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KEYSTONE MacCentral

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Keystone MacCentral Macintosh Users Group ❖ www.keystonemac.com

Keystone MacCentral September Program

Sept 21, 2021 06:30 PM

Our program will include what's new at Apple and continue our series on iPhone Photo Tips

Please see your membership email for the links to this month's Zoom meeting or email us at KeystoneMacCentral@mac.com.

We have virtual meetings via Zoom on the third Tuesday of each month.

Emails will be sent out prior to each meeting. Follow the directions/invitation each month on our email – that is, just click on the link to join our meeting..

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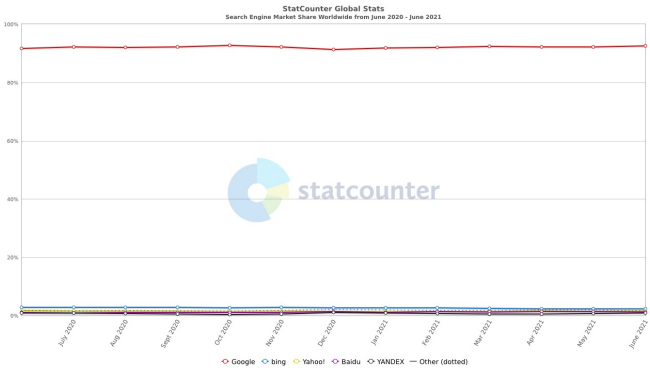
By Adam Engst

Brave Search Public Beta Offers Alternative to Google

Google has risen to its position of dominance in the tech world on the back of its search engine, which has no effective competition. According to StatCounter, Google has 92.49% of the worldwide search engine market share, with Microsoft Bing second at 2.31% and Yahoo Search (based on Bing) at 1.53%. Is there room for a new search engine, such as the just-announced Brave Search? Perhaps, if it can combine quality search results with a focus on privacy.



That's because Google's business model revolves around tracking and profiling users and then using that information to underpin the targeting of ads. For some people, that's become anathema, pushing them to switch to DuckDuckGo (also based on Bing, see "Search in Private with DuckDuckGo," 20 August 2014). But DuckDuckGo has acquired only 0.6% of the market.

I'm not as perturbed by Google's business model as many people are because I think Google services generally make the world a better place. (Unlike other companies I could mention.) To varying extents, I like and use Google Search, Gmail, Google Docs, YouTube, Google Maps, Google Photos, and Google Translate. Though I don't use either, Android and Chrome OS have made a positive impact overall, too. Other subsidiaries of Google's parent company Alphabet, like healthcare innovation company Verily and the self-driving car firm Waymo, offer a vision of a better technology-enabled future.

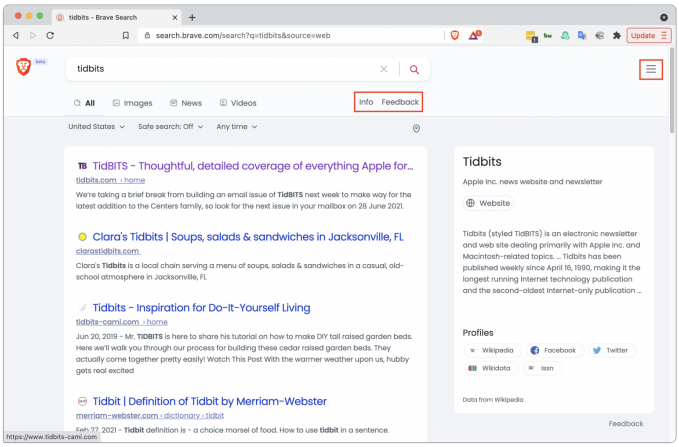
Nevertheless, there are times when I get tired of thinking about Google tracking my Web searches and bundling that information into my online dossier—check My Activity to see what Google knows about you. So when Apple made it possible to use the Ecosia search engine from Safari's address bar late last year (see "Apple Releases Apple Fitness+, macOS 11.1 Big Sur, iOS 14.3, iPadOS 14.3, watchOS 7.2, and tvOS 14.3," 14 December 2020), I decided to give it a try.

Put bluntly, Ecosia failed. It's not that it didn't work, nor did it always provide poor results. But too often, I'd find myself questioning its results or knowing they weren't what I wanted. Ecosia relies on Bing, just like DuckDuckGo (which I've tried and discarded in the past as well), so I gave up and went back to Google. I'm all in favor of privacy, but not at the expense of frequent search failures.

Introducing Brave Search

When Brave first released Brave Search in private beta, I jumped at the chance to try it. And you know what? It was pretty darn good. Now and then, I'd find myself sending a search directly to Google after Brave Search didn't find what I wanted, but it passed the annoyance test that Ecosia and DuckDuckGo had failed. It probably didn't hurt that Brave was upfront about how Brave Search was in beta—it wasn't pretending to be a finished product. Brave soon moved Brave Search into public beta, and that's where we stand now.

Happily, Brave Search passed my initial litmus test—knowing that a search for "tidbits" should put TidBITS above a Florida sandwich shop, even without knowing anything about me, unlike Google. I like it already.

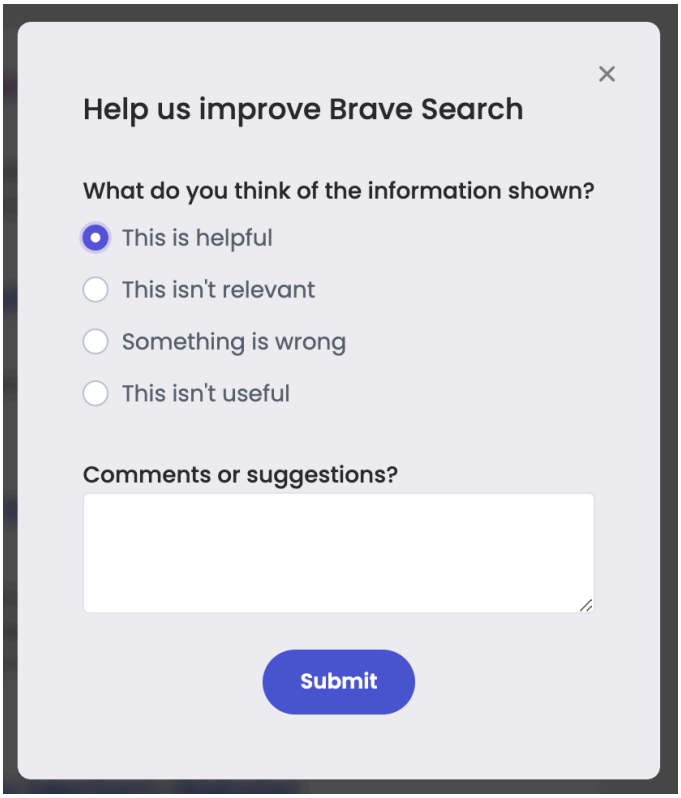


Searches work as you'd expect, with a ranked set of results and options at the top to focus the results on images, news, and videos. There are no ads at the moment, and I find the results clean and easy to read. All search results can be filtered by country (so searches on "penguins" finds the Pittsburgh Penguins for the US, but the penguins at the Adelaide Zoo for Australia), along with a safe search (presumably to filter smutty results), and time (so you can see only recent pages). With images, sub-filters let you limit the results based on size, type, layout, and color. Videos can also be sub-filtered by duration and resolution.

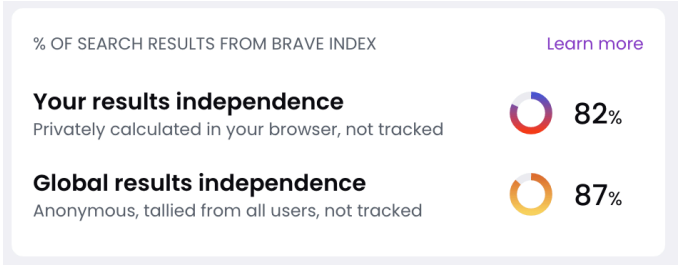
The main reasons to try the Brave Search beta now are that it is:

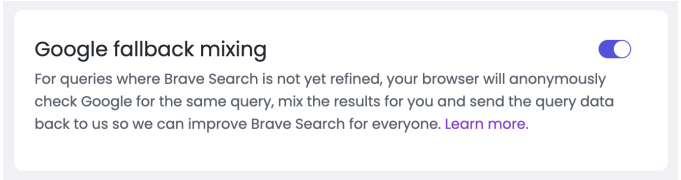
- **Private:** All searches are entirely anonymous and private, with absolutely no tracking of queries. The user comes first, not the advertising or data-collection industries.
- **Independent:** For Brave Search, Brave purchased the Tailcat search engine developed by a company called Cliqz. As long as the search result quality is there, I approve highly of a search engine that's not from Google or Microsoft.

That said, while Brave Search remains in beta, it's not entirely independent. As the company explains, it currently makes anonymous API calls to other search engines to check the quality of the results to make sure they are at the level users expect. Either way, you can click the Feedback button and share your opinion about whether the results are helpful, irrelevant, incorrect, or simply not useful.



Brave reports on how independent its results are for every results page (click the Info button) and in aggregate in the settings (click the hamburger button at the top right of the page). In the settings, Brave reports on the percentage of results for your queries that come from Brave's index (82% and rising for me right now) and the global percentage of all worldwide searches that come from Brave's index (87%). If you don't want this to happen, you can turn off Google Fallback Mixing in the Brave Search settings (again, click the hamburger button on any search results page).





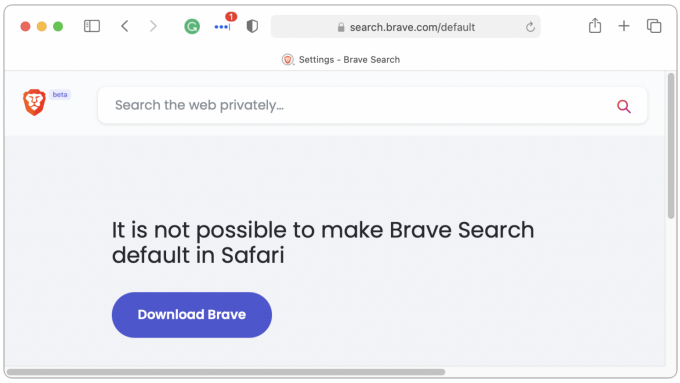
Brave has also promised a pair of initiatives that point to a better searching future:

- **Choice:** Brave says it will soon give users the choice of an ad-supported search (still without tracking) or an ad-free paid search. Finally, a chance for those of us who want to avoid ads to put our money where our mouths are.
- **Community:** Although Brave Search has its own proprietary ranking algorithm, the Tailcat developers have proposed a system called Goggles that lets users explicitly rerank results using community-created filters that instantiate their preferred biases.

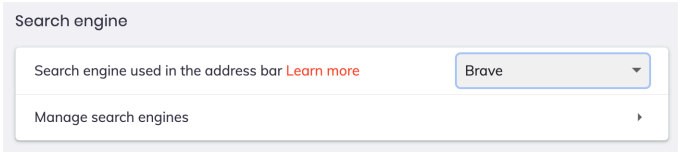
The Goggles proposal is interesting and worth a read. In essence, it offers a way to create a plurality of rankings rather than require users to submit to a single ranking, even one that attempts to personalize itself to their desires. The paper suggests that the community might create Goggles that would focus on only high-quality tech blogs, product reviews that don't have commercial intent, minor news outlets in particular countries (instead of just major newspapers), or recipe blogs vetted by particular cooks. There's no way to avoid confirmation bias, but the Goggles system makes that reality explicit and supports those who wish to explore outside their biases. That's all in the future, of course, and we'll see how effective it is if and when it ships.

Setting Up Brave Search

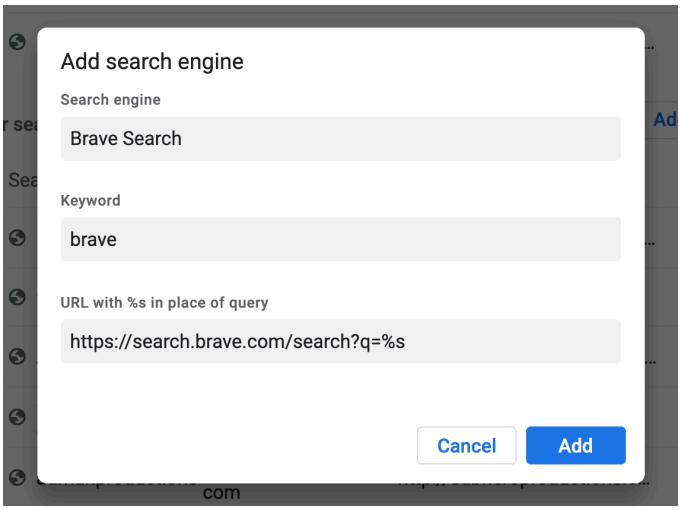
You can use Brave Search in any Web browser by loading https://search.brave.com/. That's fussy, though, and in most Web browsers other than Safari, there are ways to enter anything you want as a default search engine so you can search from the address bar. We can hope that Apple adds Brave Search to Safari's search engine list soon—I've submitted it as a suggestion via Apple's Feedback Assistant app, and I'd encourage others to do the same.



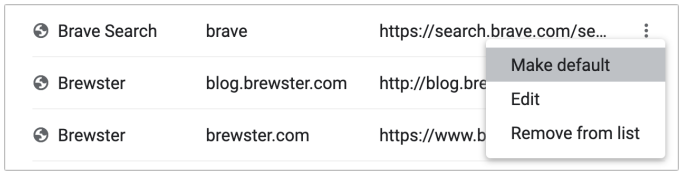
The easiest way to use Brave Search is in the Brave browser itself, of course, where you can navigate to Settings > Search Engine and choose Brave as the search engine used in the address bar. (If you don't see this option, quit and relaunch Brave to install the latest update.)



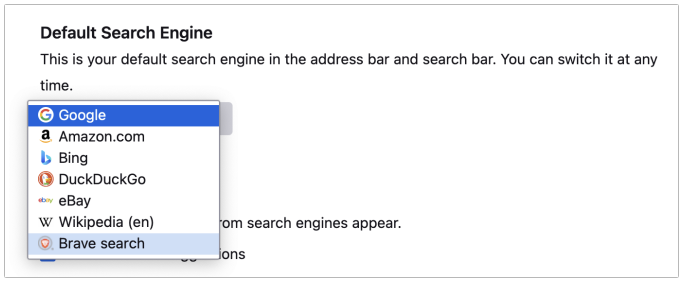
The process isn't much more difficult in Google Chrome and other Chromium-based browsers like Microsoft Edge. Go to Chrome > Preferences > Search Engine > Manage Search Engines, and click the Add button. Enter the details for Brave Search as in the screenshot below (the key is the https://search.brave.com/search?q=%s URL).



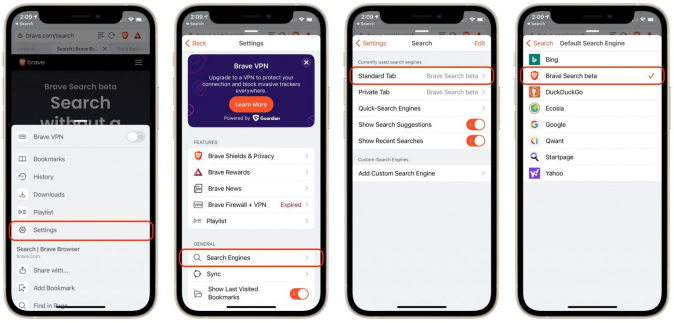
Then scroll down in the list of search engines to find Brave, click the three stacked dots, and choose Make Default.



In Firefox, there's a Brave Search add-on that, when added to Firefox, lets you choose Brave Search as your default search engine in Firefox > Preferences > Search.



In iOS, the main way I can see to use Brave Search is to use the Brave app as your default Web browser. On any page, tap the ••• button at the bottom right of the screen, then navigate to Settings > Search Engines > Standard Tab > Brave Search beta.



It's important to remember that Brave Search is still in beta, so it may not perform as well as Google. Realistically, it's not likely to be as good as Google for quite some time—that's an awfully high bar. However, I've been using Brave Search exclusively on my Mac for several weeks now, and only a few times have I explicitly switched to a Google search to see if I'd get better results. Perhaps we're entering a brave new search world!

By Glenn Fleishman

Improve Your Home Wi-Fi with Mesh, Powerline, MoCA, or More Routers

If you've made it this far through the pandemic without cursing your home Wi-Fi, congratulations! You're a rare bird, and you don't need this article. Read on, however, if you're not getting the performance and coverage you want or you're not sure what steps to take to improve your networked life.

Pay Attention to the Internet Connection

Your Wi-Fi network performance for Internet-based tasks is, of course, dependent on the speed of your Internet connection. If you're stuck at low double-digit speeds from an incumbent carrier, it might be time to look at new local wired and wireless competitors, like T-Mobile's 4G/5G home broadband service in some markets. (See "T-Mobile Offers Unlimited 5G Home Broadband Service," 14 April 2021.)

You may also be able to call your provider and get a better plan or pricing by threatening to switch to a competitor. Over the last few years, I negotiated my 1 Gbps service from CenturyLink from its initial monthly price of $155 down to $85 as the company lowered what it charged new customers and then was willing to drop my fees to match.

If your Internet connection is as souped-up as you're willing to pay for, let's look at options to extend your home network and boost performance and coverage.

Connect the Network Dots with Cables

Despite having focused much of my tech writing on wireless networking for over 20 years, I often find wired connections work best. That's true in nearly all cases except mesh wireless networking, which can sometimes benefit from a wired network, too! Most of the time, connecting a broadband modem and Wi-Fi base stations with wires provides the best throughput. It also gives you the option to plug in computers and streaming video boxes that need high throughput.

When it comes to wires, you have three options, each with varying costs, availability, and installation hassles: Ethernet, powerline, and MoCA.

Ethernet

All wired networking stems from Ethernet, a decades-old standard that's affordable even in its gigabit flavor. The wiring, switches, and other elements you need to build or extend an Ethernet network will likely cost only tens of dollars. If you have access to crawl spaces or an attic, or if you can drill through even a single wall, you can pull Ethernet cable.

I used to buy a box of Ethernet cable, cut it to length, and crimp RJ45 connectors onto the ends. But because finished and tested Ethernet cables cost so little now, I prefer buying pre-made cables that I know have been tested to work—unlike those I made from scratch. For installing plugs in walls, I like double-sided wall plates that have a jack on either side.

Look for "Cat-6" cables, where the "Cat" means "category" and the "6" refers to a set of electrical specifications designed to allow for certain kinds of performance. You can pay a little less for Cat-5e, but it's not worth the savings. Cat-6 has better insulation to protect against interference, and it's designed for the long haul. If you want to use 10 Gbps Ethernet when that becomes affordable for home use, you can with Cat-6 cabling.

Modern Ethernet switches, cards, and other hardware have auto-sensing, auto-switching ports: long gone is the need to have special patch cables or flip switches. You just plug it all in. 100 Mbps and 1 Gbps devices can work on the same network with no additional effort or slowdown.

If you can't easily access the innards of your home to run Ethernet cable, two other options have matured into great alternatives to or extensions of Ethernet.

Powerline Networking

Your home electrical wiring can carry both power and data by adding powerline networking adapters. A powerline adapter forms a network with other adapters plugged into the same leg of an electrical circuit in your home. The current generation of technology offers raw rates up to 2 Gbps.

Powerline adapters must plug directly into a wall socket and typically sport at least one gigabit Ethernet jack. Some also include a pass-through electrical plug, a built-in Wi-Fi router to extend a network, or a second Ethernet jack. Prices start at as little as $50 for a set of two with a data rate up to 1 Gbps.

If you live in a shared home or in a building with electrical wiring that may extend beyond your domicile, you can press a button on each adapter to enable security, much like simple Bluetooth pairing.

Powerline technology may not work across any two outlets in a home depending on how the electrical panel is set up, but the current generation is far more tolerant of wiring issues than the earlier ones.

MoCA (Multimedia over Coax Alliance)

Over a period of several decades, many new and renovated homes were wired for cable TV with coaxial cable in every room and a central wiring panel that distributed services from a provider's incoming wire. MoCA takes advantage of this infrastructure by encoding 1 Gbps or 2.5 Gbps over coax, with adapters offering one or more Ethernet jacks. It's more robust and reliable than powerline networking, but it's also more expensive. A pair of 1 Gbps adapters costs nearly $140.

You may need to secure a network created via MoCA adapters if you have cable broadband or video service. A point of entry (PoE) filter prevents neighbors within a short distance from tapping into your network with their own MoCA gear. These filters are readily available and cost about $5. You can also (or instead) set a password on MoCA adapters that encrypts traffic between them via a Web administration interface, much like setting a password for a Wi-Fi network.

A Real-World Example

In my home, we hit the wall (almost literally) when my wife set up a new office space for her coaching business in our bedroom. Despite having an Ethernet-connected Wi-Fi router in a basement guest room directly beneath where she worked and a wireless extender in our bedroom, she could not get reliable throughput—critical for her video sessions with clients.

After buying some Ethernet cabling and gear and tracing empty spots in the house, I realized adding more wire would be very involved and might require bringing in a cabling specialist. Our house has largely wood lath and brittle plaster walls from the 1920s that are difficult to drill through without causing a lot of damage. Since we have no coax in the house, I tested to see if powerline networking would work for our situation.

I purchased a pair of powerline adapters: the TP-Link AV1000 (TL-PA7017P kit, $52.99). They use the AV2 standard, which offers up to 1 Gbps, and each has one Ethernet port. (If you need higher throughput, the TP-Link AV2000 units (TL-PA9020P kit, under $100) have two Ethernet ports and a raw data rate of up to 2 Gbps.)

Given we already had a Wi-Fi range extender (the TP-Link AC1750 WiFi Extender, model RE450, $59.99) in the bedroom that couldn't pump out more than 1 Gbps, we checked to make sure the TP-Link AV1000 could deliver the maximum data rate we needed. It did: that pair of plugs provided the wired extension, and our Wi-Fi range extender's Ethernet port took its incoming connection from one of the powerline adapters. Problem solved.

Upgrade Your Wi-Fi Router

Upgrading to current Wi-Fi gateways or switching to mesh networking can solve problems of both low throughput and spotty coverage.

You may have outdated Wi-Fi gear. A lot of people do, and that included me until the pandemic hit. Then I had to add into the mix the bandwidth demands of two kids requiring full-time video-based remote learning. While most of my equipment supported at least the 802.11n wireless network standard (Wi-Fi 4), I upgraded everything that didn't to 802.11ac (Wi-Fi 5). (For an explanation of generations, see "Wi-Fi Switches from Obscure Protocol Names to Simple Generation Numbers" 5 October 2018.)

To give you an idea of how easy it is to fall behind the networking curve when everything is working fine, I wrote about Apple adding 802.11ac to the AirPort Extreme Base Station over 8 years ago (see "802.11ac Promises Better Coverage, but Won't Hit Advertised Speeds," 13 June 2013).

A household with only 802.11n devices likely can't keep up with multiple family members using videoconferencing, streaming video services, or bandwidth- or latency-intensive Internet services and games. Upgrade to 802.11ac for a substantial difference, or future-proof with the latest standard, 802.11ax (Wi-Fi 6), which now doesn't cost much more than 802.11ac.

If I were making the change today, I'd probably switch to 802.11ax, which offers more efficient use of the wireless spectrum and higher potential maximum throughput than any previous version. The techniques in 802.11ax include advanced strategies to avoid interference with other routers and nearby networks. It can also target individual devices by varying power across multiple antennas to "steer" or "beamform" signals to where they best overlap for reception.

As one example of a modern 802.11ax router, take a look at the TP-Link Archer AX20, which at $99.99 can offer throughput that maxes out at 1.8 Gbps across 2.4 and 5 GHz bands and has four gigabit Ethernet LAN ports. (Neither I nor TidBITS have any relationship with TP-Link. I chose to standardize on TP-Link gear for cost, features, and management via its Tether app.)

Switch to Mesh Networking

Conventional routers like the TP-Link Archer AX20 still require wired connections to other routers to extend the network, using any of the techniques above for extending a network. Many people have instead opted into mesh networking, which can rely entirely on wireless communication among network components, called *nodes*.

As far as the client hardware is concerned—a computer, phone, tablet, or other device—the nodes act exactly like regular Wi-Fi access points. But when communicating among each other, nodes determine the most efficient way to send data packets between source and destination, whether to and from the Internet or among devices on the network.

Nodes don't require any wiring. You just set up two or more of them, often with iPhone app assistance about optimal placement, and they find each other and start routing data. The NetGear Orbi and

Blackhawk and Amazon Eero (see "Eero Provides Good Wi-Fi Coverage in a Handsome Package," 25 June 2016) are three of the most popular hardware options, but D-Link, Cisco Linksys, TP-Link, and others also have mesh offerings. (The Linksys Velop is the only one sold in Apple's stores. See "Velop Provides First-Rate but Expensive Wi-Fi Mesh Networking" 9 July 2018.)

Mesh networking has one drawback: it uses Wi-Fi frequencies to communicate with both client hardware and other nodes. That means every re-transmission of data between nodes reduces the overall network throughput. With a busy network full of streaming data, that approach can cut into your performance and result in lower throughput, choppy video, and slower downloads and uploads.

If you need high and consistent throughput, I recommend purchasing either so-called "tri-band" mesh nodes *or* nodes that have wired backhaul:

- A tri-band node has three separate radio systems. One is devoted to the lower-throughput, backward-compatible, and better-penetrating 2.4 GHz band, while the other two work over the high-throughput 5 GHz band. One of the 5 GHz radios is dedicated to intra-node communication, dramatically improving overall throughput.
- It might seem ironic to get a mesh node and then rely on Ethernet for backhaul, but it's a good alternative. By purchasing nodes with Ethernet ports designed for intra-node communication, you can opt for a cheaper dual-band mesh model and use Ethernet (or powerline or MoCA) to get the highest throughput. You still get most of the benefits of mesh networking: intelligent and dynamic routing, minimal configuration, and flexibility.

Mesh networking nodes that meet my high-throughput recommendations cost about the same as the comparable number of traditional Wi-Fi gateways.

The original dual-band Eero with Ethernet backhaul is $199 for a three-pack; the Eero 6 Pro with both Ethernet and a tri-band radio system runs $599 for its three-pack. The difference? The plain Eero promises coverage with three nodes over a smaller area than the Eero 6 Pro (5000 square feet/465 square meters versus 6000 square feet/557 square meters) and up to 500 Mbps of throughput compared to 1 Gbps.

A similar price split exists at NetGear, even comparing two sets of nodes that all have tri-band radio systems and Ethernet. The three-pack Orbi AC2200 Mesh WiFi System (bundle number RBK23) costs $299.99 and promises a maximum speed of about 1.3 Gbps over 6000 square feet. The three-pack Orbi AX4200 WiFi Mesh System (bundle number RBK753) is $449.99 (that's $100 off its list price) and claims up to 4.2 Gbps across 7500 square feet/697 square meters.

Speed Up!

If you've been suffering with a Wi-Fi network that doesn't provide the coverage and throughput you need for Zoom calls, Apple TV streaming, and everything else you want to do, there's no reason to live with it any longer. Just spend a few minutes evaluating your needs, how much you're willing to spend, and the physical constraints of your home. Then decide whether it makes sense to jump to a modern mesh network or rely on one of the wired solutions with additional traditional Wi-Fi routers.

by Jason Cipriani

Check for Pegasus spyware

If you're like me, you're curious about whether your iPhone or iPad is infected by Pegasus spyware. Here's how to check for peace of mind.

You'll need to connect your iPhone to your computer to check for Pegasus spyware.

Every time there's a report about an iPhone or iPad exploit being actively distributed and used, it's unnerving. In July, it was revealed that security researchers discovered evidence of Pegasus spyware being used on the phones of journalists, politicians and activists.

The spyware can be remotely installed on a target's iPhone or iPad without the owner taking any action, granting the person or organization who installed it full access to the device and all the data it holds. That includes text messages, emails and even recording phone calls. Pegasus was originally designed and is marketed by its creator, the NSO Group, to monitor criminals and terrorists.

I think it's only natural to wonder if your devices are infected whenever reports like this surface, even though there's no reason for any government entity to want to monitor my iPhone use. That is, unless they really want to know how much time I spend on TikTok every day. And in that case, they can just ask. (Spoiler: It's a lot.) For those who are curious, like me, there's now a free tool that allows you to check your iPhone or iPad with a few clicks of the mouse.

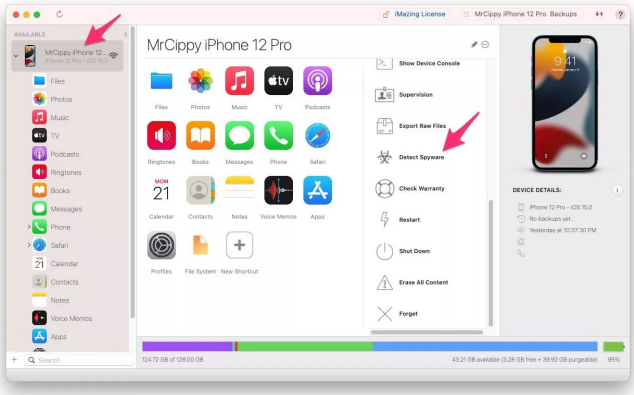
To be clear, the odds of your iPhone or iPad being infected by the Pegasus Spyware are low, and various reports claim that the most recent update, iOS 14.7.1, fixed the exploit Pegasus was using, but that hasn't been confirmed by Apple. That said, if you want peace of mind -- just in case -- by knowing that your device is free of anyone spying on you, here's what you need to do.

Download and install iMazing's app on your Mac

iMazing recently updated its Mac and PC app to include Amnesty International's Mobile Verification Toolkit (MVT) which was built to detect signs of Pegasus on a device and isn't charging users to access the feature.

Download iMazing for your respective computer from the company's website. Don't worry about buying the app, we can run the full spyware test using the free trial.

After it's downloaded, install iMazing and then open it. When prompted, select free trial.



The longest part is waiting for the app to make a back up of your iPhone or iPad.

How to run the Pegasus Spyware test on your iPhone or iPad

With iMazing installed and running, connect your iPhone or iPad to your computer using the appropriate cable. You may have to enter your Lock Screen code on your device to approve the connection before proceeding (something to keep in mind if your iPhone or iPad isn't showing up in iMazing).

Next, scroll down through the action options on the right-hand side of iMazing until you locate **Detect Spyware**; click on it.

A new window will open, guiding you through the process. The tool works by creating a local backup of your device (so you'll need to make sure you have enough storage space for the backup), and then analyzing that backup. It's an automated task, so you don't have to stick around to monitor it once you click start.

iMazing suggests leaving all of the default settings in place as you click through each screen. There are configuration options built into the tool for advanced users, but for most of us (including myself), the default configuration settings will get the job done.

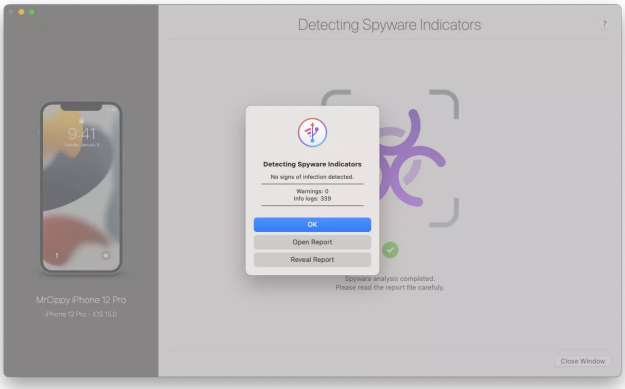
After going through the basic configuration, you'll need to accept a license for the tool and then click the **Start Analysis** button.

Once the process starts, make sure you leave your iPhone or iPad connected until it's finished. I ran the test on my iPhone 12 Pro and it took around 30 minutes to create the backup and another 5 minutes for it to be analyzed. After the backup was created, I did have to enter my account password to allow iMazing to begin analyzing the file. Because of that, I recommend starting the tool and checking on it after a while.

Once iMazing begins analyzing your device's backup, it'll show you its progress by displaying each individual app it's checking, starting with iMessage. The app is using a database of known "malicious email addresses, links, process names and file names"

When iMazing finishes, you'll see an alert with the results. In my case, my iPhone 12 Pro did not show any signs of infection and had 0 warnings.

The alert also includes two buttons to either open or reveal the report. I looked through my report and it contained a bunch of random links that meant nothing to me.



At the end of the scan, the results are displayed in an easy to read alert.

What to do if the iMazing app says your device has signs of an infection

First of all, don't panic. It could be a false positive. iMazing asks that you send the report (click reveal report to go directly to the file) to its customer support team who will then do further analysis.

The company does suggest, however, that if you or a family member are active in a "politically sensitive context" and have a positive report to immediately remove your SIM card and turn your iPhone off.

Again, the odds of getting a true positive report are very low, but at least you'll have some peace of mind. For more security tips, double-check these settings. For added privacy, go through these steps.