Goal of this talk

whoami

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    - Fully-managed Kubernetes platforms on EU clouds
- Worked in cloud computing since 2008
- PhD in CS for research on cloud resource management
- Software developer, DevOps engineer, distributed systems

Connect on LinkedIn: security, DevOps, Kubernetes, compassionate leadership
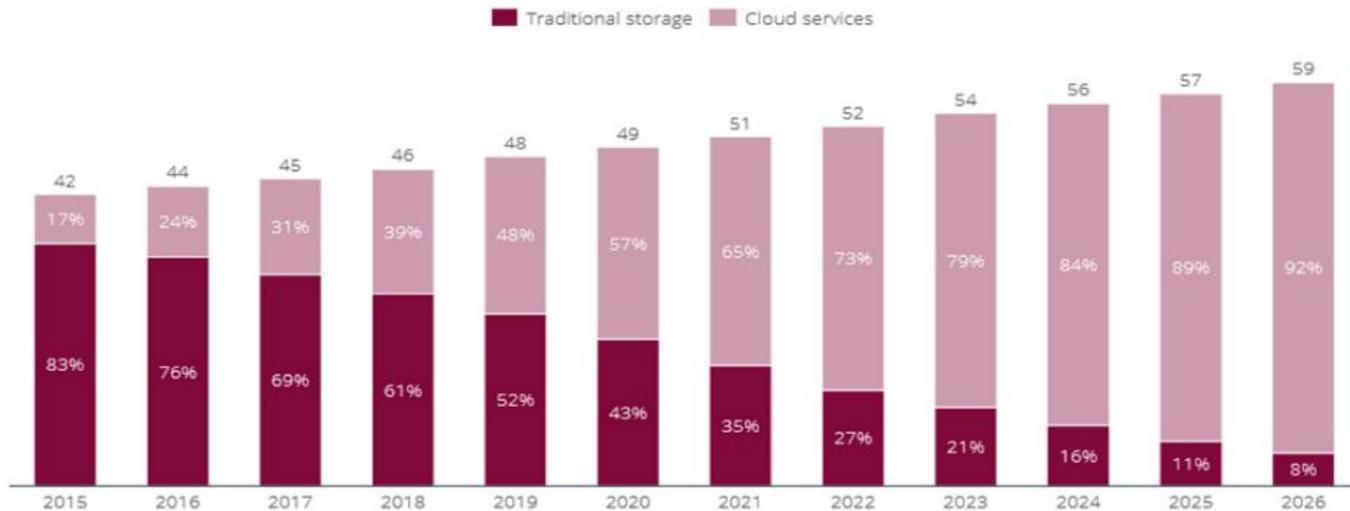
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Digital Sovereignty

- 92% of data from the West is hosted on US-owned servers ([World Economic Forum, 2021](#))

- Privacy invasive US legislation is extraterrestrial: applies to data on US-owned servers

- …**regardless of where they are in the world** 😱
  - FISA 702 ([NSA.gov](#)), CLOUD Act ([congress.gov](#)), EO 12333 ([NSA.gov](#))

Digital sovereignty is about **taking responsibility** for data again.

Figure 2 – Worldwide revenues from business data storage

Worldwide revenues from enterprise storage in billion US$

■ Traditional storage ■ Cloud services

Year	Total	Cloud services	Traditional storage
2015	42	17%	83%
2016	44	24%	76%
2017	45	31%	69%
2018	46	39%	61%
2019	48	48%	52%
2020	49	57%	43%
2021	51	65%	35%
2022	52	73%	27%
2023	54	79%	21%
2024	56	84%	16%
2025	57	89%	11%
2026	59	92%	8%

Source: Digital Economy Compass, 2019.

European Commission

Shaping Europe's digital future

Menu

Directive on measures for a high common level of cybersecurity across the Union (NIS2 Directive)

Directive on measures for a high common level of cybersecurity across the Union (NIS2 Directive)

The NIS2 Directive is the EU-wide legislation on cybersecurity. It provides legal measures to boost the overall level of cybersecurity in the EU.

"So Digital Sovereignty is easy, then?"

or "…we just use servers in Swedish or EU regions!"

- [No, that's not enough](#), says the general director of the Swedish DPA (Integritetsskyddsmyndigheten, IMY)
- …they have to also be owned by a company that is not (a subsidiary of a company that is) under extraterrestrial legislation from third-countries, e.g., the US or China
- So no AWS, Azure, Google Cloud… 😱

"But *supplementary measures*! Or standard contractual clauses! Something!"

- Your provider **will not** break the law for you
    - This is actually clearly stated (e.g. Google's SCC, Clause 15)
- So any actually effective supplementary measure (EDPB Recommendations 01/2020) would have to protect your data *from your provider*…
    - E.g. encrypting data off-cloud and **never making the key available to them**
- …but that turns the provider into a fancy file server, and you can't use their cloud services
    - …and then what's the point? 😂

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"OK, but Swedish- or EU-**owned** servers, then?!"

- Now we're getting somewhere! 👍

- But just a "server" (the physical machine) isn't very pleasant to use
    - You **very reasonably** expect a higher level of service, these days!
    - Automation, failover, pay-per-use model, …

Digital Sovereignty Enabled by **Open Source**

Cleura: Infrastructure as a Service

Cleura is "offering fully automated digital infrastructure services" with "infrastructure technology built on open-source" (Cleura)

- That open source? OpenStack, originally by NASA and **RackSpace**

Much more convenient and modern than "physical server co-location" (understatement of the year!)

Kubernetes?

Kubernetes is an open-source container orchestration system and de-facto standard for automating software deployment, scaling, and management.

- Originally developed by **Google**

Your favorite Linux-based server software is practically guaranteed to have an official way to deploy on Kubernetes.

Elastisys: Kubernetes Platform as a Service

Build customer value faster

We manage Kubernetes platform and cloud infrastructure for you,
so you can focus on your application

Your Application

Kubernetes Platform

Infrastructure
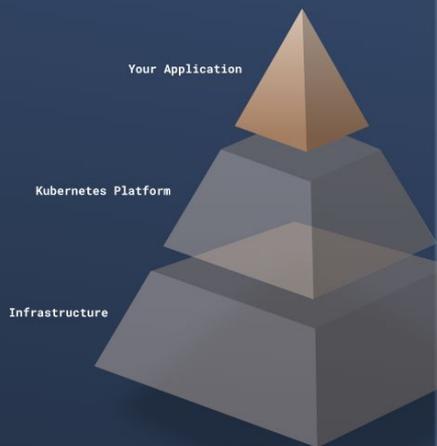
	Traditional Kubernetes as a Service	Elastisys Kubernetes Platform as a Service
App development	— You	— You
App operations	— You	— You
Platform troubleshooting	— You	✔ Included
Platform support	+ Premium add-on	✔ Included
Day-2 platform operations	+ Premium add-on	✔ Included
Platform security	+ Premium add-on	✔ Included
Platform functions (eg logging)	✔ Included	✔ Included
Kubernetes worker nodes	— You	✔ Included
Kubernetes control plane	✔ Included	✔ Included
Infrastructure	✔ Included	✔ Included

Additional Services: PostgreSQL, Redis, RabbitMQ, TimescaleDB, Harbor

Security: Gatekeeper, Starboard, Dex, falco, Kured, Trivy

Logs: fluentd, OpenSearch

Metrics: Grafana, Prometheus, Thanos, AlertManager

Disaster Recovery: Velero, Rclone

Network: cert-manager, Calico, Ingress Controller

Kubernetes: Kubernetes, containerd, Terraform, Kubespray, Helm

Visit our website

elastisys.com

Digital Sovereignty Enabled by Open Source

- Together, Cleura and Elastisys make Digital Sovereignty possible

- Open Source enables us to do it

- …and the beautiful irony is that we got it from the Goliaths themselves

Go beyond the clouds