

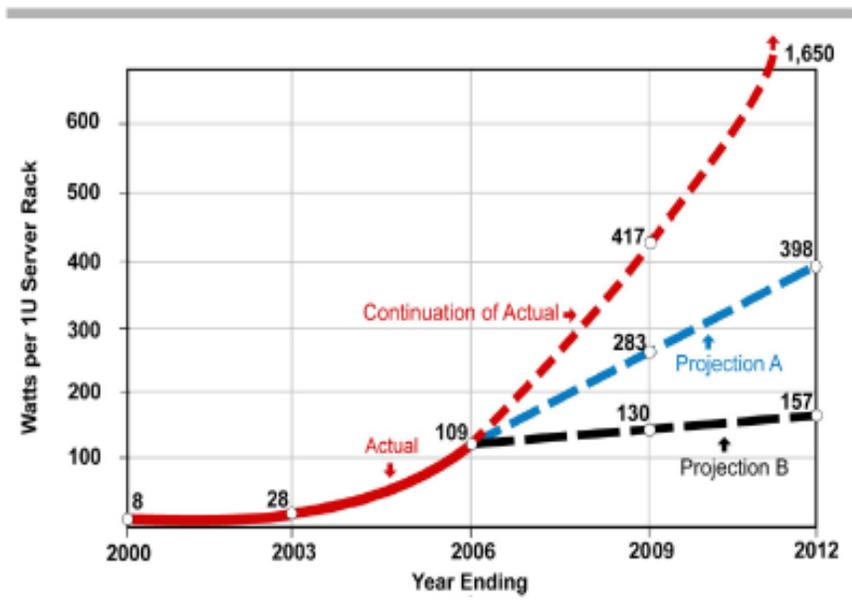
GREEN DATA CENTERS & INTERNET BUSINESS

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Embedded IT Watts per \$1,000 of Server Spend



Source: The Uptime Institute

BUSINESS

Financial services companies reduce power consumption, data center footprint with 'green' virtualized storage from Compellent

Compellent Technologies Inc. announced that two of its financial services customers, Ares Management and Credit Union of Colorado, have significantly reduced the physical and

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carbon footprint of their data centers, lowering the overall cost of ownership of their technology infrastructure. The efficient Compellent SAN has enabled both companies to measurably decrease hardware expenditures and the associated energy consumption.

“Like so many others, organizations in the financial services industry are facing explosive data growth, further compounded by federal regulations, and client demand for quick and secure access to financial data,” explained Bruce Kornfeld, vice president of marketing, Compellent. “Companies like Ares Management and Credit Union of Colorado are using storage innovation to more-effectively virtualize the data center and reduce energy costs to better manage their businesses and compete with much larger enterprises.”

Los Angeles-based Ares Management, a global investment firm specializing in private equity and leveraged finance markets, currently manages approximately \$16 billion in assets. To meet government regulations, employees need secure transactions as well as fast access to data housed at offices around the world. Ares implemented the Compellent SAN to build the foundation for its virtualization efforts, resulting in reduced storage and server requirements and a rapid-responding, secure gateway to company and client data.

“In our industry, time is literally money, and critical data needs to be accessible at all times.” said Ping Ooi, associate vice president of technology, Ares Management. “The Compellent SAN is a core component of our virtualization strategy and let’s us keep only the most frequently accessed data on high-performance storage, so we can buy more low-energy, high-capacity drives for data we don’t. As a result, we’ve lowered storage costs by roughly \$70,000, eliminated 10 servers, and reduced energy consumption by 25 percent.”

Credit Union of Colorado, run by a board of its members in Denver, Colo., is dedicated to providing green banking services by

incorporating innovative and ecologically responsible technology. After reviewing its legacy data center performance and footprint, Credit Union of Colorado needed to implement a new storage infrastructure to improve business continuity and provide redundant data protection, while reducing environmental impacts.

The organization chose Compellent not only for its extensive support for server and storage virtualization, but also because the solution would support the company-wide green initiative.

“Wasted storage capacity drew a lot of energy and threatened our efforts to go green,” said Tom Gonzales, senior network administrator, Credit Union of Colorado. “Compellent’s advanced storage virtualization eliminated allocated but unused storage, helping reduce our physical data center footprint by 50 percent.”

Using Compellent’s storage resource management tool, Enterprise Manager, both firms accurately and quickly track the return on their storage investment, manage remote replication and create storage usage reports for budgeting purposes. In addition, Free Space Recovery, available with Enterprise Manager, enables deleted file space in a Windows environment to be reused. For example, the Credit Union of Colorado estimates using Free Space Recovery alone has helped it reclaim 10 to 20 percent of previously unused disk space.

Office Depot Honored with Site Facilities Physical Infrastructure Overhead Best-in-Class 2008 Uptime Institute Green Enterprise IT Award

Office Depot, a global provider of office products and services, was recognized with the Site Facilities Physical Infrastructure Overhead Best-in-Class Award at the 2008 Uptime Institute Green Enterprise IT Recognition Ceremony.

The multichannel retailer, which has a global environmental vision to increasingly buy

green, be green and sell green, was honored for pioneering energy-efficiency improvements in its data center operations.

The Uptime Institute is a research-based think-tank and corporate advisory group that consults on business and technology issues related to critical computing, environment reliability and energy efficiency.

Through various initiatives in its Global Data Center, Office Depot was able to increase the reliability of its IT operations while expanding its capacity and reducing energy usage.

The winners of the first Green Enterprise IT Awards were announced April 29 at the third annual Green Enterprise Computing Symposium in Orlando, Florida. Office Depot was recognized in the Facilities Site Physical Infrastructure (power and cooling) category.

“Like many of our environmental initiatives, improving the efficiency of Office Depot’s Global Data Center has increased the reliability of our IT function while reducing our energy usage and costs,” said Tim Toews, Senior Vice President and Chief Information Officer for Office Depot.

“Our efforts have resulted in a true win-win.”

In 2007 Office Depot participated in a Cooling System Efficiency Study, which provided important insights on improving reliability and reducing energy usage in its Global Data Center. Following the study, Office Depot was able to implement a number of new initiatives including the following:

- Sealing all computer room raised floor openings to maximize efficiency and reduce energy usage;
- Installing computer room air handlers, which take hot air out of the room, cools it and reuses it;
- Improving data center chillers to increase efficiency and reliability;
- Evaluating and implementing new hardware that is more energy and cost efficient to run.

“Office Depot’s environmental vision is to increasingly buy green, be green and sell green,” said Yalmaz Siddiqui, Director of Environmental Strategy. “By investing in energy efficiency at our Global Data Center we are reducing the carbon footprint of our most energy intense facility and saving costs in the process.”

Office Depot’s achievements at its Global Data Center complement the Company’s overall environmental commitment and various initiatives, including the following:

- Creating The Green Book catalog of thousands of environmentally friendly products and educational content for Office Depot’s small, medium and large business customers;
- Launching Office Depot Green and becoming the first in the office products industry to introduce a “green” line with consistent packaging;
- Establishing a \$2.2 million Forest & Biodiversity Conservation Alliance through which Office Depot partnered with Conservation International, NatureServe and The Nature Conservancy to resolve real issues in the forestry sector to guide our sustainable efforts;
- Developing a Paper Purchasing Policy through which we became the first office supply company to make Forest Stewardship Council certified paper widely available in the U.S.;
- Reducing the Company’s overall Carbon Dioxide emissions output in 2006 by 10.1 percent;
- Retrofitting the lighting in the Company’s North American retail store chain to T5 high-output fluorescent lighting, which is 35 percent more efficient than traditional, incandescent lighting;
- Replacing our fleet of “box trucks” to ultra-low-emission “Sprinter” vehicles, which are on average 40 percent more fuel-efficient than their predecessors and get an estimated 15 or more miles per gallon; and
- Groundbreaking on the Company’s first “Green” store, which will be Leadership in

Energy and Environmental Design (LEED) Certified by the US Green Building Council upon completion in summer 2008.

A complete overview of Office Depot's environmental programs is available here.

Sun Microsystems, AOL, UPS, NetApp, Bank of Montreal, HP, and Nationwide Mutual Insurance named data center energy efficiency pioneers

The Uptime Institute, a research-based think-tank and corporate advisory on the business and technology issues related to critical computing environment reliability and energy efficiency, announced winners of its Green Enterprise IT Awards.

The awards, which honor organizations that are pioneering energy-efficiency improvements in their data center operations, were presented in Orlando at the Uptime Institute Symposium 2008: Green Enterprise Computing.

Co-sponsored by Deloitte Consulting, the 2008 Green Enterprise IT Awards winners:

- Sun Microsystems: Energy Efficient IT Hardware Deployment
- UPS: Facilities Site Physical Infrastructure (power and cooling) Overhead
- AOL LLC: Facilities Site Physical Infrastructure (power and cooling) Overhead
- NetApp: IT Hardware Asset Utilization
- Bank of Montreal: IT Hardware Asset Utilization
- Nationwide Mutual Insurance: IT Strategy
- Hewlett Packard: IT Strategy
- Hewlett Packard: Green IT Beyond the Data Center

2008 Green Enterprise IT Best-in-Class Finalists:

- Office Depot: Facilities Site Physical Infrastructure (power and cooling) Overhead

- Intel: Facilities Site Physical Infrastructure (power and cooling) Overhead
- Interior Health Authority of British Columbia: IT Hardware Asset Utilization
- Hannaford Bros: IT Strategy
- Nationwide Mutual Insurance: Green IT Beyond the Data Center

“Realizing that neither business nor the environment can sustain the costs of the increasing energy demands in data centers, the award-winning companies have displayed leadership and innovation in their data center energy efficiency efforts,” said Kenneth G. Brill, Institute founder and executive director. “It is our hope that they will serve as a clear example to the world’s largest operators of critical computing facilities of the realistic impact and feasibility of these types of initiatives.”

At the Symposium, the winning companies presented case studies of their award-winning initiatives in addressing the data center energy efficiency challenge. Through these case studies, winning companies shared their routes to success in order to encourage their industry peers participating in the Symposium to be advocates of change in their own organizations. The awards judging criteria were specifically designed to select projects with potential to serve as business case studies of the realistic impact and feasibility of energy efficiency initiatives. Winners’ case studies will be featured in Podcasts and white papers to be posted over the next three weeks at uptimeinstitute.org.

Force10 Networks vice president explores eco-efficiency as a holistic approach for aligning business goals with power and cooling demands

The impact of rising costs associated with data center power and cooling are not just confined to IT and facilities budgets anymore but are beginning to impact the quality of

business on many different levels, including customer satisfaction and the bottom line, said Stephen Garrison, vice president of marketing for Force10 Networks, at Interop 2008. While the notion of being “green” has become a familiar marketing concept, the key to reducing power consumption in the data center is through a holistic, eco-efficient approach, he said.

“The phrase “green IT” has become an overhyped way to confuse customers and muddy the waters of an important discussion that is impacting the way organizations design their networks and increasingly do business,” Garrison said during a session at the industry’s leading global business technology event. “The climate is ripe for business and IT communities to re-examine their power consumption through an eco-efficiency lens that offers tangible ways to optimize data centers by integrating environmental, social responsibility and economic impact analysis into the planning and design processes.”

In addition to mounting costs, a vast majority of businesses have reported server and storage downtime, outages and, ultimately, loss of customer satisfaction and revenue as a result of power and cooling-related issues, according to a survey by industry analyst group IDC. Through optimization, however, a process which includes many eco-friendly tactics, a typical data center can reduce energy costs by as much as 50 percent — or \$400,000, according to the report.

“From design to management to equipment choices, IT managers can make a huge difference in what kind of statement their data center makes at the business level,” Garrison said. “Building a strategic and reliable network that can act as a flexible foundation for implementing network automation as a tool to optimize power consumption is one of the most crucial and fundamental steps an organization can undertake to optimize their data center.”

For additional information on Force10’s eco-efficiency program, please visit [http://](http://www.force10networks.com/company/eco-efficiency/)

www.force10networks.com/company/eco-efficiency/.

CONTRACTS

Ixia powers green IT testing at Interop Las Vegas

Ixia, global provider of IP performance test systems, showcased its “Green IT” testing initiatives for network equipment and data centers at Interop Las Vegas and with partner companies throughout the exhibition area.

Ixia demonstrated a proof-of-concept (PoC) testing solution, a fully automated, comprehensive, turnkey benchmarking system for measuring power efficiency in relation to network and application load. The solution, trademarked IxGreen, offers accurate and repeatable validation of individual data center elements, with the emphasis on power consumption.

This enables data center managers to achieve their eco-efficient data center goals, which, in addition to cooling and power savings, include consolidation of data center elements, server and software virtualization, remote management/administration, and a reduced carbon footprint.

In a March 2008 “Green IT Survey,” IDC reports that the number one driver for the adoption of Green IT is the economic incentive gained by reducing operational costs.

IDC also says half the data center managers interviewed cited power and cooling costs as one of the top three areas of IT operational expenditure. Surveys conducted by IDC and the Aperture Research Institute (ARI) show that the Green IT initiative not only can make a positive environmental impact, but also has proved to be a major contributor to total savings and cost of ownership for data centers. However, ARI reported that 42 percent of data center managers said they had no way to check the validity of Green IT testing or to benchmark rival solutions.

Ixia's PoC IxGreen solution provides the necessary benchmarks to help data center managers better evaluate network elements and system architectures. With the capability to generate real-world data center application traffic, the Ixia PoC solution can test multiple traffic profiles from different industry verticals including Financial, Retail, or even Oil & Gas. A "performance-per-power" metric, the IxGreen Index is then generated which has a contextual basis in the industry of choice. The highest benchmark value indicates the most energy-efficient, greenest option.

"Looking beyond Interop, Ixia will continue to push the boundaries of innovation in Green IT testing," said Atul Bhatnagar, president and CEO of Ixia. "Our goal is to provide solutions that benefit the environment, reduce energy consumption and offer real business value for our customers."

Ixia also unveils the industry's highest density and most affordable layer 2-7, 10-Gigabit Ethernet (GbE) IP testing solution for high-density 10GbE switches designed for deployment in next-generation data centers. Ixia's new 10GbE IxYulkon load module and XM12 chassis also provide a greener alternative than the closest competitor with four times the port density in one-quarter the laboratory space and as little as one-half the power consumption.

Ixia also is powering green certification from Miercom, a consulting firm specializing in networking and communications-related product testing and analysis. Miercom began conducting the industry's first comprehensive green certification testing earlier this year, and announced its first appointees at Interop. Miercom performs these tests using Ixia solutions.

"Ixia test solutions are designed to fully load and exercise layer 2-7 products, which is important for us because we have a reputation for thorough, real-world methodologies," said Rob Smithers, founder and president of Miercom.

Intrinsa IP storage chosen as backbone of IP video surveillance system for nine Chilean casinos

Intrinsa, a provider of shared, scalable, and simple external IP storage solutions, announced that Enjoy Group, a holding company for nine of the largest casinos in Chile, has chosen an IP storage solution by Intrinsa to serve as the storage backbone of its digital CCTV surveillance system.

The system, installed by Bitelco Diebold Chile, is in full compliance with the Chilean Gaming Board, and allows Enjoy Group to build a central investigation and monitoring center that contains live and recorded video from its nine casinos. All the video can then be stored on the Intrinsa external IP storage system where it can be viewed and analyzed.

The security demands of today's modern casino operations are increasing, and worldwide many casinos have found that existing analog/VCR CCTV systems are unable to cope with the long-term storage and the fast retrieval and search of video needed to quickly resolve gaming disputes and track incidents. The IP video surveillance and storage system by Intrinsa was chosen to meet the demanding CCTV requirements of casino operations, while providing growth benefits for the future including scalability, real-time camera-based analytics and fault tolerant configurations.

Once completed, the IP video surveillance and storage project will include the upgrade of more than 2,500 cameras to digital IP-CCTV surveillance. To date two installations have been completed.

The first 500 camera system, complete with 45TB of Intrinsa IP storage, has been installed at Enjoy's casino complex in Coquimbo, Chile.

The second installation at Enjoy's casino complex in Pucon, Chile includes a 200 camera system with 22.5TB of Intrinsa IP storage. Both installations cover the hotel and convention center complex in each city.

“The complete IP Video system with IP storage provided by Intransa is performing extremely well,” said Manuel Abella, Manager of Projects and Systems, Enjoy Group.

“We were particularly impressed with the video quality, the video search and analysis features and the efficient use of network bandwidth and storage.”

The Intransa IP storage solution is flexible and upgradeable, and allows Enjoy to add more storage capacity, supporting longer storage periods and cameras.

In addition to Intransa’s EdgeBlock IP SAN storage system with RAID 5 storage that is fully protected, redundant and expandable, Bitelco Diebold Chile installed an IP Video and management software system by IndigoVision of the United Kingdom.

With the combination of Intransa’s external IP storage and IndigoVision’s IP-CCTV Enjoy’s casinos will now have the ability to remotely view recorded video on any Control Center work station, no matter where they are located on the network – a feature not previously possible with the existing analog/VCR system.

“By using Intransa’s scalable, security-grade IP storage for video surveillance applications Enjoy Group can increase surveillance reliability and lower their costs while deploying more cameras and for much longer retention periods than with a traditional storage solution using servers, DVRs or NVRs,” said Jeff Whitney, vice president of marketing, Intransa. “Enjoy can also use Intransa IP storage to run other security or IT applications simultaneously, making this a system they can continue to use well into the future.”

Intransa external storage solutions are Security-Grade IP Video Storage Certified to integrate with more than 40 physical security vendor’s products plus those of more than 35 IT vendors.

Intransa’s affordable IP storage systems allow for modular growth from 4 to 1,500TB of RAID-protected IP storage.

Ekinops equipment helps Boston Red Sox make a major data center move, with powerful Fibre Channel/SAN solution

As the World Champion Boston Red Sox open their season at home, one thing is different at Fenway Park. The team’s administrative offices aren’t overflowing with data networking equipment, thanks to high-speed fiber-optic equipment from Ekinops.

Just before the 2008 season began, the Red Sox overhauled their data center arrangement, moving equipment from overcrowded facilities at the 96-year-old ballpark to a collocated data center at 1 Summer Street, a few miles away. In order to maintain high speed access to the data center, the Red Sox installed Ekinops optical transmission equipment, enabling a Fibre Channel and storage area network solution requiring multi-Gigabit data traffic between the two sites.

Ekinops, a provider of innovative optical transport, CWDM, DWDM, and aggregation solutions for service providers and enterprise networks, had just the solution for the team’s needs, with its cost-effective Ekinops 360 DWDM (dense wavelength division multiplexing) platform.

“The issue for us was that we had outgrown our data center,” said Randy George, senior systems and network analyst for the Red Sox. “We had equipment overflowing from the data center into our employees’ offices, and we had scaled past the power limitations as well. It was definitely a facilities issue that drove us to a collocated data center.”

Because the Ekinops equipment consumes minimal power and takes up little space, the Red Sox can keep their costs down at the data center, which charges its customers based on how much space they occupy and how much power they consume. The Ekinops equipment includes aggregation modules that provide the team with eight channels of Gigabit Ethernet on a single 10Gbps wavelength and five 2Gbps Fibre Channel links over another

10Gbps wavelength to connect their storage area network (SAN). The Red Sox are carrying all that capacity over a single fiber, with a second fiber available for redundant operation.

That's a lot of capacity, but as George explains, the team needs it.

"We have all our financial applications there, along with our scouting system and video analysis system, e-mail, back-end databases, and storage area networking. The brains of our operation are essentially at the data center now, and that's why the Ekinops gear is so instrumental," he said.

George added that the cutover to the data center had an aggressive timeline, with the contract signed in early January and a goal of making the move by the time the season started.

"We were under a lot of pressure to get all this done by Opening Day, and we did it. We had to pull a lot of strings to do it, but we successfully moved the weekend of March 23 and 24. It was completely transparent to users," George said. The Ekinops gear had already been tested and was in place for the final relocation of the data networking equipment.

"We are very proud to deliver a solution for the critical data needs of Major League Baseball's reigning champions," said Jonathan Amir, Ekinops' vice president of sales. "Power and size may be important on the field, but it's just the opposite in a data center, and that's why our products are such an effective solution."

NEW DATA CENTERS

Internap to open new "green" colocation facility in Boston

Internap Network Services Corporation, a global provider of end-to-end Internet business solutions, announced plans to add approximately 15,000 square feet of colocation at a new standalone 45,000 square foot facility adjacent to its existing Boston data center.⁹The expansion helps the company meet strong customer demand for its bundled Internet

solutions. The first phase of completion will become available in the fourth quarter of this year.

Infrastructure plans will allow Internap to provide a maximum amount of power and cooling to support a customer's high-density solutions."This new facility will also take advantage of more environmentally friendly technologies, including ultrasonic humidification, air economizers and circuit level power monitoring, all designed to provide a less energy intensive solution, as compared to previous generations of data centers.

The Boston expansion also provides access to Internap's Performance IP and Content Delivery Network (CDN) product offerings. These premium Internet connectivity and content delivery services enable customers to deploy next-generation Internet applications such as video and rich media.

"This initiative is part of our strategic plan to enhance data center offerings in key markets," said James P. DeBlasio, chief executive officer of Internap." "With this expansion in Boston, Internap now has its ninth owned facility and a total of 43 colocation service points, demonstrating our commitment to serving our customers' growth requirements now and in the future."

Switch and Data announces opening of Toronto site expansion to satisfy demand in key Canadian market

Switch and Data, a provider of Internet exchange and colocation services, announced that the company has opened additional space in Toronto on schedule. This previously announced project adds capacity to Switch and Data's existing sites in the 151 Front Street carrier hotel in downtown Toronto. The new capacity was built to satisfy high customer demand for interconnection in this key communications hub. Switch and Data's Toronto operations have been growing at an annual rate of more than 40 percent.

Toronto is the major communications hub for the Canadian market and serves as one of the main aggregation points for cross-border Internet traffic between Canada and the United States. Canadian Government statistics rank Toronto as the third largest metro area in North America, by IT company concentration, behind the San Francisco Bay Area and New York. Switch and Data supports the interconnection requirements of high-tech companies by providing the broadest footprint of sites in major North American communications hub markets such as Toronto, Buffalo, Chicago, Dallas, Miami, New York, San Francisco, and Seattle.

Switch and Data's Toronto site is housed in the city's premier communications building, the International Telecom Carrier Hotel and Data Centre, located at 151 Front Street West. Switch and Data's site houses TorIX, the Toronto Internet Exchange, which is a key demand driver in the market. TorIX is the largest Internet Exchange in Canada, and more than 85 companies peer their IP traffic on TorIX to improve quality and reduce expense. These peers are listed at www.torix.net/peers.php.

"Our customers use our Internet exchanges as secure places to aggregate and distribute their Internet traffic," explained Ernie Sampera, Senior Vice President of Marketing for Switch and Data. "We are investing in capacity in the important Toronto market to help our customers evolve and accelerate their Internet services."

Switch and Data's Toronto site is also noteworthy for its environmentally friendly cooling infrastructure. Rapid Internet growth has created increasing demands for power to run servers and cool data centers. Switch and Data's Toronto site uses the innovative, energy-saving Deep Lake Water Cooling system to cool the data center. Intake pipes draw 4° C water from 83 meters below the surface of Lake Ontario and pump it through a heat exchanger to chill a closed-loop cooling water supply. This chilled water is supplied to the building and used

to create chilled air to cool Switch and Data's colocation space. This process reduces energy consumption by up to 90 percent compared with traditional air conditioning and also results in reduced green house gas emissions.

VIRTUALIZATION

Companies go green and save with VMware virtualization

VMware Inc., a provider of virtualization solutions from the desktop to the datacenter, announced that its virtualization solutions are saving customers tons in costs and CO2 emissions.

Using VMware virtualization, customers can consolidate 10 or more physical machines onto a single server and reduce power consumption and cost by 80-90 percent. VMware customers that have moved from a 1:1 application to server ratio to 60:1 or higher have achieved millions of dollars in capital and operational savings.

For every server virtualized, customers can save about 7,000 kilowatt hours (kWh), or four tons of CO2 emissions, every year. VMware has virtualized more than 6 million server workloads since 1998, resulting in an estimated energy savings of nearly 39 Billion kWh, or roughly \$4.4 billion.

This is roughly equivalent to the total energy consumption of Denmark for one year. PCs virtualized and hosted on servers in the datacenter can also reduce power consumption and cost by 35 percent. Hosting desktops in the datacenter also doubles the replacement cycle of PCs or thin clients, reducing the environmental impact associated with manufacturing new equipment.

"Most servers and desktops today are still consuming 70-80 percent of their rated power even when idle," said Stephen Herrod, chief technology officer, VMware.

"VMware is able to deliver substantial power and cost savings through innovative

power management capabilities in our virtualization solutions that safely power down or throttle servers when not in use. By powering down servers and desktops during inactive periods such as evenings or weekends, we can help customers save another 25 percent or more on power consumption without affecting applications or users.”

Since 2006, VMware has been an active pioneer in working with utility companies to offer incentive programs supporting virtualization projects in datacenters. VMware works with utilities across North America including Pacific Gas and Electric, Southern California Edison, SDG&E, BC Hydro and Austin Energy to provide customers incentives based on the amount of energy savings achieved through data center consolidation.

Sheffield Hallam University virtualizes with VMware, cuts 269 tons of CO2 and saves £43,000 on power bills annually

Sheffield Hallam, one of the UK’s most innovative and progressive universities with more than 28,000 students and over 5,000 staff, required a number of new IT services to support its user community. This led to the number of servers within the datacenter doubling within twelve months. The building’s electricity grid could not supply enough power to reliably support the required number of servers within the main datacenter, and physical space was also a major issue. Sheffield Hallam is using VMware’s market-leading datacenter virtualization and management platform, VMware Infrastructure 3, to reduce power and cooling requirements in the datacenter and improve the delivery of IT services. VMware Infrastructure 3 provides the capability for automatic load balancing, business continuity and power management and the ability to move a virtual machine across physical machines to minimize service interruption.

“With the server farm growing towards capacity, we knew a completely new strategy was required,” said Dave Thornley, service

support manager, Sheffield Hallam University. “We decided that moving to a virtual infrastructure would be the most effective way to tackle cost management and space issues. Using VMware, we have made a huge impact on our power bills as well as leading to major savings in the deployment of new services to users.”

For more information on how other companies have gone green and reduced costs using VMware virtualization, please visit: <http://www.vmware.com/solutions/consolidation/green/>.

NEW PRODUCTS

Rackable Systems C1001 ecological server beats top server manufacturers in power efficiency

Rackable Systems Inc., a provider of servers and storage products for large-scale data centers, announced the immediate availability of a head-to-head power study comparing the Rackable Systems C1001 server against similar 1U models from Dell (PowerEdge EnergySmart 1950 III), Hewlett-Packard Co. (ProLiant DL360 G5), IBM (System x3550), and Sun Microsystems (SunFire x4150).

The Tolly Group, one of the industry’s most respected testing organizations, performed the independent study in March 2008, concluding that Rackable Systems C1001 server was the most power efficient model in every test run. Rackable Systems beat the competition by up to 31 percent while using the same dual L5320 CPU, 4x2 GB memory, and mirrored drive configurations. Total Harmonic Distortion and PF factor were also consistently superior, enabling data centers to deploy more servers per AC circuit.

“As power costs continue to climb, companies with large data center needs are increasingly focused on deploying energy-efficient server and storage solutions,” said Kevin Tolly, president/CEO and founder of The

Tolly Group. "Rackable Systems Eco-Logical servers such as the C1001 have been highly tuned to cut power consumption, delivering a low total cost of ownership in addition to being more environmentally friendly."

The complete study can be freely downloaded by visiting <http://www.rackable.com/docs/tollyrackablec1001.pdf>.

"This independent study demonstrates that Rackable Systems Eco-Logical advantage holds up even when comparing its most standard C1001 server configuration against the competition's best-in-class, highly energy-optimized servers," said Tony Gaughan, chief products officer of Rackable Systems. "By deploying Rackable Systems servers, the study shows that large-scale data center customers can easily realize hundreds of thousands to millions of dollars of operational savings over a typical three-year service life."

The C1001 server used in this test was configured with new, high-efficiency Rackable Systems power supplies designed to deliver peak efficiencies of up to 92.5 percent (AC) and 96.5 percent (DC)¹. The latest generation of Eco-Logical power supply technologies are immediately available throughout Rackable Systems server product line.

New Citrix NetScaler MPX cuts datacenter costs by delivering twice as many web applications with same infrastructure footprint

Citrix Systems Inc., a provider of application delivery infrastructure, announced its new NetScaler MPX line of web application delivery systems.

The new NetScaler solutions feature a massively parallel multi-core system architecture that significantly increases datacenter capacity and delivers 2.51 times more web applications with the same infrastructure footprint. Citrix NetScaler MPX also provides unmatched performance when

delivering applications that demand the highest security and best end-user experience.

Today's web applications are straining traditional load balancers and rigidly constructed datacenters with the integration of rich media capabilities, service oriented architectures (SOA) and interactive Web 2.0 capabilities. These applications are significantly more complex and resource intensive, yet they must still be delivered with the fastest performance, best security and lowest cost. NetScaler MPX is the industry's first web application delivery controller to drive greater than ten Gigabits per second (Gbps) of real world application performance while concurrently providing advanced acceleration, traffic compression, and integrated web application firewall security – all in an energy-smart appliance form factor.

As an integral component of the Citrix Delivery Center product family, NetScaler MPX also enables the push toward dynamic datacenters that can more easily adapt to the needs of today's increasingly complex web applications. As part of this end-to-end solution architecture, NetScaler MPX provides sophisticated workflow virtualization that senses changes in application demand and automatically invokes the necessary application and server resources to meet dynamic workloads. This unique capability provides a fundamental building block of the new dynamic datacenter by offering the necessary scalability and virtualization capabilities needed to cost-effectively deliver both enterprise and Internet-facing web applications.

"With its high-performance architecture, NetScaler MPX relieves key customer pain points in large, dynamic datacenters, including the challenge of reducing power consumption while managing traffic loads that are beginning to cross the 10Gbps threshold," said Cindy Borovick, research vice president for IDC's Datacenter Networks service.

NetScaler MPX appliances are designed for the next class of dynamic datacenters, and

incorporate advanced capabilities, including the following:

- **Delivers 2.5 times More Web Applications:** The ultra-fast performance of NetScaler MPX enables datacenters to support 2.5 times the number of web applications per appliance. In addition, the massive application-layer processing capacity of the MPX system architecture drives multi-Gigabit acceleration, traffic compression and application firewall performance to provide the industry's most scalable platform enabling real-time data protection and compliance with strict new Payment Card Industry Data Security Standard (PCI-DSS) regulations going into effect in June of 2008.

- **Reduces Power Consumption for "Green" Datacenters:** The highly efficient design of the NetScaler MPX platform drives far lower power consumption for web application delivery. Compared with previous generation appliances, MPX solutions require nearly 502 percent less power.

With power being a principal cost factor for companies of all sizes, NetScaler MPX can help organizations achieve more efficient datacenters while also meeting corporate-mandated energy efficiency, or "green," initiatives.

- **Provides Dynamic Workload Virtualization:** NetScaler also integrates with Citrix XenServer to automatically provision and allocate server resources to meet shifting web application capacity requirements. As a result, datacenter managers no longer have to overprovision separate and discrete server infrastructures to accommodate unexpected traffic loads for every application. Automatic provisioning with NetScaler MPX enables expensive server resources to be shared across critical applications for maximum flexibility and lower costs.

"As applications become more dynamic, so must the network and datacenters that support these resource-intensive applications,"

said Klaus Oestermann, vice president and general manager, Application Networking Group for Citrix Systems. "NetScaler MPX solutions provide the critical set of application delivery and infrastructure virtualization services necessary to transform static datacenters into dynamic delivery centers."

Citrix NetScaler MPX 15000 and MPX 17000 are available this month through authorized Citrix NetScaler resellers worldwide. NetScaler MPX suggested retail pricing begins at \$180,000 per pair

SPECIAL FEATURE

Corporations are mashing up and moving online

By Paul Budde, BuddeComm

Based on the speed of developments in the Internet world, we will see more and more corporations following the lead of the Internet media companies and migrating applications, storage, CRM, and data hosting to online-based systems.

The virtualization of servers and the wider deployment of flash memory are also fuelling these new developments. Increasingly, computer manufacturers are introducing computers without disk drives, flash being considerably faster and more durable than current disk drives. Similar to its use in datacenters, flash developments also prove to be better suited to new software requirements like MS Vista, which require much faster processing.

Think about the combination of the new mobile devices and flash and it is clear that flash is going to be a revolutionary agent.

Importantly, these new developments are also more environmentally friendly as they require considerably less hardware and use less energy. Furthermore, they will use the wired and integrated systems to mash up data from different sources in order to expand their intelligence services.

As analysts at BuddeComm have stated on other occasions, the smaller companies will benefit first from these developments, as more and more outsourcing facilities become available to host their needs. For the first time, shared resources are making these services economically viable for many smaller organizations.

Unfortunately, this market continues to be underserved. Unlike their corporate counterparts, smaller companies don't have sufficient internal IT resources, and the ICT industry has an extremely poor track record in servicing this market — a situation that is unlikely to change any time soon. This will drive more and more companies to overseas Web sites in order to profit from the new developments.

Web-based mash-up services are one of the most hotly debated developments in the IT industry because this opens up a whole new area of IT services which, until recently, it has been impossible to develop in an economically feasible way.

Way back in the late 1990s, BuddeComm alluded to this market when the first datacenters started to arrive. However, like many of the dot-com services, at that point the timing was wrong. Broadband has stimulated the development of new services and they, in turn, are now fuelling progress for datacenters, CRM, outsourcing, and ASPs/MASPs, or (managed) applications service providers.

We are just at the beginning of the second blooming of these developments, and BuddeComm anticipates at least five golden years ahead for this market.

MARKET INTELLIGENCE

Frost & Sullivan lauds Panduit Corp. for its outstanding integrated green solution for the data center cooling solutions market

Based on its recent analysis of the data center facilities infrastructure solutions, Frost &

Sullivan recognizes Panduit Corp with the 2008 North American Green Excellence Award in Service Proposition for its determined efforts in offering a flexible yet dynamic turnkey solution towards enabling an efficient infrastructure within the data center environment.

Over the last five years, data center power and cooling requirements have surged dramatically in the face of increased server/storage equipment density and ever-growing demands for processing power. The Panduit solution is centered around the principle of 'cooling conservation' to optimize energy use within the data center space.

"Panduit combines site-specific products and technology with proper capacity planning to better suit the demand profile of high-density applications with reduced operating costs," said Frost & Sullivan research analyst Konkana Khaund. "This approach takes into consideration the deployment and management of both passive and active components that impact the availability of data center applications while at the same time gauging scalability requirements and disruptive influences that may impact operating costs in the future."

The company differentiates its solution from other industry providers by taking a holistic approach toward data center design and efficiency. The Panduit solution balances a suitably designed cabling infrastructure with desired power and cooling thresholds that are reliable, interoperable, and scalable over time.

The solution overcomes the most significant physical infrastructure challenges to the data center customer today — managing the risk associated with infrastructure convergence. Panduit tackles this risk with a value proposition that directly addresses three dominant concerns of data center stakeholders: agility, availability, and security.

Forming the right alliances with the appropriate partners is key to advancing data center interoperability and reliability. Panduit developed its solution by collaborating with a

diverse partner community including equipment providers, hardware, software and communication technology experts.

The Panduit data center service portfolio also supports virtualization to catalyze stronger, more frequent interaction between IT and facilities management, thus ensuring better uptime and availability and facilitating change management within the data center.

“By aligning a truly interoperable physical architecture with logical elements, Panduit has articulated an intelligent and effective next-generation value proposition that enables the customer to reap quantifiable benefits by way of energy savings and resource conservation,” opined Khaund.

Further, Panduit’s company-wide commitment has resulted in the long-standing deployment of programs throughout its global facilities that use energy efficiently, reduce energy consumption, and minimize the ecological footprint. This commitment extends from purchasing more efficient and energy-saving machinery, practicing reuse and recycling procedures, and adopting environmentally responsible disposal practices.

By taking a holistic approach towards data center design, integrated physical infrastructure, and improved green performance, Panduit ensures that its internal facilities as well as its facilities infrastructure solutions for data centers adhere to stringent design principles.

For its multiple achievements, Panduit is the recipient of the 2008 Frost & Sullivan Green Excellence Award in Service Proposition in the North American data center cooling solutions market.

Frost & Sullivan presents this Award to the company that has demonstrated excellence in delivering green service solutions that are aligned with a sustainable and environmentally conscious objective within its industry sector. The Award signifies the company’s identification of a unique and revolutionary solution with

significant environmental benefits, while simultaneously presenting tremendous market potential. Moreover, the Award recognizes that the company’s overall business strategy is sound and poised for success.

New report calls for fast corporate action to curb escalating power consumption and greenhouse gas emissions resulting from computing

The rapidly increasing demand for digital processing for everything from online banking to e-Bay auctions, Amazon orders, Google searches, and iTunes and YouTube downloads has become part of the global warming story. A new study suggests that large-scale computing facilities, or data centers, are a fast-growing contributor to global warming and a drain on corporate profitability.

The result of a year-long collaborative study undertaken by global management consultancy McKinsey & Company and data center computing research and corporate advisory firm Uptime Institute, the report, entitled “Revolutionizing Data Center Energy Efficiency—Key Analyses,” calls for an immediate overhaul of corporate management practices and a doubling of the energy efficiency of large-scale corporate computing facilities by 2012.

Recommendations by the report’s author, McKinsey & Company, with strong support from Uptime Institute, were made at the Institute’s Symposium 2008: Green Enterprise Computing in Orlando.

The Symposium is a global gathering of more than 400 concerned corporate executives, engineers and scientists, and representatives of the U.S. Department of Energy and the U.S. Environmental Protection Agency’s Energy Star program.

The report makes three primary recommendations which could help corporations double the energy efficiency of data- and network-center computing.

An average data center today consumes energy equivalent to that used by 25,000 American homes, and as a whole, the energy consumption in data centers is almost .5 percent of world production. For many industries, data centers are one of the largest sources of greenhouse gas emissions. If current trends continue unchecked, data center greenhouse gas emissions will quadruple by 2020.

“While the design of the next generation of ‘green’ data centers gets a lot of attention and is certainly a worthwhile pursuit, we’re putting forward the case in this report that improving efficiency in existing sites will lower energy usage and reduce greenhouse gas emissions faster and more significantly with less cost,” said Kenneth G. Brill, founder and executive director of Uptime Institute.

To improve energy efficiency in large-scale corporate data centers, the report recommends the following three solutions:

1. Mandate inclusion of true total cost of ownership, including data center facilities, in the business-case justification of new products and applications to throttle excess demand;

2. Rapidly mature and integrate asset management capabilities to reach the same par as the security function;
3. Formally move accountability for data center critical facilities expense and operations to the CIO and appoint an internal “Energy Czar” with an operations and technology mandate to double IT energy efficiency by 2012.

To achieve the recommended doubling of energy efficiency, McKinsey and Uptime suggest that equipment manufacturers and industry groups establish uniform metrics, along the lines of the metrics used for automobile fuel consumption, that will measure the individual and combined energy efficiency of corporate, public-sector- and third-party-hosted data centers.

The report was released at the Uptime Institute Symposium 2008: Green Enterprise Computing in Orlando. Podcasts of the Symposium proceedings, keynote speeches and the presentation of the report by William Forrest and Ken Brill will be made available over the next three weeks at <http://uptimeinstitute.org>.

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