How to optimize your home Wi-Fi

NOKIA

Now more than ever, we all need great Wi-Fi

These days, home isn't just "home". It's also the office. And the classroom. And a virtual hangout for friends and family. At any moment, you could have everyone in the house using the Internet for different things all at once — pushing your Wi-Fi to the limit.

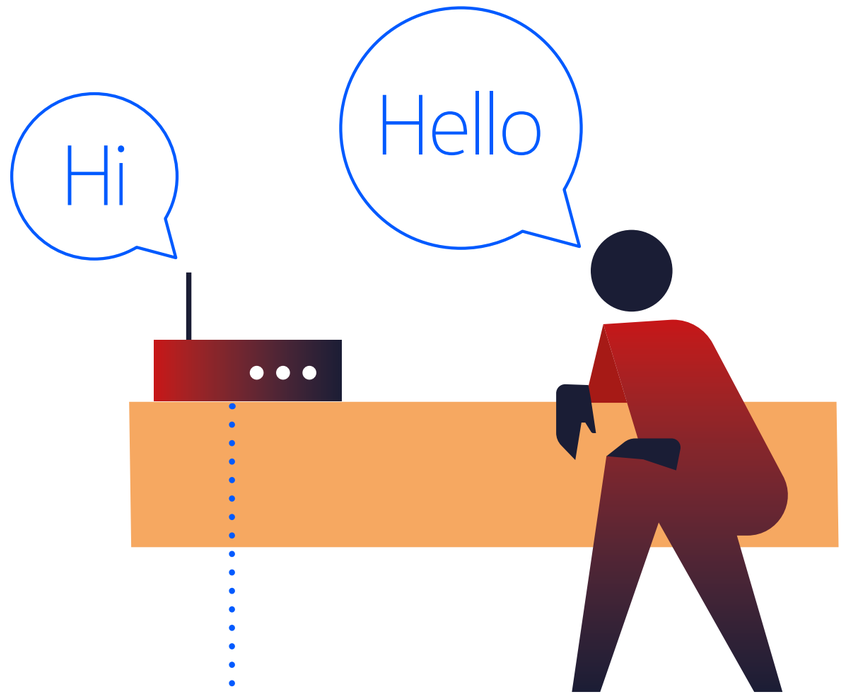
So how can you make sure you're getting the performance your household needs?

When it comes to Wi-Fi, a lot of people just "set it and forget it". But by taking a little time to fine-tune your set-up, you can give your home Wi-Fi a big boost.

This guide offers some simple tips for making your Wi-Fi network perform at its best — no IT expertise required.

Get to know your Wi-Fi network

Before making changes, know what you're dealing with. That will help you see where you can make improvements - and you'll be able to measure results. The three big things you'll want to look at are **settings, speed** and **interference**.



1. Settings – say hello to your router

Your router is the device that handles Wi-Fi traffic in your home. Every Wi-Fi router has settings you can change. All you need is our app or the router's built-in IP address, which lets you access it over the web. Usually, that address is printed right on the router itself. If you can't find it, contact us and we'll tell you what it is.

After you log into the router, have a look around at what settings are available. These can include parental controls to restrict certain access or security settings to keep the network safe. Don't be afraid to explore – it's easy to undo anything you didn't mean to do and, if all else fails, you can easily reset to the default settings.

Your router will also show you which devices are connected to your network, and which band they're using – 2.4 GHz or 5 GHz. (Wi-Fi is basically a radio network that works on electronic frequencies, so 2.4 GHz is a lower frequency for slower traffic and 5GHz is a higher frequency for faster traffic, like movies and video games). If you see any devices on your network that you don't recognize, change your network password – which you can also do right from your router. Make sure your new password is a strong one.

What's my router IP address?

You might see several numbers and codes on your router. The IP address is a set of four blocks of numbers separated by periods. It looks like this:

192.168.1.1

To access it, just type the address into your web browser exactly as it appears – including the periods. Usually the router will also have a username and password: once you've entered the IP address, use those to log in.

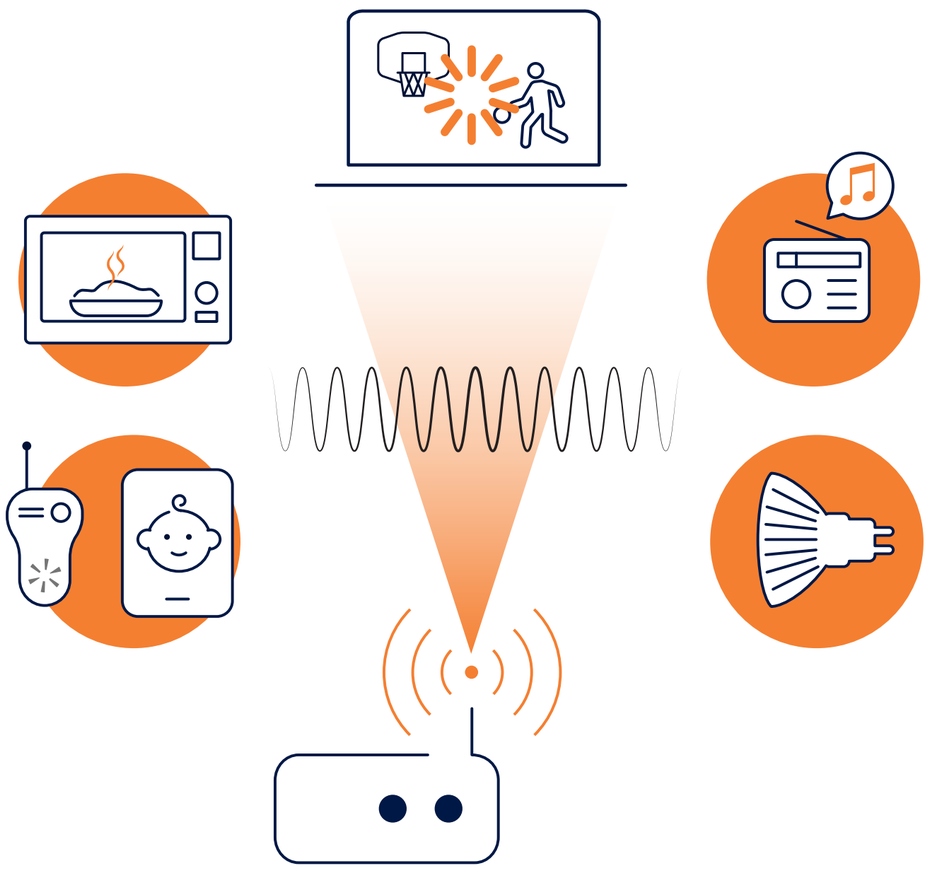
2. Speed – run some tests

If your Wi-Fi seems slow in parts of your home, you're probably not imagining it. Walls and other barriers can make it harder for signals to get from your router to your device and back, which can slow things down a lot. Use **www.speedtest.com** or an app like **Network Analyzer** to check your speed around your home. That can help you see where the signal is strongest — which might be a good place for your home office or home entertainment center — and where you may need to make some fixes.

Don't forget that if other people are using your Wi-Fi when you're testing it, that will affect the speed results, so test it at different times. You may not be able to do anything to speed things up when a lot of people are on, but you may learn when to schedule important video calls or school lessons based on when people aren't using the network.

3. Interference – experiment with appliances

Walls aren't the only things that can disrupt your Wi-Fi. Microwave ovens, radios, baby monitors, Bluetooth speakers and halogen lights are just a few common items that can make your signal degrade and slow down. Check your speed while running these types of devices to see if any are causing problems so you can relocate them. Or just make sure no one reheats their coffee while you're on a video conference!

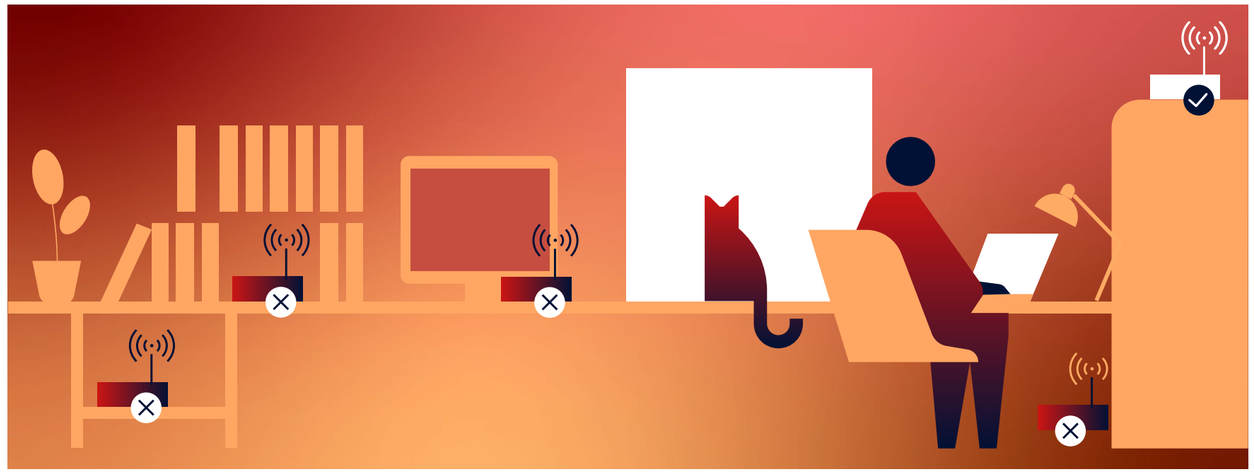


Overlapping networks cause poor performance for everyone

If your tests show poor signal even with a clear shot to the router and no other devices that could cause interference, the problem could be your neighbor's network. In dense urban areas, networks aren't always able to avoid using the same channel as other nearby networks, which can negatively affect the performance of all networks trying to share a channel. See our tips on page 9 for what to do about this.

Fine-tune your Wi-Fi performance

Now that you know where you're starting from, you can focus specifically on how to get the best possible performance from your network. Here are some quick and easy adjustments you can make to your equipment location, your network configuration and your signal coverage.



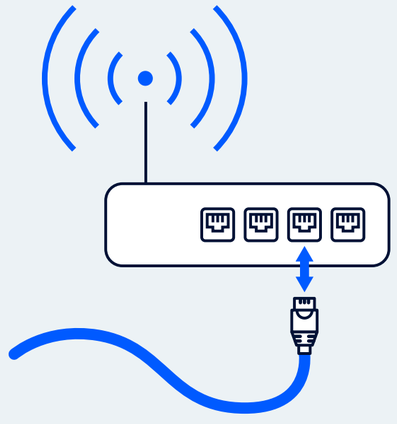
1. Location – put your router in the right spot

Router positioning is one of the most important factors that can affect Wi-Fi performance, but lots of people don't get it quite right. Most routers aren't exactly pretty, so you might want to put yours in the corner of a closet where no one can see it. But this drastically increases the number of walls, floors, furniture and other solid barriers the signal has to go through, and your Wi-Fi performance will suffer. Hiding your router also makes it much less convenient if you need to reset it or do any troubleshooting.

We recommend putting your router closer to your desk or wherever you connect most often, even if that means setting it up in the middle of your living room. Put it as high as possible — on top of a cabinet or shelving unit is ideal — to keep furniture from blocking the signal. And try to keep it away from TVs, dimmer switches, Bluetooth speakers and other electronic devices that could interfere.

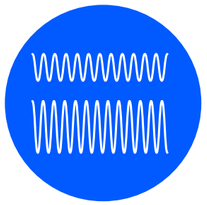
For the very best performance, plug it in

The best Wi-Fi networks still can't match the performance of a wired network, so when you absolutely need the highest bandwidth and lowest latency — for online gaming, for example — consider using an Ethernet cable to plug directly into your router.



2. Configuration – find the right settings

Here are some of the settings you can adjust on your router to boost Wi-Fi performance:



Choose your frequency band and channel

Since other networks and devices can interfere with your Wi-Fi, try using a different channel from your neighbors. At 2.4 GHz, Wi-Fi is usually best on channels 1, 6 or 11 — but in especially dense areas, those channels might already be in use. If your router supports it, you'll often get better performance in the 5 GHz bandwidth, which has many more channels and much less interference. The best solution is to set your network up to use either band, so it can automatically choose the best channel every time.

Prioritize certain applications

You may be able to adjust your settings to give certain types of traffic priority. During working hours, you can favor applications like video conferencing to ensure calls aren't interrupted by someone else's web activity. Later, when it's time to relax, you can switch to prioritizing your favorite video game to reduce your chances of being defeated by a poorly timed lag.

Reduce load

Every device connected to your Wi-Fi takes up bandwidth, so turning off Wi-Fi on devices that don't need to be on can improve performance for others. Your router interface can show you what devices are connected and how much bandwidth they're using to help you track down any particularly problematic drain.

Create a guest network

When you give guests your network password, you're actually giving them more than just the ability to use your Wi-Fi. You're also potentially giving them access to your controls and devices. It's fair to think your friends won't abuse that access, but if you'd rather be safe than sorry, you can create a guest network that will let them use the Wi-Fi but not change any settings.

Hit the reset button

If you're experiencing frequent issues with slowness or drop-outs, a full router reset might help. You can usually do it through your interface or by using the small recessed button on the router itself. This will restore all settings to their factory defaults and often prompts a firmware update. These steps will often solve persistent problems, but you may also need to re-adjust some settings and re-connect some devices.

3. Coverage – maximize your range

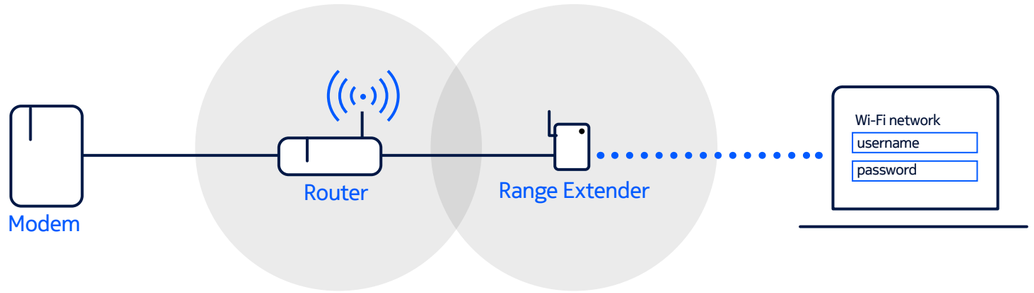
If you have a large home with especially thick walls, or if you just have a lot of devices, there may be no ideal router location that delivers the best performance to every corner and every device.

Plugging in may be an option for stationary devices like TVs or game consoles, but it's not practical for phones and laptops — and if you've invested in mobility, tethering yourself with cables defeats the purpose. Low-cost repeaters or extenders will reach farther, but they don't usually offer the best connection speeds for your devices.

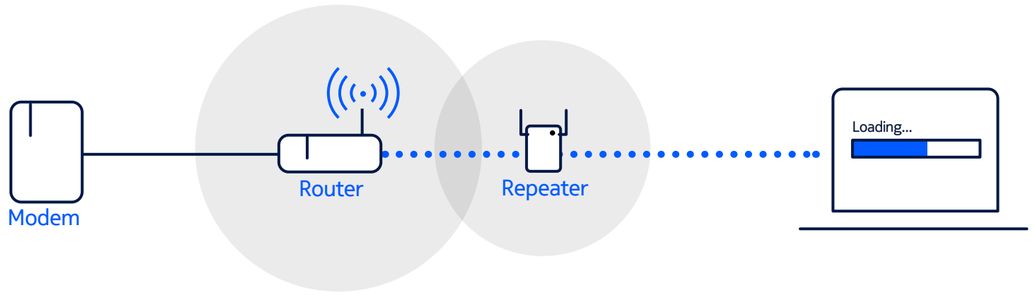
Think about how much you've invested in the devices that are connecting to your home network. Given the impact the network has on those devices, it only makes sense to invest a little bit more in your access points to give you the coverage (and performance) you need.

Consider investing in a "mesh network" solution. It involves multiple access points that are interconnected as a mesh, rather than a chain (as with repeaters or extenders) or as individual connections back to a single router. A mesh network will give you seamless, blanket coverage throughout your home, with automatic routing around any interference or bottlenecks that could slow you down — meaning you can roam from room to room without ever losing connectivity.

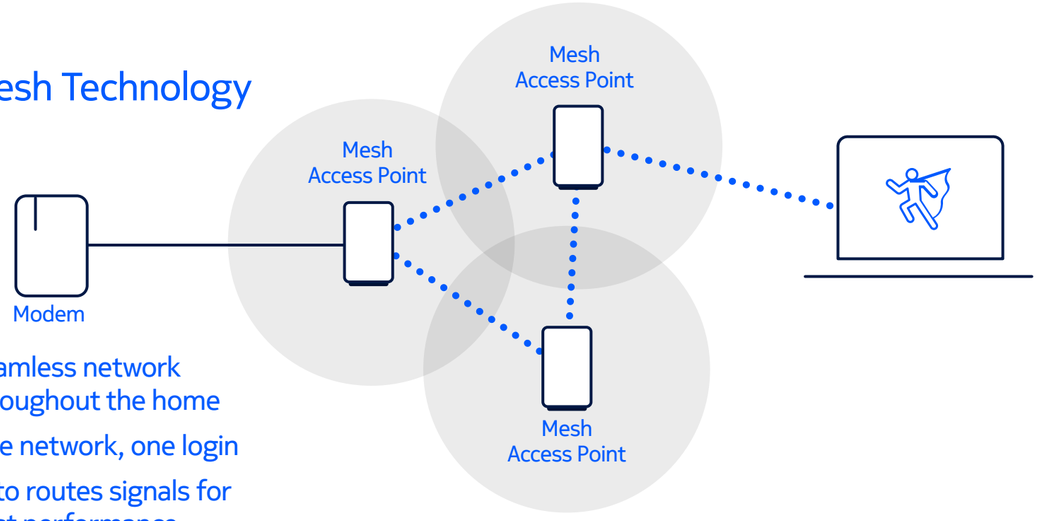
Extender - creates multiple networks and logins



Repeater - halves the speed



Mesh Technology



Seamless network throughout the home

One network, one login

Auto routes signals for best performance

A new baseline

As you make changes to your network equipment set-up and configuration, be sure to run more speed tests to see how your network performance improves. This will also give you a new baseline so you'll be better able to catch and troubleshoot any future performance issues.

You can also look into upgrading to Wi-Fi 6E, which has even higher (and less crowded) bandwidths and handles traffic more efficiently. If your devices are fairly new, some of them may already be compatible with this new standard, and you can enjoy much faster upload and download speeds.

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