



# COMPUTE ENERGY SAVINGS WITH DATA CENTER SOLUTIONS

## PROJECT-AT-A-GLANCE

### Project Benefits

- Lowered energy use and costs
- Reduced management costs
- Increased reliability
- Saved space; new blade servers take up two racks instead of eight

### Equipment Installed

- Virtualization software
- Air conditioning system economizer
- Eight blade servers
- Storage Area Networks

### Financial Analysis

- \$94,515 project cost
- \$32,291 Energy Trust incentive
- \$10,817 estimated annual energy cost savings
- 191,762 estimated annual kWh saved

Everyone, from the corporate CEO to a person making a purchase online, depends on data centers. With the cost of energy to power data centers approaching the capital costs to purchase IT equipment, energy-efficiency improvements are an essential business decision. By implementing strategies such as better facility design and new technology, data center operators can accelerate equipment functions, increase profitability and lower their facilities' environmental impacts. Since 1997, Sterling Communications has taken care of its customers by making the Internet more productive for them. The company provides Voice over Internet Protocol, VoIP, phone systems, high-speed internet access, web hosting and colocation facilities for customers throughout the Pacific Northwest.

### **Sterling slices energy costs with blade servers**

In its first decade, Sterling acquired more servers as it added new customers and services. By 2008, the company was up to 50 servers and accompanying equipment, each drawing its own supply of power. With energy costs increasing, the company decided to explore new technology to improve efficiency, conserve energy and take advantage of incentives from Energy Trust.

By employing virtualization on new blade servers and storage area networks, SANs, Sterling consolidated its 50 separate servers into eight blade servers and dramatically reduced power consumption. The company further improved efficiency by installing an air-conditioning economizer. When the outside air is cooler than the desired inside temperature, the economizer enables Sterling to turn off the air conditioner and pull in the outside air for equipment cooling. These improvements qualified for more than \$32,000 in Energy Trust incentives and are saving the company an estimated 191,762 kWh annually. "We anticipated these benefits," said Bill Anderson, vice president of engineering, Sterling. "The project did exactly what we wanted it to do."

"It was a dollars and cents deal," Anderson explained. "The payback was long enough that it didn't make good business sense to do this on our own. But with Energy Trust incentives, it was a deal we couldn't pass up."

# VIRTUALIZATION SERVES UP SAVINGS FOR THE STATE

The State Data Center, SDC, delivers computing and networking infrastructure to state agencies through a shared services model. In 2006, 11 state agencies migrated their IT equipment to the new SDC building. By leveraging skills, resources and assets, state IT equipment can now be managed more wisely by reducing costs and increasing reliability. This has also opened up opportunities for greater energy efficiency.

While looking to consolidate equipment and improve the overall efficiency of the facility, SDC worked with Energy Trust and MSI System Integrators to explore alternatives. Among SDC's inherited systems was a UNIX-based server farm, vintage 2002, with about 125 servers, plus another 75 servers that used system virtualization to some degree. The solution was to lease two large servers and apply virtualization, trimming down the landscape to fewer servers operating at higher capacity. In the project's first year, SDC reduced the number of servers from 125 to about 20. By the end of the second year, they expect to reduce that number down to six. Fewer servers mean reduced energy consumption and lower costs for energy, software licensing and technical support. The data center now has 150 percent more computing capacity, plus the ability to expand, with minimal added energy use. While the new servers are large, they have enabled the UNIX environment to move from 60 racks to a projected three by the end of the year.

"Our relationship with Energy Trust was more valuable than just the incentive check," said Marshall Wells, manager, Mid Range Computing Services, SDC. "They helped connect us with the right people in the vending community so we could take advantage of technological advances suited to our situation."



**Energy Trust invested resources in understanding the UNIX environment, not just for us, but for other organizations in the future.**

Marshall Wells, manager  
Mid Range Computing Services  
State Data Center



To learn more about energy efficiency opportunities in your business, visit [www.energytrust.org](http://www.energytrust.org) or call **1.866.368.7878**.

## PROJECT-AT-A-GLANCE

### Project Benefits

- Reduced energy load and costs
- Increased reliability and capacity
- Less hardware takes up less space
- Lower software licensing costs
- Simplified technical support
- Expandable capacity
- Reduced cooling needs

### Equipment Installed

- Two servers
- Virtualization software

### Financial Analysis

- \$101,796 project cost
- \$22,400 Energy Trust incentive
- \$9,901 estimated annual energy cost savings
- 147,776 estimated annual kWh saved