

MANAGEMENT

NYS Chief Information Office/Office for Technology

Desktop Energy Management, Phase I

Saving energy not only saves money, but is also good government. In response to the state's fiscal crisis and desire to have "green" solutions, CIO/OFT implemented a Desktop Energy Management initiative demonstrating how technology can be used to reduce operational costs of the PC environment without compromising usability or manageability of that environment.

CIO/OFT Customer Networking Solutions supports approximately 35,000 workstations that require electricity for approximately 7-8 hours each day but were powered up 24x7, wasting electricity 15-16 hours on business days. Project staff engaged NYS Energy Research and Development Authority (NYSERDA) and conducted a study of a group of workstations to baseline energy consumption, measure the energy efficiency of the solution and project savings.

CIO/OFT supports a network of approximately 35,000 desktop and notebook computers on behalf of customer agencies and internal staff. Customer agencies include: the Office of Child and Family Services, the Office of Temporary Disability and Assistance, the Department of Labor, portions of the Department of Health, the Office of the Medicaid Inspector General, and the Governor's Office of Regulatory Reform.

A number of factors, including a sustainable "Green IT" initiative and the need to plan for Microsoft's Windows 7, led to this initiative:

- The need to reduce the high costs of energy and consumption of electrical power. Each of the 35,000 workstations that managed by CIO/OFT requires electrical power while in use for approximately 7-8 hours per day, making use of electrical power very efficient. For the other 15-16 hours (24 hours on weekends and holidays), workstations remain powered up, wasting energy each day.
- The need to upgrade the current operating systems on workstations. The current operating system on the workstations is Microsoft XP, which has been determined to be in its end-of-life by the end of 2012. Limited support has been received since April 2009 but a move to the new Windows 7 operating system will be necessary.
- The need to distribute software upgrades and security patches without limitations (impacting customers during business hours). Software upgrades and security patches distributed by SCCM (Microsoft System Center Configuration Manager) are essential to the integrity of the workstations and overall security of the network environment for customers. However, due to the limitations of the current operating systems and some hardware, workstations remained powered-up overnight to receive the security patches, anti-virus updates and other software distributed off-hours.

During a three-week period, beginning on April 6, 2009 and ending on April 27, 2009, CIO/OFT engaged the NYS Energy Research and Development Authority (NYSERDA) to conduct an independent study to determine the cost savings of a sampled group of workstations in the customer networks. NYSEERDA conducted base-line measurements for each workstation in the sample. Subsequently, energy policies were deployed to the

same workstations and NYSERDA measured the power consumption. As a result of this proof-of-concept study, NYSERDA estimated an average annual cost savings of \$38.75 per computer.

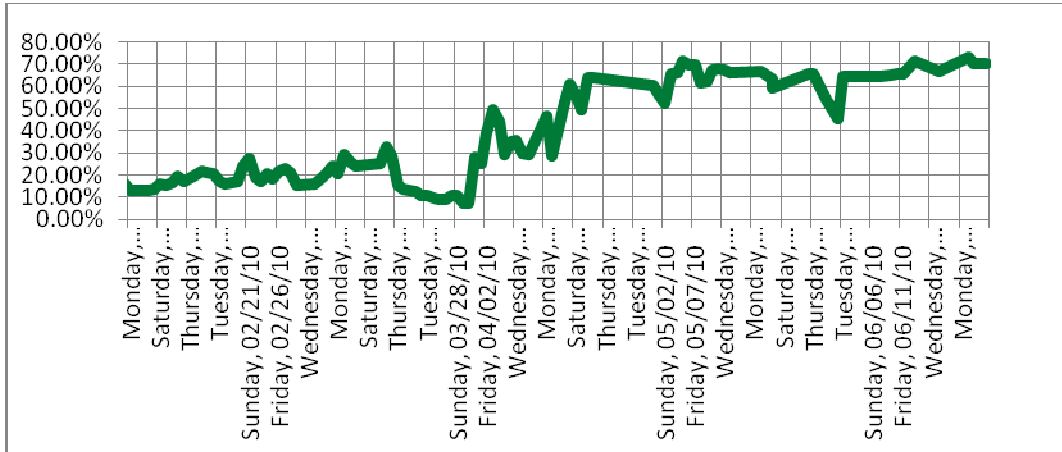
While the annual cost savings for all 35,000 workstations has been estimated by NYSERDA to be \$1,356,250, this represents only a first step in the overall plan. To significantly reduce annual costs, improve energy efficiencies and leverage the existing SCCM enterprise workstation management solution, CIO/OFT met with their six customer agencies outlining the results of the NYSERDA study and presenting the cost savings to the State. With full consent from the agencies involved, the team implemented the following solution, in a phased approach, after completing extensive application testing:

- Immediately implement Energy Star Policy and Wake on LAN (WoL) to all workstations. This involved changes to the data communications environment at 850 sites to accommodate WoL transactions. This effort involved a full rollout of (the same) modifications to the workstations that was performed for the NYSERDA study. This was completed for most of the workstations using the existing hardware and operating systems; leveraging new hardware solutions, such as vPro, as replacement workstations are installed. Energy Star and WoL allowed for the reduction of electrical consumption across the State during off-work hours.
- Upgrade all workstations from the Windows XP operating system to Windows 7. This step provided two primary benefits. Microsoft announced the Windows XP operating system was in its end-of-life as of April 2009. This means that while support for the embedded base would continue, Microsoft no longer pursued upgrades to XP and all support would end by 2012. Therefore, CIO/OFT needed to upgrade to meet our mission of operating a best-in-class IT infrastructure. In addition, the Windows 7 operating system further exploits the Energy Star and WoL rollout, providing advanced, granular energy power plans to centrally optimize the energy management of each workstation.

Implementation of the Desktop Energy Management initiative required collaboration with six State agencies. To date, power management is supported on 70% of the workstation population, resulting in an annual savings of \$834,000/year, and leverages existing enterprise services without the need to purchase any third-party software. Of the remaining workstations, 88% are unable to accommodate power management due to the age of the PC's. Once these PC's are replaced, Desktop Energy Management will be applied.

An additional benefit to the project is more efficient use of SCCM for software patches, distribution of security and anti-virus signatures and performing other tasks without interfering with user's during the work day.

Percentage of Machines Hibernating



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