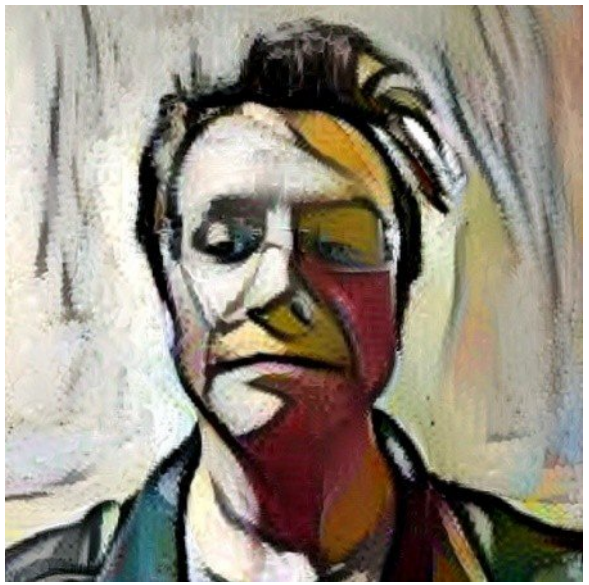
FOSDEM'26

FOSDEM

Digital Public Infrastructure - for the World

Thanks



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Supported by:

Federal Ministry for Economic Affairs and Climate Action

on the basis of a decision by the German Bundestag

Federal Ministry for Economic Cooperation and Development

Sovereign Cloud Stack

The world we live in ...

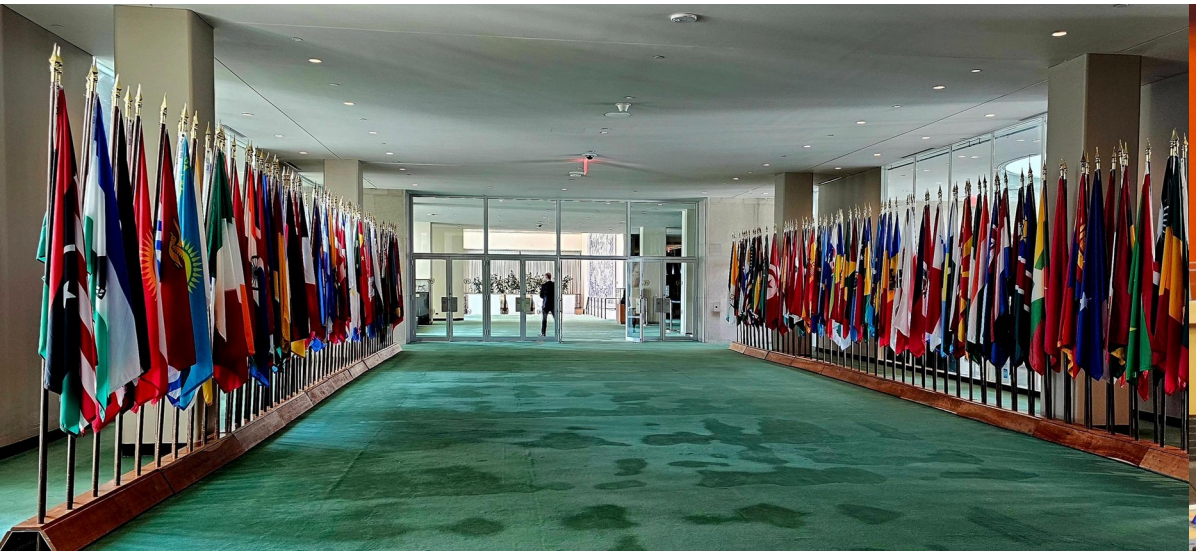
"A world of imperial ambitions and imperial wars.
A world in which dependencies are ruthlessly weaponised."

— Ursula von der Leyen, State of the European Union, September 2025

OSPOs for Good 2024 (NYC)

“Openness, of course, but there is democratization, the future of democracy. It is human centric digital development. It is values about trust and co-creation, reducing the barriers between governments and citizens. Those values are as important as the aspect of creation and innovation.”

Amandeep Singh Gill
UN Secretary-General's Envoy on Technology



Sovereign Cloud Stack

About GovStack

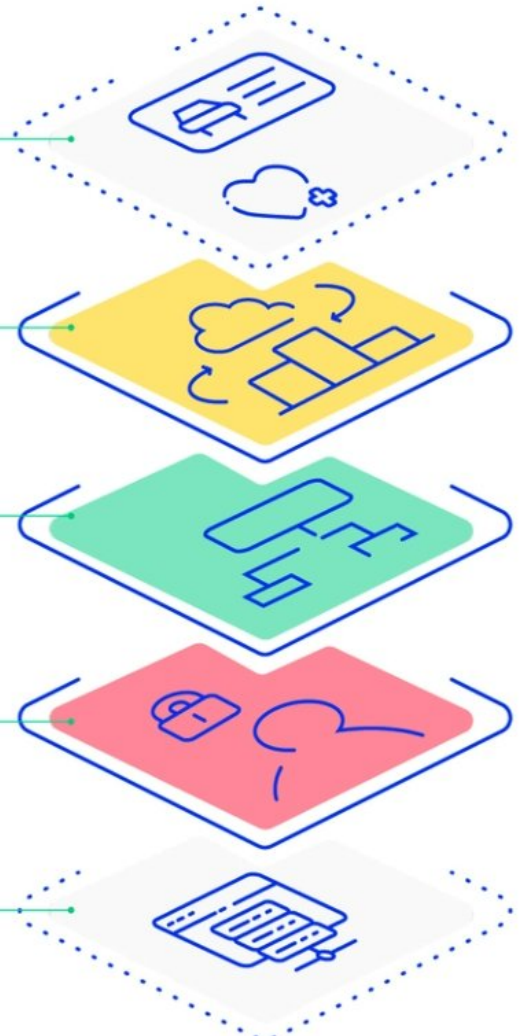
Adaptive Shared Citizen-centric e-Government Services

Mediation Middleware
Open API gateway, secure data exchange

Common Applications Blocks
e-Learning, e-Marketplace business intelligence/analytics, workflow, etc.

Foundational Blocks*
Identity/authentication, security, consent, payment, registration, messaging, etc.

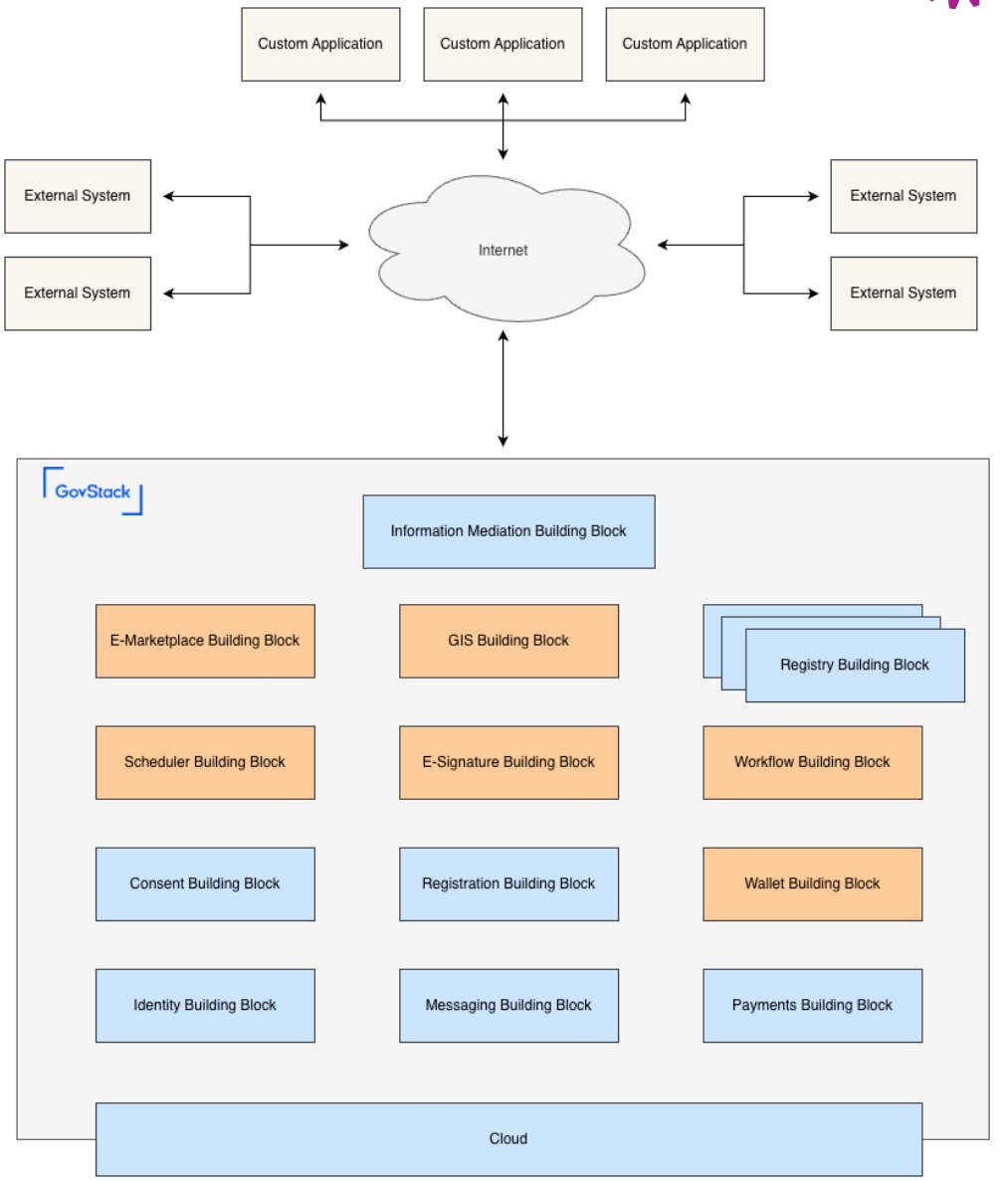
Hosting



compare

GovStack Building Blocks

- Specifications to be implemented
- Independent Components - Chosen individually per Country
- Vendor Neutrality: Implemented using OSS and Commercial Software as per Country's decision
- Assembled and Operated within the Country or in United Nations Data-Centres, or any feasible Public- or Private Cloud Environment, including Hyperscalers
- Sovereign Cloud Stack (SCS) is the Reference Cloud Implementation for GovStack



Openly-developed OSS on all Levels

GovStack

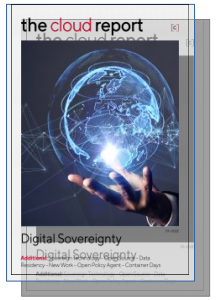
- Specifications developed in Public
- Assembly developed in Public
- Documentation is Public
- Source-Code is Public
- Automation is Public

Sovereign Cloud Stack

- Specifications developed in Public
- Software developed in Public
- Documentation is Public
- Source-Code is Public
- Automation is Public

Digital Sovereignty a.k.a. Resilience

cloud ahead



ALASCA

0 True cloud → API – driven, scalable virt/container infra

1 Data Sovereignty
Control over data, data sharing and data security. Your data stays where you decide it should stay.
→ Security by design: Virtualization, Encryption, Daily updates (possible), Automated pentesting (GAIA-X labels, ENISA, BSI)

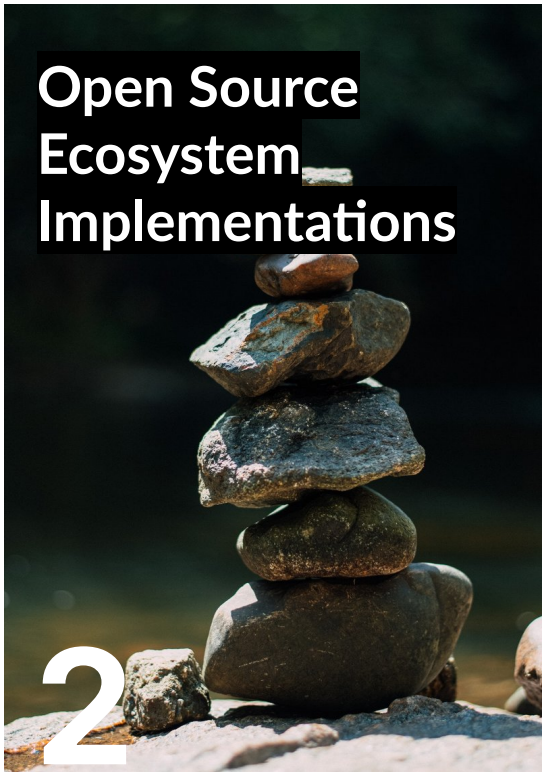
2 Provider Switching Capability
Strong standards ensure changing providers does not have high technical burdens. Makes federation possible.
→ Strong technical standards ensure technically easy switch (or federation): **SCS-compatible**

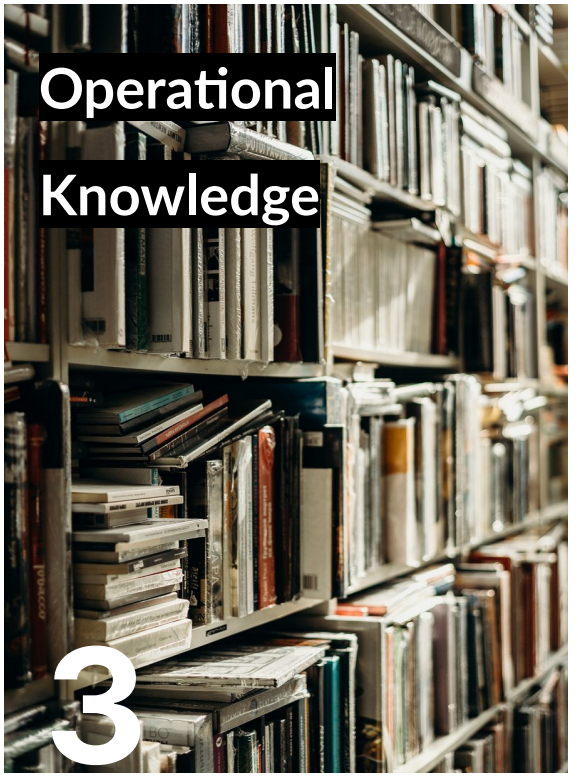
3 Technological Sovereignty
The ability to shape technology, to innovate and create value. Broadly possible only with openly developed open source.
→ Openly developed Open Source code (production quality ref. implementation available): **SCS-open**

4 Operational Skills
Availability and transparency of operational tools and best practices make operation possible for SMEs.
→ Open Operations: Transparency on Ops tools & processes, knowledge sharing: **SCS-sovereign**

Sovereign Cloud Stack

Sovereign Cloud Stack – Deliverables

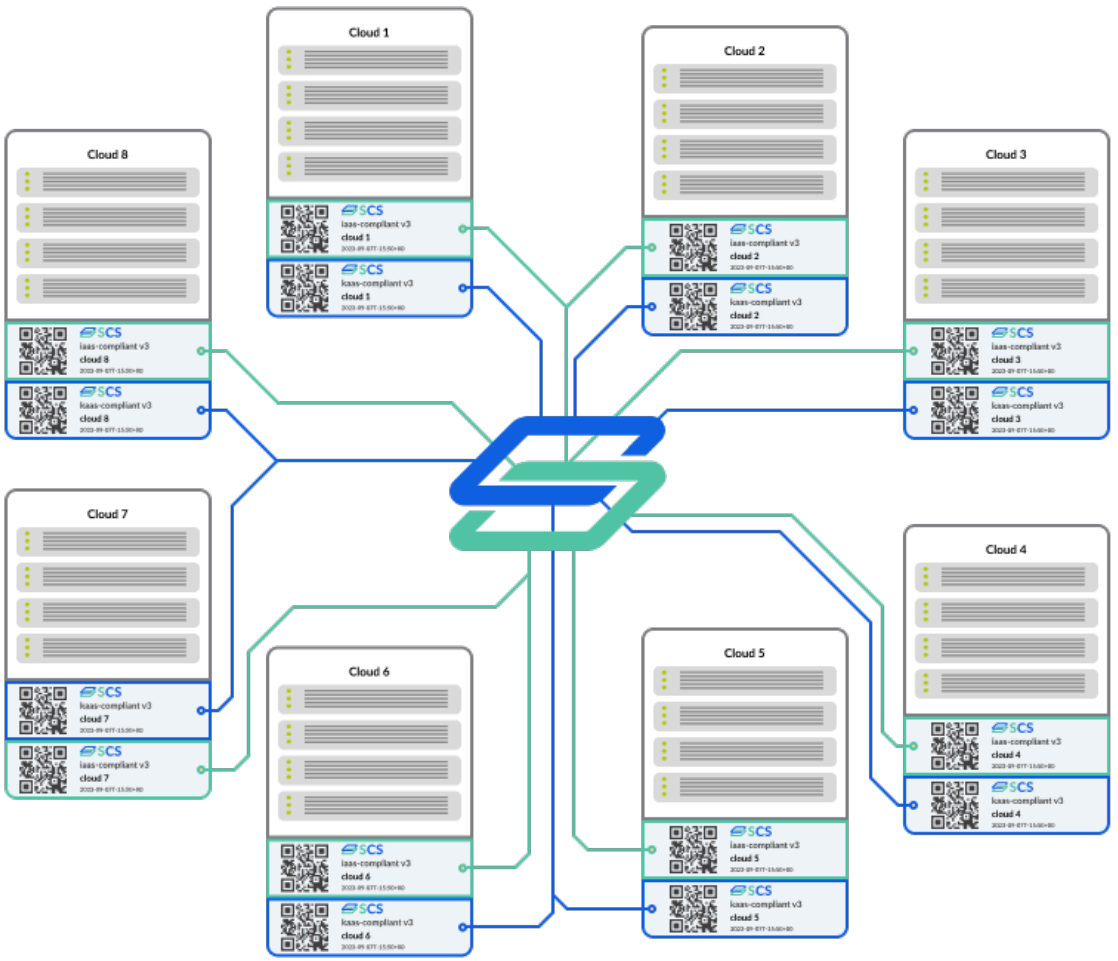




SCS ≡ an open federated Hyperscaler

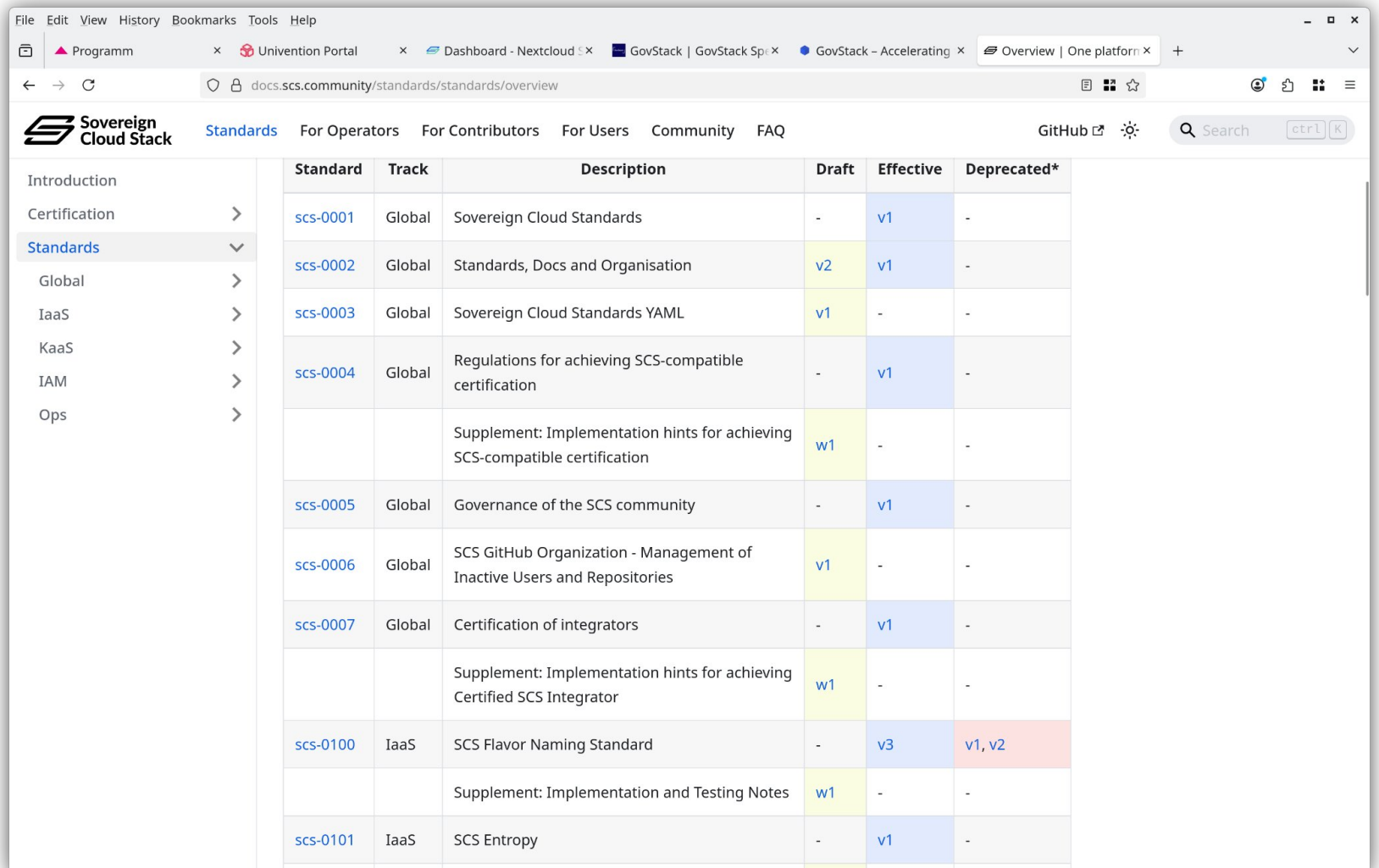
SCS ≡ an open federated Hyperscaler

Sovereign Cloud Stack



Held
together
by common
standards

SCS Standards

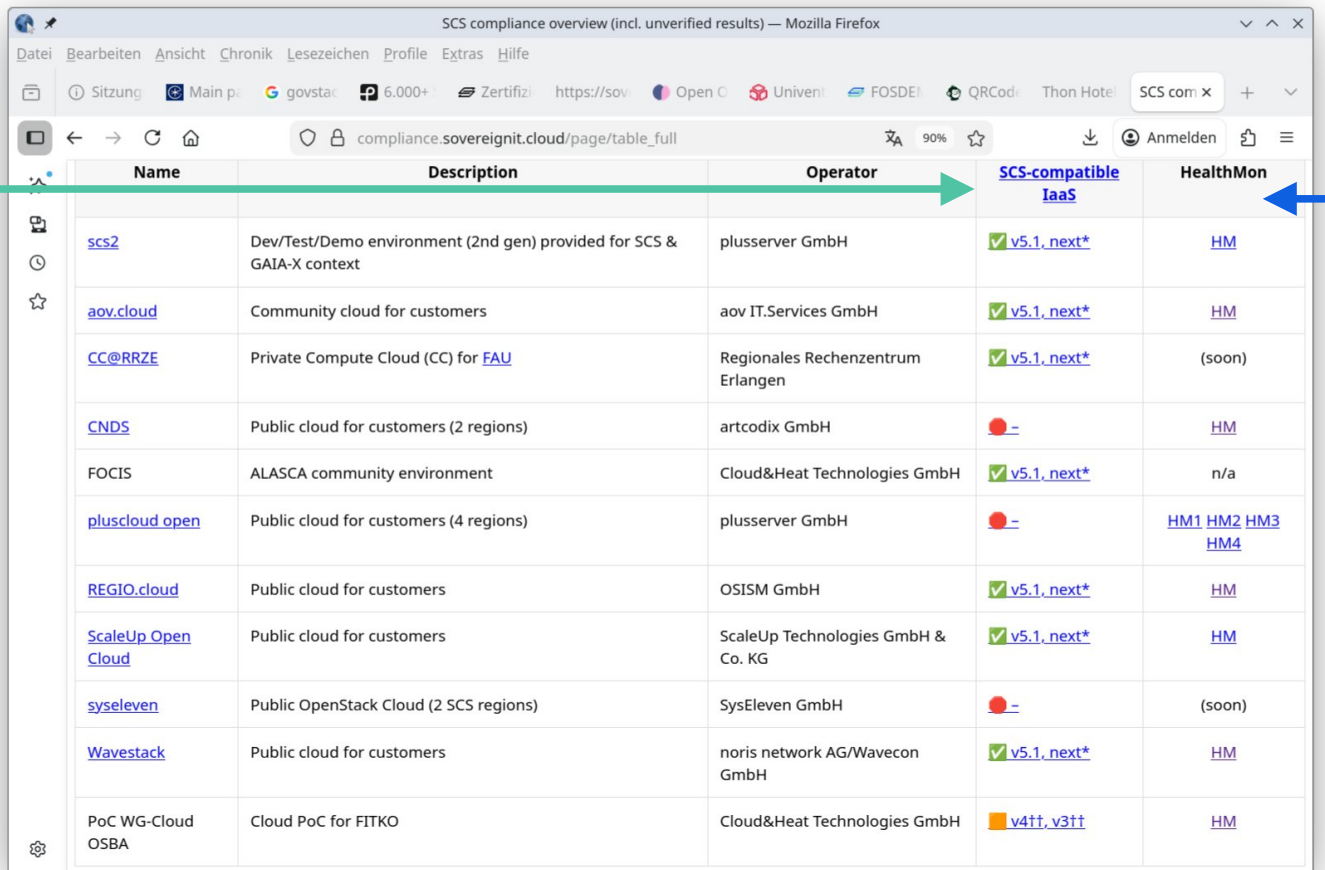


Standard	Track	Description	Draft	Effective	Deprecated*
scs-0001	Global	Sovereign Cloud Standards	-	v1	-
scs-0002	Global	Standards, Docs and Organisation	v2	v1	-
scs-0003	Global	Sovereign Cloud Standards YAML	v1	-	-
scs-0004	Global	Regulations for achieving SCS-compatible certification	-	v1	-
		Supplement: Implementation hints for achieving SCS-compatible certification	w1	-	-
scs-0005	Global	Governance of the SCS community	-	v1	-
scs-0006	Global	SCS GitHub Organization - Management of Inactive Users and Repositories	v1	-	-
scs-0007	Global	Certification of integrators	-	v1	-
		Supplement: Implementation hints for achieving Certified SCS Integrator	w1	-	-
scs-0100	IaaS	SCS Flavor Naming Standard	-	v3	v1, v2
		Supplement: Implementation and Testing Notes	w1	-	-
scs-0101	IaaS	SCS Entropy	-	v1	-

- RFC community processs
- Drafts, reviews, stabilization (github)
- Manadatory and recommended
- Optional implementation hints
- Sorted into tracks
- Test case collection and test suite
- Scopes = Set of mandatory standards

Compliance monitor

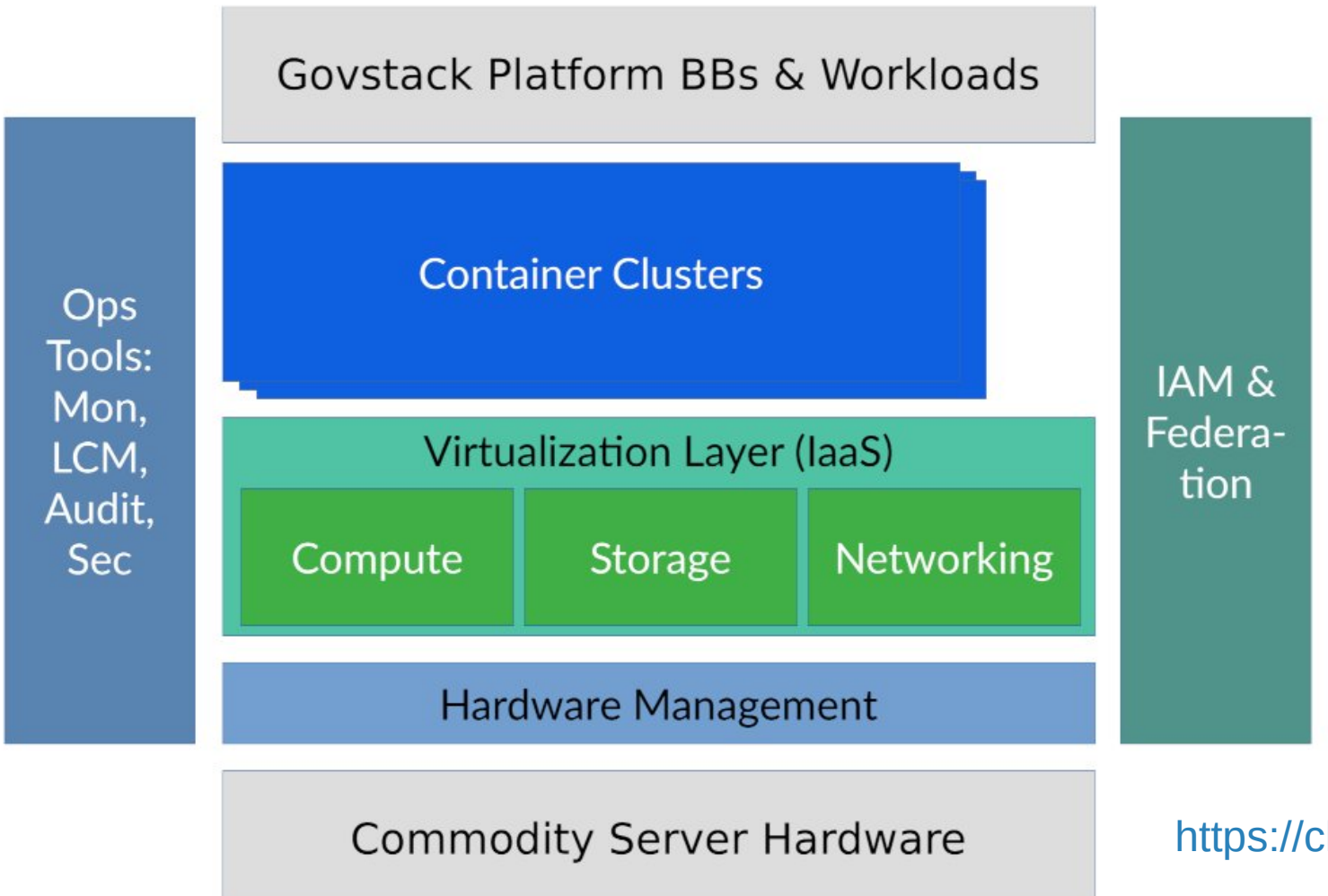
Current (daily) state of standards conformance (here: IaaS SCS-compatible)



Name	Description	Operator	SCS-compatible IaaS	HealthMon
scs2	Dev/Test/Demo environment (2nd gen) provided for SCS & GAIA-X context	plusserver GmbH	✅ v5.1, next*	HM
aov.cloud	Community cloud for customers	aov IT.Services GmbH	✅ v5.1, next*	HM
CC@RRZE	Private Compute Cloud (CC) for FAU	Regionales Rechenzentrum Erlangen	✅ v5.1, next*	(soon)
CNDS	Public cloud for customers (2 regions)	artcodix GmbH	🔴 –	HM
FOCIS	ALASCA community environment	Cloud&Heat Technologies GmbH	✅ v5.1, next*	n/a
pluscloud open	Public cloud for customers (4 regions)	plusserver GmbH	🔴 –	HM1 HM2 HM3 HM4
REGIO.cloud	Public cloud for customers	OSISM GmbH	✅ v5.1, next*	HM
ScaleUp Open Cloud	Public cloud for customers	ScaleUp Technologies GmbH & Co. KG	✅ v5.1, next*	HM
syseleven	Public OpenStack Cloud (2 SCS regions)	SysEleven GmbH	🔴 –	(soon)
Wavestack	Public cloud for customers	noris network AG/Wavecon GmbH	✅ v5.1, next*	HM
PoC WG-Cloud OSBA	Cloud PoC for FITKO	Cloud&Heat Technologies GmbH	🟧 v4††, v3††	HM

OpenStack Health Monitor Dashboard: Public realtime monitoring of performance and error rates (Recommended)

Cloud Building Block - SCS as Foundation for GovStack



https://cloud.govstack.global/

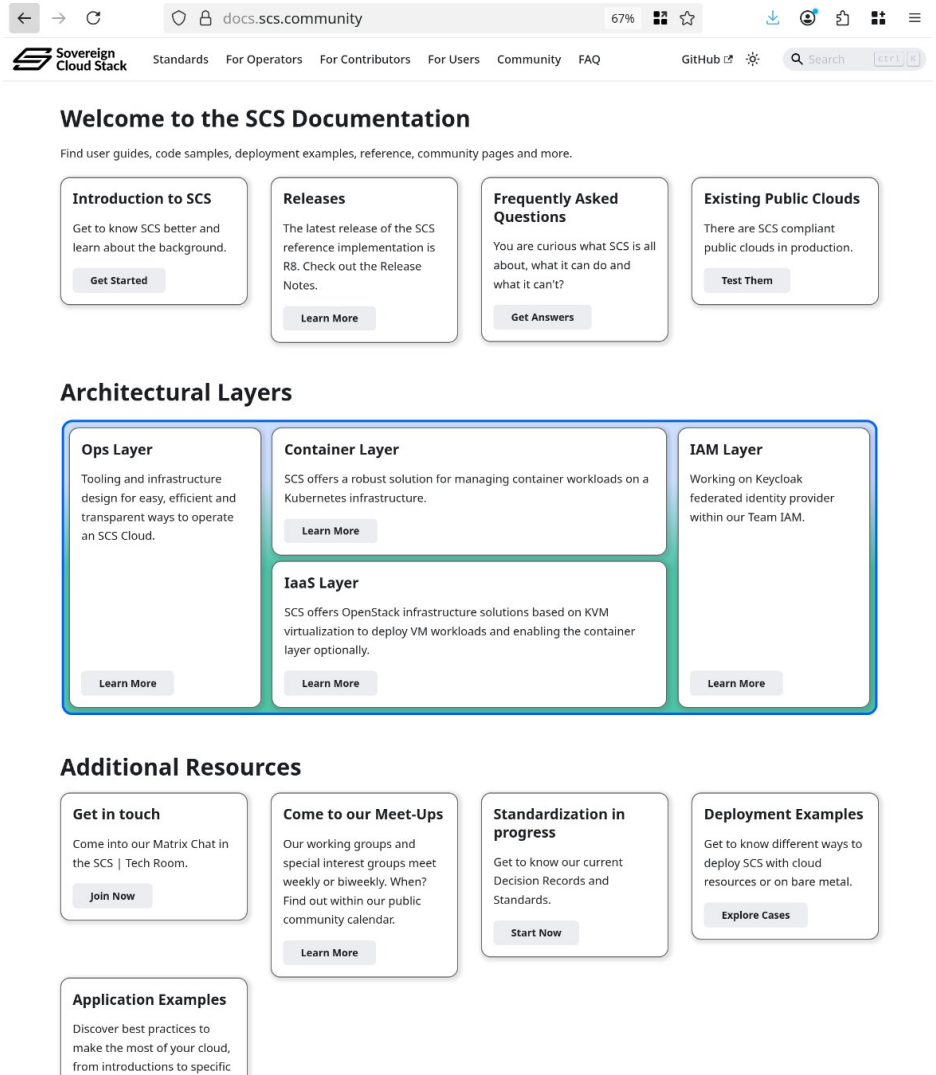
Rolling out Sovereign Cloud Stack

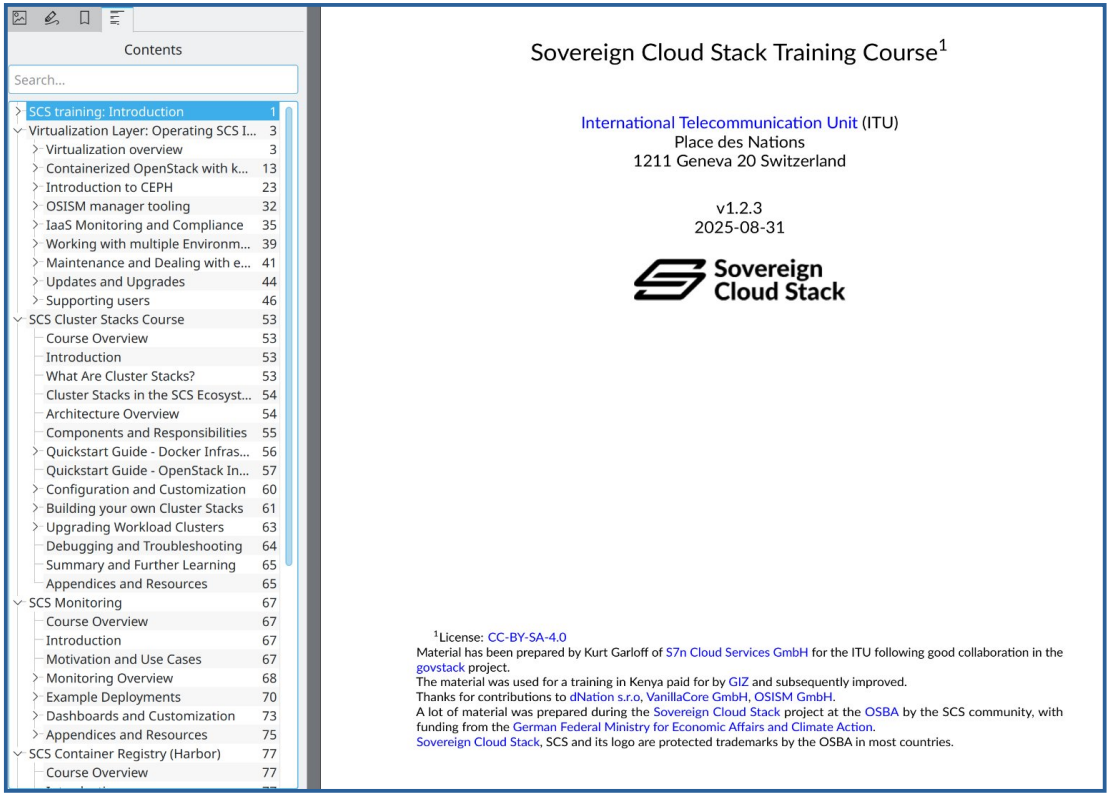
- Used by Governments and Private Companies in Europe
- African, Asian and American Countries are currently preparing for Sovereign Cloud Stack Rollouts
- Main Arguments: Digital Sovereignty, Open-Source, and Knowledge / Skills Building within the respective Countries
- Avoidance of Vendor Locks
- Avoidance of new Colonial Schemes
- Complemented by United Nation's Offerings

Skills / Capacity building

- Digital Sovereignity and Open-Source need to be learned
- Humans need to be skilled and enabled
- Capacities in Data-Centres and on-premises need to be defined and planned for

Open Knowledge: Docs & Training material





Thanks to ITU, GIZ,
VanillaCore, dNation, OSISM!

Digital Sovereignty is more than Open-Source

Control
(data)

Choice
(switching)

Shape
(innovate)

Understand
(operate)

Open
Operations

Enabling Countries for Digital Sovereignty

Kazakhstan: Digital Sovereignty using Open-Source

President Kassym-Jomart Tokayev of the Republic of Kazakhstan

Kazakhstan wants to become a “fully digital nation within three years.”

“Today, over 92% of government services are available online.

Last year, the share of cashless payments in the country exceeded 85%.

In the first six months of this year alone, 26 million digital services were provided to Kazakhstani citizens, half of which were provided via smartphones.”

Kazakhstan uses OpenStack within its national data center infrastructure, including for several government platforms managed by National Information Technologies JSC.

Open-source technologies form an important part of our approach to building resilient and sovereign digital ecosystems.

Sovereign Cloud Stack

Download Slides

https://scs.sovereignit.de/nextcloud/s/4tnmPkxB6SgKoCs