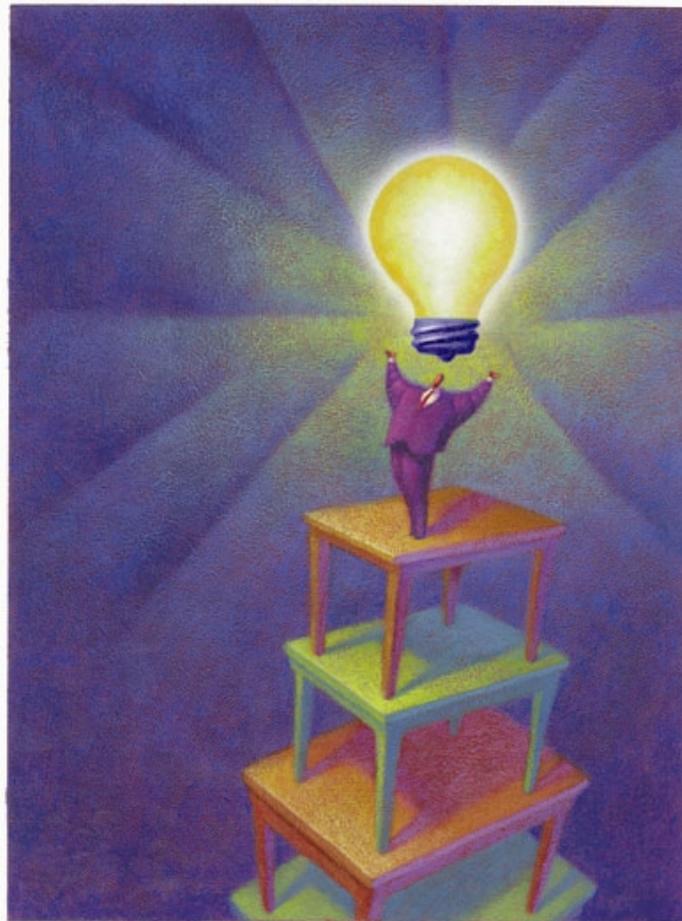


What You Need to Know When Considering Desktop Energy Management



Autonomic Software, Inc
319 Diablo Road, Suite 220
Danville, California 94526
925-820-8020
www.autonomic-software.com

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What You Need to Know About Desktop Energy Management

As a world economic leader America is completely dependent on the generation and management of information. This requires an increasing amount of electrical power, and meeting the growing energy need of our digital age places an enormous responsibility on power companies across the country.

Already operating at near maximum output, power companies are straining to deliver the energy their customers need. A power crisis looms on the horizon, and most IT professionals do not have the experience, information or tools to anticipate or deal with the changes such a crisis may bring

Reducing power consumption on a single desktop computer may not result in significant savings. But, the potential savings from five hundred PCs, or a thousand - or ten thousand - can be tremendous. Combined with the rebate programs offered by many regional power companies, power management is the key to unlocking savings no company can ignore.

There is much to consider when looking into desktop energy management solutions. Choosing the right software product for your company is imperative. To help you make that choice we have compiled this booklet. It is designed to give you an overview of power management for desktops, explain what is involved in installing a power management solution, and provide an array of relevant information not otherwise easily available.

"If all office computers and monitors in the United States were set to sleep when not being used, the country could save more than 44 billion kWh or \$4 billion worth of electricity annually and prevent the greenhouse gas emissions equivalent to those of approximately 5 million cars each year."

Climatesaverscomputing.org

What are the Options?

1. **Do Nothing.** As you might guess, this kind of “head-in-the-sand” tactic will gain nothing. Many companies appear to be taking this approach, ignoring the coming legislative burden, the potential costs savings and the environmental responsibilities every company bears. The better solution is to meet the challenge now - reaping the benefits and avoiding an expensive “catch up” game when you’re forced to act. Cutting energy costs and building a more cost-effective IT department will put your company ahead of the competition. Isn’t that were you want to be?
2. **Make it the users’ problem:** Many companies have already enacted written policies making it the responsibility of every desktop user to either set the computers power management settings or manually turn off their system when leaving for the day. In the vast majority of cases, this simply doesn’t work because workers have no incentive to comply. Additionally, a desktop PC is turned off if cannot be remotely updated, patched or backed up.
3. **Put someone in charge:** Tasking someone with the job of going to every desktop at the end of day and making sure they are turned off or unplugged is a mind numbing job. With this method maintenance, patching and back-up cannot be accomplished, unless that person goes around and turns the computers *back on*.
4. **Utilize a centralized power management:** Companies of all sizes are beginning to look for a software solution that will automatically turn off desktops when they are not in use. If that solution includes a “Wake-on-LAN” feature, the IT manager can instantly waken those desktops and perform maintenance, patches and backups. They can also scan desktops to audit software licenses - remove

unused or illegal software and install needed programs. A central console clearly shows when computers are scheduled to shut down, how much power is being used and how much money is being saved per company, group or desktop. Tasks can be scheduled, started and completed with out human intervention. If a desktop user changes the power settings on their local machine, the centralized power manager can be set automatically return them to the settings prescribed by approved company policy.

There are Three Types of Centralized Power Software Management Solutions

1. The first group is made up of vendors that provide software solutions targeted solely at desktop energy management.
2. The second group of vendors provides desktop energy management solutions as part of a larger solution. For example, Autonomic Software's ANSA Platinum offers:
 - a. Power Management
 - b. Asset Management
 - c. Granular Reporting
 - d. Configuration Management
 - e. Software Deployment
 - f. Patch Management

Something to Remember: *It is important to note that ANSA Platinum Power Management and ANSA Platinum Asset Management are also available separately*

3. A very small group of vendors provide a hardware solution to manage power conservation. This requires that additional hardware be added to the network.

Key Points to Remember

- Powering down desktops at the end of the day can save on energy costs
- Centralized power management software can take some of the guesswork out of managing desktop power consumption
- Outfit users according to what they need, not what they want, to avoid overpowered, resource-hungry desktops.

Why Centralized Desktop Power Management?

Centralized Desktop Power Management (CDPM) means that desktop power conservation is managed by the IT department from a central location and can be managed by one IT person. The solution is installed onto a server and if it has agents the agents are deployed to each desktop. Whichever solution a company chooses they will want it to be simple to install, simple to use, and must provide instant information regarding energy and cost savings.

With a CDPM solution, an IT person creates a power management policy. This policy sets the times for when a desktop is to turn off, go to sleep, or hibernate. The bookkeeping department, for instance, may have a "Turn on all PCs" command set for 7:45AM, a "Turn off all PCs" command set for 5:15 PM, and an "All Off" command for weekends and holidays. Different work groups - and even individuals - can have different power conservation settings.

Reports give IT and C-level executives exactly power use data by group, department, or campus. These reports also detail power savings in dollars, and show IT where they are in the goal to reach 100% full desktop conservation. In addition, asset reports give a complete hardware and software inventory of every desktop asset.

CDPM solutions - such as ANSA Platinum - also enable the IT group to wake up desktop units to conduct maintenance, including the installation of security patches, updates or hot fixes. They can run inventory scans to determine if all installed software is licensed and being used as intended. (Some of these solutions can also save tremendous amounts of money in licensing costs by uninstalling software that is not in use or may have been installed twice on a single machine.) When the machines are awakened for maintenance, IT can also scan and remove spyware, viruses and other dangerous programs, as well as perform disk defragmentation

and other maintenance and update tasks. Once these are completed, the desktop systems can automatically be powered off.

Centralized Power Management at a glance:

- Managed by IT rather than desktop users
- Policy driven
- Enforces conservation settings without impacting user productivity
- Remotely “wake up” computers for IT maintenance and support needs
- Accurate, instant cost and energy savings reports
- Some centralized power management solutions allow organizations to baseline their current power usage within hours and start reducing electricity usage in days
- Wake-on-LAN and flexible opt-in capabilities allow organizations to meet the needs of IT staff and end-users while still reducing overall energy usage by as much as 50%
- Easy-to-read reports equate electricity savings to “trees planted” or “cars taken off the road” or “carbon footprint reduced by xx tons”.

Something to Remember - Your customers win, too, since you need not pass increased energy costs on via price increases.

Basic Parts of a Centralized Desktop Power Management Solution

- Software Agent (optional)
- Central consol (Web-based optional)
- Asset Management (hardware and software)*
- Wake-on-LAN - for performing machine maintenance
- Reporting by location
- Baseline measurement for current energy usage



- Savings roll-up across the enterprise
- Prompt for password when computer comes off standby
- Desktop - Laptop differentiation
- AC or DC power recognition
- The ability to reset power settings if user changes them
- Policy driven power management of distributed computers
- Scalable from one computer to the entire global enterprise
- Fine-grained controls for hibernation/ standby
- Subsystem-only shut down
- Control policies targets groups, domains, etc.
- Centralized, graphical user interface
- Dashboard-driven policy setting
- Granular reporting

Something to Remember - Not all Centralized Desktop Power Management solutions include all of the features and functions.

***Allows you to see a Complete Picture of Each Desktop**

Utilization of Asset Inventory Software is critical to knowing which desktops are on the network, whether a desktop unit is a desktop or laptop, and the exact power settings of each. Asset Management can tell you if the user has changed the power settings, if you have a desktop unit that *never* sleeps, or if a desktop wakes up before it is supposed to. An inventory asset scan should also provide your IT dept with the complete picture of what is on each desktop.

Asset Management also allows you to watch for unused equipment or software applications. Asset scans will also tell you if a desktop is utilizing its assigned hardware and software effectively. This asset inventory information will help you determine if each desktop is properly configured.* **See page 12.**

The Challenges

- A mix of desktop environments - Microsoft, Mac, Linux
- Scalability- groups, sections, locations or multi-national operations
- 32 or 64 bit machines
- Configuration drift
- Manageability
- Scalability
- Incompatible security software
- Defining a comprehensive power conservation policy and distribution program
- Enforcement of power conservation policies
- Getting everyone on-board

The Opportunities

- The adoption of a centralized desktop energy management solution
- Drastic reduction in energy costs
- Controlled desktop energy usage
- Wake-on-LAN - Perform maintenance, patching, software upgrades and back-ups and put the desktop back to sleep.
- Cut CO2 emissions - help slow global warming
- Earn Carbon Credits
- Take a position of 'Green leadership' in the local community and industry

The Benefits

- Lower power bills - less power used
- Desktops maintenance performed in off time
- Central IT management is more efficient
- IT department will look very good to C level executives with direct contributions to the bottom line
- Company can become more competitive
- Workers feel good about the company's energy saving efforts and cooperate with other "Green" initiatives

What Equipment is Involved?

Centralized power management requires:

- A Server (most often a Microsoft Server), to be home to the web-based monitor. The server houses the solution that includes a web-based-console, the controller and the repository database.
- The agent (if an agent-based solution is chosen) resides on the desktop.

What Kind of Savings Can I Expect With 1000 Desktops?

ENERGY STAR Computer Power Management Savings Calculator						
Savings Estimate						
	Dollars Saved Annually	3-Year Totals				
		\$ Savings	Pollution Prevented: CO2 (in tons)	Equivalent to:		
				Acres of trees planted	Number of cars removed	
Savings from ENERGY STAR qualified monitors vs. standard monitors:	9,356.2	\$1,146.14	\$3,180.64	21.5	4.44	3.58
Savings from ENERGY STAR qualified notebooks vs. standard notebooks:	-	\$0.00	\$0.00	-	-	-
Savings from ENERGY STAR qualified desktops vs. standard desktops:	43,839.2	\$5,370.30	\$14,903.08	100.9	20.81	16.77
Total savings from ENERGY STAR qualified monitors & computers:	53,195.4	\$6,516.44	\$18,083.72	122.5	25.25	20.35
Savings from monitors going into sleep mode:	156,821.8	\$19,210.67	\$53,311.37	361.1	74.45	60.00
Savings from notebook displays going into sleep mode:	-	\$0.00	\$0.00	-	-	-
<i>Total savings from monitor sleep mode:</i>	156,821.8	\$19,210.67	\$53,311.37	361.1	74.45	60.00
Savings from desktops going into system standby or hibernate mode:	315,734.3	\$38,677.45	\$107,333.45	727.0	149.89	120.79
Savings from notebooks going into system standby or hibernate mode:	-	\$0.00	\$0.00	-	-	-
<i>Total savings from system standby and hibernate mode:</i>	315,734.3	\$38,677.45	\$107,333.45	727.0	149.89	120.79
Total savings from monitor and computer sleep settings:	472,556.1	\$57,888.13	\$160,644.82	1,088.1	224.34	180.79
Total Savings:	525,751.6	\$64,404.6	\$173,723.5	1,210.5	249.60	201.14

Other Things You May Need to Know

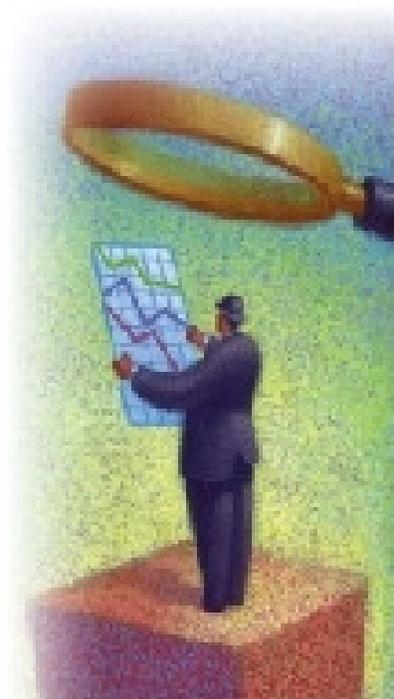
The Five Energy States of a Desktop and Their Energy Use

- **Sleep**- An energy-saving mode of operation in which all unnecessary components are shut down

Hibernate - (S4) Drops power to 1-3 W
Wakes up in 20+ seconds
Saves work in the event of power loss
Saves 40-60 per PC annually

- **System Standby** - (S3) Drops power to 1-3 W
Wakes up in seconds - Saves \$40-60 per PC annually does not write your RAM memory image to disk. Standby instead turns all your hardware off *except* your RAM.
- **Turn off hard disks** - Saves very little
- **Shut-down** - Complete Power down

Note: Definitions of these energy states are found in the glossary located at the back of this document.



Why Can't I Use the Free Group Policy Object ("GPO") for Setting Power Policies?

You can. The table below illustrates the differences between GPO and a full featured Power Manager like ANSA Platinum Power Manager.

Feature	Group Policy Object Y/N	ANSA Power Manager Y/N
Windows 2000	N	Y
XP	N	Y
Vista	Y	Y
Windows 2008	Y	Y
Windows 7	Y	Y
Average Savings Calculator	N	Y
Group Power Roles	Y*	Y
MAC	N	Y
Hardware Asset Management	N	Y
Software Asset Management	N	Y
Control Power Settings	Y*	Y
Eligible for Power Company Rebates	N	Y
Qualifies for Tax Incentives and Carbon Trading Programs	N	Y
Wake-on-LAN	Y	Y
Scalable	Y	Y
Centralized Control	Y*	Y
Granular reporting	N	Y
* Not available on Windows 2000 and XP		

What is Right Sizing?

Users want a high-end desktop with the most powerful mother boards complete with the newest, hottest chips available and the most RAM possible, but unless their responsibilities and productivity justify the expenditure, this technological 'overkill' is a waste of IT budget. A desktop's electricity footprint can be reduced by right-sizing the desktop hardware and software. Every watt reduced at the CPU saves an additional watt or more on the fans, power supplies, power distribution units,

uninterruptible power supplies and the HVAC systems.

Agent or Agent-less?

An intelligent agent is a piece of software that acts on behalf of a user or another software program in a beneficial relationship. Such "action on behalf of" implies the authority to decide when and if a particular action is appropriate. The idea is that agents are not strictly invoked for a task, but activate themselves.

Intelligent agents are related to some aspect of Artificial Intelligence (such as learning and reasoning), *autonomous* agents (which are usually capable of modifying the way in which they achieve their objectives), *distributed* agents (which are executed on physically distinct computers), *multi-agent systems* (distributed agents that do not have the capabilities to achieve an objective alone and thus must communicate), and *mobile* agents (agents that can relocate their execution onto different processors).

The bottom line is that there are many IT tasks that lend themselves to the use of different types of agents. Some agents do a better job than agent-less software...and there are other tasks that require an agent-less environment. Intelligent agents are the most capable and are used in some power management solutions to assess the state of the machine and its power settings, set power settings to meet company policies, and enforce those settings. (This means that if a user changes the settings the agent will know it and immediately return the power settings to those determined by IT policy.)

Industry Myths

Powering off PCs will Harm Disks



Some still debate whether it is better to turn off equipment at night or leave it running. One argument was that it might be better to leave the hard drives spinning than to have them started and stopped on a daily basis.

Fears about increased failure rates from starts and stops are no longer an issue.

Modern computers have the *Energy Star*[®] feature built in, and these components are designed to turn off under the control of the operating system, so turning off modern computers does not shorten their lifetime. In fact, turning them off can even extend the lifetime of modern computer.

Modern computers are designed to handle 40,000 on-off cycles before failure, and the average desktop or laptop is unlikely to approach that number, even after 5-7 years. Some studies indicate it would require on-off cycling every five minutes to harm a hard drive.

Source: Client Savers Computing - <http://www.climatesaverscomputing.org/>

Source: Rocky Mountain Institute Home Energy Brief #7 Computers and Peripherals.

Standby and Hibernation

Hibernation writes a complete image of your computer's RAM memory to the hard drive, and then completely powers down your machine. When you reboot after hibernating, the boot loader simply reloads the memory image into RAM and reinitializes some hardware.

A near-complete picture of what your machine is doing at any point in time is contained in your

system's RAM. So, simply saving and restoring your RAM (along with a few other details) should be enough to completely save and restore what you were doing across a complete shutdown of your computer. One way that people free up that disk space is to turn off hibernation.

Standby does not write your RAM memory image to disk. Standby instead turns all your hardware off *except* your RAM. Thus resuming from standby is often faster than resuming from hibernation, as the memory image does not have to be loaded from disk - it's still in memory.

The downside to standby, of course, is that your machine is not completely off. Some power is still required to maintain RAM. Some devices, particularly network cards, can wake up periodically while on standby.

If a machine's battery drops too low while it's on standby, Windows will either put the machine in hibernation, if that's enabled, or attempt to cleanly shut down so as not to lose any work in progress.

Both standby and hibernate have been problematic at times in the past. Sometimes devices won't come back up properly after one or the other, and sometimes the machine won't resume at all. Standby in particular requires not only Windows support, but cooperation between the computer's BIOS and the various device drivers that may be impacted by a loss or partial loss of power.

The good news is that for the most part, standby and hibernate tend to work relatively well with current operating systems and computers.

From ASK Leo, by Leo Notenboom- ask-leo.com/

System Standby and Hibernate can Render a Computer Unstable, Causing System Crashes, or Preventing it From Waking.

While problematic in early versions of Windows, today's sleep features almost never cause system crashes or keep computers from waking. Machines running Windows 2000, XP, Vista, and Mac operating systems should not experience these problems. Energy Star Web site

<http://www.energystar.gov/index.cfm?c=home.index>

Computers and Monitors use More Energy With Power Management Activated due to Power Surges When Cycling on and off.

In reality, the small surge of power created when some devices are turned on is vastly smaller than the energy used by running the device when it is not needed. *Information Technology Services, University of Hawaii*

All you Need to Manage Power is Already on the Desktop

Technically, this is true. If the IT department wanted to handle power conservation this way they would have to go from desktop to desktop to set and reset the power settings. If you only have five desktops this procedure might work, but what if your organization had 700, or 1000? Managing power consumption this way would be impossible. If desktops were managed this way there would be no way to performance maintenance during down time... and you most certainly do not want to perform maintenance during the users work time.

Energy Star Web Site

<http://www.energystar.gov/index.cfm?c=home.index>

You can use Your Screen-saver When Managing a Desktop's Energy Usage

Don't use a screen saver. Screen savers are not necessary on modern monitors and studies show they actually consume more energy than allowing the monitor to dim when it's not in use.

Client Savers Computing

<http://www.climatesaverscomputing.org>

A User Cannot use Their Computer Remotely if it is Powered Down

A user cannot use their computer remotely if it is powered down. If you cannot get to the operating system you cannot use the computer. Exception - When wake-on-LAN is used the computer is remotely awakened and is fully usable.

Ed Mallin - Autonomic Software Technical Service

If all computers sold in the United States meet the ENERGY STAR requirements, the savings in energy costs will grow to more than \$2 billion each year and greenhouse gas emissions will be reduced by the equivalent of greenhouse gas.

Energy Star Web site

Additional Information

There are government and independent industry agencies that can provide a great deal of information and help. Below are the two most prominent:

Energy Star

ENERGY STAR is a government-backed program helping businesses and individuals protect the environment through superior **energy** efficiency.

Office Equipment (This includes Desktops)
If every home office product purchased in the U.S. this year were ENERGY STAR qualified, Americans would save \$200 million in annual energy costs while preventing almost 3 billion pounds of greenhouse gases - equivalent to the emissions of 250,000 cars.

Office Equipment that has earned the ENERGY STAR helps save energy through special energy-efficient designs, which allow them to use less energy to perform regular tasks, and automatically enter a low-power mode when not in use.

Most office equipment is left on for 24 hours a day, making energy-efficient design and power management features important for saving energy and reducing greenhouse gas emissions that contribute to global warming. In addition to reducing power use for the products themselves, ENERGY STAR qualified office products feature energy-efficient designs for accessories. So, products sold with an external power adapter, cordless handset, or digital front-end, must have accessories which meet the ENERGY STAR specifications for External Power Supplies (EPS), Telephony, or Computers. These requirements ensure that the ENERGY STAR is represented only on the market's most energy-efficient products.

From the Energy Star web site.

www.energystar.gov/

Climate Savers Computing

Started by Google and Intel in 2007, the Climate Savers Computing Initiative is a nonprofit group of eco-conscious consumers, businesses and conservation organizations. The Initiative was started in the spirit of WWF's Climate Savers program which has mobilized over a dozen companies since 1999 to cut carbon dioxide emissions, demonstrating that reducing emissions is good business. Our goal is to promote development, deployment and adoption of smart technologies that can both improve the efficiency of a computer's power delivery and reduce the energy consumed when the computer is in an inactive state.

As participants in the Climate Savers Computing Initiative, computer and component manufacturers commit to producing products that meet specified power-efficiency targets, and corporate participants commit to purchasing power-efficient computing products.

<http://www.climatesaverscomputing.org>

Energy Provider Rebates

Many power companies across the United States offers rebates to companies who institute a power management conservation solution that meets the requirements of that individual power company. The one time rebate can be up to \$15 per desktop. Others rebate a certain amount per Kilowatt saved.

If power companies offer rebates they often list on their web sites approved venders whose solutions meets the company's strict product requirements.

You may ask why the power companies are willing to give your company money to save power. Utility companies are under increased pressure from the federal government to curb the increase of energy output. While many utility companies are at their maximum output today...they need to help people to conserve so they have enough energy for a growing community.

Rebates are Good Business for Power Companies.

Things to Remember About Energy Rebates

- Most energy providers do not include laptops in their rebate programs.
- The only desktops to qualify are those at one site. If your organization has remote locations, each location will have to be qualified for a power conservation rebate.
- You have to use an approved vendor's solution to get the rebate.
- Your power company is happy to tell you what their rebate program is.

Virtual PCs now or in the Future?

There is a lot of buzz in the industry about using virtual machines instead of the traditional desktop. That is, creating a virtual desktop on a server and placing a monitor on a user's desk for machine access. The user logs into the server in order to use their own desktop. To the older people out there this sounds familiar. In the deep computer past a user had only a terminal on his desk. This terminal was used to log into a machine, (usually a mainframe or mini-computer) that was in a do-not-enter cold room somewhere in the bowels of the company.

Virtual machines could be taking us back into the past rather than into a lower energy future.

The big question in virtual machines verses desktops is the energy that is needed to run the air conditioning that is necessary to keep the racks and racks of blade servers cool enough to work. Early users have reported a reduction in energy costs because so many machines are on one server. Time will provide more information on virtual machines and their use in Green Data Centers.

Please Note: Virtual machines still need the same care and maintenance that a desktop may need, except the dusting: such as patching, asset

management, configuration management, reports, and enforcement of governmental and corporate policies. Out-of-sight can not be out-of mind.

If your company is considering virtual machines keep these things in mind:

- The server that houses the virtual machines is not turned off, ever, so energy is always on.
- Power distribution companies whom pay energy rebates only pay rebates on desktops not servers.
- Find out what the increased air condition costs will be

Glossary

Agent- A software agent is a piece of software that acts for a user or other program in beneficial relationship. Such "action on behalf of" implies the authority to decide which (and if) action is appropriate. The idea is that agents are not strictly invoked for a task, but activate themselves.

Related and derived concepts include *Intelligent agents* (in particular exhibiting some aspect of Artificial Intelligence, such as learning and reasoning), *autonomous* agents (capable of modifying the way in which they achieve their objectives), *distributed* agents (being executed on physically distinct computers), *multi-agent systems* (distributed agents that do not have the capabilities to achieve an objective alone and thus must communicate), and *mobile* agents (agents that can relocate their execution onto different processors).

Carbon Credits - Carbon credits are a key component of national and international attempts to mitigate the growth in concentrations of greenhouse gases (GHGs). One Carbon Credit is equal to one ton of Carbon. Carbon trading is an application of an emissions trading approach. Greenhouse gas emissions are capped and then markets are used to allocate the emissions among the group of regulated sources. The idea is to allow market mechanisms to drive industrial and commercial processes in the direction of low emissions or less "carbon intensive" approaches than are used when there is no cost to emitting carbon dioxide and other GHGs into the atmosphere. Since GHG mitigation projects generate credits, this approach can be used to finance carbon reduction schemes between trading partners and around the world.

CPU - The Central Processing Unit (CPU) is responsible for interpreting and executing most of the commands from the computer's hardware and software. It is often called the "brains" of the computer. There are generally four parts to a desktop computer (1) the Monitor (what you look at.) (2) The box that we usually call the computer is the CPU. (3) The keyboard and (4) mouse if you use one.

Endpoint - Can be desktops, printers, servers, laptops logged into the network.

Energy Policy - Energy policy is the manner in which a given entity (often governmental or corporation) has decided to address issues of energy development including energy production, distribution and consumption. The attributes of energy policy may include legislation, international treaties, incentives to investment, guidelines for energy conservation, and taxation.

Hibernation - Hibernation was created to give the false impression of quick “boot” times for users who wanted to start up their computers faster. Hibernation is a software only solution that basically takes the current snapshot of the system (RAM memory) and writes it to the hard disk then informs the hardware that it should do a complete shutdown. When the hardware is turned back on, the hardware does a full POST (power on/Self Test) process and then passes off the software to do a full boot. Since the software wrote a copy of itself to the hard drive it skips it’s full boot process and simply loads the system snapshot written to disk back into RAM and the applications that were running generally have no idea they were not running during that period of time the machine was “off”.

Idle State - When a desktop is in the idle state it is fully powered, and ready to receive commands.

Insomniac Desktops - A desktop that never wants to fall asleep. May go to sleep but wakes up without meeting the proper power policy.

Monitor - A monitor or display (sometimes called a visual display unit) is a piece of electrical equipment which displays images generated by devices such as computers, without producing a permanent record. The monitor comprises the actual display device, circuitry, and an enclosure.

Narcoleptic desktop - Constantly going to sleep (lower power setting) when it is not supposed to. The bad thing about this is that data may be lost if you haven't saved it just before the computer's nod off.

Policy Driven - Policies are directions or recipes created for self-activated software and its agents.

Screen Saver - Screen savers were originally developed to save older monitors from damage by preventing the burn-in of pixels into the screen. Today, screen savers are mainly used to personalize computers or to protect them with passwords required after a certain amount of idle time.

Screen savers do not conserve energy. In fact, many of today's sophisticated screen savers use more energy than your computer would use under light conditions. Even when a display goes blank, many screen savers continue to run and consume energy. And some screen savers actually prevent your PC from going to sleep.

To increase the energy efficiency of your computer and make less of an impact on the environment, you should use display blanking instead of a screen saver. If you want the security of requiring a password to access the computer after the display has blanked, configure your PC to use the blank screen saver and check the box to display the logon screen on resume. The blank screen saver

doesn't consume any more energy than an idle computer, and it allows your PC to go to sleep when the sleep idle timeout is reached.

Note that you might want to set the screen saver timeout to be slightly longer than display blanking timeout. This lets you avoid having to type your password each time your display blanks while you are sitting at the computer. Only after the screen saver itself starts up will you need to type your password to get back to your session. Microsoft web site <http://www.microsoft.com>

Sleep Mode - An energy-saving mode of operation in which all unnecessary components are shut down. Many battery-operated devices, such as notebook computers, support a sleep mode. When a notebook computer goes into sleep mode, it shuts down the display screen and disk drive. Once awakened, the computer returns to its former operating status.

Shut-Off or Shut Down- Completely power down the desktop.

Special Purpose Workstations - Special Purpose Workstations can be described as workstations that are used to perform activities that are outside the normal confines of the basic functions. If it is deemed necessary, these workstations may be left in an active state because they perform an automated function or interact with other connected devices. Some examples of the types of activities performed by Special Purpose Workstations include but are not limited to workstations that are used: as servers; in the monitoring of medical equipment; for critical public safety purposes; and/or transportation related monitoring or management functions. Because workstations may be shared by multiple users, it is important to ensure that workstations themselves are set to enforce the power management policies rather than tying the policies to the users. For purposes of these standards, Special Purpose Workstations can be categorized in two ways, Workstations with Limited Power Management and Exempt Workstations.

Stand-by - A hardware/software solution where the hardware and software work together to manage the computer's power usage by shutting down some non-critical systems (Fans, drives, peripherals.) and throttling back the critical ones (CPU, Network).

Wake-on-LAN - WOL, sometimes WoL is an Ethernet computer networking standard that allows a computer to be turned on or woken up remotely by a network message sent usually by a simple program executed on another computer on the network.

Who is Autonomic Software?



Autonomic Software's ANSA Products (ANSA - Automatic Network & System Administrator) offers a range of powerful, automated network security management tools that includes patch management, asset management, software deployment, configuration management, conformance and policy monitoring and power conservation management. ANSA products utilize a patented Universal Agent Technology, industry standards, and are built from the ground up on N-Tier architecture and a .NET framework for scalability and performance.

Autonomic Software's universal agent technology quickly scans any device with an IP address -- hardware, software, routers, switches, video cameras, remote users, or any other device connected to a business network. The flexibility of the Agent Technology makes it possible to seamlessly integrate other companies tools, management solutions, templates, interfaces and policies into a powerful unified application that outperforms competitors and gives customers what they want...cost-effective solutions that they don't have to think about. The simplicity, speed and security of our agent technology lie in the power of the unique single agent and its ability to handle multiple tasks and work loads that would ordinarily take many conventional agents to complete.

ANSA Platinum - Power Management Solution

ANSA Platinum provides a powerful solution that allows IT managers to develop, deploy and enforce enterprise-wide desktop power conservation policies. From a single dashboard console an IT manager can synchronize with end-user work cycles and system management maintenance windows. ANSA Platinum operates in cross platform environments, scales to over 100,000 desktops, and



**Assess,
Report,
Remediate,
Enforce**

automatically insures that power policies are adhered to.

ANSA Platinum's power conservation management is automated, installs quickly, and is flexible enough to accommodate future technologies. This solution runs as a transparent background utility and does not interfere with ongoing network use in every-day business. The product's footprint is small; saving system resources, memory and the frustration a user experiences when programs compete.

The overall energy savings can be up to 60%.

Autonomic Software has also designed a special program that is intended to give your company a four-star product management solution with no out-of-pocket expenses.

ANSA Power Management Features:

- Centralized Power Management
- Easy to install and easy to use
- Policy driven power management of distributed computers
- Enforcement of power policies
- Single web-based console
- Scalable from one computer to the entire global enterprises
- Fine-grained controls for hibernation/standby, subsystem-only shut down
- Control policies targets groups, domains, etc.
- Distributed Wake-On-LAN to synchronize systems maintenance processes with power conservation
- Centralized, graphical user interface, including Dashboard-driven policy setting
- Granular reporting
- Know how much you are saving
- Scalability - individuals, groups, locations
- 32 and 64 bit machines
- Takes care of configuration drift
- Compatible with software applications including security solutions

- Asset Management
- Right-sizing make easy
- Offered as an integrated solution within ANSA suite, the asset management functions allow users to collect and maintain complete, current and useful IT asset data across the enterprise
- Track IT assets - Detects virtually anything plugged into an Ethernet cable
- Analyze software use - Collect comprehensive information regarding installed software for both long term planning and reclamation
- Monitor unauthorized users - Identify attempts to access proprietary information
- Report compliance - Develop data for internal and external audits
- Resolve user issues - Compile data of current issues
- Hardware and software updates - Plan and target software, OS or file set distributions
- IT standards - Develop, implement and report on enterprise-wide IT standards
- Lease status - Monitor and remove outdated hardware from service
- Diverse platform support - Windows, Macintosh (Apple)
- Asset repository database Windows, - support platform
- Change control notification for install and un-install status
- Database aggregation and query
- Data export for analysis and reporting



Please Ask About Our Special No Cost Desktop Power Management Program!

Call 925-820-8020.



Autonomic Software, Inc

319 Diablo Road, Ste 220

Danville, CA 94526

925-820-8020

www.autonomic.software.com