Серверы PowerEdge.Next

Ускорение трансформации в любой сфере

Ильдар Суханов
Senior Systems Engineer
Dell Technologies

What’s driving transformation in your organization?

Operations

Automate the provisioning & delivery of IT resources

Operations & optimization

Workloads

Optimize workloads using modern infrastructure

Business innovation

Edge

Find your edge & achieve success at any scale, anywhere

Unlocking new value

AI

- Accelerate intelligent outcomes everywhere

Unleash your advantage

PowerEdge Servers

Purpose-built | Intelligent | Cyber Resilient | Sustainable

Purpose-built

Scale AI, Edge & Performance Anywhere

Intelligent

Accomplish more with Automation & Improve Operational Efficiencies

Cyber Resilient

Accelerate Zero Trust Adoption

Sustainable

Maximize power efficient performance

Subscribe or Consume aaS with APEX

The Next Generation PowerEdge Server Portfolio

Purpose-built to address evolving customer needs

AI /ML

- AI training
- Data analytics

Edge / Telco

- Telco
- Retail
- Manufacturing

CSP

- Cloud service providers

Core

- Private DC
- Colo Datacenter Campus
- Traditional datacenter
- Military
- Banking
- Retail

The Next Generation PowerEdge Server Portfolio

Purpose-built to address evolving customer needs

Core

Acceleration-Optimized


XE9680


XE9640


XE8640

Modular


MX760


C6620

Mainstream


R760xa

Storage Dense


R760xd2


R760


R660


R7625


R6625

Mainstream 4 Socket


R960


R860


T560


R7615


R6615

Mainstream Optimized


R760xs


R660xs

Edge


XR8000


XR5610


XR7620


XR4000

Scale

Cloud Service Providers


HS5620


HS5610

DELL Technologies

.Next **Industry Enabled** Technologies Overview

Next Generation Intel & AMD Processors

- Intel 4th Gen Xeon (Sapphire Rapids)
  - ✓ Up to 60 cores/CPU*
  - ✓ 50% performance increase over Ice Lake
- AMD 4th Gen EPYC (Genoa)
  - ✓ Latest 5nm technology with up to 96 high-performance “Zen 4” cores
  - ✓ 1.5X & 1.25X the density and power over Milan

Memory: DDR5

- DDR5 (4800MT/s)
  - ✓ Latest DRAM technology with higher speed & bandwidth
  - ✓ Greater efficiency with 2 channels per DIMM
  - ✓ Improved RAS features with on-die ECC
  - ✓ Lower power
  - ✓ Enhanced telemetry for temperature reporting and systems management

PCIe Gen5 Capability

- Doubles throughput compared to PCIe Gen4
  - ✓ Benefits NVMe drives, GPUs, and some networking cards

EDSFF E3.S NVMe Gen5

- E3.S form factor will be introduced with PCIe Gen5 NVMe drives
  - ✓ Benefits density, thermals, and improved packaging in space constrained servers
- Double the performance over NVMe Gen4

*Max 60 cores for 4S CPUs, max 56 cores for 2S CPUs

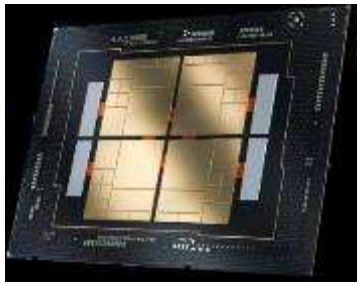
New capabilities & technologies for the next gen…

Help customers harness new technology with scalable performance using breakthrough memory and I/O

Integrated acceleration and next-generation I/O…. maximize AI performance

- Next Gen Intel® Deep Learning Boost for AI Deep Learning workloads - AMX – INT8 and BFloat16 support /Intel AVX-512 (VNNI/INT8)
- DDR5 support and higher speeds memory-intensive workloads for modeling and simulation.
- 2 x the IO bandwidth with integrated PCIe 5.0 for AI and improved scaling with NVMe E3.S
- Integration of accelerator features such as DSA*, QAT*, IAX*, and DLB* to improve performance across key segment workloads.

Intel® Xeon® Scalable Processors



1. More cores +

Better performance with high bandwidth memory (HBM) and up to 4UPI links to deliver faster workload performance

2. Faster memory +

60% faster performance using DDR5 memory to fulfill your workload performance needs.

3. More bandwidth

100% faster throughput using PCIe Gen 5 with up to 80 lanes to accommodate different workloads concurrently

DELL Technologies

New capabilities & technologies for the next gen…

Help customers harness new technology with scalable performance using breakthrough memory and I/O

Leadership Socket and Per-Core Performance with next-generation I/O and memory generation I/O….maximizes AI performance

- Increased socket level performance driving lower TCO
- DR5 support and higher speeds for memory-intensive workloads AI, ML, HPC, and large in-memory computations
- 2 x the IO bandwidth with integrated PCIe 5.0 for AI and up to 33% more improved scaling with NVMe E3.S
- New instructions like VNNI, BFLOAT16, and AVX-512 (AVX-3) to help accelerate AI inferencing, training, and HPC workloads
- Security innovation with physical and virtual security features that further improve platform and data security capabilities

1. More cores

Delivers up to 80% generational performance improvement, 50% more core count over previous generation with up to 96 cores

2. Faster Memory

50% faster performance using DDR5 memory to fulfill your workload performance needs

3. More bandwidth

Faster throughput using PCIe Gen 5 with up to 128 lanes to accommodate different workloads concurrently

PCIe Gen 5

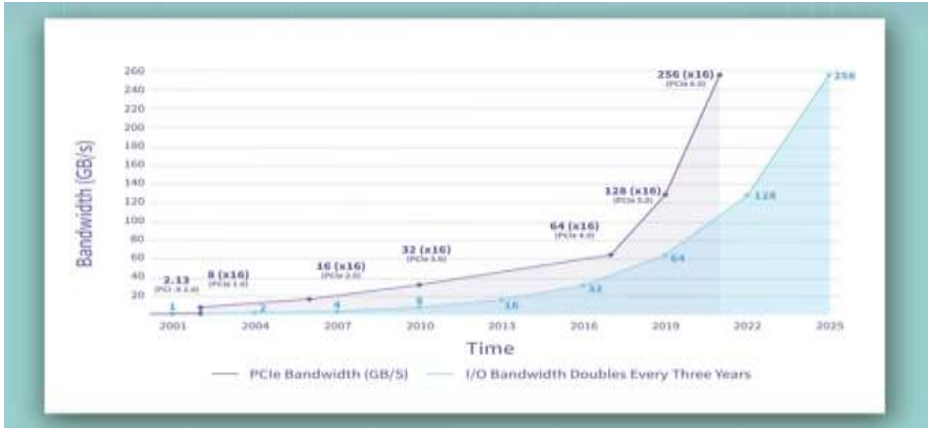
Technologies taking advantage of Gen 5

- NVMe Drives
- GPUs
- NICs

Database and AI/ML workloads will benefit from the new bandwidth

Future proofing servers for the new Gen 5 ecosystem

- PCIe Gen 5 is twice the speed of PCIe Gen 4 with backward compatibility
- PCIe Gen 5 32 GTs data rate vs PCIe Gen 4 16 GTs data rate
- PCIe Gen 5 has full duplex bandwidth for x16 interface at 128 GB/s vs Gen 4 at 64 GB/s



Generation	Raw Bit Rate	Interconnect Bandwidth	Bandwidth Lane Direction	Total Bandwidth for x16 Link
Gen1	2.5 GT/s	2 Gb/s	~250 MB/s	~8 GB/s
Gen2	5 GT/s	4 Gb/s	~500 MB/s	~16 GB/s
Gen3	8 GT/s	8 Gb/s	~1 GB/s	~32 GB/s
Gen4	16 GT/s	16 Gb/s	~2 GB/s	~64 GB/s
Gen5	**32 GT/s**	**32 Gb/s**	**~4 GB/s**	**~128 GB/s**

DDR5 Memory

- **Higher speed offering with DDR5 technology along with the following improvements**
  1. **Improved bandwidth efficiency over DDR4**
  2. **Memory bus speeds of 4800MT/s; DDR4 limits out at 3200MT/s**
  3. **Support for up to 32Gb density DRAM (up from 16Gb max in DDR4) [1]**
  4. **Single bit error correction in DRAM die**
  5. **Enhanced data integrity feature**
- **Scalability for multi-core workload**

Latest memory technology, higher speed and bandwidth

DIMMs Capacities

DDR5* (16Gb density, 4800MT/s)
- 16GB RDIMMs
- 32GB RDIMMs
- 64GB RDIMMs
- 128GB RDIMMs[1]
- 256GB RDIMMs[1]

[1] = Post RTS for AMD Genoa

DIMMs per System

- 4th Generation Intel® Xeon® Scalable Processor (Sapphire Rapids)
  - 4 socket servers: up to 64 DIMMs
  - 2 socket servers: up to 32 DIMMs
  - 1 socket servers: up to 16 DIMMs
- 4th Generation AMD EPYC™ Processor (Genoa)
  - 2 socket servers: 24 DIMMs
  - 1 socket servers: 12 DIMMs

Max Memory Bus Speed is 4800MT/s

- Higher memory bus speed compared to DDR4
- Intel Sapphire Rapids
  - Max CPU memory bus speed is 4800MT/s
- AMD Genoa
  - Max CPU memory bus speed is 4800MT/s

** Dell does not support DIMM capacity mixing on 16G*

EDSFF-E3

Increased Performance

- Supports PCIe Gen5; 100% increase in Sequential Reads, 62% increase in Sequential Writes, 60% improvement in Random Reads, and 33% improvement in Random Writes

Greater Storage Density

- 60% increase on 1U and 33% increase on 2U
- Total capacity increase:

	15G	16G
1U	154TB	245TB
2U	368TB	491TB

Improved Thermals

- Airflow can be optimized through the server due to the smaller drive size

EDSFF and E3.S, a form factor optimized for SSDs and the future of Server Storage

- EDSFF is a new family of form factors optimized for Flash storage devices designed to support high frequency interfaces like PCIe Gen5 and Gen6
- PowerEdge will utilize the E3.S form factor and it will be the launch vehicle for PCIe Gen5 NVMe
- E3.S is roughly half the size of a 2.5” SSD benefitting density, thermals, and improved packaging in space constrained servers
- E3.S SSDs will have the same Serviceability and Manageability as our current 2.5” SSDs

(EDSFF E3.S T2 will not be supported)

15G

MX750c: Up to 6 x 2.5” SSD

R650/R6515: Up to 10 x 2.5” SSD

R7525/R7515: Up to 24 x 2.5” SSD

16G

MX760c: Up to 8 x E3.S NMVe

R660/R6615: Up to 16 E3.S NMVe

R7625/R7615: Up to 32 x E3.S NMVe

DELL Technologies

GPU Accelerators

Broad multi-vendor portfolio catering to applications ranging from the Edge to Core to Cloud

Solutions for targeted workloads in HPC, AI, VDI, Data Analytics balanced by versatile and entry-level offerings to boost utilization, help the AI journey

Leading edge technology ingredients in core & memory architecture, fabrication technology, air and liquid cooling, interconnect bandwidths to deliver breakthrough performance

Growing ecosystem of frameworks, GPU-accelerated libraries that are optimized & ready-to-deploy and the necessary development tools

Benchmarking results (multiple MLPerf # 1 ranks) demonstrate performance leadership

Accelerate insight and innovation with Dell's GPU portfolio on PowerEdge servers

- Accelerate demanding AI/ML, HPC, data analytics workloads for faster value extraction and collaboration for VDI
- Drive enhanced workload outcomes with greater insights, inferencing and visualization

Brand	GPU Model	GPU Memory	Max Power Consumption	Form-factor	2-way Bridge	Recommended Workloads
PCIe Adapter form-factor						
Nvidia	A2	16 GB GDDR6	60W	SW, HHHL or FHHL	n/a	AI Inferencing, Edge, VDI
Nvidia	A16	64 GB GDDR6	250W	DW, FHFL	n/a	VDI
Nvidia	A40, L40	48 GB GDDR6	300W	DW, FHFL	Y, N	Performance graphics, Multi-workload
Nvidia	A30	24 GB HBM2	165W	DW, FHFL	Y	AI Inferencing, AI Training
Nvidia	A100	80 GB HBM2e	300W	DW, FHFL	Y, Y	AI Training, HPC, AI Inferencing
Nvidia	H100*	80GB HBM2e	300 - 350W	DW, FHFL	Y	AI Training, HPC, AI Inferencing
AMD	MI210	64 GB HBM2e	300W	DW, FHFL	Y	HPC, AI Training
Intel	Max 1100*	48GB HBM2e	300W	DW, FHFL	Y	HPC, AI Training
Intel	Flex 140*	12GB GDDR6	75W	SW, HHHL or FHHL	n/a	AI Inferencing
SXM / OAM form-factor						
Nvidia	HGX A100*	80GB HBM2	500W	SXM w/ NVLink	n/a	AI Training, HPC
Nvidia	HGX H100*	80GB HBM3	700W	SXM w/ NVLink	n/a	AI Training, HPC
Intel	Max 1550 *	128GB HBM2e	600W	OAM w/ XeLink	n/a	AI Training, HPC

* - Development or under evaluation

PCIe Adapter

PCIe with 2-way Bridge

SXM / OAM Baseboard

.Next Dell enabled Technologies Overview

Next Gen HWRAID (PERC12)

- New gen controller with 2X better performance over PERC11 and 4X better than PERC10
  - ✓ Supports all drive interfaces: SAS4, SATA & NVME
  - ✓ x16 connectivity to devices to take full advantage of PCIe Gen5 throughput

System Cooling & Efficiency

- PowerManager & Smart Cooling
- High Power Optimized Airflow chassis design to maximize air cooling capabilities
  - ✓ Support for XCC/HBM in air-cooled chassis
- Optional CPU direct liquid cooling (DLC) solutions

BOSS-N1

- Segregated RAID controller for OS with secure UEFI boot that is rear facing and hot-pluggable
  - ✓ Enterprise-class 2 x M.2 NVMe devices with strong endurance and high quality that provide increased performance over BOSS-S1 with SATA drives

Data Processing Unit (DPU)

- SmartNIC with hardware accelerated networking and storage that enables customers to save CPU cycles
  - ✓ Improved security, running workloads and security software on different CPUs (“air gap”)
  - ✓ Offload hypervisor, networking stack, and storage stack to the DPU making them OS independent

System Management

- Seamless integration of new 16G servers into your existing processes and tool set
- Complete iDRAC9 support for all components
  - ✓ PERC12, BOSS N-1, PCIe Gen5 devices, UEFI Secure Boot, Smart Cooling, DPU’s, and more

Security

- TLS 1.3 with FIPS certification, SEKM 2.0 with support for NVMe drives and VxRail
- End-to-end threat management with Zero Trust approach
  - ✓ Silicon-based platform root of trust, multi-factor authentication (MFA), inventory and platform component tracking during delivery, tamper protection during shipping

PERC12

Better & Faster Outcomes

- 2X better performance over PERC11 – 4X better over PERC10
- Optimized for PCIe Gen4 NVMe devices

Lower TCO

- Decrease in $$/IOP - Run RAID5 instead of RAID10 on NVMe SSDs
- Same performance for less cost

Shorter Downtime

- Rebuild Times for SSDs 2X faster!

Investment Protection

- Supports all drive interfaces - SAS4, SATA or PCIe Gen4
- Runs in RAID or Pass-thru & Supports a 'mix' of RAID and Pass-thru

Supports entire 16G Server Portfolio

- H965e External controller will provide support for new 24Gb SAS JBODs

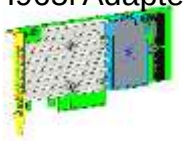
Dell's Next Generation PowerEdge RAID Controller (PERC)

Supports entire 16G Server Portfolio

- H965e External controller will provide support for new 24Gb SAS JBODs

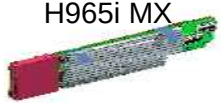
New Offer	Comment
PERC12 - H965i Adapter - Rack/Tower Servers	SAS/SATA or NVMe
PERC12 - H965i 'Front' - Rack Servers	SAS/SATA or NVMe
PERC12 - H965i MX - MX760C	SAS/SATA or NVMe

H965i Adapter



H965i Front

H965i MX



RAID-On-Chip (ROC) Performance Targets

JBOD	H755N NVMe x8G4 x16	H965i NVMe x16G4 x16	Improvement
4K RR IOPs	3.0M	6.0M	2X
4K RW IOPs	2.6M	6.0M	2X
256K SR (MiB/s)	13,600	27,000	2X
256K SW (MiB/s)	13,200	27,000	2X
RAID10	**H755N NVMe x8G4 x16**	**H965i NVMe x16G4 x16**	**Improvement**
4K RR IOPs	3.0M	5.8M	1.9X
4K RW IOPs	1.3M	2.25M	1.7X
128K SR (MiB/s)	13,600	27,000	2X
128K SW (MiB/s)	6,600	13,700	2X
RAID5	**H755N NVMe x8G4 x16**	**H965i NVMe x16G4 x16**	**Improvement**
4K RR IOPs	2.7M	5.8M	2X
4K RW IOPs	235K	900K	3.8X
128K SR (MiB/s)	13,600	27,000	2X
128K SW (MiB/s)	4,860	10,200	2X
RAID6	**H755N NVMe x8G4 x16**	**H965i NVMe x16G4 x16**	**Improvement**
4K RR IOPs	3.0M	~5.0M	1.8X
4K RW IOPs	175K	650K	2.7X
256K SR (MiB/s)	13,600	27,000	2X
256K SW (MiB/s)	4,260	9,600	2.X

New capabilities & technologies for the next gen…

Help customers take advantage of new levels of compute power with the latest integrated Smart Cooling technology.

Efficient cooling leads to better performance…

- Minimize energy costs by intelligently directing airflow within the system
- Maximize system thermal performance to enable high TDP CPUs with air-cooling, while ensuring no compromise operation without throttling
- Enable high density racks with liquid cooling to maximize performance per rack in your data center

Air Flow Optimization

Maximizing air cooling capabilities of the chassis

Direct Liquid Cooling

DLC solution & support offerings from directly Dell Tech.

1 Optimized Design

Sophisticated design methodologies maximize efficiency, plus configuration options that provide enhances air flow for top bin CPUs

2 Smart Cooling

By offering Smart Air and Liquid cooling options for a wide range of servers, customers choose the best fit for their needs

3 Solution Choices

New Dell-branded integrated DLC rack-level solutions, backed by ProDeploy & ProSupport Service offerings

Cooling

Our world class engineers designed PowerEdge servers for ultimate thermal performance.

With a new layout and high-performance fans, hot air exits the system quickly and efficiently.

- Latest Intelligent thermal algorithms minimize fan and system power consumption while maintaining component reliability
- Enables custom cooling options that can be managed via iDRAC GUI

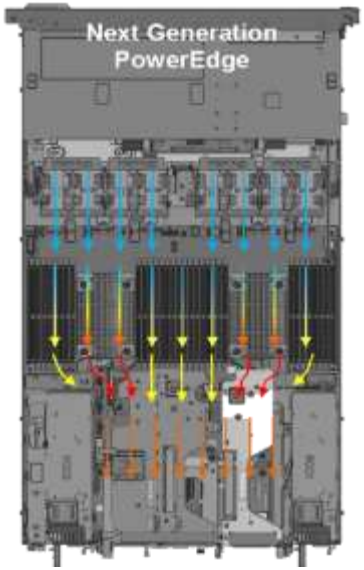
3rd generation DLC solutions enable dense configs with high TDP CPUs

- expanding to cover more platforms, with solutions backed by Dell Services
- New 2U 4-way DLC-cooled GPU system in CY23

PowerEdge Smart Cooling Solutions

Overview

- Next generation technologies are driving power and heat higher and higher
- PowerEdge ensures no-compromise system performance through innovative cooling solutions, while also offering customers options that fit their facility or usage model needs (one size does not fit all!)



Air Cooling

- 16G delivers innovations that extend the range of air-cooled configurations
- **Advanced designs** - airflow pathways are streamlined within the server, directing the right amount of air to where it's needed
- **Latest generation fan and heat sinks** – to manage the latest high-TDP CPUs and other key components
- **Intelligent thermal controls** – automatically adjusts airflow during workload or environmental changes, seamless support for channel add-in cards, plus enhanced customer control options for temp/power/acoustics

Direct Liquid Cooling (DLC)

- For high performance CPU & GPU options in dense configurations, Dell DLC effectively manages heat while improving overall system efficiency
- DLC options available for C-series, select R-series, 4S and MX platforms
- New: purpose-built liquid-cooled 2U 4-way GPU accelerator system

Edge Cooling

- New XR edge platforms deliver performance with extended temperature range support from -5ºC to 55ºC

DELL Technologies

16G Dell-Branded DLC Rack-Level Solutions

DLC rack solutions will be sold with every 16G liquid-cooled server order:

- Dell DLC-enabled servers are not self-contained solutions, they must have supporting liquid infrastructure support to run
- DLC rack solution element will all be available direct from Dell
- Rack solutions assembled at regional global rack integration facilities

New DLC-focused Dell Services (required with each order):

- Rack Integration / ProDeploy+ / ProSupport+

Customer facility must comply with DLC project requirements:

- Water availability, temperature and quality specs; must accommodate large rack size

Two New 16G Integrated DLC Rack Solutions from Dell

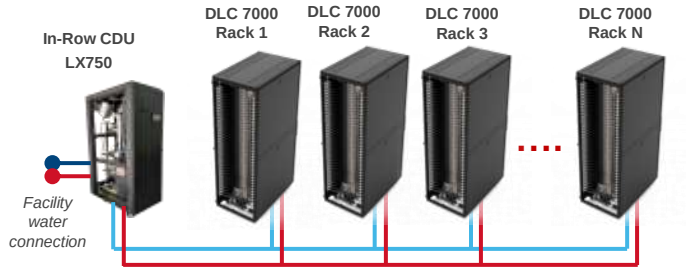
DLC 3000 – Stand-alone DLC Rack

Front view *Rear view*

DLC3000 for small-scale DLC deployments:

- ***Recommended for partial rack or up to 4 racks***
- Stand-alone DLC rack solution designed by Dell; only needs a water connection from customer data center to operate
- 42U and 48U rack height options, with capacity to support an entire rack of DLC-enabled R-series, C-series or MX760c servers
- DLC3000 solution includes a rack, a rack manifold, and an in-rack CDU

DLC 7000 – Fluid Network DLC Rack

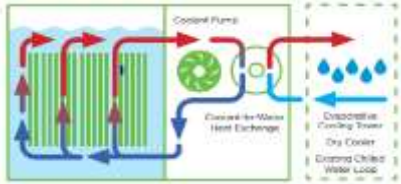


Secondary Fluid Network (SFN)

DLC7000 for large-scale DLC deployments:

- ***Recommended for 5 racks and up***
- DLC7000 racks connect to a fluid network with other DLC7000 racks for large-scale capacity and performance (not stand-alone like DLC3000)
- DLC7000 solution includes a 42U or 48U rack, and a rack manifold solution for DLC-enabled R-series, C-series or MX760c servers
- Fluid network design and installation performed by DLC partner CoolIT Systems

Cooling Technology Comparisons

	Air cooling	Air + Supplemental	Direct Liquid Cooling (DLC)	Immersion
Cooling Solution Options		 + 		
Products	• Traditional air-cooling & air-handling equipment • Containment	• In-row coolers • Rear Door Heat Exchangers (RDHx) • Containment (hot & cold aisle)	• CPU/GPU Cold-plate loops • Rack/facility level DLC products required	Single-phase (1P) and Two-phase (2P) Immersion tank solutions
Environments	Traditional data centers	Traditional data centers, with facility water	Traditional data centers, with facility water	• Non-traditional spaces, no conditioned air required (ex. - warehouse) • Note: facility water required
Main usage model	• Low to Mid-density racks • Up to ~ 15kW/rack	• **Mid to High-density racks** • Up to ~30kW/rack	• **Systems with high TDP parts** • High-density racks, up to ~80kW/rack	• **Limited/no air cooling available** • High-density racks, or high TDP parts
Typical Cost Adder	*NA*	+	+ +	Single phase (1P): + + Two-phase (2P): + + +
Availability	Standard cooling	Standard server cooling + 3rd party supplemental cooling solutions	Dell factory supported configurations	Dell OEM project engagement

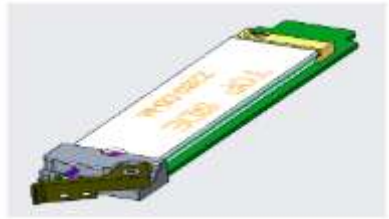
BOSS-N1

- Separate RAID controller for OS – Optimum configuration for Software Defined Storage applications.
- Space saving implementation using M.2 form factor SSDs – Maximizes server drive slots for Application Data.
- Enterprise-class M.2 NVMe devices with strong endurance – High quality.
- Simplified service with easily accessible and hot-pluggable parts in the Monolithic implementation – No scheduled downtime to replace a drive

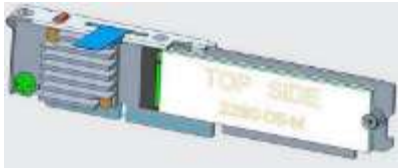
Boot Optimized Storage Solution (BOSS)

- RAS Features
  - Reliability: Enterprise-Class M.2 NVMe SSDs
    - Supports dual 80mm, Read Intensive (1DWPD), M.2 devices
    - 480GB/960GB Standard – 1920GB QNS
  - ***Accessibility**: Rear Facing (Monolithic)*
  - ***Serviceability**: Full Hot-Plug Support (Monolithic)*
- Supports Hardware RAID1 and Pass-through
  - Marvell 88NR2241 NVMe RAID Controller
- Supports UEFI Boot only
- Secure Firmware Update; Online (post RTS)
- SED FIPS Support (post RTS) – LKM and SEKM Support

Glovebox Monolithic



Carrier Card



Modular

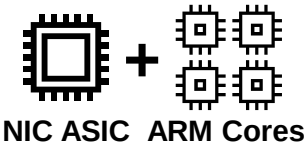
DELL Technologies

Data Processing Unit

(DPU aka SmartNIC)

- **Save CPU cycles with hardware accelerated networking and storage**
- **Improve security by running workloads and security software on different CPUs (“air gap”)**
- **Offload hypervisor, networking stack, and storage stack to the DPU making them OS independent**
- **Enable landlord/tenant models by isolating tenants not just with software, but also through hardware**

DPU Definition



- DPU is a combination of ARM Cores and a NIC ASIC
  - ARM cores run an OS and applications
  - NIC ASIC has hardware accelerate networking and storage
- PCIe form factor only

VMware ESXi 8.0 Distributed Services Engine on DPUs

(formerly VMware’s Project Monterrey)

- PowerEdge servers will support VMware ESXi running on a DPU
- These DPUs will be fully integrated into PowerEdge systems management - DRAC, OMIVV, and OME
- This solution will be supported with VxRail
- This solution has special hardware integrations
  - A cable that provides a serial connection as well as a high-speed connection to the iDRAC (same type of connection that a LOM has)
  - In 16G support for "Always On" where the DPU can be powered on and off independently from the server. This is necessary for the DPU "landlord-tenant" model

NVIDIA Channel DPUs

- PowerEdge supports NVIDIA channel DPUs that will run Linux
- Channel DPUs will have limited systems management integration (i.e., the server cools the DPU)
- Channel DPUs will not support VMware ESXi

Systems Management

- **Seamless integration of new 16G servers into your existing processes and tool set**
- **A simple update is all that is needed to add 16G servers to a solution.**
- **Complete iDRAC9 support for all components such as**
  - **PERC12**
  - **BOSS N-1**
  - **PCIe Gen5**
  - **EDSFF**
  - **UEFI Secure Boot**
  - **Smart Cooling**
  - **DPU's**
  - **more**

Comprehensive Server Management with the OpenManage Portfolio

Consoles

A complete offering for full lifecycle management of a fleet of Dell servers

- OpenManage Enterprise
  - Power Manager; OME Services, Update Manager, Cloud IQ; VMware; Microsoft
- OpenManage Enterprise Modular
- OpenManage Mobile

Ecosystem Integrations and Connections

Preserve customer investments by integrating with a partner solution

- VMware vCenter, vROPs
- Microsoft System Center Suite
- Windows Admin Center (WAC)
- ServiceNow
- Enterprise Key Management

Automation and Change Management

Scripting tools to streamline server management and keep them up to date

- Standardized APIs & scripts, and extensive API portal
- Ansible Playbooks
- Scriptable update tools
- Dell EMC Repository Manager
- Dell Bootable ISO

iDRAC9

Foundation of the OpenManage portfolio & industry leading embedded management

- iDRAC9 (available in all PowerEdge servers)
- iDRAC Service Module (OS instrumentation)
- Redfish-based API

CloudIQ for PowerEdge - Cybersecurity

- Build and implement security policies with ease
- Policy rules based on Dell & NIST best practice
- High / medium / low risk level assigned
- Remediation action highlighted
- Continuous policy monitoring
- Emailed as part of the Daily Digest

Apply policy & checks to 1000 servers in under 3 minutes

Boot Security

- Industry moving away from legacy BIOS rapidly, ***UEFI is the future***
- UEFI Secure Boot verifies and allows only authorized code modules to execute
- UEFI supports ***boot drives up to 9 zettabytes*** while legacy BIOS is limited to 2.2 Terabytes
- UEFI's modern architecture - ***easier to deploy and manage***
- ***NSA*** recognizes Dell Technologies as supporting ***optimal customization capabilities*** for Secure Boot

Modern security requires transition to UEFI secure boot

- Legacy BIOS boot is outdated for current cyber threat landscape
- UEFI with secure boot enabled is the default & recommended boot mode
- 16G will be last generation with legacy BIOS support

Legacy BIOS Support Matrix

Feature / Generation			14G	15G^	16G^
Legacy BIOS	CPU		Yes (Intel & AMD)	Yes (Intel & AMD)	AMD – Yes Intel - Limited support**
	OS N, N-1	ESXi (6.x, 7.x)	Yes ESX7.0 – Not certified	Yes ESX7.0 – Not certified	Not certified
		MS Windows	Yes, Require UEFI for FI		Win 2022, not certified Win 2019, Yes
		LINUX Distros***	Yes	Yes	Yes, Limited support*
	PERC/HBA 11		Yes	Yes	Yes, Limited support*
	BOSS S1/S2		Yes	Yes	No
	BOSS N1, PERC/HBA 12		NA		No
	Large Boot Discs (>2TB),		No	No	No
	Boot from NVMe Drives		No	No	No
	Network IO devices		Yes	Yes	To be determined

* Requires Legacy boot support to be enabled in PE servers BIOS

** Intel claims it is supported by HW but not part of their platform validation plan

*** Linux Distros supported – RHEL 8.6, RHEL 8.5, SUSE 15 SP3, UBUNTU 20.04, UBUNTU 22.04, Citrix LINUX 8.2

^ Only SP and Excludes E3 Platforms

Microsoft Server OS Support

CY23 Intel Based PowerEdge OS Support

Intel Xeon 4th Generation Scalable Processor Minimum Requirements
Windows Server 2022 Data Center Edition w/HyperV
Windows Server 2022 Standard Edition w/HyperV
Windows Server 2019 Data Center Edition w/HyperV
Windows Server 2019 Standard Edition w/HyperV

CY23 AMD Based PowerEdge OS Support

AMD 4th Generation EPYCTM Minimum Requirements
Windows Server 2022 Data Center Edition w/HyperV
Windows Server 2022 Standard Edition w/HyperV
Windows Server 2019 Data Center Edition w/HyperV
Windows Server 2019 Standard Edition w/HyperV

OS NOTES:

- To install Windows Server 2019 on AMD with more than 64 cores, Windows Server 2019: Build 17763.3532 (2022 October) or later is required.

Linux Server OS Support

CY23 Intel Based PowerEdge OS Support

Intel Xeon 4th Generation Scalable Processor Minimum Requirements
Red Hat Enterprise Linux 8.6 & 9.0
SUSE Linux Enterprise Server 15 SP4
Ubuntu 22.04

CY23 AMD Based PowerEdge OS Support

AMD 4th Generation EPYC™ Processor Minimum Requirements
Red Hat Enterprise Linux 8.6 & 9.0
SUSE Linux Enterprise Server 15 SP4
Ubuntu 22.04

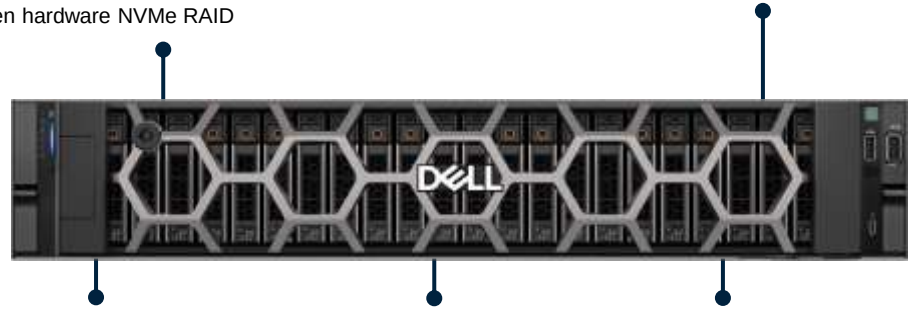
PowerEdge R760

Support for up to 28 Drives

- 24 NVMe direct-attached drives
- Gen5 NVMe* & SAS4 support
- Rear Hot-Plug BOSS-N1 (2 x M.2 NVMe) for boot
- Next-gen hardware NVMe RAID

Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)



2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- High-bandwidth memory CPUs

Support for GPU

- 2 x 300W (DW) or 6 x 75W (SW)

Flexible I/O

- Up to 8 x PCIe Slots
- Optional 2 x 1GbE LOM + 1 x OCP 3.0 slot

- Smart Cooling
- Direct Liquid Cooling
- Designed for growing scale-out solutions and air-cooled support
- Industry-leading manageability and security

MAINSTREAM

TARGET WORKLOADS

High Performance Scale-Out Databases

Architect for growth and scalability using high core count CPUs with the latest DDR5 memory technology, high-bandwidth networking and Gen5 based NVMe storage.

Next Level of Virtualization

8TB of memory combined with 112 cores of the latest generation Intel CPU enables high-density virtualization in a 2S server..

Accelerated AI Training

With the latest Gen5 PCIe enabled NVIDIA GPUs and NVMe drives designed to offer the highest throughput on the largest datasets, customers benefit from reduced training cycles and faster AI deployments.

PowerEdge R760xs

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 32 cores
- Up to 250W

Memory Support

- Up to 16 DDR5 DIMMs (1TB max)
- Up to 4800 MT/s

Flexible storage

- Up to 16 x 2.5” + 8x NVMe or 16 x 2.5” or 12 x 3.5” storage options
- Next Gen HW NVMe RAID (PERC12)
- Hot-plug BOSS-N1 (2 x M.2 NVMe) for boot

Flexible I/O

- Up to 6 x PCIe slots (up to 2 x Gen5)
- 1 x OCP 3.0 slot
- 1 x dedicated internal PERC
- Up to 2 x SW GPU (NVIDIA A2)

- Smart Cooling
- Designed for growing scale-out solutions and air-cooled support
- Industry-leading manageability and security

MAINSTREAM OPTIMIZED

TARGET WORKLOADS

Virtualization

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

Medium density VM / VDI

Up to 1TB of memory and plenty of cores, R760xs is perfectly sized for typical virtual machines or VDI instances where minor accelerator support is acceptable.

Software-Defined Storage Node

Up to 24 drives (up to 16x NVME!) for software defined storage deployments.

PowerEdge R660

Support for up to 16 Drives

- Storage options for SAS4/SATA/ NVMe Gen4 and Gen5
- Rear Hot-Plug BOSS-N1 (2 x M.2 NVMe) for boot
- Next-gen hardware NVMe RAID

Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- High-bandwidth memory CPUs

Support for GPU

- 3 x SW GPUs

Flexible I/O

- Up to 3 x PCIe Slots
- Optional 2 x 1GbE LOM + 1 x OCP 3.0 slot

- Smart Cooling
- Direct Liquid Cooling
- Designed for growing scale-out solutions and air-cooled support
- Industry-leading manageability and security

MAINSTREAM

TARGET WORKLOADS

High Performance Simulation & Modeling

Deliver unparalleled performance in air-cooled 1U HPC clusters with high-bandwidth memory CPU that feature high CPU core count combined with 4x more memory bandwidth than regular DDR5 DIMMs.

Online Transaction Processing

Enable faster, more secure online transactions with next-gen high performance Intel CPUs built with Gen5 PCIe NVMe drives and high-capacity memory.

All-Flash vSAN

Advance HCI implementations and gain higher throughput by deploying vSAN nodes equipped with high-frequency CPUs on NVMe direct-attached storage configurations.

PowerEdge R660xs

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 32 cores per processor
- Up to 250W

Memory Support

- Up to 16 DDR5 DIMMs (1TB max)
- Up to 4800 MT/s

Flexible storage

- Up to 10 x SAS/SATA/NVME drives or up to 4 x 3.5" high-capacity SATA HDDs
- Next Gen HW NVMe RAID (PERC12)
- USB and Internal BOSS-N1 (2 x M.2 NVMe) for boot

Flexible I/O

- Up to 3 x PCIe slots
- 1 x OCP 3.0 slot
- 1 x dedicated internal PERC

- Smart Cooling
- Designed for growing scale-out solutions and air-cooled support
- Industry-leading manageability and security

MAINSTREAM OPTIMIZED

TARGET WORKLOADS

Virtualization / Cloud

Medium density virtualization and Cloud-Native requiring low-medium local storage.

Scale-Out Database

Medium Duty traditional database & scale out database with low-medium local storage

High Performance Compute

HPC requiring 1DPC design for highest memory performance & scale out clusters.

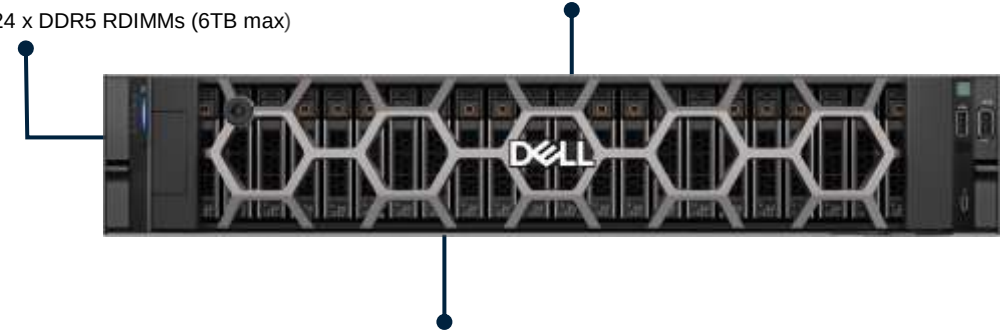
PowerEdge R7625

A step ahead in processing

- Powered by up to two 4th Generation AMD EPYC™ processors with up to 96 cores per processor
- Up to 24 x DDR5 RDIMMs (6TB max)

I/O and connectivity

- Up to 8 x PCIe slots (up to 4 x Gen5)
- OCP 3.0 for network cards



Flexible storage

- Up to 12 x 3.5” – 12Gb SAS, 6Gb SATA
- Up to 24 x 2.5” – 12Gb SAS, 6Gb SATA, NVMe
- Up to 32 x E3.S – NVMe
- Rear: Up to 4 x 2.5” Hot Plug SAS/SATA or NVMe HDDs, Up to 4 x E3.S NVMe

- Smart Cooling
- Direct Liquid Cooling (DLC) Support
- Industry-leading manageability and security

MAINSTREAM

TARGET WORKLOADS

Data Analytics

Maximized storage and memory configuration option enables HPC, ML/DL/AI and rendering

All Flash SDS

24 2.5” U.2 Gen4 NVMe or 32 E3.S drives supports all flash storage

VDI

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

PowerEdge R7615

The only socket you need

- Powered by one 4th Generation AMD EPYC™ processor with up to 96 cores per processor
- Up to 12 x DDR5 RDIMMs (3TB max)

I/O and connectivity

- Up to 8 x PCIe slots (up to 4 x Gen5)
- OCP 3.0 for network cards

Flexible storage

- Up to 12 x 3.5” – 12Gb SAS, 6Gb SATA
- Up to 24 x 2.5” – 12Gb SAS, 6Gb SATA, NVMe
- Up to 32 x E3.S – NVMe
- Rear: Up to 4 x 2.5” Hot Plug SAS/SATA or NVMe HDDs, Up to 4 x E3.S NVMe
- Internal BOSS-N1 (2 x M.2 NVMe) for boot

- Smart Cooling
- Direct Liquid Cooling (DLC) Support
- Industry-leading manageability and security

MAINSTREAM OPTIMIZED

TARGET WORKLOADS

SDS

Direct connect SAS/SATA/NVMe

Virtualization

High core count performance for highest VM density in 1S

Data Analytics

Multi-die architecture offers low latency and floating point capacity for Big Data and Containers

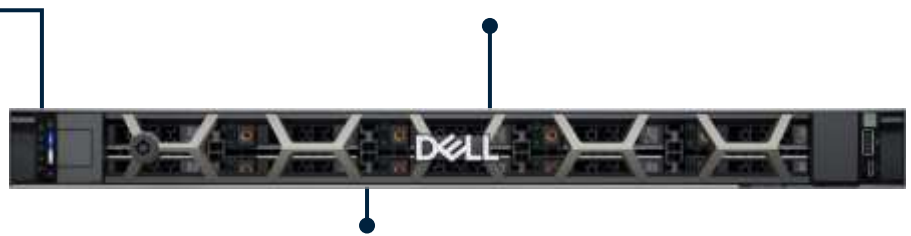
PowerEdge R6625

2 Socket Capable

- Powered by up to two 4th Generation AMD EPYC™ processors with up to 96 cores per processor
- Up to 24 x DDR5 RDIMMs (6TB max)

I/O and connectivity

- Up to 3 x PCIe slots (up to 2 x Gen5)
- OCP 3.0 for network cards



Flexible storage

- Up to 4 x 3.5" SAS/SATA or SSD
- Up to 10 x 2.5" SAS/SATA, SSD; or NVMe
- Up to 14 x E3.S Hot Plug NVMe
- HW NVMe RAID

- Smart Cooling
- Direct Liquid Cooling (DLC) Support
- Industry-leading manageability and security

MAINSTREAM

TARGET WORKLOADS

HPC

HPC requiring 1DPC design for highest memory performance & scale out clusters.

Dense VDI

Multi GPU support to accelerate end user VDI performance

Virtualization

VMMark w/ vSAN World Record performance of 24.08 @ 28 tiles is 81.5% better than previous record

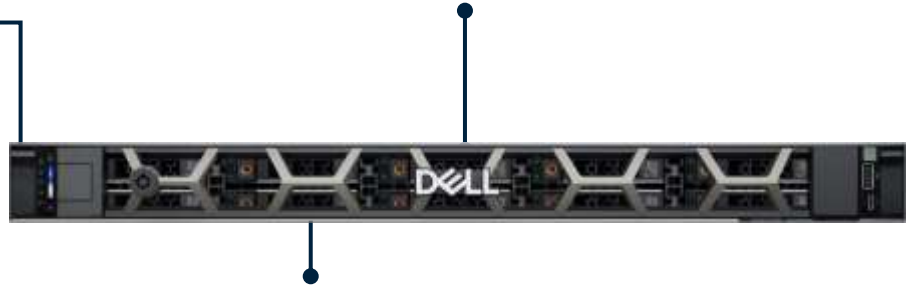
PowerEdge R6615

The only socket you need

- Powered by one 4th Generation AMD EPYC™ processor with up to 96 cores per processor
- Up to 12 x DDR5 RDIMMs (3TB max)

I/O and connectivity

- Up to 3 x PCIe slots (up to 2 x Gen5)
- OCP 3.0 for network cards



Flexible storage

- Up to 4 x 3.5" SAS/SATA or SSD
- Up to 10 x 2.5" SAS/SATA, SSD; or NVMe
- Up to 14 x E3.S Hot Plug NVMe
- HW NVMe RAID
- Internal BOSS-N1 (2 x M.2 NVMe) for boot

- Smart Cooling
- Direct Liquid Cooling (DLC) Support
- Industry-leading manageability and security

MAINSTREAM OPTIMIZED

TARGET WORKLOADS

Virtualization

Improved TCO with VM density and SQL performance improvements

HCI

High parallelism for low latency on ROBO VxRail and Dense Azure Stack HCI

NFV

OpenStack Ready Architecture applicable for Telco

PowerEdge R860

Extreme Computing Power

- Up to four 4th Generation Intel® Xeon® Scalable processors with up to 60 cores per processor

Support for highest memory speed & capacity

- Up to 64 DDR5 RDIMMs
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

Support for up to 24 Drives

- Up to 24 NVMe direct attached drives
- Gen5 NVMe & SAS4 Support
- Rear Hot-Plug BOSS-N1 (2 x M.2 NVMe) for boot
- Next-gen hardware NVMe RAID

Flexible I/O

- Up to 8 x PCIe Gen 5 Slots
- 1 x OCP 3.0 slot
- Dedicated internal PERC

- Choice of 5 PSU (Gold or Platinum) to achieve sustainable energy goals
- Optimized for air-cooling in a variety of configurations, optional Dell Direct Liquid Cooling Support
- Industry-leading manageability and security

MAINSTREAM

TARGET WORKLOADS

Large In-Memory Databases

With up to 64 DIMMs to maximize support for in-memory databases

Virtualization/VDI

With 4 CPUs and the greatest capacity for memory, storage, and I/O, this platform is optimal for the densest virtualization stacks

LOB Applications

Flexibility and capacity to support the most demanding Line Of Business applications

PowerEdge R960

Extreme Computing Power

- Up to four 4th Generation Intel® Xeon® Scalable processors with up to 60 cores per processor

Support for highest memory speed & capacity

- Up to 64 DDR5 RDIMMs
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

Support for up to 36 Drives

- Up to 36 NVMe direct attached drives
- Gen5 NVMe & SAS4 Support
- Rear Hot-Plug BOSS-N1 (2 x M.2 NVMe) for boot
- Next-gen hardware NVMe RAID

Flexible I/O

- Up to 12 x PCIe Gen 5 Slots
- 1 x OCP 3.0 slot
- Dedicated internal PERC

- Choice of 5 PSU (Gold or Platinum) to achieve sustainable energy goals.
- Optimized for air-cooling in a variety of configurations, optional Dell Direct Liquid Cooling Support
- Support for up to 4 Doublewide GPUs.
- Industry-leading manageability and security.

MAINSTREAM

TARGET WORKLOADS

Large In-Memory Databases

With up to 64 DIMMs to maximize support for in-memory databases

Virtualization/VDI

With 4 CPUs and the greatest capacity for memory, storage, and I/O, this platform is optimal for the densest virtualization stacks

LOB Applications

Flexibility and capacity to support the most demanding Line Of Business applications

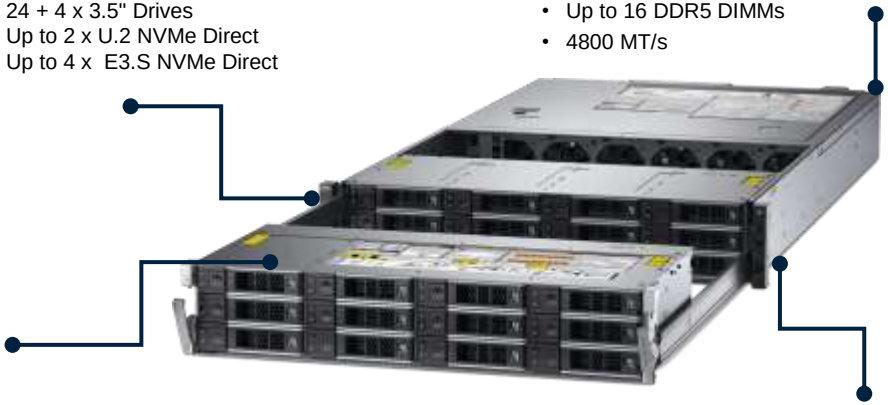
PowerEdge R760xd2

Support for up to 28 Drives

- 24 + 4 x 3.5" Drives
- Up to 2 x U.2 NVMe Direct
- Up to 4 x E3.S NVMe Direct

Support for high-speed and memory capacity

- Up to 16 DDR5 DIMMs
- 4800 MT/s



2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 32 cores per processor
- Support for NVIDIA GPUs

Flexible I/O

- Up to 4 x PCIe Gen4 slots
- OCP 3.0 for network cards
- Rear Hot-Plug BOSS N-1 (2 x M.2 NVMe) for boot (optional)

- Support for latest generation of density optimized 3.5" storage drives
- Ability to provide HW options for native in box tiering
- Industry-leading manageability and security

STORAGE OPTIMIZED

TARGET WORKLOADS

Object

Ideal for massively scalable storage solutions optimized for cost/GB

File

Balanced core count, memory and networking to support open market and vendor optimized file storage

Video surveillance and analytics

For datacenters that require ample storage for video surveillance applications with the option for in box analytics

PowerEdge T560

Exceptional Performance

- Powered by up to two 4th Generation Intel® Xeon® Scalable processors with up to 32 cores per processor
- Up to 16 x DDR5 RDIMMs (1TB max)
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

Designed for high reliability

- Hot-plug BOSS
- Hot-plug HDD/SSD
- Hot-plug redundant power supplies
- PERC 11 & 12, SW and HW RAID, Front, Internal PERC and Add-in Card options

Prepped for data analytics and machine learning

- Up to 2 Double-Wide GPU
- Up to 4 x PCIe Gen 4 slots

Expandable I/O and Storage

- Faster I/O throughput: PCIe Gen 5
- Increased memory performance with DDR5 4800MT/s
- Increased maximum storage with up to 12 x 3.5" HDD, or 24 x 2.5” SSDs, or 8 x 3.5”/2.5” HDD+ 8 x NVMe SSD

Industry-leading manageability and security

ROBO / SMB

TARGET WORKLOADS

Database

Built-in features to enable collaborative applications between groups of people that share information and processes on-site or remotely

Medium Duty Inferencing

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

Virtualization

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

Unleash your AI advantage

Accelerate your path to **faster**, **smarter** outcomes with purpose-driven PowerEdge servers for AI **enhancing data-driven business**, **delivering visual outcomes** and **expediting business-wide AI operations**

ACCELERATE insights

Improve performance.

Innovative compute driving performance across the AI lifecycle and for delivery of AI, HPC, Modeling and Simulation operations at the speed of business.

TRUSTED AI

Reduce risks and save time.

Accelerate your AI lifecycle with a trustworthy, high-quality solutions infrastructure.

SIMPLIFIED operations.

Boost AI infrastructure Automation.

Effectively control and manage your AI, HPC infrastructure and performance workloads, anywhere.

XE9680

XE9640

XE8640

R760xa

Dell Technologies helps advance **accelerated compute** to drive **enhanced AI** workload **outcomes** with **greater** insights, inferencing and visualization.

PowerEdge XE9680

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- 6U air-cooled, up to 35C ambient
- 1200mm rack capable

Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- Up to 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

AI

Large Model Training

I/O

- 10 x 16 PCIe Gen5 slots
- One OCP NIC 3.0
- 2 x 1GbE LOM

Support for up to 16 Drives

- Up to 8 x SAS/SATA/NVMe Gen4 or 16x E3.S
- Rear Hot-Plug BOSS N-1 (2 x M.2 MVNe) for boot (optional)
- SW RAID/PERC12 support

GPU Optimized

- NVIDIA 8 x H100 SXM5 700W 80GB GPUs
  -or-
- NVIDIA 8 x A100 SXM4 500W 80GB GPUs
- Full NVLINK interconnectivity

GPU OPTIMIZED

TARGET WORKLOADS

AI-ML/DL Training

Best-performing GPUs enable max performance for AI/ML-training workloads - especially for large model training

High-Performance Compute

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

Targeted Verticals

Healthcare, CSP & CRISP, Finance, HPC, Federal, Research/Universities

PowerEdge XE9640

Dual Socket

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- Direct Liquid cooled CPUs & GPUs
- 1200mm rack capable

Diverse GPU Offerings

Direct Liquid Cooled

Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

I/O

- Up to 4 x 16 PCIe Gen5 slots
- OCP 3.0 for network cards

Support for up to 8 Drives

- NVMe U.2 Gen4 or E3.S Gen5 drives
- Hot-Plug BOSS N-1 for boot (optional)

GPU Flexibility & Optimization

- 4x NVIDIA 700W SXM GPUs

  -or-

- 4x Intel Data Center GPU Max Series 1550 600W OAM GPUs
- Quad connected NVLink or XeLink capability across GPUs

GPU OPTIMIZED

TARGET WORKLOADS

AI-ML/DL Training

Best performing GPUs enable max performance/$ for AI/ML Training workload

High-Performance Compute

Higher CPU and GPU core density, **Liquid Cooled** to

- **Lower TCO**
- **Maximize Rack Utilization**
- **Enable Green Data Centers**

Targeted Workloads and Verticals

Workloads: ML/DL Training & Simulation Modeling
Verticals:: Finance, Healthcare, Higher-Ed, Fed, Retail, CSP & CRISP, Super Computing

PowerEdge XE8640

HPC & AI

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- 4U air-cooled (LAAC), up to 35C ambient
- Standard (1070mm) rack capable

Support for high-speed and memory capacity

- Up to 32 DDR5 DIMMs
- 4800 MT/s (1DPC) or 4400 MT/s (2DPC)

I/O

- Up to 4 x16 PCIe Gen5 slots
- OCP NIC 3.0
- 2 x 1GbE LOM

Support for up to 8 Drives

- SAS SSD, or NVMe U.2 or E3.S drives
- Rear Hot-Plug BOSS N-1 (2 x M.2 MVNe) for boot (optional)
- SW RAID/PERC12 support

GPU Optimized

- Nvidia 4 x H100 SXM5 700W 80GB GPUs
- Full NVLINK interconnectivity

GPU OPTIMIZED

TARGET WORKLOADS

AI-ML/DL Training

Best-performing GPUs enable max performance for AI/ML-training workloads

High-Performance Compute

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

Targeted Verticals

Oil & Gas, Finance, Healthcare, HPC, Fed, Retail, CSP, Research/Universities

Dell EMC PowerEdge R760xa

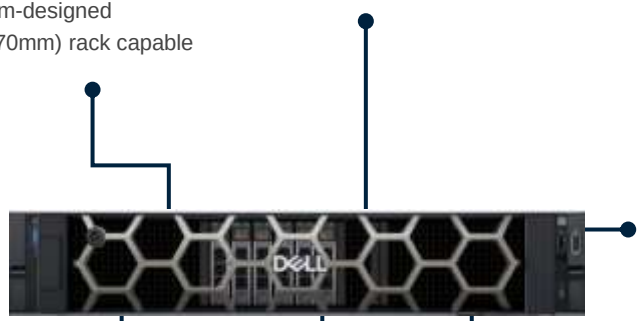
2 Socket Capable
- Two 4th Gen Intel® Xeon® Scalable
- processors through highest TDP
- 2U Mainstream-designed
- Standard (1070mm) rack capable

Support for high-speed and memory capacity
- 32 DDR5 DIMMs
- 4800 MT/s

Mainstream PowerEdge Design

Supports wide range of accelerated workloads

Flexible Infrastructure to run mixed workloads and scale as needed



I/O
- Up to 4 x16 350W PCIe Gen5 slots
- OCP 3.0 for network cards

GPU Optimized
- Up to 4x DW or 10x SW PCIe Gen5 GPUs powered by NVIDIA, Intel and AMD
- NVLINK Bridging support enables scaling of memory and performance to enhance GPU focused applications
- Multi-Instance GPU (MIG) enabled for multi-tenancy
- Supports entire Dell PowerEdge PCIe portfolio

Support for up to 8 Drives
- SAS/SATA/NVMe U.2 or E.3 SSD drives
- Hot-Plug BOSS for boot (optional)
- PERC12 support (SAS4/NVMe)

Air-Cooled to 35C
- Optional DLC for 20% more heat capture

TARGET WORKLOADS

AI-ML/DL Training and Inferencing

Flexible accelerator configurations enable optimal perf/$ AI-ML/DL workloads together with inferencing

High-Performance Compute

Higher CPU and GPU core density enable HPC simulation modeling

Render Farms and Virtualization

Higher GPU utilization using multi-tenancy to serve multiple users without compromising on density

PowerEdge C6620

Support for 16 x NVMe Gen4 Drives

- 4 x NVMe Gen4 drives/compute node

Up to 4 Nodes

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor
- Memory speed up to 4800 MT/s

Flexible I/O

- Up to 2 x PCIe Gen5 slots
- 1 x 16 PCIe Gen5 OCP 3.0 for network cards
- SNAP I/O Support

- New PowerEdge C6600 chassis with improved power, thermal capabilities
- Direct Liquid Cooling (DLC) Support
- Industry-leading manageability and security

MODULAR

TARGET WORKLOADS

High-Performance Computing

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

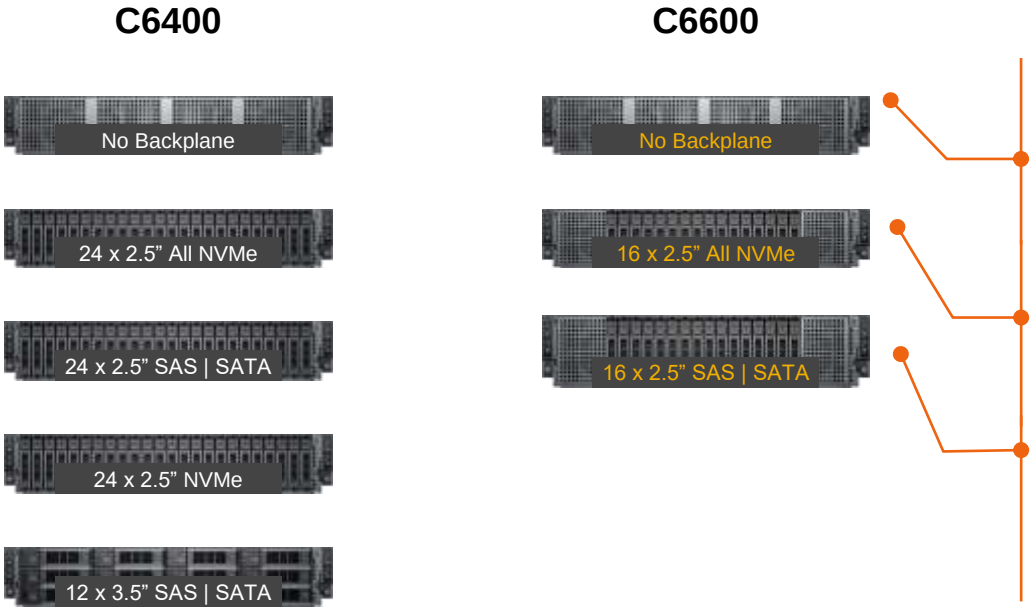
Financial analysis / High Frequency Trading

Medium Duty traditional database & scale out database with low-medium local storage

Hyper-Performance Compute

HPC requiring 1DPC design for highest memory performance & scale out clusters.

C6600 Chassis Options



No Backplane Chassis

- No front drives; Internal Boot using M.2 Boot Drive
- Improved air flow and thermal capability
- **HPC, HFT, SaaS/IaaS, Hadoop compute node w/ external HDFS storage**

16x 2.5” All NVMe Backplane Chassis

- Optimized for applications requiring high-speed storage
- Up to 4 NVMe (Gen4) drives/compute sled; internal M.2 boot drive
- **vSAN, SDS, HPDA, HCI**

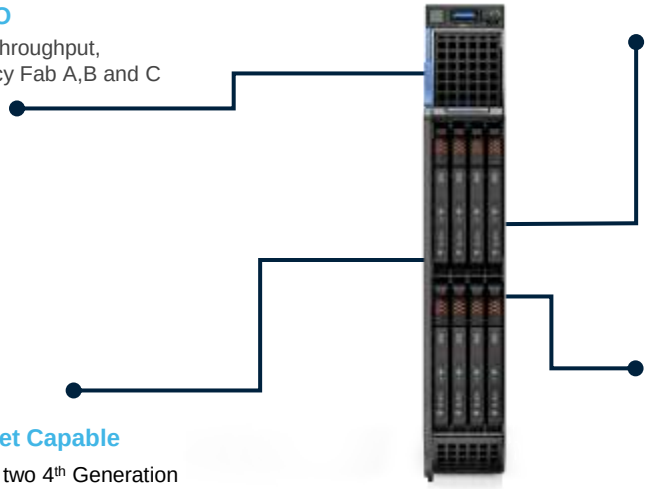
16x 2.5” SAS/SATA Backplane Chassis

- Optimized for high performance compute and storage
- Up to 4 SAS/SATA drives/compute sled; internal M.2 boot drive
- **HPC, HPDA, SaaS/IaaS, Financial modelling, HCI, vSAN**

PowerEdge MX760c

Flexible I/O

- 3 x High throughput, low latency Fab A,B and C



Up to 8 x EDSFF E3.S NVMe Gen5 or 6 x 2.5" SAS/SATA or NVMe Gen4

- Internal BOSS-N1 (M.2 NVMe) for boot /HW - RAID and SED)
- PERC12 - H965i NVMe Raid

2 Socket Capable

- Up to two 4th Generation Intel® Xeon® Scalable processors with up to 56 cores per processor

Support for higher-speed and dense memory capacity

- Optimized for 2 DIMMs/channel
- 32 DDR5 DIMMs
- 4800 MT/s

- Designed for PowerEdge MX7000 Modular chassis
- Integrated Intel® Built-In AI Acceleration, Next Gen QAT
- Industry-leading manageability and security

MODULAR

TARGET WORKLOADS

General Purpose IT, Virtualization, Containerization, Business Applications

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

Software-Defined Storage and Software-Defined Networking

Flexible and richer storage configs
High speed networking support
Redundant IO

Database, Big Data Analytics

Compute and memory rich configurations (Structured and Unstructured DB, In-Memory DB, Big Data analytics)

Thank You