PowerEdge IR7000/M7701/M7725

The Future of High-Performance Dense Compute

IRSS and IR7000

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.

PowerEdge M7725

The Dell PowerEdge M7725 provides high performance dense compute ideal for research, government, fintech and higher education environments. Designed to be deployed in the IR7000 rack, the Dell PowerEdge M7725 features 2 x 2S server nodes in a 1OU enclosure. It delivers more compute in less space with improved serviceability scaling between 24000 - 27000 cores per rack, with 64 or 72 two socket nodes, powered by 5th Gen AMD EPYC CPUs, front IO slots enable high speed IO connectivity and provides seamless connectivity for demanding applications. The server's energy-efficient form factor allows for more sustainable deployments through both direct liquid cooling (DLC) to CPUs and air cooling via quick connect to the integrated rack. The M7725 with IR7000 Rack enables room neutral (near 100%) heat capture capability via Dell's exclusive rear door heat capture technology.

Product Details

- Dense form factor: 1 OU with 2 x 2S server nodes, up to 72 nodes per rack
- Uncompromised performance: Latest AMD EPYC 5th Gen CPUs
- Energy efficient: Hybrid cooling with air + liquid for optimized power utilization
- Easy to deploy and manage: Cold aisle serviceability, quick disconnects for cable free liquid connectivity, and front I/O cabling
- Scalable: Up to 72 nodes per rack, delivering up to 27,000 cores per rack
- High-speed IO: 2 x I/O slots (PCIe Gen5 x16) per node, enabling best-in-class data transfer rates (Ethernet and InfiniBand options supported)

Customer Benefits

- Uncompromised performance without constraints
- Energy efficiency with hybrid cooling and optimized power utilization
- Easy deployment and management with cold aisle serviceability and front I/O cabling
- High-speed I/O for best-in-class data transfer rates
- Unparalleled simplicity: Cable-free liquid and power delivery
- Scalable: Grow as your compute demand grows
- Rapid deployment: Your entire HPC cluster at-scale with a white glove experience
- Efficient: Integrated DLC for energy efficiency
- Dense: Highest CPU and GPU density
- Standardized: OCP standard-based infrastructure for large-scale AI & dense compute
- Turnkey Rack Level Deployment: Unmatched service and support from datacenter assessment to rack scale integration

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.

Increase efficiency and accelerate operations with autonomous collaboration

The Dell OpenManage systems management portfolio tames the complexity of managing and securing IT infrastructure. Using Dell Technologies' intuitive end-to-end tools, IT can deliver a secure, integrated experience by reducing process and information silos in order to focus on growing the business. The Dell OpenManage portfolio is the key to your innovation engine, unlocking the tools and automation that help you scale, manage, and protect your technology environment.

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 IR7000, M7701 and M7725	
Processor	Two 5th Generation AMD EPYC™ 9005 Series processors with up to 128 Zen5 cores or 192 Zen5c cores per node	
Memory	• 24 DDR5 DIMM slots per node, speeds up to 6400 MT/s • Supports registered ECC DDR5 DIMMs only	
Front drive bays	2 x EDSFF E3.S Gen5 NVMe SSDs per node and 4 per system	
Storage controller	Internal boot: Boot Optimized Storage Subsystem (BOSS-N1 Modular DC-MHS): 2 x M.2 SSDs	
Integrated Rack solution	IR7000 ORv3 (OCP Open Rack version 3)	
Chassis	M7701 chassis supports 2 x M7725 nodes	
Sleds	Each M7725 supports 2 AMD EPYC 9005 processors per node and 4 processors per system	
Form Factor	IR7000 = 44 OU (Open Rack Units) M7701 is 1OU, M7725 is node Note: 1 OU = 48 mm (1.88 inch) height, and 538.98 mm (21.22 inch) width.	
Power Supplies	• IR7000 rack consists of Power Shelf 33kW (PS33) that supports 6 x 5500 W AC PSUs • PS33 supplies up to 50 VDC to the M7725 through Power bus bar located on IR7000 rack	
Cooling options	• Direct Liquid Cooling (DLC) • Air cooling	
Fans	Two sets of cabled dual fan modules per node	
Dimensions and Weight	IR7000 • Height — 2286 mm (90 inches) • Width — 750 mm (29.52 inches) • Depth — 1200 mm (47.24 inches) — 1340 mm (57.75 inches) with front and rear doors	M7725 nodes installed M7701 chassis • Height — 46.45 mm (1.83 inches) • Width — 537.0 mm (21.14inches) no bezel support • Depth — 848.80 mm(33.41 inches) Hook to IMM module • Weight — 26.65 kg (58.75 pounds)
DPU*	Up to 1 x 150W SW per node	
Embedded Management	• iDRAC10 • iDRAC Direct	• iDRAC RESTful API with Redfish • iDRAC Service Module
Tools	• IPMI • RACADM CLI	• Dell Repository Manage • Dell System Update • Enterprise Catalogs
Security	• Cryptographically signed firmware • Data at Rest Encryption (SEDs with local or external key mgmt) • Secure Boot • Secure Erase	• Silicon Root of Trust • System Lockdown (requires iDRAC10 Enterprise or Datacenter) • TPM 2.0 FIPS, CC-TCG certified
Network options	OCP NIC card 3.0: One slot in the front of each node	
Ports	Front ports • 1 x USB 3.0 Type - A port • 1 x USB 2.0 Type - C port • 1 x RJ45 dedicated iDRAC Ethernet port • 1 x Mini-DisplayPort Note: All front ports are located on the DC-SCM module	Internal ports • 1 x USB 3.1 Type A port
PCIe	Up to 2 x16 Gen5 PCIe slots per node	
Rail Support	Static rails for ORv3 IR7000 rack	
Operating System and Hypervisors	• Canonical Ubuntu Server LTS • Red Hat Enterprise Linux • SUSE Linux Enterprise Server	For specifications and interoperability details, see Dell.com/OSsupport.
OEM-ready version available	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit Dell.com -> Solutions -> OEM Solutions.	

* Expected to be available in the first half of 2025. Planned Offerings are subject to change and may not be released as originally designed.

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