



## Dell Provides New Servers with Premium Services

Analyst: David Reine

### Management Summary

Achieving success in the sporting arena is a fairly straightforward process. In a head-to-head competition, such as boxing, you simply try to knock your opponent off his feet for a count of ten and have the referee declare you the winner. In a team sport, it becomes more complicated, with the synergy between teammates contributing to the overall success or failure, not simply how many points you score. It does not matter how many *you* score if your *team* gives up more. In the business world, success depends on more than simply “the numbers”. In the automotive world, for example, the consumer can compare the purchase price, fuel economy, and towing capacity of any two vehicles. The consumer can compare the options that are available, from the Bose radio, to the *OnStar* communications system, to the *Garmin* navigation system. The decision to buy, however, may be based as much on the expected level of service over the life of the vehicle, whether that is five years or 100,000 miles. The car-buying public will measure the expected service and product reliability at several different levels: by manufacturer, by model, and by local dealership. The reputation for the quality of service is an important factor.

There is a similar process going on today in the data center of every enterprise, Fortune 500 or small and medium enterprise (SME). Uninhibited growth in terms of both processing power and storage, combined with the dramatic surge in the cost of energy, has caused an unexpected increase in the acquisition of enterprise level servers. The proliferation of open system servers within the data center has resulted in the spread of under-utilized compute resources throughout the enterprise. Recent developments in multi-core commodity processors and virtualization technology have given the CIO the opportunity to consolidate multi-platform architectures on new high-performance servers, reduce complexity, and restore order to the data center with any number of commodity systems based upon Intel’s *Xeon* and AMD’s *Opteron* processors. By definition, there is sameness to many commodity solutions. The differentiator between vendors often comes down to the services they can provide, both remedial and professional. The help that a vendor can provide to assist in the definition, implementation, and deployment of mission-critical applications often determines success or failure in the rollout of new business processes.

Dell’s recent announcement of their ninth generation of *PowerEdge* servers based upon Intel’s newest *Xeon* architecture has taken Dell into a higher plane of energy-efficient servers. Their announcement of a new service program, *Platinum Plus*, however, complements those servers with the highest level of support yet from Dell. To learn how *PowerEdge* and *Platinum Plus* can add profitability to your bottom line, please read on.

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## A Complex Data Center Environment

The CIO of every enterprise faces a similar set of problems.

- How do you lower the total cost of ownership of running a modern data center while, at the same time, continue to deliver the highest level of performance for the mission-critical applications that are the lifeblood of the enterprise?
- *How can the data center reduce costs and complexity when faced with the obligation to rollout more and more complex solutions on an ever-increasing number of servers, powered by kilowatts of electricity that cost more and more every day?* This does not even include the cost and environmental impact of cooling that same data center.
- Furthermore, *the CIO also faces the problem of delivering a high quality of service (QoS) to data center customers who need information **right now** and do not care how many staff it requires or how much it costs.*

A variety of studies over the past few years indicate that the average x86 server experiences less than a 20% utilization rate. This indicates that the enterprise is **wasting eighty cents of every dollar spent on acquisition and support of mission-critical applications**. As additional applications roll out, more and more over-provisioned servers are installed in the data center and throughout the enterprise. There is an ever-increasing demand for better utilization of server capacity to enable additional performance within the existing data center infrastructure. Recent technological advancements in the design and implementation of commodity microprocessors, such as dual-core and lower energy requirements, combined with improvements in I/O architecture for high-speed PCI-Express, enable the data center staff to correct the problems caused by over-provisioning through hardware-assisted virtualization and consolidation.

Any new server also has to provide more than just a lower acquisition price and improved utilization. Power costs, maintenance, integration, testing, and validation consume 80% of the total cost of ownership (TCO) of an enterprise server. A new server network must run cool and have a **full system integration**, not just for the server, but also for the entire infrastructure. That includes improved access and reliability of memory and disk resources, some of which comes standard in the new microprocessor architecture (high-speed memory interfaces), but others require time consuming, budget eating integration (SAN connections).

The enterprise cannot afford to maintain a large staff of system integration and test personnel on

hand. The vendor selected to implement the new data center environment must be able to provide all of the services that the enterprise requires, professional as well as remedial. By utilizing the services offered by the server vendor, or a third party service provider, the enterprise can better control its headcount, minimizing the staffing for server network related activities, availing itself of a trained, experienced service cadre, minimizing the cost associated with the rollout of new servers and new mission-critical applications.

With their recent server and services announcements, Dell has stepped up even further into the role of consolidator for the largest enterprises as well as high performance purveyor for the SME. Dell is once again leading the parade of vendors delivering the latest Intel architecture within a fully integrated PowerEdge (PE) environment. Dell followed up the server announcement with the introduction of a new level of data center services, *Platinum Plus*, to enable the enterprise, of any size, to reduce complexity and offload their labor-intensive integration and test activities from permanent internal staff to Dell, utilizing Dell's investments in staff and training to lower IT TCO.

### Dell PowerEdge Servers

Dell has taken extra care with their ninth generation of PowerEdge servers to assume price/performance per watt leadership, while implementing commodity technologies to ensure common interfaces within the server, storage, and software environment. In addition to the platform products based upon the latest Intel *Xeon 5000* and *5100* CPUs, the Dell *PowerEdge 1950*, *2900*, and *2950*, along with the *PowerEdge 1955* blade server, Dell has also introduced two new NAS storage appliances<sup>1</sup>.

Today's data center demands a consistent and reliable architecture, for both hardware and software. Dell has outdistanced their rivals in the area of operating environment reliability – reporting only three BIOS changes over the past 15 months, significantly lower than the competition. To ensure a continued stable environment, Dell has implemented new PowerEdge servers with enhanced performance and reliability, and improved energy efficiency, features based upon commodity technology, including the following.

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<sup>1</sup> Based upon the PowerEdge 29x0, they are optimized for file sharing to simplify storing, managing, and protecting data for all enterprises.

### Exhibit 1 – PowerEdge Xeon Options with Processor Power Consumption

• Xeon 5050, 2x2MB Cache, 3.00GHz, 667MHz FSB .....	95 Watts
• Xeon 5060, 2x2MB Cache, 3.20GHz, 1066MHz FSB .....	130 Watts
• Xeon 5080, 2x2MB Cache, 3.73GHz, 1066MHz FSB .....	130 Watts
• Xeon 5110, 4MB Cache, 1.60GHz, 1066MHz FSB .....	65 Watts
• Xeon 5130, 4MB Cache, 2.00GHz, 1333MHz FSB .....	65 Watts
• Xeon 5140, 4MB Cache, 2.33GHz, 1333MHz FSB .....	65 Watts
• Xeon 5150, 4MB Cache, 2.66GHz, 1333MHz FSB .....	65 Watts
• Xeon 5160, 4MB Cache, 3.00GHz, 1333MHz FSB .....	80 Watt

Source: Intel

- New dual-core *Xeon 5000* and *5100* series processors, with 65-nanometer technology, with a 152% improvement in performance<sup>2</sup> over single-core Xeon and a 40% reduction in power requirement to create a 3.5x improvement in performance/watt. (See Exhibit 1, above for PE Xeon options.)
- Enhanced virtualization technology for improved utilization and management in virtualized workloads.
- Fully buffered DIMMs for a new memory interface for 3X improvement in memory throughput and bandwidth, and improved signal integrity and error detection.
- 3.5" SATA drives up to 250GB capacity, 3.5" SAS drives up to 300GB, or 2.5" SAS drives up to 73GB for faster, more reliable I/O and reduced thermal output.
- TCP/IP Offload Engine to reduce traffic on the host processor to enhance system performance
- PCI-Express I/O to deliver high-performance Ethernet, RAID, InfiniBand, and FC interconnect while providing investment Protection for the future.

In addition, Dell has included a series of design changes to provide enhancements to improve server usability, including:

- A programmable LCD for quick/easy diagnosis of faults;
- Visual aids for maintenance including color coded components and product labeling;
- Tool-less access to server components via a one-handed latch;
- Cross-platform single system image (BIOS, drivers, O/S, applications) to simplify data center operations and reduce administrator costs;

Dell servers support Microsoft *Windows 2003*, standard and enterprise editions, and both *Red Hat*

and *SUSE Enterprise Linux* offerings. Dell also provides *OpenManage 5.0* to deliver enhanced system management capabilities to control hardware deployment and system monitoring.

#### ***Dell PowerEdge 1950 Server***

The PE 1950 is a 1U rack-mounted server capable of supporting up to two new dual-core Intel Xeon microprocessors, at up to 3.73GHz. The PE1950 comes standard with 2GB of memory, but can support up to 32GB over eight fully buffered DIMM sockets. It supports up to two 3.5" SATA or SAS hot plug drives, or up to four 2.5" SAS hot-plug drives, and up to five I/O adapters.

#### ***Dell PowerEdge 1955 Server***

The PE 1955 is a blade server capable of supporting up to two new dual-core Intel Xeon 5050 microprocessors or any of the 5100 CPUs defined in Exhibit 1, up to 3.0GHz. Up to ten PE1955 blades may be configured in a single 7U chassis. The PE1955 comes standard with 1GB of memory, but can support up to 32GB over eight fully buffered DIMM sockets. It supports up to two 2.5" SATA or SAS drives and an optional FC or NIC I/O card.

#### ***Dell PowerEdge 2900 Server***

The PE 2900 is configurable as a tower or as a 5U rack-mounted server, capable of supporting up to two new dual-core Intel Xeon microprocessors, at up to 3.73GHz. The PE2900 comes standard with 2GB of memory, but can support up to 48GB over 12 fully buffered DIMM sockets. It supports up to eight 3.5" SATA or SAS hot plug drives, plus two optional hot-plug drives in a flex bay, and also supports up to six I/O channels.

#### ***Dell PowerEdge 2950 Server***

The PE 2950 is a 2U rack-mounted server capable of supporting up to two new dual-core Intel Xeon microprocessors, at up to 3.73GHz. The PE2950 comes standard with 2GB of memory, but can support up to 32GB over eight fully-buffered

<sup>2</sup> Based upon industry standard SPEC benchmarks

DIMM sockets. It supports up to six 3.5" SATA or SAS hot plug drives, or up to eight 2.5" SAS hot plug drives, with up to six I/O adapters.

### Dell Platinum Plus Services

Dell has taken an innovative approach to an age-old part of IT operations, clearly focused on infrastructure services. The company offers seven suites of services to meet the needs of the customers' enterprise environments. With these offerings, Dell provides new features and an industry first in its most comprehensive level of premium support for server and storage systems. As it continues expanding its capabilities, Dell has invested \$200M in services over the past few years to implement five global Enterprise Command Centers, fifteen Enterprise Expert Centers, and 400 parts depots to track customer incidents in real-time, provide proactive monitoring and crisis management, 7x24x365, and distribute parts. ***Dell staffed these response centers with 3,000 service specialists to assist customers in resolving complex issues.***

Dell has now taken their professional service offering to a new level in order to provide a differentiator for their business, education, and government server customers. Dell has culminated their investment with the introduction of *Platinum Plus*, a premium set of worldwide services designed to be more proactive and to provide increased reliability and consistency for mission-critical applications throughout the enterprise environment, with repeatable quality. In addition to the features in Exhibit 2 (at the top of the next column), the following are two key elements of Platinum Plus.

- *Operations Performance Benchmarking* – Analytic feature that, for the first time, allows customers to compare critical server IT performance metrics to historical results and with other like servers, enabling data center staff to cross-check performance throughout the network against established norms and better control IT operations; and
- *Enterprise Command Center Real-Time Tracking Window* – This is a web-enabled feature that allows the IT staff to monitor on-going support activities in multiple locations around the country or around the globe. This window utilizes *Google Earth Pro* to create an interactive 3D display of command center information.

### Conclusion

Life in the data center is the same as in any other arena – perception is reality. Dell has already changed one perception of their company: from one of low cost supplier to an image of deliverer of high-

### Exhibit 2 – Platinum Plus Offering

In addition to Operations Performance Benchmarking and Real-Time Tracking Window, Platinum Plus also includes the following features.

- 7x24 hardware warranty support;
- 7x24 software troubleshooting;
- 7x24 Enterprise Expert Center with priority access;
- Technical account manager for expedited escalation management;
- Emergency dispatch with critical situation process; and
- Standard four-hour and optional two-hour on-site troubleshooting.

Source: Dell

performance, cutting-edge technology. However, being first to deliver the latest technology is no longer sufficient to guarantee a sale. The platform is not enough of a differentiator. It only gets you through the door. Now, Dell is going about the business of educating the enterprise community of their commitment to excellence in the delivery of infrastructure services. They are doing this the best way possible: by *delivering* the most complete set of professional services available to the enterprise data center to help customers plan, implement, and maintain their IT infrastructure.

No one in the data center would question Dell's ability to deliver the latest hardware – now Dell is changing the enterprise paradigm regarding IT services. Dell has put together an outstanding set of support services to improve performance while maximizing uptime, to support the consolidation, migration, and virtualization of the data center with one goal – to lower the TCO of the enterprise IT environment. They have positioned themselves to be a single point of accountability for IT infrastructure services. Combined with the latest state-of-the-art hardware architecture, Dell has positioned itself as a formidable competitor in the enterprise server market. If you are looking for a total solution provider, take a look at Dell. You may not have to look any further.



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