



Introducing the Dell PowerEdge R815: **High performance in a compact design**

Maximizing performance while making efficient use of available power and space can be critical in data center environments. The Dell™ PowerEdge™ R815 rack server with the AMD Opteron™ 6000 Series platform delivers four-processor performance in a compact, cost-effective 2U design.

Enterprise IT departments are constantly looking for ways to increase performance, memory capacity, and I/O bandwidth while extracting maximum value from the available space. For these environments, the powerful Dell PowerEdge R815 rack server offers an innovative combination of high performance, compact size, and cost-effective value. Enabled by the high core count and substantial memory capacity of the AMD Opteron 6000 Series platform, the PowerEdge R815 is a powerful x86-based four-processor server in a 2U form factor—helping organizations to achieve high levels of processing density, flexibility, and energy efficiency at a price typically associated with two-processor servers.

Increased density and flexibility

Traditionally, x86-based four-processor rack servers have been available primarily in a 4U

form factor, meaning that organizations that needed these levels of processing and memory resources could fit no more than 10 such servers in a typical 42U rack. Thanks in part to the ample core count and memory footprint of the AMD Opteron 6000 Series platform, however, the PowerEdge R815 can deliver four-processor performance in a 2U design—allowing organizations to install up to 21 of these servers in a 42U rack, and enabling them to implement the capacity of a four-processor system while more than doubling their rack density. When taking into account the costs of data center space, the savings from consolidating servers onto a reduced number of racks can be considerable.

In terms of compute density, a rack holding 10 four-processor, 4U servers with 6 cores per processor would contain just 240 total cores. Because each four-processor server based on the AMD Opteron 6000 Series platform can include

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The Dell PowerEdge R815 with the AMD Opteron 6000 Series platform packs four-processor performance into a 2U rack server design

up to 48 cores, a 42U rack holding 21 PowerEdge R815 servers could contain up to 1,008 total cores—a 320 percent increase over legacy 4U servers. This compute density even rivals that of blade servers, enabling organizations to choose among highly flexible deployment options to help meet their specific needs.

The flexibility of the PowerEdge R815 also extends to virtualized environments. PowerEdge servers and the AMD Opteron 6000 Series platform both support a wide range of hypervisors, including Microsoft®, VMware®, and Citrix® platforms. As a result,

organizations using the PowerEdge R815 as a virtualized host server can select the appropriate hypervisor for their specific needs.

Enhanced energy efficiency

In addition to rack and floor space, the PowerEdge R815 is designed to conserve power as well. First, the AMD-P suite of power management technologies built into AMD Opteron processors enables the AMD Opteron 6000 Series platform to deliver 12-core performance within the same general power and thermal envelopes as previous-generation 6-core

processors. And second, because the PowerEdge R815 is a 2U server, it contains just two power supplies instead of the four that are typical of some 4U four-processor servers, helping reduce power draw.

The PowerEdge R815 also incorporates key Dell Energy Smart technologies to enhance efficiency. The careful positioning of system components and internal shrouding, along with programmable voltage regulators, efficient fan designs, and system thermal management, is designed to provide the right level of cooling to help reduce energy use.



Highlighting the PowerEdge R815

In this video, Dell senior product line consultant Armando Acosta outlines some of the key features of the PowerEdge R815 rack server and the advantages it can provide in enterprise IT environments.

youtube.com/watch?v=qO188iZTu2g



1,008

A 42U rack filled with Dell PowerEdge R815 servers can house up to 1,008 total processor cores—a 320 percent increase in compute density over legacy 4U servers.

Sensors also help decrease power consumption by automatically tracking and regulating internal thermal activity. And Energy Smart management features such as power capping, power scheduling, and device disablement further help PowerEdge R815 servers to limit energy use.

Intelligent management capabilities

Like other 11th-generation PowerEdge servers, the PowerEdge R815 incorporates a variety of sophisticated management features designed to simplify administration and reduce operating costs, including the following:

- **Lifecycle Controller:** The Lifecycle Controller is an embedded chip installed directly on the motherboard that makes common provisioning functions such as deployment, configuration, and updating available to administrators without requiring media such as a CD or DVD. By enabling administrators to perform these tasks without the hassle of tracking and using separate media, this chip helps to streamline server configuration and reduce downtime.
- **Interactive LCD screen:** Positioned on the front of each server, this miniature monitor enables technicians to see error messages, execute selected boot options, view power consumption information, and more.
- **Dell Management Console:** A standard feature on Dell servers, Dell Management

Console powered by Altiris™ from Symantec™ offers IT staff a consolidated view of their infrastructures, including deployment, inventory, monitoring, and updates.

Also like other 11th-generation PowerEdge servers, the PowerEdge R815 is designed for long-term value. Dell incorporates durable materials, emphasizes component redundancy and ease of servicing, and performs rigorous testing and validation to help minimize downtime and ensure reliability.

High-performance, highly efficient rack server

Balancing performance against power, space, and cost requirements can be a challenge for enterprise IT departments. Designed to support highly threaded workloads such as virtualization and high-performance computing, the PowerEdge R815 server with the AMD Opteron 6000 Series platform provides a highly efficient way for organizations to gain the performance advantages of a four-processor server while still maintaining the space and cost efficiencies of a 2U design. 

Learn more



**Dell PowerEdge servers with
AMD Opteron processors:**
dell.com/poweredge/amd