Industry: *Energy/Utilities*

Customer name: *NewEnergy Associates*

Headline: *Virtualizing Data Center and Delivering 18:1 Server Consolidation*

Organizational Summary:
A subsidiary of Siemens Power Generation, NewEnergy Associates is a leading global provider of solutions for decision support and energy operations, with clients in electric and natural gas utilities, energy trading and retailing, government, power generation and project development, and transmission.

Business Issue:
o   Improve performance and accuracy with risk evaluation
o   Increase computational speed and throughput
o   Reduce data center footprint, power consumption, and heat
o   Improve disaster rollover and customer response times with virtual servers

Solution:
NewEnergy migrated its grid computing infrastructure to Sun Fire x64 servers running Solaris, and deployed Sun Java Workstations for state-of-the-art software development. NewEnergy also consolidated and virtualized legacy remote and back office x86 servers using Sun Fire x64 servers running VMware GSX server.

Results:
o   Saved 30% of capital budget for CPUs
o   Computations that took hours now take seconds or minutes
o   Consolidation ratios of 8:1 and 30% heat savings
o   Improved developer productivity
o   Improved system availability and reliability with integrated lights out management
o   Replaced 18 Intel servers with 1 Sun Fire X4200 server
o   Uses only 50% server capacity, reserving 50% for future growth

Sun Products/Services:
o   Sun Fire X4100 and X4200 Servers
o   Sun Java Workstation W2100z
o   Sun Fire V20z and V40z Servers
o   Java 2 Platform, Enterprise Edition (J2EE) technology
o   Sun N1 Grid Engine software
o   Solaris 10 Operating System

Success at a Glance:
NewEnergy develops simulations for energy clients to evaluate key business risk factors and manage risk in the face of rising fuel costs, environmental regulations, and competitive pressures. The company needed to increase its computational power with more servers and CPUs. "We ran into a boundary condition—not just compressing the rack space in the data center, but the heat and power consumption in the data center. You can't just add another air conditioner or add some more uninterrupted power supply (UPS) backup power. Quite often you have to buy a whole new system if you hit that boundary—and it's very, very expensive. We found that the Sun equipment ran much cooler, ran much, much faster, and the price/performance frankly astounded us."

The company's VectorGas application, which optimizes gas portfolio and delivery, uses the grid, as does its Monaco and Monte Carlo risk analysis, producing in seconds or minutes what used to take up to 30 hours. "The benefits we see in the Sun Fire x64 servers and the AMD Opteron processor are the amazing amount of computing power and the speed you get out of them, largely due to how fast they can marshal data from memory through their address architecture into CPUs," says Tisdale. "Incredibly, 55-minute transactions have gone sub-minute. We're able to save 30% of our capital budget for buying CPU needs at NewEnergy in our data center for the coming year."

In risk analysis, companies have previously looked at only one scenario as a base case, but today energy companies want a thousand or 10,000 scenarios. "NewEnergy software makes that possible, and Sun hardware makes it achievable," says Tisdale. "We recommend Sun technology highly because we know it works, we know it will deliver the required customer benefits, and we have great confidence in it."

NewEnergy also used Sun Fire x64 servers to consolidate legacy x86 servers in its Houston data center and in its Atlanta corporate data center and establish a virtual server environment for its accounting systems, customer license management systems and more. "To reduce maintenance, power and space costs, we literally consolidated our data center—which was equipped with 18 x86 servers, 24 CPUs, 22 power supplies, 44 hard drives, and 26GB of RAM, and consumed over 14,000 watts of power—with one Sun Fire X4200 server. And the hardest part is figuring out what to do with the other 50% of the X4200 server sitting in idle," says Tisdale. Since NewEnergy virtualized its HPC data center, the company has benefited from improved disaster rollover contingency processes, and can roll over excess back office server capacity to be consumed as grid computing resources. In addition, with the integrated Sun N1 System Manager, system availability and reliability are improved without increased data center staff.

Quote:
"We found that the Sun equipment ran much cooler, ran much, much faster, and the price/performance frankly astounded us."
— *Neal Tisdale, Vice President, Software Development, NewEnergy Associates*

Keywords (used for search): *IT services, energy, efficiency, scalability, cost-savings, grid computing, HPC, VMware consolidation, virtualization*