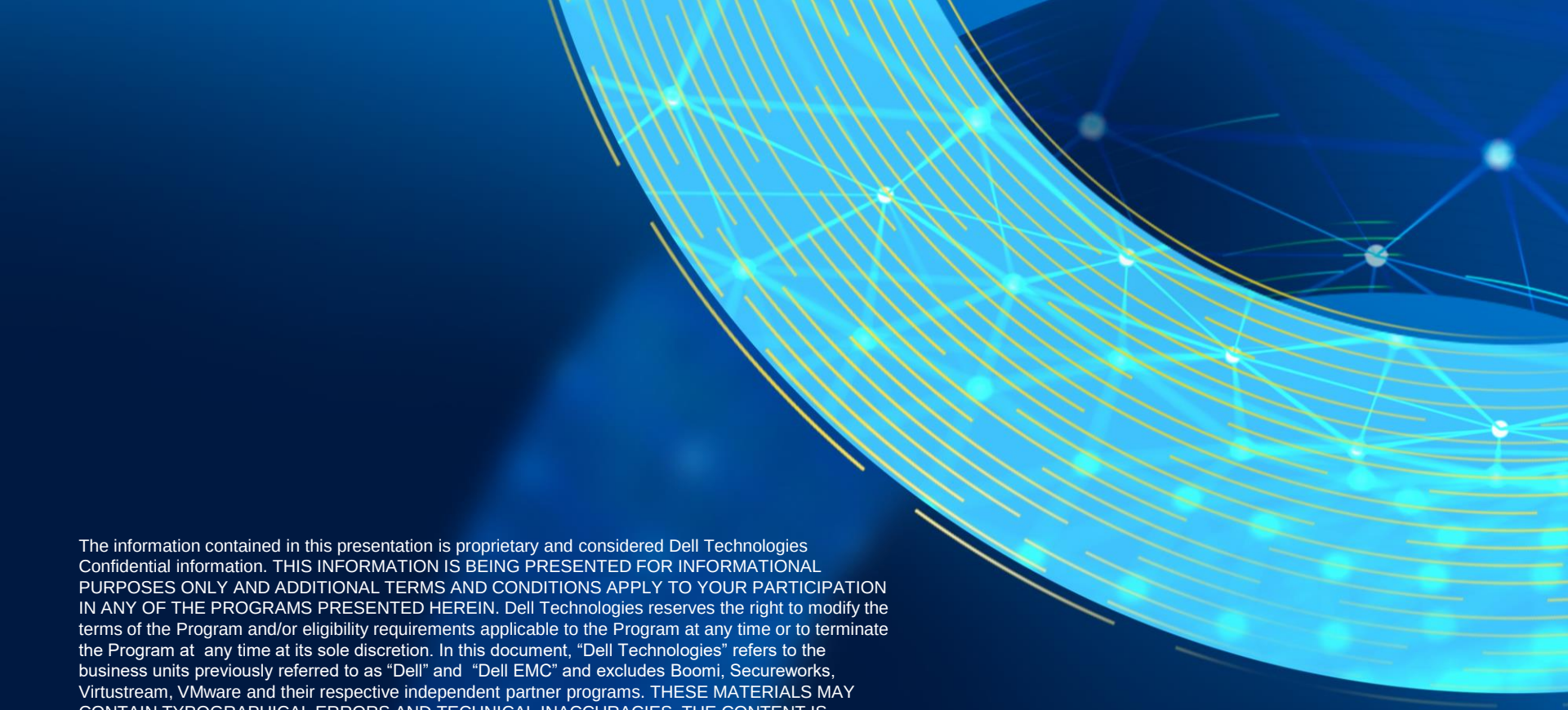

DELL Technologies
PARTNER PROGRAM

Dell PowerEdge Portfolio der 15. Generation

Markus Wolfram
Senior System Engineer
Dell Technologies

Michael Fischhold
System Engineer
Ingram Micro

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Vorstellung des neuen

Dell EMC PowerEdge Server Portfolios

YOUR **INNOVATION ENGINE**

*Technology and solutions that help you **innovate**, **adapt**, and **grow***

Prozessortechnologien

Die neuesten AMD und Intel CPUs

AMD EPYC™3

"Milan"

AMD Milan enhancements from Rome

DDR4 coupled DDR3200

Reduction in latency for fabric clock coupled with DRAM MEMCLK at DDR3200

Improves memory intensive workload performance

6 channel memory Interleave

6 memory channels can be used to better match core count, capacity and workload requirements

Better memory provisioning for reduced TCO without compromising performance

IOMMU

Improvement to achieve better line rate with 200Gbits

Improved IO performance for attached peripherals and virtualized environments

Hot Plug surprise remove

“Milan” adds surprise hot plug remove, following PCIe-SIG’s new implementation guideline

Provides more robust remote use cases by simplifying surprise removal and data center operations

Probe filter improvement

Improved performance on Giga updates per second

AMD EPYC

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Intel Xeon

“Ice Lake”

intel

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Ice Lake Highlights

3rd Gen Intel Xeon scalable processors

MORE CORES

UP TO 1.42X MORE CORES PER PROCESSOR

40 CORE ICE LAKE VS. 28 CORE CASCADE LAKE

INCREASED PERFORMANCE

UP TO 1.40X GENERAL COMPUTE

ON TOP BIN ICE LAKE SKU OFFERING VS. TOP BIN CASCADE LAKE

ENHANCED MEMORY

1.60X MEMORY BANDWIDTH AND 2.66X MEMORY CAPACITY

8 CHANNELS, 3200MT/S, NEXT GEN OPTANE PERSISTENT MEMORY & 256GB DIMMS

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Technologien in der 15. Servergeneration

Komponenten in den neuen Serversystemen

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Dell EMC PowerEdge Innovationen

Unterstützung von Kundenanforderung und Geschäftsprioritäten

Bieten ein höheres Niveau der Leistung

Bessere I/O Bandbreite und niedrigere Latenz um die nötige Leistung für modern Workloads zu liefern

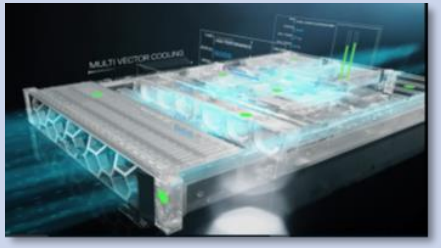
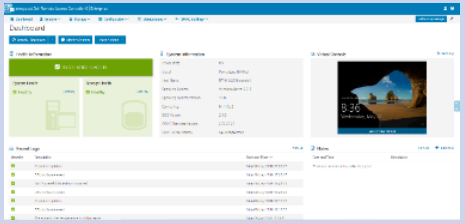
Gesteigerte Resilience

Hohe Verfügbarkeit einfacheres System Management und leichtere Wartung

Zusätzliche Kühlungsoptionen mit genug Reserven für den Einsatz von Hochleistungskomponenten

DELL Technologies PARTNER PROGRAM

Neuerungen mit Dell EMC PowerEdge 15G

Bessere Bedienung	Mehr Geschwindigkeit	Höhere Effizienz
		
Hot-Plug BOSS-S2	Onboard NIC mit OCP V3 Karten	Neues Chassis und MB Design
	 	PCI EXPRESS®
iDRAC FW V4.x mit Telemetrie	PERC 11 mit 16 SAS Ports / NVMe	PCIe Gen4 & Direct Attach NVMe

Neue PowerEdge Server Features

Erweiterte Riser Designs
für noch mehr Workloads

PCI Gen4 Universal
Storage Backplane
2x PCIe Gen3
Geschwindigkeit

OCP 3.0 NICs

Neue Storage Controller
mit 16 Ports SATA/SAS

Optimiertes thermisches Design
(optionale Flüssigkeitskühlung bei einigen Systemen)

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Dell EMC definiert Networking Industry Standards

PowerEdge Networking geht auf den neuen Open Compute Project (OCP) 3.0 Standard

Dell rNDC

- Proprietär
- x8 Gen3
- Kein normaler Connector
- Shared LOM mit iDRAC

OCP 3.0

- Industrie Standard - mehr Karten schneller verfügbar
- Bis x16 Gen4 – mehr Bandbreite, mehr Geschwindigkeit
- Standard Connector
- Shared LOM mit iDRAC möglich

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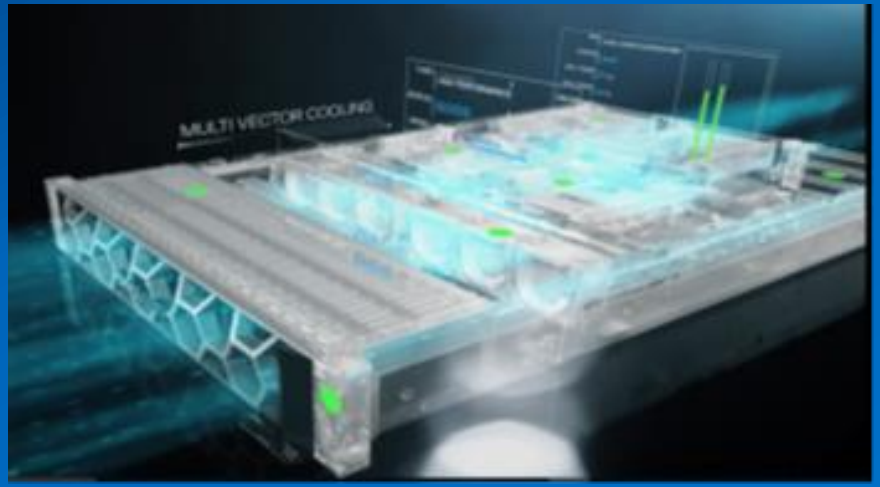
Ausgewogenes Board Design

- Optimiertes Airflow Design erlaubt noch größere Konfigurationen
  - CPU TDPs bis zu 240 W
  - Mehrere GPUs mit bis zu 300 W
  - Große Memory Kapazität – bis zu 32 LRDIMMs
- Verbesserte Signalqualität für PCIe Gen4 mit doppelter Geschwindigkeit von Gen3 – 16 GT/s



Source: Direct from Development - Next Generation PowerEdge Servers Implement Eco-Friendly Designs

https://downloads.dell.com/manuals/common/dfd-nextgen_poweredge_ecofriendly_design.pdf

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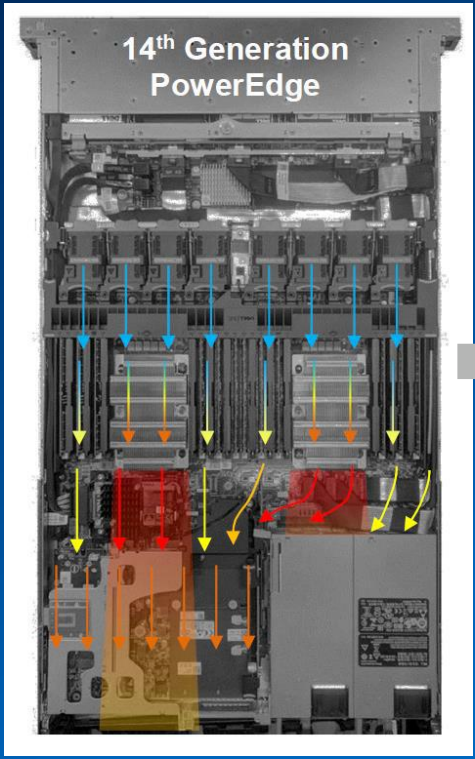
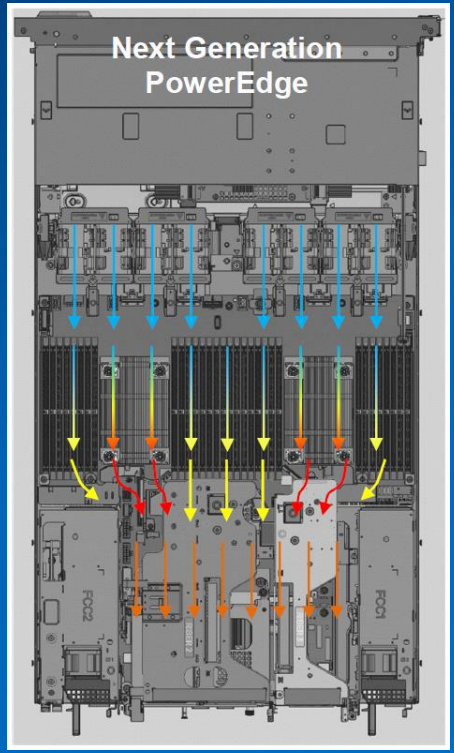
Chassis Air-Flow Design 14G vs. 15G





Optimiertes Design

- Netzteile links und rechts
- Hotspots entzerren
- Bessere Luftführung
- Nochmals verbesserte Lüfter
- Multi Vector Cooling V2.0
- Damit höhere Energie-dichten möglich

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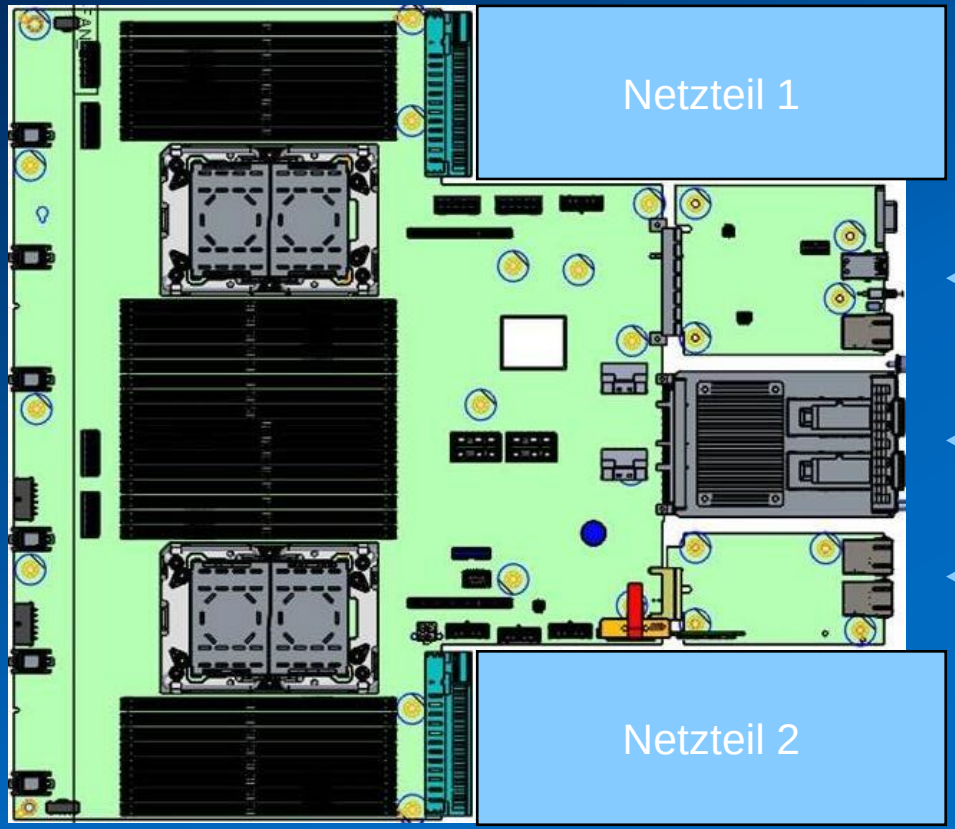
PowerEdge 2S Server Mainboard T-Shape Design



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Direct Contact Liquid Cooling über das Portfolio

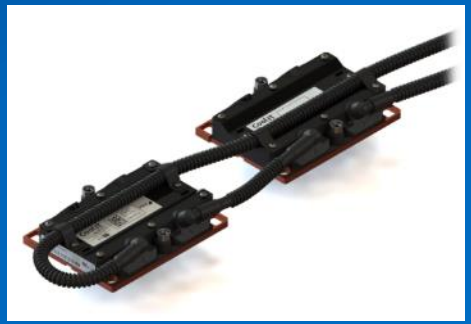
Heat Exchanger

Heat Exchange Module Optionen:

- CHx (Liquid-to-Liquid)
- AHx (Liquid-to-Air)
- Custom Optionen

Hinweis: Abhängig von Ausstattung und Verfügbarkeit von Kühlmittel

Volles Rack



CPU Cold Plate

Passives CPU Cooling ersetzt den normalen Kühlkörper und wird über eine zentrales System versorgt

DELL Technologies
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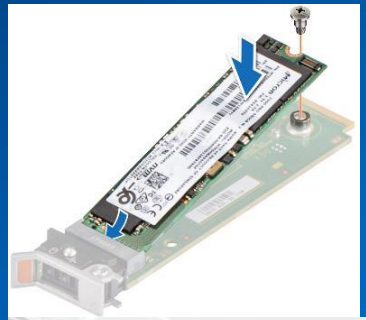
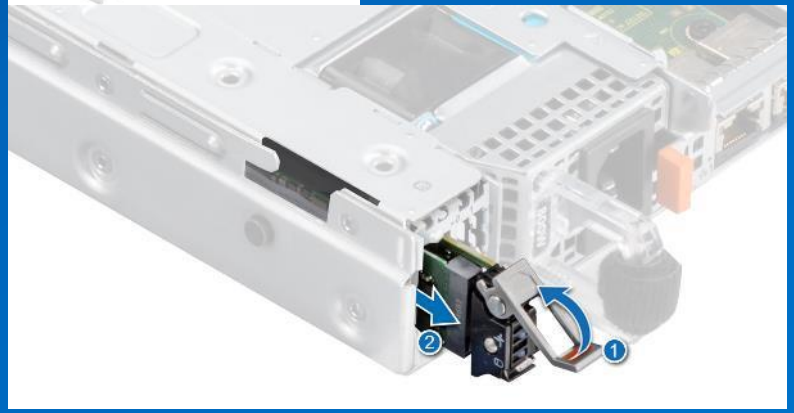
Boot Optimized Storage Solution (BOSS)

Hot-Plug BOSS-S2

- Separates Boot Medium
- Dual SATA Gen3 M.2 Devices
  - 240/480 GB 1 DWPD
  - Hot-Plug Carrier
- Support für RAID1 und Pass-Through
  - SATA RAID Controller
  - Standard OS AHCI Treiber
- Support für UEFI & Legacy Boot
- Überwacht von der iDRAC
- LEDs für M.2 Device





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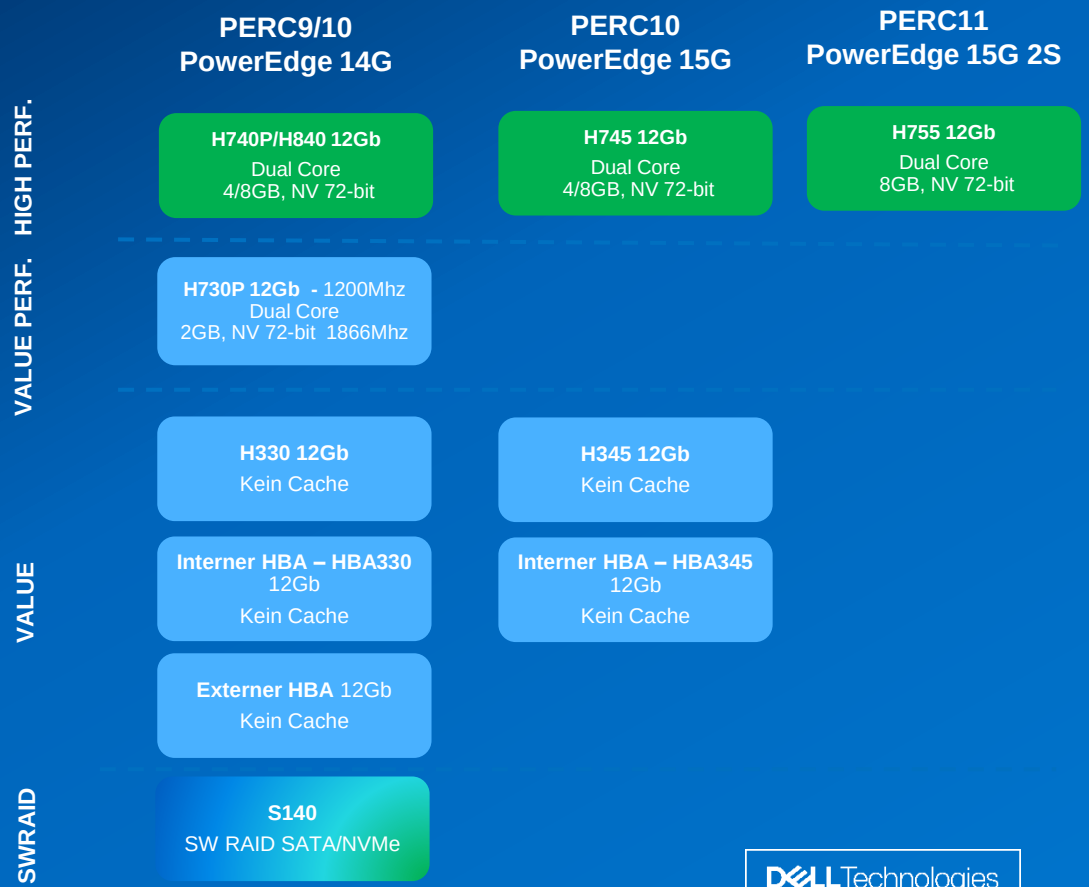
Dell PERC

PERC11 H755/H755N

- PCIe Gen4
  - x8 -> Host
  - x16 -> Storage bzw.
  - 16 Ports SAS/SATA
- NVMe HWRAID Connectivity ist per x2 Gen4
- Drei Versionen
  - SAS/SATA
  - NVMe only
  - SAS/SATA/NVMe
- Zwei Formfaktoren
  - Front PERC (fPERC)
  - PCIe Steckkarte



DELL Technologies
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PowerEdge 15G Intel und AMD Memory Übersicht

15G Ice Lake, Rome und Milan CPUs haben 16 DIMM Slots mit einem maximalen Memory Bus Speed von 3200MT/s

Balanced Memory Konfigurationen

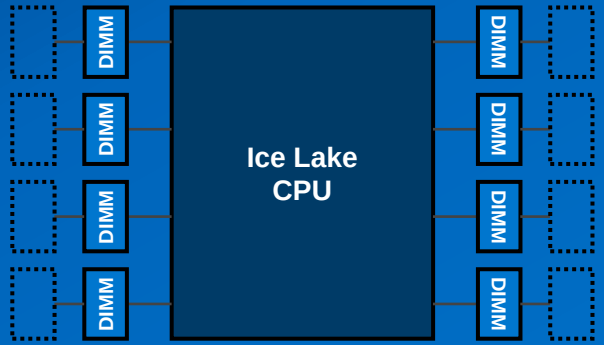
- Die beste Memory Performance bekommt man mit Balanced Memory Konfigurationen
- 2-socket Systeme: 16 oder 32 DIMMs
- 1-socket Systeme: 8 oder 16 DIMMs
- Für weitere Details siehe Balanced Memory Whitepaper:
  - https://www.delltechnologies.com/resources/en-us/asset/white-papers/products/servers/whitepaper-memory-population-rules-for-3rd-generation-intel-xeon-scalable-processors-on-poweredge-servers.pdf
  - https://www.delltechnologies.com/resources/en-us/asset/tech-notes/products/servers/whitepaper-memory-population-rules-for-3rd-generation-amd-epyc-processors-for-poweredge-servers.pdf

Intel Optane Persistent Memory (PMem) 200 Serie für Intel CPUs (ausschliesslich Intel!)

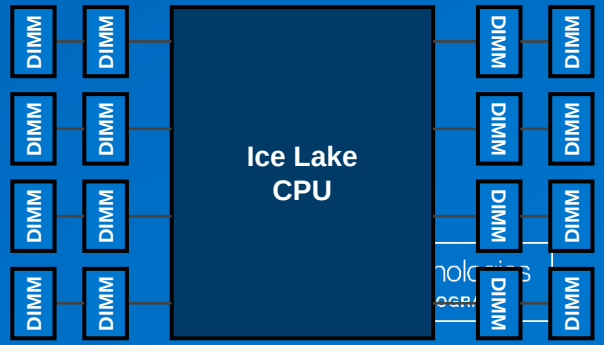
- 200 Serie hat eine im Durchschnitt 25% bessere Performance als die 100 Serie
  - Bessere Read und Wite Latenzen
  - 3200MT/s Memory Bus Speed
  - 16 DIMM Slots per CPU

15G Intel and AMD DRAM Balanced Memory Configs

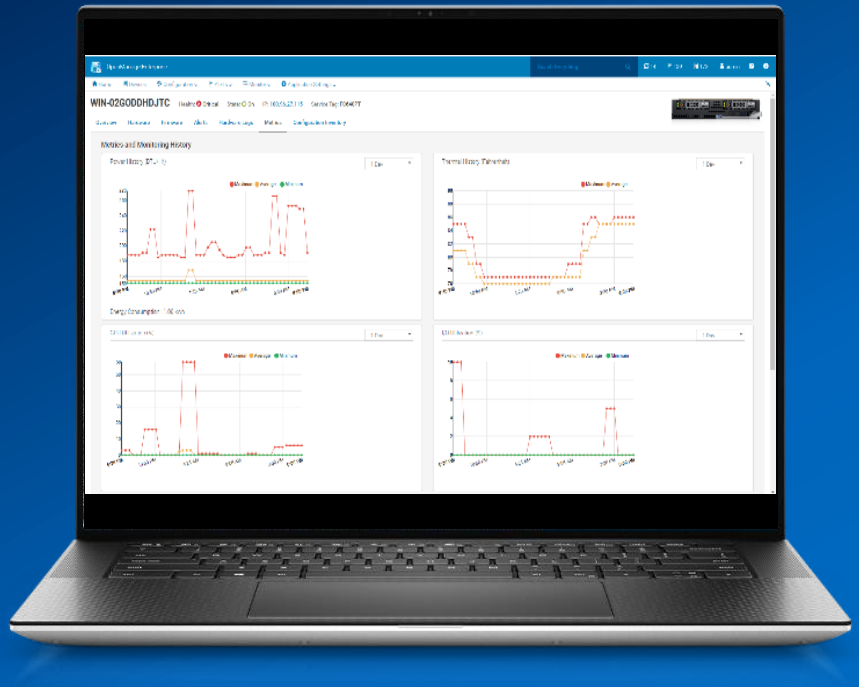
8 DIMMs per CPU



16 DIMMs per CPU



Design Innovation: OpenManage Enterprise & Power Manager 2.0



OME 3.6 Key Features

- Scope based access and control (SBAC) erlaubt Administratoren Benutzerzugriff auf spezifische Gruppen von Geräten zu limitieren
- Support von Redfish Protocol für Discovery/Inventory der PowerEdge Server via iDRAC
- Support von OpenAPI spec v3

PMP 2.0 Key Features

- VM Power Mapping
- PDU support
- Open API Compliance
- Redfish Support von Power- und Thermalmetriken

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Server der 15. Generation

Rack, Modular & Spezialsysteme

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PARTNER PROGRAM

Nomenklatur

R 6 5 0

1 2 3 4 5 6 7 8 9

R	6								5	0
									Generation	Prozessor

R 6 5 1 5

1 2 3 4 5 6 7 8 9

R					6					5	1	5
										Generation	Anzahl CPUs	Prozessor

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PARTNER PROGRAM

Die Dell EMC PowerEdge Portfolio Erweiterung

Spezialisiert – Telco & Edge

XR11

XR12

Spezialisiert - GPU

R750xa

XE8545

RACK SERVER

R550

R7515

R750xs

R750

R7525

R450

R6515

R650xs

R650

R6525

C-SERIE

C6525

C6520

MODULAR COMPUTE SLED

MX750c

Q1: R7525 / R6525 / R7515 / R6515 / C6525 / XE8545

Q2: R750 / R750xa / R650 / C6520 / MX750c

Q3: R750xs / R650xs / R550 / R450 / XR11 & XR12 / T550

Q4: R250 / R350 / T350 / T150

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Technology and solutions that help you innovate, adapt, and grow

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Die Dell EMC PowerEdge Portfolio

T140
Entry

T340 / T440
1S & 2S

T640
Skalierbar 2S

Tower Server

VRTX
Integriert

FX2
Converged Plattform

FX
Server Einschübe

M640
2 Sockel M1000e

MX7000 mit MX740c / MX750c & MX840c
Modulare Infrastruktur

Modulare Infrastruktur

R240 / R340
Einstiegs 1S/1HE

R440 / R450 / R650xs
Einstiegs 2S/1HE

R540 / R550 / R750xs
Storage-Kapazität 2S/2HE

R6515
AMD 1S/1HE

R7515
AMD 1S/2HE

R740 / R740xd / R750 / R750xa
Skalierbar 2S/2HE

R740xd2
High Storage-Kapazität 2S/2HE

R6525
Dichte AMD 2S/1HE

R7525
Skalierbar AMD 2S/2HE

R640 / R650
Dichte 2S/1HE

R940 / R940xa
Hoch skalierbar 4S

R840
Virtualisierung 4 Sockel/2 HE

XR11 / XR12
Rugged Server

Rack Server

XE8545
GPU Server

Storage Server XE7100

XE2420
Edge Server

C6420 / C6520 / C6525
Cloud optimiert

C4140
HPC GPU optimiert

DSS 8440
ML/AI GPU optimiert

AMD basierte Server

1S und 2S

POWEREDGE R6515

Kompakter 1 HE Server mit 1 CPU und der Leistung eines traditionellem 2 Sockel Servers

Workloads

- Virtualisierung
- HCI
- Remote Site Server

Key Features

- Bis zu 10 NVMe SSDs mit Direct Connect für schnellsten Zugriff
- Bis zu 64 Cores, ZEN2 und ZEN3 Architektur
- 16 DIMM Steckplätze
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 10 Direct Connect NVMe PCIe Steckplätze für maximale Leistung
- Bis zu 2 GPUs zur Performancesteigerung
- Umfangreiches Dell EMC System Management
- vSAN Ready Nodes

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge R6515

Features	PowerEdge R6515
CPU	1x AMD Rome/Milan (Socket SP3), up to 280W (cTDP)
Memory	**DDR4**: Up to 16 x DDR4 RDIMM, LRDIMM (2TB), bandwidth up to 3200 MT/S
Disk Drives/Storage	**Front:** 1. Up to 4x 3.5” Hot Plug SAS/SATA HDD 2. Up to 10x 2.5” Hot Plug SAS/SATA/NVMe 3. Up to 8x 2.5” Hot plug SAS/SATA **Internal**: Option 2x M.2 (BOSS)
PCIe Storage	Up to 10 NVMe Direct
USB	**Front: 1** ports (USB 2.0), 1 (micro-USB, iDRAC Direct) **Rear**: 2 ports (USB 3.0) **Internal**: 1 port (USB 3.0)
Storage Controller	**HW RAID**: PERC 9/10 - HBA330, H330, H730P, H740P, H840, 12G SAS HBA **Chipset** SATA/SW RAID (S150): Yes
Network Daughter Cards (NDC)	2 x 1GbE; 2 x 10GbE BT; 2 x 10GbE SFP+; 2 x 25GbE SFP28
PCIe slots	Up to 2 PCIe: 1 PCIe Gen3; 1 PCIe Gen4
Power Supply Unit (PSU)	PSU – 550W
System Mgmt	LC 3.x, OpenManage, QuickSync 2.0, Digital License Key, iDRAC9, iDRAC Direct (dedicated micro-USB port), Easy Restore
High Availability (HA)	Hot plug Hard drives, PSUs, IDSDM, Boot Optimized Storage Subsystem (BOSS)
Security	Dell EMC Integrated Security
Graphics Processing Unit (GPU)	Up 2 Single-Wide GPU (T4)

DELL Technologies
PARTNER PROGRAM

POWEREDGE R7515

Flexibler 2 HE Server mit 1 CPU und der Leistung eines traditionellem 2 Sockel Servers

Workloads

- Software Defined Storage Knoten
- Virtualisierung
- Data Analytics

Key Features

- Bis zu 12 NVMe SSDs mit Direct Connect für schnellsten Zugriff, 24/26 Medien insgesamt
- Bis zu 64 Cores mit 1 CPU und ZEN2/ZEN3 Architektur
- 16 DIMM Steckplätze
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Bis zu 26 Medien, davon 12 NVMe Direct Connect
- Bis zu 4 GPUs zur Performancesteigerung
- Umfangreiches Dell EMC System Management
- vSAN Ready Nodes

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge R7515

Features	PowerEdge R7515
CPU	1x AMD Rome/Milan (Socket SP3), up to 280W (cTDP)
Memory	**DDR4:** Up to 16 x DDR4 RDIMM, LRDIMM (2TB), bandwidth up to 3200 MT/S
Disk Drives/Storage	**Front:** 1. Up to 8 x3.5" Hot Plug SATA/SAS HDDs 2. Up to 12x 3.5" hot-plug SAS/SATA HDDs 3. Up to 24x 2.5" Hot Plug SATA/SAS/NVMe **Rear**: Up to 2x 3.5" hot-plug SAS/SATA HDDs **Internal**: 2x M.2 (BOSS)
PCIe Storage	Up to 24 NVMe (Up to 12 NVMe Direct)
USB	**Front:** 2 ports (USB 2.0), 1 (micro-USB, iDRAC Direct) **Rear**: 2 ports (USB 3.0) **Internal**: 1 port (USB 3.0)
Storage Controller	**HW RAID:** PERC 9/10 - HBA330, H330, H730P, H740P, H840, 12G SAS HBA **Chipset** SATA/SW RAID(S150): Yes
Network Daughter Cards (NDC)	2 x 1GbE; 2 x 10GbE BT; 2 x 10GbE SFP+; 2 x 25GbE SFP28
PCIe slots	Up to 4 PCIe: 2 PCIe Gen3; 2 PCIe Gen4
Power Supply Unit (PSU)	PSU – 495W, 750W, 1100W, 1600W
System Mgmt	LC 3.x, OpenManage, QuickSync 2.0, Digital License Key, iDRAC9, iDRAC Direct (dedicated micro-USB port), Easy Restore
High Availability (HA)	Hot plug Hard drives, PSUs, IDSDM, Boot Optimized Storage Subsystem (BOSS)
Graphics Processing Unit (GPU)	Up to 4 Single-Wide GPU (T4); Up to 1 Full-Height FPGA

DELL Technologies
PARTNER PROGRAM

POWEREDGE R6525

Leistungsstarker 2 Sockel/1 HE Server, maximale Performance im kompakten Gehäuse

Workloads

- HPC
- Virtualisierung
- VDI Cloud Client Computing
- Applikationsserver

Key Features

- Bis zu 10 NVMe SSDs mit Direct Connect für schnellsten Zugriff
- Bis zu 64 Cores pro CPU mit AMD ZEN2/ZEN3 Architektur
- 32 DIMMs für bis zu 4 TB Memory
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Optionale Flüssigkeitskühlung der CPUs, damit volles Portfolio in einer HE
- 10 Direct Connect NVMe PCIe Gen4 Steckplätze für maximale Leistung
- Bis zu 3 GPUs zur Performancesteigerung
- Bis zu 4 TB Memory für Virtualisierung

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge R6525

Features	PowerEdge R6525
CPU	2x AMD Rome/Milan (Socket SP3), up to 280W (cTDP)
Memory	**DDR4:** Up to 32 x DDR4 RDIMM, LRDIMM (4TB), bandwidth up to 3200 MT/S
Disk Drives	**Front:** 1. Up to 4x 3.5” Hot Plug SAS/SATA HDD 2. Up to 12x 2.5” (10 Front + 2 Rear) Hot Plug SAS/SATA/NVMe 3. Up to 8x 2.5” Hot plug SAS/SATA Optional: BOSS (2x M.2)
PCIe Storage	Up to 12 (10+2) NVMe Direct
USB	**Front:** 1 port (USB 2.0), 1 (micro-USB, iDRAC Direct) **Rear:** 1 port (USB 3.0) + 1 port (USB 2.0) **Internal:** 1 port (USB 2.0)
Storage Controller	**HW RAID**: PERC 10.4 - HBA345, H345, H745, H840, 12G SAS HBA **Chipset** SATA/SW RAID: Yes
Network	OCP x16 Mezz 3.0 + 2 x 1GE LOM
PCIe slots	Up to 3 x PCIe x16 Gen4 slots @ 16GT/s
Power Supply Unite (PSU)	PSU – 800W, 1400W
System Mgmt	iDRAC9 with Lifecycle Controller
High Availability (HA)	Hot plug redundant Hard drives, Fans, PSUs BOSS (2 x internal M.2)
Graphics Processing Unit (GPU)	Up to 3 nvidia T4 or 2 x FH ¾ L at 150W each

DELL Technologies PARTNER PROGRAM

POWEREDGE R7525

Universeller 2 Sockel/2 HE Server mit hoher Speicher- und I/O-Leistung, maximale Anzahl an Cores

Workloads

- HPC
- VDI Cloud Client Computing
- Datenbanken/In-Line Analytics
- Scale-Up Software Defined Umgebungen

Key Features

- Bis zu 24 NVMe SSDs mit Direct Connect für schnellsten Zugriff
- Bis zu 64 Cores pro CPU mit AMD ZEN2/ZEN3 Architektur
- 32 DIMMs für bis zu 4 TB Memory
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Multi-Vektor Cooling liefert hochoptimierten Luftstrom und ermöglicht eine große Konfigurationsvielfalt und effizienten Betrieb
- 24 Direct Connect NVMe PCIe Gen4 Steckplätze für maximale Leistung
- GPU/FPGA zur Performancesteigerung
- Bis zu 4 TB Memory für BI und Virtualisierung

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge R7525

Features	PowerEdge R7525
CPU	2x AMD Rome/Milan (Socket SP3), up to 280W (cTDP)
Memory	**DDR4:** Up to 32 x DDR4 RDIMM, LRDIMM (4TB), bandwidth up to 3200 MT/S
Disk Drives	**Front:** 1. Up to 8x 3.5” Hot Plug SAS/SATA 2. Up to 8x 2.5” Hot Plug NVMe 3. Up to 12x 3.5” Hot plug SAS/SATA 4. Up to 16x 2.5” Hot plug SAS/SATA 5. Up to 24x 2.5” Hot plug SAS/SATA\NVMe 6. Up to 2x 2.5” Hot plug SAS/SATA + Rear up to 2x 2.5” Hotplug SAS/SATA Optional: BOSS (2x M.2)
PCIe Storage	Up to 24 NVMe Direct
USB	**Front:** 1 port (USB 2.0), 1 (micro-USB, iDRAC Direct) **Rear:** 1 port (USB 3.0) + 1 port (USB 2.0) **Internal:** 1 port (USB 2.0)
Storage Controller	**HW RAID**: PERC 10.4 - HBA345, H345, H745, H840, 12G SAS HBA **Chipset** SATA/SW RAID: Yes
Network	OCP x16 Mezz 3.0 + 2 x 1GE LOM
PCIe slots	Up to 8 x PCIe x16 Gen4 slots @ 16GT/s
Power Supply Unite (PSU)	PSU – 800W, 1400W, 2400W
System Mgmt	iDRAC9 with Lifecycle Controller
High Availability (HA)	Hot plug redundant Hard drives, Fans, PSUs BOSS (2 x internal M.2)
Graphics Processing Unit (GPU)	Up to 3x 300W DW or 6x 75W SW or 4x 150W SW

POWEREDGE C6525

Universeller 2 Sockel/2 HE Server mit hoher Speicher- und I/O-Leistung, maximale Anzahl an Cores

Workloads

- HPC
- Web Tech
- Forschung

Key Features

- 24 Medien, 6 pro System optional davon 2 NVMe
- BOSS Boot Medium
- Bis zu 64 Cores pro CPU mit AMD ZEN2/ZEN3 Architektur
- 16 DIMM Sockel
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Ultrakompakter 4 Server in 2 HE (4in2) Server mit optionaler Flüssigkeitskühlung
- Komplettes CPU Portfolio
- Viele I/O Optionen
- Optional NVMe Direct Connect für Caching

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge C6525

Features	PowerEdge C6525
CPU	Single or dual AMD Rome (and Milan) per node Air and Direct Contact Liquid Cooling (DCLC target post RTS)
Memory	**DDR4:** 8 channels/CPU; Up to 16 x RDIMMs and LRDIMMs Speed: up to 3200 MT/s
Storage	**Backplanes:** • 24 x 2.5” (direct, and NVMe with 2 universal slots) • 12 x 3.5” direct • No-Backplane **Internal:** uSD card | M.2 SATA BOSS
PCIe slots	2 PCIe Gen4 HH/HL slot, x16 (network, storage, AIC) 1 x16 Gen4 OCP 3 Slot
USB	MiniDP, 1x USB 3.0, dedicated iDRAC direct port
Storage Controller	**HW RAID:** PERC 10.4: H345, HBA 345 & H745 adaptor PERC **SW RAID:** Yes, S150
LOM	Single port 1Gbe LOM (Broadcom)
Power Supply Unite (PSU)	PSUs (support for 2x1600W, and 2400W), and 2000W 240VDC
System Mgmt	iDRAC9 with Lifecycle Controller
High Availability (HA)	Hot plug Hard drives and PSUs, Dual rotor redundant fans
Graphics Processing Unite (GPU)	1 x T4

DELL Technologies
PARTNER PROGRAM

POWEREDGE XE8545

Leistungsstarker GPU-basierter Server

Workloads

- HPC
- Machine Learning/Deep Learning/AI
- GPU Virtualization

Key Features

- 10x SAS/SATA, bis zu 8x NVMe
- BOSS Boot Medium
- Zwei Sockel mit bis zu 64 Cores pro CPU mit AMD ZEN3 Architektur
- 32 DIMM Sockel
- Bis 4x A100 GPUs mit NVLink

HIGHLIGHTS

- Support für 4x 400W/500W NVIDIA A100
- Milan Support
- Fresh Air Optionen

AMD EPYC

DELL Technologies PARTNER PROGRAM

PowerEdge XE8545

Features	PowerEdge XE8545
CPU	Single or dual AMD Milan CPU up to 64 cores per processor support for up to 2x 280W processors
Memory	**DDR4:** Up to 32 x DIMMs Speed: up to 3200 MT/s
Storage	**Backplanes:** • 10 x 2.5” Hot Plug SAS/SATA • 8 x 2.5” NVMe **Optional:** M.2 SATA BOSS
PCIe slots	1x PCIe Gen4 LP x16 slot, 1x PCIe Gen4 FH x16 slot + 1x PCIe Gen4 FH x16 slot or 2x PCIe Gen4 FH x8 slot
USB	**Front:** 1 port (USB 2.0), 1 (micro-USB, iDRAC Direct) **Rear:** 1 port (USB 3.0) + 1 port (USB 2.0)
Storage Controller	**HW RAID:** PERC 10.4: H745 adaptor
LOM	2x 1Gbe
OCP	1x OCP 3.0
Power Supply Unite (PSU)	2+2 2400W
System Mgmt	iDRAC9 with Lifecycle Controller
High Availability (HA)	Hot plug Hard drives and PSUs, Hot plug redundant cooling
Graphics Processing Unite (GPU)	4 x A100 NVLink

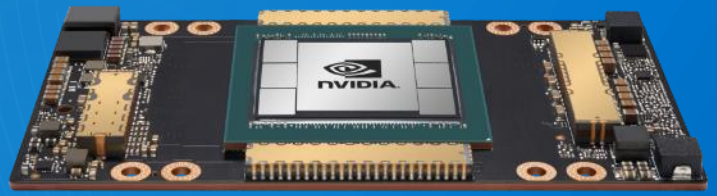
DELL Technologies
PARTNER PROGRAM

POWEREDGE XE8545

NVIDIA A100 SXM4 GPU

GPU Memory	**40 GB oder 80 GB**
Memory Bandwidth	1,6 TB/s
Power	**400 W oder 500W**
Interconnect	PCIe Gen4 64 GB/s
Multi-Instance GPU	Bis zu 7
Formfaktor	Fix 4 GPU Board

- **2x** HPC Performance
- **3x** ML Training Performance
- **7 “virtuelle” V100** in einer A100 (mit Multi-Instance GPU)



Ein A100 SXM GPU “Modul”

*Das 80GB/500W GPU Modell kann bis zu 13% mehr Training Performance ergeben.**

* Based on Dell internal testing

DELL Technologies PARTNER PROGRAM

POWEREDGE XE8545

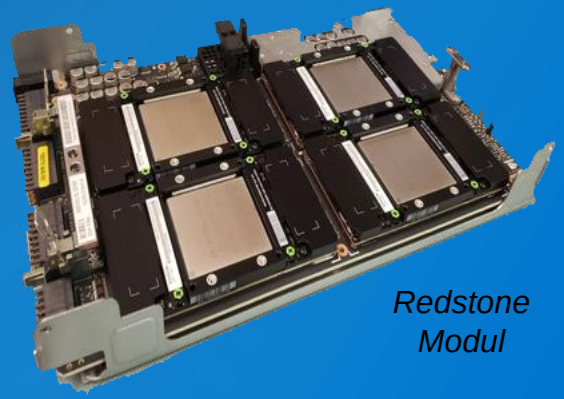
HGX A100 4-GPU Baseboard “Redstone” – Festes 4 Wege SXM4 GPU Modul mit NVLINK

Der XE8545 hat ein Modul mit 4 SXM4 Mezzanine GPUs **mit NVLINK Interconnect**

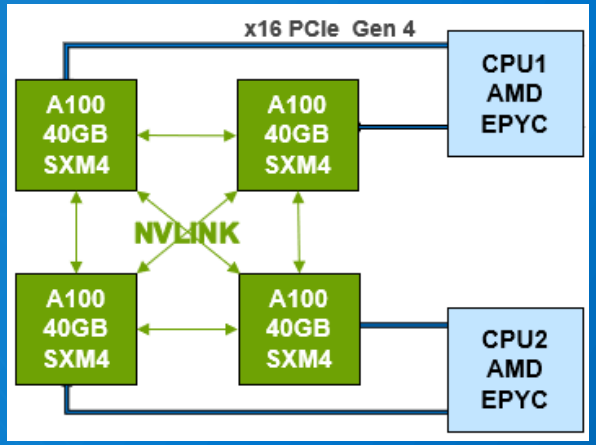
Das 4 SXM4 Module ist fest mit dem Mainboard verbunden **kein Switch wird benötigt**

12 NVLINK Interfaces pro GPU für schnelle **GPU zu GPU** Kommunikation (600 GB/s)

Die A100 SXM4 GPU Module auf der HGX Platine haben **entweder 40GB / 400W oder 80GB / 500W**



Redstone Modul



AMD EPYC

Intel basierte Server

1S, 2S und 4S

DELL Technologies
PARTNER PROGRAM

POWEREDGE R650

Ideale Kombination aus kompakter scale-out Compute Leistung und Storage in einem 2 Sockel / 1 HE Server

Workloads

- Datenbanken und Analytics:
  XaaS, Hadoop, OLTP und Decision Support
- Kompakter Software Defined Storage Server
- High-Density Virtualisierung

Key Features

- Bis zu 12x 2,5” Medien mit bis zu 10 NVMe oder bis zu 4x 3,5”
- Gemischte Laufwerktypen mit Front und Rückseitigem Storage für optimale Performance
- Optionales hot-plug BOSS-S2
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- OCP3 NIC und optional SNAP I/O
- PERC H755N mit NVMe Hardware RAID
- Dual Intel Xeon Scalable Family 3. Generation CPU mit bis zu 40 Cores, PCIe Gen4 und 32 DIMM Sockel

intel

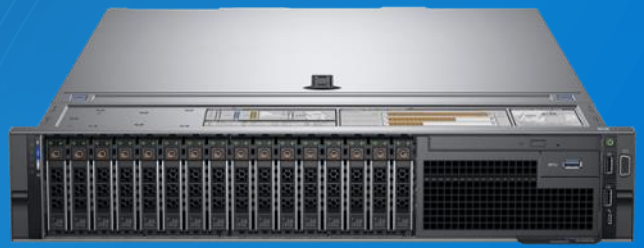
DELL Technologies PARTNER PROGRAM

PowerEdge R650

FEATURES	POWEREDGE R640	POWEREDGE R650
CPU	Up to two 2nd Generation Intel® Xeon® Scalable processors with up to 28 cores per processor Support for up to 2 x 205W procs	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support
Memory	UP to 24 x DDR4 RDIMM/LR-DIMM Optane Persistent Memory 100 Series (Apache Pass): Yes NVDIMM: Yes DIMM Speed: Up to 2933 MT/s	Up to 32 x DDR4 RDIMMs/LRDIMMs (8TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: Yes DIMM Speed: Up to 3200 MT/s
Storage	Up to 4 x 3.5" SAS/SATA HDD Up to 10 x 2.5" SAS/SATA HDD or SSD; or NVMe Up to 2 x 2.5" (rear) SAS/SATA HDD or SSD; or NVMe Internal: IDSDM and BOSS (2 x M.2) for boot Bandwidth: 12Gb/6Gb SAS	Up to 4 x 3.5" SAS/SATA HDD Up to 10 x 2.5" SAS/SATA HDD or SSD; or NVMe Up to 2 x 2.5" (rear) HDD or SSD; or NVMe Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: PERC 9 / PERC 10; Dual PERC option Chipset SATA/SW RAID: Yes	HW RAID: PERC 10.5 & 11; Dual PERC Option HW NVMe RAID Chipset SATA/SW RAID: Yes
Network	1 NDC	2 x 1GbE LOM + 1 x OCP 3.0
PCIe slots	Up to 3 x PCIe Gen3 (x16/x16/x16) or 2 x PCIe FH slots (Gen3)	Up to 3 x PCIe LP Slots Gen4 (x16/x16/x16) with SNAP I/O options or 2 x PCIe FH slots (Gen4)
GPU	Up to 3 x SW GPUs	Up to 3 x SW GPUs
Integrated Ports	Front: 1 x USB 2.0, 1 managed (micro USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB	Front: 2 x USB 2.0, 1 managed (micro USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Hot Plug redundant drives, 3 Tiered Fans, PSU, IDSDM, BOSS (2 x Internal M.2)	Hot Plug Redundant Dives, 3 Tiered Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)
Power Supplies	495W AC, 750W AC & Mix Mode, 1100W AC|DC & Mix Mode, 1600W AC	800W AC|DC, 1100W AC|DC, 1100W -48DC, 1400W AC|DC
Dimensions	H x W x D: 1U x 434mm x 773mm	H x W x D: 1U x 434mm x 787mm
Form Factor	1U Rack Server	1U Rack Server

POWEREDGE R750

Universeller 2 Sockel/2 HE Server für alle Aufgaben im Rechenzentrum mit optimierter Kühlung für maximale Leistung



Workloads

- VDI: GPU und Storage Optionen
- AI/Machine Learning: Accelerator Karten Support
- Private Cloud: Optimierte Performance

Key Features

- Intel Xeon Scalable Family 3. Generation CPUs
- 32 DIMM Sockel mit bis zu 4 TB RAM
- Bis zu 28x 2,5” oder 12x 3,5” Laufwerke mit NVMe
- Multi Vector Cooling für optimale Kühlung bis auf Slot Ebene
- Bis zu 8 PCIe Slots Gen4

HIGHLIGHTS

- Multi Vector Cooling liefert hochoptimierten Luftstrom und ermöglicht eine große Konfigurationsvielfalt und effizienten Betrieb
- 2x FH GPU oder 6x SH GPU
- 32x DIMMs mit bis zu 16x PMEM
- Hot-Plug BOSS-S2 Boot Device

intel

DELL Technologies PARTNER PROGRAM

PowerEdge R750

FEATURES	POWEREDGE R740	POWEREDGE R750
CPU	Up to two 2nd Generation Intel® Xeon® Scalable processors with up to 28 cores per processor Support for up to 2 x 205W procs	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support
Memory	Up to 24 x DDR4 RDIMM, LRDIMM, Optane Persistent Memory 100 (Apache Pass): Yes NVDIMM: Yes DIMM Speed: Up to 2933 MT/s	Up to 32 x DDR4 RDIMMs/LRDIMMs (8TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: Yes DIMM Speed: Up to 3200 MT/s corrected
Storage	Up to 12 x 3.5" SAS/SATA HDD Up to 24 x 2.5" SAS/SATA HDD or SSD Up to 24 x NVMe Internal: IDSDM and BOSS (2 x M.2) for boot Bandwidth: 12Gb/6Gb SAS	Up to 12 x 3.5" SAS/SATA HDD Up to 24 x 2.5" SAS/SATA HDD or SSD or NVMe with universal slots Up to 16 x 2.5" SAS/SATA HDD or SSD + 8 x 2.5" NVMe Up to 4 x rear 2.5" SAS/SATA HDD or SSD or NVMe Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: PERC 9 / PERC 10; Dual PERC option Chipset SATA/SW RAID: Yes	HW RAID: PERC 10.5 & 11 (dual PERC Option) HW NVMe RAID Chipset SATA/SW RAID: Yes
Network	1 NDC	2 x 1GbE LOM + 1 x OCP 3.0
PCIe slots	Up to 8 x PCIe Slots Gen3 (4 x16)	Up to 8 x PCIe Slots Gen4 (6 x16, 2 x8), SNAP I/O option
GPU	3 x 300W (DW) or 6 x 75W (SW)	2 x 300W (DW) or 6 x 75W (SW)
Integrated Ports	Front: 2 x USB 2.0, 1 managed (micro-USB) + upsell: 1 x USB 3.0 Rear: 2 x USB 3.0	Front: 2 x USB 2.0, 1 managed (micro-USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Hot Plug redundant drives, 3 Tiered Fans, PSU, IDSDM, BOSS (2 x Internal M.2)	Hot Plug redundant drives, 3 Tiered Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)
Power Supplies	495W AC, 750W AC & Mix Mode, 1100W AC|DC & Mix Mode, 1600W AC, 2000W AC, 2400W AC	800W AC|DC, 1100W AC|DC & -48v DC, 1400W AC|DC, 2400W AC|DC
Dimensions	H x W x D: 2U x 434mm x 716mm	H x W x D: 2U x 434mm x 736mm
Form Factor	2U Rack	2U Rack Server

POWEREDGE R750xa

2 HE Server optimiert für GPU Einsatz mit ausbalancierter Leistung

Workloads

- HPC: GPU optimiert
- AI/Machine Learning: Accelerator Karten Support
- Render Farmen und High-End Virtualisierung

Key Features

- Intel Xeon Scalable Family 3. Generation CPUs
- 32 DIMM Sockel mit bis zu 4 TB RAM
- Bis zu 8x 2,5” Laufwerke optional mit NVMe
- Multi Vector Cooling für optimale Kühlung bis auf Slot Ebene
- Bis zu 8 PCIe Slots Gen4

HIGHLIGHTS

- Multi Vector Cooling liefert hochoptimierten Luftstrom und ermöglicht eine große Konfigurationsvielfalt und effizienten Betrieb
- 4x FH GPU oder 6x SH GPU
- 32x DIMMs mit bis zu 16x PMEM
- Hot-Plug BOSS-S2 Boot Device

intel

DELL Technologies PARTNER PROGRAM

PowerEdge R750xa

2 Sockel Server
- Bis zu zwei 3. Generation Intel ® Xeon® Scalable Processors mit bis zu 40 Cores

High-Speed und Memory Kapazität
- 32x DDR4 DIMMs
- 3200 MT/s
- Intel® Optane Persistent Memory 200 Serie

I/O
- Bis zu 8x PCIe Gen4
- OCP 3.0 für NIC

Bis zu 8 Laufwerke
- SAS/SATA SSD oder NVMe Medien
- BOSS-S2 (2x M.2) für boot (optional)
- HW NVMe RAID

GPU Optimiert
- Bis zu 4x Double-Wide und 6x Single-Wide PCIe Gen4 GPUs von NVIDIA oder AMD
- NVLink Bridging Support erlaubt bessere Skalierung von Memory und Performance
- Multi-Instance GPU (MIG) für multi-tenancy

- Multi Vector Cooling 2.0
- Dell Direct Liquid Cooling (DLC) Support
- Industrie-führendes System Management und Security

WORKLOADS

AI-ML/DL Training und Inferencing

High-Performance Compute

Render Farmen und high-end Virtualisierung

DELL Technologies PARTNER PROGRAM

PowerEdge R750xa

FEATURES	POWEREDGE R750xa	POWEREDGE R750
CPU	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support
Accelerators	Support for PCIe Gen4 based NVidia, Intel and AMD Up to 4 x A100 250W 40GB PCIe 4.0 w/ NVLink bridges Up to 4 x MI100 250W 32GB PCIe 4.0 Up to 4 x A40 Up to 6 x T4, T4-N	2 x 300W (DW) or 6 x 75W (SW)
Memory	Up to 32 x DDR4 RDIMMs/LRDIMMs (4TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: No DIMM Speed: Up to 3200 MT/s	Up to 32 x DDR4 RDIMMs/LRDIMMs (8TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: Yes DIMM Speed: Up to 3200 MT/s corrected
Storage	Up to 8 x 2.5" SAS/SATA SSD UP to 8 x 2.5" HW RAID NVMe UP to 6 x 2.5" Direct Attach NVMe Mixed config: Up to 4 x 2.5" SAS/SATA SSD + 4 x 2.5" NVMe Rear: Optional BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB	Up to 12 x 3.5" SAS/SATA HDD Up to 24 x 2.5" SAS/SATA HDD or SSD or NVMe with universal slots Up to 16 x 2.5" SAS/SATA HDD or SSD + 8 x 2.5" NVMe Up to 4 x rear 2.5" SAS/SATA HDD or SSD or NVMe Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: PERC 10.5 & 11 HW NVMe RAID Chipset SATA/SW RAID: Yes	HW RAID: PERC 10.5 & 11 (dual PERC Option) HW NVMe RAID Chipset SATA/SW RAID: Yes
Network	2 x 1GbE LOM + 1 x OCP 3.0	2 x 1GbE LOM + 1 x OCP 3.0
PCIe slots	Up to 8 x PCIe Slots Gen4 (6 x16, 2 x8)	Up to 8 x PCIe Slots Gen4 (6 x16, 2 x8), SNAP I/O option
Integrated Ports	Front: 2 x USB 2.0, 1 managed (micro-USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB	Front: 2 x USB 2.0, 1 managed (micro-USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Hot Plug redundant drives, High performance Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)	Hot Plug redundant drives, 3 Tiered Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)
Power Supplies	1400W, 2400W	800W AC|DC, 1100W AC|DC & -48v DC, 1400W AC|DC, 2400W AC|DC
Dimensions	H x W x D: 86.8 x 434mm x 837.2mm	H x W x D: 2U x 434mm x 736mm
Form Factor	2U Rack Server	2U Rack Server

POWEREDGE MX750c

Hohe Leistung und kompakter Aufbau für skalierbare Workloads

Entwickelt für

- Virtualisierung, VDI, Applikationsserver
- Basis für Software Defined Storage und Networking, hyper-converged Infrastruktur

Eigenschaften

- Bis zu zwei 40 Core Intel® Xeon® Scalable Prozessoren
- 32x DDR4 DIMM Slots, RDIMM / LRDIMM, bis zu 3200 MT/s Geschwindigkeit, 4 TB maximale Memory Größe
- Bis zu 6x 2,5” SAS/SATA (HDD/SSD) oder NVMe SSD Medien plus optionalem BOSS
- Dual SD Karten oder BOSS für SDS Boot

HIGHLIGHTS

- 2S Server für skalierbare Workloads
- Konfigurations-Flexibilität für optimale Nutzung
- iDRAC9 für einfache Verwaltung und Automatisierung

intel

DELL Technologies PARTNER PROGRAM

PowerEdge MX750c

FEATURES	POWEREDGE MX740C	POWEREDGE MX750c
Chassis	MX7000	MX7000
CPU	Up to two 2nd Generation Intel®™ Xeon(R)™ Scalable processors, with up to 28 cores per processor	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor 3 x UPI @ 11.2 GT/s
Memory	DDR4: 6 channels/CPU; Up to 24 x RDIMMs and LRDIMMs DIMM Speed: Up to 2933 MT/s Intel Optane Persistent Memory 100 series	DDR4: 8 channels/CPU; Up to 32 x RDIMMs and LRDIMMs DIMM Speed: Up to 3200 MT/s Intel Optane Persistent Memory 200 series
Storage	Up to 6 x 2.5" SAS/SATA (HDD/SSD) or NVMe	6 x 2.5" SAS, SATA, NVMe (Gen4) Internal: uSD Card, M.2 SATA BOSS 1.5
Storage Backplane	x 6 Universal Backplane x 6 SAS/SATA Backplane x 4 Universal Backplane	x 6 Universal Backplane x 6 SAS/SATA Backplane x 4 Universal Backplane
Storage Controller	S140 Software RAID PERC HBA330 H730P H745P HBA330 mini-mez	S150 Software RAID PERC HBA330 H755 Performance RAID, NVMe RAID H745P Performance RAID, internal and external drive connect HBA350i MX mini-mezz, HBA, external drive connect
IO slots	Dual Port and Quad Port Mezz 25G, Dual Port FC32G, PCIe Gen3 enabled Up to 2 pair redundant general-purpose switch or pass-through module bays (Fabrics A and B); redundant pair of storage specific switch bays (Fabric C)	Dual Port and Quad Port Mezz 25G, Dual Port FC32G, PCIe Gen4 enabled Up to 2 pair redundant general-purpose switch or pass-through module bays (Fabrics A and B); redundant pair of storage specific switch bays (Fabric C)
System Management	iDRAC9 with Lifecycle Controller, OME-M1.3, OME 3.x	iDRAC9 with Lifecycle Controller, OME-M1.3, OME 3.x
Power Supplies	3000W AC	3000W AC
Form Factor	7U Chassis, single-width compute sled	7U Chassis, single-width compute sled

POWEREDGE C6520

Hohe Leistung und Flexibilität in einem 2 HE Chassis mit bis zu 4 Server-Einschüben und Flüssigkeitskühlung ab Werk zur Effizienzsteigerung

Workloads

- HPC: Dell EMC Validated Solutions for HPC
- Financial Modeling / HFT
- Scale-Out Web Tech

Key Features

- Bis zu 4 Dual Sockel Einschübe in 2 HE
- Flüssigkeitskühlung ab Werk für max. TDP CPUs
- Chassis Optionen für Chassis mit 24x 2,5” oder 12x 3,5” oder NVMe oder Diskless,
- 2 oder 4 Server-Einschübe
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Entwickelt für große Scale-Out Umgebungen
- Basis für HPC und Hyper Converged Infrastructure Lösungen von Dell EMC
- Flüssigkeitskühlung ab Werk zur Effizienzsteigerung

intel

DELL Technologies PARTNER PROGRAM

PowerEdge C6520

FEATURES	POWEREDGE C6420	POWEREDGE C6520
Chassis	C6400 Chassis	C6400 Chassis
CPU	Up to two Intel® Xeon® Scalable processors including integrated Omni-Path fabric processors with up to 28 cores per processor and up to 205W processors Air and Direct Liquid Cooling support (configuration restrictions apply due to thermal/power limits)	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Air and Direct Liquid Cooling support (configuration restrictions apply due to thermal/power limits)
Memory	Up to 16 x DDR4 RDIMMs and LRDIMMs DIMM Speed: Up to 2933 MT/s	DDR4: 8 channels/CPU; Up to 16 x RDIMMs and LRDIMMs DIMM Speed: Up to 3200 MT/s Intel Optane Persistent Memory 200 series: No
Storage	Backplanes: Up to 24 x 2.5" Options: 1) Direct: SAS/SATA; 2) SAS/SATA with 2 NVMe drives Up to 12 x 3.5" Diskless configuration Internal: uSD Card, M.2 SATA BOSS 1.0	Backplanes: Up to 24 x 2.5" Options: 1) Direct: SAS/SATA; 2) SAS/SATA with 2 NVMe drives Up to 24 x 2.5" all NVMe Up to 12 x 3.5" Diskless configuration Internal: uSD Card, M.2 SATA BOSS 1.0
Storage Controller	HW RAID: PERC: H330, H730p Chipset SATA/SW RAID: Yes, S140	HW RAID: PERC 10.5 H345 , H745, HBA 345 Chipset SATA/SW RAID: Yes, S150
Network	Single port 1GbE LOM	Single port 1GbE LOM
PCIe slots	1 x16 PCIe Gen 3 LP HH riser slot 1 x16 OCP 2.0 Mezz slot (for network controller) 1 x 8 Mezz slot (for storage controller)	2 x PCIe Gen4 HH/HL slots, x16 (network, storage, AIC), 1 x16 Gen4 OCP 3.0 slot
Integrated Ports	Rear ports: 2 x USB 3.0 ports Micro USB port for iDRAC Direct Mini Display Port for video	Rear ports: 1 x USB 3.0 Micro USB port for iDRAC direct Mini Display Port for video
System Management	iDRAC9 Enterprise, OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct
Accelerators		Up to one GPU/FPGA/PAC (up to 75W)
Power Supplies	1600W, 2000W AC|DC (Mix Mode), 2400W	1600W, 2000W AC|DC (Mix Mode), 2400W, 2600W
Dimensions	H x W x D: 86.80mm x 448.00mm x 790.00mm	H x W x D: 86.80mm x 448.00mm x 790.00mm
Form Factor	2U rack mounted multi-node server	2U rack mounted multi-node server

PowerEdge C6520

Feature	C6420 (Intel Skylake)	C6525 (AMD Rome)	C6520 (Intel Whitley)
Storage Controller	HW RAID: PERC 9 Mini(support for Mini H330, H730P, HBA330) Chipset SATA/SW RAID: Yes/S140	HW RAID: PERC 10.4: H345, HBA 345 & H745 adaptor PERC SW RAID: Yes/S150	HW RAID: PERC 10.4: H345, HBA 345 & H745 adaptor PERC SW RAID: Yes/S150
PCIe slots	1 PCIe Gen3 HH/HL slot, x16 1 MEZZ slot x8 (storage), 1 x16 OCP Slot (network)	2 PCIe Gen4 HH/HL slot, x16 (network, storage, AIC) 1 x16 Gen4 OCP 3 Slot (non hot plug)	2 PCIe Gen4 HH/HL slot, x16 (network, storage, AIC) 1 x16 Gen4 OCP 3 Slot (non hot plug)
LOM	Single port 1Gbe LOM onboard (Intel)	Single port 1Gbe LOM onboard (Broadcom)	Single port 1Gbe LOM daughter board (Broadcom)
Std Rear Ports	MiniDP, 2x USB 3.0, dedicated iDRAC direct port	MiniDP, 1x USB 3.0, dedicated iDRAC direct port	MiniDP, 1x USB 3.0, dedicated iDRAC direct port
GPU	No	75W low profile PCIe	75W low profile PCIe
System Mgmt	BMC (includes virtual console/media), and iDRAC Enterprise	BMC (includes virtual console/media), and iDRAC Enterprise: Benelli	BMC (includes virtual console/media), and iDRAC Enterprise :Halo
PSUs	PSUs (support for 2x1600W, 2000W,and 2400W PSU's), 2000W 240V DC by MLK	14G PSUs (support for 2x1600W, 2000W, and 2400W, 2000W 240V DC)	14G PSUs (support for 2x1600W, 2000W, and 2400W, 2000W 240V DC)
HA	Hot plug drives and PSUs, Dual rotor redundant fans	Hot plug Hard drives and PSUs, Dual rotor redundant fans	Hot plug Hard drives and PSUs, Dual rotor redundant fans

DELL Technologies PARTNER PROGRAM

POWEREDGE R650xs

Kompakter 1 HE 2 Sockel Server mit mehr Leistung und optimiertem Preis-/Leistungsverhältnis

Workloads

- HPC
- Virtualisierung
- Datenbanken

Key Features

- Neueste Intel Xeon Prozessoren mit bis zu 32 Cores
- NVMe Support, optional mit NVMe HW RAID
- Flexible Storage Optionen, bis 10 10x 2,5“ Medien
- Multi-Vector Cooling V2.0
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Optimiert für mittelgroße Umgebungen
- NVMe HW RAID als Option
- Volle Integration in Dell EMC OpenManage

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DELL Technologies PARTNER PROGRAM

PowerEdge R650xs

Features	PowerEdge R650xs	PowerEdge R650
CPU	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 32 cores per processor Support for up to 2 x 220W procs	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support
Memory	Up to 16 x DDR4 RDIMMs (1TB max) Optane Persistent Memory 200 Series (Barlow Pass): No NVDIMM: No DIMM Speed: Up to 3200 MT/s	Up to 32 x DDR4 RDIMMs/LRDIMMs (4TB, *8TB pRTS + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: No DIMM Speed: Up to 3200 MT/s
Storage	Up to 4 x 3.5" SAS/SATA HDD Up to 10 x 2.5" SAS/SATA HDD or SSD; or NVMe Up to 2 x 2.5" (rear) SAS/SATA HDD or SSD; or NVMe Up to 8 x 2.5" NVMe RAID HW NVMe RAID (8 x 2.5" with PERC H755N) Internal: IDSDM,USB and BOSS-S1 (2 x M.2) for boot Bandwidth: 12Gb/6Gb SAS	Up to 4 x 3.5" SAS/SATA HDD Up to 10 x 2.5" SAS/SATA HDD or SSD; or NVMe Up to 2 x 2.5" (rear) HDD or SSD; or NVMe Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: PERC 10.5 & 11 (no Dual PERC option) HW NVMe RAID Chipset SATA/SW RAID: Yes	HW RAID: PERC 10.5 & 11; Dual PERC Option HW NVMe RAID Chipset SATA/SW RAID: Yes
Network	2 x 1GbE LOM + OCP 3.0	2 x 1GbE LOM + 1 x OCP 3.0
PCIe slots	Up to 3 x PCIe Gen4 (x16/x8/x8) with SNAPI I/O option	Up to 3 x PCIe LP Slots Gen4 (x16/x16/x16) with SNAP I/O options or 2 x PCIe FH slots (Gen4)
GPU	None	Up to 3 x SW GPUs
Integrated Ports	**Front:** 2 x USB 2.0, 1 managed (micro-usb) + front VGA **Rear:** 1 x USB 3.0, 1 ports (USB 2.0) serial (option), network, iDRAC9, secondary VGA, SysID	**Front:** 2 x USB 2.0, 1 managed (micro USB) + front VGA **Rear:** 1 x Gen2 + 1 x Gen3 USB Optional Internal USB
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Hot Plug redundant Hard Drives, PSU. Cold plug fans. DSDM and BOSS (2 x M.2)	Hot Plug Redundant Dives, 3 Tiered Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)
Power Supplies	600W, 800W, 1100W, -48Vdc/1100W,1400W	800W, 1100W, -48Vdc/1100W,1400W
Dimensions	H x W x D: 1U x 434mm x 698mm (2.5" drives) or 749mm (3.5" drives)	H x W x D: 1U x 434mm x 787mm (4x 3.5" or 10x 2.5" drives) or 736mm (8x 2.5" drives)
Form Factor	1U Rack Server	1U Rack Server

DELL Technologies
PARTNER PROGRAM

POWEREDGE R750xs

Hohe Leistung und Flexibilität in einem 2 HE Chassis mit bis zu 4 Server-Einschüben und Flüssigkeitskühlung ab Werk zur Effizienzsteigerung

Workloads

- Software Defined Storage
- Virtualisierung
- VDI Umgebungen mit GPU Support

Key Features

- Neueste Intel Xeon Prozessoren mit bis zu 32 Cores
- NVMe Support, optional mit NVMe HW RAID
- Hot-Plug BOSS-S2 boot Medium
- Flexible Storage Optionen, bis 24 2,5“ Medien
- Multi-Vector Cooling V2.0
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Optimiert für mittelgroße Umgebungen und SDS Umgebungen
- NVMe HW RAID als Option
- Hot-plug BOSS-S2
- Volle Integration in Dell EMC OpenManage

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DELL Technologies PARTNER PROGRAM

PowerEdge R750xs

Features	PowerEdge R750xs	PowerEdge R750
CPU	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 32 cores per processor Support for up to 2 x 220W processors	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 40 cores per processor Support for up to 2 x 270W processors Direct Liquid Cooling support
Memory	Up to 16 x DDR4 RDIMMs (1TB max) Optane Persistent Memory 200 Series (Barlow Pass): No NVDIMM: No DIMM Speed: Up to 3200 MT/s	Up to 32 x DDR4 RDIMMs/LRDIMMs (8TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200 Series (Barlow Pass): Yes NVDIMM: No DIMM Speed: Up to 3200 MT/s
Storage	Up to 12 x 3.5" SAS/SATA HDD Up to 12 x 3.5" SAS/SATA HDD + 2 x 2.5" Rear Up to 16 x 2.5" SAS/SATA HDD or SSD Up to 16 x SAS/SATA HDD or SSD + 8 x NVMe HW NVMe RAID (8 x 2.5" with PERC H755N) Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS	Up to 12 x 3.5" SAS/SATA HDD Up to 24 x 2.5" SAS/SATA HDD or SSD or NVMe with universal slots Up to 16 x 2.5" SAS/SATA HDD or SSD + 8 x 2.5" NVMe Up to 4 x rear 2.5" SAS/SATA HDD or SSD or NVMe Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM or USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: PERC 10.5 & 11 (no dual PERC option) HW NVMe RAID Chipset SATA/SW RAID: Yes	HW RAID: PERC 10.5 & 11; Dual PERC Option HW NVMe RAID Chipset SATA/SW RAID: Yes
Network	2 x 1GbE LOM + 1 x OCP 3.0	2 x 1GbE LOM + 1 x OCP 3.0
PCIe slots	Up to 5 x PCIe Gen4 (5 x16), 1 x PCIe Gen3 (1:x8) with SNAP I/O option	Up to 8 x PCIe Slots Gen4 (up to 6 x16) with SNAP I/O option
GPU	None	2 x 300W (DW) or 6 x 75W (SW)
Integrated Ports	Front: 2 x USB 2.0, 1 managed (micro-usb), primary VGA Rear: 1 ports (USB 3.0), 1 ports (USB 2.0), serial (option), network, iDRAC9, secondary VGA, SysID	Front: 2 x USB 2.0, 1 managed (micro-USB) + front VGA Rear: 1 x Gen2 + 1 x Gen3 USB Optional Internal USB
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Hot Plug redundant Hard drives, 3 Tiered Hot Plug Fans, PSU, IDSDM and BOSS-S2 (2 x M.2)	Hot Plug redundant drives, 3 Tiered Hot Plug Fans, PSU, IDSDM, BOSS-S2 (2 x M.2)
Power Supplies	600W, 800W, 1100W, -48Vdc/1100W, 1400W	800W, 1100W, -48Vdc/1100W,1400W, 2400W
Dimensions	H x W x D: 2U x 434mm x 721mm	H x W x D: 2U x 434mm x 736mm
Form Factor	2U Rack Server	2U Rack Server

DELL Technologies
PARTNER PROGRAM

POWEREDGE R450

Kompakter und günstiger 1 HE
2 Sockel Server mit modernster CPU Technologie

Workloads

- Einfache Virtualisierung
- Infrastruktur
- Nichtvirtualisierte Anwendungen

Key Features

- Neueste Intel Xeon Prozessoren mit bis zu 24 Cores
- Bis zu 8x 2,5“ oder 4x 3,5“ Medien SAS/SATA
- Multi-Vector Cooling V2.0
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Kostengünstiger 2S Server
- Ideal für Infrastrukturaufgaben
- Volle Integration in Dell EMC OpenManage

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DELL Technologies
PARTNER PROGRAM

PowerEdge R450

Features	PowerEdge R440	PowerEdge R450
CPU	Up to two 2nd Generation Intel® Xeon® Scalable processors with up to 24 cores per processor Support for up to 2 x 140W processors	Up to two 3rd Generation Intel® Xeon® Scalable processors with up to 24 cores per processor. Support for up to 2 x 165W processors (Xeon Silver 4000, Gold 5000 series).
Memory	Up to 16 x DDR4 RDIMMs	Up to 16 x DDR4 RDIMMs
Storage	4x 3.5" SAS/SATA 8x 2.5" SAS/SATA and/or SATA only (PCH SATA) 10 x2.5" SAS/SATA/NVMe (max 4 NVMe – requires 2P) Internal: IDSDM, USB and BOSS (2 x M.2) for boot Bandwidth: 12Gb SAS/6Gb SATA	4x 3.5" SAS/SATA or ChipSATA 8x 2.5" SAS/SATA Internal: IDSDM, USB and BOSS-S1 (2 x M.2) for boot Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: Standard PERC 9 Chipset SATA/SW RAID: Yes	HW RAID: PERC 11, PERC 10.5/11 Chipset SATA/SW RAID: Yes
Network	2 x 1GbE + OCP 2.0	2 x 1GbE + OCP 3.0
PCIe slots	Up to 2 x PCIe Gen3 (x16/x16)	Up to 2 x PCIe Gen4 (x16/x16)
Integrated Ports	Front: Power, USB 2.0, USB micro (iDRAC Direct), primary VGA, status LEDs Rear: 2 ports (USB 3.0), secondary VGA, serial, iDRAC, SysID	Front: Power, USB 2.0, USB micro (iDRAC Direct), primary VGA, status LEDs Rear: 2x USB 3.0, secondary VGA, serial, iDRAC, SysID
System Management	Base: iDRAC9 Express w/ Lifecycle Controller 2.0 Quick Sync 2.0, iDRAC Direct 2.0, new HTML5-based GUI Options: LCD bezel	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	2 internal M.2 for boot	Hot Plug redundant Hard drives, PSU, Cold Plug Fans, IDSDM and BOSS-S1 (2 x M.2)
Power Supplies	450W, 550W	600W, 800W, -48Vdc/1100W
Dimensions	H x W x D:1U x 434mm x 678mm (2.5” drives) or 728mm (3.5” drives)	H x W x D: 1U x 434mm x 698mm (2.5” drives) or 749mm (3.5” drives)
Form Factor	1U Rack Server	1U Rack Server

POWEREDGE R550

Storage-optimierter Einstiegs-Server mit 2 Sockeln und 2 HE du aktuellen Intel Prozessoren

Workloads

- IT Infrastruktur
- Einfache Virtualisierung
- Small Business Umgebungen

Key Features

- Neueste Intel Xeon Prozessoren mit bis zu 24 Cores
- Bis zu 8x 3,5“ oder 16x 2,5“ Medien
- Hot-Plug BOSS-S2 boot Medium
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Kostengünstiger 2S Server
- Ideal für IT Infrastrukturaufgaben
- Optional BOSS-S2 mit hot-plug
- Volle Integration in Dell EMC OpenManage

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PowerEdge R550

Features	PowerEdge R540	PowerEdge R550
CPU	Up to two 2nd Generation Intel® Xeon® Scalable processors with up to 20 cores per processor Support for up to 2 x 125W processors	Up to two 3rd Generation Intel® Xeon® Scalable processors scalable up to 24 cores Support for up to 2 x 185W processors (Xeon Silver 4000, Gold 5000 series).
Memory	Up to 16 x DDR4 RDIMM or LR-DIMM	Up to 16 x DDR4 RDIMMs
Storage	8 x 3.5" SAS/SATA 12 x 3.5" SAS/SATA Rear: 2 x 3.5" SAS/SATA Internal BOSS-S1 (2 x M.2) for boot Bandwidth: 12Gb/6Gb SAS	8 x 3.5" SAS/SATA or ChipSATA 16 x 2.5" SAS/SATA 8 x 2.5 SAS/SATA Rear BOSS-S2 (2 x M.2) for boot Internal: IDSDM and USB Bandwidth: 12Gb/6Gb SAS
Storage Controller	HW RAID: Standard PERC 9 Chipset SATA/SW RAID: Yes	HW RAID: PERC 11, PERC 10.5/11 Chipset SATA/SW RAID: Yes
Network	2 x 1GbE + OCP 2.0	2 x 1GbE + OCP 3.0
PCIe slots	Up to 3 x PCIe Gen3 (x16,x8,x8) + up to 2 x PCIe Gen2 + dedicated PERC slot	Up to 3 x PCIe Gen4 (x16,x16,x16), 1 x PCIe Gen3 (x8)
Integrated Ports	Front: Power, USB 2.0, USB micro (iDRAC Direct), primary VGA, status LEDs Rear: 2 ports (USB 3.0), secondary VGA, serial, iDRAC, SysID	Front: 2 ports (USB 2.0), 1 managed (micro-usb) + front VGA Rear: 1 ports (USB 3.0), 1 ports (USB 2.0), serial (option), network, iDRAC9, secondary VGA, SysID
System Management	iDRAC9 Express w/ Lifecycle Controller 2.0 Quick Sync 2.0, iDRAC Direct 2.0, new HTML5-based GUI Options: LCD bezel	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct, Quick Sync 2.0
High Availability	Optional 2 x M.2	Hot Plug redundant Hard drives, PSU, Cold Plug Fans, IDSDM and BOSS-S2 (2 x M.2)
Power Supplies	450W, 495W, 750W, 1100W	600W, 800W, -48Vdc/1100W
Dimensions	H x W x D: 2U x 434mm x 718mm	H x W x D: 2U x 434mm x 721mm
Form Factor	2U Rack Server	2U Rack Server

POWEREDGE XR11 & XR12

Performance

- Eine 3rd Generation Intel® Xeon® Scalable Processors mit bis 36 Core pro Prozessor
- Multi-Accelerator Support

Certified rugged für Telco & militärische Anwendungen

- Betrieb in staubigen Umgebungen
- Betrieb in extremen Temperatur-Bereichen von -5C bis 55C (41F bis 131F)
- NEBS Level 3 Compliant für Telcos
- MIL-STD qualifiziert für Stöße, Vibration, Staub und andere rauen Umgebungen

Kompakt & flexibles Design

- 400 mm oder 16 Inch Tief
- Umdrehbare Montage mit I/O und Netzteilen an der Front
- Dank umkehrbaren Luftstrom auch „rückwärts“ einbaubar

Einfaches und integriertes Remote Management

- 100% kompatibel mit OpenManage
- Optional mit streaming Telemetriedaten zur detaillierten Analyse
- Auch verwaltbar mit den Konsolen unserer Partner, Skripting

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WORKLOADS

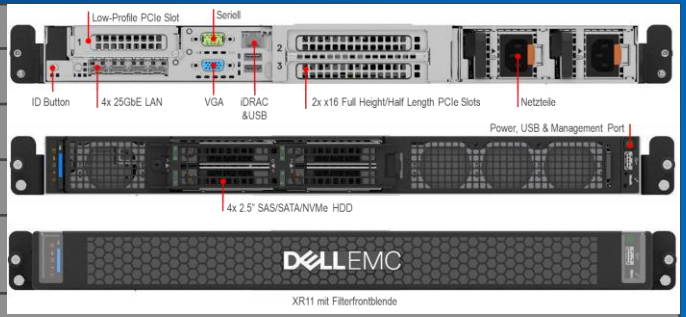
- Telekommunikation
- Behörden / Militär
- Retail & Restaurants

- **Telco / 5G:** MEC, CDN, VRAN
- **Militär:** Mobile Data Center in Einsatzzentralen, Fahrzeuge
- **Retail:** Video-Überwachung Analyse, Point of Sale Analyse und IoT Device Aggregierung und Analyse

DELL Technologies
PARTNER PROGRAM

PowerEdge XR11

Features	PowerEdge XR11
CPU	One 3rd Generation Intel® Xeon® Scalable processors with up to 36 cores Support for up to 1 x 225W processors
Accelerators	Support PCIe Gen4 based Nvidia cards Up to 2 x T4
Memory	Up to 8 x DDR4 RDIMMs/LRDIMMs (1DPC) Optane Persistent Memory 200 Series: Yes
Storage	Up to 4 x 2.5" 12Gb SAS, 6Gb SATA, NVMe SSDs 4 x NVMe (direct or with RAID controller) Optional BOSS 1,0 for boot
Storage Controller	PERC 10.5: H345 PERC 11: HBA355i, H755P External: H840, HBA355e Software RAID: S150
Network	Integrated LOM - (4x) 25 GbE SFP+ 2 x16 Gen4 FH PCIe
PCIe slots	1 x8 PCIe Gen4 LP + 2 x16 PCIe Gen4 FH
Integrated Ports	Integrated LOM - (4x) 25 GbE SFP+ Serial Port VGA USB: XR11 with front access ports – Front: 1 standard USB 2.0, 1 micro USB 2.0; Rear: 1 standard USB 2.0, 1 standard USB 3.0; Internal: 1 standard USB 3.0 USB: XR11 with rear access ports - Front: 1 standard USB 2.0, 1 micro USB 2.0, 1 standard USB 3.0; Rear: None; Internal: 1 standard USB 3.0 Dedicated iDRAC network port
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct
High Availability	Hot Plug Drives, Hot Plug Redundant Power Supplies, Redundant fans, Boot Optimized Storage Subsystem (BOSS 1.0)
Dimensions	H x W x D: XR11NAF – 42.8mm x 434mm x 400mm; XR11RAF – 42.8mm x 434mm x 404mm
Form Factor	1U Rack Server



XR11 mit Filterfrontblende

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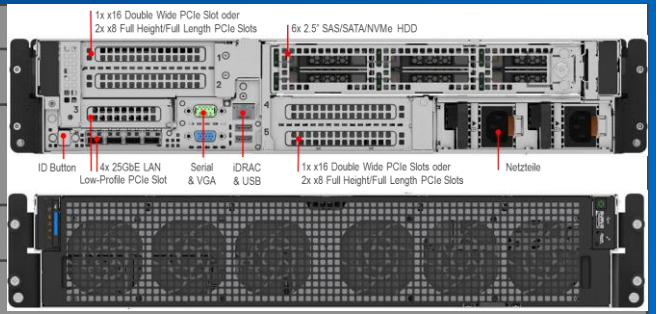
PowerEdge XR12

Features	PowerEdge XR12
CPU	One 3rd Generation Intel® Xeon® Scalable processors with up to 36 cores Support for up to 1 x 225W processors
Accelerators	Support PCIe Gen4 based NVidia, Up to 2 x T4 Up to 2 x A100 Up to 2 x A40
Memory	Up to 8 x DDR4 RDIMMs/LRDIMMs (8TB + Optane Persistent Memory 200 Series) Optane Persistent Memory 200: Yes
Storage	Up to 6 x 2.5" 12Gb SAS, 6Gb SATA, NVMe SSDs 6 x NVMe (4 NVMe direct attach or 6x with H755P RAID controller) Optional BOSS 1,0 for boot
Storage Controller	PERC 10.5: H345 PERC 11: HBA355i, H755P External: H840, HBA355e Software RAID: S150
Network	Integrated LOM - (4x) 25 GbE SFP+
PCIe slots	1 x8 PCIe Gen4 LP + 2 x16 PCIe Gen4 FH or 1 x8 PCIe Gen4 LP + 4 x8 PCIe Gen4 FH
Integrated Ports	Integrated LOM - (4x) 25 GbE SFP+ Serial Port VGA USB: XR12 with front access ports - Front: 1 standard USB 2.0, 1 micro USB 2.0; Rear: 1 standard USB 2.0, 1 standard USB 3.0; Internal: 1 standard USB 3.0 USB: XR12 with rear access ports - Front: 2 standard USB 2.0, 1 micro USB 2.0, 1 standard USB 3.0; Rear: None; Internal: 1 standard USB 3.0 Dedicated iDRAC network port
System Management	iDRAC9 Enterprise, Datacenter license options; OpenManage Enterprise and Plugins (Power Manager, SupportAssist, and Update Manager). iDRAC Direct
High Availability	Hot Plug Drives, Hot Plug Redundant Power Supplies, Redundant fans, Boot Optimized Storage Subsystem (BOSS 1.0)
Dimensions	H x W x D: XR12NAF – 86.8mm x 434mm x 400mm; XR12RAF – 86.8mm x 434mm x 400mm
Form Factor	2U Rack Server



DELL Technologies
PARTNER PROGRAM

Mainstream WORKLOADS (R750,R7525,R650,R6525)

Database and Analytics

Ideal for XaaS, Hadoop, OLTP and Decision Support Systems workloads with flexible resources (NVMe, large memory and capacity)

Virtual Desktop Infrastructure

Balanced core count and GPU to support for maximum numbers of end users

Mixed Workload Standardization

For datacenters that require standardized hardware for several diverse workloads. Provides the highest performance, capacity and configuration flexibility in the most dense form factor.

Optimized WORKLOADS (R750xs,R7515,R650xs,R6515)

Virtualization / Cloud

A perfect choice for medium businesses exploring the advantages of software virtualization.

Medium VM (virtual machine density)

Consider medium VM as an adaptable option to right size your virtual instances needed to process workloads as they fluctuate in your business.

Medium Duty Inferencing

Tuned to power medium duty AI or ML tailored inferencing algorithms to drive more timely and accurate business insights.

Specialized WORKLOADS (XE8545, R750xa)

AI-ML/DL Training/Inferencing

High Performance compute and accelerators configuration options enables AI/ML/DL workloads

High-Performance Compute

High performance compute, higher CPU and GPU core density per rack enables HPC simulation modeling

Render farms and Virtualization

GPU flexibility enables various workloads, as well as higher GPU-utilization using multi-tenancy to serve multiple users without compromising performance

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C-Series WORKLOADS (C6520,C6525)

High-Performance Computing

High compute performance, higher core/node density per rack enables HPC, Research, Rendering, Vectorized and Advanced Vector Extensions (AVX)

Financial analysis / High Frequency Trading

Density optimized compute and low latency I/O configurations

Scale-out Web Tech

High performance cache tiering, better I/O performance for volume scale-out workloads and 1S optimized configurations

Telco/Edge WORKLOADS (XR11,XR12)

Telecommunications

Compact and rugged design capable of supporting accelerators for remote private networks requiring AI/ML/DL type workloads.

Government / Military

Reliable DC power in a hardened chassis to support mobile data centers deployed globally to collect and analyze reconnaissance data.

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Retail & Restaurants

Built with a minimum footprint and enterprise compute to optimize expensive retail space and deliver a targeted virtual experience.

Modular WORKLOADS (MX750c)

General Purpose IT

Scalable processor core count, higher performance memory configurations, sufficient storage capacity and networking capabilities

Software-Defined Storage & Software-Defined Networking

Flexible and richer storage config
High speed networking support
Redundant IO

Database Analytics

Compute and memory rich configurations (Structured and Unstructured DB, Database analytics)

DELL Technologies
PARTNER PROGRAM

Ressourcen

Server quick comparison guides

https://www.delltechnologies.com/resources/en-us/asset/quick-reference-guides/products/servers/dell_emc_poweredge_rack_quick_reference_guide.pdf

https://www.delltechnologies.com/resources/en-us/asset/quick-reference-guides/products/servers/poweredge-modular-quick-reference-guide.pdf

https://www.delltechnologies.com/resources/en-us/asset/quick-reference-guides/products/servers/dell_emc_poweredge_c_series_servers_quick_reference_guide.pdf

Virtual Rack

https://esgvr.dell.com/

Balanced Memory Whitepaper

https://www.delltechnologies.com/resources/en-us/asset/white-papers/products/servers/whitepaper-memory-population-rules-for-3rd-generation-intel-xeon-scalable-processors-on-poweredge-servers.pdf

https://www.delltechnologies.com/resources/en-us/asset/tech-notes/products/servers/whitepaper-memory-population-rules-for-3rd-generation-amd-epyc-processors-for-poweredge-servers.pdf

Server Übersicht & Tec Specs

https://www.delltechnologies.com/de-de/servers/poweredge-rack-servers.htm#accordion0&accordion1&accordion2&accordion3

Direct from Development

https://www.delltechnologies.com/resources/en-us/asset/tech-notes/products/servers/direct-from-development-dell-technologies-liquid-cooling-support-for-new-poweredge-servers.pdf

https://www.delltechnologies.com/resources/en-us/asset/tech-notes/products/servers/top-3-networking-utilities-for-new-poweredge-servers-with-3rd-generation-intel-xeon-scalable-processors.pdf

https://www.delltechnologies.com/resources/en-us/asset/tech-notes/products/servers/direct-from-development-pciegen4.pdf

Server der 14. Generation

Rack & Tower

DELL Technologies
PARTNER PROGRAM

Dell EMC PowerEdge R340

1 Sockel Rack-Server für hohe Performance und Verfügbarkeit in Remote Sites

Zielanwendungen

- File/Print, kleine Anwendungen, Mail/Messaging, Backup/Recovery

Wichtigste Features

- 4 und 6 Core Intel® Xeon® E-2100 Prozessoren
- 4x DIMM Slots (64 GB maximal, 2666 MT/s UDIMMs)
- Bis zu 8x 2,5” oder 4x 3,5“ hot-plug Festplatten
- Bis zu 2x PCIe 3.0 Slots
- 2x 1 GbE LOM
- Redundante hot-plug 550 W oder 350 W verkabeltes Netzteil

HIGHLIGHTS

- **Effizienteres Arbeiten**
  - 50% höherer Core Count
  - 11% schnellerer Datentransfer
  - 20% mehr PCIe Lanes
- **Mehr „Server“ Features**
  - Redundante Netzteile
  - Hot-plug Festplatten
- Verwaltbar mit iDRAC9

PowerEdge R440

Preiswerter Scale-Out Server in 1 HE mit 2 CPUs, hoher Dichte und Leistung

Workloads

- High-Performance Computing (HPC)
- Entry-Level & Midrange Virtualisierung
- Webtech Server
- Applikationsserver

Key Features

- Bis zu 10x 2,5“ Laufwerke mit optional bis zu 4 NVMe oder 4x 3,5“
- Interner M.2 Boot Optimized Storage
- Flexible Netzwerkkonfiguration
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- Bis zu 4 NVMe Laufwerke
- 27 % mehr Cores und 50 % mehr Memory Bandbreite verglichen mit dem R430
- Nur 73 cm tief

DELL Technologies PARTNER PROGRAM

PowerEdge R540

Preiswerter File Server in 2 HE mit 2 CPUs, optimal für SDS Umgebungen

Workloads

- Software Defined Storage
- File-Services
- Messaging Server
- Video/Media Streaming

Key Features

- Bis zu 14x 3,5“ Laufwerke, max. 140 TB
- Interner M.2 Boot Optimized Storage
- Flexible onboard Netzwerkkartenoptionen
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 12/16 DDR4 DIMMS, bis zu 384/512 GB
- 27 % mehr Cores und 50 % mehr Memory Bandbreite verglichen mit dem R530
- Bis zu 14x 3,5“ hot-plug Festplatten

DELL Technologies
PARTNER PROGRAM

PowerEdge R640

Ideale Kombination aus kompakter scale-out Compute Leistung und Storage in einem 2 Sockel / 1 HE Server

Workloads

- HPC: Dell EMC Validated Solutions for HPC
- Virtualisierung: Dichter, leistungsfähiger Compute Node
- Software Defined Storage: vxFlex, vSAN, XC (Nutanix)
- Service Provider: Anwendungsschicht

Key Features

- Bis zu 12x 2,5” Medien mit bis zu 8 NVMe oder bis zu 4x 3,5”
- Gemischte Laufwerktypen mit Front und Rückseitigem Storage für optimale Performance
- Interner M.2 Boot Optimized Storage
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

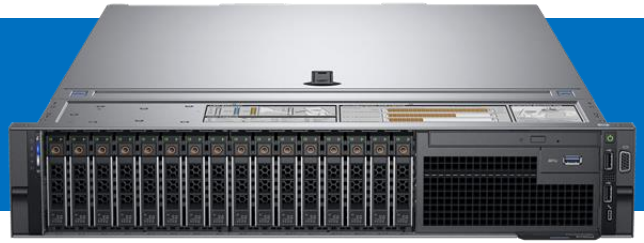
- 200% mehr NVMe als beim R630
- Dell EMC Ready Nodes für vxFlex, vSAN, VxRail und XC Familie (Nutanix)
- 27 % Steigerung im Core Count und 50 % Steigerung in der Memory Bandbreite vs. R630

Basierend auf internen Dell EMC Tests 03/01/2017.

DELL Technologies PARTNER PROGRAM

PowerEdge R740

Universeller 2 Sockel/2 HE Server für alle Aufgaben im Rechenzentrum mit optimierter Kühlung für maximale Leistung



Workloads

- VDI: GPU und Storage Optionen
- AI/Machine Learning: Accelerator Karten Support
- Private Cloud: Optimierte Performance

Key Features

- Bis zu 3x 300W oder 6x 150W Accelerator Karten
- Bis zu 16x 2,5” oder 8x 3,5” Laufwerke
- Multi Vector Cooling für optimale Kühlung bis auf Slot Ebene
- Bis zu 8 PCIe Slots

HIGHLIGHTS

- Multi Vector Cooling liefert hochoptimierten Luftstrom und ermöglicht eine große Konfigurationsvielfalt und effizienten Betrieb
- 50% mehr Accelerator-Karten vs. R730
- 24x DIMMs mit bis zu 12x NVDIMM
- Internes M.2 Boot Optimized Storage Subsystem

DELL Technologies
PARTNER PROGRAM

PowerEdge R740xd

Die ideale Software Defined Storage Plattform mit hoher Flexibilität, Performance und einfacher Bedienung mit 2 Sockel in 2 HE

Workloads

- Software Defined Storage: vxFlex, vSAN, XC, VxRail
- Big Data, Unstructured Data, Analytics
- Service Provider: Data Tier

Key Features

- Bis zu 24x NVMe
- Bis zu 32x 2,5” oder 18x 3,5” Laufwerke
- Bis zu 3x 300W oder 6x 150W Accelerator Karten
- Multi Vector Cooling für optimale Kühlung bis auf Slot Ebene

HIGHLIGHTS

- Multi Vector Cooling liefert hochoptimierten Luftstrom und ermöglicht eine große Konfigurationsvielfalt und effizienten Betrieb
- 6x mehr NVMe Support vs. R730xd
- 24x DIMMs mit bis zu 12x NVDIMMs
- Internes M.2 Boot Optimized Storage Subsystem

DELL Technologies PARTNER PROGRAM

PowerEdge R740xd2

Storage optimierter Server für alle Anwendungen mit Bedarf an hoher Kapazität und Dichte

Workloads

- Storage-Intensive Anwendungen (Hadoop, Big Data, Content Delivery, Video-Überwachung)
- Software Defined Storage
- Exchange und SharePoint

Key Features

- Bis zu 26x 3,5“ Laufwerke in 2 HE
- Interner M.2 Boot Optimized Storage (BOSS)
- 2x 1 GbE Ethernet plus 2 optionale Ports bis zu 25 GbE
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 2 HE 2 Sockel Server optimiert für maximale Storage Kapazität und Dichte
- Skaliert auf bis zu 364 TB in 2 HE mit günstigem internen Storage und scale-out auf bis zu 7,2 PB in 42 HE
- iDRAC9 für Management

DELL Technologies
PARTNER PROGRAM

PowerEdge R840

Hohe IOPs, 4 CPUs und Acceleratoren für alle High-End Workloads

Workloads

- Datenbanken mit GPU Support
- Virtualisierung mit GPU Support
- Server Konsolidierung

Key Features

- Bis zu 6 TB Memory, 6 PCIe Slots
- Bis zu 24 hot-swap NVMe PCIe SSDs oder 24x HDD/SSD
- Viele CPU Optionen, GPU & FPGA Support
- BOSS M.2 Boot-Option
- System Management per iDRAC9

HIGHLIGHTS

- Optimiertes Chassis und Mainboard Design
- Bis zu 24x Apache Pass (RTS+) / 12 NVDIMMs
- 24x 2,5” NVMe oder SAS/SATA Optionen
- Bis zu 2x GPU/FPGA (300 W)

DELL Technologies
PARTNER PROGRAM

PowerEdge R940

Der Dell EMC Server für anspruchsvolle Workloads wie Datenbanken, ERP oder High-End Virtualisierung – in einem kompakten 3 HE

Workloads

- In-Memory Database: maximale Leistung
- Analytics: NVMe und NVDIMM für maximalen I/O
- Virtualisierung: Redundante Hypervisoren

Key Features

- Bis zu 12 NVMe und bis zu 24x 2,5” mit Universal Backplane
- Spezielle High-Performance 2 Sockel Konfiguration mit 50 % mehr UPI Bandbreite verglichen mit einem traditionellem 2 Sockel Server
- Interner M.2 Boot Optimized Storage
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 50 % mehr NVMe vs. R930
- Bis zu 48 DIMMs mit maximal 6 TB Memory und bis zu 12 NVDIMMs
- Optimiertes Design mit den Eigenschaften eines 4 HE Servers in 3 HE

DELL Technologies PARTNER PROGRAM

PowerEdge R940xa

Maximale Skalierbarkeit und Leistung für Datenbanken, Analytics und Virtualisierung

Workloads

- Compute und I/O Intensive Workloads
- Machine Learning und Artificial Intelligence
- GPU unterstützte Datenbanken

Key Features

- Bis zu 6 TB Memory, 12 PCIe Slots
- 32 HDD Support mit bis zu 4 NVMe PCIe SSDs
- Vier CPUs und bis zu 4x GPU & FPGA Support
- BOSS M.2 Boot-Option
- System Management per iDRAC9

HIGHLIGHTS

- 32x HDDs mit bis zu 4x NVMe PCIe SSDs in der Backplane
- Bis zu 4x 300 W oder 8x 150 W GPU/FPGA
- Optimiertes Mainboard-Design

DELL Technologies
PARTNER PROGRAM

PowerEdge R840 vs.R940xa vs. R940

Feature	R840	R940xa	R940
CPU	Full Intel Purely shelf 3 and shelf 4 support UPI fully connected		
Memory	DDR4: Up to 48 x DDR4 RDIMMS (6TB ,Apache Pass: 24x Apache Pass (12TB) NVDIMM: up to 12 x (6 per CPU1& CPU2)		
Storage	1. 8x2.5" SAS/SATA or 2. 24x2.5" SAS/SATA with upto 12NVMe Drives, 3. 24NVMe option Internal: IDSDM and BOSS (2 x M.2) for boot(HW RAID) Rear: 2x2.5" HDD only	1. 8x2.5" SAS/SATA or 2. 24x2.5" SAS/SATA 3. 32 HDD with up to 4 NVMe backplane options Internal: IDSDM and BOSS (2 x M.2) for boot(HW RAID) Rear: **None**	1. 8x2.5" SAS/SATA or 2. 24x2.5" SAS/SATA with upto 12NVMe Drives Internal: IDSDM and BOSS (2 x M.2) for boot(HW RAID) Rear: **None**
PCIe slots	2 base slots+ 4 additional on riser **(Total 6)** 4x16 slots or 2x16 + 4x8 slots	2 base slots+ 10 additional on riser **(Total 12)** 6x16 slots or 2x16 + 10x8 slots	7 base Slots + 6 on PEM Risers **(Total 13)**
GPU/FPGA	**2** DW FH/FL GPU **/4** FPGA	**4** DW FH/FL GPU **/8** FPGA	Not supported
Storage Controller	**HW RAID**: PERC 9/10 – All Adapters; Dual PERC option		
NDC	Vendor & fabric choice w/ 1 x NDC, Choice of 1G,10G,25G		
SysMgmt	iDRAC 9		
HA	Hot plug redundant Hard drives, Fans, PSU, IDSDM and 2 x internal M.2		
Dimensions	Height: 2U; Depth: 812mm	Height: 4U; Depth: 812mm	Height: 3U; Depth:777mm PEM design
Feature	**R840 2U**	**R940xa 4U**	**R940 3U**

Dell EMC PowerEdge T140

Einfach nutzbarer und sicherer Eintiegs-Server,
entwickelt für kleine Büros und Remote Sites

Zielanwendungen

- File/Print, Mail/Messaging, Point of Sale

Wichtigste Features

- 4 und 6 Core Intel® Xeon® E-2100 Prozessoren
- 4x DIMM Slots (64 GB maximal, 2666 MT/s UDIMMs)
- Bis zu 4x 3,5” verkabelte Festplatten
- Bis zu 4x PCIe 3.0 Slots
- 2x 1 GbE LOM
- 365 W verkabeltes Netzteil

HIGHLIGHTS

- **Effizienteres Arbeiten**
  - 50% höherer Core Count
  - 11% schnellerer Datentransfer
  - 20% mehr PCIe Lanes
- **Flexible Platzierungen**
  - Leiser Betrieb
  - Effiziente Thermik
- Verwaltbar mit iDRAC9

Dell EMC PowerEdge T340

Zuverlässiger, einfach verwaltbarer und skalierbarer Tower Server, ideal für Remote Sites

Zielanwendungen

- File/Print, kleine Anweundgen, Mail/Messaging, Backup/Recovery

Wichtigste Features

- 4 und 6 Core Intel® Xeon® E-2100 Prozessoren
- 4x DIMM Slots (64 GB maximal, 2666 MT/s UDIMMs)
- Bis zu 8x 2,5” hot-plug Festplatten
- Bis zu 4x PCIe 3.0 Slots
- 2x 1 GbE LOM
- Redundante hot-plug 495 W oder 365 W verkabeltes Netzteil

HIGHLIGHTS

- **Effizienteres Arbeiten**
  - 50% höherer Core Count
  - 11% schnellerer Datentransfer
  - 20% mehr PCIe Lanes
- **Mehr „Server“ Features**
  - Redundante Netzteile
  - Hot-plug Festplatten
- Verwaltbar mit iDRAC9

PowerEdge T440

Leistungsfähiger 2 Sockel Tower Server für remote Office Anwendungen

Workloads

- Mail, Messaging, File & Print
- Workgroup Collaboration
- Robo Server

Key Features

- Gute Balance von Preis und Leistung
- Bis zu 16x 2,5“ oder 8x 3,5“ Laufwerke
- Kompaktes und leises Design
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 12/16 DDR4 DIMMS, bis zu 384/512 GB
- 27 % mehr Cores und 50 % mehr Memory Bandbreite verglichen mit dem T430
- Leises Design, optimiert für ROBO

DELL Technologies PARTNER PROGRAM

PowerEdge T640

High-End Tower Server mit 2 CPUs Intel Xeon SP und großer Storage-Kapazität

Workloads

- Desktop/CAD Virtualisierung
- File-Services, Backup to Disk
- Datenbanken mit lokalem Storage
- Robo Server

Key Features

- Bis zu 32x 2,5“ oder 18x 3,5“ Laufwerke
- Optional bis zu 8 NVMe PCI SSDs
- Bis zu 4x GPU mit 300 Watt
- Umfangreiches Management und Scripting Support für iDRAC9 mit Lifecycle Controller und Redfish API

HIGHLIGHTS

- 24 DDR4 DIMMS, bis zu 1,5 TB
- 27 % mehr Cores und 50 % mehr Memory Bandbreite verglichen mit dem T630
- Bis zu 18x 3,5“ hot-plug Festplatten

DELL Technologies PARTNER PROGRAM

PowerEdge T440 vs. T640

Feature	T440	T640
CPU	2 x Intel Purley socket P	2 x Intel Purley socket P **Support for up to 2 x 165W procs >165W support UI**
Memory	**Up to 16 x DDR4 RDIMMS (AEP UI)** **Apache Pass**: UI; **NVDIMM**: No	**DDR4**: Up to 24 x RDIMMs **Apache Pass: Yes, up to 6 per cpu (UI)** **NVDIMM: Yes, up to 6 per cpu (UI)**
Storage	Front: Base: 4 or 8 x 3.5" or 16 x 2.5" devices Optional optical drive; **Internal**: IDSDM or **2 internal M.2 for boot** **Bandwidth**: 12Gb SAS/6Gb SATA	Base: 8 x 3.5" devices; **Upsell**: Up to 18 x 3.5" or 16 x 2.5", 16x 2.5" + 8x NVMe drives or 32 x 2.5"; TBU and/or optical drive NVMe – **optional x4+ bay UI** **Internal**: IDSDM and **BOSS (2 x M.2) for boot** **Bandwidth**: 12Gb/6Gb SAS
Storage Controller	**HW RAID**: Up to PERC 9 12Gb SAS, 6Gb SATA **Chipset SATA/SW RAID:** Yes	**HW RAID**: PERC 9 – All Adapters; Dual PERC option **Chipset SATA/SW RAID:** Yes
LOM	2 x 1GE	**2 x 10GE**
PCIe slots	Up to 4 x PCIe Gen3 + up to 2 x PCIe Gen2 + dedicated PERC slot	**Up to 8 x Gen3 slots + one internal**
Integrated Ports	4 x RJ-45 1GE LAN ports; Rear system ID button; CMA external LED jack; iDRAC RJ45 port; Two USB (1xUSB2.0, 1xUSB3.0); DB-15 VGA; DB-9 Serial; VFlash socket	Front: 1x USB 3.0, 1x USB 2.0 Dedicated iDRAC, serial, video, 4x USB 2.0/**3.0**
System Mgmt	**Base:** iDRAC Express with Lifecycle Controller 2.0 **Upsell:** Enterprise edition, OME Config and vFlash	**iDRAC9** with Lifecycle Controller; Express, Enterprise and OME Config optional upsells**. iDRAC Direct 2.0, Wireless (Titan)**
HA	Cabled HDD and PSU; optional hot swap redundant PSUs and hot swap drives, IDSDM or **BOSS**	Hot plug redundant Hard drives, Fans, PSU IDSDM **and BOSS (2 x internal M.2)**
Dimensions	Height: 5U; Depth: 26.3" (Same as previous Gen)	**Height:** 5U; **Depth**: same as 13G
Security	**14G-class Security**	**14G-class Security**
GPU	1 x DW 300W GPU **Supported**	4 x DW, 8 x SW

PowerEdge R740xd vs. T640

Feature	R740xd	T640
CPU	2 x Intel Purley socket P (Support for up to 2 x **205W** procs)	2 x Intel Grantley socket R3 **Support for up to 2 x 205 procs**
Memory	**DDR4**: Up to 24 x RDIMMs **NVDIMM: up to 12 x NVDIMM support, 16GB NVDIMM-N**	**DDR4**: Up to 24 x RDIMMs **Apache Pass: Yes, up to 6 per cpu** **NVDIMM: Yes, up to 6 per cpu**
Storage	**Front**: Base: 12 x 3.5" devices; Upsell: Up to **24 x 2.5" SAS/SATA/NVMe** **Mid:** Up to 4 x 3.5" **or 2.5"** SAS/SATA HDD**/SSD or 4 x 2.5" NVMe SSD** **Internal**: Optional IDSDM **or Internal M.2 Boot Module (2 x M.2) for boot** **Rear**: **Up to 2 x 3.5" or 4 x 2.5"** **Bandwidth**: 12Gb/6Gb SAS/SATA	Base: 8 x 3.5" devices; Upsell: Up to 18 x 3.5" or 16 x 2.5"or 32 x 2.5", 16x 2.5 +8x NVMe NVMe – **Up to x8 bay** **Internal**: **ACE** and **BOSS (2 x M.2) for boot** **Bandwidth**: 12Gb/6Gb SAS
Storage Controller	**HW RAID**: PERC **10, PERC 9** **Chipset SATA/SW RAID:** Yes, **NVME only**	**HW RAID**: PERC 9 / **PERC 10**; Dual PERC option **Chipset SATA/SW RAID:** Yes
LOM	Cost-effective vendor/fabric choice w/ 1 NDC: 4 x 1GE, 2 x 10GE + 2 x 1GE, 4 x 10GE, **2 x 25GE**	**2 x 10GE**
PCIe slots	1P: Up to **4** Gen3 slots 2P: Up to **8** x Gen3 slots, up to **4** are x16	**Up to 8 x Gen3 slots + one internal**
Integrated Ports	Front: Video, 2x USB 2.0, **dedicated** iDRAC Direct USB Rear: Video, serial, 2x USB 3.0, dedicated iDRAC network	Front: 1x USB 3.0, 1x USB 2.0 Dedicated iDRAC, serial, video, **6**x USB 2.0/**3.0**
System Mgmt	**iDRAC9** with Lifecycle Controller; Express, Enterprise and OME Config optional upsells**. Quick Sync 2, iDRAC Direct, new HTML5-based GUI**	**iDRAC9** with Lifecycle Controller; Express, Enterprise and OME Config optional upsells**.** **iDRAC Direct 2.0, Wireless (Titan)**
HA	Hot plug redundant Hard drives, Fans, PSU Optional IDSDM	Hot plug redundant Hard drives, Fans, PSU **ACE and BOSS (2 x internal M.2)**
Dimensions	**Height:** 2U; **Depth**: same as 13G	**Height:** 5U; **Depth**: same as 13G
Security		**14G-class Security**
GPU	**3 x DW, 6 x SW**	4 x DW, **8** x SW


DELL Technologies
PARTNER PROGRAM

25GbE Switches für 25GbE SFP28 und 10GbE SFP+ Server Adapters

PowerEdge 25G OCP Cards

15G OCP NIC 3.0 Options

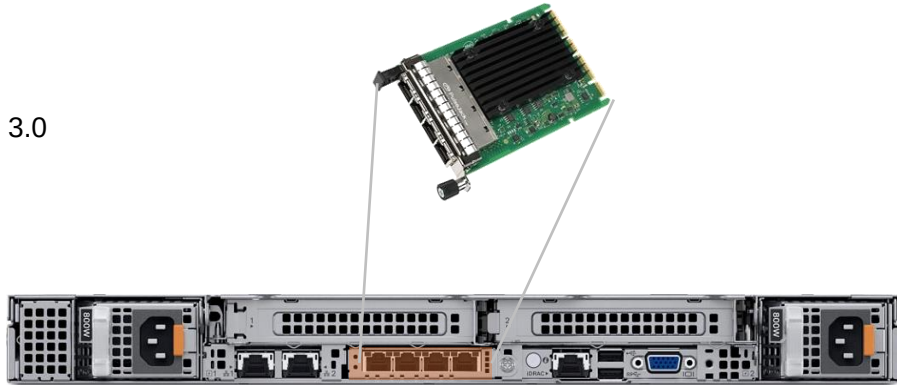
- **Broadcom**
  - Broadcom 5720 Quad Port 1GbE OCP NIC 3.0
  - Broadcom 57416 Dual Port 10GbE BASE-T Adapter, OCP NIC 3.0
  - Broadcom 57412 Dual Port 10GbE SFP+, OCP NIC 3.0
  - Broadcom 57414 Dual Port 10/25GbE SFP28 OCP NIC 3.0
  - Broadcom 57504 Quad Port 10/25GbE,SFP28, OCP NIC 3.0

- **Intel**
  - Intel i350 Quad Port 1GbE OCP NIC 3.0
  - Intel X710-T2L Dual Port 10GbE BASE-T, OCP NIC 3.0
  - Intel X710-T4L Quad Port 10GbE BASE-T, OCP NIC 3.0
  - Intel X710 Dual Port 10GbE SFP+ OCP NIC 3.0
  - Intel X710 Quad Port 10GbE SFP+ OCP NIC 3.0
  - Intel E810 Dual Port 10/25GbE SFP28 OCP NIC 3.0
  - Intel E810 Quad Port 10/25GbE SFP28 OCP NIC 3.0 (SeptFY22)

- **Marvell (QLogic)**
  - Marvell FastLinQ 41132 Dual Port 10GbE SFP+ OCP NIC 3.0
  - Marvell FastLinQ 41232 Dual Port 10/25GbE SFP28 OCP NIC 3.0

- **Mellanox**
  - Mellanox ConnectX-5 Dual Port 10/25GbE SFP28 OCP NIC 3.0

- **Solarflare**
  - Solarflare X2562 Dual Port 10/25GbE SFP28 OCP NIC 3.0
  - Solarflare X2562 PLUS Dual Port 10/25GbE SFP28 OCP NIC 3.0
    (Solarflare available via ESI intake only)



DELL Technologies
PARTNER PROGRAM

S5200-ON: 25GbE &100GbE in-rack switches

Latest generation 25GbE & 100GbE open networking switches

- Low cost fixed form factor top-of-rack switches offering multiple options of 25GbE SFP28 ports for in-rack server and storage connections and 100GbE QSFP28 & QFSPDD-28 ports for uplink and clustering
- Based on Broadcom Trident3 chipset
- Enhanced buffering, higher forwarding tables and data plane support for VXLAN Routing (RIOT: Routing In and Out of Tunnels)
  - **S5212F-ON –** 1RU, half-width,12 x 25GbE ports and 3 x 100GbE ports - **2.5X the throughput at ½ the size**
  - **S5224F-ON** - 1RU, 24 x 25GbE ports and 4 x 100GbE ports
  - **S5248F-ON** – 1RU, 48 x 25GbE ports and 8 x 100GbE ports (4xQSFP28 100GbE and 2xQSFPDD-28 2x100GbE ports)
  - **S5296F-ON** – 2RU, 96 x 25GbE ports and 8 x 100GbE ports
  - **S5232F-ON** – 1RU, 32 x 100GbE ports

Purpose-built for

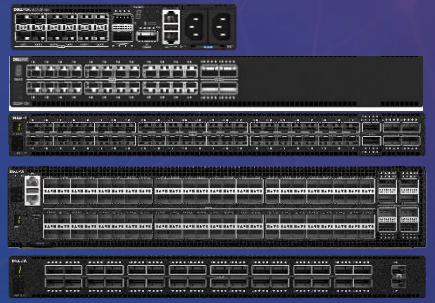
- Optimized for combinations of **25GbE connections in-rack** with 100G to fabric and highly scalable **and cost-effective 100GbE leaf/spine fabric** between data center racks
- Ideal for Web 2.0, Enterprise, Mid-market and cloud Service Provider data center networks

Dell EMC innovation

- High Density (96-port) for ToR/MoR/EoR
- QSFPDD-28 ports for higher density 100GbE uplink (S5248F)
- **Open Networking** running **OS10 & ONIE** or **Enterprise SONiC Distribution (S5232F-ON, S5248F-ON, S5296F-ON)**
- Fully tested and validated with 3rd party operating systems

Enterprise SONiC Distribution by Dell Technologies

OS10



S5212F-ON

S5224F-ON

S5248F-ON

S5296F-ON

S5232F-ON

Dell EMC PowerSwitch S5200-ON

2.5X
Throughput of traffic

32
100GbE ports in 1RU

* Ports: Comparing S5296F (96) with S5048F (48) 25GbE;

S4100 10/100GbE in-rack switches

Latest multi-functional, multi-protocol 10/100GbE in-rack switches

- **S4112F-ON** – ½ RU,12 x 10GbE + 3 x 100GbE ports
- **S4112T-ON** – 1/2RU, 12 x 10GBase-T + 3 x 100GbE ports
- **S4128F-ON -** 28 x 10G SFP+ and 2 x 100G QFSP28 ports
- **S4128T-ON** - 28 x 10GBaseT ports and 2 x 100G QFSP28 ports
- **S4148F-ON -** 48 x 10G SFP+, 2 x 40G QSFP+ ports and 4 x 100G QSFP28 ports
- **S4148T-ON -** 48 x 10GBaseT ports, 2 x 40G QSFP+ ports and 4 x 100G QSFP28 ports
- **S4148FE** – 48 x 10G SFP+ , 2 x 40G QSFP+ ports and 4 x 100G QSFP28 ports with support for LRM optics
- **S4148U: Industry's first and only 32G FC unified switch** – 24 x SFP+, 24 x unified SFP+/SFP28 ports (1/10GbE or FC8/FC16), 2 x 40G QSFP+ ports and 4 x unified QSFP28 ports (10/25G/40G/50G/100G) or FC8/FC16/FC32)

Applications

- 10/100GbE in-rack connectivity for servers and SDS environments
- Converged LAN/SAN environments to FC32

Dell EMC innovation

- Open Networking with support for OS10 & ONIE
- Fully tested and validated with 3rd party operating systems

ONIE

OS10

Dell EMC PowerSwitch S4100-ON

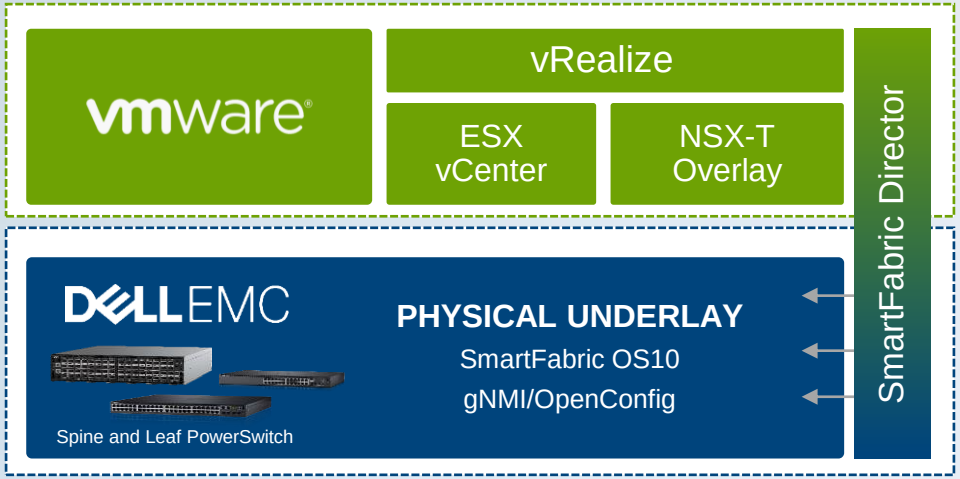
10/100 GbE
in-rack connectivity

OS10 software environment
Programmable Linux OS

Dell EMC SmartFabric Director

The industry's only fabric management platform developed by VMware and Dell EMC

Enable smarter fabrics & end-to-end management
by connecting the physical world with the virtual world



Simple

Significantly ease the time-consuming process of creating and deploying an open, simple, and efficient network fabric, while simultaneously verifying it will operate as intended.

Efficient

Save time and effort typically required to configure individual switches, verify that the switch network will work as intended, then manually correlate the physical layer with the existing virtual overlays.

Open

Reduce the number of commands, interfaces, and amount of coordination within the organization to configure the network fabric, and simplify its deployment in a highly efficient and scalable manner.

*Based on internal Dell EMC testing. Actual results will vary

SmartFabric Services

- A component of SmartFabric OS10

HCI

Automates and simplifies networking for **VxRail HCI** deployments

Integrated with **VxRail Manager**

Server

Fully automated network fabric for **VMware ESXi on PowerEdge Servers and vSAN Ready Nodes**

Integrated with **Dell EMC Open Manage**

Storage

Automated, integrated fabrics for **VMware ESXi on PowerScale, PowerStore**

Integrated with **Dell EMC Dell EMC PowerScale OneFS, PowerStore**

Gartner

“It is critical to commit to automating the operation of the data center in order to improve availability and agility. Further, this allows you to achieve economies of scale because, as you grow a system, you won't have to linearly grow the resources required to support it.”

Gartner — Bringing Web-Scale Networking to Your Data Center (Joe Skorupa, Andrew Lerner), November 2016

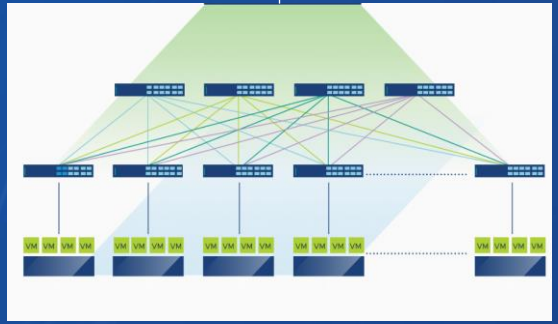
SmartFabric Director

Building a VMware-ready fabric in 3 steps

1

Create

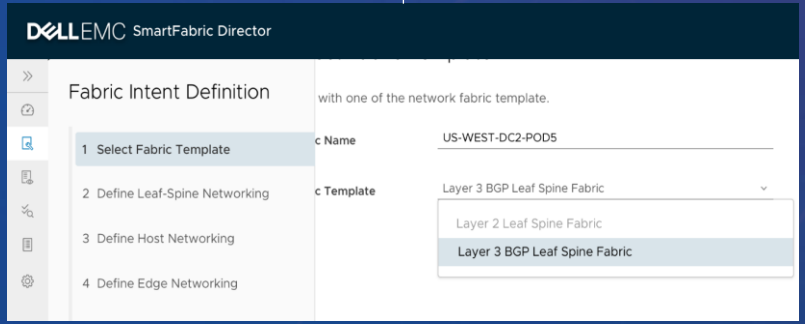
physical setup



2

Define

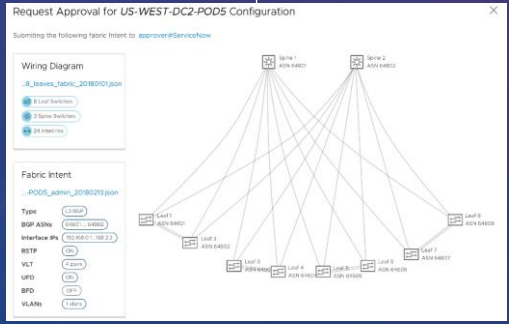
logical topology



3

Deploy

your fabric

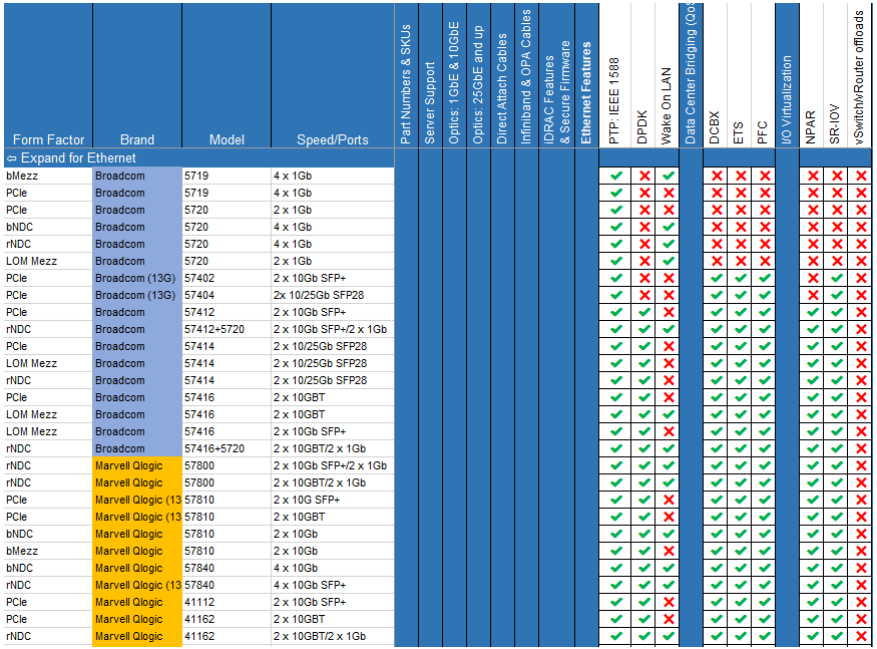


Guides und Konfiguratoren

Server Network Adapters Support Lookup:

PowerEdge Server Adapter Matrix

PowerEdge Server Adapter Matrix



Form Factor	Brand	Model	Speed/Ports	Part Numbers & SKUs	Server Support	Optics: 1GbE & 10GbE	Optics: 25GbE and up	Direct Attach Cables	Infiniband & OPA Cables	iDRAC Features & Secure Firmware	Ethernet Features	PTP: IEEE 1588	DPDK	Wake On LAN	Data Center Bridging (DCB)	DCBX	ETS	PFC	I/O Virtualization	NPAR	SR-IOV	vSwitch/Router offloads
⇦ Expand for Ethernet																						
bMezz	Broadcom	5719	4 x 1Gb									✓	✗	✓		✗	✗	✗		✗	✗	✗
PCIe	Broadcom	5719	4 x 1Gb									✓	✗	✗		✗	✗	✗		✗	✗	✗
PCIe	Broadcom	5720	2 x 1Gb									✓	✗	✗		✗	✗	✗		✗	✗	✗
bNDC	Broadcom	5720	4 x 1Gb									✓	✗	✓		✗	✗	✗		✗	✗	✗
rNDC	Broadcom	5720	4 x 1Gb									✓	✗	✓		✗	✗	✗		✗	✗	✗
LOM Mezz	Broadcom	5720	2 x 1Gb									✓	✗	✓		✗	✗	✗		✗	✗	✗
PCIe	Broadcom (13G)	57402	2 x 10Gb SFP+									✓	✗	✗		✓	✓	✓		✗	✓	✗
PCIe	Broadcom (13G)	57404	2x 10/25Gb SFP28									✓	✗	✗		✓	✓	✓		✗	✓	✗
PCIe	Broadcom	57412	2 x 10Gb SFP+									✓	✓	✗		✓	✓	✓		✓	✓	✗
rNDC	Broadcom	57412+5720	2 x 10Gb SFP+/2 x 1Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
PCIe	Broadcom	57414	2 x 10/25Gb SFP28									✓	✓	✗		✓	✓	✓		✓	✓	✗
LOM Mezz	Broadcom	57414	2 x 10/25Gb SFP28									✓	✓	✗		✓	✓	✓		✓	✓	✗
rNDC	Broadcom	57414	2 x 10/25Gb SFP28									✓	✓	✗		✓	✓	✓		✓	✓	✗
PCIe	Broadcom	57416	2 x 10GBT									✓	✓	✗		✓	✓	✓		✓	✓	✗
LOM Mezz	Broadcom	57416	2 x 10GBT									✓	✓	✓		✓	✓	✓		✓	✓	✗
LOM Mezz	Broadcom	57416	2 x 10Gb SFP+									✓	✓	✗		✓	✓	✓		✓	✓	✗
rNDC	Broadcom	57416+5720	2 x 10GBT/2 x 1Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
rNDC	Marvell Qlogic	57800	2 x 10Gb SFP+/2 x 1Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
rNDC	Marvell Qlogic	57800	2 x 10GBT/2 x 1Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
PCIe	Marvell Qlogic (13	57810	2 x 10G SFP+									✓	✓	✗		✓	✓	✓		✓	✓	✗
PCIe	Marvell Qlogic (13	57810	2 x 10GBT									✓	✓	✗		✓	✓	✓		✓	✓	✗
bNDC	Marvell Qlogic	57810	2 x 10Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
bMezz	Marvell Qlogic	57810	2 x 10Gb									✓	✓	✗		✓	✓	✓		✓	✓	✗
bNDC	Marvell Qlogic	57840	4 x 10Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗
rNDC	Marvell Qlogic (13	57840	4 x 10Gb SFP+									✓	✓	✓		✓	✓	✓		✓	✓	✗
PCIe	Marvell Qlogic	41112	2 x 10Gb SFP+									✓	✓	✗		✓	✓	✓		✓	✓	✗
PCIe	Marvell Qlogic	41162	2 x 10GBT									✓	✓	✗		✓	✓	✓		✓	✓	✗
rNDC	Marvell Qlogic	41162	2 x 10GBT/2 x 1Gb									✓	✓	✓		✓	✓	✓		✓	✓	✗

- ✓ Server Compatibility & Support
- ✓ Transceiver support (optics & cables)
- ✓ Part numbers & SKUs
- ✓ Systems management features
- ✓ Adapter features (RDMA, VxLAN, etc)
- ✓ Spec sheet links & vendor contact

Intended as an internal sales-facing matrix, but can be shared under NDA

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25G OCP NICs

Form Factor	Brand	Model	Speed/Ports
OCP NIC 3.0	Broadcom	57414	2 x 10/25GbE SFP28
OCP NIC 3.0	Broadcom	57504	4 x 10/25GbE SFP28
OCP NIC 3.0	Marvell	41232	2 x 10/25GbE SFP28
OCP NIC 3.0	Mellanox	ConnectX-5	2 x 10/25GbE

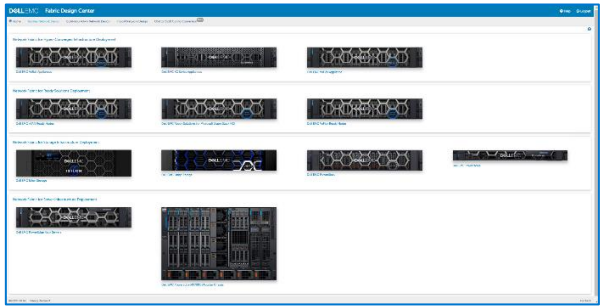
Fabric Design Center

Fabric Design Center

Automated Network Design, Deployment and DevOps Integration

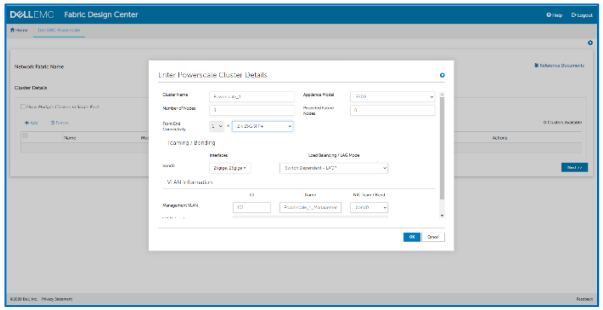
1

Choose the reference architecture



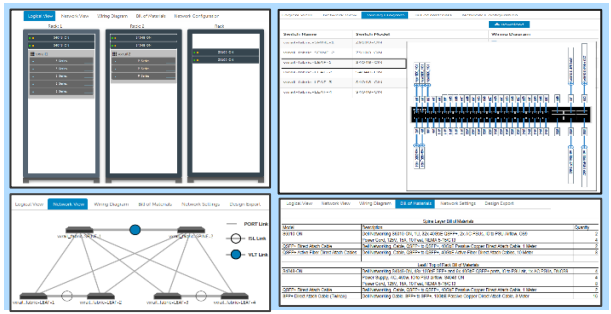
2

Size the deployment



3

Get the complete network design, wiring diagrams & bill of materials



4

Download configurations and deploy network fabric or download Ansible Playbooks for DevOps Integration

FDC a Network Design Wizard

fdc.emc.com

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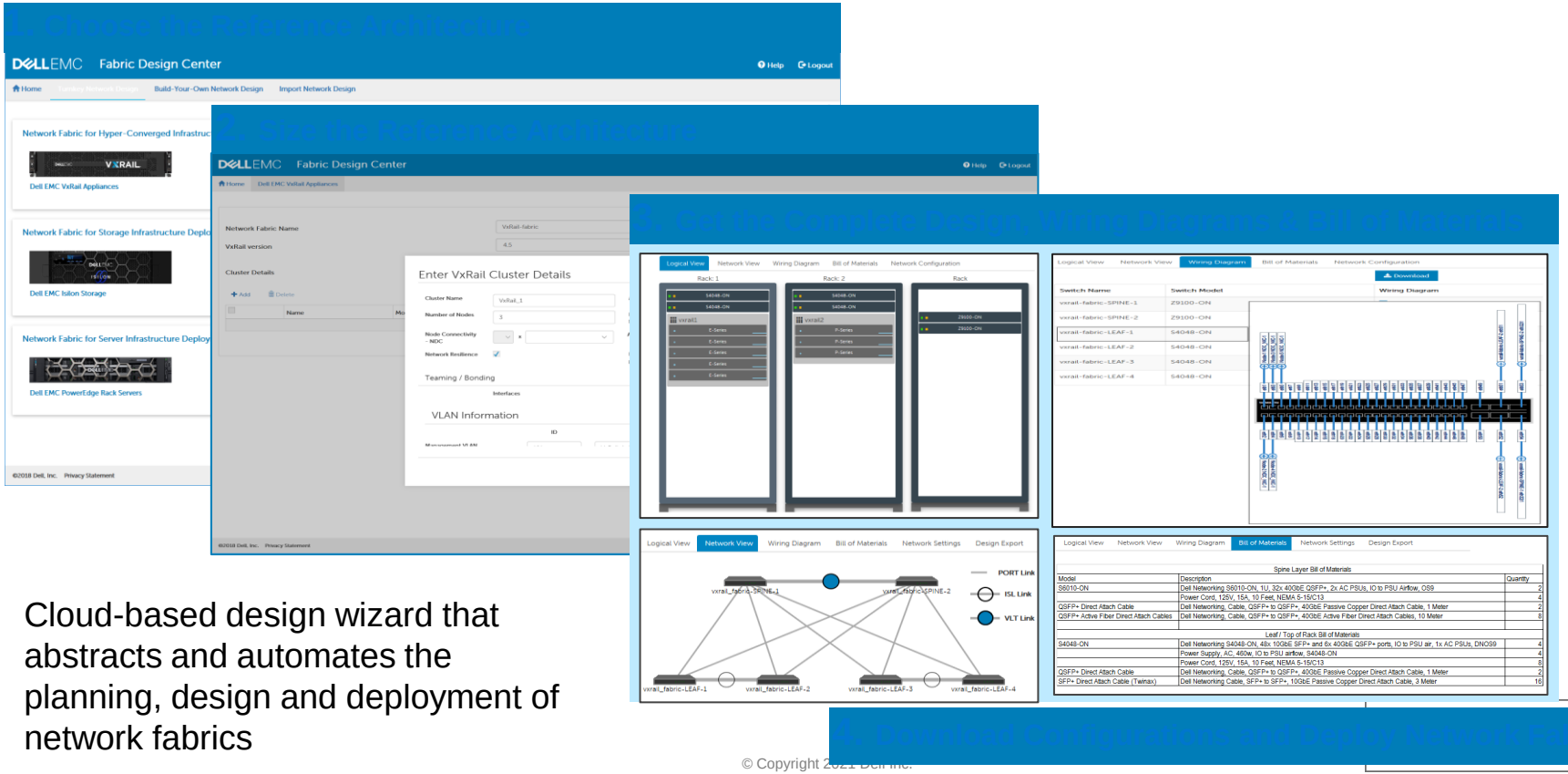
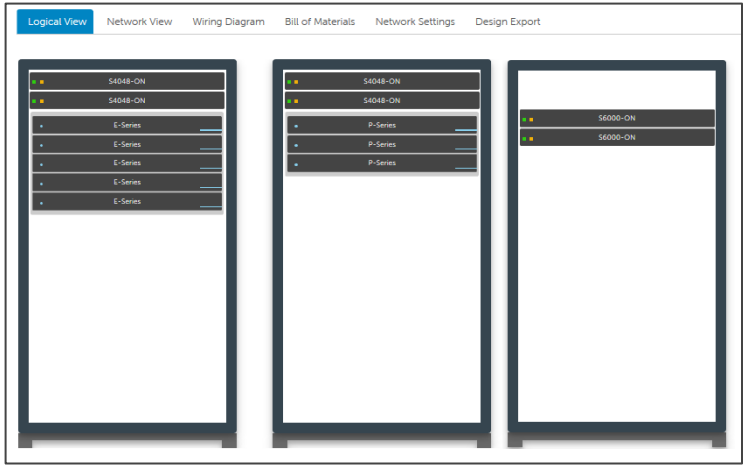
Fabric Design Center Workflow

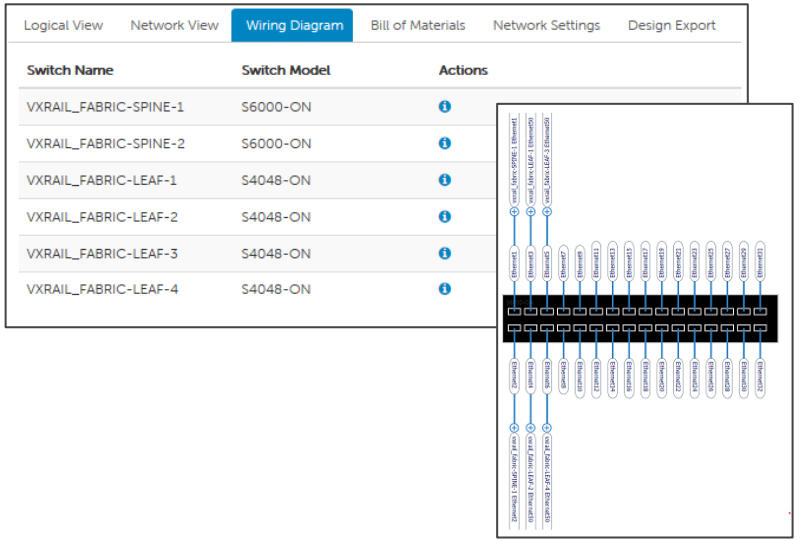


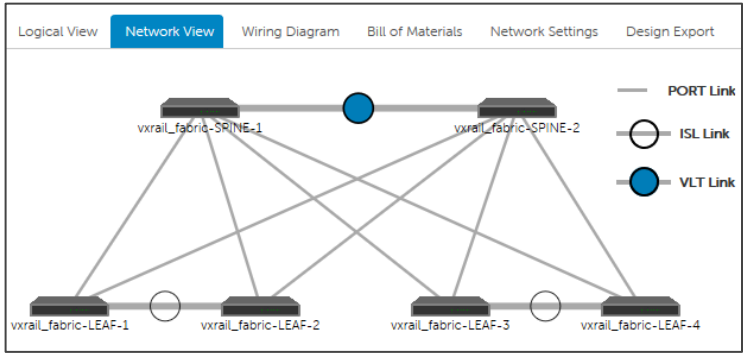
Cloud-based design wizard that abstracts and automates the planning, design and deployment of network fabrics

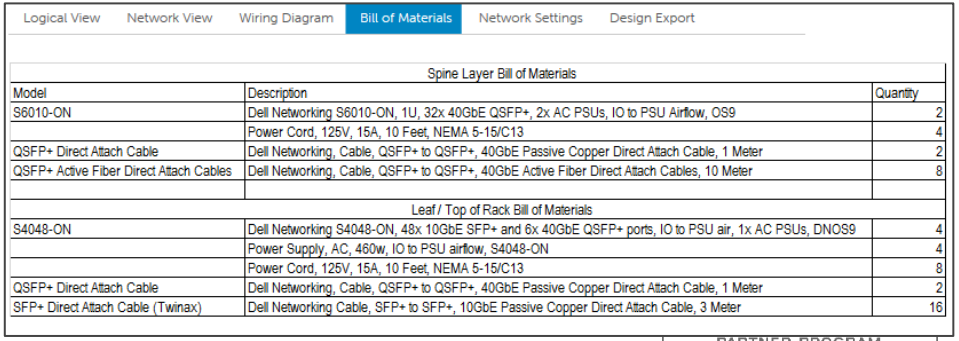
Fabric Design Center

https://fdc.emc.com









Spine Layer Bill of Materials		
Model	Description	Quantity
S6010-ON	Dell Networking S6010-ON, 1U, 32x 40GbE QSFP+, 2x AC PSUs, IO to PSU Airflow, OS9	2
	Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13	4
QSFP+ Direct Attach Cable	Dell Networking, Cable, QSFP+ to QSFP+, 40GbE Passive Copper Direct Attach Cable, 1 Meter	2
QSFP+ Active Fiber Direct Attach Cables	Dell Networking, Cable, QSFP+ to QSFP+, 40GbE Active Fiber Direct Attach Cables, 10 Meter	8
Leaf / Top of Rack Bill of Materials		
S4048-ON	Dell Networking S4048-ON, 48x 10GbE SFP+ and 6x 40GbE QSFP+ ports, IO to PSU air, 1x AC PSUs, DNOS9	4
	Power Supply, AC, 460w, IO to PSU airflow, S4048-ON	4
	Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13	8
QSFP+ Direct Attach Cable	Dell Networking, Cable, QSFP+ to QSFP+, 40GbE Passive Copper Direct Attach Cable, 1 Meter	2
SFP+ Direct Attach Cable (Twinax)	Dell Networking Cable, SFP+ to SFP+, 10GbE Passive Copper Direct Attach Cable, 3 Meter	16

Optics & Cables

Nützliche Tools

Cable und Transceiver guides

https://www.delltechnologies.com/resources/de-de/auth/asset/quick-reference-guides/products/networking/Dell_Networking_Optics_and_Cables_Interop_Matrix.xlsx.external

https://www.delltechnologies.com/resources/de-de/auth/asset/quick-reference-guides/PowerEdge_Server_Adapter_Matrix.xlsx.external

Virtuelles Rack

https://esgvr.dell.com/

Networking Solutions Support Matrix

https://infohub.delltechnologies.com/l/networking-support-matrix-1/networking-solutions-support-matrix-1

Fabric Design Center

https://fdc.emc.com/#!/network-fabric

DELL EMC NETWORKING TRANSCEIVERS AND CABLES

DELL EMC

Features and benefits

- Hot-swappable for simplified maintenance (no power-down required for installation or replacement)
- Some of the smallest and lowest-power 10GbE, 25GbE, 40GbE and 100GbE optical form factors in the industry
- Optical interoperability with SFP, SFP+ and selected QSFP modules
- Offers "pay-as-you-use" model for lower total cost of ownership (TCO) and ease of technology migration
- Reliability ensured by rigorous optics validation, qualification and certification
- Dell EMC product specification encoding feature allows Dell EMC Networking platforms to recognize certified and supported transceivers
- Guaranteed to work with Dell EMC Networking platforms under temperature and process variations with optimal performance

SFP+ DAC

QSFP+ DAC

QSFP+ AOC

QSFP+ DAC breakout

SFP SFP+

QSFP+

Dell EMC provides optical and cabling options for each Ethernet speed. Long- and short-range optical connectivity options are suited to a wide range of data center and campus applications. For the shortest connections, passive copper direct attach cable (DAC) is a simple and cost-effective solution.

1GbE solutions

1GbE SFP optical transceivers include short-reach (SX), long-reach (LX) and extended long-reach (ZX). A 1000BASE-T transceiver facilitates twisted-pair copper connections.

10GbE solutions

10GbE SFP+ optical transceivers include short-reach-lite (USR), short-reach (SR), long-reach (LR) and extended long-reach (ER and ZR). The 10GbE SFP+ receptacle will also recognize 1GbE SFP transceivers. An LRM transceiver supports links up to 220m over older OM1 and OM2 grade multimode fiber. A 10GBASE-T transceiver facilitates twisted-pair copper connections.

25GbE solutions

25GbE SFP28 optical transceivers include short-reach (SR) and long-reach (LR) variations. In 25GbE networking environments, the 100GbE ports on our Z9100-ON, S6100-ON, S4124-ON and S4148-ON switches can be broken out into four 25GbE lanes by use of either active optical (AOC) or passive copper (DAC) breakout cables.

40GbE solutions

40GbE (4x10GbE) QSFP+ optical transceivers include short-reach (SR4), long-reach (LR4) and extended long-reach (ER4). In many cases, 1GbE SFP and 10GbE SFP+ optics can be readily inserted, recognized, and utilized in the 40GbE QSFP+ receptacle through the use of a (QSA) pluggable adapter. The adapter supports standard SFP and SFP+ optics in a QSFP+ socket providing backwards compatibility, while preserving the 40GbE port for future bandwidth expansion.

40GbE QSFP+ ports support both optical and passive copper (DAC) breakout cables where the four 10GbE lanes are broken out into four individual 10GbE SFP+ interfaces. This solution can be deployed with a single active optical cable (AOC) with integrated QSFP+ and SFP+ transceivers or through the use of a passive fiber breakout cable/multiplexer.

Dell EMC enables cost-savings through the reuse of a legacy 10GbE fiber plant to support new 40GbE connections with our 40GbE duplex (multimode) fiber solutions. These solutions use wavelength multiplexing (SM4) and/or directional multiplexing (BIDI) to transport 40GbE over a single (multimode) fiber pair.

50GbE solutions

50GbE is a relatively new specification utilizing half-populated QSFP28 modules. In 50GbE networking environments, the 100GbE ports on our Z9100-ON, S6100-ON, S4124-ON and S4148-ON switches can be broken out into two pairs of 2x25GbE through a QSFP28 to 2xQSFP28† passive copper direct attach breakout cable (breakout DAC). (The QSFP28† is a half-populated QSFP28 with 2x25GbE lanes.)

100GbE solutions

100GbE (4x25GbE) QSFP28 optical transceivers include short-reach (SR4), intermediate-reach (CWDM4), long-reach (LR4) and extended long-reach (ER4-lite). Standard 10GbE SFP+ and 25GbE SFP28 optics can be readily inserted, recognized, and utilized in the 100GbE QSFP28 receptacle through the use of a (QSA28) pluggable adapter. Although this reduces the effective throughput of the 100GbE port to 25GbE, it provides an immediate low-cost transceiver solution while preserving the option for later bandwidth expansion.

100GbE QSFP28 ports support both optical and passive copper breakout cables. Each of the four 25GbE lanes can be broken out into four individual SFP28 interfaces. This solution can be deployed with a single active optical cable (AOC) with integrated QSFP28 and SFP28 transceivers or through the use of a passive fiber breakout cable/multiplexer.

DELL EMC TRANSCEIVERS

Model	Connector type	Wavelength(s) (nm)	Transmission medium	Distance (max.)	Transmitter power (dBm)	Receiver power (dBm)	Power dissipation (max.; W)	Notes
16G Fibre Channel SFP+ transceivers								
SFP-16GFC-SW	duplex LC	850	MMF OM3 MMF OM4	100 m 125 m	-7.8 to 0.0	-13.5 to 0.0	1.0	
SFP-16GFC-LW*	duplex LC	1310	SMF	10 km	-5.0 to 2.0	-17.0 to +2.0	1.2	
Quad 16G Fibre Channel QSFP+ transceivers								
QSFP-64GFC-SW4	MPO-12	850	MMF OM3 MMF OM4	100 m 125 m	-7.8 to 0.0 /lane	-13.5 to 0.0 /lane	2.5	compatible with 4 x 16GFC, 4 x 8GFC or 4 x 4GFC
25-Gigabit Ethernet SFP28 transceivers								
SFP-25G-SR	duplex LC	850	MMF OM3 MMF OM4	70 m 100 m	-9.1 to 0.0	-11.0 to 0.0	1.2	
SFP28-25G-ESR*	duplex LC	850	MMF OM3 MMF OM4	200 m 300 m	-7.3 to 0.0	-11.9 to 0.0	1.2	
SFP28-25G-LR	duplex LC	1310	SMF	10 km	-7.0 to +2.0	-13.3 to +2.0	1.2	
Quad 32G Fibre Channel QSFP28 transceivers								
Q28-128GFC-SW4	MPO-12	850	MMF OM3 MMF OM4	85 m 100 m	-8.5 to +2.4 /lane	-10.4 to +2.4 /lane	3.5	compatible with 4 x 32GFC or 4 x 16GFC
40-Gigabit Ethernet QSFP+ transceivers								
QSFP-40G-SR4	MPO-12	850	MMF OM3 MMF OM4	100 m 150 m	-7.6 to +2.4 /lane	-9.0 to +2.4 /lane	1.5	can operate in 1 x 4 breakout mode
QSFP-40G-ESR4	MPO-12	850	MMF OM3 MMF OM4	300 m 400 m	-4.3 to -1.0 /lane	-11.1 to -1.0 /lane	1.5	can operate in 1 x 4 breakout mode
QSFP-40G-LM4	duplex LC	1271 1291 1311 1331	MMF OM3 MMF OM4 SMF	140 m 160 m 1 km	-7.0 to +4.3 /lane (MMF) -10.0 to +2.3 /lane (SMF)	-10.0 to +4.3 /lane (MMF) -13.7 to +2.3 /lane (SMF)	3.5	
QSFP-40G-SM4	duplex LC	850 880 910 940	MMF OM3 MMF OM4	300 m 300 m	-4.8 to +2.4 /lane	-4.8 to +7.0 /lane	1.5	
QSFP-40G-BIDI	duplex LC	850 900	MMF OM3 MMF OM4	100 m 150 m	-4.0 to +5.0 /lane	-10.0 to +5.0 /lane	3.5	
QSFP-40G-PSM4-LR	MPO-12	1310	SMF	10 km	-5.5 to +1.5 /lane	12.6 to +1.5 /lane	3.5	can operate in 1 x 4 breakout mode
QSFP-40G-LR4	duplex LC	1271 1291 1311 1331	SMF	10 km	-7.0 to +2.3 /lane	-13.7 to +2.3 /lane	3.5	
QSFP-40G-ER4	duplex LC	1271 1291 1311 1331	SMF	40 km	-2.7 to +4.5 /lane	-21.2 to -4.5 /lane	3.5	links longer than 30 km are considered engineered links
QSA-QSFP-SFP+	SFP+	N/A	N/A	N/A	N/A	N/A	N/A	adaptor to use SFP+ modules in QSFP+ receptacles

DELL Technologies PARTNER PROGRAM

DELL EMC NETWORKING TRANSCEIVERS AND CABLES

http://i.dell.com/sites/doccontent/shared-content/data-sheets/en/Documents/Dell-Networking-Optics-Spec-Sheet.pdf

PRODUCT SUPPORT *

10-GbE transceivers	SFP-10G-USR	SFP-10G-SR	SFP-10G-LR	SFP-10G-LRM	SFP-10G-ER	SFP-10G-ZR	SFP-10G-T-DWDM	SFP-10G-T10
Z9100-ON	✔	✔	✔		✔	✔	✔	✔
S6100-ON	✔	✔	✔		✔	✔	✔	✔
S6010-ON		✔	✔		✔	✔	✔	✔
S5000		✔	✔		✔	✔	✔	✔
S4048T		✔	✔		✔	✔	✔	✔
S4128-ON / S4148-ON	✔	✔	✔	✔***	✔	✔		
S4048 / S4048-ON		✔	✔		✔	✔	✔	✔**
N4000	✔	✔	✔	✔	✔	✔		
X4012	✔	✔	✔		✔	✔		
N2128-ON	✔	✔	✔		✔	✔		
N3132-ON	✔	✔	✔		✔	✔		
S31XX	✔	✔	✔	✔	✔	✔	✔	
S5048		✔*	✔*		✔*	✔*	✔*	✔**
S5148		✔*	✔*		✔*	✔*	✔*	✔**
N20XX / N30XX	✔	✔	✔	✔	✔	✔		
S3048-ON	✔	✔	✔	✔	✔	✔	✔	
X1052	✔	✔	✔		✔			
MXL & IO Agg		✔	✔	✔	✔		✔	
VRTX IOA & MXL		✔	✔					
FN IOM pass-through		✔	✔	✔			✔	
M8024-K		✔	✔	✔				
M6220		✔	✔	✔				
M6348		✔	✔	✔				
10Gb Pass-thru-K		✔	✔					
C-Series 36pt 1000BASE-T (and PoE) Comb Line Card: 2 10Gb SFP+ ports		✔	✔		✔			
C-Series 8 pt 10Gb SFP+ Line Card		✔	✔	✔	✔			
C9010	✔	✔	✔	✔	✔	✔	✔	

DELL Technologies PARTNER PROGRAM