Fall 2011 [Number 251]

Major Articles

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Fall Events
October is NIH Disability Awareness and National Cyber Security Awareness Month
October 24 – 28 The 25th annual **NIH Research Festival** highlights the scientific excellence of the Intramural Research Program through scientific symposia, poster sessions, NIH exhibitors, the vendor tent show, and more. Visit CIT's booth October 24 – 26.
October 31 NIH Disability Awareness: **More Than Words** – NIH Celebrates Accessibility (9:00 am – 1:00 pm, NIH Building 45, Natcher Conference Center). CIT is one of the sponsors of this event.
November 22 At the **NIH Telework Festival,** find information and demos of CIT's telework-related services. Also on offer are other breakout session, a poster contest, and vendors on site (Bldg 45, Natcher Conference Center).
November 24 **Thanksgiving Day**

NIH Data Center Tours
CIT offers scheduled tours of its NIH Data Center, a multi-system federal data center located in Building 12 on the NIH campus, on the **first Wednesday** of every month from **9 am to 10 am**. (Additional tours can be coordinated at other times as needed.) Sign up at http://training.cit.nih.gov/ (under "CIT Services" in Courses by Category).

Articles

CIT Streamlines Windows Virtual Server Provisioning

CIT has implemented a new process for provisioning Microsoft Windows-based virtual servers—also referred to as virtual machines (VMs). The new, automated self-provisioning process significantly decreases turnaround time for requested Windows VMs, allowing most customers to get their servers within hours after CIT receives the request.

Faster provisioning

Before the new process was implemented, provisioning was done manually during business hours, which could take from one to three business days to complete. The new process cuts provisioning time to one to two hours, and can be performed any time—24 hours a day, 7 days a week. Once a VM is provisioned, it is released to the customer and the customers can install software and perform any necessary tests to make the server production-ready.

About our Windows Virtual Server Service

The new VM provisioning process is a feature of CIT's Windows Virtual Server Service. Server virtualization allows multiple guest operating system instances to run as VMs on the same physical host machine. The VM operating systems are independent of each other and are as secure as our physical servers. A cluster of physical machines provides the VMs with a pool of resources from which to access memory and processors as needed. The benefit to customers: reduced cost, improved capacity management, faster provisioning, and decreased downtime.

The proposed rate for a basic Windows VM is scheduled to decrease by nearly 30% in fiscal year 2012.

For more information about CIT's Windows Virtual Server Service, see the CIT Services Catalog online at http://cit.nih.gov/ServiceCatalog/VMWare.htm.

Provisioning through ASR

Existing CIT customers with established projects can take advantage of the new provisioning process when submitting an Application Service Request (ASR) for a Windows VM. The ASR system prompts customers for specific information, including server location (NIH Data Center on the Bethesda campus or the Sterling, VA facility), operating system (Windows2008R2-64bit, Windows2008-32bit, Windows2003R2-32bit), number of CPUs, and RAM.

Once the ASR is submitted, the automated provisioning process begins. The system generates a service ticket and the customer-provided data is used to automatically provision the VM server. When a customer adds a server, CIT will make the appropriate adjustment to charges on the customer's CIT account. Also, as result of the additional server being provided, the customer's Service Level Agreement will be updated to reflect the change. For instructions on submitting an ASR for a VM, see the Self-Service Provisioning web page at: http://cit.nih.gov/ServiceCatalog/SelfServWin.

For more information

If you're not a current CIT customer but want to request a Windows VM or would like more information, contact the NIH IT Service Desk by submitting an online request at: http://itservicedesk.nih.gov/Support/ or calling 301-496-4357 (6-HELP) (local), 866-319-4357 (toll free), or 301-496-8294 (TTY).

For information about other services, see the CIT Services Catalog online at http://cit.nih.gov/ServiceCatalog/.

Mainframe (Titan) and zLinux Services to Get New IBM z114 Business Class Server

This November, CIT is replacing its z9 Business Class Server—the reliable infrastructure hosting CIT mainframe applications as well as the new zLinux service for the past five years—with the newly-announced z114 Business Class (BC) Server. The upgrade is necessary due to continual workload growth and IBM's upcoming retirement of the z9 Business Class Server.

Benefits

Upgrading to the z114 offers a range of benefits, such as:
- immediate performance benefits for existing applications,
- increased flexibility to accommodate changing customer requirements by adjusting the capacity setting of the z114,
- platform-as-a-service cloud capabilities for new or changed applications for years to come,
- and opportunities for saving on software licensing costs in the future.

What's new?

While the z114 remains a great choice for customers who need to run mission-critical applications, host private enterprise clouds, or require a backup development machine, it also opens up a world of powerful new capabilities, including developing and running java workloads, hosting SAS legacy applications, and running high transactional volume web blogs in the zLinux arena. Its new microprocessor chip has a higher-frequency superscalar design, improved cache structure, new "out of order" execution sequence, and over 100 new hardware instructions that deliver world-class per-thread performance for DB2, WebSphere, and Linux workloads.

The z114 also features a new processor called the z Integrated Information Processor (or zIIP) that is designed to free up general computing capacity and lower the overall cost

of computing for selected workloads that take advantage of zIIP processing. Running on the z114, workloads including DB2, SILK, and future releases of Model204 will offload a portion of CPU processing to the zIIP, enabling better performance and lower costs for these applications.

Major enhancements

The following is a list of some of the major enhancements that the z114 processor provides:

Capacity

- 48 GB of Internal RAM, up from 32 GB on the z9-BC
- General purpose processors rated at over 300 MIPS for an over 22% increase in processor power for Titan workloads
- Three Integrated Facility for Linux processors (IFLs) dedicated for zLinux application expansion
- The ability to adjust capacity settings with a non-disruptive microcode change to save on hardware and software costs as circumstances warrant

Connectivity

- The z114 upgrades FICON I/O Connectivity so it can support up to 8 gigabytes per second data transfer rates to meet the demands of future applications.
- Each FICON Channel has two possible modes of operation designed for connectivity to servers, switches/directors, disk, tape, and printers. These two types include CHPID type FC for traffic supporting z/OS and zLinux environments, and CHPID type FCP for attachment to SCSI devices to support the zLinux environment.

Networking

- Large Send for IPv6 packets is available for z/OS environments on the z114. Large Send (also referred to as TCP segmentation offload) is designed to improve performance by offloading outbound TCP segmentation processing from the host to an OSA-Express3 feature.

These are just some of the new functions and capabilities our Titan and zLinux customers can expect from the new z114 zSeries server. With this upgrade, we are also positioned to take advantage of the latest features and technologies to be introduced in z/OS and zLinux. Because the new environment will allow for uninterrupted operation without disruptive hardware upgrades for years to come, it is ideal for customers that require a stable environment either for running their existing applications or developing new applications. Whether you are looking for stability or innovation and performance, our new z114 will be a great benefit both now and into the future.

What steps to take

If you have any third-party software on the mainframe, check with your vendor now to make sure it is certified for and supported in the new environment. We will publish the new z114-BC serial number in *Titan News* prior to the upgrade, which is scheduled for November 13, 2011.

Questions?

If you have questions about the upgrade or the new z114 Business Class (BC) Server, please contact the NIH IT Service Desk using the information below:

- To submit an online request to the Service Desk:
  http://itservicedesk.nih.gov/Support/

- To contact the Service Desk by phone:
  - 301-496-4357 (6-HELP) (local)
  - 866-319-4357 (toll free)
  - 301-496-8294 (TTY)

End of Fiscal Year Brings Annual CIT Change Moratorium

With the end of the fiscal year, CIT has enacted its annual system change moratorium. CIT implements this restriction internally on system changes to help ensure a stable technology environment when NIH closes the old year's books and readies for the new fiscal year.

The moratorium is scheduled to run from close of business (COB) Friday, September 16th, to COB Friday, October 14th. It is possible that the moratorium could be lifted earlier, dependent on the status of NIH's financial systems.

What does the moratorium entail?

During the moratorium, any proposed system changes must receive advance approval from the recently-created CIT Change Advisory Board (CAB) (see related article *Change Management at CIT* in this issue). There are a limited number of blanket exemptions for systems such as Helix and Biowulf that have no bearing on financial transactions, and also for certain types of important but low-impact changes, such as virus scanning DAT file updates. However, outside of these few exemptions, all work during the moratorium is limited to what has been pre-approved by the CAB.

Of course, if an unplanned outage occurs, restoration of service is always our top priority.

To customers, the annual moratorium may mean delays or additional scrutiny in fulfilling some requests for CIT services. CIT appreciates your patience and support as we work to ensure a stable environment during this vital time of year.

Questions?

If you have any questions about the change moratorium, please contact the NIH IT Service Desk at 301-496-4357, 301-496-8294 (TTY), or 866-319-4357 (toll free), or online at http://itservicedesk.nih.gov/support/.

Change Management at CIT

As part of its continuing journey into ITIL implementation (see *Interface* 247 for details), CIT conducted an ITIL assessment in the spring of 2010 to determine the current state of the initiative and plan for the next steps going forward. From this assessment, CIT leadership identified having a centralized, federated Information Technology (IT) Change Management (CM) process as a top priority.

Change Management provides a structured and controlled process to ensure effective impact assessment and scheduling for the introduction of change. Through consideration of both business and technical criteria, the Change Management process can significantly reduce risks and minimize the impact of change.

In August 2010, the key change managers from CIT's operational divisions came together in a working group chartered to develop CIT's first-ever centralized Change Management process.

Federating CIT's Change Management processes

Each CIT division already had at least one change management (CM) process in place and some divisions had several processes depending on the branch and/or the technology involved. The lack of a central process allowing for center-wide review of riskier changes was identified as a gap.

The working group looked at the different processes currently in place, considered several examples of change failure at CIT, and developed metrics to measure CM process effectiveness. These metrics included total number of changes, outcome of changes, number of incidents per change, and number of unannounced changes that have adverse impact. CIT is still working to fully and effectively capture all these measures.

Next, the group set out to negotiate a central process. In April 2011, the new federated Change Management process received final management approval. The process did not replace the existing processes within the divisions, but merely added an additional layer of review for those changes that met predefined escalation criteria. Implementation of the new CM process was set for July 1, 2011.

Testing, implementation, and beyond

The week before the July 1st launch, CIT performed a dry run with a set of test CIT Change Requests (CCRs), using this as an opportunity to "kick the tires" on the process and make sure there were no unforeseen snags. The test drive culminated on June 29th with a pizza-laden kickoff meeting of the new CIT Change Advisory Board (CAB), attended by Al Whitley, Deputy Director, CIT.

As of mid-August, the CAB had reviewed eight CCRs, provided input to the redesign of the IT Maintenance & Outage Calendar (see the *Change Management at NIH* article in this issue), and assumed management of the annual CIT end-of-fiscal-year change moratorium (see related article in this issue: *End of Fiscal Year Brings Annual CIT Change Moratorium*).

Additionally, the CAB has implemented metrics to measure process efficiency, capturing how long it takes to approve a CCR (turnaround), how far in advance of the planned maintenance CCRs are submitted (lead time), and percentage of total changes reviewed by the CAB.

Going forward, the CAB will be reconvening the CIT working group in early fall to review the process's effectiveness, determine what adjustments need to made, and decide what the next phase of Change Management at CIT will look like. Stay tuned for details!

Questions?

If you have any questions about change management at CIT, please contact the NIH IT Service Desk at 301-496-4357, 301-496-8294 (TTY), or 866-319-4357 (toll free), or online at http://itservicedesk.nih.gov/support/.

Change Management at NIH

NINDS and CIT have collaborated to re-invigorate the work of the NIH Change Management Communications Working Group under the NIH IT Management Committee (ITMC). This effort seeks to carry the benefits of Change Communications to the NIH community at large (for more about Change Management, see also the *Change Management at CIT* article in this issue).

Enhancing NIH's Change Communications

At the February 1, 2011 ITMC Meeting, NINDS and CIT announced an effort to breathe fresh life into the NIH Change Management Communications Working Group by taking a two-pronged approach to the problem of change communications across the NIH enterprise. First, the group was to develop an Enterprise Architecture (EA) Business Process Model around CM. This would be a best community practice that would represent a more idealized vision of how Change Management could be done across NIH's various ICs, while also providing a framework for start-up CM initiatives to design processes that would cleanly integrate into the larger NIH environment. Second, the group was charged with designing an inter-IC change communications process that could be implemented immediately by any interested ICs, organizations, or system owners.

Reviewing existing CM Processes at NIH

In March, the working group kicked off with a free-ranging review of the Change Management processes in place at the participants' organizations, various ITIL maturity models, the Capability Maturity Model Integration (CMMI), frameworks for the integration of Information Technology Service Management (ITSM) with Project Management (PM), and a host of other related topics. From this starting point, the group built an EA process model framework that they submitted to the Office of the Chief Enterprise Architect just before

Memorial Day. The working group received a few well-considered comments during the EA RFC review period in July, which they integrated into the document. On August 30, the Architectural Review Board (ARB) approved the process model for inclusion in the NIH Enterprise Architecture.

The EA CM Process model

The EA model provides organizations who are implementing Change Management processes with a framework that they can use, which enables them to integrate their processes into the larger, federated NIH environment. While the model is not a complete, nuts and bolts textbook for Change Management implementation (ITIL and similar ITSM frameworks can provide that), it does offer a set of key points and deliverables that will support NIH enterprise change communications.

The IT Maintenance & Outage Calendar

After submitting the process model, the working group turned its attention to designing a real-world communications process that interested organizations could begin implementing immediately. They needed a central repository for proposed changes; for this, the group turned to the IT Maintenance & Outage Calendar, a web-based table of upcoming maintenance activities provided by CIT.

Under the process, each participating organization provides their maintenance activity information to the CIT Continuity Assurance Program (CAP) for posting to the calendar. Participants also routinely review the calendar as part of their own CM process to check for potential conflicts. The working group developed templates to use in communications with CAP, and spearheaded a pending overhaul to the IT Maintenance & Outage Calendar that will better enable participants to post and review content, and will improve reporting (the update is scheduled to roll out on September 28). The process also includes tables with guidance as to assessing what maintenance activities should be posted to the calendar, and what activities require Hot News notifications.

Now, it's your turn

At the September ITMC meeting, the working group presented the communications process, and is now actively soliciting organizations interested in participating in the process. Not all organizations at NIH will likely choose to participate, but the working group believes that if a dedicated group does implement the process within their organizations, they can demonstrate its value to the entirety of NIH.

The NIH Change Communications Plan is available to NIH staff at the following URL: http://sps.itil.cit.nih.gov/ChangeManagement/NIHCommunications/.

NINDS and CIT would like to thank the many ICs and organizations that have participated in the working group over its lifespan, including CC, eRA, NBS, NHLBI, NIAID, NIDCR, NIEHS, NIGMS, OD/OIT, and OD/ORS. We also would like to acknowledge that many others have provided input and feedback to the process, and though too many to list, we appreciate all of their efforts on our behalf.

If your IC is interested in participating in the change communications process, please contact Geoff Marsh (CIT) or Pete Soltys (NINDS).

CIT's Lifecycle Management Program for Your Hardware

When it comes to IT property management, CIT maintains, tracks, and replaces over 2300 desktop and laptop computers situated in three different locations. Part of the challenge of keeping the maintenance on a regular schedule without unduly disrupting customers' workflows is to have full control over where your inventory comes from, how it is used, and what sort of programs run on it.

So, to streamline processes and enhance the level of service to CIT customers, CIT initiated the Lifecycle Program in June 2010. By ensuring a standardized hardware inventory, lifecycle management increases the efficiency of acquisitions, maintenance, and IT support, as well as enabling better enforcement of NIH Security Policies and improved patch and security audit performance.

Cradle-to-grave management

The best way to increase levels of support and security for all of CIT was to manage as many machines as we could from cradle-to-grave. We set up the Lifecycle Program to manage all computers through the four lifecycle phases: Acquisition, Deployment, Maintenance, and Decommission.

DSS Lifecycle Management

Centralized Procurement

Deployment

Maintenance

Decommission
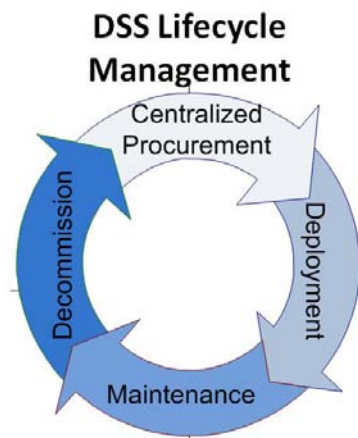
Implementing the Lifecycle Program eliminated existing inefficiencies in our old inventory system and processes that were the result of inadequate tracking of property and the inability to manage, maintain, and secure a larger than acceptable population of computers. The Lifecycle Program enabled us to centralize the management of the user machines (laptops and desktops) and to restructure how CIT charges its customers for IT support.

Restructured support charges

To make the cost of support more fair and equitable to all of our customers, and encourage participation in the Lifecycle Program, we changed how we charge for support services. Previously, every division paid based on human population with no regard to the number of machines that were being supported. This formula provided little incentive for divisions to rid themselves of their aged machines, the ones that were the largest burden to the service team.

Under the new pricing structure, divisions are charged based on the number of computers they possess. This charging structure provides an incentive for divisions to surplus some of the old equipment they are storing in closets or under people's desks. In addition, a special 40% premium is charged for machines that customers don't surplus after receiving new hardware, providing an added push to those reluctant to retire their old machines.

Standard hardware profile benefits hardware maintenance

Before we implemented a more standardized approach, the ever-increasing age of machines and the variety of makes and models in our hardware inventory hampered the efficiency of our maintenance. It required time-consuming and resource-intensive individualized support for the unique hardware profile of each individual make and model.

A standard hardware profile enables CIT to maintain a single disk image as opposed to multiple images, thus reducing the time needed to restore a machine. Previously, a crashed machine often required the services of a technician to

rebuild the system by hand. Restoring a machine this way could take up to two days, limiting our customers' ability to do their work. By decreasing the number of makes and models we support, we are now able to create a "disk image" for each computer, giving us the ability to restore a machine back to its original state in roughly two hours.

Efficiencies through centralization of the acquisition process

The old acquisition process was cumbersome and inefficient. Each division handling its own purchasing resulted in a duplication of effort. Divisions also had difficulties in preparing for new employees or catastrophic events because there was no shared pool of available machines. Instead, divisions were limited by the supplier's ability to deliver. Orders were delivered all over campus, which in many instances led to new machines being given directly to the end user without being properly built by a technician. As a result, computers were being delivered without the proper antivirus and patching software installed, thus creating a security risk and a breach of policy.

The Lifecycle Program created a contract vehicle that allows CIT to purchase all hardware through a single vendor, eliminating the need to compete each individual purchase. We have seen demonstrated cost savings through the leveraging of bulk buying. Just-in-time delivery has eliminated the need to warehouse machines on premises. As a result, divisions can have a new machine within two days in the event of a catastrophic incident or an unplanned new hire. And, for those times when a two-day timeframe is not fast enough, customers can rely on our loaner pool of new machines to limit their down time.

Centralized property management

Our previous property system was inconsistent. Each division's property custodian had their own process for entering new machines and naming conventions.

Through the Lifecycle program, CIT has made one specific group —Desktop Support Section (DSS), a section under the Division of Customer Support

(DCS)—responsible for the data entry and property intake process. DSS takes ownership at delivery and ensures that each machine is entered into the NIH property system accurately. Once entered, the computer is routed to a Lifecycle Technician to be properly imaged. Before delivery to customer, each machine goes through a quality assurance process by project management staff. From there, property ownership is transferred to the receiving division's property custodian before final delivery to the customer.

Maintenance and management improvements

- Conformance checks - What was once a painful task that every person had to complete in CIT twice a year hurts a lot less due to new policies and hardware. As a result of the new standard machines and security policies, CIT customers now only have to bring machines in for conformance checks **once** a year. Additionally, with better management, two to three hour conformance checks are a thing of the past. Checks can be completed in as little as 30 minutes.

- Critical security and software updates - Now, with computers consistently routed through the property and configuration process, there is a greater assurance that our client management software and antivirus management tools are being installed and configured properly. This process improvement has ensured that our computers will be less likely to miss vital security patches, software upgrades, and antivirus updates.

- Laptop loaner pool - The laptop loaner pool is the realization of a common desire expressed by each division during the planning stages of the Lifecycle Program. Since the program went live last summer, the pool has grown to 25 machines which are readily available to our customers. Users have access to the loaner pool when they experience hardware failures, have travel or presentation requirements, or when their computer requires routine maintenance. The laptop pool has been praised by our customers and has proven effective in reducing periods of downtime.

Decommission and surplus

In the past, when users purchased new machines, they would retain their old machines as personal backups or secondary units. Each of these semi-retired machines placed extra demands on our support services, as CIT still had to fix these aged items when broken or provide patch and security updates as best possible. With the change in how our customers are billed for support, divisions have become more determined to rid themselves of machines that are of little use. The need for individuals to keep a spare machine in the event of a technical malfunction has been replaced by the presence of the laptop loaner pool. In the first year of this program, CIT has been able to surplus over 500 of these machines.

Additional benefits as a result of the lifecycle program

The Lifecycle Program's success has grown since its initial deployment. As processes are continuously improved and customers continue to provide feedback, we have seen benefits and innovations that were not on the radar when this project was first conceived.

- By embedding the NIH asset tag into each machine's BIOS, our real-time client management service can now pick up this data through its automated inventory function, allowing the potential for greater data analysis by giving us the ability to cross-reference data from this service with the definitive NIH;
- Increased level of security with greater number of machines managed properly and a resulting reduction of non-compliant machines;
- Increased customer satisfaction as a result of less down time, newer and more productive machines, and increased knowledge base of support services;
- CIT project managers can worry less about loss of productivity due to down machines as a result of access to a laptop loaner pool and reduced time needed to fix equipment;
- New security policies are easier for everyone to follow;

- Reduced onboarding time for new hires as new machines are now waiting for them when they arrive;
- An increased ability for division managers to plan and budget based on better insight of future support costs and hardware acquisitions.

Overall, the Lifecycle Program has been a successful work in progress. With each deployment period, we realize new solutions and improvements. Through strong project management and supportive leadership, Lifecycle is poised to be a critical win for CIT and our customers in terms of efficiencies and increased levels of service for all its members.

Questions?

If you have any questions about the Lifecycle Management Program, please contact the NIH IT Service Desk at 301-496-4357, 301-496-8294 (TTY), or 866-319-4357 (toll free), or online at http://itservicedesk.nih.gov/support/.

Ask the NIH IT Service Desk: More about the KB

For those of you who work the occasional odd hours, or are hooked on quick access to information, the NIH IT Service Desk's Self-Service Knowledge Base (KB) is the tool for you.

Why use the KB?

The KB is the place to go to when you are looking for NIH-related IT information. For example, if you want to know how you can setup NIH email on your iPad or if you want to know what to do when you lose your BlackBerry on the metro, the KB can help.

The KB is open 24x7 and is perfect for those who like to find answers quickly and independently, or for those who are working off-hours. Need a quick review on how to update your address in GovTrip? Give the KB a try.

Video tutorials

Some of the most popular Service Desk requests now also have video tutorials attached to the text, such as [How to Create a Personal Folder in MS Outlook](#), or [How to Use your PIV Card and the Any Connect VPN client for Remote Access](#).

We want your feedback

The Self-Service KB is a growing resource and depends on the contributions and feedback from the NIH community. If you use the KB and have information that you would like added to the KB, or if you see incorrect information, or have

other comments/questions, please feel free to contact the NIH IT Service Desk's Knowledge Management team at CITDCSKMTEAM@mail.nih.gov.

Visit the Self-Service Knowledge Base:

- http://itservicedesk.nih.gov/selfservice (Direct link)
- http://itservicedesk.nih.gov/support/ (Via the OSR/Online Ticket Submit)

As always, the Service Desk is happy to help with your requests, and we hope that this resource will enhance our ability to do so.

Updated Deregistration Official and Account Sponsor Manual

An updated version of the CIT manual *Procedures for Deregistration Officials and Account Sponsors* (September 2011) is now available. You can view this publication online, print a PDF copy, or order a hard copy from the CIT publications [http://publications.cit.nih.gov] web page. Click on the link to "General Documentation" to access the manual.

What does it include?

Procedures for Deregistration Officials and Account Sponsors describes the responsibilities of deregistration officials and account sponsors for their CIT accounts. It also provides information on Web Sponsor, how to reset forgotten passwords, the requirements for a RACF (Titan) password, how to access billing reports (if you are an account official), and the responsibilities of two other types of account officials--billing coordinators and security coordinators.

Who should read it?

If you are a new account official for a CIT account (employed at NIH or another government agency) you will find this manual useful.

More information

For more information about these services, contact the NIH IT Service Desk via http://ITServiceDesk.nih.gov or by phone at 301-496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357.

Directories and Reference Information

NIH Data Center Hardware and Software
[http://cit.nih.gov/ServiceCatalog/HardwareSoftware.htm]

Computer Services Telephone Directory
[http://cit.nih.gov/ServiceCatalog/ServicesDirectory.htm]

Online Services Directory
[http://www.cit.nih.gov/ServiceCatalog/OnlineServices.htm]

The CIT Service Catalog
[http://cit.nih.gov/ServiceCatalog/]

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DCSS   Division of Computer System Services
PECO   Planning, Evaluation & Communications
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