The Dell AI Factory with NVIDIA Advances Supercomputing-Class Infrastructure Powering the Next Generation of HPC and AI

June 22, 2026

New Dell PowerEdge server brings next-generation density and efficiency to the Dell AI Factory with NVIDIA as customer momentum builds across industries

- **Purpose-built HPC and AI:** The new Dell PowerEdge XE8812 server featuring NVIDIA Vera Rubin NVL4 architecture scales up to 144 GPUs per rack for the most demanding HPC and AI workloads in the Dell PowerRack 9100, an OCP standards-based rack architecture.
- **Global customer momentum:** Dell AI Factory with NVIDIA deployments advance global AI ambitions, accelerating AI-powered research, engineering and design, and sovereign AI initiatives to decoding the building blocks of life.

HAMBURG, Germany--(BUSINESS WIRE)--Jun. 22, 2026-- ISC--Dell Technologies (NYSE: DELL) introduces the Dell PowerEdge XE8812 server, a new addition to the Dell AI Factory with NVIDIA, purpose-built for the world's most demanding HPC and AI workloads, featuring NVIDIA Vera Rubin NVL4 architecture and delivering up to 144 GPUs per rack. The announcement comes as Dell AI Factory deployments accelerate worldwide, advancing sovereign AI initiatives, engineering and design workflows, and genomic science.

This press release features multimedia. View the full release here: https://www.businesswire.com/news/home/20260622081099/en/

Dell PowerEdge XE8812

Why it matters

As AI and HPC simulation workloads converge, the scale and pace of these workloads are outgrowing what incremental infrastructure upgrades can keep up with. At the same time, organizations are pushing the boundaries of science and industry, resulting in a need for platforms that deliver a generational leap.

The global push for AI innovation is accelerating demand for high-performance infrastructure that keeps data, compute and control where organizations need it. As the AI growth opportunity speeds up, AI investment is projected to grow 44 percent year-over-year in 2026[1] and 87% of organizations say innovation and AI (75%)[2] are key to their business strategy.

Dell is meeting this imperative head-on, providing organizations with the infrastructure they need to turn AI and simulation ambition into realized outcomes at scale.

Next-Generation Infrastructure for HPC and AI at Scale

The new fanless, direct liquid cooled Dell PowerEdge XE8812 server is purpose-built for the world's most sophisticated institutions running demanding HPC and AI workloads like molecular and multi-physics simulations. Featuring NVIDIA Vera Rubin NVL4 architecture, the XE8812 delivers a generational leap in compute density and memory capacity. With the shift from NVIDIA GB200 NVL4 to NVIDIA Vera Rubin NVL4, the platform gains expanded host memory, more cores (expanding from 144 to 176), more GPU memory, and more compute. Paired with NVIDIA CUDA-X libraries this gives HPC organizations the ability to run their largest models and simulations entirely in-memory, with unparalleled processing power.

- **Maximum density, minimal footprint:** Dell will deliver one of the industry's densest platforms in an ORv3-style rack with up to 144 GPUs, 300kW+ power support and 100% direct liquid cooled CPUs and GPUs for maximum energy efficiency.
- **More memory for bigger breakthroughs:** 50% more memory per socket and GPU memory compared to the prior generation enables organizations to run larger models and simulations entirely in-memory without the need for staging (streaming data from host memory or storage) or swapping (evicting and reloading data), both of which introduce microsecond–millisecond latency and dramatically lower effective bandwidth particularly impactful for modern AI and HPC workloads.
- **Open architecture that's easily managed:** Based on the open ORv3 standard, this server and rack design offer better efficiency and modular deployment. Once deployed, systems management tools reduce risk and simplify operations. The Integrated Dell Remote Access Controller (iDRAC) allows IT teams to deploy, update and monitor PowerEdge servers anywhere, anytime. IT teams also gain rack-level visibility through the Dell Integrated Rack Controller and OpenManage Enterprise, which use real-time telemetry and automated leak detection to identify issues early, reducing risk and delivering unified support across the broader system.
- **Faster time to value with turnkey deployment:** Dell PowerRack gives organizations deploying large-scale HPC and AI systems a faster, lower-risk path to production with turnkey, factory-integrated, pre-validated rack-scale systems that reduce deployment complexity and help customers realize operational value and ROI faster. With Dell PowerRack integration and Dell ProDeploy white-glove services, PowerRack replaces manual integration with production-ready racks that can be deployed and running live workloads in just over six hours.[3]

Dell AI Factory Momentum Builds Globally

With more than 5,000 customers[4] already deploying the Dell AI Factory globally, momentum around the world reflects the breadth of workloads Dell supports, from sovereign AI infrastructure to AI-driven engineering to genomic science.

- **In the US**: Dell, NVIDIA and **NERSC** are building **Doudna**, the next flagship U.S. Department of Energy supercomputer. Located at Lawrence Berkeley National Laboratory, this system will be based on Dell PowerEdge XE8812 servers with NVIDIA Vera Rubin NVL4 and connected with NVIDIA Quantum-X800 InfiniBand networking, driving larger-scale HPC workloads, AI training and inference, and data intensive workflows. This will accelerate breakthroughs from the molecular level to astronomy, reshaping science and everyday life.
- **In France**: Dell and NVIDIA are supporting InstaDeep, an AI company, to scale its Kyber supercomputing cluster using the Dell AI Factory with NVIDIA. Delivering approximately 0.5 exaFLOPs of FP16 performance, Kyber enables large-scale AI model training and complex industrial design workloads, including automated design of printed circuit boards, the core components that power everything from consumer electronics to industrial systems.[5]
- **In the UK**: The **Wellcome Sanger Institute** is using Dell PowerEdge XE-Series servers with NVIDIA GPUs to decode DNA at unprecedented scale. The institute now produces one fully assembled genome every seven hours and manages over 100 petabytes of curated genetic data on-premises. This work underpins the Tree of Life Programme at the Institute and has contributed more than 70% of genomes to the global Earth BioGenome Project.
- **In Australia**: **Monash University** has developed and deployed **MAVERIC**, in collaboration with Dell, NVIDIA and CDC Data Centres. Featuring liquid-cooled Dell PowerRack systems with Dell PowerEdge XE9712 servers and NVIDIA GB200 NVL72 architecture, this supercomputer will power large-scale AI and data-intensive workloads, supporting research across areas like cancer detection, climate action and genomics.

Perspectives:

Arun Narayanan, senior vice president, Compute and Networking, Dell Technologies:

"The institutions doing the world's most important research like decoding the human genome, modeling the energy systems of the future and building the sovereign AI infrastructure that nations depend on deserve infrastructure that matches the ambition of their work. The Dell PowerEdge XE8812 reflects Dell's commitment to pushing the boundaries of what's possible, giving these organizations the density, memory and open architecture they need to tackle workloads that once seemed impossible."

Chris Marriott, vice president, Enterprise Platforms, NVIDIA:

"The convergence of AI and HPC is redefining what organizations should expect from their infrastructure. Dell and NVIDIA are raising that bar together, combining NVIDIA Vera Rubin NVL4 architecture and CUDA-X libraries with Dell's engineering and at-scale deployment expertise to provide the performance, efficiency and openness required for the world's most demanding AI and scientific computing workloads."

Availability

- The Dell PowerEdge XE8812 will be globally available early next year.

Additional resources

- Connect with Dell on X and LinkedIn

About Dell Technologies

Dell Technologies (NYSE: DELL) helps organizations and individuals build their digital future and transform how they work, live and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the AI era.

---

1 Gartner, "Forecast: AI Spending, Worldwide 2024-2029," January 2026

2 Dell Technologies survey across 750 business and IT decision makers across US, UK, DE, FR and JP, all segments, Feb 2025.

3 Based on a Principled Technologies report commissioned by Dell, Accelerate AI time to value with Dell Services, April 2026 *Actual results may vary.

4 Based on April 2026 Dell analysis of customer order data.

5 InstaDeep unveils near-exascale supercomputer 'Kyber,' boosting AI capabilities

View source version on businesswire.com: https://www.businesswire.com/news/home/20260622081099/en/

Media Relations: Media.Relations@Dell.com

Source: Dell Technologies