

11 March 2022

Feedback on Improving the Broadband Monitoring Programme

Introduction

The MBNZ programme has been a great success. The consumer now has access to independent information on broadband performance.

Technologies covered

Choosing a service in rural NZ can be particularly complicated because multiple technologies are sometimes available (e.g. DSL, 4G, WISP, GEO satellite, LEO satellite). Consumers benefit when there is a source of independent information/advice on the various telecommunication services available.

It would be good to see the following tested:

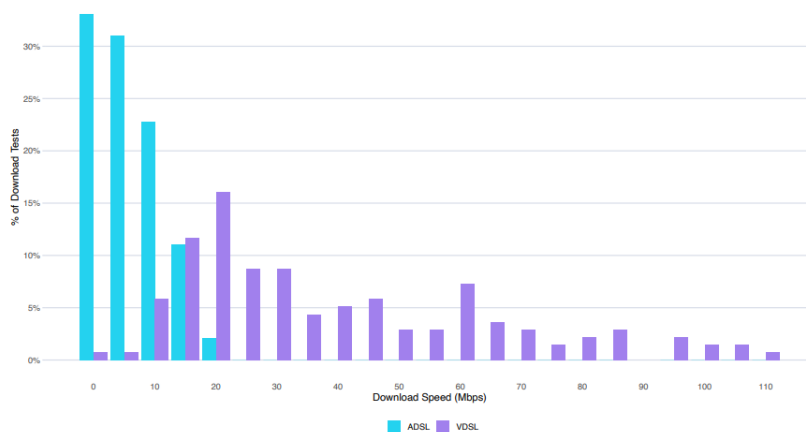
- WISPs
- Satellite (Many consumers are still unaware of the different performance characteristics of FWA vs GEO sat vs LEO sat)
- Retain testing of DSL because it's often the technology of last resort.

Speed Distributions

Where there is significant variation in a service, publishing the speed distribution has been very useful. Below is an extract from a MBNZ report. We would like to see these distributions reported more often.

Copper Download Speed Distributions - ADSL vs. VDSL.

Distributions of monthly household averages.



QUIC

As well as TCP speed tests, it would be interesting to see QUIC speed tests because a significant proportion of internet traffic is now QUIC.

Multithreaded vs single threaded speed tests.

Multithreaded speed tests often give a good indication of speed. However, there are some cases where they can be deceptive. For example, consider a file transfer on a connection with high packet loss or high latency. Test results using multiple TCP connections are significantly faster than what is actually achieved with a single threaded download.

Working from Home

When choosing a service, many people now need to know whether it will be suitable for Working from Home (WFH). Connections dropping below 10Mbps are a particular concern. It would be good to see more focus on the worst 20% of connections because some people are struggling to WFH on these connections.

The MBNZ currently provides information which could help determine the likelihood of a connection being suitable for WFH. However, many consumers require more guidance on what is required for WFH. It may be useful if the reports could compare offerings in the context of WFH.

Use of Samknows to help RSPs and customers identify poor performance

An independent measurement such as Samknows can be useful where the RSP or customer is unable to resolve a performance issue. There are many possible causes for perceived poor performance (eg poor in-home WiFi coverage, cross-traffic), and in many cases it is difficult for the RSP to determine the problem and fix the issue.

It may be helpful if the RSP/customer could request a whitebox (or equivalent) as a troubleshooting tool. (A software solution would be convenient.) This has the added benefit of recruiting more participants into the measuring programme, an ongoing challenge.

VoIP

Many providers now supply landline services without “end to end” QoS. For example, 2Talk, or Vodafone’s “voice calling over broadband” (specifically VoIP over ADSL). Samknows provides useful information on whether VoIP services will work (“UDP packet loss” report, Video Conferencing packet loss, and “Disconnections” on the dashboard). Would it be possible to expand on this? The reporting of packet loss when the connection is fully loaded would give indications of VoIP landline reliability. Generating VoIP traffic, and reporting the voice quality/reliability is another potential option.

Below is an example of Samknows showing the “[disconnects](#)” on an ADSL line in rural NZ. It is clear cut that this particular line will present some challenges for VoIP, but other connections may be less clear cut.

Disconnections

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● Total of **2195 disconnections** (4h 25min 3s) registered in the past week



Peak time reporting

It would be convenient if consumers could graph download speeds at peak times. This could then be compared against the national averages used in the marketing of alternative services.

National averages and local congestion

Some fixed wireless cells are heavily congested. Moving to FWA can be a lottery. It is unfortunate that minimum standards are not published by the providers.

Possibly the speed distributions could be distilled down to simple statements. Eg “Most (95%) ADSL users had average speeds between X and Y at peak times.”

If it is impossible to neatly define the performance of a service, then the consumer should be made aware of the range of possible outcomes.

Impact of testing to voice services

Many RSPs (e.g. Vodafone, Trustpower) have been moving their landline services from the PSTN to “VoIP over DSL” technology. These voice services can be vulnerable to congestion. For instance, speed tests using speedtest.net over these lines have been shown to significantly impact voice quality.

MBNZ tests should avoid disrupting “VoIP over DSL” traffic. (ie VoIP must be detected as “Cross-traffic” on ADSL connections.)