DEVOPS IN SWITZERLAND 2023

A report about the state of DevOps in Switzerland

VSHN

VSHN

DevOps in Switzerland 2023

Practices, technology, and culture

VSHN – The DevOps Company

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Chapter 1. Introduction

Switzerland has embraced the DevOps principles to an extent that surprises and delights us. In this document, the fourth VSHN "DevOps in Switzerland" Report, we tell the story of an ever-changing technical landscape, but also that of a country that has dared evolve in its perceptions and hierarchies, opening up a new blue ocean of opportunities.

The challenges are not small; in a world ripe with war, instability, energy shortages, climate change, inflation, and mass-layoffs, Swiss companies have learned the value of agility and DevOps to release better software, more often. Traditional Swiss hierarchies gave way to new ways of working: sociocracy, holacracy, horizontal structures are popping up all over the country, building on the democratic values that underpin our nation, yet resolutely turned towards the future.

The maturity of the Kubernetes platform definitely contributed to the success of DevOps. Kubernetes is the *de facto* platform for DevOps teams, enabling them to work with unprecedented speed and agility. Now it's time for the DevOps industry to consolidate, focusing on efficiency, stability, and quality over quantity.

As a new generation of Artificial Intelligence tools open the door to a never-before seen outlook of automation and efficiency, we look forward to new and exciting possibilities, impatient to see what the future holds for us.

We are thrilled to publish the DevOps in Switzerland 2023 report, and we would like to thank all those who participated in the survey. We hope that this information will be useful, and as usual, please don't hesitate to contact us with your comments, suggestions, and remarks. We would love to hear from you.

Markus Speth, CEO
Adrian Kosmaczewski, Developer Relations
VSHN – The DevOps Company

Chapter 2. Executive Summary

As a quick "TL;DR", these are the most important conclusions of the DevOps in Switzerland 2023 Report:

- DevOps is the default standard approach for the delivery of IT services and products in Switzerland. The self-service capabilities of DevOps teams increased dramatically during the last year.
- Red Hat OpenShift is the most popular Kubernetes-based platform used in Switzerland.
- IT budgets kept increasing during 2022, albeit at a slower rate.
- Linux, Python, PostgreSQL, and Argo CD are the most popular technologies used by DevOps teams in Switzerland.
- Microsoft Azure is the leading cloud provider in Switzerland, followed closely by Amazon Web Services, who opened its new Swiss region last year.
- DevOps teams prefer managed Kubernetes services such as EKS, AKS, GKE, or Exoscale SKS, over self-managed clusters.

Methodology

This report is primarily based on quantitative research conducted through a survey between February and April 2023.

This report is a mostly descriptive but also clustering and exploratory analysis of the data collected in said survey, based on a total population size of 120 responses. The sample size is representative of the local Swiss IT market, estimated at a total population of around 16000 companies.[1]

The error margin, calculated using the $z\frac{\sigma}{\sqrt{N}}$ formula (where N is the sample size, z is a standard score of 1.96 corresponding to a confidence level of 95%, and σ is the standard deviation), is estimated at 9%.

[1] Netzwoche, "So viele Unternehmen und Beschäftigte zählt die Schweizer IT," August 27th, 2018, www.netzwoche.ch

Chapter 3. What’s DevOps?

DevOps is a dazzling term, but often just as vague as "cloud" or "container." Everybody understands it differently, and in many cases, "DevOps" is just used as a buzzword with shallow marketing purposes.

DevOps is the mainstream nowadays. It is the default organizational scheme used by software development teams worldwide to deploy better software, more often.

At its core, DevOps is a word encapsulating the notions of software development, and IT operations and system administration. DevOps stands as a symbol for a new culture of collaboration between departments having historically pursued rather different goals. Software development must be agile, creative and at the cutting edge of technological development in order to be able to constantly deliver new features. On the other hand, IT operations is geared towards stability, security, and reliability. The concept of DevOps merges the apparently contradicting ideas of agility and stability.

As a logical extension of agile software development, DevOps aims to include the entire value chain in an interdisciplinary way. Most importantly, DevOps aims to break up silo thinking.

DevOps consists of processes, tools and cultural components, thereby primarily depending on people. A DevOps culture must be lived. DevOps can’t be "bought" with tools, introducing new processes, or just through the hiring of a "DevOps engineer."

DevOps is an interdisciplinary cooperation, not only of Dev and Ops, but of all parties involved in the product lifecycle; this includes Product Owners, Scrum masters, testers, security experts, and more. Under the DevOps mantra, the entire organization contributes to this effort in unison.

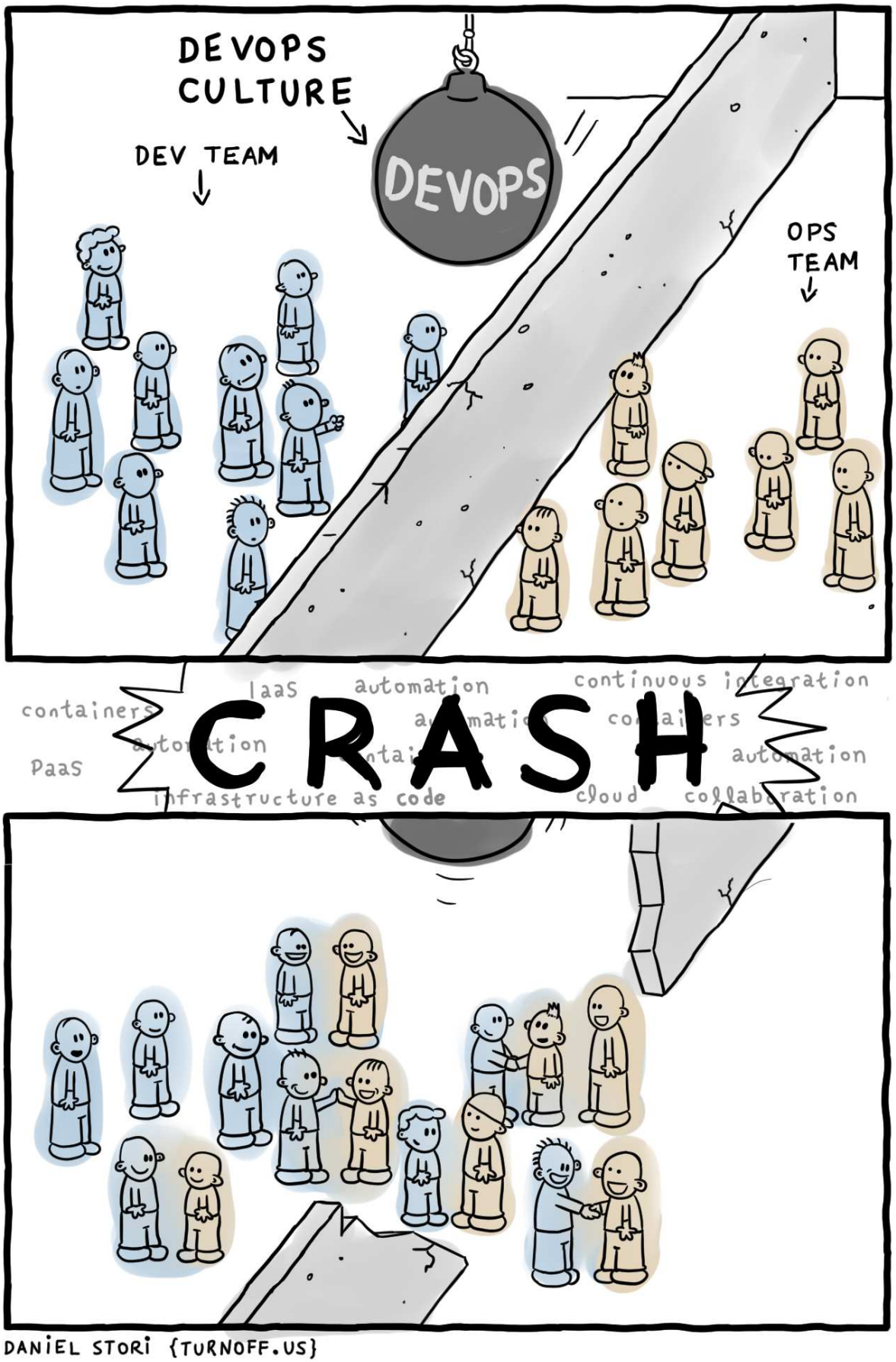


Figure 1. DevOps explained © Daniel Stori (with permission)

It’s not possible to establish a DevOps culture in a company without committed teams breaking out of the "sysadmin vs. coder" dichotomy. It requires leaders who promote cooperation and collaboration between teams. It calls for a management eager to share ideas and set examples. DevOps is a philosophy, a holistic approach, and not a mere methodology nor a management framework that can simply be introduced in an existing organization.

Who Benefits from DevOps?

DevOps affects all sectors; in the age of digitization, it isn’t limited to software development anymore. Many "traditional" industries today support their core business with software: no matter if they’re banks, insurance companies, retail or industrial firms. Digitization doesn’t stop at any industry. If the customer is happy, so is the team, the contributor, and ultimately, the company.

In the end, everyone benefits from DevOps.

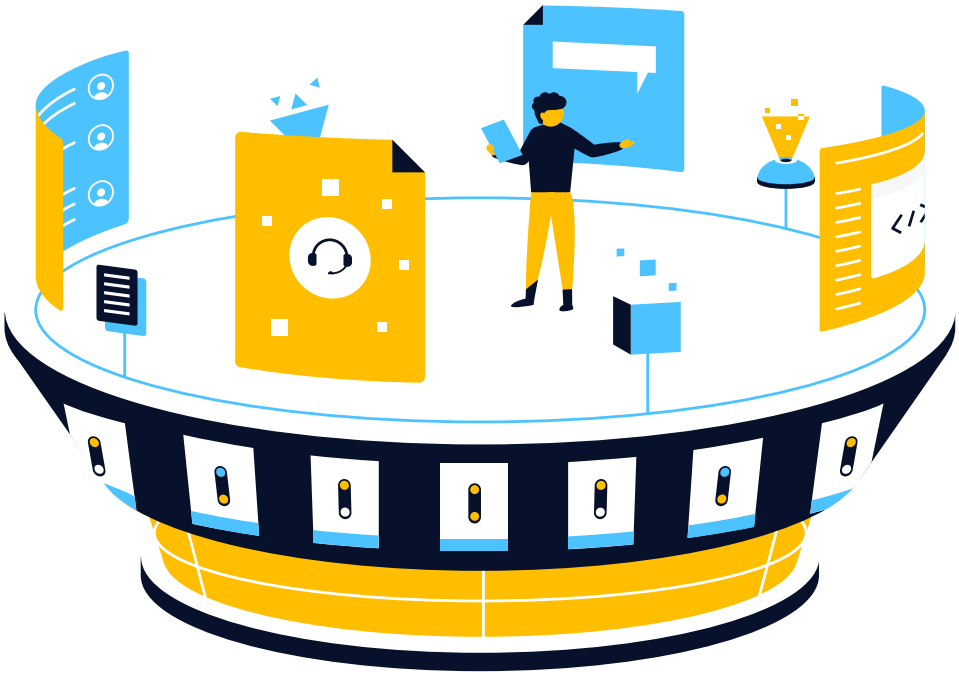
A DevOps culture that focuses on collaboration and automation not only ensures consistency, predictability, faster code delivery, and code quality. Problem solving also benefits from DevOps. Bugs and failures aren’t prevented by DevOps *per se*; but with a collaborative and solution-oriented DevOps team and a mature level of automation, troubleshooting and problem solving becomes many times more efficient and faster, reducing the cost of a failure.

DevOps stands for the lean concept of Continuous Improvement, and a conscious and active feedback culture. Mistakes may be made in order to continuously improve cooperation and processes. The software development and IT operations departments are jointly responsible for the final product or service.

Chapter 4. Demographics

> *The success of open source demonstrates the importance of a fundamentally different solution, built on top of an unconventional understanding of property rights configured around distribution. Open source uses that concept to tap into a broad range of human motivations and emotions, beyond the straightforward calculations of salary for labor.*
>
> — Steven Weber, The Success of Open Source (2004)

We asked our respondents a few questions about their team organization and dynamics at the beginning of the survey. This gave us an idea of the current organization models at work in Switzerland, and how they evolve over time. This chapter provides a short summary of this information.



4.1. Organization Industry and Size

Just like in previous years, most of them are active in the software or banking industries, in small to medium organizations ranging from 1 to 250 collaborators.

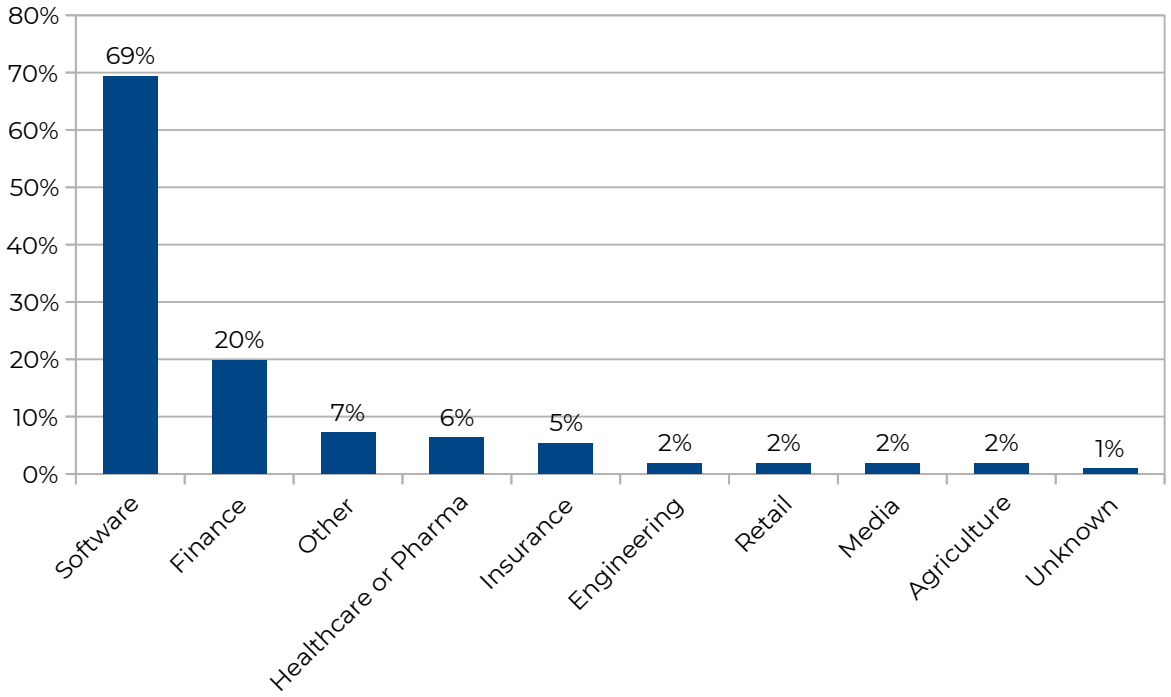


Figure 2. Industries in 2022

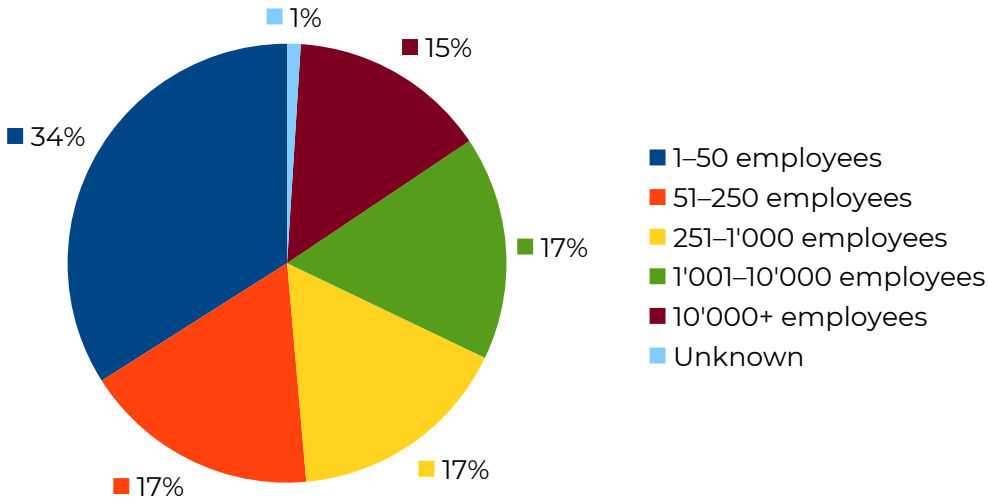


Figure 3. Organization sizes in 2022

4.2. Domains

These are the domains in which the respondents of the survey have responsibilities. The vast majority of them are active in the software development and engineering domains, followed by DevOps teams, and IT operations and infrastructure teams.

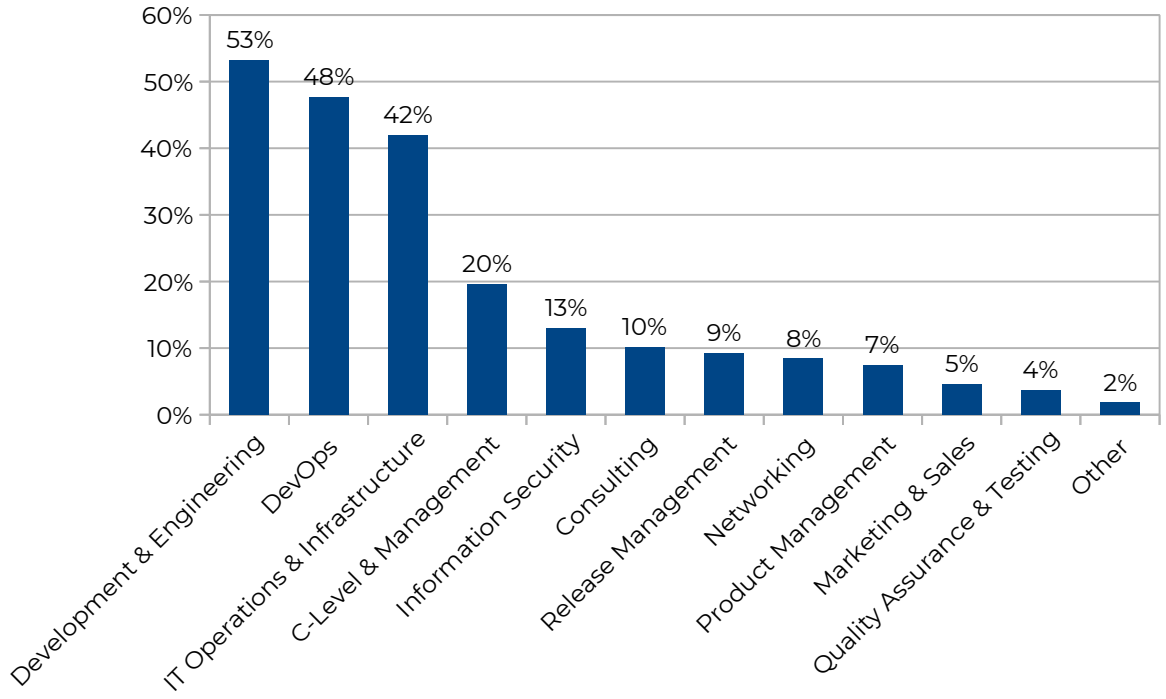


Figure 4. Domains of responsibility in 2022

20% of the respondents are also active C-suite members (CEO, COO, CMO, etc.) The involvement of C-suite members in the survey is a good sign, as it shows that the topic of DevOps is now considered a strategic one in many organizations.

The relative weights of these domains of responsibility haven't changed much since our last report.

4.3. Separation of Development & Operations

In our previous reports, based on data gathered from 2018 to 2022, we had observed a sustained (and from our perspective, quite puzzling) tendency to separate development from operations.

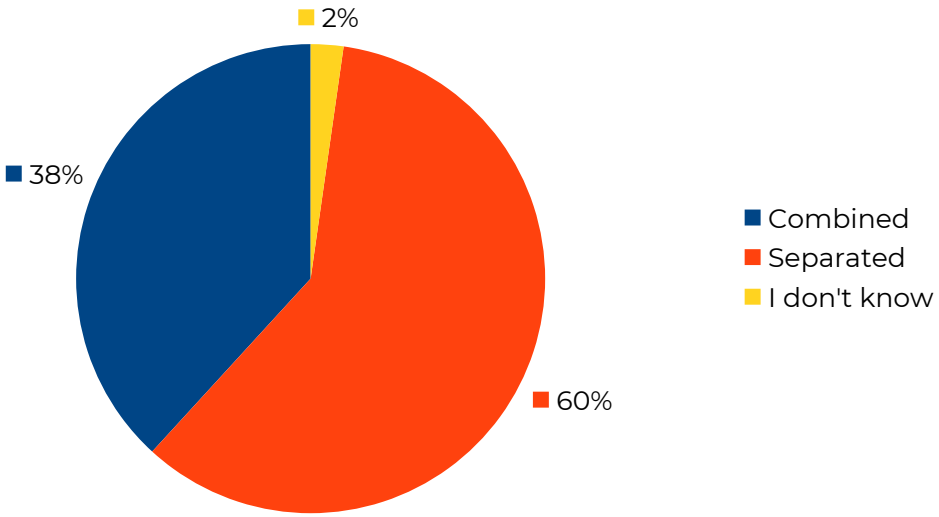


Figure 5. Separation of development & IT operations in 2021

This trend has reversed now, with a majority of teams being integrated again. We believe that this is a positive sign, as it shows that the industry is moving away from the siloed organization models of the past, and towards a more collaborative approach.

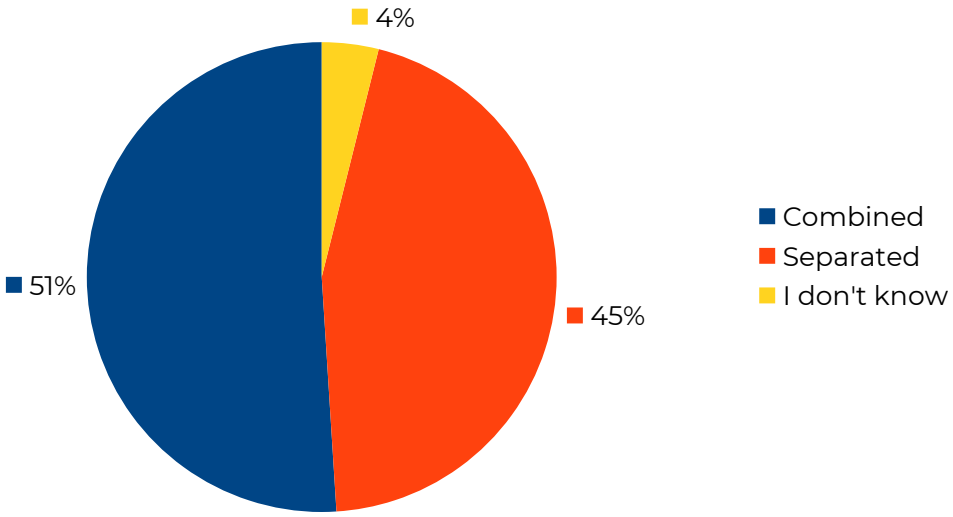


Figure 6. Separation of development & IT operations in 2022

4.4. IT Budgets

IT budgets have grown in 2022, but not as strongly as in 2021. The uncertainty in the world after the pandemic, together with the current political and economic panorama, will bring businesses to become more attentive to spending budgets in 2023.

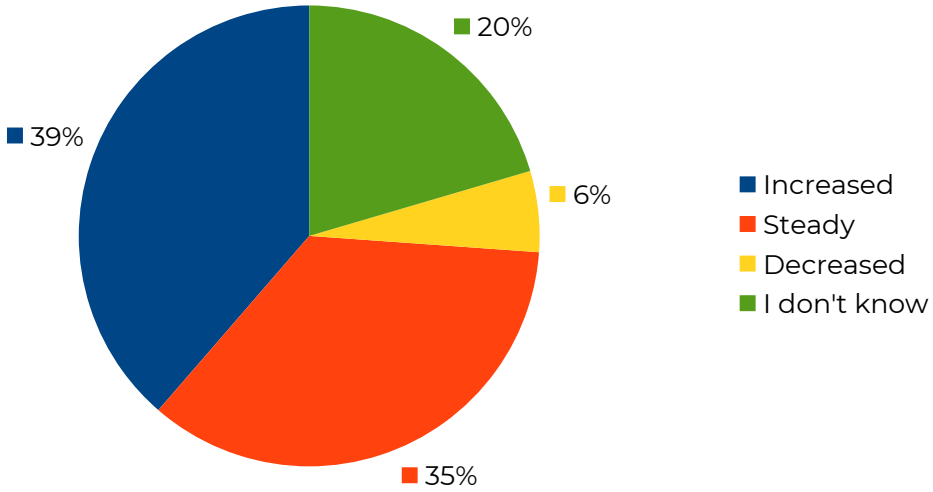


Figure 7. IT Budgets in 2021

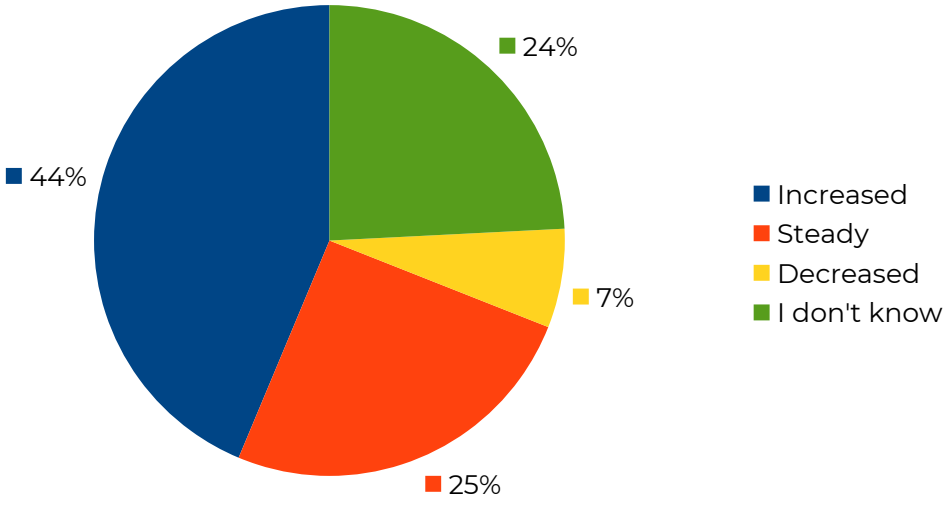


Figure 8. IT Budgets in 2022

4.5. IT Budgets: Forecast

We've asked our respondents their IT budgets forecast for 2023. The results are quite positive, with a majority of respondents expecting their budgets to grow.

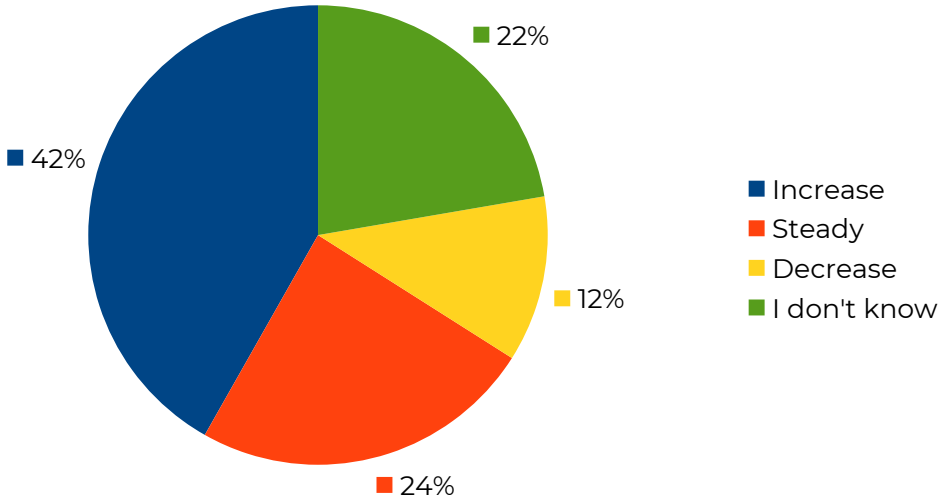


Figure 9. IT Budgets Forecast for 2023

Chapter 5. Tools & Technology

> *Today open source software, like GitHub, and cloud services, such as Amazon Web Services, have slashed the cost of software development from millions of dollars to thousands.*
>
> — Steve Blank, Why the Lean Start-Up Changes Everything (Harvard Business Review, 2013)

As Kubernetes reaches its first decade of life, the Cloud Native technology landscape is showing signs of maturity, with increasing perceived quality and stability of the tools available to DevOps teams.

This chapter will provide an overview of the tools and technologies used by respondents to the survey in their DevOps implementations.

5.1. Operating Systems

Linux has cemented its dominance on the Cloud Native space, with an ever-increasing presence in the cloud markets, and an almost full consensus among DevOps teams.

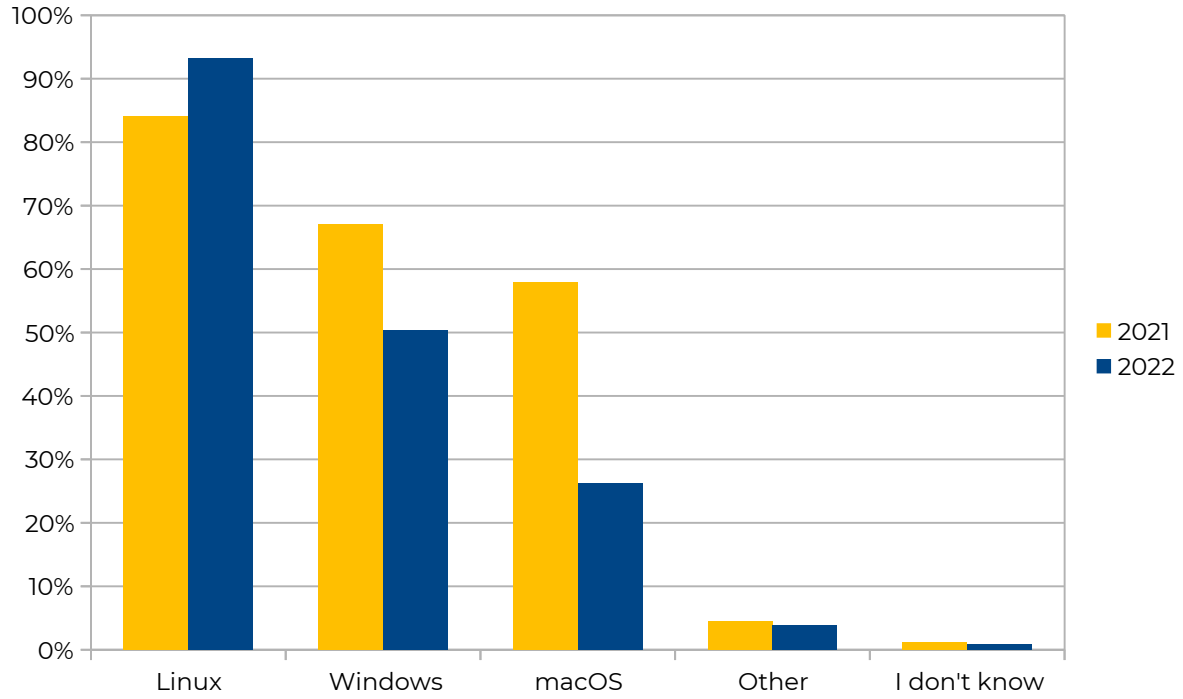


Figure 10. Operating Systems in Production in 2022

Windows has lost ground in the Cloud Native arena, in spite of its push for containerized workloads, its compatibility in enterprise solutions such as Red Hat OpenShift, and its being a classic and historic choice in Swiss corporate IT environments for the past 30 years. macOS shows an even larger loss of market share in this respect.

Linux is the clear winner in this category, driven by the surge in popularity of containers.

5.2. Programming Languages

The major change this year was the surge in popularity of Python among our respondents, relegating last year's winner JavaScript to the third place of the ranking.

This drive might be due to the popularity of Python in the Data Science and Machine Learning fields, which are gaining traction in the Swiss market, as well as its ease of use and its large ecosystem of libraries and frameworks.

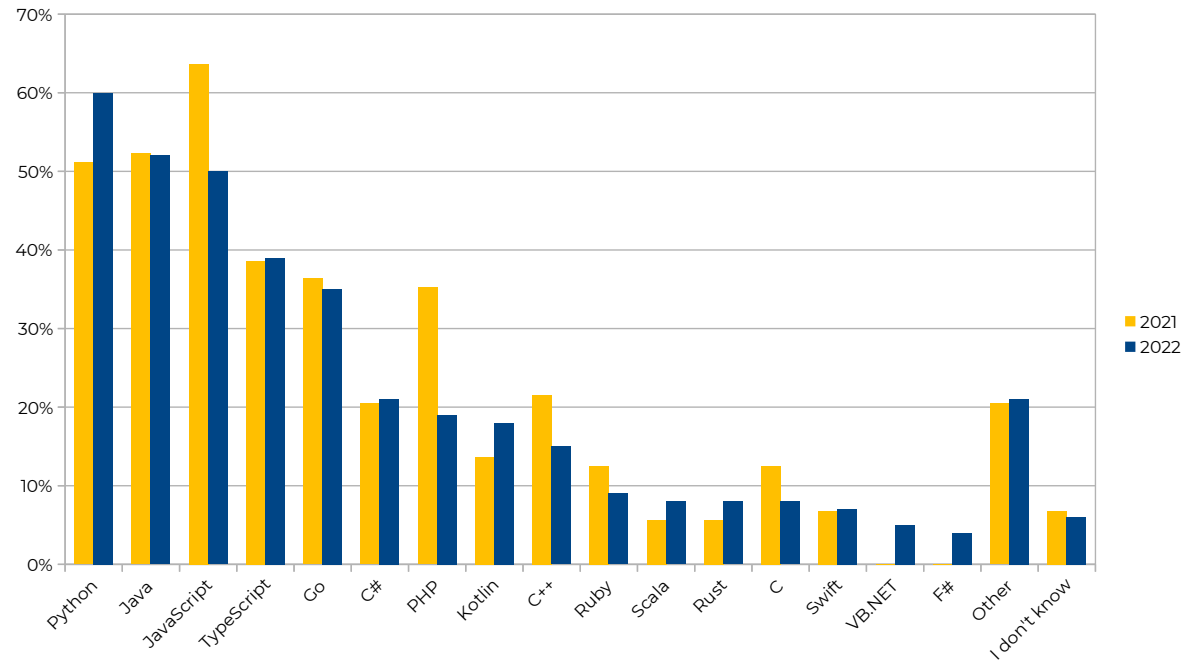


Figure 11. Programming Languages in 2022

Java, TypeScript, Go, and C# remained stable, while Rust has shown an interesting uptick in popularity, driven by its type safety, its cross-platform support, its excellent performance, and its low power consumption footprint.

New entrants in this year's survey are Visual Basic.NET and F#, both part of the .NET family, as reported by a small number of respondents.

5.3. Auxiliary Back-end Services

This section shows no major changes since last year: PostgreSQL, NGINX, Elasticsearch, and S3-compatible storage (in its various forms) remain the most used technologies by DevOps teams for their Cloud Native applications.

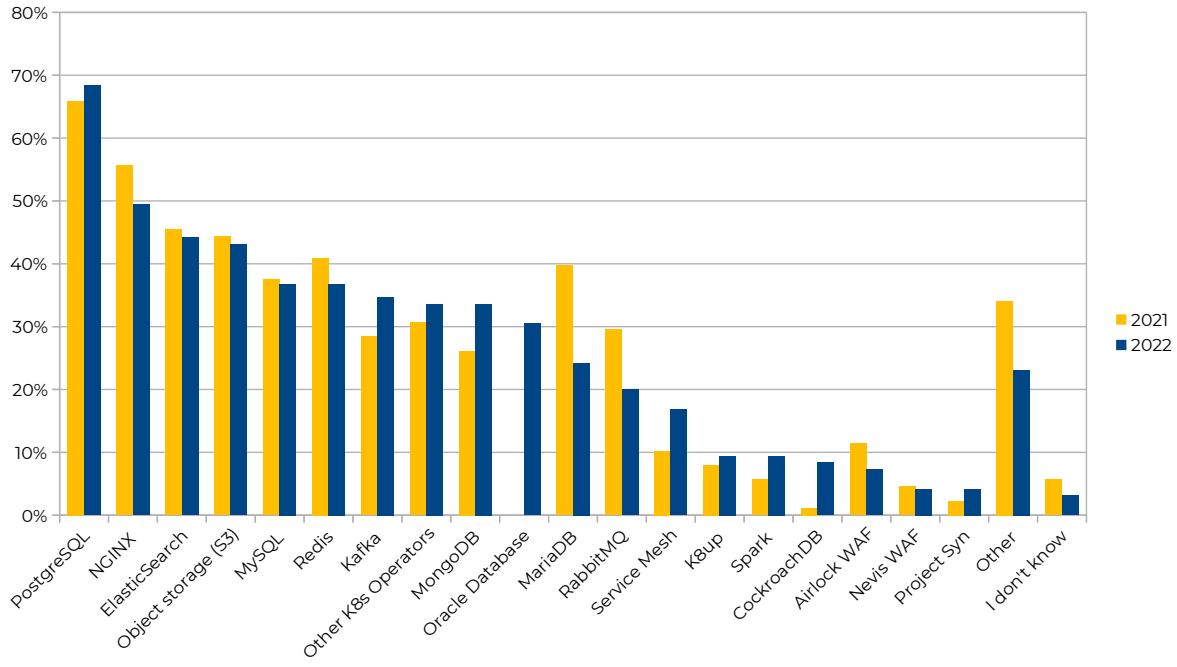


Figure 12. Auxiliary Back-end Services in 2022

Some of these technologies have shown an increase in popularity last year: among them Mongo DB, Service Mesh, and Apache Kafka.

But the most impressive growth was that of CockroachDB, a system gaining traction in the Swiss market, thanks to its PostgreSQL compatibility, and its cloud-first architecture. This database will be one to watch in the coming years.

5.4. Infrastructure

Microsoft Azure is the clear leader in the Swiss cloud in 2022, with an increased market share since last year. However, the opening of the first 100% Swiss region by Amazon Web Services, fueling a surge in popularity in this year's survey, might change the landscape in the coming years.

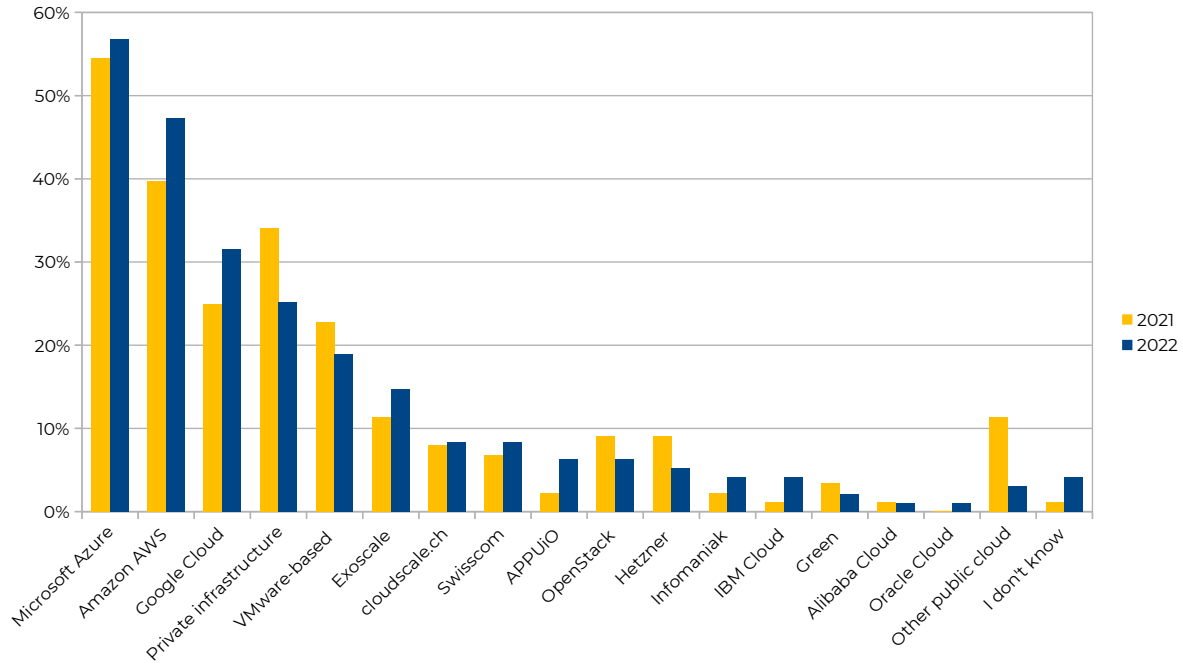


Figure 13. Infrastructure Providers in 2022

Google Cloud Platform, Exoscale, Infomaniak, IBM Cloud, and APPUiO have also been favored by respondents.

In the case of APPUiO, this is due to its Red Hat OpenShift-based APPUiO Cloud offering, which is gaining traction in the Swiss market. APPUiO Cloud offers a ready-to-use, fully managed, and highly available Red Hat OpenShift cluster, with a Swiss data residency guarantee, ready to use in minutes.

5.5. Cloud Strategies

In 2022, Swiss DevOps teams have increasingly chosen to deploy their workloads on public cloud providers, either exclusively on one hyperscaler, or in a multi cloud approach. The launch of the new Amazon Web Services zone in Switzerland might be one of the contributing factors to this trend.

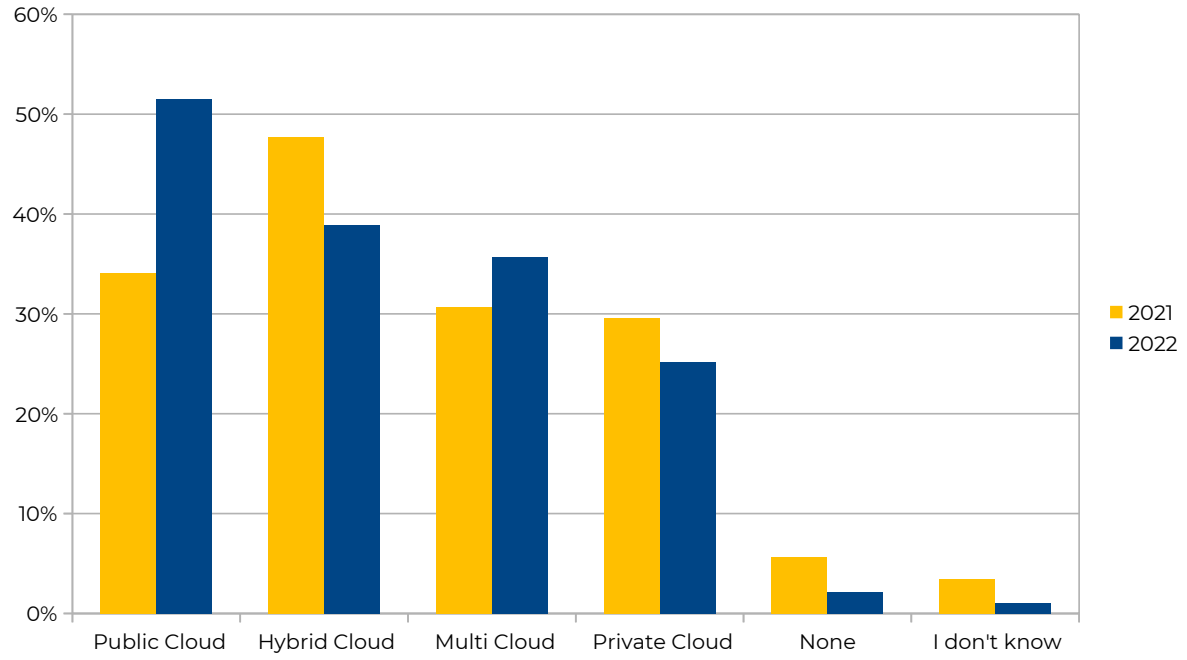


Figure 14. Cloud Strategies in 2022

There is a drop in interest in private and hybrid cloud solutions, where teams prefer the convenience of public cloud providers, and the flexibility of Kubernetes to deploy their workloads. This is a trend might change in the coming years, depending on the evolution of IT budgets and privacy concerns.

5.6. Container Technology

Containers are the new bread and butter of the DevOps engineer, and the numbers prove it: jumping at a staggering rate, from 75% to 84%, it is safe to say that nearly all Swiss teams are deploying their workloads using containers at this point.

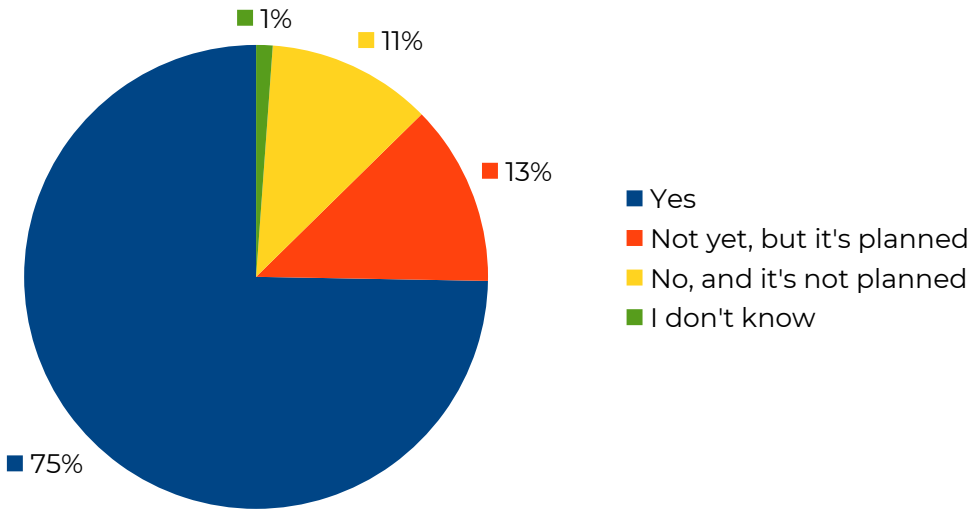


Figure 15. Container Technology in 2021

Even better, 11% of the respondents state that they are actively planning to use them in the future.

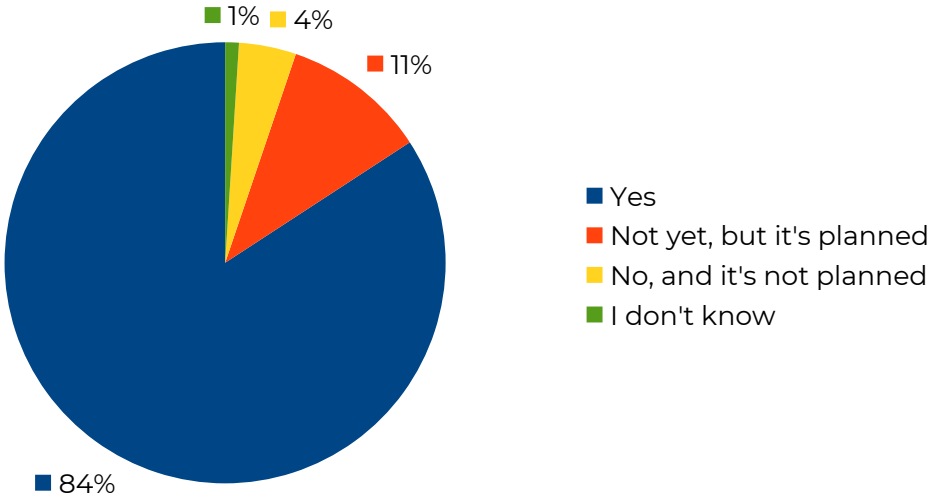


Figure 16. Container Technology in 2022

5.7. CI/CD Tools

In the realm of CI/CD tooling, 2022 was the year of Terraform, GitHub, and Argo CD. These three systems have gained ground in the Swiss landscape, and are now among the most used tools by DevOps teams, together with GitLab and Ansible.

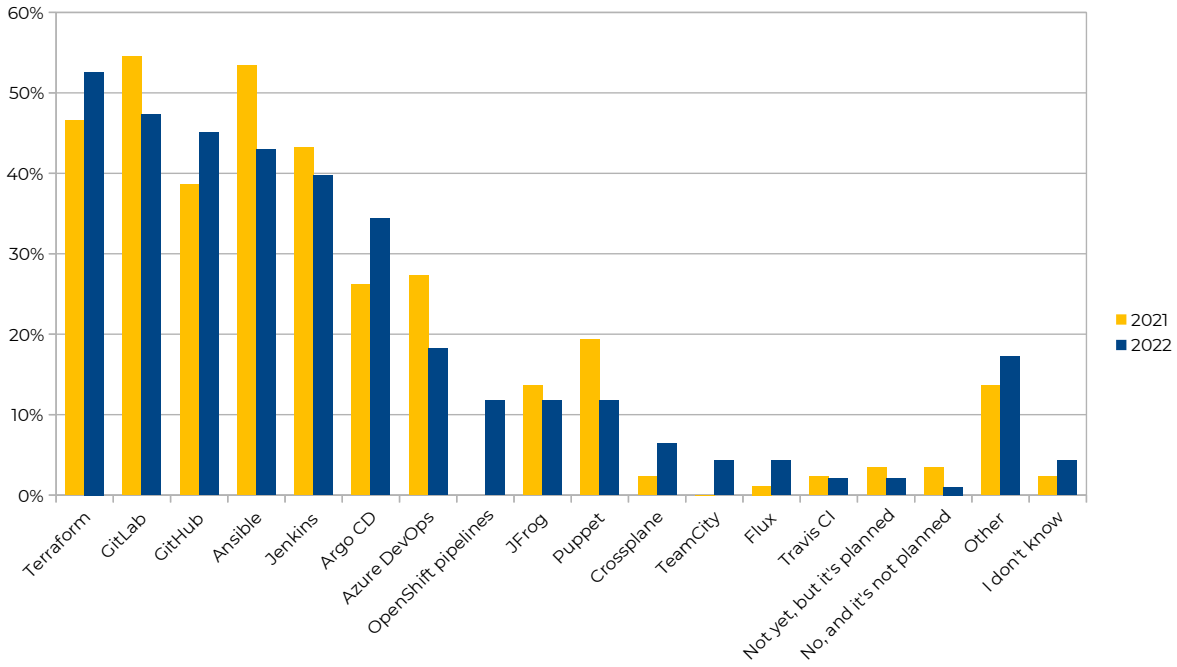


Figure 17. CI/CD Tooling 2022

There is, however, a very interesting trend in the graph: the drop in popularity of tools such as Ansible and Puppet, signaling the end of the era of virtual machine-based environments, replaced by Kubernetes clusters running Containers.

5.8. Kubernetes

Among Kubernetes-based platforms, version 4 of Red Hat OpenShift has seen a dramatic increase in use and popularity in the past year, largely overtaking other distributions. This was at the expense of SUSE Rancher and VMware PKS/Tanzu, whose popularity dropped significantly during the same period.

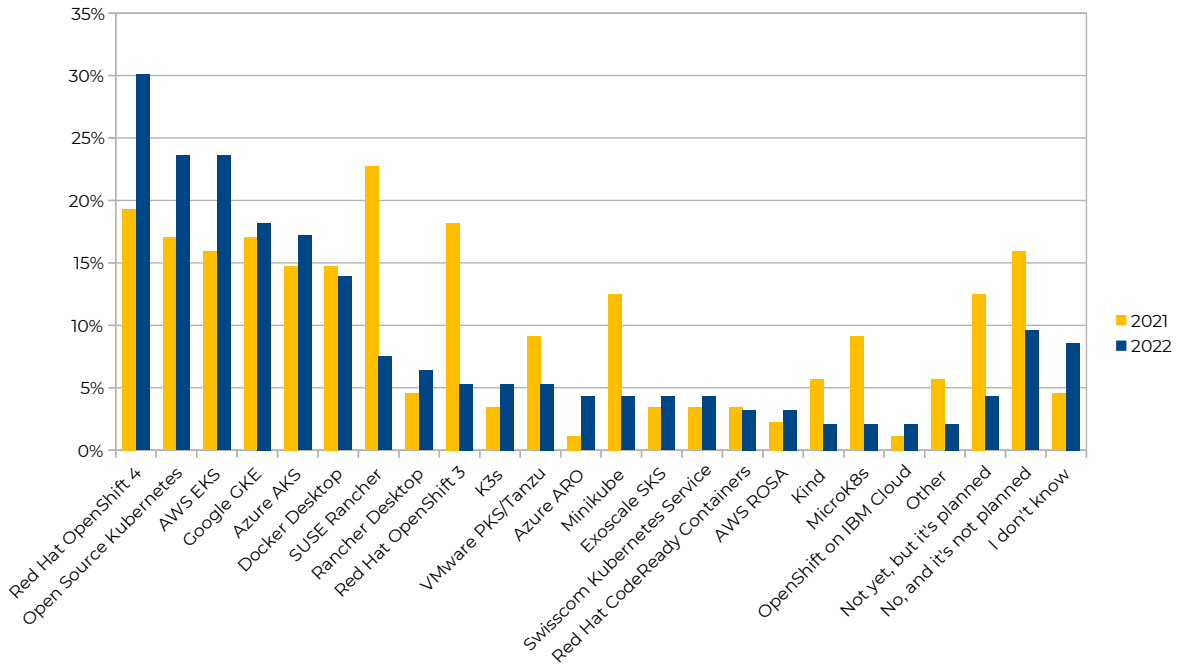


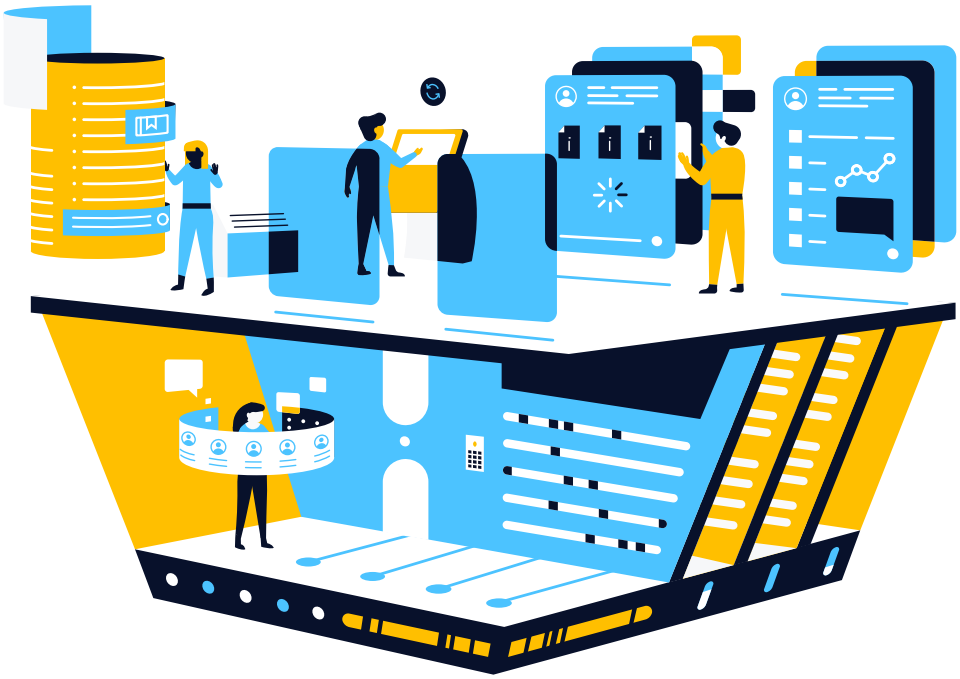
Figure 18. Kubernetes Distributions 2022

Another interesting trend is the increase in popularity of managed Kubernetes offerings, such as Amazon Web Services EKS and ROSA, Google Cloud Platform GKE, Microsoft Azure AKS and ARO, and Exoscale SKS. DevOps teams appreciate the convenience of these offerings, which allow them to focus on their workloads, rather than on the underlying infrastructure.

Chapter 6. Processes & Culture

> *We tend to use the word team fairly loosely in the business world, calling any group of people assigned to work together a "team." But many of these groups just don't seem like teams. They don't have a common definition of success or any identifiable team spirit. Something is missing. What is missing is a phenomenon we call jell. (...) A jelled team is a group of people so strongly knit that the whole is greater than the sum of the parts.*
>
> — Tom DeMarco and Timothy Lister, Peopleware: Productive Projects and Teams, Third Edition (2013)

How do Swiss teams work? This is the question we're trying to answer in this final chapter. Through the lense of these numbers, we see teams that are becoming ever more collaborative and autonomous. The end result is a more efficient and more productive work environment, and better software released more frequently than ever before.



6.1. Perception

The perception of DevOps in Switzerland has stayed overwhelmingly positive from 2021 to 2022. Even though we did receive some negative answers to this question, we observe a net positive result in the overall perception of its benefits.

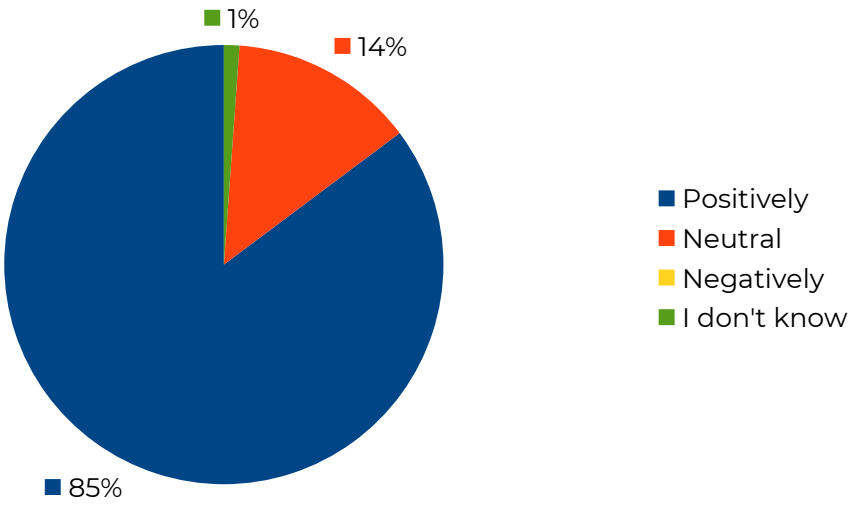


Figure 19. DevOps Perception in 2021

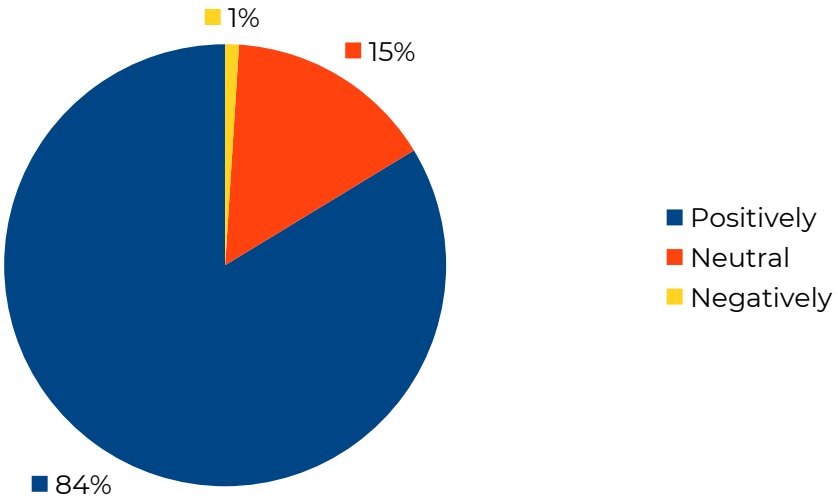


Figure 20. DevOps Perception in 2022

6.2. Adoption

Just like last year, the adoption of DevOps shows no sign of stopping. The number of respondents that have adopted or are currently adopting DevOps in their teams has increased dramatically in 2022, and we have no reasons to believe that this trend will change in 2023.

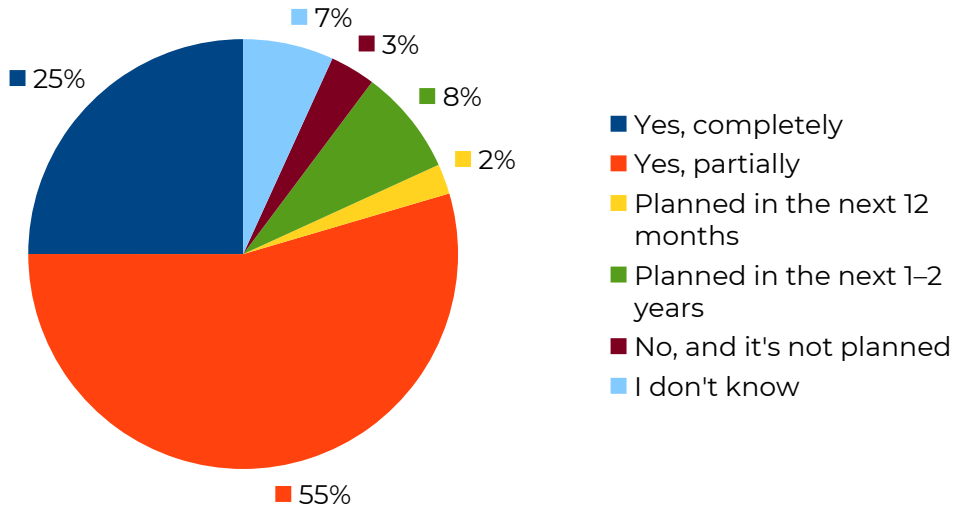


Figure 21. Adoption of DevOps in 2021

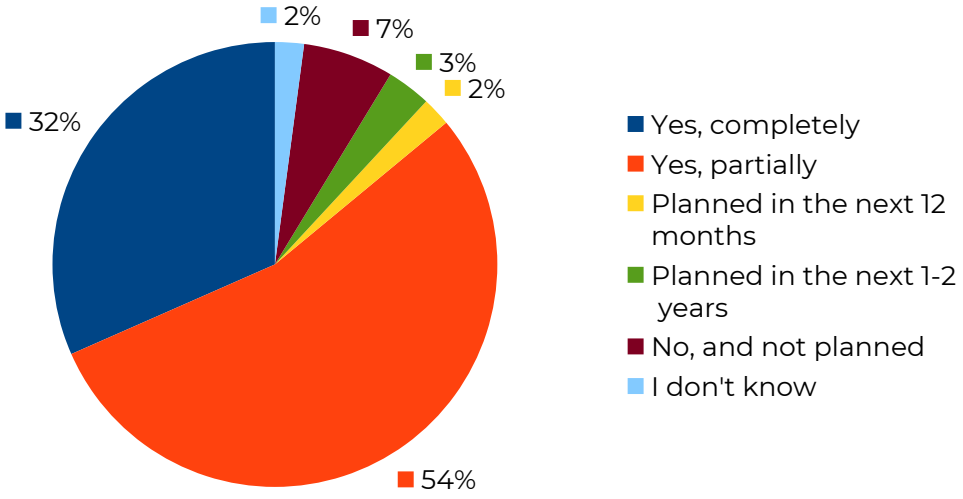


Figure 22. Adoption of DevOps in 2022

6.3. Overall Results

What's the ROI (return on investment) of DevOps? A lot, as it turns out:

- 65% say they've seen visible changes across the organization.
- 60% report an increase in collaboration among teams.
- 65% mention a positive influence in their work environment.
- More than 50% of respondents signal an increase in both the quantity and quality of their final products.
- More than 40%, however, report a long adaptation phase and a steep learning curve.

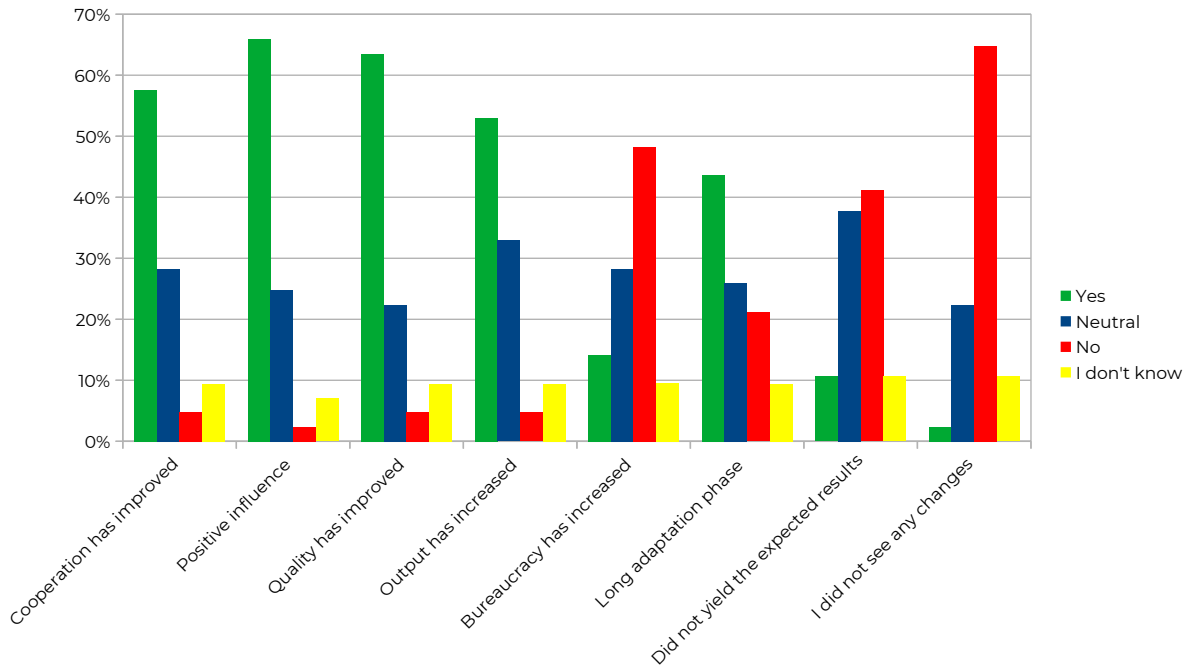


Figure 23. Return on Investment

6.4. Team Autonomy

We observe that Swiss DevOps teams have greatly increased their autonomy during 2022, effectively becoming the most promising result of this report.

The number of respondents affirming that teams at their organization weren't able to provision any services (in any environment) by themselves dropped from 16% to 8%, while those able to provision all required services in production environments... climbed from 26% to 30%! This is a very positive sign that Swiss teams are becoming more and more autonomous.

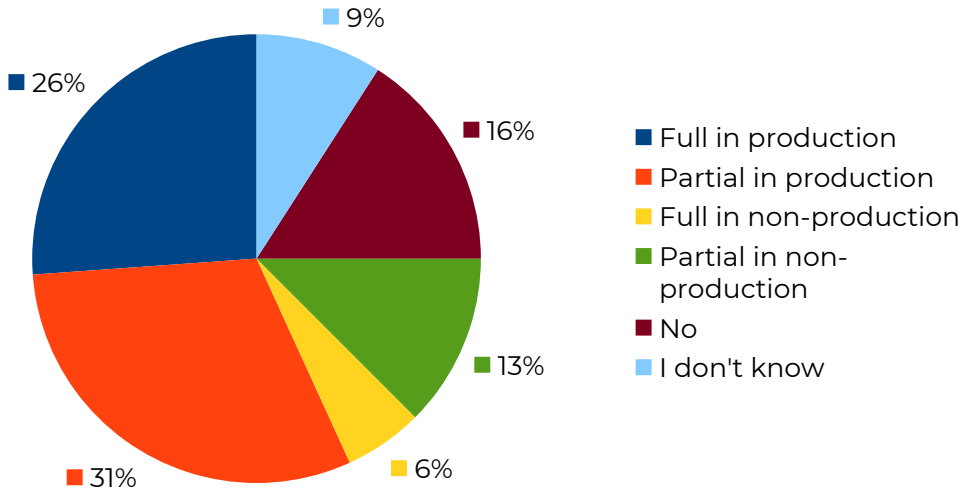


Figure 24. Provisioning of Services

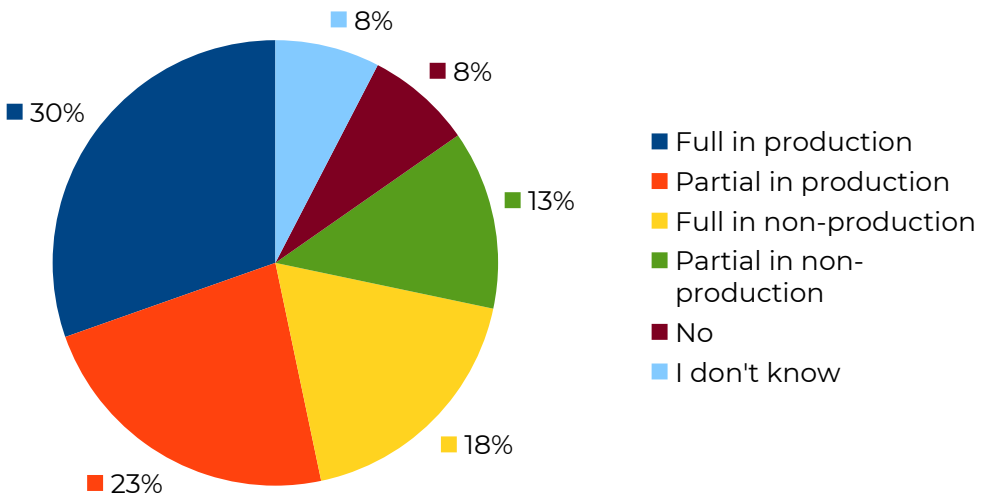


Figure 25. Provisioning of Services

6.5. Outsourcing

More teams have outsourced their DevOps implementations in 2022 than in 2021, proving the economies of scale generated by experts hired to scale up DevOps initiatives in an organization are real.

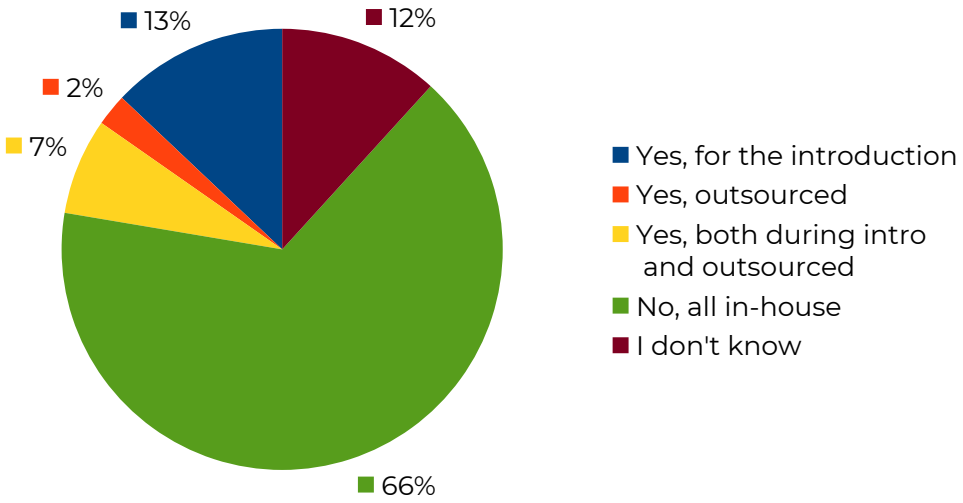


Figure 26. Outsourcing DevOps in 2021

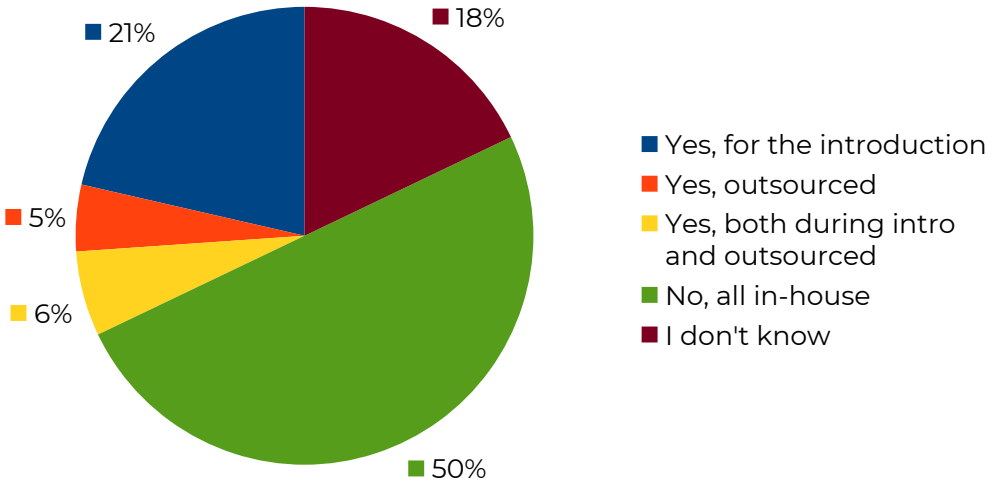


Figure 27. Outsourcing DevOps in 2022

Chapter 7. About VSHN

VSHN (pronounced ˈviʒn like "vision") is "The DevOps Company," Switzerland's leading DevOps, Docker, Kubernetes, OpenShift and 24/7 cloud operations partner.

VSHN was founded with the intention to fundamentally shake up the hosting market. We focus on operating IT platforms through automation, agility and a continuous improvement process. Completely location-independent and without our own hardware, we operate extensive applications according to the DevOps principle agilely and 24/7 on every infrastructure, so that software developers can concentrate on their business and IT operations are relieved.

VSHN is the link between business, software development and IT operations

VSHN supports software developers in making applications automatically testable, deployable and scalable and operating them on any infrastructure. In addition to close and agile cooperation and consulting, we also take over responsibility for the stability of our services, including 24/7 support.

With APPUiO.ch we've created a Swiss container platform based on Red Hat OpenShift on which we can offer Managed Services as a PaaS solution (Platform-as-a-Service) on any infrastructure: cloud, dedicated, private and on-premises. Our latest offering, APPUiO Cloud provides "OpenShift Projects as a Service" to our customers.

The Team

Our employees (also known as "VSHNeers") near Zurich Central Station are the most experienced specialists in development and operations, experts in innovative container technology, Kubernetes, and Red Hat OpenShift.

Open Source

We believe in openness and sharing know-how, experience and code (Open Source). We use open source software wherever possible, but also give our own developments back to the community. Have a look at our Github profile: github.com/vshn or K8up, our Kubernetes Backup Operator, now a Cloud Native Computing Foundation (CNCF) sandbox project.

We also released Project Syn, the next generation Open Source managed services framework for DevOps and application operations on any infrastructure based on Kubernetes.

Engagement and Memberships

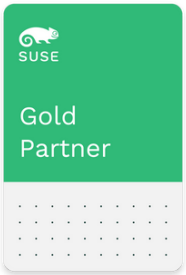
We actively support organizations such as the Linux Foundation and Cloud Native Computing Foundation.

About the Company

VSHN was founded in 2014, and as a privately-owned company we're exclusively committed to our customers. The shares are 100% owned by VSHNeers.

Awards & Recognition

VSHN won Gold at the Digital Economy Award 2019. We're one of the Fastest growing ICT companies in Switzerland for the third time in a row. We're the first Kubernetes Certified Service Provider (KCSP) in Switzerland and we're Red Hat Advanced CCSP Partner. We were awarded as Rising Star Switzerland 2019 in the ISG Provider Lens. We're ISO 27001 certified, work according to the strict FINMA guidelines and are ISAE 3402 Report Type 2 audited.



Jobs

Do you also want to become a VSHNeer and be at the forefront of IT? Then have a look at our job site, we're always looking for good people.

Stay up to date

Subscribe to our YouTube channel, follow us on Mastodon or Twitter (@vshn_ch and @APPUiO), on LinkedIn, and on Facebook, to keep up with our latest news.

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