



Solution Brief

Choice, performance and agility at any scale

Dell's most advanced servers bring new levels of IT flexibility to traditional and emerging applications

Combining industry advances in processing and memory with customer-inspired Dell innovations, next generation PowerEdge servers help IT organizations to:

- Accelerate application performance. With new in-server Flash configurations, PowerEdge servers accelerate data intensive applications such as real-time data analytics, databases, enterprise resource planning (ERP), and customer relationship management (CRM).
- Improve data center efficiency. In-server tiered storage and hybrid Flash/rotational storage are ideal for deploying software defined storage solutions.
- Grow data centers and private clouds easily. The agile scale out server solutions can be easily deployed, letting IT react quickly to business demands.
- Manage from anywhere. With more automation, enhanced local access and monitoring from mobile devices, the Dell OpenManage™ portfolio makes enterprise systems management easier and more efficient.

Broad adoption of real-time analytics, cloud solutions, big data initiatives and virtualization is transforming the data center. Data centers built around predictable, one-dimensional applications are evolving into dynamic environments tasked with complex, infrastructure-taxing workloads. As user expectations are driven by always-on, instant access devices, traditional and emerging applications generate enormous amounts of data while the pressure to contain operational and capital costs is not easing off — so the search goes on for a scalable, flexible, efficient compute architecture with streamlined and intuitive management.

Some IT organizations are looking to hyperscale computing with the desire to apply the well-known efficiency, scalability and modularity benefits these scale-out architectures offer to mainstream enterprise environments. But many servers on the market today are afflicted with architectural limitations of rigid platforms, resulting in forklift upgrades, siloed computational resources and complex management — which make the path to a future-ready server platform for a mid-sized data center very challenging.

Applying hyperscale efficiencies to general purpose computing

Dell is in a unique position to drive efficiencies learned from the industry-leading PowerEdge hyperscale business into general purpose computing of mainstream IT environments. These learnings include the ability to apply an exact amount of compute and storage resources to generate the precise workload performance needed, scalability that allows organizations to meet their evolving business needs, and maximum attention given to operational efficiency. The latest generation of PowerEdge servers, Dell's most advanced lineup of rack, tower and shared infrastructure systems, delivers on this hyperscale promise with industry-leading platforms designed for organizations of all sizes that offer unmatched systems management, application-optimized storage and versatile configurations.

Performance, simplicity and efficiency for key applications

From general purpose to distributed applications, the PowerEdge server portfolio is designed for a wide range of enterprise applications, including:

- Unified Communications and Collaboration (UC&C) for Microsoft® Exchange™, Lync® and SharePoint® that require large amounts of memory, high I/O bandwidth and high-capacity local storage
- Data-intensive business computing such as decision support, analytics, ERP and CRM based on databases that need caching or storage tiering that can facilitate moving data closer to compute, improving application response time and reducing latency
- High-performance computing (HPC) in scientific research, financial markets or commercial big data that relies on parallel cluster performance and demands ultra-dense design and very high compute power
- Virtualized and cloud computing environments that depend on host resources (storage, memory, I/O and CPU cores, and so on) to efficiently support virtual machines.

A complete server portfolio

The next generation of PowerEdge solutions enables enterprises to deploy infrastructures incrementally, delivering just the right amount of needed performance without overprovisioning or overpaying for unnecessary capacity. One-, two- and four-socket PowerEdge rack servers pack up to 18 processing cores per socket, large amounts of memory and a tremendous amount of internal storage, delivering performance and reliability for the most demanding applications. PowerEdge performance tower servers bring versatile configuration options, massive internal storage and peak two-socket performance to small and medium businesses. From the most space constrained data center that leverages the dense modularity of M-series blades to remote/branch offices that leverage the convergence of servers, storage and networking in PowerEdge VRTX, PowerEdge shared infrastructures are perfect for future-ready IT organizations.

Customer-inspired innovation of the 13th generation

In this latest generation of PowerEdge servers, Dell combined state-of-the-art industry advances in processing and memory technology with customer-inspired innovation, designing the portfolio for a broad range of traditional and emerging IT environments to:

Improve application performance with in-server storage designs that utilize new, disruptive types of Flash technology and caching options.

- Groundbreaking in-server Flash designs with the newest Flash protocols and form factors are ideal for performance- and I/O-hungry applications like online transaction processing (OLTP) or decision support systems. With ultra-fast storage bringing data closer to the compute layer, PowerEdge servers can provide exceptional performance, eliminate I/O bottlenecks and increase the efficiency of backend storage by freeing it to deliver capacity rather than performance.
- Hybrid storage can allow for in-server data tiering and better disk utilization for optimized application performance. When the ultra-high performance Flash and high-capacity rotating disk storage is combined and enhanced with tiering inside the server, PowerEdge becomes an ideal platform for many enterprise applications, able to deliver just the right amount of performance to workloads that need it at the best overall cost.
- Software-defined storage solutions, such as VMware® Virtual SAN™ or Microsoft Windows® Storage Spaces, can help boost operational efficiencies when coupled with PowerEdge servers. Just-in-time provisioning, improved disk utilization and multi-tenant support for hybrid storage are benefits of a virtualized storage pool that can serve multiple applications when hosted on a PowerEdge platform.

Simplify systems management operations with new levels of automation and embedded intelligence.

Dell OpenManage, which enables IT departments to efficiently manage Dell PowerEdge servers in virtual, physical, local and remote environments, is enhanced and expanded with new features that deliver incremental policy-based automation and ease-of-use, as well as:

- New methods for local management to accelerate time-to-production by speeding deployment and configuration. By using the Integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller, iDRAC Direct with a laptop or iDRAC Quick Sync with a smart device, server status information can be accessed instantaneously and troubleshooting can be done immediately to prevent downtime.
- Auto-discovery and auto-configuration over the network, combined with "Zero Touch" server deployment, eliminates manual configuration processes and reduces time to production and risk of entry errors.
- Improved server availability and reduced maintenance windows with firmware updates that are staged in the server and scheduled to be applied when IT desires. Updates are automated and self-synchronized to conform to existing firmware baselines.
- An automated technical support report within iDRAC that maintains a continuously updated health status report by monitoring and recording key parameters, reducing the time needed to identify and resolve server issues. This ability is complemented by Dell SupportAssist, an offering that seamlessly integrates systems management with tech support, identifies failures in a customer's IT environment remotely and resolves them proactively.
- The use of OpenManage Essentials, OpenManage Mobile and a smart device to monitor Dell servers, storage, networking and firewall appliances, as well as third-party hardware, to maintain the continuous availability of data center systems from any location, at any time.

Dell: an enterprise solutions provider

Dell PowerEdge servers are the foundation of a comprehensive enterprise systems portfolio that includes storage, networking, software, management and services. With a broad range of enterprise product offerings, Dell can help IT organizations more rapidly respond to business demands, improve efficiency and strengthen IT services. Through the development of unique technologies and exclusive capabilities, Dell has built an end-to-end selection of enterprise solutions that deliver a scalable IT infrastructure for the future based on standardized technologies.



The 13th generation of PowerEdge servers is Dell's most advanced lineup of rack, tower and shared infrastructure platforms designed for a wide range of web, enterprise and hyperscale applications.

Learn More at Dell.com/PowerEdge.

