

# Why your NBN is slow (and how you can speed it up)

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The Government's National Broadband Network rollout is still very much in its infancy. And as it is with any infant, there are teething issues.

The Telecommunications Industry Ombudsman (TIO) reported that complaints about **NBN** services again **rose in 2017**, with many consumer pain points relating to line faults and slow data speeds.

As you'll see as we move through this complex topic, a number of these issues relate to the network, the underlying technology, and the relationship between NBN and service providers.

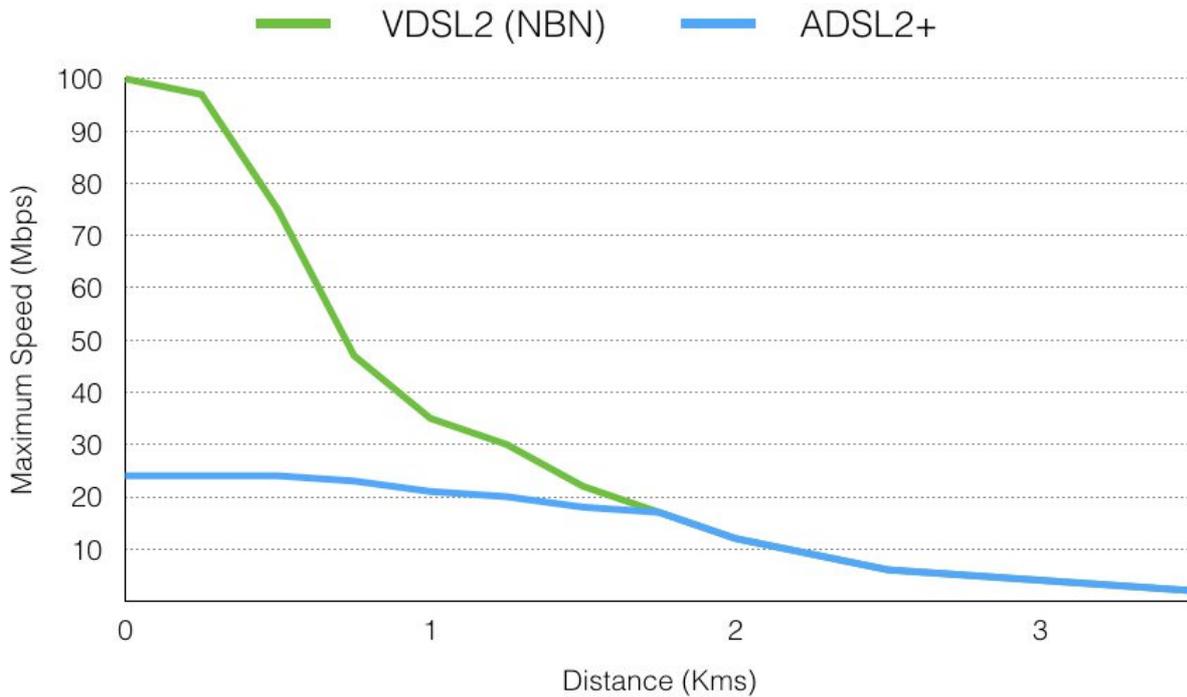
Unfortunately this means that there is a limit to what you can do to improve the performance of your NBN connection at home. Often times, this isn't just a matter of tweaking settings in your router or on your computer. But if your NBN speed is a little too slow, you do have options.

## Reasons your NBN is slow

### Distance from the node

If your home is connected to the National Broadband Network using **Fibre to the Node technology**, the distance that your house is from the node can make a huge difference in the speed and performance of your service. NBN estimates that about 90% of homes should be within 700m of the nearest node, but even at this distance the signal over the old copper wires can degrade quite a bit.

This is referred to as attenuation and it was one of the key reasons why many people experienced slow **ADSL2+** speeds as well. Basically, a house sitting next to the node will get a great speed, while houses further away will experience this attenuation and slower speeds. See below for an indicative illustration of what attenuation looks like.



The greater the distance from the node, the slower the maximum speed achievable.

To make matters worse, it can be difficult to find out exactly which node your home connects to and the distance it is from your front door. This makes it hard to estimate the connection you should expect and the speed tier that would be best for you.

Similar issues apply to **Fixed Wireless** and **Satellite NBN** connections. There is no node in these connections, but there are a number of technological obstacles between your home and the greater internet, so you may find that there are hard limits on what sort of performance you can expect from your connection.

## Network congestion

This is something you've probably heard about. When people discuss slow NBN speeds they tend to

point the finger at their Netflix-loving neighbours, and kids on YouTube after school.

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Why is this? Well, the service providers buy access to the NBN in bulk. They assess the number of connections in a certain area then predict how much bandwidth they need. Bandwidth is capacity, sort of like the size of the pipe carrying water to all of the homes in a given area. The bigger the pipe that the providers buy, the more homes they can service, but at a higher cost to them. The smaller the pipe, the more each home needs to share what is available and take a hit to performance.

CVC - the Connectivity Virtual Circuit charge - is typically blamed as the leading cause of congestion on National Broadband Network, given that it is impossible for ISPs to buy enough to guarantee every single customer the speeds they're paying for at peak times.

NBN charges ISPs a base fee of around \$15.25 per Mbps per month, which can go as low as \$8 per Mbps per month under volume discounts.

If you look at [Telstra](#), which prices its 100Mbps (Premium Evening Speed) NBN plans from \$100 monthly, the company would need to spend a minimum of \$800 per month to facilitate those speeds under NBN's new pricing structure, not counting other costs associated with providing access to the National Broadband Network.

Obviously, Telstra isn't spending \$800 per customer, and as such, if too many Telstra subscribers are online simultaneously, none of them get the speeds they are paying for.

NBN CEO Bill Morrow has accused ISPs of drastically under purchasing CVC in order to deliver the cheapest prices on NBN connection, and said the average CVC purchased across the industry works out to be 1Mbps per user.

It's a corporate tug-o-war that's being investigated by both the ACCC and ACMA. Hopefully it sorts itself out sooner rather than later.

## You're paying for a slower speed tier

This might seem like a dumb suggestion, but one of the potential reasons for slower-than-expected NBN speeds could be the plan you're on. There are four different [NBN speed tiers](#), ranging from 12Mbps (Basic Evening Speed) to 100Mbps (Premium Evening Speed). If you're on a cheaper plan, there's a chance you're on a 12Mbps connection.

The problem with a 12Mbps connection is that it is designed to operate at speeds as fast as, or slower than, an old ADSL2+ connection. If you're switching to the NBN and expect a big improvement in performance, you will be disappointed if you connect with an NBN 12 plan.

In some cases, providers don't offer speed options, but will offer 'speed boosts' instead. These work the same as choosing a higher speed tier, and often cost the same; between \$10 and \$30 extra per month, depending on how fast you want your connection to be.

You can [read more about NBN speed tiers here](#).

## Basic connection issues

Rolling out a nationwide broadband network; no one said this would be easy. Many of the complaints that the TIO is fielding relate to good old-fashioned incompetence, delays, and

faulty equipment. This definitely isn't something related specifically to the NBN, but it is frustrating nonetheless.

With millions of homes and businesses to connect, there are bound to be errors. Thousands and thousands of them. And as they say, you can't make an omelette without breaking a few eggs. Not that you should accept a faulty connection, but with a project of this scale, it is best to exercise a little patience.

## DIY: how to fix slow internet speeds

But, before you burn your modem, move to a cave and swear off the internet forever, here are a few things to try.

### Test with a direct connection

Before you make your mind up about your internet connection, you should test the speed with a direct connection to the modem. By this, we mean plugging a laptop into the modem using an Ethernet cable — not testing using Wi-Fi. There are a number of reasons why your Wi-Fi connection might suck, so plugging in is the only way to get a clear reading on what your connection actually looks like.

You should also try testing your connection at different times of the day to try and identify whether congestion is an issue. Is your connection OK in the morning, but unusable in the evening? That might be the key bit of information you need to make your next decision.

### A different modem / router

When it comes to an internet connection, you can only really control the elements inside your home, and you might find that the modem you were sent for free by your service provider is the culprit. We've heard several stories from our readers about how a replacement modem made all the difference in connecting the devices in their homes with a decent, solid connection.

This is especially true with Wi-Fi. If you've run a direct connection test as suggested above, but struggle with devices connected over Wi-Fi, it could be a good indicator that your modem isn't up to scratch.

We know that buying a new modem and setting it up is a pain in the neck, but it might be the difference between mediocre internet and getting the service you pay for. Just make sure you unpack the modem carefully and keep your receipt: if you find that the modem is not the culprit, you'll want to return the new one.

### Consider an NBN switch

If congestion is the problem, you might find that [switching to a different service provider](#) is in order. Think about it this way — if one service provider is much cheaper than another could they be penny-pinching on capacity? We'll never know for sure, but given what we

do know about NBN pricing so far, a cheaper price may indicate a greater gamble on bandwidth allocation from your provider.

Make sure you start with a **no-contract NBN plan** to give yourself the freedom to move if you're unhappy with the service you get. You might find that network performance doesn't improve with a new provider, though, which would point to a greater technological limitation in your area or at your address.

## Time for a change?

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Search for a new internet plan using your address and see only the NBN plans available at your home. [Click here to start.](#)

## Start with an NBN 25 / Standard Evening Speed plan

NBN will hate us for saying this, but you might consider starting on a slower, cheaper plan and step up to faster speeds after you've tested the connection. After all, as we explained above, if you live 700m from the node cabinet, you might only be able to get speeds up to 50Mbps.

Choose a no-contract plan to keep your options open, and sign up for a 25Mbps (Standard Evening Speed) connection. Then, if all is well, move up to 50Mbps (Standard Plus Evening Speed) or 100Mbps (Premium Evening Speed), and see what you get. If you move up and find you are not getting the speed you should be getting, move back down to a slower speed and save money until the corporates figure out what they're doing.

At this point it is as much about managing our expectations as it is about demanding a better service. NBN service providers *should* deliver us with the speeds that we're pay for, but we know that this isn't the case for many Australians. The [ACCC is on your side](#) and is recommending changing to advertising, so that service providers will be compelled to report real-world speed estimations. Changes are already underway, with Telstra and Optus now offering more realistic speed expectations in their advertising and plan summaries.

In the meantime, we should keep complaining to the TIO and vote with our feet. If limitations in NBN technology mean that you can't get 100Mbps to your home, then don't pay for 100Mbps. If your service provider makes things difficult for you, take your business elsewhere. We have no doubt that things will improve over time - just look at our awesome mobile phone networks! - but in the meantime, we need to protect ourselves.

## Search plans by speed

Click on the speed you need to see all plans matching that **NBN**tier.

**Angry hipster image** via Shutterstock



NBN Plans  
**Basic Evening Speed**  
/ **NBN 12**



NBN Plans  
**Standard Evening Speed / NBN 25**



NBN Plans  
**Standard Plus Evening Speed / NBN 50**



NBN Plans  
**Premium Evening Speed / NBN 100**