

# Dell Technologies

vSAN and Dell EMC

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Distribution Account Manager  
Dell Technologies



# Digital Transformation Is Disrupting Every Industry

**AUTOMOTIVE**



**RETAIL**



**MANUFACTURING**



**SCIENCES**



**FINANCE**



**AND MORE...**



**50%+**

of global GDP will be digitized by 2021<sup>1</sup>

**48%**

are unsure what their industry will look like in 3 years

**45%**

fear they will be obsolete in 3-5 years<sup>2</sup>

**92%**

see digital business initiatives as critical<sup>2</sup>

<sup>1</sup> IDC FutureScape: Worldwide IT Industry 2018 Predictions Oct 2017 - - Doc # US43171317

<sup>2</sup> Dell Digital Transformation Index

# Transforming the business

to help

Digital  
Transformation



IT  
Transformation



Workforce  
Transformation



Security  
Transformation



# IT Modernization: Workload Placement



Physical



Virtual



IaaS/SaaS



PaaS/CaaS

Operations

“Construct”

“Consume”

Change Process Driven

Self Service & Chargeback  
Fully Automated & Orchestrated

Workloads

Workloads

File  
AIX  
**Optimize for Savings and Continuity**  
IBM I  
Specialized Apps

ORACLE



**Optimize for Automation**



Emerging Apps  
**Optimize for Business Agility**  
Containers

On Prem

Mostly On Prem

On/Off Prem

On/Off Prem

# A Choice of Consumption Models

Modernize Traditional  
Architectures for Today  
i.e. All Flash Arrays

**FUTURE-PROOF**  
STORAGE LOYALTY PROGRAM

Deploy Emerging  
Architectures for the Future  
i.e. SDS & HCI

Transformational  
Licensing



#1



Storage



CI / HCI

TRADITIONAL APPLICATIONS & ARCHITECTURES

EMERGING APPLICATIONS & ARCHITECTURES

# Critical elements of a Modern Data Center



All-Flash



Scale-Out



SW-Defined



Cloud-Enabled



Trusted



AI/ML

## Traditional and Cloud-Native Applications

Best of Breed  
Components

Servers 

Storage 

Networking 

Data Protection 



Converged  
Hyper-Converged

#1

FASTER | SIMPLER | LESS RISK



# HCI is the Foundation of SDDC and Hybrid Cloud

## Traditional SAN



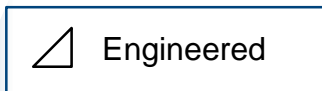
## Hyper-Converged



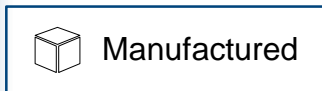
# Our proven unique approach

- Why Dell EMC CI/HCI is the fastest, least risky way to modernize

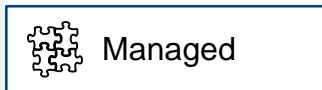
## 5 Pillars of value



Engineered according to strict standards and best practices  
Lowers cost and risk vs building your own system



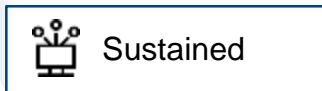
ISO-certified manufacturing for integrating all components  
Faster time-to-value



One way to manage the health and life-cycle of all components  
Simpler to deploy, scale, upgrade, secure, and monitor



Single call support for all components  
Faster and simpler problem resolution



Pre-tested, pre-certified code upgrades for all components  
Reduced downtime and lowering the cost and risk of upgrades



# What is inside VxRail?

A full suite of capabilities included at no additional charge



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## POWERED BY VMWARE vSAN

Flexible vSAN Licensing  
vSphere Ready\*  
vCenter Server  
vRealize Log Insight

## LIFECYCLE MANAGEMENT AND SUPPORT TOOLS

VxRail Manager  
Secure Remote Support

## INCLUDED DATA PROTECTION OPTIONS

RecoverPoint for VMs  
vSphere Replication

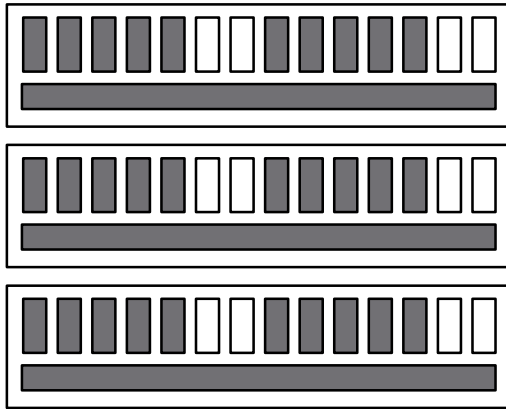
\*Compatible with a broad range of customer-supplied vSphere licenses

# The flexibility you need

## Minimizes risk and enables pay as you grow

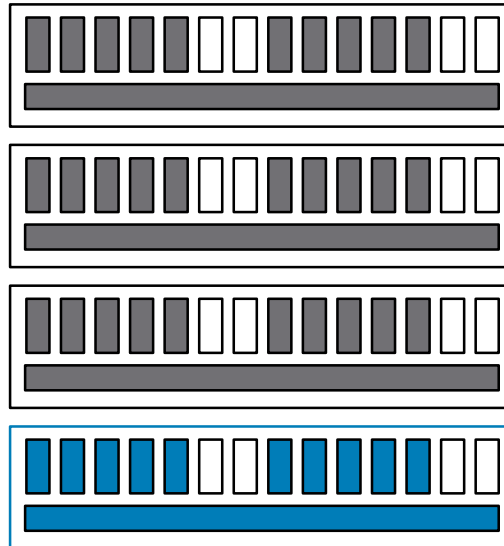
### START WITH WHAT YOU NEED

Minimize risk by closely matching your requirements



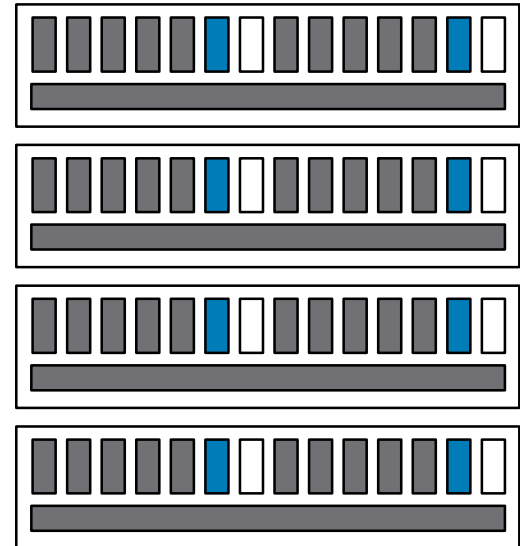
### SCALE OUT

Add as few as one node to increase performance and capacity



### SCALE UP

Incrementally add storage as data grows



# VxRail continuous innovation

Future-proof performance, accelerate transformation, and secure your environment



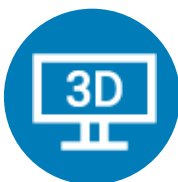
## NVMe Cache Drives

**Future proof** with NVMe 800GB and 1.6TB cache drive options for faster caching technology



## M Series Processors

Up to **2X** more memory (3TB) using new high memory Intel Xeon processor options



## NVIDIA P40 GPUs

**2x** performance in graphics acceleration and **50% more** users per board with addition of NVIDIA P40 GPU



## 25GbE Connectivity

**The Most** aggregate bandwidth of any other vendor's appliance



## Hardened Security

Security Configuration Guide, STIG, and automated scripts **accelerate deployment of secure VxRail infrastructure**

# VxRail configuration flexibility for your workload

## G, E, P, S, V Series based on the latest Dell EMC PowerEdge servers

### Processor

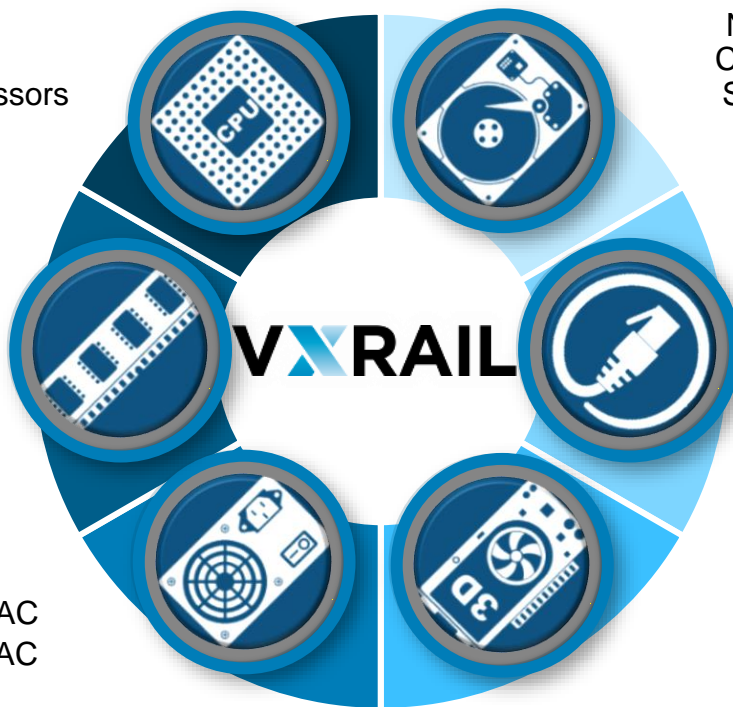
Choice of 40 Intel® Scalable® processors  
4 to 56 cores per system

### RAM

24 DIMM slots  
16GB RDIMM  
32GB RDIMM  
64GB LRDIMM  
128GB LRDIMM

### Power supply

1100W	100-240V AC
1600W, 2000W, 2400W	200-240V AC
1100W	48V DC



### Storage

NVMe Cache Drives: 800GB, 1600GB  
Cache SSDs: 400GB, 800GB, 1600GB  
SSDs (SAS & SATA) : 1.92TB, 3.84TB  
HDDs: 1.2TB, 1.8TB, 2.4TB (10K)  
2.0TB 4.0TB (7.2K)

### Base networking

SFP28, SFP+, RJ45  
2x 25GbE  
4x 10GbE  
4x1GbE (auto negotiate)

Optional add-on NICs

### GPUs

NVIDIA

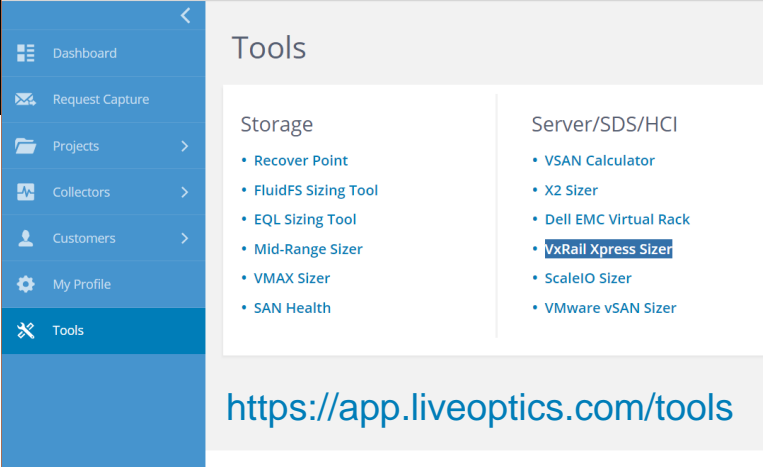
Note: GPU SW & drivers  
sold separately

# Leverage Live Optics for VxRail Sizing

## Dell EMC VxRail

### Performance and sizing guide

 live optics



The screenshot shows the 'Tools' section of the Live Optics application. The left sidebar contains navigation options: Dashboard, Request Capture, Projects, Collectors, Customers, My Profile, and Tools (selected). The main content area is titled 'Tools' and is divided into two columns: 'Storage' and 'Server/SDS/HCI'. The 'Storage' column lists: Recover Point, FluidFS Sizing Tool, EQL Sizing Tool, Mid-Range Sizer, VMAX Sizer, and SAN Health. The 'Server/SDS/HCI' column lists: vSAN Calculator, X2 Sizer, Dell EMC Virtual Rack, **VxRail Xpress Sizer** (highlighted with a blue box), ScaleIO Sizer, and VMware vSAN Sizer. At the bottom of the screenshot, the URL <https://app.liveoptics.com/tools> is displayed.

## VxRail Performance Sizing Guide

- There is little difference in sizing VxRail from sizing a server
- Compute, Memory and Storage must all be accounted for in the sizing
- You can scale up/out or both
- Consider what's best for your customer
  - What are likely factors that will drive their expansion? CPU or Storage?
  - Remember you can mix appliances assuming they are of like storage (hybrid or flash) and don't mix 1G and 10G appliance
- Sizing for Performance ONLY will likely to lead to unbalanced and less than optimal configuration

# VxRail in the Future-Proof Loyalty Program

**FUTURE-PROOF**  
LOYALTY PROGRAM

[dellmc.com/futureproof](https://dellmc.com/futureproof)

## Investment Protection

*Lowering the risk of your investment*

## A Path forward

*You will be ready for the future*

## Peace of mind

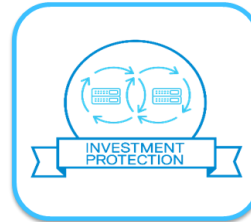
*No hidden costs or fees*



3-YEAR SATISFACTION  
GUARANTEE



ALL-INCLUSIVE  
SOFTWARE



HARDWARE INVESTMENT  
PROTECTION



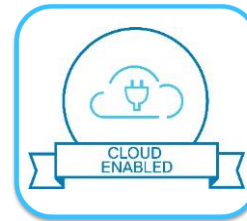
NEVER-WORRY  
DATA MIGRATIONS



PREDICTABLE SUPPORT  
PRICING



FLEXIBLE CONSUMPTION  
MODELS



CLOUD MOBILITY,  
PROTECTION AND  
MANAGEMENT



# Why VxRail

Dramatically lower OPEX enables you to focus IT on the things that make you more competitive



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## CREATE CERTAINTY

Management • M&O Tools • Knowledge

## PREDICTABLY EVOLVE

Lifecycle • Upgrades • Support

## CONTINUOUSLY INNOVATE

Building • Maintaining • Expanding

# Dell EMC vSAN Ready Nodes

Pre-configured and validated building blocks



- Purpose-designed to support VMware vSAN
- Reduce project risk and improve storage efficiency
- Scale quickly and manage simply

## Unique Values:

- 1 One of the **broadest vSAN RN portfolios** in the market<sup>1</sup>, the first with **dedicated vSAN Identity Modules**, and offering **flexible VMware Cloud Foundation** deployment options
- 2 **130% faster deployment** with **97% less administrator time required** via Open Manage Integration for VMware vCenter® (OMIVV) compared to Cisco UCS<sup>2</sup>
- 3 PowerEdge MX yields up to **40% more VMs** and **55.9% lower storage latency** than competing solutions<sup>3</sup>
- 4 Industry-leading support<sup>4</sup> and the **most complete** service offering on the market with ProDeploy Plus

1. Based on Dell EMC review of complete vSAN RN offering across all OSAs listed on VMware vSAN Compatibility Guide on February 1, 2018.  
2. Based on Dell EMC internal competitive testing.  
3. Based on Principled Technologies report administered by Dell EMC, November 2018.  
4. Based on internal Dell EMC services data.

# Dell EMC vSAN Ready Nodes Portfolio

100+ Certified Ready Node Configs: All-flash, Rugged, Hybrid Rack, & Kinetic

PowerEdge R440, R640, XR2 or R6415



PowerEdge R740, R7415



PowerEdge R740xd, R740xd2, R7425



PowerEdge C6420



PowerEdge FC640 Blade



MX740c



Does Not Require Multi Path SAS

4 to 8 Node Configs:

1x NVMe cache  
5x NVMe/SAS/SATA/SSD

or

2x NVMe cache  
4x NVMe/SAS/SATA/SSD

MX740c & MX5016s



Requires Multi Path SAS

4 x Node Config:

4 x NVMe cache  
16 x SAS capacity



# Dell EMC vSAN Ready Nodes – PowerEdge MX

MX740c



*ToR switches integrated into the MX7000 chassis simplify deployment and increase connectivity*



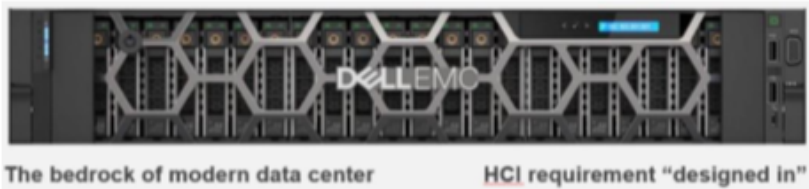
Manage with *OpenManage Enterprise – Modular Edition* integration for VMware vCenter®, a native vCenter plug-in



*SDDC Ready in a box* – place up to 8 vSAN Ready Nodes in an MX7000 to create a self-sustained, validated VMware Cloud Foundation

# Dell EMC vSAN Ready Nodes

Provides the most **cost-effective**, validated building block for a VMWare Software Defined Datacenter that is fully supported by Dell EMC

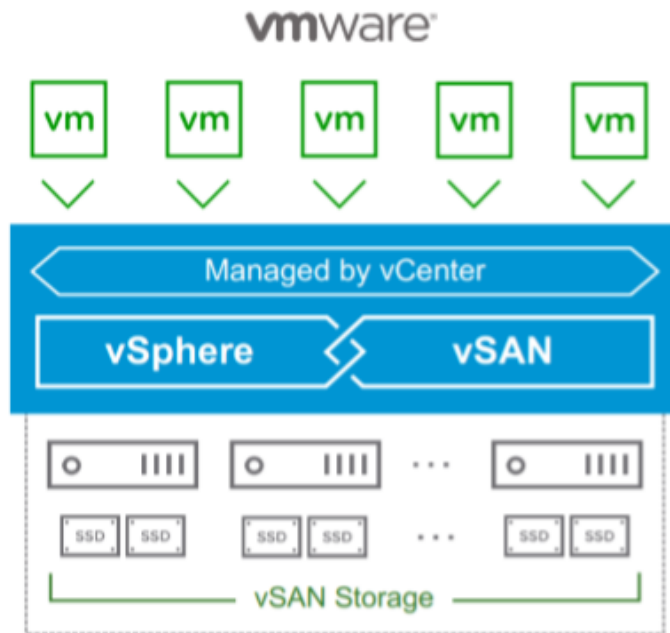


## Solution benefits

- Designed for vSAN
- Scale as you need, pay as you grow
- Reconfigurable general-purpose building blocks
- OpenManage integration for automated HW lifecycle management

## Differentiation

- Leverage all of the benefits of vSAN with the flexibility to build it 'your way'
- Broad set of tested, certified, and supported configurations
- Flash-optimized hybrid or all-flash



Services: Deployment, Integration, ProSupport, ProSupport Plus

# Deployment Services | Dell EMC VxRail

**Basic Deployment**

N/A

**ProDeploy**

- **Remote** project management
- Onsite Hardware installation
- **24x7 Remote SW** configuration
  - Per node

**Default**

**ProDeploy Plus**

- **In-region** project management
- **24x7 Onsite** HW & SW configuration
- Post deployment 30-day assistance
- Training credits
  - Per node

**Supplemental Offers**

- Data Migration
- Residency
- Data Erasure

**Basic Deployment Add-on Services**

N/A

**Deployment add-on services**

Ask your customer if they need to expand the capabilities of their solution with:

- Stretched Clusters (POS)
- Top-of-Rack Switch (POS)
- Hardware node expansions or component upgrades (APOS)
- Data Protection (POS):
  - RecoverPoint for Virtual Machines (RP4VM)
  - Data Domain Virtual Edition (DDVE)
  - Data Protection Suite for VMware (DPS4VM)

**Order with product or later**

**Product Integration\***

*Recommend deployment services to configure these products*

- Top-of-Rack Switch
- RP4VM
- DDVE
- DP4VM



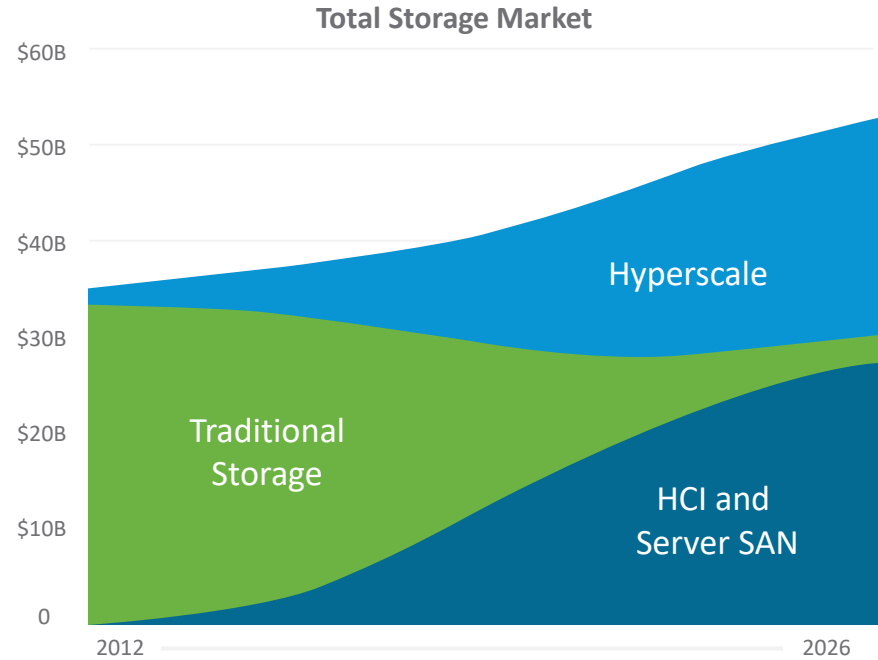
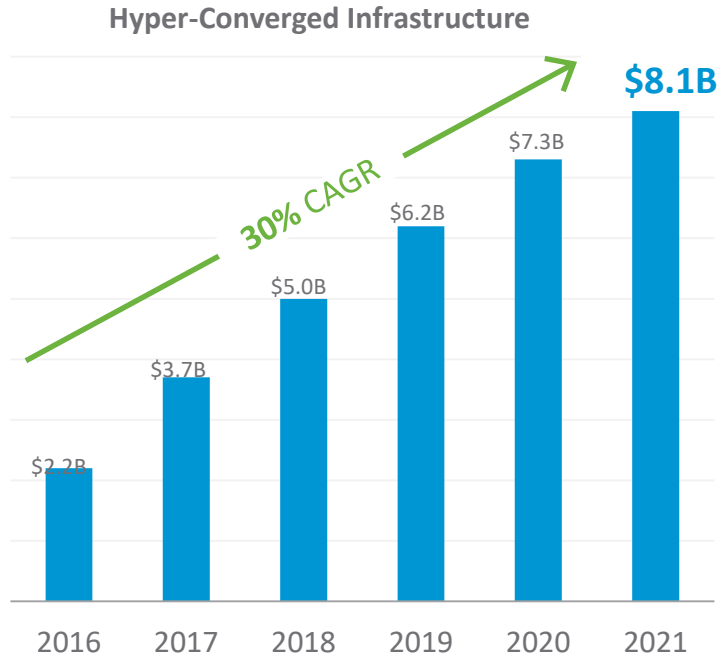
**DELL**Technologies

**PARTNER PROGRAM**

# 6%

Competitive Swap rebate awarded to Authorized storage resellers with valid deal registration through their preferred specialty products distribution partner!

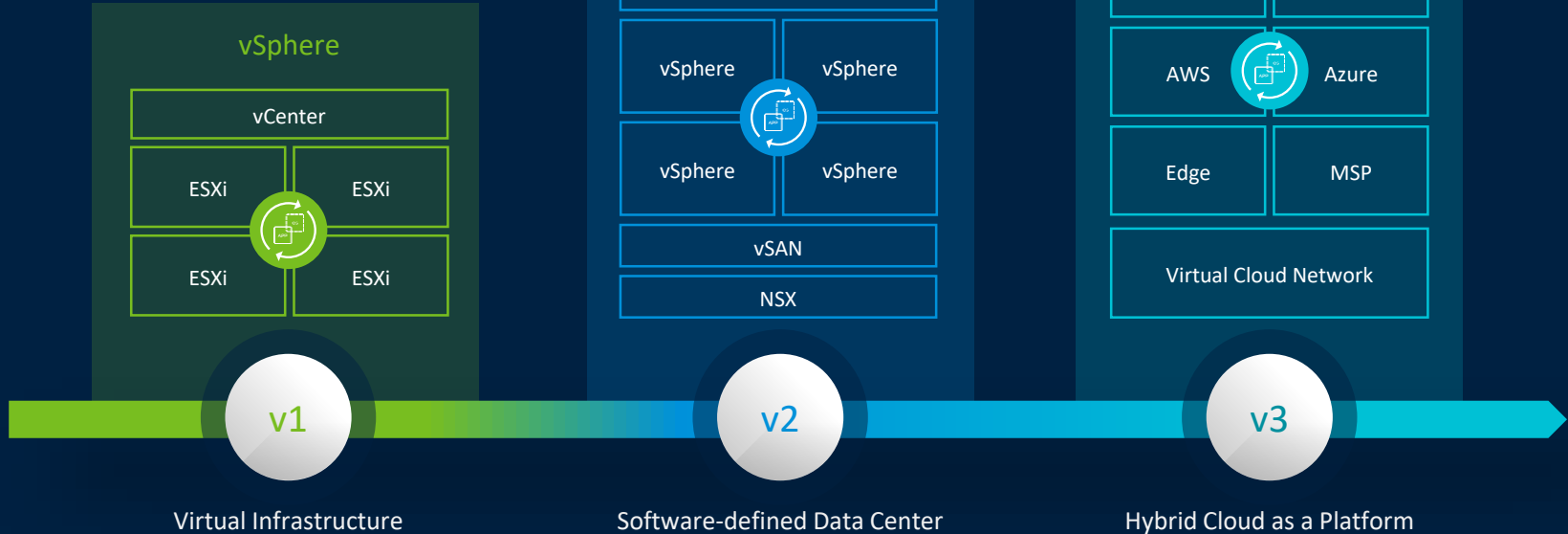
# HCI is the Fastest Growing Storage Segment Today



Source: Wikibon Server SAN Research Project, 2016

# VMware Evolution

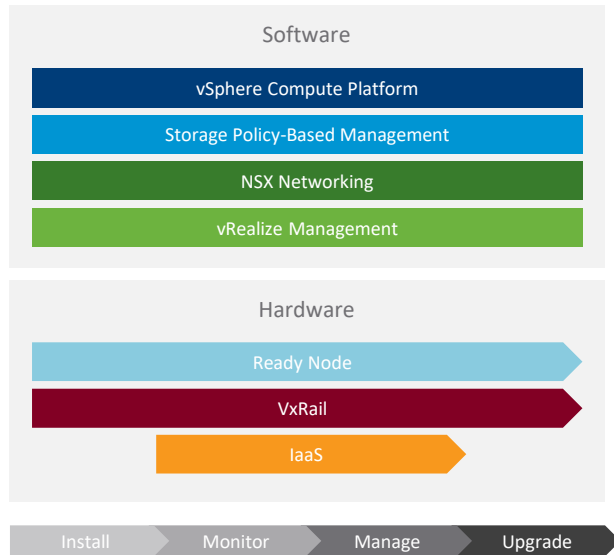
Powering Hybrid IT Organizations



# The Software Stack is Today's Most Important Decision

## VMware HCI Vision for IT Investment Protection

**Unified software stack** for any HCI consumption model with automated lifecycle management



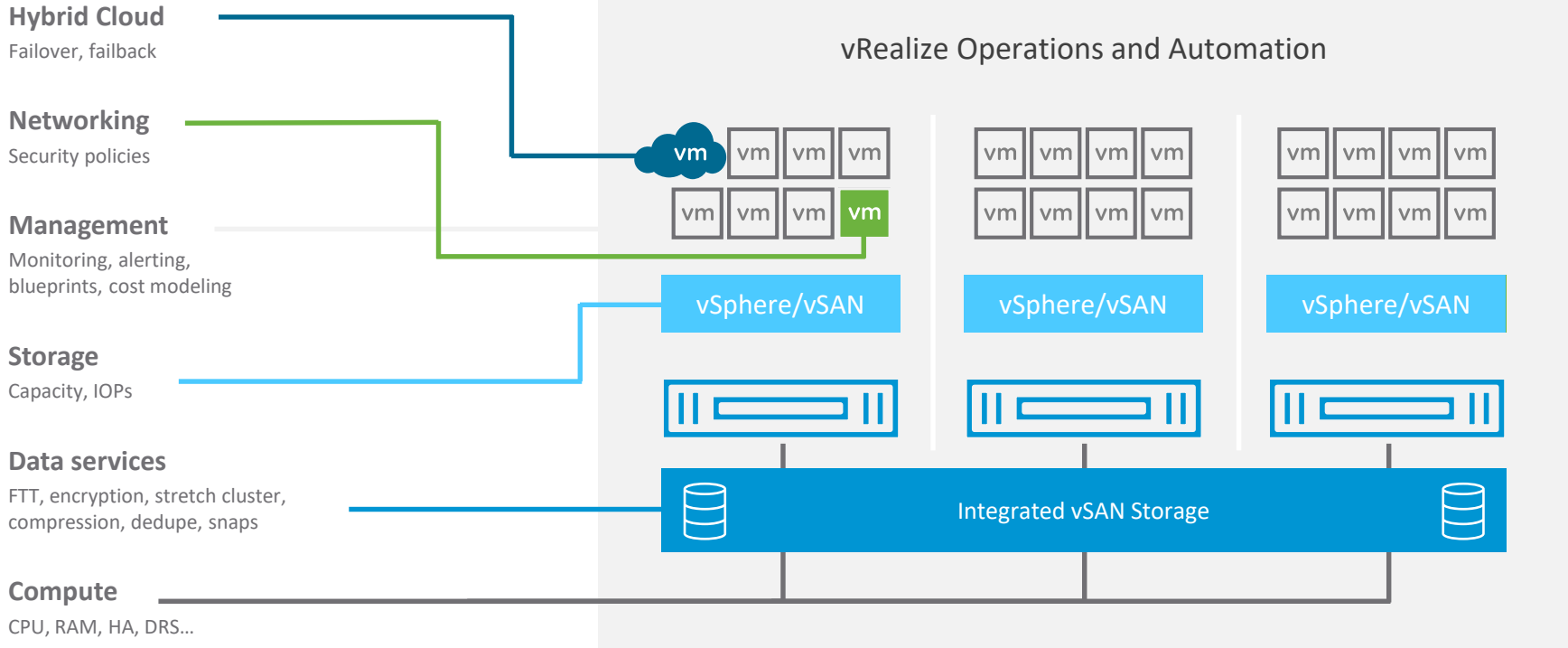
**Hybrid Cloud** ready with consistent operations model from DC to cloud



**Integrated data services** across Hybrid Cloud: data protection, file, governance



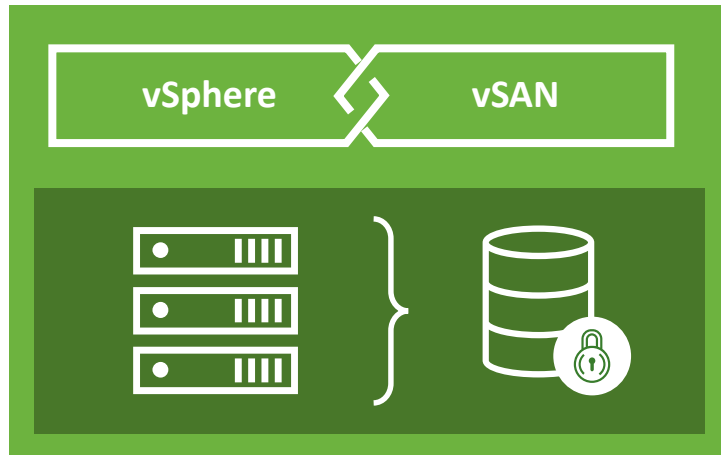
# HCI Introduces a Sleek New Operating Model





# vSAN: Any Server, Any Application, Any Cloud

Largest HCI Hybrid Cloud Ecosystem



## Natively Integrated for High-Performance Apps

Managed through per-VM storage policies with existing SDDC tools

## Industry Leading Deployment Flexibility

Runs on any standard x86 server; pools DAS into a shared datastore

## Edge to Core to Cloud Management

Simply and consistently deliver a unified environment ready to run any app, anywhere

# VMware Offers Most Flexible Deployment Options Across Clouds

## Private Cloud

Jointly  
Engineered  
System



vSAN  
ReadyNodes















## Public Cloud



CLOUD PROVIDER™  
PROGRAM

# Positioning vSAN ReadyNodes vs VxRail Appliance

Speed and Simplicity (Appliance) vs Choice and Flexibility (ReadyNode)

	Hardware Choice	vSphere Integration	Cloud Integration	Data Protection	Integrated Experience	
	 Set Configs	 Fully Integrated	 Cloud Array, VMware Cloud Provider Program	 Fully Integrated	 Low Touch Operations	 Full Integration VxRail Appliance
vSAN Ready Nodes	 Hundreds of Servers	 Fully Integrated	 AWS, IBM, VMware Cloud Provider Program	 Third Party Ecosystem	 Assembly Required	 Choice & Flexibility

# Why Customers are Deploying vSAN Today



Fully integrated  
SDDC stack,  
**Available Today**



**No new tools to learn**, vCenter is already familiar tool for unified management



**Deployment flexibility** on public and private clouds



**Most secure HCI solution** (vSAN now has FIPS 140-2 validated encryption for data at rest)



**Best price-performance** for VM consolidated workloads

# vSAN Opportunity is Huge

## Identify the HCI Sales Triggers

VMware Customers = 500k

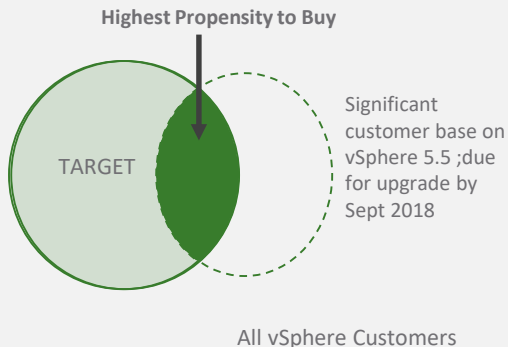
vSAN Attach  
>10k / 2.5%

### Best HCI Target?

#### Server Refresh



60% of vSphere customers due for server refresh by 2019



#### Data Center Expansion



Customers looking to expand

- Use cases (Business Critical Applications, VDI, ROBO, DR)
- New workloads and Next-Gen Applications

#### Storage Refresh



- Avoid costly SAN upgrades
- Complement existing storage with HCI powered by vSAN

# 1. Shorter & More Frequent HCI Sales Cycle vs Legacy Storage



Legacy Storage  
Sales Cycles are **Long**



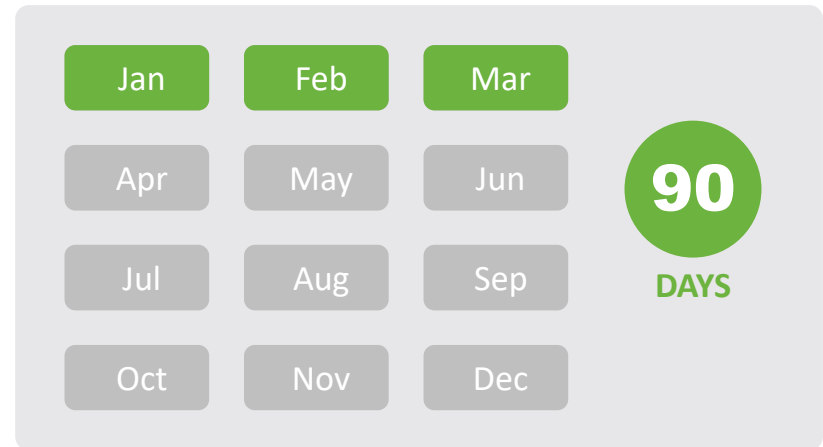
1 month for every \$100K

5-7 year life requires long-term planning

Fibre Channel planning and investment



HCI Sales Cycles  
are **Short**

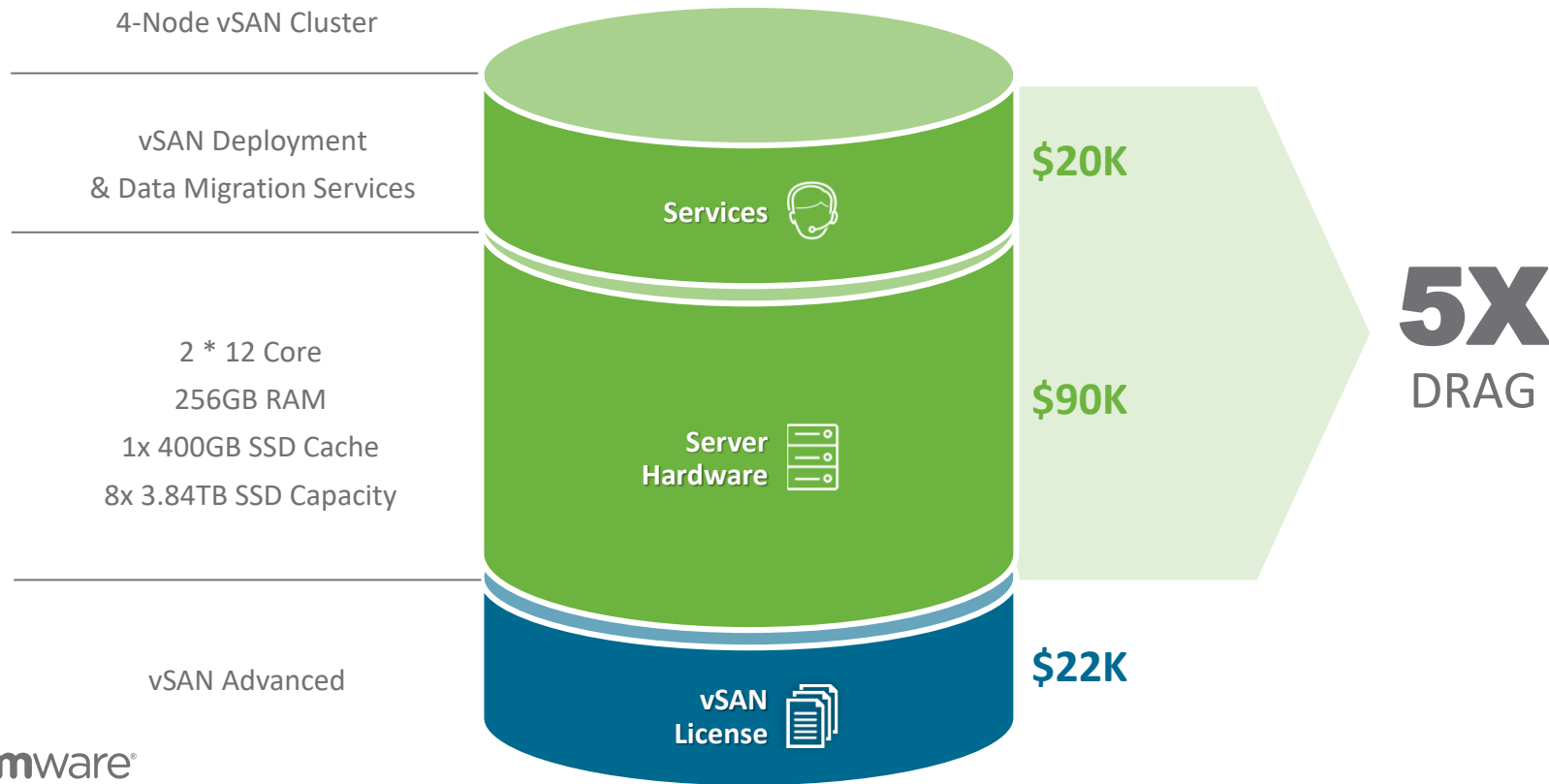


Sub \$100K price points

Appliance flexibility allows dynamic reconfiguration

Leverages Ethernet investment

## 2. Partner Opportunity is 5X on Top of vSAN



# VMWare vSAN – HCI Market Leader <sup>[1]</sup>

## Best vSphere Storage

- **Native HCI, Integrated with vSphere**  
Optimal data path, minimal compute overhead
- **Unified management experience & datacenter automation**  
Application centric, granular policy management (SPBM)

## Choice, Flexibility, Rich Ecosystem

- **Deployment options On-Prem & in Public Clouds**
  - Appliances & Integrated Systems - 15 OEM partners
  - Multiple public clouds offering vSAN HCI
  - Rich SW Ecosystem - back-up, data protection services

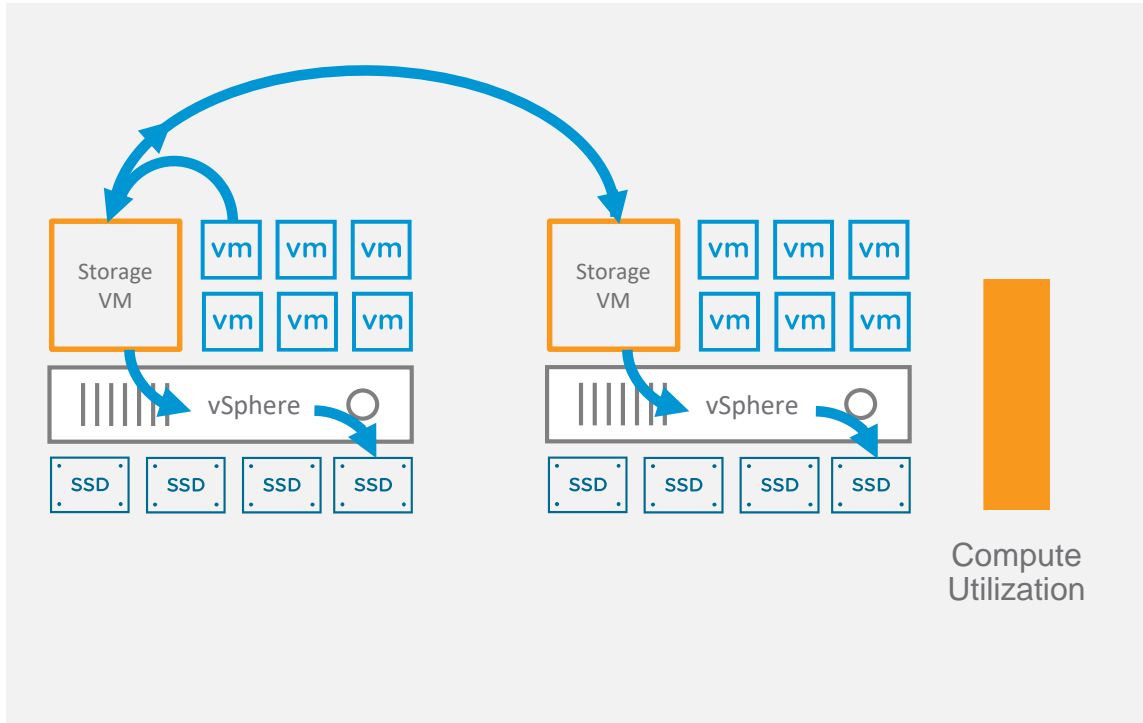
## Edge to Core to Cloud

- **Powering Multi-Clouds in Production TODAY**
  - Extend your applications - consistent and common control plane
  - Optimized for Cloud Native Apps & Containers
  - VMC storage services & DRaaS powered by vSAN

[1] vSAN holds 33% SOM in HCI – Source IDC, Dec2017



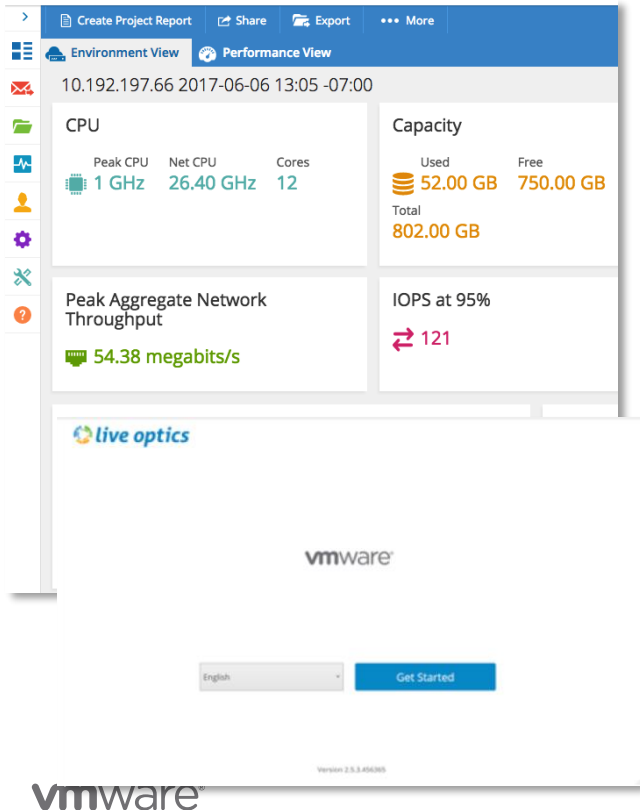
# HCI Solutions Are Not Created Equal



## Other HCI Solutions

- Resource-intensive storage Controller VMs on every host
- More hops, context switching, queues, and locks
- Host CPU and I/O amplification
- Fewer VMs per host, less consistent performance

# Call to Action : VMware HCI Assessment



1. **VMware HCI Assessment** is powered by industry leading **Live Optics** (formerly DPACK), a tool widely adopted among the SE community
2. **Data Zoning:** Data of all users of the VMware HCI Assessment will be **restricted and limited to VMware ONLY** and can therefore be run on ANY OEM platform
3. **Quick, Simple & Free** - Get results in 24-48 hours
4. **Graphically Presents Metrics for HCI (compute + storage)**
5. **Works on vSphere, Hyper-V and Physical Environments:** Opens up new markets as it allows assessment of non-ESXi environments
6. **Ability to Integrate with vSAN Sizer, DICE**

<https://app.liveoptics.com/register/vmware>

# Call To Action



## Visit the vSAN page on Partner Central

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### 1 Build Competency

- [HCI Training](#)
- 

### 2 Create Demand

- [Partner Demand Center](#)
- 

### 3 Arm & Sell

- Ad+ Incentives, Solution Rewards, Accelerator Bonus, HCI Kits Promo,
  - HCI Assessment Tool & HOL
  - vSAN Sizer & TCO
-

DELLEMC