



## **Technical FAQ – SamKnows**

**September 2018**

## Purpose

1. This technical FAQ document seeks to record concerns raised by Retail Service Providers (RSPs) following the SamKnows industry workshop in June 2018. It addresses a number of the questions about the Measuring Broadband New Zealand programme which we have received so far, and will be updated as further questions arise.
2. For any further questions, please email [regulation.branch@comcom.govt.nz](mailto:regulation.branch@comcom.govt.nz). If your question is of a technical nature, we will forward it on to SamKnows, provide you with their response and then add it to this document. However, we will respond to RSP-specific questions on an individual and confidential basis, when necessary.

## Server locations

3. M-Lab provides the servers that the tests will run to in New Zealand, which are located in Wellington and Auckland.
4. The Wellington and Auckland servers that will be used for testing are already online and belong to AS38022 (Research and Education Advanced Network New Zealand (REANNZ)) and inside the block 163.7.129.0/24.
5. As of 22 August 2018, both REANNZ servers now have a 10 Gbps uplink. This has been completed to avoid possible bottleneck issues for testing.
6. There are seven international test servers as part of the programme. These are all M-Lab servers.

The locations of the servers testing connectivity and Download and Upload tests are:

- 6.1 London, United Kingdom – [AS3356](#), AS3257
- 6.2 San Francisco, USA – [AS1280](#), AS174, AS6453, AS6461, AS1299
- 6.3 Sydney, Australia – AS7575, AS4826.

Servers testing connectivity but not subject to Download or upload tests are:

- 6.4 Tokyo, Japan – AS2500, [AS2518](#)
- 6.5 Johannesburg, South Africa – AS2018
- 6.6 Mumbai, India – AS9498, AS4755
- 6.7 Florianópolis, Brazil – AS11242.

7. The technical requirements for hosting an M-Lab site can be found [here](#).

## **Augmenting connections to test servers**

8. We have received information from RSPs relating to the Measuring Broadband New Zealand testing server locations, their desire to ensure that the connection is appropriately sized, and that they anticipate making arrangements to ensure their connections to REANNZ servers are optimised.
9. The Commission has considered this in conjunction with SamKnows. We are comfortable that RSPs can choose to improve their connection to the REANNZ servers, on the following basis:
  - 9.1 RSPs improve their connection to all of REANNZ services, and not just the servers for testing. All of the RSP's customers (not just volunteers) should receive the benefit of improved connectivity for all aspects of the REANNZ network. SamKnows will perform testing to confirm this.
  - 9.2 RSPs notify the Commission that they are taking such action, to ensure transparency, and warrant that their improvements will apply to all their traffic to REANNZ.

## **Impact of no test server in the South Island**

10. The Netflix and YouTube tests will likely use CDN nodes in the South Island, either if an RSP has them inside their own networks, or Google/Netflix host them separately in the South Island. The web browsing test may also use CDN nodes located in the South Island. This is much more dependent on what CDNs the websites themselves use (eg, Akamai) and whether an RSP has Akamai caches inside their networks or Akamai chooses to host CDN nodes in the South Island.

## **Data validation**

11. RSPs will be asked to confirm volunteers' plan, technologies, data allowance and expected synch rates (or attenuation speeds), so we can validate and normalise the test results to ensure they are accurate and meaningful for consumers.
12. All providers will be subject to a Code of Conduct to ensure that they act in good faith and will not provide an increased level of service quality to volunteers that they don't provide to their other customers.
13. Volunteers acknowledge that we can share data about their technologies/plan, address etc. with their RSP as part of the End-user Licence Agreement, which they were required to agree to when signing up.

## **Reporting**

14. Our initial findings report is planned to be released in mid-December. The first full quarterly report will likely be released early in 2019.

15. The initial findings report will likely be similar to that which was produced by the [Australian Competition and Consumer Commission \(ACCC\)](#) in Australia and will focus on technology comparisons rather than RSP comparisons.

### Data availability

16. We are still in the process of determining the granularity and availability of the testing data.
17. The anonymised testing data used to prepare the reports will be made available for public access. Overseas regulators who also run SamKnows programmes publish the same data via M-Lab including the Federal Communications Commission (FCC) in the United States and Ofcom in the United Kingdom.

### Sample plan

18. Our sample plan tests eight RSPs who between them provide broadband services for 95% of the market and pay the Telecommunications Development Levy (TDL).

	ADSL	VDSL	Fibre 100	Fibre Max	Fixed wireless	Cable Max
Trustpower	*	*	*	*		
Orcon	*	*	*	*		
MyRepublic (NZ)			*	*		
Slingshot	*	*	*	*		
Skinny					*	
2 Degrees	*	*	*	*		
Vodafone	*	*	*	*	*	*
Spark	*	*	*	*	*	

19. SamKnows will not report on any metric, technology or plan without sufficient data points in the relevant testing period. To ensure that we achieve this, our confirmed sample plan allows for 100 Whiteboxes for each of the technologies/plans and RSP that we are testing. We have not actively made a distinction between ADSL 1 and ADSL 2, or the VDSL variants within those categories.

20. We intend to provide a high-level geographical breakdown of the technologies/plans. To the extent we are able to, we will report technology breakdowns into the following geographical regions:

20.1 Auckland

20.2 Wellington

20.3 Christchurch

20.4 North Island Other Urban

20.5 North Island Rural

20.6 South Island Other Urban

20.7 South Island Rural.

### Test schedule

21. The table below shows the confirmed tests and testing frequencies that the Whiteboxes will perform. More information on how the tests work can be found [here](#).

Metric	NZ Standard	NZ Lightweight
<b>Domestic</b>		
<i>Download speed test</i>		
Duration (seconds)	5	5
Frequency (per day)	7	4
<i>Upload speed test</i>		
Duration (seconds)	5	5
Frequently (per day)	7	4
<i>UDP latency/loss/disconnections</i>		
Usage (MB)	0.5	0.5
<i>VoIP emulation</i>		
Usage (MB)	1	1

<b>International</b>		
Number of international destinations	3	3
<i>Download speed test</i>		
Duration (seconds)	5	5
Frequency (per day)	4	2
<i>Upload speed test</i>		
Duration (seconds)	5	5
Frequency (per day)	4	2
<i>UDP latency/loss/disconnections</i>		
Usage (MB)	0.5	0.5
<i>VoIP emulation</i>		
Usage (MB)	1	1
<b>Global</b>		
<i>DNS resolution</i>		
Usage (MB)	0.5	0.5
<i>YouTube</i>		
Duration (seconds)	10	10
Frequency (per day)	4	2
<i>Netflix</i>		
Duration (seconds)	10	10
Frequency (per day)	4	2
<i>Web browsing set</i>		
Websites	10	10
Frequency (per day)	8	8

22. Each test runs for designated durations, rather than fixed file sizes, so that we get an accurate measure of the faster technologies/plans. This means that, in general, the faster the technology/plan, the more monthly volunteer data will be used. Information on the expected monthly data usage has been emailed to current volunteers and the sign-up page has been amended to inform new volunteers of these amounts. All volunteers are given the opportunity to opt out of the programme (or choose the lightweight testing schedule for fixed wireless) if they do not want to use this much of their own data.
23. All tests in the schedules will run to the two domestic servers in Auckland and Wellington. All tests except the two video tests, web browsing and DNS tests will also run to three M-Lab international servers in Sydney, San Francisco and London. All tests except the video, web browsing and DNS and download and upload tests will also run to M-Lab servers in Japan, South Africa, India and Brazil.

### **Impact of testing on the light weight vs standard test schedule**

24. The lightweight testing schedule has been created specifically for fixed wireless volunteers because it runs tests less frequently, and therefore uses less data. It will still run the same tests as the standard schedule, so the results will remain comparable as long as enough data points are recorded.

### **Will all Whiteboxes run tests at the same time?**

25. The Whiteboxes don't all run their testing at the same times, and the testing is fairly randomly distributed during the test periods (a given hour or so, avoids having all 3,000 Whiteboxes all trying to run the same test at the same time in the network).