

# Sovereign Cloud Stack

## more than yet another cloud stack



FOSSASIA Summit 2022

Felix Kronlage-Dammers - <[fkr@osb-alliance.com](mailto:fkr@osb-alliance.com)> - @felixkronlage  
<https://scs.community/kronlage-dammers>

# whoami

```
$ whoami  
fkr
```

```
$ finger fkr  
Login: fkr  
Job: PO IaaS & Ops  
E-Mail: fkr@osb-alliance.com
```

Name: Felix Kronlage-Dammers  
Where: OSB Alliance / SCS Project  
Twitter: @felixkronlage

Objective:

Create more value than you capture!  
Only failures make us experts.

Plan:

If not working, either having fun with my son or riding a bike with drop bars.

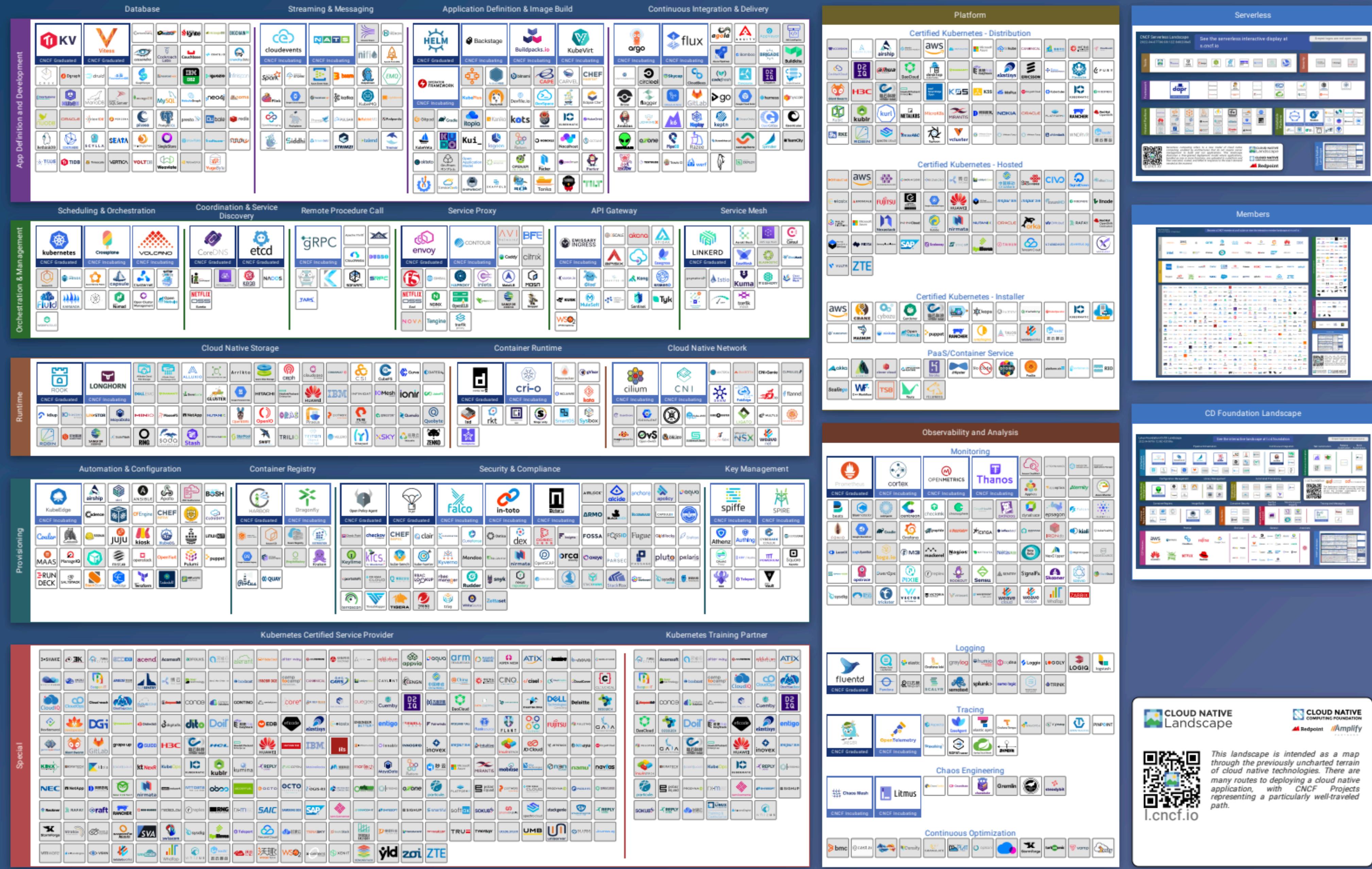
# The Challenge

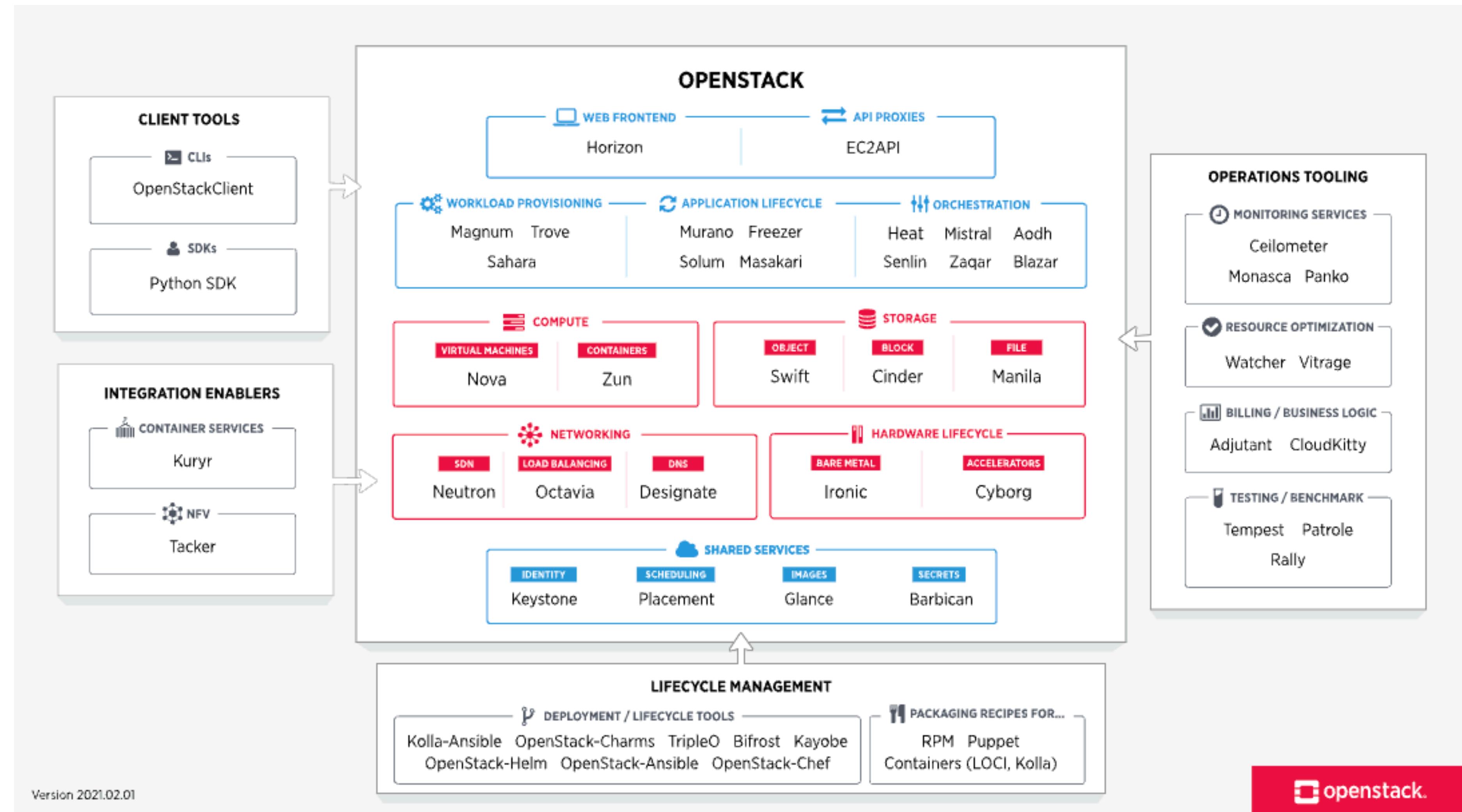
# The Challenge

- Hyperscalers dominate the market
  - Dependencies (economic, strategic, legal challenges) → digitization barrier
  - Centralized control over platforms and data access
  - Control and Value creation mostly within large corporations

# The Goods

- Many fantastic open source building blocks available
  - CNCF landscape
  - OpenInfra World
- Many fragmented efforts
- Example: managed kubernetes





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# SCS - *The Project*

# The Vision

Only Open Source guarantees digital sovereignty by interoperability, transparency and independence from unlawful claims of third parties and thus from any unauthorised interference.

# Goals and Vision

- Standardization
- Certification
- Transparency
- Sustainability
- Federation



# Who is behind the project?



Bundesministerium  
für Wirtschaft  
und Klimaschutz

**SPRIN-D**

# Open Source Business Alliance

- Organisation to strengthen Open Source
- Striving for Digital Sovereignty
- More than 190 companies as members
- Funded in 2011, merger of LISOG and LIVE

# Digital Sovereignty

Today, digital sovereignty is an important aspect of general sovereignty, which refers to the ability to use and design digital systems, self-determination over aggregated and stored data, as well as over the related processes.

*-Digital Gipfel 2018*

# Building blocks

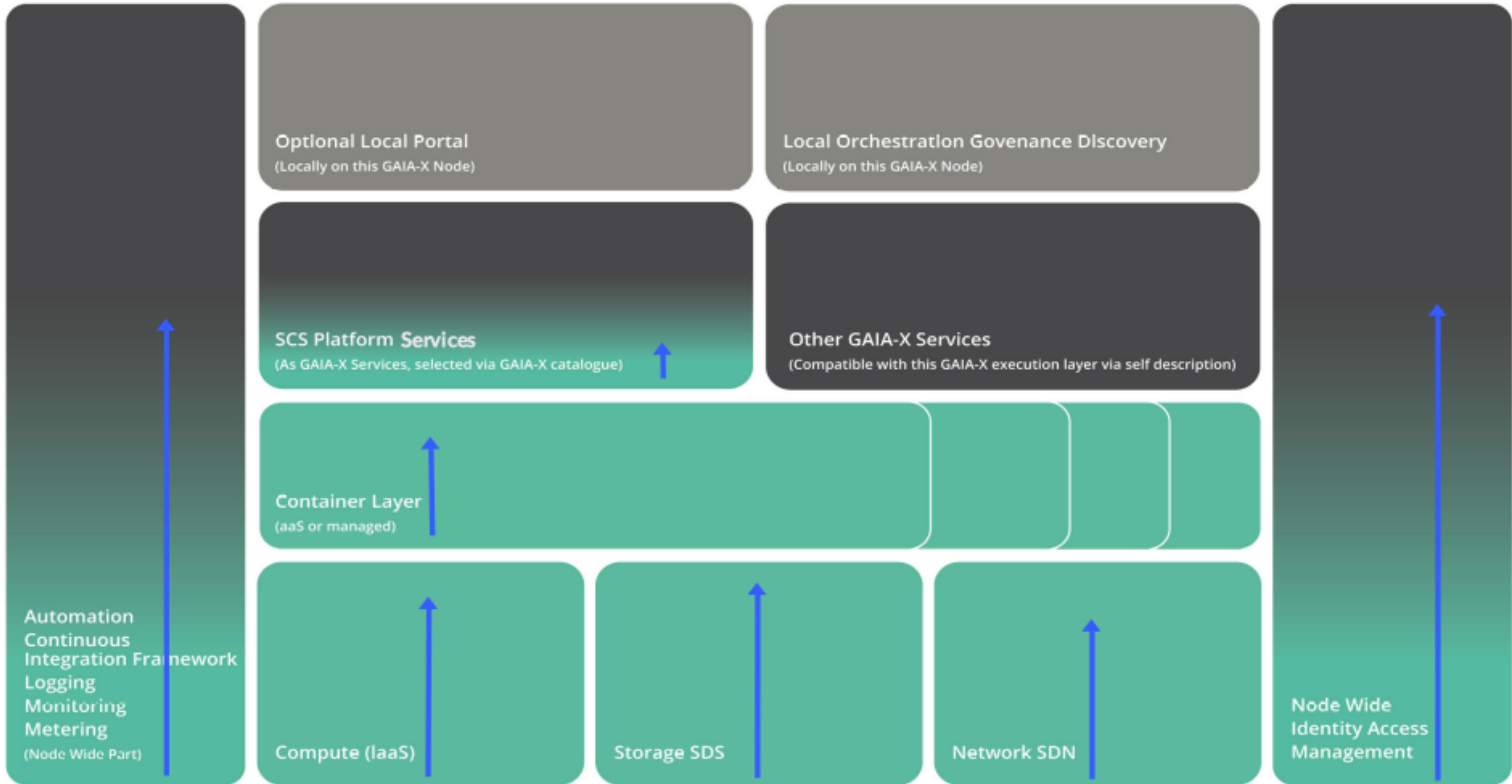
- Legal dimension
- Freedom of choice
- Technological dimension
- Dimension of competence

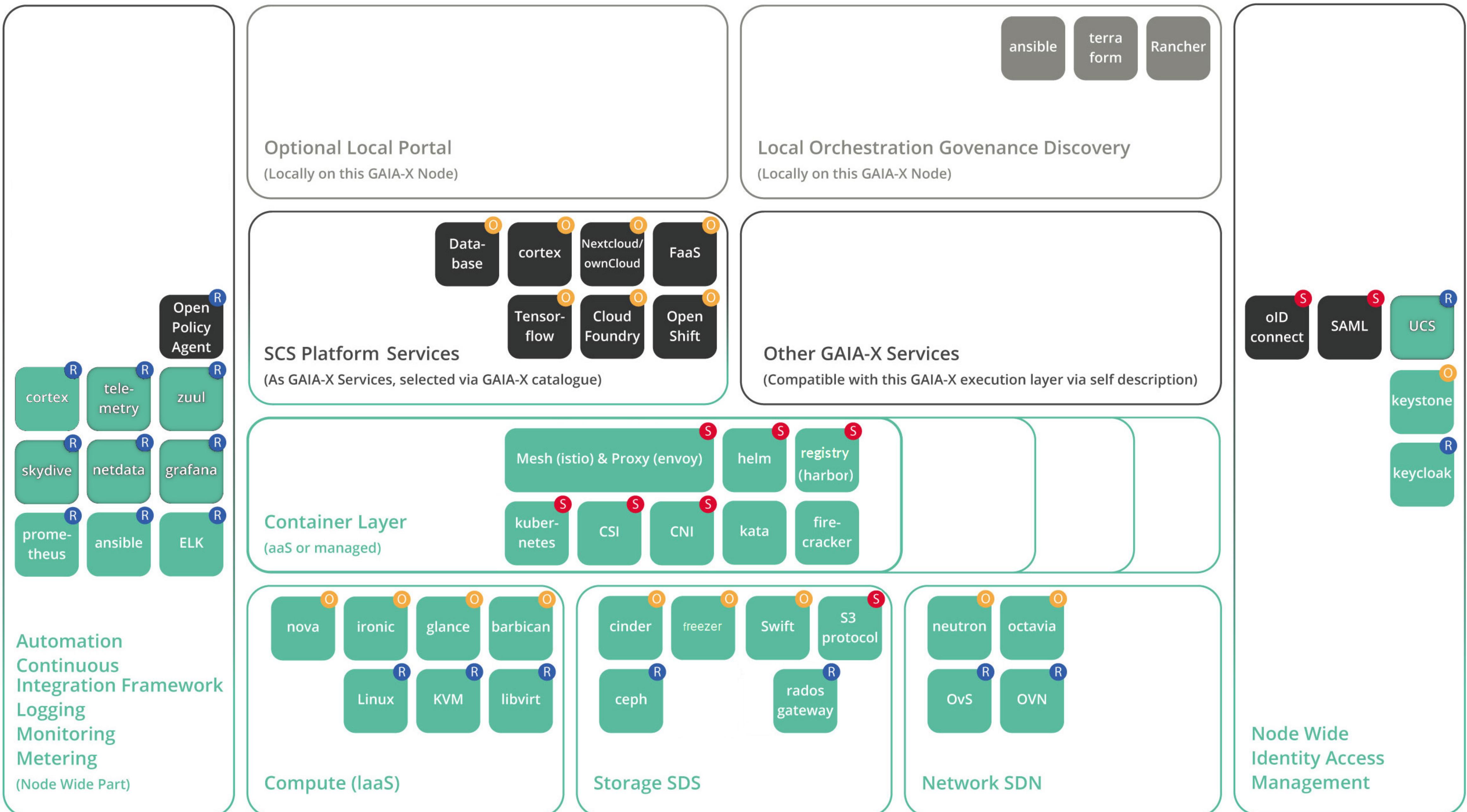
# *Buzzword Bingo Index*

80 (out of 100)

# Sovereign Cloud Stack

# The Architecture

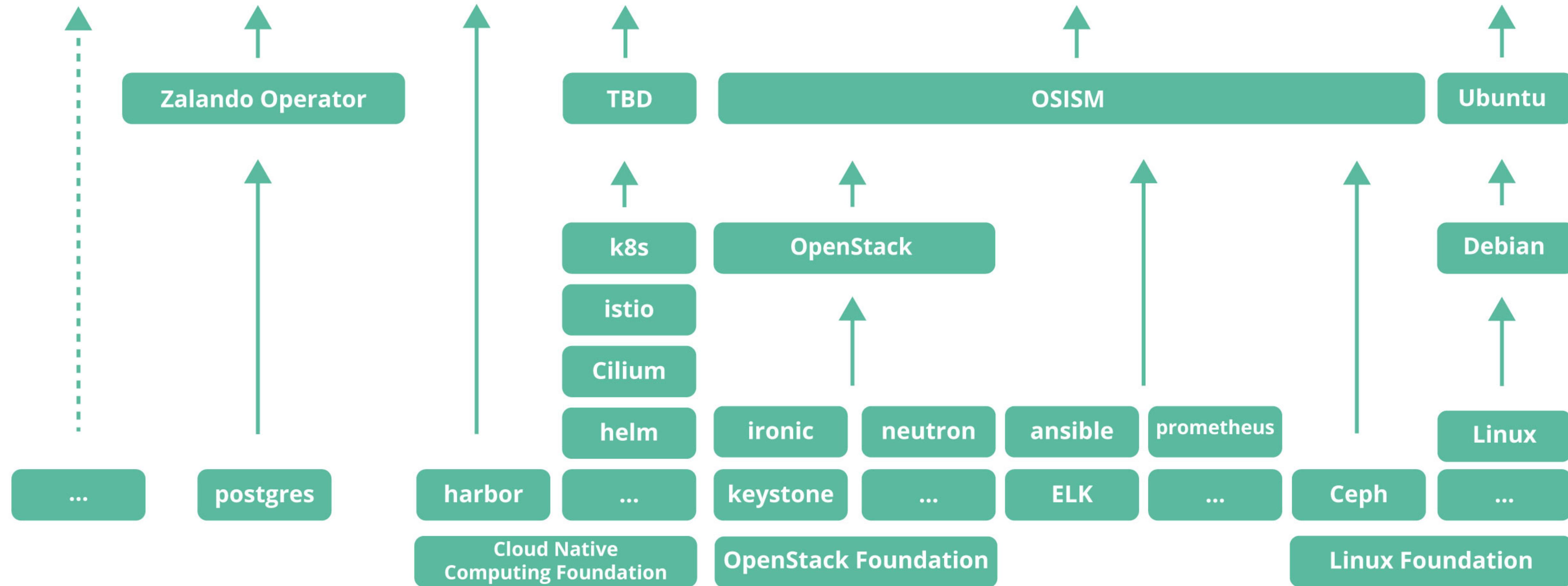




**S** SCS Standard

**O** Optional Standard

**R** Reference Implementation Detail



# Releases - Roadmap

# Releases 2021

## ● Release 0

- Fully automated Infra, IaaS, Ops automation (CI/CD, Monitoring, Patching), local IAM
- Technical Preview for Container Stack (k8s cluster API, incl. CNI/CSI, helm)

## ● Release 1

- Container Stack in production quality
- Federation (OIDC)
- More preconfigured monitoring and logging

# Release(s) 2022

## ● Release 2

- More Container work (cluster API, k8s, registry, multi-AZ/multi-cloud, rolling upgrades in prod) Federation (OIDC)
- Ops Stack: More preconfigured Metering, Monitoring, Logging, Alerting
- Federation: Cmd line tool support OpenStack
- More Bare Metal automation
- Extend CI coverage

# The Community

# How we work

- Out in the open ;)
- Weekly team calls
  - SCS Project Team
  - Operators (CSPs) and Integrators
  - Companies participating in the tenders
  - Volunteers

# Collaboration over Competition



gridscale



citynetwork

univention  
be open

23| Technologies



\_dilossacon

plusserver

T ..

StackHPC

dataport

**GONICUS**  
PIONEERS OF OPEN SOURCE

Stackable

CLOUD  
& HEAT

OSISM

# Use SCS

# The Testbed

- Virtual Testbed
  - <https://github.com/osism/testbed>
- Easily deployed on various public clouds



OSISM

# Operations dashboard

[Contribute](#)[Documentation](#)[Bug report](#)

## 🔧 Deployment

**ARA Records Ansible**  
Ansible logs  
[#dashboard](#)

**NetBox**  
Infrastructure Resource Modeling (IRM)

## 💼 Operations

**Ceph**  
Ceph dashboard

**Flower**  
Distributed Task Queue

**Keycloak**  
Identity and Access Management (IAM)

**phpMyAdmin**  
Administration of MariaDB

**RabbitMQ**  
Administration of RabbitMQ

## 📈 Insights

**Grafana**  
Observability platform

**Kibana**  
Visualized logs

**Netdata**  
Realtime monitoring

**Patchman**  
Linux Patch Status Monitoring System

**Prometheus**  
Monitoring system & timer series database

## 👤 User interfaces

**Horizon**  
OpenStack dashboard

Edit View History Bookmarks Tools Help

Dashboard - Nextcloud SCS X Usage — OSISM Testbed docu X Device Roles - NetBox X Problem loading page X Welcome to Keycloak X Index patterns - Elastic X ara | Playbook reports: 1-3 X +

→ C ⌂ 192.168.16.5:8121/dcim/device-roles/ 120% ⭐

Most Visited Garloff-Cloud Files SCS CoYo BMWi - GAIA-X GAIA-X Core · GitLab PlusServer | Login github SCS OSBA Owncloud Murals SK K-BN FRITZ!Box LBA UAS » Other Bookmarks

 netbox Organization Devices IPAM Virtualization Circuits Power Secrets Other Search Configure + Add Import Export

# Device Roles

Name	Devices	VMs	Color	VM Role	Description	Actions
Ceph control node	0	0	<span style="background-color: orange; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Ceph resource node	0	0	<span style="background-color: orange; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Compute node	0	0	<span style="background-color: blue; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Control node	0	0	<span style="background-color: blue; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Generic node	0	0	<span style="background-color: black; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Manager node	0	0	<span style="background-color: green; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Monitoring node	0	0	<span style="background-color: green; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>
Network node	0	0	<span style="background-color: blue; width: 100px; height: 10px;"></span>	✓	—	<span>⌚</span> <span>✍</span> <span>-trash</span>

# Resources

- <https://scs.community>
- <https://github.com/SovereignCloudStack>
- <https://scs.community/2022/03/18/digital-sovereignty-whitepaper/>
- [https://twitter.com/scs\\_osballiance](https://twitter.com/scs_osballiance)
- [#scs-general:matrix.org](https://#scs-general:matrix.org)

Thanks for your time ;)