

Firm cuts power costs amid growth

CASE STUDY: SPECTRUM MITIGATES ENERGY CONCERNS WITH RACKABLE SYSTEMS GEAR

By Anne Chen

WHEN SPECTRUM ENERGY AND Information Technology Inc. began looking for a way to reduce energy costs while significantly growing its data center, the global provider of services for oil and gas seismic processing turned to Rackable Systems.

By deploying servers from Rackable Systems that use efficient DC power and are half the depth of conventional servers, Spectrum has been able to reduce monthly power costs, said Derek Skoyles, president of Spectrum, in Houston.

“Power costs have been rising quickly over the last three months, and we have seen those costs amplified by increases in discrete energy costs,” Skoyles said. “We saw the power savings right away when we put in the Rackable Systems servers.”

Spectrum is not alone in deploying hardware that runs on DC rather than AC power. As IT managers look to expand their data centers, server density is cause for power concerns. With analyst group IDC last year reporting that DC-powered systems can cut heat output by as much as 40 percent while reducing power costs from 10 to 30 percent, an increasing number of IT managers are considering DC solutions.

Spectrum Energy and Information Technology Inc. is the U.S. subsidiary of Spectrum Energy and Information Ltd., of Woking, England. The U.S. branch provides computer services to Spectrum subsidiaries worldwide, including offices in Egypt, India, Libya and Argentina.

In Houston, Spectrum provides oil and gas seismic data processing using GeoCenter’s SeisUp seismic processing software. SeisUp runs on multiprocessor Hewlett-Packard Exemplar servers and a 4,000-node compute cluster—once ranked as the world’s 17th-largest supercomputer—to perform pre-stack time and depth migration and other CPU-intensive processes.

In late 2004, Skoyles decided to expand the compute cluster at Spectrum to handle

additional seismic processing loads. Spectrum, which has purchased servers in the past from Sun Microsystems as well as HP, began evaluating and benchmarking systems from a wider variety of server vendors.

In the end, Spectrum decided to purchase DC-powered servers from Rackable Systems because of their ability to reduce the company’s power consumption. The servers are also deployed in DC cabinets, a feature Skoyles found appealing because of issues

he’s had with AC-based power-supply failure in the past.

“When you operate a large number of computers in a cluster, there is always something failing, and that point of failure often comes from having discrete power supplies that weren’t that good in each node,” Skoyles said. “That’s fine for a home computer but not in our business environment.”



“We saw the power savings right away,” Skoyles said.

Steady expansion

LAST JUNE, SPECTRUM DEPLOYED ALMOST 400 Scale Out Series servers from Rackable Systems. The systems, which are powered by 64-bit, 2.2GHz Opteron 248 processors from Advanced Micro Devices, each have 2GB of RAM and an 80GB hard drive. The servers are running a variety of operating systems—including Microsoft’s Windows NT (to accommodate several applications used by Spectrum) and different Linux variants—as well as some off-the-shelf and proprietary software applications.

Skoyles is not facing the space constraints in his data center that many of his peers are, but he said he likes the fact that Rackable Systems’ solution allows him to compress so many nodes in such a small space.

Rackable Systems’ servers have a half-depth form factor that has enabled Skoyles to purchase cabinets of back-to-back rack-mounted servers.

Spectrum has been doubling the number of servers in its data center every two years, and Skoyles said the com-

pany will go through another vetting process next year to determine which vendor is right for its next data center expansion.

Skoyles said that if he were to buy another cabinet now, he’d probably purchase one from Rackable Systems.

“A lot of providers will give us Opteron or Intel chips,” Skoyles said. “The business benefit of Rackable Systems, from our point of view, is that it had a different approach for the power supply. The real benefit was a heavy-duty single power supply for a lot of nodes that is well-tested, reliable and feeds a nice, stable DC to all of our servers.” *e*

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Case file

- ▶ **Company** Spectrum Energy and Information Technology Inc.
- ▶ **Location** Houston
- ▶ **Challenge** Spectrum needed to find a way to add servers to a cluster used for seismic data processing while keeping cooling and power costs down
- ▶ **Solution** Spectrum decided to deploy servers that use DC rather than AC power. DC-powered systems not only use less power but also reduce maintenance costs because they do not require power adapters
- ▶ **Tools** Rackable Systems’ Scale Out Series servers; Microsoft’s Windows NT operating system; GeoCenter’s SeisUp seismic processing software; HP’s Exemplar servers
- ▶ **What’s next** Spectrum is considering adding DC-powered servers as its data center continues to grow

Source: eWEEK reporting

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