REDUCE THE CARBON FOOTPRINT OF YOUR CLOUD-NATIVE WORKLOADS NOW

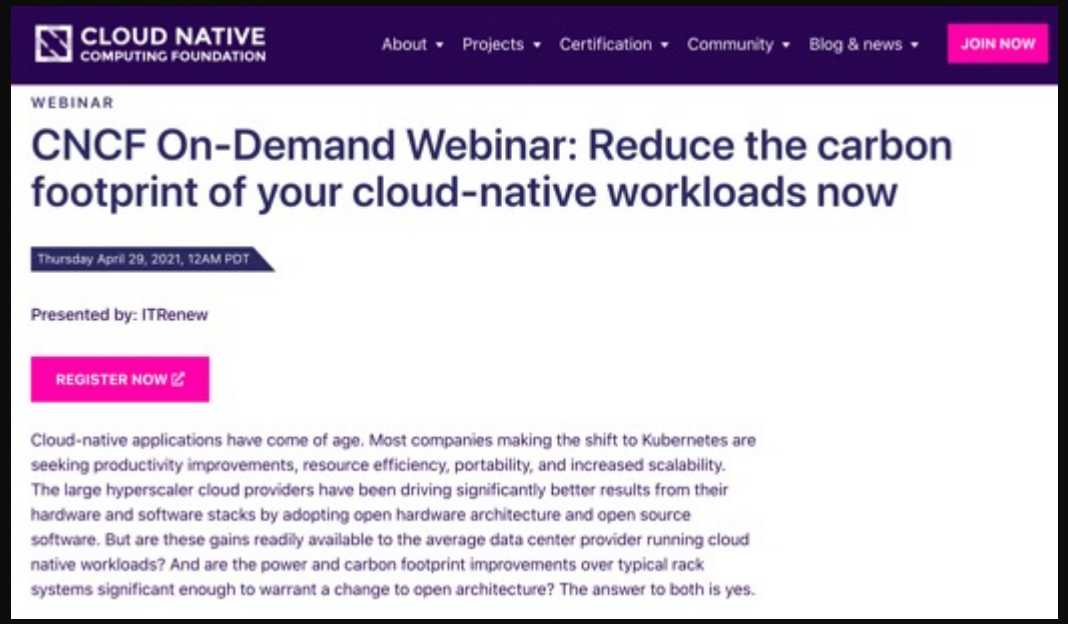
Erik Riedel, PhD
Senior VP, Engineering | ITRenew
@RiedelAtWork

Andy Randall
Chief Commercial Officer | Kinvolk
@andrew_randall

CNCF Member Webinar

Reduce The Carbon Footprint of Your Cloud-Native Workloads Now

29 April 2021

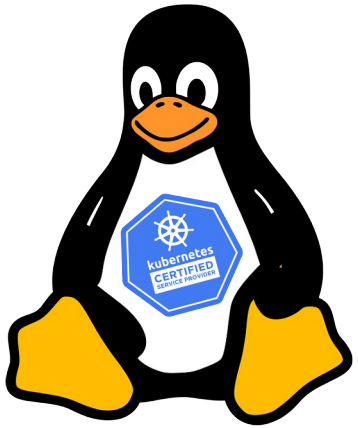


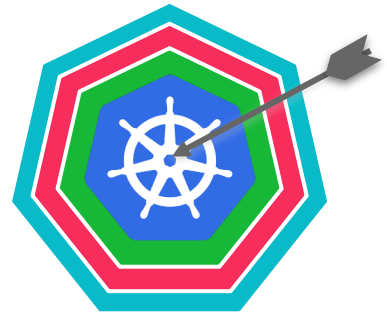
Cloud-native applications have come of age. Most companies making the shift to Kubernetes are seeking productivity improvements, resource efficiency, portability, and increased scalability. The large hyperscaler cloud providers have been driving significantly better results from their hardware and software stacks by adopting open hardware architecture and open source software. But are these gains readily available to the average data center provider running cloud native workloads? And are the power and carbon footprint improvements over typical rack systems significant enough to warrant a change to open architecture? The answer to both is yes.

Join Erik Riedel of ITRenew, and Andy Randall of Kinvolk, to learn about reducing your carbon footprint and achieving better computing economics for your cloud-native workloads today.

Photo by Tim Mossholder from Pexels

Kinvolk – the power of community





Expertise

Deep-stack Linux and

Kubernetes

Values

Contributing > Consuming

Cooperating > Competing

Community > Product

Welcoming > Excluding

Mission

To build and promote a

100% open source

enterprise-grade

Cloud-Native stack

kubernetes

Data Center Facility

Sub-Projects:
Modular Data Center
Critical Facility Operations - Incubation
Advanced Cooling Facility - Incubation

Hardware Management

Sub-Projects:
OpenRMC
Hardware Management Module - Incubation
Hardware Fault Management - Incubation

Networking

Sub-Projects:
ONIE
Open Network Linux
SAI
SONiC

Open System Firmware

Rack & Power

Sub-Projects:
ACS Immersion
ACS Cold Plate
ACS Door Heat Exchange

Security

Server

Sub-Projects:
High Performance Computing - Incubation
Mezz (NIC)
Open Accelerator Infrastructure
Open Domain-Specific Architecture

Storage

Telco

Sub-Projects:
openEDGE

OPEN COMMUNITY®

Products that comply 100% with an existing accepted specification and the design files are open sourced and available.

OCP ACCEPTED

Products that comply 100% with an existing accepted specification and are available from OCP Silver, Gold or Platinum Member.

OCP INSPIRED

Worldwide Delivery, Service, Support Network

OPEN Compute Project SOLUTION PROVIDER

Project

- [ ] Server (65)
- [ ] Networking (48)
- [ ] Rack & Power (36)
- [ ] Telco (21)
- [ ] Data Center Facility (15)
- [ ] Storage (13)
- [ ] Security (Incubation) (2)

Show more

Contributor

- [ ] Facebook (52)
- [ ] Microsoft (35)
- [ ] Edgecore Networks (18)
- [ ] Intel (7)
- [ ] AT&T (6)
- [ ] Delta Electronics (6)
- [ ] Inspur (6)

Show more

Family

- [ ] Network Switch (38)
- [ ] OpenRack v2 (24)
- [ ] OCS (18)
- [ ] OTHER (15)
- [ ] Olympus (14)
- [ ] Data Center (10)
- [ ] Storage (8)
- [ ] Telco (8)
- [ ] Power (7)
- [ ] OpenRack (6)
- [ ] SOC Boards (6)
- [ ] Server (6)
- [ ] 19" Server (5)
- [ ] Software (5)
- [ ] Accessory (4)
- [ ] Optical NW (4)
- [ ] ACS (3)
- [ ] CG-Openrack-19 (3)
- [ ] PCI Card (3)
- [ ] Access Point (2)
- [ ] Barreleye (2)
- [ ] Mezz Card (2)
- [ ] OCP Mezzanine (2)
- [ ] Security (2)
- [ ] uCPE (2)
- [ ] Debug Card (1)
- [ ] Honey Badger (1)
- [ ] Information (1)
- [ ] Open Vault Storage (1)

OPEN Compute Project®

agile
clouds
stacks
infrastructure
FE
FIELD ENGINEER
fieldengineer.com

Hardware Clusters

compute
compute
compute
compute
infra
power supply + switch

up to 5 nodes

SESAME Fast-Start

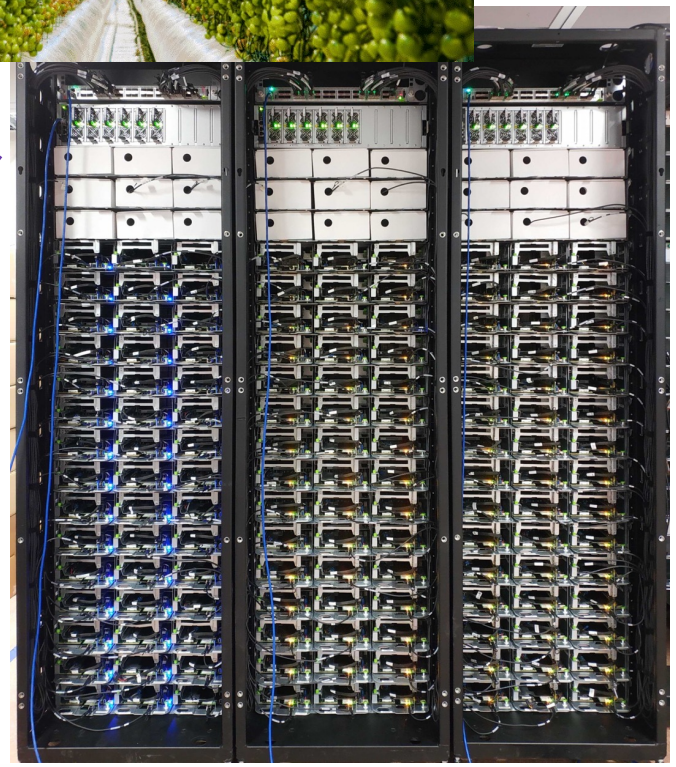
external TOR switches (2x)		
ingress	ingress	ingress
internal TOR switches (2x)		
compute	compute	compute
compute	compute	compute
compute	compute	compute
compute	compute	compute
compute	compute	compute
compute	compute	compute
power zone BB		
compute	compute	compute
compute	compute	compute
compute	compute	compute
storage	storage	storage
storage	storage	storage
storage	storage	storage
mgmt	mgmt	mgmt
infra	infra	infra
power zone AA		

up to 48 nodes

SESAME for Open Systems

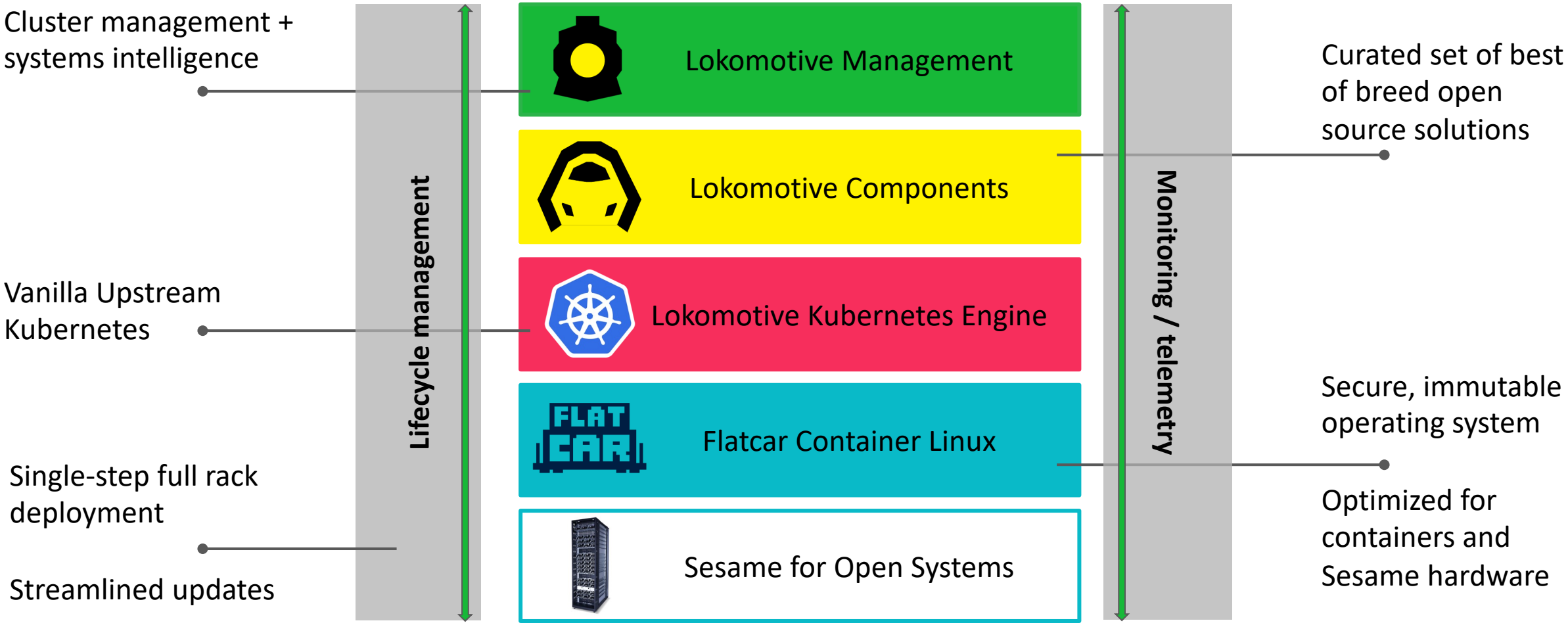
blockheating
Recycling datacenter energy

deployed today in Amsterdam



SESAME for Greenhouses

The Open Cloud Native Stack for Sesame



46
million
servers

31
million
tonnes CO2e

6.7
million
cars' annual emissions

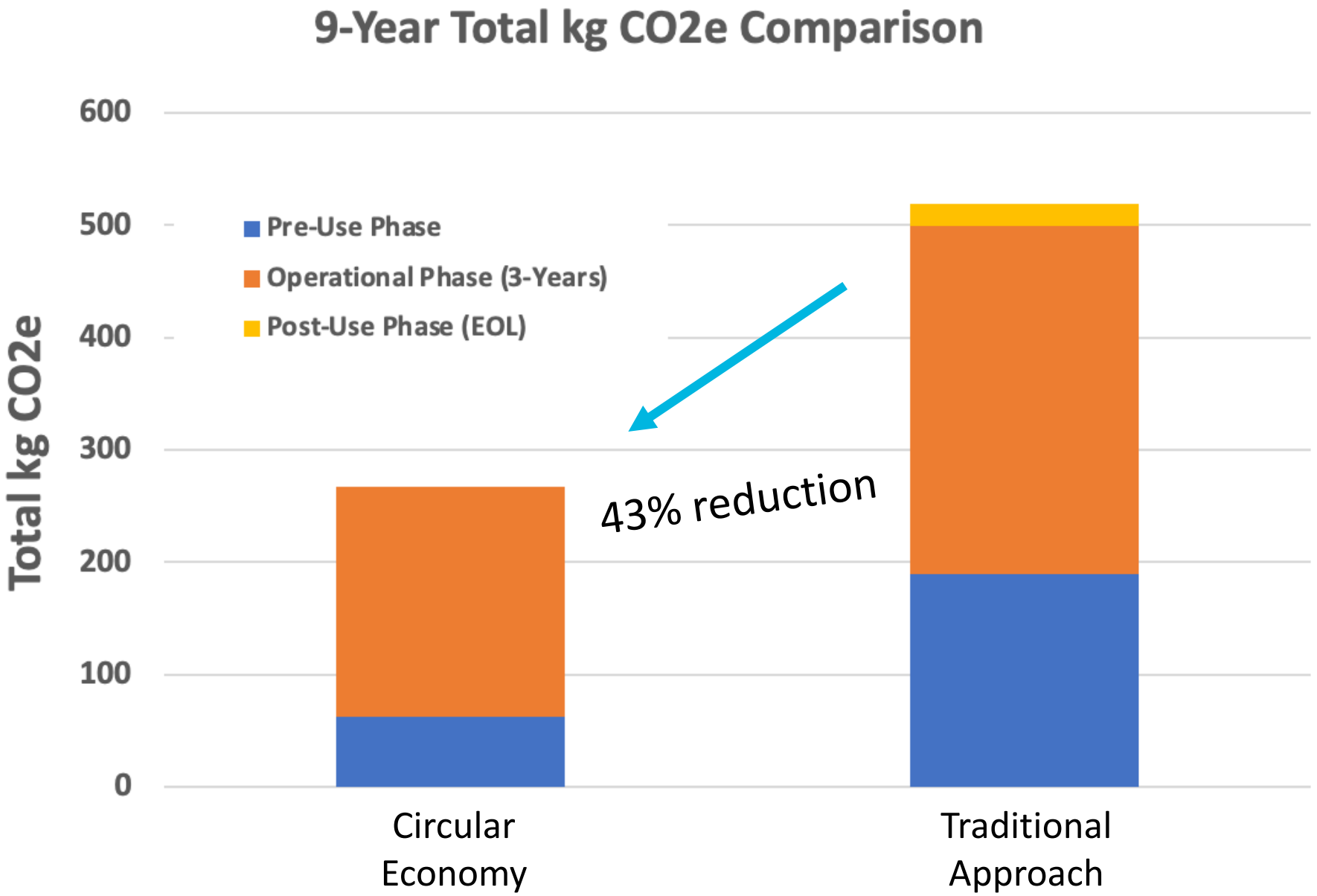

9-Year Total kg CO2e Comparison
Total kg CO2e
600
500
400
300
200
100
0
Pre-Use Phase
Operational Phase (3-Years)
Post-Use Phase (EOL)
43% reduction
Circular Economy
Traditional Approach

Photo by Paul Carroll on Unsplash

CALL TO ACTION

CHECK US OUT ON OUR WEBSITE:

www.itrenew.com/sesame

www.itrenew.com/resources

Watch Video:
Sesame By ITRenew

QUESTIONS OR COMMENTS, REACH US:

@RiedelAtWork

/in/er1p

https://github.com/SesameEngineering

ITRENEW