Survey of fixed Internet connections in Switzerland



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2022 Report



nPerf is a service offered by nPerf, located at 87 rue de Sèze 69006 LYON - France.

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1 Results Summary

1.1 Summary table, with FTTH focus



Salt subscribers benefited from the best fixed Internet performance in Switzerland in 2022.



1.2 Our analysis

In 2022, in Switzerland, nPerf users performed **52,830** connection tests on the four fixed networks of the country's largest ISPs.

During this year, the Swiss population was able to enjoy an average download bitrate of 247 Mb/s, rising to 151 Mb/s. With such Internet bitrates, Swiss homes are among the best connected in Europe.

On average, bitrates have increased by 25% in one year!

Salt offered the best Internet performance in the country to its subscribers.

Salt dominated the market in terms of Internet performance on fixed networks thanks to its occupying first place in terms of download bitrates (+ 600 Mb/s!) and upload bitrates (+ 470 Mb/s!), as well as excellent latency on its network (10 ms!).

Its bitrates of several hundred Mb/s are the result of a mostly fibre network, but also of a very good technological choice of equipping its network with equipment compatible with 10 Gb/s.

Moreover, its competitors are at a disadvantage due to the segmentation of their commercial offers, which Salt has not decided to do by offering a single symmetrical 10 Gb/s bandwidth to all its fibre subscribers.

Swisscom still occupies second place.

Thanks to good bitrates and latency, Swisscom is still in second place in the overall ranking, all technologies combined, but it will have to pay attention to Sunrise, which improved more in 2022.

Sunrise, in third place.

The new group, with a download bitrate close to 235 Mb/s, is catching up with Swisscom by improving its latency by 10%.

Regarding Internet performance on fibre networks, Salt is also largely in the lead relative to its competitors.

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2 Results – All technologies

2.1 Test volume and distribution

From **1** January 2022 to **31** December 2022, we counted 52,830 unit tests on the country's major ISPs. After filtering, our sample group consists of **44,754 unit tests**, distributed by operator as follows:



2.2 Download bitrates



In 2022, the average download bitrate in Switzerland was 247 Mb/s.

The highest download bitrate is the best.

Salt subscribers benefited, in 2022, from the best average download bitrate, all fixed technologies combined.

Indeed, the Iliad subsidiary gives a new boost to the download bitrate and displays a stratospheric average result of more than 600 Mb/s! With a further increase of +129 Mb/s on average compared to 2021, it is overall three times faster than its rivals on this indicator. However, mention should also be made of the latter, which is recording both good results and serious interannual increases. Sunrise takes second place, with Swisscom coming third, and only net+ is slightly below the 200 Mb/s mark, although the bitrate is comfortable.





The highest download bitrate is the best.

This graph illustrates the capacity of the operators to ensure a constant bitrate throughout the period.

No events appear to have disrupted Salt's dominance during 2022. Its gap is such that, even during its significant declines in July and September, the average bitrate offered by Salt remains significantly higher than those of its competitors, which all range between 160 and 270 Mb/s.



The highest download bitrate is the best.

This graph illustrates the ability of operators to ensure constant bitrate throughout the day, regardless of the network load (number of simultaneously connected customers).

Despite strong variations from one hour to the next, Salt users seem to be spoiled for choice: 1.3 Gb/s at 1 a.m., or 406 Mb/s at 8 p.m.?

The bitrate available to Swiss customers of each operator is therefore comfortable and very sufficient, at any time of the day and night.



2.3 Upload bitrates



In 2022, the average upload bitrate in Switzerland was 151 Mb/s.

The highest download bitrate is the best.

Salt subscribers benefited, in 2022, from the best average download bitrate, all fixed technologies combined.

Its progress is just as incredible as on the upload bitrates. Salt wins the race with remarkable ease (4 times faster than Sunrise or net+, for example), adds an additional 106 Mb/s to its 2021 result, and does not seem to have a ceiling. With such bitrates, it is difficult to imagine a domestic use that Salt would not be able to satisfy.

As in the previous year, Swisscom finished second and the podium was completed by net+. Finally, Sunrise closes the ranking.



The highest download bitrate is the best.

This graph illustrates the capacity of the operators to ensure a constant bitrate throughout the period.



Like the download bitrates, Salt's upload bitrate underwent variations of a large amplitude during the year. However, its most modest results are already extremely powerful. With this effect of scale, it would seem that its opponents have very similar bitrates, but in reality Swisscom remains one step ahead of net+ and Sunrise.

2.4 Latency



In 2022, the average latency in Switzerland was 18 ms.

In 2022, Salt subscribers benefited from the best average latency, all fixed technologies combined.



The shortest response time is the best.

There are clearly two groups of operators, one of which consists of the single Salt.

Firstly, Sunrise, Swisscom and net+, which are in the vicinity of 19-20 ms on average, which represents a very correct response time. And on the other hand, Salt, which does not worry about it and offers latency twice as fast, 10 ms on average! In addition, although Salt, net+ and Sunrise improved their 2021 results, Swisscom's results deteriorated significantly: 2.6 ms longer on average.

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The *shortest* response time is the best.

2.5 nPerf Scores

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



Thus, this score reflects the overall quality of the connection for standard consumer use.

The highest score is the best.

In 2022, Salt provided the best fixed Internet performance in Switzerland, all technologies combined.

For the third year in a row, Salt won with disconcerting superiority over its peers, despite their good results. Winner on all the indicators studied, and recording the strongest improvement in bitrates since 2021, it observes the closest of its competitors, Swisscom, from a distance of more than 33,000 points. Salt is thus gradually approaching 200,000 nPerf points... will it be able to achieve them soon?





The highest score is the best.

This graph illustrates the monthly variation of the score over the period.

Thanks to the nPerf website and application, you can access this global indicator directly on your computer, smartphone or tablet, via the "=

Compare" function at the end of the complete test. It is updated in real time over 14 rolling days.



3 Results - Fibre Optic (FTTH)

3.1 Test volume and distribution (FTTH)

From **1** January 2022 to **31** December 2022, we accounted for 15,308 unit tests on the fibre optic networks of the country's main ISPs. After filtering, our sample group consists of **13,116 unit tests**, broken down by operator as follows:



The indicators that follow in this section relate only to the FTTH (fibre optic to the home) technology offered by the operators. In order to isolate the FTTH tests for comparison, we have chosen to filter on an upload bitrate greater than or equal to 100 Mb/s. Thus, only the FTTH results are considered, the FTTLA/FTTB, G-Fast or VDSL type technologies are discarded. Please note, however, that this filter also eliminates "bad" FTTH tests, at least those with an upload bitrate of less than 100 Mb/s. Nevertheless, this identical filtering for all operators does not call into question the comparison.

3.2 Download bitrates (FTTH)



The highest download bitrate is the best.

Salt provided its subscribers with the best average FTTH download bitrate of 2022.

Knowing that these statistics are averages, we are entitled to qualify Salt as a "supersonic" provider, due to its staggering bitrates. The optical fibre download bitrates offered by the other three operators are unfortunately also very attractive, following very strong interannual increases.

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The highest download bitrate is the best.

This graph illustrates the capacity of the operators to ensure a constant bitrate throughout the period.

Salt maintained, in all circumstances, better FTTH bandwidth availability than the other ISPs studied. In November, Salt even managed to cross the symbolic threshold of 1 Gb/s, on average!

3.3 Upload bitrates (FTTH)



The highest download bitrate is the best.

Salt provided its subscribers with the best average FTTH upload bitrate of 2022.

Aside from Salt's clear victory, net+ takes second place on the podium for this type of connection, surpassing Swisscom, which fails to achieve it in the general case. This is certainly explained by the difference in the composition of the infrastructures among the operators.

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3.4 Latency (FTTH)



Salt provided its subscribers with the best average FTTH latency of 2022.

With exceptional latency, the winner adds a string to its bow and continues to amaze the competition: 8.46 ms! At this stage, will it be able to significantly improve it? If so, what concrete difference will this make?

3.5 nPerf Scores (FTTH)

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

Thus, this score reflects the overall quality of the connection for standard consumer use.



The highest score is the best.

Salt provided the best fibre optic performance in Switzerland in 2022.

In terms of fibre optics, Salt sets the tone and flies ever higher. Thanks to the modernity and power of its fixed network, which is largely fibre-based, this operator takes residential connections to a



superlative level in Switzerland. Will it be able to keep up the pace and stay above 200,000 points in the future?

4 You too, participate in the nPerf sample group!

To participate in the sample group, all you have to do is use the <u>www.nperf.com</u> website to test your bitrate. For mobile Internet, you can also use the nPerf application, available free of charge on the Apple AppStore for iPhone and iPad, and on Google Play for Android terminals.

5 Personalised study & contact

Do you need further study or do you want to get the raw data, punctually or automatically, to compile it yourself? Contact us for a quote.

You can contact nPerf via <u>www.nPerf.com</u>, under the "Contact Us" section, or directly through the mobile app.

Telephone contact: + 33 4 82 53 34 11 - Postal address: nPerf, 87 rue de Sèze, 69006 LYON

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6 Annexes

6.1 Methodology

6.1.1 The sample group

nPerf offers an Internet bitrate test application that can be used free of charge at <u>www.nPerf.com</u>. Everyone is free to use this application to measure the bitrate of their Internet connection. All users of the nPerf application form the sample group of this study. In addition, the results from the nPerf bitrate test integrated on partner sites are also included in the sample group.

Thus, the nPerf study is based on **tens of thousands of tests**, which makes it the study with one of the most extensive sample groups in the country.

6.1.2 Bitrate and latency tests

6.1.2.1 Objectives and operation of the bitrate and latency test

The purpose of the nPerf bitrate test is to measure the maximum capacity of the data connection in terms of bitrate and latency.

To achieve this, nPerf establishes multiple connections simultaneously to saturate the bandwidth for accurate measurement. The bitrate used for the survey is the average bitrate measured by the application.

The bitrate measurements thus reflect the maximum capacities of the data connection. This bitrate may not be representative of the user experience during normal Internet use, as it is measured only on nPerf servers.

The measured bitrate can be impacted by the quality of the user's local network. This constraint is all the stronger the higher the possible bitrate. Thus, for a fibre optic connection, a local Wi-Fi or PLC connection can greatly reduce performance. However, since these constraints are identical to all operators on the market, they do not bias the comparison. Furthermore, the user is made aware of these constraints and invited to use a local wired connection for very high bitrate tests.

6.1.2.2 nPerf servers

In order to ensure maximum bandwidth at all times for users, nPerf relies on a network of servers dedicated to this task.

These servers are located in hosting centres, in Switzerland or abroad. nPerf has also installed dedicated servers, directly at the premises of the operators who have accepted it, in order to maximise the reliability of local measurements.

The total bandwidth available in Switzerland is over **329 Gb/s**, and exceeds **12 Tb/s** worldwide, with more than **2,560** active servers.

6.1.3 Statistical accuracy

| Category | Absolute values | Percentages |
|----------|-----------------|-------------|
| Overall | 3% | 1 point |
| FTTH | 3% | 1 point |

With regard to the unit test volumes, the statistical precision used in this publication is:

If, for a given indicator, one or more operators have results sufficiently close to the best, that is to say within the confidence interval defined above, these will come "**joint first**".

6.1.4 Filtering of results

The results obtained are subject to automatic and manual checks, in order to avoid duplication and rule out any abusive or fraudulent use.

6.1.4.1 Filtering of "business" offers

In order to publish a study that best reflects the consumer market, we excluded tests performed from "business" connections.

Tests performed on mobile connections (2G, 3G, 4G, 5G) are also excluded from this survey, however, when the mobile connection increases the xDSL bitrate by a link aggregation system, the results are included.

6.1.4.2 Identification of technologies

When possible, access technologies are identified; unfortunately, this identification is not possible for all operators.

