement in instructions-per-clock (IPC) across a wide variety of tasks, but encryption, video compression, and machine learning tasks should execute a lot faster.

Before you get all excited about the next round of MacBooks being 18 percent faster than the ones sold today (and much more in select tasks), get ready for some bad news. That big IPC boost is somewhat offset by the fact that these 10th-generation chips have significantly lower base



In many tasks, Ice Lake is just a little bit faster. But encryption and compression tasks get a big performance boost

and boost clocks than the Amber Lake and Coffee Lake-U chips they are replacing.

It's hard to get an exact picture of how well these chips will perform in a MacBook Air or 13in MacBook Pro. So much of laptop processor design is constrained by thermal design and the nature of the workload; short and bursty so that high turbo speeds can be maintained, or long sustained tasks that cause the processor to settle in at a lower clock speed?

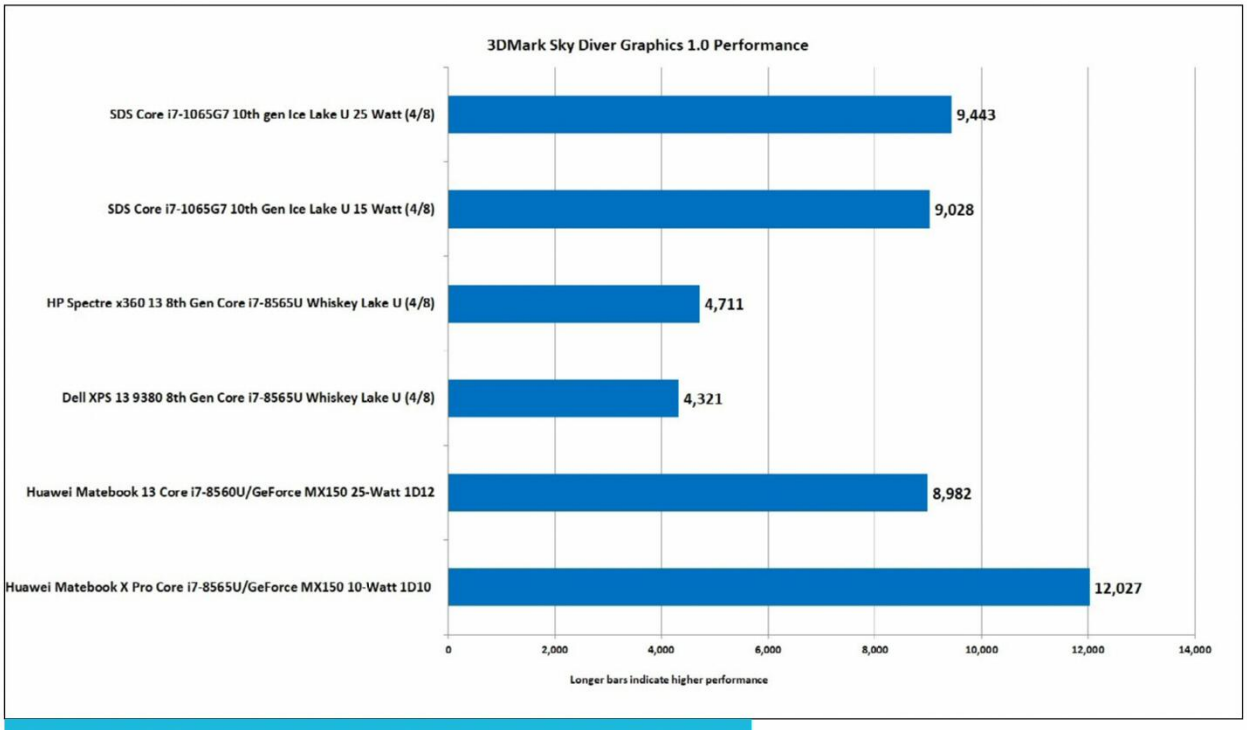
In our tests, the new 10th-generation processors perform just a few percent faster in many tasks, but short 'bursty' synthetic tests like Geekbench show about 10 percent better single-core performance

and 20 percent better multi-core performance. Some areas stand out, however. Quick Sync video compressions is more than 30 percent faster, as is AES encryption and other tests optimized for every wide vector operations.

If Apple puts these chips in a MacBook, we expect most day-to-day tasks to feel about the same as the current generation, but compressing or decompressing large files and encoding video to certain formats should be a lot speedier.

GPU: Game-changing performance

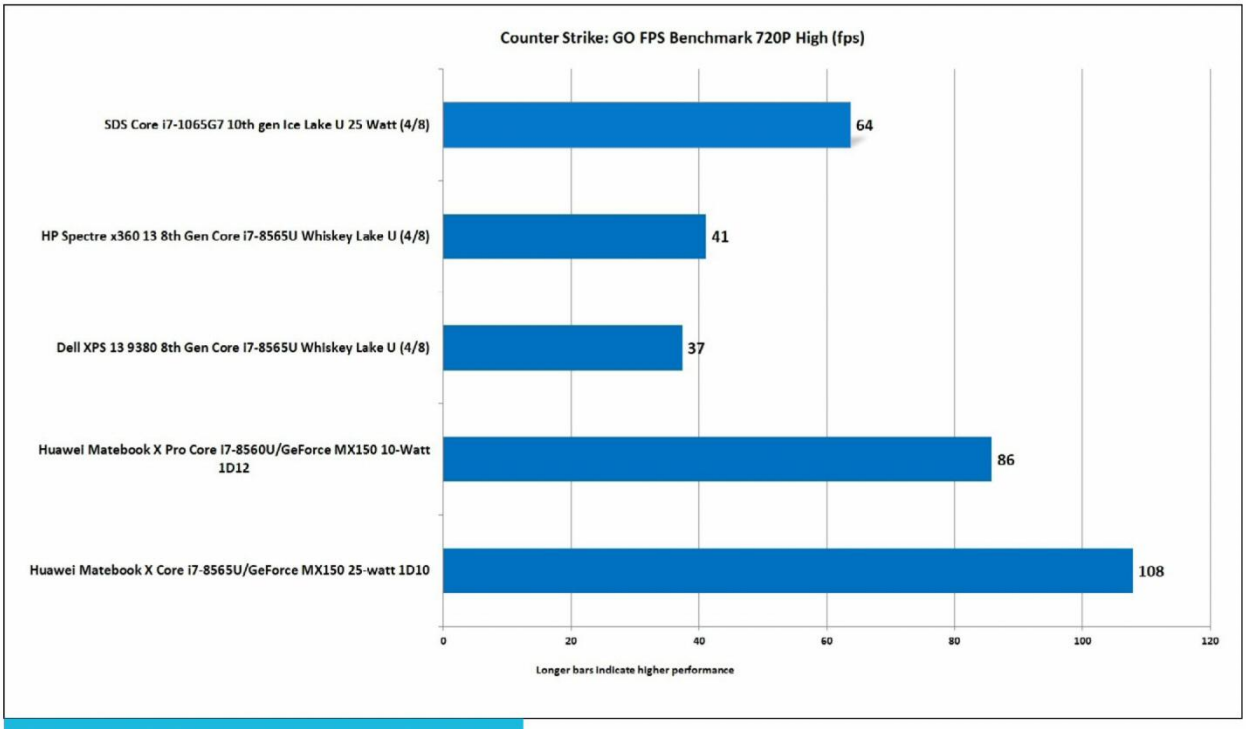
On the graphics side, Intel's 10th-generation processors deliver incredible gains. In several synthetic benchmark tests, the new Ice Lake chips



Synthetic graphics benchmarks are around twice as fast with 10th-generation chips

delivered around double the performance of the Whiskey Lake generation, and even managed to get close to ultra-low-power GeForce MX 510 running at a 10W configuration. Real-world game tests using World of Tanks Encore and Counter-Strike: GO don't show quite that same performance gap, but the new chips still deliver a greater than 50 percent boost in real-world graphics performance.

Mac laptops aren't exactly gaming machines (at least, not without hooking up an external GPU), but some light gaming is possible and that should be a lot more enjoyable with the new 10th-generation Intel CPUs. Graphics acceleration is important in many applications beyond gaming, and those might feel a lot smoother.



Even real-world games see a huge performance boost

Wi-Fi 6 and better display output

All of the new Ice Lake processors include Wi-Fi 6 support. That's the Gig+ speed standard formally known as 802.11ax, for which home routers are just now trickling out. If Apple doesn't supplant Intel's own Wi-Fi hardware with a chip with a separate networking chip, we can expect high-performance, future-proof Wi-Fi.

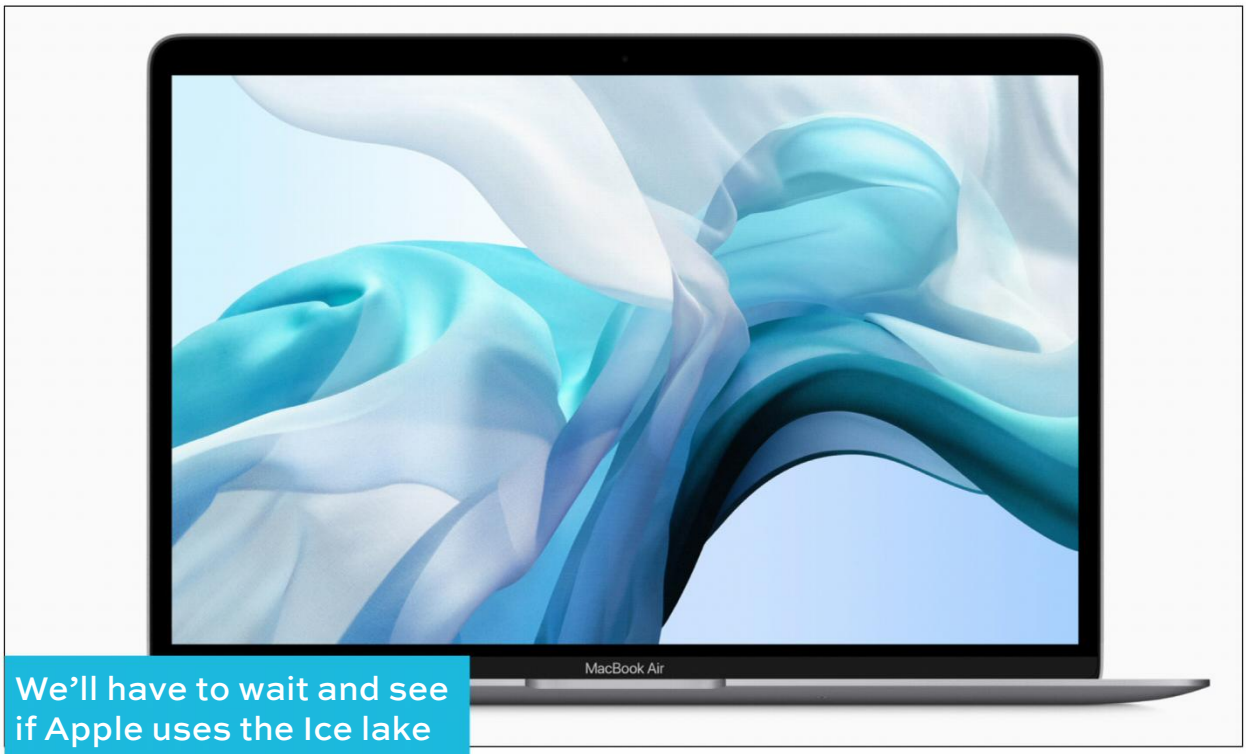
MacBooks built with Ice Lake CPUs should be all ready for that new Pro Display XDR monitor. The graphics engine has three display pipes that support DisplayPort 1.4 HBR3 and HDMI 2.08, plus HDR10 and Dolby Vision. You'll be able to hook up three simultaneous 4K displays at 120Hz, a pair of 5K displays at 60Hz, or a single 8K display at 30Hz.

Coming to a MacBook near you?

The million dollar question is: when will Ice Lake processors be available in a Mac laptop? As is typically the case with Apple, we just don't know. Intel expects PCs with these chips to hit the market in the last quarter of this year, but Apple is typically not in the first wave of laptops to use a ne Intel chip.

Often, a MacBook refresh featuring new Intel processors hits the market between three and six months after the first Windows laptops. If that holds true again, we can expect 10th-generation processors to arrive in MacBooks in the spring or summer of 2020.

The rumour mill says Apple is due to introduce a new 16in MacBook Pro this autumn, possibly along



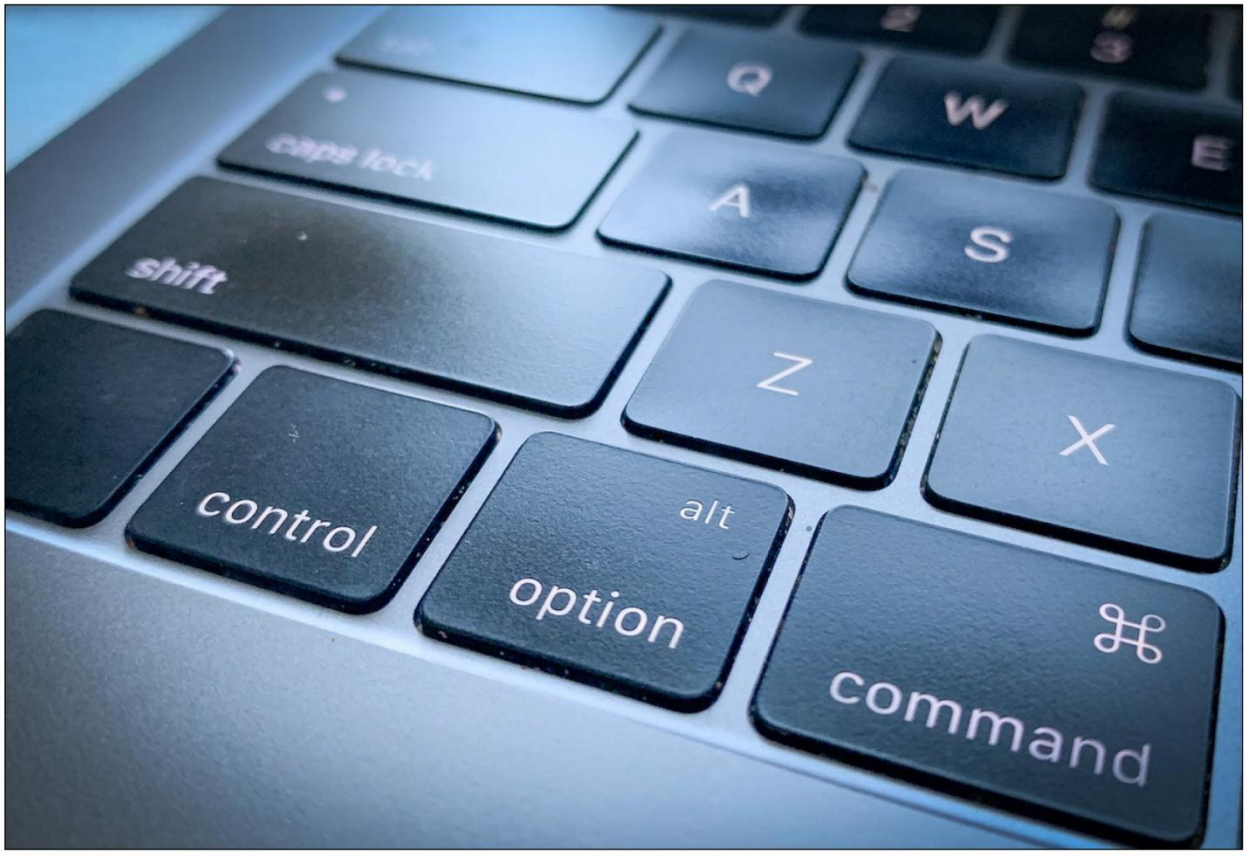
We'll have to wait and see if Apple uses the Ice lake chip in a future MacBook

with refreshed 13in models. That would probably be too soon to expect Ice Lake processors; if Apple releases those products this autumn, they will probably not contain 10th-generation Intel Core processors, and we'll have to wait for a product refresh next year.

FEATURE

10 Mac keyboard shortcuts you should be using

Want to take screenshots or find files faster? There's a shortcut for that, and many other things. **Leif Johnson** reports



If you're not using keyboard shortcuts on your Mac, you're missing out on a big part of the reason why so many people love Apple's desktop operating system. Thanks to the firm's integration of hardware and software, you'll rarely have to reach for your mouse or trackpad once you learn to speak the language of the keys.

MacOS has many shortcuts, but I consider these the ones everyone should know. I've tried to avoid (still useful) shortcuts with related Windows counterparts – such as ⌘+A to select all or ⌘+F open the Find prompt – and focus on shortcuts you may not be familiar with if you're new to Mac.

And let's talk about that '⌘' symbol. That's the Command key, and it's the key to all the shortcuts listed here. It works kind of like the Control key on a Windows PC, except it's in a handier spot – typically on both sides of the space bar. In the following examples, an example like '⌘+A' typically means you need to hold down the Command button and press A or press both at the same time.

If these shortcuts get you hooked, you can even make your own by going to System Preferences > Keyboard > Shortcuts and then choosing one of the options on the left.

1. Open the Spotlight search tool

⌘+Space bar: This is the most useful shortcut of all. Whenever you want to find a file on your Mac, tap this shortcut and type the name of the file you'd like the find in the prompt that pops up. The results are instant. Spotlight will also search through things like iMessages, bookmarks, and the full text of files on your hard drive. It's also a quick way to find and open apps you don't keep on your dock.

2. Immediately quit any app

⌘+Q: Use this command to shut down any app immediately. This command doesn't just minimize

the app (as sometimes happens when you hit the red 'X' button at the top of any Mac app) – it completely shuts it down.

3. Take screenshots or record the screen

As you can probably imagine, we use these shortcuts a lot here at Macworld. There are actually several ways you can take a screenshot on a Mac.

⌘+Shift+3: Screenshot the entire visible window. If you can see it on your Mac's screen, it'll show up in the screenshot.

⌘+Shift+4: Screenshot a specific area of the screen with the help of a rectangular cropping tool. This is the one I use the most, and it's also great for sharing images or snippets of text on social media.

⌘+Shift+5: Beginning with macOS Mojave, Apple made it easy to see all your screenshotting tools at once with this shortcut. Press it, and you'll see a toolbar that gives you options for capturing the entire screen, capturing a specific window, of capturing a specific portion of a window. You can also use it to record either the entire screen or a portion of it and choose where to save the image or video file. (By default, screenshots save to the desktop.)

4. Hide apps instantly

⌘+H: Here's one for sneaky people. If you're looking at something you don't want an

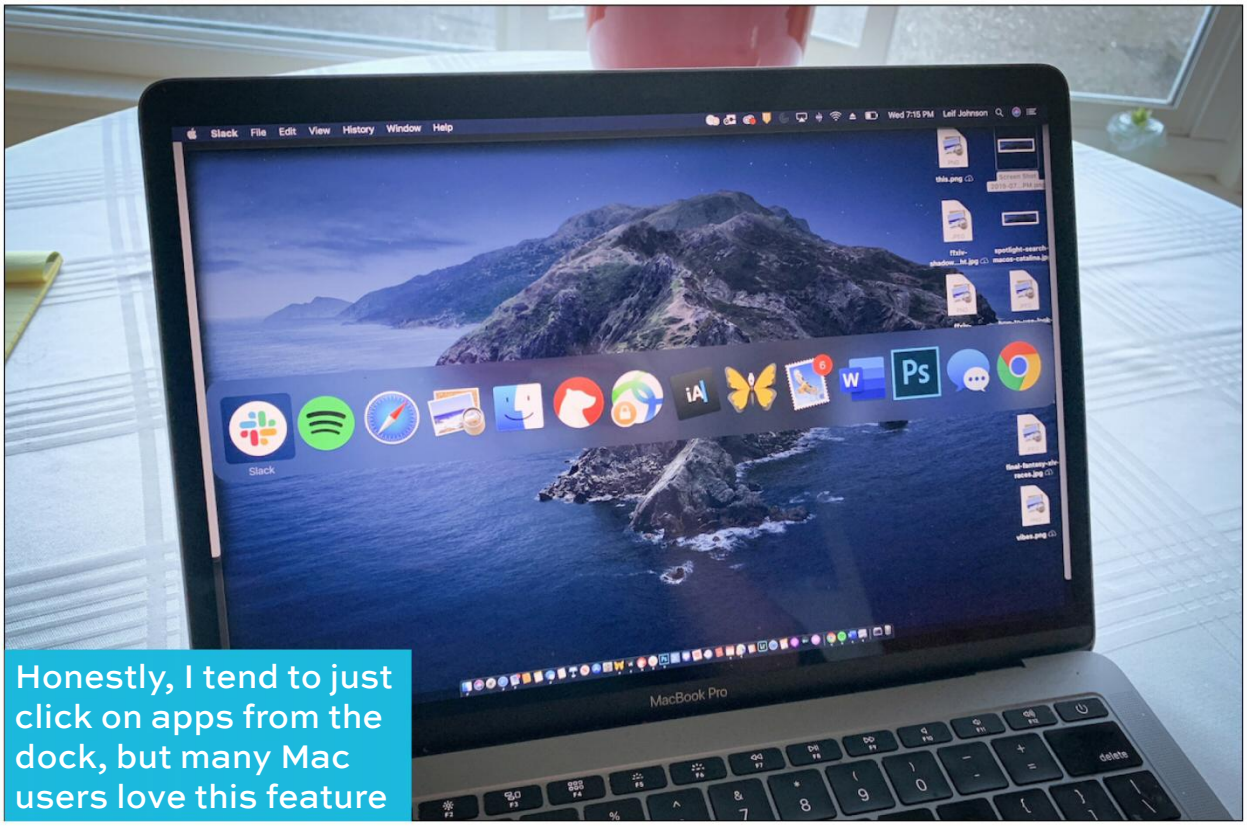
approaching boss, parent, or friend to see, tap this shortcut and the active open window will vanish. To start using the app again, press the app's icon on either the dock or the App Switcher.

You can do this for all active apps by holding down ⌘+Alt and pressing your mouse on any visible part of your desktop. Every app will 'Hide'. It's a great way to declutter your desktop.

If you simply want to minimize an app, press ⌘+M, but its preview will still show up on the right side of your dock.

5. Quickly switch between active apps

⌘+Tab: Holding ⌘ and then tapping Tab opens the App Switcher, which lets you easily switch between



Honestly, I tend to just click on apps from the dock, but many Mac users love this feature

all active apps by tapping Tab until you land on the one you want.

6. Switch between different windows in an app

⌘+~: This one makes research a lot easier. Let's say you have two documents open from Apple's Pages app: one with your notes and one with your draft. This shortcut lets you easily switch between the two (or more) documents. I find it's helpful if I'm working on a MacBook with a smaller screen where the split-view interface might feel too cramped.

7. Quickly access the search/address bar in Safari

⌘+L: Reaching for your mouse to activate Safari's search bar wastes a lot of time. Press this shortcut while you're using Safari, and the cursor will jump up to the search bar, where you can type out either a search term or an URL. This shortcut also works with Google Chrome. (You can also use it on Windows with the Control key.)

Safari has some other great keyboard shortcuts, too: ⌘+T opens a new tab, and ⌘+Z reopens the last tab you (possibly accidentally) closed. If you want to reopen an accidentally closed tab in Chrome or Opera, you can press ⌘+Shift+T.

8. Force-quit an App

⌘+Option+Q: If an app is locked up (and ⌘+Q isn't working for whatever reason), use this shortcut to

It's also just a convenient way to shut down a lot of apps at once

force the app to quit. You can also choose multiple apps to force-quit by pressing ⌘+Option+Esc (Escape), which is much like using Control-Alt+Delete on a PC. Instead of the Task Manager, though, you'll get a window that says Force Quit Applications and you can choose which app you want to close from there.

9. Immediately lock your Mac

⌘+Control+Q: If you're stepping away from your desk at home or the office and you don't want someone snooping around on your Mac, press this shortcut and your Mac will immediately switch

to the lock screen. It's a lot faster than doing it through the menu bar.

10. Use Quick Look to preview files

Click+Space Bar: If you want to see what a file looks like but you don't want to waste time opening the associated app, select the file in a Finder folder and then press the space bar. (This also works with files on the desktop.) A full-page preview will pop up – and with Markup options, too. This works for everything from images and PDFs to Microsoft Excel files.

You can also select multiple files to preview at once by holding down the Command key as you select them and then pressing ⌘+Y. (⌘+Y also works for single files, but in that case it's less convenient.) Once that window is open, you can navigate between the files with the arrow keys in the upper left.

16in MacBook Pro: All the rumours revealed

Everything we know so far. **Michael Simon** reports

For the first time in nearly a decade, a brand new MacBook Pro may be on the way. Rumours have been ramping up for months regarding a brand new 16in flagship notebook, expanding Apple's laptop line-up beyond the 13- and 15in models its been selling since 2012. Here's everything we know so far.

Design

With the first new size in eight years, it seems likely that Apple will also usher in a new MacBook design

Our fingers are crossed for the return of the light-up Apple logo

to go with it. Way back in February, analyst Ming-Chi Kuo predicted the new model would have an "all-new design", so we're inclined to believe him, especially since his other two rumours at the time – a modular Mac Pro and a 31.5in display – were on the money.

But there have been few details about what that might mean. We'd love to see the latest DigiTimes report of bezels as thin as the iPad Pro come true – which would still leave room for Face ID – as well rounded display corners, and a trimmer and lighter chassis. And while we're dreaming, we wouldn't be opposed to the return of the light-up Apple logo either, but we're not holding our breath for that.

The MacBook Pro needs to go

Keyboard

The MacBook keyboard has been a source of headaches, hand-wringing, and hatred, and rumour has it that Apple has finally got the message. After trying to fix the butterfly keyboard several times over recent MacBook releases, Kuo is predicting that Apple will be abandoning the mechanism it introduced in 2015 in favour of the more traditional scissor mechanism. He reports that the new mechanism will use “a glass fibre for a reinforced structure” and will likely be thicker than the existing keyboard, but we’re willing to bet that no one will notice or care – as long as it’s quieter, more durable, and won’t be nuked by a speck of dust.

One thing is certain about the new MacBook's keyboard, however: the Touch Bar will be standard. Apple's recent 13in MacBook Pro update eliminated the only non-Touch Bar Pro, so there's no turning back now. For better or worse, the Touch Bar is here to stay.

Processor and specs

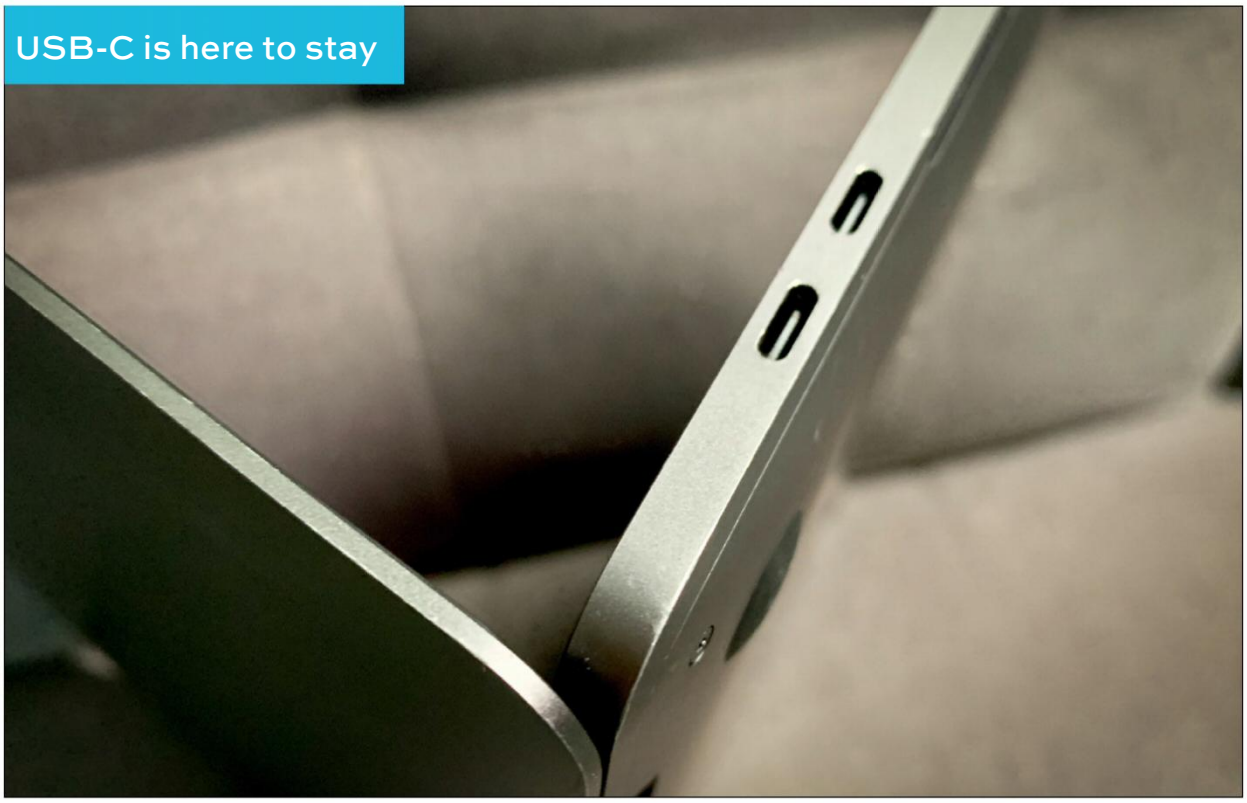
The current 15in MacBook Pro offers a 2.4GHz 8-core 9th-generation Intel Core i9 processor, which is pretty close to Intel's top-of-the-line. We expect the 16in MacBook Pro to at least match that and maybe even squeeze out a few more megahertz. Apple could opt for a higher base configuration of graphics card, but it's likely that the Radeon Pro Vega 16 and 20 will remain as BTO options, lest the entry level price enter the stratosphere. The same goes for RAM and storage, which will likely start at 16GB and 512GB, respectively, with options to go much higher.

Ports

Apple has decided that four USB-C Thunderbolt 3 ports are the standard for a pro machine, and that's unlikely to change. Don't expect the return of an SD card slot or a USB-A port. Let's just hope Apple doesn't decide to dump the headphone jack.

Price

Apple's MacBook Pro laptops don't come cheap. The 13in version starts at £1,299, while the 15in doesn't come cheaper than £2,399. We've heard



rumours that the 16in model will start as high as £2,999, according to the Economic Daily News, and we wouldn't be at all surprised if that's the case.

Consider this: the most expensive non-BTO 13in MacBook Pro is £1,999, leaving £400 between it and the 15in MacBook Pro. Meanwhile, the high-end 15in MacBook Pro tops out at £2,399 before any options. Apple the same scale and you're at £2,799. So if you want one, you should probably start saving now. The new laptop is expected to launch sometime in the fourth quarter, likely mid- to late October.

OPINION

Does Apple's Mac line-up have a hole in it?

Apple's recent tweaks to its portable Mac line-up puts the company in an unusual position. **Dan Moren** reports

When Steve Jobs came back to Apple, one of his early moves was to vastly simplify what had become a bloated line-up of Mac hardware. He famously showed off a two-by-two product grid: pro and consumer, desktop and portable. Filling the grid were four products – iMac, PowerMac, iBook, PowerBook – each addressing one of those combinations.

The two-by-two grid lasted for several years, until the debut of the category-busting Mac mini in 2005. Since then, there's been an almost magnetic impulse to cite the grid as the holy grail of Apple product design aspirations. Every time

the firm releases something a new Mac, pundits try desperately to figure out how to shove the latest addition into the already bulging grid.

With this week's rearrangement of its portable line-up, Apple has got both closer to and farther away from that product grid ideal – if indeed it's even an ideal that Apple should be striving for anymore. But what the new line-up does point out is that there's a puzzling imbalance in the company's Mac offerings.

Home and away

At the end of last year, Apple announced it would no longer report unit sales on its products, depriving both financial analysts and us poor tech writers of hard data on which to base our speculation. But look back further and you'll find Apple actually used to break out its portable versus desktop sales. The last filing to report those, in the last quarter of 2012, shows that the company sold about a million desktops, compared to 3 million portables. Since then, Apple has given occasional breakdowns on the percentage of desktop versus laptop sales, though even those have become fewer and farther between. But in general, Apple's laptop sales are understood to outpace those of its desktops.

Of course, some of that could be attributed to pent-up demand: Apple's lacklustre 2013 Mac Pro stifled sales for high-end desktop Macs; the same could be said on the low-end for the Mac mini, which went several years without a significant upgrade. But the overall trend in the market has

A vast majority of Macs sold by Apple are laptops

been undeniably towards mobile computing, driven in part by Mac laptops, but also by the phenomenal success of iOS devices.

Laptop of luxury

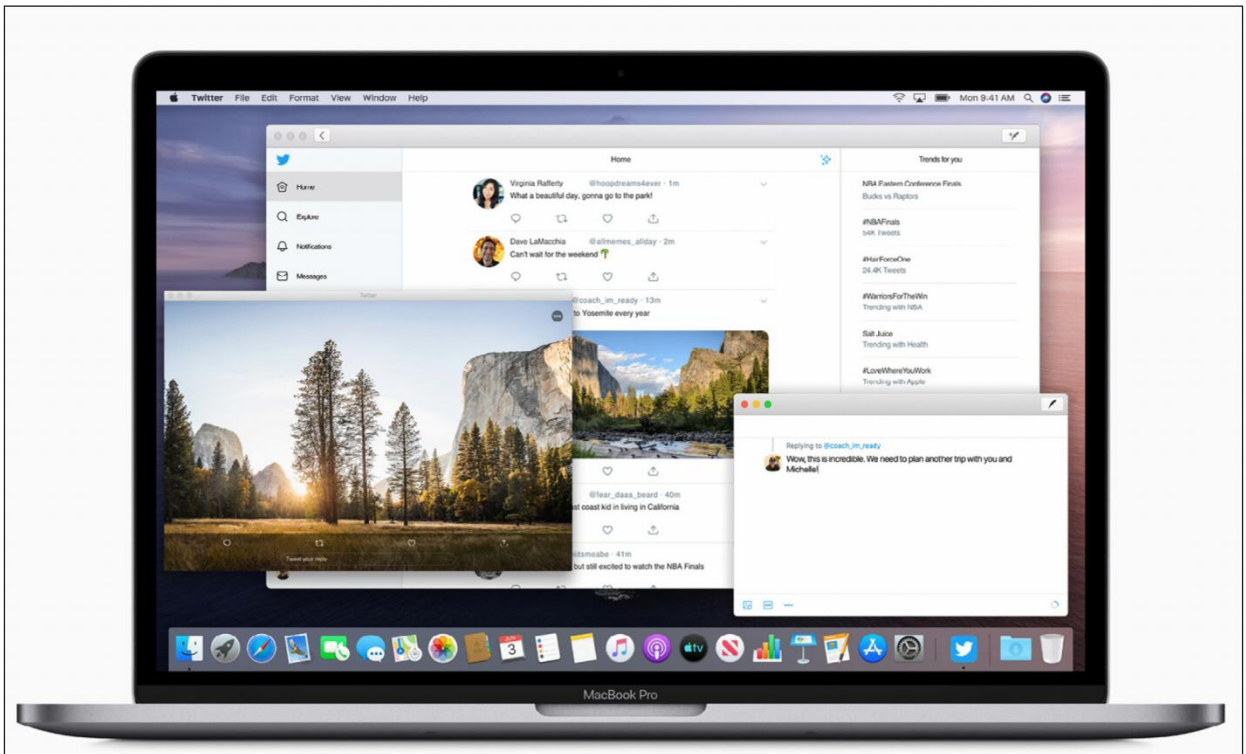
Given the high demand for Mac laptops, it makes sense that Apple would be aggressive about its products. Hence the recent rejigging of the MacBook line-up, which saw cheaper entry-level prices for the MacBook Air and MacBook Pro, as well as the latter getting a more streamlined selection of models. (For the moment, we'll set aside the frustrations about Apple laptops voiced from certain corners, including keyboard woes.)

The simultaneous discontinuation of the 12in MacBook, Apple's smallest and most lightweight offering, seemingly brings the laptop line-up back into the territory of that two-by-two product grid: the MacBook Air is Apple's consumer portable; the MacBook Pro its professional model.

But this also means that, for the first time in a long time, Apple's desktop line-up provides a broader range of options than its laptop bench. You have the Mac mini, the iMac, the iMac Pro, and the forthcoming Mac Pro. Even if you jammed the iMac and the iMac Pro into the same product box, your grid would still be straining at the seams. In fact, you can pretty much move the desktops into their own two-by-two product grid: all-in-one consumer (iMac) and professional (iMac Pro) models versus modular consumer (Mac mini) and professional (Mac Pro) models. Even that analogy is imperfect: while the Mac Pro and iMac Pro are clearly professional-level machines, the iMac and Mac mini are hardly slouches.

The missing link

So, what gives? Is Apple all in on desktops over laptops now? One interpretation might be that Apple has realized mobile computing has shifted towards iOS devices, especially for the kind of lightweight category that the 12in MacBook used to fill. Still, the MacBook line-up seems to be missing something. Since the MacBook Air's introduction back in 2008, Apple's always had a thin, light laptop in the mix, usually representing



RIP, MacBook. (For now, maybe?)

the puck towards which the company is skating with its portable offerings. But with the 12in MacBook, the consensus often seemed to be that the company had skated too far too fast, made too many trade-offs. It didn't help that the revamped MacBook Air seemed to address much the same market, and provided better bang for the buck.

But that doesn't mean there isn't room for an ultralight MacBook in the mix. I've been banging the ARM-based MacBook drum for a while now, in the hopes that I'll eventually be that stopped clock that's right twice a day. Such a device could theoretically provide much better power efficiency in a package that's lighter and smaller than a

MacBook Air – and perhaps has more acceptable trade-offs. And if a newer device is in the works, it potentially explains why Apple might choose to discontinue the 12in MacBook now rather than simply updating it at a later date.

Goodbye, grid

That said, what Apple's overall Mac line-up is making clear is that the two-by-two product grid of yesteryear isn't an ideal we'll be getting back to anytime soon. For one thing, as much as the lines between consumer and professional have blurred, the types of devices have gotten fuzzy as well. Where do iPads fall in that theoretical grid? Are they part of the company's portable strategy, or an entirely separate row in the grid? What about iPhones, for that matter?

As comforting as the two-by-two product grid is, it's ultimately a pipe-dream in this day and age. Most of us don't have just one or two devices anymore: we have a panoply of gadgets that fill a variety of purposes, from Apple Watches on our wrists to Apple TVs or HomePods in our houses. The product grid was a useful tool, once upon a time, but perhaps it's outlived its usefulness in a day and age where it seems we all live inside a grid all the time.