BROADBAND SPEED TESTS

Guidance notes for consumers

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FOREWORD

These guidance notes are designed to provide broadband users with guidance on the steps they may wish to take to obtain accurate broadband speed test results.

With these notes, consumers will be able to ensure that they reduce the chance of obtaining negative broadband speed test results.

These notes should not be viewed as a determination or decision made by the GRA and are not designed with the intention to cause alarm. In the event that a negative speed test result is achieved, and all the relevant precautions outlined in these notes have been applied, only then is it fair to contact your service provider.

Any harm caused by using a broadband speed test service, shall not be attributed to these guidance notes in any way.

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What Are They?

A broadband speed test provides users with an indication1 of the broadband speeds available to them at the time a test is performed.

Perform a quick search on your web browser to reveal a multitude of services which offer basic internet (or broadband) speed tests. The majority of these are free of charge and provide all the information you require. Running these tests is very straightforward and should provide users with a clear instruction on how to proceed with the test. Often it requires a single click to run the test.

Some service providers offer their customers a broadband speed test, often found on their website and some even offer advice on how to properly use the facility.

Some mobile devices also have proprietary software, which allows owners to carry out broadband speed tests over Wi-Fi and over a data network (in the case of mobile phones).

What Do They Measure?

The speed tests primarily yield results for upload and download speeds as two separate readings. The results are provided in Megabits per second (Mbps) and higher numbers signify higher speeds. Results will mostly be determined by the broadband package you are currently signed up to. In simple terms, if you are currently purchasing a 25Mbps broadband service, you should not be expecting results any higher than that.

Here, we shall be discussing if you should be expecting results lower than your contracted speed and why that may or may not be the case.

Although of slightly less importance to most broadband consumers, these tests also provide a reading for "Ping" or "Latency", which represents the reaction time of the network between when a request is sent and when the request is actioned. This is particularly important for applications which require near instant network reaction times such as financial establishments and online gaming platforms. Ping is measured in milliseconds (ms) and the smaller the number, the faster the reaction time.

Basic "Ping" guidelines for regular browsing:

> 0-59ms – Excellent
>
> 60-129ms – Very good
>
> 130-199ms – Acceptable
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> 200+ms – Unacceptable

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[1] It is difficult to guarantee the accuracy of broadband speed test results beyond reasonable doubt using this technique. These tests should be viewed as a means to obtaining a fairly accurate representation of the speed available to users at any given time.

Why Do I Need To Run A Speed Test?

You don't need to run a speed test unless you suspect that you are being undersupplied or if you are simply curious to check the broadband speeds you are currently receiving from your service provider.

Customers may find it unfair if they receive less of something than previously agreed and paid for. This argument stands true for all retail transactions, including when customers buy broadband services. However, due to the virtual nature of the service, some broadband customers may be unaware if and when they're being undersupplied. Broadband speed tests give customers the ability to verify if their service provider is holding up their end of the deal or not.

How Do I Carry Out A Speed Test?

As a customer, all you can do is eliminate or minimise the variables which are known to negatively affect your broadband speed tests. Below is a list of steps which you may wish to take to ensure you get the most accurate speed tests possible.

Before you start, identify which internet/broadband speed test you wish to use by searching on your preferred web browser. Once you launch the application and are confident that you know how to carry out the test, proceed through the steps below.

There are a few important actions you can take to improve your chances of obtaining an accurate test result:

1. First check the download and upload speeds your service provider is meant to be supplying you with. If you are unsure, check your bills or contact your service provider for confirmation.

2. Your router is essentially a small computer and performs tasks in the background which may affect the speed test results. Make sure it is focusing squarely on the task you want it to perform by removing all other devices from its Wi-Fi and restart the router prior to performing the speed test.

3. One of the bigger culprits is Wi-Fi, in particular for ultra-fast bandwidth packages in excess of 100Mbps. For best results connect your laptop or desktop computer, to the router, by cable.[2] This is the number one rule when performing broadband speed tests and eliminates the reliability issues which are characteristic of Wi-Fi.

4. There are a variety of reputable speed test websites and applications which generally use very similar methods to carry out the speed tests. Some more advanced software requires a download, but this is not necessary as the web-based versions offer more than adequate information.

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[2] You must first locate your computer's ethernet port and get hold of an ethernet cable (Cat 5e, Cat 6 or Cat 6e cable is essential for speeds over 100Mbps). Connect one end of the cable into your computer's ethernet port and the other should be connected to the ethernet port on the back of your router.

5. Once you find a speed test that you are happy with, run the test and ensure that you test at different times of the day. If you have the time, run the test over a number of days, noting the results of each test.

To make a judgement on whether or not the speed test results are acceptable, you should compare the results with the broadband speeds you have contracted from your service provider.

Service providers should also provide information to their customers on the remedies available when there is continuous or regular discrepancy in speeds. Additionally, if you wish to submit a formal complaint to your service provider, the procedures for handling your complaint should be presented to you upon request and be available on their website.

Useful Information For Accurate Tests.

It is important that you understand a little bit about ethernet ports and cables in order to understand if your hardware has inherent limitations before carrying out a speed test by cable.

Although nowadays, "gigabit ethernet" (up to 1000Mbps) is relatively common, some older routers and computers may have ethernet ports that are limited to as little as 10Mbps or 100Mbps, thus creating a bottleneck for broadband services with speeds in excess those limits.

The ethernet cable used may also create a speed limitation. Ethernet cables come in various standards, but Cat 5e, Cat 6 and Cat 6e are regarded as being able to handle speeds in excess of 100Mbps. If any of these components (ports and cables) are limited to 100Mbps, your service will also be subject to an upper limit of 100Mbps. Please refer to the device manufacturer specifications to check if your router or computer's ethernet port is limited to 100Mbps.
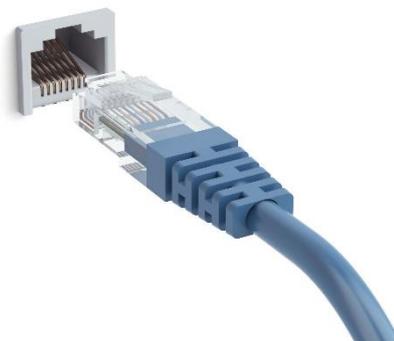
When Should I Approach My Service Provider?

Only when you have reason to suspect that they are undersupplying you.

With these guidance notes, the GRA's intention is to encourage consumers to properly inform themselves on what a broadband speed test entails, its purpose and limitations. When carried out properly, speed tests can provide users with an <u>indication</u> of the speeds they are being supplied with by their service provider.

Most users will only ever get to experience the user-end of the supply chain and would therefore be forgiven for taking for granted what goes on behind the scenes in a service provider's network. A low speed test result alone, would not necessarily mean your service provider is undersupplying you. There could be a hardware failure, maybe your internal wiring has been damaged, or maybe the test is being carried out incorrectly.

Furthermore, when the service works as intended, customers enjoy high speed broadband services and have no reason to feel let down by their service provider and possibly no reason to run a speed test.

It is not until you feel like the quality of service has deteriorated that you begin to ask yourself questions. This is both normal and understandable. High speed broadband is in the process of transitioning from being a luxury commodity to utility status, like having electricity or running water.

Your service provider is supplying hundreds or thousands of customers with a broadband service and each customer (both residential and business), generally has more than one device connected to their corresponding router, each one asking the service provider's networks to carry out multiple requests at once. This is happening continually, night and day.

Shouldn't I Always Be Getting The Same Speed?

In short, both yes and no. In theory, yes you should, but the reality is that the elements involved in delivering high speed (up to 100Mbps) or ultra-high speed (in excess of 100Mbps) broadband to customers, consistently, is an extremely complex process and the burden on these networks is likely to increase as users carry out more and more tasks over the internet.

Due to the nature of how speed tests function, they can sometimes yield inaccurate results, in particular, if not carried out properly. A speed test result alone, should not be considered to be beyond question, nor should it be considered indicative of a service provider intentionally undersupplying you as their customer.

It is vitally important that broadband speed tests be used as an indication of potential problems with your broadband service. Take all the necessary precautions outlined in this document. If the results are less than satisfactory, only then should you contact your service provider and raise the matter.

A Note On Broadband Services

Service providers generally offer asymmetrical broadband products, meaning that their offerings are made up of download speeds which are substantially higher than their corresponding upload speeds. For example, 100Mbps download and a 10Mbps upload. This is standard practice as service providers expect users to browse and download more content than they would upload. A good result would mean that both download and upload speeds achieved on the test are very close to the speeds stated in your contract.

GLOSSARY OF TERMS

Broadband - In telecommunications, broadband is wide bandwidth data transmission which transports multiple signals and traffic types. The medium can be coaxial cable, optical fibre, radio or copper pair. In the context of Internet access, broadband is used to mean any high-speed Internet access that is always on and faster than dial-up access over traditional analogue services.

Download speed - The download speed is how fast you can pull data from the server to you. Most connections are designed to download much faster than they upload, since the majority of online activity, like loading web pages or streaming videos, consists of downloads. Download speed is measured in megabits per second (Mbps).

Upload speed - The upload speed is how fast you send data from you to others. Uploading is necessary for sending big files via email, or in using video-chat to talk to someone else online (since you have to send your video feed to them). Upload speed is measured in megabits per second (Mbps).

Ping - The ping is the reaction time of your connection – how fast you get a response after you've sent out a request. A fast ping means a more responsive connection, especially in applications where timing is everything (like video games). Ping is measured in milliseconds (ms).

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