



The bridge to possible

# Cluster Power – Designing and Building a Datacenter with Cloud-operated Model

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Webex spaces will be moderated until February 24, 2023.





# Agenda

- ClusterPower intro
- Start of the journey
- Challenges and insights
- The Cloud
- A look into the future

# Clusterpower Intro



# About ClusterPower

A technology company with a mission

- Privately Owned Romanian company by group of **experienced entrepreneurs**
- Strong partnerships with companies with **expertise** and projects in industrial infrastructure, energy infrastructure and trading, Cloud and IT infrastructure projects.
- **A company with a mission**: Enable digital transformation through advanced infrastructure and innovative solutions.
- **Our vision** is to create enduring, maximized impact projects that place us in the front seat for reshaping how businesses impact our world in the future.
- **Our core values**: high-quality standards, trustworthiness and integrity.

# About ClusterPower

A technology company with a mission

## ENERGY EFFICIENCY

Highly efficient buildings in terms of energy consumption, using innovative technology (Est. Power Usage Effectiveness < 1.1)

- Green self-energy generator

## GUARANTEED QUALITY

Designed for Uptime Institute Tier 3 Datacenter certification

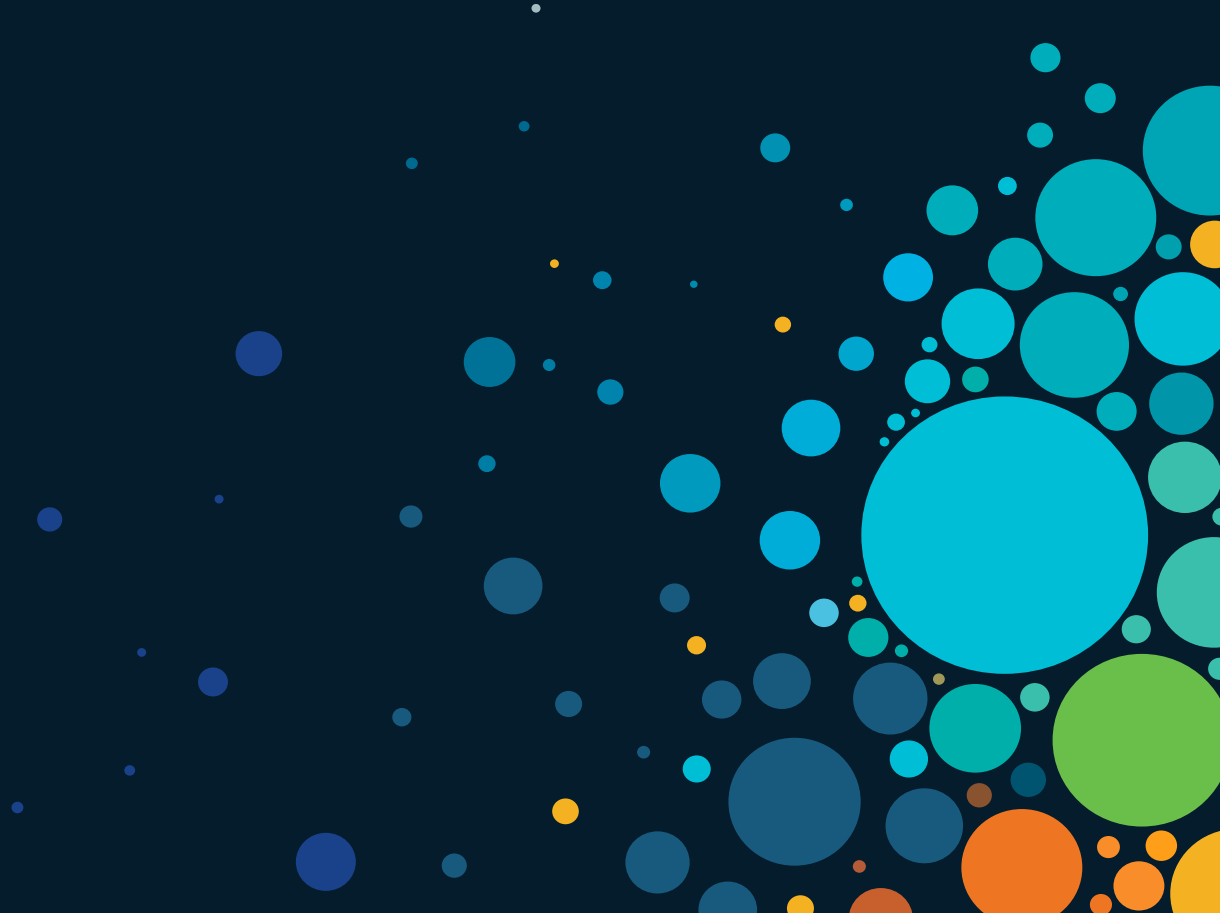
## PREMIUM INFRASTRUCTURE

Software Defined Virtual IaaS  
Neutral Internet Connectivity  
Dedicated L2 Circuits in EU Major Cities  
On-Site internet Exchange Capabilities

## FLEXIBILITY AND SCALABILITY

Free choice of telecom and IT-service providers  
First True Native hybrid cloud provider in Romania  
Up to 200 MWh

# Start of the Journey



# A merge between two industries

## Cluster

- IT Sector
  - ISP Infrastructure
  - Large Enterprise
  - Data Center and Cloud
- Volatile, fast-moving industry
- Complex

## Power

- Energy Sector
  - National Grid infrastructure
  - Renewable Projects
  - Nuclear Power Plant
- Highly regulated industry
- Complex



# THE PLAN...?



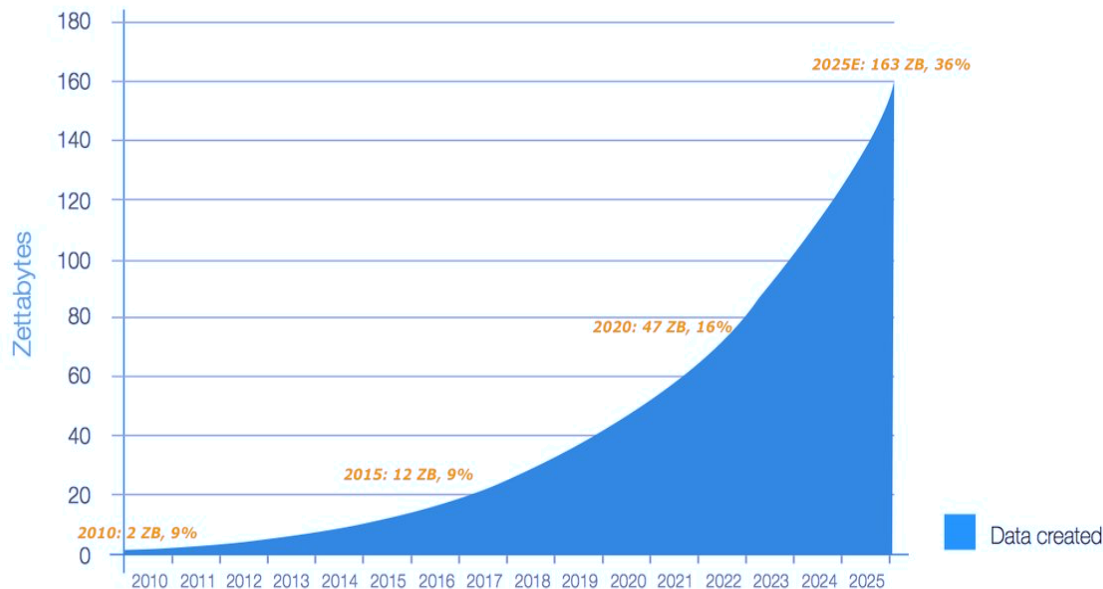
# Largest Data Center and Cloud Operator in the CEE Region



# The Global Datasphere

**163ZB** - A tenfold growth between 2016 and 2025

Figure 2. Annual Size of the Global Datasphere



# Design principles

- Innovative
- Efficient
- Sustainable
- Scalable
- Flexible
- Secure
- Multi-tenant

# ClusterPower – DataCenter USP



## Resilience

National energy  
transport  
connections

Onsite energy  
production

Carrier-neutral



## Efficiency and scalability

PUE of 1.1

5000+ Racks

Build to suit  
options

Rapid  
Deployment  
and scalability



## World Class Security

Physical

Personnel

CyberSecurity



## Certification

Uptime  
institute Tier 3

Industry  
relevant  
Certifications

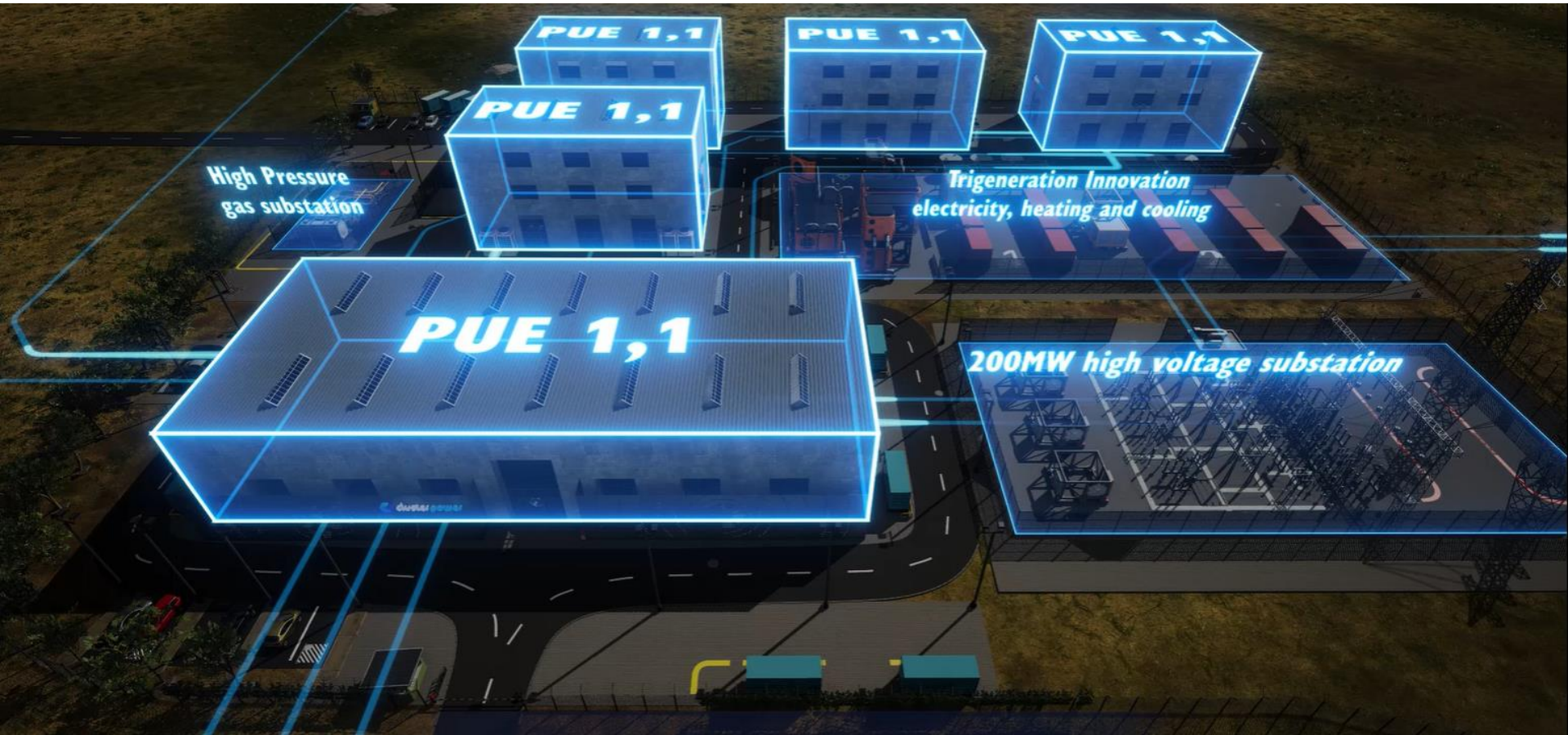


## Cost Saving

Efficiency

Onsite Energy  
production

# ClusterPower **Campus Layout**

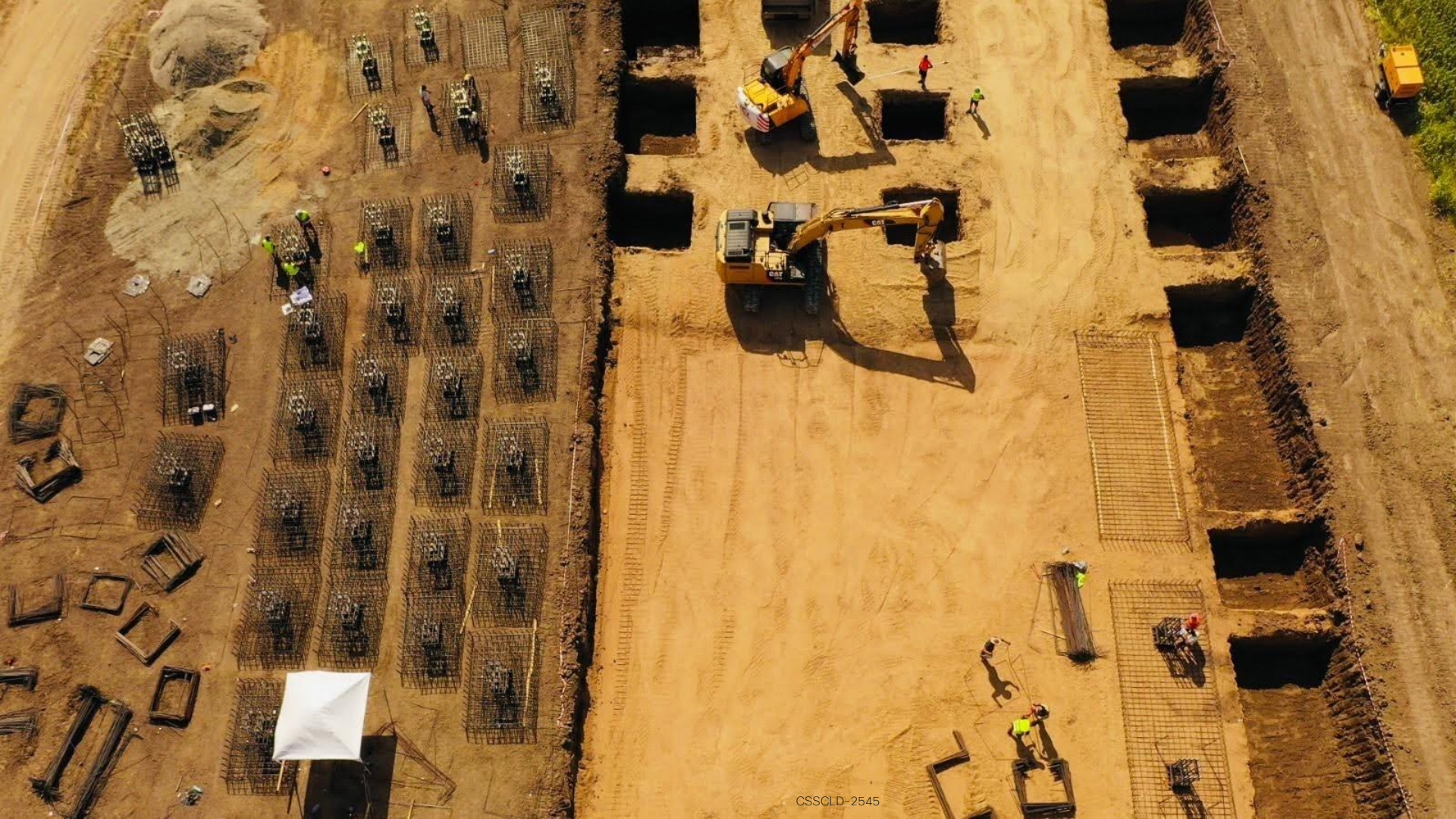


# How it all started?









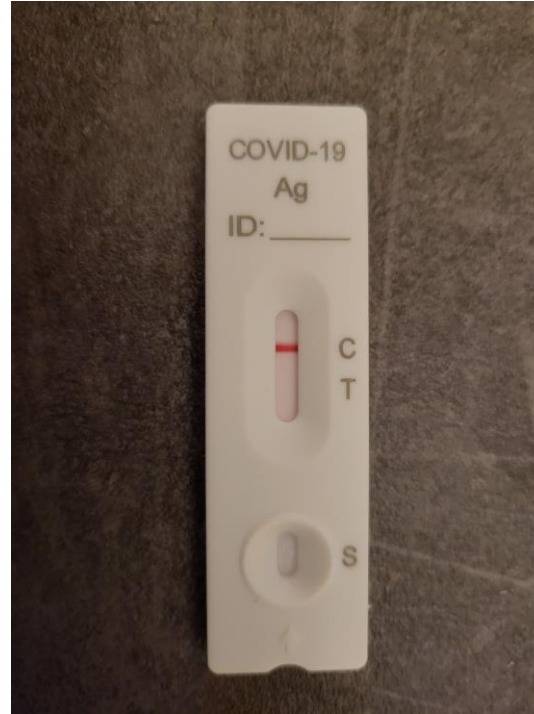




# Challenges



# Do you remember those?



What's the difference between Bigfoot and an accurate delivery forecast? Bigfoot has been sighted.

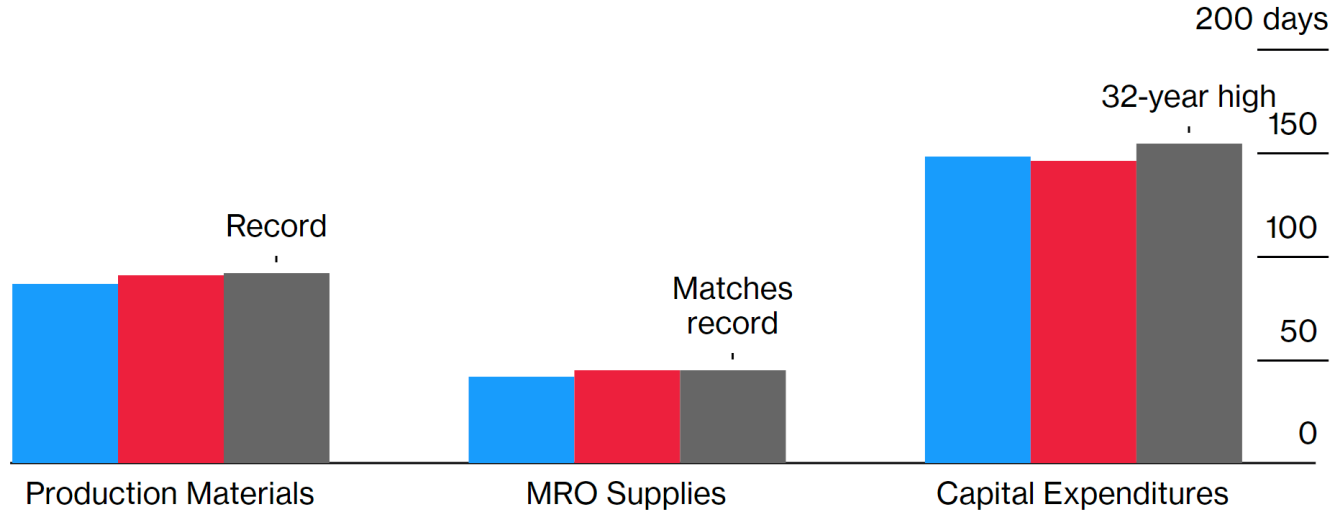




# Tick Tock

Average lead times for materials, supplies and equipment have soared

■ July ■ August ■ September



Source: Institute for Supply Management

# CPU Release Cycle

## Expanding the Intel® Xeon® Processor Roadmap



Sapphire Rapids  
Intel 7  
2022



Emerald Rapids  
Intel 7  
2023



Granite Rapids  
Intel 3  
2024



Next Gen

P-Core

Perf/core  
optimized for  
mainstream &  
premium cloud and  
data-center  
applications



Sierra Forest  
Intel 3  
2024



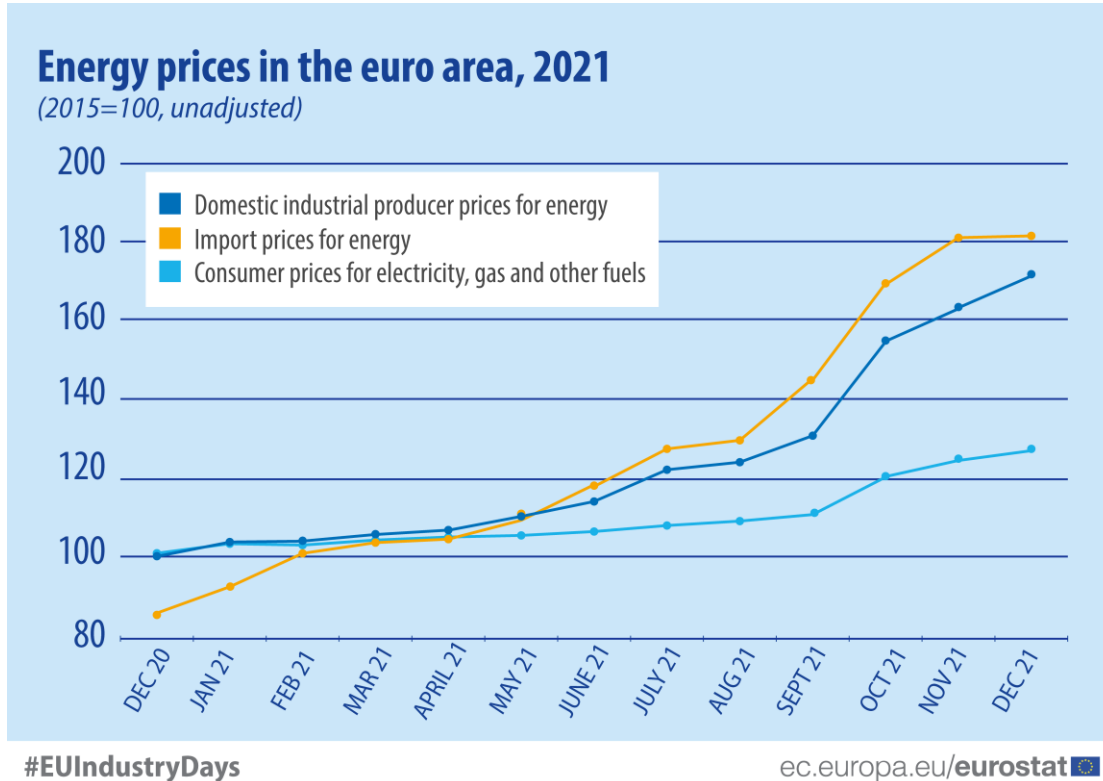
Next Gen

E-Core

Power/perf  
optimized to  
support high-  
density, ultra-  
efficient compute  
for the cloud



# Energy market surge



How it turned out



# The Cloud



# Services Approach

Application & Data	SaaS	Managed by Partner Ecosystem & ClusterPower
Operating System, Middleware Runtime	PaaS	Managed by Partner Ecosystem & ClusterPower
Networking Compute Storage Virtualization	IaaS	Provided by ClusterPower
Power, Cooling Security, Racks	Colocation and Physical Infrastructure Services	Provided by ClusterPower

# ClusterPower Cloud Services



## ARTIFICIAL INTELLIGENCE

We have the highest processing power and energy availability in the region. Our supercomputer, powered by Nvidia's latest technology is specially designed for artificial intelligence applications. Our powerful setup ensures high speed of deployment, from proof of concept to fully implemented, operational solution.



## ADVANCED STORAGE FABRIC

Our Enterprise Storage solutions simplify and integrate data management across cloud and on premises infrastructure to accelerate your digital transformation. It delivers unfailing cohesive hybrid cloud data services for data visibility and insights, data access and control and data protection and security.



## CLOUD COMPUTING

Smart Cloud & Compute services for large data deployments. Our services enable the interconnection between your business, data, cloud, and end users in a cost efficient set up. Guaranteed storage performance will provide you the best overall cloud experience.



## Universal Backup as a Service

Implement your business continuity plan and say good bye to the risk of business interruptions by having your on prem and cloud based data backed-up in a fast and secure way

# ClusterPower Cloud Services



## DDOS Protection

multi-layered defense that protects against blended network attacks and sophisticated application attacks, while enabling full SSL decryption, anti-bot capabilities, and advanced detection methods.



## Next Generation Firewall as a Service

Cloud delivered Security Services, including Threat Prevention, Advanced URL Filtering, Global Protect as service components. You can prevent file based attacks and unknown threats by using ML to deliver inline signatureless attacks natively classify all traffic – applications, threats



## Web Application Firewall as a Service

Inspects the web application layer (HTTP/s traffic) and safe-guards sensitive user data embedded in your business application. Protects web and mobile apps from exploits, bots, theft, app-layer DoS. Prevents brute force attacks that use stolen credentials. Protect for app-layer DoS. Prevents malware from stealing data and users' credentials..



## Cloud Desktop

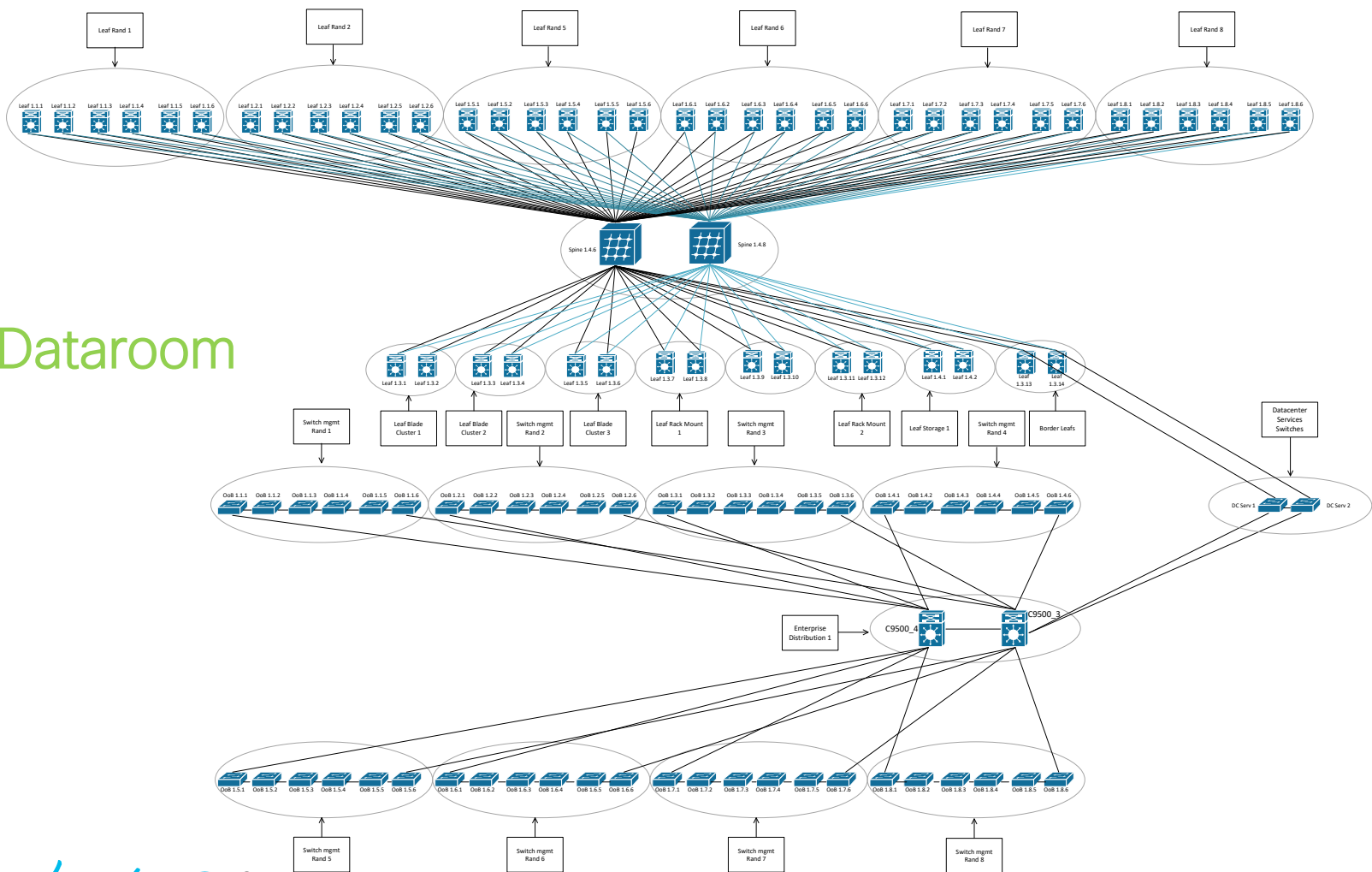
Because virtual desktops require less physical equipment and maintenance, they can be more cost-effective than physical desktops. Data is stored in the CP Data Center and not on individual endpoint machines, which can allow for greater data security.

# Beneath the cloud

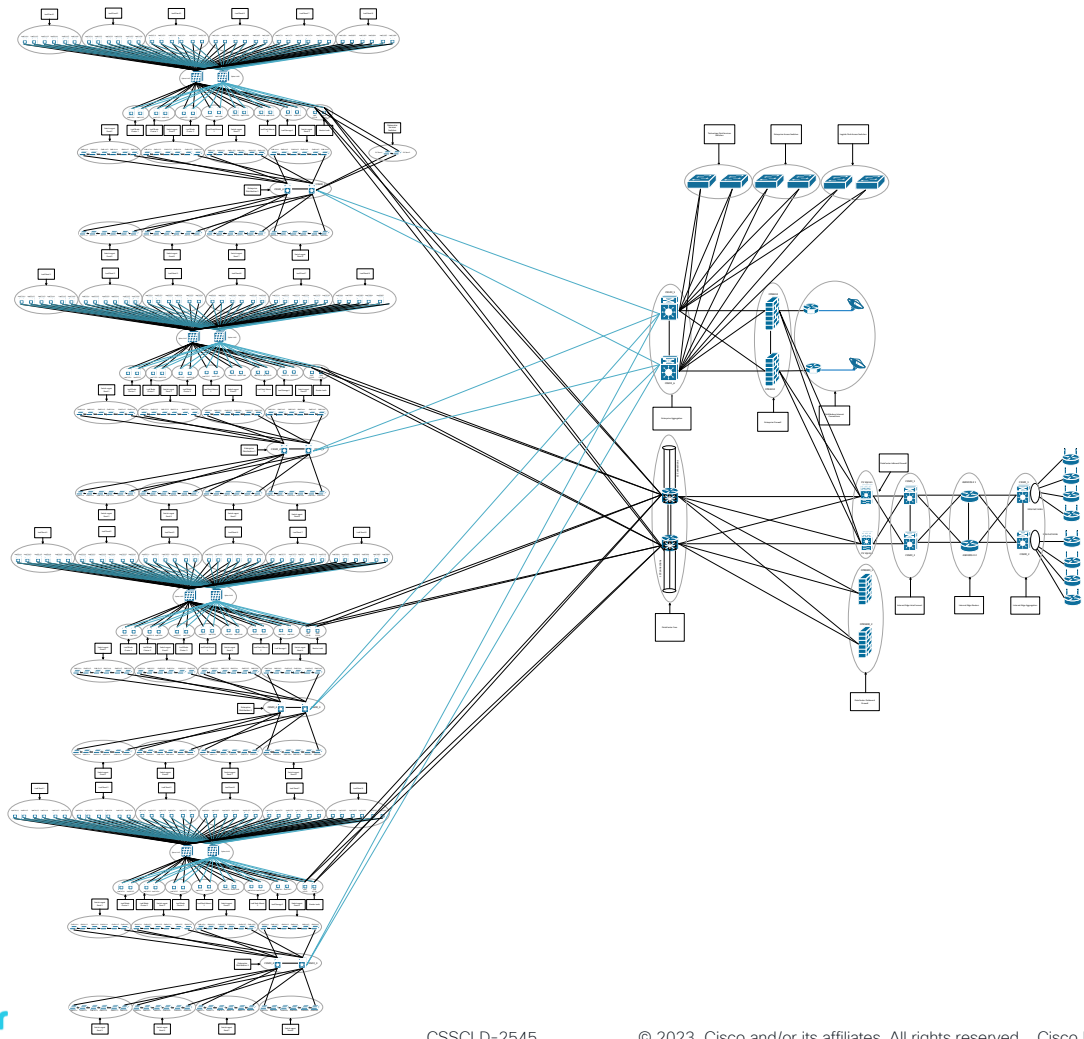




# 1 x Dataroom



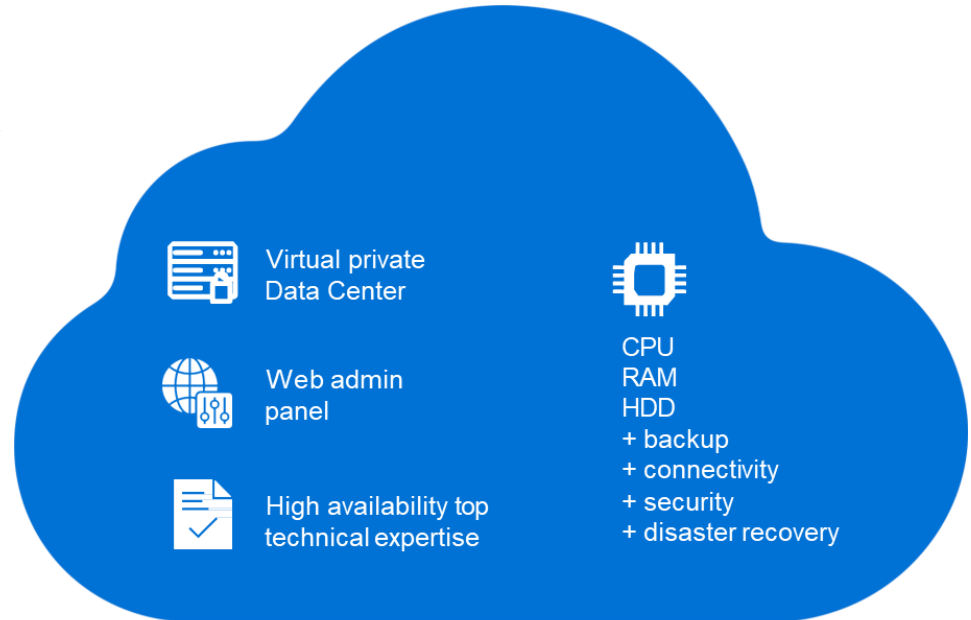
## 4 x Datarooms



# ClusterPower Cloud Computing

A powerful and flexible **Infrastructure-as-a-Service (IaaS)** solution, which allows the administration of **Virtual Compute Resources in Tier 3 environment** offered by our datacenter located in Craiova.

- A model based on OPEX, with no CAPEX investments in IT infrastructure, based on a monthly subscription and **scalable** according to business needs at a given time.
- Access to **flexible resources** for IT projects, productivity and critical applications.



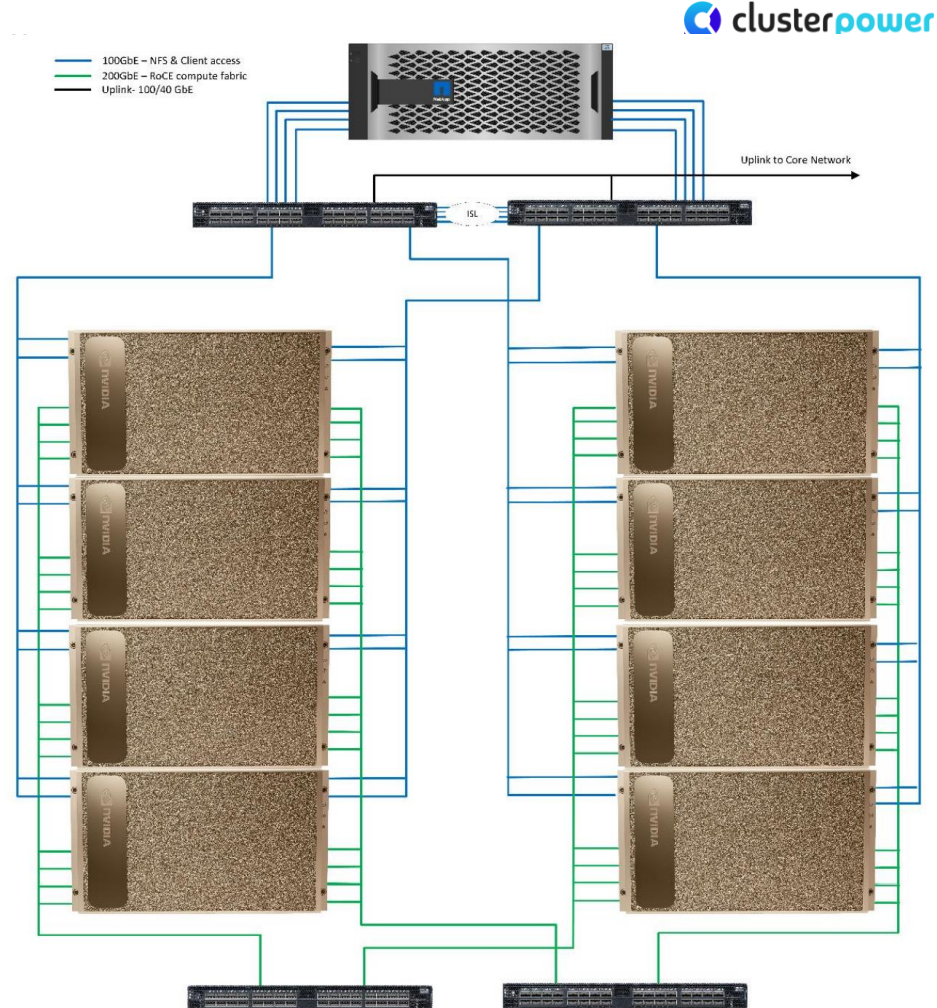
# Early Adopters of UCS-X

- High compute density
- Flexible
- Highly scalable
- Modularity
- SAP-HANA certified
- Operational efficiency
- Energy efficiency



# High Performance Computing Fabric

powered by Cisco ACI



# Future plans



# Cluster Power 2.0

A look into near future

- Next campus already started
- Regional Expansion
- Edge DataCenter layout
- Orchestration & Automation
- Expand HPC Capabilities
- Expand PaaS & SaaS Service Offering





A special thanks for our friends!



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The bridge to possible

# Thank you

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CISCO *Live!*

ALL IN