REPORT 2021

of the .ch Registry

SWITCH

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A leading role

in data protection on the internet

I am grateful to live in a country that has a functioning legal system with carefully balanced political forces. The Swiss legal system protects me within the country's borders and, where feasible, extends this to my travels abroad through diplomatic activities.

I spend part of my professional and my private life in the digital world. I expect the same state protection there too, with the same rights and obligations. It is exciting to see what is happening at the political level. The most impressive development in recent years has been the EU's General Data Protection Regulation, which has shaken up the global internet sector. We will continue to feel the shock waves for some time to come. I find it particularly satisfying that there is an equivalent regulatory framework in Switzerland and therefore an equivalent level of protection.

The public is less aware of the EU's next initiative: a European recursive DNS resolver for its population of 450 million people. The initiative is caught between hugely conflicting priorities. On the one hand, there is the task of protecting the public's data from abuse by Google and Cloudflare, the two major resolver operators. On the other, state filters should also be made possible, since they already exist today for the likes of unlicensed gambling. Defenders of trademark protection and intellectual property have immediately come forward requesting that DNS blocks be extended. How this resolver will actually be implemented in practice will become clear as early as 2022.

SWITCH's experts regularly analyse DNS traffic. We have been observing the concentration of power among DNS resolver operators for some time now. We believe that it is the responsibility of registries to ensure that internet users' privacy is protected at all times in DNS traffic. Working together with the Swiss Confederation, we have successfully managed to bring the global resolver operator Quad9 to Switzerland. This means that the entire chain of communication in the DNS is subject to Swiss data protection. All I have to do is enter 9.9.9.9 as the name server on my laptop and I have access to secure DNS communication, whether I am at home or abroad.

The Swiss Confederation and lawmakers are working continuously to lay the key foundations for Switzerland's digital transformation. Pragmatic cooperation with industry is typical for us. At least with regard to the subject areas that I can understand from a professional standpoint, I have the satisfying impression that we are moving faster here than our neighbouring countries.

Urs Eppenberger *Head of Registry, SWITCH*
(Photo: SWITCH)

Combating cybercrime

COMPROMISED WEBSITES

The number of websites compromised by phishing increased in 2021. Drive-by infections and malware increased once again after a dip in 2019. One reason for this was a rise in the number of reports from the National Cybersecurity Centre (NCSC) and the improvement of our own detection capabilities.

IMPROPER REGISTRATION

However, the number of domain names suspected of being registered improperly continued to decline. Collaboration with the Swiss authorities was expanded. The process of identifying improper registrations was improved further with support from additional Swiss authorities.

Website: https://www.switch.ch/saferinternet

TYPE OF ACCESS TO DOMAIN NAMES
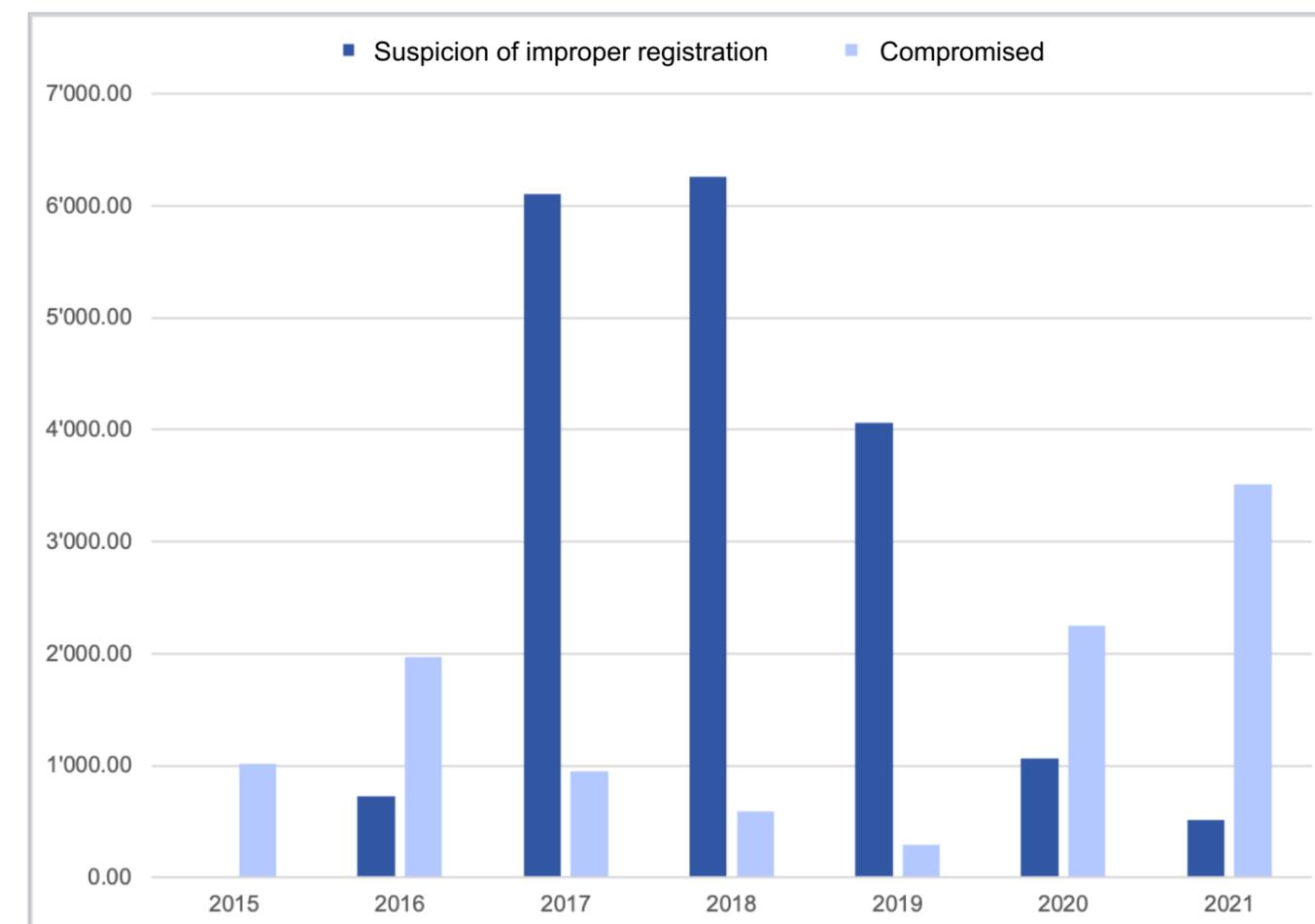
Dealing with cases of suspected abuse

REQUESTS FROM RECOGNISED AUTHORITIES – OID ART. 15.1

In 2021, accredited authorities sent a total of 20 requests under OID Art. 15.1 for immediate blocking of domain names (for technical/administrative reasons). All except two of these requests were due to phishing under Art. 15.1a. In two cases, the NCSC blocked a domain name for spreading malware under Art. 15.1b.

Requests	Consequences	2021
Not answered	Domain name deleted	18
Answered	Domain name reactivated	2
Total		**20**

All authorities recognised by OFCOM are listed on the following website:
Recognised authorities

In 2021, Swissmedic Medicrime MKA and the Basel-Landschaft police force (criminal police/cybercrime) were added. We contacted these authorities and explained our processes to them. They have already participated in our LEO events (see page 9).

ADMINISTRATIVE ASSISTANCE – OID ART. 16.3

At the request of an intervening Swiss authority acting within its area of responsibility, 498 requests were submitted for Swiss correspondence addresses under OID Art. 16.3.

Requests	Consequences	2021
Not answered	Domain name deleted	364
Answered	Domain name reactivated	134
Total		**498**

Security awareness

SECURITY AWARENESS DAY

On 5 October 2021, SWITCH held its fourth Security Awareness Day. This year, it was once again held on Zoom, but we were able to host the speakers on site. The roughly consistent 80 participants (170 registrations, 95 unique viewers) had the opportunity to network with other experts on the 'Gather' networking platform in between presentations.

Once again, the purpose of this year's programme was to heighten awareness of security-related issues in the SWITCH community, while also sharing ideas and encouraging communication and interaction.
All presentations are available online:
www.switch.ch/security/security-awareness-day

IBARRY AND SISA

This year, in collaboration with SISA, SWITCH once again launched a campaign focusing on internet security as part of European Cyber Security Month in October, just like in 2020.

Credit-card-sized information cards, sticking plasters and stickers with a theme of 'First aid for cyber accidents' were sent out accompanied by easy-to-understand information on https://www.ibarry.ch.

Plasters, information cards and stickers were provided to universities, OFCOM and over 50 Registrars.

Security awareness

PIECE OF CAKE – THE SWITCH SECURITY AWARENESS ADVENTURE

'Piece of Cake – the role-playing game' was launched in the middle of the year, making it SWITCH's third security awareness adventure after 'Hack The Hacker – the escape room' and 'Track The Hacker'.

Attendees take on the role of social engineers and have to work together as a team to recover the stolen cake recipe. A brief introduction explains the basics of social engineering, which then have to be put into practice during the game. In a debrief session, attendees explain and discuss what they have learned and experienced.

This format is also implemented virtually.
https://swit.ch/piece-of-cake

PODCAST: SECURITY AWARENESS INSIDER

The (German-language) 'Security Awareness Insider' podcast has been published on a monthly basis since November 2020.

Katja Dörlemann (SWITCH) and Marcus Beyer (Swisscom) talk about raising employee awareness of security issues and new and creative methods, tools, and training approaches, provide insight into the security awareness programmes of companies and organisations, and much more.

Since the podcast launched, it has already been downloaded 3,928 times, with an average of 200 to 220 downloads per episode.

Available on Spotify or here:
https://www.securityawarenessinsider.ch

Community events

SWISS WEB SECURITY DAY

On 6 October 2021, SWITCH joined forces with SISA and SWICO to host Swiss Web Security Day online. The event was a superb success, with 80 participants in attendance from Switzerland and abroad. 'Gather' was used as a networking platform here too – and was met with a very positive response from attendees.

Topics included the DNS resilience programme, Quad9 in Switzerland, ID4ME, and a panel on 'Anti-phishing measures for email providers'.

This year, the event was again held virtually and shortened to a half-day. Participants from different industries were able to follow the presentations and panel discussions via Zoom and connect on the 'Gather' networking platform.

The Swiss Web Security Day will be held again next year.

All the articles are available online:
https://tube.switch.ch/channels/BYSK7PjNAF

DNSSEC DAY

DNSSEC Day took place at the Metropol restaurant in Zurich on 22 November 2021. 26 participants signed up.

The informal event gave Registrars and DNS operators the opportunity to share their experiences with DNSSEC signing of a large number of domain names.

REGISTRAR MEETING

Interested Registrars found out about the planned measures to promote internet security standards (especially DNSSEC) at an online meeting held on 3 March 2021.

The need for a DNSSEC incentive programme and its key elements were explained to the participants, who also had the opportunity to ask questions. There were 25 Registrars with 40 participants in attendance.

LEO events

Cooperation with law enforcement organisations

TARGET GROUP

This year, SWITCH organised LEO events with the aim of strengthening cooperation with the authorities.
LEO stands for 'law enforcement organisations'.

SWITCH sent out invitations to all authorities who are involved in combating domain name abuse and interested in joining forces. Until now, this exchange has taken place informally and through cooperation on a case-by-case basis.

Various legal changes, such as the restrictions on domain name search queries and the newly introduced deferred delegation, prompted SWITCH to promote transparent and clear cooperation through direct exchange.

ZURICH, 28 SEPTEMBER 2021

SWITCH held the first of two LEO events on 28 September. 35 members of the law enforcement community were present; most of them came from German-speaking Switzerland. The participants came from the cantonal police forces, the cantonal public prosecutor's offices and the Liechtenstein National Police. Authorities like Swissmedic and Seco were represented as well.

LAUSANNE, 2 NOVEMBER 2021

SWITCH held its second LEO event in Lausanne on 2 November. 33 members of the law enforcement community were present, with the majority hailing from French-speaking Switzerland. The participants came from the cantonal police forces, the cantonal public prosecutor's offices, Fedpol and the Office of the Attorney General of Switzerland. Authorities such as OFCOM, MilCERT and Antidoping Switzerland were also represented.

FEEDBACK

The events were a superb success. Participants discussed current developments and projects relating to domain abuse. Processes, interfaces and opportunities to simplify cooperation were also covered.

In this way, direct communication channels could be established, and these are also used by the authorities. Exchange between both sides has increased significantly. Participants at both events expressed interest in holding another event in the coming year in order to further consolidate this cooperative relationship and foster exchange. The events have proved to be very valuable for the authorities.

Registry operations

DNSSEC: SIGNATURE FOR .CH AND .LI ZONE

The key signing ceremony for the .ch and .li domain took place on 9 November 2021. For further details, please refer to the minutes prepared for OFCOM and the Liechtenstein Office of Communications.

TECHNICAL SUPERVISION ACCORDING TO ARTICLE 40 OF THE OID

OFCOM inspected the delegated tasks on 8 December 2021 in accordance with Art. 40 of the OID. This check is usually performed every two years. Following the amendment of the OID on 1 January 2021, it was necessary to examine whether SWITCH had correctly implemented the modified OID requirements. Work on preparing the DNS resilience programme was also discussed.

IETF PUBLISHES SUPPLEMENT TO THE EPP STANDARD

The Internet Engineering Task Force (IETF) published the new Internet Standard RFC 9038, entitled 'Extensible Provisioning Protocol (EPP) Unhandled Namespaces', on 30 May 2021.

It describes how a registry's EPP server should handle extensions to the EPP when the Registrars' EPP clients do not support all the extensions used. The solution ensures that new and future EPP extensions can be introduced more easily.

Co-author Martin Casanova from SWITCH
The standard, which is now applicable internationally, is based on a proposal that James Gould (Verisign) and Martin Casanova (SWITCH) developed together and submitted to the responsible IETF working group as an Internet Draft in October 2018.

Experts from Registrars and registries were represented in this working group. They critically examined the proposal and made suggestions. The two co-authors led these discussions and submitted a revised version of the draft at each IETF meeting.

ISMS surveillance audit

In 2021, SWITCH successfully passed the surveillance audit of the domain name registry according to the ISO 27001 standard. The ISO certification is checked every three years by means of recertification and, in between recertifications, by means of an annual surveillance audit.

The surveillance audit did not record any deviations, requirement or requests for improvement. The auditor made two recommendations based on their observations. These recommendations are now being incorporated into the continuous improvement process.

The auditor made the following introductory remark in the report: *'Once again, the overall impression is positive. Commitment and awareness are very high among management and all the employees interviewed. Information security and data protection are both high priorities within the registry. The ISMS is being continuously updated.'*

For SWITCH and the registry, the external review is a key step in maintaining and improving the security and stability of this critical infrastructure. The auditor recognised that, with regard to security, it is not only technical measures that are relevant, but also the fact that SWITCH's employees and management are making a key contribution.

ISO 27001
Certificate for the SWITCH registry

SV Certification Group

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

SNAS
Reg. No. 661/R-141

CERTIFICATE

Management System

ISO/IEC 27001:2013

In compliance with the SV Certification procedures we certify that company

SWITCH

Werdstrasse 2 - 8021 Zürich (Swiss)

operational offices:

Werdstrasse 2 - 8021 Zürich (Swiss)

the management system is compliance with the standards mentioned above for the following area:

Domain name registration

SoA Version 1.3 / 1.12.2020

The validity of the certificate is subject to periodic annual surveillance and a complete review of the system every three years. The use and validity of this certificate are subject to compliance with the Certification Regulations of SV Certification

IAF:	Certificate number:	Initial Date	Modification date	Expiration date
	315-ISMS-21	05.12.2017	06.09.2021	04.12.2023

Printed by SV Certification Sro
Certificate of accreditation
N. 661/R-141

(CEO SV Certification Sro)

Audit 2021	Audit 2022	Audit 2023
SV Certification Group		

This certification was conduced in accordance with SV CERTIFICATION Sro, Certification body, and is subject to regular surveillance audits

SV CERTIFICATION Sro, HQ: Jégého 220/19, Bratislava – Mestská Casť Ružinov 821 08 – SLOVAKIA
Information & Contact: www.svcertification.com – info@svgroupcert.ch
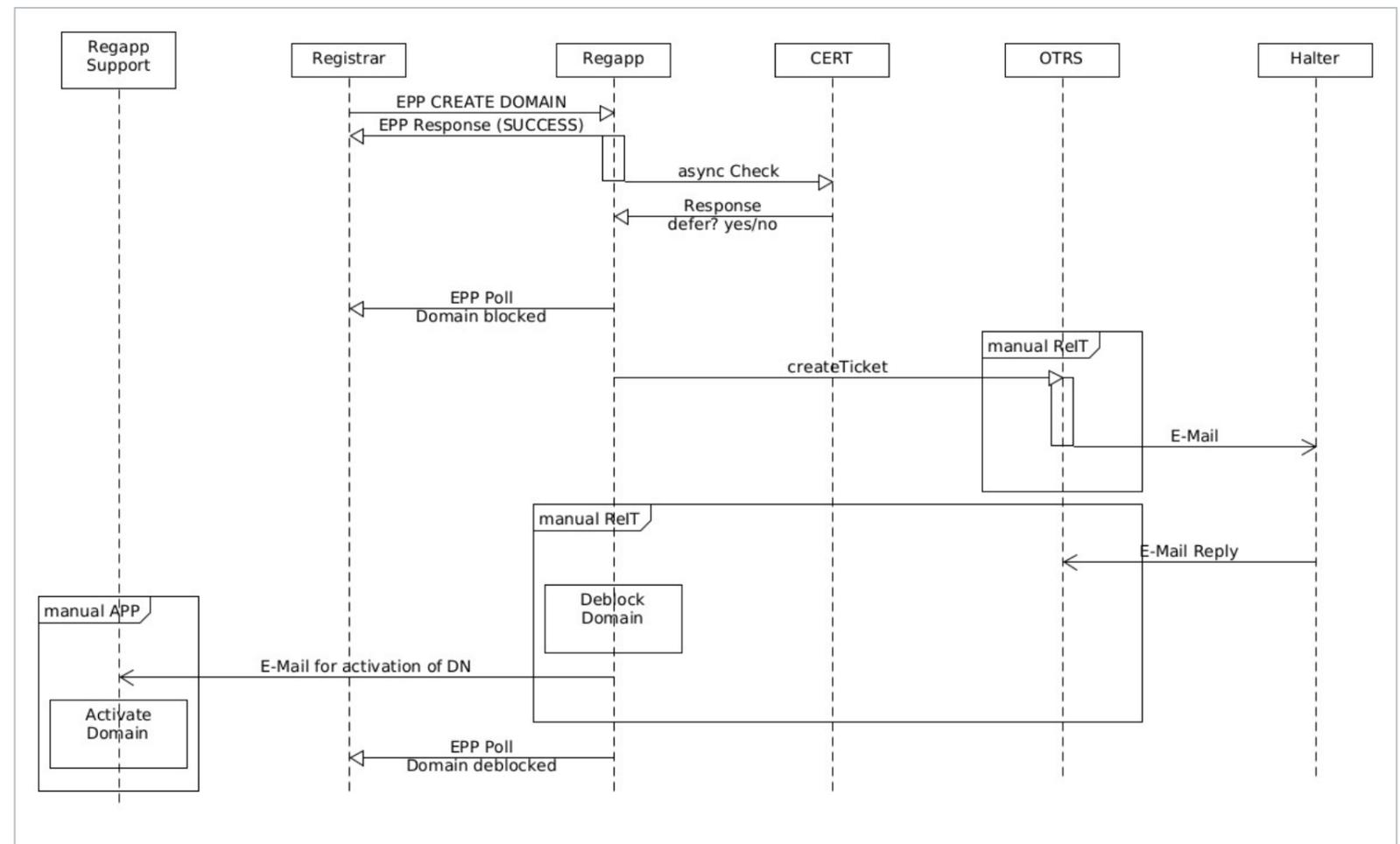
Deferred delegation

LEGAL BASIS

With Article 25 of the OID entitled 'General conditions of allocation', OFCOM has established the legal basis that enables the registry to defer activation of a domain name for a fixed period of time and to refrain from entering the name servers in the zone file if there is suspicion that the domain name is being used unlawfully or its purpose is unlawful. This process is referred to as 'deferred delegation'.

PROCESS

Deferred delegation of .ch domain names has been implemented in a pilot phase since 6 December 2021. If registrations are suspicious, the domain name is only activated once the holder has been successfully identified. The holder has 30 days to identify themselves.

The criteria for identifying suspicious registrations are deliberately set low at the start so that Registrars can gain experience with the new process. In December 2021, activation of a total of 31 domain names has been deferred as part of the deferred delegation.

FLOW CHART
Deferred delegation

Information service

Data protection for domain name holders

INFORMATION SERVICE

On 1 January 2021, the publicly accessible Whois service was replaced by a domain name search query that shows only the registered domain name, the responsible Registrar and the name servers. Personal data will no longer be disclosed for data protection reasons.

Access to the personal data of the holder of a domain name is only granted on request, provided that the claimant individual or organisation proves their identity and substantiates an overriding legitimate interest in the requested data.

An overriding legitimate interest may exist if, for example,
- a holder or technical contact of the domain name in question wishes to review the current entry.
- a domain name infringes trademark rights.
- the content of a website infringes copyright or personal rights.
- an authority requires the data to fulfil its legal duties.

Website: https://www.nic.ch/whois/domaininfo

SIMPLIFIED ACCESS VIA RDAP

SWITCH operates an RDAP server for looking up registration data of .ch and .li domain names in a structured format.

Anonymous users are not shown any information about holders or the technical contacts for domain names.

Authenticated users with user accounts receive the full registration data, depending on their permissions.

If an authority or organisation has the appropriate permissions, it can query domain names with personal data via RDAP.
In 2021, only the Zurich Cantonal Police Force had this permission.

The statistics for 2021 can be found on page 20.

DNS resilience programme

Mandate

GREATER RESILIENCE FOR .CH DOMAIN NAMES
The use of open security standards is critical for resilience against cyber threats.

The DNS resilience programme promotes the introduction and use of open security standards for .ch and .li domain names. The programme is based on a financial incentive scheme and will run from 2022 to 2026.

The DNS Advisory Board defines the security standards to be supported. OFCOM, a representative of the Registrars, and SWITCH are all represented on this committee.

The main objective is to promote the signing of domain names with DNSSEC. At least 60% of all .ch domain names are to be signed by the end of 2026.

INITIAL SUCCESS IS CLEAR
Since the programme was announced back in March 2021, the number of domain names signed with DNSSEC has risen sharply. 35% of all .ch domain names were already signed as at 1 January 2022.

SHARP INCREASE IN THE NUMBERS OF SIGNED DOMAIN NAMES
January 2021 to January 2022

DNS resilience programme

How it works: the financial incentives in detail

MEASUREMENTS

Measurements of DNS-related security criteria are taken daily by an independent monitoring service provider.

PRICE DIFFERENTIATION

Different prices are charged for subscription renewals based on these criteria. A domain name that is considered secure according to the criteria costs less.

A domain name that does not meet the criteria for a secure domain name will cost CHF 1 more at subscription renewal. This franc is put into the 'piggy bank', which is then raided at the end of the year during the refund process.

Each Registrar also receives one 'resilience point' each time they renew their subscription for a secure domain name.

REFUND

The additional revenue in the piggy bank at the end of the year will be refunded to the Registrars. The distribution formula is based on the number of resilience points collected.
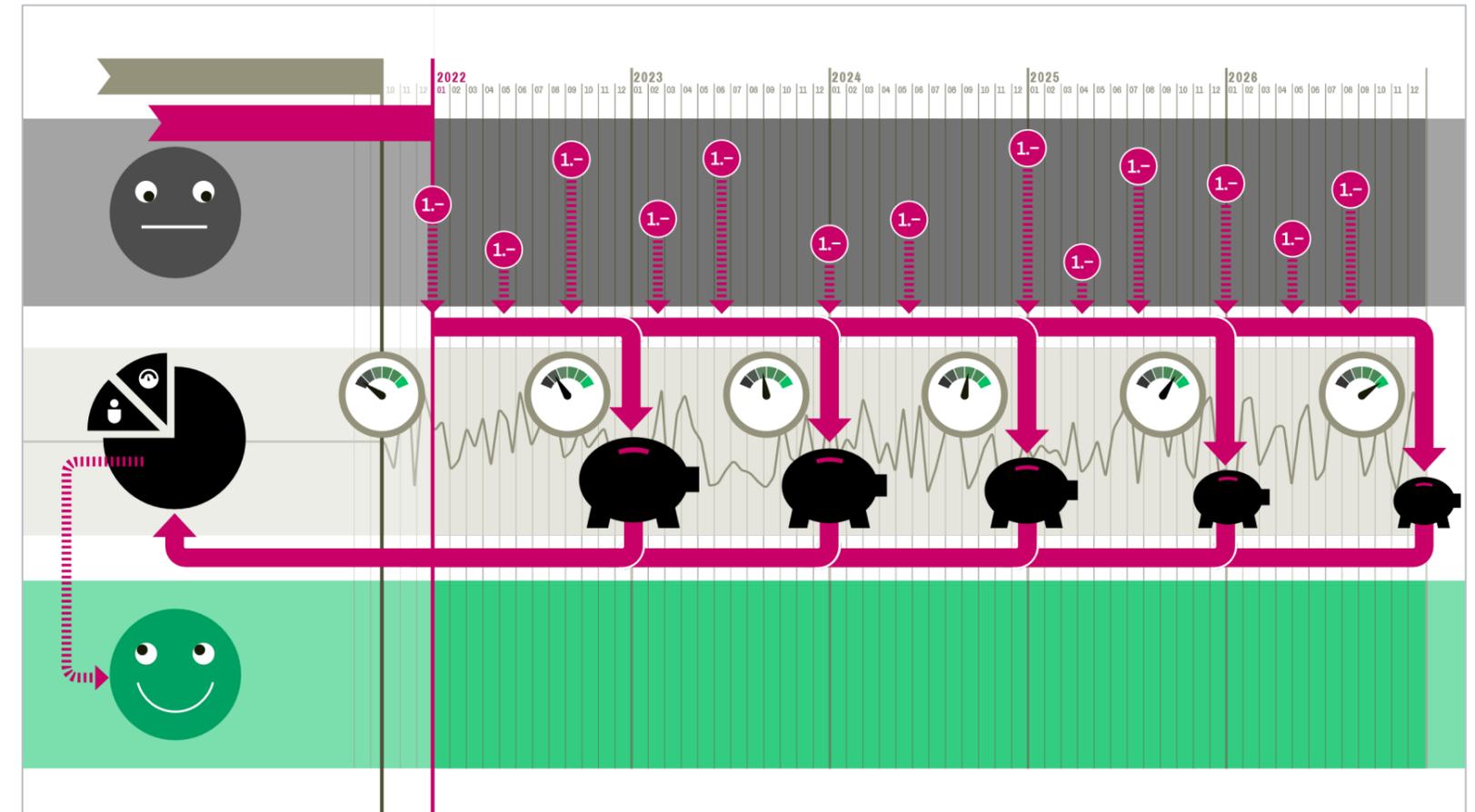
Quad9 moves to Switzerland

Quad9, the globally available non-profit security platform in the Domain Name System (DNS), is moving its headquarters from California to Zurich. It is being supported in this endeavour by Packet Clearing House and SWITCH.

WHAT DOES QUAD9 OFFER?
Quad9 sets itself apart from other DNS providers by voluntarily submitting to the jurisdiction of a country that strictly enforces data protection legislation to the highest standards in the world. Switzerland is considered a stronghold of individual rights. The Swiss Data Protection Act is harmonised with the European standard, the General Data Protection Regulation (GDPR).

It gives private individuals enforceable rights and effective legal protection. This means that users around the world who use Quad9's DNS servers when surfing the web benefit from unrestricted protection under Swiss law. These and other concessions along with recognition of legal rights by the Swiss government, which guarantee both the privacy and security of Quad9's users, made Quad9's choice of location the obvious solution.

More information is available here:
https://www.switch.ch/news/Quad9-moves-to-Switzerland

DATA PROTECTION RISKS
Whenever consumers use the internet, they leave behind digital data trails. DNS providers are central hubs. All users' activities run through them. DNS providers can record, analyse and even sell personal data. Other large DNS providers are based in the United States, where they are protected from privacy claims and obligations to users. Quad9 is bucking the trend and submitting to the legally binding jurisdiction of legislation that is vital to data protection. Strong Swiss law combined with Quad9's mission and transparent data privacy practices guarantees that personal data will never be collected, analysed or sold.

PARTNERSHIP WITH SWITCH
SWITCH is largely the driving force behind Quad9's move to Switzerland. It is a Swiss centre of excellence for internet security. SWITCH has been committed to the best possible cybersecurity for decades, with the goal of making the internet a safer place for its users. SWITCH is represented on and helps to strategically manage the Quad9 Foundation Council.

Registry security increased

thanks to the use of TLS 1.2 and 1.3

The Extensible Provisioning Protocol (EPP) is used for data communication between Registrars and SWITCH. The Transport Layer Security (TLS) protocol is used to encrypt this communication.

Several improved versions of the TLS protocol have been defined to adapt its security to the ever-growing requirements. The latest version (TLS 1.3) was published by the IETF in August 2018.

SWITCH already expanded the functionality of its EPP server in 2020, and has since supported the two current versions of the TLS protocol (1.2 and 1.3). Additional, stronger cryptographic algorithms were also introduced at the same time.

But adding improved procedures exclusively on the server side is not enough to effectively increase the security of the system as a whole. It is critical that Registrars' EPP clients use the more secure algorithms too.

This is precisely why SWITCH announced a multi-stage plan of action to Registrars in advance, giving them more than a year to choose a suitable time to upgrade their software components.

Many Registrars used the EPP test server that SWITCH provided to prepare themselves for the upgrade. So some pitfalls were recognised in time and could be analysed and eliminated bilaterally by the experts.

This project came to a successful conclusion on 15 April 2021, when SWITCH discontinued support for all cryptographic algorithms that were considered obsolete.

DNS Anycast providers

In addition to its own name servers, SWITCH also uses commercial DNS Anycast providers to operate the DNS infrastructure.

In 2021, we switched DNS Anycast providers. After five years, we ended our relationship with CommunityDNS Ltd and have been working with RcodeZero since 1 September 2021, thereby further strengthening our long-standing and close collaboration with nic.at.

RcodeZero has 24 server locations around the world at present. Part of the contract with RcodeZero was establishing a location in Zurich. In addition to DNS Anycast services for TLDs (including .swiss), RcodeZero also operates these services for enterprise customers there as well. These customers include various hosts in Switzerland. Therefore, the new site in Zurich does more than just help guarantee the resilience of .ch and .li domain names; it also safeguards the security of many other domain names held by Swiss citizens.

It is also worth mentioning that RcodeZero has a location in Feldkirch too. The data centre is run by the Rheintal IX Association, based in Schaan.

RCODEZERO LOCATIONS

Amsterdam, Athens, Berlin, Chicago, Dallas, Dublin, Feldkirch, Frankfurt, Hong Kong, Johannesburg, London, Los Angeles, Miami, New York, Paris, Salzburg, São Paulo, Seattle, Singapore, Sydney, Tokyo, Vienna, Warsaw, Zurich

Domain name inventory

Developments 2021

DEVELOPMENT OF .CH

The inventory of .ch domain names increased by almost 100,000 in the past year. Even if the increase was less pronounced than in the previous year (+113,000 domain names), it still seems to be a consequence of the COVID-19-related surge in digitalisation.

DEVELOPMENT OF .LI

The inventory of .li domain names increased by 2,000 within the past year, identical to the growth achieved between 2019 and 2020. No comparable surge in digitalisation can be observed for the top level domain .li as is the case for .ch.

	2020	2021
New registrations	323,602	315,728
Deletions	235,147	251,142
Reactivations *	24,943	31,950
Domain inventory as at 31/12	2,370,925	2,467,461

	2020	2021
New registrations	9,462	9,178
Deletions	8,077	9,083
Reactivations *	859	1,918
Domain inventory as at 31/12	66,732	68,740

DOMAIN NAME INVENTORY
Development of the domain name inventory for .ch and .li
* Deleted domain names that were reactivated by the Registrar within the 40-day transition period.

Information service

2021 statistics

INFORMATION SERVICE

SWITCH grants anyone who can credibly demonstrate an overriding legitimate interest free access to the domain name holder's personal data contained in the RDDS database (WHOIS).

These statistics record all requests that were made in the reporting year using the information service's forms.

SIMPLIFIED ACCESS VIA RDAP

If an authority or organisation has the appropriate permissions, it can query domain names with personal data via RDAP. In 2021, only the Zurich Cantonal Police Force had this permission.

More information about the information service and RDAP access can be found on page 13.

	Private	Authorities
Information provided	351	166
Information not provided	130	3
General requests *	17	2
Total requests	**498**	**171**

* *These are requests about processes, procedures and legal bases.*

|	Requests
Valid requests	2,074
Invalid requests *	1,342
Total requests	**3,416**

* *These are requests about domain names that do not exist or that SWITCH is not responsible for. This may be the case, for example, if the request concerns domain names with other endings.*

Market share of .ch and .li

among Swiss domain name holders

The market share of the TLD (top-level domain) .ch among holders in Switzerland remained nearly unchanged from January 2021 to October 2021.

There was little change in the market share for the generic TLDs .com/.net/.org, or for .li domain names.
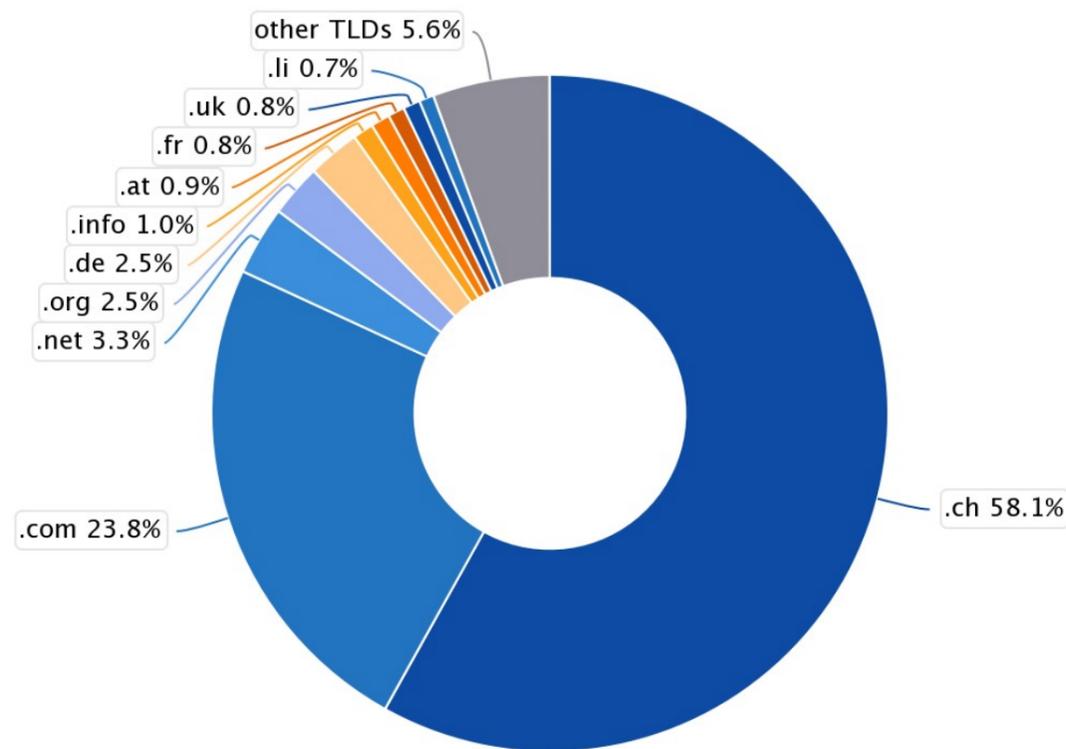
MARKET SHARE JANUARY 2021
of various TLDs among domain name
holders in Switzerland
Source: CENTR
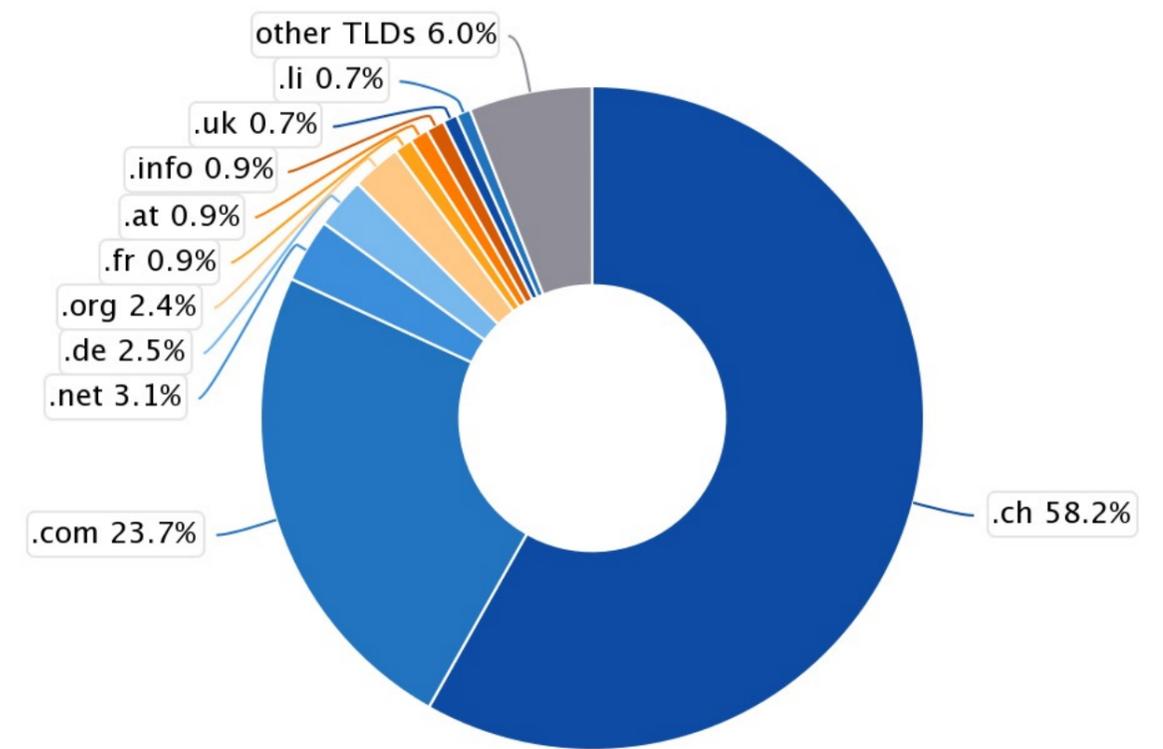
MARKET SHARE OCTOBER 2021
of various TLDs among domain name
holders in Switzerland
Source: CENTR

DNSSEC developments

Number of signed domain names

The number of .ch domain names signed with DNSSEC increased to over 820,000 by the end of 2021. This corresponds to a share of 35% of all .ch domain names compared to 6% in the previous year.

This jump is a direct result of the DNS resilience programme. The announcement of the programme has already prompted several Registrars to sign their entire inventory of domain names with DNSSEC.
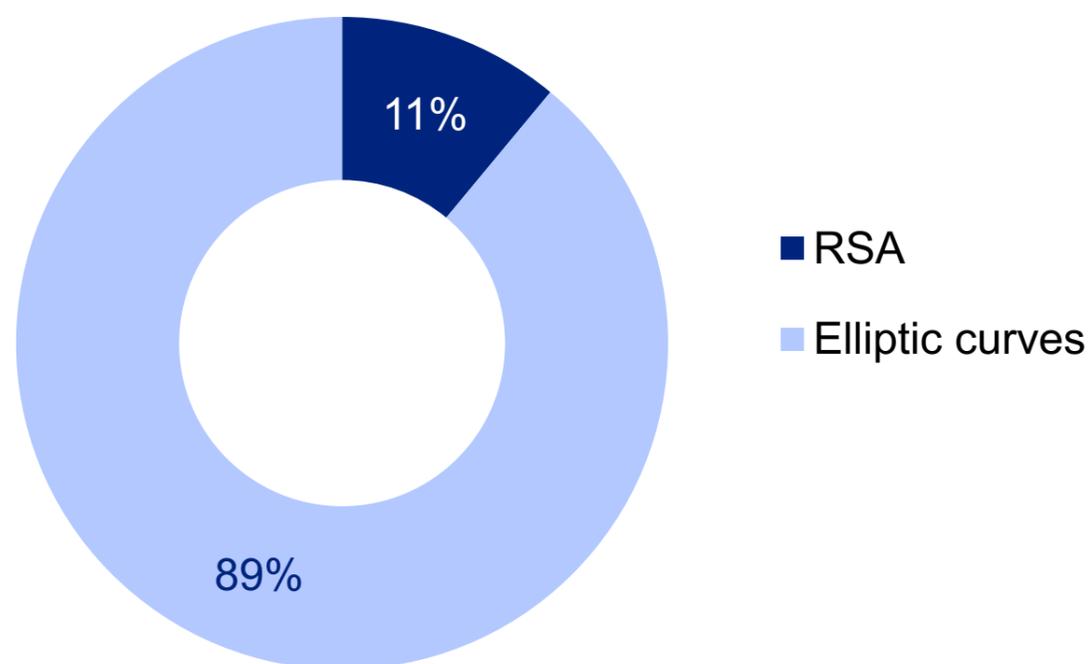

DNSSEC
Number of .ch domain names signed with DNSSEC

DNSSEC developments

Distribution of DS algorithms

89% of the .ch domain names secured with DNSSEC use modern ECDSA (elliptic curve) signatures. The share increased by 4% compared to the previous year, with 11% being traditional RSA signatures.

■ RSA

■ Elliptic curves

Percentage of DNSSEC algorithms

DNSSEC algorithm	Number	Percentage
5 – RSASHA1	183	0.02%
7 – RSASHA1-NSEC3-SHA1	643	0.08 %
8 – RSASHA256	86,502	10.53 %
10 – RSASHA512	3,327	0.40 %
13 – ECDSAP256SHA256	731,004	88.95 %
14 – ECDSAP384SHA384	114	0.01 %
15 – ED25519	26	0.00 %
16 – ED448	1	0.00 %

DNSSEC signatures used
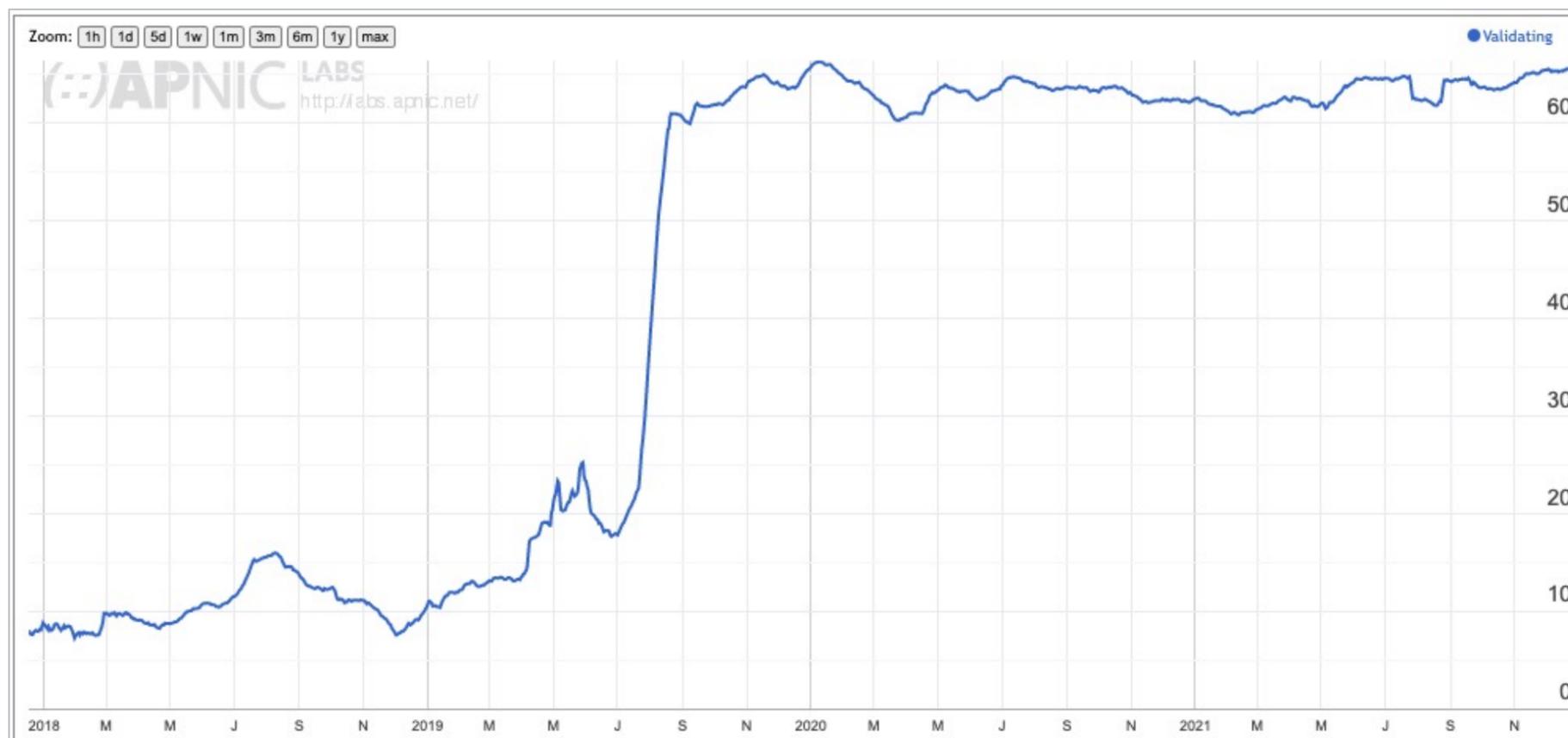
DNSSEC validation

in Switzerland

DNSSEC VALIDATION AT 65%

According to APNIC measurements, the validation of DNSSEC on resolvers of Swiss ISPs remained constant at around 65% in the past year.

The validation rate has stagnated at this level for two years. The introduction of the DNS resilience programme is increasing the signature rate of .ch domain names, creating the conditions that will in future help to convince more resolver operators of the security gain that DNSSEC validation provides.

Website: https://stats.labs.apnic.net/dnssec/CH

DNSSEC VALIDATION
on Swiss resolvers

Dispute resolution

SWITCH has been tasked by OFCOM with providing an affordable dispute resolution service. Since 2004, SWITCH has been using the WIPO (World Intellectual Property Organization) dispute resolution service for this purpose. WIPO operates an ICANN-accredited dispute resolution service for over 70 other registries.

In 2021, the experts made decisions on 18 .ch domain names. The expert decision is the final step in the process. A somewhat smaller number of cases are closed, for example, during arbitration or because proceedings are abandoned.

WIPO decision	2020	2021
Transfer to applicant	17	15
Complaint rejected	3	3
Number of decisions	**20**	**18**

	Domain names
Transfer to applicant	cosmoprof.ch zuehlke-engineering.ch swissnet.ch bulgari.ch deka-finance.ch dekafinance.ch swisslifeinvestment.ch quintessentiallyevents.ch aaba-ag.ch vuse.ch trikora.ch olimpiasplendid.ch novartis-premium.ch johndeeredistributor.ch mevlanacay.ch
Complaint rejected	maxx-drive.ch maxxdrive.ch zueri-holzbau.ch

*DISPUTE RESOLUTION*
WIPO decisions as of February 2022

Registrar developments

With the announcement of domain name migration from SWITCH to the Registrars, the number of Registrars leapt from 83 to 100 in 2015.

This trend has slowed a little, and SWITCH had 104 active Registrars by the end of 2016. There were only three additional Registrars in 2017. In 2018, considerably more Registrars than expected were added; by the end of the year, we recorded 122 Registrars. In 2019, the number of Registrars rose to 131, and the registry had 137 Registrars at the end of 2020.

In 2021, nine Registrars first signed a test contract for access to the test system. We switched these Registrars to the productive system once they had successfully completed the test phase and passed the test course. The total number of recognised Registrars rose to 146.

The market is working well and potential holders have a wide range of providers to choose from.
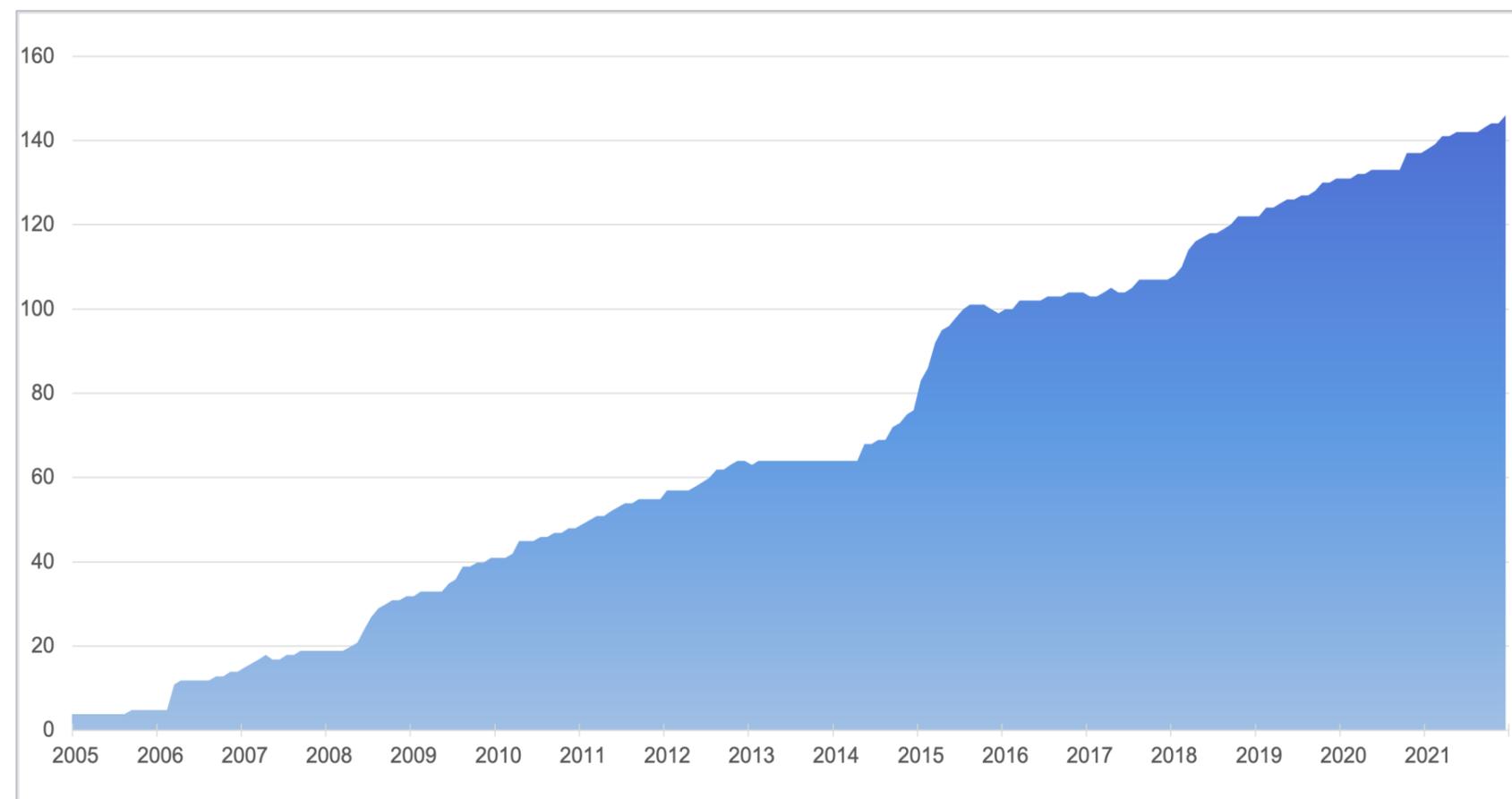
INVENTORY DEVELOPMENT
At the end of 2021, the registry had 146 active Registrars.

Name server performance

In terms of DNS performance measurement, SWITCH relies on the response time requirements for DNS queries stipulated by the ICANN Agreement: queries in the CH zone must be answered by at least one logical name server within 500 ms (UDP) or 1,500 ms (TCP).

In 2021, this requirement was met in each instance. The measurements were carried out by RIPE and are available to the public. https://atlas.ripe.net/dnsmon/group/ch

As a result of re-evaluating the various operators of the authoritative name servers, individual logical name servers were taken out of operation and replaced by new ones.
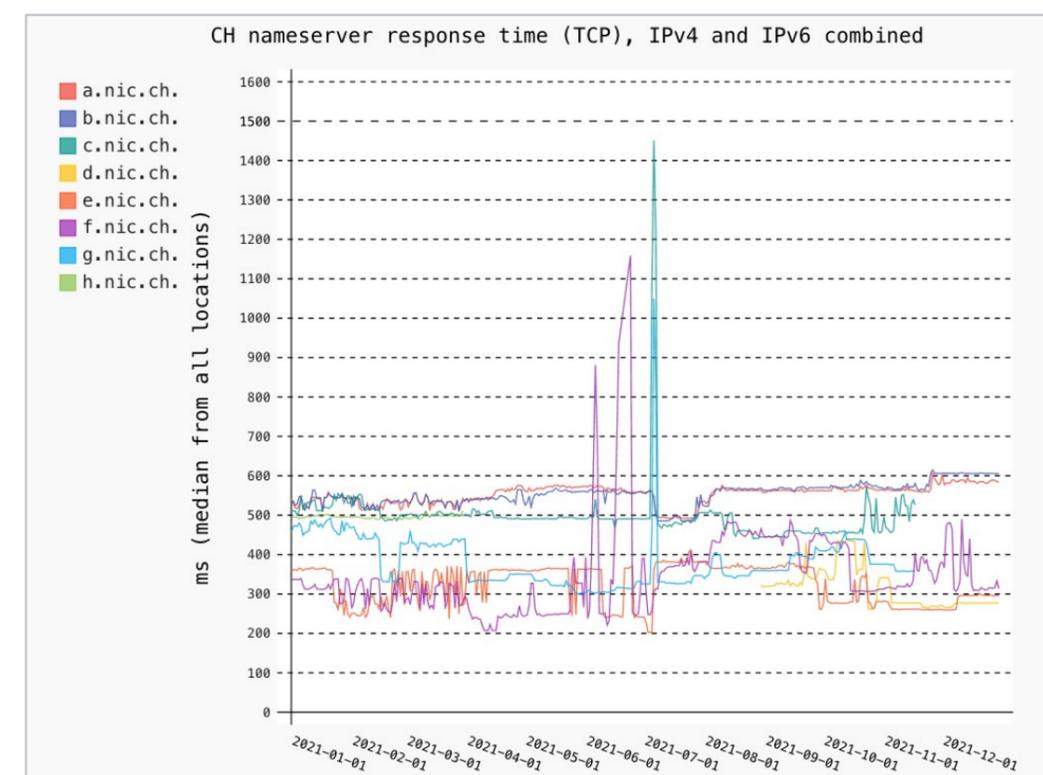
UNICAST a.nic.ch (CH), b.nic.ch (CH), h.nic.ch (CH, out of service)
ANYCAST c.nic.ch (out of service), d.nic.ch (new), e.nic.ch, f.nic.ch, g.nic.ch (out of service)
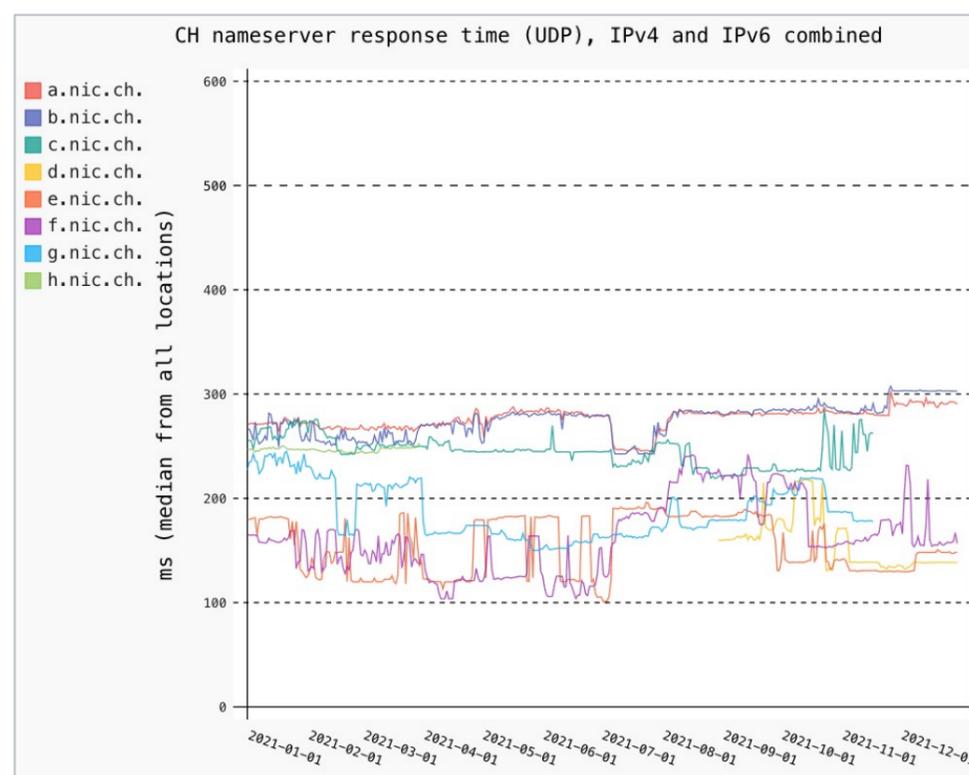
UDP RESPONSE TIMES
Combined response times of IPv4 and IPv6

TCP RESPONSE TIMES
Combined response times of IPv4 and IPv6

Cybercrime

QUANTITATIVE

In the reporting year, we captured and processed the following cases:

	# malware cases	# phishing cases
Reports received	2,749	797
Suspicion confirmed	2,001	350
Number of blocked domain names	738	60
Reason for lifting block:		
- Statutory period expired	109	6
- Eliminated after block	476	18
- In progress on the cut-off date	12	23
Revoked domain names	143	31

NUMBER OF MALWARE AND PHISHING CASES 2021
quantitative view

QUALITATIVE

The time spent on cases was:

	Duration	
Duration of blocking according to OID Art. 15 (1), (2), (3). Max. blocking time 30 days (720 hours)	Min. time Average Max. time	0.10 h 102.14 h 160.92 h
Response time from SWITCH following notification	Average	7.97 h
Time until removal of threat after notifying the holders	Average	85.31 h

NUMBER OF MALWARE AND PHISHING CASES 2021
qualitative view

DNS Health Report

Checking the accessibility of name servers

FUNCTION

The DNS Health Report checks the accessibility of name servers and .ch and .li domain names. In the event of technical problems, SWITCH informs the operator and makes recommendations for resolving them. As such, the DNS Health Report improves the reliability of the internet in Switzerland.

What is being checked:
Name servers: The function of the name servers is being checked for compliance with the DNS standards.
Domain names: It checks whether DNSSEC-signed domain names can be resolved using a validating recursive resolver.

NAME SERVER REPORT

The DNS Health Report reaches its goal when the number of errors decreases in the long term. This trend is correct in the measurement period for the name server report.
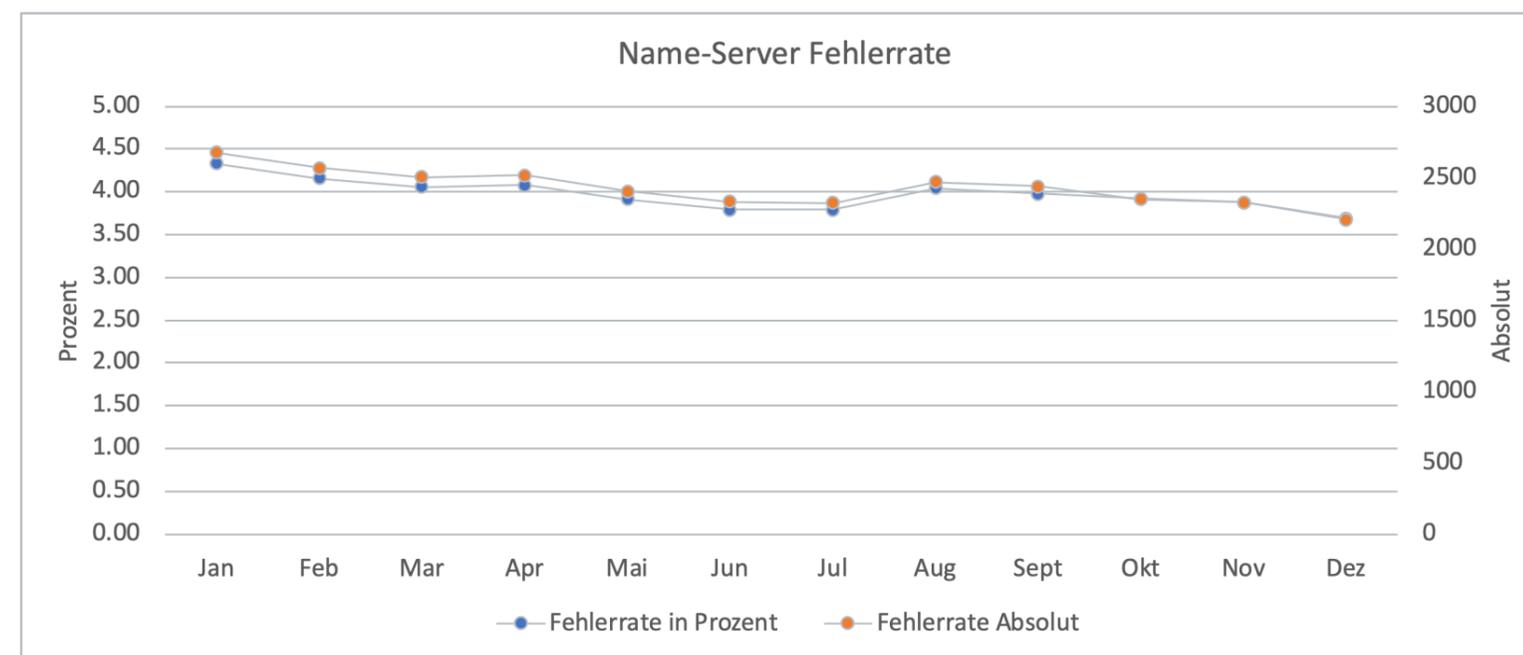
Error rate in the accessibility measurement of name servers over time

DNS Health Report

Checking the accessibility of domain names

DOMAIN NAME REPORT

In absolute figures, the number of detected errors concerning DNSSEC configuration has almost doubled. This is mainly due to the strong increase in signed .ch and .li domain names in connection with the DNS resilience programme.

Due to the steep rise in signed domain names, the error rate in percent has decreased by more than a factor of three.

Depending on how the inventory of signed domain names progresses, we are also expecting an upswing in the number of incorrectly configured DNSSEC domain names (absolute figures) for the next measurement period.

DNSSEC Fehlerrate

— Fehlerrate in Prozent   — Fehlerrate Absolut
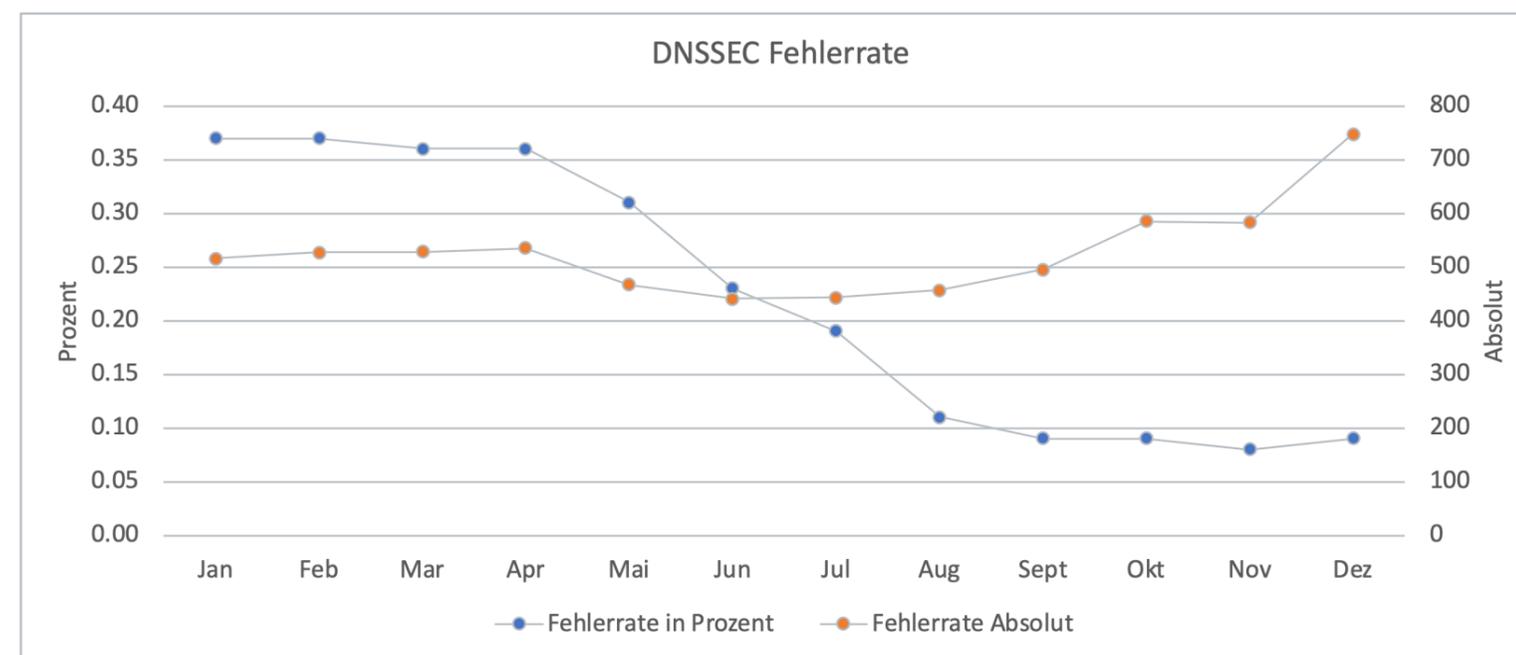
Error rate in the accessibility measurement of DNSSEC domain names over time

DAAR .ch

ICANN Domain Abuse Activity Reporting

With the publication of the .ch zone, SWITCH is taking part in ICANN's DAAR (Domain Abuse Activity Reporting) project. The project compares reports of suspected abuse in different TLDs.

The programme and the reports for ccTLDs are still at the beta stage. However, the figure already allows us to compare .ch and other ccTLDs and gTLDs.
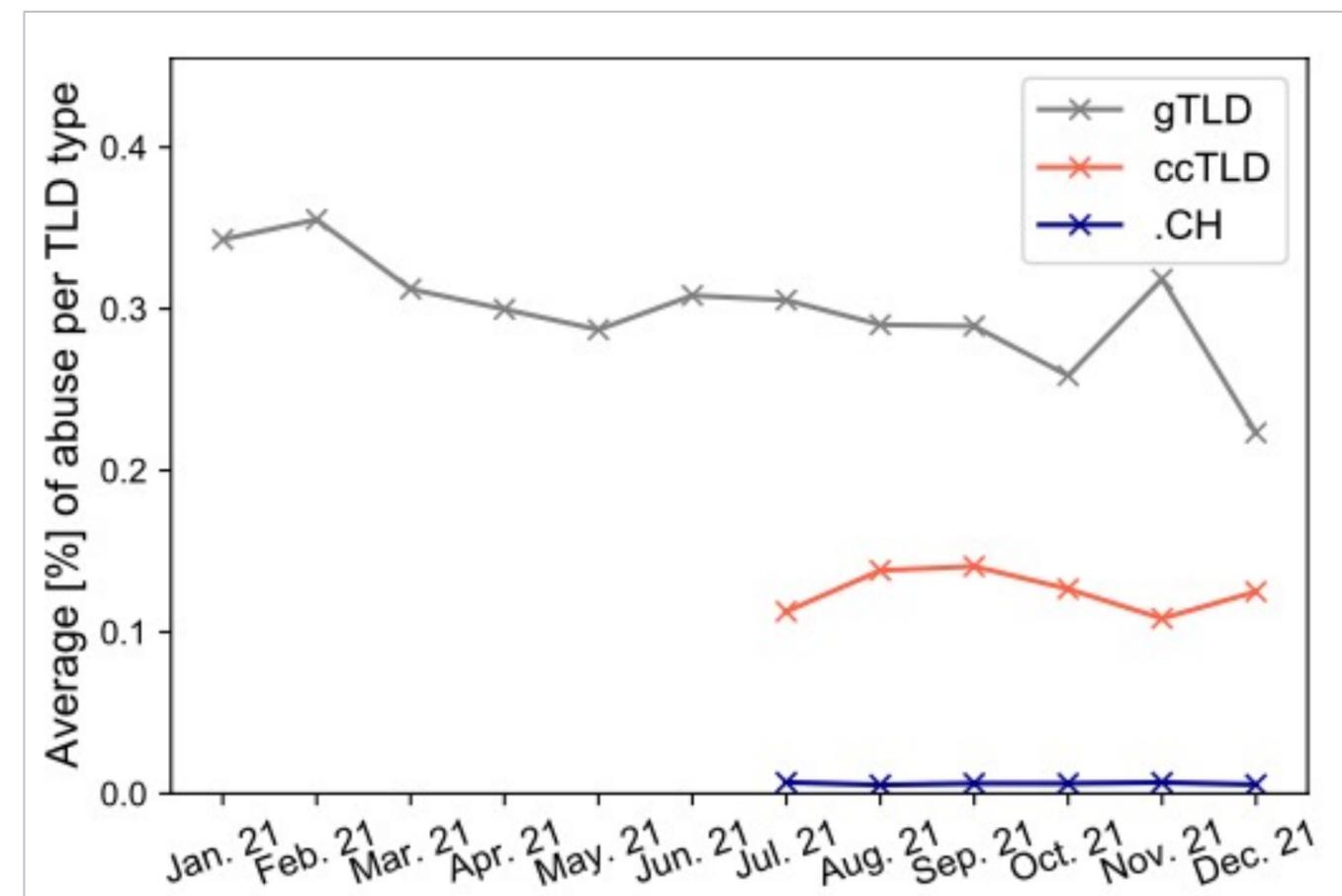
WHAT IS MONITORED
The proportion of .ch domain names (as %) identified as a security threat compared to the average number of domain names in other TLD zones. Detailed information is available from ICANN:
https://www.icann.org/octo-ssr/daar

ANALYSIS OF .CH
The DAAR report reveals that domain name abuse is low for the .ch ccTLD compared to the average for all TLDs. This confirms the effectiveness of the ongoing measures aimed at combating cybercrime and the effective cooperative relationship with Swiss authorities and international organisations.

The figure only shows the last six months.

DAAR .li

ICANN Domain Abuse Activity Reporting

With the publication of the .li zone, SWITCH is taking part in ICANN's DAAR (Domain Abuse Activity Reporting) project. The project compares reports of suspected abuse in different TLDs.

The programme and the reports for ccTLDs are still at the beta stage. However, the graphic already allows us to compare .li and other ccTLDs and gTLDs.

WHAT IS MONITORED
The proportion of .li domain names (as %) identified as a security threat compared to the average number of domain names in other TLD zones. Detailed information is available from ICANN:
https://www.icann.org/octo-ssr/daar

ANALYSIS OF .LI
The DAAR report reveals that domain name abuse in the .li ccTLD has been eliminated except for nearly two dozen domain names. This low value can only be maintained if the cooperative relationship between the registry and the authorities remains as effective.
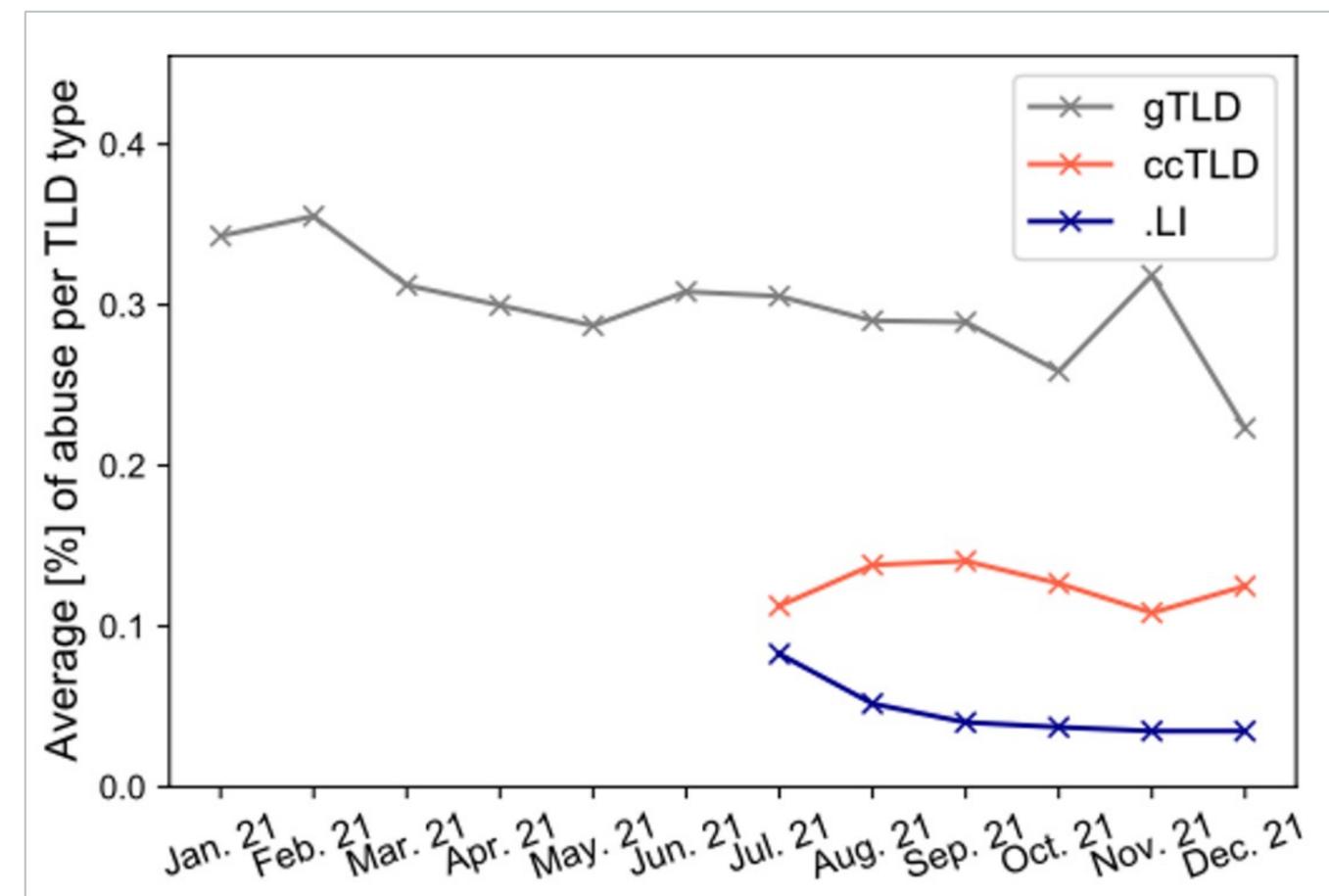
The figure only shows the last six months.

Economic indicators

The Foundation Council session of 30 June 2022 will approve the SWITCH Foundation's 2021 annual report, along with the balance sheet and income statement. Publication will take place from 1 July 2022.

No figures will be published at this point. Instead, interested parties will be referred to the comprehensive documents of the 2021 SWITCH Annual Report.

Orientation and goals 2022

Looking back at 2021

In addition to the secure and stable operation of .ch and .li, the registry has worked on four main goals.

INTRODUCTION OF THE INFORMATION SERVICE
With respect to the information service, the crucial question for the registry is: what is a legitimate interest? First of all, we needed a few dozen requests to develop a practice that optimally takes into account the interests of the parties involved.

'TRUSTED RECURSIVE RESOLVER' ACCORDING TO SWISS LAW
With Quad9, we have succeeded in bringing a partner to Switzerland that operates a globally scalable, secure and stable infrastructure. This foundation has been laid.

DEFERRED DELEGATION
When it comes to fighting domain name abuse, experts agree that 'deferred delegation' has the potential to become a very effective tool. We have held discussions with other registries and law enforcement agencies, on the basis of which we have worked out the processes and a technical architecture.

INTRODUCTION OF THE DNS RESILIENCE PROGRAMME
The DNS resilience programme was the greatest task on both a technical and communication level. OFCOM's mandate defined the basic idea and framework. However, there were many details that needed to be clarified with the Registrars, the external monitoring service provider and even the tax authorities in preparation for the programme's launch on 1 January 2022.

Orientation and goals 2022

General outlook for 2022

The aforementioned projects that took place in 2021 significantly increased the registry's workload. There was a great deal that had to be structured and worked out from scratch. The information service and the DNS resilience programme had strict time limits that we were able to meet. The 'deferred delegation' project has already reached the pilot phase.

The registry is clearly caught between ensuring stable operation of a critical infrastructure and meeting the need for continuous further development. Following a phase of fundamental innovations in 2021, we will focus on consolidating our achievements and integrating them into standard operations.

Further development will still focus on the DNS resilience programme and combating abuse of .ch domain names.

The successes that are already visible in the DNS resilience programme are a huge source of motivation for the professional community as a whole. It is now a matter of building on this momentum with appropriate communication above all else.

When it comes to combating abuse of .ch domain names, proactive measures are the priority. The 'deferred delegation' pilot phase in 2022 will primarily serve to gather the necessary experience. We are increasing security awareness among internet users by holding training courses and campaigns. This makes it harder for cyber criminals to gain access to digital infrastructures.

Planned innovations 2022

DNS RESILIENCE PROGRAMME: USER DASHBOARD

The dashboard developed in 2021 to test domain names provides basic functionality. It will be expanded to provide users with meaningful reports and advice on how to fix the identified errors.

DNS RESILIENCE PROGRAMME: STATISTICS FOR RESEARCHERS

This is an optional project, but it meets a need among researchers. The DNS is a critical infrastructure. We seize every opportunity to further increase the DNS's resilience. With that in mind, we support research projects in this area by providing statistics from the DNS resilience programme, which (in correlation with other findings) lead to a more secure, more stable internet.

EXPANDING THE REGISTRAR PORTAL

A portal with access control is available to Registrars at registrar.nic.ch. There, they can find information about their domain portfolio, supporting documents and other information. This portal is being expanded for the DNS resilience programme. The Registrars will receive an overview of how the DNS resilience programme is developing. We are also considering how to display more information relating to the Registrar's specific situation.

DMARC TRAINING

Together with OFCOM and SWITCH, the Registrars have decided to include DMARC as additional security standard in the DNS resilience programme. This criterion will be applied for the refund from 2024. In preparation, SWITCH will offer training on DMARC for Registrars and name server operators.

IMPLEMENTING THE REFUND PROCESS

The measurements used to assess whether the price difference and refund criteria are met have been implemented as of 1 January 2022. At the start of 2023, the additional revenue from the price difference will be refunded to eligible Registrars for the first time. This process with supplementary statements of account must be defined and programmed in 2022.

DEFERRED DELEGATION PILOT PHASE

We completed an initial version of this system in 2021 for a pilot phase. In 2022, our primary goal is to gain experience with and gradually improve the system. The filters used are not our only focus; we are also zeroing in on smooth communication with Registrars and holders.

Growth forecast

.ch domain names

In 2020, the registry experienced unexpected growth of 4.8% triggered by the surge in digitalisation and marketing initiatives by hosts.

In 2021, the increase dropped to 3.9%, but this still exceeds the growth achieved in our neighbouring countries. The surge in digitalisation has clearly slowed down.

SWITCH is forecasting slightly lower growth of 3.0% for 2022.

In the long term, we believe that the trend will return to the more subdued growth experienced in previous years.
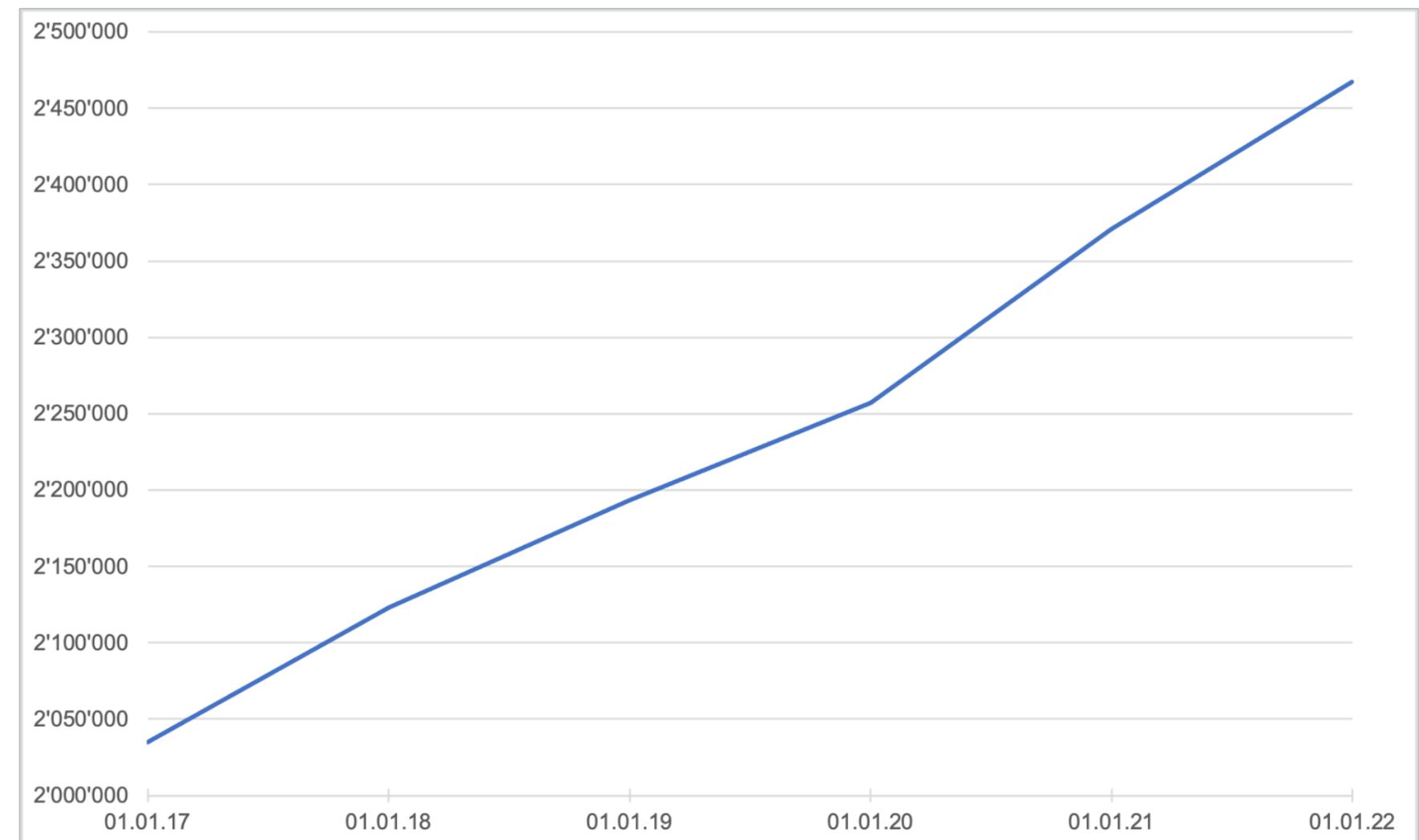
SWITCH

SWITCH
Werdstrasse 2
PO Box
8021 Zurich

Phone +41 44 268 15 15
www.switch.ch
info@switch.ch