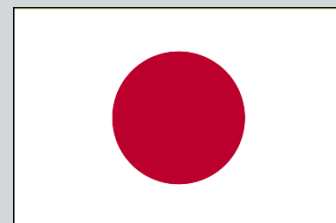


Barometer of fixed Internet connections in Japan

H2 2021 – H1 2022



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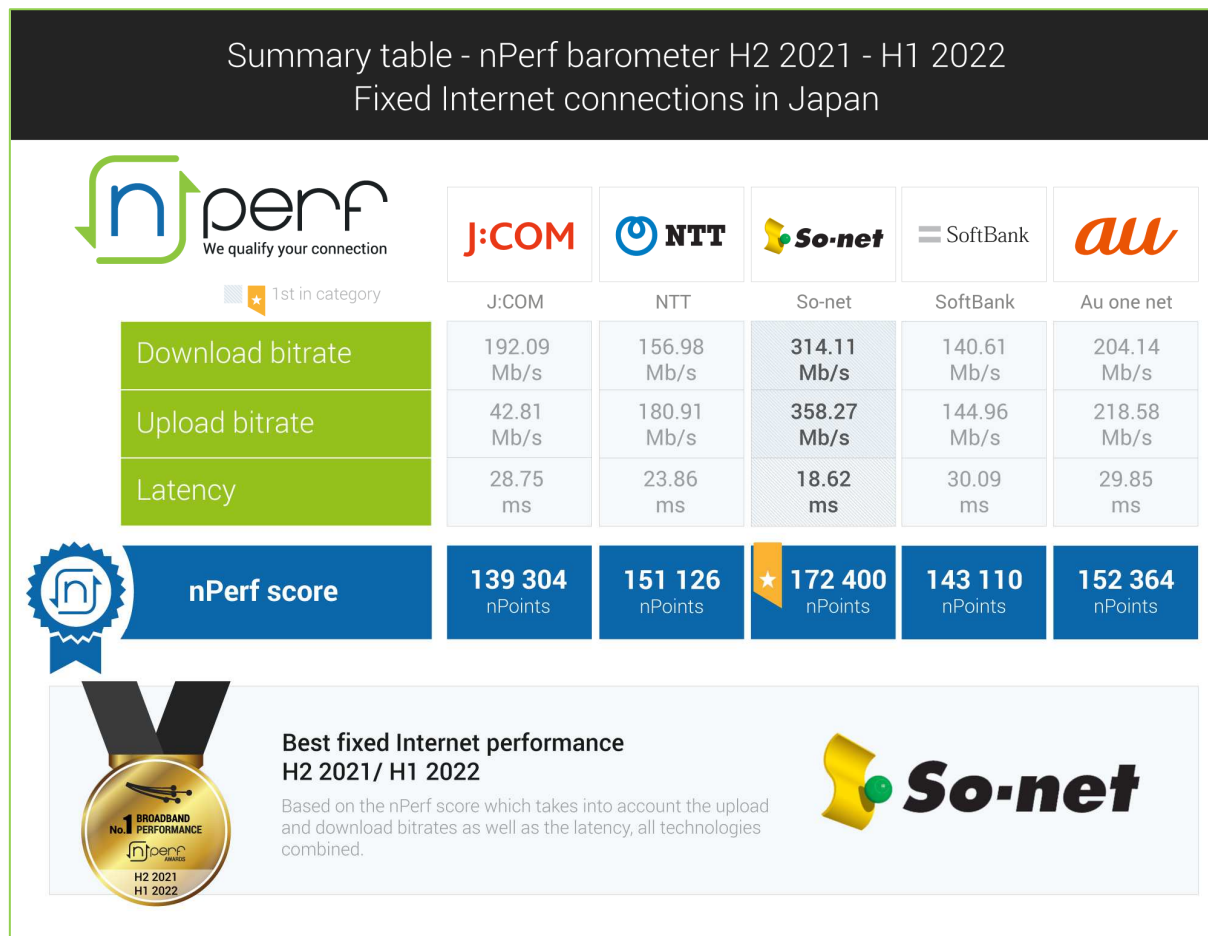


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1 Overall results

1.1 Summary table and nPerf score



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So-net provided the best broadband Internet performances in Japan during the last two semesters.

1.2 Our analysis

This study is based on tests carried out by users of the nPerf website. During the last two semesters, users of the nPerf app in **Japan** completed, before filtering, **238.971 tests**.

So-net takes the crown of the Japanese broadband Internet.

Its clear-cut victories on all the KPI contribute to its easy triumph in our newest barometer. By showing outstanding symmetrical speed figures, and being the only provider under 20 ms of latency, its 172 400 nPoints and the large score gap with the rest of the contenders are fully deserved (>20k nPoints).

Au one net and NTT, in the battle for the second place

Those ISP have done a good work throughout the period, and even if they finish 20k nPoints under the leader, they will surely fight to be considered the main opponent to the Sony subsidiary. Their scores are tight (respectively 152k and 151k nPoints, approx.), and, if we didn't consider So-net in the panel, the KDDI subsidiary would have won the download and upload speeds, while NTT would have been the best in latency measures.

SoftBank and J:COM, in need of a technological leap forward

With almost 30.000 score points of delay for these operators, the victory is clearly out of their reach by now. Even if significant efforts were done, this gap looks too large too big to catch up with the first positions in the mid term.

Will the next months bring some surprises ? Of course, nPerf will keep an eye on the situation!

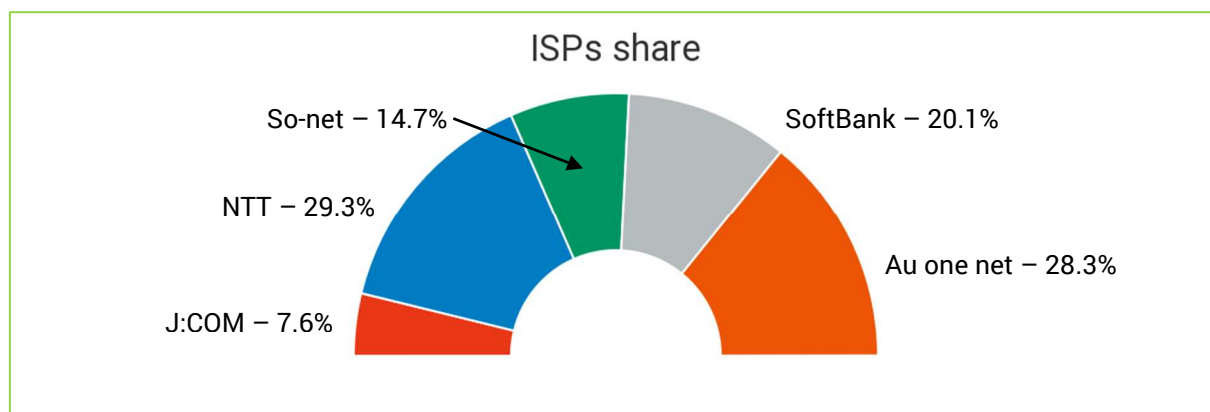
1 Results, all technologies combined

1.1 Data volume and distribution

Between **July 1st, 2021** and **June 30th, 2022** we counted in Japan **238.971 speed tests**, distributed as follows, after filtering (see § 4.4) :

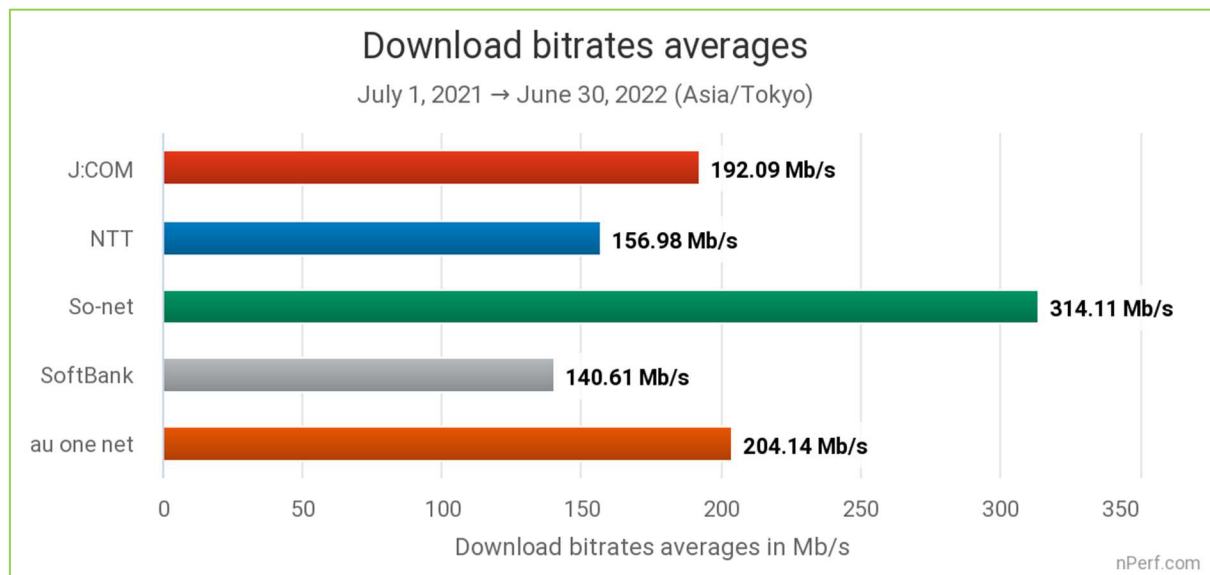
Country	Total
Japan	180.054

The overall distribution of the tests per provider is as follows:



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1.2 Download speed

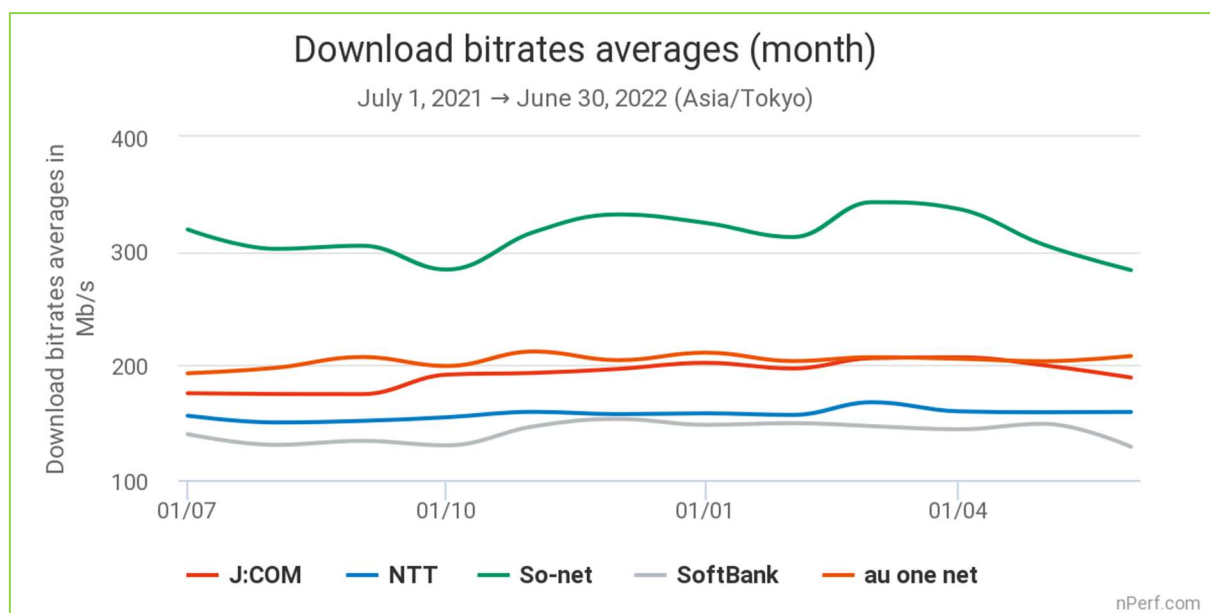


The highest speed is the best.

So-net subscribers enjoyed the best average broadband download speed, during the last two semesters.

With a mind-blowing average speed of 314 Mb/s, the Sony subsidiary makes the difference compared to its rivals, offering more than 100 additional Mb/s than its closest competitor in this field, i.e. au one net (KDDI).

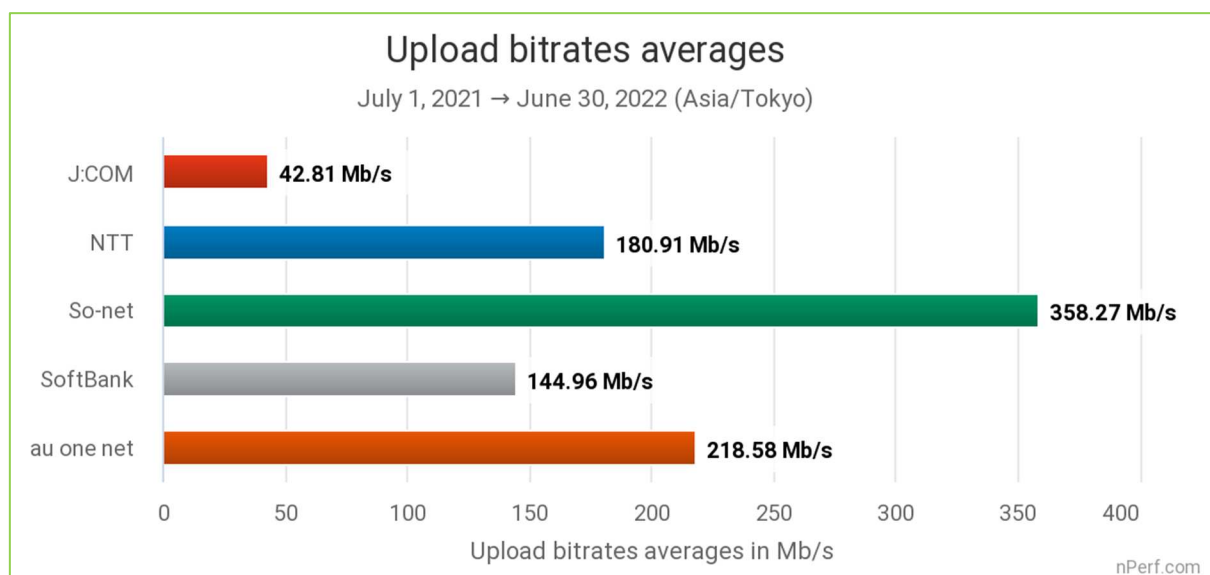
In any case, average performances of the Japanese providers on this field are pretty high : 193 Mb/s on average on these five major networks. The last position of this ranking is for SoftBank, which offers an average bitrate more than twice as slow than the leader.



The graph above shows the evolution of the *monthly* average bitrates throughout the period.

Without no surprises, So-net has flown over this race from start to end, while its competitors have offered a lower level scale and rather constant bitrates across the last months, without overrunning each other, around 140 to 200 Mb/s on average.

1.3 Upload speed



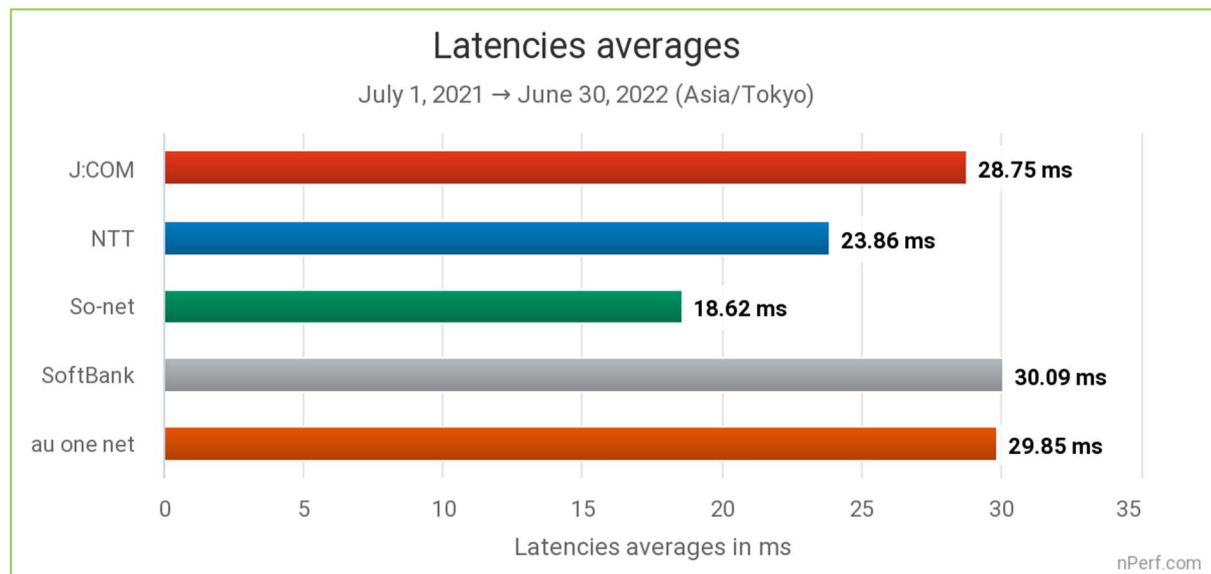
The highest speed is the best.

So-net subscribers enjoyed the best average broadband upload speed, during the last two semesters.

Excepting J:COM, which stays out of the race with a 8 to 9 times inferior speed than the leader of this KPI, it is important to state that Japanese have offered a more than symmetrical upload speed, with an enormous average bitrate of 200 Mb/s, i.e. higher than for downloading, which is a very

rare phenomenon abroad ! If J:COM had offered similar bitrates than for downloading, SoftBank would have got the last position again, even if its throughputs would be huge anywhere else.

1.4 Latency



The shortest time is the best.

So-net subscribers enjoyed the best average broadband latency, during the last two semesters.

So-net does not weaken when it comes to the latency. Under 19 Mb/s, its nice performance allows it to put some distance between itself and its best opponent, NTT, which is 5 ms behind. Thus, So-net confirms its total domination over the rest of contenders. Nevertheless, these competitors haven't offered a bad performance either, given that the slowest time of response goes to SoftBank and au one net, with approx. 30 ms each, on average.

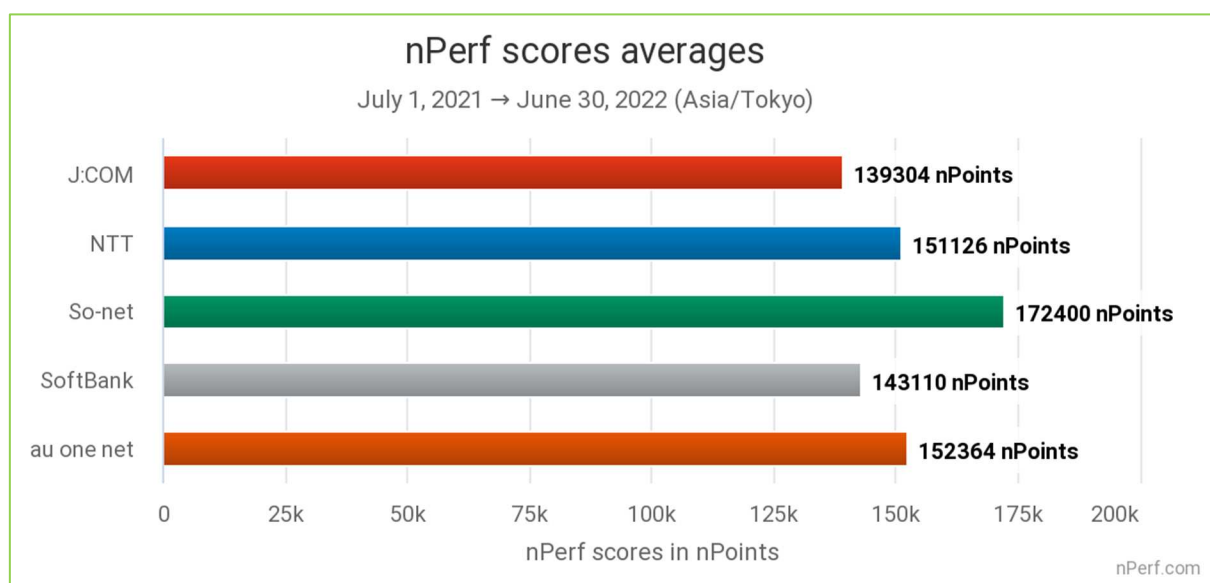
Finally, and as for the upload speed, the performances trends within the period have all been insignificant and of little interest.

1.5 nPerf scores

The nPerf score, expressed in nPoints, gives an overall picture of the quality of a connection. It takes into account the measured bitrates (2/3 Download + 1/3 Upload) and the latency. These values are calculated on a logarithmic scale to better represent the perception of the user.

Thus, this score reflects the overall quality of the connection **felt by the user**.

The results below consider all the previous indicators and therefore all the tests carried out. As technologies are grouped together, the proportion of tests in different technologies strongly impacts this global trend.



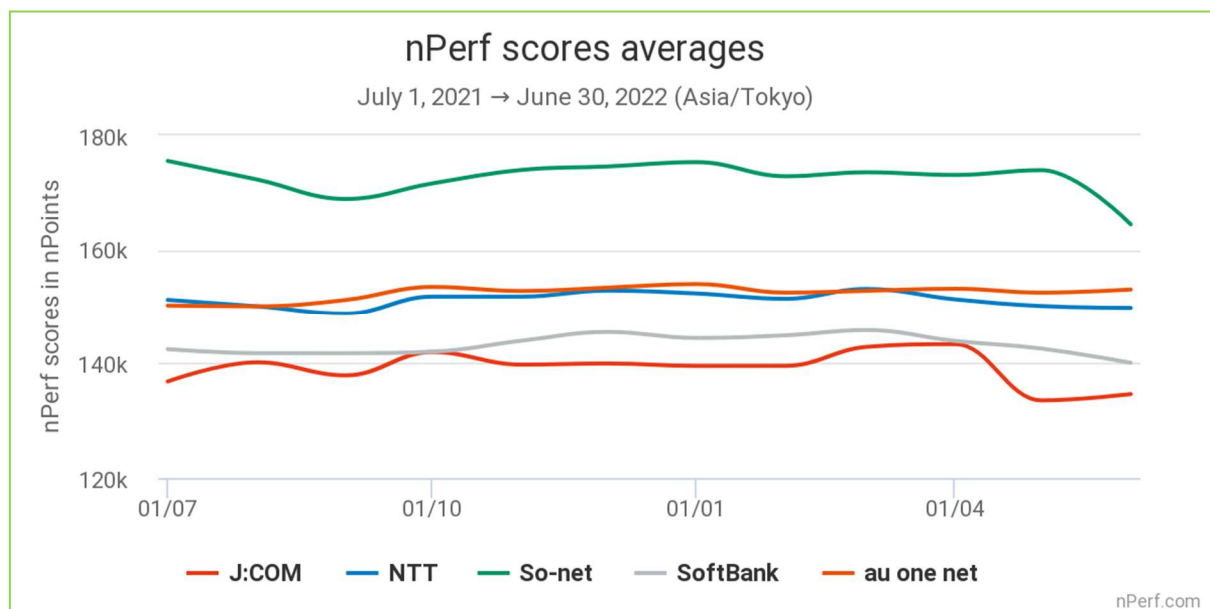
The highest value is the best.



So-net subscribers enjoyed the best broadband Internet performances, during the last two semesters.

So-net dominates its rivals, with a nice score of 172 400 nPoints, while the two biggest Japanese suppliers occupy the rest of our podium, very close to each other, but 20.000 nPerf points below the winner : au one net reaches the second step and NTT gets the third.

Besides, we must highlight the very good upload speed in the country (except for J:COM), the bitrates symmetry, and, in general, the very high standard of service offered by any provider. Japanese Internet users really do not have to worry about their connection quality.



The graph above illustrates the evolution of the *monthly* average scores throughout the period.



Find this global indicator directly in the website, or on your mobile device, via the « Compare » function at the end of the (full) test. It is updated in real time over 14 rolling days.

2 You too, participate in the nPerf panel!

To participate in the panel, simply test your connection on the website www.nperf.com.

For mobile Internet, you can also use the nPerf app, available for free on the Apple AppStore for iPhone and iPad and on Google Play for Android devices.

3 Custom analysis & contact

Do you need further studies, or want to get the raw data, punctually or automatically, to compile it yourself?

You can contact nPerf via www.nperf.com through the "Contact Us" section, or directly from the mobile app.

Phone contact: +33 482 53 34 11

Address: nPerf SAS, 87 rue de Sèze, 69006 LYON, France

Stay in touch with us, follow us!



4 Methodology

4.1 The panel

nPerf offers an Internet speed test application, which can be used for free at www.nPerf.com.

Everyone is free to use nPerf to measure the quality of their Internet connection. The panel of this study is formed by its users in Japan. In addition, the results from the nPerf speed tests integrated on our partner websites are also included in the panel.

Thus, the nPerf study is based on the **tens of thousands of tests** carried out yearly, exclusively by the operators' end customers, which makes it the "crowdsourced" study based on **one of the largest panels of the country**.

These tests reflect the **actual experience of the general public** on the various Internet networks.

4.2 Speed and latency tests

The purpose of the nPerf Speed Test is to measure the maximum capacity of the data connection in terms of data rates and latency.

To achieve this, nPerf establishes multiple connections simultaneously to saturate the bandwidth to accurately measure it. The speed used for the barometer is the average speed measured by the application.

Speed measurements thus reflect **the maximum capacity** of the data connection. This rate may not be representative of the user experience experienced during normal use of the Internet, as it is measured only on nPerf servers.

The measured bit rate can be impacted by the quality of the user's local network, especially since the expected flow is high. Thus, for an optical fiber internet connection, a local Wi-Fi or Power-Line connection can greatly reduce performance. However, since these constraints are identical to all market operators, they do not bias the comparison. In addition, the user is made aware of these constraints and invited to use a wired local connection for testing very high speed.

4.3 nPerf servers

To ensure maximum user bandwidth at all times, nPerf relies on a network of servers dedicated to this task. These servers are hosted in the country and abroad. Indeed, nPerf has also installed dedicated servers directly at some providers' facilities, to maximize measurement reliability. **Local carriers are welcome [to install nPerf servers, that's free](#) !**

The total bandwidth available for Japan is **28 Gb/s**, and reaches more than **10 Tb/s** worldwide, with more than **2.300** active nPerf servers!

4.4 Filtering of test results

The results obtained are subject to automatic and manual checks to avoid duplication and to rule out possible abusive or fraudulent use (massive tests, robots...).

The exclusive nPerf algorithm retains only the relevant tests, thus eliminating biases related to the overrepresentation of certain terminals, users or test locations.

The results are classified by provider. Tests performed on cellular connections (2G, 3G, 4G & 5G), or on professional/business/military/academic networks are also excluded from this barometer.

4.5 Statistical accuracy

With regard to the total volume of unit tests, the statistical precision used in this publication is:

Category	Number of tests (filtered)	Absolute values	Percentages
Global	180.054	3%	1 point

If, for a given indicator, one or more operators have results very close enough to the best, in the confidence interval defined above, these will **share the first place**.