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Dell Technologies Sales Team

Thomas Mack
Supervisor Sales
+49 89 4208 – 2537
Thomas.Mack@ingrammicro.com

Dell Technologies Pre-Sales Team

Michael Fischhold
System Engineer
+49 89 4208 – 2797
Michael.Fischhold@ingrammicro.com

Nikola Grujicic
System Engineer
+49 89 4208 – 1035
Nikola.Grujicic@ingrammicro.com

Philipp Lehnart
System Engineer
+49 172 - 285 9691
Philipp.Lehnart@ingrammicro.com

Dell Technologies Außendienst

Manfred Honsdorf
Key Account Manager
+49 172 - 102 9012
Manfred.Honsdorf@ingrammicro.com

Martin Schnelldorfer
Senior Key Account Manager
+ 49 152 – 288 88301
Martin.Schnelldorfer@ingrammicro.com

Özhan Bakar
Technical Sales Consultant
+49 89 4208 – 2728
Oezhan.Bakar@ingrammicro.com

Katrin Klose
Technical Sales Consultant
+49 89 4208 – 3351
Katrin.Klose@ingrammicro.com

Max Riedel
Senior Sales Consultant
+49 89 4208 – 1684
Max.Riedel@ingrammicro.com

Natasa Stojanovic
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+49 89 4208 – 3285
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Hristiana Staenova
Sales Consultant
+49 89 4208 – 3747
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Gabriele Yordanova
Sales Consultant
+49 89 4208 – 3755
Gabriele.Yordanova@ingrammicro.com

Martina Geßl
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+49 89 4208 – 1470
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+49 89 4208 – 34611
Markus.Ungnader@ingrammicro.com

Dell Technologies Business Management Team

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Senior Business Development Manager
+49 89 4208 – 1306
Martina.Kern@ingrammicro.com

Thorsten Lieser
Business Development Manager
+49 89 4208 – 2136
Thorsten.Lieser@ingrammicro.com

Rouven Scharrenberg
Business Development Manager
+49 89 4208 – 2071
Rouven.Scharrenberg@ingrammicro.com

Ludwig Steffel
Product Manager Marketing
+49 89 4208 – 1785
Ludwig.Steffel@ingrammicro.com

Ramona Klix
Marketing Manager
+49 89 4208 – 3386
Ramona.Klix@ingrammicro.com

DellEMC@ingrammicro.com
089 4208 – 2020

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VxRail For Hybrid Cloud and More

7.April 2020
Christian Stein,
Adv. PSE, Global Distribution Group
Christian.stein@dell.com

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VxRail By the Numbers

Fastest Growing HCI System[1]

7000+ Customers

$2B Annual Revenue

132% Growth Rate

79K+ Nodes

1. For Q4 2019 year-over-year among TOP 10 product brands.

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HCI Trends in 2019 – continue 2020

Data center modernization

Continues to simplify and transform IT operations

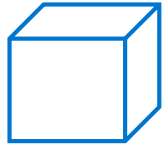
Edge computing growth

More AI, ML and IOT driving compute at edge locations

Hybrid cloud acceleration

Delivers consistent infrastructure and operations

Cloud-native adoption driver



HCI will power cloud native and container adoption

CONTINUED INNOVATION

New consumption models | New data services | AI / ML for self-diagnosis

Next-gen processors | NVMe | 5G | 100GbE | Enhanced serviceability

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Dell EMC VxRail

The fastest & simplest path to IT outcomes in VMware environments

Turnkey experience

- Flexible Licensing
- RESTful APIs
- Platform Innovation

Lifecycle management

- One-click Upgrades
- Serviceability

Highly differentiated

- Operational Transparency
- SmartFabric Services
- Advanced analytics

Dell – Internal Use – Confidential

VxRail – platform for Edge, Core & Cloud

Turnkey experience

Lifecycle management

Highly differentiated

Cloud native adoption driver

Pivotal

VMware PKS

Data Center-as-a-Service:
VMware Cloud on Dell EMC

Cloud Platform:
Automated and accelerated hybrid cloud

vmware Cloud Foundation™

Enterprise edge – starting at 2 nodes

Upgrade, refresh or expansion of modern data center

Custom and guided hybrid cloud architecture

vmware VALIDATED DESIGNS

EDGE

CORE

CLOUD

DELL EMC

*Source: 1 Among TOP 5 product brands., IDC Quarterly Converged Tracker, Q1 2019. Hyperconverged Systems product category, vendor revenue (US$M) June 2019

Dell Technologies Cloud on VxRail with VCF

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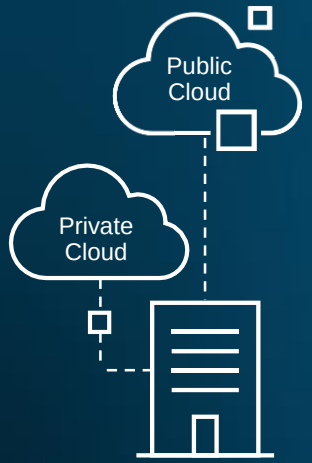
Customers Want Multiple Clouds

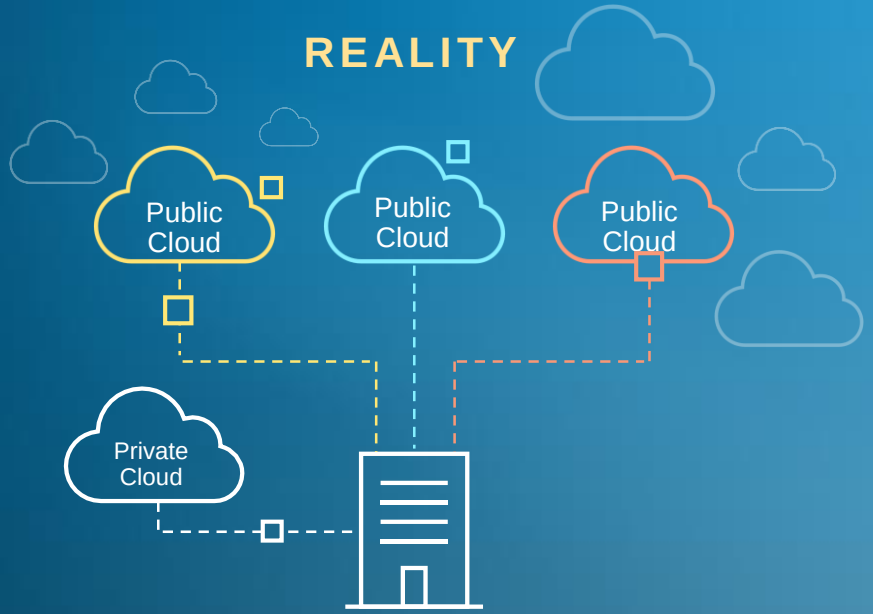
93%[1]

of customers will deploy workloads across two or more clouds[1]

EXPECTATION



REALITY



Leading to Operational Silos without the possibility of moving workloads between these silos

[1] IDC White Paper, sponsored by Cisco, Adopting Multicloud — A Fact-Based Blueprint for Reducing Enterprise Business Risks, June 2018.

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The future is multi-cloud

Competition drives innovation and the creation of new services

165 Services

251 Services

101 Services

Alibaba Cloud

IBM Cloud

. . . . .

Dell EMC wants to help our customers leverage all these services, not just a subset

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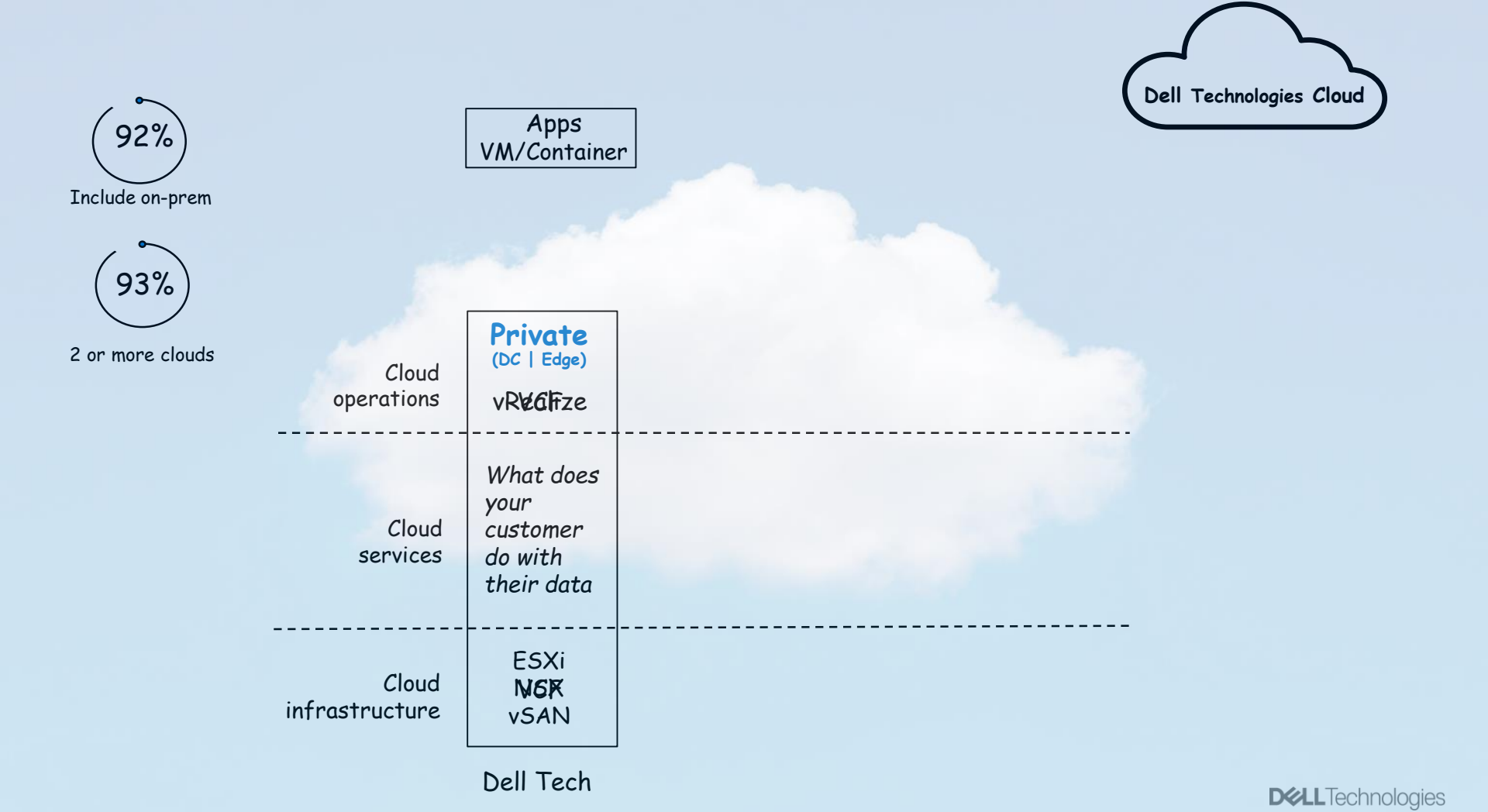

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Multi-Cloud

92%

Include on-prem

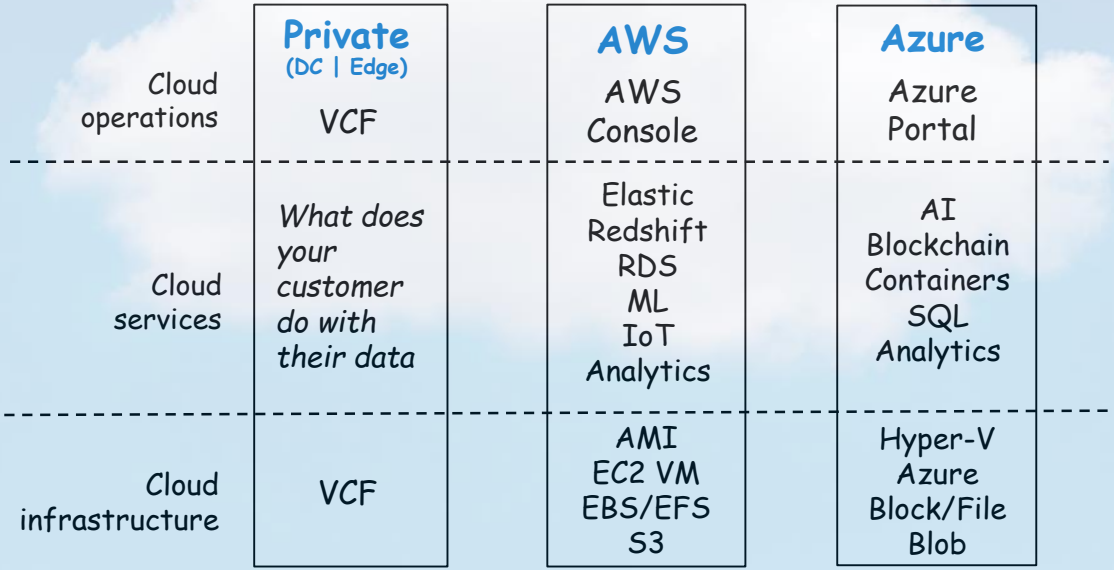
93%

2 or more clouds

App incompatibility

Apps VM/Container ⟷ Apps VM/Container ⟷ Apps VM/Container

Dell Technologies Cloud



Operational silos

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Hybrid Cloud

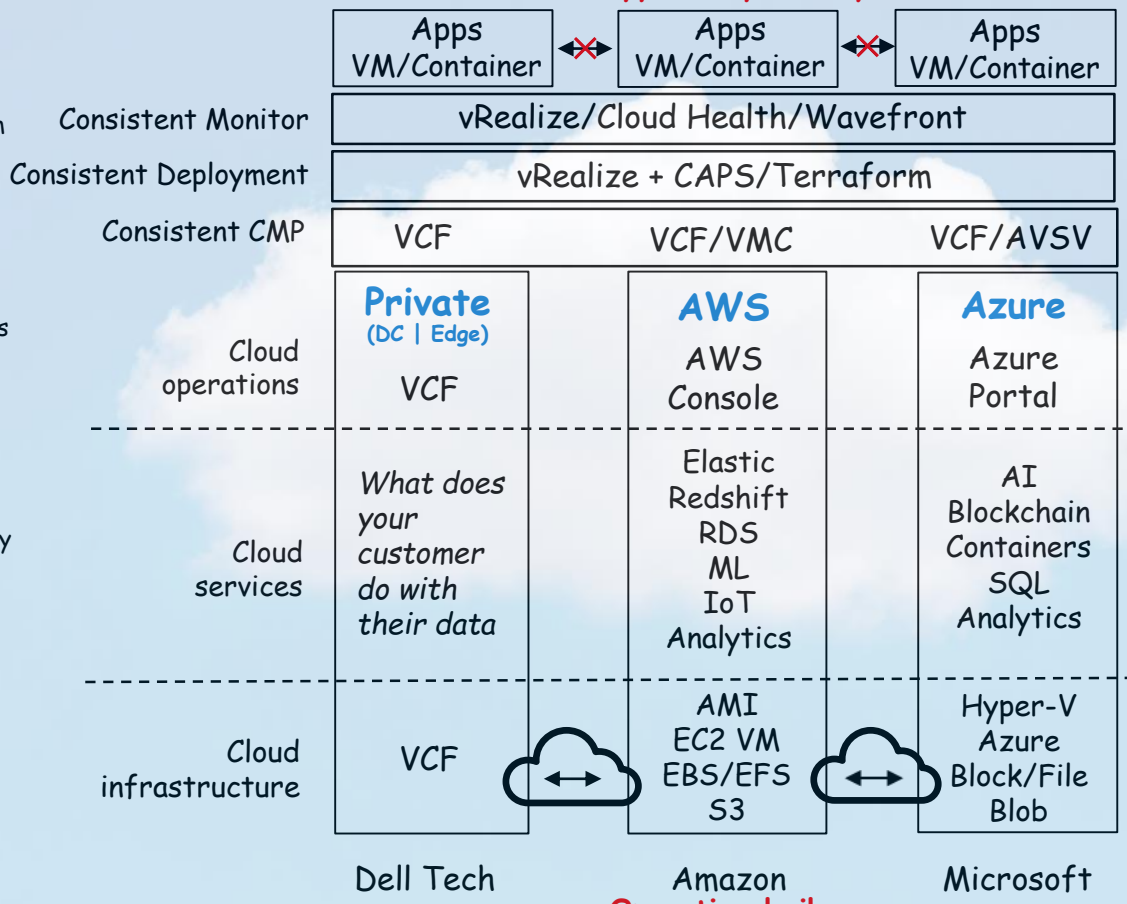
App incompatibility

92%
Include on-prem

93%
2 or more clouds

83%
Value consistency

47%
TCO



Operational silos

Dell Technologies Cloud

✓ App placement agility

✓ 4300 CSP partners

✓ Flexibility and choice

✓ Cloud Data Services

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The Dell Technologies Cloud

#1 Global Provider of Cloud Systems Management Software[1]

#1 Global Provider of Hyperconverged Infrastructure Software[3]

ONE cloud strategy…

#1 Globally in Cloud IT Infrastructure Revenue[2]

[1] IDC Worldwide Quarterly Cloud System Management Software Market Shares September 2018 – Doc #US44282218
[2] IDC Worldwide Quarterly Cloud IT Infrastructure Tracker, March 2019
[3] IDC Worldwide Hyperconverged Infrastructure Software, Apr 2019

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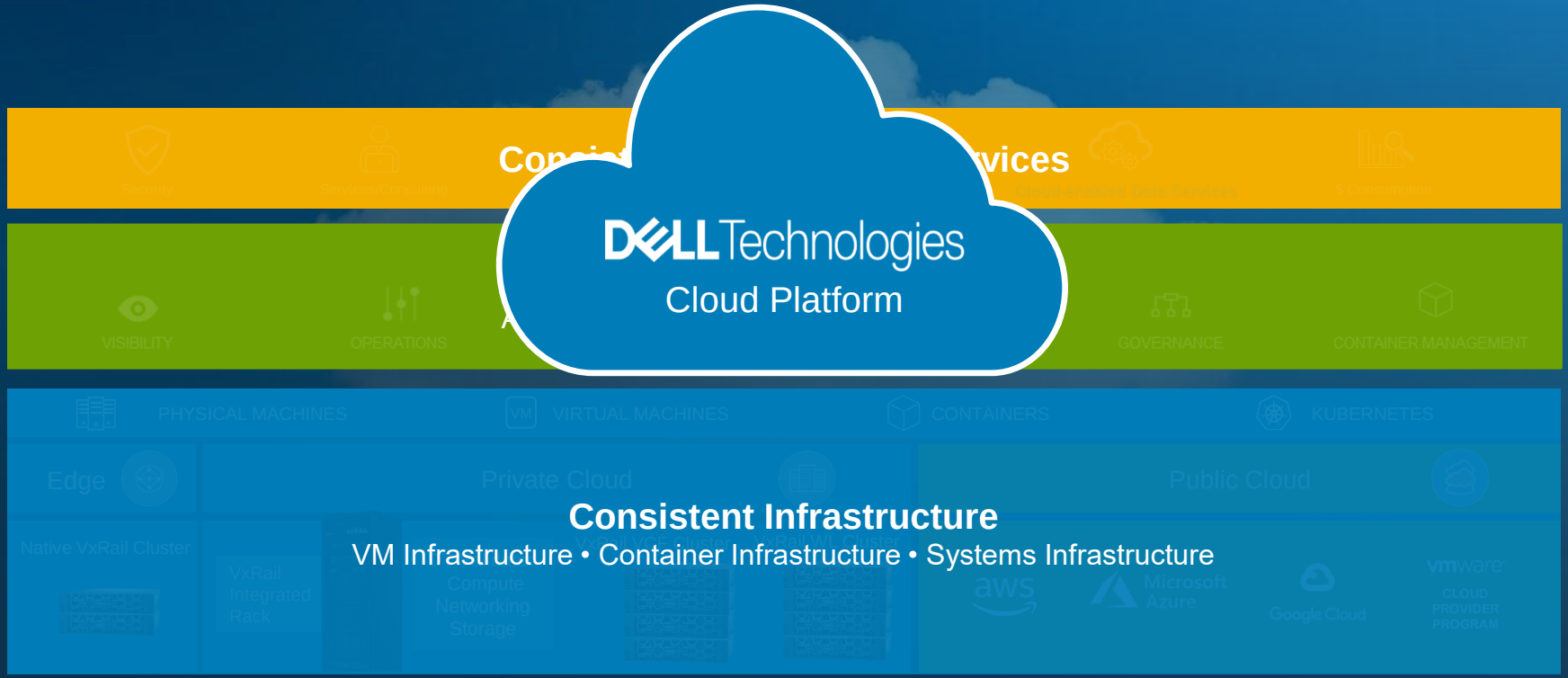
Dell Technologies Cloud Platform

The complete portfolio for the Hybrid Cloud Journey with Dell EMC HCI and VMware VCF



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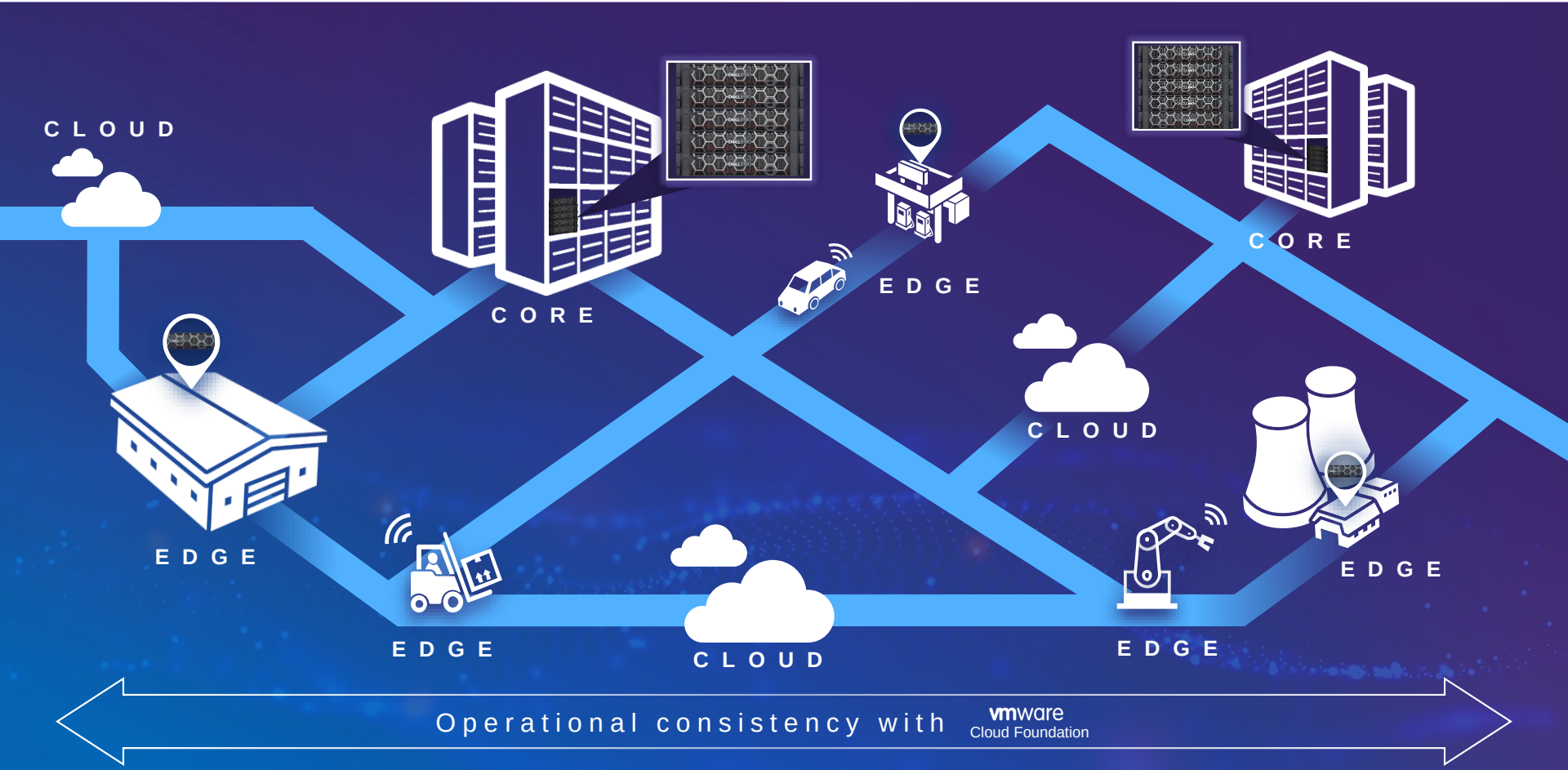
EDGE ⟷ CORE ⟷ CLOUD
CLOUD
CORE
EDGE
CORE
CLOUD
EDGE
EDGE
CLOUD
EDGE
EDGE
Operational consistency with vmware Cloud Foundation

EDGE

CORE

CLOUD

Business Edge

Small footprint, easy to deploy

Optimized for data retention and flexibility

Data can be replicated to core data center

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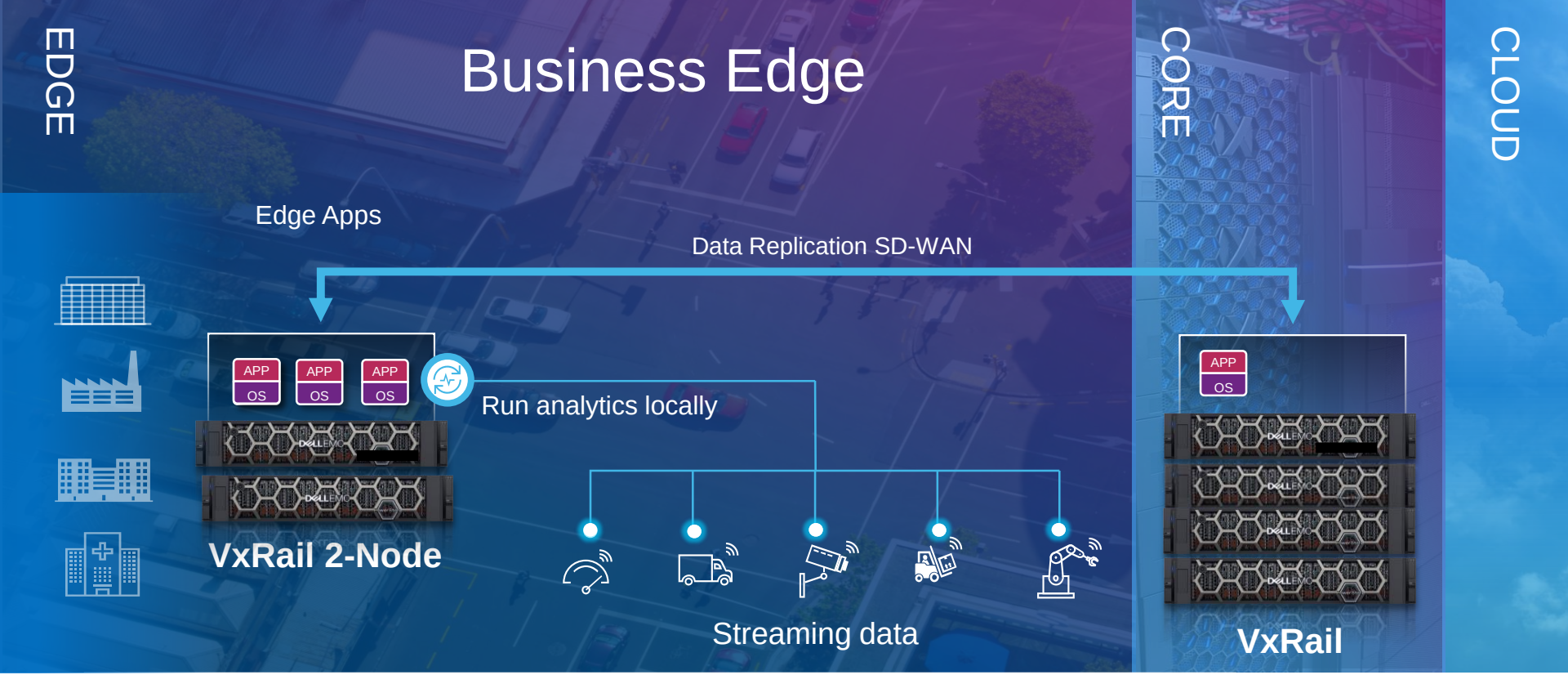
Business Edge



Small footprint, easy to deploy

Optimized for data retention and flexibility

Data can be replicated to core data center

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EDGE

CORE

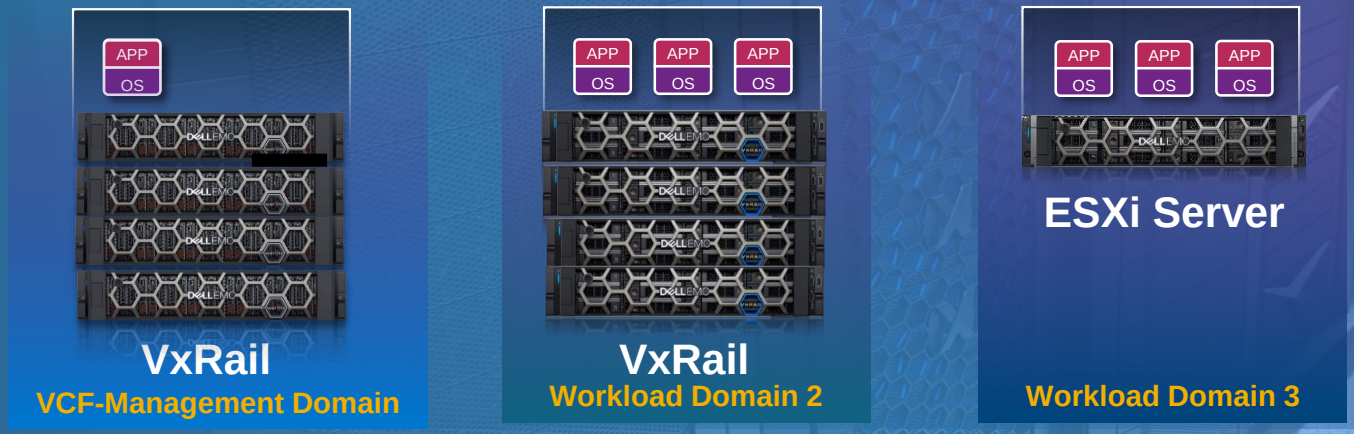
CLOUD

Data center modernization

Cloud Validated Designs

vmware Cloud Foundation

Move VMs with vMotion



Utilizes existing infrastructure investments

Complements existing HCI

Landing zone for VCF workloads

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EDGE

CORE

CLOUD

Multi-cloud access

Cloud Validated Designs

vmware Cloud Foundation

Operational consistency

Application and data migration

Seamless application mobility with VCF

Multi-cloud for workload migration, analytics, test/dev

Scalable, resilient cloud-attached storage

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VxRail 2-Node

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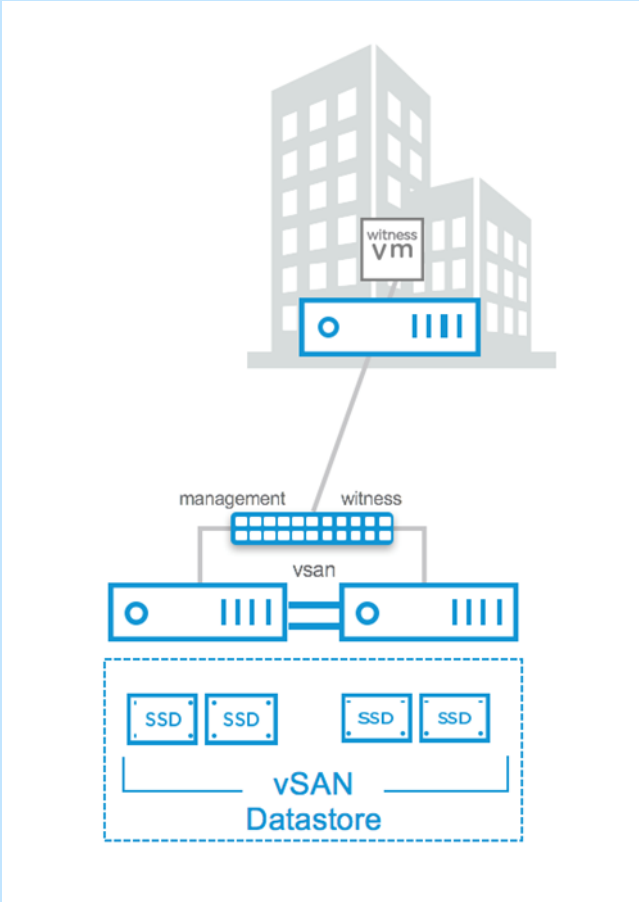
VxRail Deployment Options

- **Cluster deployment type**
  - Standard VxRail cluster
  - VVD
  - VCF
  - Dell Technologies Datacenter-as-a-Service
  - ***2-node vSAN cluster***
  - Stretched cluster

- **2-node Deployment**
  - Leverage customers' *existing* VMware infrastructure for witness
    - No automated install of witness
    - Witness status monitoring
      - Healthy, disconnected, maintenance mode, shutdown)
  - Direct connect or switched
    - Nodes connected with cross-over cables
    - 10/25GbE switch required for switched



VxRail Stretched Cluster

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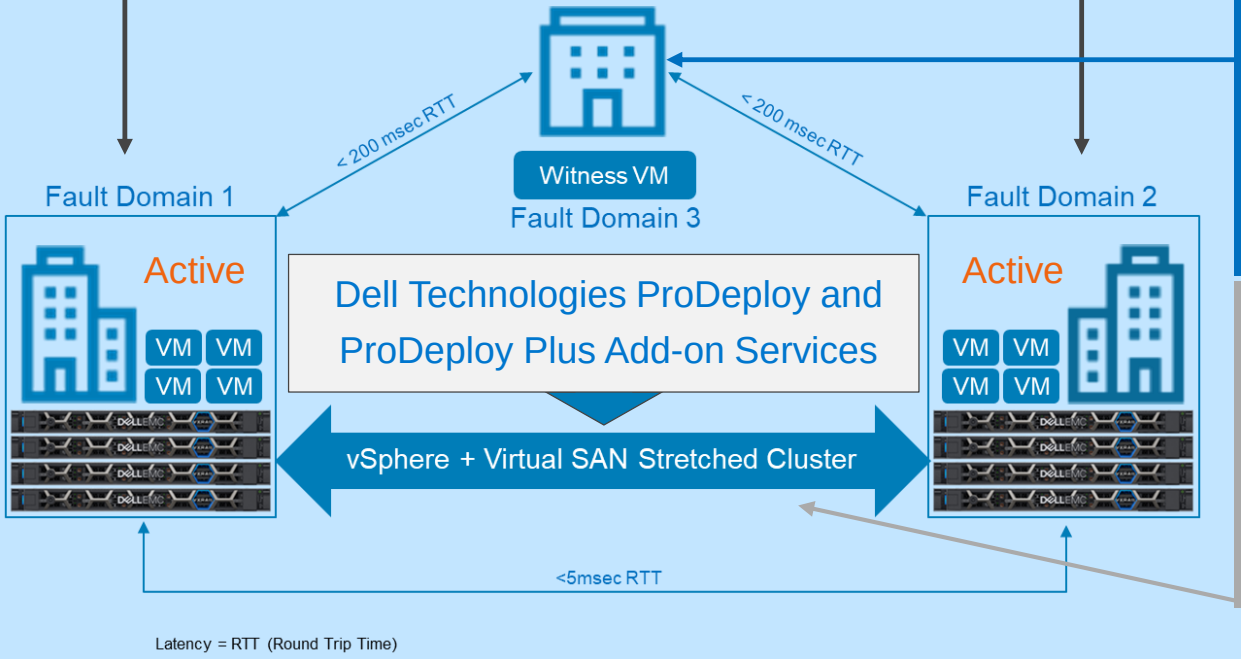
Elements of a stretched cluster

All virtualization hosts are part of the same logical cluster but housed in separate locations in an active/active configuration.



A witness host housed in a third location coordinates data placement between sites and assists in the failover process in the event of a failure.

The vSAN Stretched Cluster feature ensures an entire site failure can be tolerated with no data loss and near zero downtime.

Latency = RTT (Round Trip Time)

DELL Technologies

Configuration parameters of a stretched cluster

- *Preferred or Primary site* – one of the two data sites that is configured as a vSAN fault domain.
- *Secondary site* – one of the two data sites that is configured as a vSAN fault domain.
- *Witness host* – a dedicated ESXi host or vSAN witness appliance that is host to the witness component which coordinates data placement between the preferred and secondary site. It also helps with the failover process. This is the third fault domain.

The vSAN storage policies that impact the VxRail Cluster configuration are:

- *Primary Failures to Tolerate (PFTT)1/Failures to Tolerate (FTT)* – for stretched clusters this rule has two possible values: 0 ensures protection on a single site; 1 enables protection across sites.
- *Secondary Failures to Tolerate (SFTT)* – This term is used in vSAN 6.6/VxRail 4.5.070 or later. The rule that defines the number of host and device failures that a virtual machine object can tolerate in the local site. Possible values: 0,1,2,3.
- *Failure Tolerance Method*- either RAID-1 (mirroring) used when performance is important or starting with vSAN 6.6/VxRail 4.5.070, RAID-5/6 (erase coding) used when capacity is important. For stretched clusters, this policy only applies to the SFTT setting. This failure tolerance method is the local file protection mode.
- *Affinity (only applicable starting with vSAN 6.6/VxRail 4.5.070)* - this policy is applicable when PFTT is set to 0. It is set to preferred or secondary to determine which site stores the vSAN object.

https://www.dellemc.com/resources/en-us/asset/white-papers/products/converged-infrastructure/h15275-vxrail-planning-guide-virtual-san-stretched-cluster.pdf

VxRail: Automated Life-Cycle Management

Unlock Innovation

RAPID PATCHING AND UPDATING

Automated patching to keep pace with innovation
Single click update entry to full stack updates
Upgrade time estimates enable better business alignment

Foster operational freedom

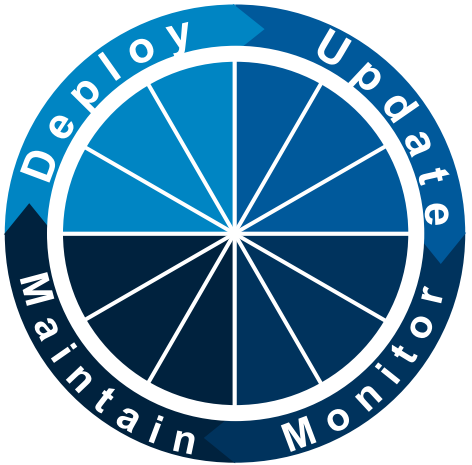
STREAMLINED CLUSTER UPGRADES

Schedule upgrades at your convenience
Only update needed components
Pre-stage next nodes for time savings

Evolve predictably

NON-DISRUTPTIVE END TO END UPDATES

Non-disruptive End to End Upgrades
Stretched cluster updates
$5M per year lab investment



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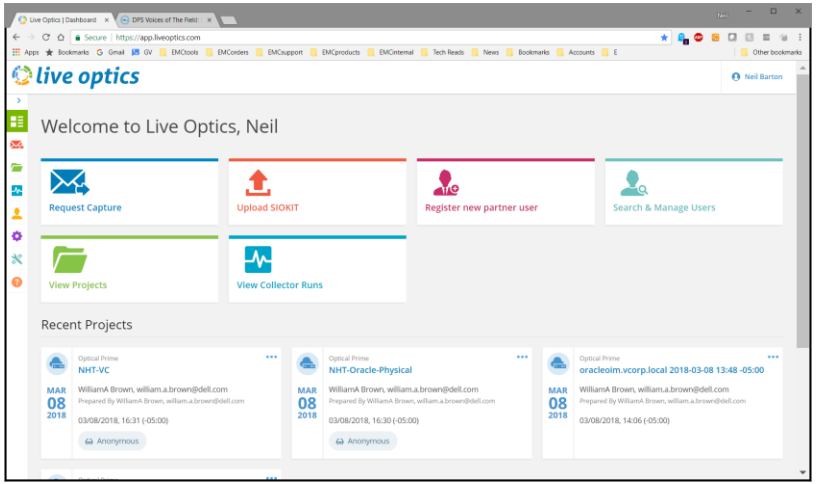
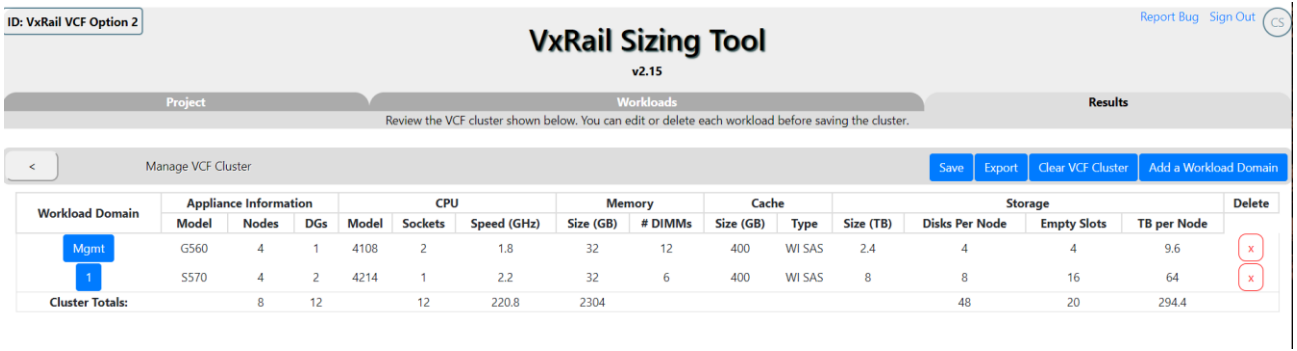
Size Your VxRail Cluster



Live Optics http://www.liveoptics.com

https://vxrailsizing.emc.com/



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VxRail for HPC and AI in the Core

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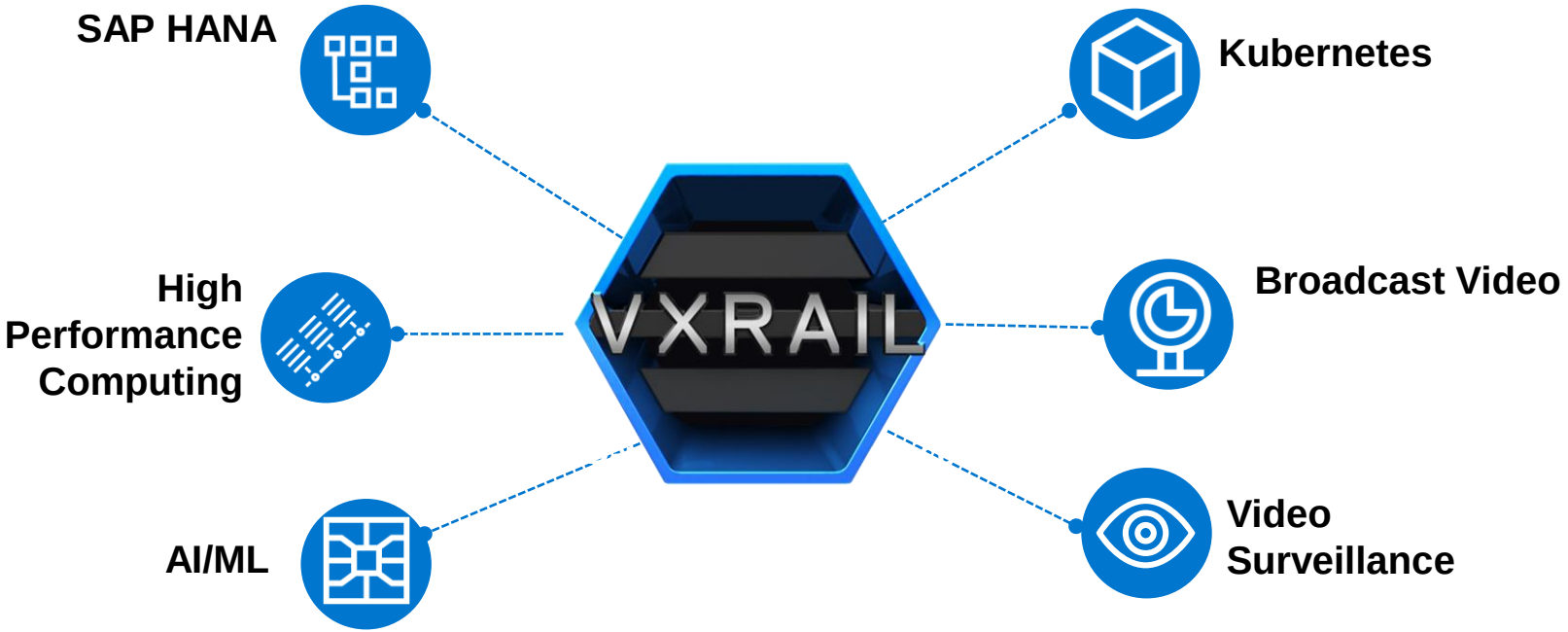
Expand Workload Possibilities

Unlock innovation and modernize the data center



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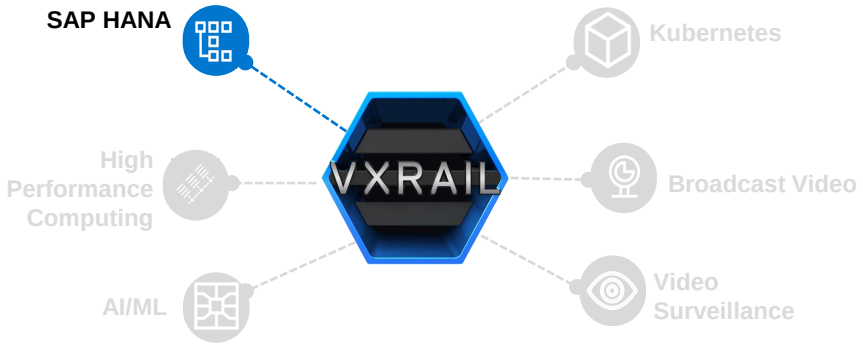
Expanding Platforms for Business-Critical Workloads

New VxRail P580N model

- Features four-socket PowerEdge server platform with 2nd Generation Intel® Xeon® Scalable Processors delivering 2x the memory per system*
- Ideal for in-memory intensive database applications including SAP HANA workloads, offering 25% potential processing enhancement over VSA based solutions
- First performance optimized P series 2U platform with all NVMe



*Up to 6144GB RAM

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High Performance Cost Effective Platforms

- New! E560N designed to run complex workloads including data warehouses, ecommerce, databases, and high-performance computing (HPC)
- New! NVIDIA T4 GPUs in E series platforms, for deep learning, AI/ML, data inferencing and of course VDI workloads.
- Addition of 7.68TB value SSD, doubles the capacity of all flash platforms

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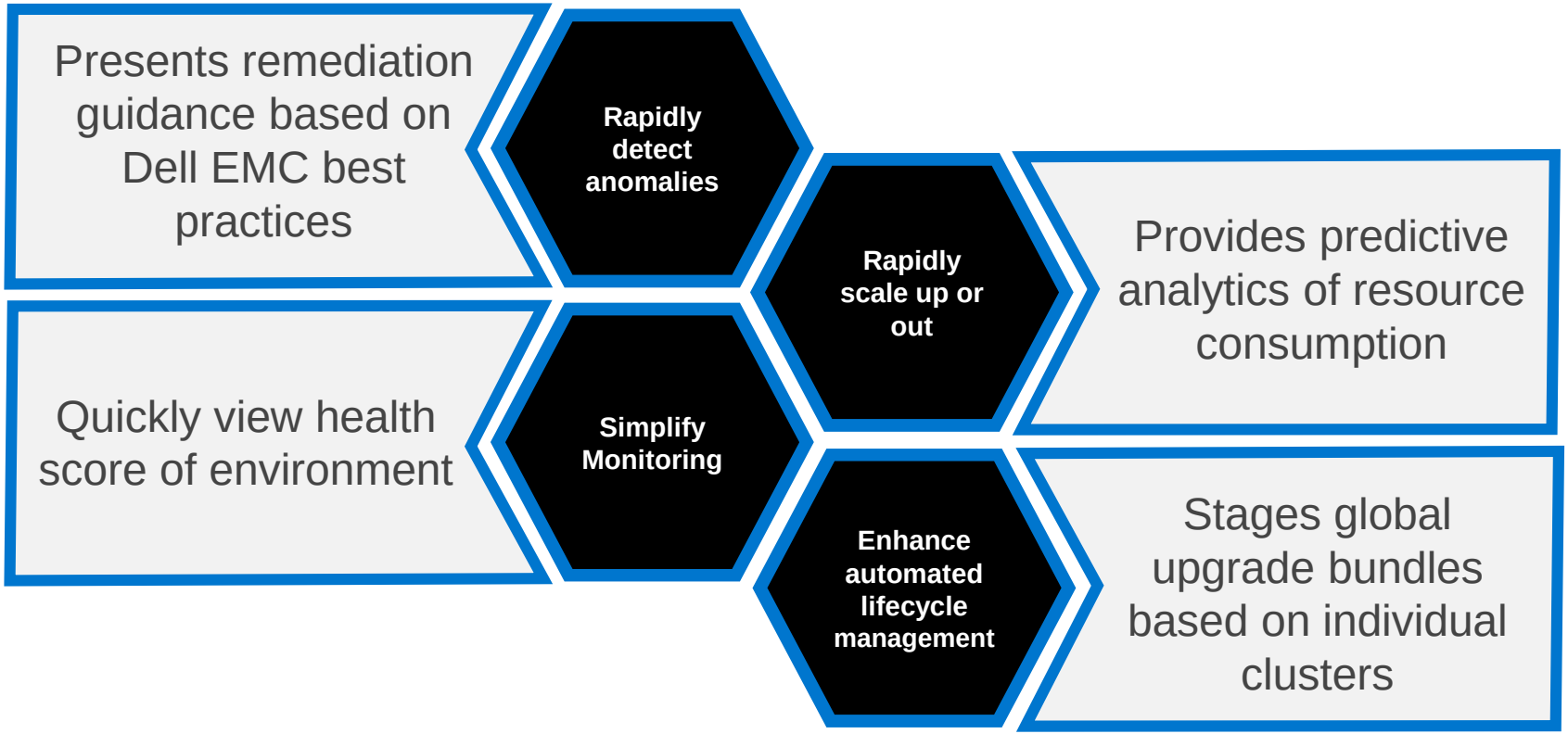
Simplified Operations with VxRail ACE



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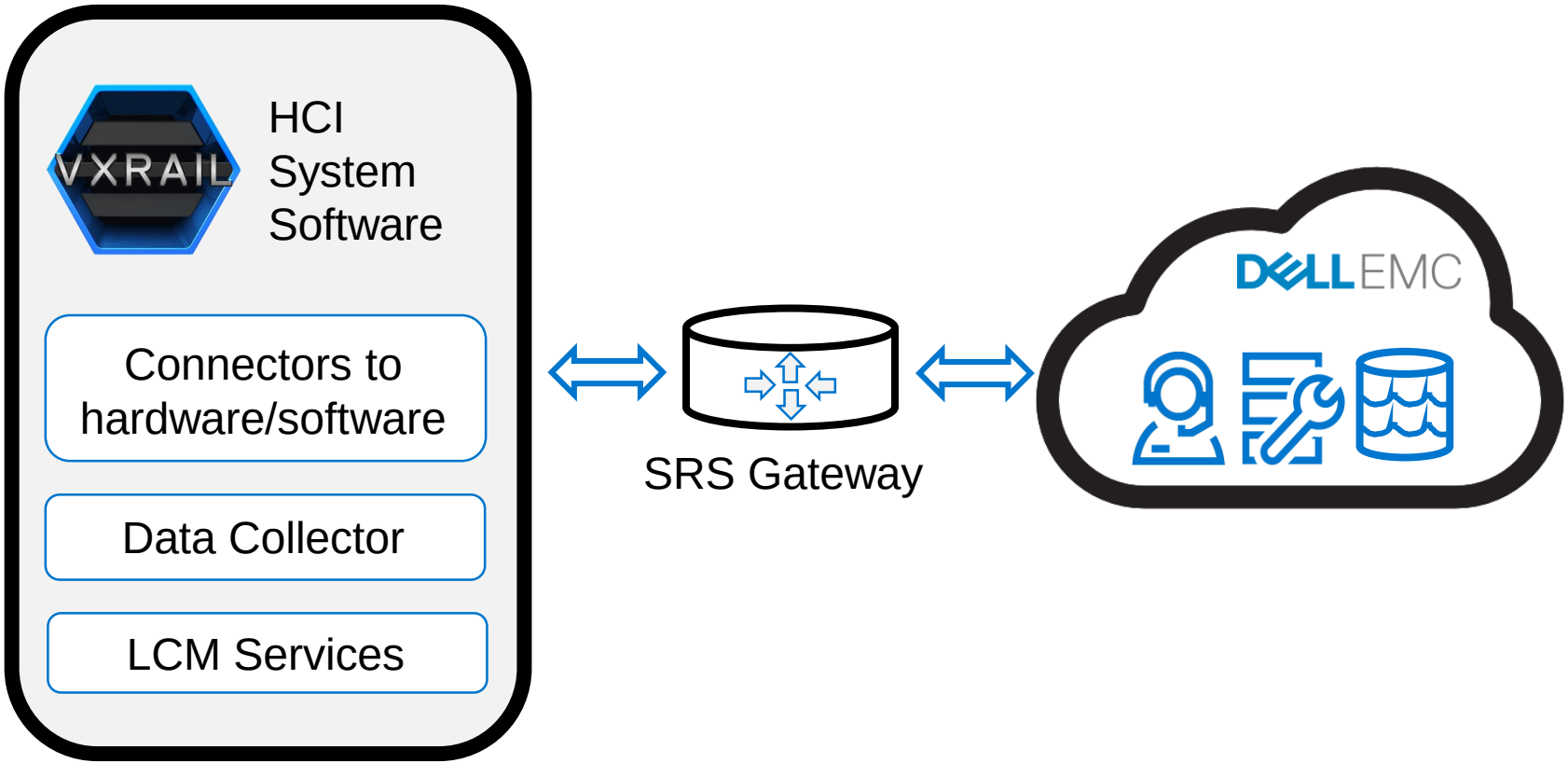
ACE Connectivity



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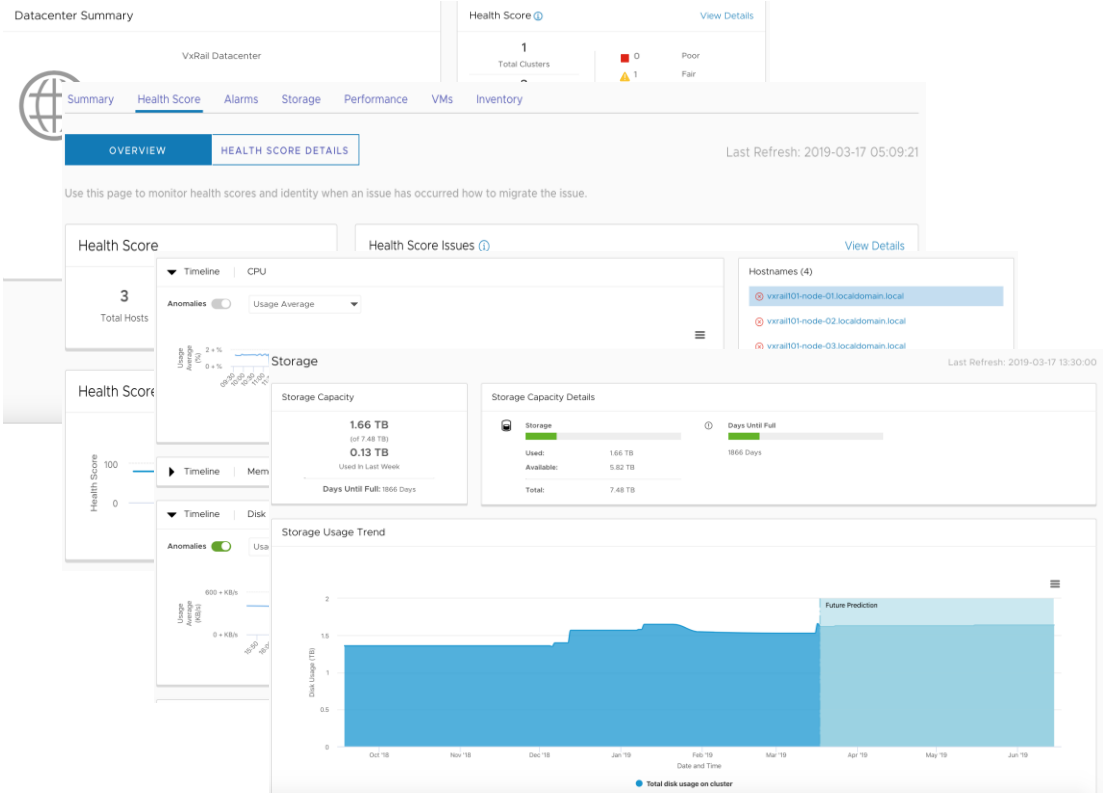
ACE Functionality

- Global visualization
- Simplified health score
- Advanced metric charting
- Capacity planning



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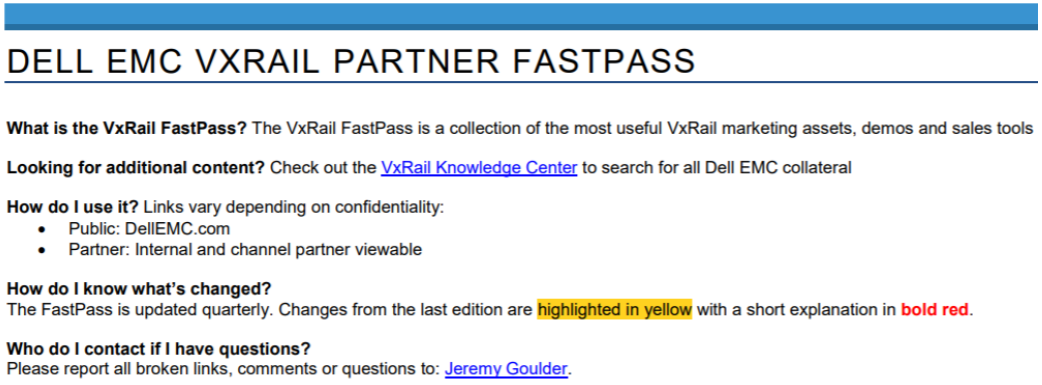
VxRail Knowledge Center

Now featuring **Partner Fast Pass**: find everything you're looking for without the hassle of searching.

http://vxrail.is/partnerfastpass



DELL EMC VXRAIL PARTNER FASTPASS

What is the VxRail FastPass? The VxRail FastPass is a collection of the most useful VxRail marketing assets, demos and sales tools

Looking for additional content? Check out the VxRail Knowledge Center to search for all Dell EMC collateral

How do I use it? Links vary depending on confidentiality:
- Public: DellEMC.com
- Partner: Internal and channel partner viewable

How do I know what's changed?
The FastPass is updated quarterly. Changes from the last edition are highlighted in yellow with a short explanation in **bold red**.

Who do I contact if I have questions?
Please report all broken links, comments or questions to: Jeremy Goulder.

For You	For Customers
DISCOVER	**DISCOVER**
Partner Deck	Customer Presentation
Online Training	Solution Overviews
Partner Accreditation	Data Sheets
	Future-Proof
EDUCATE	**EDUCATE**
Technical Presentation	Dell EMC eStore
VxRail FAQs	TCO Studies
EduTube Channel	Xpress Sizer
	Test Drive
BUY	**BUY**
Sizing Tool	Interactive Demo
Ordering & Licensing Guide	Xpert Videos
Proposal Generator	White Papers
Co-Selling Guides	VxRail TechBook
GROW	**GROW**
Welcome to VxRail Video	Welcome to VxRail Video
ECN Community	Best Practice Guides
VxRail Xpert community	Planning Guides
	ECN Community

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