

WELCOME



HCI Powered by VMware vSAN

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Digital Businesses Face Economic Stress

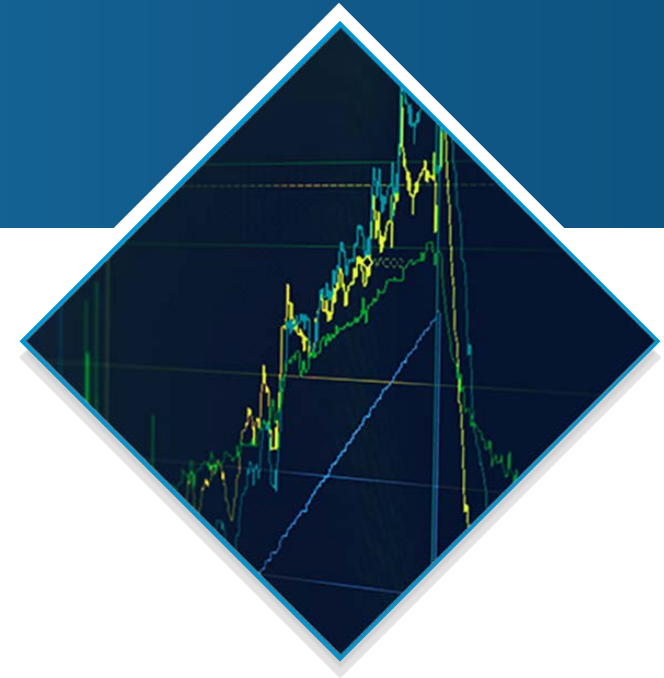
Digital
Transformation



Budget
Constraints



Fast Pace
of Technology



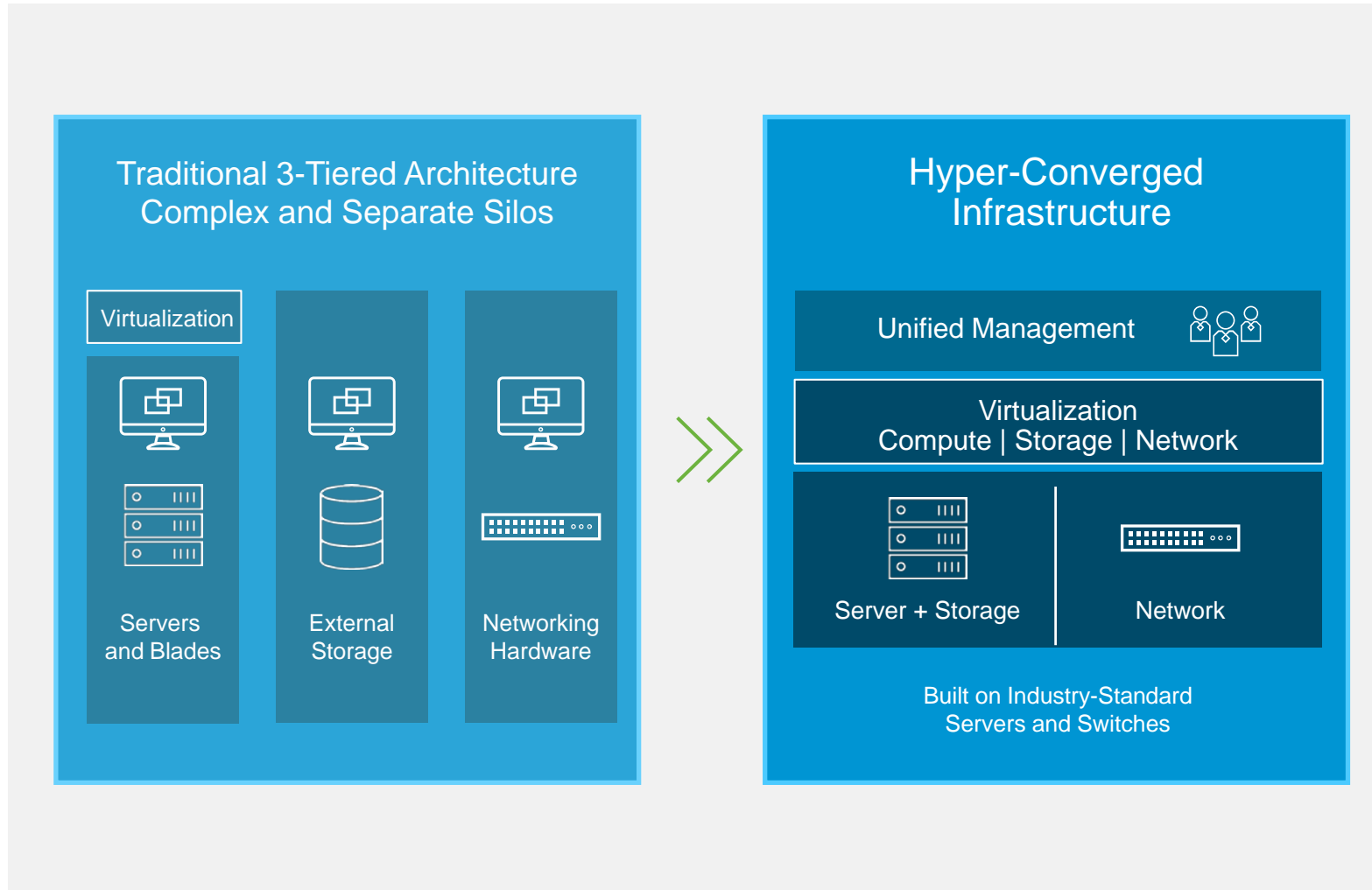
Every Business Initiative Today is an IT Project

Modern infrastructure must...

- ◆ Allow shifting resources
- ◆ Deliver agility to meet unpredictable needs
- ◆ Be scalable and future ready



Modernization of the Data Center Being Fueled by HCI

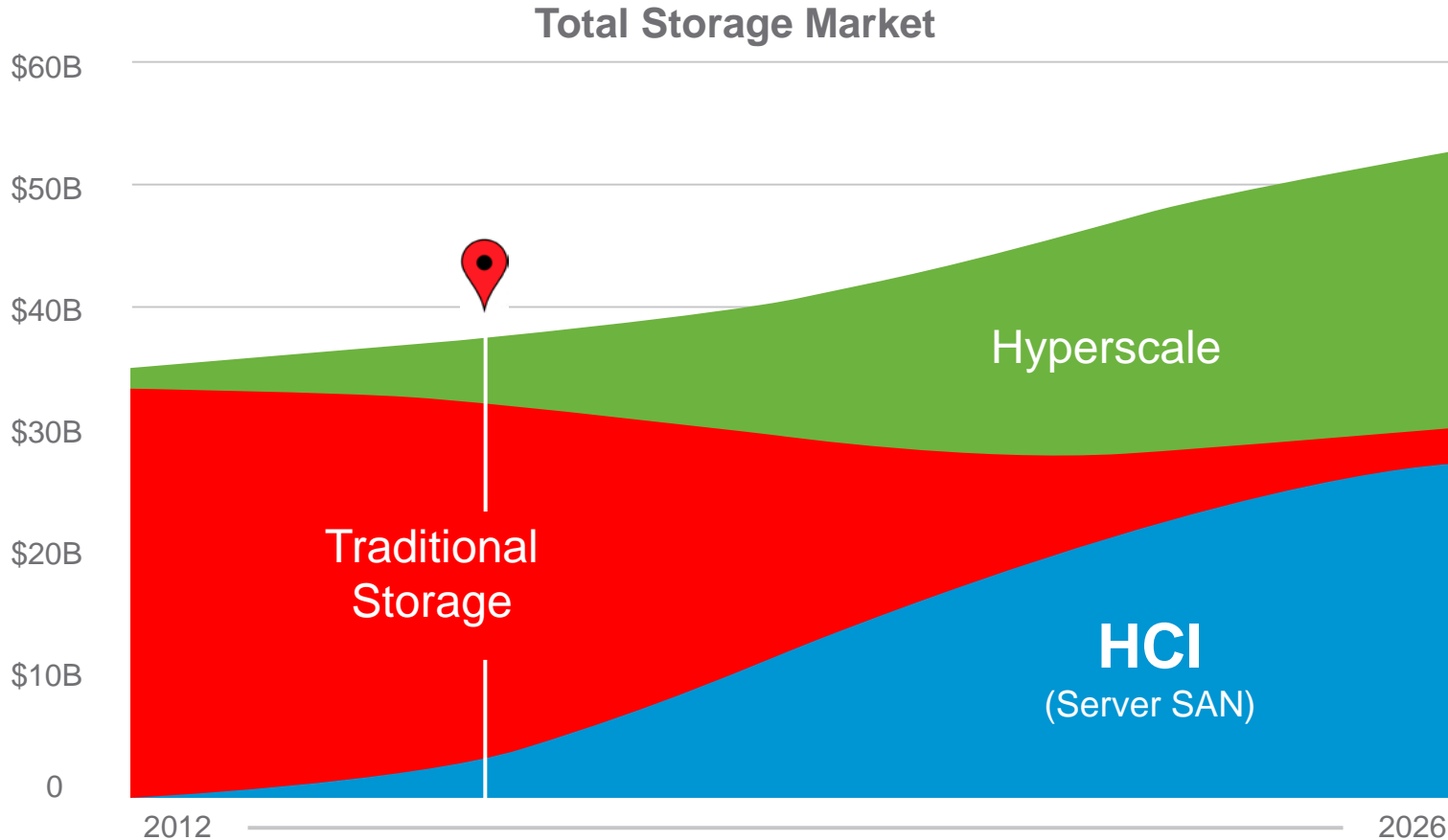


Lower total costs

Greater agility and scale

Simplified management

HCI is the Fastest Growing Storage Segment



Source: Wikibon Server SAN Research Project, 2016

Switch to efficient, server economics

Extend simple server management to storage

Unlock affordable server-side flash



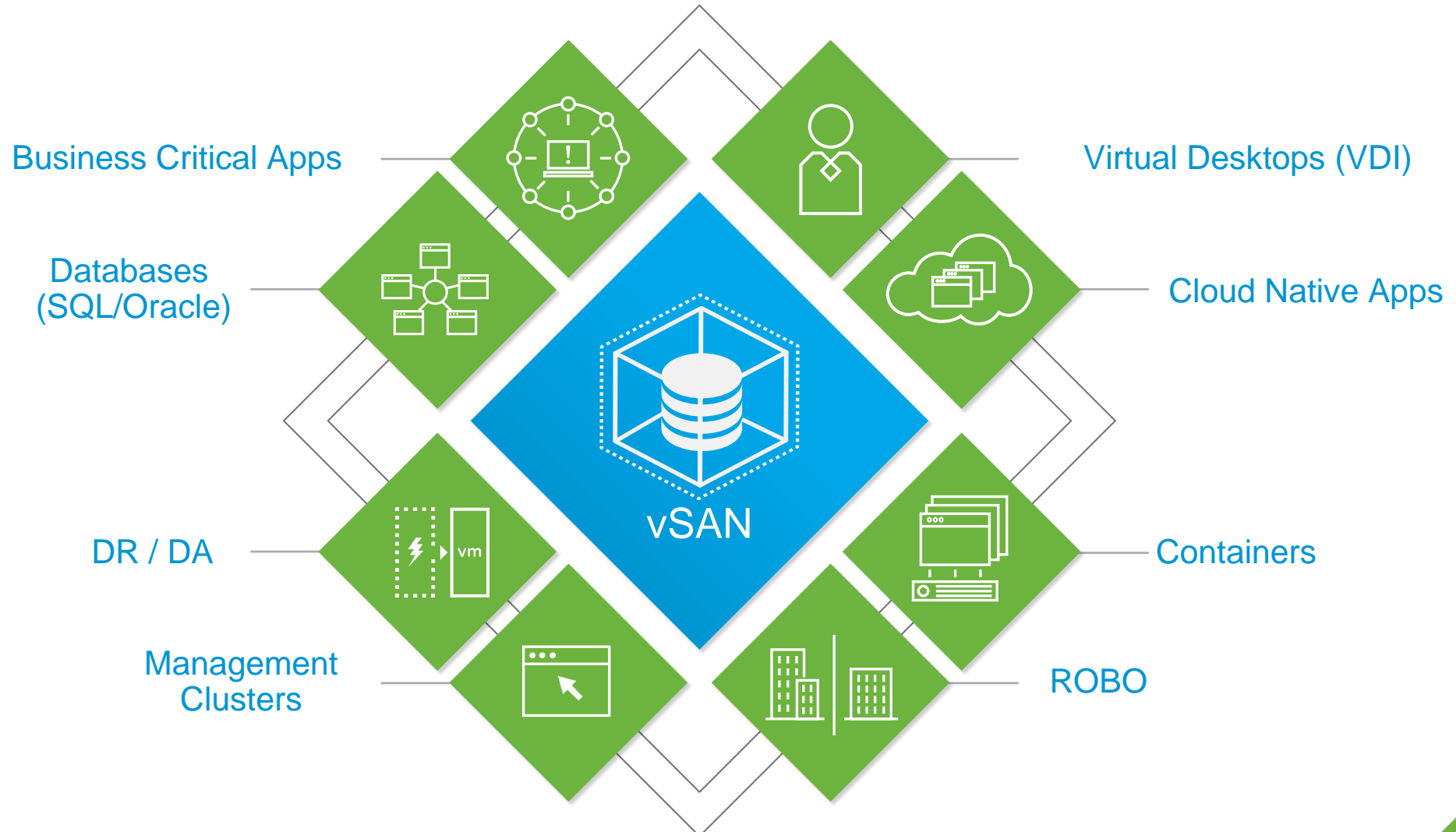
vSAN Keeps the A380 Flying

300,000 on-board sensors send log files to a Big Data Analytics System running on VMware vSAN

Analytics accelerate maintenance and turnaround times

Each extra hour of flying time yields \$25,000 in savings

Supporting a Broad Variety of Use Cases

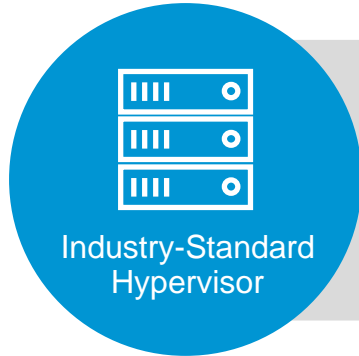


VMware and HCI

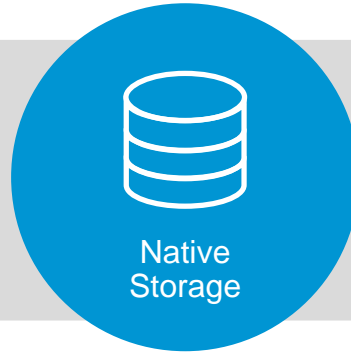
Enabling industry-leading HCI solutions
for the evolving IT industry

HCI Powered by VMware vSAN

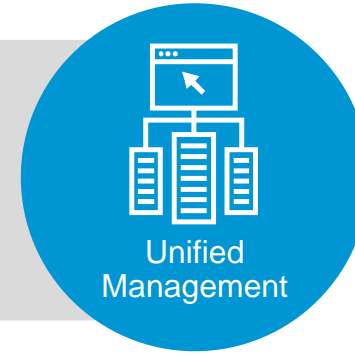
vSphere



vSAN



vCenter



Broadest Deployment Choices

vSAN ReadyNodes

Del EMC VxRail Appliance

VMware Cloud Foundation

VMware vCloud Air Network

Why HCI Powered by vSAN?

**Evolve
without Risk**



Extend don't replace
Native security

**Lower
TCO**



Decrease HW spend
Simplify operations

**Scale to
Tomorrow**



Use latest HW, Apps
Enable multi-cloud

Blistering Pace of vSAN Adoption

Fastest since ESX

8,000+ Customers



150% YoY bookings growth

\$300M

Software run-rate

100%

Industry verticals use vSAN



Recent industry awards

vSAN – A Diverse Set of Customers Across Industries



VMware vSAN 6.6

Sixth-Generation Enterprise Storage Platform for
Leading HCI Solutions

Rapid Pace of Innovation: vSAN 6.6 Biggest Release Ever!

20+ New Major vSAN Features

- Distributed RAID
- Per-VM SPBM
- Set and change FTT via policy
- In-kernel hyper-convergence engine
- RVC and Observer

- All-flash architecture
- Perf improvements (4x IOPS)
- 64-node support
- High density storage blades
- Fault domain awareness
- Scalable snapshots and clones
- Disk enclosure management

- Windows Failover Clustering
- Oracle RAC support
- HW checksum and encryption
- 2-node ROBO mode
- UltraDIMM and NVMe support
- Stretch clusters
- 5 min RPO (vSphere Rep)
- SMP-FT support
- Health Check, vROps, LogInsight

- IPv6 support
- Software checksum
- Nearline dedup and compression on all-flash
- Erasure coding on all-flash
- Qos: IOPS limits
- Performance monitoring service

- iSCSI
- 2-Node direct connect
- PowerCLI
- Public APIs and SDK
- 512e support
- All-Flash to all editions

- Native encryption for data-at-rest
- Compliance certifications
- Resilient management independent of vCenter
- Degraded Disk Handling v2.0 (DDHv2)
- Smart repairs and enhanced rebalancing
- Intelligent rebuilds using partial repairs
- Certified file service & data protection solutions
- Stretched clusters with local failure protection
- Site affinity for stretched clusters
- 1-click witness change for Stretched Cluster
- vSAN Management Pack for vRealize
- Enhanced vSAN SDK and PowerCLI
- Simple networking with Unicast
- vSAN Cloud Analytics with real-time support notification and recommendations
- vSAN Config Assist with 1-click hardware lifecycle management
- Extended vSAN Health Services
- vSAN Easy Install with 1-click fixes
- Up to 50% greater IOPS for all-flash with optimized checksum and dedupe
- Support for new next-gen workloads
- vSAN for Photon in Photon Platform 1.1
- Day 0 support for latest flash technologies
- Expanded caching tier choice
- Docker Volume Driver 1.1

v5.5

3/2014

v6.0

3/2015

v6.1

8/2015

v6.2

2/2016

v6.5

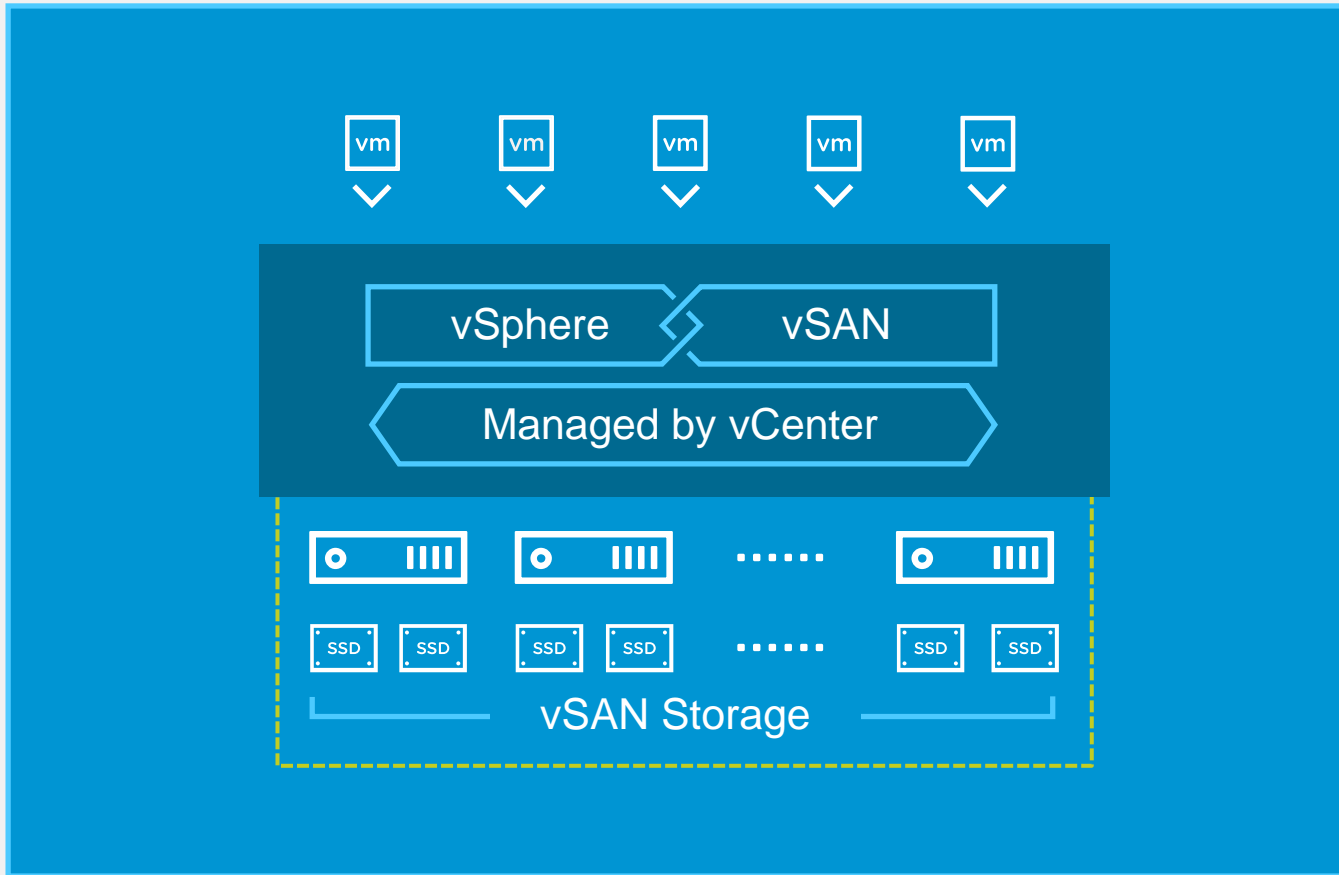
10/2016

v6.6

4/2017

(vSphere 6.5 EP02 Patch)

HCI Powered by VMware vSAN



Runs on any standard x86 server

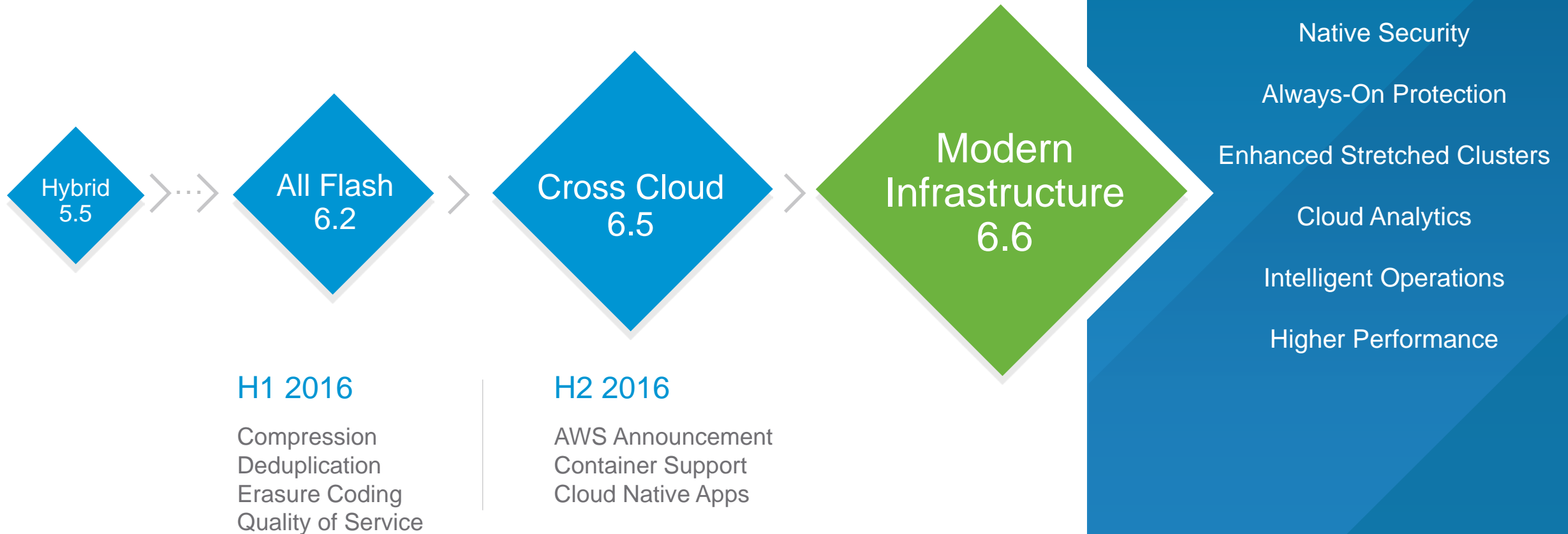
Pools SSDs/HDDs into a shared datastore

Delivers enterprise-grade security, scale and performance

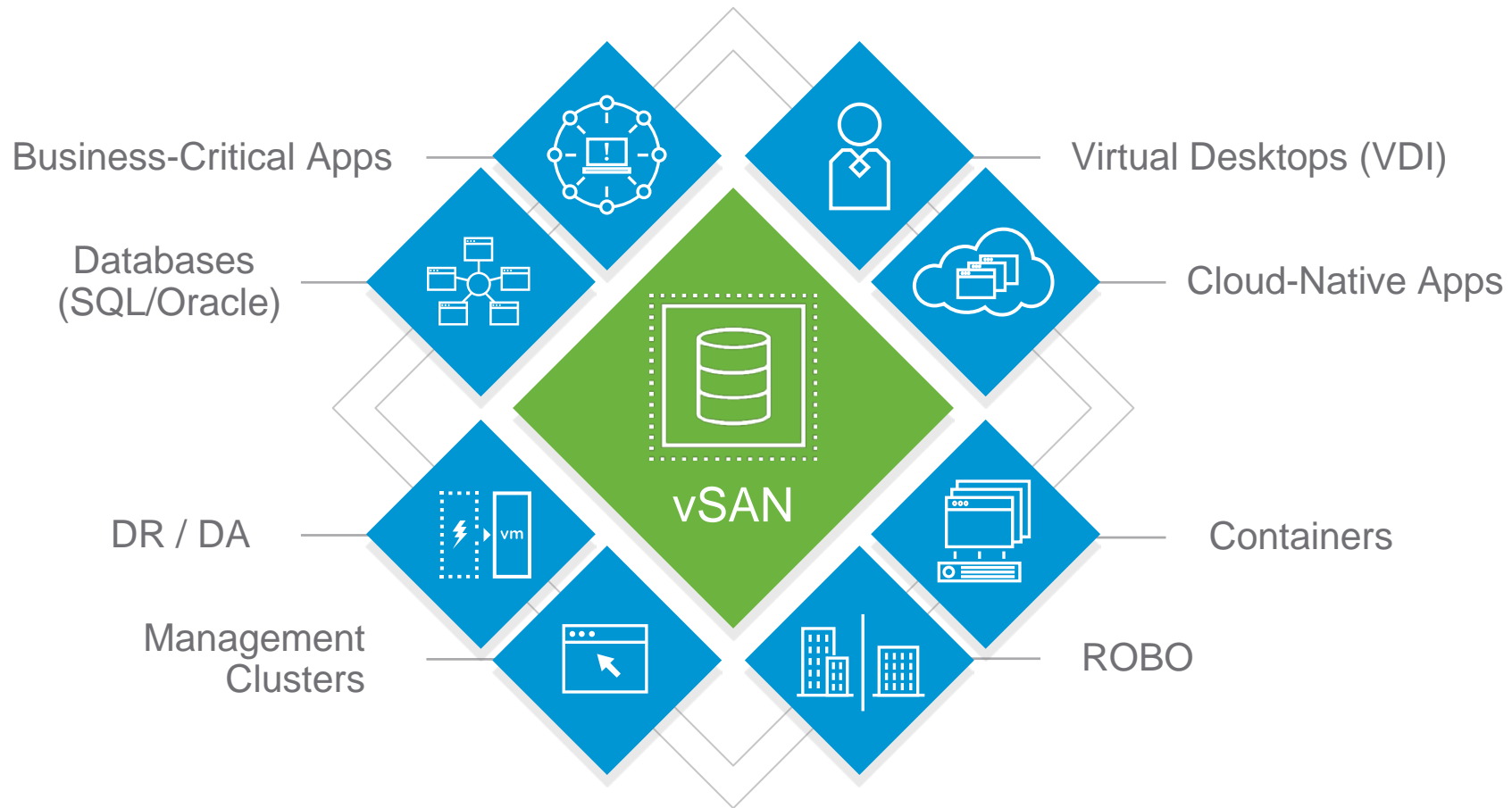
Managed through per-VM storage policies

Deeply integrated with the VMware stack

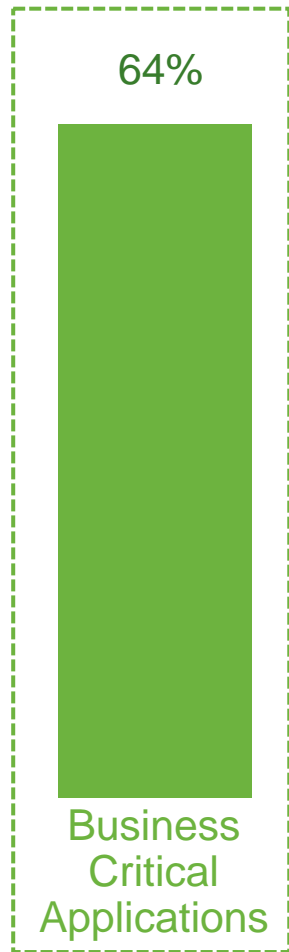
Accelerating HCI Innovation



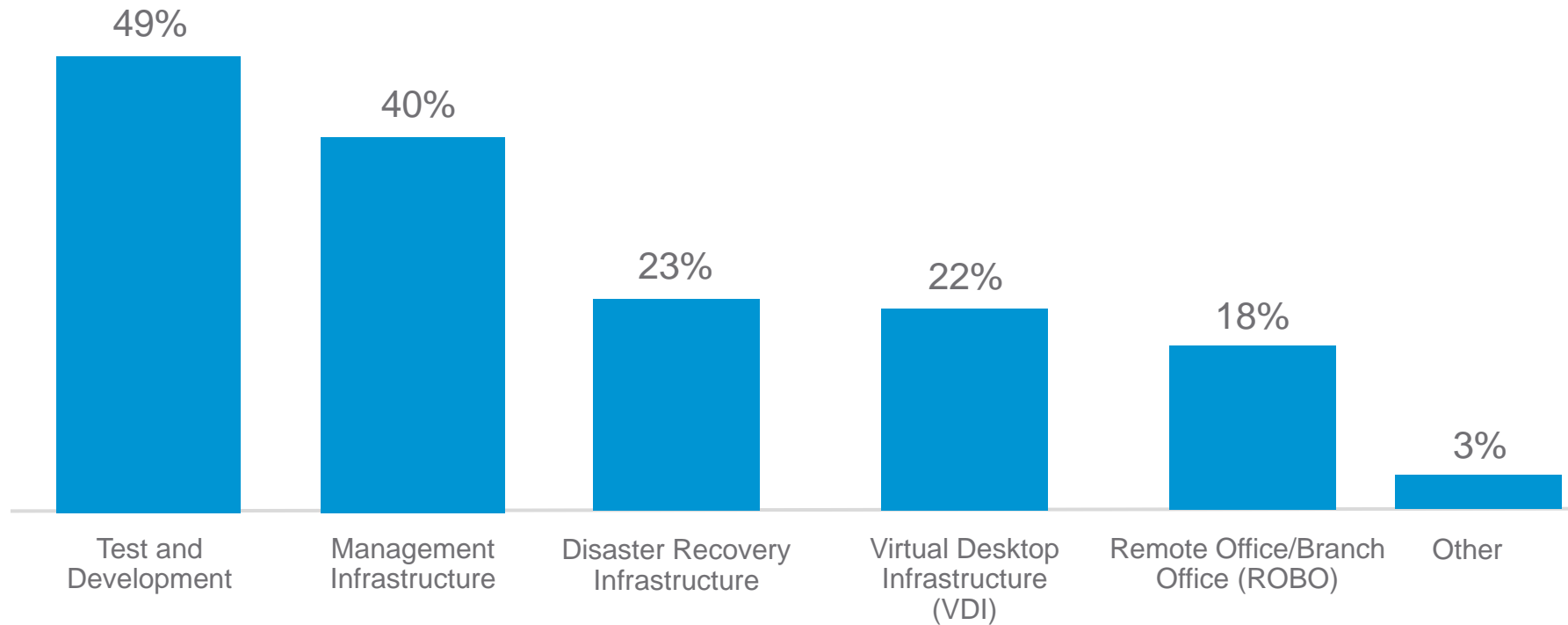
Modern Infrastructure for Modern Workloads



vSAN Target Markets



What use cases are you using vSAN for today?
(Total Responses = 249)



Source: vSAN Customer Survey, 2016

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EVOLVE WITHOUT RISK



Use VMware-native storage



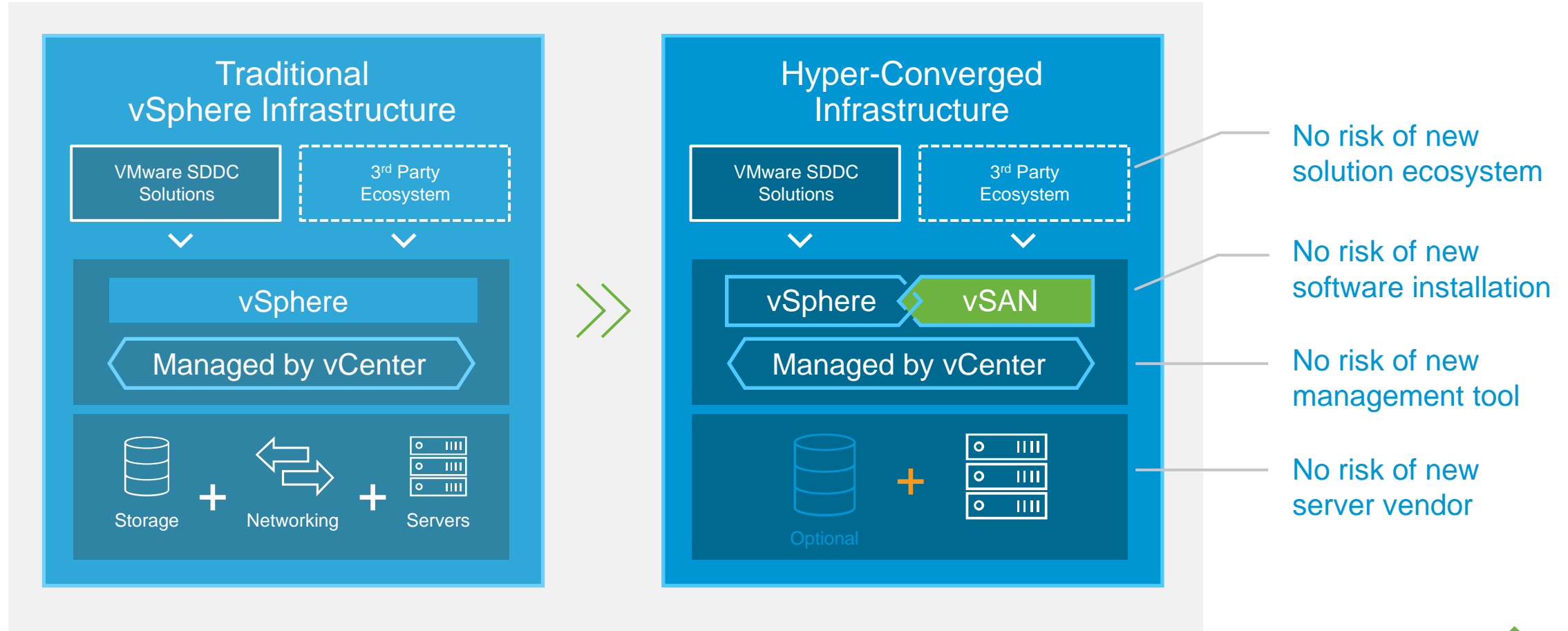
Native HCI security



Protect storage investments

You are Already Just a Step Away from HCI

Build on the virtualization foundation and expertise you already have



Control HCI Deployments with Choice of DIY or Appliances

Dell EMC VxRail Appliances



All-in-one HCI Appliance

- Dell EMC best-in-breed data protection
- Rapid time-to-value with multiple configurations
- Single, pro-active vendor support for software and hardware

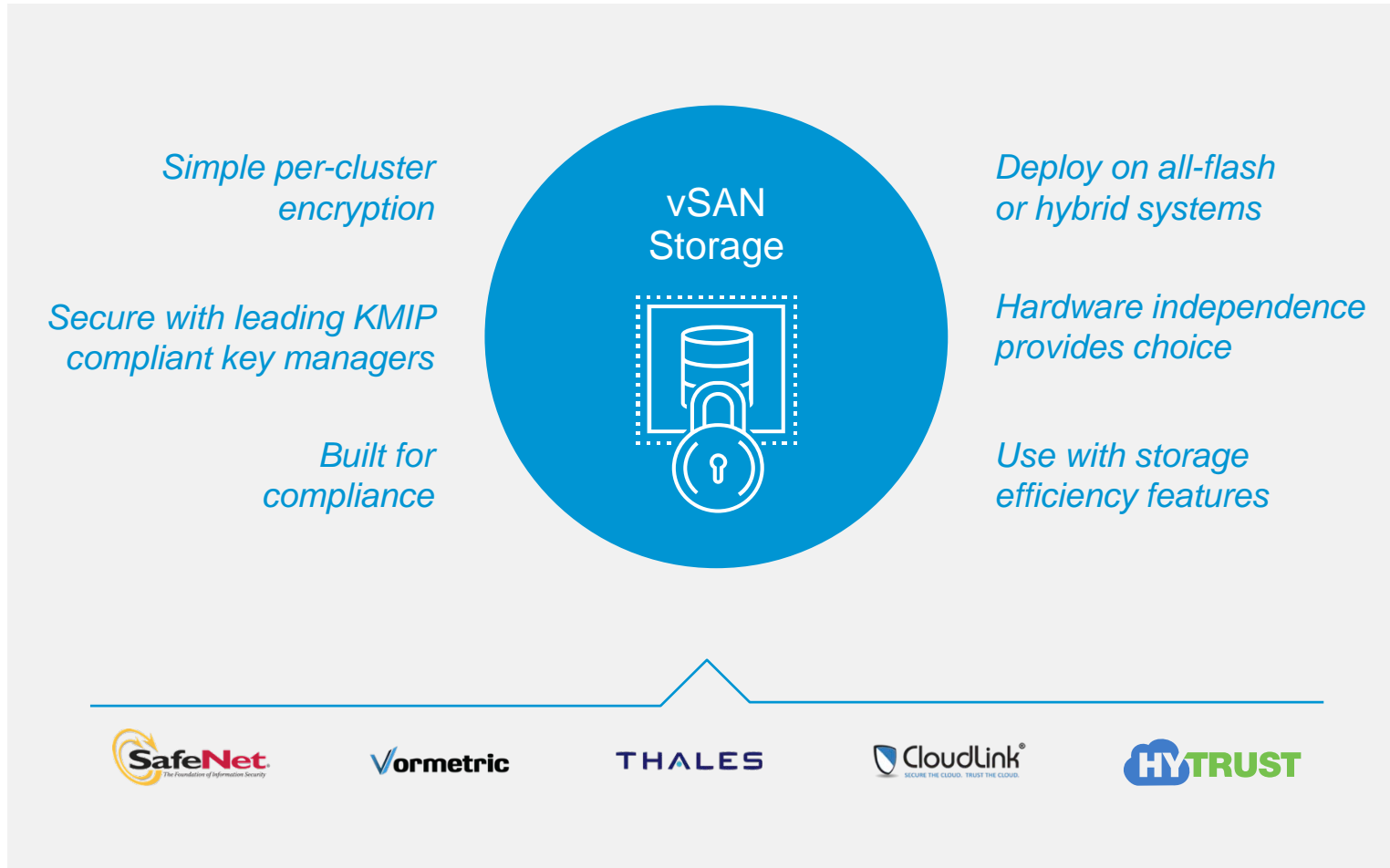
VMware vSAN ReadyNodes



Fully Customizable HCI

- Choice of 5x more server vendors
- Software and support flexibility
- Backup agnostic to minimize change

Simplify Security and Compliance Needs with Native HCI Encryption



Meet key compliance and security requirements

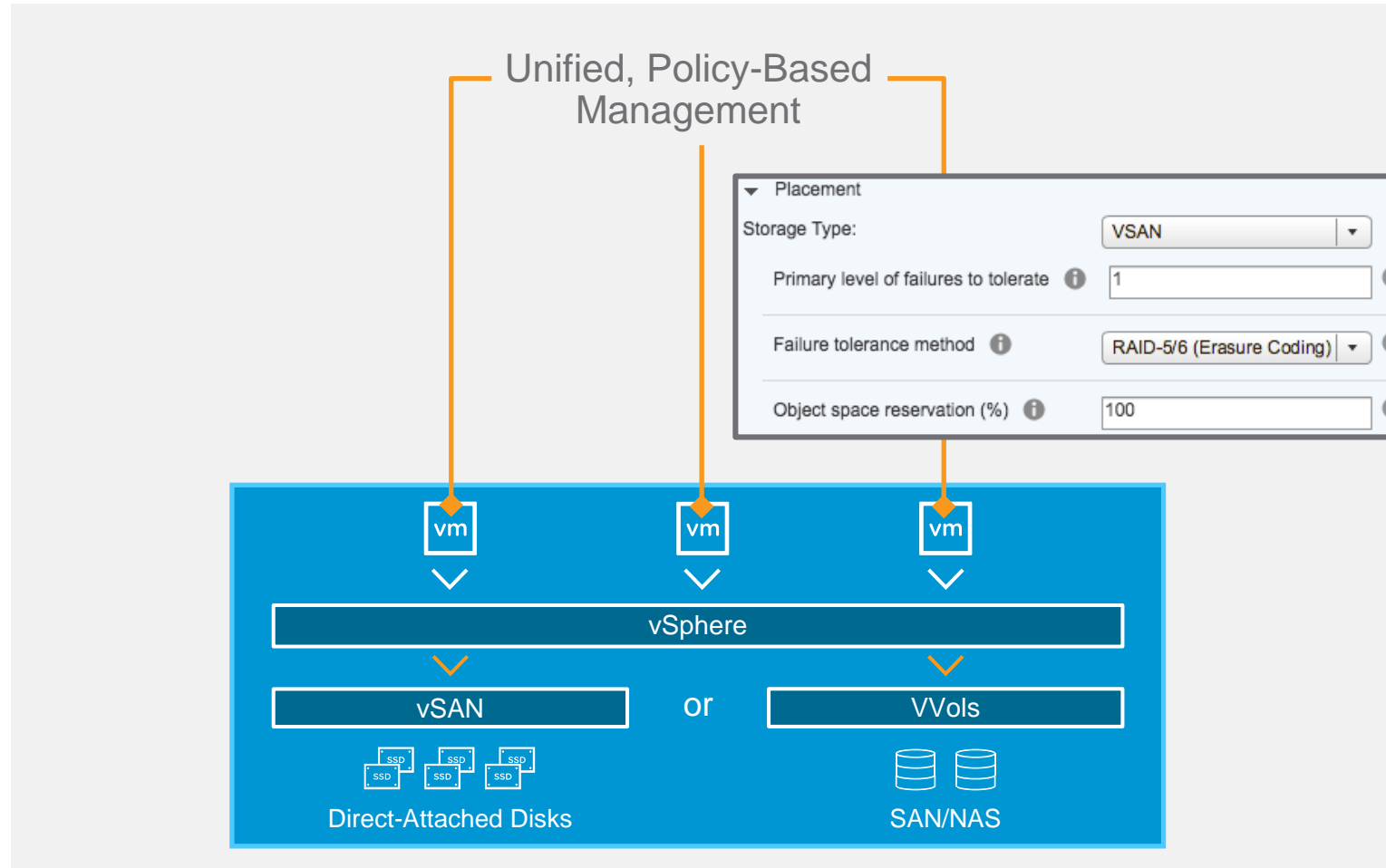
Protect against unwanted access or drive theft

Flexibility to deploy on flash hardware of choice, including existing drives

Lower cost by eliminating need for costly self-encrypting drives

Simplified management with a single cluster-wide key to manage and change

Continue to Use Existing Storage Investments with Common Policy Management Framework



Protect storage investments by complementing vSAN storage with SAN or NAS storage

Automated VM-level placement and provisioning on both vSAN and traditional storage

Single-click policy changes to control data services, like QoS, at the VM or VMDK level

LOWER TCO



Benefit from Server
Economics



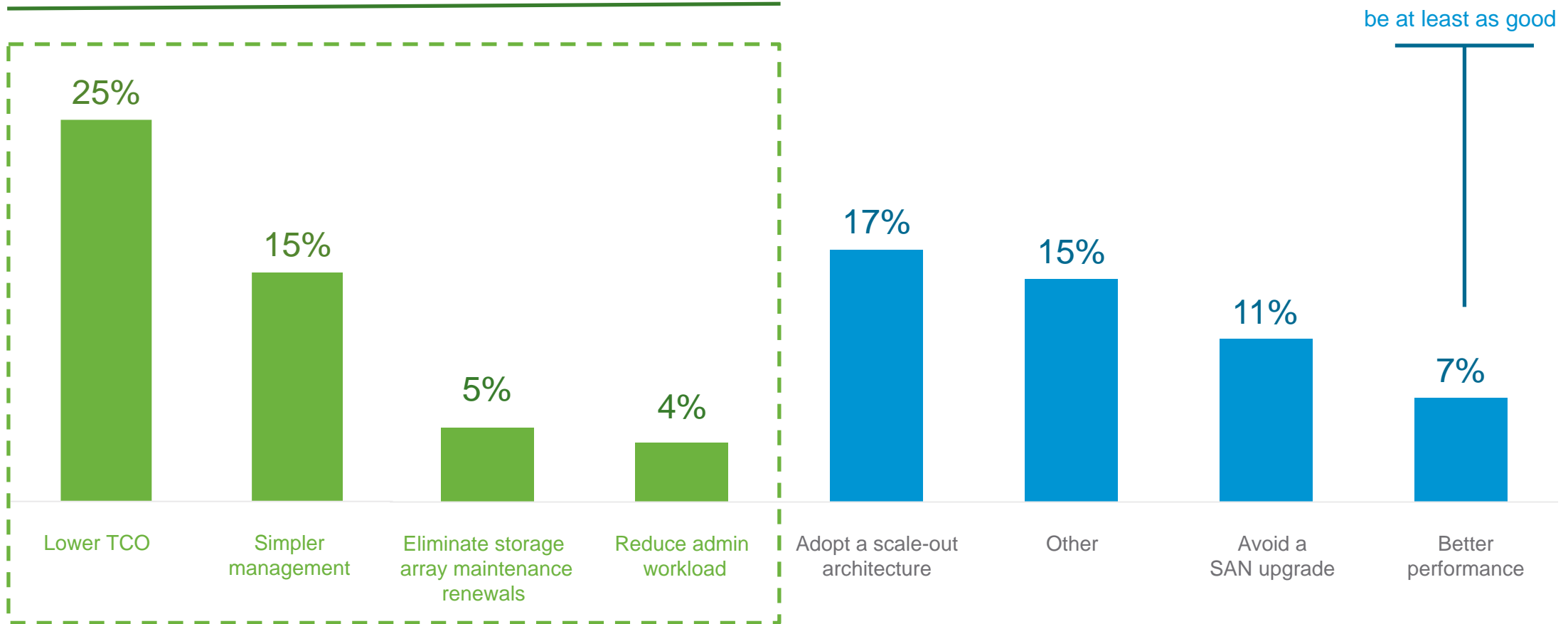
Increase Operational
Efficiency



Accelerate
Responsiveness

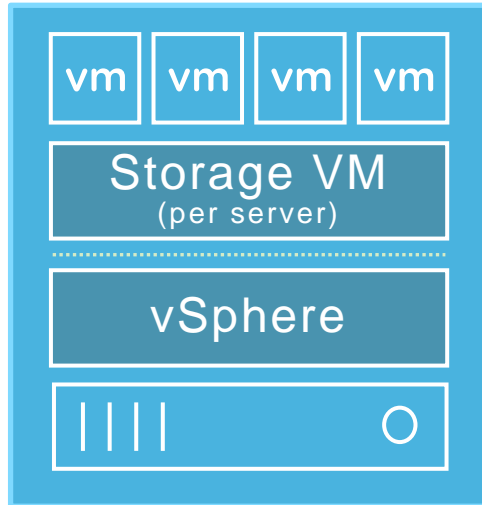
Customers Primarily Choose vSAN For TCO Benefits

~50% of customers choose vSAN to lower TCO and simplify management

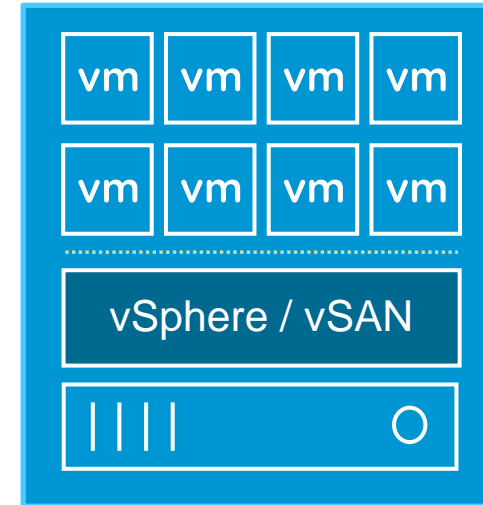


Greater Consolidation Ratio Lowers Cost per VM

Typical HCI



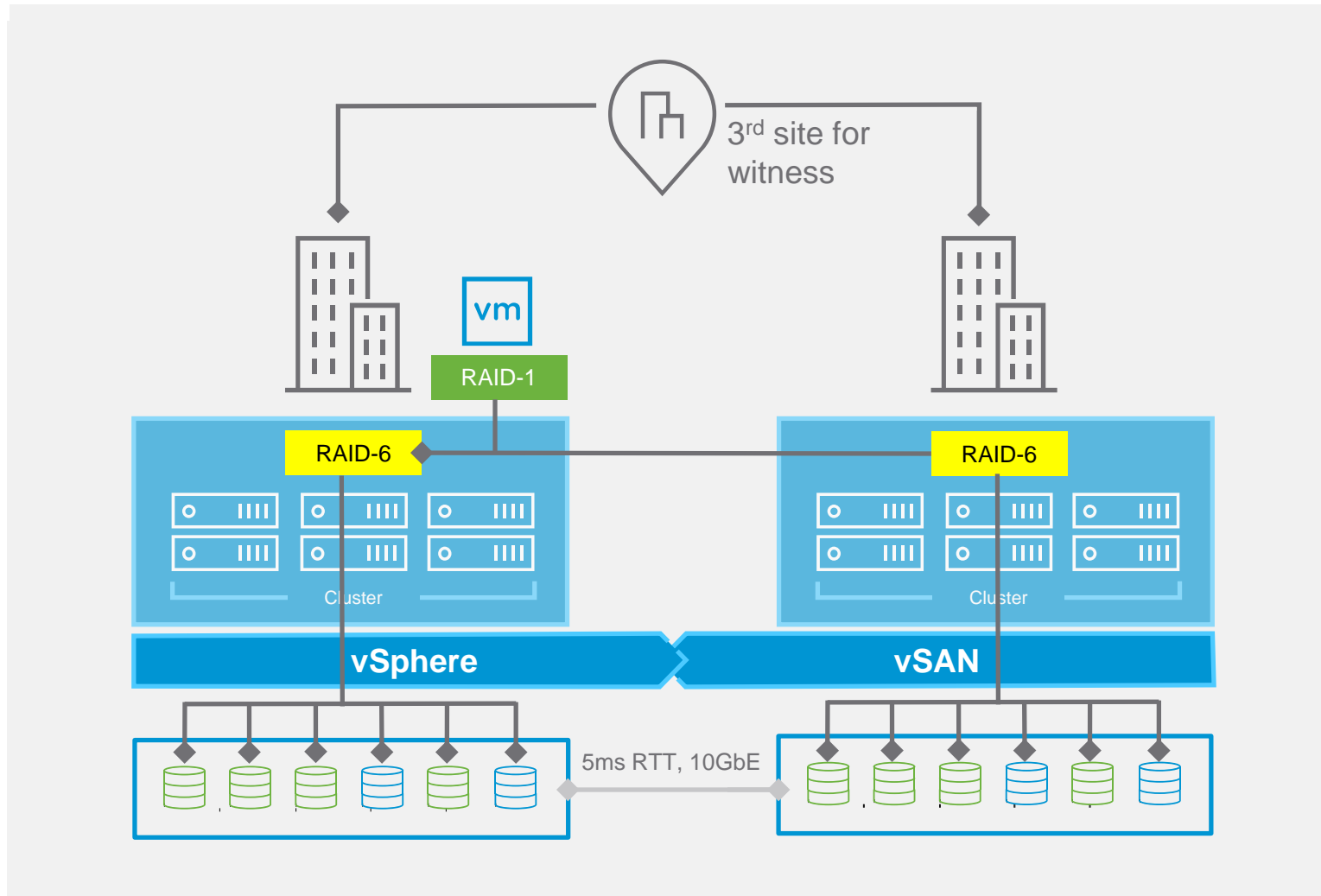
vSphere-Native vSAN



- ⊗ Storage VM consumes resources
- ⊗ Data paths are inefficient
- ⊗ Additional management bolted on

- ✓ 2x CPU and 3x memory efficiency
- ✓ Native vMotion and DRS
- ✓ Simple, single-management pane

Site Protection for 50% Less than Traditional Solutions with Enhanced Stretched Clusters



Evolve
without Risk

Lower
TCO

Scale to
Tomorrow

Greater availability with local and site protection

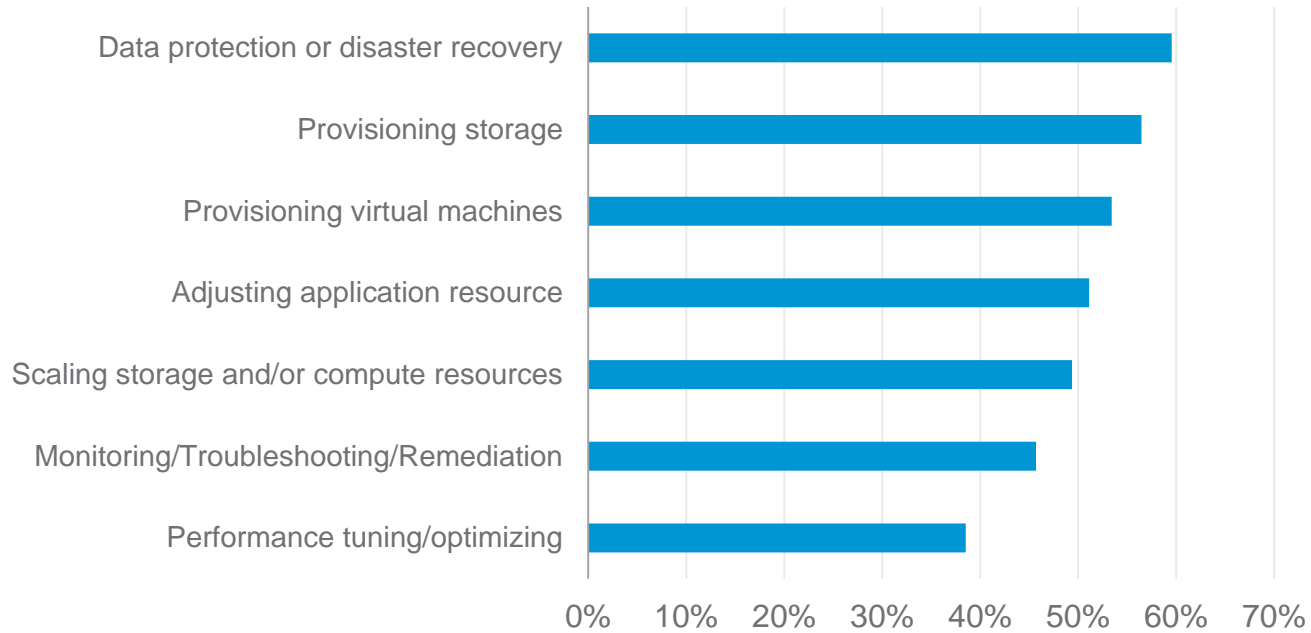
50% lower costs compared to leading legacy storage solutions

Simplified operations with policy-based management for non-disruptive changes

Increased flexibility with granular per-VM policies and 1-click witness replacement

Lower OPEX Up to 50% or More

IDC study of vSAN users

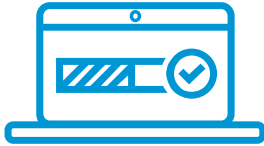


Up to
59%
Less Time for
Storage Tasks

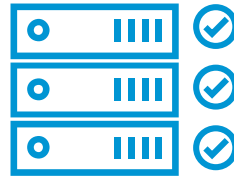
Q: When thinking of the tasks that will be conducted more efficiently, what improvement in IT staff time did you see versus previous environments?

Lower Operational Costs Up to 80% with Intelligent Operations

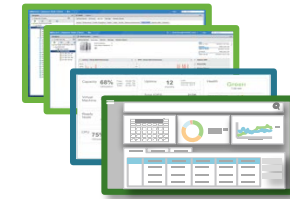
vSAN Easy Install
with 1-click fixes



1-click controller hardware
lifecycle management



Comprehensive monitoring with
enhanced Health services



Accelerate deployments with configuration checks and 1-click fixes

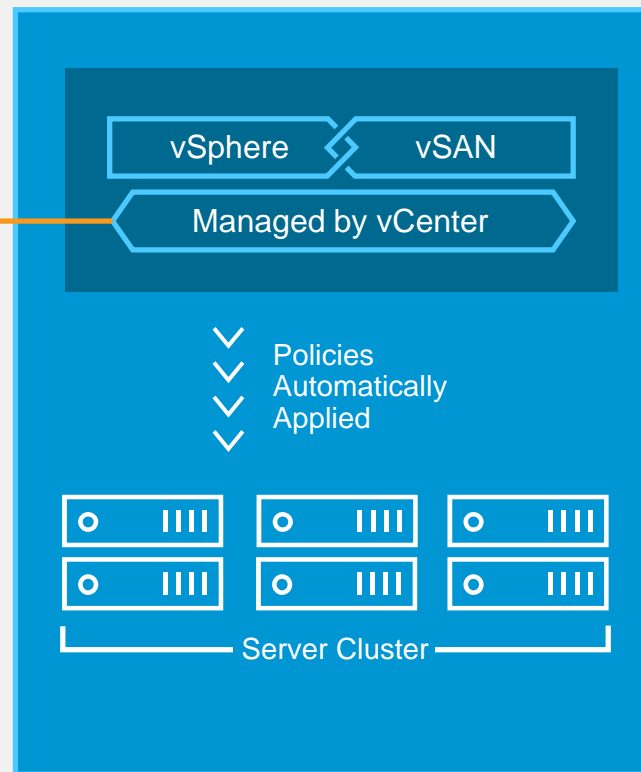
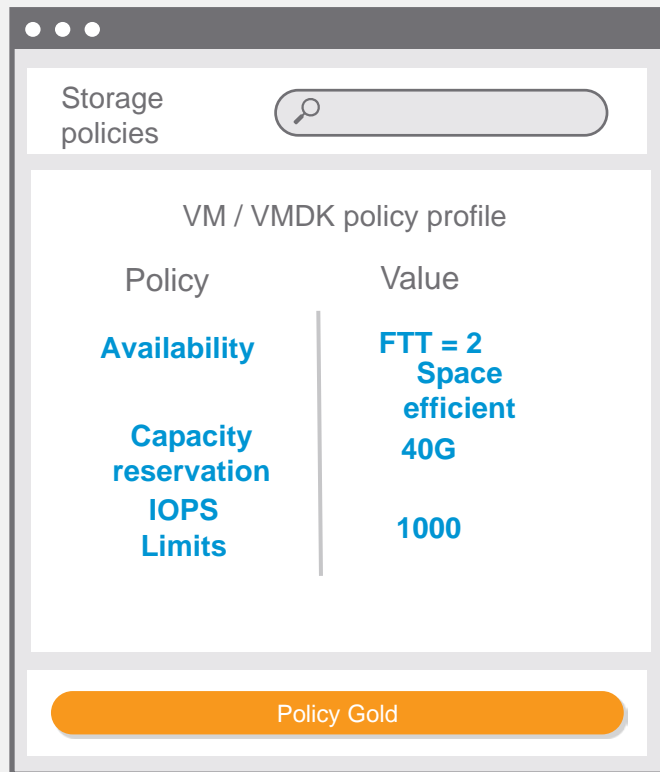
Reduce time up to 80%* on hardware lifecycle management

Simplify monitoring with more comprehensive vSAN Health Services

* Source: VMware Internal Analysis. Comparison against vSAN 6.5 upgrade time.

Accelerate Day-to-Day Tasks with Policy-Based Automation

Define granular storage policies



Simplicity of per-VM storage policies for capacity, performance, availability

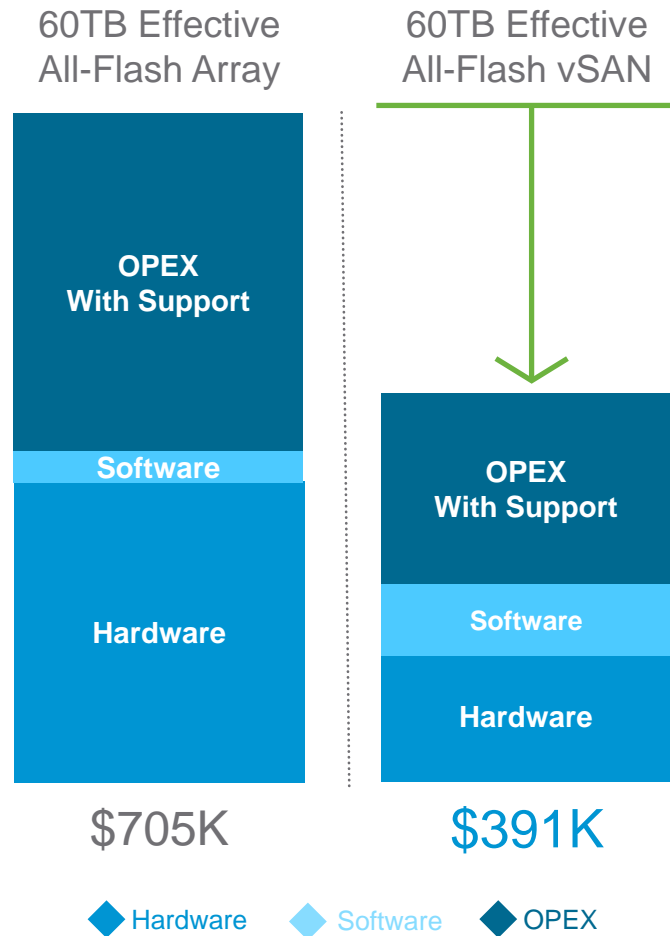
No LUN/Volumes – automated control of service levels

Scalable automation platform with PowerCLI

Non-disruptive policy changes

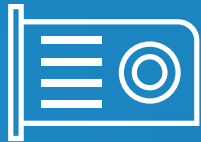
All-Flash vSAN Reduces TCO by 45% vs. All-Flash Arrays

Eliminate expensive custom hardware and save 45% over a five-year period



45%
Lower Cost than
All-Flash Arrays

SCALE TO TOMORROW



Grow into Next-Gen Hardware

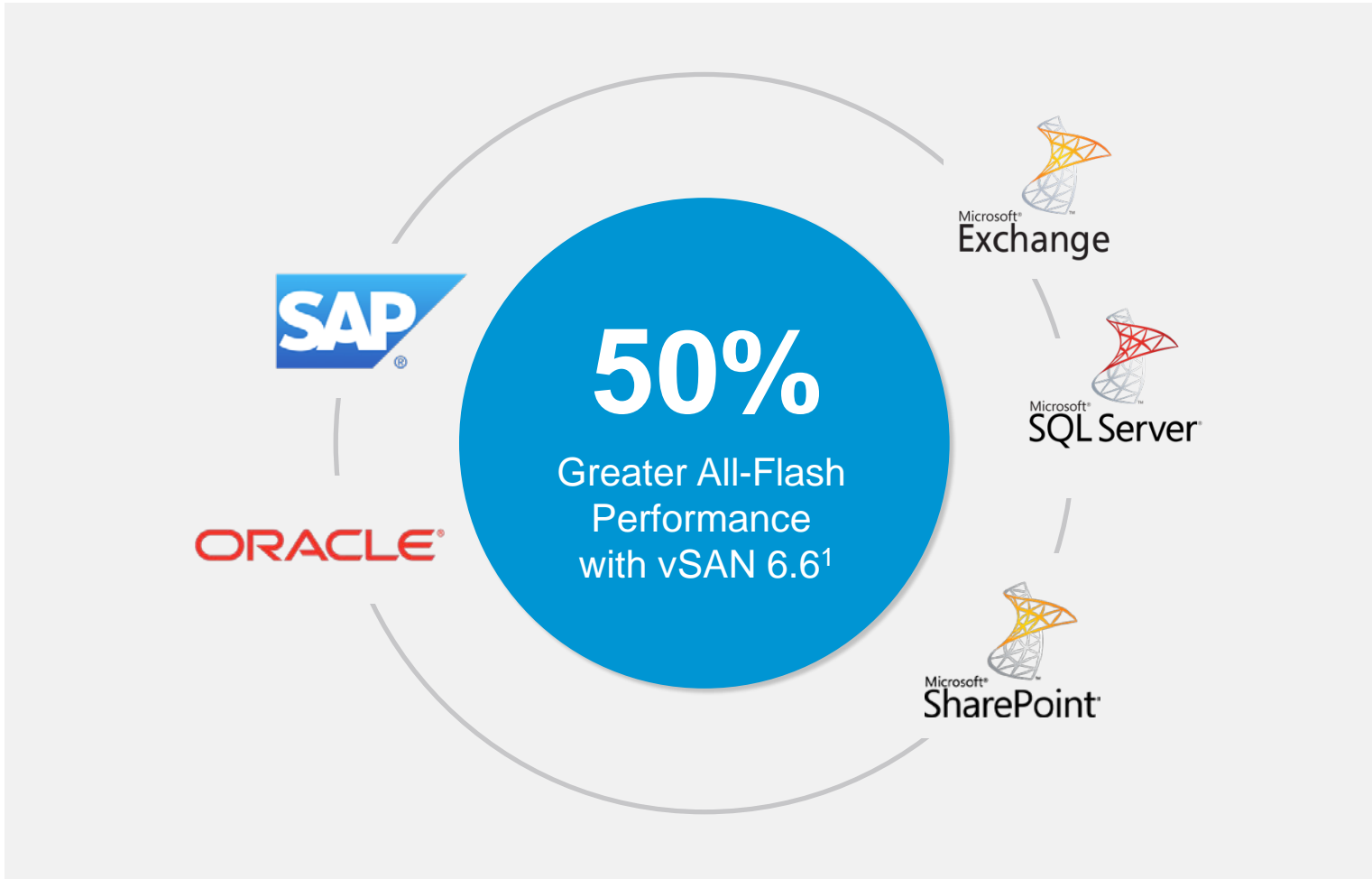


Prepare for Any Workload



Build for the Multi-Cloud Era

Ready for Any Workload with up to 50% More All-Flash Performance

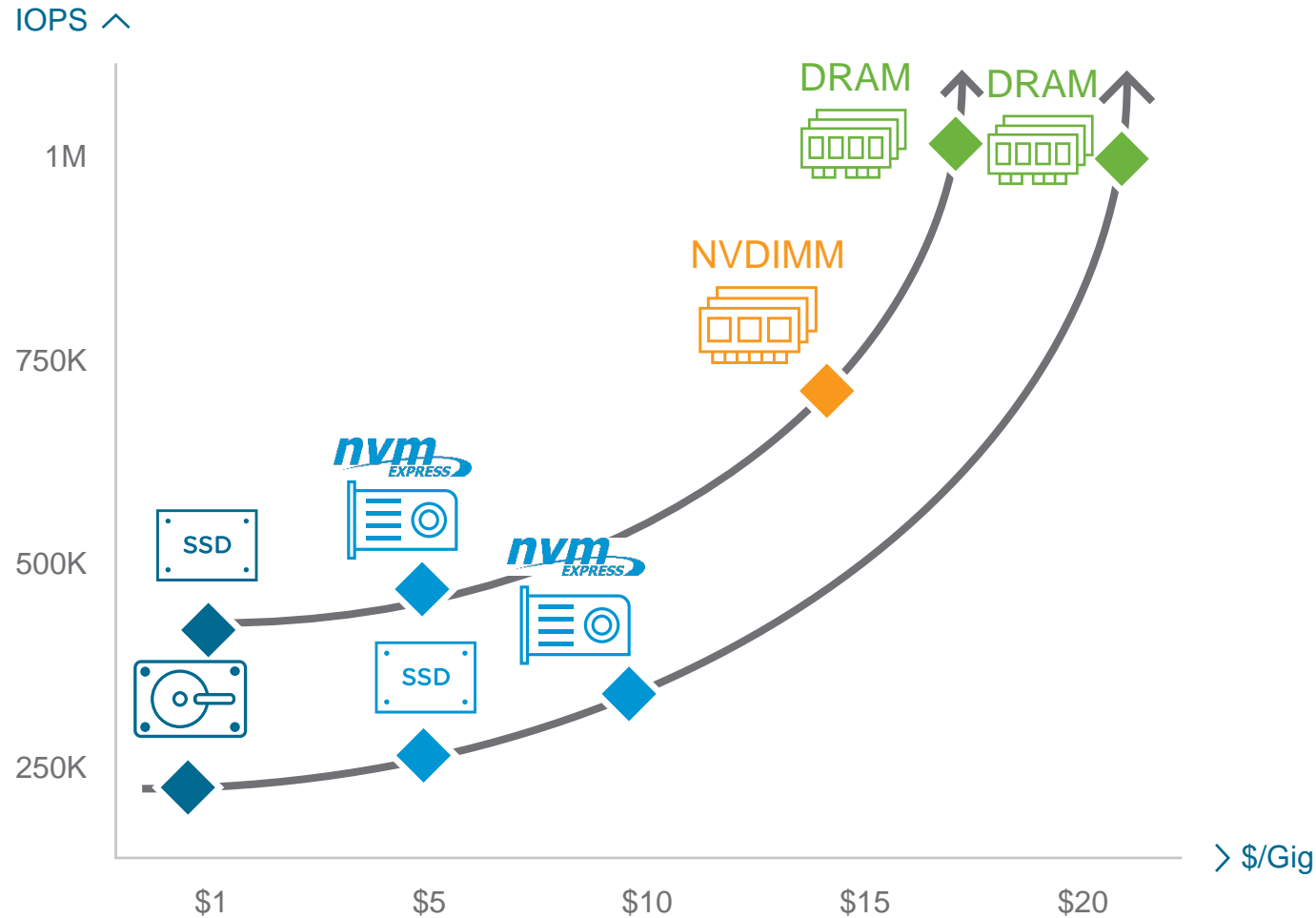


Accelerate mission-critical applications with enhanced all-flash performance

Expedite infrastructure modernization projects with confidence

Simplify environment with strong mixed-workload performance

Ready for Speed and Endurance of Future Storage Devices



Today

Low latency devices too expensive for persistent storage

Device latency >> Network latency

Future

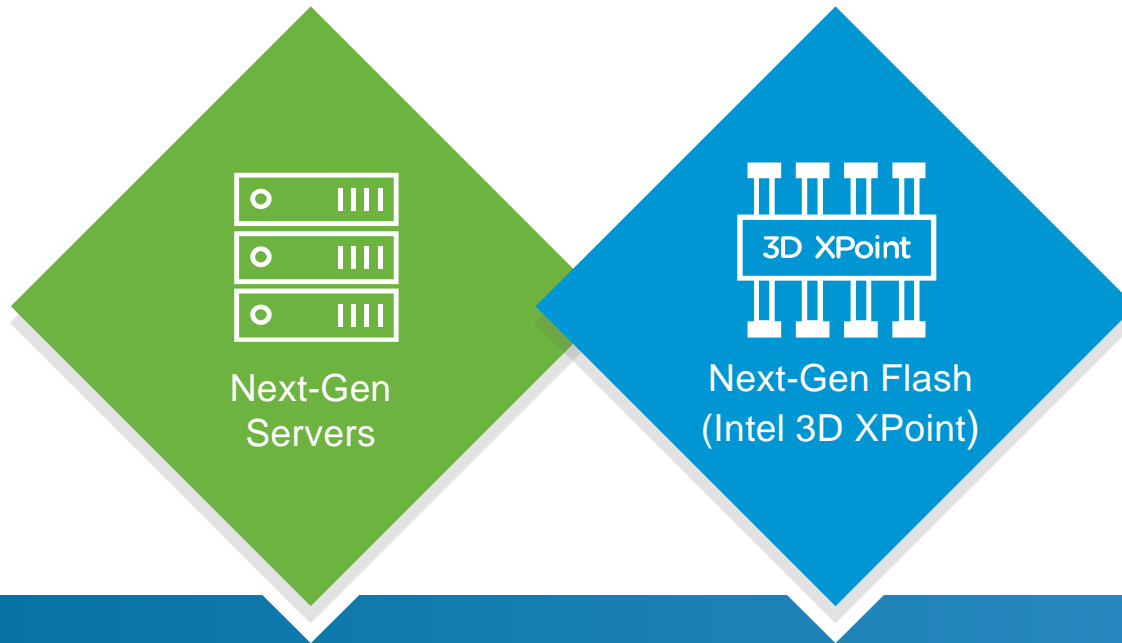
SSD is the new capacity disk

High-capacity NVMe

Byte-addressable NVDIMMs

Network latency >> Device latency

Day 1 Support of Latest Hardware Innovations



Support larger caching drive options, including 1.6TB flash drives

Day 1 support of latest hardware through industry's best ecosystem

Lower read latencies with vSAN and new 3D XPoint NVMe drives from Intel

Expand competitive advantage with Day 1 support of latest flash innovations
Simplify new technology adoption without a major forklift upgrade to infrastructure
Lower costs with higher consolidation ratios

Simplify Adoption of Next-Gen Apps

Persistent Container Storage



docker



kubernetes

- Multi-Tenancy
- Policy Support
- Cloning
- Snapshots

Photon Platform 1.1 with vSAN

Platform Services

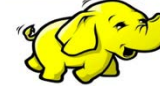
Photon Controller

ESXi | NSX | vSAN



Next-Generation Applications

hadoop



InterSystems
CACHE



Pivotal Cloud Foundry

Accelerate DevOps support with native vSAN services in Photon Platform

Streamline infrastructure with one platform across any application

Accelerate next-gen apps with optimized flash performance

Deploy with confidence using proven reference architecture

vSAN 6.6 Pricing and Packaging Summary

- New Feature in vSAN 6.6
- Existing feature in vSAN 6.5

Features	vSAN STD	vSAN ADV	vSAN ENT
Storage Policy-Based Management	●	●	●
Read / Write SSD Caching	●	●	●
Distributed RAID	●	●	●
vSphere Distributed Switch	●	●	●
vSAN Snapshots & Clones	●	●	●
Rack Awareness	●	●	●
Replication (5 min RPO)	●	●	●
All-Flash Support	●	●	●
Block Access (iSCSI)	●	●	●
QoS – IOPS Limits	○	○	●
Deduplication & Compression (All Flash only)		●	●
Erasur Coding (All Flash only)		●	●
Stretched Cluster with Local Failure Protection			●
Data-at-rest Encryption			○

Conclusion

Evolve without the Risk, Costs or Limitations of Traditional Infrastructure



**Evolve
without Risk**



**Lower
TCO**



**Scale to
Tomorrow**

Industry's Most Complete Solution for Modern Data Centers



Multi Cloud	Experience unified operating environment from on-prem to choice of public clouds
SDDC ecosystem	Full SDDC offering with broad ecosystem of hardware platforms and complementary software
Native security	Industry's first native HCI security solution for data-at-rest encryption.
Simplified management	Policy-based management to automate common tasks and reduce operational risk
Reduce TCO	Higher performance for any application

Next Steps to Get Started with vSAN

Start with vSAN Assessment



- Understand the needs of your environment in just one week!
- Contact your VMware Partner, SEs or Rep for a free vSAN assessment



StorageHub – Demos and Guides
www.storagehub.vmware.com



Free Hands-On Labs
vmware.com/go/vsanlab



Virtual Blocks – vSAN Blog
blogs.vmware.com/virtualblocks/



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