



<https://scs.community>

Gefördert durch:



aufgrund eines Beschlusses



gaia-x

Mercedes FOSS Convention 2022-11-17

# Developing the Open Source Sovereign Cloud Stack

Kurt Garloff

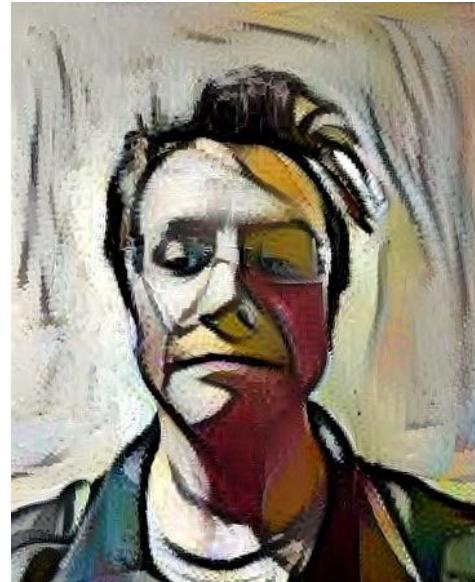
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Bianca Hollery-Pfister, Alexander Diab, Maximilian Wolfs

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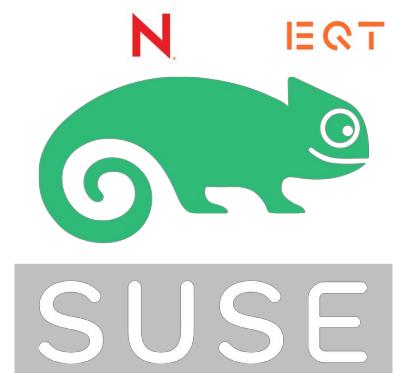
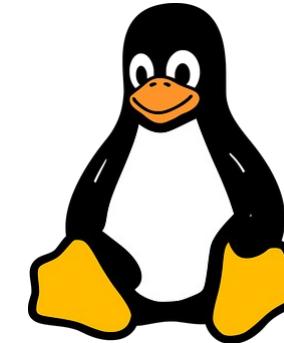
<https://scs.community/>

<https://github.com/SovereignCloudStack/>

**OSB** Open Source  
Business  
**ALLIANCE**  
Bundesverband für digitale Souveränität e.V.



# Kurt Garloff



T...T...Systems



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Business  
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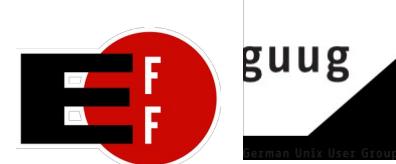
Supported by:



Federal Ministry  
for Economic Affairs  
and Climate Action

on the basis of a decision  
by the German Bundestag

**SPRIN-D**





Von macmorning - Eigenes Werk, CC BY-SA 3.0,  
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Open Source  
connections ...  
Scuba diving?  
subsurface  
Caves!

# Agenda

## About our project - SCS

Building it:

- Working with communities
- OSS best practices

The Operations challenge



# Sovereign Cloud Stack vision

Create a world where modern IT infrastructure is decentralized and under the control of its users.



# Sovereign Cloud Stack mission



Substantially simplify using, building and operating standardized and federated cloud & container platforms to enable innovation on sovereign infrastructure, reducing the technical, economical, strategic, legal dependencies on infrastructure outside of your control.

# Sovereign Cloud Stack mission

Open, federated infrastructure for  
industry, science, government

Easy to use

Easy to operate

Modern, state-of-the art on-demand

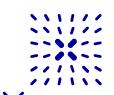
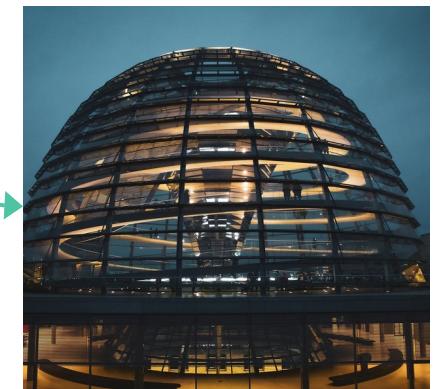
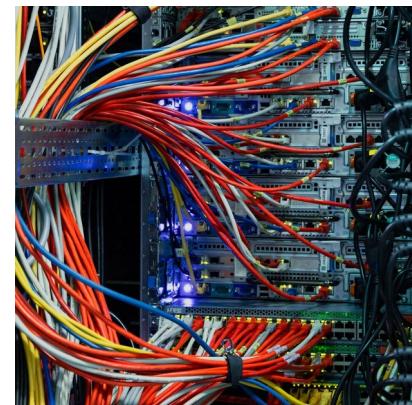
Secure by design

Federatable

Standardized

Modular

4x Open



# Sovereign Cloud Stack Deliverables



1

Certifiable Standards



2

Modular Open Source  
Reference Implementation



3

Operational Knowledge

# Fact sheet & Timeline



Gefördert durch:



Bundesministerium  
für Wirtschaft  
und Klimaschutz

aufgrund eines Beschlusses  
des Deutschen Bundestages



**SPRIN-D**

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gaia-x



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23 Technologies



2019 → 2025

Cloud



Pub



plusserver  
BSI C5

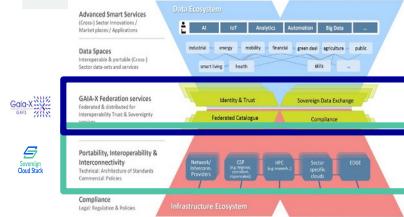
wavestack

OPEN OPERATIONS MANIFESTO  
Building a community of practice and transparency for operations

IT-Planungsrat  
DVS



Code



Vorhabenbeschreibung

(zur vertraulichen Behandlung)

Zum Projekt GAIA-X

GAIA-X

Vorhaben: Sovereign Cloud Stack

Akronym: SCS

Sovereign  
Cloud Stack

Schlagworte zum Vorhaben:  
GAIA-X, SCS, Digitale Souveränität, Infrastruktur, Cloud, Förderung, Open Source, Infrastructure as Code, OSB Alliance

R0 R1

R2

R3

...

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define('PSIG_COMPARE_32', true);
define('PSIG_COMPARE_32_16', true);
if (!extension_loaded('psig')) {
    if (!extension_loaded('psig')) {
        die("The psig extension is required!");
    }
    require_once APP_ROOT . '/includes/autoload.inc.php';
}
if (!extension_loaded('psig')) {
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```



Gefördert durch:  
Bundesministerium für Wirtschaft und Klimaschutz  
aufgrund eines Beschlusses des Deutschen Bundestages

# Public SCS Clouds in production

## Supporters (9/22)

And  
you?

<https://scs.community/>

### Cloud services based on Sovereign Cloud Stack



### Supporting companies and organizations

23|Technologies

citynetwork

dilossacon

noris network

OX Stay Open.

Stackable

WAVECON



GONICUS  
PIONEERS OF OPEN SOURCE



StackHPC

SPRIN-D

CLOUDICAL

gridscale

OSB Open Source Business  
ALLIANCE  
Bundesverband für digitale Souveränität e.V.

OVHcloud

Syself



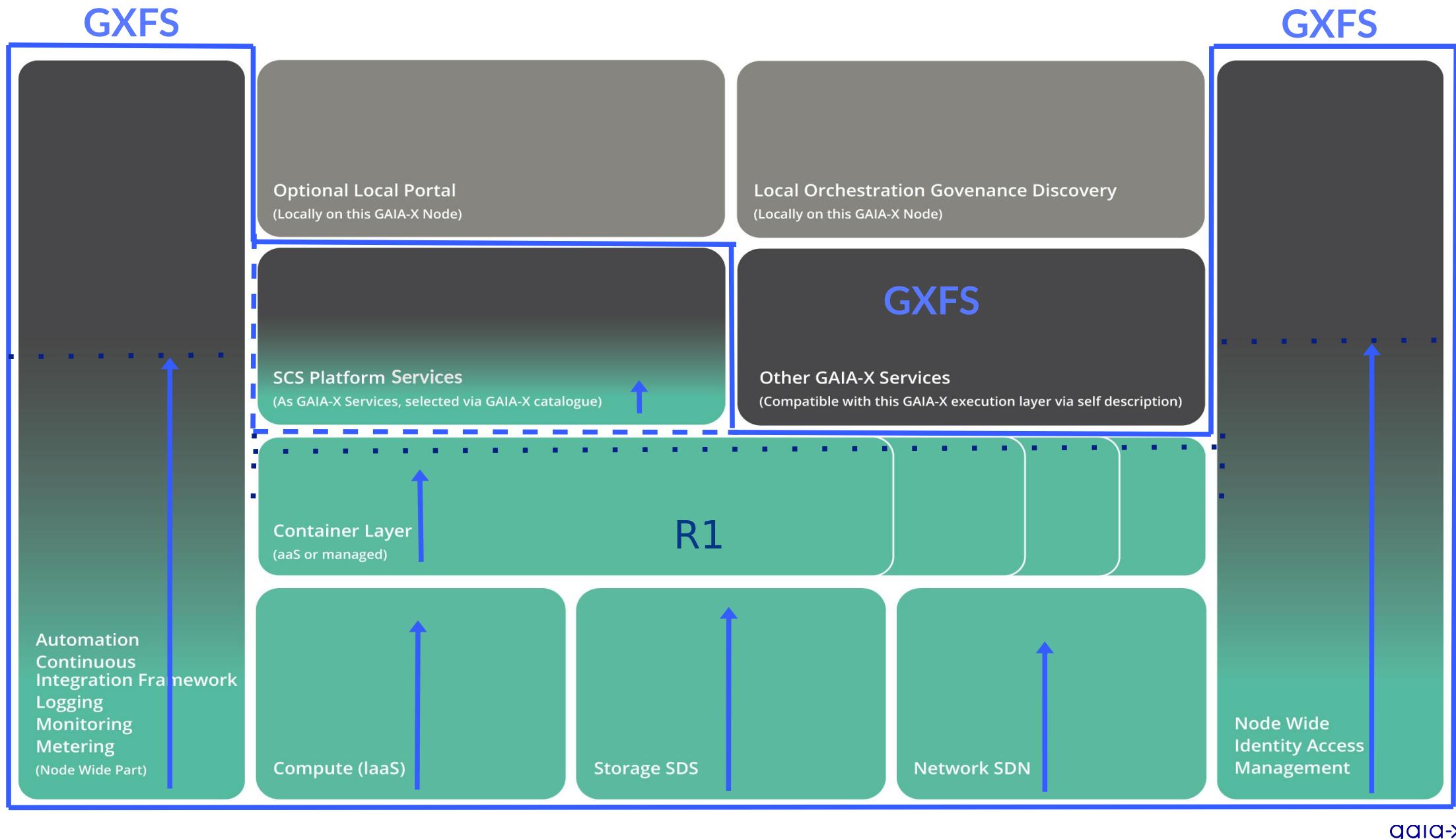
LEITWERK  
Die Zukunft Ihrer IT



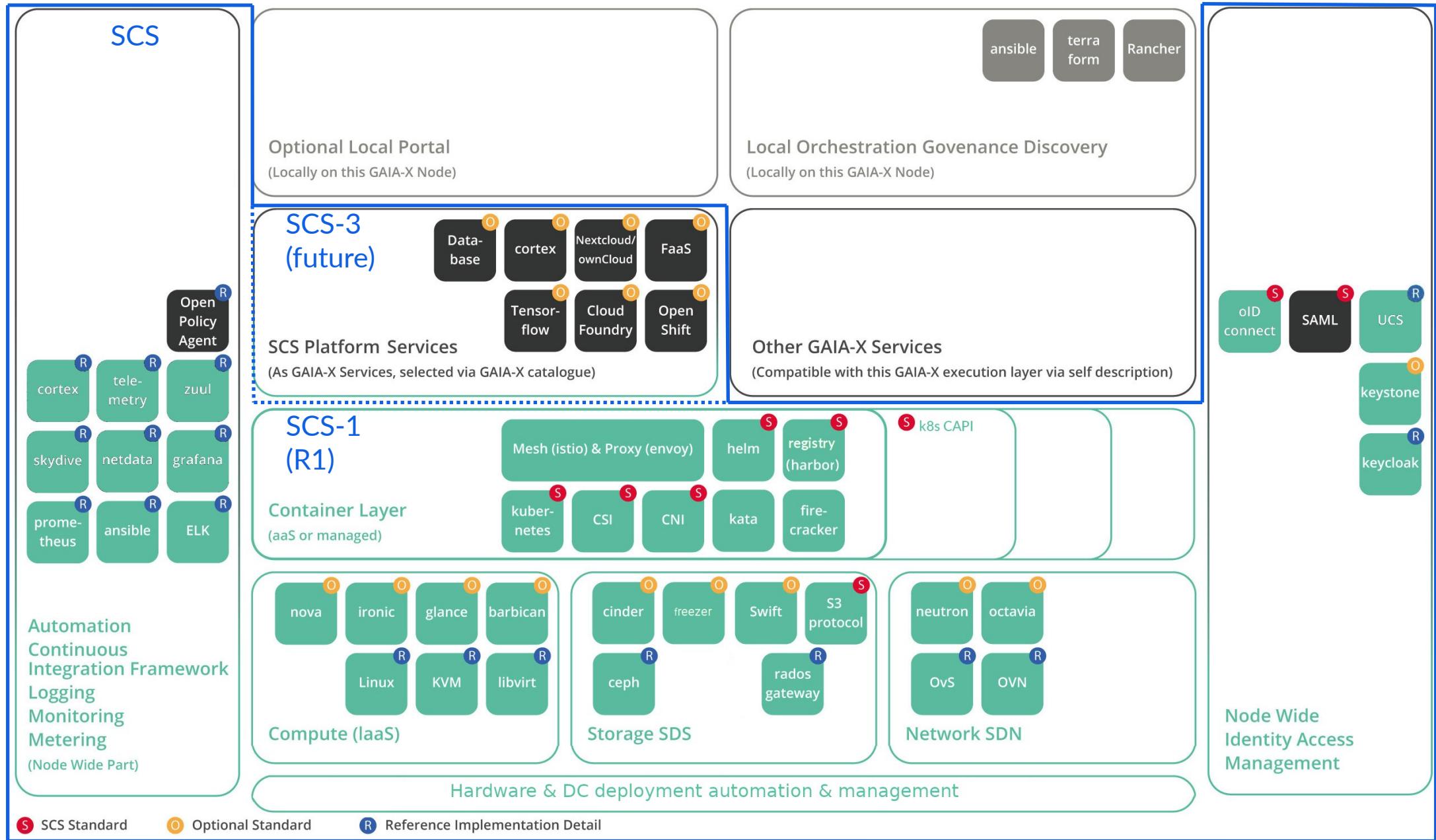
plusserver

univention  
be open

# Building the SCS architecture bottom up

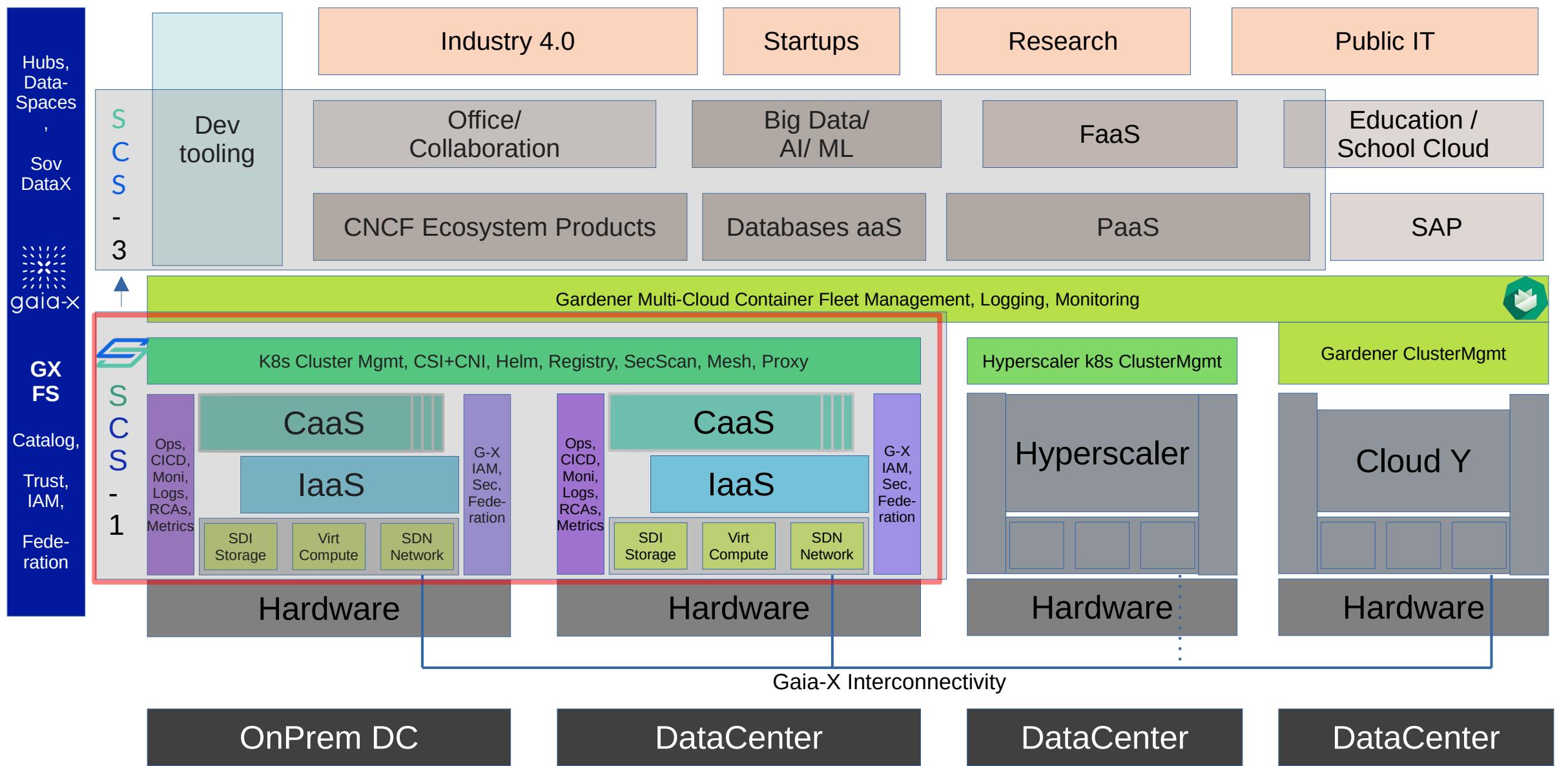


# SCS Ref. Architecture (current status)

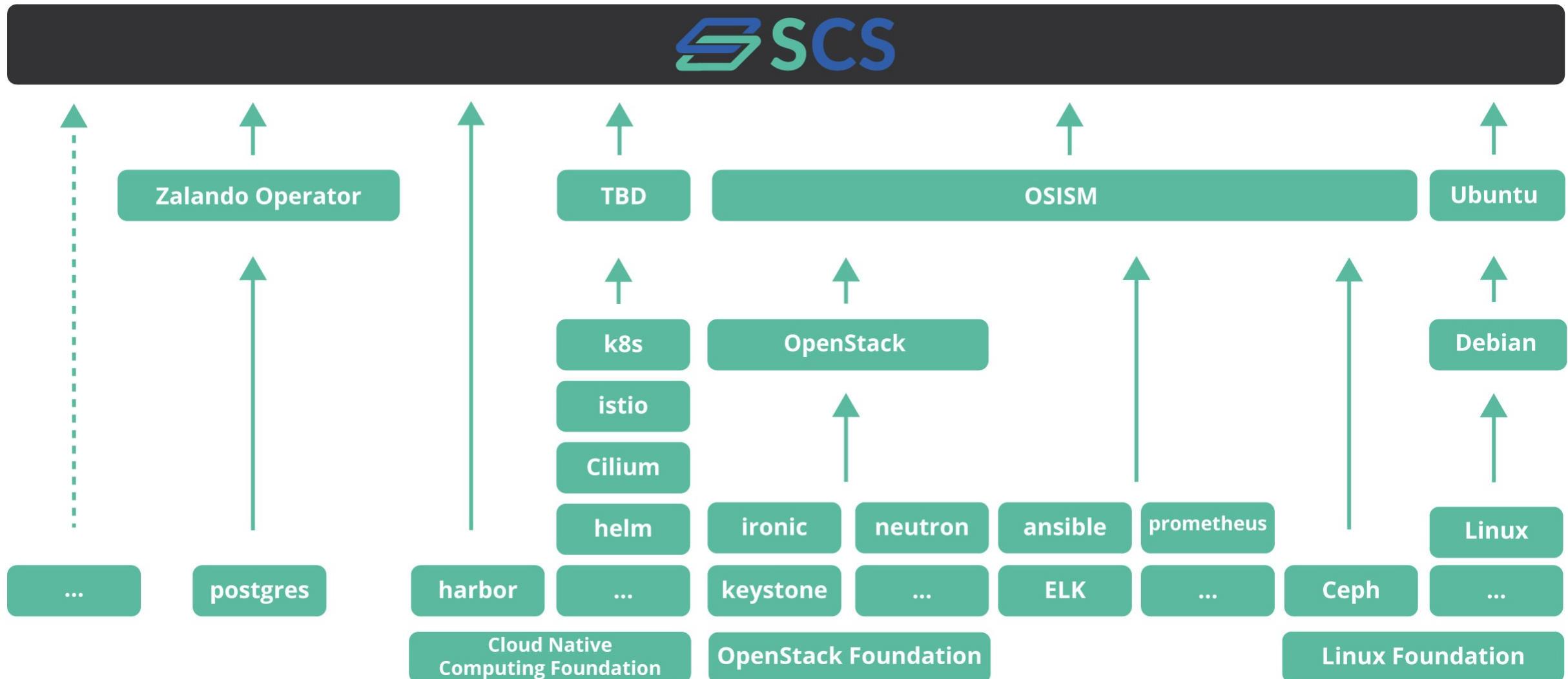


# IT Ecosystem with GAIA-X

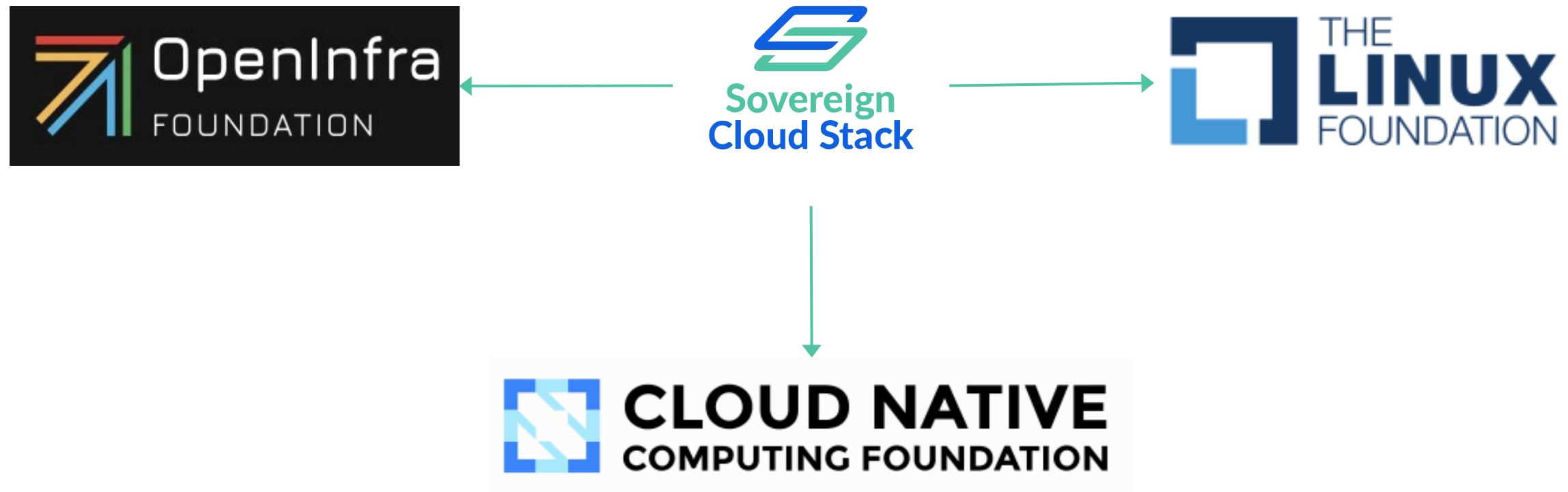
adapted from Acatech whitepaper



# How is it built? (SCS developer perspective)



# Upstream first!



# SCS ecosystem

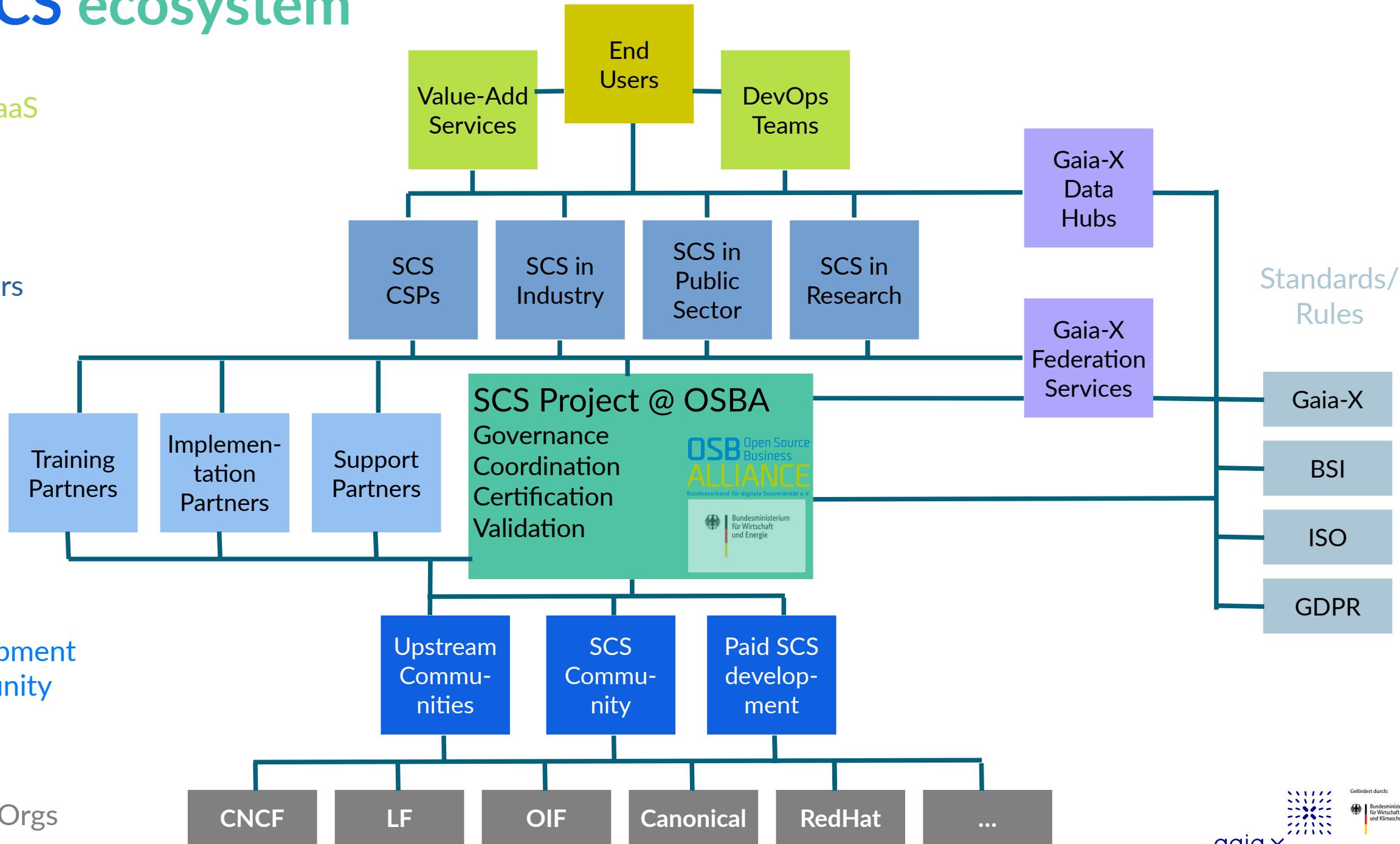
SaaS/PaaS

(Infra)  
Providers

Servi-  
ces

Development  
Community

Found/Orgs



# IP management in SCS

**Only accept OSI-approved open source licenses in implementation**

## **Open Source health check**

- 4 opens (open license, community, development, design)
- active&diverse communities
- maintenance, maturity, security

**Use OSI licenses (ASL2, MIT, GPL, ...) of upstream projects**

- contribute back as much as possible
- prefer copyleft for own independent code (weak copyleft for interface code)

## **Distributed copyright (like the Linux kernel)**

- Intentionally prevents dual licensing, license changes

**Use Digital Certificate of Origin (DCO, „signed-off-by“)**

- documenting willful contributions under accepted license terms
- enforced by pre-merge checks

# The Four Opens



**Open Source**

**Open Design**

**Open Development**

**Open Community**

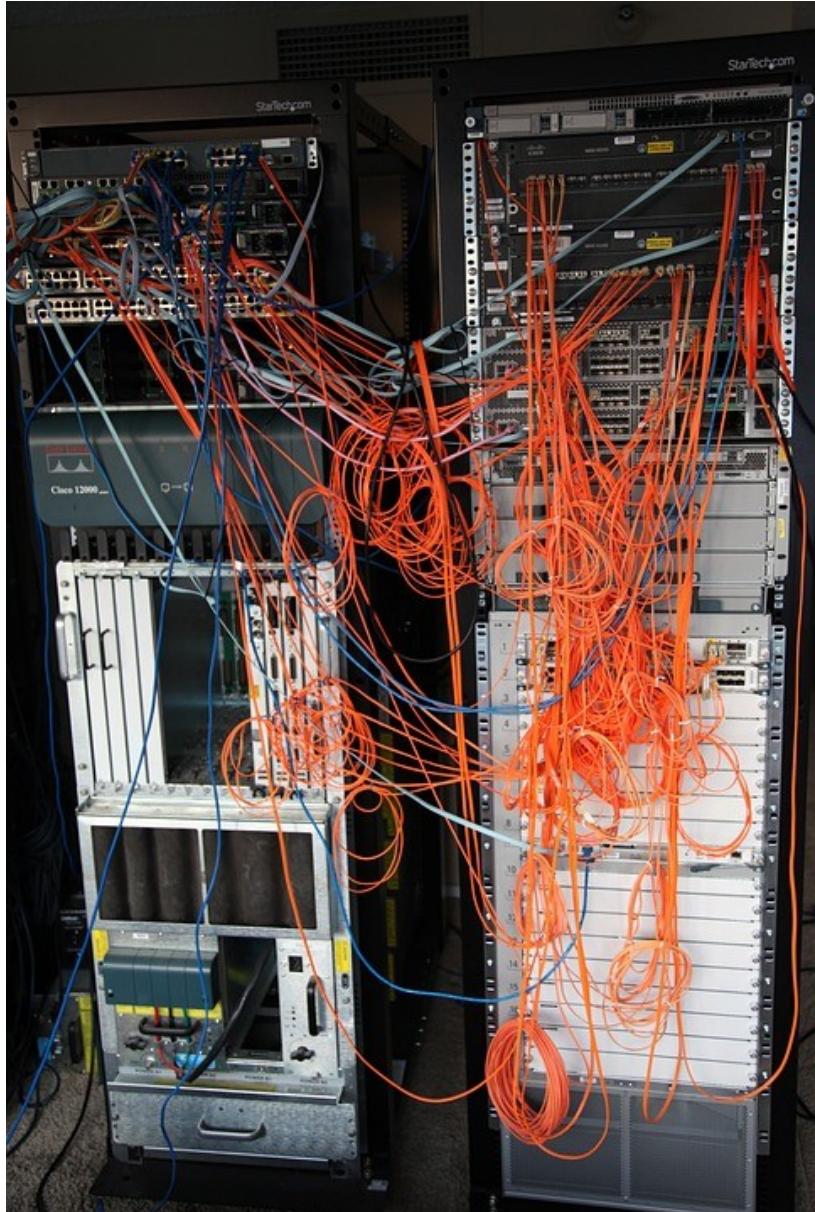
FANT  STIC

# Open Source Health Check

<https://github.com/SovereignCloudStack/Docs/blob/main/Design-Docs/OSS-Health.md>

1. Really Open: Four Opens (Code, Devel, Design, Community)
2. Maturity: Quality, Reviews, CI, Maintenance, Standards
3. Security: Supply Chain, Sec Response, SecTesting / PenTest
4. Activity: Adoption, Community, Ecosystem
5. Risk Assessment: Likelihood to fail? Replace? Fork?

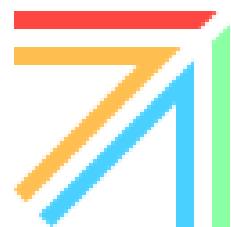
# Operations is harder than development



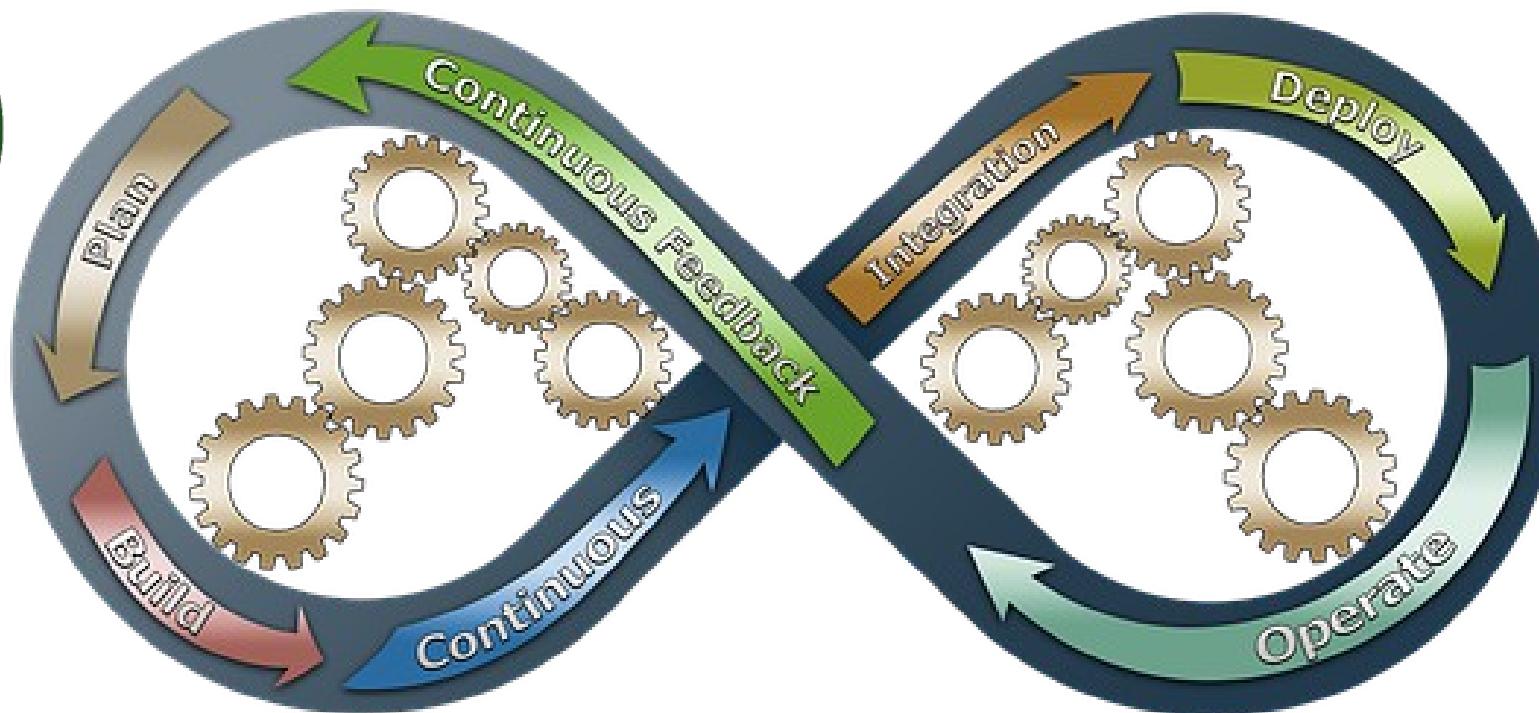
But even if I can participate in the community developing the software, how the heck am I supposed to operate this stack at scale?



# DevOps allows to dev & op complex infra



4 x open



Need:  
OpenOperations

# A new hope^W movement ...



## OPEN OPERATIONS MANIFESTO

Building a community of practice and transparency for operations

<https://openoperations.org/>

### We build a community of practice

Open Operations builds a community of practice to keep the barrier to entry low and create a thriving environment for comfortable exchange.

### We share knowledge

The availability of knowledge and skilled engineers is the limiting factor for many organizations to adopt, leverage, and successfully operate complex technology.

### We're transparent about our incidents

We firmly believe that failures make us experts. The way we handle mistakes is how we become better.

### We're transparent about our operational processes

We share our internal processes for the sake of transparency. We firmly believe that transparency leads to better and more reliable processes.

# Summary & Call to Action

A growing network of Operator builds standards, open source reference implementation and operational practices for sovereign cloud/container stacks in the SCS project

[Join the growing network!](#)

Open Source enables Europe to combine innovative technology with gaining control / sovereignty

[Avoiding nationalistic / isolationist „European Technology“ silos!](#)

Successful Open Source is much more than saying „open“!

[Do it right: Fully Open Code, Dev, Design, Community. SBOM. Reviews. CI. Maturity.](#)  
[Join the OSB Alliance!](#)

Building & sharing operational skills – Open Operations manifesto

[Join the movement!](#)

