FREQUENTLY ASKED QUESTIONS

What is Internet speed?

Internet speed is the amount of bandwidth allocated to you as per the package that you may have selected. Bandwidth is the amount of data that can be sent or received, usually measured in seconds. For example, 5 mbps download capacity would mean that you can receive up to 5 megabits of data per second.

What Internet speed do you need?

If you want to do…	You will need at least…
General web surfing, email and social media	1 to 2 mbps bandwidth
Online gaming*	1 to 3 mbps bandwidth
Video conferencing*	1 to 4 mbps bandwidth
Standard definition video streaming	2 to 4 mbps

** A connection with low latency is more important than bandwidth for gaming and video conferencing.*

Megabytes versus Megabits?

The term Megabyte is often used when referring to the size of a file or document. Whereas, Megabit is used for download and upload speeds. A megabyte is 8 times larger than a megabit and is therefore not the same thing. For example, you would require an 8 mbps (megabits per second) Internet connection to download a 1 MB (megabyte) file in roughly one second. The abbreviations below are for the amount of data that is being sent per second.

Abbreviation	Description
Kbps	Kilobits per second (usually only applies to older Internet connections)
Mbps or MBps	Megabits per second – not to be confused with megabytes. The difference between the two is how the "b" is written in the abbreviation. • Mbps = megabits per second • MBps = megabytes per second (not usually applicable to RSA Internet packages)
Gbps	Gigabits per second – Rarely used for Internet packages as the costs make them unpractical for residential and small to medium businesses.

What is the difference between Upload and Download speeds?

Internet Service Providers usually offer “Synchronous” or “Asynchronous” packages. Simply put, this refers to the Upload and Download capacities of the packages on offer:

- Synchronous or Symmetrical:
    - Upload and download capacity of the link is the same, i.e., a 1 mbps Synchronous Link has 1 mbps upload and 1 mbps download capacity
    - Synchronous links are recommended for customers that plan to use the Internet for online gaming or accessing Cloud-based systems as data is sent from the customer’s device to the target service.
- Asynchronous or Asymmetrical:
    - Upload capacity is not the same as the download capacity, i.e., a 1 mbps Asynchronous Link will have a certain percentage of the total capacity assigned for upload and 100% of the total capacity assigned for download.
    - The service provider must inform the customer of the upload capacity percentage for all of their Asynchronous offerings.

How much Internet data are you using?

The table shows how much data some standard online activities use, please bear in mind that these figures are only rough estimates.

Activity	**Data Consumption**
One hour of web browsing	10 to 25MB
Download of a document	2MB
One hour of Facebook	20MB
Download a music track	4MB
Stream 30 minutes of YouTube	175MB
Download a standard definition movie	700MB to 1GB
Download a high definition movie	4GB
Stream one hour of standard definition video	250 to 500MB
Stream one hour of high definition video	2GB
Stream one hour of music or radio	150MB

What is Latency?

Latency is how long it takes for data to travel between its source and destination measured in milliseconds. If you were browsing the web on different types of connections, this is how latency would “feel”:

- High Latency – you would click on a link on a web page and, after a noticeable delay, the web page would start downloading and show up almost all at once
- Low Latency – you would click on a link on a web page and the web page would appear almost immediately, downloading all at once

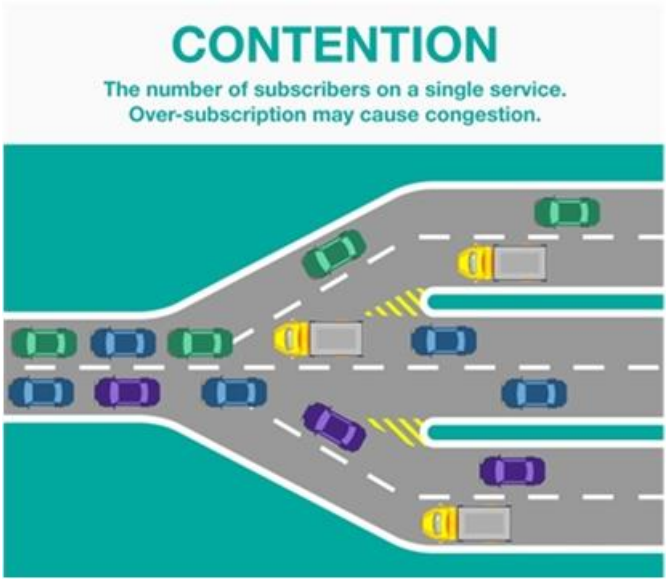
High latency always manifests a delay. For example, if you were having a Skype chat with someone on a high latency Internet connection, you would be out of sync with each other and would have to pause in between sentence’s to avoid talking over one another.

What does Contended, Uncontended and Contention Ratio mean?

Firstly try and understand bandwidth as a pipeline full of water, the municipality (ISP) has a couple of large pipelines and then connects your house and all the other houses on your street to the same pipeline. This would mean that the pipeline is now “contended” as the entire capacity of the pipe is spread amongst the houses on your street, if on the other hand the total pipe capacity was dedicated to your address then the pipeline would be “uncontended”.

The amount of houses connected to that one pipeline would form the “contention ratio”, so if the pipeline was servicing 10 houses then the contention ratio would be 10:1. In this scenario, it would be unlikely that all houses would be using water at the same time so the water pressure should always be sufficient.

Another simple analogy to explain contention would be to liken the service to a road when the lanes converge as shown in the graphic below.



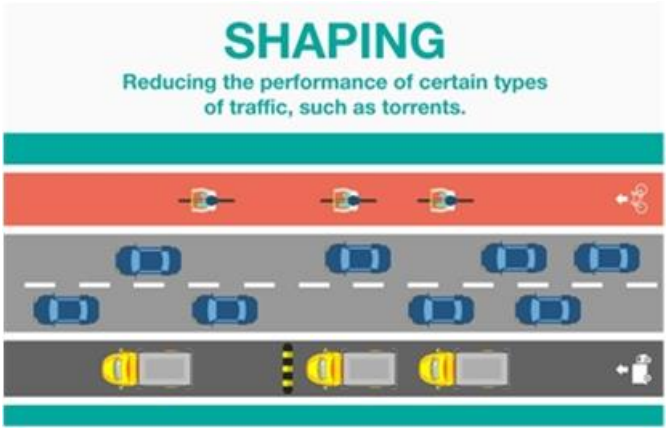
Capped versus Uncapped services?

Everything that you do on the Internet consumes a certain amount of “data”.

- Capped Services:
    - Data will be taken from your monthly data allowance or cap until it is exhausted and the Internet link becomes unusable
    - You then either have to top up your bundle (buy more data) or wait until the next month for your new data allowance
    - Normal web browsing and email only consume small amounts of data but there are other activities such as operating system updates (Windows, IOS, Android, etc.), streaming or watching YouTube videos that can guzzle up the monthly allowance in just a few hours
- Uncapped Services:
    - Have no monthly data allowance and enable unlimited data consumption
    - Generally the best option for businesses and multi-user households

What is the difference between Shaped and Unshaped services?

A *shaped* service distinguishes between the various protocols used over the Internet and prioritises these protocols with the main priority being normal web traffic or HTTP. The other protocols that are usually prioritised are: HTTPS, FTP, Email (POP3, SMTP and IMAP), SSH and Telnet, any other protocol will receive lower priority on the network, similar to the graphic below.



An *unshaped* service will not shape any protocols and therefore all protocols will share the available bandwidth equally and data is returned on a first come, first served basis.

What is Throttling?

Bandwidth throttling is the intentional lowering of the speed that is typically available over an Internet connection. There are various reasons why an ISP may throttle bandwidth such as to decrease congestion on the network or when traffic on the network is of a certain kind (torrents) or from a certain website. For example, an ISP may throttle the bandwidth of a user only when the assigned link is operating at maximum capacity for an extended period or after a certain threshold has been reached.

What is an Acceptable and Fair Usage Policy (A&FUP)?

Firstly, there are a number of ways the term can be expressed such as Fair Usage/Use Policy or Acceptable Usage/Use Policy.

An A&FUP is a document that sets out rules for an owner, creator or administrator of a network, it identifies what users on the network may and may not do. Basically, it is a guideline of how the network can be used. Terms that may appear in an A&FUP document but are not limited to:

- Unlawful use
- Prohibited activities
- Uncapped, Capped, Shaping and Throttling Procedures
- Notice and Take Down Procedures
- Complaints Procedure
- Support and Escalation Procedures
- Etc.

Wireless versus WiFi

The term wireless can be defined as using radio signals or microwaves to broadcast or transmit signals wirelessly between signal towers and/or customer premise equipment.

WiFi is a facility which allows computers, smartphones, tablets and other devices to connect to the Internet wirelessly, i.e., without the need for a network cable connection. WiFi also allows such devices to communicate with each over a private network (WLAN or Wireless Local Area Network).

Why do I need a Wireless Router or Wireless Access Point?

A wireless router is a device that sends data from an Ethernet cable to other devices such as smartphones, laptops, tablets, etc. Wireless routers convert the data into radio signals (WiFi) and then transmit them.

A typical wireless Internet installation with a wireless router is depicted below.