

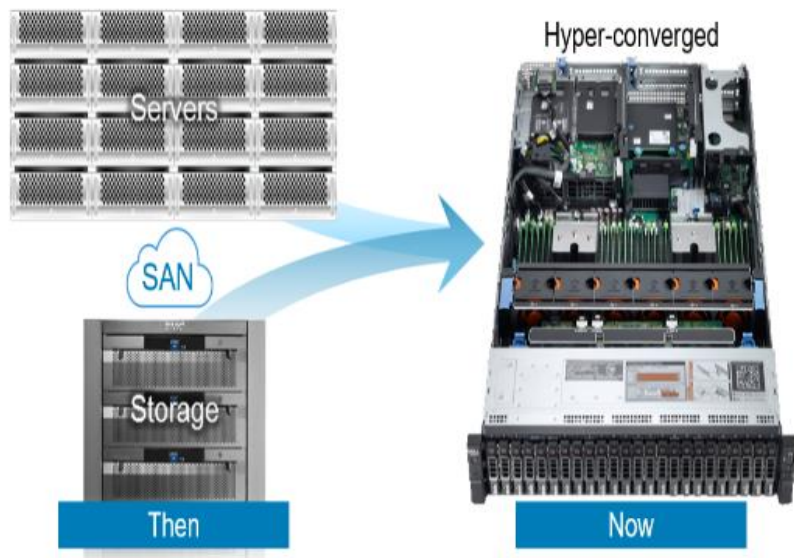
# Los Alamos County

## MUNIS Infrastructure Refresh Project

### EXECUTIVE SUMMARY



## Dell EMC Proposed VxRail



## VxRAIL™ = Only TRUE Hyperconverged Appliance

- Integrated compute, software-defined storage, networking, **AND** virtualization
- Engineered, Manufactured, Validated, Managed, and Supported **AS ONE**
- VSAN technology is integrated into kernel of vSphere Hypervisor
  - = no additional Virtual Storage Appliance (VSA) required for integration
  - = **more efficient and performant** than any other "HCI" vendor

### BUSINESS OUTCOMES:

- 20x Faster time to value vs. build it yourself
- 90% Less Time Keeping the Lights On
- Zero hours required for upgrade planning
- 99% Fewer Steps to Scale
- 30% Lower Power & Cooling

### TECHNICAL/OPERATIONAL OUTCOMES:

#### Speed increased because of SSD

- Single interface through VSphere – ease of management
- Eliminates SAN HCL and Lifecycle Management, e.g. 100% elimination of SAN data migrations
- Reduces risks and downtime- engineered experience vs manually configured experience

#### Simplicity with Agility

- 3-5X fewer management consoles, all management from within vCenter
- Reduces downtime and risk with full suite of enterprise data services, including data protection
- Architecture allows IT to flexibly scale on demand without overspending
- Single vendor approach (compute, network, storage, virtualization, backup)

#### Efficiency

- Continuously modernize with evergreen clusters
- VxRail allows an organization to consolidate infrastructure, introduces new way to eliminates yearly capital expenditures on separate environments (servers, networking, storage, etc.)
- Solution reduces monthly OPEX costs by shrinking the customer's IT footprint

### KPIs



**90%**  
Less Time to Manage



**20X**  
Faster Time to Value



**70%**  
Less Space



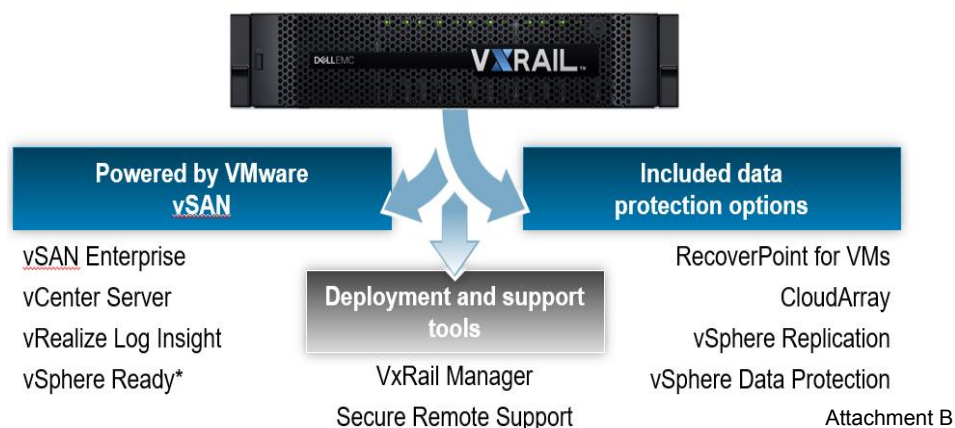
**40%**  
More CPU  
Performance



**2:1**  
Data Reduction

## What is inside VxRail?

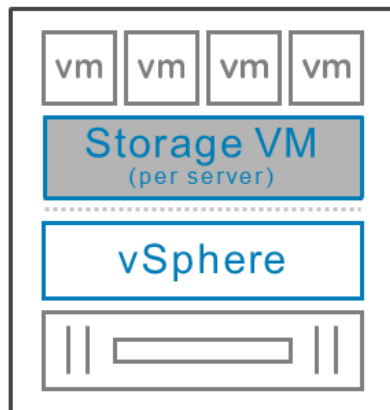
A full suite of capabilities included at no additional charge



- REPLICATION
- BACKUP
- CLOUD
- MARKET

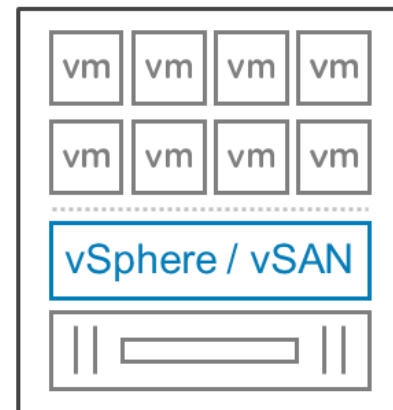
# In-kernel vSAN makes VxRail more efficient

TYPICAL HCI



- ⊗ Storage VM consumes resources
- ⊗ Data paths are inefficient
- ⊗ Management must be bolted on
- ⊗ Coarse storage management

VxRAIL WITH vSAN



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

## VxRail configuration flexibility for your workload

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

### Processor

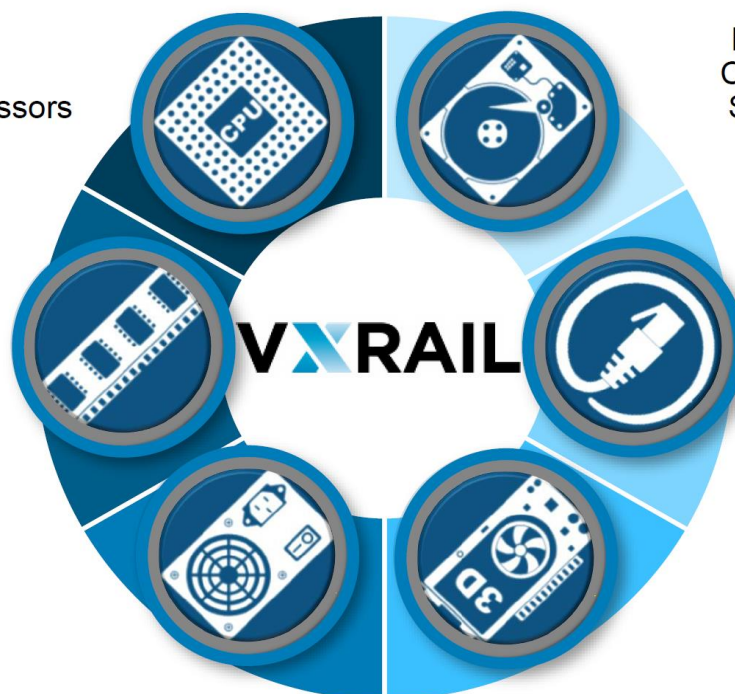
Choice of 38 Intel® Scalable® processors  
4 to 56 cores per system

### RAM

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

### Power supply

1100W	100-240V AC
1600W, 2000W	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

## Top Reasons Why VxRail

- 1. Fastest and easiest way to extend a VMware environment-** Dell EMC VxRail is the only fully integrated, preconfigured, and tested HCI appliance powered by VMware vSAN™
- 2. Flexibility and choice** with a wide range of platforms and configure-to-order hardware are designed to address any use case
- 3. Scalability and performance** to start small and grow, scaling capacity and performance easily and non-disruptively
- 4. Fully loaded with enterprise data services-** All-flash VxRail Appliances include efficient and in-line deduplication, compression, and erasure coding
- 5. Backup and recovery included-** VMware Data Protection (VDP) and RecoverPoint for VMs provides simple, efficient, and proven disaster recovery for VMware vSphere
- 6. Familiar management experience-** integrates into existing VMware ecosystem and utilize the management and orchestration tools
- 7. Single support model** single point of global 24x7 support for both the hardware and software

## Asset Links to Leverage

Top Reasons - [Why VxRail](#)

Data Sheet - [VxRail Data Sheet](#)

Infographic- [VxRail Infographic](#)

Video – [VxRail Customer Montage Video](#)

TCO Case Study – [Edison Group TCO study](#)

Spec Sheet - [VxRail Spec Sheet](#)

Analyst Paper- [Cost of Using Public Cloud](#)

Tech Book- [VxRail TechBook](#)

Video – [Data Recognition Customer Video](#)

## Customer Perspectives

LAND ROVER **BAR**

*“With old technology it was days before we could do anything useful with the data. Our VxRail Appliance enables the team to do some serious number-crunching for daily debriefs the minute they finish sailing.”*

LAND ROVER BAR's Quest for America's cup glory leaves no margin for error. Land Rover BAR has sharpened its competitive edge with a VxRail Appliance to accelerate collaboration on boat development and honing sailing tactics. Read the [Full Story](#).

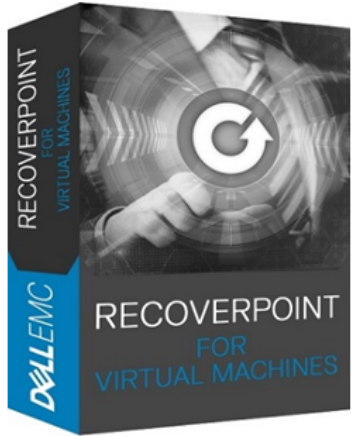
CSI Companies Customer [Video](#)

Fujifilm Medical Systems [Video](#)



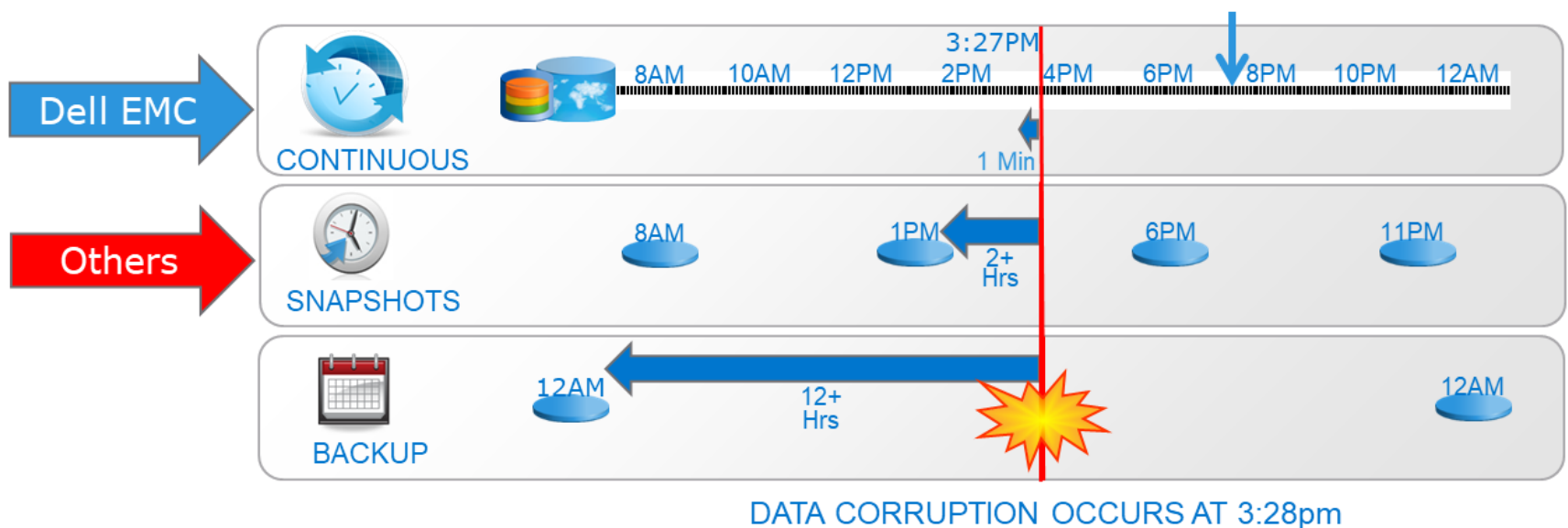
# Industry Leading Disaster Recovery Capabilities

## Advantages of RecoverPoint for Virtual Machines



- Disaster Recovery and Operational Recovery with **VM-level granularity**
- **Integrated Management & Orchestration** with VMware's vCenter GUI
- Performs **parallel replication capability** to on-premises and Disaster Recovery Site
- **Any point-in-time** protection per VM
- **Sync/Async** concurrent replication to local & remote copies
- Software Only - **Hypervisor based** replication solution
- **Storage agnostic** eliminating HW lock in, and providing a single solution to function as disaster recover console for entire environment

**DVR-like, ANY Point-In-Time access to data = Minimize Data Loss & Time to Recover**



## Advanced Recovery Orchestration









### Easily Recover single or multiple VMs







- **Manage replica VM IP setting**  
Script-less Re-IP management and automatic MAC address replication
- **Customize power-up sequence**  
Define VMs boot order within a consistency group, and between consistency groups
- **External scripts and user prompts**  
Set pre/post VM power-up operation, add delays for user operation/ time limited
- **Pre-define Failover Network**  
Pre-define Network settings for recovered environment and tests, or apply isolated network

# Dell EMC Proposed Solution

## Production Site

<b>VXRAIL<sup>™</sup></b> <b>E560F</b> 3 Node Cluster   3 Total Rack Units	
 <b>Processor</b>	Dual Silver 4116 2.1GHz 12C 24 cores per node   72 cores per cluster
 <b>RAM</b>	384GB (12x32GB RDIMM) per node 1152GB per cluster
 <b>Storage</b>	2 x 800GB SSD cache   0 open slot(s) per node 6 x 3.84TB SAS SSD   2 open slot(s) per node <i>Effective Capacity: ~28.4TB (Acct for DS)</i>
 <b>Networking</b>	4x10GbE SFP+ Add-on NIC: None 2x 10GbE Switch: Dell S4112F SFP+
 <b>GPU</b>	None
 <b>Power Supply</b>	1100W 100-240V AC
<b>Licensing</b>	vSphere Enterprise+ vSAN Advanced Backup Software: None Licenses for 6 sockets
<b>Professional Services</b>	ProDeploy
<b>Support</b>	36 Months ProSupport MC HW/SW

## Disaster Recovery Site

<b>VXRAIL<sup>™</sup></b> <b>S570</b> 3 Node Cluster   6 Total Rack Units	
 <b>Processor</b>	Dual Silver 4116 2.1GHz 12C 24 cores per node   72 cores per cluster
 <b>RAM</b>	384GB (12x32GB RDIMM) per node 1152GB per cluster
 <b>Storage</b>	2 x 800GB SSD cache   0 open slot(s) per node 7 x 4.00TB 7.2k HDD   5 open slot(s) per node <i>Usable Capacity: ~28.1TB (Acct for Overhead)</i>
 <b>Networking</b>	4x10GbE SFP+ Add-on NIC: None 2x 10GbE Switch: Dell S4112F SFP+
 <b>GPU</b>	None
 <b>Power Supply</b>	1100W 100-240V AC
<b>Licensing</b>	vSphere Enterprise+ vSAN Standard Backup Software: None Licenses for 6 sockets
<b>Professional Services</b>	ProDeploy
<b>Support</b>	36 Months ProSupport MC HW/SW

- All Sizing shown accounts for 20% buffer on capacity to remain within best practices and to provide conservative estimates.
- All Flash Data Reduction estimates based upon conservative 1.25:1 reduction estimate

### Included Components in Proposal

- 3 Node VXRail E560F Cluster for Production (Details Above)
- 3 Node VXRail S570 Cluster for DR Site (Details Above)
- 4x (2 per site) Dell 4112 10GbE top of rack switches
- VMware vSphere Enterprise+ - 12x CPU Licenses
- 30 Recoverpoint for VM licenses for Replication and DR
- 36 Month Support for All Components – 4hr Onsite Response
- 5K Value in VXRail & VMware Training Credits

### Professional Services Included

- Dell ProDeploy Implementation and configuration for VXRail cluster and S4112 Switching for production and DR sites
- Switch configuration service optimized for HCI
- RP for VM installation for DR failover between sites

Los Alamos CountyMUNIS VXRail Investment Summary		
List Price	\$	641,489.38
Negotiated Discount	\$	(290,864.91)
Dell Q2 Discounts (Exp 7/31/2019)	\$	(51,329.10)
<b>VXRail HCI * VMware Subtotal</b>	<b>\$</b>	<b>299,295.37</b>

**Total Solution Investment\* \$ 299,295.37**

\*Pricing shown does not include tax or freight Attachment B

# FUTURE-PROOF

## LOYALTY PROGRAM

The Future-Proof Loyalty Program is a customer facing program designed to provide investment protection with a set of world class technology capabilities and programs that will enable Dell EMC's Storage, Data Protection, and Hyper-Converged Infrastructure (HCI) products to provide value for the entire lifetime of the customer's applications. The Future-Proof Loyalty program is different because it is available to customers at no additional cost either in terms of higher maintenance price or higher product price. The Dell EMC Program leverages the strength of Dell Technologies to offer the industry's strongest satisfaction guarantee: 3 years versus our competitors who provide 30 days for their programs.



We guarantee 3 years of storage, data protection, and hyper-converged product satisfaction. If the product does not perform to specification, and Dell EMC cannot remediate, customers will be refunded their purchase (prorated based on 36 Month depreciation)



Always trade-in existing or competitive systems for credit towards next gen Dell EMC storage, data protection, or HCI product offerings



Get consistent and predictable maintenance pricing and services for your storage, data protection, and hyper-converged products. Future renewal cost is predictable and fixed throughout the service life of the product.



Everything you need to store and manage your critical data is included with your Dell EMC storage and HCI purchase

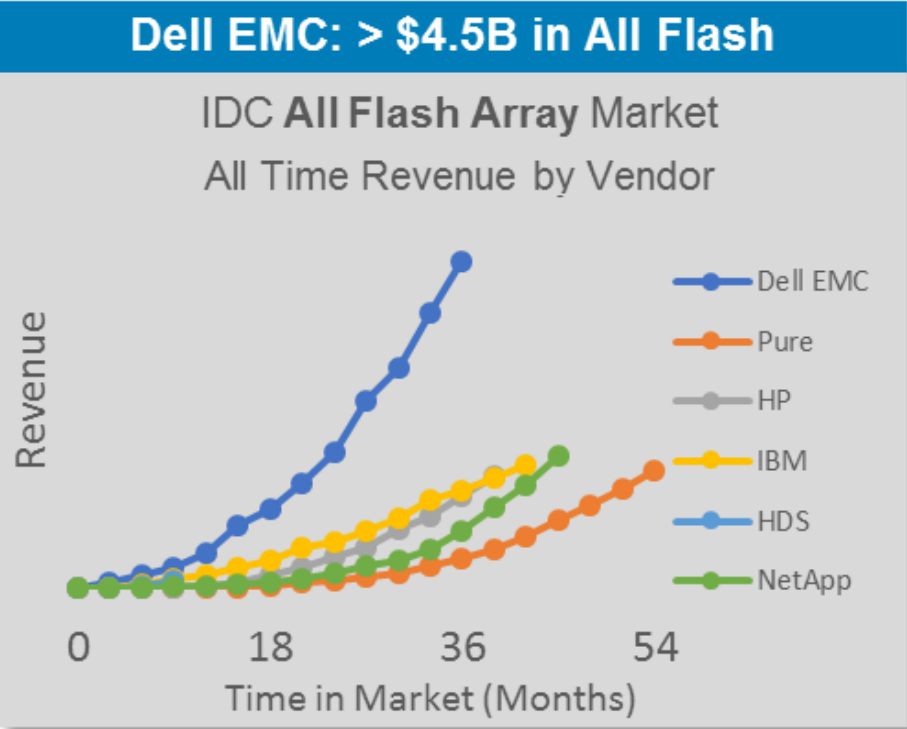


It's always simple to move to next generation storage and hyper-converged solution with seamless upgrades and built-in data migration tools

# PARTNERING WITH DELL EMC



Market Leader in All Infrastructure Categories



IDC Hyperconverged Infrastructure

