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Hyperkonvergente Infrastruktur

Lösung rund um das Thema IoT und Robo`s

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MARKET DYNAMICS & CUSTOMER CHALLENGES

SEISMIC SHIFTS AHEAD FOR ENTERPRISE STORAGE

BUSINESS DRIVERS

TRADITIONAL STORAGE HAS FAILED TO MEET THE DEMANDS OF THE MODERN ENTERPRISE

IT'S IMPOSSIBLE TO RUN TOMORROW'S WORKLOADS ON YESTERDAY'S INFRASTRUCTURE

CIOs ARE COMPLETELY RETHINKING THEIR STORAGE STRATEGY TO STAY COMPETITIVE

TECHNOLOGY DRIVERS

Hybrid Cloud

Forrester cites 2 out of 3 decision makers rank hybrid cloud as a critical priority

Containers

Gartner predicts by 2022, more than 20% of enterprise primary storage capacity will be deployed to support container workloads

Hyperconvergence

IDC pegs HCI as the fastest growing of all the multi-billion-dollar storage segments

Sources:
https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/forrester-hybrid-cloud-
https://www.gartner.com/smarterwithgartner/6-best-practices-for-creating-a-container-platform-strate
http://www.hyperconverged.org/blog/2018/01/26/hyperconvergence-trends-in-2018/

Software Defined Storage als Basis der Hyper-Konvergenz

Mit Software-Defined Storage (SDS) können Sie einen gemeinsam genutzten Speicher auf branchenüblichen Standard-Servern erstellen, ohne dass hierfür dedizierte Arrays erforderlich sind und er ist leicht skalierbar. Stellen Sie den erforderlichen Speicher dann bereit, wenn Sie ihn benötigen

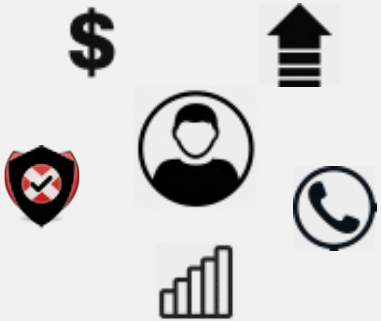
Quelle : HPE

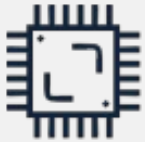
„Hyper-Konvergenz (Hyper-Convergence) bezeichnet eine Art von Infrastruktur-Systemen mit einer Architektur, bei der die Software im Mittelpunkt steht. Sie integriert Computing-, Storage-, Netzwerk- und Virtualisierungs-Ressourcen sowie andere Technologien sehr eng miteinander. Dabei kommt Standard-Hardware zum Einsatz …….“

Quelle: SearchStorage

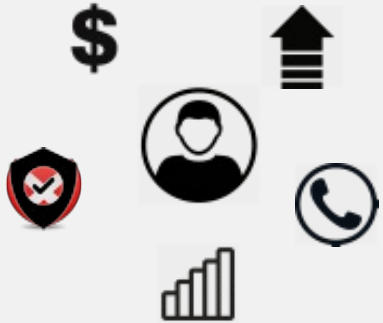
SILOED INFRASTRUCTURE INEFFICIENT

Virtualization

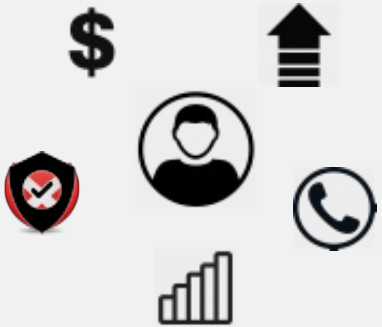




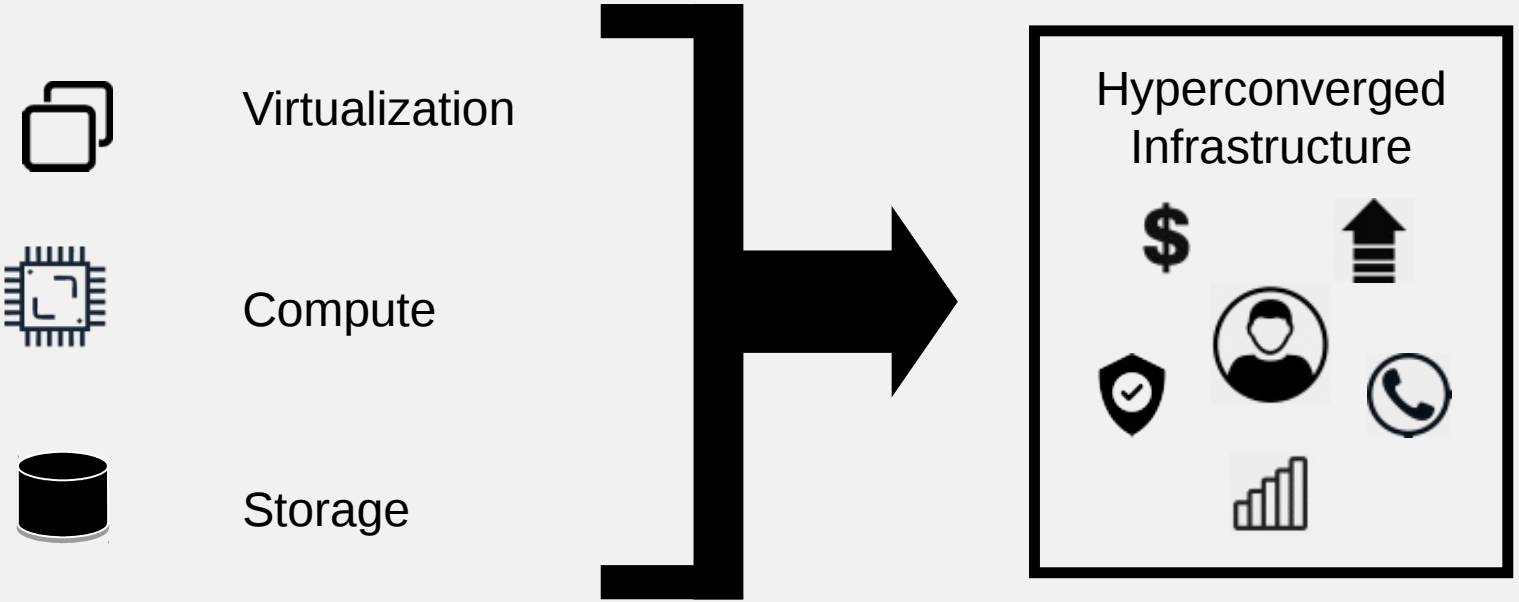
Compute



Storage



THE NEED: HYPERCONVERGED INFRASTRUCTURE



BENEFITS OF HCI VS. ROLL YOUR OWN

80%

Time to value savings

Time to production decreases from 1 year to ~10 Weeks

57%

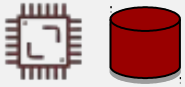
OpEx Savings

Each admin can manage 2.33x the infrastructure

Source: Wikibon 2018

RED HAT HYPERCONVERGED INFRASTRUCTURE FOR VIRTUALIZATION

RED HAT HYPERCONVERGED INFRASTRUCTURE FOR VIRTUALIZATION - *THE BASICS*

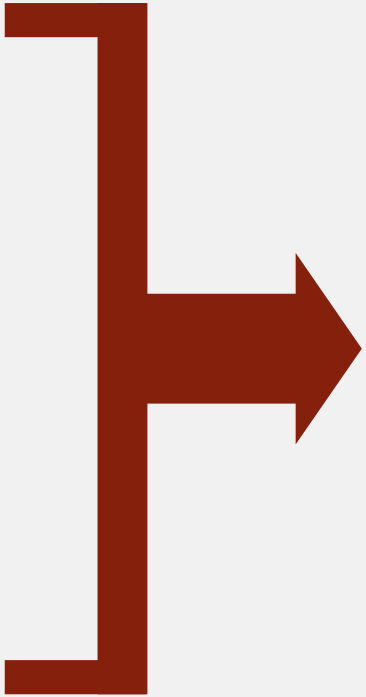


Open HCI

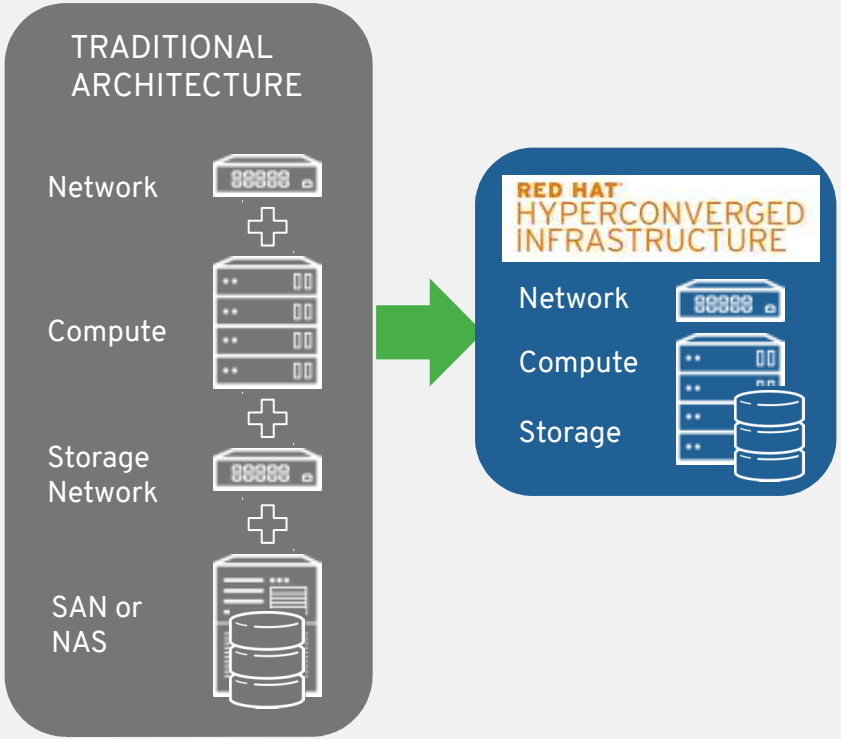
Subscription model

Simplified management

Security & automation



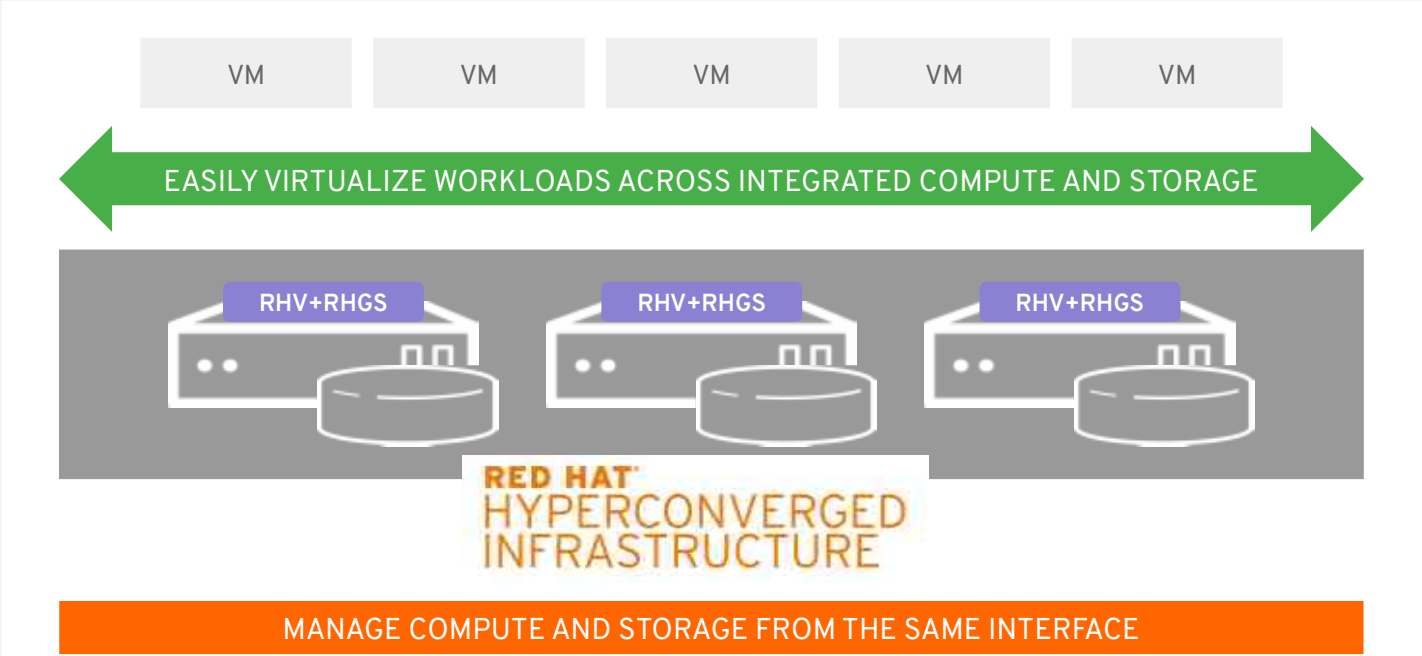
THE BENEFITS OF HCI:
INFRASTRUCTURE CONSOLIDATION & OPERATIONAL EFFICIENCY



- **Single budget** for compute, storage, & networking
- **Single** team managing infrastructure
- **Simplified** planning & procurement
- **Streamlined** deployment & management
- **Single support** stack

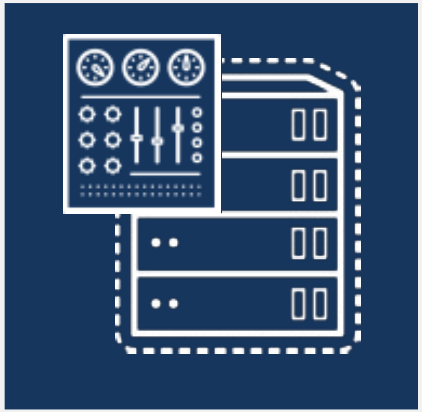
RED HAT HYPERCONVERGED INFRASTRUCTURE

OPTIMIZE, INTEGRATE, MANAGE



RED HAT HYPERCONVERGED INFRASTRUCTURE

CORE COMPONENTS



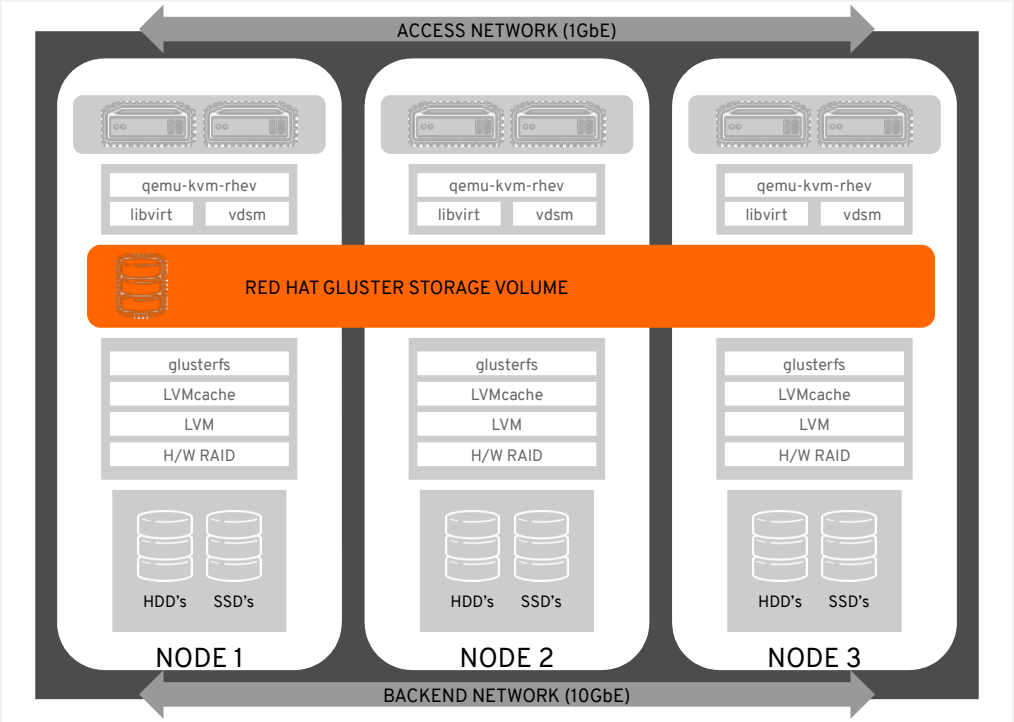
RED HAT VIRTUALIZATION

- Open source virtualization built on RHEL 7 and KVM
- High availability for VMs and RHV-M
- Security features like SELinux and sVirt inherited from RHEL

RED HAT GLUSTER STORAGE

- Open, software-defined storage
- Modular architecture allows easy addition of features
- Data Replication with self healing features

RED HAT HYPERCONVERGED INFRASTRUCTURE 1.5
ARCHITECTURAL VIEW - POD



3, 6, 9 or 12 Node Pod Configuration

ADVANTAGES OF SUBSCRIPTION MODEL

	RHHI	HCI appliance	Proprietary SW HCI
SW portability (across HW or cloud)	✔	✖	✔
No feature degradation at expiration	✔	✔	✖
All-inclusive license/subscription	✔	✖	✖
No HW or SW lock-In	✔	✖	✖

✔ Ability/Common ✖ No Ability/Uncommon

SIGNIFICANT COST SAVINGS

Medium-sized environment

- 9 nodes, production support
- 3 years, 25% discount
- Must support encryption

VMware/VSAN (Source/Source/Source)

- Cost - $110,337

RHHI4V - $40,500

- VMware 172% more expensive

Open HCI = Lower dev costs

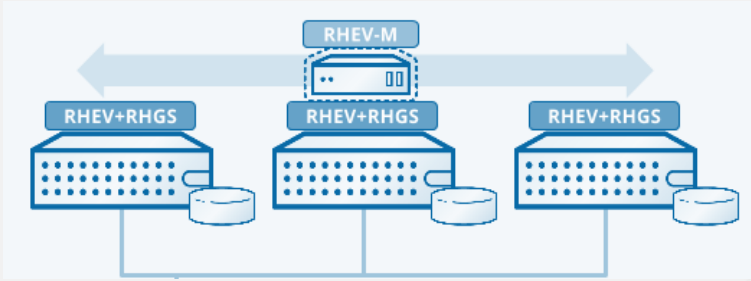
→ Customer savings

RED HAT HYPERCONVERGED INFRASTRUCTURE IN DETAIL

SIMPLIFIED ADMINISTRATION

- Ansible Automation vs. 70% downtime from manual actions!
- Setup in 30 minutes via Ansible playbook
- Single pane management
- CloudForms reporting

ANSIBLE
by Red Hat



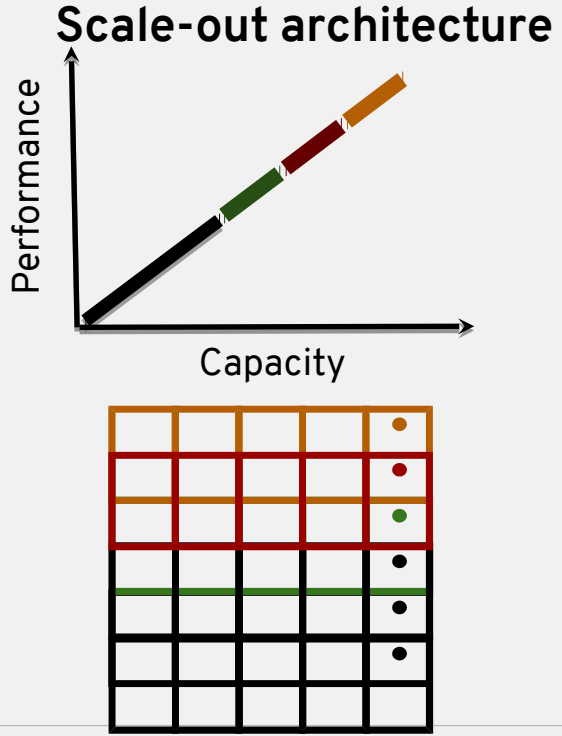
RED HAT VIRTUALIZATION

RED HAT GLUSTER STORAGE

redhat

SIMPLIFIED GROWTH

- Easily add nodes
  - Linear scale-out of compute and storage
- Mix and match nodes
  - Among HW vendors
  - Across media types
- Remove nodes
- Online w/out downtime

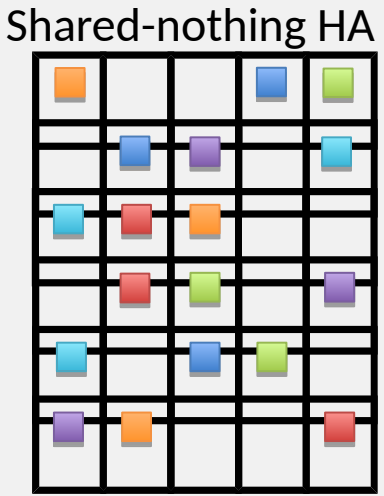


SIMPLIFIED UPGRADES

- Upgrades
  - Node by node
  - For entire stack
  - No SPOF during upgrade
  - Non-disruptive

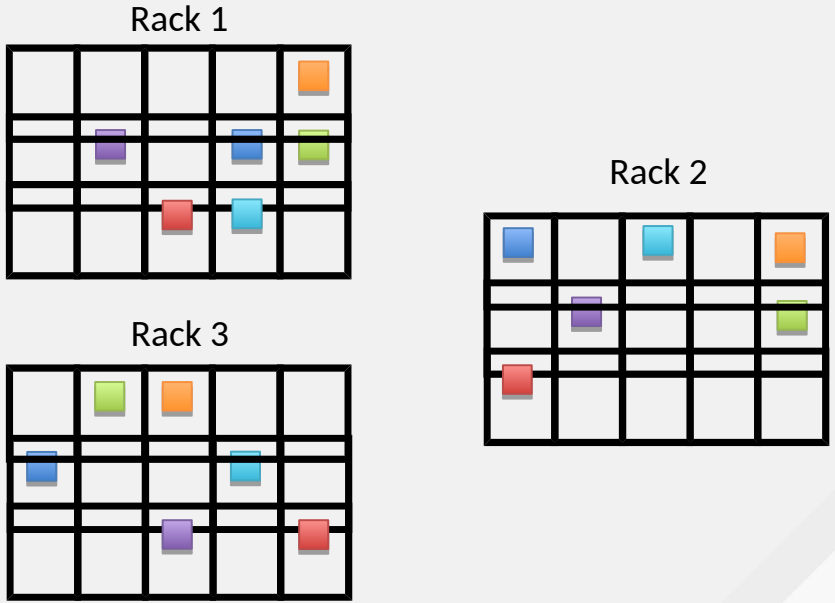
SHARED-NOTHING HIGH AVAILABILITY

- Resiliency against multiple:
  - Drive failures
  - Network failures
  - Node failures
  - Easier recoveries
- For full stack



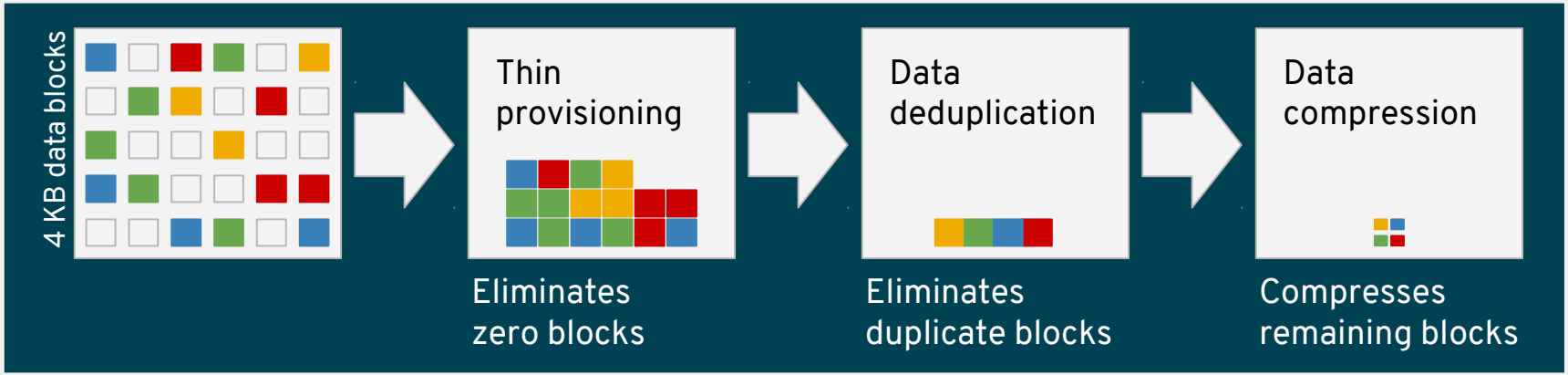
RACK AWARENESS

- Highest level of redundancy
- Setup of failure domains
  - Nearby site or rack
  - Easier recoveries
- Remote replication
- Snapshots



STORAGE EFFICIENCIES THROUGH THE OS

COMPRESSION WITH PERMABIT VDO AND INTEGRATED MANAGEMENT



SUMMARY

RED HAT HYPERCONVERGED INFRASTRUCTURE PORTFOLIO

	RED HAT HYPERCONVERGED INFRASTRUCTURE *for Virtualization*	RED HAT HYPERCONVERGED INFRASTRUCTURE *for Cloud*
Technology	• Red Hat Virtualization • Red Hat Gluster Storage	• Red Hat OpenStack Platform • Red Hat Ceph Storage
Target Use Cases	DevTest Lines of business & departmental Remote Facilities / ROBO IoT Edge Small datacenter deployments	NFVi Mobile edge Private Cloud
Workloads	Mode 1 applications	Mode 2 applications, VNFs

A DECISION ON FREEDOM and FUTURE

Only
Open-Source Software-Defined Storage
can last “forever”.

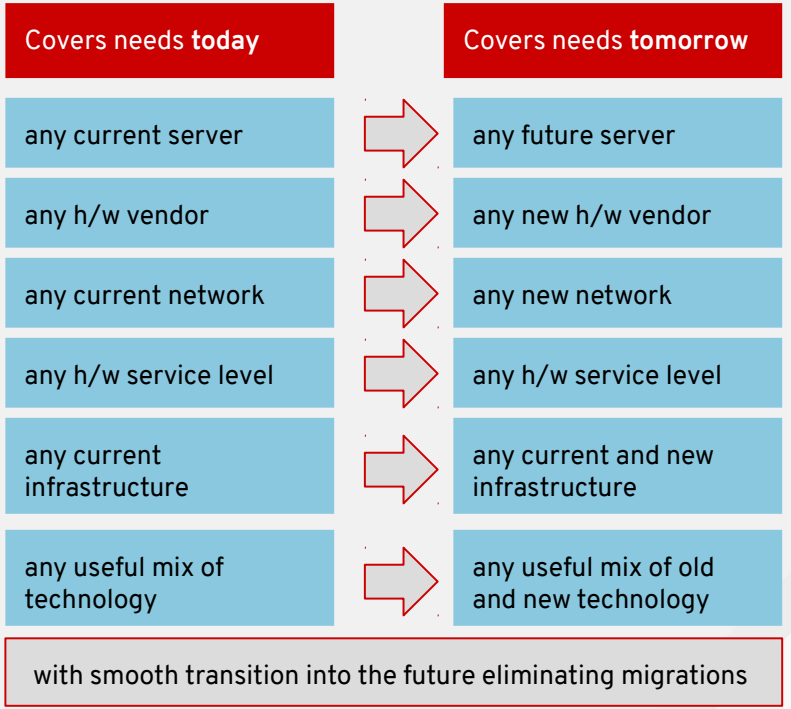
Storage is the heart of business.

Storage is too central to look at migrations.

Storage needs independency from single sources.

Storage needs to be long term.

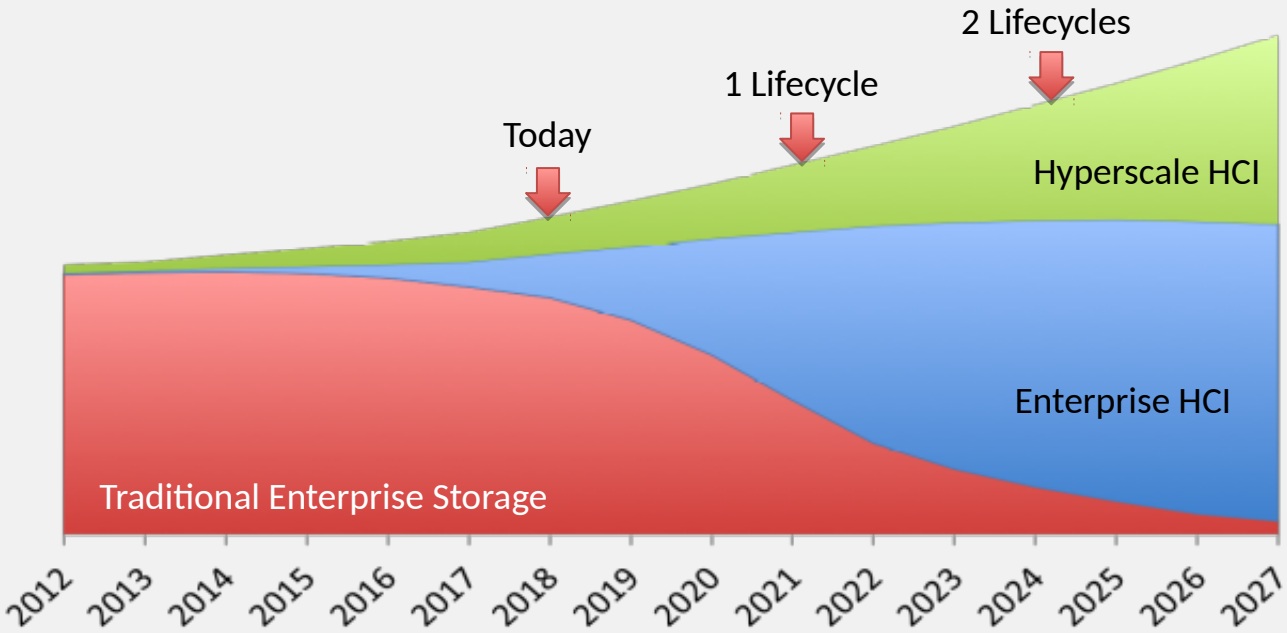
Storage needs to adopt new technologies easily.



RHHI BENEFITS WHEN MODERNIZING

- Software-defined infrastructure with minimum HW footprint
- Standardized infrastructure for scaling out across different small sites
- Modern infrastructure for traditional workload with HA/DR requirements
- Full control over stack vs. specifying 10s of pages with pre-reqs beforehand
- Ideal starting point for “slow infrastructure modernization project”
  - Bare metal to virtualization migration for consolidation
  - Standardization on open source and single technology stack

HYPERCONVERGENCE IS IMMINENT



Source: Wikibon 2015

redhat.

THANK YOU

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twitter.com/RedHat

youtube.com/user/RedHatVideos