

PowerEdge and PowerSwitch for building a modern data center



Modern workloads demand scalable, efficient, and secure infrastructure. Dell PowerEdge servers and PowerSwitch networking deliver a flexible, high-performance foundation to accelerate progress and support evolving business needs.

Key Benefits:

- Seamless scalability for growing workloads
- Reduced power, cooling, and operational costs
- Simplified management through automation
- Enhanced security with integrated features
- High-performance compute and connectivity

Drive progress with scalable, secure AI-driven data centers

Today's data centers are under pressure to meet growing demands for scalability and robust security, challenges that often hinder the ability to adapt and innovate quickly. Dell PowerEdge R-Series servers, combined with Dell PowerSwitch switches, address these critical needs with future-ready solutions. Together, they enable seamless scalability to support evolving workloads, fortify defenses with integrated security features, and streamline operations through intelligent automation. This powerful combination helps businesses overcome scalability and security challenges, ensuring peace of mind while maximizing productivity and preparing for the demands of tomorrow.

Dell PowerEdge R-Series Servers: Scalability, versatility and intelligent management

PowerEdge R-Series servers are engineered for record-breaking performance, combining exceptional power and efficiency to support the most demanding workloads¹. [PowerEdge R-Series](#) servers support both Intel and AMD CPUs/GPUs and deliver a comprehensive range of configurations—from cost-effective single-socket options to mainstream dual-socket and high-density platforms that enable enterprise IT, cloud, and data-intensive applications. Their versatility in selection and advanced designs help achieve high reliability and performance leading to reduced energy costs and minimized environmental impact, while delivering the scalability, security, and versatility required for modernized compute environments. Intelligent management tools like Dell's integrated Remote Access Controller (iDRAC) and OpenManage Enterprise portfolio and OpenManage Enterprise are standard across the PowerEdge R-Series, centralizing monitoring, automation, and firmware updates. These capabilities reduce IT complexity, enhance uptime, and streamline operations at scale.

Dell PowerSwitch Networking: Intelligent, scalable connectivity

Dell Networking solutions, featuring PowerSwitch Z-Series and S-Series deliver intelligent, high-density connectivity tailored to the needs of modern data centers. The [PowerSwitch Z-Series](#) switches are high-performance switches that provide ultra-low latency and exceptional scalability, ideal for large-scale environments and demanding workloads. [PowerSwitch S-Series](#) switches offer high-performance, versatile, and energy-efficient options for top-of-rack connectivity. Powered by Dell's open-source-based [Enterprise SONiC distribution](#), PowerSwitch and PowerEdge create a secure, adaptable infrastructure designed to optimize workload performance, streamline operations, and support next-generation applications as business needs evolve.



PowerEdge R770 server



Powerswitch S5248F-ON

Key Features and Benefits

- **Unmatched Performance and Versatility:** PowerEdge R-Series servers, equipped with advanced processors and high-speed memory, are built to handle a wide range of modern workloads, from virtualization and VDI to AI and machine learning. When paired with Dell PowerSwitch solutions, offering high-density, scalable, and energy-efficient networking, your data center gains the flexibility and performance needed to adapt to evolving business demands.
- **Intelligent Automation:** Simplify IT operations with iDRAC and OpenManage Enterprise portfolio. Automate routine tasks like deployment and maintenance, while PowerSwitch solutions powered by Dell Enterprise SONiC, streamline network management with intelligent automation, simplified life-cycle management and comprehensive visibility—delivering optimized performance and efficiency while freeing your team to focus on strategic initiatives.
- **Enhanced Security:** Protect your infrastructure with cyber-resilient architecture. Features like silicon-based root of trust, secured component verification, and dynamic system lockdown safeguard your

data center against evolving threats, ensuring end-to-end security across servers and networking.

- **Energy Efficiency:** Achieve sustainability goals with SmartPower and Cooling technologies in PowerEdge servers, energy-efficient PowerSwitch designs, and Dell Linear Pluggable Optics (LPO). Consuming less than 10 watts, LPO cuts power use by up to 50%³ and reduces latency by up to 98%³, making it ideal for AI and latency-sensitive workloads. These innovations deliver a high-performance, sustainable infrastructure that lowers your environmental footprint and costs.
- **Simplified, Open Networking:** Break free from proprietary, complex networking with Dell PowerSwitch solutions and SmartFabric Manager for SONiC. This advanced platform reduces network setup steps by up to 93%² while delivering single-pane orchestration, lifecycle management, advanced analytics, and telemetry—empowering modern data centers with the flexibility, scalability, and efficiency to optimize operations and drive success.
- **Expert Support for Your Modernization Journey**
Dell provides a comprehensive suite of services to maximize the value of your PowerEdge and PowerSwitch investment including [Dell ProDeploy infrastructure suite of services](#). With Dell's proven portfolio of services, you gain a reliable partner dedicated to helping you deploy, manage, and optimize the modern data center.
- **Drive Your Business Forward**
It's time to move beyond the limitations of legacy systems. With Dell PowerEdge servers and PowerSwitch networking, you can build a secure, efficient, and scalable data center that accelerates innovation and drives business success.

Contact a Dell Technologies expert today to learn how you can start your data center modernization journey.

¹Based on Dell testing with Servers at Dell Performance Labs and publicly available performance results submitted on https://www.spec.org/power_ssj2008/results/ on March 10 2025 for Dell PowerEdge R770 with Intel 6th Gen Xeon SP 6787P (86 cores) which achieved highest ssj_ops 24,658,201 out of all the existing submissions on March 10th 2025 with 6787P for a 2U and 2 Socket Rack server.

²Based on internal analysis of a manual CLI configuration of a 4-leaf/2-spine VXLAN fabric vs. a 4-leaf/2-spine configuration using SmartFabric Manager for SONiC, July, 2024. Results may vary depending on fabric configuration.

³Compared to power consumption and latency within the current transceivers with DSP. Based on Dell internal testing, Santa Clara lab, April 23, 2025



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