Absolute Manage: Client Management

Intelligent, Automated, Cross-Platform Management of All Your Computers

The Benefits of Power Management

Typical Workplace Computer Usage

Office equipment including personal computers is one of the fastest growing consumers of electricity in the commercial sector. The U.S. Department of Energy estimates that computers account for approximately 7% of the electricity used in offices[1]. Most PCs are often idle for much of the time that they are on. The average PC is only in active use 4 hours each work day and idle for another 5.5 hours. Even though most modern office computers are capable of down shifting into an energy saving mode when idle, only a small fraction of them are actually configured to do so. By some estimates 30-40% of office computers are left fully powered on outside of business hours[2].

The Rising Cost of Electricity

With the accelerating cost of electricity within recent years, can your organization afford to not implement a power management plan? Consider the many financial, social, and ecological reasons for doing so. The following are average electrical rates for the commercial sector within the last few years according to the Department of Energy.

Recent electricity prices for the commercial sector[3]:

	Rate (cents/kWh)	% Increase
2006	9.46	9.1%
2005	8.67	6.3%
2004	8.16	2%
2003	8	1.2%
2002	7.9	

The Federal Energy Regulatory Commission (FERC) points to a universal trend of significantly higher power prices for the foreseeable future due to increased fuel costs and increased costs for new construction[4].

Reduce Costs by Conserving Energy

By implementing an environmentally friendly energy saving plan your enterprise can greatly reduce its power usage. This reduces electrical costs on your corporate bottom line and allows your organization to realize significant savings on its energy bills. These savings are further maximized by enforcing an energy saving policy to reduce electricity usage by idle computers and their monitors during peak hours when utility rates are at their highest.

Wondering how much your organization can cut its power usage? Here's a rough estimate:

If between 30-40% of computers are left on outside of business hours, you could reduce your energy usage by 35% if these machines were off all of the time. However, there is most likely an end user using this machine during work hours. Assuming an 8-hour workday with an hour for lunch, these machines are left on unnecessarily for 123 out of 168 hours (73% of the time) in a normal week. According to the EPA, putting a computer and monitor to sleep can cut power usage from 270W to 60W (78% reduction).

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[1] http://www1.eere.energy.gov/buildings/commercial/appliances.html
[2] http://it.med.miami.edu/x1159.xml
[3] http://www.eia.doe.gov/cneaf/electricity/esr/backissues.html
[4] http://www.ferc.gov/legal/staff-reports/06-19-08-cost-electric.pdf

On average, all of these energy usage reductions together (35% X 73% X 78%) result in a 20% decrease in energy usage by personal computers in your enterprise if you enforced a power management policy on just these machines that have no power management implemented. This doesn't even take into account the 5.5 hours they are likely idle during the workday or other savings from improved power management on other workstations that already have some power management enabled.

Calculate potential savings for your enterprise with one of the following calculators:

- Energy Star Savings Calculator:
  http://www.energystar.gov/ia/products/power_mgt/LowCarbonITSavingsCalc.xls
- Cadmus Group Savings Calculator:
  http://pmdb.cadmusdev.com/powermanagement/quickCalc.html

Potential Barriers to Adoption of Power Management

With the advent of Windows 2000 and Mac OS X, the energy saving features included in PCs and Macs have matured and become stable enough that anyone can use them without any adverse effects on productivity.

One frequent concern voiced by telecommuters is that they need to remotely access their work desktops from home. In this case activating power management on just the monitor alone could save $10-35/monitor annually[5]. Educating end-users to turn off their monitors when not in use could boost these savings even further.

Many utilities available for enabling these power saving features must be run locally by the end-user, which can be a large barrier to implementation. A U.S. Department of Energy funded study estimates that organizations with 500 or more computers would benefit most from a centralized approach for managing these settings since this is the point at which the cost savings begin to overtake the upfront costs to evaluate and install software for centrally implementing the energy policy.

Lawrence Berkley National Labs found that over 80 percent of users disable power management settings within 90 days[6]. This is another reason you need a solution that will allow you to turn them back on remotely without user intervention.

Another roadblock is the lack of incentive for IT departments to implement energy-saving policies since their main goal is end-user satisfaction and not necessarily saving money. However, this is beginning to change as CIOs and CFOs are starting to talk to each other to find out ways to save the company money and improve the corporate balance sheet, thus keeping it competitive.

Energy Savings Plans Pay for Themselves

The EPA's Energy Star program estimates that you can save between $25 and $75 annually per computer with power management features[7]. The maximum savings of $75 is far more than the cost of a Absolute® Manage (formerly LANrev) client seat. An Absolute Manage purchase could easily pay for itself within the first year if you used its power management features to implement your new energy policy.

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[5] http://www.epa.gov/region2/performancetrack/presentations/computer_power_management.pdf
[6] http://enduse.lbl.gov/info/LBNL-53729.pdf
[7] http://www.energystar.gov/powermanagement

Unlike many other products, Absolute Manage power management is fully cross-platform and can manage energy settings for both your Windows and Macintosh workstations. Absolute Manage not only tells you what the current power management settings are on client machines, but also lets you assign multiple power saving profiles to clients. Configure profiles based on power connectivity that trigger different power saving actions after a specified period of inactivity or at a certain day/time. The most energy efficient profile is always enforced, ensuring maximum energy savings. Profiles can even depend on whether a user is logged in or not.

You can also take advantage of the other useful client management features built into Absolute Manage at no additional cost. The cost of the Absolute Manage client has already been recovered by your new energy conservation policy. In fact, many enterprises are able to justify and budget for green products more easily than traditional IT tools. Even the federal government has recognized the importance of conserving electricity by issuing Executive Order 13423[8], which requires federal agencies to activate Energy Star sleep features on computers and monitors.

Debunking Misconceptions About Power Management

There are many myths about computers' energy-saving features that need to be addressed before end users and even some IT staff will become comfortable with your new power management policy. Let's sort out the fiction from fact below.

1. **Power cycling computers reduces their lifespan** – Putting machines on standby or to sleep actually lengthens their lifespan by reducing the wear and tear resulting from the ambient heat generated when they are powered on, as well as preventing moving parts such as CPU and power supply fans from wearing out as quickly.
2. **Stopping and starting computers uses up a lot of energy** – While there is a small surge when you wake up a computer from sleep or standby, it's insignificant compared to the amount of energy wasted if the machine were left on continuously.
3. **Screen savers are an energy saving feature** – In fact, they may actually use even more energy than a static display. Screen savers were originally developed to prevent burn-in on CRT monitors of static images and not to reduce power consumption. It should be noted that screen savers are mostly an obsolete technology whose time has passed since LCD monitors do not suffer from screen burn-in.

Lesser-Known Benefits of Green Power Saving Policies

Having computers sleep or hibernate enhances computer security by reducing the chance of confidential data being accidentally exposed to unauthorized persons passing by unattended computers. Additionally the sleep or standby feature can be configured to require a username and password to unlock a computer upon wake-up to further increase security.

Half of the energy used by a computer is wasted as heat. Putting managed clients and their monitors to sleep or on standby when not in use can reduce your air conditioning usage by $5-10/computer annually. In warmer climates the savings can be as high as $10-25/computer. This translates to approximately a 15% and 30% reduction in air conditioning bills[9].

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[8] http://ofee.gov/eo/eo13423_main.asp
[9] http://www.epa.gov/region2/performancetrack/presentations/computer_power_management.pdf

Many utility companies also offer rebates for companies that implement energy saving measures. Following a power management program to reduce energy usage may qualify your organization for utility company rebates or discounts.

How Power Management Works

Below is a typical listing of computer and monitor power usage from the U.S. Department of Energy. Power management savings come from powering down the computer or monitor to sleep or hibernate levels when inactive.

Typical computer and monitor power usage[10]:

	Active	Standby/Sleep	% Usage Reduction
Computer	120W	30W	75%
Monitor	150W	30W	80%

The EPA recommends putting monitors to sleep after 5-20 minutes of idle time and setting computers to standby/sleep or hibernate after 30-60 minutes of inactivity[11]. Power management in a monitor usually means blanking it by turning off all its pixels. Standby/sleep for computers typically slows the CPU clock rate, spins down the hard disk, and stops the power supply fan. The advantage of putting devices to sleep instead of shutting them down is it's faster to restore them to a fully functional state than if they were completely powered off. End-users might actually welcome power management if they understood that it saves the company money and lets them get back to work faster than if their computer was completely turned off. To increase your savings even further remind your end users to turn off their monitors when not in use since it only takes a second or two to turn them back on.

Conclusion

Many enterprises have recently come to recognize that implementing a power management program not only benefits the environment but also their balance sheets. Make the right choice and join the EPA's Energy Star program and the Climate Savers Smart Computing initiative in reducing waste, energy usage, and pollution to protect the environment. It certainly doesn't hurt that implementing an energy management plan also saves your company money and can even pay for your Absolute Manage client management software within a year. Reducing your organization's carbon footprint will help slow down global warming which has been widely acknowledged will have a major impact on businesses in the future. It's an issue with which society, governments, and businesses all need to deal with. This is even more imperative with possible government regulation of carbon emissions looming in the near future. Isn't reducing your company's power usage an easier and better alternative than having to purchase carbon offsets. Eventually every company will likely have to implement a program so why not get a head start on yours before the competition beats you to it. Having a power management plan not only improves the bottom line but also improves your organization's environmental credentials and the public's impression. Even now many investors and customers already take into account a company's carbon profile when deciding whether or not to invest in or do business with it. In the court of public opinion it's always good to be a first class corporate citizen that cares about the planet and its future.

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[10] http://www.eere.energy.gov/consumer/your_home/appliances/index.cfm/mytopic=10040
[11] http://www.epa.gov/region2/performancetrack/presentations/computer_power_management.pdf

About Absolute Software

Absolute Software Corporation is the leader in Computer Theft Recovery, Data Protection and Secure Asset Tracking® solutions. Absolute Software provides organizations and consumers with solutions in the areas of regulatory compliance, data protection and theft recovery. The Company's Computrace® software is embedded in the firmware of computers by global leaders, including Dell, Fujitsu, MPC, General Dynamics Itronix HP, Lenovo, Motion, Panasonic and Toshiba, and the Company has reselling partnerships with these OEMs and others, including Apple. For more information about Absolute Software and Computrace, visit www.absolute.com or blog.absolute.com.

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