VSCALER

Start your cloud journey today

VSCALER

Good Morning CloudExpo

AGENDA

Our Observations around Public Cloud
Rethinking Private Cloud
Private Cloud vs Traditional Hardware Cluster
The vScaler Advantage
Q&A

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Observations

HPC IN PUBLIC CLOUD

Interconnect performance varies significantly across public cloud providers.

Optimising costs in a single public cloud is hard and multi-cloud or hybrid environments are even more challenging.

Identifying the correct instance for your goal or workload is not simple.

The cost of data movement can be prohibitive.

Resources can sit idle – its down to the end user to manually shut down resources when not in use.

Automated scaling can be hard to achieve and implicit constraints may create issues.

While it is a very useful resource to augment existing HPC systems, Cloud does not replace traditional HPC but rather should be considered as part of a hybrid strategy.

Rethinking Private Cloud

HPC IN PRIVATE CLOUD

HPC has traditionally been a static resource (software/applications) bringing the flexibility of cloud inhouse, provides your team with a more flexible research environment.

Blend virtual systems with physical systems as users progress from development and prototyping towards large scale simulations.

Simulations can be validated against instance types to optimise performance without additional cost and at will.

A parallel file system but with the capability to provide access via s3 object, HDFS (Hadoop file system) and be API driven to connect to containers.
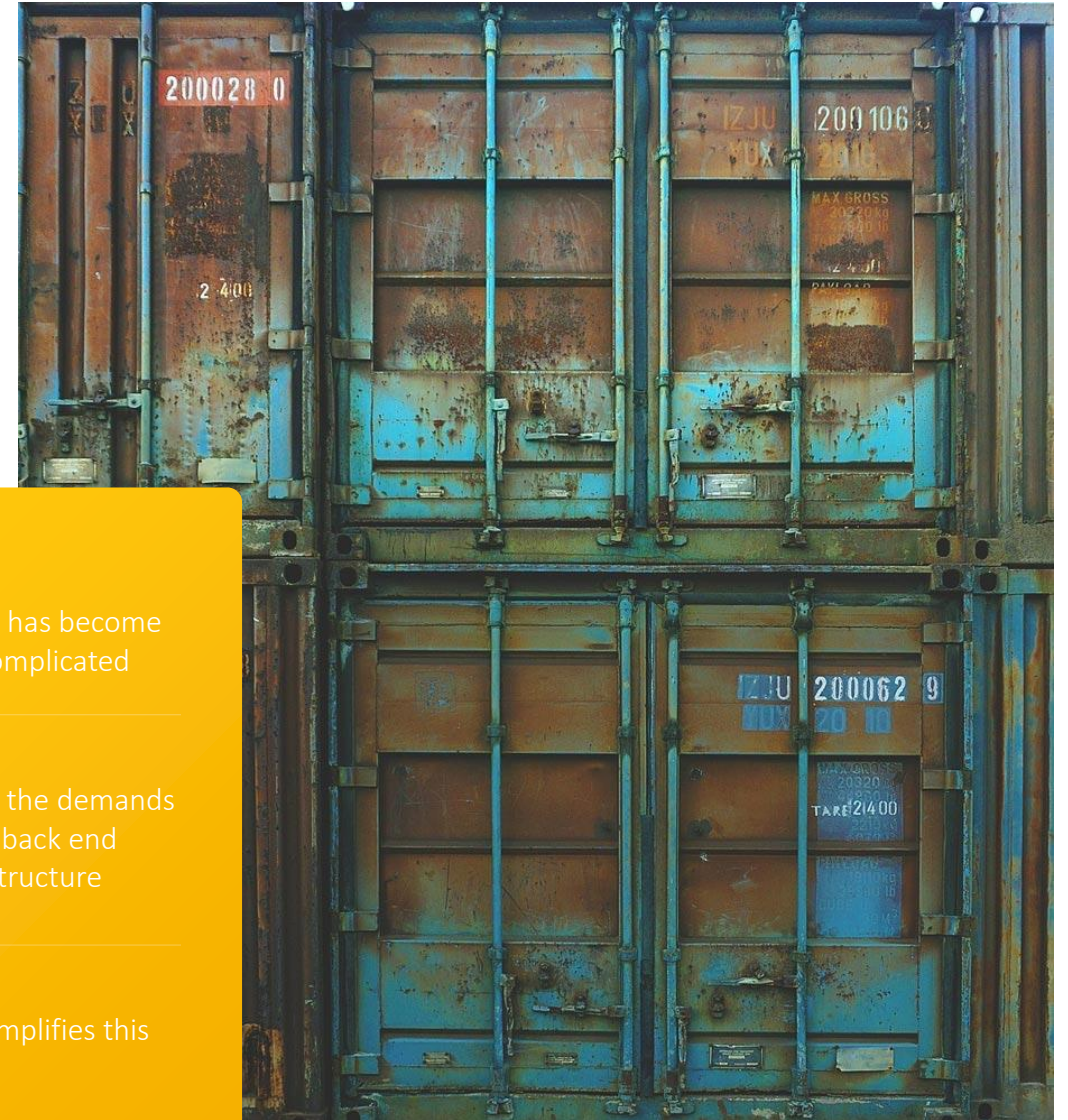
Clear control of costs – Budgets, cost overruns etc. Simplify support and cost of support
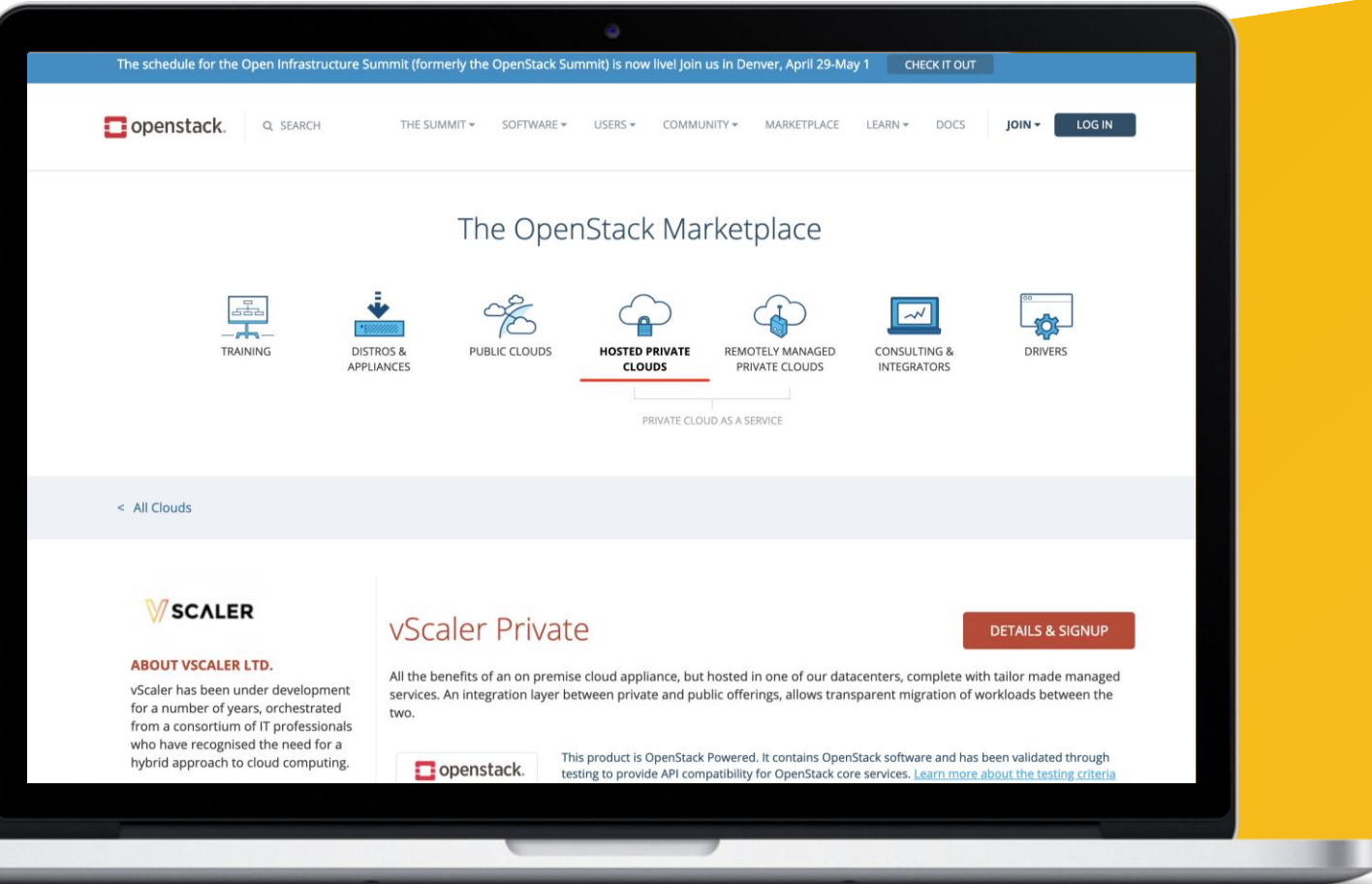
No Longer needs to be owned by a single Department/Team/Faculty

Modern IT has become more complicated

Broadening the demands on the back end infrastructure

vScaler simplifies this

What is vScaler?

POWERED BY OPENSTACK

Find us on the OpenStack marketplace as a validated and tested OpenStack platform for Private, public and hosted cloud.

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WHAT IS VSCALER

Built on
OpenStack

Introducing
OpenStack

OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed through a dashboard that gives administrators control while empowering their users to provision resources through a web interface.
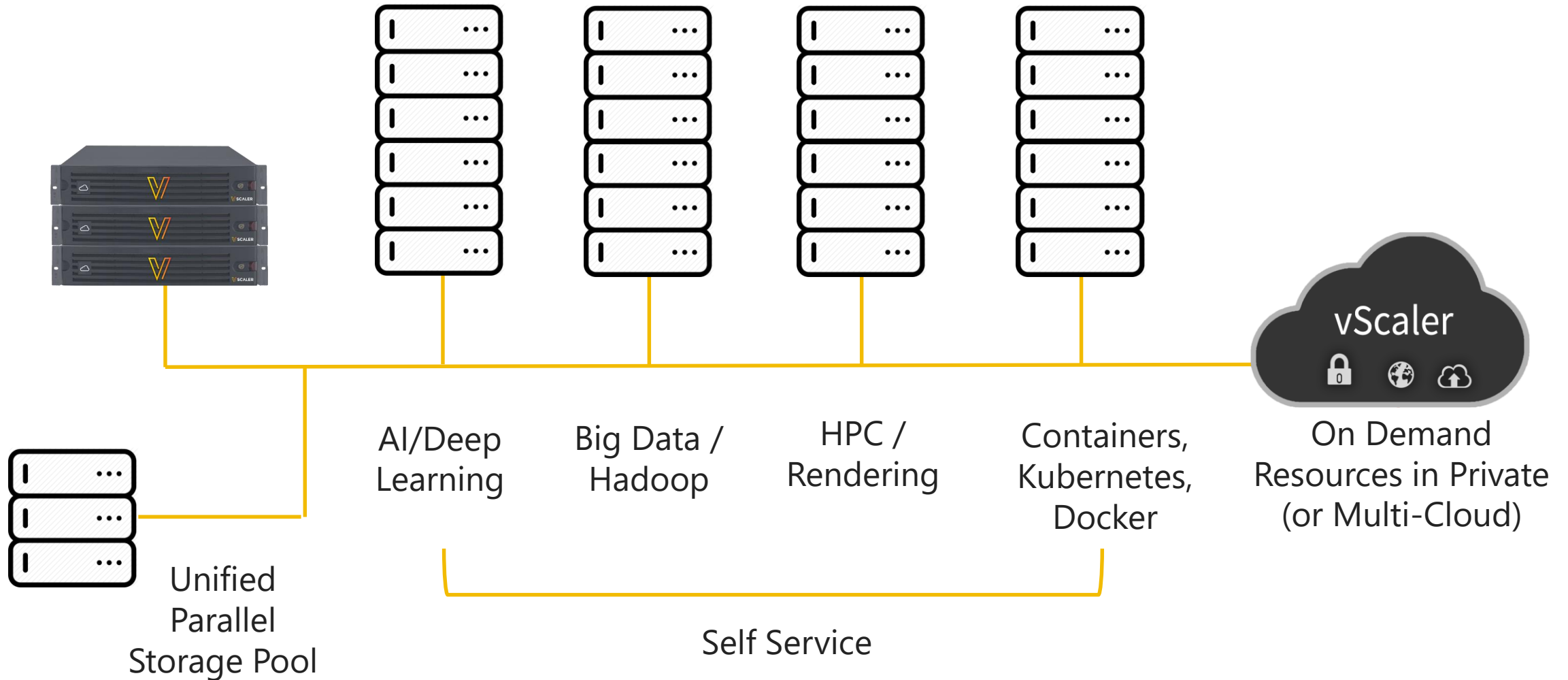
Today's IT Challenges

Traditional

- Siloed approach
- Manual Configuration
- Separate teams for Storage,
- Network and Compute
- Storage typically block/SAN based (not scale out)
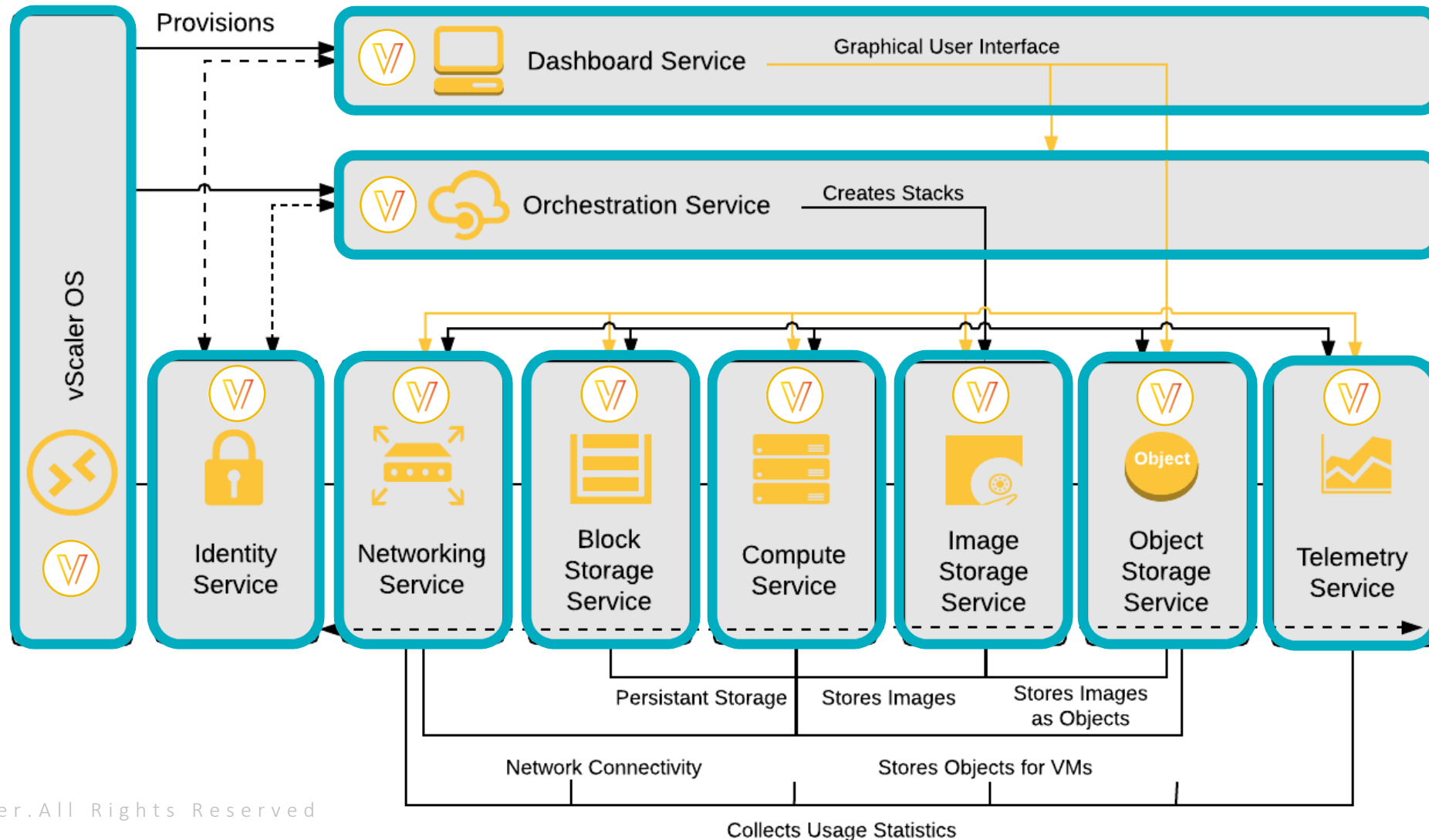- Challenges in scaling and keeping up to date

Modern

- Self service capability
- Application Portals
- Deep Learning Frameworks
- Big Data / Hadoop
- Rapid Provisioning
- Distributed Collaboration
- Demands for scale out Storage: file, block and object
- Dev/Ops
- COE: Mesosphere / Kubernetes

vScaler Cloud Platform

AI/Deep
Learning

Big Data /
Hadoop

HPC /
Rendering

Containers,
Kubernetes,
Docker

vScaler

On Demand
Resources in Private
(or Multi-Cloud)

Unified
Parallel
Storage Pool

Self Service

vScaler Software Architecture

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vScaler
Features

Feature List

Enterprise Grade Cloud

Eliminate the admin Pre-emptive log analysis warning admins of potential issues. Comprehensive hardware monitoring and integration.

Containerised deployments

Rapid deployment

Tested and validated software stack

Zero touch provisioning

Storage balanced when online

Drives tagged and ready for use ithin 10 minutes

See More
>

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vScaler Features

vScaler validated registry
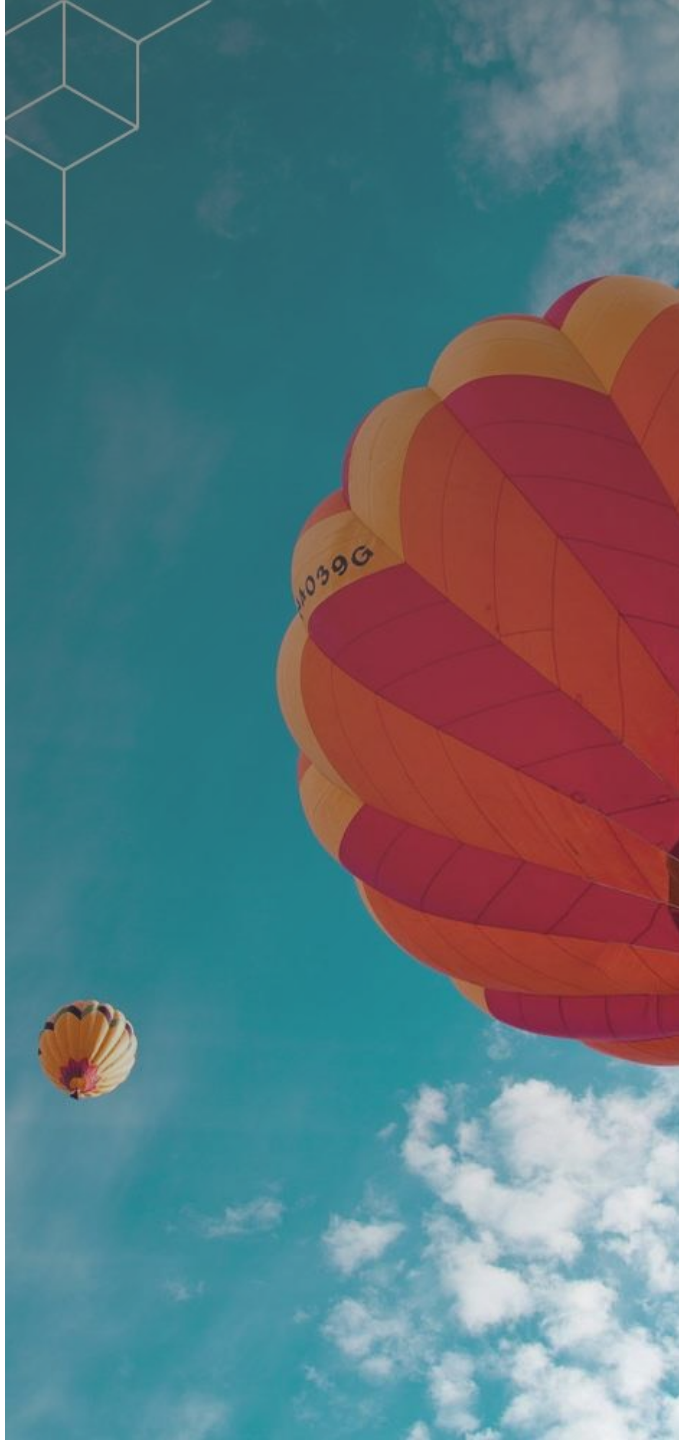
Highly available No SPOF

Rolling Upgrades/Zero downtime

vGPU, assign 1 GPU to many VM's

vScaler Architecture

ELASTIC: SCALE OUT
EVERYTHING

⚙ SCALE AT ANY TIME

Servers can be added or removed at any time.
No forced rebalance necessary – but optional
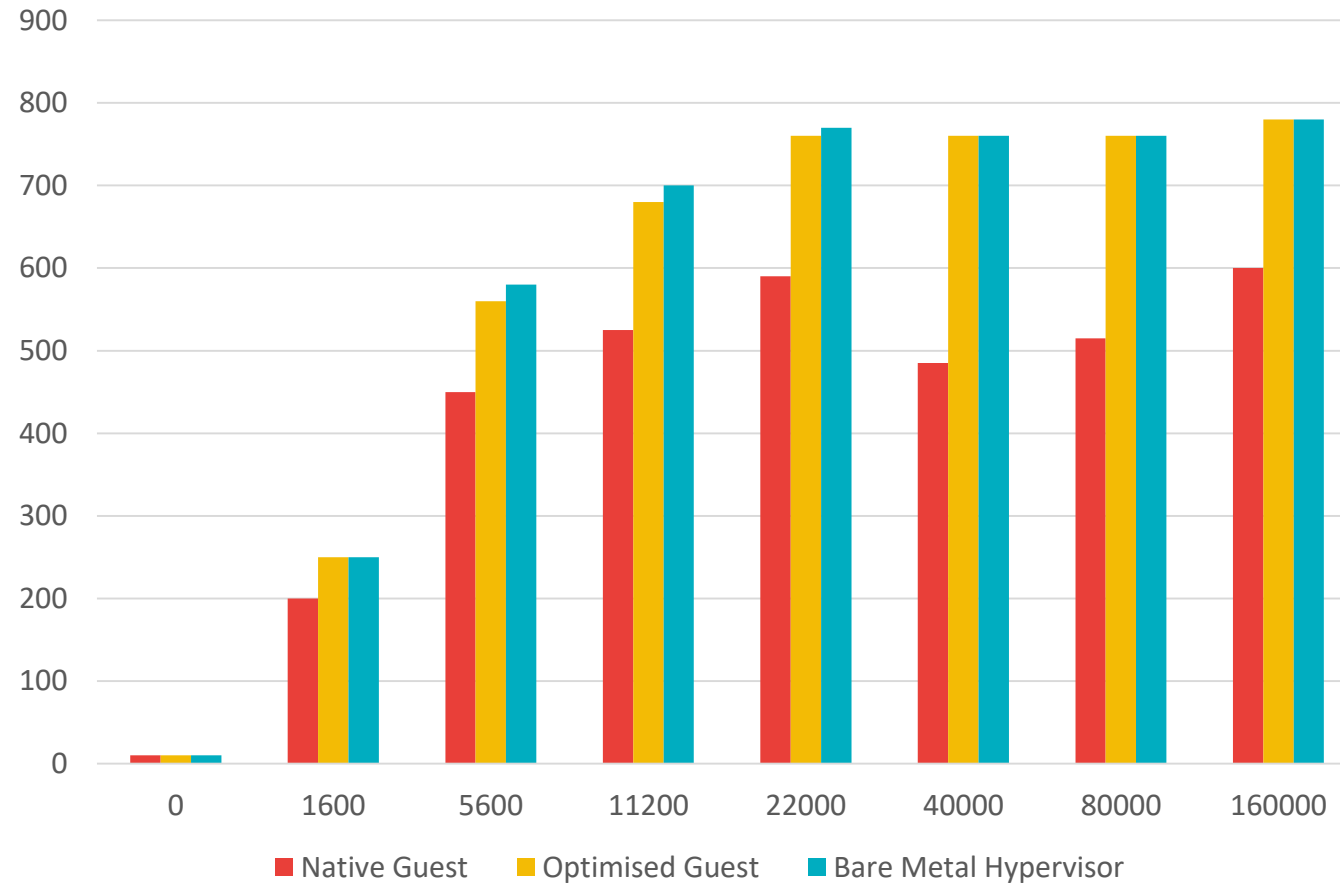CPU, Capacity, IOPS and bandwidth available immediately

☰+ ADD DEVICES
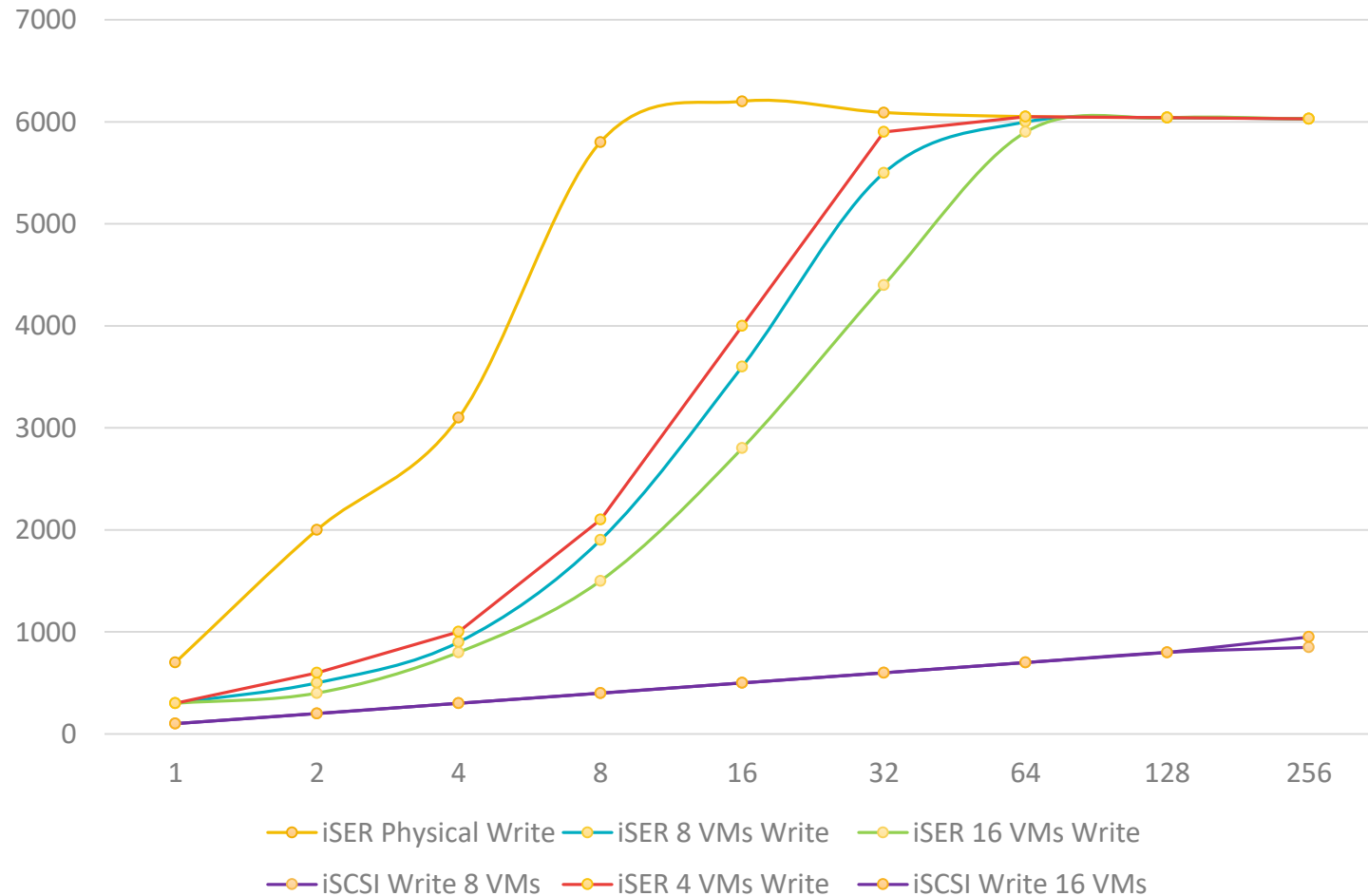
Auto detected and available in minutes

🗑 DRAIN WITH ONE CLICK

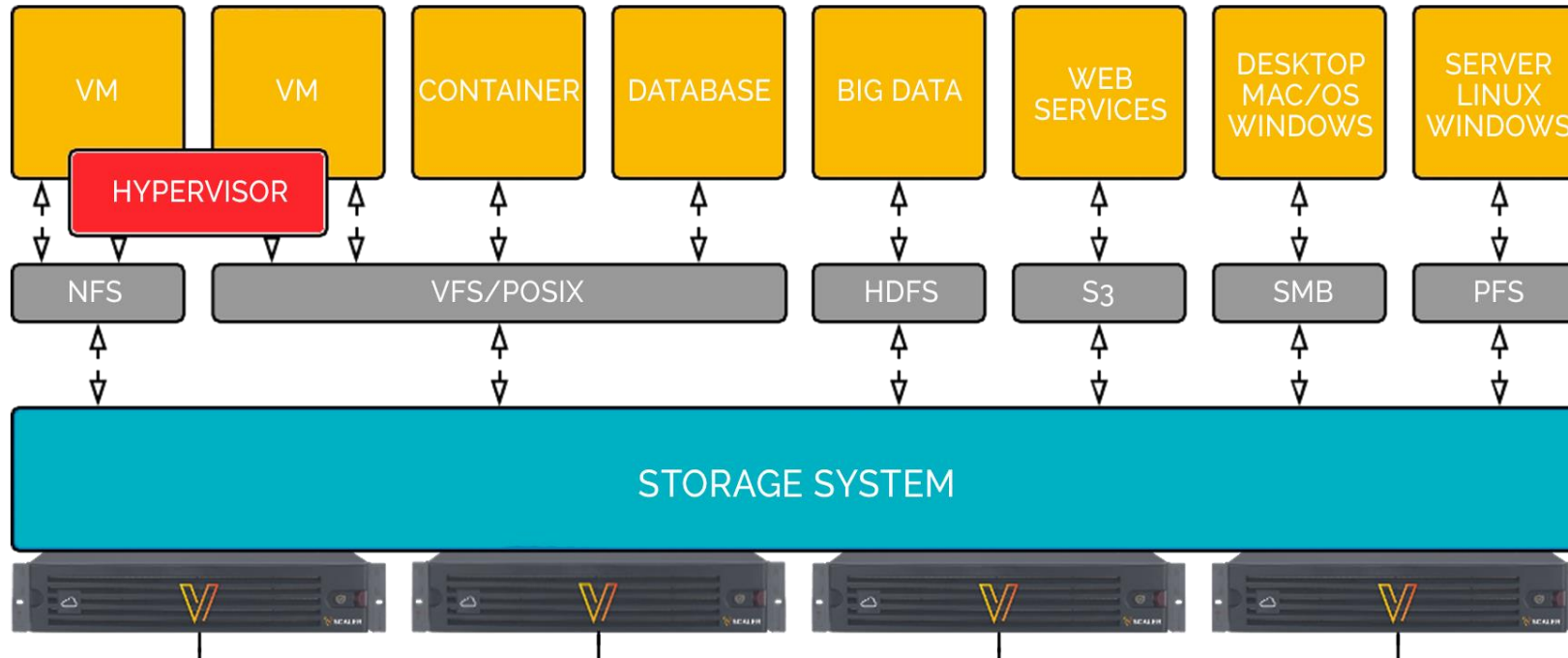Replicas are recreated on other devices
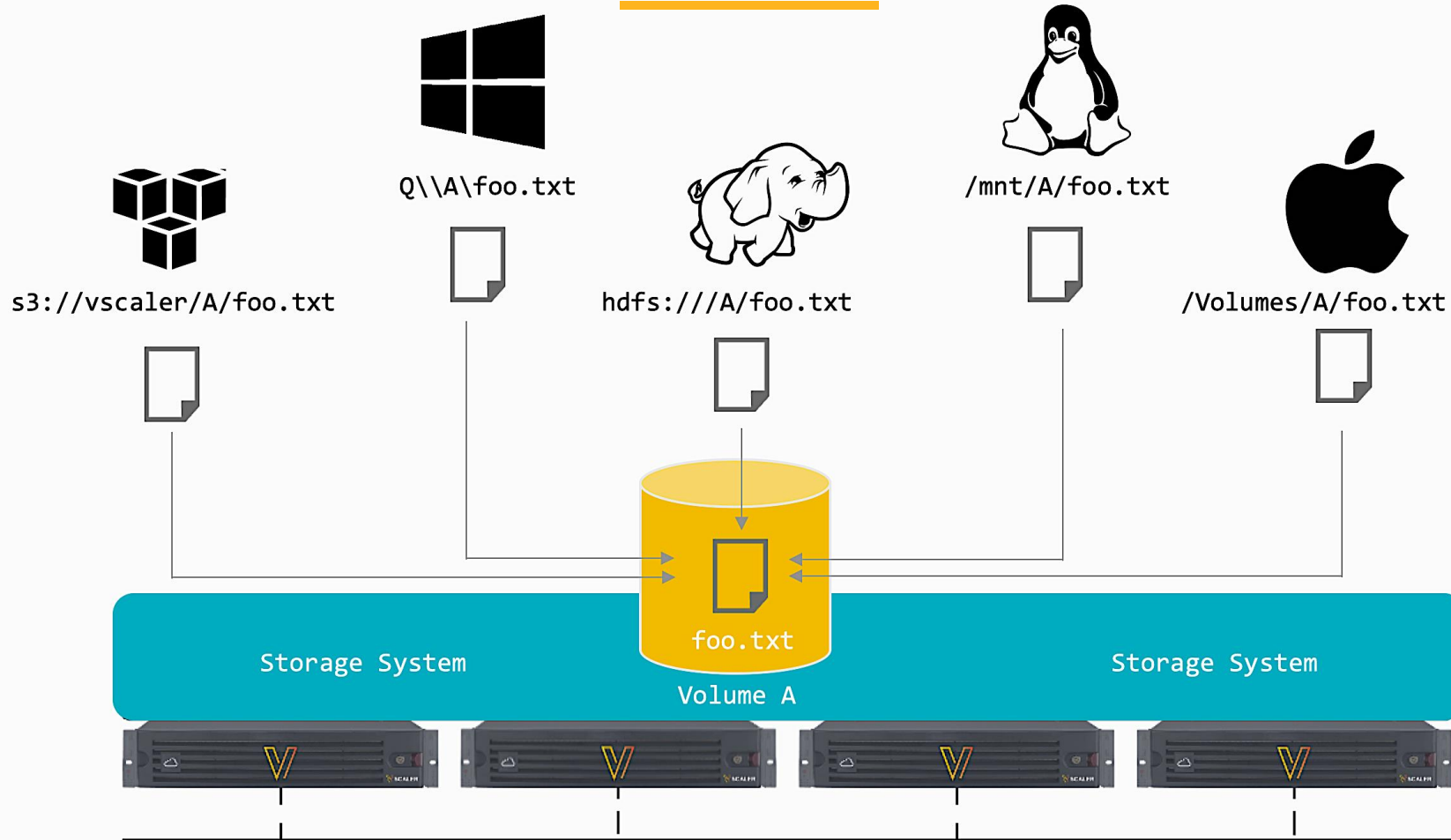Replication factor is always ensured

vScaler Compute

Bar chart comparing Native Guest, Optimised Guest, and Bare Metal Hypervisor across values 0, 1600, 5600, 11200, 22000, 40000, 80000, 160000.

vScaler Network Performance

vScaler Storage

Unified File Access

Q\\A\foo.txt

s3://vscaler/A/foo.txt

hdfs:///A/foo.txt

/mnt/A/foo.txt

/Volumes/A/foo.txt

Storage System

foo.txt

Volume A

Storage System

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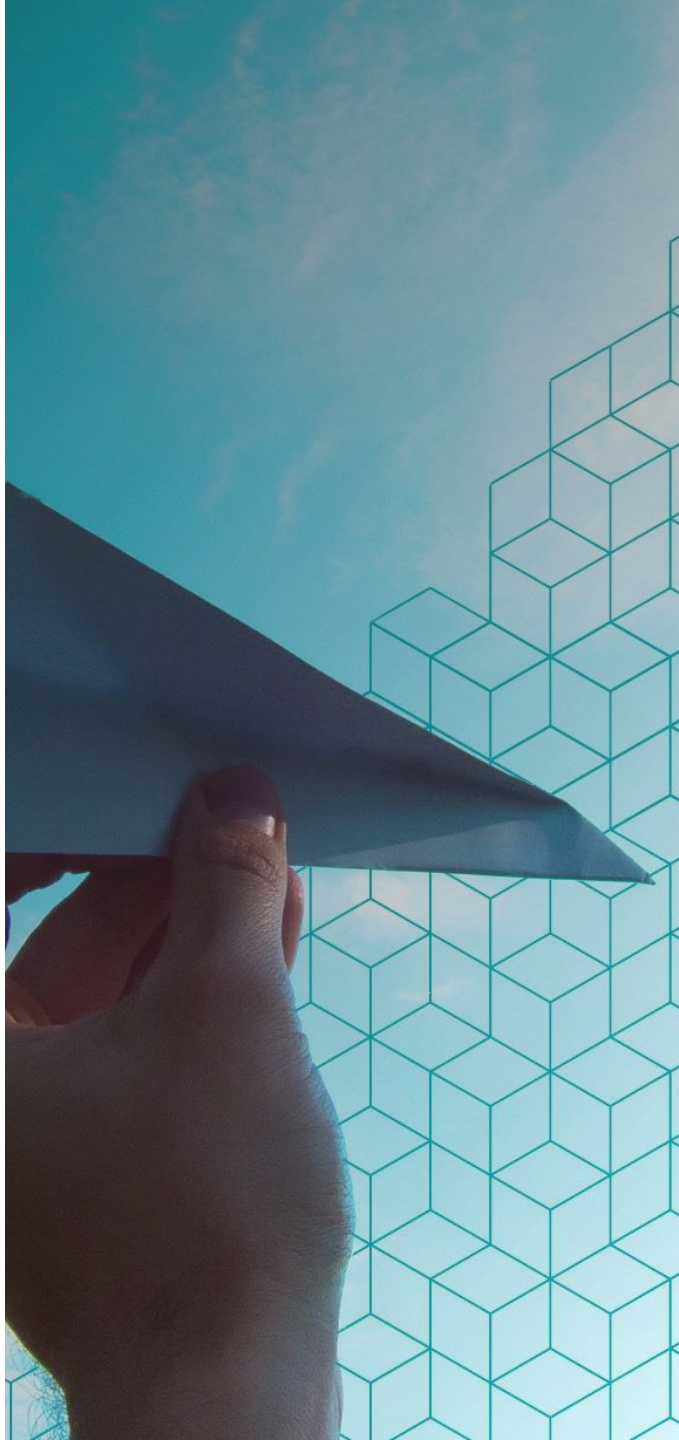
vScaler Architecture

RESILIENT POOLS
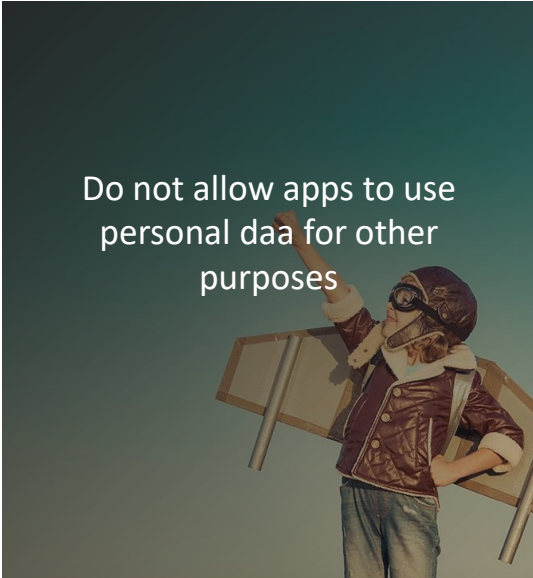
✔ Resilient Volumes

✔ Auto Tiering

✔ Disaster Recovery

✔ Composable Quotas

✔ Real time analytics

✔ Public cloud compatibility
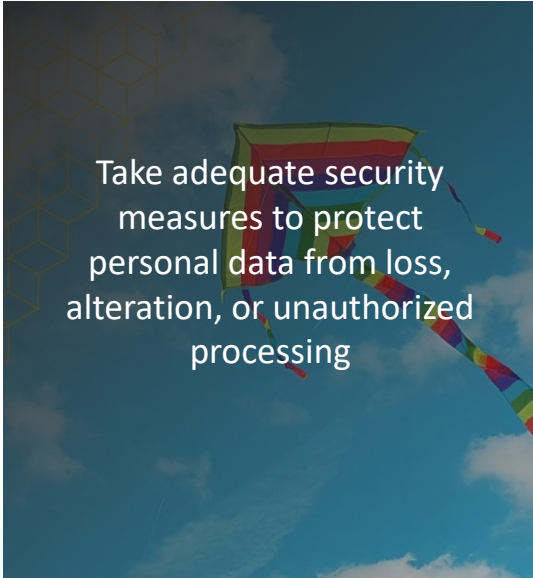
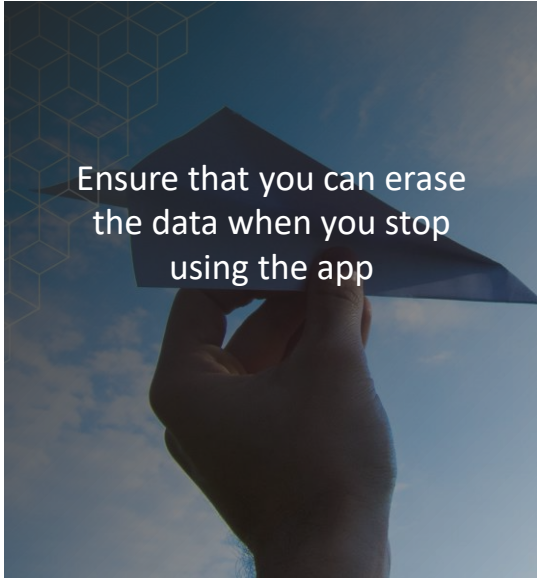✔ Integrate with 3rd party storage products

GDPR Ready

Know the location where cloud apps are processing or storing data

Do not allow apps to use personal daa for other purposes

Take adequate security measures to protect personal data from loss, alteration, or unauthorized processing

Ensure that you can erase the data when you stop using the app

vScaler
Security

"

Your data in the vScaler private cloud is protected and fully isolated at the hardware, hypervisor and network levels. The use of Security Groups and Rules allow full control of the type and direction of all data at all times. Services provides automated security intrusion detection and monitoring. Biometric authentication provided for MFA (optional)

vScaler Private Hosting & Connectivity

Our DC solutions range from UK based partners to those in Iceland, ensuring that whatever the primary driver we can deliver a total IT solution.

Our Datacentres offer true enterprise support with ultra-efficient PUEs of 1.2, and minimum of Tier III (n+1) mechanical and electrical infrastructure. All ISO 9001 & ISO 27001 Certified.

Custom fully Managed Services can be overlaid with any of your requirements. Only pay for the services you need.

Multiple connectivity partners ensures that we can advise on the best Routing for both performance and cost.

Partners of Tier III Data Centres

And world Leading Connectivity providers

Eg. Global Cloud Xchange Verne Global

vSCALER

USE CASE

CFD in the Cloud

Knowledge through experience

Our CFD Solutions Team, specialising in High Performance Compute (HPC) and Computational Fluid Dynamics (CFD), can offer fully tuned, highly efficient solutions, based on a range of compute architectures and software environments.

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CFD Benchmarking

Force India Single Node Benchmarking - Solve

Force India Single Node Benchmarking - Mesh
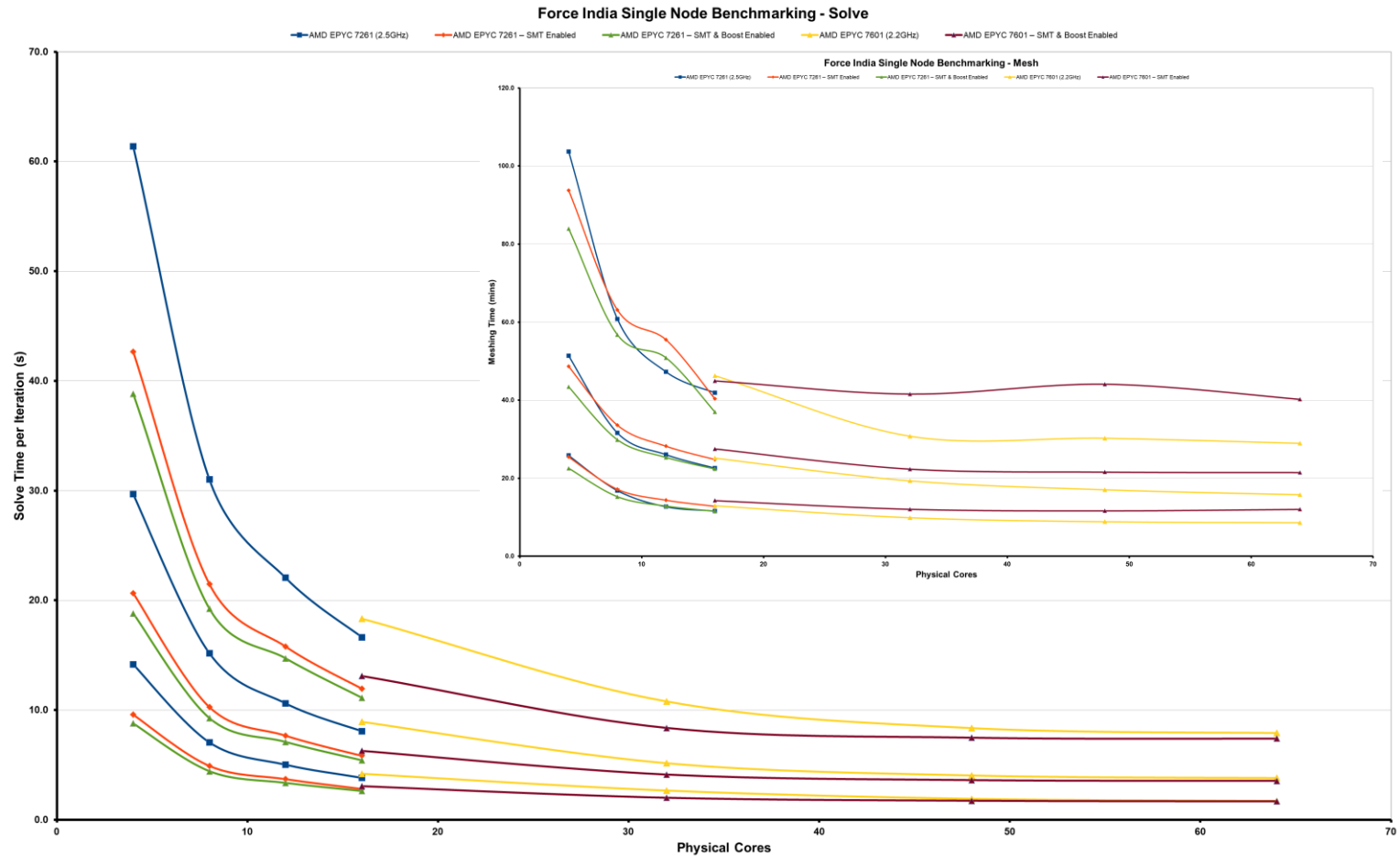
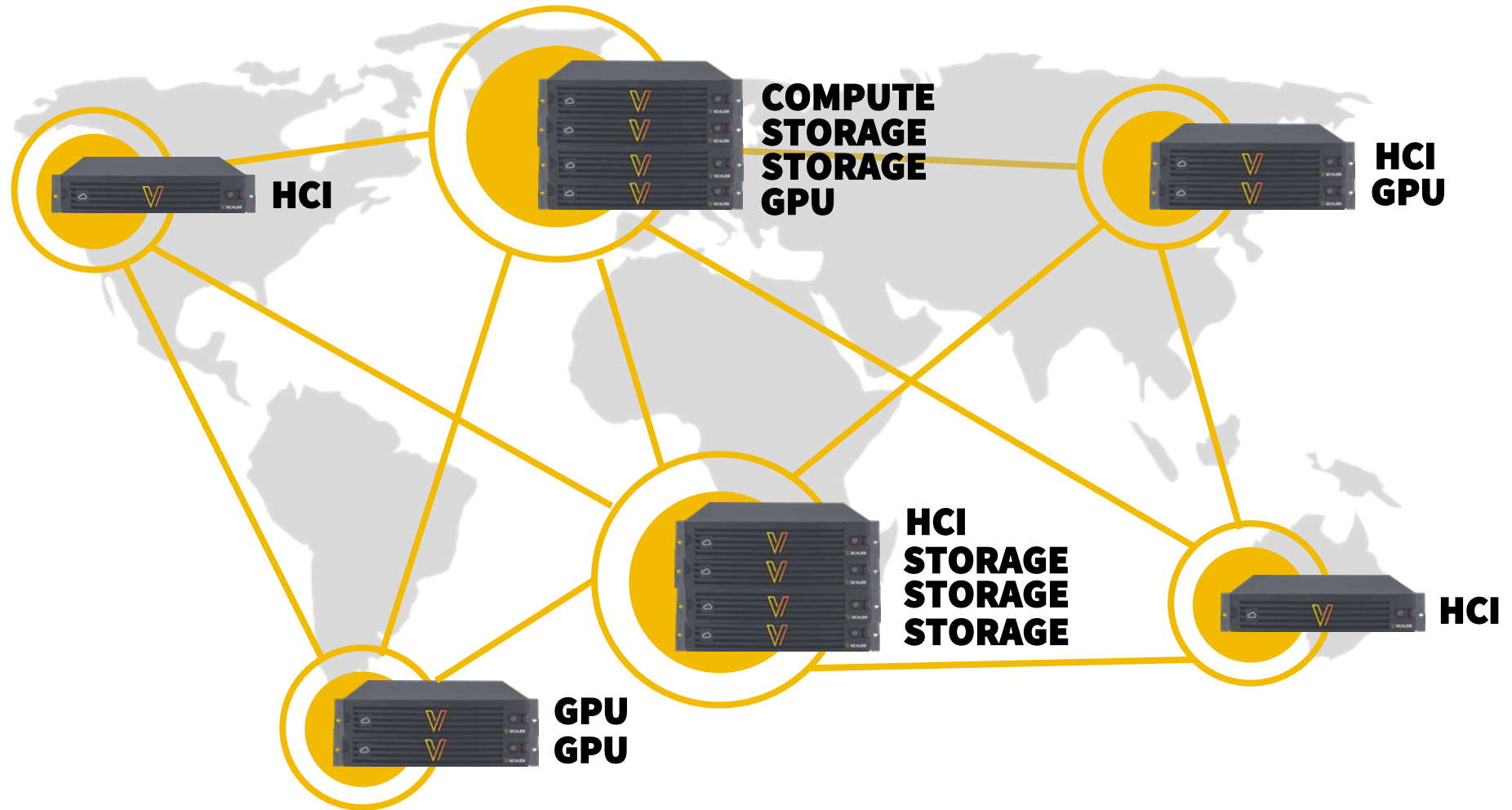VSCALER OS
LATEST GEN. HW
ALL FLASH STORAGE
RDMA INTERCONNECT

vScaler Private Cloud Appliance

Our Hyper-converged private cloud appliance includes everything you need to connect to your network:

- Compute nodes
- All Flash storage nodes
- High speed switch
- Management switch
- vScaler software
- 3 Years NBD Support

vScaler Multi Cloud

vScaler Building Blocks

	HCI	Compute	GPU	Flash/Hybrid	Stor XL
Nodes	4 (2U)	4 (2U)	1 (1U)	1 (2U)	1 (4U)
vCPUS	320	320	72	N/A	N/A
Storage	24 SSD	N/A	N/A	24 x 2.5"	60 3.5"
Memory	1.5TB	1.5TB	384GB	192GB	64GB
Network	8 x 25Gbe	8 x 25Gbe	8 x 25Gbe	8 x 25Gbe	Dual 100G
Accelerators	N/A	N/A	1-4 V100	N/A	N/A

GCloud Supplier

vScaler is proud to be an official GCloud framework supplier and can be found through the Gcloud Digital marketplace

HM Government
G-Cloud
Supplier

G-Cloud 8	G-Cloud 9	G-Cloud 10
Accredited	Accredited	Accredited

THANK
YOU
FOR YOUR TIME

QUESTIONS?