DELL Technologies

Specification Sheet

PowerEdge XE8712

The Future of High-Performance Dense Compute

IR7044 and IR7050 (44 OU and 50 OU)

Dell's Integrated Rack Scalable Systems (IRSS) program is designed for rack-scale AI and HPC deployments, maximizing space, energy efficiency, reducing costs and are delivered as fully built and tested sets of racks. As an option within the IRSS program, The IR7000 series features a 21-inch Orv3-based rack infrastructure with dense compute and liquid cooling for high TDP GPUs and CPUs. With integrated power busbars and DLC manifolds, the IR7000 series simplifies back-of-rack serviceability and cabling, paving the way for standardization. The series also includes power shelves that eliminate PSU/PDU cabling complexity and supports both in-rack and in-row CDUs.

PowerEdge XE8712

The Dell PowerEdge XE8712 is our highest-density GPU server, enabling up to 144 NVIDIA Blackwell GPUs per rack for unprecedented AI and HPC performance. Built on the modular IR7000 platform, it's optimized for space-constrained environments without compromising compute power. With support for L11 components, it offers unmatched flexibility across varying power, cooling, and rack configurations. Tool-less service and front-access design make maintenance fast and efficient — even in high-scale deployments. It's a future-ready solution engineered to accelerate innovation while simplifying operations.

Key highlights

- Absolute GPU density leader — up to 144 NVIDIA Blackwell GPUs per IR7000 rack, unmatched in the industry for AI/HPC workloads.
- Modular flexibility — thanks to OCP-inspired IR7000 design and support for L11 component configurations, enabling flexible power, cooling, and rack setups.
- Serviceability engineered in — front-access I/O, tool-less connectors, and quick-disconnect liquid cooling manifolds simplify maintenance at scale High efficiency and reliability — leveraging Direct Liquid Cooling (DLC), disaggregated power modules, and shared bus architecture to support up to 264 kW per rack, reducing operating costs.
- Future-ready rack-scale compute—fully integrated within Dell's IR7000 ecosystem, prepared to support next-gen PowerEdge servers as GPU and AI demands evolve

Cyber Resilient Architecture for Zero Trust IT environment & operations

Security is integrated into every phase of the PowerEdge lifecycle, including protected supply chain and factory-to-site integrity assurance. The Silicon-based root of trust anchors end-to-end boot resilience while Multi-Factor Authentication (MFA) and role-based access controls safeguard trusted operations.

Sustainability

From recycled materials in our products and packaging, to thoughtful, innovative options for energy efficiency, the PowerEdge portfolio is designed to make, deliver, and recycle products to help reduce the carbon footprint and lower your operation costs. We even make it easy to retire legacy systems responsibly with Dell Technologies.

Rest easier with Dell Technologies Services

Maximize your PowerEdge Servers with comprehensive services designed to meet you wherever you are. Accelerate time to value in achieving high AI use cases with Professional Services for AI, choose from tailored deployment options with the ProDeploy Suite, receive proactive and predictive support with our ProSupport Suite, and so much more with our services available across 170 locations and backed by our 60K+ employees and partners.

Feature	Technical Specifications for IR7044, IR7050, XE8712	
Processor	Two NVIDIA Grace with 72 cores per processor	
Memory	• 480 GB of LP DDR5 memory with error-correction code (ECC) / CPU • 192 GB HBM3e / GPU	
GPU	• 4 Blackwell Ultra GPUs • 900GB/s of coherent memory through NVLINK CPU-GPU interconnect	
Front drive bays	Up to 2 x EDSFF E3.S hot-swappable NVMe drives*	
Storage controller	No HBA or PERC, direct NVMe only	
Integrated Rack solution	IR7000 ORv3 (OCP Open Rack version 3)	
Rack and Sled Form Factor	IR7044 is a 44 OU (Open Rack Units) rack IR7050 is a 50 OU (Open Rack Units) rack Each XE8712 sled is 1 OU Note: 1 OU = 48 mm (1.88 inch) height, and 537 mm (21.14 inch) width.	
Power Supplies	• IR7000 rack consists of Power Shelf 33kW (PS33) that supports 6 x 5500 W AC PSUs • PS33 supplies up to 54 VDC to the XE8712 through Power bus bar located on IR7000 rack	
Cooling specifications	• Direct Liquid Cooling (DLC)	
Fans	Eight high performance gold (HPR Gold) cooling fans	
Dimensions and Weight	IR7000 • Height — 2286 mm (90 inches) for IR7044 rack — 2574 mm (101.33 inches) for IR7050 rack • Width — 750 mm (29.52 inches) • Depth — 1200 mm (47.24 inches) — 1340 mm (57.75 inches) with front and rear doors	XE8712 • Height — 46.45 mm (1.83 inches) • Width — 560 mm (22.05 inches) • Depth — 840.85 mm (33.10 inches) • Weight — 33.07 kg (72.90 pounds)
Embedded Management	• Aspeed AST2600 BMC DC-SCI compatible • iDRAC10 • BMC-to-NVIDIA HMC for HPM management	
Network options	• 4 x16 CX7 or 2 CX8 OSFP ports	
Ports	• 1 x USB 3.0 Type - A port • 2 x RJ45 dedicated iDRAC Ethernet ports	• 1 x USB 2.0 Host/Managed Type - C port • 1 x Mini-DisplayPort
PCIe slots and Risers	• Up to 4 x16 FH HL Gen5, front risers only	
PCIe Cards	• 1 x BF3 SuperNIC Full Height Half Length	
Boot Drives	• 1 x M.2 Boot	
Rail Support	Static rails for ORv3 IR7000 rack	
Operating System and Hypervisors	• Red Hat Enterprise Linux For specifications and interoperability details, see Dell.com/OSsupport.	

Technical Abbreviations

Octal Small Form-factor Pluggable (OSFP)

BF3 is a device called BlueField-3, a networking card from NVIDIA.

* Feature not available at product launch. Please refer to the product configurator page on Dell.com to confirm feature availability.

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