

Dell Technologies VxRail / HCI Update

DELLTechnologies

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Wir unterstützen Sie kompetent und persönlich!

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Dell Technologies Business mit Ingram Micro

Unserer Mehrwerte in der Übersicht



Schnelligkeit

Lieferung werktags
binnen 24 H (Cut-off Zeit 17 Uhr)
bei vorrätiger Ware



Vielfalt

Ingram bietet Ihnen ein
sehr breites ergänzendes Produktportfolio neben
Dell Technologies Produkten („one-stop shopping“)



Kompetenz

Dedizierte und zertifizierte
Ansprechpartner

- Wir übernehmen Ihre Projektmeldung und die Koordination mit Dell Technologies
- Dell Technologies PremierPage | Konfiguration von Wunschsystemen zu attraktiven Preisen
- Übergreifende Pre-Sales Unterstützung
- Solution Selling | Wir schließen die Lücken zwischen Volume und Value
- Dedizierte Dell Technologies Aktionen, Incentives und Veranstaltungen
- Best in Class Logistik | Bevorratung, Lagerfinanzierung, Konsignationslager, SN-Scannung
- Individuelle Sales Trainings und Unterstützung beim Geschäftsaufbau
- Additive und flexible Finanzierungsmodelle | Limit, Projektkonten, Forderungsabtretungen
- Dell Technologies RISE Program | Distributionstreue wird belohnt
- PowerQuote Konfigurator für Server ab Lager | Sie konfigurieren online

Wir liefern Ihnen Ihre optimale Assemblierung!

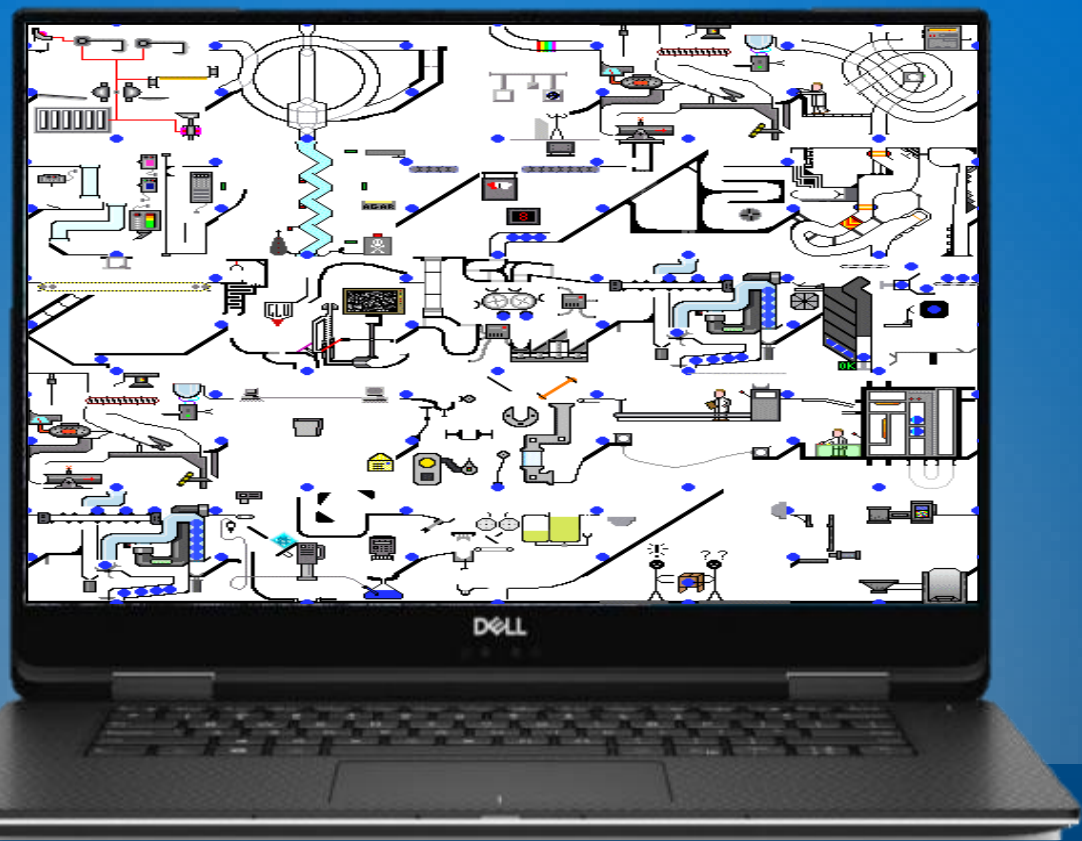
INGRAM
MICRO

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Keiner kann alles.
Wir schon!
#Alleskönner

Zubehör 
Storage 
Server 
Services 
Premier-Page 
ROK 
Blog 
089 4208 2020 
NETWORKING 
Displays 
NOTEBOOKS 
THIN CLIENTS 
Workstations 
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IT-Infrastruktur in vielen Unternehmen



Hohe Komplexität

Geringe Effizienz

Aufwendige Skalierung

Wenig Automation

Hohe Kosten



Gründe für Hyperconverged (HCI)

Erhöhte Effizienz | Niedrigere OPEX Kosten | Einfache Cloud Anbindung



Agilität

Public Cloud Agilität,
Wirtschaftlichkeit
und Effizienz innerhalb des
eigenen Rechenzentrums



Skalierbarkeit

Klein starten, elastisch
Skalieren und dabei hohe
SLAs gewährleisten

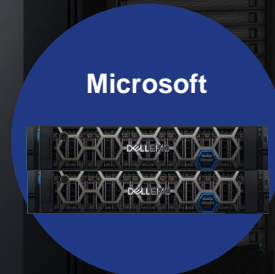
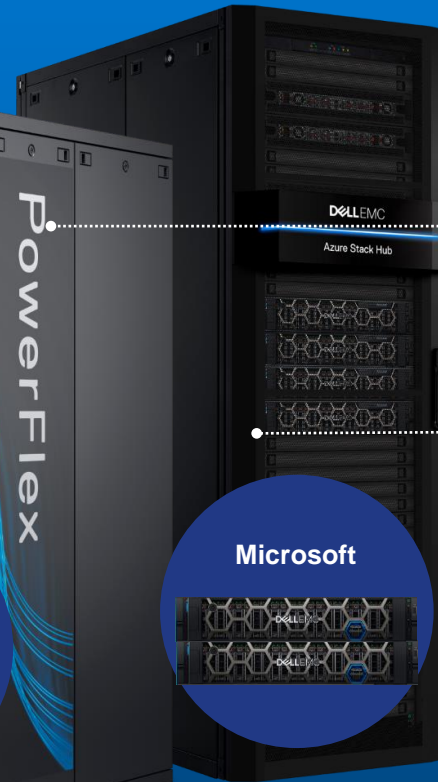
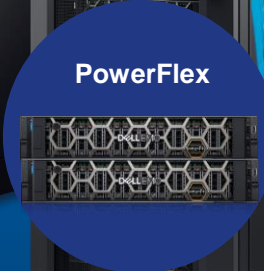


Einfachheit

Simple Operationen mit
“Software-driven” Automation
und Lifecycle-Management

Dell Technologies HCI Portfolio

Die HCI-Umgebung
für VMware
**VxRail System
Software**



Software-Defined
Infrastruktur mit
**PowerFlex
Manager**

Bekannte Microsoft
Management Tools und
**Dell Technologies
Integrationen**

Eindeutige Vorteile von VxRail



AUTOMATISIEREN

Vereinfachen von IT Operationen durch ein operationales Modell

72%

Niedrigere operationale Kosten¹



ERNEUERN

Agilere Business Entwicklung durch standardisierte Technologie Integration

114%

Mehr neue Apps Pro Jahr¹



BESCHLEUNIGEN

Erhöhter Business Wert, Schnellere Amortisierung des Investments

10

Monate

“Return of Investment”



1. Based on the IDC Business Value White Paper sponsored by Dell EMC, "The Business Value of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail, December 2020." Actual results may vary.

Nächste Generation VxRail Technologie



2016

2017

2018

2019

2020

2022
Gesamte
VxRail Kunden:
15,000+

#1 in HCI
19 Quartalen
in Folge¹

Hardware

- 15G PowerEdge Plattformen
- Intel Ice Lake Prozessoren
- VxRail dynamische Nodes und Satellite Nodes für mehr Use Cases

Software

- Cluster Integrität mit Compliance Checker und Update Advisor
- Mehr Netzwerk Flexibilität (100Gb)
- Multi-Cluster Management via vCenter/CloudIQ
- CloudIQ Anbindung für Monitoring, Trending und Analyze

¹ IDC WW Quarterly Converged Systems Tracker, Vendor Revenue (US\$M) Q4 2021, March 2022

VxRail Plattform Optionen

Auswahl der optimalen Plattform für die Kundenanforderungen

“Everything” E Serie

“Durable” D Serie

“Performance” P Serie

VxRail

“General-Purpose” G Serie

“VDI-Optimized” V Serie

“Storage-Dense” S Serie

Dell VxRail mit Intel Optane

Einzigartige Performance für anspruchsvolle Applikationen

Intel® Optane™ SSD P5800X

What's **New**
Next-gen
Intel Optane Media

PCIe **4.0**

Sequential Read	up to 7.2 GB/s
Sequential Write	up to 6.2 GB/s
Random 4k Read (IOPS)	up to 1.5 M
Random 4k Write (IOPS)	up to 1.5 M
Random 4k 70/30 (IOPS)	up to 1.8 M
QoS (4KRR, QD=1, 99%)	<6 μs²
QoS (4KRR, RW, Mixed QD=1, 99.99%)	<2.5 μs

4.6M 512B RR IOPS

100 DWPD

The World's Fastest Data Center SSD³




400/800GB
1.60/3.20TB
in U.2 form factor

Improvements vs Intel® Optane™ SSD DC P4800X¹ (PCIe gen 3)

- 3x** Greater Random 4k Mixed R/W IOPS
- 40%** Better QoS (4K Random Read QD=1, 99%)
- 3x** Higher Seq 4K-128K Bandwidth (R/W)
- 67%** Higher endurance (Drive Writes Per Day)

Intel® Optane™ Persistent Memory 200 Series

Persistent memory made flexible



Average of **32%** higher memory bandwidth compared to 100 series

Up to **6 TB** total memory per socket for faster analysis of the largest data sets

intel OPTANE PERSISTENT MEMORY

eADR (Enhanced Asynchronous DRAM Refresh) improves performance of apps that use persistent memory by eliminating "cache flushes" – volatile data including the CPU caches save automatically, even if power fails

Intel Optane PMem 200 series is compatible with existing PMem SW ecosystem & it continues to grow

KATANA GRAPH
Computes up to **2X** faster graph analytics algorithms used in search, social networks, and fraud detection

vmware Lower infrastructure costs by up to **25%** per VM while delivering the same performance



Lifecycle Management mit VxRail



Überlastete IT
Mitarbeiter

Bis zu
60% erhöhte Effizienz
des IT infrastrukture Teams¹



Unterbrechung für
das Unternehmen

Reduzierte Downtime mit bis zu
**88% weniger
ungeplanten
Ausfällen¹**



Budget Effizienz
Kosteneinsparung

Bis zu 47%
niedrigere Kosten
verglichen zu ähnlichen
Public Cloud Lösungen²
**52% niedrigere Kosten
von IT-Operationen**
verglichen mit Erneuerung von alten
Umgebungen¹

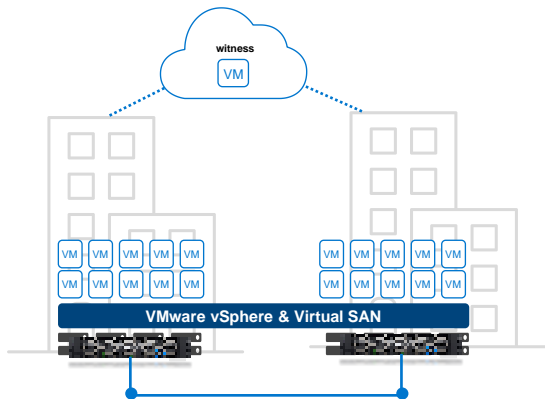
¹"Delivering Efficient Business Expansion with Dell EMC VMware-Based HCI," IDC whitepaper sponsored by Dell EMC, October 2018.

²"The Cost of Using the Public Cloud," Evaluator Group, Jan 2019.

VxRail weitergehende Lösungen (Schutz, Disaster)

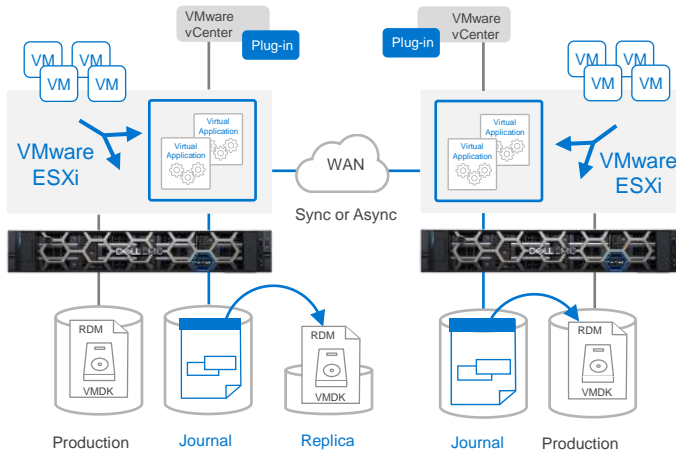
HCI Software-defined Data Center – Schutz der Daten

Continuous Availability mit Stretched Cluster



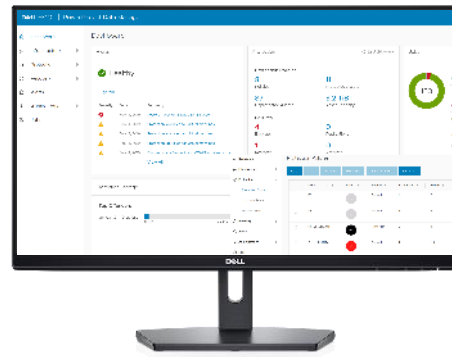
Aktiv-Aktiv Data Center mit **VMware Stretched-Cluster** Unterstützung

Tier-1 Disaster Recovery zwischen Sites



RecoverPoint for VMs ermöglicht “Any Point-in-Time Protection”, lokal oder zwischen Sites

Lokaler Datenschutz mit PowerProtect Lösungen



Schutz der VxRail Daten mit **PowerProtect DM** und **PowerProtect DD/VE**

VxRail Satellite Nodes

Operationalize your edge

NEW



- Low-cost **single node** extension for VxRail environments
- Operations & LCM **managed through centralized VxRail management cluster** for consistent operating experience
- **No vSAN** & single node **only, cannot expand to a cluster**
- **Smaller footprint** – ROBO, retail, test/dev, legacy applications

VxRail at the Edge – 2-Node Overview

Supported with either direct connection or ToR switch

vCenter | Witness



- 1/3 less footprint than a traditional cluster
- Uses Witness host
- Fixed 2-node configuration
- Supports automated LCM

vCenter | Witness

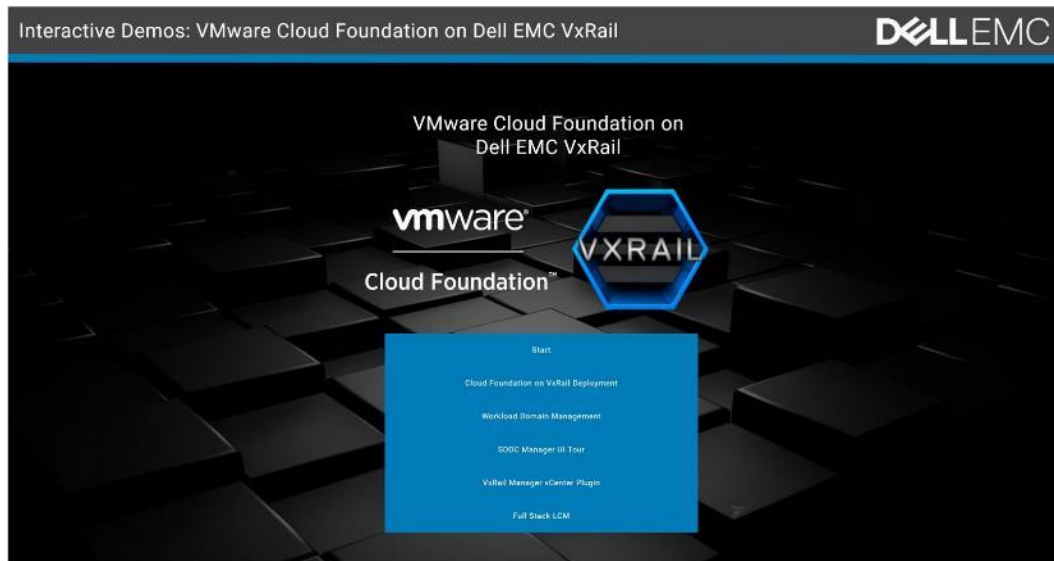


- VxRail E, P, S, D and V Series qualified for 2-node deployments
- Must use 4-port 10GbE configuration
- Minimum VxRail software version 4.7.100

- Standard ProDeploy Service
- Specially adapted and automated 1st run experience

What's available to you

- Core VxRail demos
 - Interactive demo – VxRail 4.7
 - <https://vxrail.is/demo>
 - Hands-on lab: VxRail 4.7 – Simplifying IT through Standardization and Automation
 - <https://democenter.dell.com/>
 - New interactive VCF demo
 - <https://vxrail.is/vcfdemo>
- CloudIQ Simulator
 - <https://cloudiq.emc.com/simulator>
- VxRail Sizing
 - <https://vxrailsizing.emc.com/>



VxRail Hardware Platform

VxRail with vSAN nodes: flexibility for your workloads

E, P, V, D, S, G Series based on the latest Dell PowerEdge

Processor

Single, dual or quad, Gen 2 or Gen 3 Intel® Xeon®
Scalable with 4 to 112 cores per system
Or
2nd or 3rd Gen AMD EPYC™ 7000 Series
with 8 to 64 cores in a single socket

RAM

16GB RDIMM
32GB RDIMM
64GB RDIMM/LRDIMM
128GB LRDIMM

Intel Optane Persistent Memory:
128GB, 256GB & 512GB

Power supply

550W, 1100W, 1600W	100-240V AC
1600W, 2000W, 2400W	200-240V AC
1100W	48V DC



Storage

Cache Drives: Optane 400GB, 800GB
NVMe 1600GB
SAS 800GB, 1600GB

Capacity NVMe: 1TB, 4TB, 7.68TB
Capacity SSDs: 1.92TB, 3.84TB, 7.68 TB
HDDs: 1.2TB to 12.0TB

Base networking

SFP28, SFP+, RJ45

4x 25GbE

4x 10GbE

2x 10GbE

Optional add-on NICs, FC HBA

GPUs

Ampere A16, A30, A40 or A100
Tesla T4 or M10

Note: GPU software & drivers sold separately

VxRail dynamic nodes: flexibility for your workloads

E, P, and V Series based on Dell PowerEdge

Processor

Dual Gen 3 Intel® Xeon® Scalable
16 to 80 cores per node

RAM

128GB to 8TB DRAM

Intel Optane PMem:
128GB, 256GB, and 512GB modules

Power supply

100-240V AC
200-240V AC
48V DC



Storage

PowerStore-T
PowerMax
Unity XT

Connectivity

Dual or quad 10 GbE or 25 GbE NICs
Plus, additional PCIe NICs
QLogic or Emulex 16Gb/32Gb FC

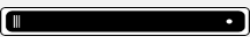
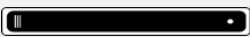



NVIDIA GPUs

Ampere A16, A30, A40 or A100
Tesla T4 or M10
Note: GPU software & drivers sold separately

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VxRail with vSAN nodes

Built upon the latest generation Dell PowerEdge

E660/F/N	E665/F/N	P670F	P675F/N	V670F
				
Our everything platforms		Performance focused platforms		Optimized for acceleration
R650 10 x 2.5" drives All-NVMe / All-Flash / Hybrid	R6515 10 x 2.5" NVMe or 8 x 2.5" All-Flash / Hybrid	R750 28 x 2.5" drives All-Flash only	R7515 24 x 2.5" drives All-Flash or NVMe	R750 24 x 2.5" drives All-Flash only
Single or dual Intel® Xeon® Scalable Gen 3	Single 2 nd or 3 rd Gen AMD EYPC™	Dual Intel® Xeon® Scalable Gen 3	Single 2 nd or 3 rd Gen AMD EYPC™	Dual Intel® Xeon® Scalable Gen 3
10GbE or 25GbE OCP3	10GbE or 25GbE OCP2	10GbE or 25GbE OCP3	10GbE or 25GbE OCP2	10GbE or 25GbE OCP3
2nd Generation Intel Optane Persistent Memory	2 x PCIe Gen4 slots	2nd Generation Intel Optane Persistent Memory	Two single width GPUs or One double wide GPU	Six single width GPUs or Two double wide GPUs Four NVIDIA GPU options
Two single wide GPUs		4 x PCIe Gen4 slots	2 x PCIe Gen4 slots	8 x PCIe Gen4 slots (6 x if using DW GPU)
3 x PCIe Gen4 slots				
10GbE or 25GbE PCIe Optane/NVMe/SAS cache FC HBA	FC HBA	10GbE or 25GbE Optane/NVMe/SAS cache SAS/SATA capacity FC HBA	10GbE or 25GbE Optane/NVMe/SAS cache All NVMe capacity FC HBA 48V DC PSU option	10GbE or 25GbE Optane/NVMe/SAS cache FC HBA 220V – 240V AC only




VxRail with vSAN nodes

Built upon Dell PowerEdge

P580N	D560/F	S670	G560/F
			
Performance focused	Durable & rugged	Storage dense	Compute dense
Quad Intel® Xeon® Scalable Gen 2, up to 112 cores Up to 12TB of Optane Persistent Memory	MIL-STD 810G and DNV-GL Maritime certified to withstand extreme heat, sand, dust and vibration Short depth only 20" Certified cold start down to -15C & to run at up to 45C	Only series with 3.5" HDD Hybrid only	Eight Intel® Xeon® Scalable Gen 2 processors in 2U
R840 24 x 2.5" drives	XR2 8 x 2.5" drives	R750 12 x 3.5" plus 4 x 2.5" drives	C6400 with C6420 node 24 x 2.5" drives
10GbE or 25GbE Optane/NVMe cache All NVMe capacity FC HBA M10 GPU	10GbE or 25GbE Optane/NVMe/SAS cache NVIDIA T4 GPU	10GbE or 25GbE NVMe / SAS cache FC HBA 48V DC PSU option	10GbE Optane/NVMe/SAS cache 220V – 240V AC only




VxRail dynamic nodes

Built upon the latest generation Dell PowerEdge

E560F	P570F	V570F
		
Our low-profile everything platform	Performance focused	Optimized for GPU acceleration
Dual Intel® Xeon® Scalable Gen 2 8 to 56 cores Up to 3TB of Optane Persistent Memory Up to two NVIDIA T4 GPUs	Dual Intel® Xeon® Scalable Gen 2 8 to 56 cores Up to 3TB of Optane Persistent Memory	Dual Intel® Xeon® Scalable Gen 2 8 to 56 cores Up to six GPUs from a choice of four NVIDIA GPUs
R640	R740XD	R740XD
10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel 48V DC PSU option	10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel 48V DC PSU option	10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel 220V – 240V AC only

VxRail dynamic nodes

Built upon the latest generation Dell PowerEdge

E560F	P570F	V570F
		
Our low-profile everything platform	Performance focused	Optimized for GPU acceleration
Dual Intel® Xeon® Scalable Gen 3 16 to 80 cores Up to 8TB of DRAM memory Up to 8TB of Optane PMem 200 Series Up to two single wide NVIDIA GPUs	Dual Intel® Xeon® Scalable Gen 3 16 to 80 cores Up to 8TB of DRAM memory Up to 8TB of Optane PMem 200 Series	Dual Intel® Xeon® Scalable Gen 3 16 to 80 cores Up to 4TB of DRAM memory Up to six GPUs from a choice of NVIDIA Ampere and Tesla cards
BOSS with dual M.2 SATA	BOSS with dual M.2 SATA	BOSS with dual M.2 SATA
R650	R750	R750
10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel	10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel	10GbE or 25GbE networking 16Gb or 32Gb Fibre Channel