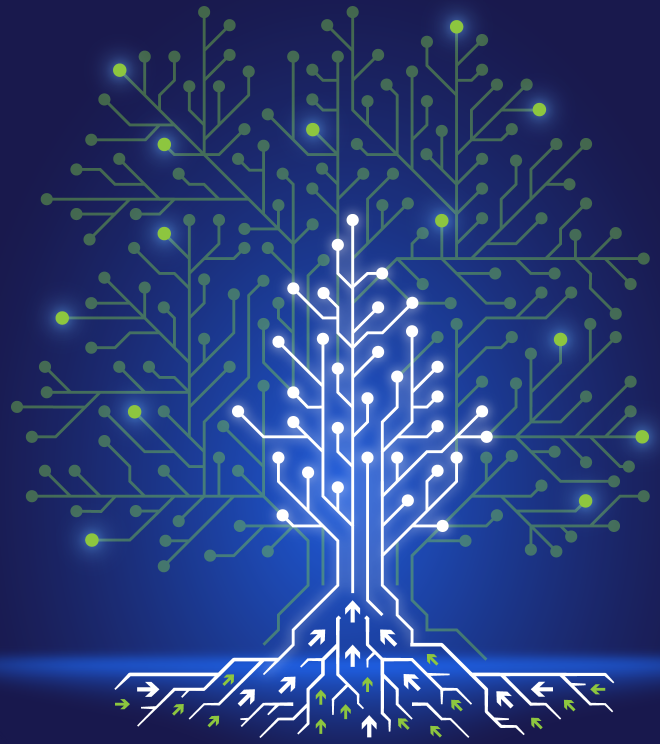
SCS Summit 2024

Steigerung der Energieeffizienz von SCS-basierten Clouds mit Open Hardware



ScaleUp Technologies

Sovereign Cloud Stack

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Steigerung der Energieeffizienz von SCS-basierten Clouds mit Open Hardware

Christoph Streit, CEO, ScaleUp Technologies

Who we are

- Managed Hosting, Cloud & Colocation provider based in Germany
- OpenStack based cloud for IaaS offering, including a Managed Kubernetes platform
- Small teams based in Hamburg and Berlin, Germany
- Our focus is on Open Source and Sustainability
- Became OCP member and Solution Provider in 2023
- Member of SCS project since late 2023

Why build a cloud with open hardware?

- Complete software stack is open source
- Server infrastructure is mostly 19” proprietary hardware
- When we first learned about OCP, we were intrigued by
  - The hardware being open (source)
  - uses less energy
  - Less material for the servers (i.e. no faceplate, etc.)

Testing Open Hardware

- Building a proof of concept cloud setup in order to perform additional testing
- Questions:
  - Do OCP servers really consume less energy
  - How does this work in a traditional datacenter environment
  - Measuring scope 2 and scope 3 emissions*

* https://en.wikipedia.org/wiki/Carbon_accounting#Greenhouse_Gas_Protocol_(GHGP)

OCP & Sustainability

- OCP servers use 15-20% less energy compared to traditional 19” servers*
- OCP servers are built to run at higher temperatures and last longer
- Less materials used (no case, no bezel, no dedicated PSU, etc.)
    - Therefore less Scope 3 emissions

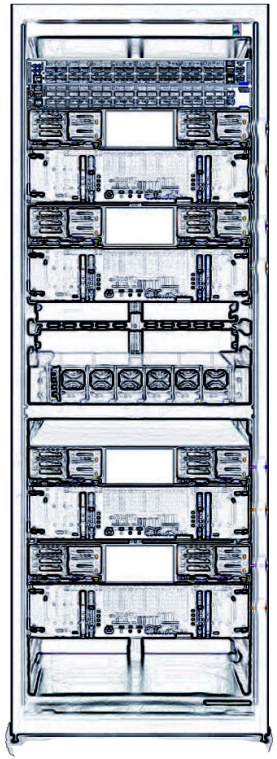
* See presentation from OCP Summit 2022: https://www.youtube.com/watch?v=8d5VB1ToaFs

SUSTAINABILITY

OCP Rack – Benefits

What an OCP rack can save

- 80 PSUs
- 80 power cables
- Network cables in rear
- 300+ 40mm fans
- Rack PDUs
- Much less material



Additional benefits

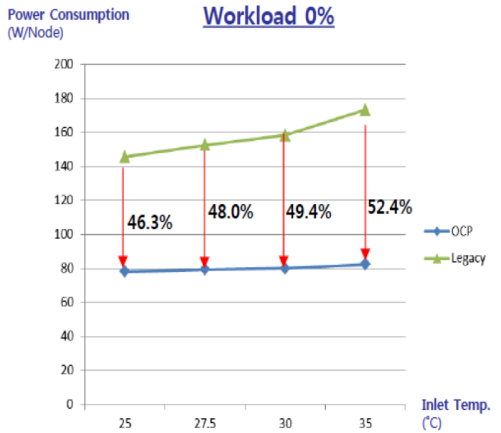
- Lower costs
- Tool-free
- Modular & flexible
- Less power consumption
- Improved recycling
- Open Source

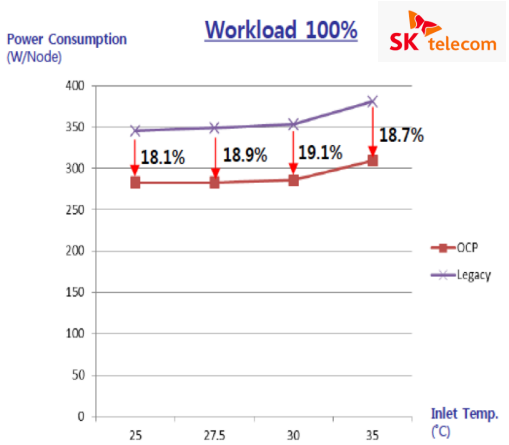
RACK & POWER | NETWORKING | HW MGMT

SERVER | STORAGE | AI

Energy saving test results

Load	Dell Server	OCP Server	Savings
0.0 – 0.5	126 Watt	78 Watt	38 %
10.0-12.0	140 Watt	120 Watt	15 %
60.0	280 Watt	240 Watt	15 %





- We could confirm the “benchmarks” done by SK telecom* which showed power savings between 15-20% compared to standard servers
- The usual cold-aisle containment in datacenters has less impact on OCP servers (another 2% savings)

* ref: https://www.youtube.com/watch?v=lydmxgf42ds

Regional & sustainable Cloud

- Cloud based on OCP hardware
- Using 100% green energy, OCP servers saving additional energy, using refurbished hardware whenever possible
- Using SCS as software stack
- No lock-in, open APIs, local technical teams offering service and support
- Focus on the infrastructure, working with regional partners for additional services (i.e. industry specific solutions, SaaS offerings, consulting, etc.)
- Following an open operations approach
  - i.e. collaborating with „competitors“

What makes our cloud sustainable

Energy efficient OCP servers
> 15-20% power savings

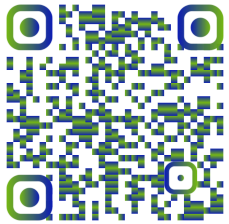
100% green energy
> Reducing Co2

Using refurbished servers and components
> Less Scope 3 emissions

Reusing waste heat of the servers
> Reducing Co2

Our call to action / Conclusion

- Open Hardware and OCP can be a driver in reducing overall CO2 emissions if adopted more widely
  - OCP solutions have to be adopted by more service providers and enterprises
- Regional hosting/service providers should team up and collaborate
  - Start using SCS
- Customers should choose their (regional) cloud providers not only on cost, but also on sustainability aspects
- OCP Marketplace link to ScaleUp Open Cloud:



Vielen Dank!

Weitere Fragen?

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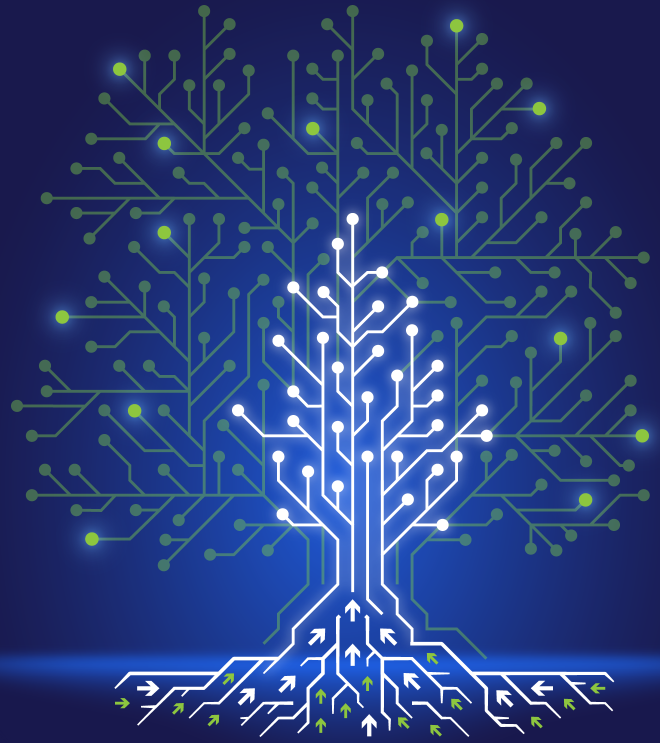

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