

Barometer of fixed internet connections in Switzerland

Year 2018



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1 Summary of global annual results

1.1 Our analysis, all technologies combined

Since January 2018, nPerf has set up a new methodology to rank the ISP's. As we proceed for mobile networks we calculate a score that takes into account download, upload throughputs and latency results. Download throughputs counts for 2/3 of the score. This new methodology explains why there is so many changes in our ranking. We do believe that a good service can't be based just only on download speed but it must includes upload speed and latency.

In 2018, nPerf users have performed **102 660** connection tests on Switzerland's four largest ISPs.

In 2018, People in Switzerland have enjoyed an average download speed of 73 Mbps and 40 Mbps. Swiss households are among the best-connected ones in Europe with these broadband performances.

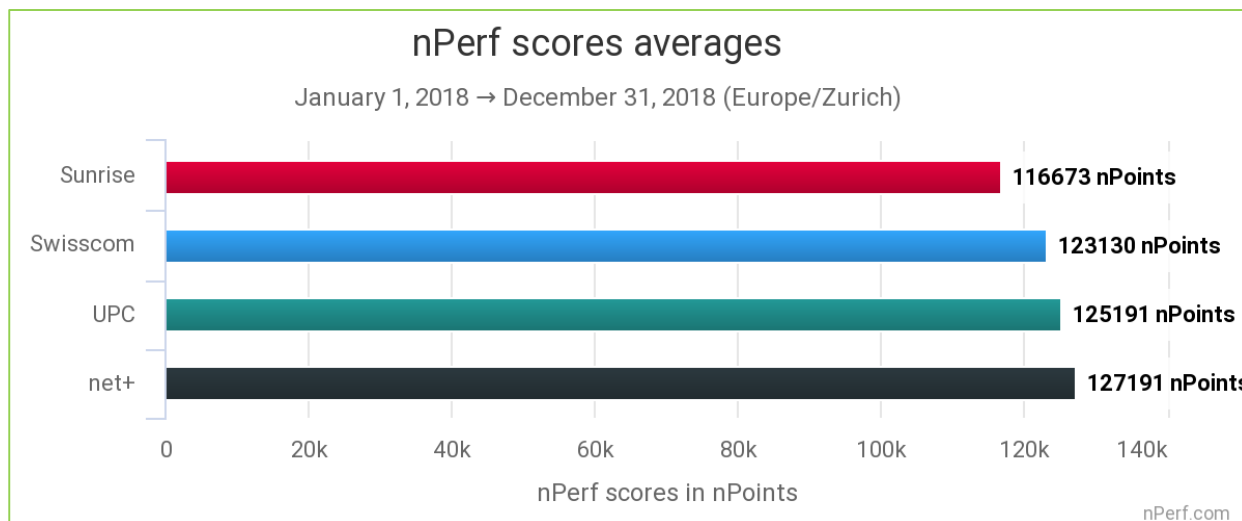
We have voluntary excluded Salt and Quickline from the category "all technologies combined", because of a too small volume of tests.

net+ and UPC have offered the best internet performances to their subscribers. net+ has delivered a good download throughput and latency while UPS offered a huge download bitrate, far from its competitors.

Even if net+ has the best score, we consider net+ and UPC equal because of the confidence interval which is less than 3%.

Swisscom is not far behind and has offered the best upload speeds and a good latency.

1.2 nPerf score, all technologies combined



The highest value is the best.

Net+ and UPC, the best fixed Internet performances in 2018.

1.3 Focus on FTTH networks

In 2018, nPerf users have performed **102 660** connection tests on Switzerland's six largest ISPs. Among these tests, **9 077** have been performed on FTTH networks.

We have voluntarily excluded Quickline from this FTTH study because of a too small volume of tests.

Salt, the best internet performance on fiber networks in 2018.

Salt dominates the market in terms of performances on fiber Internet connections thanks to its first place on latency, download speed and upload speed.

These results are due to a very good choice of technology. By choosing 10 Gbps technology, Salt is sure to deliver the best internet performance. Other Internet providers are penalized by a marketing segmentation. Indeed, Salt is the only provider who delivers symmetric 10 Gbps broadband.

Note also that, if the performance is far from the theoretical one, it's because customers don't have yet the equipment (powerful chipset, ethernet cable, new generation of Wi-Fi...) that allows them to reach 10 Gbps.

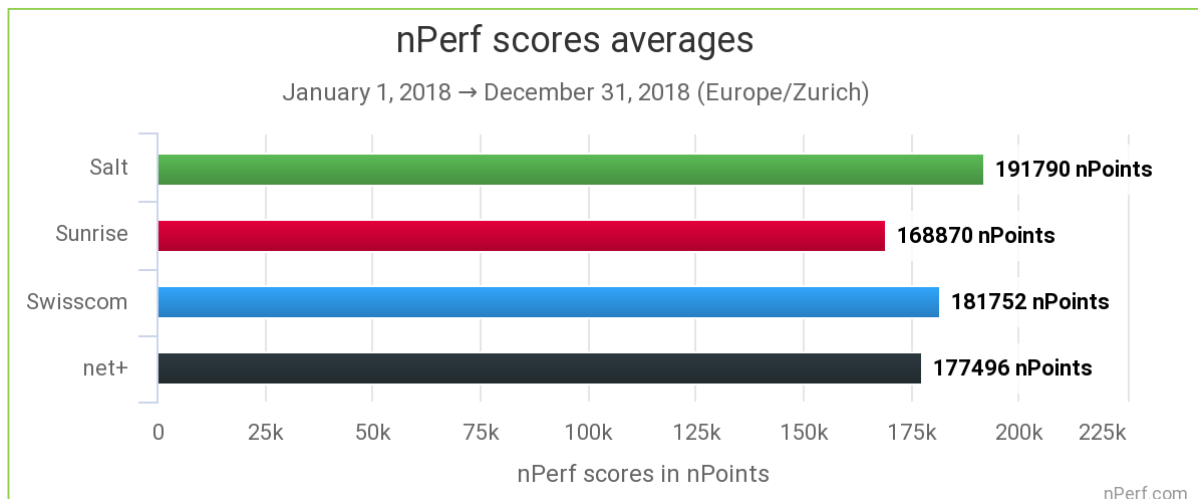
Swisscom, a nice second place.

Thanks to an excellent upload speed and a very good latency, the largest ISP in Switzerland reaches the second place in our ranking.

net+, in third place.

Thanks to an excellent download speed and a very good upload speed, net+ reaches the third place in our ranking of the best internet performances on fiber networks.

1.4 nPerf score on FTTH networks



The highest value is the best.

Salt, the best 2018 internet performance on fiber networks.

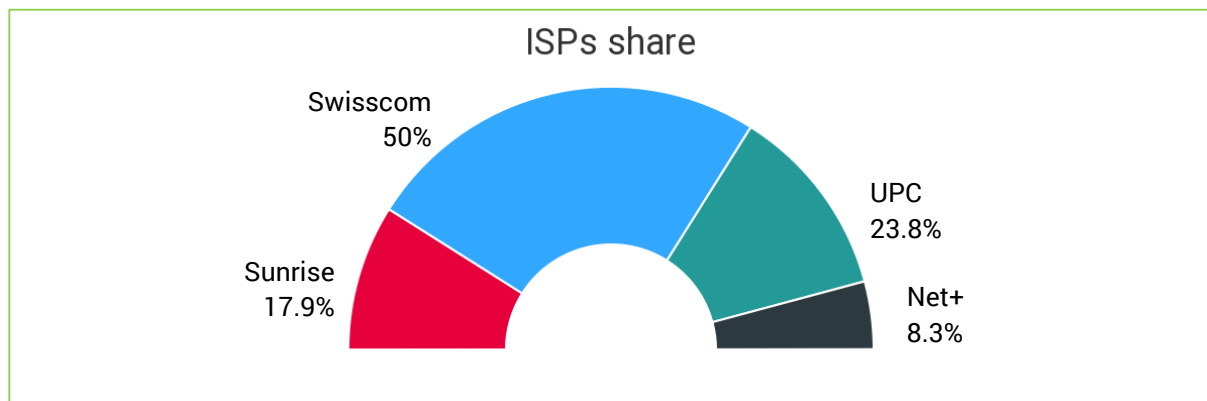
2 Results, all technologies combined

2.1 Data amount and distribution

From **January 1, 2018** to **December 31, 2018** we counted 102 660 tests, distributed after filtering as follows:

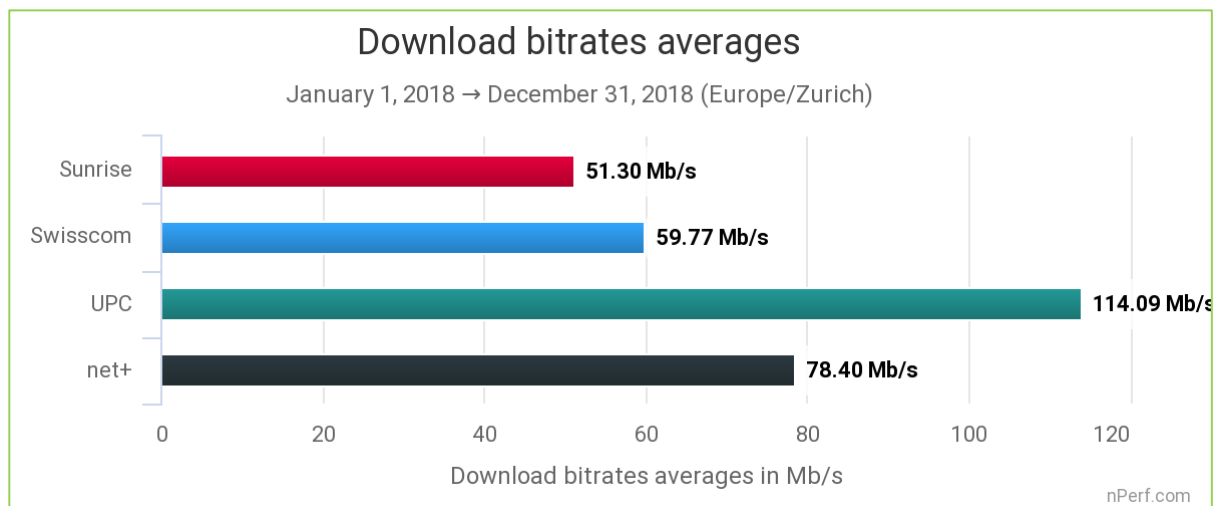
Country	Tests
Switzerland	87 183

Breakdown of tests by provider



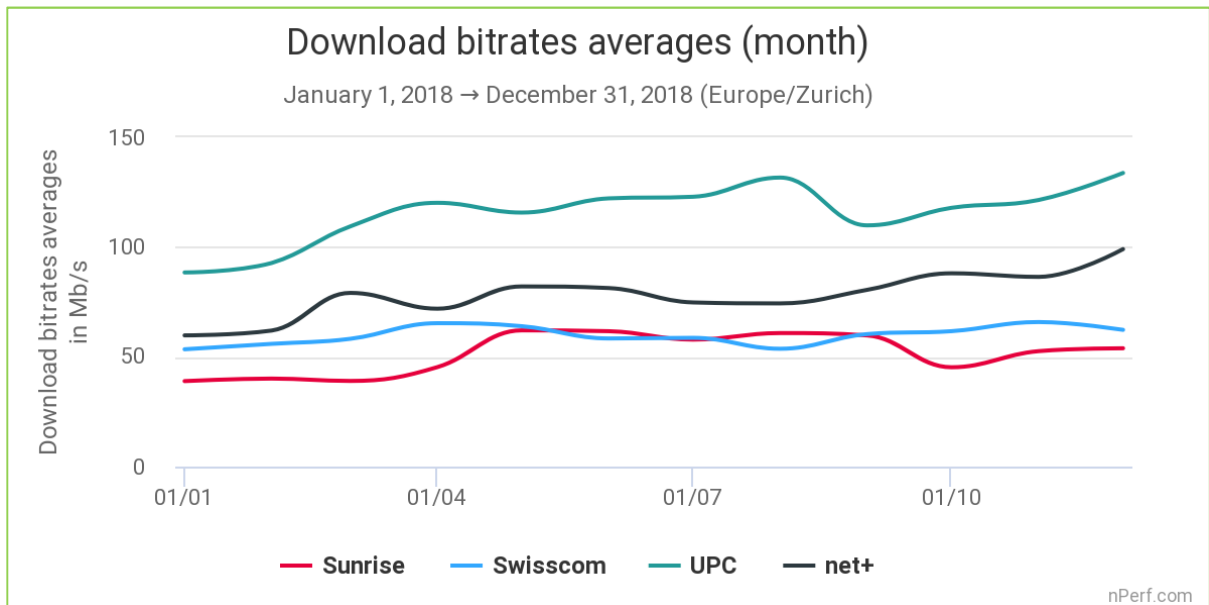
2.2 Download speed

In 2018, the average download speed in Switzerland was 73 Mb/s.



The highest value is the best.

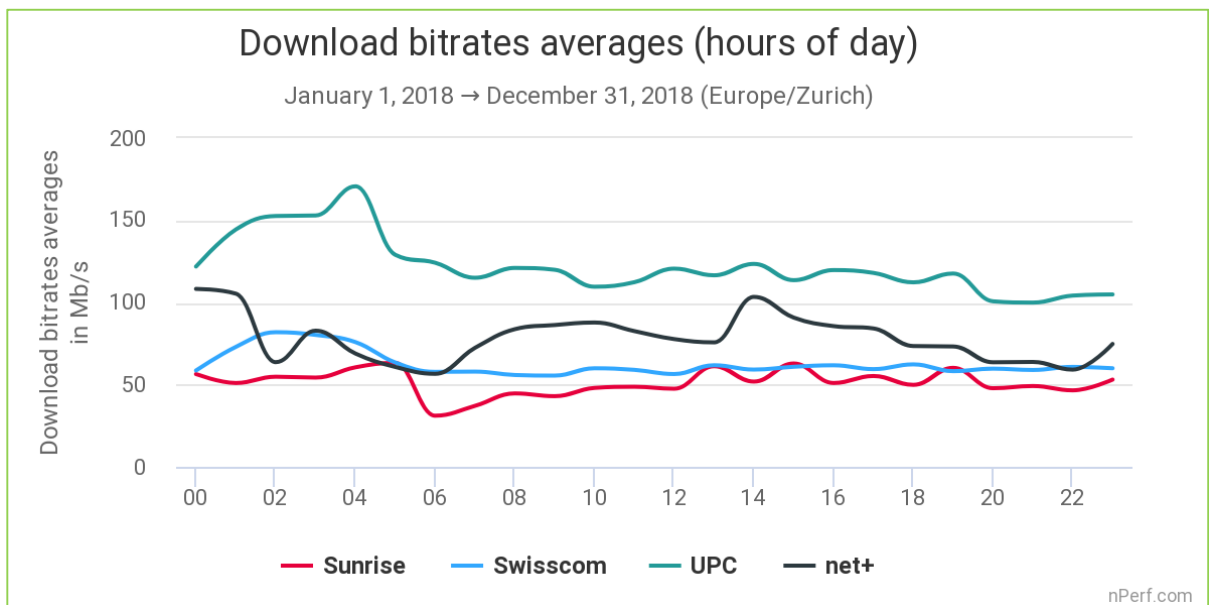
All technologies combined, **UPC** has offered the best download speed to its subscribers in 2018. Sunrise has also made progress on this indicator (+ 4 Mb/s during the second semester 2018).



The highest value is the best.

Above graph illustrates the ability of providers to maintain a constant download speed over the period regardless of network load (number of connected clients).

All ISPs have slightly improved their download throughput during the year.

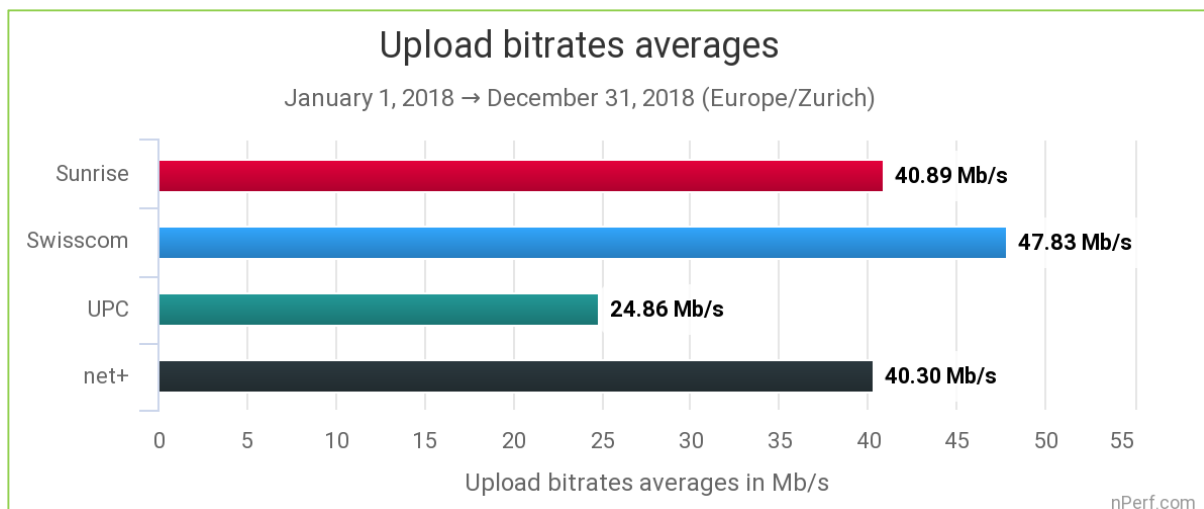


The highest value is the best.

This graph illustrates the ability of providers to ensure a constant download speed during the day, regardless of network load (number of connected clients). We note that there is no decline of the throughput during the busy hours; this is a good performance from the ISPs.

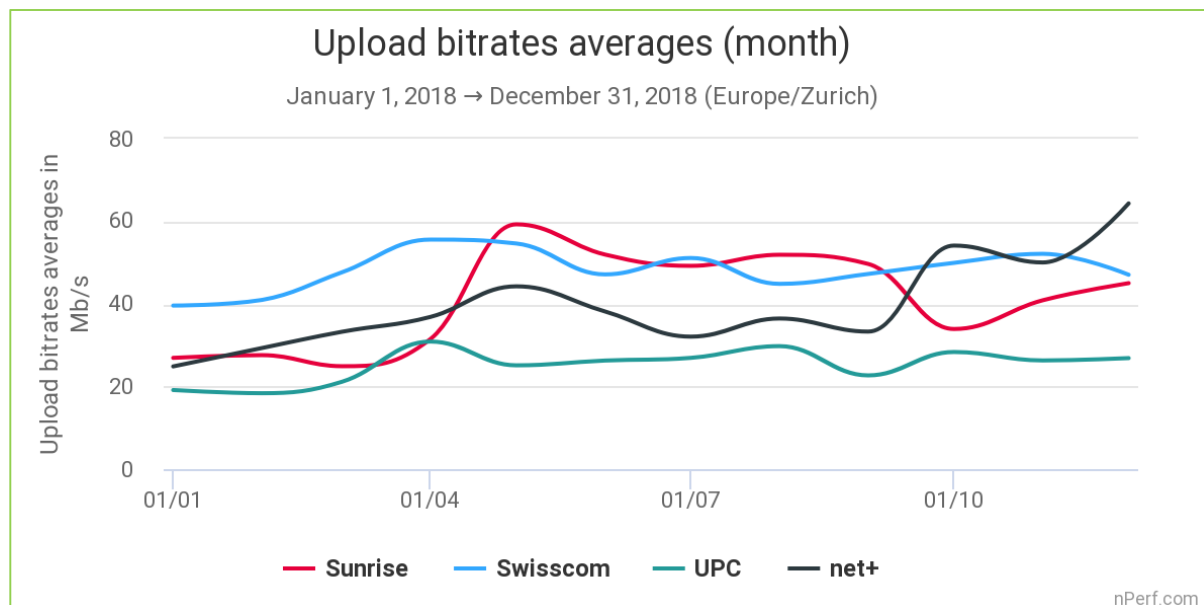
2.3 Upload speed

In 2018, the average upload speed in Switzerland was 40 Mb/s.



The highest value is the best.

All technologies combined, **Swisscom** has offered the best upload speed to its subscribers in 2018 but it is Sunrise who has made the best progress on this indicator (+ 4 Mb/s during the second semester 2018).



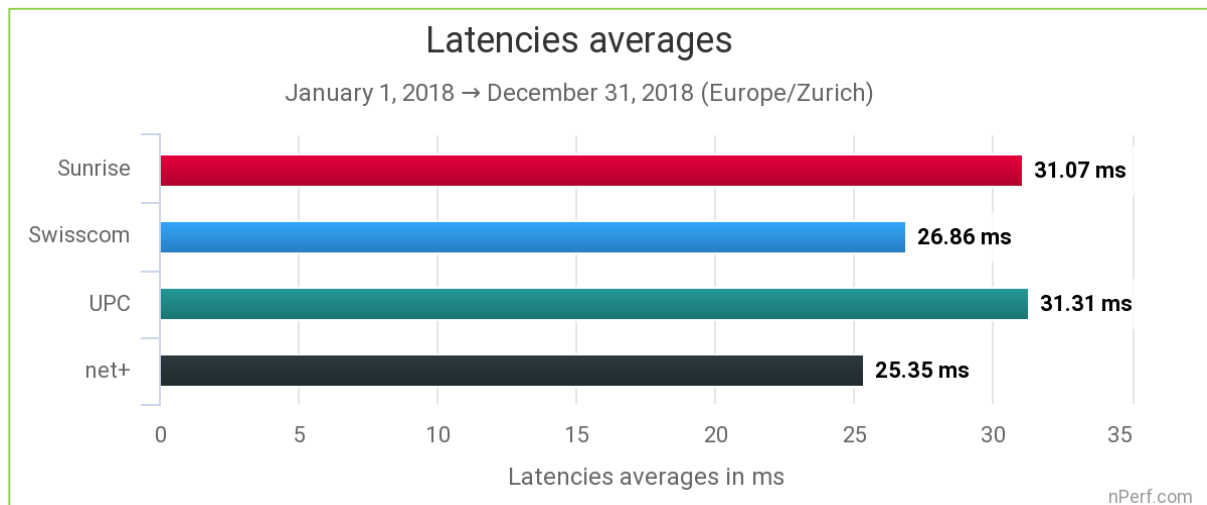
The highest value is the best.

Above graph illustrates the ability of providers to maintain a constant upload speed over the period regardless of network load (number of connected clients).

All ISPs have slightly improved their upload throughput during the year.

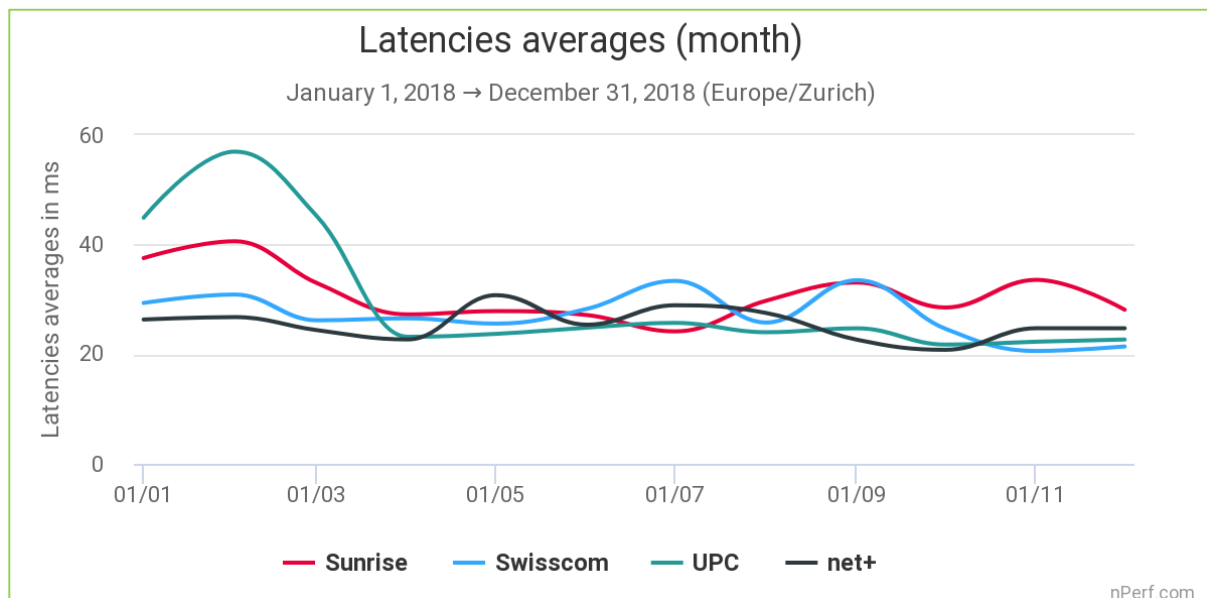
2.4 Latency

In 2018, the average latency in Switzerland was 28 ms.



The lowest value is the best.

All technologies combined, **net+** has offered the best average latency to its subscribers in 2018.



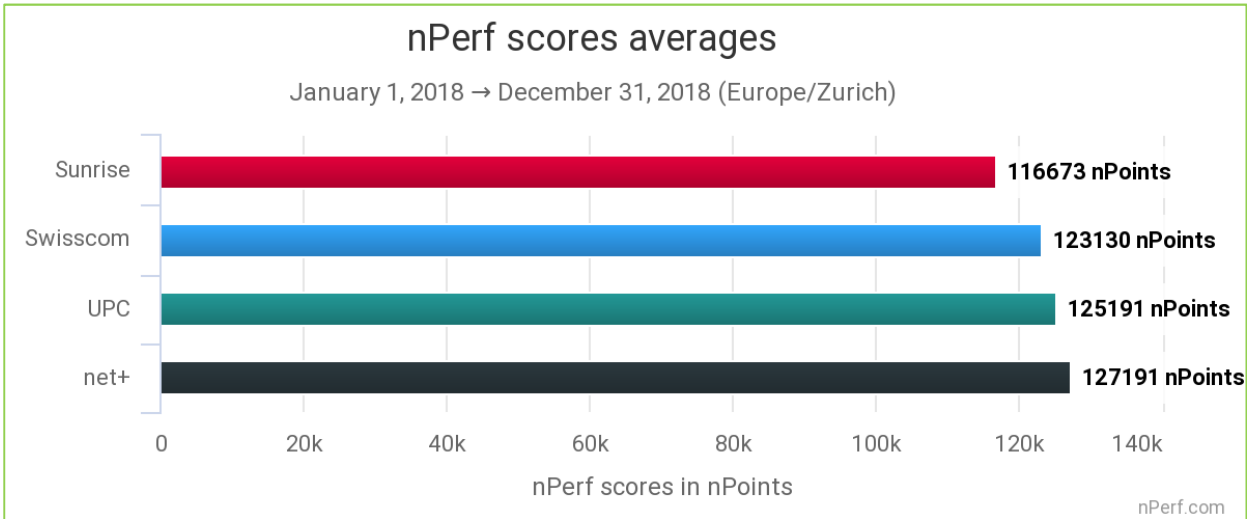
The lowest value is the best.

This graph illustrates the ability of providers to maintain a constant latency during the period, regardless of network load (number of connected clients).

2.5 nPerf score

The nPerf score, expressed in nPoints, gives an overall picture of the quality of a connection. It takes into account measured bitrates (2/3 Download + 1/3 Upload) and 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 for mainstream consumer use.



The highest value is the best.

Net+ and UPC, the best fixed Internet performances in 2018.

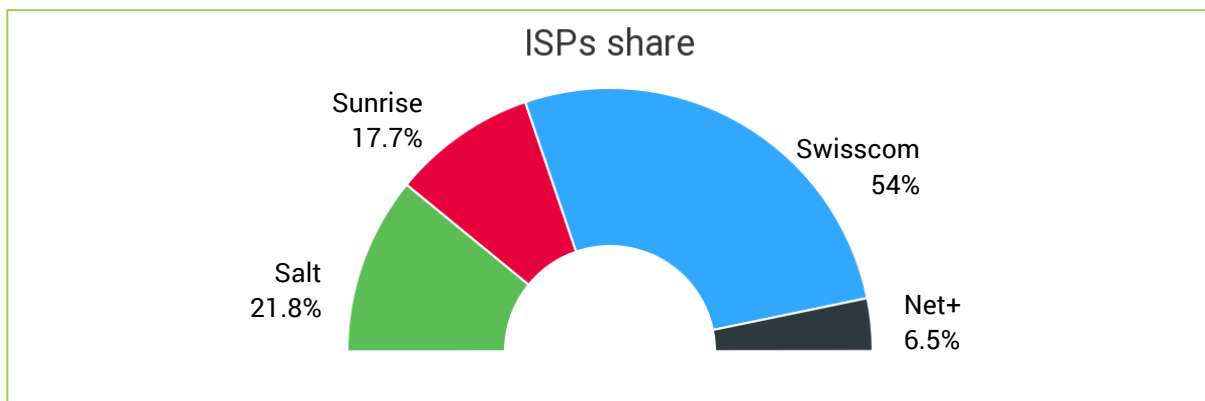
3 Optical Fiber Results

3.1 Data amount and distribution

From **January 1, 2018** to **December 31, 2018** we counted **9 077** tests, distributed after filtering as follows:

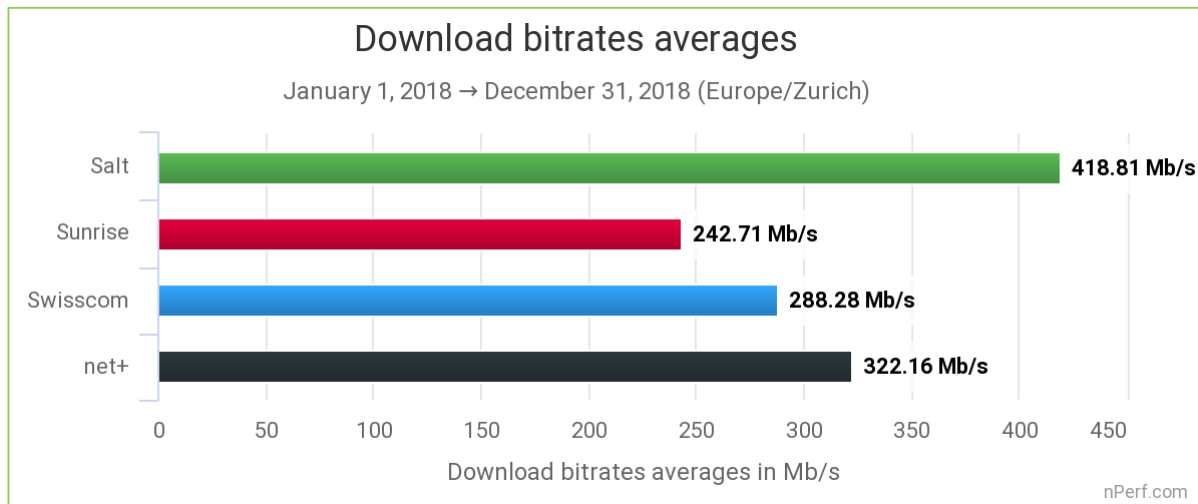
Country	Tests
Switzerland	7 544

Breakdown of tests by provider



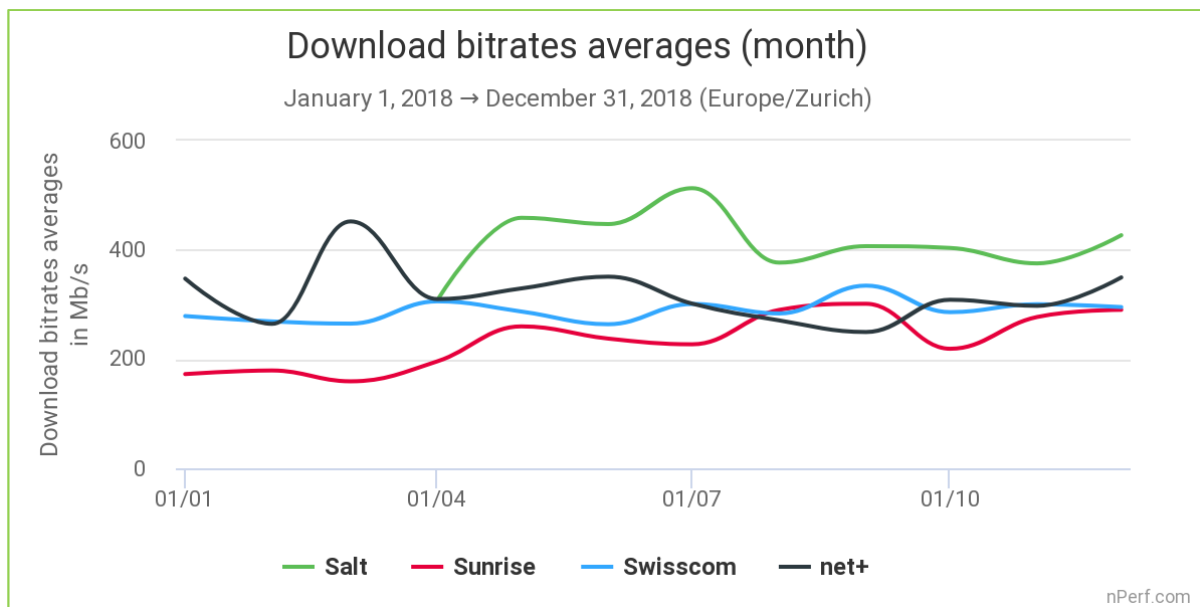
The indicators that follow in this section relate only to the FTTH technology (Fiber to the home) proposed by the 4 carriers. In order to isolate the FTTH tests for the comparison, we have chosen to filter on an upload bitrate greater than or equal to 100 Mb/s. Thus, only the FTTH results stand out, the technologies like FTTLA / FTTB, G-Fast or VDSL are discarded. However, this filter also eliminates "bad" FTTH tests, at least those that have a bitrate below 100 Mb/s. This filtering is identical for all operators, it does not put into question the comparison.

3.2 FTTH download speed



The highest value is the best.

On FTTH technologies, **Salt** has offered the best download speed to its subscribers in 2018.

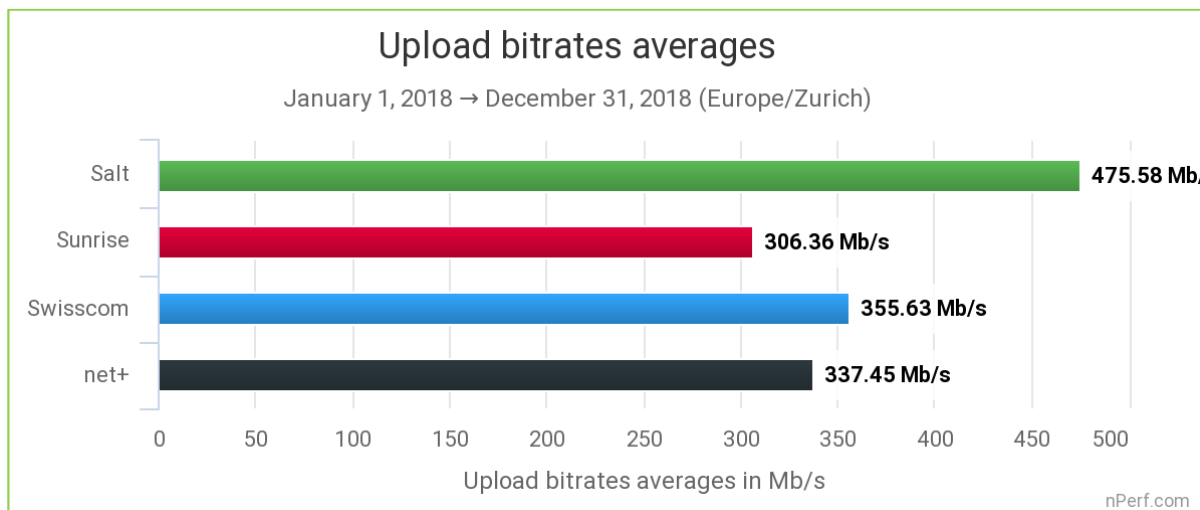


The highest value is the best.

Above graph illustrates the ability of providers to maintain a constant download speed over the period regardless of network load (number of connected clients).

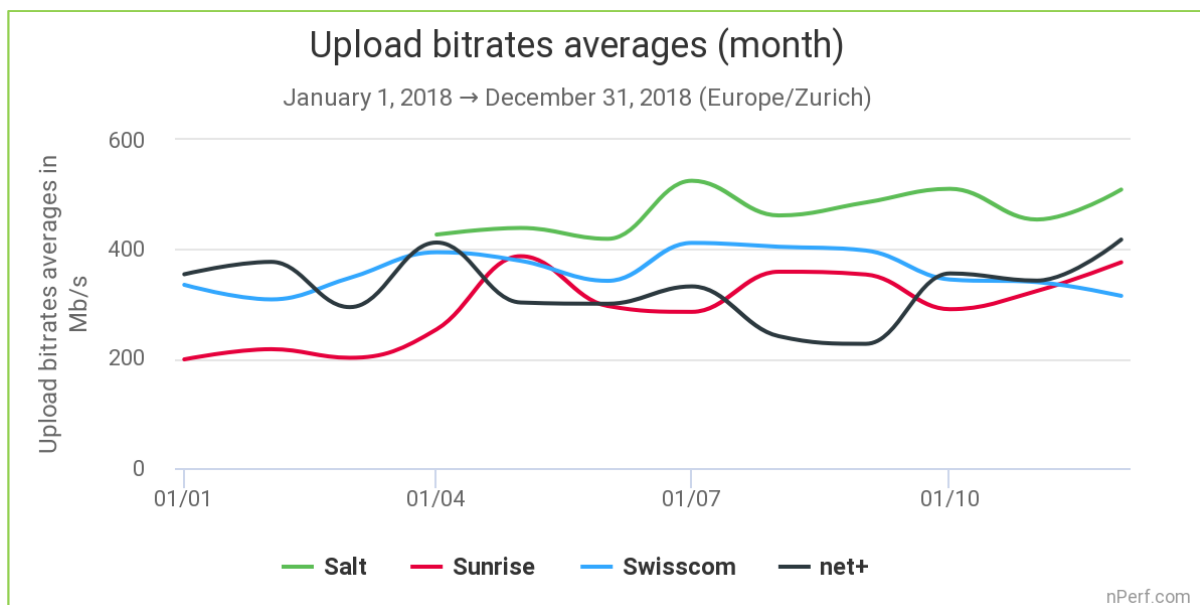
Sunrise has significantly improved its download throughput during the year and so all ISPs have offered more than 250 Mb/s since the fourth quarter of 2018.

3.3 FTTH upload speed



The highest value is the best.

On FTTH technologies, **Salt** has offered the best upload speed to its subscribers in 2018.

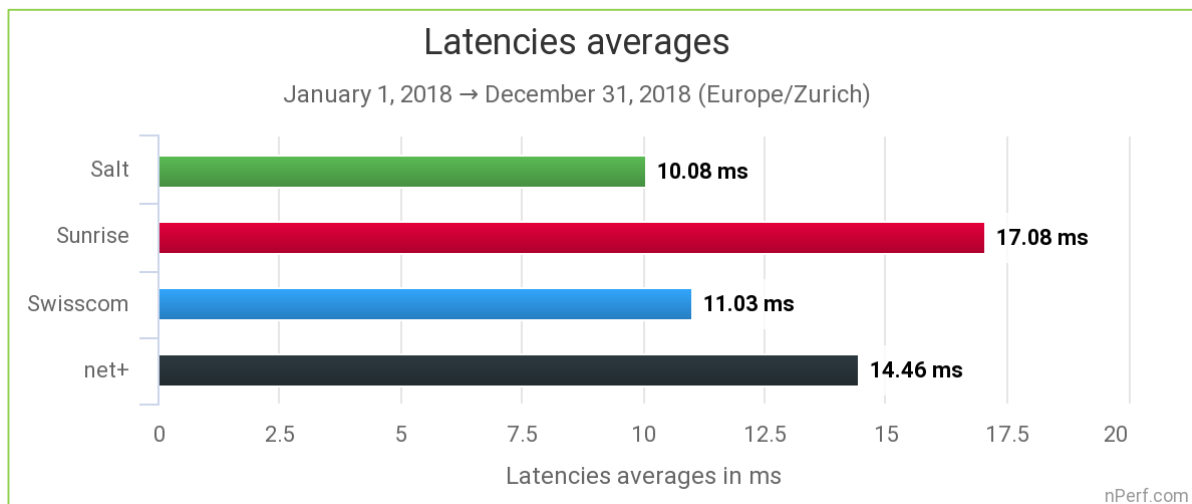


The highest value is the best.

Above graph illustrates the ability of providers to maintain a constant upload speed over the period regardless of network load (number of connected clients).

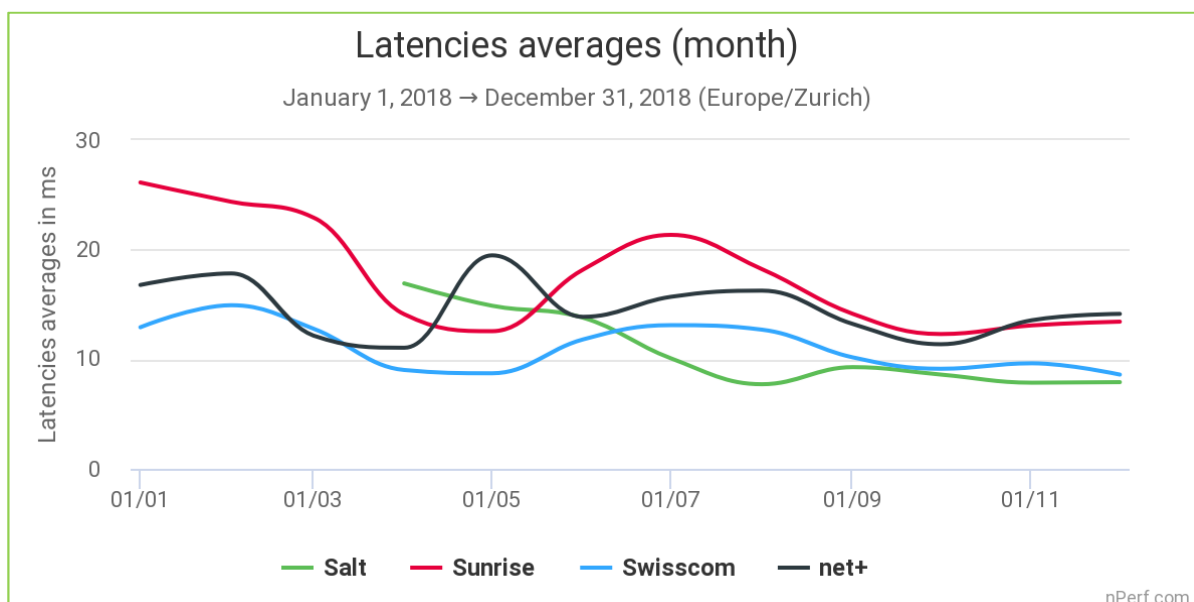
Sunrise has significantly improved its upload throughput during the year and so all ISPs have offered more than 300 Mb/s since the third quarter of 2018.

3.4 FTTH latency



The lowest value is the best.

On FTTH technologies, **Salt** has offered the best average latency to its subscribers in 2018.



The lowest value is the best.

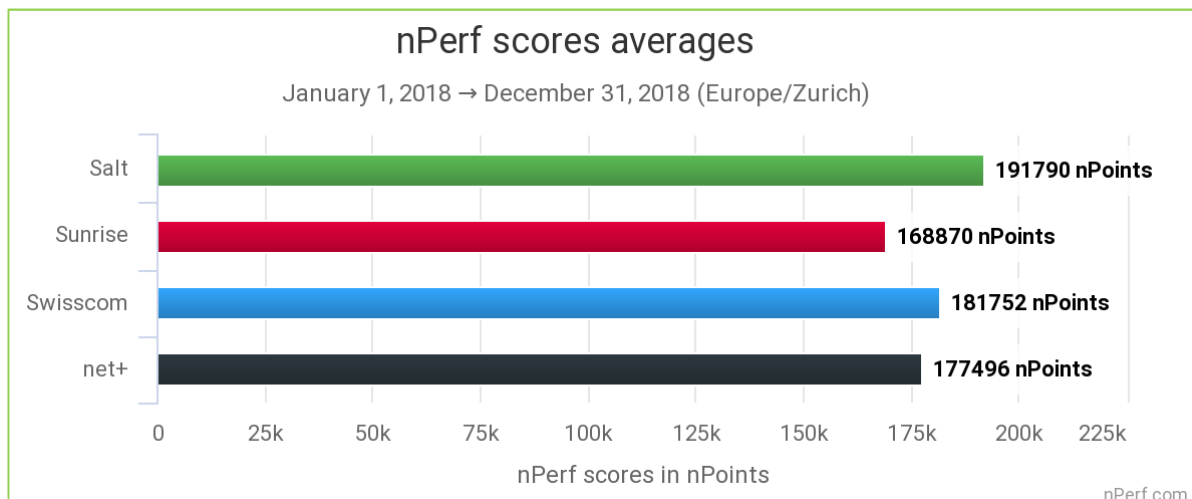
This graph illustrates the ability of providers to maintain a constant latency during the period, regardless of network load (number of connected clients).

We can note strong fluctuations on the latency during the first half of the 2018.

3.5 nPerf score, zoom on the FTTH

The nPerf score, expressed in nPoints, gives an overall picture of the quality of a connection. It takes into account measured bitrates (2/3 Download + 1/3 Upload) and 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 for mainstream consumer use.



The highest value is the best.

Salt, the best 2018 internet performance on fiber networks.

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 speed of their Internet connection. All users of the nPerf application form the panel of this study.

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 thousands of tests, making it the study with the largest panel in Switzerland.

4.2 Speed and latency tests

4.2.1 Objectives and operation of the speed and latency test

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 WiFi 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.

4.2.2 nPerf servers

To ensure maximum user bandwidth at all times, nPerf relies on a network of servers dedicated to this task.

These servers are located with hosts in Switzerland and abroad. Switzerland providers are welcome to install nPerf servers, that's free!

The total bandwidth available for Europe is greater than 300 Gb/s.

4.3 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 ...).

Tests performed on cellular connections (2G, 3G, 4G) are also excluded from this barometer.

5 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, on Google Play for Android devices and on the Windows Store for Windows Phone and Windows Mobile devices.

6 Custom analysis & contact

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

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

Phone contact: +33 482 53 34 11

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