

# HCI mit VMware vSAN

Radikal einfach und vollständig in die SDDC Strategie integriert

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# Digitalisierung als Treiber für die Transformation

# Transformation – The Need for Change

From a world that was good yesterday...



... into a world that fulfills the requirements of today and tomorrow!



**WIKIPEDIA**  
The Free Encyclopedia

# Transformation – The Need for Change

From a world that was good yesterday...



... into a world that fulfills the requirements of today and tomorrow!



# Transformation – The Need for Change

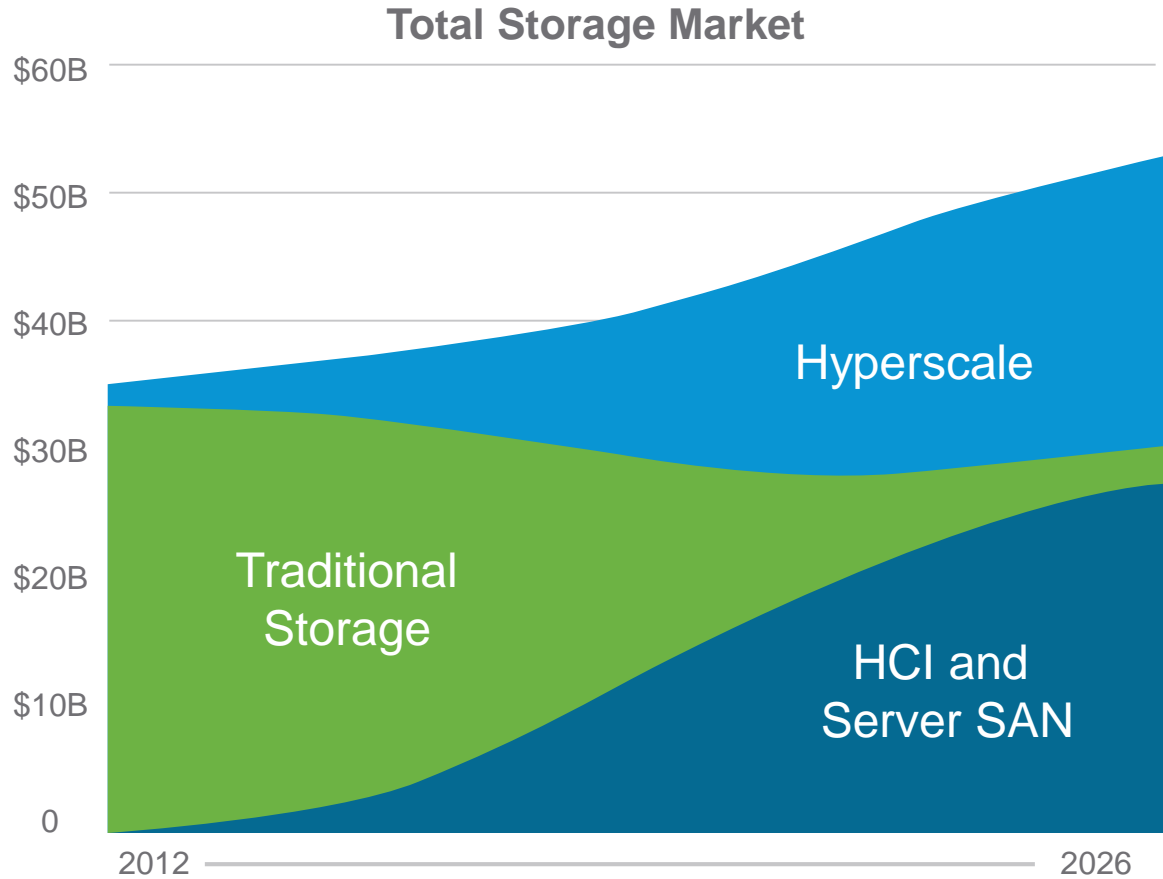
From a world that was good yesterday...



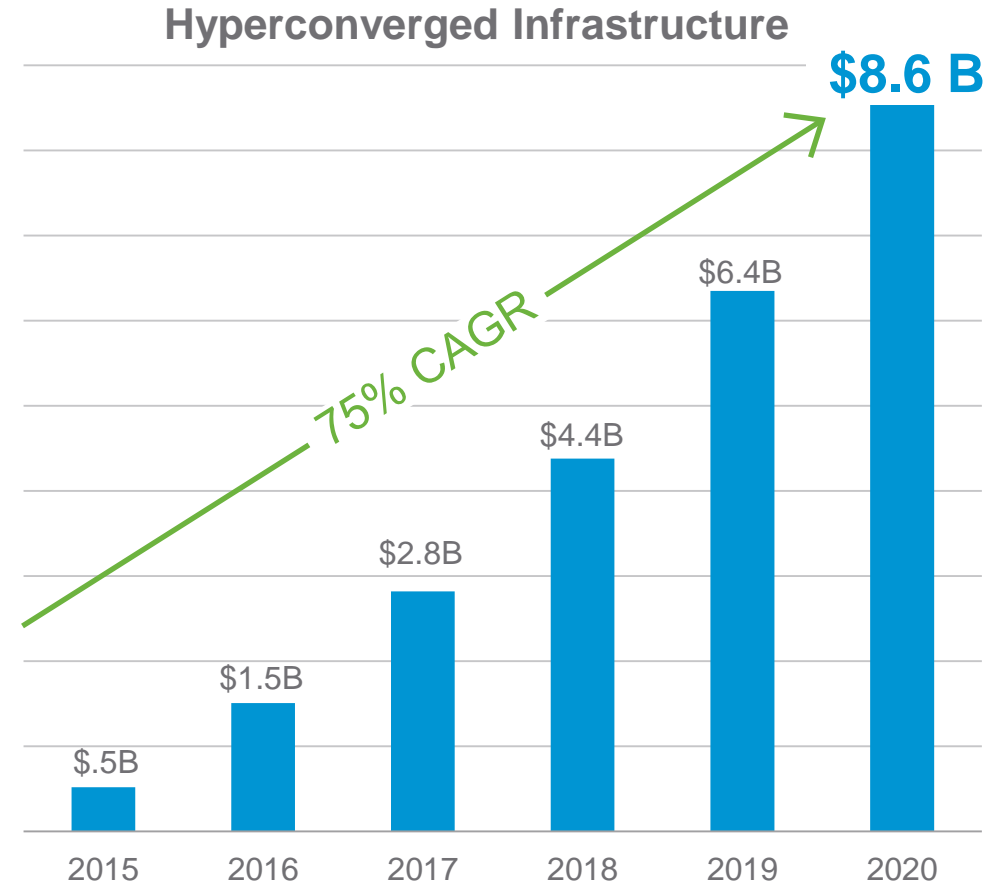
... into a world that fulfills the requirements of today and tomorrow!



# HCI is the Fastest Growing Storage Segment



Source: Wikibon Server SAN Research Project, 2016



Source: Gartner Forecast Analysis: Integrated Systems Worldwide, 1Q17 Update

# Why?

Today's storage products do not meet the requirements of the evolving IT industry

# Digital Businesses Face Economic Stress

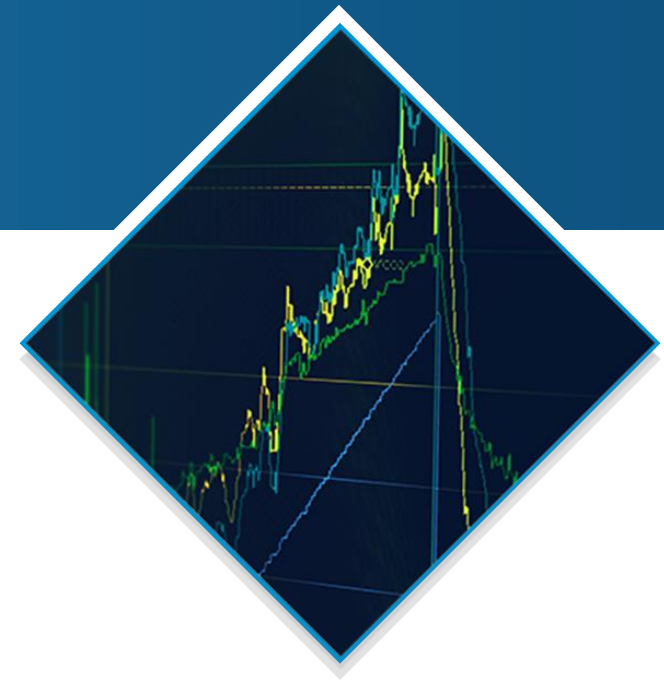
Digital  
Transformation



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



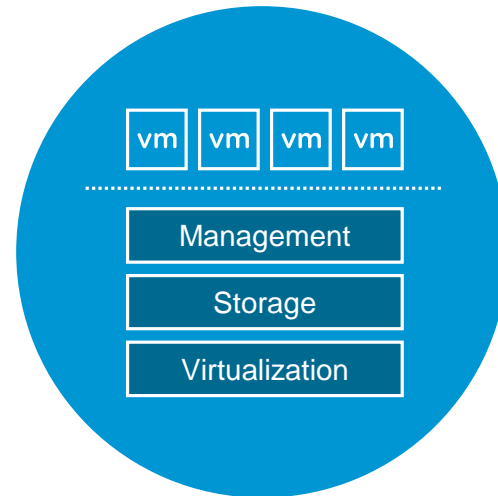
# There is a Gap in the Market...

Traditional Storage



Proven and reliable  
but complex

Hyper-Converged  
Infrastructure



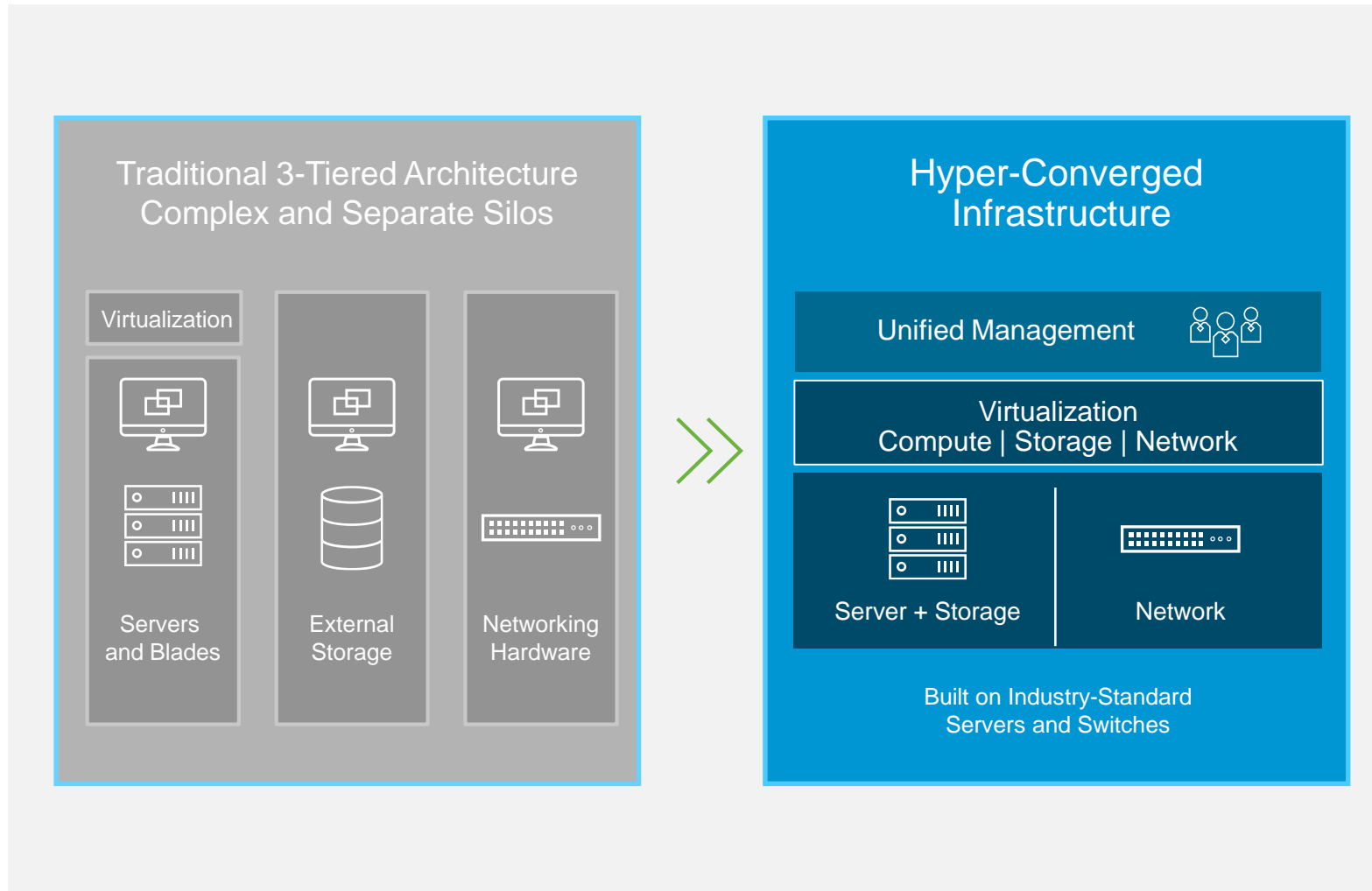
Simple, secure, low cost,  
and high performance

Cloud Storage



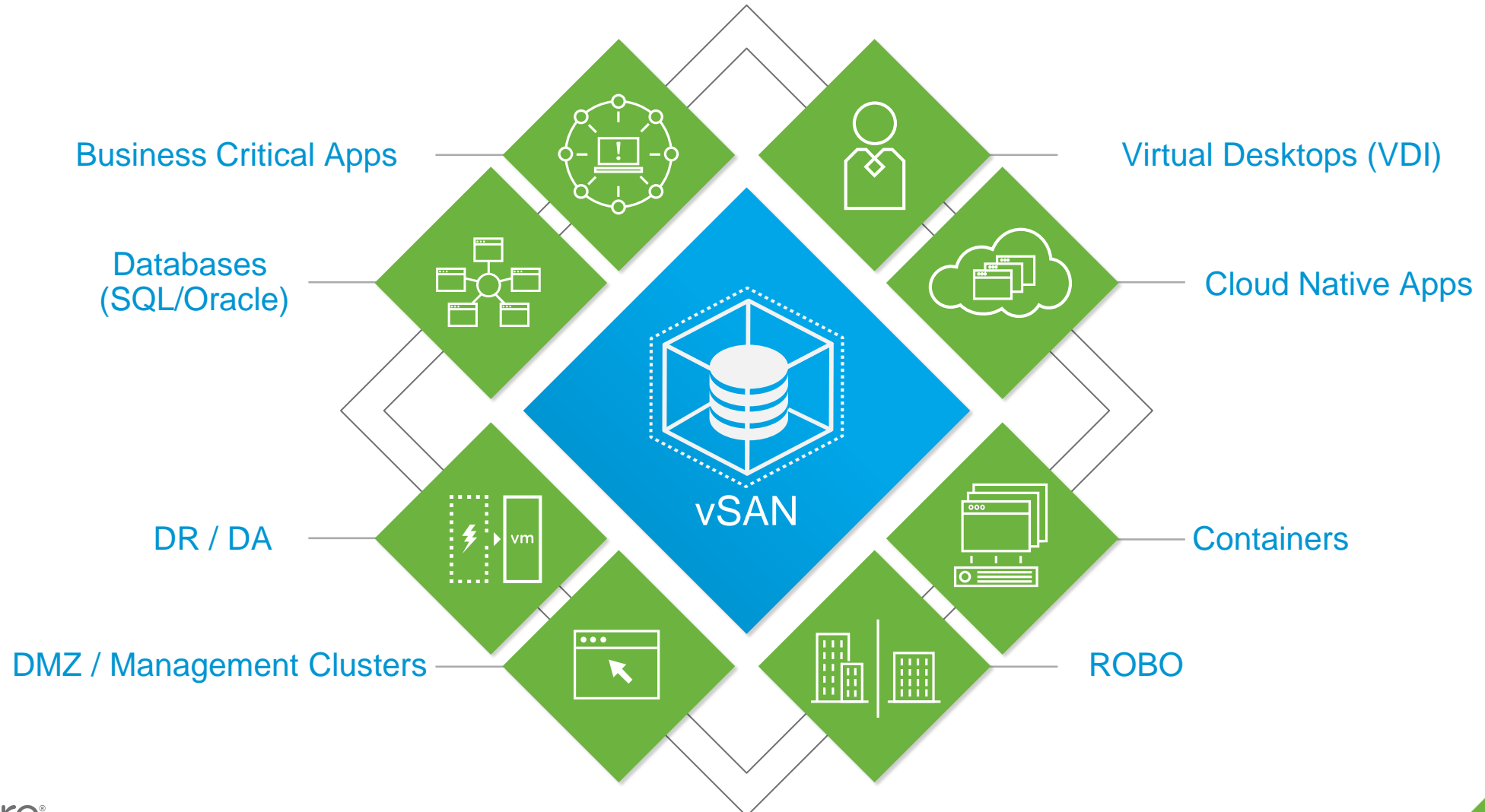
No footprint  
but no control or flexibility

# Hyper-Convergence Integrates Servers and Storage



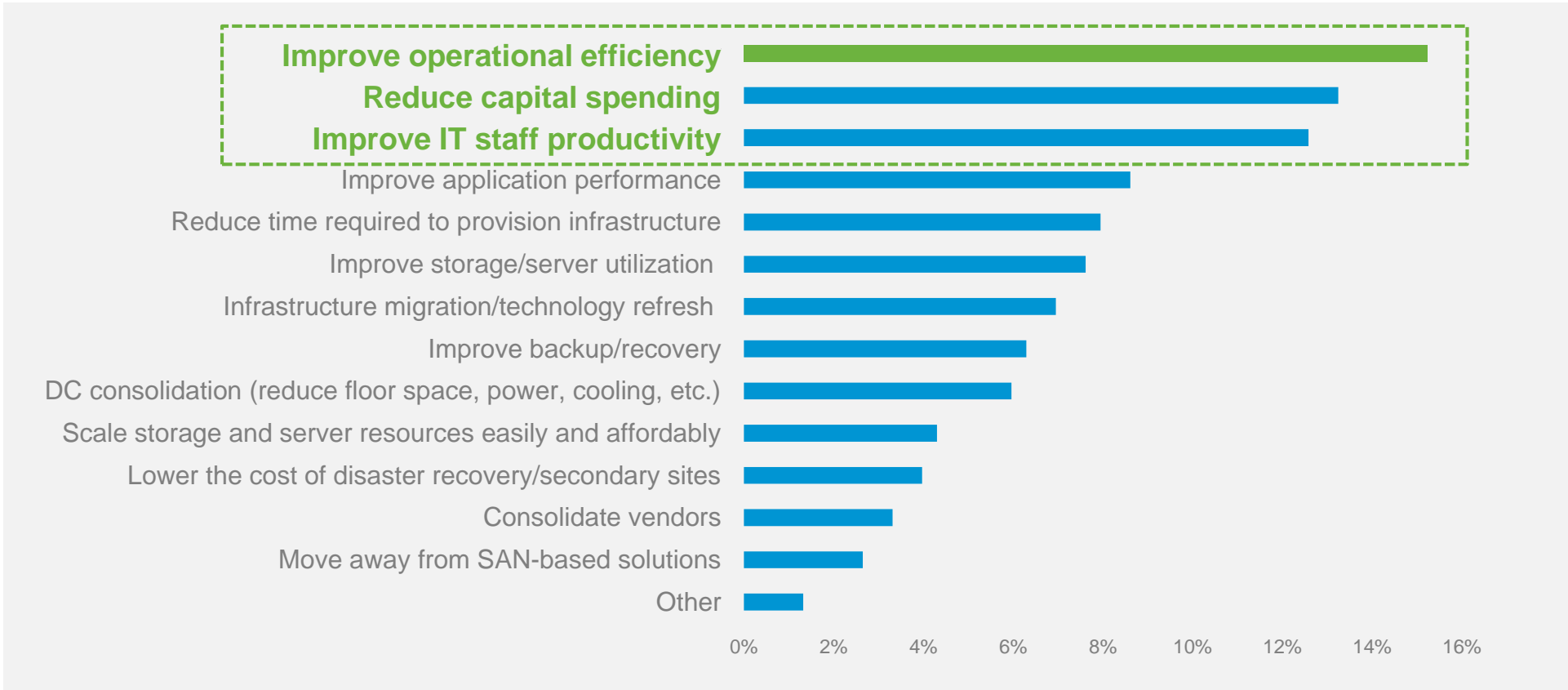
- Lower total costs
- Greater agility and scale
- Simplified management

# Supporting over 11k customers with a Broad Variety of Use Cases



# Businesses Need the Operational and Capital Savings of HCI

Q. What is the primary challenge your organization is seeking to address with the use of a hyperconverged system?



N=302

Only 1 Response Allowed

Source: IDC Hyperconverged Systems Survey, November 2016

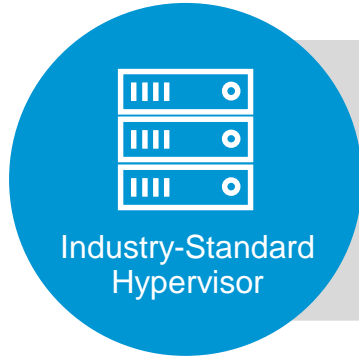
© 2017 VMware Inc. All rights reserved.

# What does HCI powered by vSAN provide?

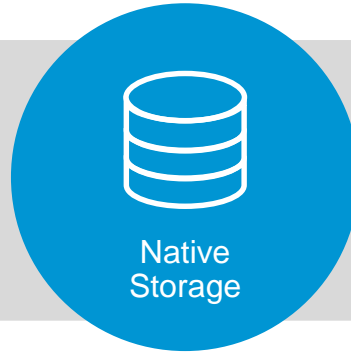
## **Simplicity**

# HCI Powered by VMware vSAN

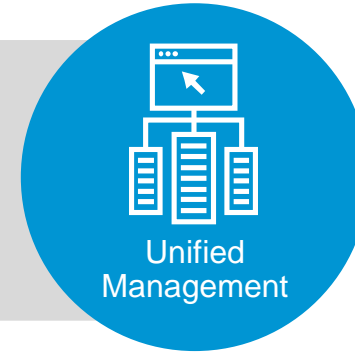
vSphere



vSAN



vCenter



## Broadest Deployment Choices

vSAN HCL

vSAN  
ReadyNodes

Dell EMC  
VxRail Appliance

VMware Cloud  
Foundation

VMware vCloud  
Air Network



# Deploy Confidently with Proven Data Center Solutions

## Native vSphere Experience

vMotion®	vSphere® Replication™
Storage vMotion®	Data Protection
Policy-Based Management	Snapshots
Fault Tolerance	HA
	DRS™

## End-to-End Solutions

NSX®	vCenter
vRealize® Ops™	vRealize® Log Insight™
Horizon®	vCloud® Air™
vRealize® Automation™	Site Recovery Manager™
	VMware Cloud Foundation

HCI Powered by  
VMware vSAN



## Extend with Software Ecosystem

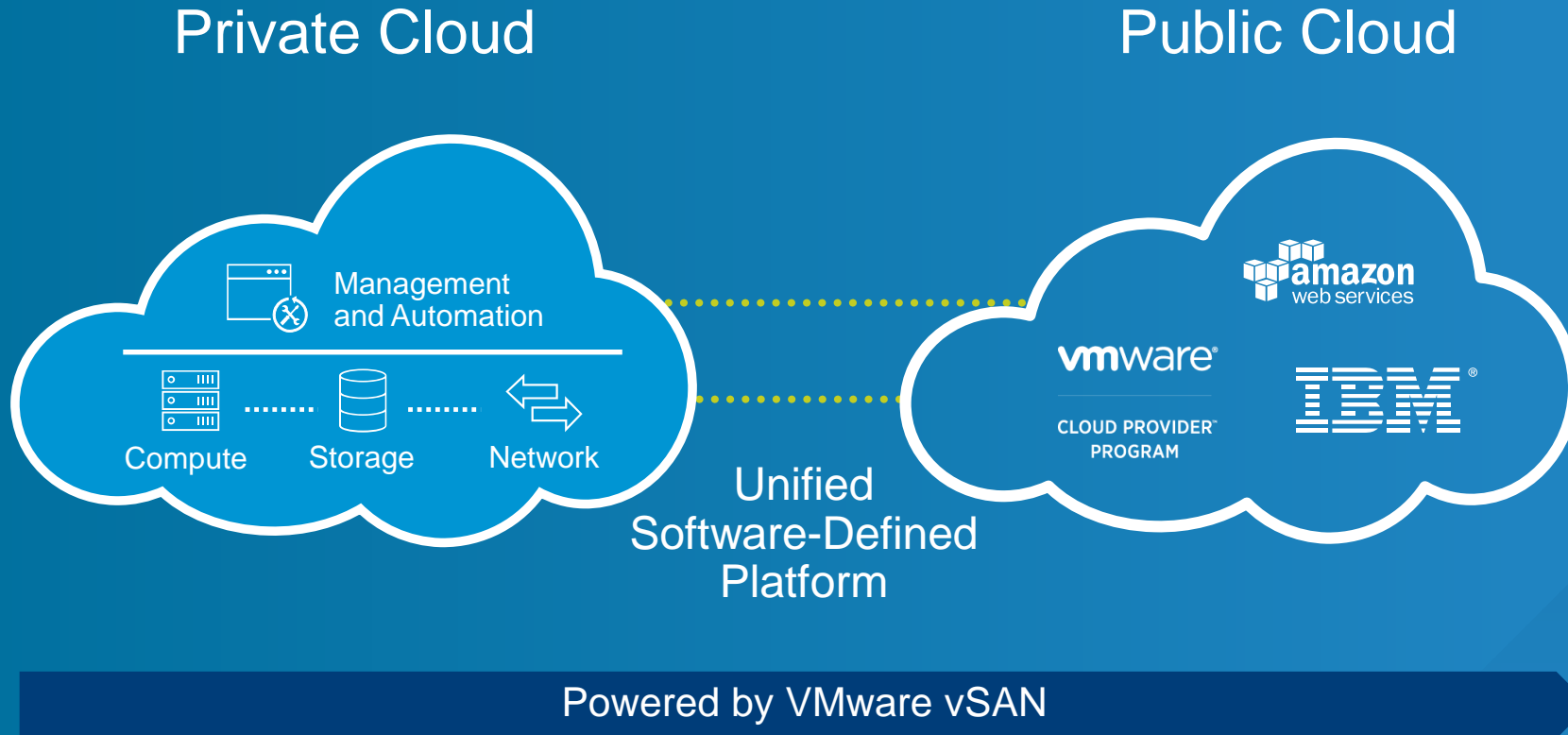


## 5x Larger Hardware Choice





# The Modern Data Center is a Unified Software-Defined Platform Extensible to the Public Cloud



Fully software defined

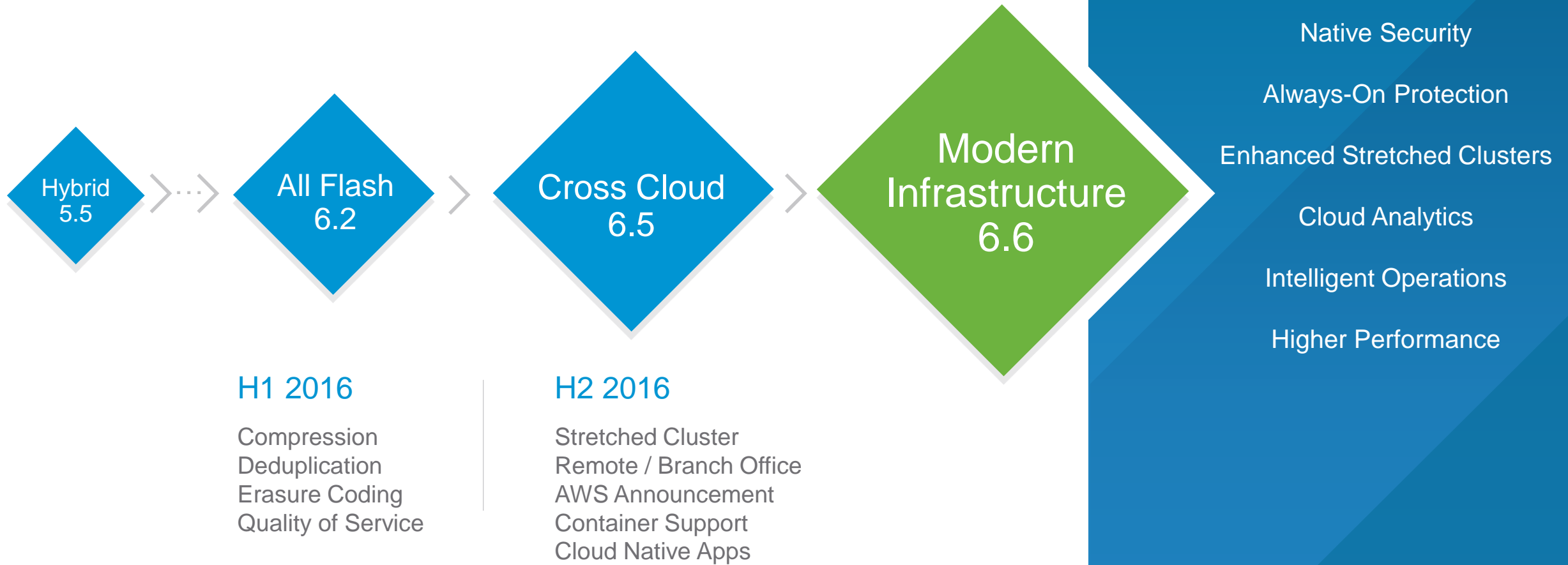
Enterprise ready

Ideal for Build or Buy users

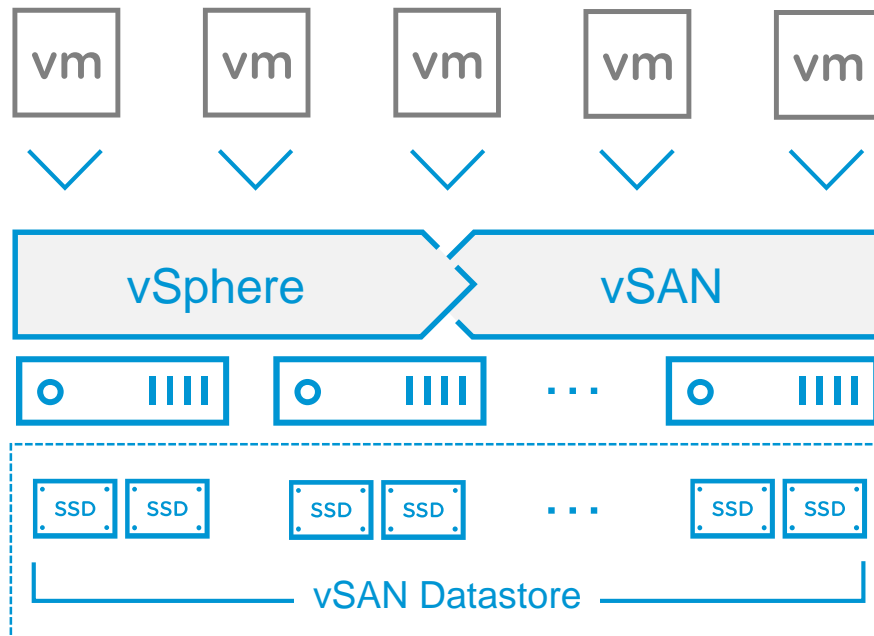
# VMware vSAN 6.6.1

Sixth-Generation Enterprise Storage Platform for  
Leading HCI Solutions

# Accelerating HCI Innovation



# Powered by VMware vSAN and vSphere



Runs on any standard x86 server

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Pools HDD/SSD into a shared datastore

---

Delivers enterprise-grade scale and performance

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Managed through per-VM storage policies

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Deeply integrated with the VMware stack

# Really Simple Setup

Cluster - Configure Virtual SAN

1 Select VSAN capabilities  
2 Network validation  
3 Claim disks  
4 Ready to complete

**Select VSAN capabilities**  
Select how you want your Virtual SAN cluster to behave.

**Disk Claiming**  
Add disks to storage:  ▼  
Requires manual claiming of any new disks on the included hosts to the shared storage.

**Deduplication and Compression**  
 Enable  
Deduplication and compression will improve the total cost of ownership by reducing the data stored on your physical disks. Deduplication and compression only works for all-flash disk groups. Creating hybrid disk groups is not allowed when Deduplication and compression is turned on.  
 Allow Reduced Redundancy ⓘ

**Fault Domains and Stretched Cluster**  
 Do not configure  
 2 host Virtual SAN cluster ⓘ  
 Stretched cluster ⓘ  
 Configure fault domains ⓘ

**Licensing**  
⚠ A license must be assigned to the cluster in order to create disk groups or consume disks automatically.

Back Next Finish Cancel

Deduplication  
and  
Compression  
Enable?

Manual or  
Automatic Disk  
Claiming

Fault Domains,  
2 node or  
stretched  
cluster?

# vSAN objects and components

The vSAN datastore is an Object Store

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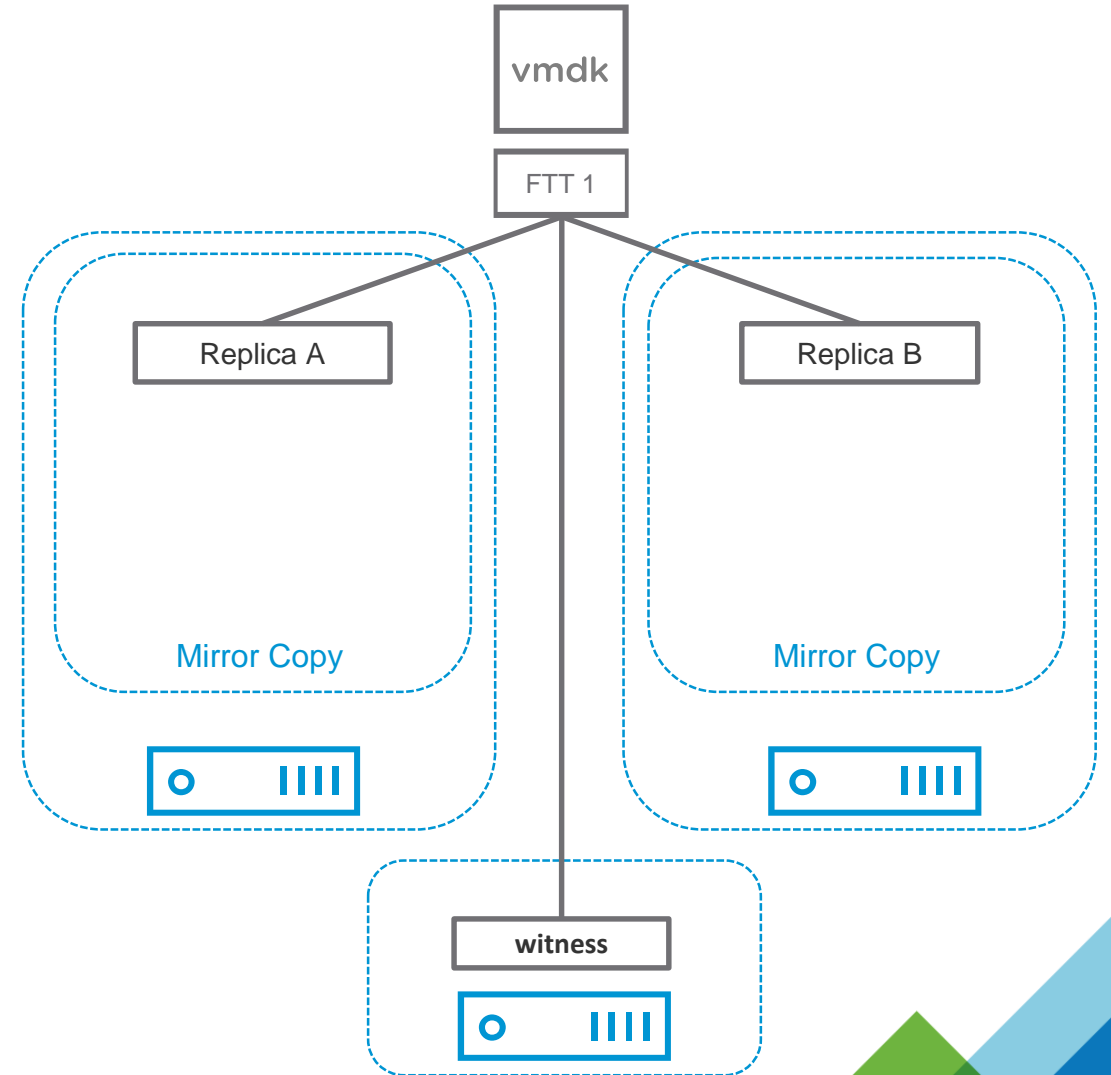
Each Object has multiple Components

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This to allow you to meet Availability and Performance requirements

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Data is distributed based on VM Storage Policy



# Define a policy first...

vSAN currently surfaces 13 unique storage capabilities to vCenter Server

Virtual SAN Default Storage Policy: Edit VM Storage Policy

**Name and description**

**Rule-Set 1**

Storage compatibility

**Rule-Set 1**

Select rules specific for a datastore type. Rules can be based on data services provided by datastore or based on tags. The VM storage policy will match datastores that satisfy all the rules in at least one of the rule-sets.

Rules based on data services VSAN

Number of failures to tolerate 1

Number of disk stripes per object 1

Force provisioning No

Object space reservation (%) 0

Flash read cache reservation (%) 0.0000

<Add rule>

**Storage Consumption Model**

A virtual disk with size 100 GB would consume:

Storage space 200.00 GB

Initially reserved storage space 0.00 B

Reserved flash space 0.00 B

What If APIs

OK Cancel

# Assign it to a new or existing VM

When the policy is selected, vSAN uses it to place / distribute the VM to guarantee availability and Performance

The screenshot shows the 'template - Clone Template To Template' wizard. The '2c Select storage' step is active. The 'VM Storage Policy' dropdown is set to 'FTT=3'. A table of available datastores is shown, with 'vsanDatastore' selected. A compatibility check message states 'Compatibility checks succeeded.' An inset window titled 'VM Storage Policies' shows the selected policy 'FTT=3' is 'Compliant' and was last checked on 2/11/14 at 11:16 AM.

**1 Select creation type**

- 1a Select a creation type
- 1b Select a template

**2 Edit settings**

- 2a Select a name and folder
- 2b Select a compute resource
- 2c Select storage**

**3 Ready to complete**

Select virtual disk format: As defined in the VM storage policy

VM Storage Policy: **FTT=3**

The following datastores are accessible from the destination resource that you selected. Select the destination datastore for the virtual machine configuration files and all of the virtual disks.

Name	Capacity	Provisioned	Free	Type	Storage DRS
<b>Compatible</b>					
vsanDatastore	36.38 TB	6.39 TB	36.11 TB	vsan	
<b>Incompatible</b>					
nfsDatastore	300 GB	19.47 GB	280.53 GB	NFS	

Compatibility:

✔ Compatibility checks succeeded.

Back

**VM Storage Policies**

VM Storage Policies	FTT=3
VM Storage Policy Compliance	✔ Compliant
Last Checked Date	2/11/14, 11:16 AM

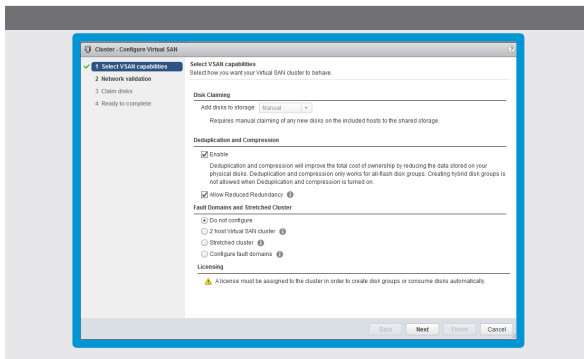
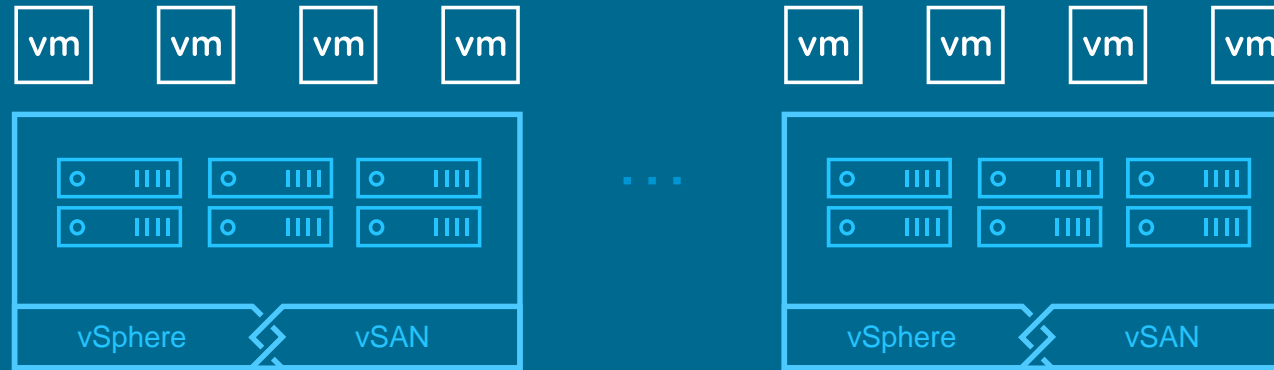
Refresh



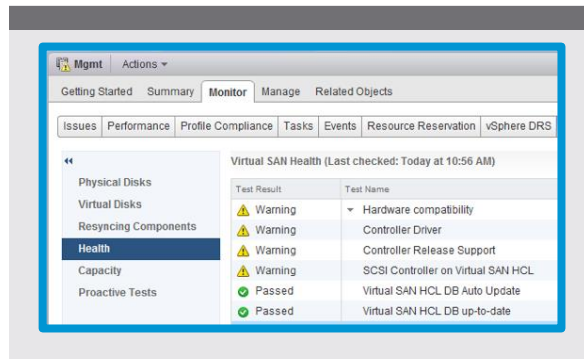
# Ease of Day 0, 1 and 2 operations

vSphere APIs

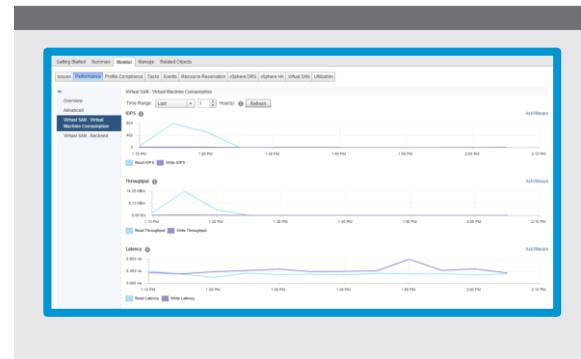
vSphere UI



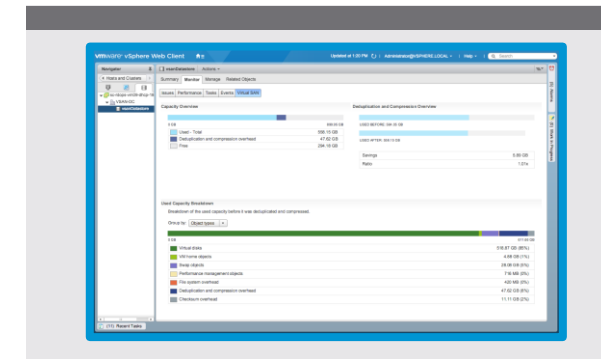
Configuration



Health Checks



Performance Monitoring



Capacity Reports

# Conclusion

# Why HCI Powered by vSAN?

**Evolve  
without Risk**



Extend don't replace  
Native security

**Lower  
TCO**



Decrease HW spend  
Simplify operations

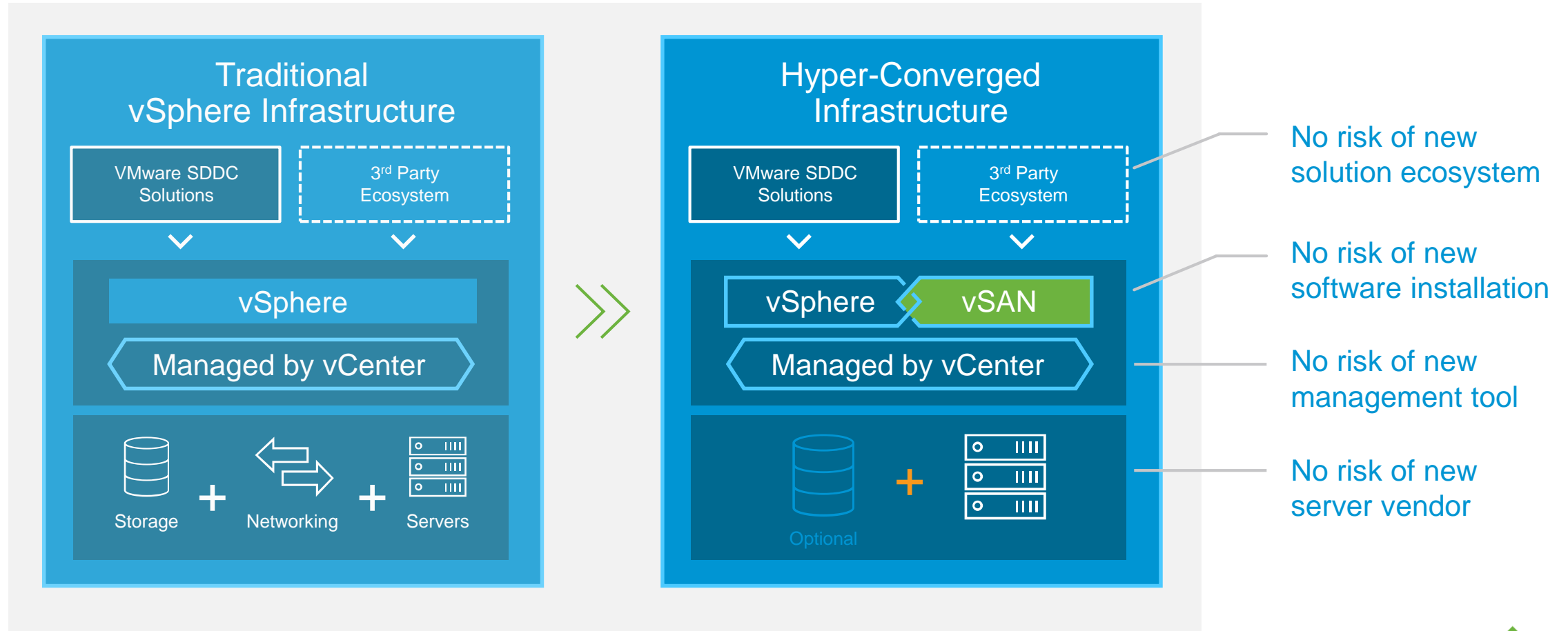
**Scale to  
Tomorrow**



Use latest HW, Apps  
Enable multi-cloud

# You are just one Step Away from HCI

Build on the virtualization foundation and expertise you already have



# Industry's Most Complete Solution for Modern Data Centers



# 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](http://www.storagehub.vmware.com)



Free Hands-On Labs  
[vmware.com/go/vsanlab](http://vmware.com/go/vsanlab)



Virtual Blocks – vSAN Blog  
[blogs.vmware.com/virtualblocks/](http://blogs.vmware.com/virtualblocks/)



vSAN Sales Experts  
[sdssales@vmware.com](mailto:sdssales@vmware.com)

# Go vSAN!

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