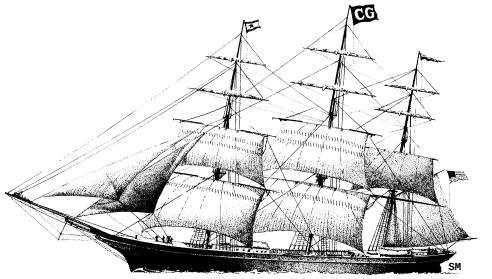
THE CLIPPER GROUP
Captain's Log™



Navigating Information Technology Horizons℠

Published Since 2001 Report #TCG2005052 September 2, 2005

Dell Shines Light on Dual-Core with LAMP-Featured Servers

Analyst: David Reine

Management Summary

The entertainment industry understands the concept very well: find a formula that works and replicate it, giving the consumer a little more each time. Thus we see in the movies where *Rocky I* begets *Rocky II* begets *Rocky III*, etc. In television we see where *CSI* begets *CSI-Miami* begets *CSI-NY*. We can see a similar principle in Information Technology (IT), where producers of commodity microprocessors have been improving the architecture of their products two and three times a year, turning up the clock speed, improving functionality. In the latest iteration of the *Pentium* architecture from Intel, the *Pentium D*, the industry finds dual-core technology, a technique designed to improve performance per socket while holding the line on cost – thus helping to lower the total cost of ownership for the consumer. This enables system manufacturers to build newer, more sophisticated platforms around a processor capable of delivering ever increasing value.

In July, Dell became the first systems provider to deliver a platform based upon the Pentium D environment – the *PowerEdge SC430*[1]. Now Dell has replicated that announcement with the introduction of two new servers – the *PowerEdge 830* and the *PowerEdge 850*. In addition to superior configurability, however, these platforms have also been introduced with features which enable smaller businesses to enjoy the same developmental environment as the largest IT enterprises with support for Linux, Apache, MySQL, and Perl/Python/PHP – an environment known as *LAMP*.

New PowerEdge Platforms

The *PowerEdge 830* is the logical big brother for the SC430 with a tower format for deskside installation. Like the SC430, the PE830 supports.

- **Pentium D** dual-core processor to enable productivity applications to run coincident with applications for messaging, shared Internet access and Web services;
- **Pentium 4**[2] for low-cost single-application environments; and
- **Celeron** for standard file and print services.

Starting for under $700, the PowerEdge *830* supports twice the memory of the PowerEdge SC430 with up to 8GB of DDR2 SDRAM, along with Intel's *E7230* chipset, to support 64-bit applications, and twice the internal disk capacity - with up to 1TB of SATA storage or 1.2TB of SCSI. The PowerEdge 830 also supports the 15K RPM SCSI drives, while the PowerEdge SC430 is limited to 10K drives. In addition, the PowerEdge 830 has support for two 64-bit PCI-X adapters as well as the high performance PCI Express (PCIe) and 32-bit PCI slots which populate the PowerEdge SC430. The PowerEdge 830 with dual-core Pentium D delivers about 60% more performance than a similarly configured server with Pentium 4 at 3.0GHz. The *PowerEdge 850* is designed as a 1U rack-mount server, more compact than

[1] See **The Clipper Group Navigator** dated July 14, 2005, entitled *Dell Drives Server Technology Race with Intel Dual-Core for Small Enterprises* and available at http://www.clipper.com/research/TCG2005043.pdf.
[2] While the SC430 is limited to 3.0GHz, the PowerEdge 830 and 850 employ Pentium 4 at 3.6GHZ.

the PowerEdge 830, yet supports the same 8GB of memory and Intel E7230 chipset. The PowerEdge 850 is limited to two disk drives, however, with a capacity of 600GB of SATA or 500GB of SCSI disk. The I/O capability is good with two embedded NIC ports and support for either one 64-bit PCI-X and one x8 PCIe or two PCIe adapters (x4 and x8). Multiple PowerEdge 850 servers can be mounted, in a tool-free environment, in a rack in order to save valuable floor space in the datacenter. The dual-core version of the PowerEdge 850 delivers almost 80% more performance than its similarly configured predecessor, the PowerEdge 750 Pentium 4 system, and is priced from $749.

PowerEdge Linux Environment

Designed to run a website – or an entire business – the PowerEdge 830 and 850 come with new enterprise-level support for key elements of the LAMP, stack which represents a bundled Linux software package including support for **L**inux, **A**pache, **M**ySQL, and **P**HP/Perl. Dell now provides an end-to-end LAMP solution stack consisting of a PowerEdge server, Linux (either from Red Hat or Novell), MySQL database application, MySQL Network, JBoss application server software, and JBoss network.

Linux is recognized as the main alternative for proprietary UNIX and Windows operating systems. It is freely distributed with comparable functionality, adaptability, and a robustness which enables a datacenter implementation to run business-critical applications. Now, however, many applications such as MySQL are being used in conjunction with Linux. Dell has moved forward with delivering a platform to facilitate the implementation of this application set in order to support:

- ***Apache*** – an application used to develop and maintain an open-source HTTP server for commodity operating environments, including UNIX and Windows;
- ***JBoss Application Server*** – the market-leading, open source Java 2 Enterprise Edition application server that delivers a high-performance, enterprise-class platform for developing and deploying e-business applications;
- ***MySQL*** – the most popular and fastest growing open source database (i.e., free); the MySQL network provides a comprehensive set of enterprise-quality software, support, and services available directly from the developers;
- ***Perl (and PHP and Python)*** – an interpreted language optimized for string manipulation, I/O, and system tasks; it is popular with system administrators and incorporates syntax elements from a variety of shells, including *Bourne*, *csh*, and *C*. It is an effective way to mock up applications that provide much of the web's interactive I/O.

Conclusion

When your customers and business partners need to access your enterprise in real-time, installation of a web server becomes an instant necessity. A low-cost website is mandatory for survival in the world of e-business. Today that implies the acquisition of a high-performance, open-source solution, a commodity server using an open-source operating environment such as Linux, so that a small business may run its own website or manage an entire business without destroying its bottom line.

Systems integration and support become more and more important. In order to simplify the support process, Dell now offers a full program of support services including MySQL subscriptions, as well as JBoss Network support subscriptions, enabling a single source for support for everything from the PowerEdge server, the Linux operating environment, to the O/S surround environment. A single source for server solutions may be just what your enterprise needs.

About The Clipper Group, Inc.

The Clipper Group, Inc., is an independent consulting firm specializing in acquisition decisions and strategic advice regarding complex, enterprise-class information technologies. Our team of industry professionals averages more than 25 years of real-world experience. A team of staff consultants augments our capabilities, with significant experience across a broad spectrum of applications and environments.

- ***The Clipper Group can be reached at 781-235-0085 and found on the web at www.clipper.com.***

About the Author

David Reine **is Director, Enterprise Systems for The Clipper Group.** Mr. Reine specializes in enterprise servers, storage, and software, strategic business solutions, and trends in open systems architectures. He joined The Clipper Group after three decades in server and storage product marketing and program management for Groupe Bull, Zenith Data Systems, and Honeywell Information Systems. Mr. Reine earned a Bachelor of Arts degree from Tufts University, and an MBA from Northeastern University.

- ***Reach David Reine via e-mail at dave.reine@clipper.com or at 781-235-0085 Ext. 123. (Please dial "123" when you hear the automated attendant.)***

Regarding Trademarks and Service Marks

The Clipper Group Navigator, **The Clipper Group Explorer**, **The Clipper Group Observer**, **The Clipper Group *Captain's Log***, **The Clipper Group Voyager**, and *"clipper.com"* are trademarks of The Clipper Group, Inc., and the clipper ship drawings, *"Navigating Information Technology Horizons"*, and *"teraproductivity"* are service marks of The Clipper Group, Inc. The Clipper Group, Inc., reserves all rights regarding its trademarks and service marks. All other trademarks, etc., belong to their respective owners.

Disclosure

Officers and/or employees of The Clipper Group may own as individuals, directly or indirectly, shares in one or more companies discussed in this bulletin. Company policy prohibits any officer or employee from holding more than one percent of the outstanding shares of any company covered by The Clipper Group. The Clipper Group, Inc., has no such equity holdings.

Regarding the Information in this Issue

The Clipper Group believes the information included in this report to be accurate. Data has been received from a variety of sources, which we believe to be reliable, including manufacturers, distributors, or users of the products discussed herein. The Clipper Group, Inc., cannot be held responsible for any consequential damages resulting from the application of information or opinions contained in this report.