Parldigi

Parlamentarische Gruppe Digitale Nachhaltigkeit

Open Source Roundtable

4. November 2021

Programm OSS Roundtable

Parldigi

13:00 *Eintreffen in der Conference Hall des BIT in Zollikofen*

13:30 **Begrüssung, Einleitung, kurze Vorstellungsrunde** - **Dirk Lindemann** und **Matthias Stürmer**

13:40 **«Midar-App» - Use Case für Open Source Technologien und Open Source Plattform Odoo**
Andreas Lautenschlager BIT

14:00 **Überblick neuste Open Source Cloud Technologien und Trends** - **Nicolas Christener** Adfinis

14:20 **Good and Bad Practices bei Security von Web-Anwendungen** - **Christoph Ackermann,** Cubetech

14:40 **Open Source, Standards, and Technical Debt** - **Raphaël Pinson** Camptocamp

15:00 *Pause*

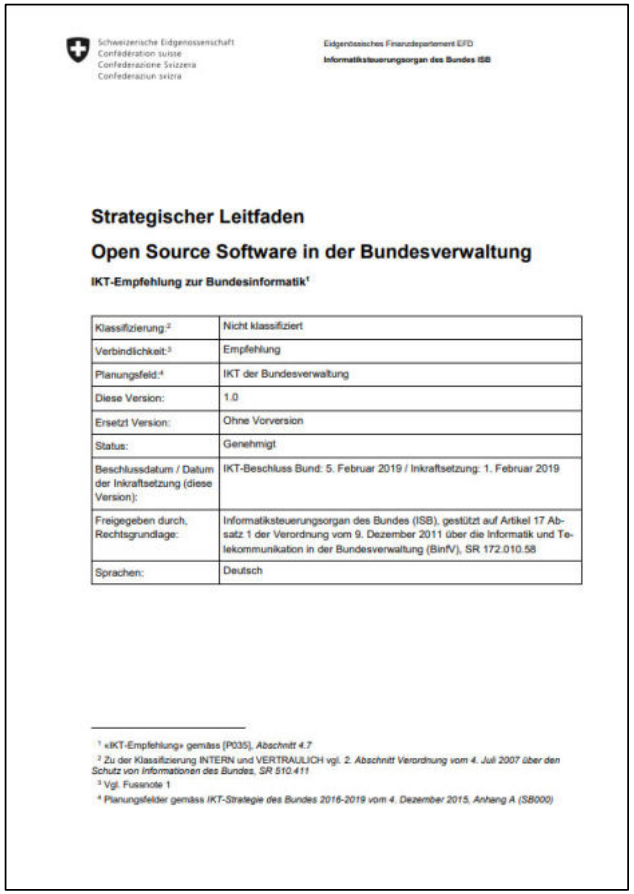
15:30 **Micro-Service Architekturen mit Kubernetes und PaaS-Lösungen** - **Adrian Kosmaczewski** VSHN

15:50 **Rancher – Swissknife for Multi Kubernetes Cluster Management** - **Bo Jin** SUSE

16:10 **Quarkus – Supersonic/Subatomic Kubernetes Native Java - Peter Mumenthaler** Red Hat

16:30 **Leistungsfähiges Ausliefern von Daten** – **Adrian Zimmermann, Nicolas Karrer** Snowflake

Open Source Strategie und Leitfaden



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Eidgenössisches Finanzdepartement EFD
Informatiksteuerungsorgan des Bundes ISB

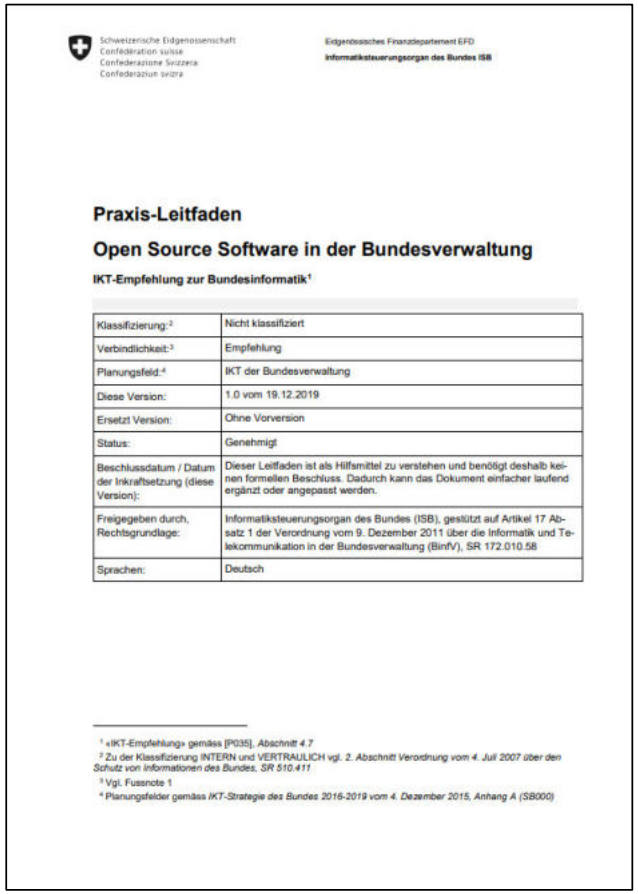
Strategischer Leitfaden

Open Source Software in der Bundesverwaltung

IKT-Empfehlung zur Bundesinformatik[1]

Klassifizierung:[2]	Nicht klassifiziert
Verbindlichkeit:[3]	Empfehlung
Planungsfeld:[4]	IKT der Bundesverwaltung
Diese Version:	1.0
Ersetzt Version:	Ohne Vorversion
Status:	Genehmigt
Beschlussdatum / Datum der Inkraftsetzung (diese Version):	IKT-Beschluss Bund: 5. Februar 2019 / Inkraftsetzung: 1. Februar 2019
Freigegeben durch, Rechtsgrundlage:	Informatiksteuerungsorgan des Bundes (ISB), gestützt auf Artikel 17 Absatz 1 der Verordnung vom 9. Dezember 2011 über die Informatik und Telekommunikation in der Bundesverwaltung (BinfV), SR 172.010.58
Sprachen:	Deutsch

[1] «IKT-Empfehlung» gemäss [P035], *Abschnitt 4.7*
[2] Zu der Klassifizierung INTERN und VERTRAULICH vgl. *2. Abschnitt Verordnung vom 4. Juli 2007 über den Schutz von Informationen des Bundes, SR 510.411*
[3] Vgl. Fussnote 1
[4] Planungsfelder gemäss *IKT-Strategie des Bundes 2016-2019 vom 4. Dezember 2015, Anhang A (SB000)*



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Informatiksteuerungsorgan des Bundes ISB

Praxis-Leitfaden

Open Source Software in der Bundesverwaltung

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Klassifizierung:[2]	Nicht klassifiziert
Verbindlichkeit:[3]	Empfehlung
Planungsfeld:[4]	IKT der Bundesverwaltung
Diese Version:	1.0 vom 19.12.2019
Ersetzt Version:	Ohne Vorversion
Status:	Genehmigt
Beschlussdatum / Datum der Inkraftsetzung (diese Version):	Dieser Leitfaden ist als Hilfsmittel zu verstehen und benötigt deshalb keinen formellen Beschluss. Dadurch kann das Dokument einfacher laufend ergänzt oder angepasst werden.
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https://www.bk.admin.ch/bk/de/home/digitale-transformation-ikt-lenkung/ikt-vorgaben/strategien-teilstrategien/sb004-ikt-teilstrategie-open-source.html

Schweizerische Eidgenossenschaft
Confédération suisse
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Eidgenössisches Finanzdepartement EFD
Bundesamt für Informatik und Telekommunikation BIT
Management Services

Midar App

Supporting our transformation to the next FOITT

Goals of the Midar App

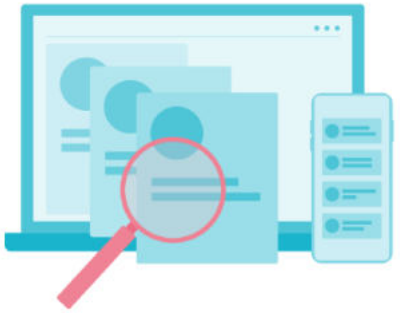
“Foster cultural change at the FOITT as its the key for successful transformation.”

Finding one's way in the new, agile organization:

- Searching for, finding and directly communicating colleagues, organizations (dual system with line and work organization), responsibilities
- Establishing employee-driven knowledge management in an agile organization

Sharing information:

- Employees identify with the "why" of transformation.
- Campaigns use a wide variety of examples to show employees how meaningful and value-creating their work is for the federal administration and Switzerland.
- The app is designed to invite employees to get directly involved through comments, likes and their own contributions.



Midar Dir

Multi dimensional Directory Services for agile enterprises

Midar Campaign

Corporate Social Media campaigns

Design Principles

Mobile First

- The cell phone is always with you. Everyone understands how to use it.
- Rollout via Apple and Google Stores so that everybody can use is (also externals)
- User identification via company email address and OTP. Backend hosting @FOITT.

Interactive

- Campaigns with feedback and social media elements.
- Data maintenance also by the employee himself
- Easy to use but flexible editorial and management system

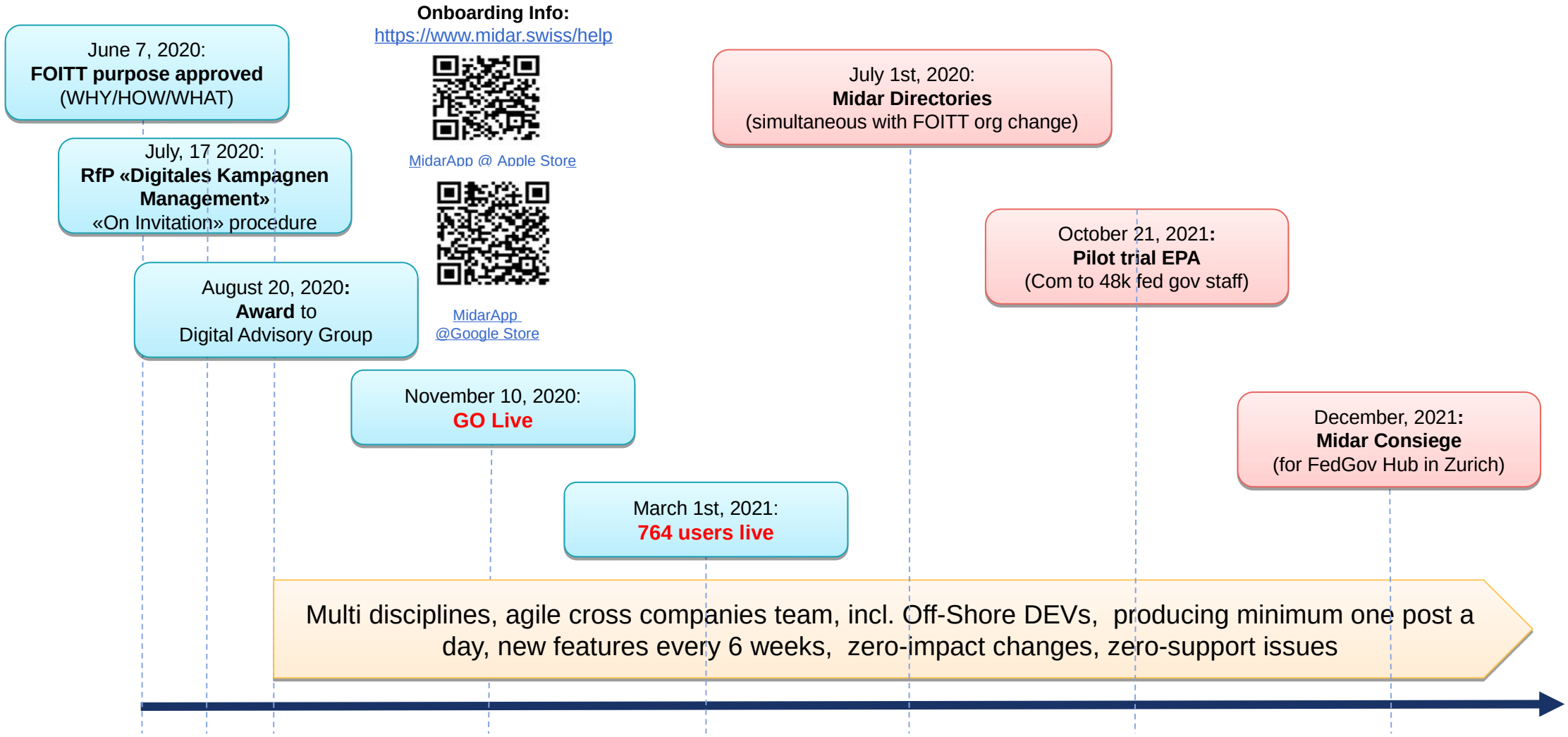
Technology

- Buy before make. Proven technologies. Open source solutions only.
- Very granular rights system due to confidential data
- Multilingual (Romansh, German, French, Italian, English) & multi-client capable

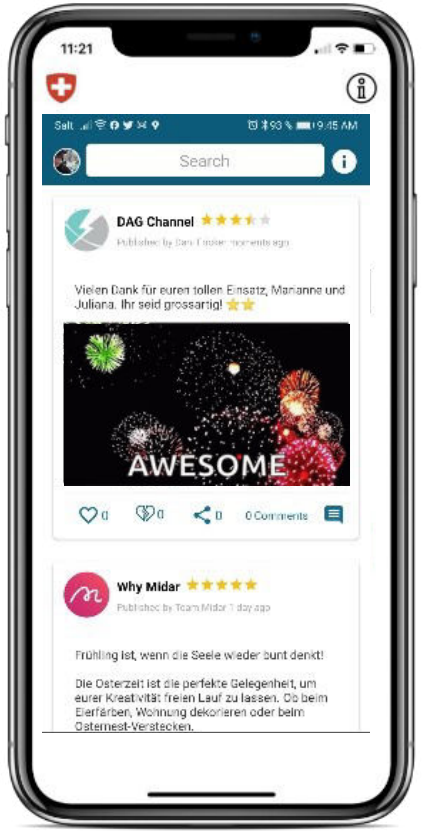
Minimum Time

- Very fast ready - based on standard product
- Agile – continuous enhancements (DevOps)

Timeline


June 7, 2020:
FOITT purpose approved
(WHY/HOW/WHAT)
July, 17 2020:
RfP «Digitales Kampagnen Management»
«On Invitation» procedure
August 20, 2020**:**
Award to
Digital Advisory Group
Onboarding Info:
https://www.midar.swiss/help
MidarApp @ Apple Store
MidarApp
@Google Store
November 10, 2020:
GO Live
March 1st, 2021:
764 users live
July 1st, 2020:
Midar Directories
(simultaneous with FOITT org change)
October 21, 2021**:**
Pilot trial EPA
(Com to 48k fed gov staff)
December, 2021**:**
Midar Consiege
(for FedGov Hub in Zurich)
Multi disciplines, agile cross companies team, incl. Off-Shore DEVs, producing minimum one post a day, new features every 6 weeks, zero-impact changes, zero-support issues

Midar Campaign



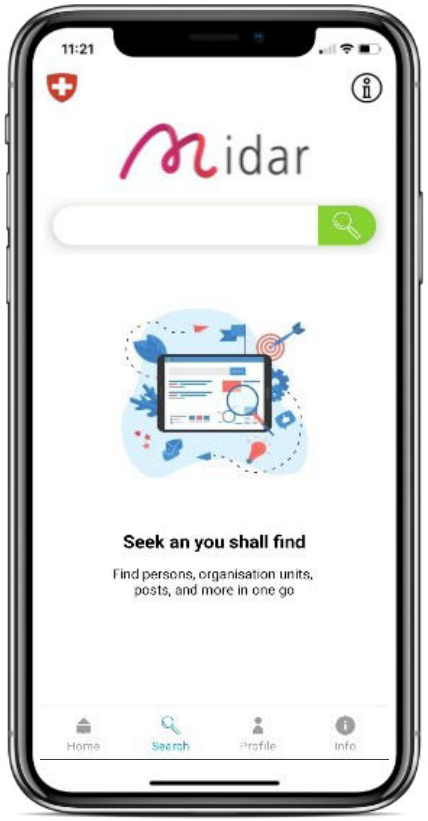
Drive cultural change with social communication

- Let employees know how meaningful and valuable their work is
- Appreciate performance of teams and individuals
- Enable employees to take a stand and make a difference

Reach out to your peer groups

- Use campaigns to reach your global target groups (e.g. individuals, teams, peer groups)
- Assess adequacy of campaigns via feedback and ratings.
- Let employees contribute with likes, dislikes, shares, comments, and content (videos, images, PDF, etc.).

Midar Directories

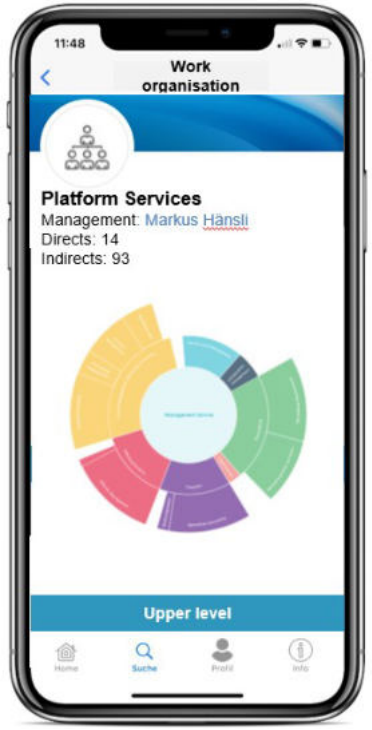


Free form, dynamic search across all data

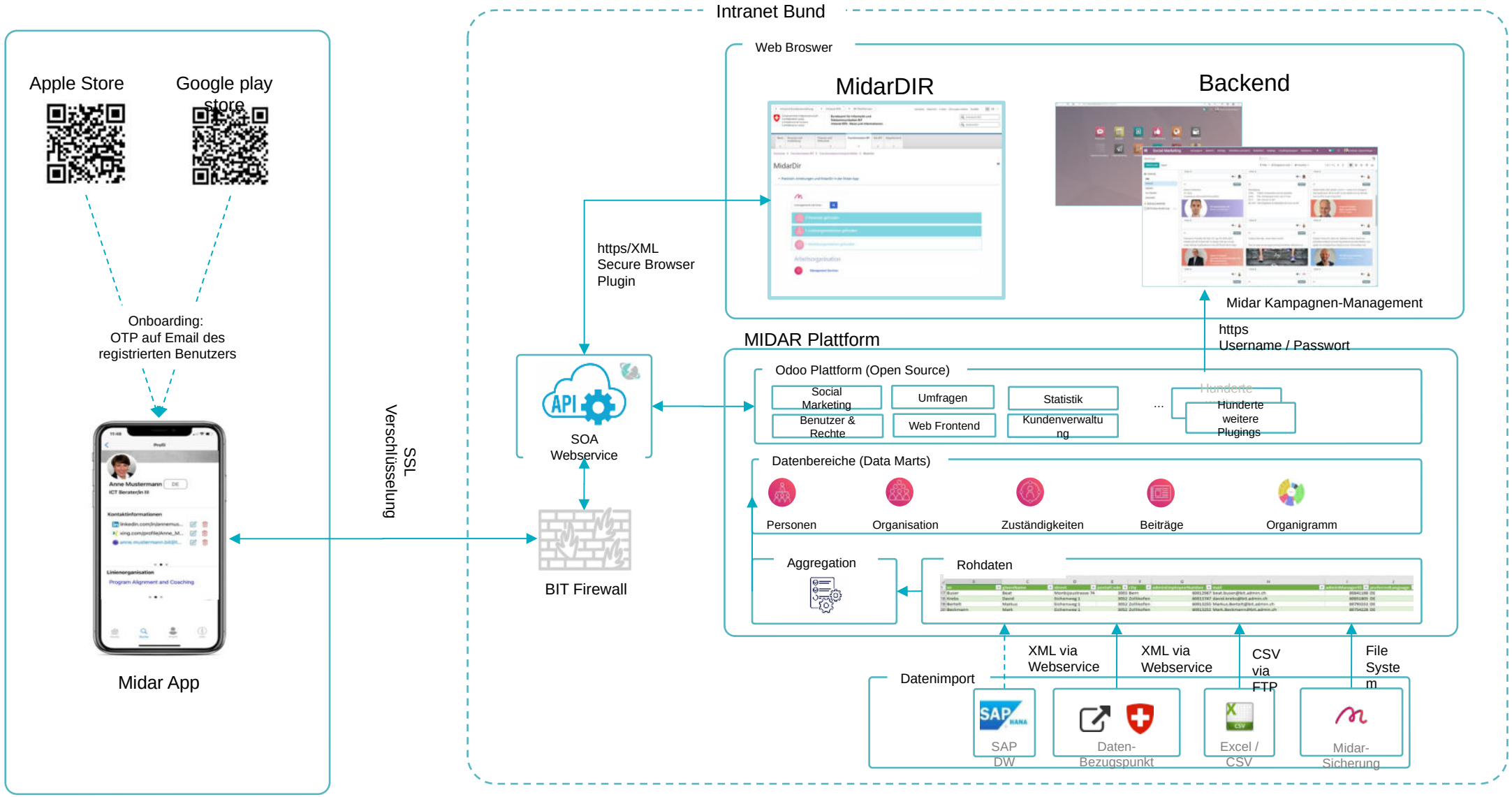
Persons | Organisational Units | Customers | Responsibilities | Content | Site Info

Organisation charts drill down

- Representation of large, complex, multidimensional organisatios in an easy-to-understand dynamic cyrcle
- Visualisation of dynamic agile project teams (Art's, trains, CoPs, etc.) – Mobile phone & Intranet
- Surf through all organisational levels up and down
- Fed by central data sources, but end user can change is data (e.g. membership in a team, contact info, etc.)
- Find a person and communicate with one click.
- consolidated ressource view in all dimensions



Architecture



OpenSource Software works us

Speed:

- Huge variety of good software solutions out there (e.g. in our case: Odoo ™). The endeavour would never have been possible with bespoke software development
- Local partner using a global eco system for components and resources

Secure and adaptive

- Deploy fast in AWS, then insource into the FOITT (Docker)
- Full DevOps chain including CI/CD (incl. stores)
- All sources in github repositories

Cost effective

- TCO3y < CHF 0.5m (there of 50% external / 50% internal cost) for a 2000 user base
- Full service package incl. support and cloud ops

Easy to work with

- Fast agile prototyping – working prototype every week
- Easy to use – main backend user are non-IT staff
- Well accepted by end users – more than 1000 active users!

Midar App – Whats next? – Midar Consierge

Virtual reception desk

- Video Call to reception in Berne
- Work space & meeting room localisation and occupation check
- Location & faculties information
- Work space reservation (via MidarApp)
- Ambient information (next train/tram, restaurant, delivery services, parking, etc.)

Outlook/Ideas:

- Virtual reality avatar
- Chat, voice controlled interface

Federal Co-Working HUB
powered by BIT @Ackermannstrasse 26, Zürich


Adfinis

Überblick neueste Open Source Cloud-Technologien und Trends

BIT Open Source Roundtable

> Our mission is to foster **Open Source technology**, deliver high-quality work, and run mission-critical systems **around the clock** so our customers can focus on their core business. By working with us, customers are **liberated from vendor lock-in** and are one step ahead of their competition.

Adfinis Mission Statement

Über Adfinis


Open & Inner Source Mindset
Clients can focus on their core business
Motivated Team
Partnerships
Cloud Native,
Classic IT & Development
24 / 7 / 365 Support
Switzerland,
Netherlands & Australia

OSS Trends

Trends im Open Source Ökosystem

Security als integraler Bestandteil

- Shift Left, DevSecOps und Zero Trust
- Compliance (ISO 27k1, ISAE 3402, NIST, HIPAA, PCI DSS, ...)
- Fuzzing, SAST, DAST, IAST, ...

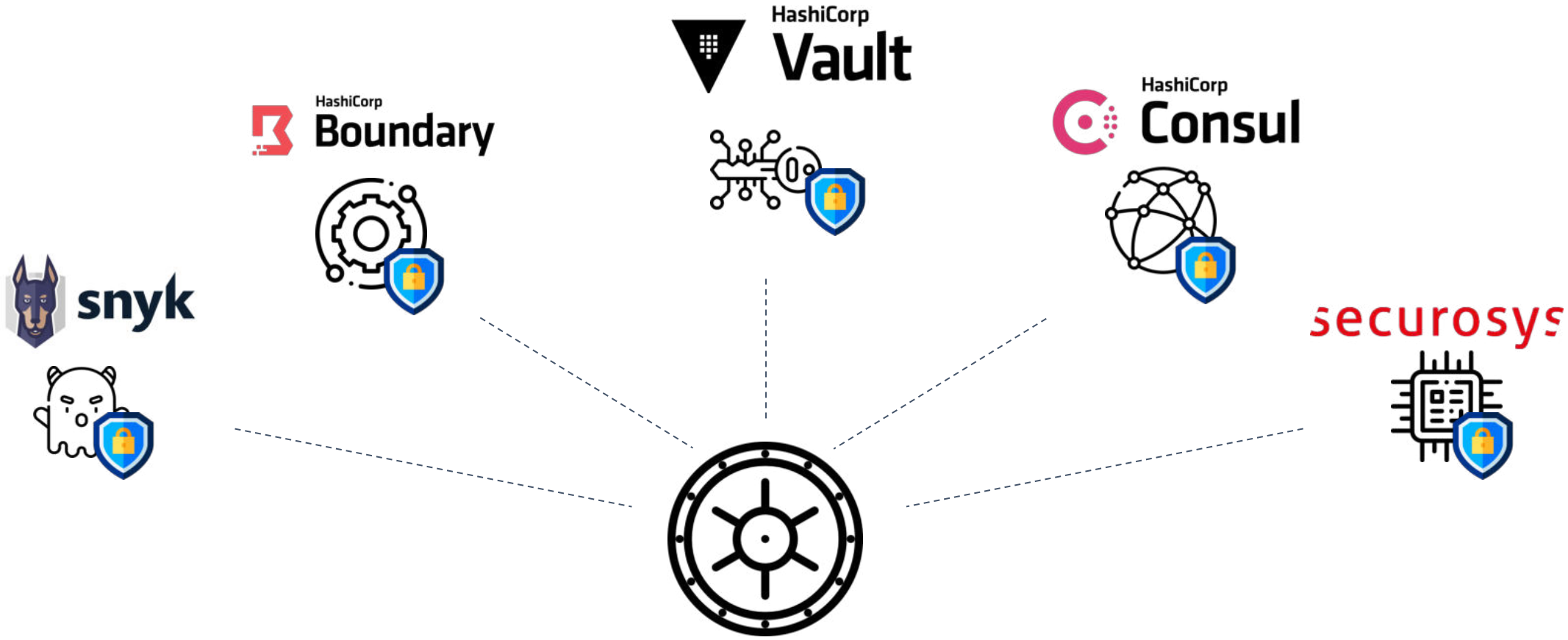
Entwickler:innen im Fokus

- Automation / Self Service
- Developer Workstation (Linux, WSL)
- Verbesserung der Time-to-Market
- Infrastructure as Code
- Container

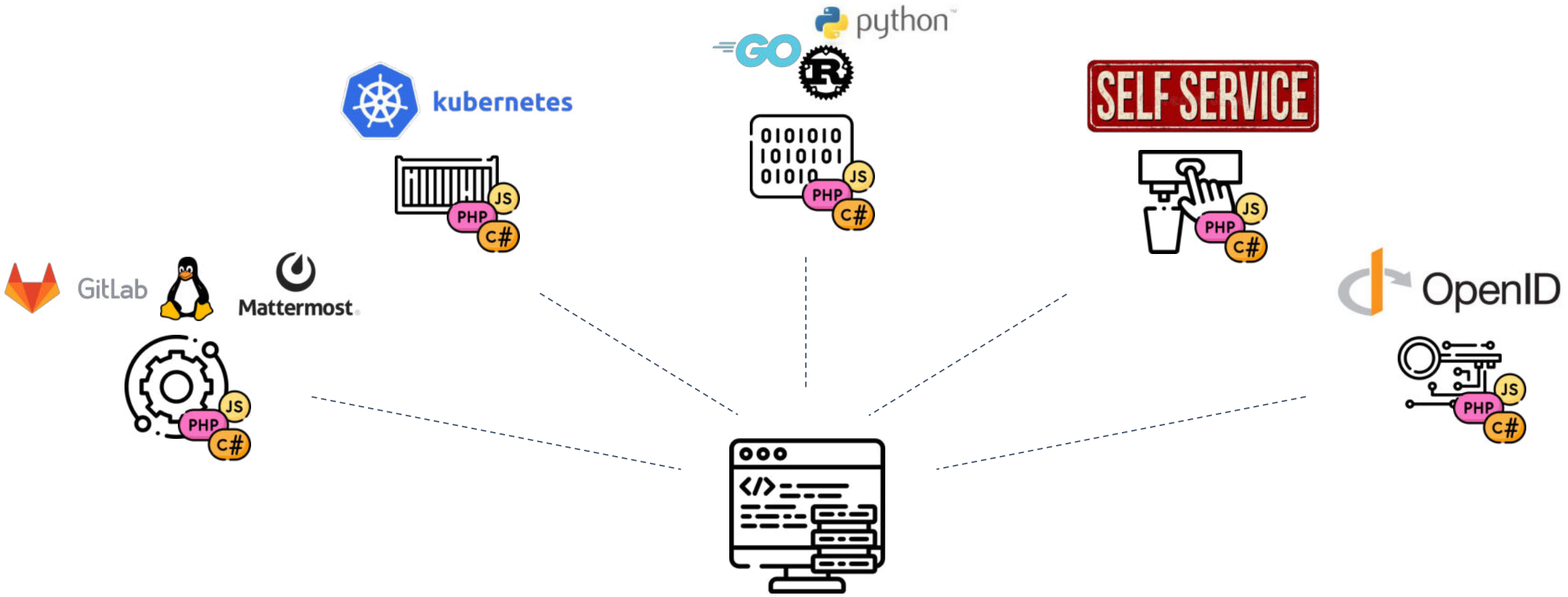
Souveränität im Aufwind

- Impact von Schrems I/II ist ein heisses Thema
- Gaia-X - Sovereign Cloud Stack
- Europäische Anbieter werden sichtbarer (z.B. Exoscale)

Trends Security


HashiCorp
Vault
HashiCorp
Boundary
HashiCorp
Consul
snyk
securosys
Sicherheit, Datenschutz
und Compliance

Trends Development



Agilität und Dev-Fokus

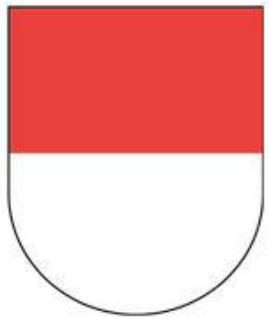
Trends Datenhaltung

Souveränität

One More Thing ;)

Behörden Produzieren OSS - zusammen!

- Adfinis hat mit **Caluma** (caluma.io) ein Werkzeug für die Digitalisierung von **Formularprozessen** geschaffen
- Einsatz in verschiedenen Kantonen z.B. für eBau
- Kantone haben **Inosca Community** (inosca.ch) geschaffen, um die Lösung gemeinsam und als OSS voranzutreiben!
- Vorbild für andere Lösungen der öffentlichen Hand?!



Solothurn

Uri

Bern

Schwyz

Was ist inosca?

inosca (in= Innovation, os= Open-Source, ca= Kanton) ist der Zusammenschluss der Kantone Uri, Schwyz, Solothurn und Bern. Gemeinsam verfolgen wir das Ziel durch technische Innovation mittels Open-Source elektronische Bewilligungsprozesse auf interkantonaler Ebene zu vereinheitlichen. In den Mitgliedskantonen werden Baugesuchsverfahren über inosca seit mehreren Jahren erfolgreich abgewickelt.

inosca kann für verschiedenste Arten von Bewilligungsverfahren und auch als Geschäftskontrolle eingesetzt werden.

WERDE TEIL VON INOSCA

Spareffekt von 3,2 Mio. erhofft

Einreichung von Berner Baugesuchen nur noch elektronisch

Seit 2019 möglich, ab 1. März 2022 obligatorisch: Im Kanton Bern können Baugesuche nur noch über den elektronischen Weg eingereicht werden.

Stay in Touch

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info@adfinis.com

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camptocamp

INNOVATIVE SOLUTIONS
BY OPEN SOURCE EXPERTS

The Hare and the Tortoise

Open Source, Standards & Technical Debt

Raphaël Pinson

Open Source Roundtables beim BIT — 04.11.2021

Who I am

Raphaël Pinson

- Cloud Native Technology Evangelist
- Infrastructure as Code
- DevOps

Puppet / Terraform / Docker / Kubernetes

Camptocamp

The Open Source IT Company

Geospatial Solutions

When location matters, we help our customers solve their most important challenges.

Business Management Software (Odoo)

When efficiency matters, we help our customers to digitize and optimize their processes.

Infrastructure Solutions & Services

When automation matters, we help our customers to improve their IT infrastructure.

Camptocamp

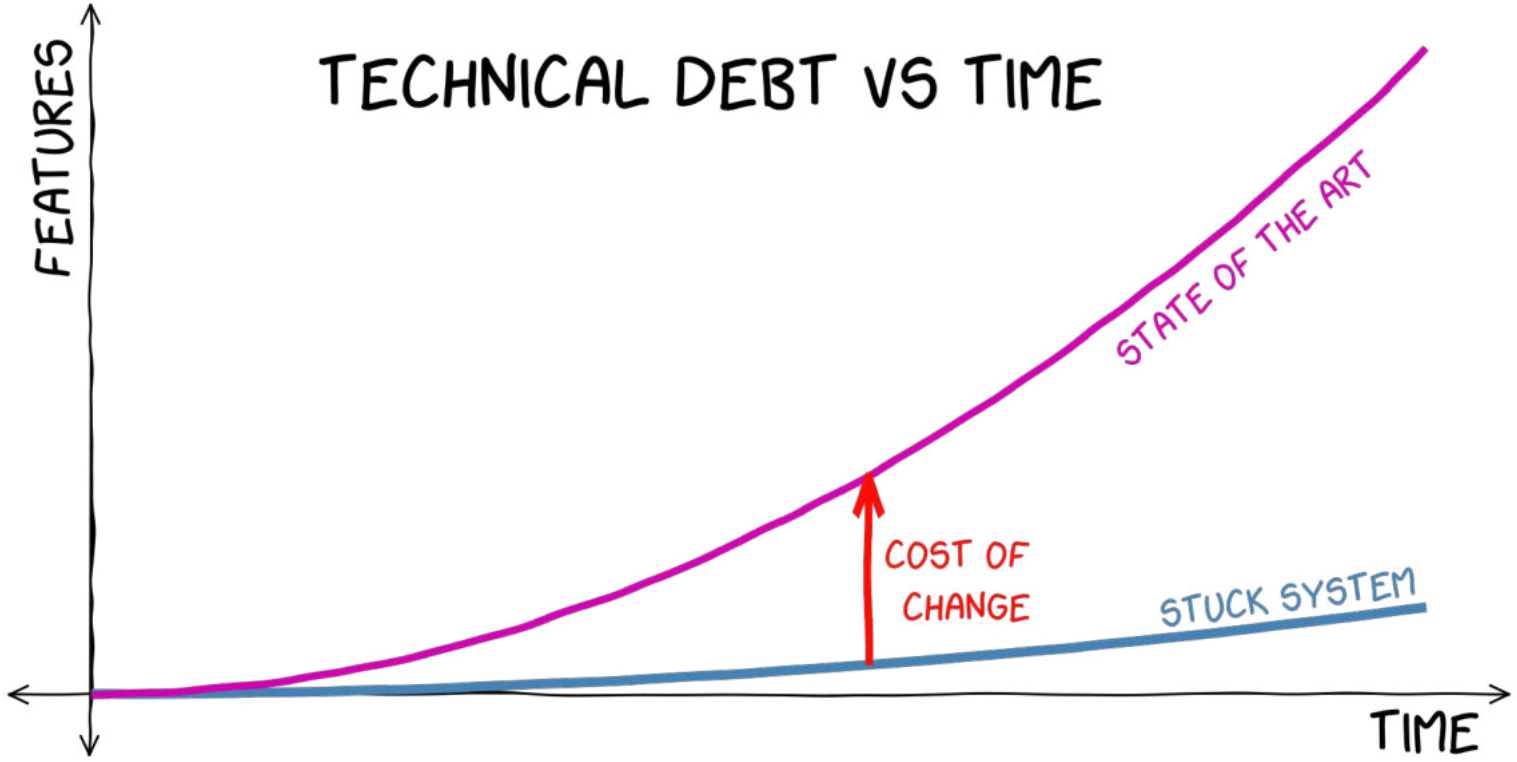
- 5 offices in 3 countries
- 130+ collaborators
- One of Switzerland’s best employers

GREAT PLACE TO WORK®

Technical Debt

- Can go unnoticed for a long time
- You might only realize it when it's time to pay

Time to Pay!


TECHNICAL DEBT VS TIME
FEATURES
TIME
STATE OF THE ART
STUCK SYSTEM
COST OF
CHANGE

Standards

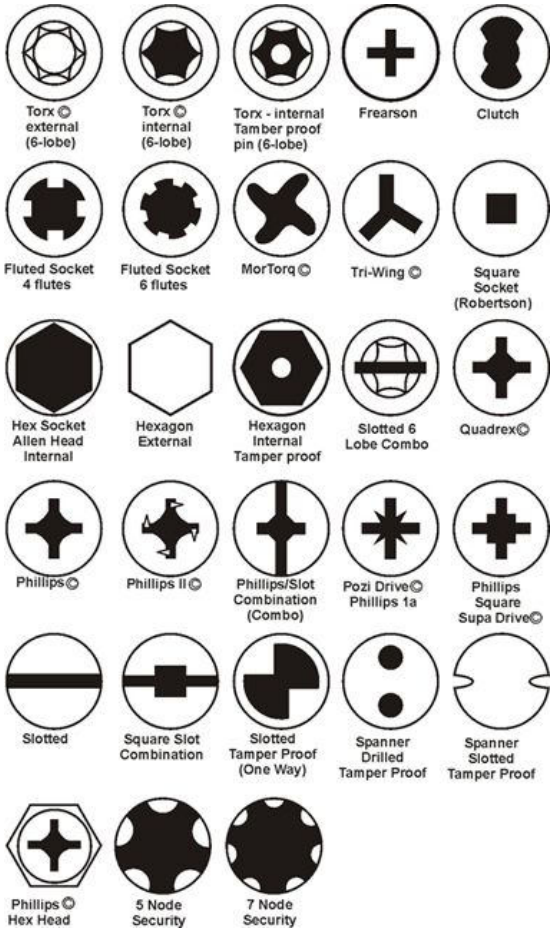
- Not Invented Here Syndrome
- Lagging behind standards

- Examples:
  - Rancher 1.6 vs Let's Encrypt Root Cert
  - Puppet modules: private vs public

Open Source & Standards

- Follow vs Influence
- Avoid NIH by setting industry standards

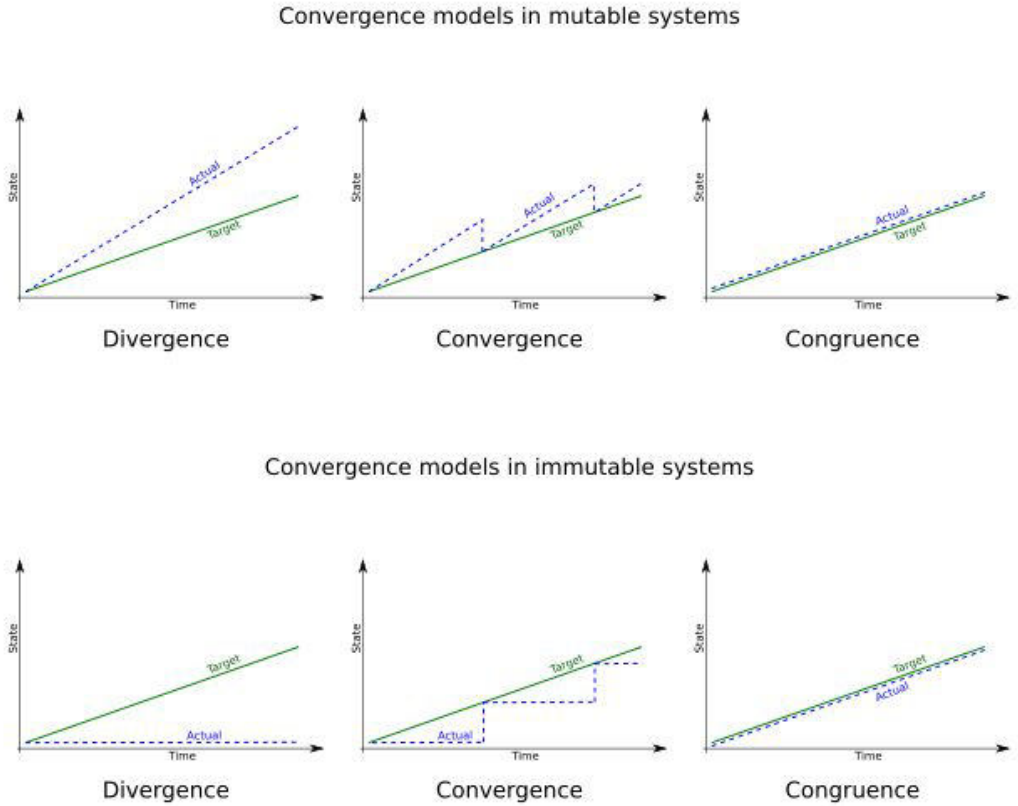
https://www.camptocamp.com/en/news-events/open-source-standards-and-technical-debt



Coupling

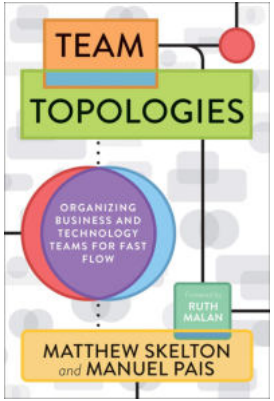
- The Mammoth & the Turtle
- Immutability encourages loose coupling

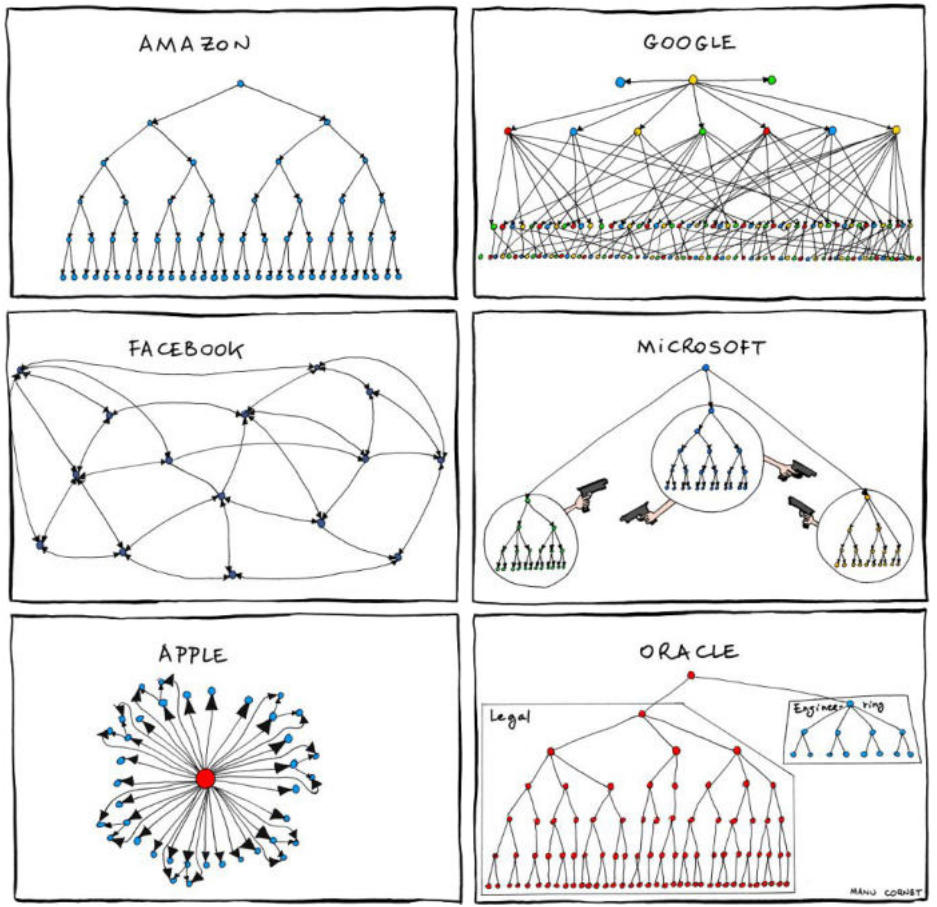
https://www.camptocamp.com/en/news-events/immutability-and-loose-coupling-a-match-made-in-heaven



Team Topologies

- Conway's Law
- Code debt/ownership
- Debt dilution





The more Haste, the worst Speed

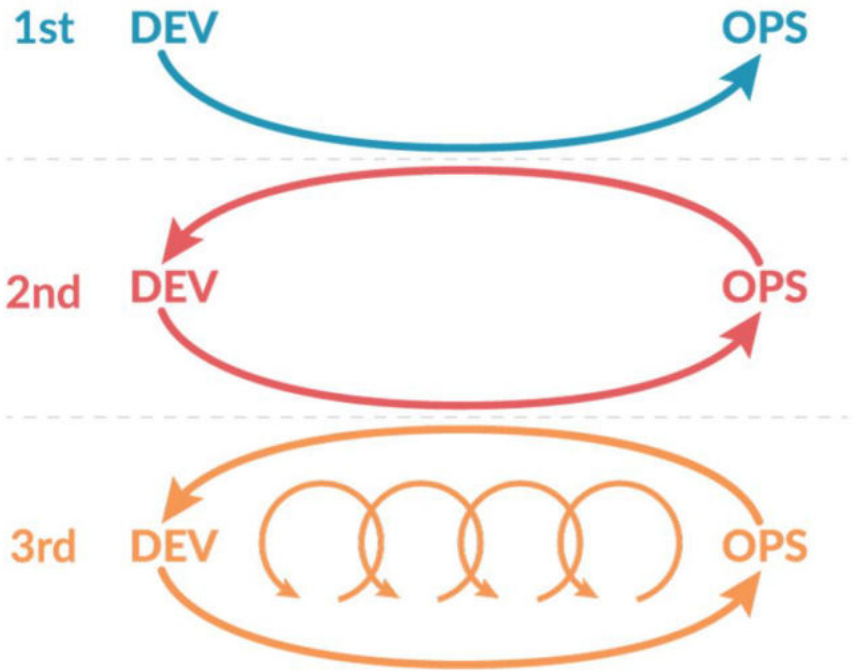
vs

Public Cloud

- Delegation of Technical Debt
- One way of reduce debt
  (at least its ownership)
- ⚠️ Strong dependence on
  Cloud APIs/features
  - local optimum
  - global debt

Three Ways of DevOps

- Flow/Systems Thinking
- Amplify Feedback Loops
- Culture of Continual Experimentation & Learning



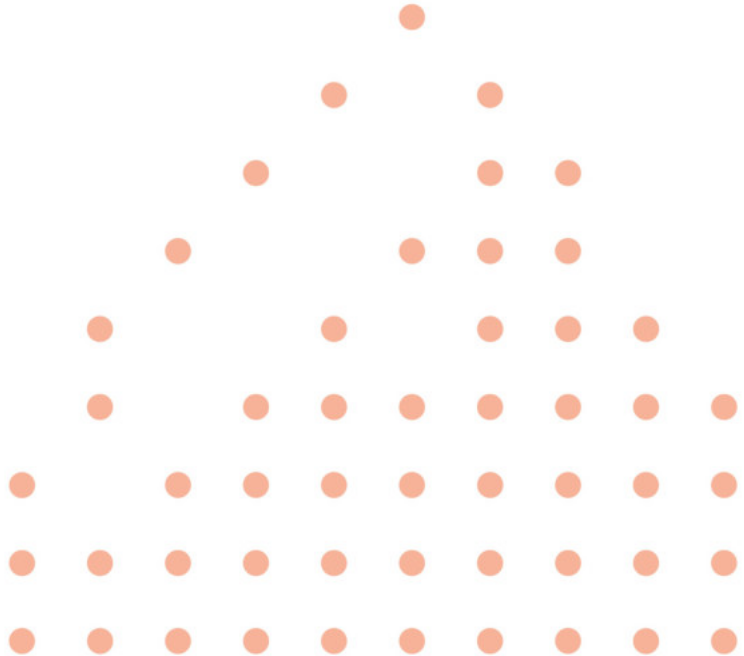
It's not the speed that matters,

it's the direction.

camptocamp

INNOVATIVE SOLUTIONS
BY OPEN SOURCE EXPERTS

Merci



Microservice Architectures with Kubernetes and PaaS

Adrian Kosmaczewski, Developer Relations

- Pronounced 'vɪʒn – like "vision"
- *The DevOps Company*
- Switzerland’s leading DevOps, Docker & Kubernetes partner
- Founded 2014, 46 VSHNeers located in Zürich
- 24/7 support
- ISO 27001 certified & ISAE 3402 Report Type 1 verified
- First Swiss Kubernetes Certified Service Provider


GitLab
RANCHER


EXOSCALE
cloudscale.ch


Google


Red Hat
OPENSHIFT


Microsoft
Azure

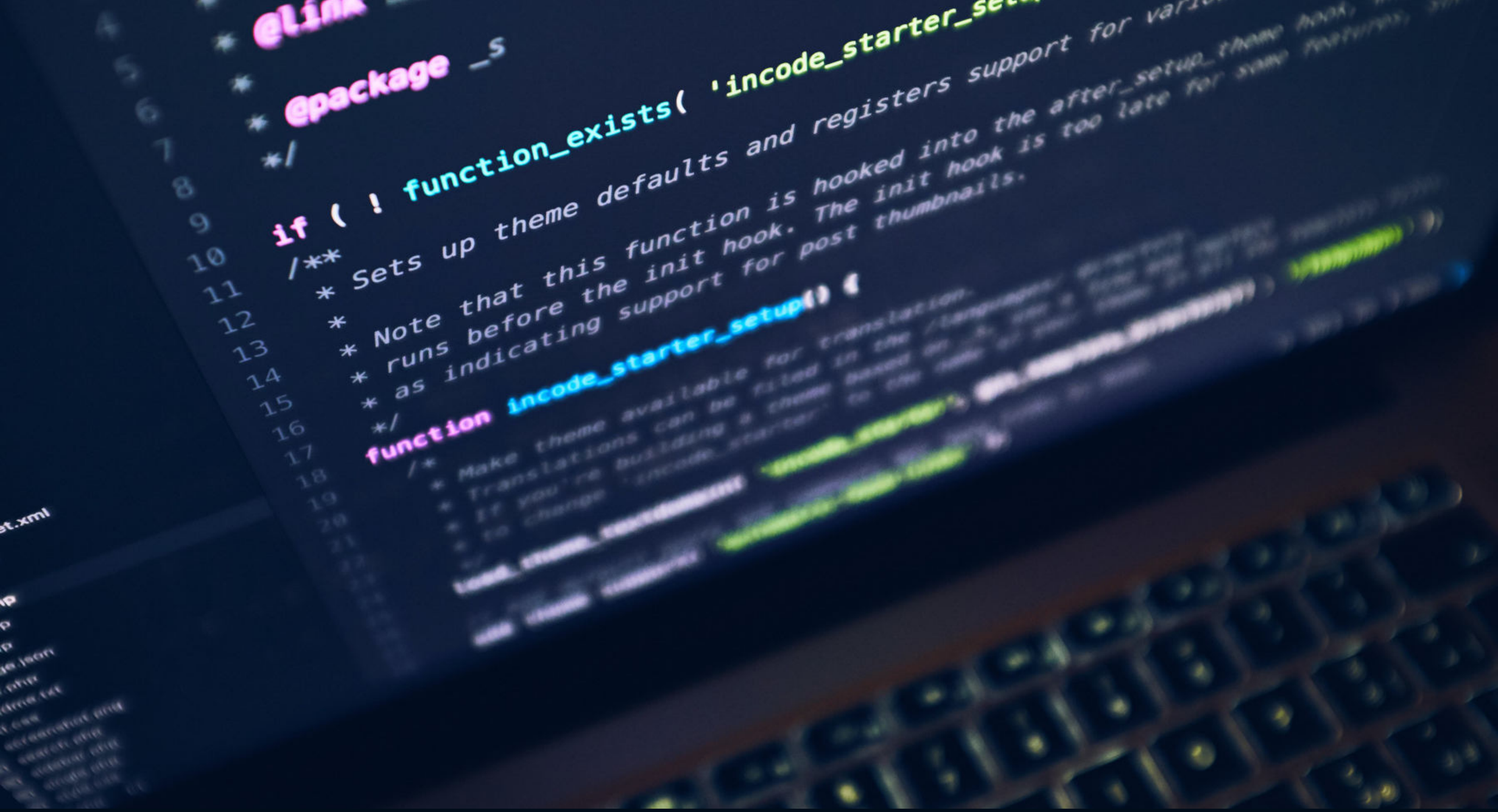

Crossplane
docker
NGINX
Part of F5


APPUiO
SWISS CONTAINER PLATFORM

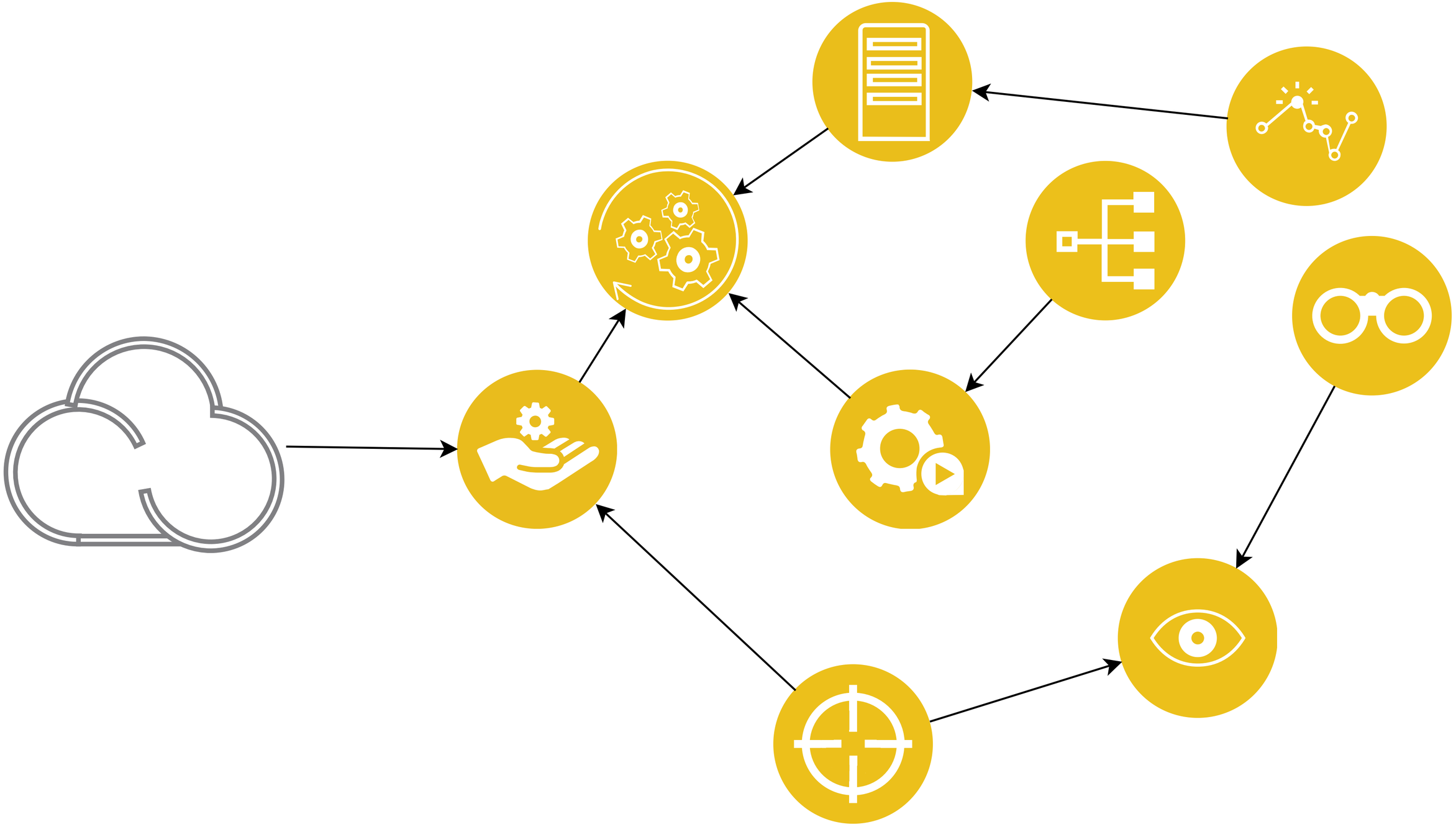

Project Syn

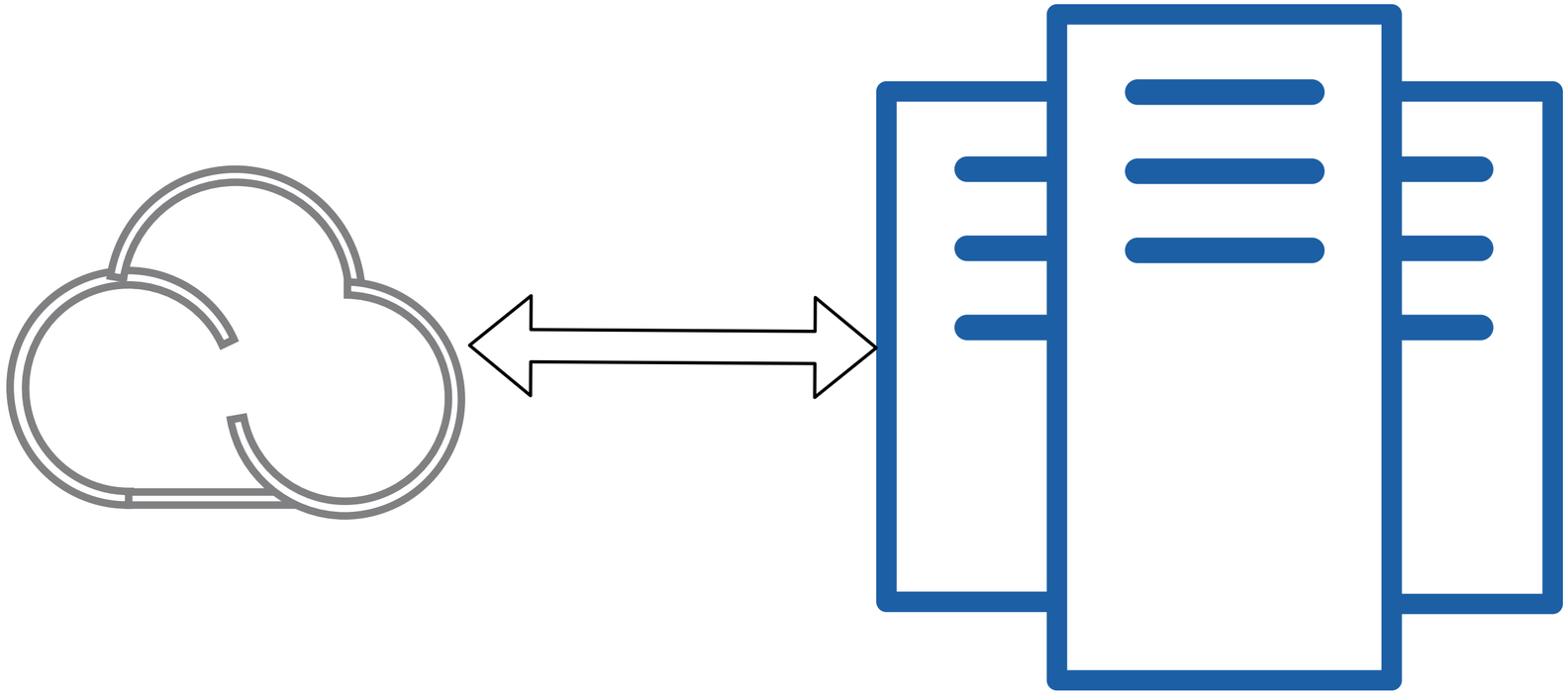

k8up

Microservice Architectures


@link
@package _s
*/
if (! function_exists('incode_starter_setup')) :
/**
* Sets up theme defaults and registers support for various
*
* Note that this function is hooked into the after_setup_theme hook, which
* runs before the init hook. The init hook is too late for some features, such
* as indicating support for post thumbnails.
*/
function incode_starter_setup() {
/*
* Make theme available for translation.
* Translations can be filed in the /languages/ directory.
* If you're building a theme based on _s, use a find and replace
* to change 'incode_starter' to the name of your theme in all the template files.

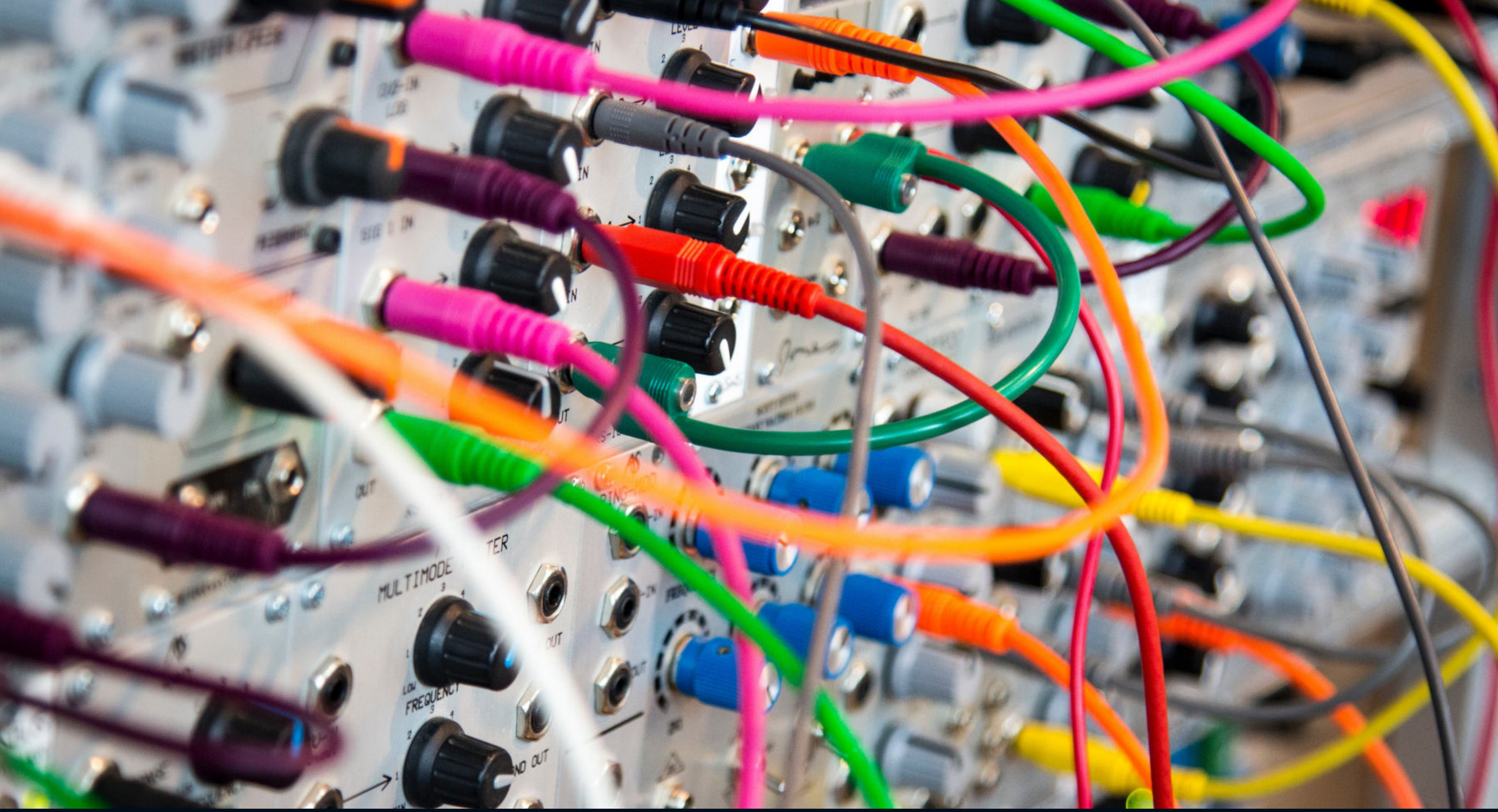
Definition

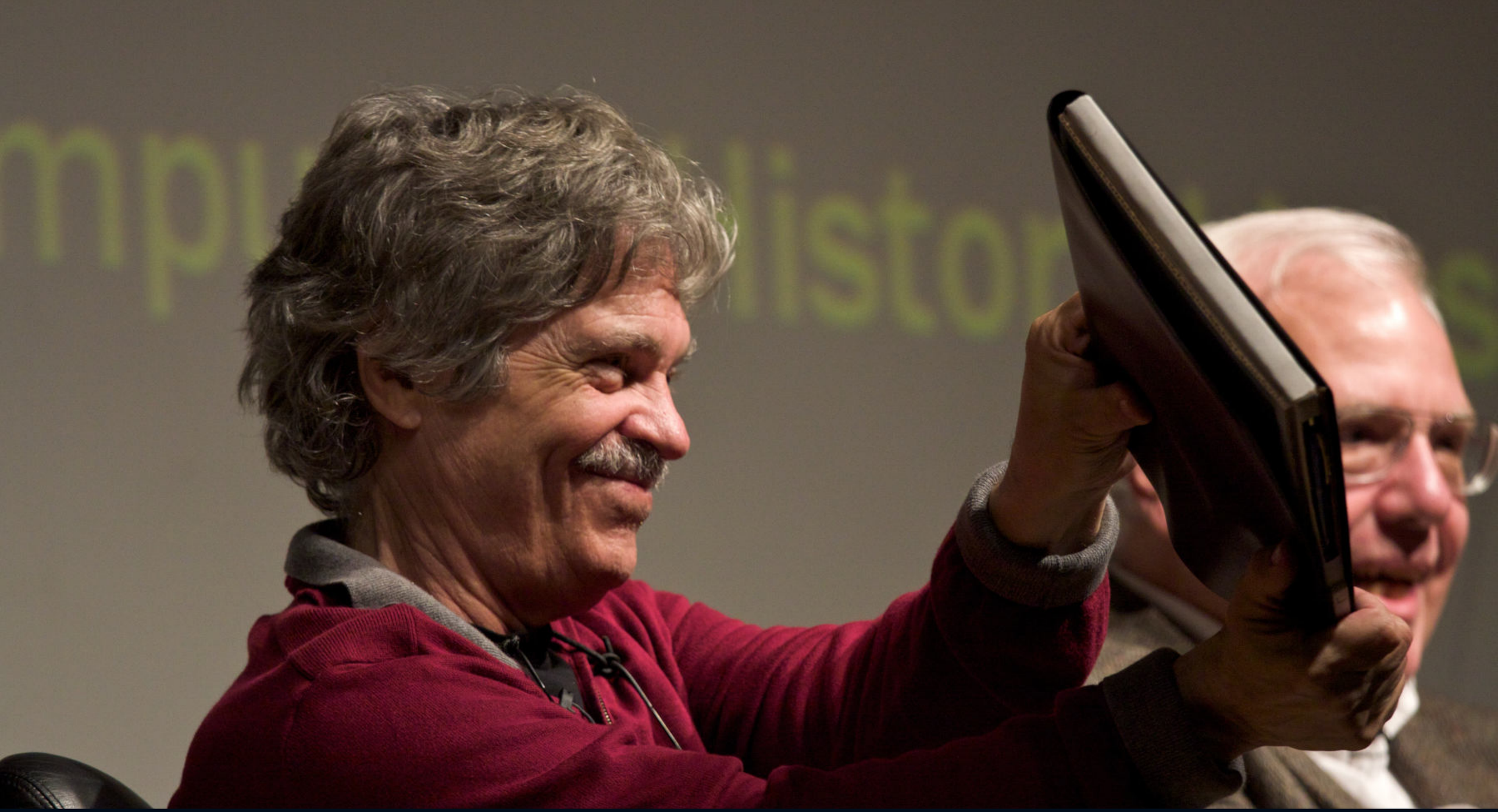




Microservices Features

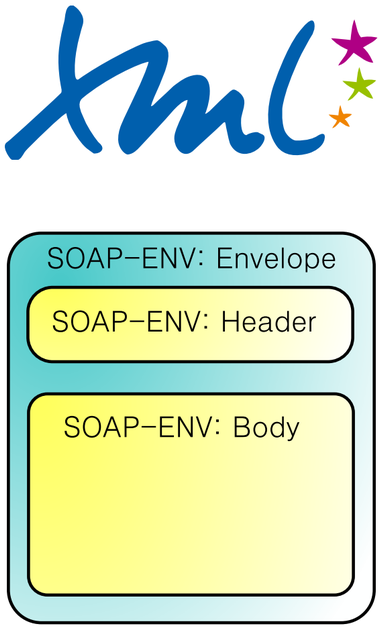
- Own implementation & data
- Single purpose
- Strong cohesion
- "Share nothing" architecture
- Small, lightweight, and fast


MULTIMODE
FREQUENCY
OUT



OOP to me means only messaging, local retention and protection and hiding of state-process, and extreme late-binding of all things.

Source: www.purl.org/stefan_ram/pub/doc_kay_oop_en



REST

CLOUD NATIVE
COMPUTING FOUNDATION

Pros

- Parallel development
- Best tool for each service
- More efficient system
- High availability
- Progressive update

Cons

- Performance
- Required experience
- Cost
- Feasibility
- **Team structure**
- **Complexity**

1. Conway's Law

HOW DO COMMITTEES INVENT?

by MELVIN E. CONWAY

That kind of intellectual activity which creates a useful whole from its diverse parts may be called the *design* of a *system*. Whether the particular activity is the creation of specifications for a major weapon system, the formation of a recommendation to meet a social challenge, or the programming of a computer, the general activity is largely the same.

Typically, the objective of a design organization is the creation and assembly of a document containing a coherently structured body of information. We may name this information the *system design*. It is typically produced for a sponsor who usually desires to carry out some activity guided by the system design. For example, a public official may wish to propose legislation to avert a recurrence of a recent disaster, so he appoints a team to explain the catastrophe. Or a manufacturer needs a new product and designates a product planning activity to specify what should be introduced.

The design organization may or may not be involved in the construction of the system it designs. Frequently, in public affairs, there are policies which discourage a group's acting upon its own recommendations, whereas, in private industry, quite the opposite situation often prevails.

It seems reasonable to suppose that the knowledge that one will have to carry out one's own recommendations or that this task will fall to others, probably affects some design choices which the individual designer is called upon to make. Most design activity requires continually making choices. Many of these choices may be more than design decisions; they may also be personal decisions the designer makes about his own future. As we shall see later, the incentives which exist in a conventional management environment can motivate choices which subvert the intent of the sponsor.[1]

stages of design

The initial stages of a design effort are concerned more with structuring of the design activity than with the system itself.[2] The full-blown design activity cannot proceed until certain preliminary milestones are passed. These include:

1. Understanding of the boundaries, both on the design activity and on the system to be designed, placed by the sponsor and by the world's realities.
2. Achievement of a preliminary notion of the system's organization so that design task groups can be meaningfully assigned.

We shall see in detail later that the very act of organizing a design team means that certain design decisions have already been made, explicitly or otherwise. Given any design team organization, there is a class of design alternatives which cannot be effectively pursued by such an organization because the necessary communication paths do not exist. Therefore, there is no such thing as a design group which is both organized and unbiased.

Once the organization of the design team is chosen, it is possible to delegate activities to the subgroups of the organization. Every time a delegation is made and somebody's scope of inquiry is narrowed, the class of design alternatives which can be effectively pursued is also narrowed.

Once scopes of activity are defined, a coordination problem is created. Coordination among task groups, although it appears to lower the productivity of the individual in the small group, provides the only possibility that the separate task groups will be able to consolidate their efforts into a unified system design.

Thus the life cycle of a system design effort proceeds through the following general stages:

1. Drawing of boundaries according to the ground rules.
2. Choice of a preliminary system concept.
3. Organization of the design activity and delegation of tasks according to that concept.
4. Coordination among delegated tasks.
5. Consolidation of subdesigns into a single design.

It is possible that a given design activity will not proceed straight through this list. It might conceivably reorganize upon discovery of a new, and obviously superior, design concept; but such an appearance of uncertainty is unflattering, and the very act of voluntarily abandoning a creation is painful and expensive. Of course, from the

[1] A related, but much more comprehensive discussion of the behavior of system-designing organizations is found in John Kenneth Galbraith's, *The New Industrial State* (Boston, Houghton Mifflin, 1967). See especially Chapter VI, "The Technostructure."

[2] For a discussion of the problems which may arise when the design activity takes the form of a project in a functional environment, see C. J. Middleton, "How to Set Up a Project Organization," *Harvard Business Review*, March-April, 1967, p. 73.

Dr. Conway is manager, peripheral systems research, at Sperry Rand's Univac Div., where he is working on recognition of continuous speech. He has previously been a research associate at Case Western Reserve Univ., and a software consultant. He has an MS in physics from CalTech and a PhD in math from Case.

The basic thesis of this article is that organizations which design systems (...) are constrained to produce designs which are copies of the communication structures of these organizations.

Source: www.melconway.com/Home/Committees_Paper.html

VSHNinternal

Reverse Engineering Conway's Law

15. Jan 2021

The lecture of Jacob Kaplan-Moss' blog post, "Designing Engineering Organizations" triggered quite a few interesting conversations internally, and I would like to expose in a few lines our opinion about the subjects discussed therein. (If you haven't read this article, please do, we'll wait for you here.)

In a nutshell, and basing his reasoning on top of Conway's Law, Jacob (former director of security at Heroku, and creator of the Django web framework) explains in detail a very simple definition for effective teams:

Summary: the most effective teams are stable, multi-disciplinary, aligned to product delivery.

Fifty years after Melvin Conway coined it, Conway's Law is being "rediscovered" once again by teams all over the world. The rise of DevOps and in particular microservice architectures have been (in some cases, painful) demonstrations of its reality and its applicability.

2. Complex vs. Complicated

Complex

complexus

plectere ⇒ to intertwine

Complicated

complicare

plicare ⇒ to fold

Complex

Microservices architecture

Complicated

Monoliths

Best Practices

Complicated ⇒ Complex

Migrate or Rewrite?

7 Tips

1. No need to migrate all
2. Identify components correctly
3. Network bandwidth is not infinite!
4. Reduce inter-service communication
5. Testing strategy
6. Standardize around containers
7. Automate all the things!

DevOps Workshop

DevOps workshop & situation analysis

Would you like to find out whether there is still room for improvement in your application architecture? You want to get a second opinion from the expert?

Book our DevOps workshop and let's do an analysis of your application architecture together.

Details:

- half a day (4h) evaluation and analysis of your current status by a VSHNeer (DevOps Engineer)
- including preparation and follow-up (4h) and definition of actual and target state
- the DevOps Workshop will take place at VSHN AG, Neugasse 10, 8005 Zurich,

Conclusion

Microservices:

Great benefits, but huge challenges

Reverse-engineer **Conway's Law**

Complex is better than complicated.

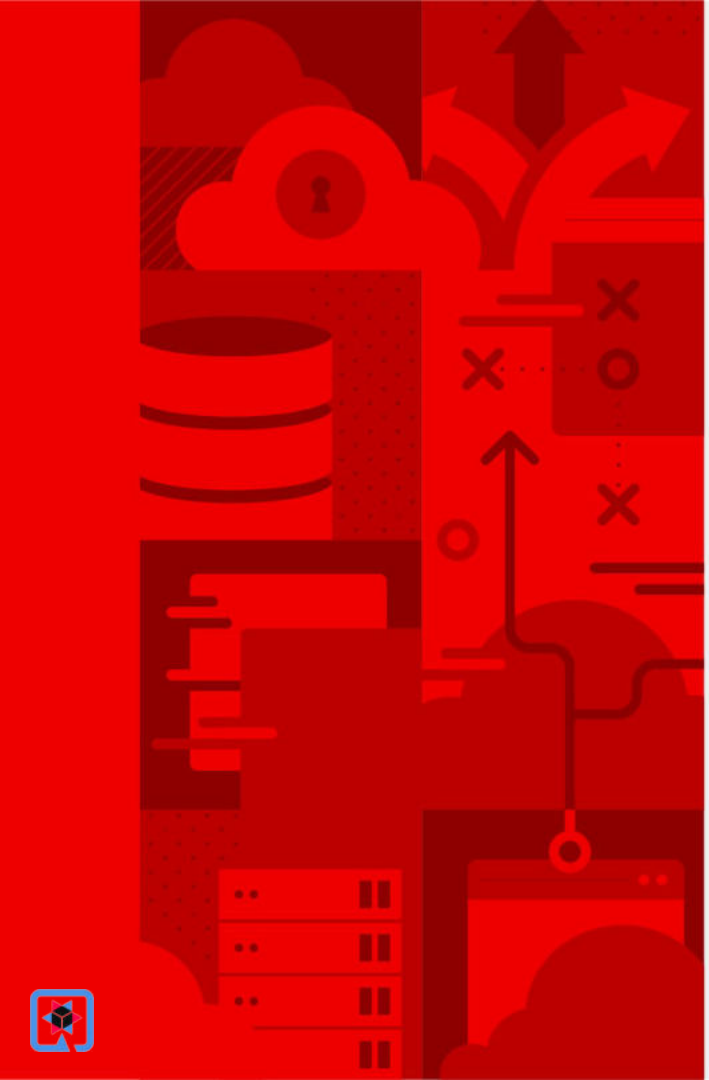
Embed structure in your activities, and remove it from your hierarchy.

Thanks!

Adrian Kosmaczewski, Developer Relations –

adrian.kosmaczewski@vshn.ch

VSHN AG – Neugasse 10 – CH-8005 Zürich – +41 44 545 53 00 – vshn.ch – info@vshn.ch



Quarkus SUPERSONIC/ SUBATOMIC/ JAVA

OpenSource RoundTable @ BIT

4.11.2021

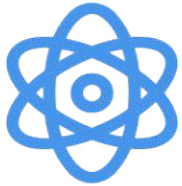
Peter Mumenthaler
Sr. Solution Architect Red Hat ALPS
pmumenth@redhat.com

Red Hat

Kubernetes-Native Java

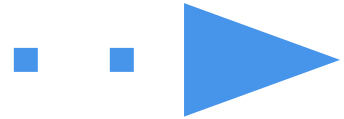
Monolith

Cloud Native



Microservices

Serverless



Event-Driven Architecture

kubernetes

Istio

Knative

Red Hat

"Historical" Enterprise Java Stack

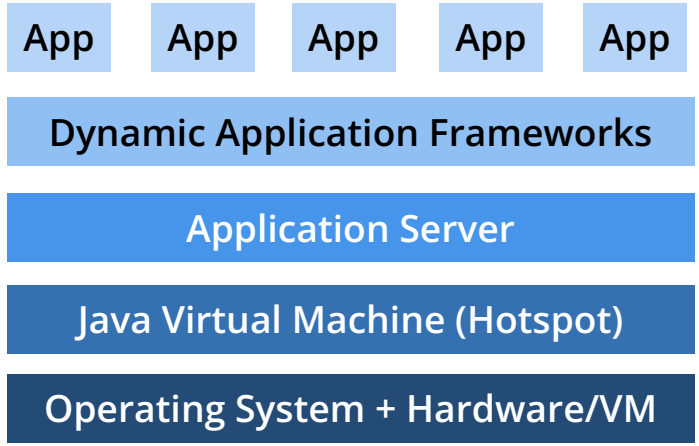
Architecture: Monoliths

Deployment: multi-app, appserver

App Lifecycle: Months

Memory: 1GB+ RAM

Startup Time: 10s of sec



Red Hat

"Modern" Enterprise Java Stack

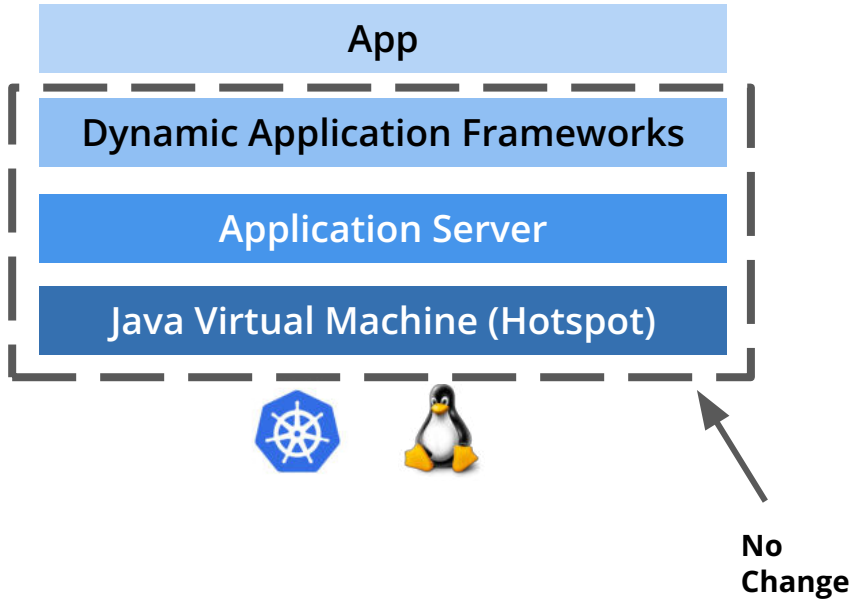
Architecture: Microservices

Deployment: Single App

App Lifecycle: Days

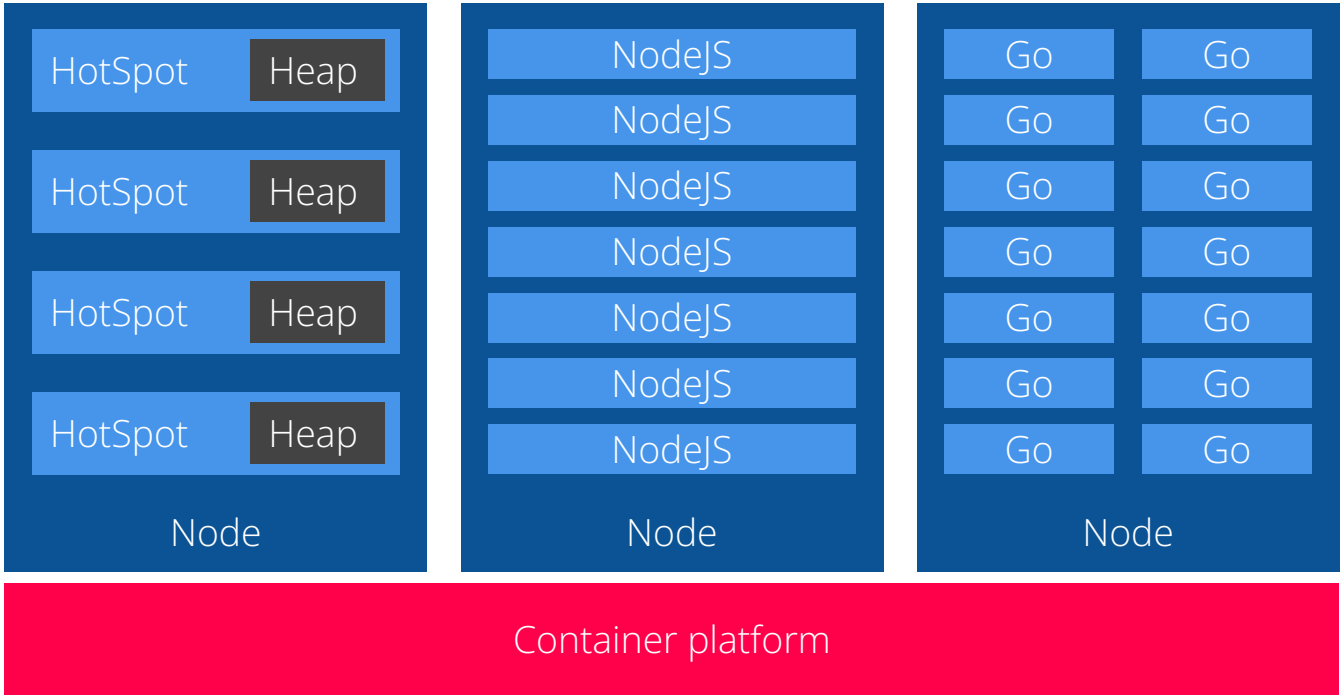
Memory: 100MBs+ RAM

Startup Time: Seconds



Red Hat

Hidden Truth About Java + Containers



Red Hat

THERE IS A NEED FOR A NEW JAVA STACK FOR CLOUD-NATIVE AND SERVERLESS

Red Hat

QUARKUS

Supersonic. Subatomic. Java.

Red Hat

WHAT IS QUARKUS?

QUARK: elementary particle / **US**: hardest thing in computer science

Red Hat

May 08, 2019 #announcement

Welcome to Quarkus!

By Emmanuel Bernard

Quarkus has received awesome community feedback. Many many thanks for your warm encouragements, your contributions, your proposals and above all your enthusiasm. This has gone beyond our wildest expectations.

Let's keep rocking! Join us on our Google group or Zulip chat.

Oh by the way, quite a few people ask us whether Quarkus was Open Source? Of course, all is on GitHub under the ASL 2.0 license.

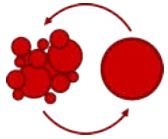
Red Hat

Open Source Culture

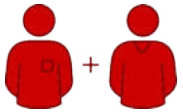
Collaboration

Transparency
(both access and the ability to act)

Infinite amount of projects, with no resource constraints and budgetary discussions



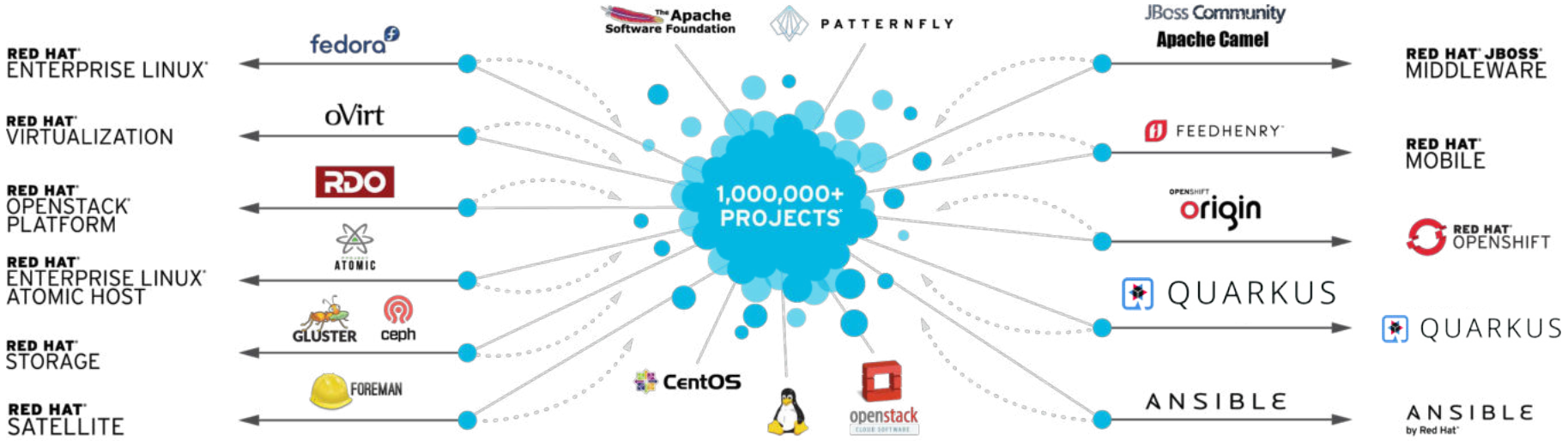
Shared problems are solved faster



Working together creates standardization

Red Hat

From Communities To Enterprise



RH0064-3

Red Hat

Experts from cloud-native Java OS projects

Eclipse Vert.x | Hibernate | RESTEasy | Eclipse MicroProfile | WildFly | Undertow | OpenJDK

QUARKUS

Red Hat

Differentiators

Container First

Tailors your app for HotSpot & GraalVM

Fast boot time and low RSS memory

Serverless fit

Developer Joy

Live coding

Unified configuration

Unifies Imperative & Reactive

Combines blocking and non-blocking

Built-in event bus

Best of Breed Libraries & Standards

90+ extensions

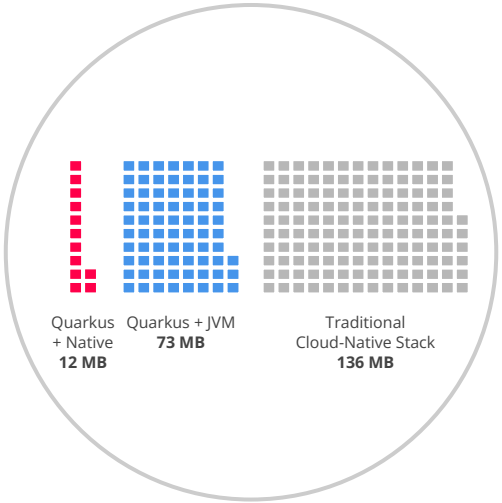
“Powered by Quarkus” applications

Red Hat

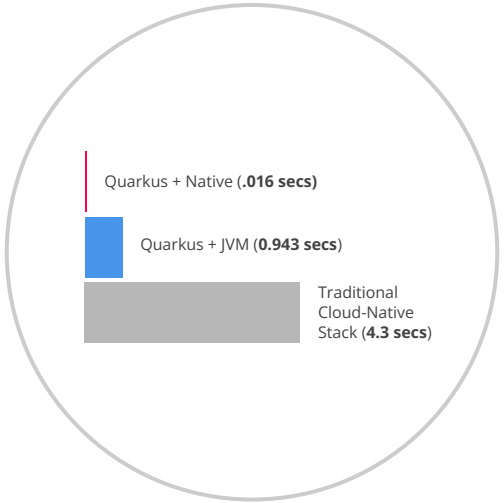
Benefit No. 1: Container First

*"We went from **1-min** startup times to **400 milliseconds**"*

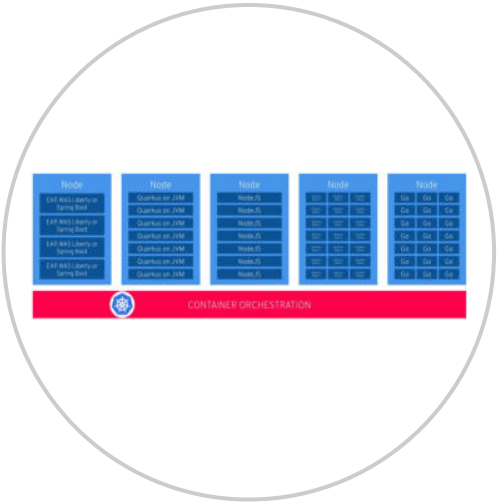
Reduced Memory Footprint



Fast Startup Time



Smaller Disk Footprint



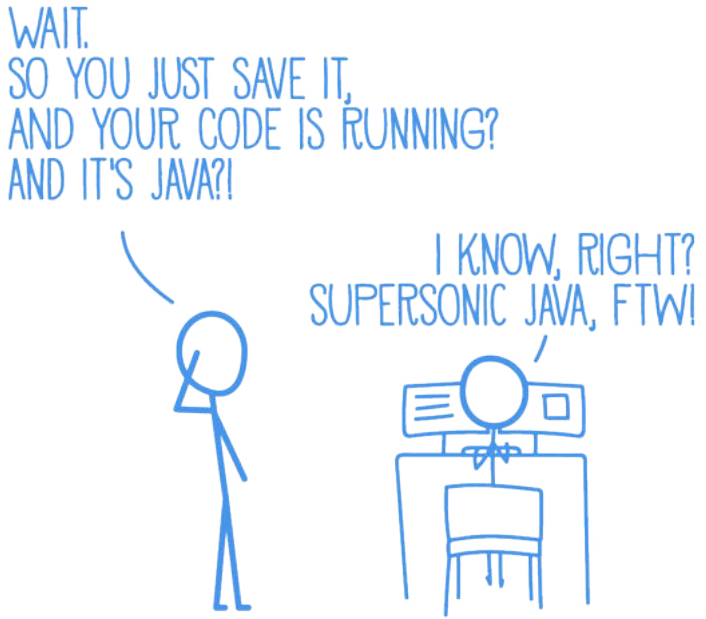
Red Hat

Benefit No. 2: Developer Joy

*"Our developers used to wait **2 to 3 mins** to see their changes. **Live coding** does away with this."*

A cohesive platform for optimized developer joy:

- Based on standards and more
- Unified configuration
- Live coding
- Streamlined code for the 80% common usages, flexible for the 20%
- No hassle native executable generation



Red Hat

Benefit No. 3: Unifies Imperative and Reactive

```
@Inject
SayService say;

@GET
@Produces(MediaType.TEXT_PLAIN)
public String hello() {
      return say.hello();
}
```

```
@Inject @Stream("kafka")
Publisher<String> reactiveSay;

@GET
@Produces(MediaType.SERVER_SENT_EVENTS)
public Publisher<String> stream() {
      return reactiveSay;
}
```

- Combine both Reactive and imperative development in the same application
- Inject the EventBus or the Vertx context
- Use the technology that fits your use-case
- Key for reactive systems based on event driven apps

Imperative	Reactive
A = 1 B = A + 1 C = B + 1 A = 10 Result: A = 10 B = **2** C = **3**	A = 1 B = A + 1 C = B + 1 A = 10 Result: A = 10 B = **11** C = **12**

Red Hat

Benefit No. 4: Best of Breed Frameworks & Standards

"When you adopt Quarkus, you will be productive from day one since you don't need to learn new technologies."

Eclipse Vert.x

Hibernate

RESTEasy

Apache Camel

Eclipse MicroProfile

Netty

Kubernetes

OpenShift

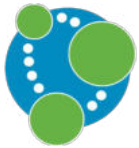
Jaeger

Prometheus

Apache Kafka

Infinispan

Flyway



Neo4j

MongoDB

MQTT

KeyCloak

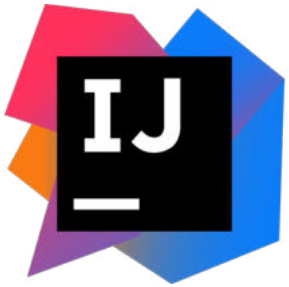
Apache Tika

Red Hat

Quarkus Tools - IDE

VSCode

Eclipse



IntelliJ

che.openshift.io

Red Hat

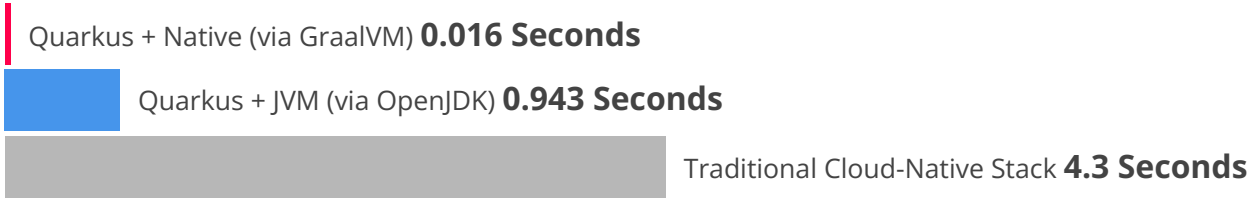
Supersonic, Subatomic

Fast.
Blazing fast to start.
Millisecond fast!

Red Hat

Supersonic, Subatomic Java

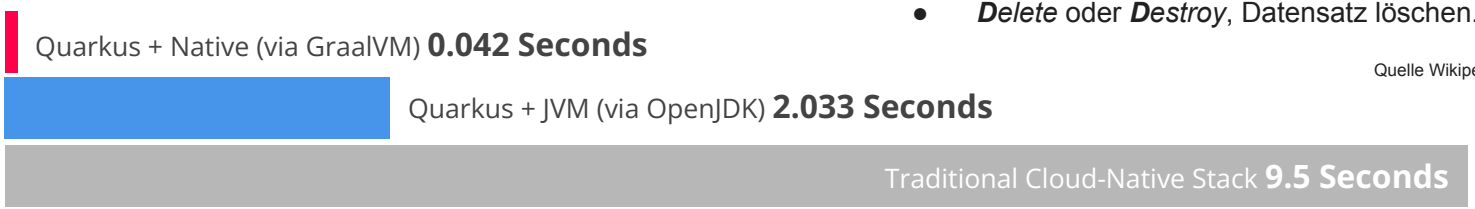
REST



REST + CRUD

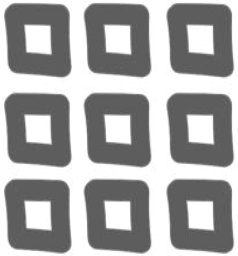
- ***C**reate*, Datensatz anlegen,
- ***R**ead* oder *Retrieve*, Datensatz lesen,
- ***U**pdate*, Datensatz aktualisieren, und
- ***D**elete* oder ***D**estroy*, Datensatz löschen.

Quelle Wikipedia



Time to first response

Red Hat



Supersonic, Subatomic

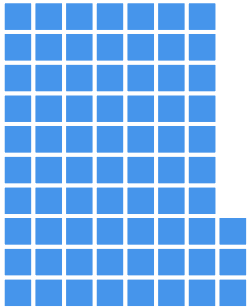
Improve memory consumption.
Increase deployment density.

Red Hat

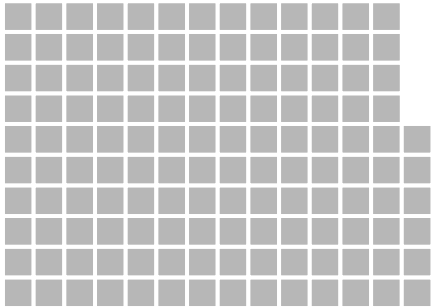
Supersonic, Subatomic Java

REST*

Quarkus + Native
(via GraalVM)
12 MB



Quarkus + JVM
(via OpenJDK)
73 MB



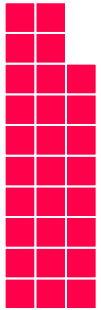
Traditional
Cloud-Native Stack
136 MB

*Memory (RSS) in Megabytes, tested on a single-core machine

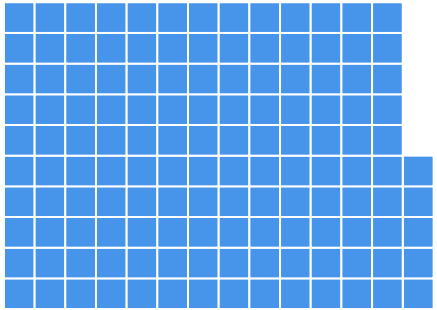
Red Hat

Supersonic, Subatomic Java

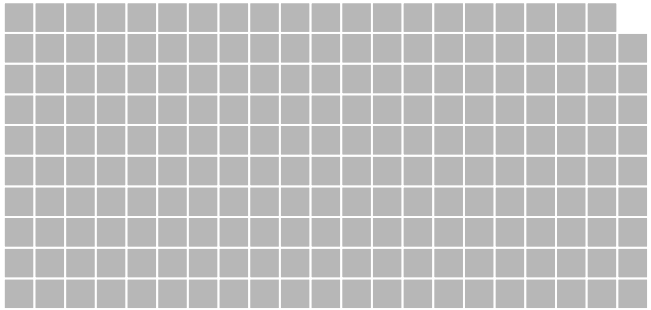
REST + CRUD*



Quarkus + Native
(via GraalVM)
28 MB



Quarkus + JVM
(via OpenJDK)
145 MB

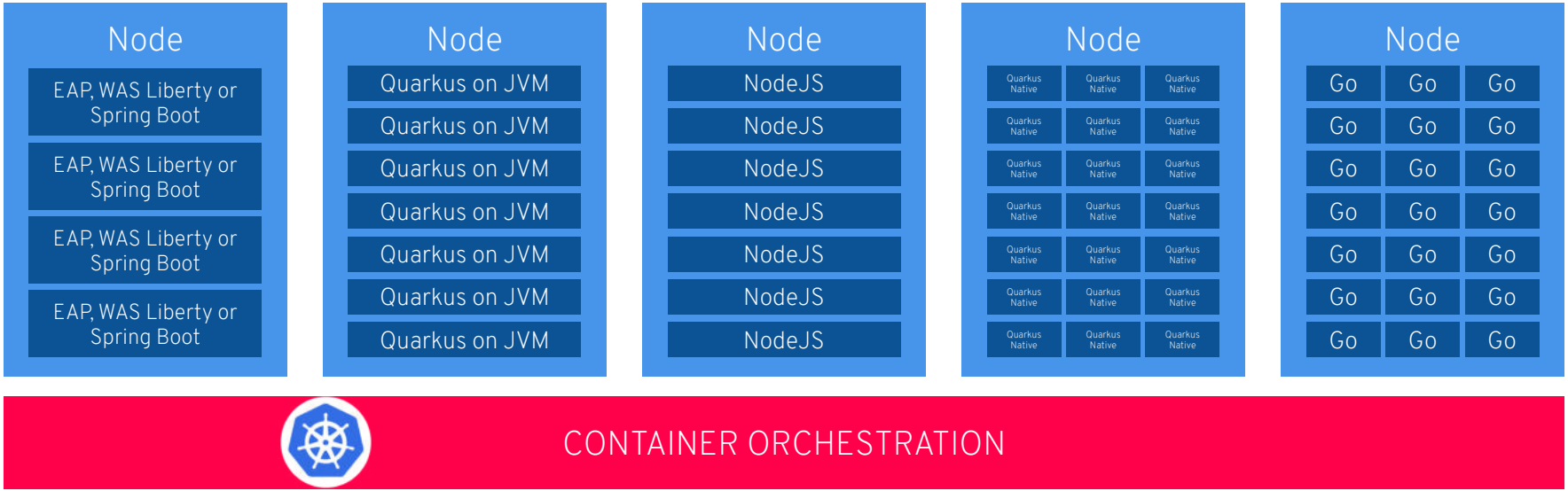


Traditional
Cloud-Native Stack
209 MB

*Memory (RSS) in Megabytes, tested on a single-core machine

Red Hat

Cloud Native Java Stack + Containers



*"We could run **3 times** denser deployments without sacrificing **availability** and **response times** of services"*

https://developers.redhat.com/blog/2017/03/14/java-inside-docker/

Red Hat

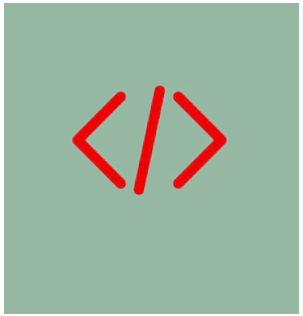
Additional Resources

CUSTOMERS

Documentation
Getting Started
Start Coding

COMMUNITY

Quarkus.io
Guides
Blogs

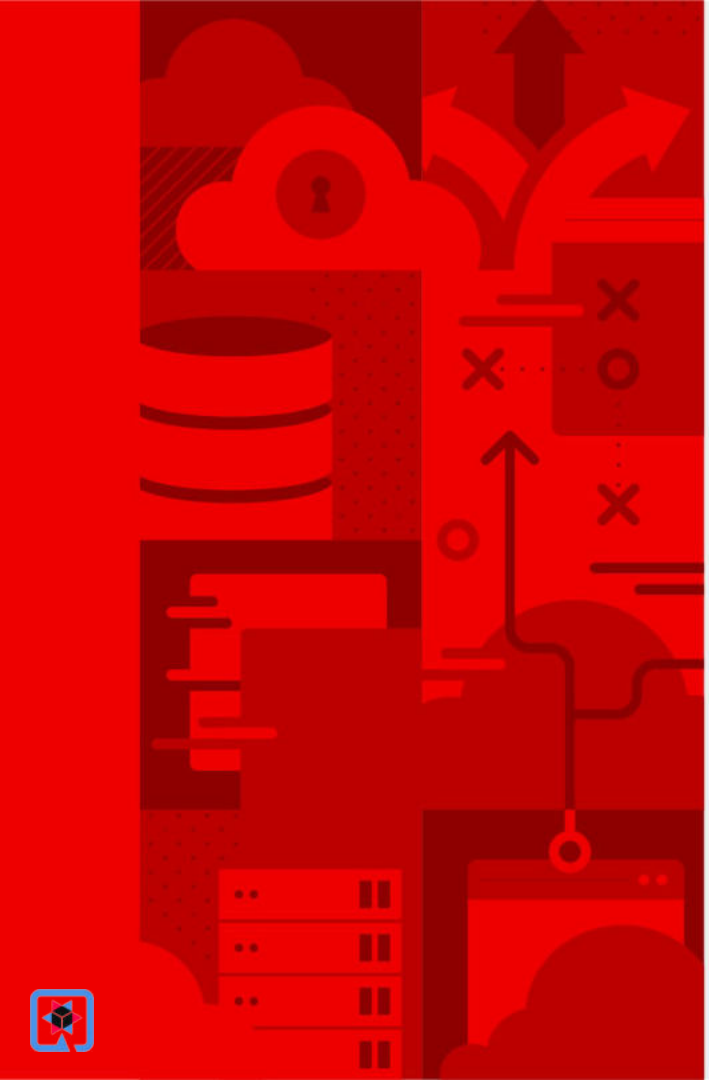


DEVELOPERS

Interactive Tutorials
Blogs & Posts

Video Series
User Stories

Tips & Tricks (QTips)



Thank You

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.

linkedin.com/company/red-hat

facebook.com/redhatinc

youtube.com/user/RedHatVideos

twitter.com/RedHat

Red Hat

OSS Roundtable BIT 2021

Leistungsfähiges Ausliefern von Daten mit starkem Aktualitätsbezug


System Overview
CPU
16,8
0,0
100,0
0,0
0,00
0,65
8,5
64,7
SHARP


SNOWFLAKE
EXPERIENCE
OSS Roundtable 2021
Wahlwebsite zu den Parlamentswahlen 2019
Aufraggeber: BfS


Zutritt

Bundesverwaltung › EDI › BFS

Kontakt | DE FR IT EN

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Statistik

Übersicht

Schweiz

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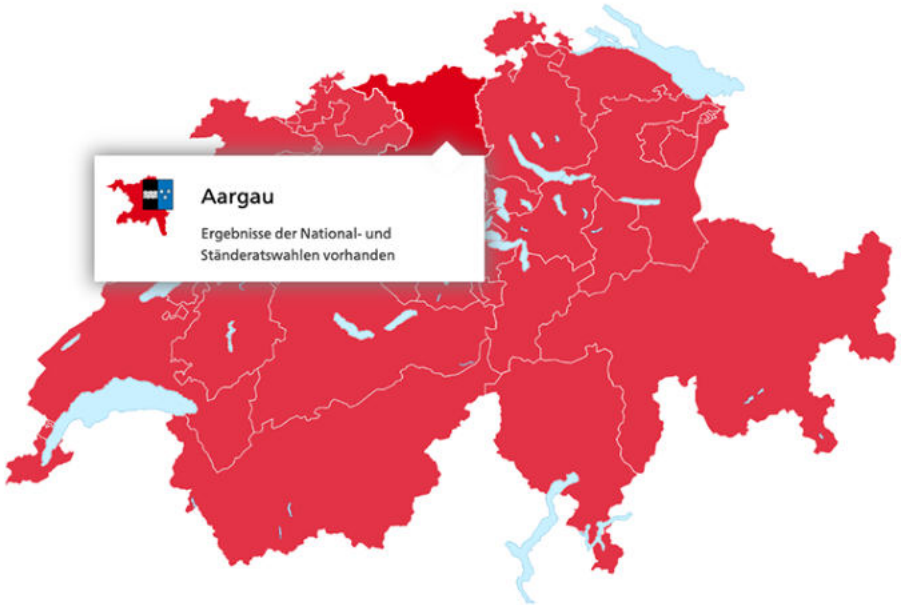
SO BS
BL SH
AR AI
SG GR
AG TG
TI VD
VS NE
GE JU

National- und Ständeratswahlen 2019

Eidgenössisches Wahljahr – Wahlwebseite des BFS

Die eidgenössischen Wahlen vom 20. Oktober 2019 bestimmen die Politlandschaft der nächsten Legislaturperiode. Das Bundesamt für Statistik veröffentlicht die laufend aktualisierten provisorischen Ergebnisse der Parlamentswahlen auf nationaler und auf kantonaler Ebene. Sobald die Daten aus allen Kantonen vorliegen, werden die gesamtschweizerischen Ergebnisse publiziert. Ab Mittag werden die Angaben zu Sitzverteilung, Parteistärken und Wahlbeteiligung laufend aktualisiert. Zusätzlich stellt das BFS auf der OGD-Plattform des Bundes maschinenlesbare Dateien mit den Ergebnissen bereit.



Gesamtergebnisse

Wählen Sie einen Kanton in der Spalte links oder in der Karte. Die Karte zeigt zudem durch einen Farbcode, ob die Wahlergebnisse für National- oder Ständerat bereits ausgezählt sind. Die Gesamtergebnisse stehen nach Auszählung aller Kantone zur Verfügung.

- Nationalrat und Ständerat
- Nationalrat
- Ständerat
- Keine Resultate

https://www.wahlen.admin.ch

Die Website und Grafiken müssen…

- ✓ …von einem **Schweizer Internet Hosting Provider**, mit Rechenzentrum und **Daten in der Schweiz**, gehostet werden.
- ✓ …unter der Last von **10‘000 gleichzeitigen Aufrufen** und Downloads am Tag X in 90% der Fälle innerhalb von 1 Sekunde reagieren.

Lead Application Engineer

Nicolas Karrer

Hi, ich bin Nicolas und Lead Application Engineer.

Ich bin seit 14 Jahren als Entwickler und Softwarearchitekt für Individuallösungen im Bereich der Digitalisierung von Geschäftsprozessen bei Snowflake tätig.

Managing Partner

Adrian Zimmermann

Grüezi, ich bin Adrian Zimmermann und einer der Gründer von Snowflake.

Meine Leidenschaft für digitale Themen lebe ich als OS-Experte und Mitgründer der TYPO3 Association.

Ich glaube daran, dass man gemeinsam mehr erreichen kann und engagiere mich deshalb bei der Parlamentarischen Gruppe Digitale Nachhaltigkeit «Parldigi».

Unsere Vision

Wir sind die erste Adresse für massgeschneiderte Digitalisierungsprojekte in der Schweiz.
Für Lösungen mit maximalen Business Value kombinieren wir Agilität und Erfahrung.

Unser Erfolgsrezept

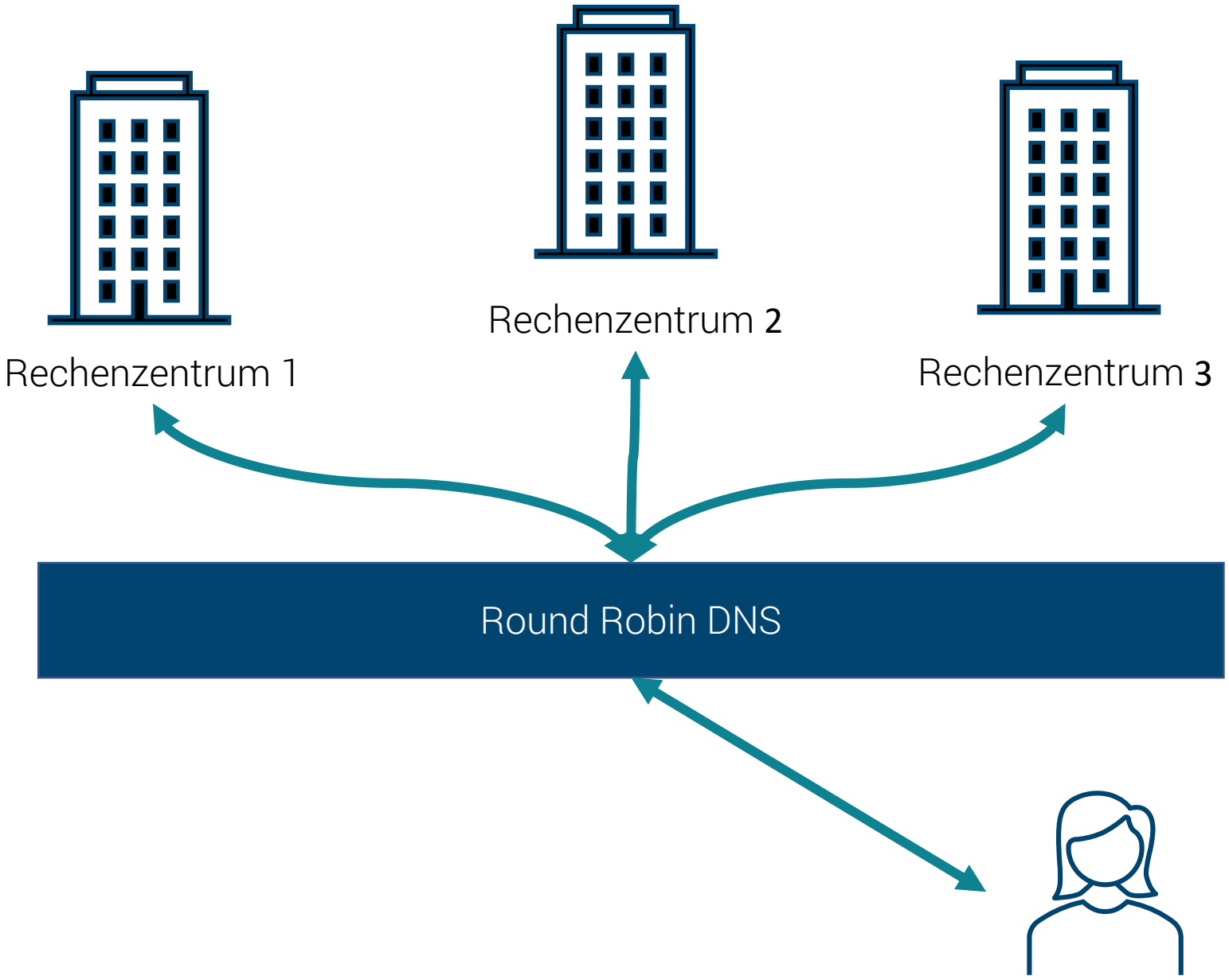
- ✓ Individuelle Webapplikationen
- ✓ Nutzerzentrische Sichtweise
- ✓ Kundenorientierte Denkweise
- ✓ Zielführende Vorgehensmodelle
- ✓ **Open Source Software**

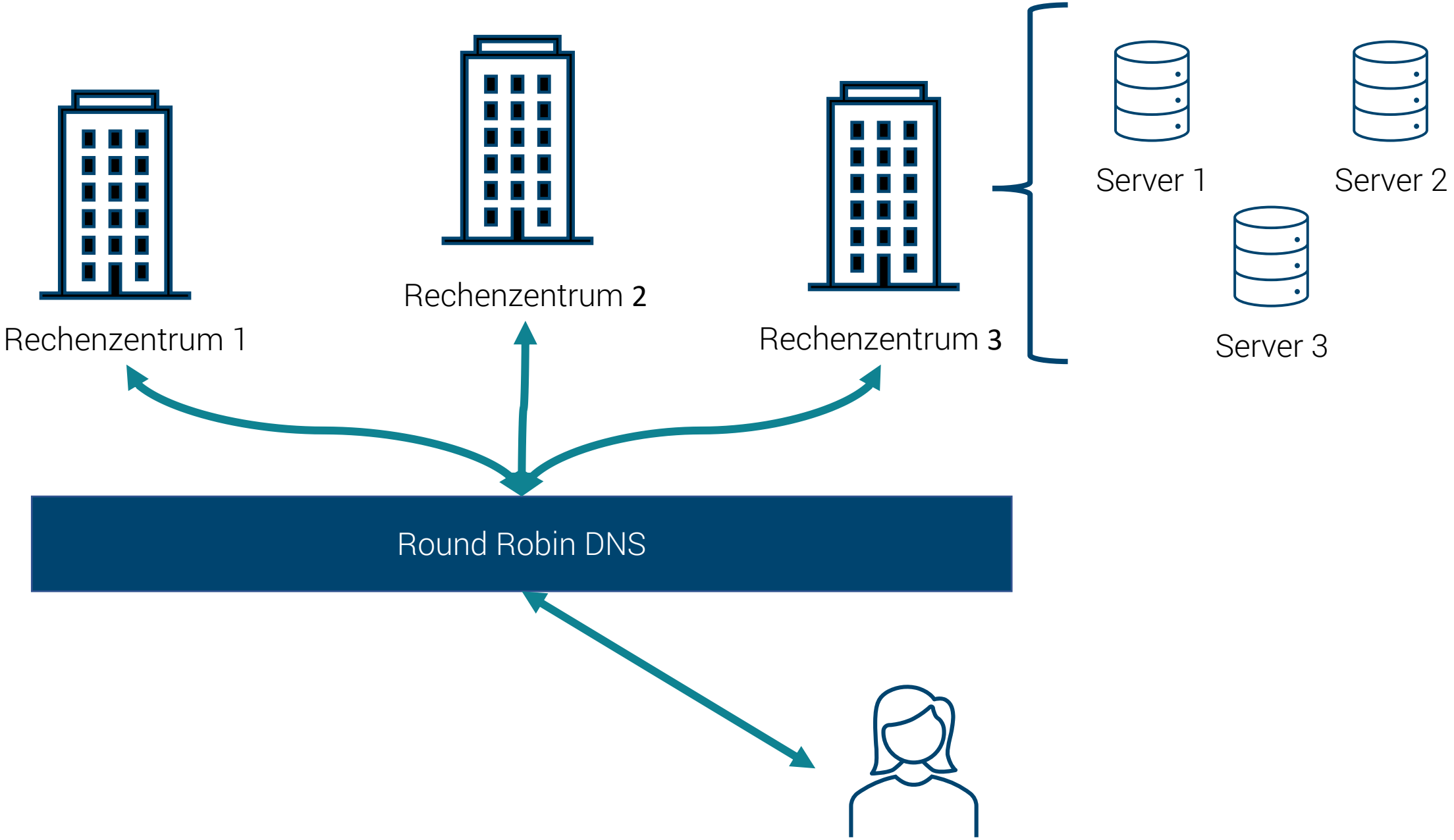
Die Wahlen in Zahlen

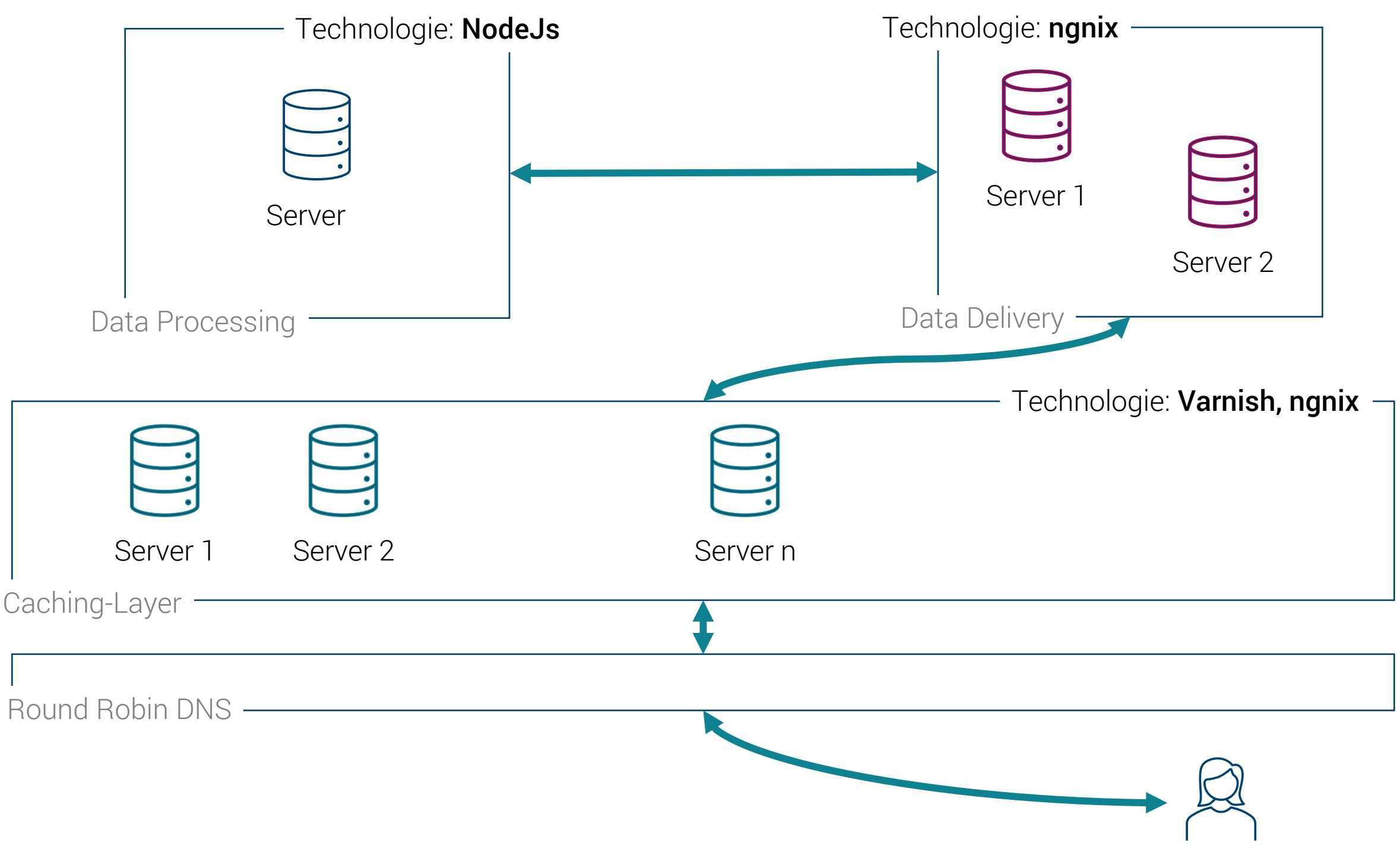
Zugriffszahlen am 20.10.2019 (~12:00 – 22:00)

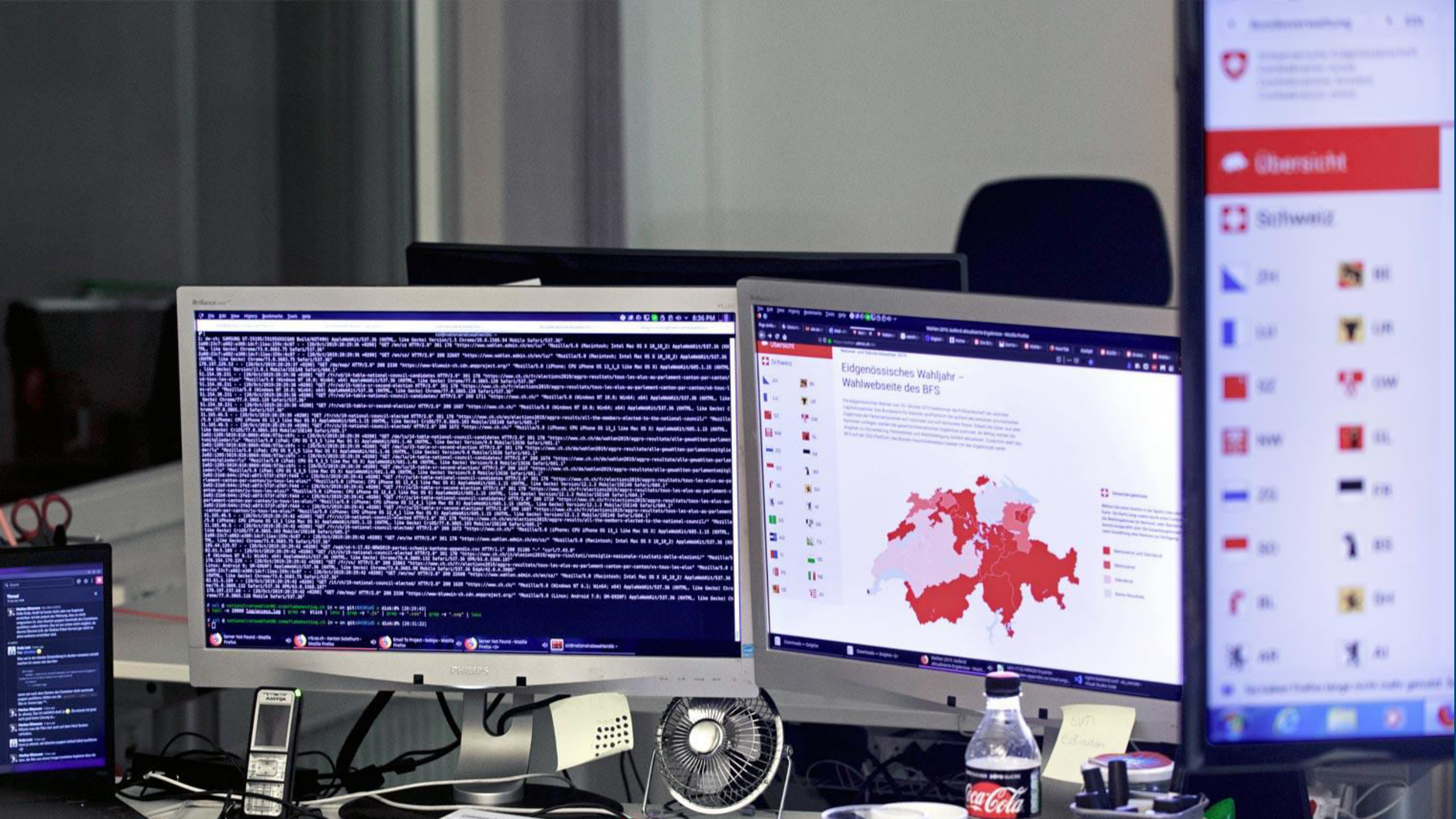
- ✓ Zugriffe Total: 41'509'305 Requests
- ✓ Zugriffe auf Open Government Data: 1'543 Requests
- ✓ Zugriffe auf Objekte: 6'690'739 Requests
- ✓ Zugriffe auf Seite: 263'682 Requests
- ✓ Übertragene Datenmenge: 264.63 GB
- ✓ Peak Zugriffe (1Min): 86'843 Requests

Infrastruktur


Rechenzentrum 1
Rechenzentrum 2
Rechenzentrum 3
Round Robin DNS


Rechenzentrum 1
Rechenzentrum 2
Rechenzentrum 3
Server 1
Server 2
Server 3
Round Robin DNS


Technologie: NodeJs
Server
Data Processing
Technologie: ngnix
Server 1
Server 2
Data Delivery
Technologie: Varnish, ngnix
Server 1
Server 2
Server n
Caching-Layer
Round Robin DNS


Übersicht
Schweiz
Eidgenössisches Wahljahr –
Wahlwebseite des BFS
PHILIPS
Coca-Cola

Dank Open Source und durchdachter Server-Infrastruktur volle Kontrolle über Ihre Daten und Datenströme

SNOWFLAKE
EXPERIENCE

Gemeinsam mehr erreichen

Vielen Dank für Ihre Aufmerksamkeit.

Bildnachweise

Bild Landsgemeinde:

https://www.gl.ch/public-newsroom/details.html/31/news/15761