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http://www.nih.gov is one of the most frequently visited federal government websites.

	November	December	January 08
Total hits for the month	65,056,179	56,088,052	70,770,992
Hits per day	2,168,539	1,809,292	2,282,935
Different individuals per month	2,518,995	2,107,500	2,646,669

The server has been up 100% of the time* during February 2008.
Server uptime is independent of network accessibility.

Articles

Energy Management at the NIH Data Center: Going Green (and Saving Money)

With the increasing reliance on data processing and information management in the U.S. economy, data centers have taken on a larger role. More businesses are building and maintaining more data centers, placing greater strain on power grids as demand for electricity increases. Under these circumstances, rising energy costs, along with associated environmental concerns, have made energy management an important issue for all businesses but especially for the IT sector.

The EPA energy efficiency report

Servers and data centers make up a significant portion of the nation's energy consumers, and a substantial share of this consumption is due to federal data centers. Therefore, the government is taking steps to analyze and better manage the electricity use of its data centers. In 2007, the Environmental Protection Agency (EPA) published a study examining the energy use of data centers in the United States (EPA Report 109-431). It found that:

- Server rooms/data centers consumed about 1.5% of all electricity (or about 61 billion kWh) in the U.S. in 2006, at a cost of around $4.5 billion
- Federal server rooms/data centers accounted for 10% (or 6 billion kWh) of this electricity at a cost of $450 million annually
- Blade servers consumed 68% of the electricity used for IT equipment in data centers in 2006
- The amount of energy Blade servers use more than doubled between 2000 and 2006
- About 38% of electricity use is due to enterprise-class data centers and those growing most rapidly

The EPA's analysis shows that the energy costs in data centers arise not only from energy-hungry servers, but also from the cooling infrastructure necessary to support IT equipment.
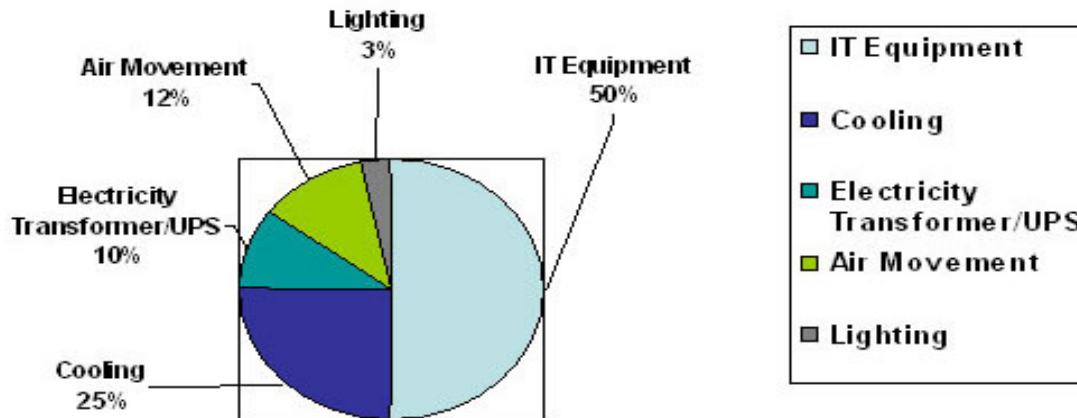

Illustration 1: Data Center Power Draws

Data centers today are forced to redefine capacity from terms of space to terms of cooling and power. While efficient blade servers solve issues of space, they raise issues of cooling (by creating intense hot spots) and even the most power-efficient server can strain the electricity bill due to increased cooling demands (see also *Energy Efficient Equipment in the Data Center* in this issue).

Compared to 2000, the overall use of energy by U.S. servers and data centers more than doubled in 2006. If efficiency standards remain unchanged, the EPA report projects that national energy use by data centers could double again in the next five years. Combined with climbing energy prices, this means that energy needs will claim ever larger shares of data centers' budgets, leaving less money for other areas such as expansion, new equipment, or general improvements.
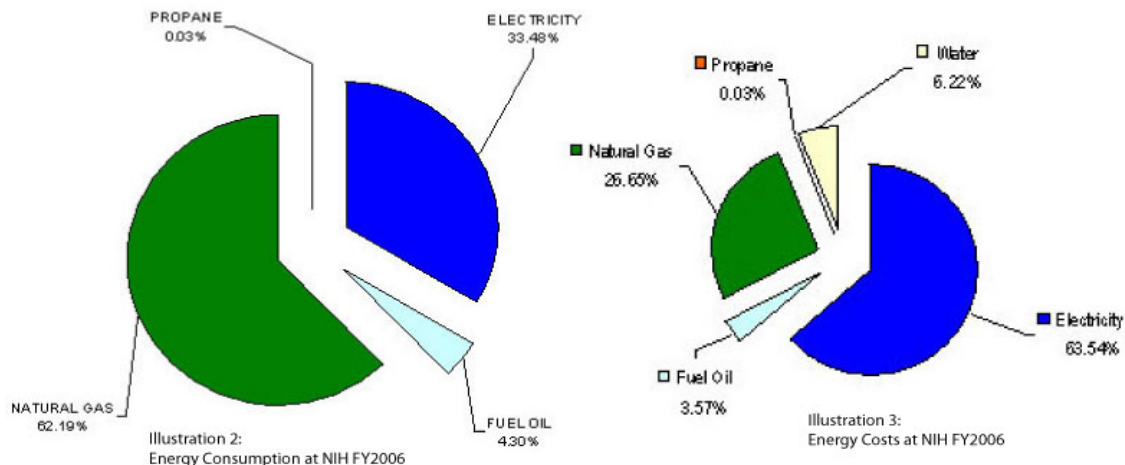
Energy efficiency is a budget mandate as much as it is an environmental issue.

The federal mandate to reduce energy consumption

In an effort to reduce both the environmental impact and energy consumption of federal agencies, federal acquisition regulations (see Executive Order 13423 at http://www.epeat.net/Docs/EPEAT%20FAR%20interim%20final%20rule.pdf) will soon require that at least 95% of federal electronic product purchases must conform to Electronic Product Environmental Assessment Tool (EPEAT) recommendations (see also the EPEAT website at http://www.epeat.net).

Energy consumption and cost at NIH

At NIH, where data processing and information management are vital parts of the larger mission, an examination of energy consumption and cost found that while the bulk of NIH's energy came from natural gas in 2006 (see illustration 2), electricity accounted for nearly 64 percent of dollars spent on energy costs that year (illustration 3).

PROPANE 0.03%
ELECTRICITY 33.48%
NATURAL GAS 62.19%
FUEL OIL 4.30%

Illustration 2:
Energy Consumption at NIH FY2006

Propane 0.03%
Water 6.22%
Natural Gas 26.65%
Fuel Oil 3.57%
Electricity 63.54%

Illustration 3:
Energy Costs at NIH FY2006

NIH mandate to reduce energy consumption

NIH and CIT are seeking to reduce their electricity bill and to become more energy efficient while still providing full IT support. Inspired by Executive Order 13148 "Greening the Government through Leadership in Environmental Management" (December 2005), the EPEAT requirement in federal purchasing, and spurred on by the EPA report, NIH has set a mandate to reduce its energy consumption by a cumulative 20% by the end of fiscal year 2015.

The overarching goal for NIH is to take concrete action on a number of environmental aspects related to its functions (find details of the NIH Environmental Management System's plan at http://www.nems.nih.gov/records/NIH_Goals.pdf). In doing its part, the NIH Data Center will focus on energy consumption as the issue that most directly affects its own operations.

NIH Data Center goals for 2008

In order to comply with federal energy efficiency mandates and pursue a successful energy management strategy, the NIH Data Center has developed the following goals for 2008:

Improve Power Management
- Inventory all devices in the data center :
  As part of the energy-saving plan, the Data Center conducted a thorough inventory to have complete information on its equipment and the attendant power needs. Having a complete and up-to-date inventory also helps to avoid uncovered empty server slots on racks that might leak hot air into cold aisles, creating more work for the cooling units.
- Continuously monitor power consumption:
  Keeping an eye on the levels and cycles of power consumption helps us ensure top efficiency in our equipment by anticipating and adjusting to changing power needs.

Reduce Power Consumption by 2%
- Create power consumption baseline:
  Knowing our baseline needs will help the Data Center to implement efficient energy management because it will pinpoint areas that can be adjusted and those that are not flexible.
- Procure Energy Star devices:
  Using energy-efficient equipment reduces power needs.
- Eliminate all unnecessary devices:
  Unused servers that remain connected to power are an obstacle to reducing unnecessary energy/electricity use. Even though these servers are not active, they are still powered, using energy and requiring cooling, while not being used for any productive work. It is a goal of the NIH Data Center to identify and eliminate these devices and so help reduce waste of resources.
- Increase Virtualization of Servers:
  Virtualization reduces the number of physical servers, which translates to savings in both power and space. The Data Center already offers virtualized Windows servers and is looking into both Unix and Linux virtualization options.

Consolidate Tape Silos
- One large silo saves power compared to running four smaller silos. The Data Center plans to get rid of its smaller silos by September 2008 and move to one large silo instead.

Other measures
- There are currently many separate server rooms and data centers on the NIH campus. Great savings in energy could be achieved by consolidating these server rooms. The difficulty lies in determining what defines a server room and when consolidation will produce useful power savings.
- Duplex printing: As part of the NIH Green Initiative, divisions in CIT should set the default print options for all printers to print double-sided pages.

Links to more information

The Federal Energy Management Program site (http://www1.eere.energy.gov/femp/) promotes energy efficiency and the use of renewable energy resources at federal agencies and sites. The U.S. Department of Energy offers advice on best practices for energy management in industry (http://www1.eere.energy.gov/industry/bestpractices/) as well as advice specifically for data centers seeking to reduce their energy consumption (http://www1.eere.energy.gov/industry/saveenergynow/partnering_data_centers.html). The EPA champions a Combined Heat and Power solution (cogeneration) at http://www.epa.gov/chp/.

Energy Efficient Equipment in the NIH Data Center

What does energy efficiency mean in a data center? It means saving costs, saving space, and saving power. That's it in a nutshell. But…it's actually not that simple, and there are two parts to this equation. On the one hand, customers can increase their energy efficiency by using virtual servers instead of dedicated servers, and by using blade servers instead of stand alone servers. However, such measures can, paradoxically, also increase the demand on your power system because of the cooling issues involved.

One of a data center's main energy drains is the need to keep the servers consistently cool. This task is more difficult today because the new servers, although more energy efficient, generate more heat. While compact Blade servers take up less space, they concentrate a lot of heat in a small space, necessitating greater cooling efforts. Reducing the number of physical servers by opting for virtualization means the remaining servers are working harder and hotter, which puts more demand on your cooling units. Finding the right equation of power density and cooling requires maintaining a delicate balance and constant monitoring.

So the NIH Data Center, which is operated by CIT, is doing its part by upgrading the air conditioning systems and by installing sophisticated monitoring software that keeps a constant check on temperature, humidity, generators, leak detection equipment, power usage levels, hydrogen levels, and fire detection panels. And to make the humans as efficient as the equipment, these monitors can be read from any device that has a web connection.

Blade servers

Let's look at the customer side of the equation. Customers can save power, space, and costs by using blade servers and virtual servers. Blade servers are small servers that are stacked into one cabinet. A single cabinet might hold up to 66 blades, depending on design and manufacturer. That obviously saves space, but it also saves power.

For example, an individual server will have at least two cables connecting it to the power supply. Sixty-six servers will have at least 132 cables. Those cables will run under the computer room floor and interfere with air flow, resulting in a hotter environment. With blades, however, the entire cabinet of blades will have only two cables, leaving more area for air flow under the floor. Better circulation of air means less power expended in cooling.

Also, today's blades are more efficient than the older models. Manufacturers have been working to make better cooling fans, resulting in blades that use less power. Hewlett Packard (HP), for example, has produced an efficient C-class blade to replace their older P-class blade. CIT is now procuring the more efficient C-Class blades, and customers will soon be deployed on these new servers, which will save power and space, resulting in lower costs.

Virtual servers

Virtual servers offer an even more significant savings in power and space. A virtual server is an operating system that runs on a server that hosts several other operating systems. Each operating system runs in isolation, allowing several systems to use the resources of the same hardware. The advantage is that the host server with virtual systems can run at a higher capacity, unlike dedicated servers, which often use only a fraction of their capacity.

The Windows group of the CIT Hosting Services Branch (HSB) is already offering virtualization on Windows servers, using VMWare as the middleman between the hardware and the operating system. (See "Introducing CIT's Windows Virtual Server Service" in issue 238 of *Interface* (http://datacenter.cit.nih.gov/interface/interface238/VM_Ware.html)).

With VMWare, 96 virtual servers can run on the hardware that would normally house only four dedicated servers. The NIH Data Center itself took advantage of this virtualization opportunity and moved its own application, Aperture, onto a virtual server. For more information about VMWare, see the Data Center website (http://cit.nih.gov/ProductsAndServices/ApplicationHosting/ApplicationAndWebHosting/VMWare.htm).

The Unix group of HSB is beginning an evaluation of a virtualized Solaris offering. Once the evaluation is complete, they will be contacting those customers who may be able to realize savings with the virtual servers. A future project will be to evaluate virtualized HP servers using an HP Itanium VM product.

Environmental improvements

Savings in power translate to a greener NIH Data Center. Selecting reduced-power solutions are the customer's contribution to energy efficiency. On the NIH Data Center's side of the equation, however, the more efficient and compact blade servers generate more heat in a smaller space, so the NIH Data Center has had to upgrade its cooling systems. To determine the best way to do this, the Data Center Operations Branch (DCOB) asked WFT Engineering, Inc., to evaluate all of their mechanical systems and make recommendations. Some of the changes that have been put in place as a result are:

Rearranging the servers:
Previously, server placement in the racks ignored which way the servers faced. Today, servers are placed in neatly ordered aisles with the backs of servers facing each other. Why? To help the Data Center's air conditioning units (ACUs) work more efficiently.

Servers maintain workable temperatures by taking in cold air through the front and exhausting hot air through vents in the back. Placing the servers so that hot air exhausts face each other (and cold air intakes face each other), creates separate, alternating aisles of hot and cold air. This ensures that the hot and cold air do not mix, establishing a better air flow (hot air rises, cold air does not) and preventing the cold air

from heating up before it reaches the servers' front air intake. Areas of racks that don't have equipment are blocked off with blank plates to prevent leakage of hot air into cold aisles.

Rearranging the floor tiles:
Perforated or vented tiles are placed in the cool aisles to channel the cooled air up through the floor and directly to the server intakes. To avoid wasting the cold air, no vented tiles are used in the hot aisles where the servers exhaust hot air. Because the holes in the floor tiles that let cables reach the servers also work like unintentional vents, the NIH Data Center staff has carefully blocked all such holes in the raised floor by placing custom-shaped foam blocks around the protruding cables. This prevents cooling inefficiencies as the cold air can't seep out into hot aisles.

Upgrading the air conditioning units (ACUs):
Vintage ACUs from the 1970s were reaching the end of their life cycles, and, had become superseded by today's more efficient models. The NIH Data Center is now replacing the old units with 20-ton Computer Room Air Conditioning (CRAC) units from Liebert.

The new units work in conjunction with the server and floor tile arrangement, as shown in illustration 1 below.
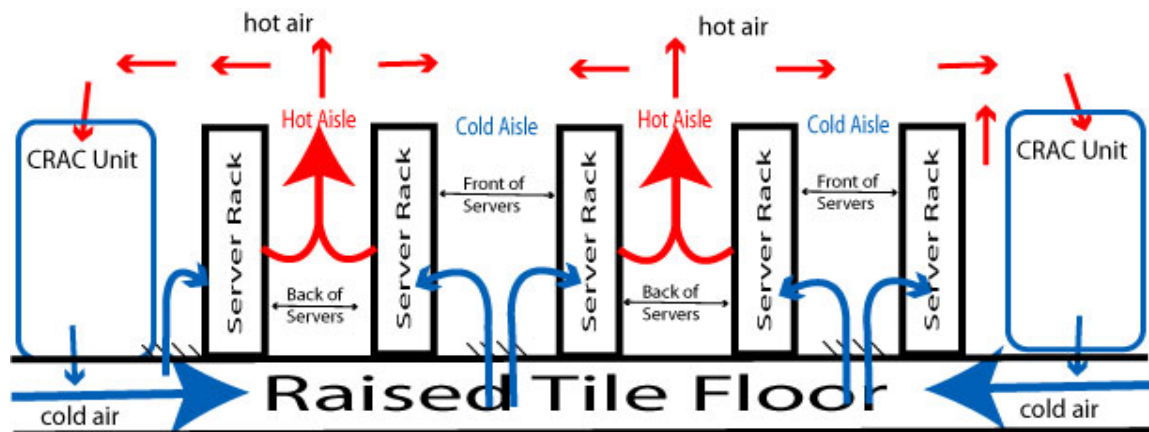
(Illustration 1) The CRAC units work with the hot aisle/cold aisle design to cool the Data Center efficiently

Environmental monitoring:
To make sure that the CRACs and the chilled water system are keeping the environment at optimal temperature and humidity, the NIH Data Center monitors them. Using WebCRTL, created by OEMCRTL and licensed to Lee Technologies, the NIH Data Center gets constant readouts from data picked up by sensors placed at strategic locations in rooms 1100, 2200, the customer service areas, and the penthouse electrical room.
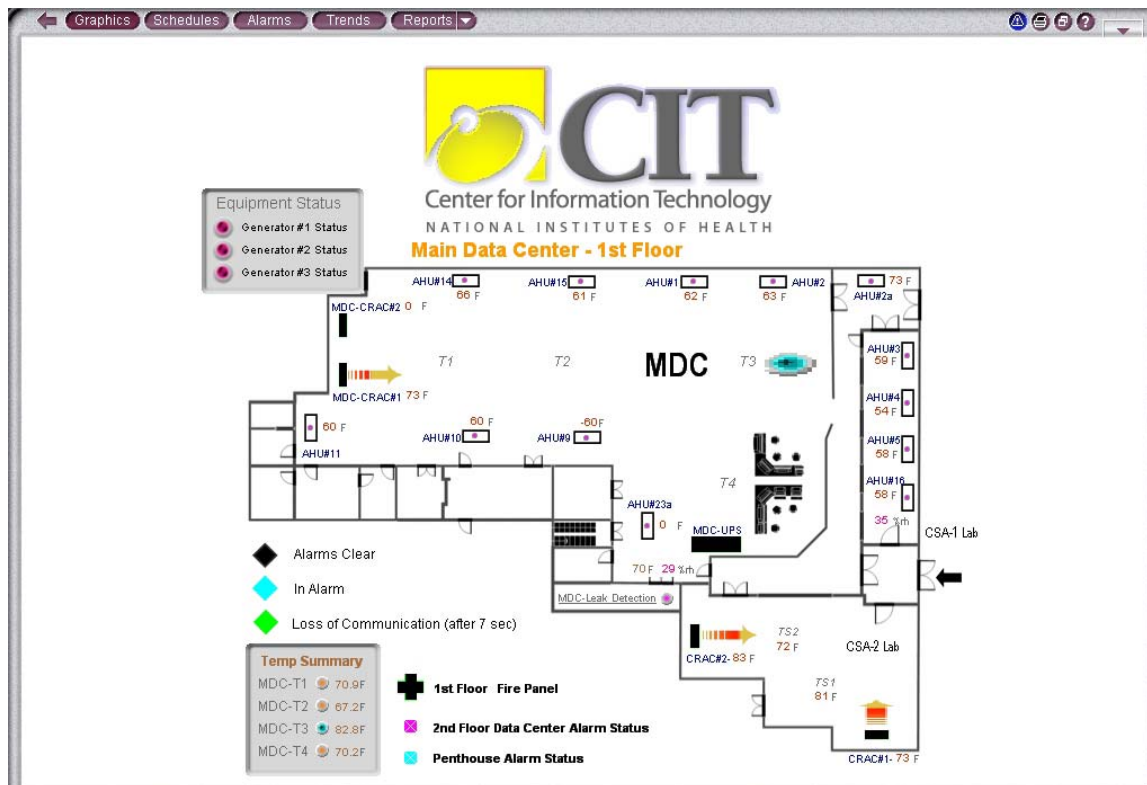
(Illustration 2) Main Data Center 1st floor: WebCTRL color-codes the UPS and CRAC units to show whether they are operating properly, are in alarm, or have lost communication. It also displays the temperature at each monitor and the status of the three generators.

WebCTRL also monitors the generators, the leak detection equipment, the power usage levels, the hydrogen levels, and the fire detection panels.

Several monitors in the NIH Data Center display the current environmental conditions. In addition, operators can check the conditions from a remote computer, a Blackberry, or any other device that has web access. If one of the sensors detects a faulty condition, such as a leak or a temperature that is out of the acceptable range, it sends out an alarm.

(Illustration 3) Generator 1: WebCTRL tracks 21 conditions for each generator, including oil pressure, coolant level, battery voltage, fuel level, and water temperature.

Federally mandated requirements

It is expected that the federal government will mandate greener equipment within the next few years. It has created an Electronic Product Environmental Assessment Tool (EPEAT) to guide consumers in selecting environmentally friendly equipment (see http://www.epeat.net). EPEAT helps purchasers evaluate computer equipment based on its environmental attributes. It provides 51 performance criteria for the design of products, divided into 8 categories, including materials selection, design for end of life, longevity, energy conservation, corporate performance, and packaging. Using the EPEAT criteria, customers will be able to make intelligent purchase decisions based on knowing exactly how green a product is.

More information

You can find more information on energy conservation and federal guidelines through the NIH Environmental Management System (http://www.nems.nih.gov) or visit the Environmental Protection Agency's best practices website (http://www1.eere.energy.gov/industry/bestpractices/) and data center partnership page

(http://www1.eere.energy.gov/industry/saveenergynow/partnering_data_centers.html) to get you started.

You may also want to join the NIH Greenserve at GREENSERVE-L@LIST.NIH.GOV, (see https://list.nih.gov/archives/greenserve-l.html for the archives). To join, go to this website: https://list.nih.gov/cgi-bin/wa?SUBED1=greenserve-l&A=1 and register.

The NIH Energy Conservation Program

In the 2007 fiscal year, NIH spent more than $81 million on electricity. Most electricity in the U.S. is still generated by burning coal, which creates air pollution and greenhouse gases (see also http://www.eia.doe.gov/cneaf/electricity/epa/epa_sum.html). These emissions can contribute to health issues and global warming.

As the largest energy consumer in Montgomery County, NIH plays an important leadership role in energy conservation. NIH's Energy Conservation program helps our employees contribute to energy savings by keeping them aware of energy issues and providing them with training and tools to reduce their energy use. NIH employees can make measurable contributions to energy conservation by using office equipment in an environmentally friendly manner.

Reduce your office's energy use – 15 simple steps

The small actions that employees can take really add up! Obvious places to start are the computers and monitors in your office:

1. When procuring electronic equipment, you can use the Electronic Product Environmental Assessment Tool (EPEAT) criteria to green your purchases (http://www.epeat.net/Criteria.aspx).
2. By enabling the low-power or sleep mode feature on your computer or monitor, you save energy, you save money, and you protect the environment.

3. Remember to turn off computers and monitors at the end of the workday. Inactive computers and monitors with the low-power or sleep mode enabled can save $10 to $45 per computer annually (ENERGY STAR estimate: http://www.energystar.gov/index.cfm?c=power_mgt.pr_power_management). With over 60,000 desktop computers and monitors (excluding servers) in use on the NIH campus, this simple step could save NIH as much as $2 million in energy costs a year!

Computers and monitors are not the only equipment that can be greened. There are also many energy conservation steps that can be applied to printers, copiers, and fax machines:
1. Configure the power saving features so that printers go into sleep mode when not used for more than 30 minutes during the workday.
2. Turn off printers and copy machines at the end of the workday.
3. Turn off group printers at the end of each workday, on weekends, and when nobody will be using them for an extended period of time.
4. Use copiers instead of printers to produce multiple copies.
5. Save documents on your hard drive to create a virtual filing system instead of printing out hard copies.

In addition to consuming energy, office equipment consumes other natural resources. Here are some tips that you can do to conserve these resources:
1. Load recycled paper with a minimum 30% post-consumer fiber content.
2. Copy and print all materials double-sided. To make this automatic, set your default print settings to duplex (or double-sided) printing.
3. Minimize the number of hard copies and paper drafts.
4. Disable the printer test page feature.
5. Set fax machines to print a confirmation sheet only when there is a problem.
6. Recycle used office paper.
7. Recycle ink/toner cartridges in Toner/Ink Jet cartridge recycling bins *(NIH Charities receive $1 for each cartridge that is recycled.)*

More information on going green at NIH

The NIH Energy Conservation Program is part of a larger environmental program at NIH, known as NIH Goes Greener. For more information, visit our website http://www.nems.nih.gov or email green@mail.nih.gov.

The Green Computing Summit

On December 5, 2007, FCW Events (affiliated with the *Federal Computer Week*) held the inaugural Green Computing Summit (http://events.fcw.com/EventOverview.aspx?Event=GCS07) in Washington, DC to bring together representatives of the public and private IT sectors and discuss ways of making data centers "greener" while remaining cost-effective and efficient.

IT professionals from federal, state, and local governments, as well as public policy organizations, met with their industry counterparts and suppliers to explore how public agencies can adapt private sector innovation in areas such as energy efficiency and e-cycling programs.

Federal green initiatives

The federal government, as the largest IT client in the market, is seeking to lead the move to energy-efficient, cost-effective, environmentally-conscious IT polices and procedures. Initiatives such as the pending change in federal acquisition regulations (Executive Order 13423), the EPA report on energy management, and Executive Order 13148 "Greening the Government through Leadership in Environmental Management" send a message that "going green" is a priority for federal IT.

The Green Computing Summit created an opportunity for government IT managers, such as CIT's Adriane Burton, DCSS Director, to assess the direction of green initiatives in the federal sector and to learn more about the companies offering and implementing green equipment and policies. In light of NIH's commitment to reducing its energy consumption by 20 percent by the end of fiscal year 2015, NIH IT managers need to be aware of tools such as the Electronic Product Environmental Assessment Tool (EPEAT), featured at the Green Computing Summit.

EPEAT and other topics

EPEAT offers assessment of an electronic product's environmental attributes and impact for the entire life cycle of the product (EPEAT website at http://www.epeat.net). Executive Order 13423 (http://www.epeat.net/Docs/EPEAT%20FAR%20interim%20final%20rule.pdf) requires the use of EPEAT recommendations for purchases of federal electronic products.

Aside from discussing EPEAT, speakers at the one-day summit focused on how an awareness of environmental effects might change energy management, equipment disposal procedures, data center consolidation, and other related data center business processes. They also offered expertise on existing and developing green IT policies and programs, important technologies such as virtualization, and what issues shape business and government decisions to embrace greener alternatives.

Upcoming Green Computing Summit

The next Green Computing Summit is scheduled for May 20, 2008, at the Ronald Reagan Building in Washington, DC (http://events.fcw.com/).

CIT Introduces a Sanitization Service for Data Storage Media

Before you toss your old CDs and DVDs into the nearest trash can, or take an old hard-drive to a dumpster, consider the type of information these items hold. Electronic storage media related to federal information systems and the information processed, stored, and transmitted by those systems cannot be disposed of so casually. Even erasing and reformatting a disk does not permanently remove the data. Magnetic media that cannot be erased using an approved repeated-overwrite operation must be degaussed* to completely erase data prior to recycling, reusing, donating, or disposal of the storage media. For optical media, such as CDs and DVDs, destruction is the only safe bet.

As part of its commitment to data security, CIT is offering a new Media Sanitization Service through the NIH Data Center for the secure disposal of information storage media. These include CDs, DVDs, tapes (except for the old round mainframe tapes) and disk media (e.g., hard drives and floppy disks). The NIH Data Center Media Sanitization Service is available to NIH, HHS, and other federal agencies.

Why is this service necessary?

In response to today's data security issues, the National Institute of Standards and Technology (NIST) issued the Federal Information Processing Standards Publication (FIPS) 200, Minimum Security Requirements for Federal Information and Information Systems. These standards require that organizations sanitize information system media, both digital and non-digital, prior to disposal or release for reuse. Based on the NIST publication, NIH issued the NIH Sanitization Guide [http://irm.cit.nih.gov/nihsecurity/SanitizationGuide.doc] which provides guidance, definitions, and procedures needed to satisfy the FIPS 200 requirement.

The CIT Sanitization Service meets the minimum sanitization requirements and risk levels according to NIST FIPS and SP as well as the NIH Sanitization Guide.

*What is degaussing?

When data is stored in magnetic media (i.e. hard drives and magnetic tape), very small areas called magnetic domains change their magnetic alignment to be in the direction of an applied magnetic field. This is similar to a compass needle pointing in the direction of the earth's magnetic field. Degaussing, commonly called erasure, leaves the domains in random patterns with no preference to orientation, thereby rendering previous data unrecoverable. There are some domains whose magnetic alignment is not randomized after degaussing. The information these domains represent is called magnetic remanence. Proper degaussing ensures there is insufficient magnetic remanence to reconstruct the data.

Benefits of the CIT Media Sanitization Service

CIT's Media Sanitization Service offers the following key benefits:

- Reduces the risk of data exposure (increasing data security)
    - Degaussing uses a magnetic field to corrupt and render the data unreadable and unrecoverable. Remember, even when you delete and reformat files on a drive, the storage media still retains some data.
    - Storage media placed in a trash can or empty office area can easily be taken by anyone, causing security and inventory issues.

- Meets security requirements
    - With the use of NSA-approved degaussing products, the CIT service meets the minimum sanitization requirements and risk levels according to NIST FIPS and SP as well as the NIH Sanitization Guide.
    - All sanitized data storage media meets the same erasure requirements issued for classified or sensitive data by the NSA Central Security Service.

- Minimizes environmental risks
    - Disposing of obsolete information storage media by placing it in the trash is bad for the environment. As part of the degaussing service, if customers do not want their degaussed media back, CIT will coordinate with the NIH Office of Research Facilities, Division of Environmental Protection for recycling.

- Reduces Costs
    - CIT's price for this service is lower than that of commercial vendors.
    - Certain types of sanitized data storage media (e.g., tapes) can be returned to the customer for reuse, saving our customers additional money.

Our equipment

CIT's degaussing device and optical media destruction equipment is NSA- and DOD-certified and stored in our highly secure NIH Data Center. The equipment sanitizes data from the following data storage media:

- Hard disk drives -- up to 3.5" diameter and 1.6" high
- Hard disks up to 5300 Oersted
- Tapes up to 2600 Oersted
- Removable magnetic disks
- Floppy disks
- Tapes up to 1/2" wide (type 3480)

- Other tapes -- DLT, LTO, QIC, DAT, 8mm, TRAVAN, and AIT tapes
- CDs and DVDs

*Note: Hard disk drives are rendered **permanently unusable** by the sanitization equipment and should be submitted for the sanitization service only if they are no longer needed, are technically obsolete, or have already been damaged. Other magnetic media (e.g., tapes) can be reused but may require reformatting.*

What about disposal of the sanitized media?

If customers do not want their sanitized data storage media back, CIT will coordinate with the NIH Office of Research Facilities, Division of Environmental Protection (DEP) to recycle these media. DEP recently initiated a new recycling program to process "techno trash" including decommissioned hard drives, DVDs, CDs, floppy disks and discarded software disks.

Charges

As a fee-for-service offering, CIT charges will be as follows:

Media Sanitization Service	FY 2008 Rate
Tapes and hard drives (per item)	$2.56
CDs/DVDs/Diskettes (per 1/2 pound)	$4.00

The current charges for services provided by the NIH Data Center are listed at:
http://cit.nih.gov/ProductsAndServices/ApplicationHosting/DataCenterRates.htm

How to request this service

To use the media sanitization service do the following:

- Submit an Online Service Request through the NIH Help Desk with "Media Sanitization" in the description of the service request.
- Complete the media sanitization request form by going to:
  http://cit.nih.gov/ProductsAndServices/ApplicationHosting/DataCenterSecurity.htm
  and clicking on "Request for Media Sanitization."
- Fill out the form online (in the PDF) and then print it out. The form cannot be submitted online and must be printed out to be signed. Be sure to have it signed by your Administrative Officer.
- Fax the signed form to CIT at 301-402-3529.

Our staff will then contact you to schedule an appointment. At that time, bring the media to building 12A, room 1007. For most jobs of 10 units or less, the work can be completed while you wait. If the sanitization job cannot be completed immediately, CIT will contact you when it is finished. You may then retrieve the media from CIT or have CIT dispose of the media.

All customers will be responsible for transporting the storage media to and from the NIH Data Center.

More information

Further information on this service and the request form can be found by going to http://cit.nih.gov/ProductsAndServices/ApplicationHosting/DataCenterSecurity.htm and selecting the link "Request for Media Sanitization . "   Contact the NIH Help Desk at 301-496-4357, 866-319-4357 (toll free), or 301-496-8294 (TTY) or via web at http://ithelpdesk.nih.gov

NIH Federated Authentication Town Hall

On November 29th, 2007, the Office of the Chief Information Technology Architect (OCITA) and the Center for Information Technology (CIT) hosted the NIH Federated Authentication Town Hall, designed to give the NIH community a closer look at the service.

Federated Authentication provides a better way for NIH staff to collaborate with colleagues from outside NIH, including those from universities, other Department of Health and Human Services (HHS) Operating Divisions (OPDIVs), and other Federal agencies. Access and collaboration under Federation is streamlined because outside collaborators who are authorized by NIH research, grants, or administrative groups can use their credentials from their own organization for authentication.

OCITA and CIT used the Town Hall to give NIH stakeholders, such as software application program managers, lead customer contacts, and application developers, an overview of the services offered by the Federated Authentication project at NIH. The presentations emphasized the important role that Federated Authentication plays in cross-organizational identity management while also ensuring their audience understood both the benefits and the risks of using this service. The sessions provided technical details along with information on how to best use these features and discussions on the extent of users' responsibilities with respect to securing their data.

Details of the Town Hall

The meeting began with opening remarks by Dr. Jack Jones, NIH Chief Information Officer (CIO), followed by a series of talks designed to afford a high-level overview of Federated Authentication. The overview talks included:

- "New CyberInfrastructure for Collaboration between Higher Ed and NIH", Ken Klingenstein, InCommon Federation
- "US Federal IdM/Federation Strategy and Your Apps", Peter Alterman, NIH E-Authentication and Chair, Federal PKI Policy Authority
- "Federation Observations & Tips", Chris Louden, E-Authentication Federated Architecture, Enspier Technologies
- "NIH Identify Federation", Valerie Wampler, NIH/CIT

A technical session, featuring a "Technical Overview and Demos" presentation by Debbie Bucci, NIH/CIT as well as a panel discussion with a Q&A session completed the town hall. In addition to the speakers, the panel included Jim Seach, Division of Information Technology, electronic Research Administration (eRA)/Office of Research Information Systems (ORIS)/Office of Extramural Research (OER)/Office of the Director (OD)/NIH, and Deborah Blanchard, Senior Consultant and Program Manager, Verizon Business Security Solutions.

Issues to consider

OCITA and CIT encourage all NIH stakeholders to consider the following questions and issues when exploring the use of Federated Authentication for collaborations:
- What does this service mean to me?
- How can I best take advantage of collaboration under Federated Authentication?
- What do I need to do to secure my application appropriately?

Benefits of Federated Authentication

The benefits of Federated Authentication result from the fact that application owners no longer need to maintain credentials for this potentially very large user base. This translates to a significant decrease in the time needed to set up and use applications collaboratively. Consequently, NIH has the added responsibility to certify applications to provide access only to those who have been authorized.

More information

More information on the Federated Authentication Town Hall can be found at http://enterprisearchitecture.nih.gov/About/NewsEvents/Other/FederatedAuthenticationTownHall.htm, which includes links to additional materials such as the presentation slides and the videocast of the Town Hall (http://videocast.nih.gov/Summary.asp?File=14168).

For additional information on Federated Authentication at NIH, please send email to nihfederationrequest@mail.nih.gov.

Ask the NIH Help Desk

How to enable low-power or sleep mode in your computer and printer

To reduce energy consumption, your computer can be configured to go into low-power or sleep mode when there has been no keyboard or mouse activity for a given period of time. The recommended period of inactivity or timeout before your computer powers down is 30 minutes.

What about screen savers?

Screen savers, which prevent a specific graphical image from becoming permanently embedded into the screen, do consume more energy than a blank screen would. However, NIH IT security policy requires that all NIH users lock their computers with a password-protected screen saver whenever they are away from their desks. Therefore, simply not using a screen saver on your office computer is not an option. You could turn off your monitor while leaving the password-protected screen saver enabled.

Enabling low-power or sleep mode

Windows XP

1. Click on the Start button
2. Select Control Panel (or, depending on your set-up, select "Settings" and then "Control Panel")

3. If you are using Category View, under "Pick a Category," click on the Performance & Maintenance link. If you are using Classic View, skip this step and open Power Options (see step 4).
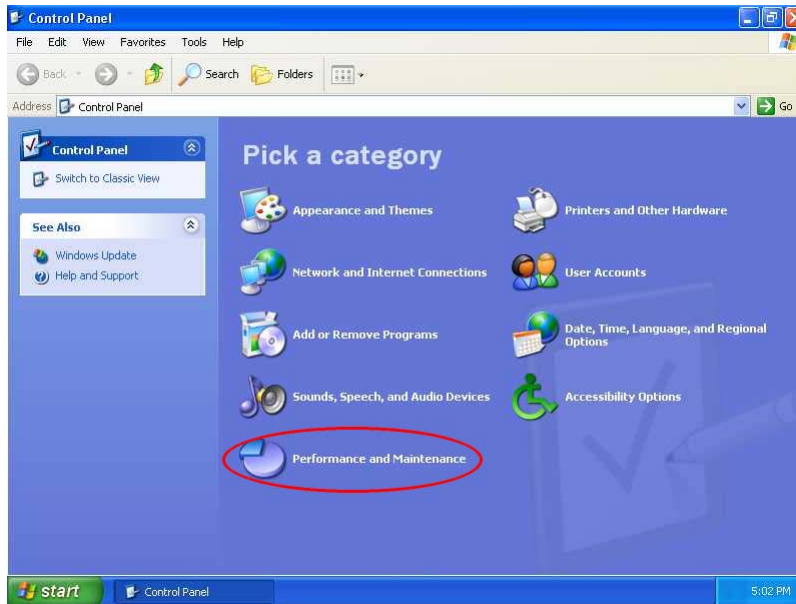
4. In Category View, click on Power Options. In Classic View, open (double click) Power Options.
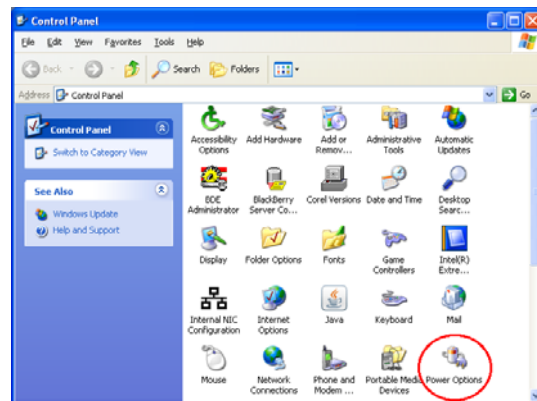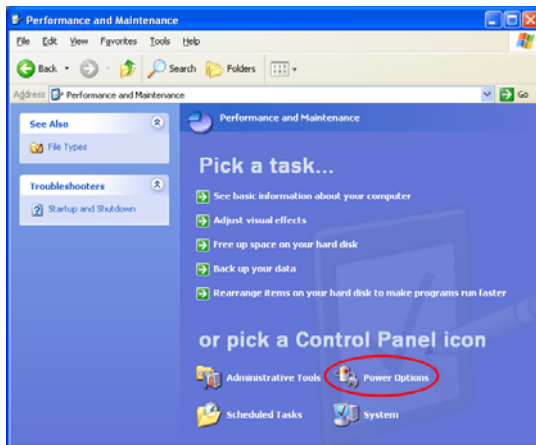
5. From the Power Schemes tab, choose an existing scheme and if desired, alter the preset timeouts.
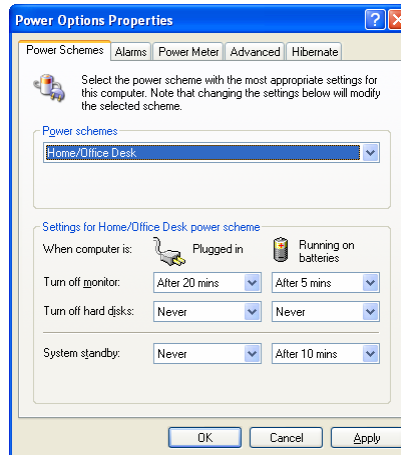
NOTE: A setting of *Never* will cause that feature to never conserve energy.
NOTE: It is generally recommended that the hard drive power setting be set to *Never* as many applications are unable to function properly if the hard drive powers down.

6. When you have finished, click on the Apply button
7. Click on the OK button
8. Close the Control Panel

Vista

1. Click on the Start button

2. Select Control Panel
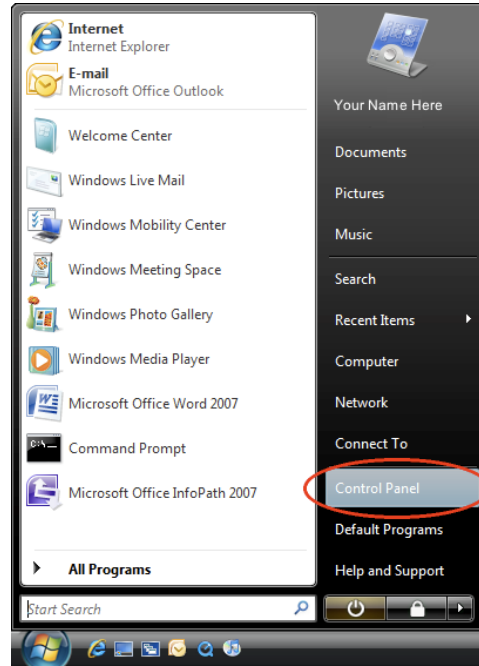
3. Open Power Options
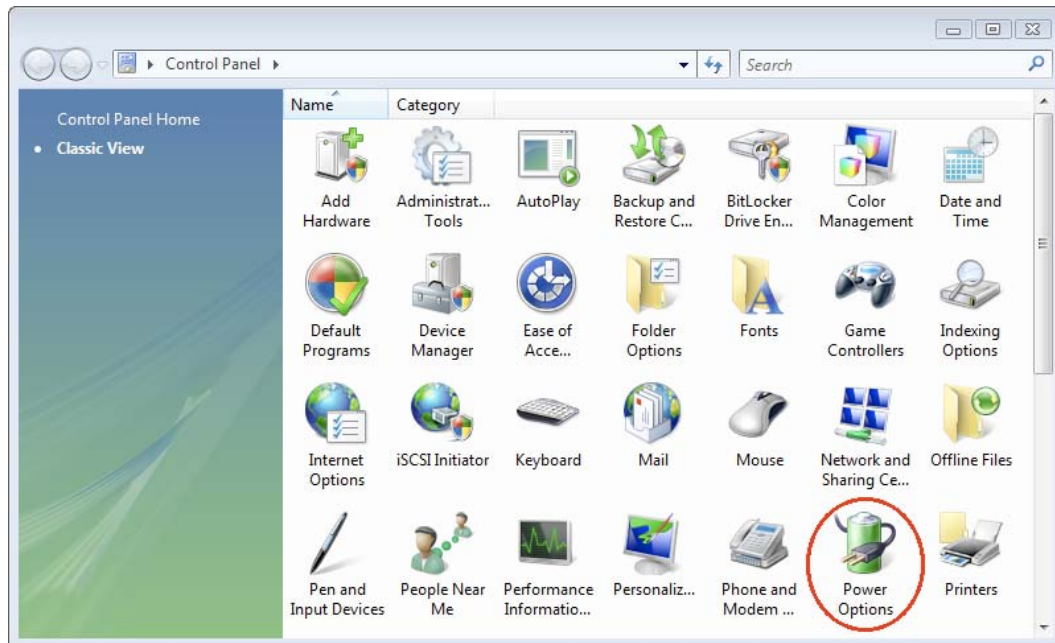
4. Choose an existing scheme and if desired, alter the preset timeouts.
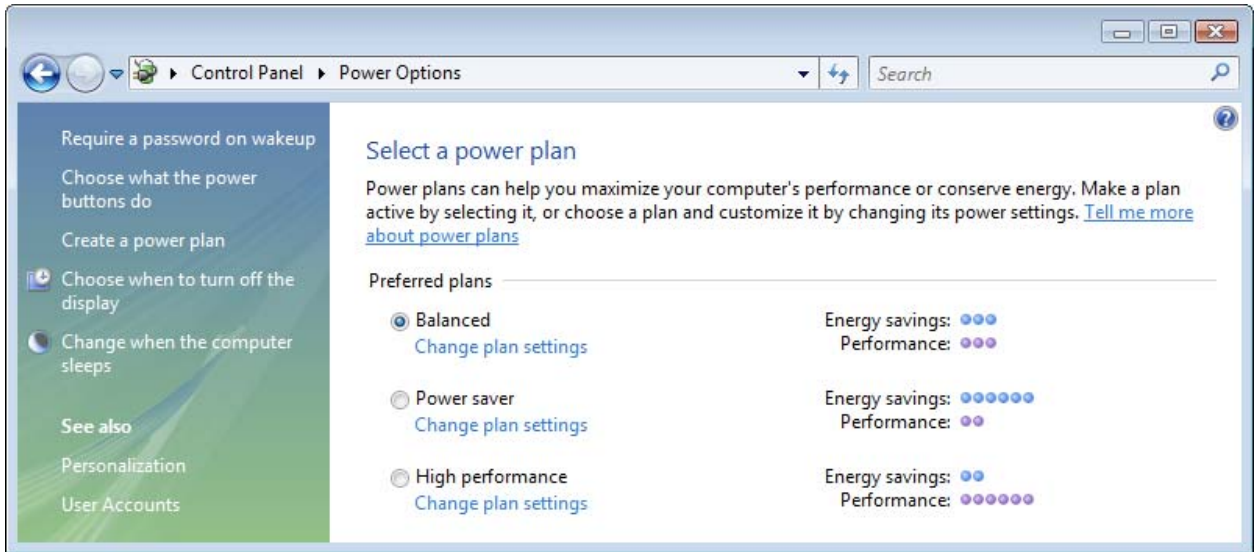
NOTE: A setting of *Never* will cause that feature to never conserve energy.
NOTE: It is generally recommended that the hard drive power setting be set to *Never* as many applications are unable to function properly if the hard drive powers down.

5. When you have finished, close the Control panel

Macintosh

1. Open the System Preferences – either from the Dock (see below – 10.4 vs 10.5 respectively) or from the Apple menu (top, left corner of the screen).

2. From the System Preferences screen (see below – 10.4 vs. 10.5 respectively), click on Energy Saver icon

3. From the options listed (see below – 10.4 vs. 10.5 respectively), choose an existing scheme and if desired, alter the preset timeouts.
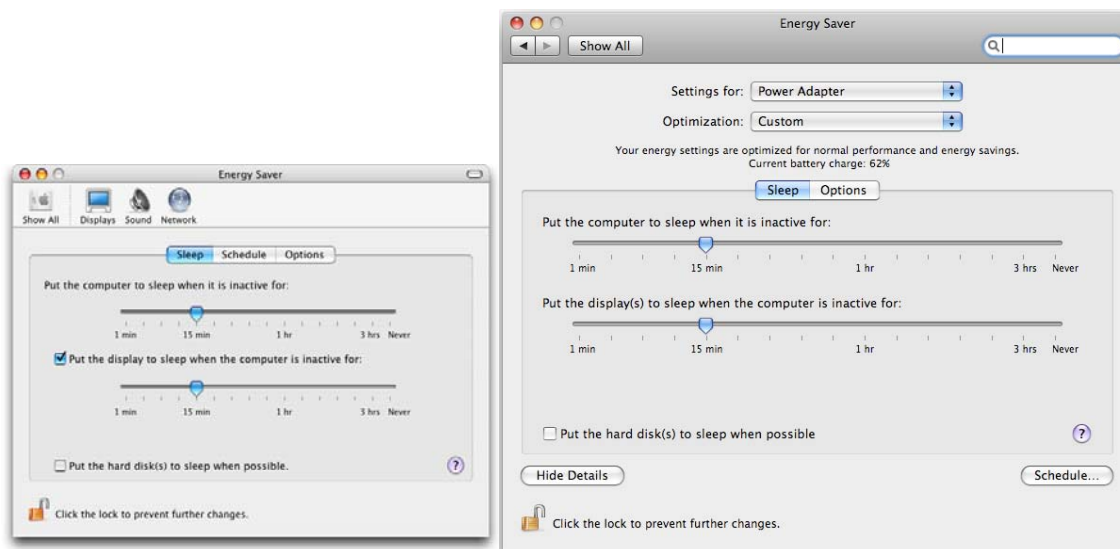
NOTE: A setting of *Never* will cause that feature to never conserve energy.
NOTE: It is generally recommended that the hard drive power setting be set to *Never* as many applications are unable to function properly if the hard drive powers down.

4. When you have finished, close the System Preferences

Printers

Changing the low-power or sleep timeouts on printers varies depending on the printer. Some printers have a "console" – a small screen with buttons – which will usually have power saver settings available from one of the menu options. Consult the Owner's Manual that came with the printer for specific instructions.

Have more questions?

If you need any assistance, or have additional questions, just submit a service request via our website (http://ithelpdesk.nih.gov) or give us a call at the NIH Help Desk at 301-496-4357, 866-319-4357 (toll free), or 301-496-8294 (TTY).

Computer Training Spring 2008 Term is Now in Session

A flood and a new beginning

The CIT Computer Training Program has overcome quite a challenging start to the 2008 calendar year. On January 3, a water pipe above the classrooms in Building 12A burst and thousands of gallons of water poured into the training rooms. The ceiling tiles, walls, light fixtures, and carpets were damaged, as were a few laptops and other equipment. Thankfully, the rooms were not in use at the time and no one was injured.

For several weeks the rooms were unusable which meant CIT Training staff had to cancel and reschedule many training sessions. A lot of people were inconvenienced through this challenging time; but, cooperation prevailed as the instructors and students worked together to make changes.

The CIT Training Program would like to thank all the folks that were involved in the massive cleanup process. CIT Training is back in session!

Share your expertise

With the ever-changing community at NIH, our courses have evolved to keep pace. One of the unique opportunities afforded through our training program allows individuals from the NIH community to share their expertise with other colleagues. Are you involved in an emerging field of interest which will benefit the mission of the NIH? Are you a project lead rolling out a new or updated program? Contact us at 301-594-6248 x2 or by email at CITTraining@mail.nih.gov as we may be able to assist you with the opportunity to share what you know to benefit others.

Courses to watch for

Security Courses
Security will always be a concern as long as technology exists. To help understand how to protect yourself, your computer, and your systems, we are offering the following courses: "Securing Web Applications," "Identity Theft: What You Need to Know," and "NIH Certification and Accreditation Tool (NCAT)."

Statistics
Statisticians and aspiring statistical analysts will enjoy the SPSS offerings this term. The seminars include: "SPSS: Basics," "SPSS: ANOVA," and "SPSS: Regression."

Seminars for Scientists
In order to meet the needs of the diverse scientific community here at NIH, we offer sessions dealing with Image Processing I & II, Microarray Data, AFNI, MIPAV, "Effective Utilization of the Biowulf Cluster for Bioinformatics," "Bioinformatics Resources for Functional Categorization and Splice Variation Analysis," "Mathematica 6," and many more.

Grants
A new course comes to CIT Training – "Grants Managements Spreadsheet." This seminar will cover the Grants Management Standardized Categorical Excel Spreadsheet and its use. The always popular, "Understanding the Grants Process," QVR (Introduction, Intermediate, and Advanced) and QVR Training Profile sessions explain the workings of the system here at NIH. Sessions in ECB Data Administration (Basic and Advanced) and "ECB Early Concurrence Workshop" round out the exciting sessions for grants.

Personal Computers
Come see what all the hype is about in Microsoft Office and Windows Vista. Two new offerings are "Office 2007 – What's New" and "Getting to Know Windows Vista." In addition, a sampling of topics to be given this term are "Basic PC Skills for NIH," "Seeking Information on the Web," and "Microsoft Visio Professional 2003 Introduction," and many more. There are also sessions of returning favorites including Excel, "Windows XP Tips and Tricks," and "BlackBerry Tips and Tricks."

IT Professionals
IT professionals will enjoy "Data Center Tours – Division of Computer System Services," "Network Security and Firewalls," "Spend a Day with the Help Desk," "ITIL V3 Foundations," "AJAX – The Easy Way with ASP.NET," "Microsoft Office SharePoint Server 2007 Administrator Training," and more.

More information

You can obtain full course information, register for Spring 2008 classes, join our CIT Training mailing list, and check out your transcript or current application status at our website, http://training.cit.nih.gov.

Most CIT Training courses are free of charge to NIH staff! While NIH employees get first priority for classes, contractors are welcome to attend when space is available, the class is related to their NIH work, and they have approval from their NIH supervisor.

If you have any questions about the CIT Training Program you may contact us by phone at 301-594-6248 x2 or by email at CITTraining@mail.nih.gov

CIT Training Calendar – Spring 2008

March

926	Getting Started with Medical Image Processing Analysis and Visualization (MIPAV)	3/3
370H	NIH Certification and Accreditation Tool (NCAT)	3/4
652A	Microsoft Office SharePoint Server 2007	3/4
682A	Wiki Tutorial	3/4
820A	Office 2007 – What's New	3/4
476A	NIH Biowulf Supercluster for Scientific Applications	3/5
705I	NEES: Preparation, Submission, and Supervisory Reviews of HHS-520 Requests	3/5
799B	Data Center Tours – Division of Computer System Services	3/5
485	Introduction to Homology Modeling: Sequence Alignment and Template Selection	3/6
800A	Basic PC Skills for NIH	3/6
823A	Creating Presentations with PowerPoint 2003	3/6
947A	MATLAB Fundamentals and Programming Techniques	3/6
435	Affymetrix Data Analysis in GeneSpring GX 9.0	3/7
949	MATLAB for Image Processing	3/7
740A	Grants Management Spreadsheet (Part A)	3/10
741A	Grants Management Spreadsheet (Part B)	3/10
853A	Project Management Overview	3/10
964B	EndNote (PC) Basics	3/10
924	Introduction to Image Processing I	3/10-11, 3/13-14
979	NCBI's MapViewer Quick Start	3/11
528B	ITIL V3 Foundations	3/12 – 3/14
180B	NIH Data Warehouse Query: Budget & Finance	3/13
406	Clustering: How Do They Make Those Dendograms and Heat Maps?	3/13
656B	SharePoint 2007 System Administrator Training	3/14
423	Statistical Analysis of Microarray Data Using the MSCL Analysts's Toolbox and JMP	3/17 – 3/18
199	NIH Data Warehouse Query: Advanced Query & Reporting Workshop	3/18
511A	nVision: Travel	3/18
731	ECB Data Administration - Basic	3/18
237	SPSS: ANOVA	3/18 – 3/19
170B	NIH Data Warehouse Analyze: Budget & Finance	3/19
173B	NIH Data Warehouse Analyze: Human Resources	3/19
730B	Introduction to the QVR System	3/19
732	ECB Data Administration - Advanced	3/19
186	nVision Property: Ad Hoc Training	3/20
187	nVision Acquisitions & Contracts: Ad Hoc Training	3/20

April

Dates to Remember

Now . . .

March 5	•	Data Center Tours [http://training.cit.nih.gov]
March 9	•	Daylight Savings Time begins
April 2	•	Data Center Tours [http://training.cit.nih.gov]
April 9	•	Spend a Day with the Help Desk [http://training.cit.nih.gov]
May 7	•	Data Center Tours [http://training.cit.nih.gov]
May 14	•	Spend a Day with the Help Desk [http://training.cit.nih.gov]

Later this year . . .

May 26	•	Memorial Day (observed)
June 4	•	Data Center Tours [http://training.cit.nih.gov]
June 11	•	Spend a Day with the Help Desk [http://training.cit.nih.gov]
July 4	•	Independence Day
July 15	•	Disaster recovery off-site test. [E] [T] [http://cit.nih.gov/ProductsAndServices/ApplicationHosting/DisasterRecovery.htm]

E   EOS (Unix system)
T   Titan (OS/390 system)

Articles in other issues of *Interface* appear in brackets [ ].

Subscribe to the "Interface" list via Listserv to receive notification of new issues as soon as they are available on the web [http://list.nih.gov/archives/interface.html].

Directories and Reference Information

NIH Computer Center Hardware and Software

[http://cit.nih.gov/ProductsAndServices/ApplicationHosting/RelatedServices/HardwareSoftware.htm]

Computer Services Telephone Directory

[http://cit.nih.gov/NR/rdonlyres/CD8200B2-35E6-424C-A1C9-48DA35CE8155/0/TelephoneDirectory.pdf]

Online Services Directory

[http://cit.nih.gov/ProductsAndServices/ApplicationHosting/AboutDataCenter/OnlineServices.htm]

Popular Websites for NIH Computer Center Users

[http://cit.nih.gov/ProductsAndServices/ApplicationHosting/AboutDataCenter/PopularWebSites.htm]