



# Sovereign Cloud Stack

Open Source Cloud & Container Stack for Federated Sovereign Infrastructure (Gaia-X)

## An Open Operations concept - The fifth Open Paradigm?

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OpenInfra Summit Berlin 2022



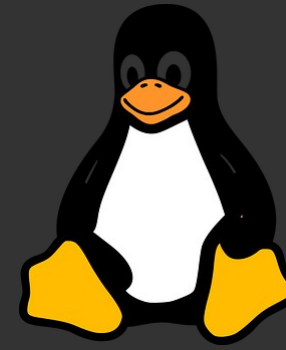
Supported by:



on the basis of a decision  
by the German Bundestag

**Don't copy slides**  
**They will be published on**  
**<https://scs.community/>**

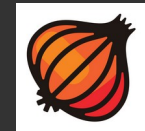
**And there is a recording ...**



Sovereign Cloud Stack

An OSB ALLIANCE project

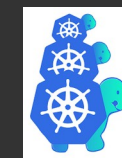
OpenInfra SUMMIT > BERLIN '22



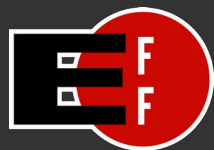
OSB Open Source Business ALLIANCE Bundesverband für digitale Souveränität e.V.



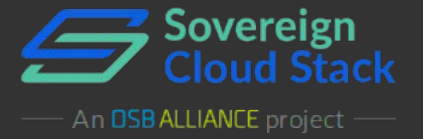
Supported by: Federal Ministry for Economic Affairs and Climate Action on the basis of a decision by the German Bundestag



SPRIN-D



2010 Linux-Kongress







# Open Source ~1995

2020: Open Source  
everywhere (Internet,  
TV, Smartphones,  
Cars ...)



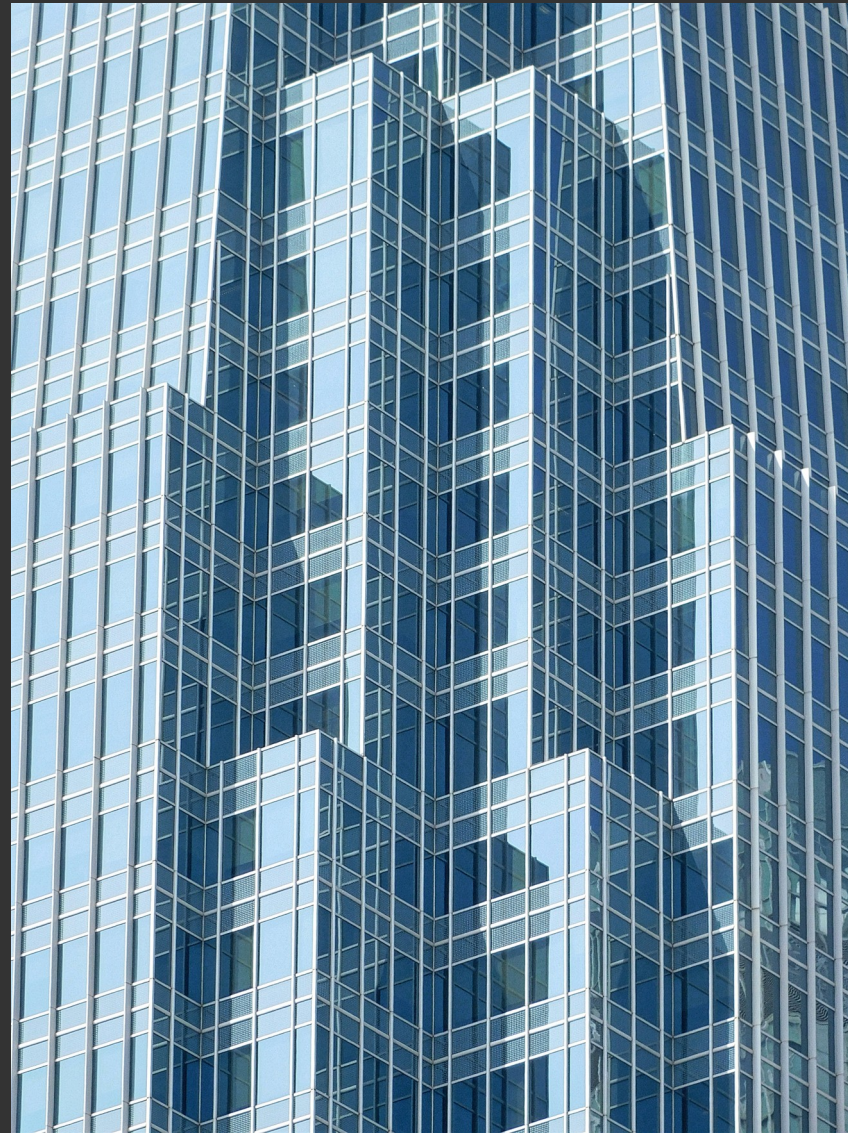
?



# Openness?

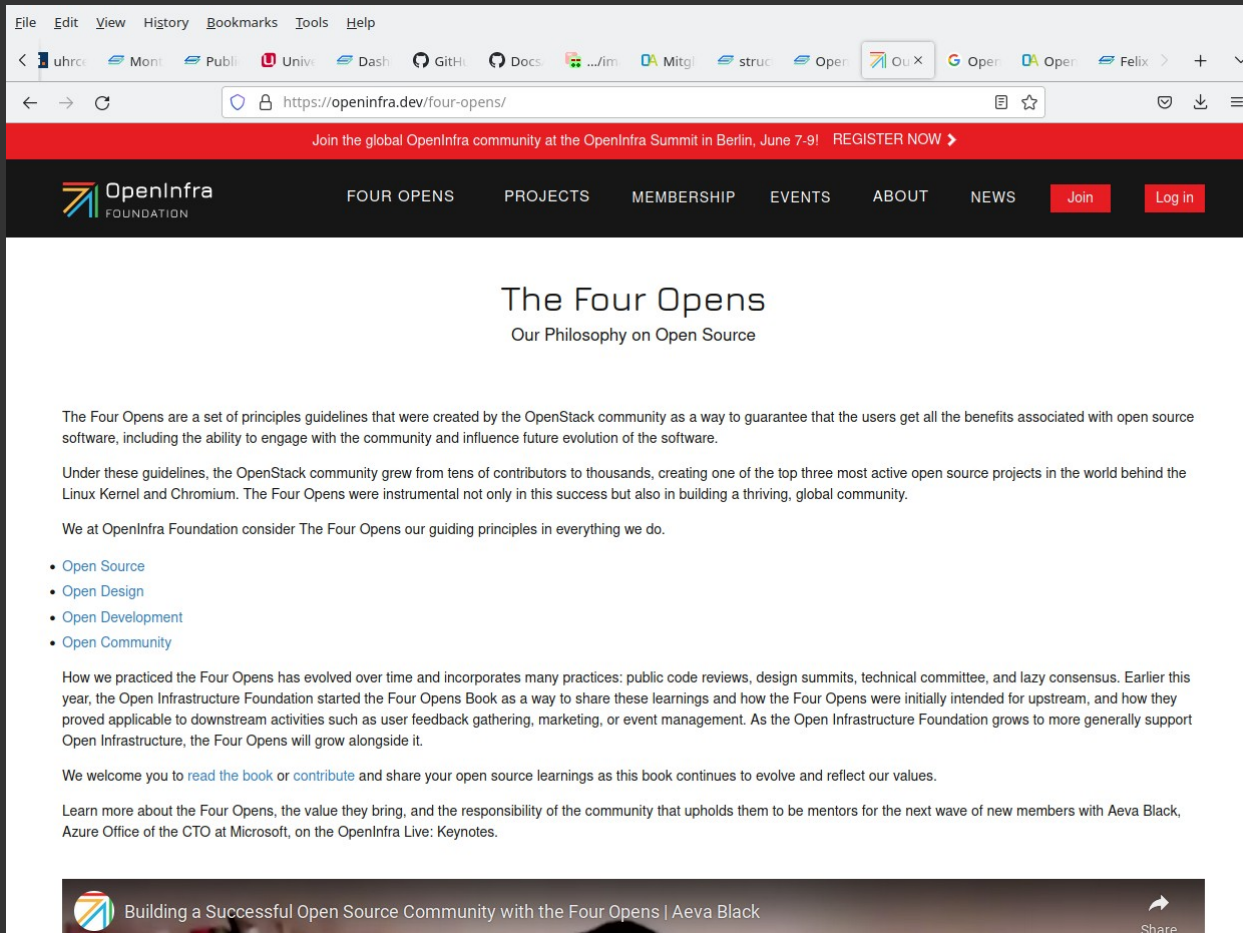


# Transparency?



“Open”  
has  
become a  
marketing  
term





Open Source

Open Design

Open Development

Open Community

Really  
open!



# Internet platforms

We should have won ...



Reality Check

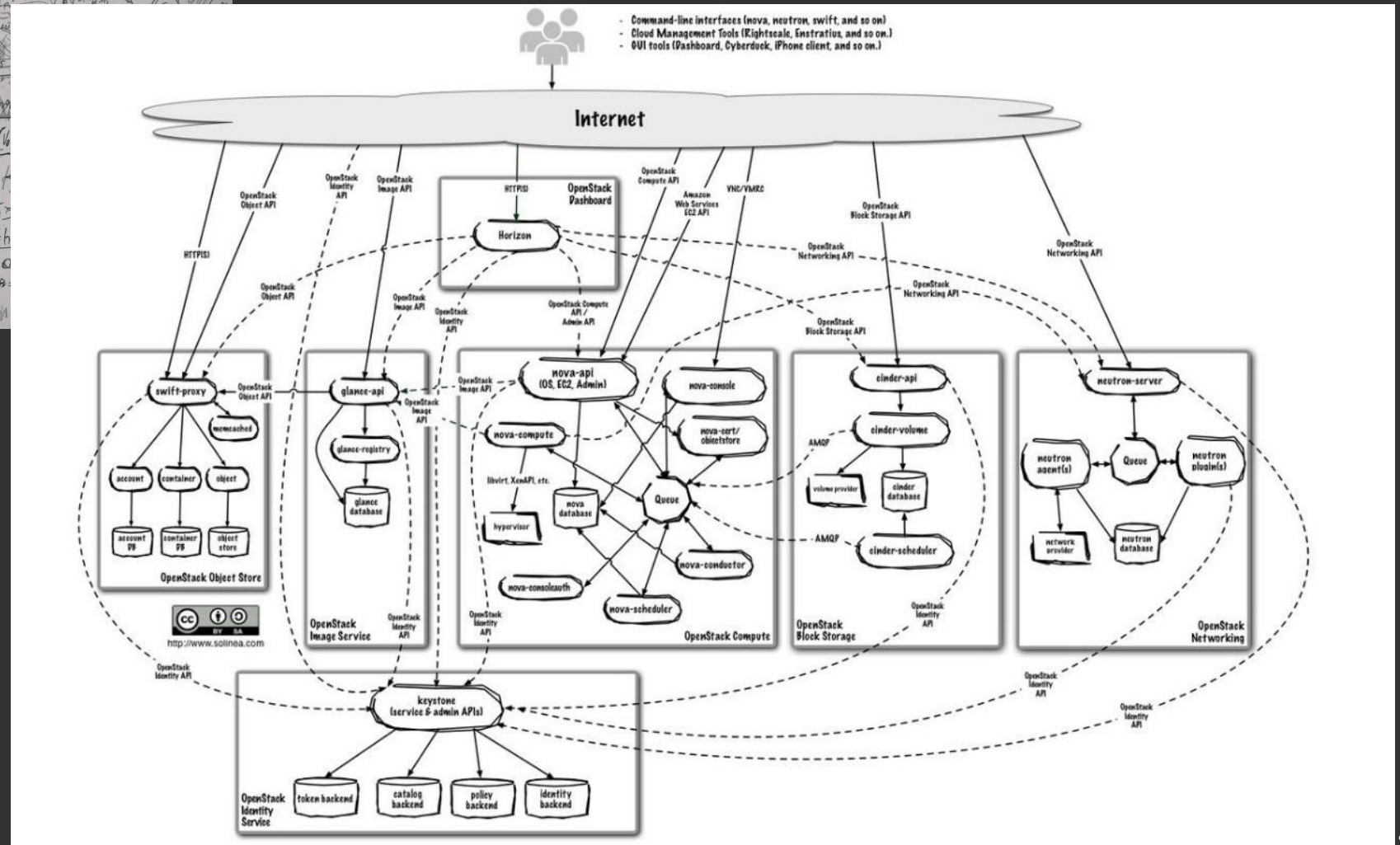
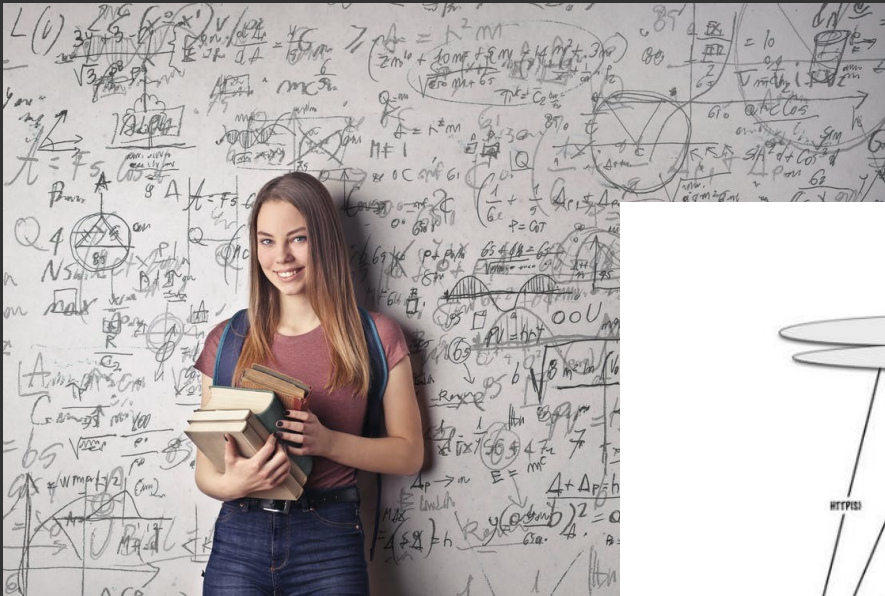


# Why?



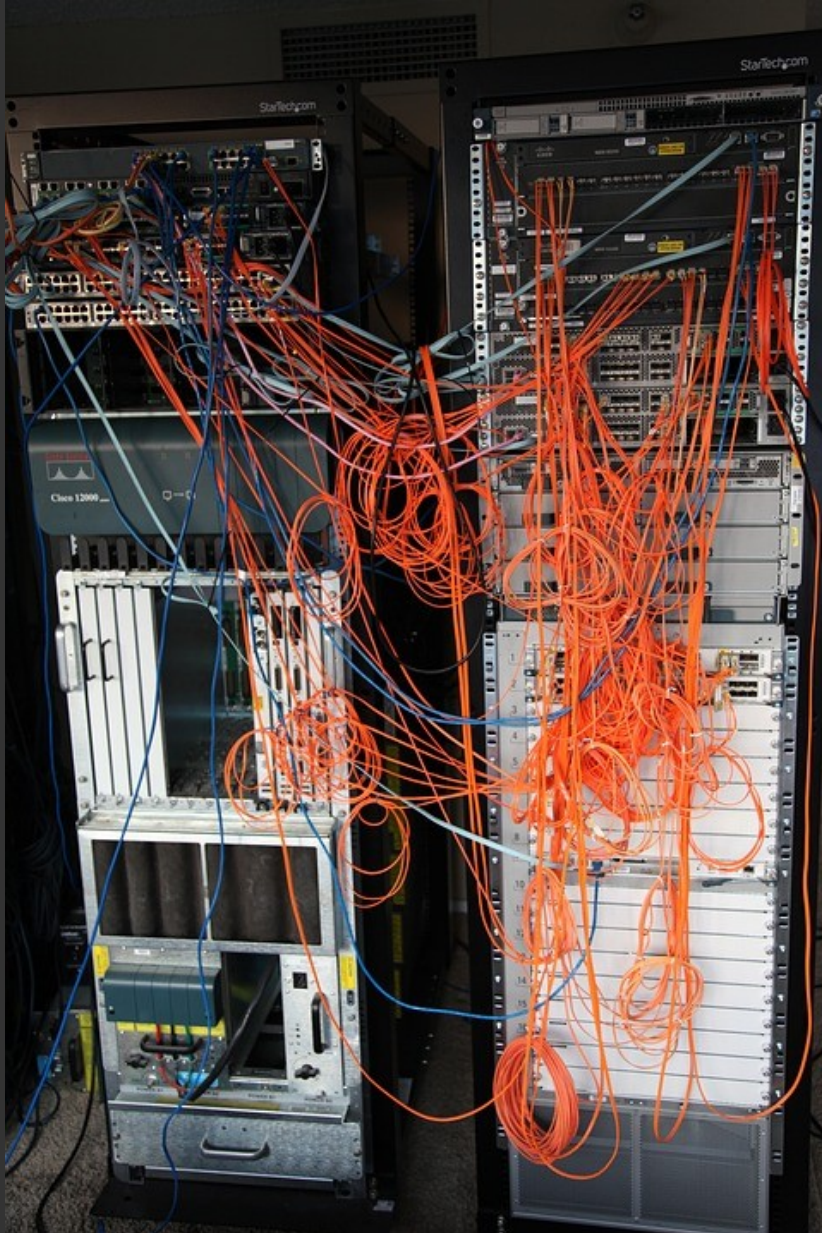


# Developing distributed dynamic infra is hard





# Operating distributed dynamic infra is harder

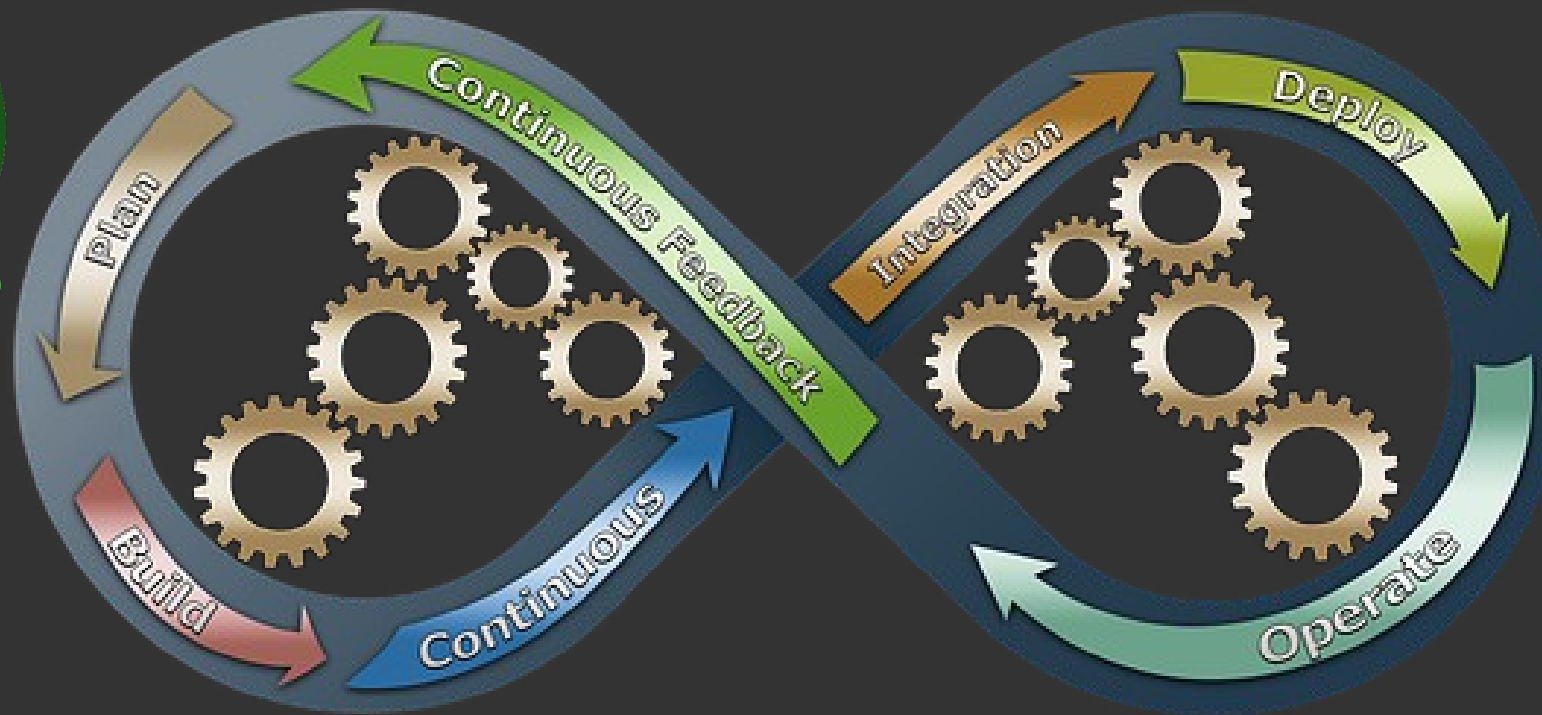




# DevOps allows to dev & op complex infra



4 x open



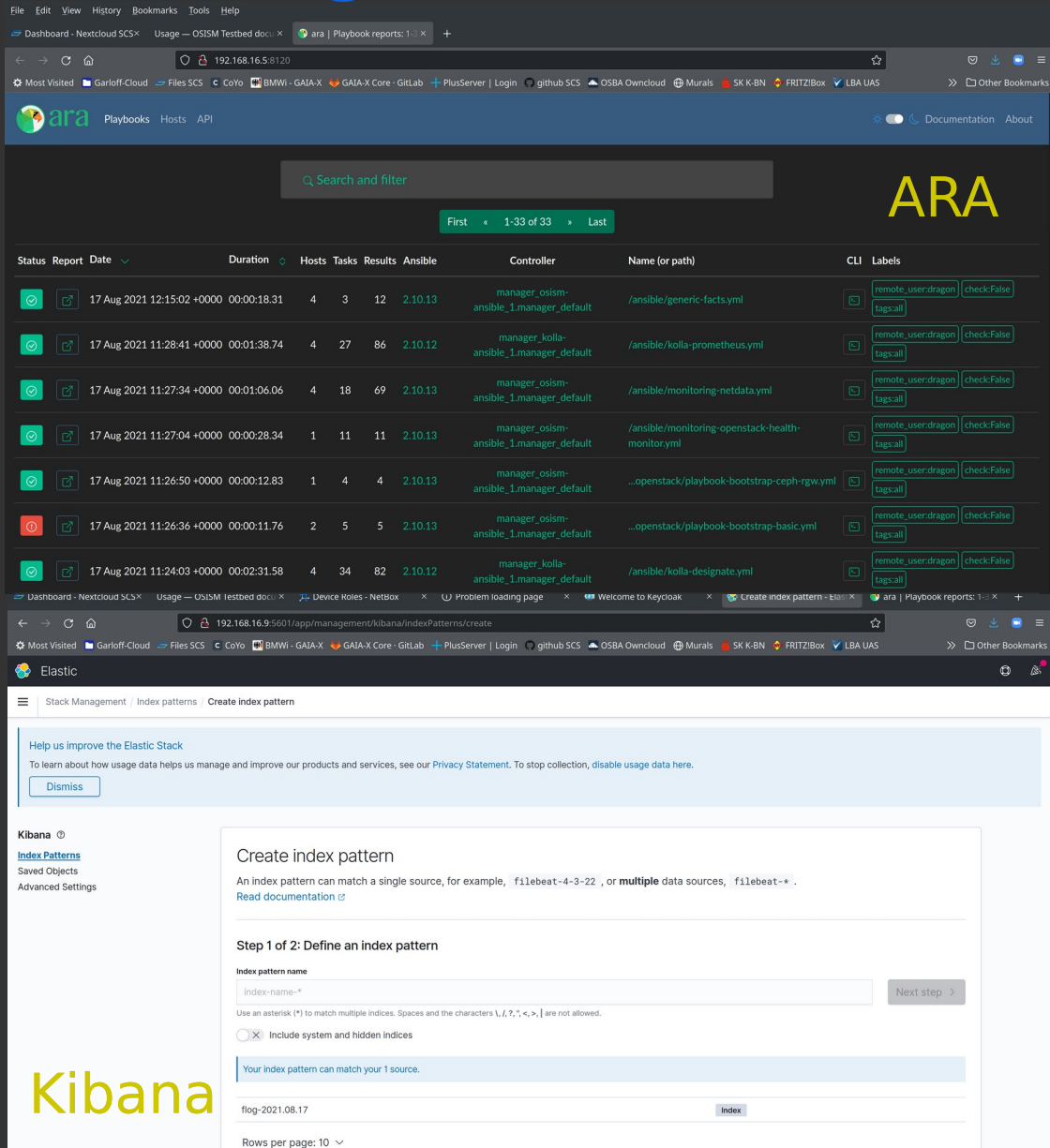
***By sharing and documenting best practices for operating such cloud stacks, the difficulty to provide high quality cloud services internally or publicly is vastly reduced.***

- <https://scs.community>



# Is it time to introduce the *fifth* Open?

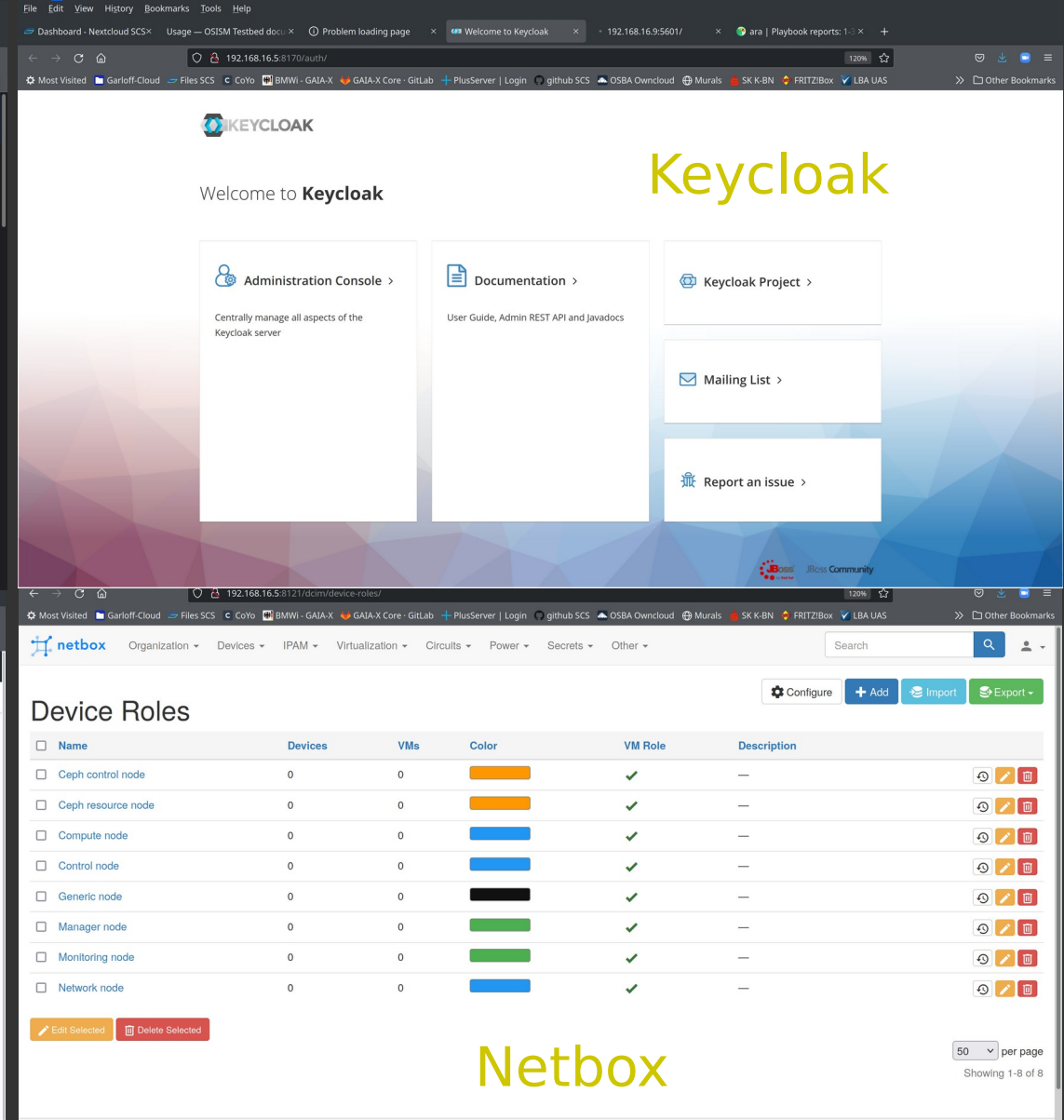
# Addressing the Operations challenge: Tooling (SCS reference implementation)



The screenshot shows the ARA web interface. At the top, there's a search bar and navigation links. Below that is a table of reports with columns for Status, Report Date, Duration, Hosts, Tasks, Results, Ansible version, Controller, Name (or path), and CLI Labels. The table contains several rows of data, including reports for generic-facts, kolla-prometheus, monitoring-netdata, monitoring-openstack-health-monitor, and kolla-designate.

Status	Report Date	Duration	Hosts	Tasks	Results	Ansible	Controller	Name (or path)	CLI Labels
Success	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
Success	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
Success	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
Success	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
Success	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
Failure	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
Success	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

Kibana

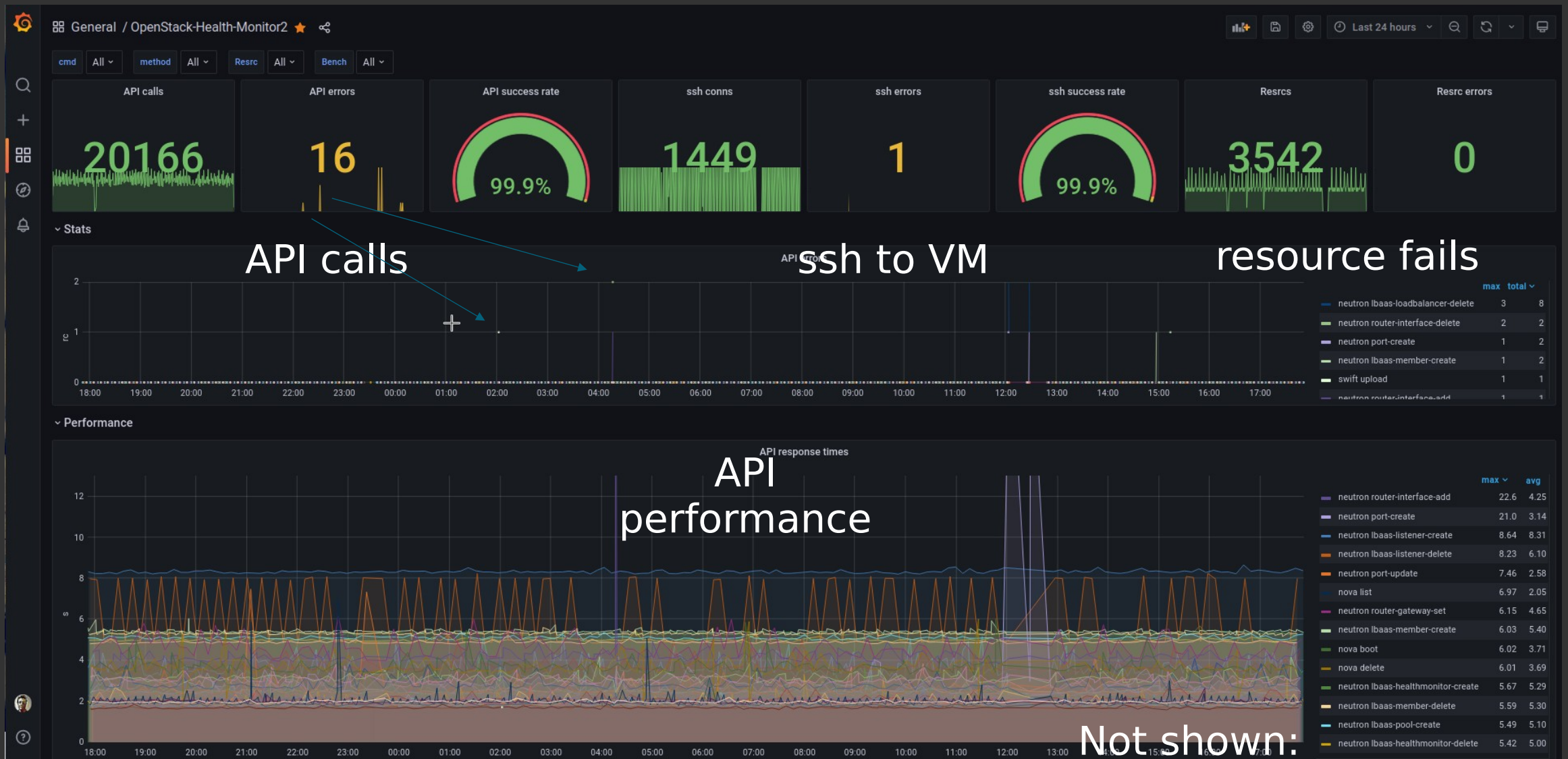


The screenshot shows two web interfaces. The top one is Keycloak, displaying a 'Welcome to Keycloak' message and navigation links for Administration Console, Documentation, Keycloak Project, Mailing List, and Report an issue. The bottom one is Netbox, showing a 'Device Roles' table with columns for Name, Devices, VMs, Color, VM Role, and Description. The table lists various roles like Ceph control node, Ceph resource node, Compute node, Control node, Generic node, Manager node, Monitoring node, and Network node.

Name	Devices	VMs	Color	VM Role	Description
Ceph control node	0	0	Orange	✓	—
Ceph resource node	0	0	Orange	✓	—
Compute node	0	0	Blue	✓	—
Control node	0	0	Blue	✓	—
Generic node	0	0	Black	✓	—
Manager node	0	0	Green	✓	—
Monitoring node	0	0	Green	✓	—
Network node	0	0	Blue	✓	—

Netbox

# Operations: Measure what you want to manage ...



API calls

ssh to VM

resource fails

API performance

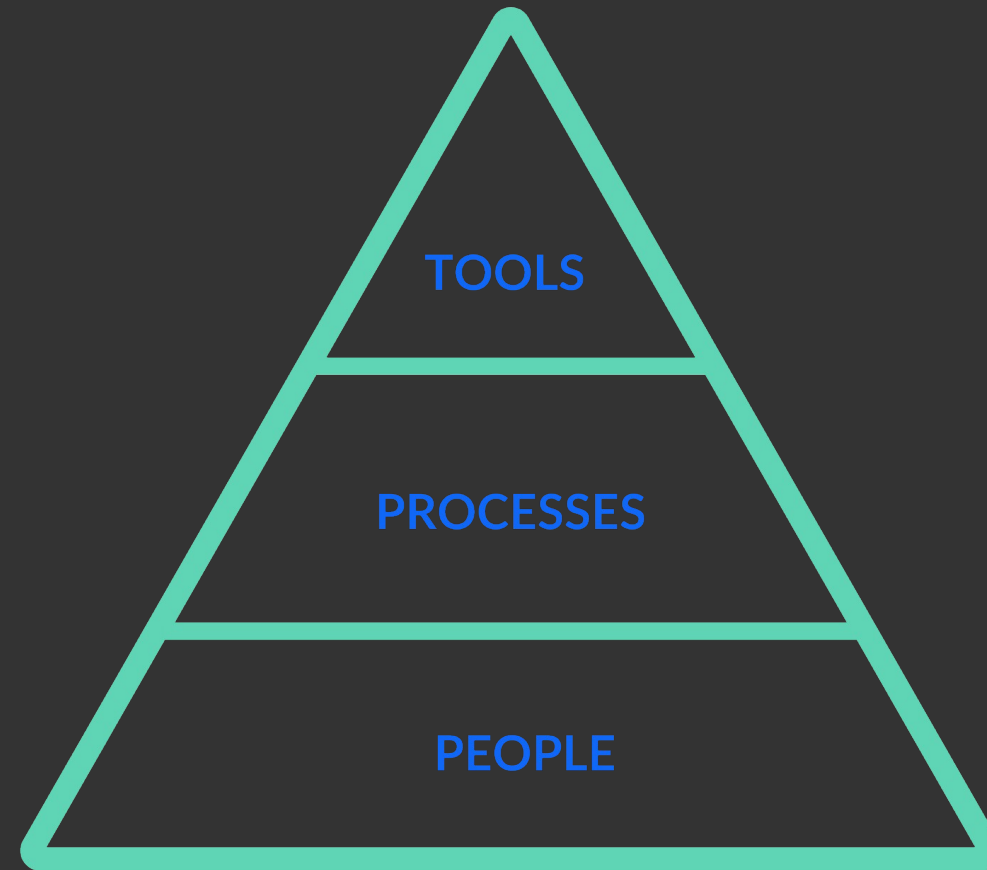
Not shown:

resource performance

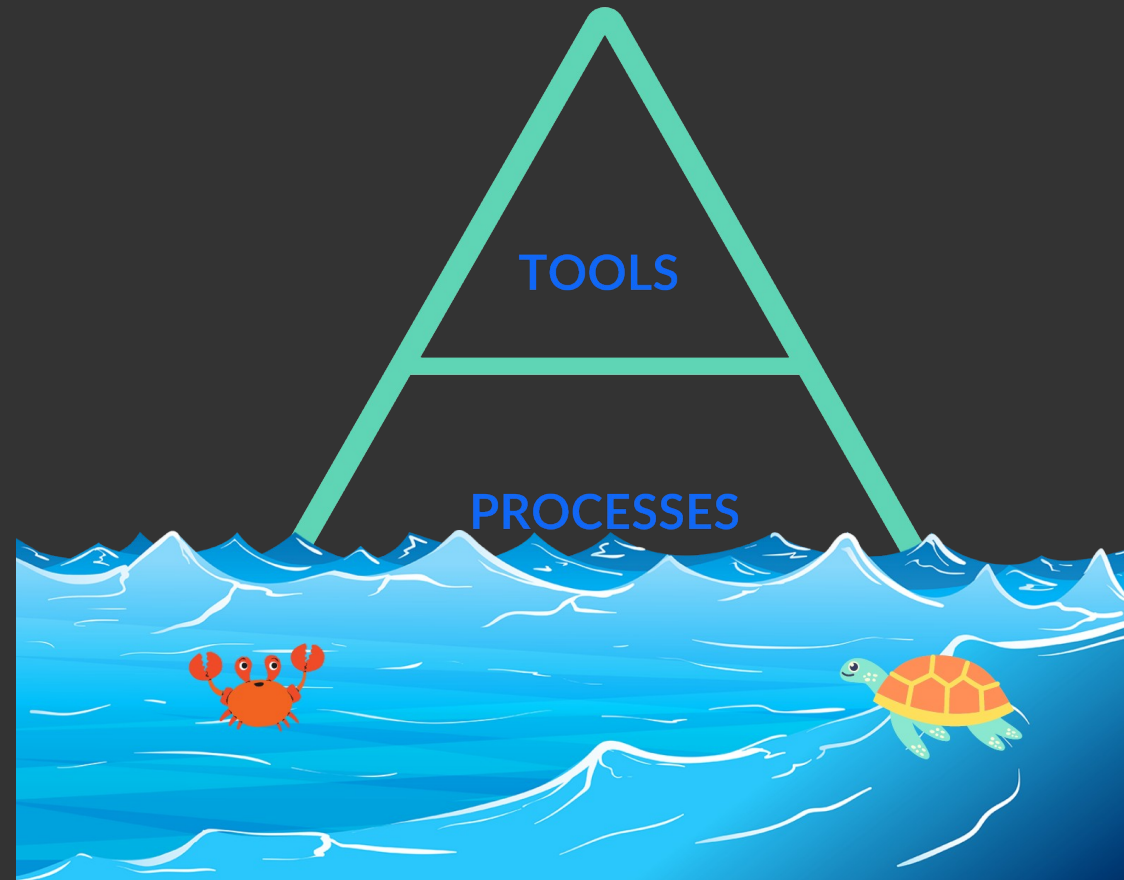




# Are open source tools enough?









# Psychological Safety!



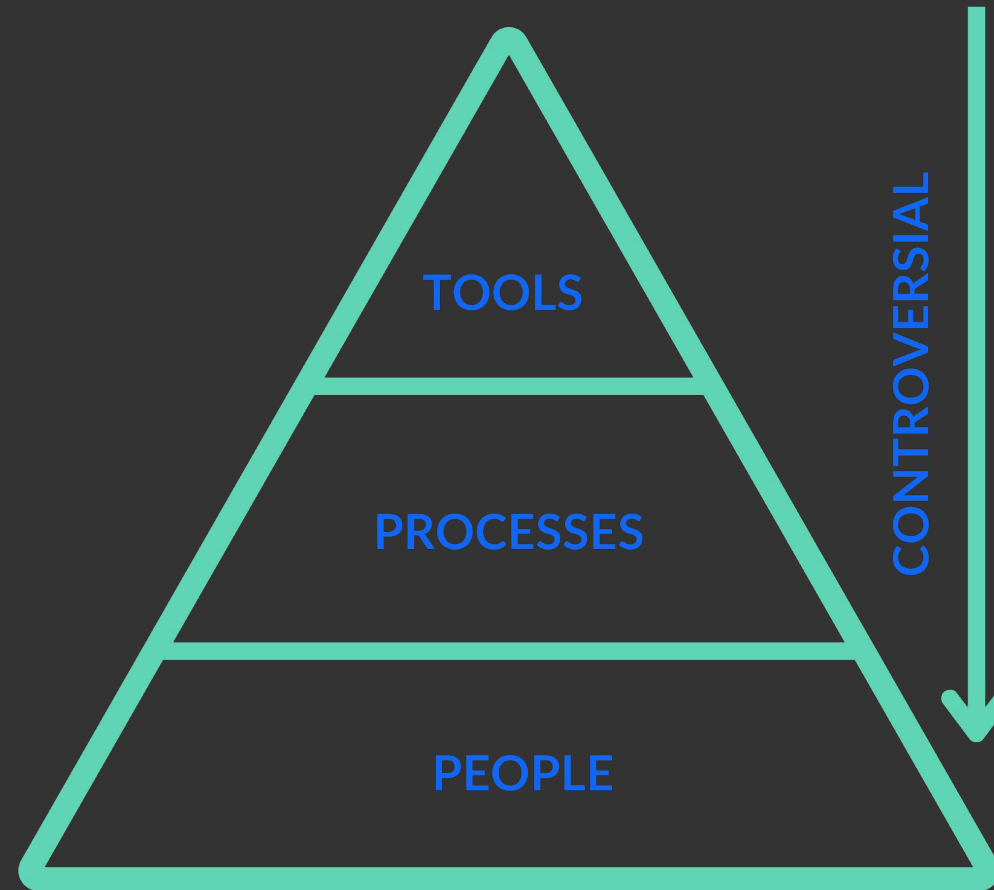
# Good examples for public RCAs

## Azure, 2012-02-29

<https://azure.microsoft.com/de-de/blog/summary-of-windows-azure-service-disruption-on-feb-29th-2012/>

## OTC, 2017-11-08

<https://imagefactory.otc.t-systems.com/home/root-cause-analysis-and-improvements-on-otc-network-outage-2017-11-08>



# Good examples for open processes

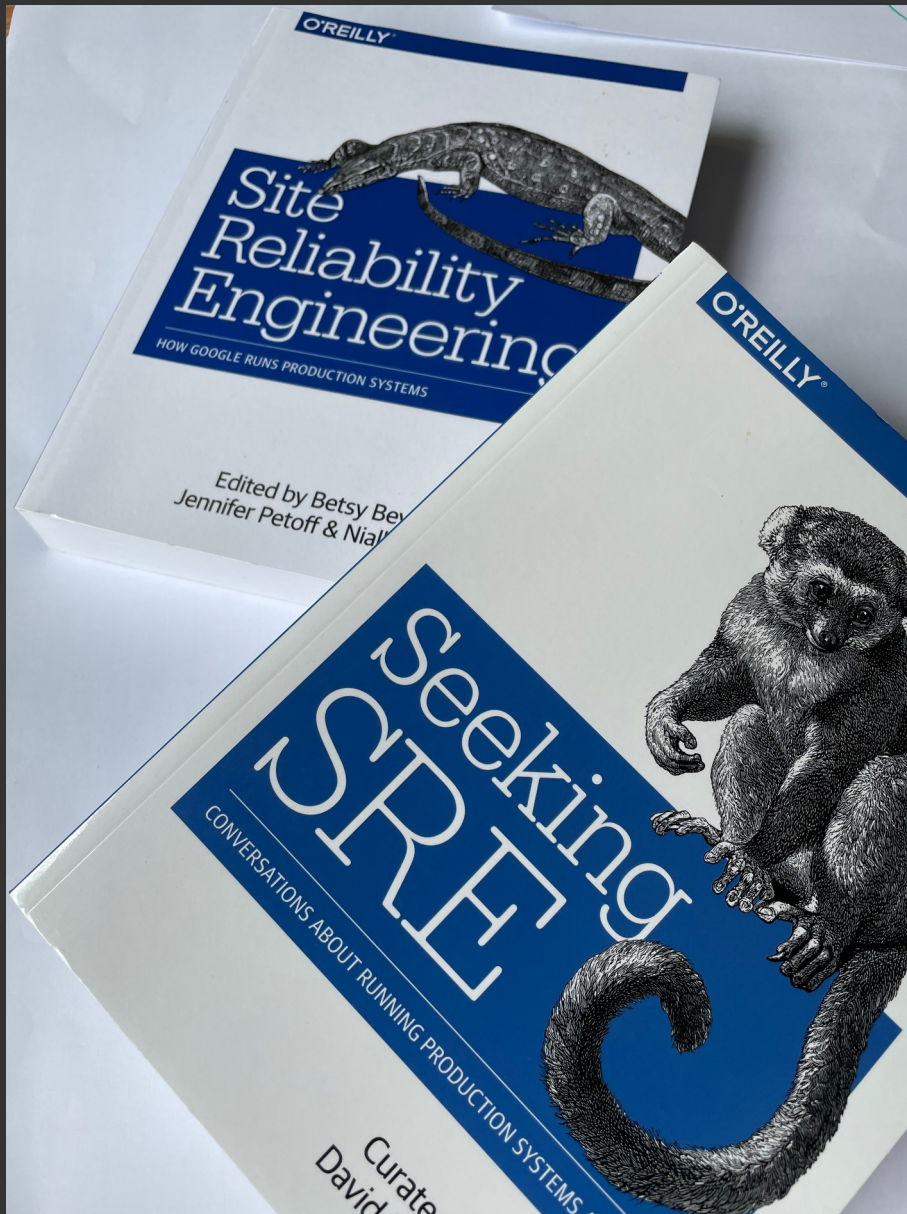
**gitlab**

<https://about.gitlab.com/handbook/>

**Are you the next awesome example?**



# A step in the right direction



<https://sre.google/books/>

# Wanted: Sharing culture in Ops

## Share knowledge

e.g. monitoring setup and config

## Share status

e.g. health & performance monitoring

## Share challenges

e.g. fraud detection

## Public Root Cause Analysis

e.g. outages

# Sovereign Cloud Stack project is working on it

Started end of 2019

Funded by BMWK (German Fed. Min. for Economic Affairs & Climate Action) since summer 2021

Run by Open Source Business Alliance e.V. with half a dozen employees (growing to a dozen)

Open Community contributions

Paid contractor work (awarded via public tenders)

Closely working with Gaia-X

SCS project is neutral orchestrator within the SCS ecosystem, partners do business as CSP, services providers, etc.

Project page: <https://scs.community/>



**SPRIN-D**





# Join in with developing Open Operations!

## SCS DevOps community

<https://scs.community/>

## Operate 1st (Open Infra Labs)

<https://openinfralabs.org/operate-first-manifesto/>

## Presentation: Intent-based holistic DC management

Wed, June 8, 4:40pm - 5:10pm | Berlin Congress Center - B - B09

## Forum session: Open Operations / 5th Open Paradigm

Thu, June 9, 9:40am - 10:10am | Berlin Congress Center - A - A05

## Presentation: Observability in OpenStack

Thu, June 9, 11:50am - 12:20pm | Berlin Congress Center - B - B08