OPEN UNCOMPLICATED

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OCP VIRTUAL SUMMIT, MAY 2020

Hyperscale for All: Powering the Circular Data Center

ITRenew delivers maximum financial & sustainability returns from open technology

CIRCULAR CLOUD

Strategic Advisory Services

Infrastructure planning

TCO & Sustainability Modeling

Lifetime value maximization

DECOMMISSIONING

and Data Security

Data center decommissioning services

Teraware data sanitization platform

Value Recovery (*$1B+ TCO to date*)

End-to-end logistics solutions

SESAME BY ITRENEW

Rack-Scale Solutions

Rack-scale solutions for data centers

Open systems, HCI, AI/ML

Breakthrough TCO

EDGE SOLUTIONS

and Components

Edge solutions & building blocks

Server components

Laptop and PC memory

amazon Dropbox ebay facebook Google PayPal Uber

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Design and procure hardware that enables circularity

HYPERSCALE DATA CENTERS

facebook ORACLE ebay Uber PayPal ...

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1 INTERNAL RE-USE

2 RACK-SCALE SOLUTIONS → SESAME BY ITRENEW

3 EDGE SOLUTIONS → EDGE BY ITRENEW

4 RE-CERTIFIED COMPONENTS

SECONDARY MARKETS

CSP
Industrial
Retail
Telco
Gaming
IoT
Energy
Enterprise

5 RESPONSIBLE RECYCLING

COST AVOIDANCE — **LIFETIME VALUE MULTIPLIER** — VALUE RECOVERY

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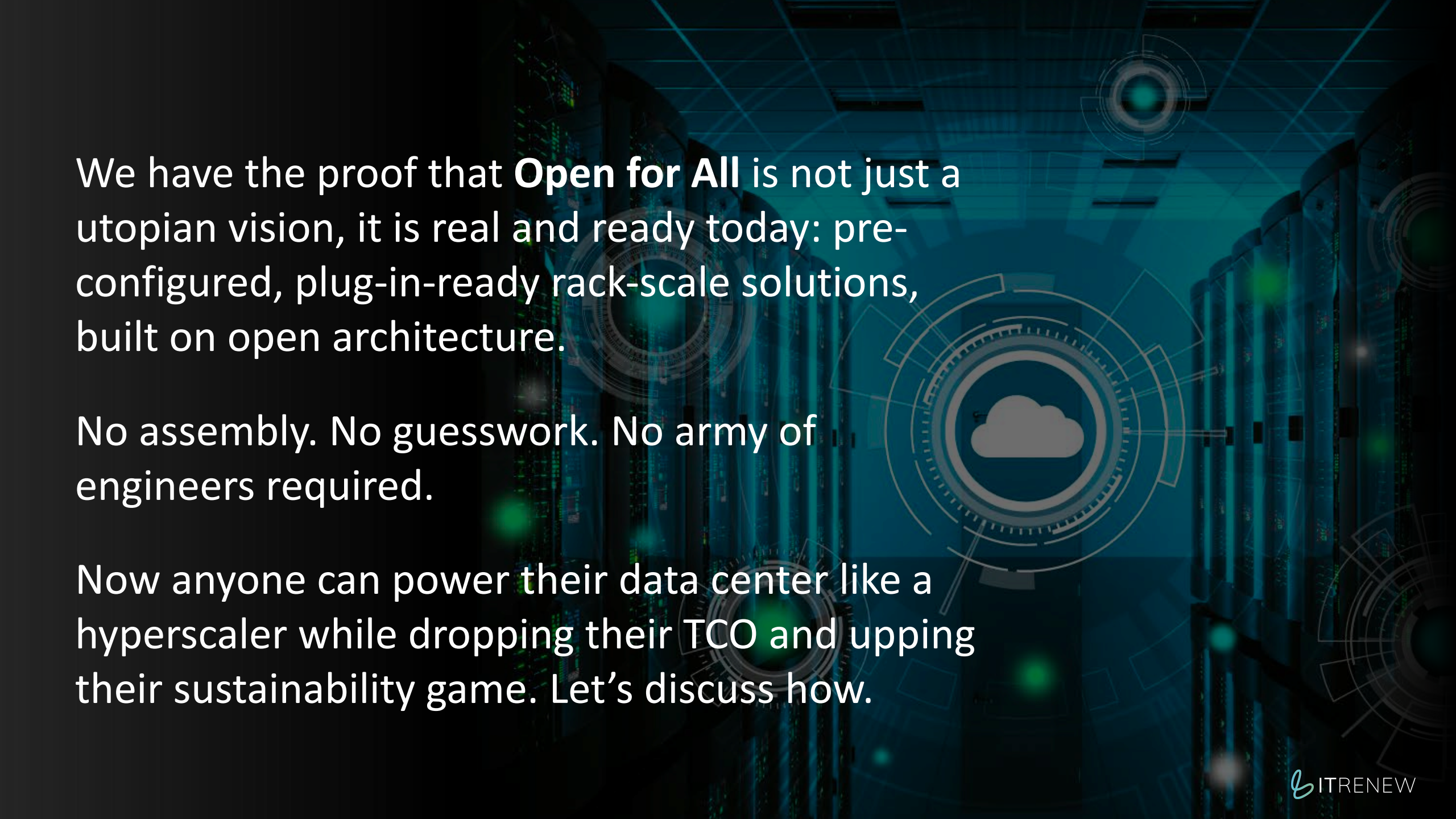
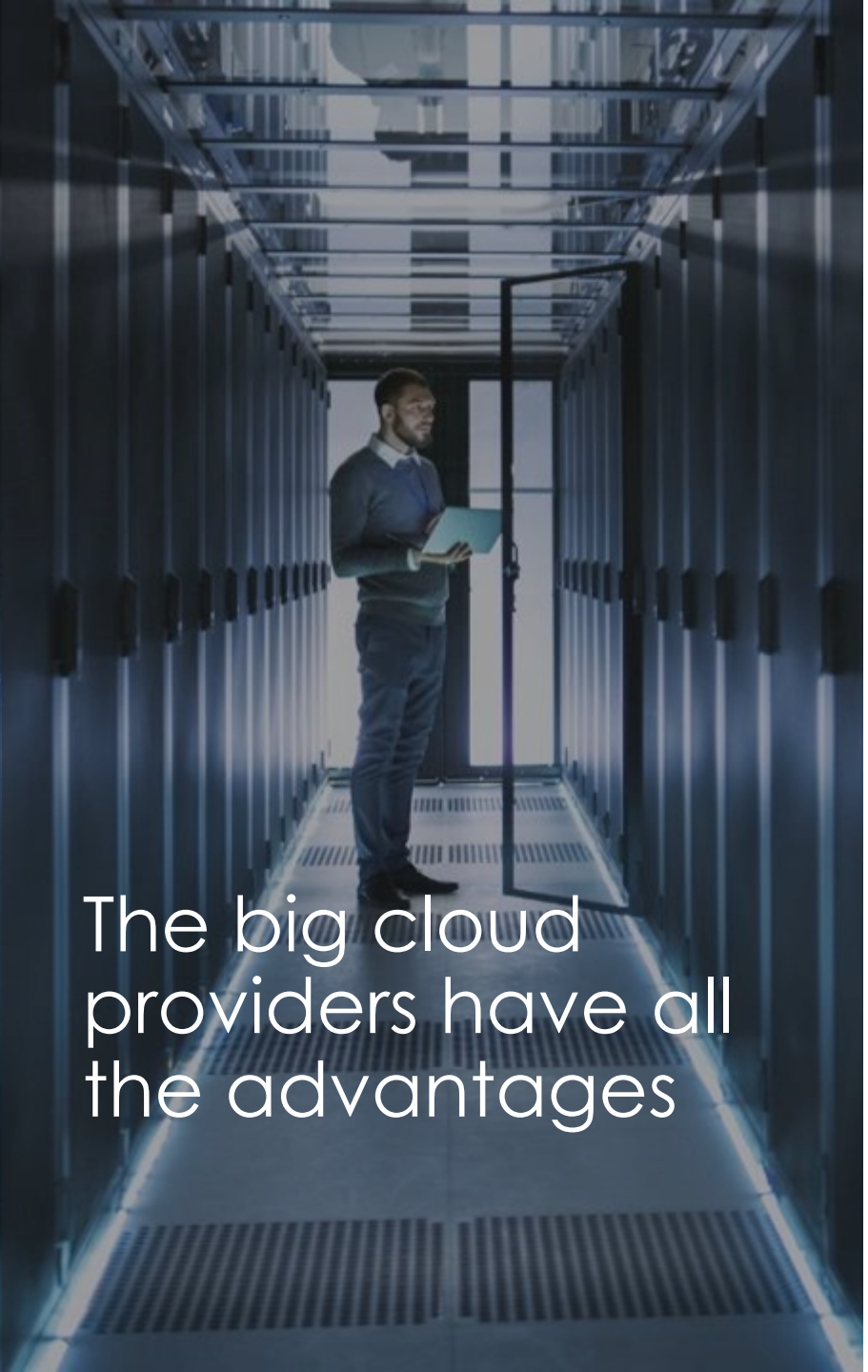


We have the proof that **Open for All** is not just a utopian vision, it is real and ready today: pre-configured, plug-in-ready rack-scale solutions, built on open architecture.

No assembly. No guesswork. No army of engineers required.

Now anyone can power their data center like a hyperscaler while dropping their TCO and upping their sustainability game. Let’s discuss how.



The big cloud providers have all the advantages

$2B
$1B $2B
$1B

Massive budgets and talent pools

Most advanced technology

Greatest flexibility to scale

Lowest costs

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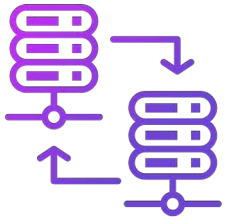
If everyone had the advantages, they could...

Deliver more new services



Respond faster to customer needs

Grow the user base

Increase margins & accelerate growth

Open Is Necessary, But Not Sufficient Per Se

design, engineering and product expertise, rigorous commitment to component quality

[software]

requires baseline partnership across hardware & software

[hardware]

design, engineering and product expertise, rigorous commitment to component quality

devops – collaboration from designers & developers to operations

ORCHESTRATING AN OPEN HARDWARE + OPEN SOFTWARE STACK

from capacitors to consensus algorithms to cognitive load

wide dynamic range of skills must be applied & appreciated

automation, analytics, and machine learning for all the things

can't be efficient at hyperscale without the machines making many, most decisions

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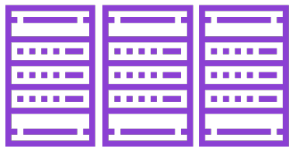
The Benefits of Open Hardware

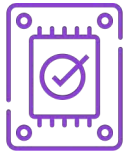
MORE FLEXIBILITY

Multi-vendor, standards-based hardware for modular solutions to fit your needs



HIGH DENSITY COMPUTING

More server, storage, and network capacity, in less space saves costs



OPTIMIZED POWER

Rack-level power vs. individual server power. More efficient. Less cost. Fewer points of failure

OPTIMIZED COOLING

Rack-level cooling to operate more efficiently. Even more with free-air cooling, if the data centers support it

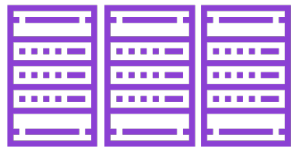
STREAMLINED MAINTENANCE

Flexible, easy-access design enables faster troubleshooting, updates, and upgrades

The Benefits of Open Software

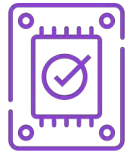
MORE FLEXIBILITY

Multi-vendor, standards-based software for modular solutions to fit your needs



HIGH DENSITY COMPUTING

More automation, with API-driven scalability, allows more software per silicon in^2



OPTIMIZED POWER

Stack-level power vs. individual packaged software. More efficient. Less cost. Fewer points of failure

OPTIMIZED VALIDATION

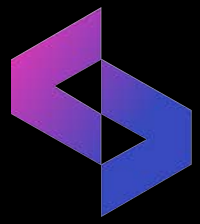
Stack-level continuous integration, continuous deployment (CI/CD) to validate more efficiently. Fewer points of failure in the field

STREAMLINED MAINTENANCE

Flexible, API-based, devops-considered design enables faster troubleshooting, updates, and upgrades


FE
FIELD ENGINEER
fieldengineer.com

INTRODUCING AN ALL-NEW OPEN RACK SCALE SERVER CHOICE



SESAME BY ITRENEW

PROVEN HYPERSCALE TECHNOLOGY

PURPOSE BUILT READY TO DEPLOY

DEPENDABLY AVAILABLE CONSISTENT PRODUCT

BUSINESS-CHANGING TCO

MEET YOUR GROWING DATA AND INFRASTRUCTURE DEMANDS WITH THE SAME OPEN HARDWARE AS THE WORLD'S LEADING HYPERSCALERS.

Optimized For Workloads. Ready To Deploy

NO GUESSWORK. NO ASSEMBLY. JUST PLUG THEM IN.

SESAME FOR OPEN SYSTEMS

Massive scale, cross-rack switching interconnects up to 20 racks; 750+ nodes in a single cluster, network domain

Prevalidated with Kubernetes software and infrastructure stacks

Linux-ready with scalable OpenBMC management

SESAME FOR AI/ML

High bandwidth, low latency platform to optimize learning

Powerful application processing on large and small accelerated compute nodes

100G and InfiniBand connectivity for top throughput

SESAME FOR CONVERGED

Simplicity of design with standardized converged nodes

Compute, storage and network capability scalable in lockstep as needed

Fully open configuration and manageability tools, qualified and optimized for Linux

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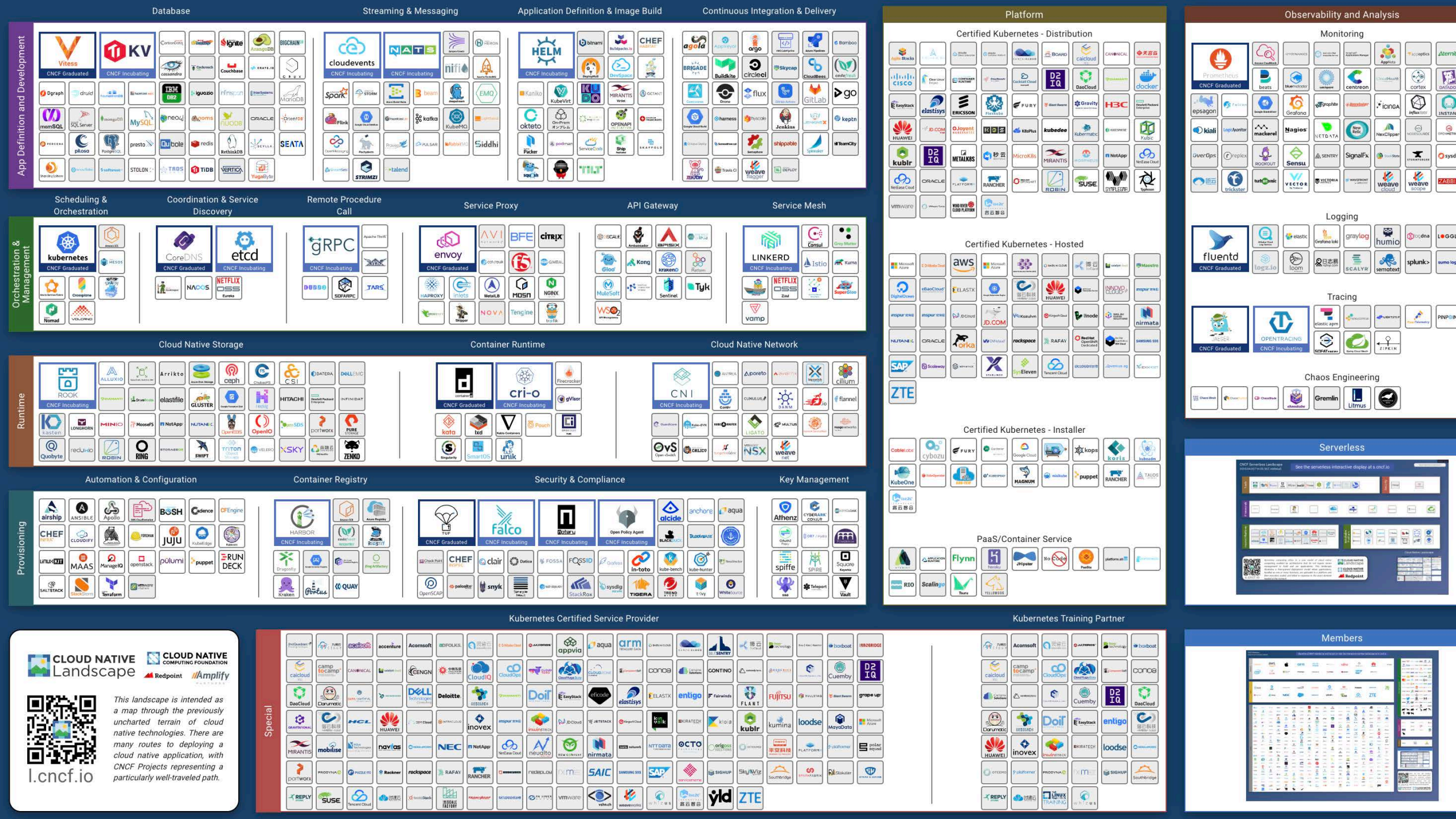
Database
Streaming & Messaging
Application Definition & Image Build
Continuous Integration & Delivery
App Definition and Development
Vitess
CNCF Graduated
KV
CNCF Incubating
cloudevents
CNCF Incubating
NATS
CNCF Incubating
HELM
CNCF Incubating
Scheduling & Orchestration
Coordination & Service Discovery
Remote Procedure Call
Service Proxy
API Gateway
Service Mesh
Orchestration & Management
kubernetes
CNCF Graduated
CoreDNS
CNCF Graduated
etcd
CNCF Incubating
gRPC
CNCF Incubating
envoy
CNCF Graduated
LINKERD
CNCF Incubating
Cloud Native Storage
Container Runtime
Cloud Native Network
Runtime
ROOK
CNCF Incubating
cri-o
CNCF Incubating
CNI
CNCF Incubating
Automation & Configuration
Container Registry
Security & Compliance
Key Management
Provisioning
HARBOR
CNCF Incubating
TUF
CNCF Graduated
falco
CNCF Incubating
Notary
CNCF Incubating
Open Policy Agent
CNCF Incubating
Platform
Certified Kubernetes - Distribution
Certified Kubernetes - Hosted
Certified Kubernetes - Installer
PaaS/Container Service
Observability and Analysis
Monitoring
Prometheus
CNCF Graduated
Logging
fluentd
CNCF Graduated
Tracing
JAEGER
CNCF Graduated
OPENTRACING
CNCF Incubating
Chaos Engineering
Serverless
Members
Kubernetes Certified Service Provider
Special
Kubernetes Training Partner
CLOUD NATIVE Landscape
CLOUD NATIVE COMPUTING FOUNDATION
Redpoint
Amplify
l.cncf.io
This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.


SESAME BY ITRENEW
SESAME FOR OPEN SYSTEMS

Sesame for Open Systems

- Massive scale; cross-rack switching interconnects up to 20 racks; 900+ nodes in a single cluster, network domain
- Pre-validated with Kubernetes software and infrastructure stacks
- Linux-ready with scalable node-level management

CAPACITY

- 6 to 36 nodes per rack – mix of node types
  - single-socket x86 compute
  - 2-socket x86 compute
  - storage nodes w/ NVMe flash
- 3, 6, or 9 infrastructure nodes/rack

PERFORMANCE

- BASE config: 150+ cpu cores & >1 TB memory
- SCALE config: 700+ cpu cores & >8 TB memory
- 5 TB to 250 TB of high IOPS flash storage/ rack
- 2.5 kW to 18.9 kW per rack
- Full 25 GbE connectivity within the rack

WORKLOAD FLEXIBILITY

- Pre-designed/integrated racks fit most common Kubernetes/VM orchestration deployment architectures
- Servers, storage, and networking hardware is pre-qualified and pre-tested
- Designed to fit the space & power constraints of most modern data centers

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		

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CONCLUSION


THE
BUZZ

THANK YOU

Open uncomplicated, from deskside to data center

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