Next-Generation Dell PowerEdge Servers Deliver Advanced Performance and Energy Efficient Design

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News summary

- Dell PowerEdge server portfolio expansion offers more performance, including up to 2.9x greater AI inferencing
- Dell Smart Flow design and Dell Power Manager software advancements deliver greater energy efficiency
- Dell Secured Component Verification helps secure the supply chain with cryptographic verification
- Dell APEX portfolio to offer a modern compute as-a-Service experience, helping companies improve IT operations while making the most of their resources

Full story

Dell Technologies (NYSE:DELL) expands the industry's top selling server portfolio[1], with an additional 13 next-generation Dell PowerEdge servers, designed to accelerate performance and reliability for powerful computing across core data centers, large-scale public clouds and edge locations.

Next-generation rack, tower and multi-node PowerEdge servers, with 4th Gen Intel Xeon Scalable processors, include Dell software and engineering advancements, such as a new Smart Flow design, to improve energy and cost efficiency. Expanded Dell APEX capabilities will help organizations take an as-a-Service approach, allowing for more effective IT operations that make the most of compute resources while minimizing risk.

"Customers come to Dell for easily managed yet sophisticated and efficient servers with advanced capabilities to power their business-critical workloads," said Jeff Boudreau, president and general manager, Infrastructure Solutions Group, Dell Technologies. "Our next-generation Dell PowerEdge servers offer unmatched innovation that raises the bar in power efficiency, performance and reliability while simplifying how customers can implement a Zero Trust approach for greater security throughout their IT environments."

New Dell PowerEdge servers are designed to meet the needs of a range of demanding workloads from artificial intelligence and analytics to large-scale databases. The expanded portfolio announced in November 2022, including the PowerEdge XE family of servers with NVIDIA H100 Tensor Core GPUs and the NVIDIA AI Enterprise software suite for a full stack, production AI platform builds on advancements in artificial intelligence and machine learning.

New servers for cloud service providers

The introduction of **Dell PowerEdge HS5610** and **HS5620** servers delivers optimized solutions tailored for cloud service providers managing large-scale, multi-vendor data centers. Available in both 1U and 2U form factors, these new, two-socket servers include cold aisle serviceable configurations and are available with Dell Open Server Manager, an OpenBMC based systems management solution to simplify multi-vendor fleet management.

Greater performance and simpler management

Next-generation PowerEdge servers provide improved performance, including the **Dell PowerEdge R760**, which delivers up to 2.9x greater AI inferencing on 4th Gen Intel Xeon Scalable processors with Intel Deep Learning Boost and Intel Advanced Matrix Extensions.[2] The PowerEdge R760 also offers up to a 20% increase in VDI users[3] and over 50% more SAP Sales & Distribution users on one server, compared to the previous generation.[4] PowerEdge systems may be ordered with NVIDIA Bluefield-2 data processing units to provide additional offload, acceleration and workload isolation capabilities ideal for power efficiency for private, hybrid and multicloud deployments.

Enhancements to Dell monitoring software and new services make server management even easier:

- **Dell CloudIQ —**Dell software combines proactive monitoring, machine learning and predictive analytics while offering a comprehensive view of servers wherever they reside. Updates include advancements to server performance forecasting, select maintenance operations and new virtualization and visualization features.
- **Dell ProDeploy services —**The **Dell ProDeploy Factory Configuration** service delivers PowerEdge servers ready to install and preconfigured with the customer's preferred operating system, hypervisor software and settings for RAID, BIOS and iDRAC. The **Dell ProDeploy Rack Integration** service delivers and installs production-ready racked and networked PowerEdge servers, ideal for companies expanding their data center environments or undergoing an IT modernization.
- **Dell iDRAC9 —**As customers seek increased server automation and intelligence, Dell Remote Access Controller (iDRAC) makes Dell systems easier to deploy and diagnose, equipped with updated features such as Certificate Expiry Notice, Telemetry for Dell Consoles and GPU monitoring.

"With improvements in genomic sequencing technology and new methods in the lab driving data growth, data flows will continue to expand in the future. To ensure our continued innovation, we need to process data quickly and efficiently," said Dr. Pete Clapham, Informatics Support Group leader, Wellcome Sanger Institute. "Dell PowerEdge servers are well-designed, have built-in security, and deliver the performance that allows us to accelerate scientific discovery and bring innovation to the world faster."

Designed for sustainability

Dell PowerEdge servers are designed with sustainability in mind, offering customers a 3x performance improvement, compared to 14th Generation PowerEdge servers with Intel Xeon Scalable processors launched in 2017, resulting in less floor space required and more powerful and efficient technology across all next-generation systems.[5] Key highlights include:

- **Dell Smart Flow design —**A new feature within the Dell Smart Cooling suite increases airflow and reduces fan power by up to 52% compared to previous generation servers.[6] The Smart Flow design supports greater server performance with less power required to cool systems for more efficient data centers.
- **Dell OpenManage Enterprise Power Manager 3.0 software —**Customers can better manage efficiency and cooling goals, monitor carbon emissions and set power caps up to 82% faster to limit overall energy usage. With the enhanced sustainability target tool, customers can determine overall server use, virtual machine and facility energy consumption, leak detection for liquid cooling systems, and more.
- **Electronic Product Environmental Assessment Tool (EPEAT) —**Four next-generation Dell PowerEdge servers will be available with the EPEAT silver designation, and 46 systems will be designated EPEAT bronze. The EPEAT ecolabel is a leading global designation, covering products and services from the technology sector that demonstrate a responsible purchasing decision.

"Today's modern data center requires continuous performance improvements for complex workloads such as AI, ML and VDI," said Kuba Stolarski, research vice president, IDC Enterprise Infrastructure Practice. "As data center operators endeavor to keep up with the demand from these resource hungry workloads, they must also prioritize environmental and security goals. With its new Smart Flow design, coupled with enhancements to its power and cooling management tools, Dell offers organizations significant improvements in efficient server operation alongside the raw performance gains in its newest generation of servers."

Reliability and security at the core

Next-generation PowerEdge servers help accelerate Zero Trust adoption within organizations' IT environments. The devices constantly verify access, assuming every user and device is a potential threat. At the hardware level, silicon-based hardware root of trust, with elements including the Dell Secured Component Verification (SCV), helps verify supply chain security from design to delivery. Additionally, multifactor authentication and integrated iDRAC verifies users before granting access.

A secure supply chain also enables customers to advance their Zero Trust approach. Dell SCV offers cryptographic verification of components, which extends supply chain security to the customer's site.

Delivering a scalable, modern compute experience

Customers looking for OpEx flexibility can consume PowerEdge servers as a subscription through Dell APEX today. Using advanced data collection and processor-based measurement by the hour, customers can take a flexible approach to avoid the costs associated with over-provisioning their compute needs.

Later this year, Dell Technologies will expand its Dell APEX portfolio to offer bare metal compute services on-premises, at the edge, or in colocation facilities. Services will be available through a predictable, monthly subscription and easily configured through the APEX Console, enabling customers to meet their workload and IT operational needs with scalable and secure compute resources.

"4th Gen Intel Xeon Scalable processors have the most built-in accelerators of any CPU on the market to help maximize performance efficiency for real world applications, especially those powered by AI," said Lisa Spelman, corporate vice president and general manager, Intel Xeon Products. "With the latest generation of Dell PowerEdge servers, Intel and Dell continue our strong collaboration in delivering innovations that create real business value, while incorporating leading scalability and security that customers require."

Availability

- Dell PowerEdge R760 is available globally in February 2023.
- Dell PowerEdge HS5620, HS5610 are available globally in April 2023.

- Additional next-generation Dell PowerEdge servers will be global availability throughout the first half of 2023.
- ProDeploy Factory Configuration is globally available today, and ProDeploy Rack Integration is available today in the US.
- Dell APEX compute services are planned for the second half of 2023.

Additional resources

- Learn more about Dell PowerEdge
- See more about Dell ProDeploy services
- Press Release: Dell Technologies Advances High Performance Computing and AI with Dell PowerEdge Servers and Dell APEX Innovation
- Press Release: Next-Generation Dell PowerEdge Servers Dramatically Improve Performance for More Sustainable Data Centers
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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 data era.

[1] Based on the IDC Worldwide Quarterly Server Tracker for Q3 2022, released December 6, 2022.

[2] Testing commissioned by Dell in December of 2022 and performed by Scalers AI, which delivers greater AI inferencing for object detection using INT8 on 4th Gen Intel Xeon. PowerEdge R760 includes a fourth-generation Xeon SP CPU with updated Deep Learning Boost instructions. Actual results will vary.

[3] Based on internal Dell testing where the R760 with (2) Intel® Xeon® Gold 6454S Processors hosted 220VDI sessions compared to an R750 with (2) Intel® Xeon® Gold 6348 Processors that was able to host 183VDI sessions.

[4] Based on test results approved by SAP under certification number: 2023005 where the R760 with (2) Intel® Xeon® Platinum 8480 Processors with a total of 112 cores, 224 threads and 2,048 GB DRAM hosted 72,250 SD users using SUSE SLES15 compared to published results for the R750 with (2) Intel® Xeon® Platinum 8380 Processors with a total of 80 cores, 160 threads and 1,024GB DRAM which demonstrated support for up to 48,000 SD Users using RedHat RHEL8.2 under certification number 2021026 . SAP Standard Application Benchmarks

[5] Based Dell SPEC.org benchmark published results on R760 with (2) Intel® Xeon® 8480+ Processors as compared to a R740 with (2) Intel® Xeon® 8180 Processors Published results as of Jan 2023 https://www.spec.org/cpu2017/results/

[6] Based on internal Dell testing conducted in the Thermal & Efficiency lab evaluating power draw and airflow of PowerEdge R760 Smart Flow chassis configuration vs PowerEdge R760 standard chassis configuration on Nov 2022

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