Sovereign Cloud Stack

gaia-x

Sovereign Cloud Stack

Open Source Cloud & Container Stack for Gaia-X

How does it work?

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2021-08-17

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

Gefördert durch:

Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages

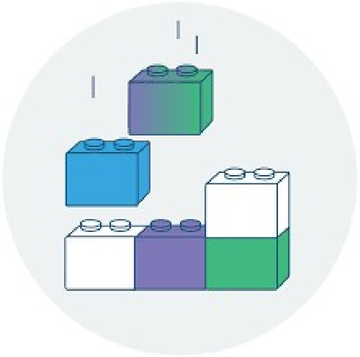
Status Quo & Sovereign Cloud Stack vision

Hyperscalers dominate the cloud market

- Dependencies (economic, strategic, legal challenges) → digitization barrier
- Centralized control over platforms and data access
- Control and Value creation outside Europe

Open Source Building blocks available for alternatives

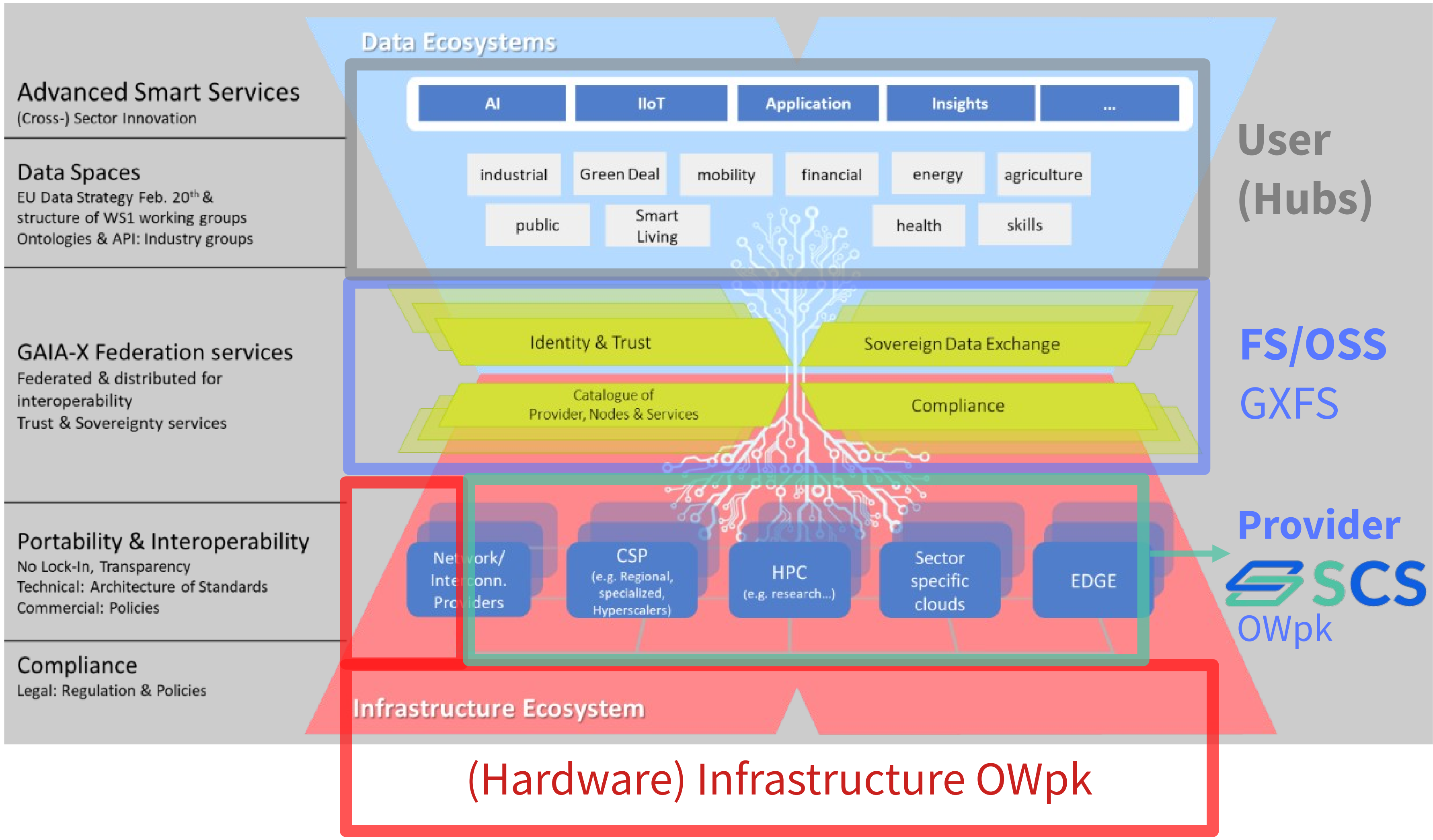
- Many mostly disconnected efforts in many companies, research institutes and some CSPs to build & run their own stacks
- Operating such a dynamic distributed platform well is very hard
- Every team solves curation, integration, testing, automation, certification, operations on their own (duplicated efforts)
- Many somewhat incompatible disconnected offerings, don't sum up to a viable alternative



Sovereign Cloud Stack creates a network of many of these teams

- Define and implement the stack together as open source (in an open community process) and also tackle operational topics together ("Open Operations")
- Certifiable standardized interfaces
- Make it easy for users to federate clouds

Gaia-X Conceptual Map


Advanced Smart Services
(Cross-) Sector Innovation
Data Spaces
EU Data Strategy Feb. 20th &
structure of WS1 working groups
Ontologies & API: Industry groups
GAIA-X Federation services
Federated & distributed for
interoperability
Trust & Sovereignty services
Portability & Interoperability
No Lock-In, Transparency
Technical: Architecture of Standards
Commercial: Policies
Compliance
Legal: Regulation & Policies
Data Ecosystems
AI
IIoT
Application
Insights
...
industrial
Green Deal
mobility
financial
energy
agriculture
public
Smart Living
health
skills
Identity & Trust
Sovereign Data Exchange
Catalogue of Provider, Nodes & Services
Compliance
Network/ Interconn. Providers
CSP (e.g. Regional, specialized, Hyperscalers)
HPC (e.g. research...)
Sector specific clouds
EDGE
Infrastructure Ecosystem
User (Hubs)
FS/OSS
GXFS
Provider
SCS
OWpk
(Hardware) Infrastructure OWpk

Gaia-X's mission is to strengthen digital sovereignty for business, science, government and society by empowering the development of innovation ecosystems. Digital sovereignty means that these individuals, organizations and communities stay in complete control over stored and processed data and are enabled to decide independently who is permitted to have access to it.

Source: (w/o frames)
https://www.data-infrastructure.eu/GAIAX/Redaktion/EN/Publications/gaia-x-the-european-project-kicks-of-the-next-phase.pdf?__blob=publicationFile&v=7

SCS Goals & Vision

Standardization

- Of the offered interfaces (compatibility for users)
- Operator – Focus: Configuration, Operations Tooling, Continuous Ops Processes
- Create scale advantages for all

Certification

- Verifiable Compatibility/Interoperability, Quality, Security

Transparency

- Completely Open Source Software, Open Community, Open Design and Development
- Open Ops: Configuration, Operational Processes and Operations Knowledge (new!)
- GAIA-X Self-Descriptions

Sustainability

- Long-term existence of SCS
- Contribute back to existing upstream projects
- Efficient usage of resources

Federation

- Network of federated, compatible providers is better than monolithic structure
- Allows for specialization and differentiation

=> Relevance as one federated platform

SCS value to Gaia-X ecosystem

SCS provides one viable option to provide trustable, secure and fully sovereign infrastructure (IaaS/CaaS/KaaS/PaaS)

- Full technology control (fully open source, design, open development, open community)
- Can be implemented in-house or by CSP (and be federated – if wanted)
- SCS works within Gaia-X to help define standards and ensure compliance, deliver SD templates

Helping to validate Gaia-X

- Working closely with GXFS to validate concepts and implementation

Standardization Value (for providers that chose to comply with SCS)

- SCS defined IaaS/CaaS/KaaS/PaaS standards can be more precise/specific (less inclusive) than Gaia-X rules – technical decisions that make a difference to DevSecOps teams
- Providers can chose to only use a subset of SCS implementation (or even none of it) and still fulfill all relevant SCS compliance tests
- Ecosystem value – services developed and tested against one SCS implementation working on all.

Implementation Value (for providers that chose to use most of SCS implementation)

- Providers can chose to use most or all of SCS
- Saving a lot of work for architecture, curation, planning, implementation, testing by collaborating
- Benefitting a lot from shared operational practices, tools and encouraged Ops collaboration
- Commoditizing the lower layers of infrastructure

SCS project status

Organization

- Project team started in early 2020 with SPRIN-D funding
- Part of GAIA-X (WS2/SWG 1.4 → GAIA-X (Open) Work Package SCS under TC Provider WG)
- BMWi funding (14.9M€ granted on 2021-06-30 to OSB Alliance e.V., hosting the team to coordinate partners)
- Homepage (https://scs.community/), source code on github/SovereignCloudStack
- Lined up ~25 engineers (growing) from partners regularly contributing code/artifacts, weekly sprints

Standardization & Ecosystem

- Working with existing providers: Betacloud Solutions, PlusServer, CityNetwork, T-Systems, Cloud&Heat, gridscale, StackHPC, OVH, IONOS, intel, HiSolutions …
- Working with industry (private clouds @ e.g. automotive, HPC)
- Working with public sector IT providers (DVS, dataport, BWI, … - Germany)

Implementation

- Automated deployment of federatable IAM, Ops Tooling (LCM, Monitoring, CI, Security, telemetry), SDS, SDN, IaaS (OpenStack) – daily deployments (CI/CD) on virtual environments (city, plus, …)
- KaaS is WIP (k8s cluster API + Gardener), CNI+CSI, Container tooling (helm, mesh, registry, monitoring, …)
- Future: PaaS => ecosystem, develop standardized base in 2022 („SCS-3")
- Future: Edge specific work (realtime, accelerators, simplifications) => 2022 („SCS-2")
- Release Plan: R0: 7/2021 (delayed by funding delay), R1: 9/2021, R2: 3/2022, R3: 9/2022, …

Transparency & Certification

- GAIA-X self descriptions created 11/2020 (rudimentary) – working with SD group on improving
- TBD: Convert chosen standards (all open source!) into automated standards compliance tests

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SCS Roadmap

Releases

- Release 0: (2021-07-14)
  - 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: (9/21)
  - Container Stack in production quality, container registry
  - Federation (OIDC, SAML)
- Half-yearly releases (3/22, 9/22, 3/23, 9/23, 3/24, 9/24):
  - Multi-region setups, Security scanning, Security Certifications, CI coverage (for daily updates!), Compliance test coverage (automated certification), SSI/DID federation, X-Cloud Orchestration, Service Mesh, ...

Adoption

- Public Clouds: Betacloud Solutions (2020), PlusCloud Open (12/2020), ...
- Industry Partners: (Automotive, Commerce, ...)
- Public Sector: DVS – looking for pilot / PoC partners

Ecosystem

- Building skilled support, implementation, training partners
- Platform services on top of well-defined SCS standards

SCS-2: Edge (project proposal WIP)

- Even smaller simplified stacks (limited multitenancy), but w/ special acceleration / realtime requirements

SCS-3: PaaS&Dev (project proposal WIP)

- Integrate set of Platform services and Dev Tooling into standard SCS base

Security by Design

Using strong isolation for container clusters

- Different tenants receive their own Kubernetes clusters; by default, no cluster sharing happens
- Underlaying VMs, network, storage are separated by strong virtualization barriers

Private registry for users

- Make it easy for DevOps teams to enforce their own security vetting processes and control their supply chain
- Vulnerability scanning included in regristry solution

Daily patching supported

- The architecture is built for daily patching (or redeployment) without noticable customer impact
- This creates a practice of keeping the systems up to date especially with respect to security patches

Secure Operational practices

- Document updating, patching, security response, … processes to help with secure operations

Air gap mode supported

- Deploying and updating without internet connection possible
- Leveraging an internal registry and patch distribution mechanism (includes vulnerability scanning)

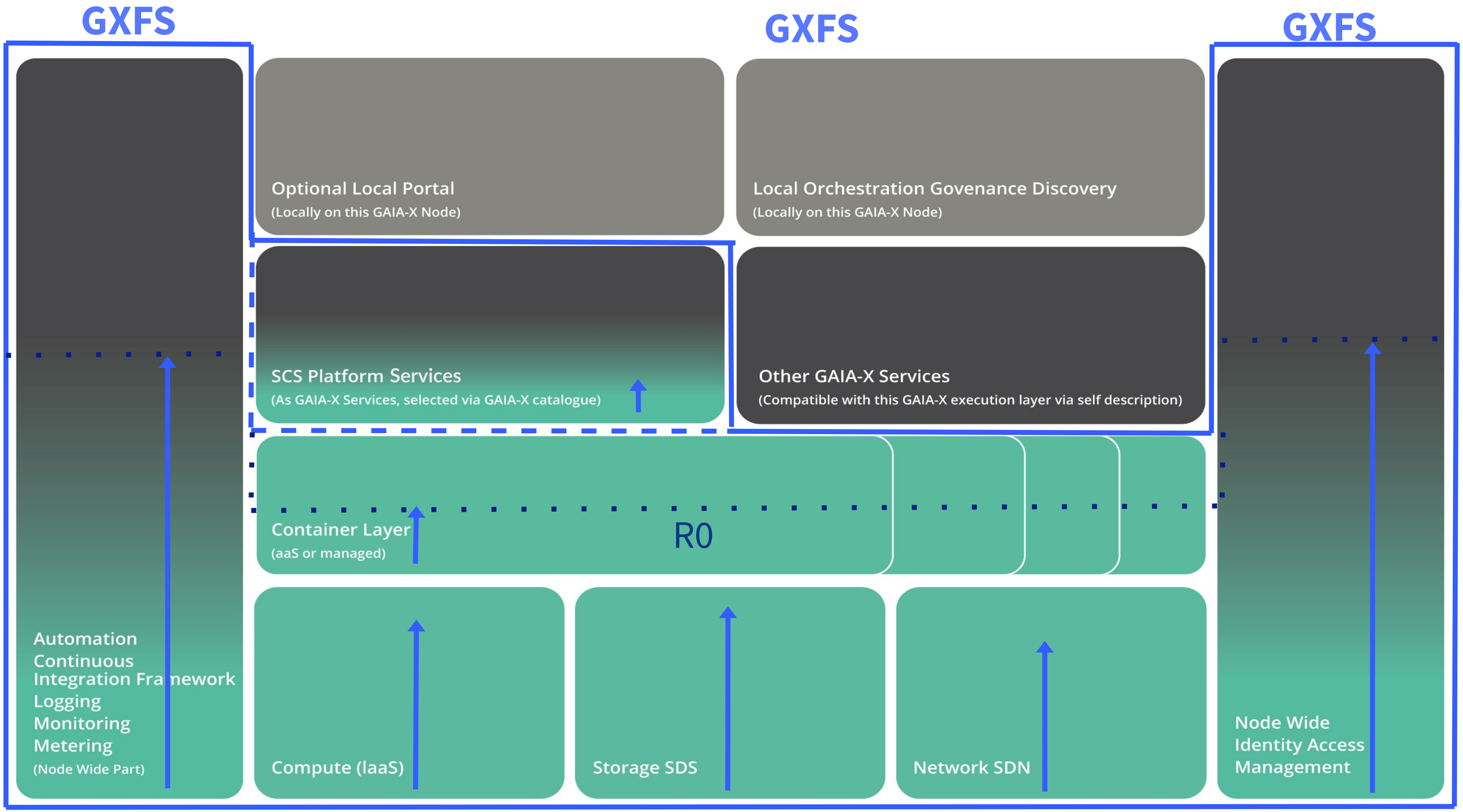
Certification

- Budget for security certifications (BSI) with partners
- Pen testing planned (and budget allocated)

Supply chain security

- Work with researchers on further improving supply chain security (reproducible builds, scanning, …)

Building the SCS architecture bottom up



GXFS

GXFS

GXFS

Optional Local Portal
(Locally on this GAIA-X Node)

Local Orchestration Govenance Discovery
(Locally on this GAIA-X Node)

SCS Platform Services
(As GAIA-X Services, selected via GAIA-X catalogue)

Other GAIA-X Services
(Compatible with this GAIA-X execution layer via self description)

Container Layer
(aaS or managed)

R0

Automation
Continuous
Integration Framework
Logging
Monitoring
Metering
(Node Wide Part)

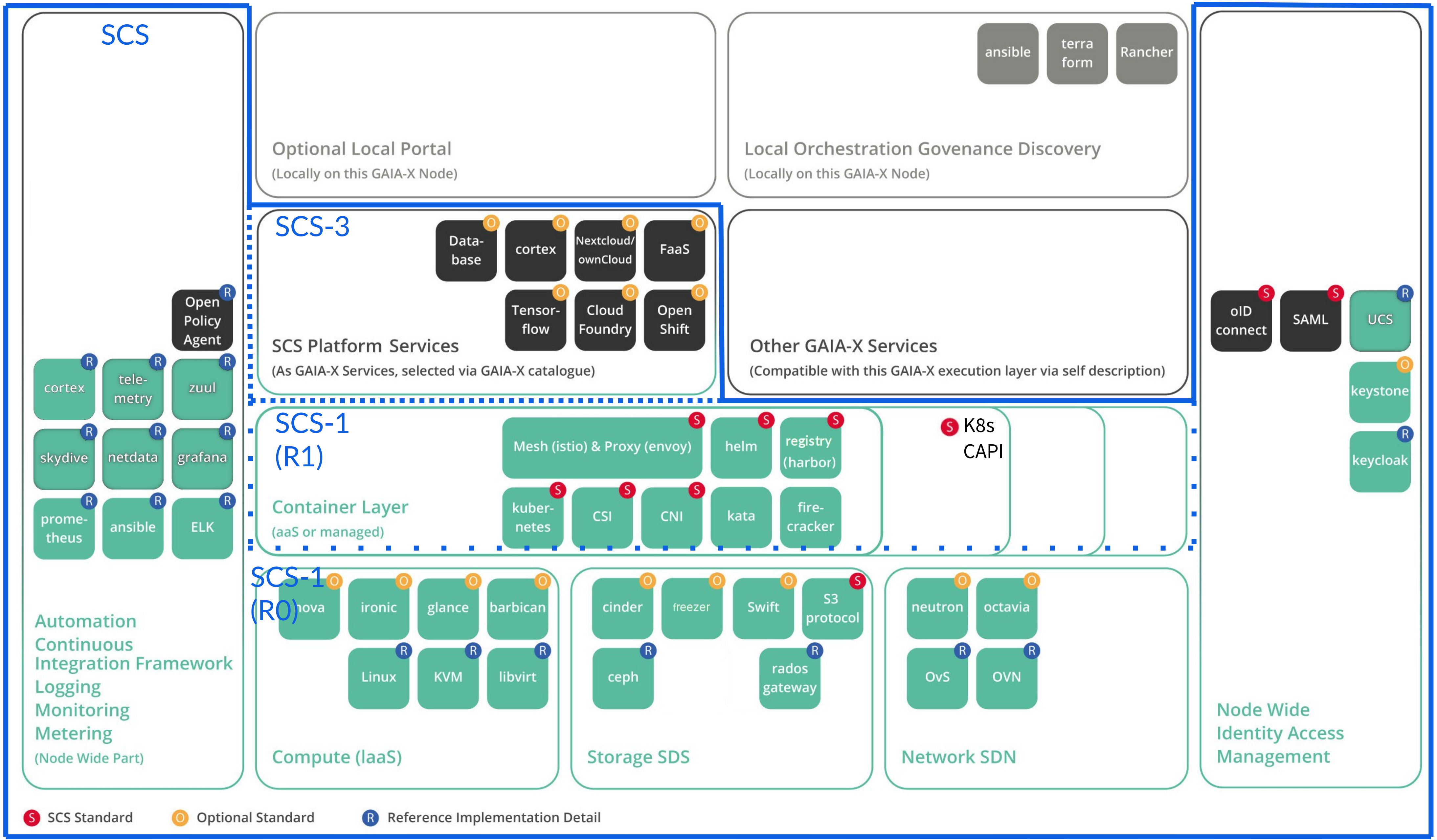
Compute (IaaS)

Storage SDS

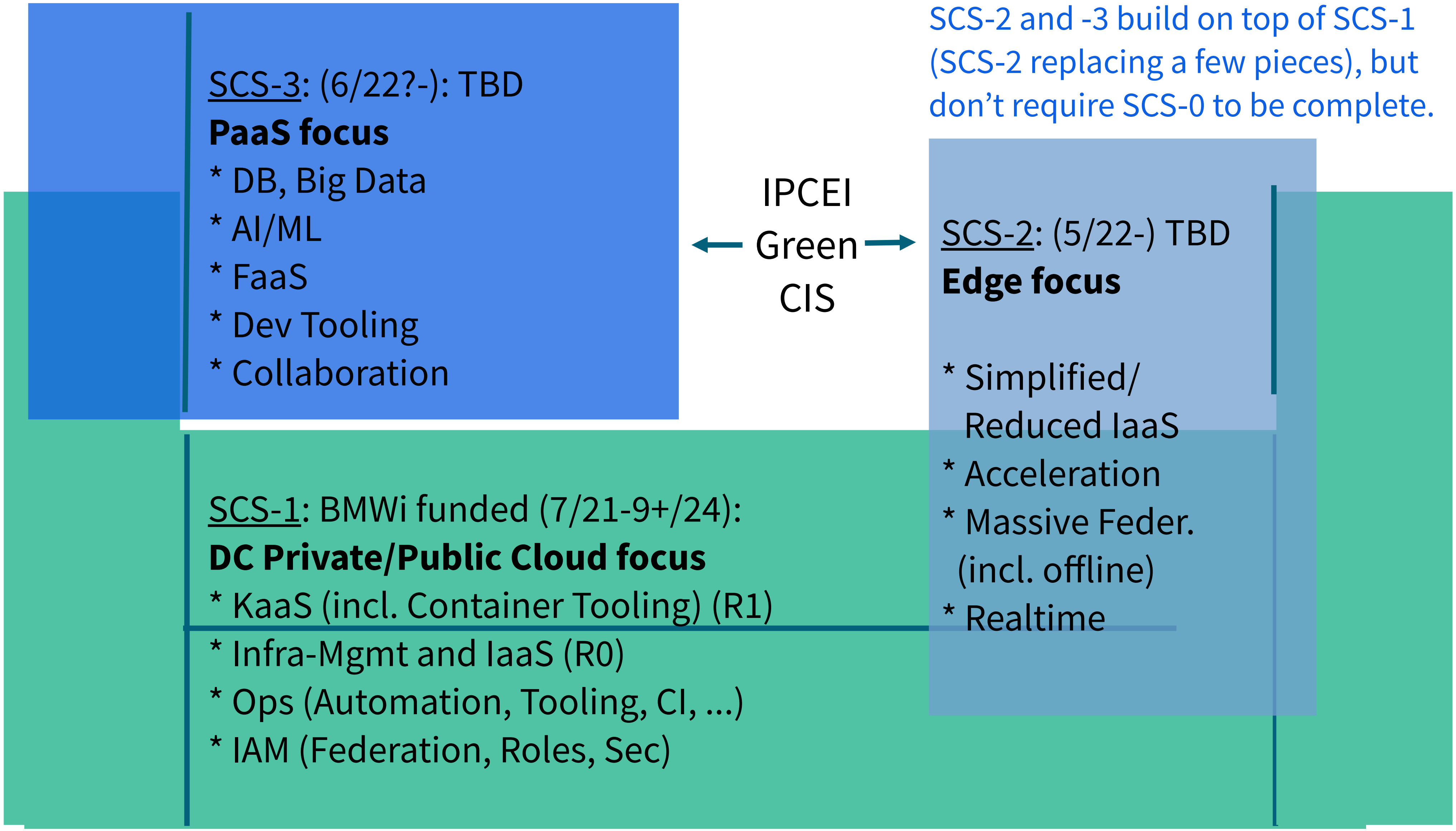
Network SDN

Node Wide
Identity Access
Management

SCS Architecture (current status)



Beyond SCS ("SCS-1") ...



SCS-2 and -3 build on top of SCS-1 (SCS-2 replacing a few pieces), but don't require SCS-0 to be complete.

SCS-3: (6/22?-): TBD
PaaS focus
* DB, Big Data
* AI/ML
* FaaS
* Dev Tooling
* Collaboration

IPCEI Green CIS

SCS-2: (5/22-) TBD
Edge focus

* Simplified/ Reduced IaaS
* Acceleration
* Massive Feder. (incl. offline)
* Realtime

SCS-1: BMWi funded (7/21-9+/24):
DC Private/Public Cloud focus
* KaaS (incl. Container Tooling) (R1)
* Infra-Mgmt and IaaS (R0)
* Ops (Automation, Tooling, CI, ...)
* IAM (Federation, Roles, Sec)

Inside SCS

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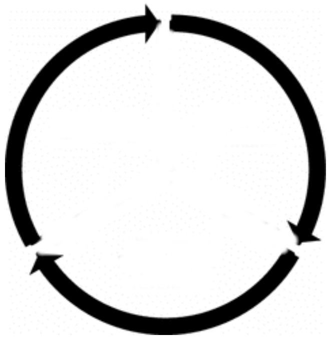
How does SCS succeed?

Operator perspective

- Full-featured, open, federated, modular IaaS/KaaS platform
- High degree of automation for Operations - Tooling for installation, monitoring, lifecycle management, logging, CI, asset management, capacity management, …
- Operational practices shared and published
- Differentiation with professional services, platform services, managed services
- Suitable as public cloud, private cloud, near edge cloud



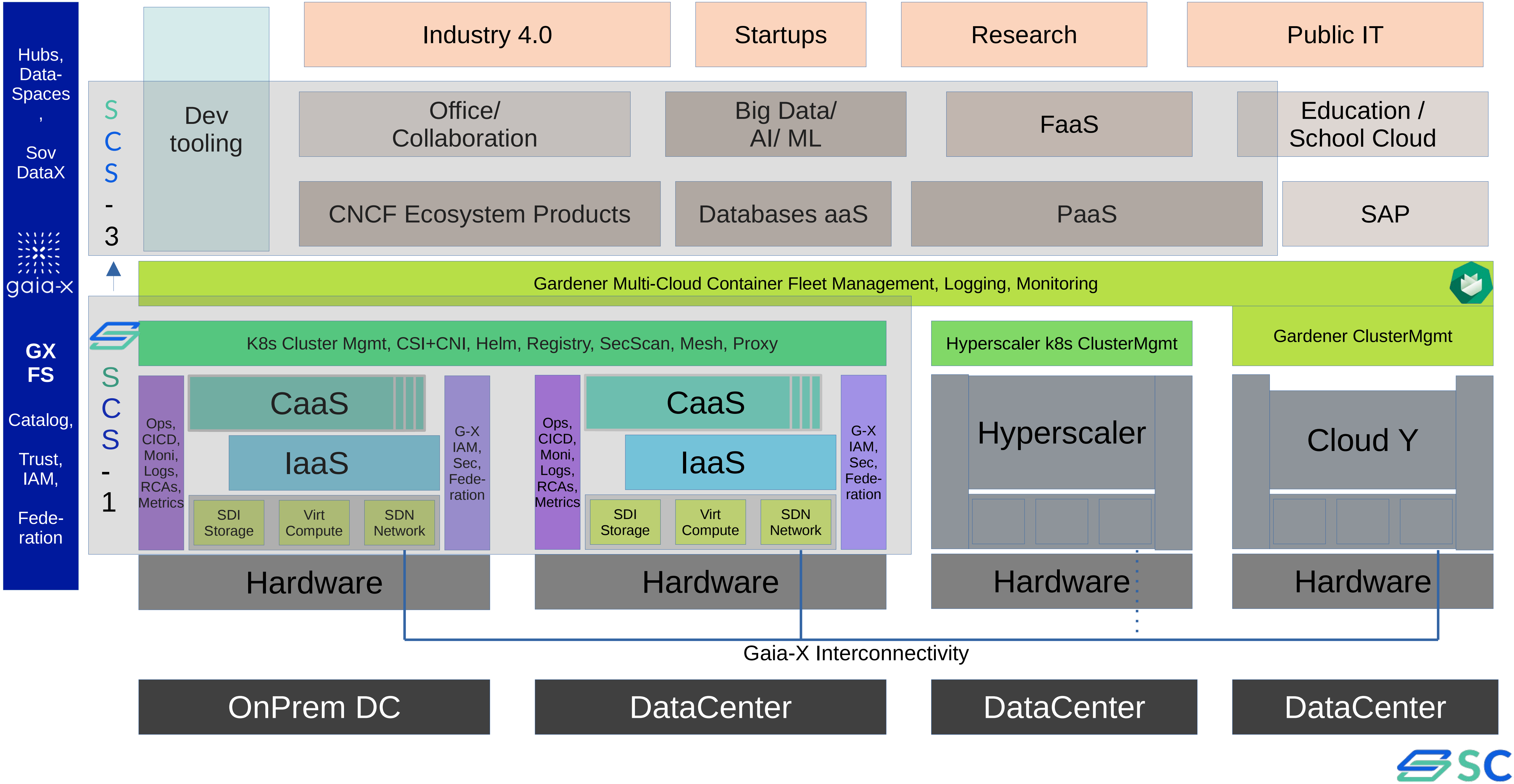
Customer perspective

- Choice and transparency on platform AND its operation
- Highly standardized IaaS platform (OpenStack plus SCS standards)
- Well-defined CNCF aaS platform (k8s, CNI, CSI, registry, sec, mesh/proxy, helm, …)
  - Self-Service (KaaS with k8s cluster API) or Managed (CaaS)
- Standardization, network connectivity and identity federation allowing to easily use several SCS clouds as one
- Federation Services (from Gaia-X) provide standardized way for higher-level InterOp & Transparency

Ecosystem perspective

- Viable ecosystem for training, prof. services, support
- Viable platform for tools, standard building blocks, solutions
- Availability of experts

IT Ecosystem with GAIA-X
adapted from Acatech whitepaper



Flow of automated deployment

(currently covering: Infra, IaaS, Ops, KaaS is WIP)

Physical SCS can of course host virtual SCS
Nested virtualization support recommended

BETACLOUD plusserver

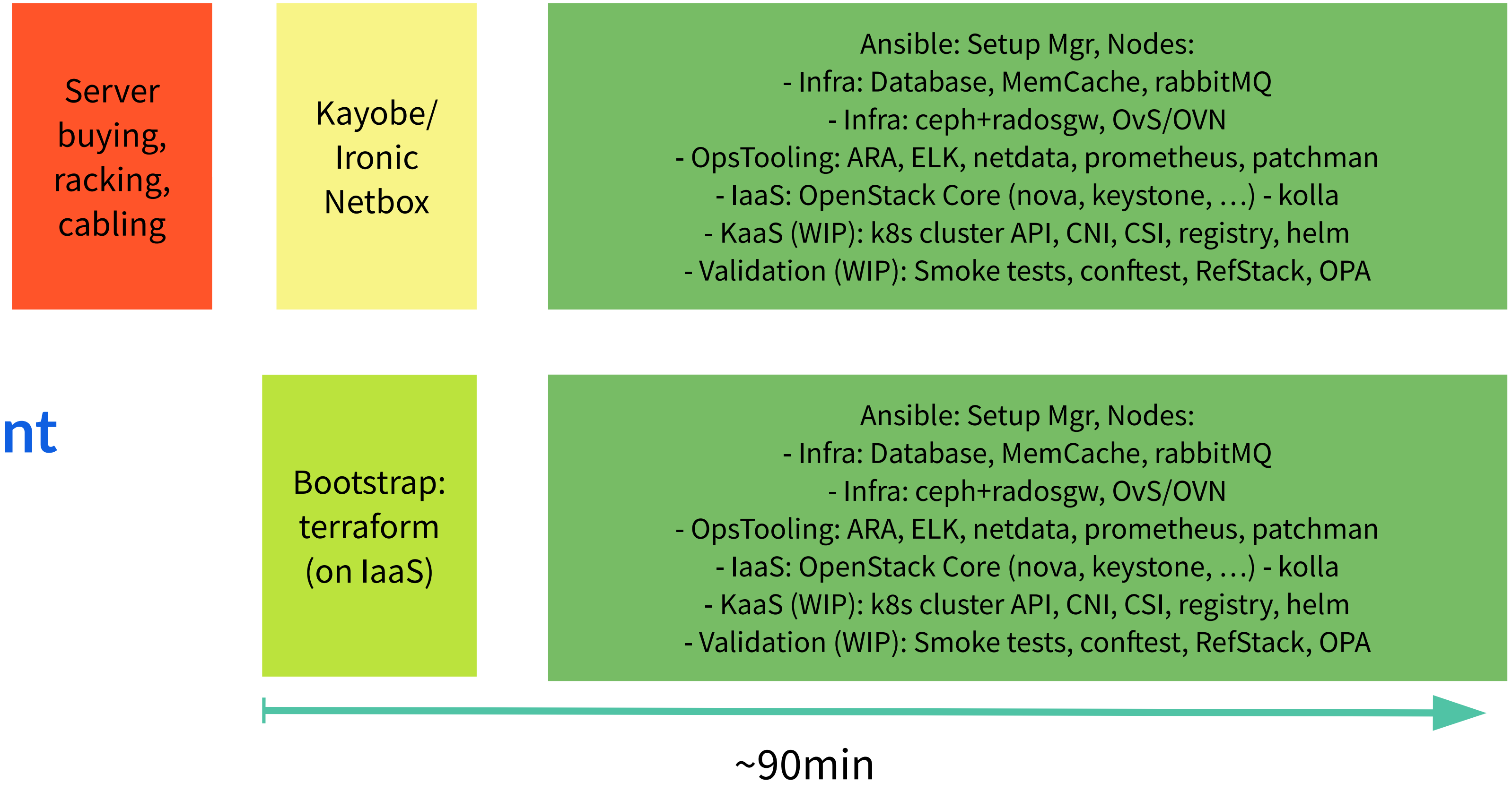
Physical deployment

Production („Live“)

Virtual (testbed) deployment

Dev, Testing / CI („Ref/Test“)
Demo, Explore, Debug, ...

citynetwork T · ·
OVHcloud



Server buying, racking, cabling

Kayobe/ Ironic Netbox

Ansible: Setup Mgr, Nodes:
- Infra: Database, MemCache, rabbitMQ
- Infra: ceph+radosgw, OvS/OVN
- OpsTooling: ARA, ELK, netdata, prometheus, patchman
- IaaS: OpenStack Core (nova, keystone, …) - kolla
- KaaS (WIP): k8s cluster API, CNI, CSI, registry, helm
- Validation (WIP): Smoke tests, conftest, RefStack, OPA

Bootstrap: terraform (on IaaS)

Ansible: Setup Mgr, Nodes:
- Infra: Database, MemCache, rabbitMQ
- Infra: ceph+radosgw, OvS/OVN
- OpsTooling: ARA, ELK, netdata, prometheus, patchman
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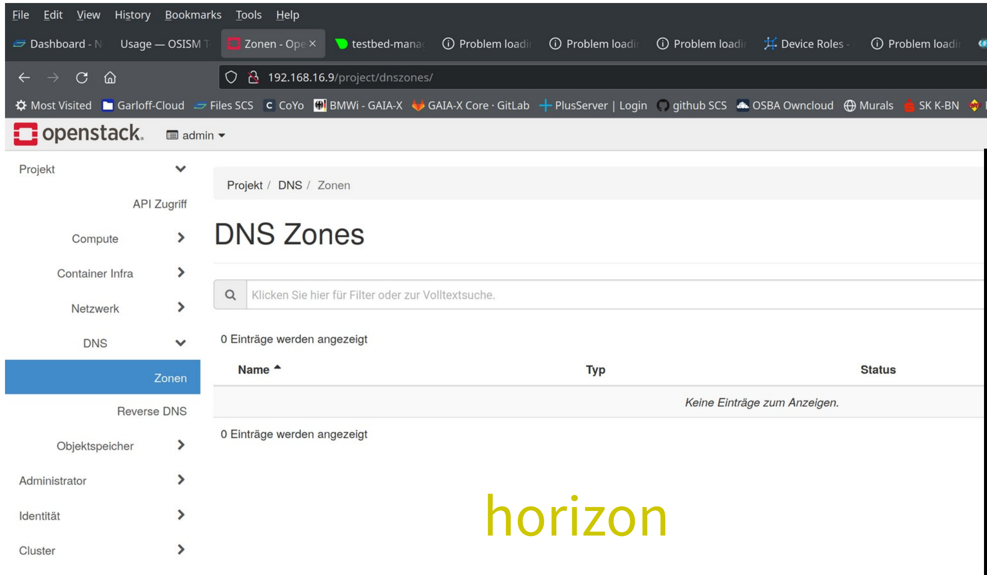
- KaaS (WIP): k8s cluster API, CNI, CSI, registry, helm
- Validation (WIP): Smoke tests, conftest, RefStack, OPA

~90min

https://github.com/OSISM https://docs.osism.de/ https://docs.osism.de/testbed/

https://github.com/OSISM/testbed https://github.com/SovereignCloudStack/Docs

How does it look? (Customer perspective)



Projekt / DNS / Zonen

DNS Zones

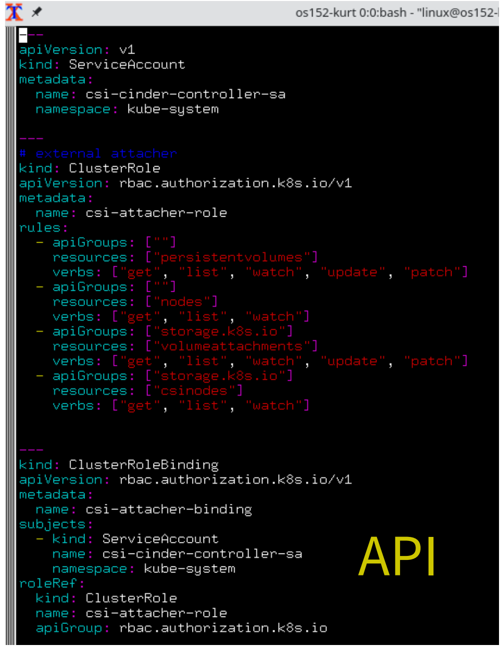
Klicken Sie hier für Filter oder zur Volltextsuche.

0 Einträge werden angezeigt

Name ▲	Typ	Status
Keine Einträge zum Anzeigen.		

0 Einträge werden angezeigt

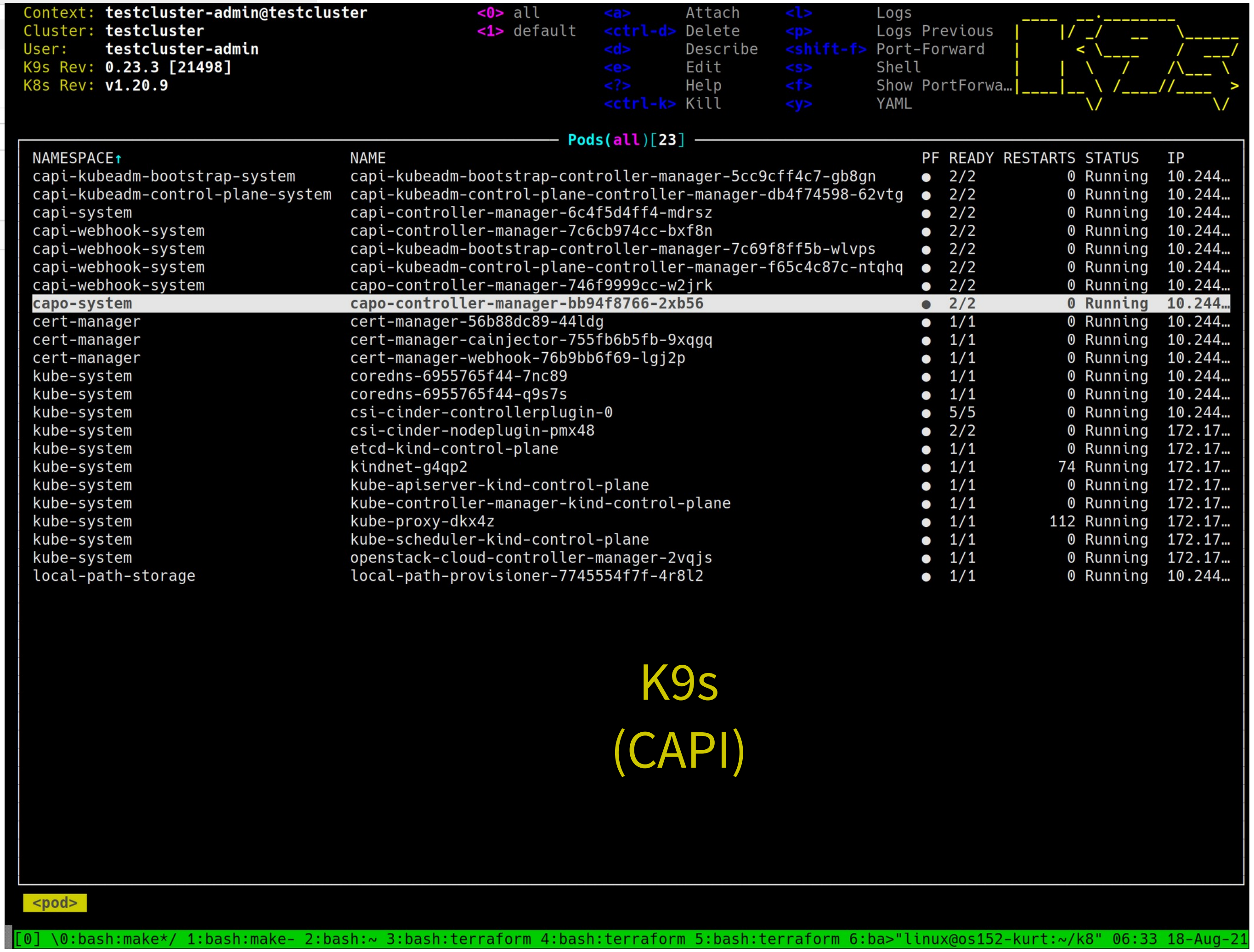
horizon



```
---
apiVersion: v1
kind: ServiceAccount
metadata:
  name: csi-cinder-controller-sa
  namespace: kube-system

---
# external attacher
kind: ClusterRole
apiVersion: rbac.authorization.k8s.io/v1
metadata:
  name: csi-attacher-role
rules:
  - apiGroups: [""]
    resources: ["persistentvolumes"]
    verbs: ["get", "list", "watch", "update", "patch"]
  - apiGroups: [""]
    resources: ["nodes"]
    verbs: ["get", "list", "watch"]
  - apiGroups: ["storage.k8s.io"]
    resources: ["volumeattachments"]
    verbs: ["get", "list", "watch", "update", "patch"]
  - apiGroups: ["storage.k8s.io"]
    resources: ["csinodes"]
    verbs: ["get", "list", "watch"]


---
kind: ClusterRoleBinding
apiVersion: rbac.authorization.k8s.io/v1
metadata:
  name: csi-attacher-binding
subjects:
  - kind: ServiceAccount
    name: csi-cinder-controller-sa
    namespace: kube-system
roleRef:
  kind: ClusterRole
  name: csi-attacher-role
  apiGroup: rbac.authorization.k8s.io
```

API

REST APIs for DevOps teams (Infra-as-Code)

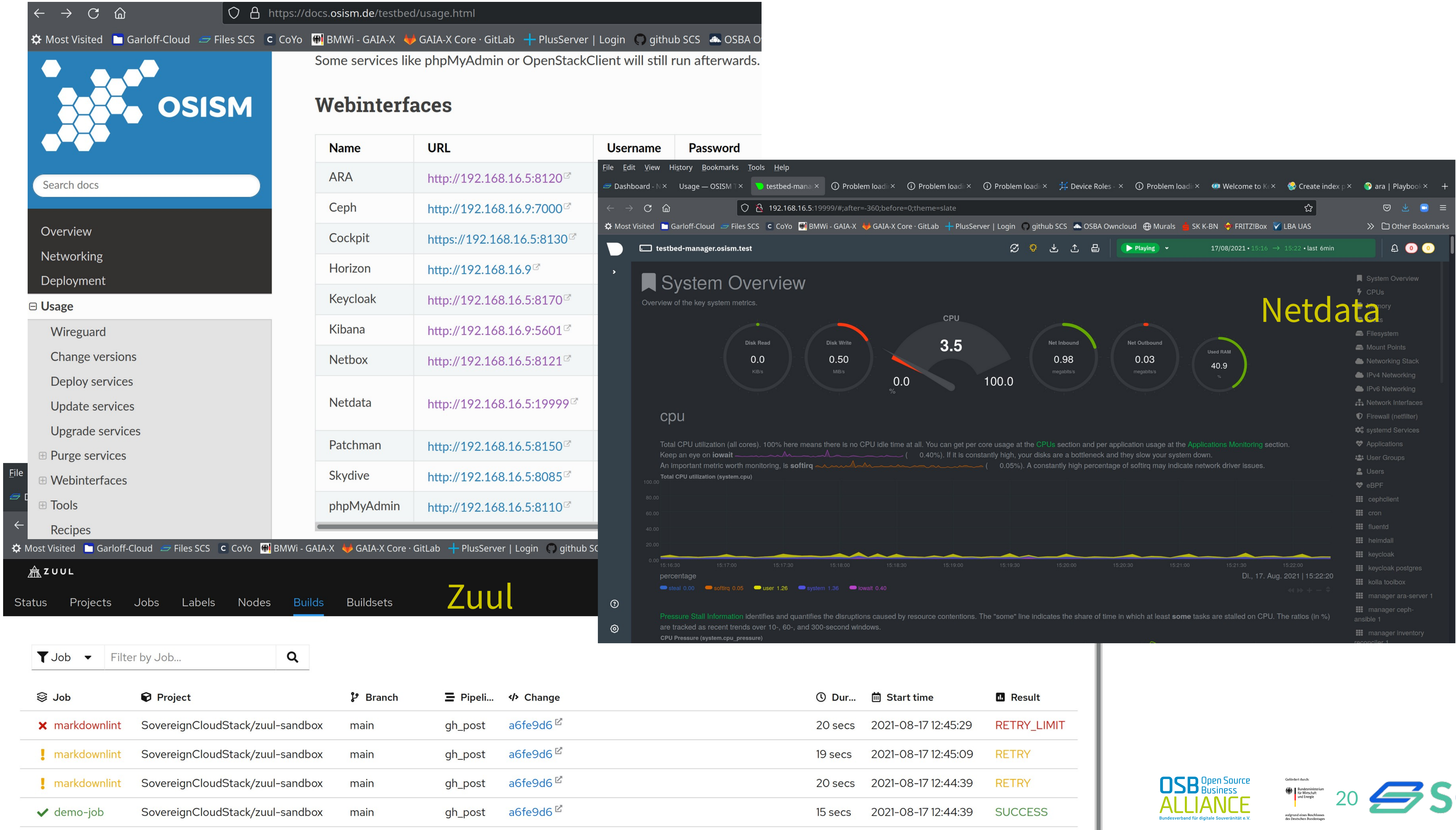


```
Context:  testcluster-admin@testcluster       <0> all       <a>       Attach    <l>        Logs
Cluster:  testcluster                         <1> default   <ctrl-d>  Delete    <p>        Logs Previous
User:     testcluster-admin                                 <d>       Describe  <shift-f>  Port-Forward
K9s Rev:  0.23.3 [21498]                                    <e>       Edit      <s>        Shell
K8s Rev:  v1.20.9                                           <?>       Help      <f>        Show PortForwa…
                                                            <ctrl-k>  Kill      <y>        YAML

 Pods(all)[23]
NAMESPACE↑                          NAME                                                      PF READY RESTARTS STATUS   IP
capi-kubeadm-bootstrap-system       capi-kubeadm-bootstrap-controller-manager-5cc9cff4c7-gb8gn     ●  2/2         0 Running  10.244…
capi-kubeadm-control-plane-system   capi-kubeadm-control-plane-controller-manager-db4f74598-62vtg  ●  2/2         0 Running  10.244…
capi-system                         capi-controller-manager-6c4f5d4ff4-mdrsz                       ●  2/2         0 Running  10.244…
capi-webhook-system                 capi-controller-manager-7c6cb974cc-bxf8n                       ●  2/2         0 Running  10.244…
capi-webhook-system                 capi-kubeadm-bootstrap-controller-manager-7c69f8ff5b-wlvps     ●  2/2         0 Running  10.244…
capi-webhook-system                 capi-kubeadm-control-plane-controller-manager-f65c4c87c-ntqhq  ●  2/2         0 Running  10.244…
capi-webhook-system                 capo-controller-manager-746f9999cc-w2jrk                       ●  2/2         0 Running  10.244…
capo-system                         capo-controller-manager-bb94f8766-2xb56                        ●  2/2         0 Running  10.244…
cert-manager                        cert-manager-56b88dc89-44ldg                                   ●  1/1         0 Running  10.244…
cert-manager                        cert-manager-cainjector-755fb6b5fb-9xqgq                       ●  1/1         0 Running  10.244…
cert-manager                        cert-manager-webhook-76b9bb6f69-lgj2p                          ●  1/1         0 Running  10.244…
kube-system                         coredns-6955765f44-7nc89                                       ●  1/1         0 Running  10.244…
kube-system                         coredns-6955765f44-q9s7s                                       ●  1/1         0 Running  10.244…
kube-system                         csi-cinder-controllerplugin-0                                  ●  5/5         0 Running  10.244…
kube-system                         csi-cinder-nodeplugin-pmx48                                    ●  2/2         0 Running  172.17…
kube-system                         etcd-kind-control-plane                                        ●  1/1         0 Running  172.17…
kube-system                         kindnet-g4qp2                                                  ●  1/1        74 Running  172.17…
kube-system                         kube-apiserver-kind-control-plane                              ●  1/1         0 Running  172.17…
kube-system                         kube-controller-manager-kind-control-plane                     ●  1/1         0 Running  172.17…
kube-system                         kube-proxy-dkx4z                                               ●  1/1       112 Running  172.17…
kube-system                         kube-scheduler-kind-control-plane                              ●  1/1         0 Running  172.17…
kube-system                         openstack-cloud-controller-manager-2vqjs                       ●  1/1         0 Running  172.17…
local-path-storage                  local-path-provisioner-7745554f7f-4r8l2                        ●  1/1         0 Running  10.244…

<pod>
[0] \0:bash:make*/ 1:bash:make- 2:bash:~ 3:bash:terraform 4:bash:terraform 5:bash:terraform 6:ba>"linux@os152-kurt:~/k8" 06:33 18-Aug-21
```

K9s (CAPI)

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

How does it look? (Operator perspective)



Some services like phpMyAdmin or OpenStackClient will still run afterwards.

Webinterfaces

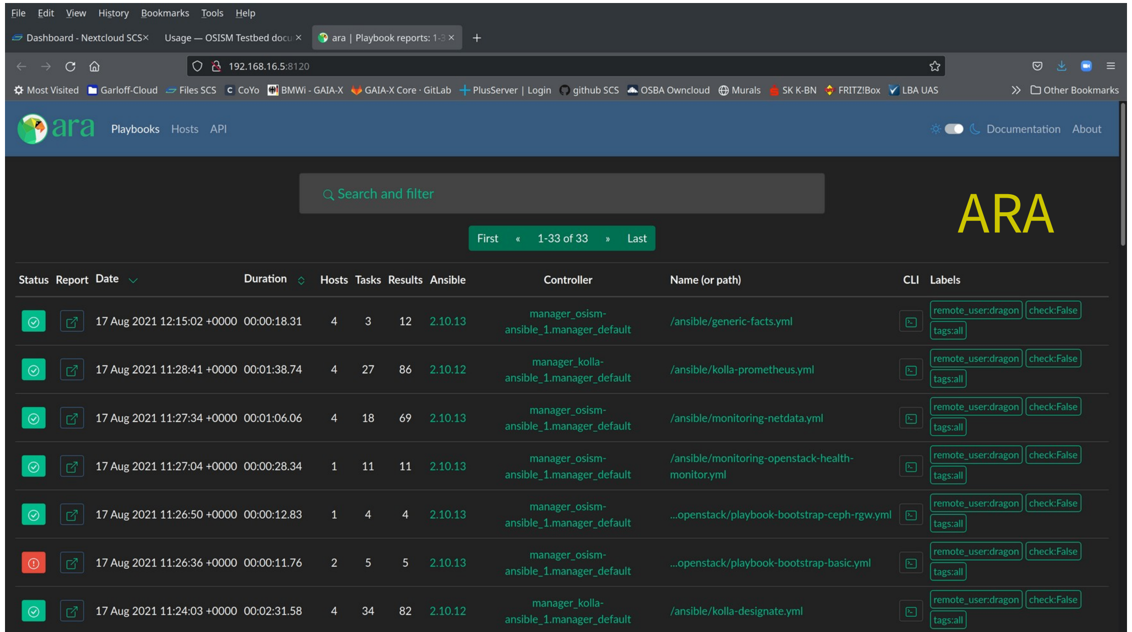
Name	URL	Username	Password
ARA	http://192.168.16.5:8120		
Ceph	http://192.168.16.9:7000		
Cockpit	https://192.168.16.5:8130		
Horizon	http://192.168.16.9		
Keycloak	http://192.168.16.5:8170		
Kibana	http://192.168.16.9:5601		
Netbox	http://192.168.16.5:8121		
Netdata	http://192.168.16.5:19999		
Patchman	http://192.168.16.5:8150		
Skydive	http://192.168.16.5:8085		
phpMyAdmin	http://192.168.16.5:8110		

Total CPU utilization (all cores). 100% here means there is no CPU idle time at all. You can get per core usage at the CPUs section and per application usage at the Applications Monitoring section.
Keep an eye on **iowait** (0.40%). If it is constantly high, your disks are a bottleneck and they slow your system down.
An important metric worth monitoring, is **softirq** (0.05%). A constantly high percentage of softirq may indicate network driver issues.

Pressure Stall Information identifies and quantifies the disruptions caused by resource contentions. The "some" line indicates the share of time in which at least **some** tasks are stalled on CPU. The ratios (in %) are tracked as recent trends over 10-, 60-, and 300-second windows.

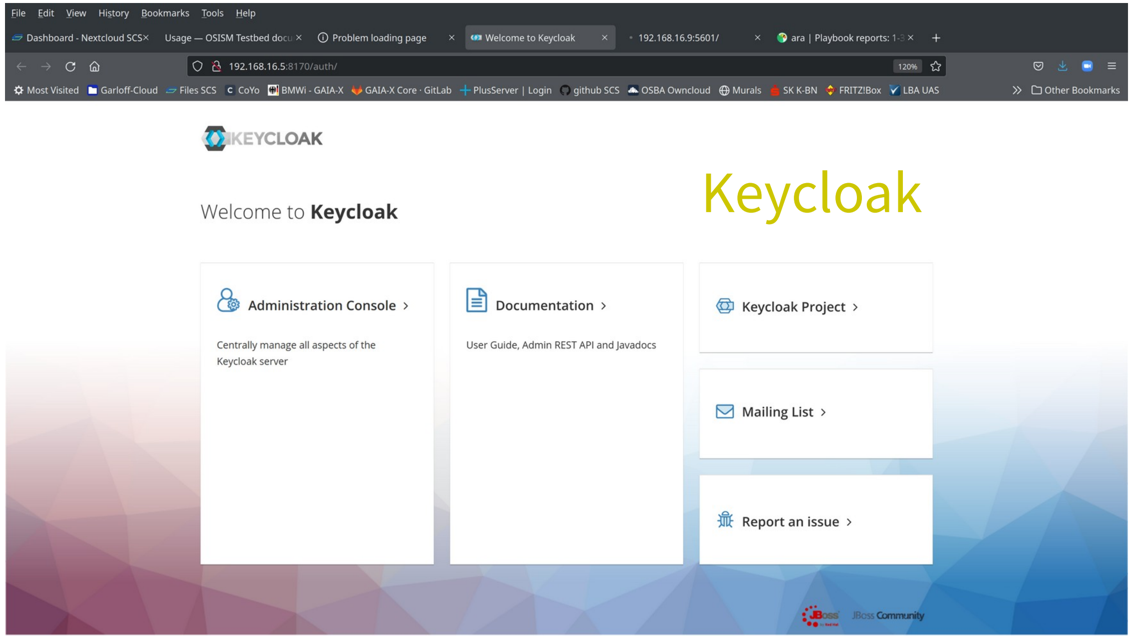
Job	Project	Branch	Pipeli...	Change	Dur...	Start time	Result
✗ markdownlint	SovereignCloudStack/zuul-sandbox	main	gh_post	a6fe9d6	20 secs	2021-08-17 12:45:29	RETRY_LIMIT
! markdownlint	SovereignCloudStack/zuul-sandbox	main	gh_post	a6fe9d6	19 secs	2021-08-17 12:45:09	RETRY
! markdownlint	SovereignCloudStack/zuul-sandbox	main	gh_post	a6fe9d6	20 secs	2021-08-17 12:44:39	RETRY
✓ demo-job	SovereignCloudStack/zuul-sandbox	main	gh_post	a6fe9d6	15 secs	2021-08-17 12:44:39	SUCCESS

How does it look? (Operator perspective)



Status	Report	Date	Duration	Hosts	Tasks	Results	Ansible	Controller	Name (or path)	CLI	Labels
✓		17 Aug 2021 12:15:02 +0000	00:00:18.31	4	3	12	2.10.13	manager_osism-ansible_1.manager_default	/ansible/generic-facts.yml		remote_user:dragon check:False tags:all
✓		17 Aug 2021 11:28:41 +0000	00:01:38.74	4	27	86	2.10.12	manager_kolla-ansible_1.manager_default	/ansible/kolla-prometheus.yml		remote_user:dragon check:False tags:all
✓		17 Aug 2021 11:27:34 +0000	00:01:06.06	4	18	69	2.10.13	manager_osism-ansible_1.manager_default	/ansible/monitoring-netdata.yml		remote_user:dragon check:False tags:all
✓		17 Aug 2021 11:27:04 +0000	00:00:28.34	1	11	11	2.10.13	manager_osism-ansible_1.manager_default	/ansible/monitoring-openstack-health-monitor.yml		remote_user:dragon check:False tags:all
✓		17 Aug 2021 11:26:50 +0000	00:00:12.83	1	4	4	2.10.13	manager_osism-ansible_1.manager_default	...openstack/playbook-bootstrap-ceph-rgw.yml		remote_user:dragon check:False tags:all
!		17 Aug 2021 11:26:36 +0000	00:00:11.76	2	5	5	2.10.13	manager_osism-ansible_1.manager_default	...openstack/playbook-bootstrap-basic.yml		remote_user:dragon check:False tags:all
✓		17 Aug 2021 11:24:03 +0000	00:02:31.58	4	34	82	2.10.12	manager_kolla-ansible_1.manager_default	/ansible/kolla-designate.yml		remote_user:dragon check:False tags:all

ARA



Welcome to **Keycloak**

Administration Console ›

Centrally manage all aspects of the Keycloak server

Documentation ›

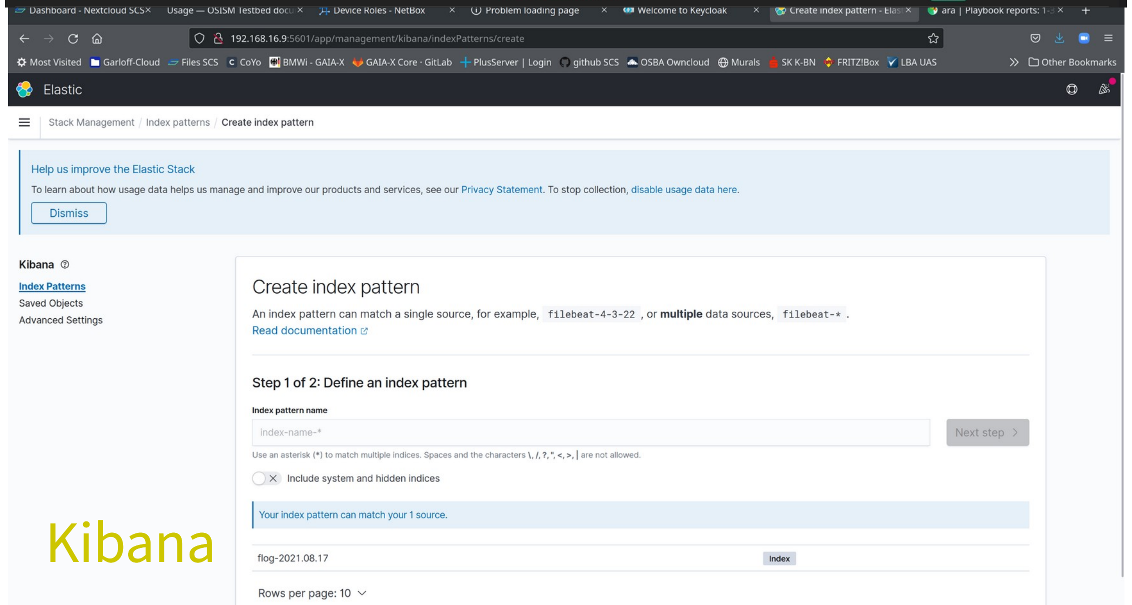
User Guide, Admin REST API and Javadocs

Keycloak Project ›

Mailing List ›

Report an issue ›

Keycloak



Help us improve the Elastic Stack

To learn about how usage data helps us manage and improve our products and services, see our Privacy Statement. To stop collection, disable usage data here.

Create index pattern

An index pattern can match a single source, for example, `filebeat-4-3-22` , or **multiple** data sources, `filebeat-*` .
Read documentation

Step 1 of 2: Define an index pattern

Index pattern name

index-name-*

Use an asterisk (*) to match multiple indices. Spaces and the characters \, /, ?, ", <, >, | are not allowed.

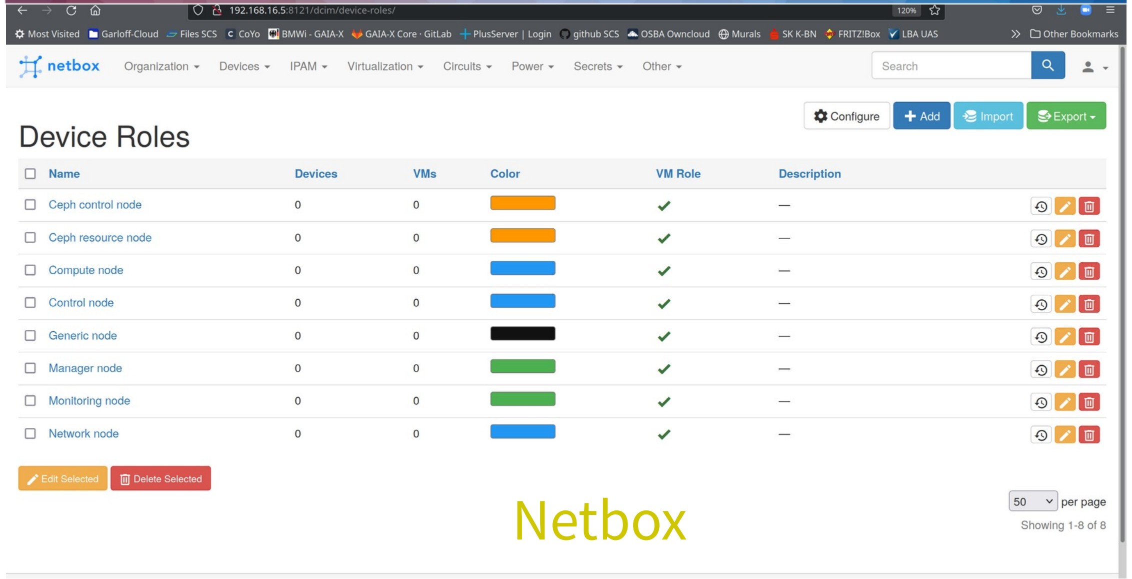
Include system and hidden indices

Your index pattern can match your 1 source.

flog-2021.08.17 Index

Rows per page: 10

Kibana



Device Roles

□	Name	Devices	VMs	Color	VM Role	Description
□	Ceph control node	0	0	🟧	✓	—
□	Ceph resource node	0	0	🟧	✓	—
□	Compute node	0	0	🟦	✓	—
□	Control node	0	0	🟦	✓	—
□	Generic node	0	0	⬛	✓	—
□	Manager node	0	0	🟩	✓	—
□	Monitoring node	0	0	🟩	✓	—
□	Network node	0	0	🟦	✓	—

50 per page

Showing 1-8 of 8

Netbox

Developing SCS

Gefördert durch:

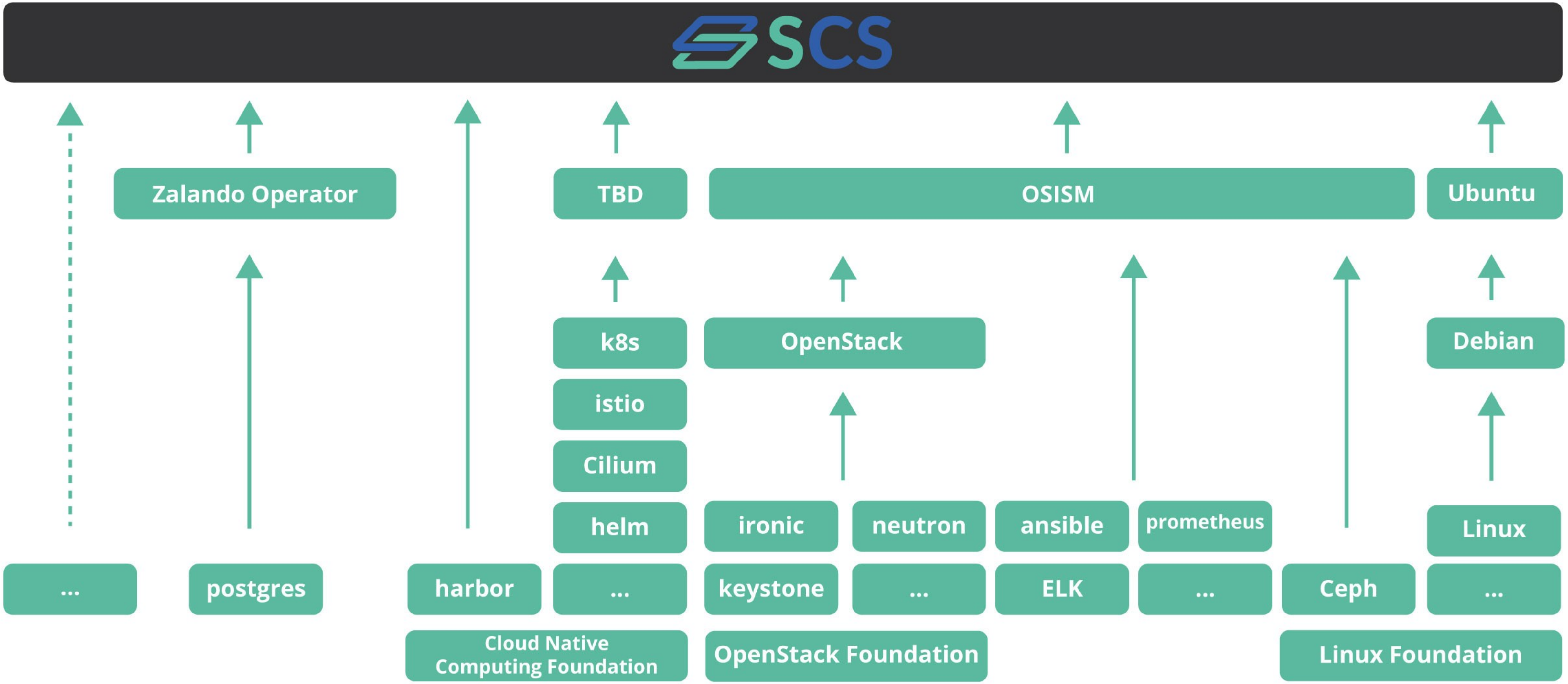
Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages

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

SCS

How is it built? (SCS developer perspective)



How is it developed?

Upstream communities

- OIF: OpenStack, kolla-ansible, kayobe, zuul, …
- CNCF: kubernetes, helm, harbor, openstack-capi-provider
- LF: Linux, KVM, ceph, …
- OSISM: Integration, Ops tooling (https://github.com/OSISM/)

SCS community

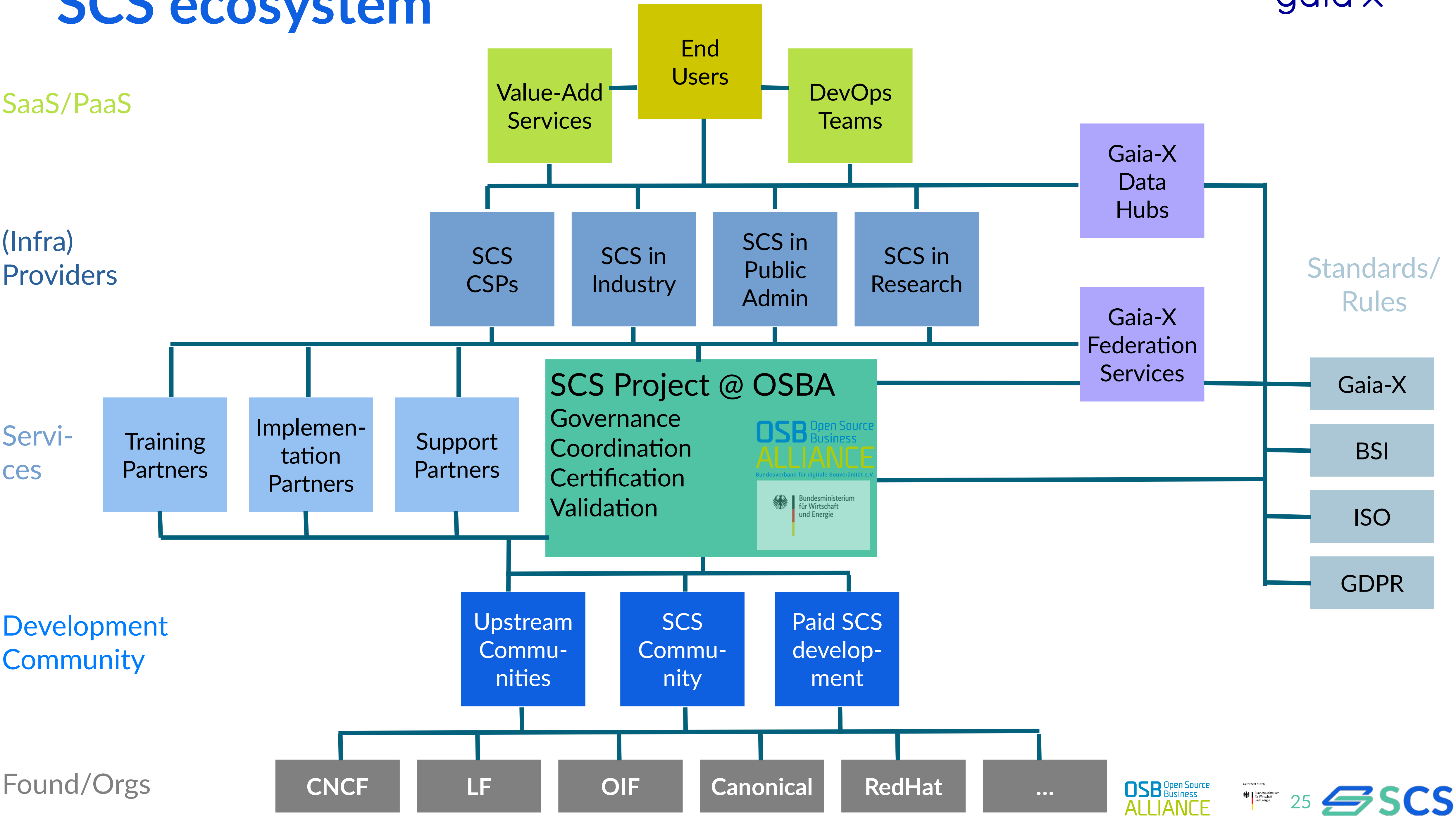
- https://github.com/SovereignCloudStack/Docs
  https://scs.community/docs/contributor/
- Contributions from providers, users, volunteers
- IP policy (Various FOSS licenses, Four Opens, DCO)
- Paid development via public tenders (BMWi funded): https://scs.community/Tender/
- Development performed in agile teams coordinated by POs (@OSBA)
- Align with upstream and contribute back

Collaboration

- Weekly sprints: Sprint reviews, backlog refinement, sprint planning via weekly VC (Jitsi)
- Weekly team call (Thu afternoon, SCS Jitsi)
- Taskboard (nextcloud deck, trello-like)
- Github: Reviews, PRs, Issues
- Mailing list

SCS ecosystem

gaia-x



SaaS/PaaS

End Users

Value-Add Services

DevOps Teams

(Infra) Providers

SCS CSPs

SCS in Industry

SCS in Public Admin

SCS in Research

Gaia-X Data Hubs

Gaia-X Federation Services

Standards/ Rules

Gaia-X

BSI

ISO

GDPR

Servi- ces

Training Partners

Implemen- tation Partners

Support Partners

SCS Project @ OSBA

Governance

Coordination

Certification

Validation

OSB Open Source Business ALLIANCE

Bundesverband für digitale Souveränität e.V.

Bundesministerium für Wirtschaft und Energie

Development Community

Upstream Commu- nities

SCS Commu- nity

Paid SCS develop- ment

Found/Orgs

CNCF

LF

OIF

Canonical

RedHat

...

How to get started? How to join?

Test testbed ...

- Virtual deployment of SCS for testing, exploring, demos, CI, ….
  - You need access to a reasonably vanilla OpenStack
  - OR: You can helps us port the terraform recipes to VMware, AWS, …
- Ask questions, raise issues, submit PRs (with DCO)

Contribute upstream

Join the SCS community

- Become a regular contributor …
- Onboarding call to understand interests, needs, skills, contribution areas …
- Participate in team call (Thu 15:00 CEST) and sprint reviews (Mon afternoon)
- Onboarding to nextcloud and mailing lists
- Participate in tenders

Use SCS

- Create production setups for internal usage or as public clouds
  - Support available via partners (e.g. osism.tech)
  - Certification conformance tests in development
- Develop apps/services for SCS container/cloud platform (preferably with k8s operators)
- Become skilled to offer services around SCS (partner certification program in preparation)

Discussion

QUESTIONS?

Test it!

Pilot project / Proof-of-concept

Join us!

Team meeting on Thu, 15:00 CE(S)T

GAIA-X: https://gaia-x.eu/

SCS Project: https://scs.community/

EMail: project@scs.sovereignit.de, garloff@osb-alliance.com

Appendix

Gefördert durch:

Bundesministerium
für Wirtschaft
und Energie

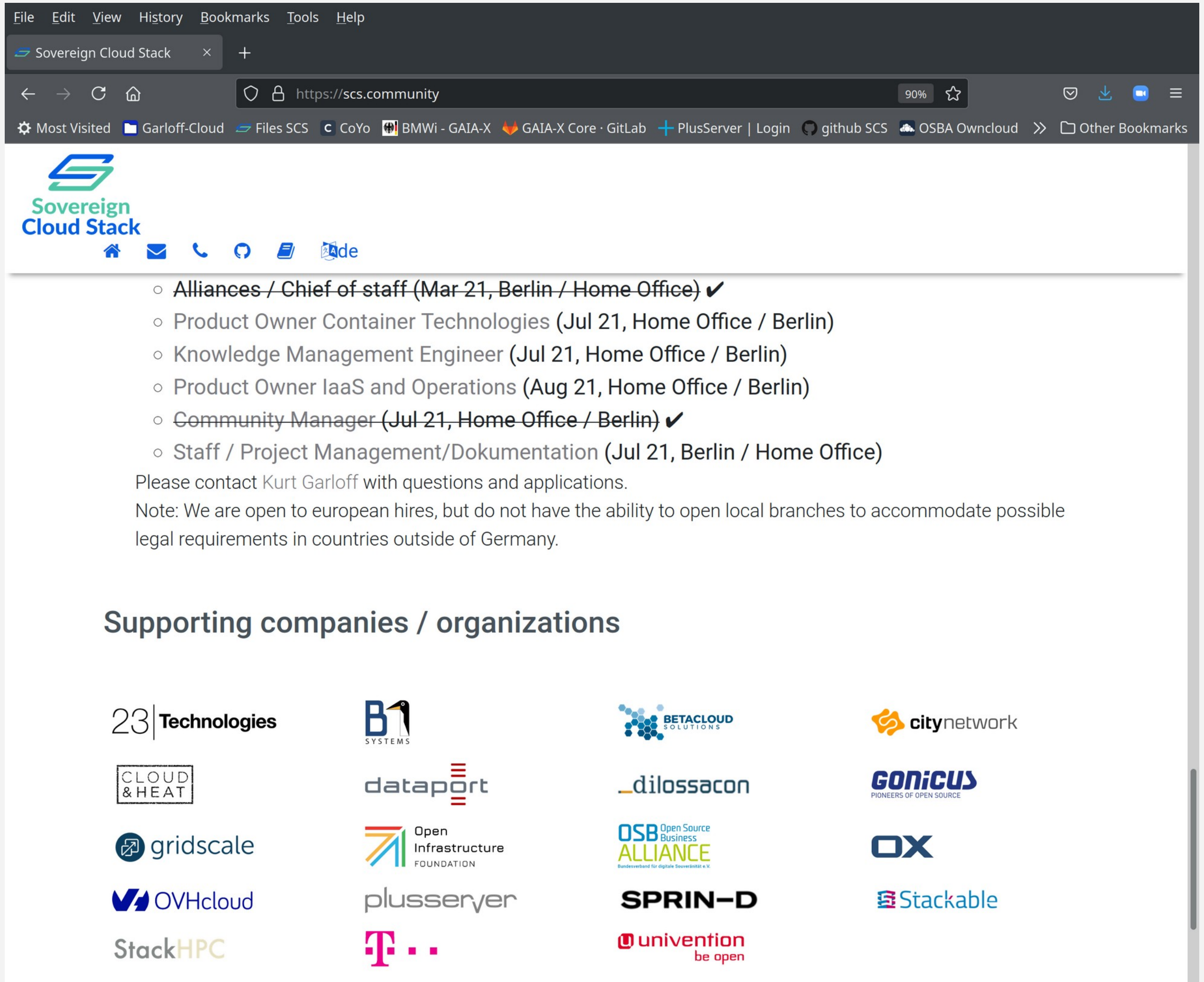
aufgrund eines Beschlusses
des Deutschen Bundestages

Webpage & github

https://scs.community/

github/SovereignCloudStack

gaia-x



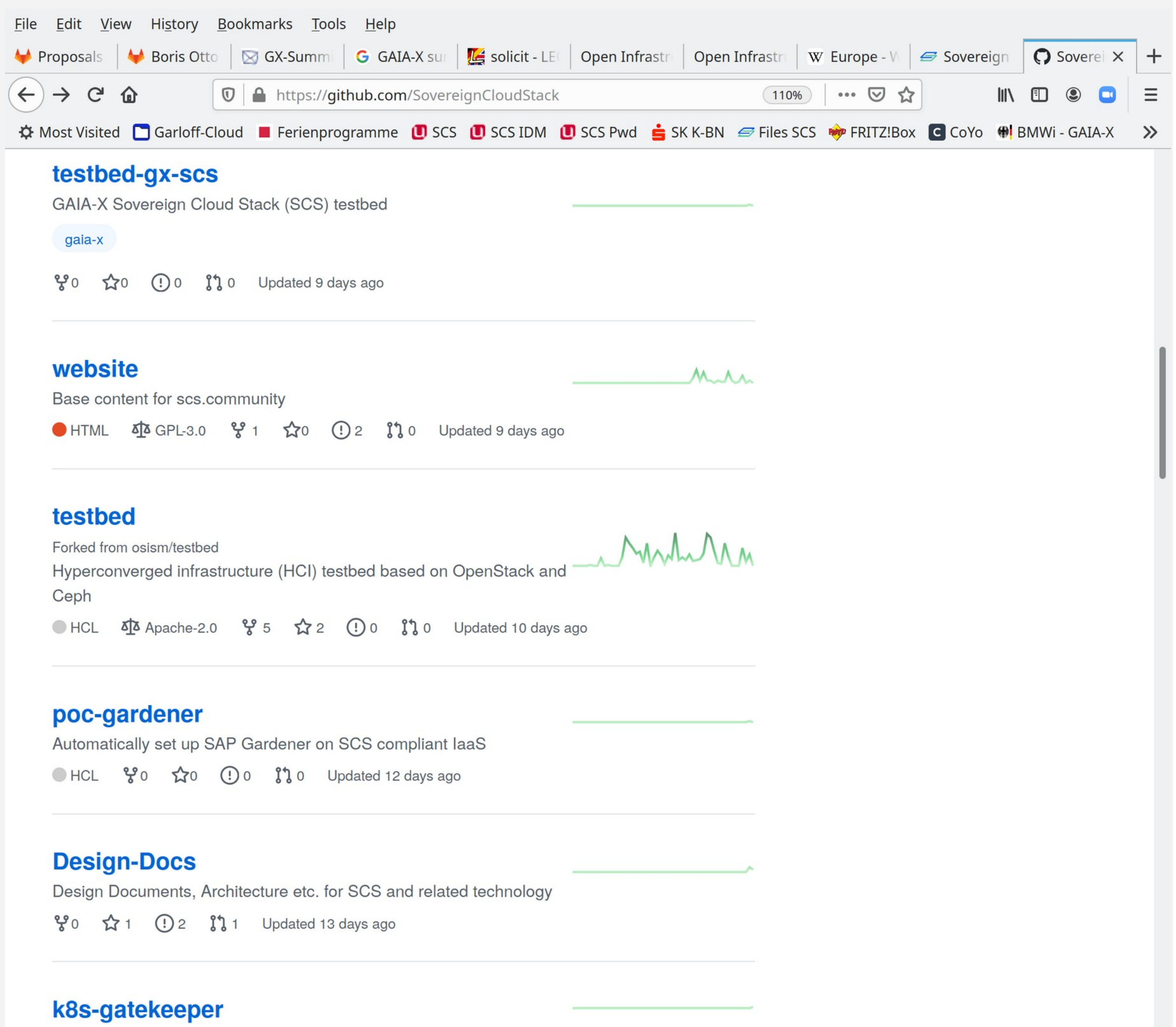
- ~~Alliances / Chief of staff (Mar 21, Berlin / Home Office)~~ ✔
- Product Owner Container Technologies (Jul 21, Home Office / Berlin)
- Knowledge Management Engineer (Jul 21, Home Office / Berlin)
- Product Owner IaaS and Operations (Aug 21, Home Office / Berlin)
- ~~Community Manager (Jul 21, Home Office / Berlin)~~ ✔
- Staff / Project Management/Dokumentation (Jul 21, Berlin / Home Office)

Please contact Kurt Garloff with questions and applications.

Note: We are open to european hires, but do not have the ability to open local branches to accommodate possible legal requirements in countries outside of Germany.

Supporting companies / organizations

23 Technologies, B1 Systems, Betacloud Solutions, citynetwork, Cloud & Heat, dataport, _dilossacon, Gonicus, gridscale, Open Infrastructure Foundation, OSB Open Source Business Alliance, OX, OVHcloud, plusserver, SPRIN-D, Stackable, StackHPC, T · ·, univention be open



testbed-gx-scs
GAIA-X Sovereign Cloud Stack (SCS) testbed
gaia-x
0 ☆0 ⓘ0 0 Updated 9 days ago

website
Base content for scs.community
● HTML GPL-3.0 1 ☆0 ⓘ2 0 Updated 9 days ago

testbed
Forked from osism/testbed
Hyperconverged infrastructure (HCI) testbed based on OpenStack and Ceph
● HCL Apache-2.0 5 ☆2 ⓘ0 0 Updated 10 days ago

poc-gardener
Automatically set up SAP Gardener on SCS compliant IaaS
● HCL 0 ☆0 ⓘ0 0 Updated 12 days ago

Design-Docs
Design Documents, Architecture etc. for SCS and related technology
0 ☆1 ⓘ2 1 Updated 13 days ago

k8s-gatekeeper

IP management in SCS

Only accept OSI accepted open source licenses in implementation

Open Source health check

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

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)

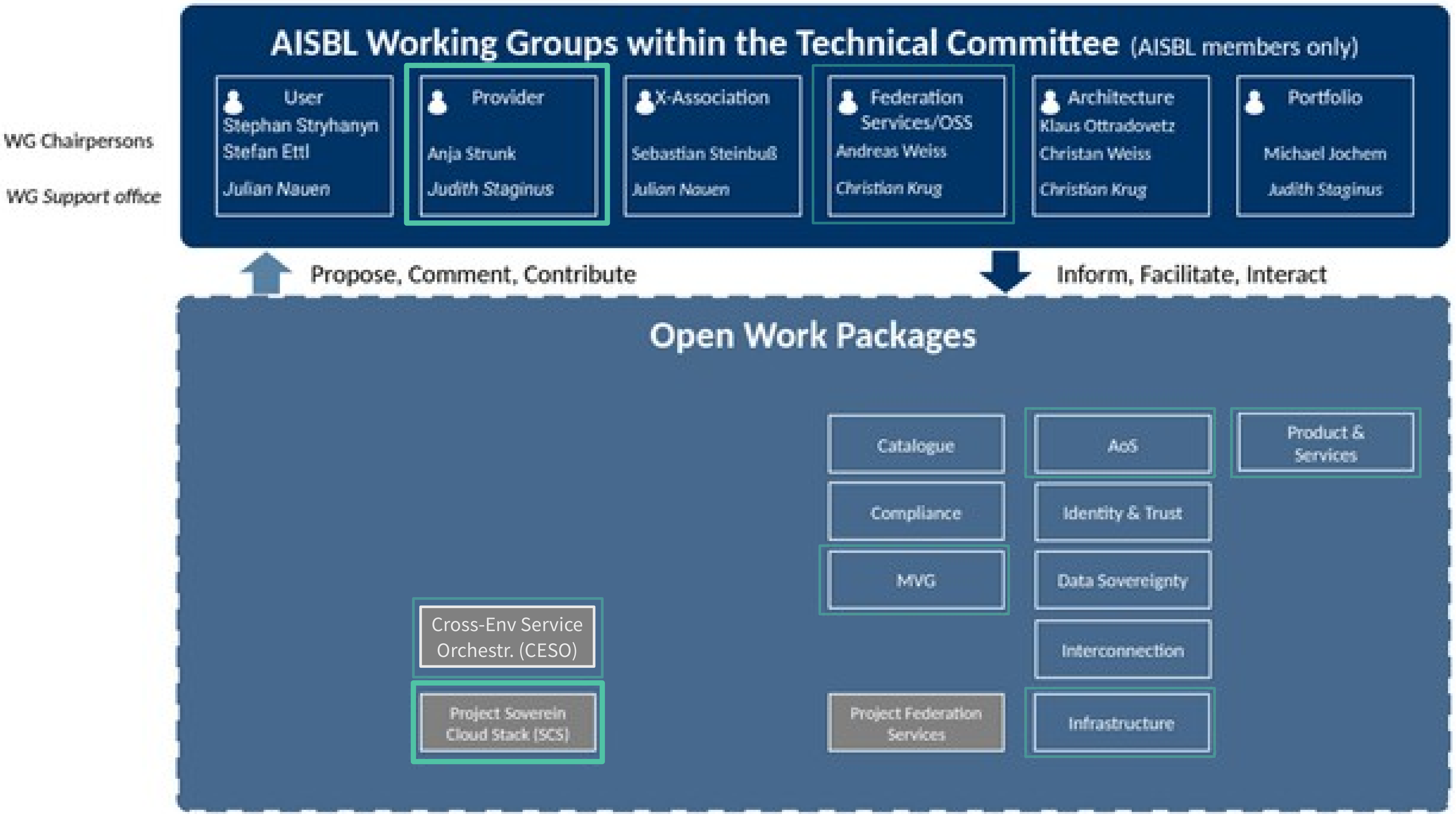
Distributed copyright (like the Linux kernel)

- 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

GAIA-X Technial Committee and SCS



AISBL Working Groups within the Technical Committee (AISBL members only)

WG Chairpersons

WG Support office

User
Stephan Stryhanyn
Stefan Ettl
Julian Nauen

Provider
Anja Strunk
Judith Staginus

X-Association
Sebastian Steinbuß
Julian Nauen

Federation Services/OSS
Andreas Weiss
Christian Krug

Architecture
Klaus Ottradovetz
Christan Weiss
Christian Krug

Portfolio
Michael Jochem
Judith Staginus

Propose, Comment, Contribute

Inform, Facilitate, Interact

Open Work Packages

Catalogue

AoS

Product & Services

Compliance

Identity & Trust

MVG

Data Sovereignty

Interconnection

Cross-Env Service Orchestr. (CESO)

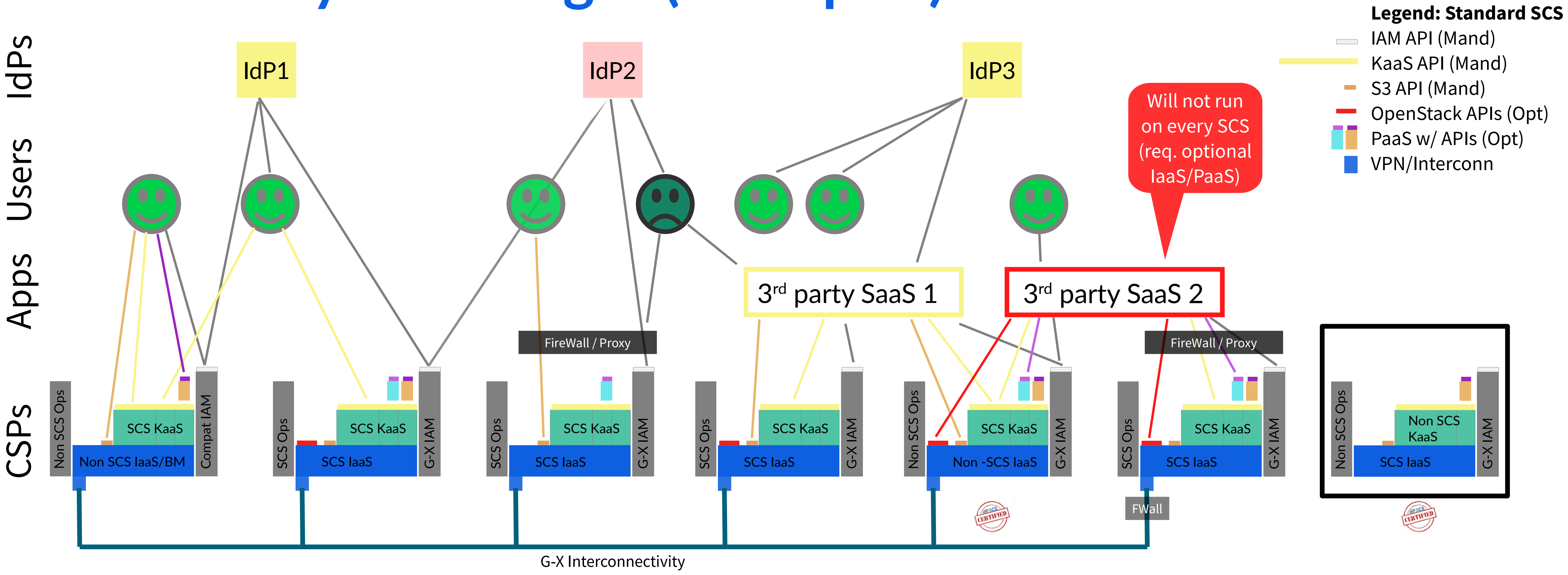
Project Soverein Cloud Stack (SCS)

Project Federation Services

Infrastructure

CSP ecosystem target (examples)

gaia-x



Will not run on every SCS (req. optional IaaS/PaaS)

Legend: Standard SCS

- ▭ IAM API (Mand)
- ▬ KaaS API (Mand)
- ▬ S3 API (Mand)
- ▬ OpenStack APIs (Opt)
- ▮▮ PaaS w/ APIs (Opt)
- ■ VPN/Interconn

Prov1: (public)

Using preex IaaS or BM, not exposing IaaS, Non-Std Ops, Compat IAM

Standard SCS KaaS, S3, PaaS 2

Prov2: (public)

Standard SCS Ops, IaaS (exposed), IAM, KaaS, S3, PaaS 1+2

Prov3: (priv/comm)

Extra protection (limit users/IdPs)

Standard SCS Ops, IaaS (not exposed), IAM, KaaS, S3, PaaS 1

Prov4: (public)

Standard SCS Ops, IaaS (exposed), IAM, KaaS, S3

Prov5: (public)

Non-Standard Ops, IaaS (but certified & exposed as std)

Standard SCS IAM, KaaS, S3, PaaS 1+2

Prov6: (priv/corp)

Extra protection for Interconnect, limited federation

Standard SCS Ops, IaaS (exp), IAM, KaaS, S3, PaaS 1+2

Prov7: (gov/mil)

Air-Gap protected Own KaaS, but compatible (cert)

Still using std SCS Ops, IaaS (not exp), IAM, S3, PaaS 2

CS

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