

Summer 2008 [Number 241]



Major Articles

Celebrating 40 Years of Interface

Using the NIH Guide for Identifying Sensitive Information

Keeping Your Laptop and Data Secure

The zSeries Server for Economy, Reliability, Scalability and Security

Property Risk Mitigation with nVision Property Reports

Ask the NIH Help Desk: What to Do if Your Laptop or BlackBerry Is Lost or Stolen

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	February	March	April
Total hits for the month	74,897,871	81,422,147	79,833,457
Hits per day	2,582,685	2,626,520	2,661,115
Different individuals per month	2,653,115	2,798,883	2,872,627

Articles

Celebrating 40 Years of Interface

Forty years ago, on July 15, 1968, the first issue of *Interface* appeared at NIH. That same year, pop culture offered us the HAL 9000, villain of Stanley Kubrick's film *2001: A Space Odyssey*, as the harbinger of computers' powers. Of course, actual computers were still far from being HAL-like and the realm of computing then looked much different, even simpler, than it does today. The arrival of *Interface*, begun as a "series of technical notes" from the Division of Computer Research and Technology (DCRT), was a relatively small event in a year that also saw the founding of the Intel Corporation, the first Network Working Group (NWG) meetings, the first ARPANET program plan (June 3, 1968) and the first public demonstration of hypertext and the mouse pointer on the NLS (oNLine System).

And yet, because computers play such a vital part in supporting the scientific research at NIH, *Interface* has been fortunate to chronicle many important instances and firsts of computing history simply by being a continued resource for NIH computer users. Computing at NIH has grown and changed over the past 40 years, something reflected not just in the step-by-step changes that turned the Division of Computer Research and Technology into the Center for Information Technology (CIT), but also in the expansion of *Interface*'s focus. As computer technology created new possibilities and CIT strove to offer the best digital tools to NIH researchers, scientists and support staff, *Interface* widened its scope beyond technical notes to offer user-friendly information about applications, services and programs for all CIT customers, regardless of their computer-related expertise.

Early computing at NIH (1960s)

The machinery and services *Interface* covered in its early years looked quite different from what is available in terms of computing power today. In the 1960s, computers, which used punch cards for data entry, storage and processing, tended to be large, relatively slow machines that could process only a limited number of jobs at a time and required specially-trained operators to function. Potential computer users had to deal with key punches, data cards, program decks, time sharing and long waits while the computer ran the jobs of those who submitted first. Computer access at NIH improved somewhat in the late 1960s, when remote terminal systems brought computers to more NIH laboratories and offices and the computer facility could accommodate an average of 43 batch jobs per day.

A milestone of computing created at the NIH Computer Center that just pre-dated *Interface* was SPOUT (system peripheral output utility) in 1967-68. This resource-saving printer usage program saved NIH about \$200,000 in its first year. It was later distributed to other federal agencies and organizations throughout the world.

The first issue

The first issue of *Interface*, dated July 15, 1968, was only 13 pages long and consisted mostly of a diagnostics section offering descriptions of common problems with the operating system, possible

solutions and hints for debugging. Terms like JCL (job control language), FORTRAN, COBOL dominated, and the specialized nature of the terminology gave rise to in-jokes in later issues.

Apart from introducing itself, the first issue also introduced the *Interface* masthead symbol, which "portrays NIH's medical research and administration linked with computer technology." It was left to the reader to figure out which shape represented which field.



The first Interface masthead symbol

Highlights from the first year

Interface reported on two important firsts at NIH in 1968:

- August 1968 (#2): "On August 3, 1968, the NIH Computer Center became the first OS/360 installation in the country to share user libraries, on common disk files, between more than two 360 computer systems."
- November 1968 (#5): The first conversational programming system (CPS) at NIH becomes available for testing in December. CPS, a PL/1-like programming language, allows multiple users to simultaneously write, debug and execute 360 computer programs conversationally from 2741 typewriter terminals that communicate with the NIH central 360 system over telephone lines (similar to commercial BASIC systems).

WYLBUR and Interface

Although *Interface* began teasing readers with cryptic messages such as "WYLBUR is coming!" in issue #5 (November 1968), NIH users had to wait until July 1969, coincidentally *Interface's* first birthday (#11), before WYLBUR- the multi-user, terminal-oriented, text-editing and remote job entry system running under OS/360 - arrived on campus for testing, and it wasn't until August that WYLBUR finally went into production at NIH (#12, August 1969).

WYLBUR was a huge advance over the old punch card system of programming because it allowed the creation, modification and retention of sets of arbitrary textual data that could be used as source language for a computer program, data for a computer program or simple text (letters or lists). In fact, for many years *Interface* itself was created in WYLBUR using an NIH 8188 terminal with a modem connection to the IBM mainframe.

Unlike many other programs from the early days of computing, WYLBUR also proved to be extremely resilient. Not only did WYLBUR undergo only one major re-design (in 1980), which resulted in NIH Extended WYLBUR (#92), the program also escaped its planned retirement in February 2001 (as reported in *Interface* issue #213, March 2000: "The Plug Will Not Be Pulled on WYLBUR in February 2001!"). Today, WYLBUR is still running, with relatively few changes from NIH Extended WYLBUR.

From the archives - 1970s:

• March 1970 (#17): An *Interface* article by Dr. L.E. Watson highlights how computers help patients by describing the success of the DCRT-designed (and developed) electronic data processing blood donor file system for the Clinical Center Blood Bank. By using WYLBUR to create data sets for updating donor files and maintaining online data files, the system offers unparalleled convenience, speed and accuracy to doctors, who no longer have to rely on slow manual retrieval of donor and blood type data.

Interface in the 1970s and 1980s

In 1970, *Interface* added two new regular columns to its repertoire: **Data Line**, introduced in issue #18 (April) as a sort of informal advice forum to address specific, brief user questions about Computer Center services and operations; and **Recreational Programming** (by Gary Knott), which, beginning with issue #22 (November), offered readers monthly brain-teasing programming problems to solve. It was advertised as "a mixture of practical and theoretical programming lore intended to amuse and enlighten" (p. 5). The column was later renamed **Programming Methods** and ran throughout most of the 1970s.

From the archives - 1970s:

- In an early effort at resource conservation, issue #22 (November 1970) points out that the Computer Center's annual consumption of more than 325 tons of printer paper and over 55 tons of punch cards translates to 5750 trees felled each year in the U.S. to provide paper for NIH computers and calls for the establishment of a paper salvage program (mentioned again in issue #24 of February 1971).
- April 1971 (#25): Shared Spool arrives. Shared Spool, created by the NIH Computer Center, allows multiple machines to share a common work queue. The design was taken over by IBM and is still an essential component of IBM's latest operating system.
- July 1971 (#28): *Interface* reports that NIH is the first institution anywhere in the world to install an IBM 370/165.
- September 1977 (#70): An article on a program called Mailbox, part of a new communication medium called "computer mail," mentions the Carter campaign's use of this new medium.

In 1978, *Interface* celebrated its 10th anniversary (issue #76, July 15) by instituting a unified table of contents and a brand new, sleeker cover page. Previously, the only issues with a true cover page, and any attempts at cover art, were the December/Christmas issues. Beginning with issue #78, every issue now

had a true cover page that might even include the occasional cover art. Color, both for the cover and the entire text of an issue, was still reserved for Christmas issues – a trend that began in 1970 and lasted for decades.

From the archives - 1980s:

- November 1981 (#98): Dyadic processing arrives at NIH with the IBM 3081 Dyadic Processor Complex, one of the first to be shipped to a government installation.
- March 1983 (#108): Resource Access Control Facility (RACF) to provide data set security for the NIH Computer Utility (CU).
- Also reported in issue #108 is the news that *Interface* won second prize in the 1982 newsletter contest conducted by the Association for Computer Machinery (ACM) Special Interest Group on University and College Computing Services.

In 1984, DCRT celebrated its 20th anniversary, and *Interface* reported on the festivities (#116, April). By this time, people recognized computing as an essential part of all NIH activities, while marveling at how the state of the technology had improved since the early beginnings. The NIH Central Computing Utility (CU) now covered 26,000 square feet, operated 24 hours a day and seven days a week (up from 20 hours a day and five days a week in the 1960s), served over 14,500 users and processed over 30,000 batch and interactive jobs daily – a great improvement from the average of 43 per day in 1965.

From the archives - 1980s:

- April 1984 (#116): The NIH CU introduces Information EXCHANGE as an easy way to share information among its users.
- December 1985 (#127): *Interface* features Database 2 (DB2), a general purpose, user-friendly relational model DBMS (Data Base Management System).
- March 1986 (#129): *Interface* announces that the NIH CU has joined the BITNET (Because it's Time) international network, a digital communications network connecting universities and educational institutions to facilitate the exchange of information between scientists and educators.

Interface's own 20th anniversary in 1988 passed more quietly, with a celebratory cover on issue #145 (August) and a black and white centerfold of past *Interface* covers featuring cover #1, TSO, WYLBUR, ENTER MAIL, the linking of DEC-10 and IBM 370 and the DB2 Christmas cover. At the time, *Interface* was produced in WYLBUR and printed on the mainframe printers. The titles for articles were constructed on a Merlin label printing machine, and then stripped into the hardcopy.

The yearly *Interface* indices were created by hand by having the writing staff go through the issues for the year and laboriously crafting a WYLBUR file with the index entries. In 1988, part of this process was modernized by assembling the "back pages" with Ventura desktop publishing software on a PC. With desktop software still in the future, *Interface* staff had to rely on the NIH Medical Arts department for the cover art, which had begun appearing on every issue in the 1980s.

From the archives - 1980s:

- July 1986 (#131): For the first time, the CU's two mainframe computers communicate and now users can easily send mail between WYLBUR and DECsystem-10.
- December 1987 (#140): ENTER MAIL (EM) improves the NIH Computer Center's (CC) electronic mail facility. EM will provide the most comprehensive electronic mail and communications processing capabilities of the day both on NIH campus and around the world.
- April 1988 (#143): UNIX planned as part of replacement for DECsystem-10.
- October 1989 (#153): A two-page photo spread welcomes the arrival of HELIX, the new NIH Convex Supercomputer.
- December 1989 (#154): Mail connectivity to the Internet becomes operational at NIH this new gateway provides high-speed mail service to TCP/IP and DECnet LANs and the worldwide Internet network

Interface in the 1990s

In the early 90s, the production of *Interface* moved away from WYLBUR and to a Mac platform, beginning with FrameMaker software and eventually shifting over to creating issues in Word on the Mac. Using Word to produce *Interface* eventually led to the current use of the Windows platform.

From the archives – 1990s:

- July 1990 (#158): A centralized Bulletin Board System (BBS) allows users not only to access but also to create and administer their own bulletin boards without having to acquire equipment and personnel for full 24-hour operation.
- 1991 (#163 and 165): NIH CU Integrated LAN and Workstation Support Network (NUnet) expands to encompass 78 LANs in 30 buildings, connected via two high-speed central Ethernet networks. The NUnet electronic mail gateway connects Parklawn Computer Center (PCC) to HHS regional offices via a T1 teleprocessing line.
- 1992: NIHnet the interconnected networks of NIH WANs and LANs (#171); NIH offers LISTSERV (#173); NIH Gopher service implemented on Helix enables users to browse, search and retrieve information on multiple networked computers (#175).
- September 1993 (#181): In July, the Computer Center Branch became the Computing Facilities Branch (CFB). The new name brings an expanded mission: responsibility for the centrally-owned computing resources for NIH enterprise use supporting both scientific and administrative programs.

For *Interface*, as for many others, the 1990s revolve around the World Wide Web (as it was first introduced to us) and computer networking. During the celebration of DCRT's 30th anniversary in 1994, *Interface* noted the exponential growth curve in use of networks at NIH, where network usage more than doubled in the 1990s (#184 and 185). Indeed, networking that created massively parallel supercomputers greatly helped scientific computing face challenges like protein folding, molecular dynamics or drug design on a quantum mechanical basis.

In March of 1995, *Interface* ventured online for the first time with <u>issue #190</u>, which featured articles explaining the Internet ("What is the World Wide Web?") and how to publish online ("Publishing Your NIH Documents on the Internet"). The *Interface* cover art did not manage the jump to the web until December of that year, when <u>issue #193</u> offered a link to the art as well as the articles.



NIH Moves Toward Consensus Online cover art for Interface issue #193 – the first online cover for Interface

Although *Interface* had an online presence now, the main focus still lay with its print incarnation – a set of priorities reflected in the bare-bones design and sometimes awkward structure of the web pages. On the other hand, *Interface* editors spared readers the flash animation and garish colors of other early websites. *Interface* marked its 30th anniversary in 1998 by displaying the front page of its first issue both online and in print. At this point, celebrating anniversaries with reprints of issue covers seems to have established itself as a tradition for *Interface*.

In 1999, the print issue underwent both a full-body overhaul to a new, easier-to-read format – referred to as "*Interface* Gets a Facelift" (#209) – and a brand new cover design that featured the logo and set-up *Interface* still has today (#210). As part of these changes, the "Technical Notes" section migrated online and only abstracts of the notes appeared in the print version after issue #209.

From the archives – 1990s:

- June 1995 (#191): "A DCRT Home Page on the World Wide Web (Home, Home on the Web)" [http://datacenter.cit.nih.gov/interface/interface191/dcrt.html]
- Also in #191: PARACHUTE opens at NIH (dial-up network access to the NIH community).
- 1996 (#196 and 197): The NIH SP, a new large-scale parallel supercomputer, becomes available to NIH scientists.
- December 1996 (#198): The issue's cover art features SILK (Secure Internet-LinKed-or SILK-Web technology) the web service will be introduced on campus in January 1997.
- June 1997 (#201): "NIH's New Open Environment for Client/Server Computing Coming Soon" [http://datacenter.cit.nih.gov/interface/interface201/client-server.html]

Remember Y2K?

Interface devoted much of the second half of the 1990s to the specter of Y2K, leading off with a dramatic 1996 cover asking readers "Are You Ready?" (#195, March 1996) and <u>an article</u> about the "year 2000 crisis" that labeled the issue, with its attendant "drop dead date," the "Challenge of the Century."



Interface #195 cover art

The topic of Y2K reappeared every year after 1996, in cover art (#203) as well as extensive articles about conversion services and Y2K readiness (#211). Finally, in December of 1999, *Interface* was ready to "Welcome the Future" (#212) and reported that "Several years of work by CIT and NIH are about to pay off with a smooth transition into the next millennium." The calm optimism was warranted, as the Century Rollover Weekend came and went without a breakdown of NIH computing or civilization in general.

From the archives – 1990s:

- June 1998 (#206): DCRT becomes the Center for Information Technology (CIT) and Alan S. Graeff, the first CIO of NIH, will head CIT.
- December 1998 (#208): CIT launched dynamic website in September [http://datacenter.cit.nih.gov/interface/interface208/citweb.htm]
- September 1999 (#211): The CIT website wins CIO WebBusiness magazine's 1999 50/50 awards [http://datacenter.cit.nih.gov/interface/interface211/citweb.htm]

After the millennium

Having successfully weathered the first challenge of the new digital decade, *Interface* took steps to fully embrace its online existence in 2000. First, in March 2000, the *Interface* website expanded its archival functions by adding the annual indexes from 1990 to 1993 and by offering the full and searchable text of past issues, starting with #189 (December 1994). Then, *Interface* offered its readers the *Interface* listserv list, which would notify subscribers once the web version of an issue became available (after the print version had been sent out).

From the archives – 2000s:

- June 2000 (#214): The NIH Business System (NBS) will replace the 22-year-old Administrative Data Base (ADB). The NIH-wide effort will likely take four years and cost an estimated \$50 million.
- Also in #214: Biowulf, a 224-processor supercluster of PCs, is the latest high performance computer system to join the Helix Systems. Biowulf runs the Linux operating system and is interconnected by a high-speed network.
- January 2001 (#217): Titan Transition: CIT is in the process of implementing the new, standard OS/390 system (named Titan) to combine the best functions of the North and South systems onto a single platform.
- August/September 2001 (#220): CIT creates a specialized spin-off to *Interface*, called "Titan / South System News" (now known as "Titan News"), as a way to quickly communicate technical information directly to OS/390 (MVS) users as the information becomes available.
- November 2003 (#228): NIH Login offers one login for all NIH applications. Also in this issue: get to know the NIH Portal. And, for the first time, CIT is offering off-site co-location services housing your equipment in a secure, off-site location in Sterling, VA.

The biggest step towards a full digital existence for *Interface* came in 2001, when, with its first official online issue (#218), *Interface* became a full-fledged web journal - available to anyone with a web browser and a connection to the Internet. The <u>April 2001 issue</u> (#218) was the first issue formatted specifically for e-mail and online distribution in order to offer readers "a quick, easy way to receive information about CIT policies, services, and other important news."

On September 5, 2001, *Interface* Online unveiled a new web design (#220) that should be familiar to readers today – after all, it is the look of this newest issue, celebrating 40 years of *Interface* serving users at CIT and NIH.

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The first issue of *Interface*, July 15, 1968.



The blurriness of the reprint is due to the poor quality of the original image file. For a slightly clearer view, try http://datacenter.cit.nih.gov/interface/interface206/iface.htm.

Using the NIH Guide for Identifying Sensitive Information

In the wake of a recent breach of NIH Personally Identifiable Information (PII) – the theft of an employee's **unencrypted** laptop containing patient data and social security numbers – the NIH <u>Guide for</u> <u>Identifying Sensitive Information at the NIH</u> was published (April, 2008). A cascade of OMB, HHS and NIH controls continue to be mandated in an attempt to close the security gaps where sensitive data is at risk. At the crux of this effort is educating users how to determine if the data is sensitive.

What is sensitive information and how do I identify it?

Information is considered sensitive if the loss of confidentiality, integrity, or availability could be expected to have a **serious**, **severe or catastrophic** adverse effect on organizational operations, organizational assets, or individuals (definition from the *Guide*).

To recognize whether unclassified information is sensitive and requires special precautions, users must take into account not only the face value of data and its context but must consider whether improper disclosure, modification or deletion of the data could be expected to have a serious, severe or catastrophic adverse effect on the NIH mission and operations, organizational assets or individuals.

It is not always easy or straightforward to recognize information as sensitive or categorize data as Personally Identifiable Information (PII). Thus, the *Guide for Identifying Sensitive Information at the NIH* is intended to provide useful guidance on how to effectively identify sensitive information (including PII) and Privacy Act records. The publication suggests some insight into the complexity of identifying this type of data. While it's not an exact science and requires some thinking on the part of the user, context is often a determining factor.

For example, a picture of an employee along with their name placed in a newsletter article recognizing their achievements is not sensitive. However, that same picture and name contained in a file named "Genetic screening results" or "Staff placed on probation" would be considered very sensitive. The same information in different contexts can make a tremendous difference in how the information needs to be protected.

Personally Identifiable Information (PII)

The *Guide for Identifying Sensitive Information at the NIH* identifies PII as any information about an individual maintained by an agency, including, but not limited to, education, financial transactions, medical history, and criminal or employment history <u>and</u> information which can be used to distinguish or trace an individual's identity, such as their name, SSN, date and place of birth, mother's maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

In general, PII is an individual identifier (like a name or driver's license number) along with data that can be used to cause harm to the individual (like a bank account number or medical record). PII can be an individual field, such as a SSN. PII does NOT include publicly obtainable information that is lawfully made available to the general public from federal, state, or local government records.

Examples of identifying pieces of information can include:

- Personal characteristics (such as height, weight, gender, sexual orientation, date of birth, age, hair color, eye color, race, ethnicity, scars, tattoos, gang affiliation, religious affiliation, place of birth, mother's maiden name, distinguishing features and biometrics information, such as fingerprints, DNA and retinal scans).
- A unique set of numbers or characters assigned to a specific individual, including name, address, phone number, SSN, e-mail address, driver's license number, financial account or credit card number, and Automated Integrated Fingerprint Identification System (AIFIS) identifier, booking, or detention system number.
- Descriptions of event(s) or points in time (for example, information in documents such as police reports, arrest reports and medical records).
- Descriptions of location(s) or place(s), including geographic information system (GIS) locations, electronic bracelet monitoring information, etc.

Pieces of information that can cause harm to an individual include the following types of records:

- Financial records
- Criminal records
- Health/Patient records
- Personnel/HR records

However, context, good judgment and risk assessment should always be taken into consideration when evaluating data's potential for harm.

The Privacy Act

PII may be contained in a Privacy Act system of records. The Privacy Act applies when you have a group of records (more than one) that contains information about an individual and is designed so that data is retrieved using the individual's name or another personal identifier assigned to that individual. If you have a single record, or publicly available information, it is not subject to the Privacy Act although it may still be sensitive. See the *Guide for Identifying Sensitive Information at the NIH* for more information about the Privacy Act.

Why Social Security numbers are a privacy risk

The Social Security number (SSN) has a unique status as a privacy risk because no other form of personal identification plays such a significant role in linking records that contain sensitive information. Identity theft and other forms of credit fraud are associated with the widespread overuse and public exposure of SSNs as unique identifiers.

NIH staff and contractors **should** <u>not</u>:

- Collect SSNs unnecessarily,
- Post or publicly display SSNs,
- Print SSNs on identification cards or badges,
- Transmit SSNs over the Internet or in email unless the connection is secure or the number is encrypted,
- Require people to transmit a SSN over the Internet or in email unless the connection is secure or the number is encrypted,
- Require people to log onto a website using an SSN as a username or password, or
- Print SSNs on anything mailed to a customer unless required by law or the document is a form or application.

Please see the *Guide for Identifying Sensitive Information at the NIH* for important tips on keeping the SSN private and safe.

How the *Guide* can help you

The NIH *Guide for Identifying Sensitive Information at the NIH* contains working definitions and examples that help users distinguish whether data (electronic and hard copy) is sensitive information, PII or can be publicly available without causing harm. The *Guide* also qualifies what data falls under Privacy Act protections.

In addition to guidance about adherence to security controls including encryption, more stringent authentication and time-out requirements for remote access, etc., the *Guide for Identifying Sensitive Information at the NIH* educates users about minimizing the risk of sensitive information exposure by reducing its use. This publication addresses de-identification of patient data and devotes an entire section to understanding the unique status of the Social Security numbers (SSN) as a privacy risk. Users will develop a full appreciation on how the use of the SSN can be reduced, and if required, how to securely manage and protect this form of identity.

Be aware that this publication is a living document and may be expanded. A newly established trans-NIH work group is being convened to determine if there are additional types of information that should be labeled as sensitive. The work group will analyze what polices and protections currently apply to sensitive information, and if gaps in coverage are identified, supplementary policy protections may be implemented.

Remember your role in safeguarding sensitive information

We exist in a world where personal privacy erodes daily, identify theft and credit fraud are rampant and the confidentiality, integrity and availability of organizational assets and operations are exposed to overt and stealth attacks. This underscores the need for every individual using NIH information and information systems to take their role of information stewardship seriously. Beyond practicing common sense behaviors, the protection of sensitive NIH information will be best served when users supplement their knowledge with the valuable guidance contained in this *Guide for Identifying Sensitive Information at the NIH*.

Have questions?

For questions concerning the NIH *Guide for Identifying Sensitive Information at the NIH*, please contact Brent Kopp (koppb@mail.nih.gov). Additional information about privacy and the Privacy Act can be found at the Office of the Senior Official for Privacy website (<u>http://oma.od.nih.gov/ms/privacy/</u>) or by contacting your IC Privacy Coordinator (<u>http://oma.od.nih.gov/about/contact/browse.asp?fa_id=3</u>).



Keeping Your Laptop and Data Secure

Laptop computers offer the convenience of mobility, connectivity and technology – virtual offices on the road – but these qualities also make them vulnerable to the risk of loss or theft. Losing possession of your NIH-issued laptop creates opportunities for wrongful or malicious access to NIH data. The recent theft of an NIH employee's laptop containing sensitive patient data has led to a renewed focus on ensuring the installation and use of full-disk encryption on all NIH laptops (unless a waiver is in place). However, beyond encryption, laptop users need to be aware of precautions they should be taking. Anyone who has in their possession an NIH-owned laptop should take a few minutes to review the recently revised, <u>NIH</u> Laptop Computer Security Brochure.

The brochure includes useful tips on preventing theft or loss, data protection, NIH policy requirements and resources for assistance. Excerpted from this useful brochure is the following basic advice on keeping your NIH laptop, and the sensitive information stored there, safe.

Preventing theft or loss

It only takes a moment of distraction for your laptop to vanish. No one thinks their laptop will be stolen – at least not until they find the trunk of their car broken into, notice that their laptop isn't waiting at the other side of airport security, or get a refill at the coffee shop only to turn around and find their laptop gone. Always assume thieves are watching and waiting patiently for *your* moment of distraction.

- **Treat your laptop like cash:** Never leave it unattended in an unsecured environment even for a few seconds.
- Never store passwords: Including your password in a carrying case or on your laptop is like leaving the keys in your car.
- **Keep it locked:** In the office, store the laptop in a locked drawer and lock your door when you leave.
- **Keep it off the floor:** When in public at a conference, coffee shop or a registration desk avoid putting your laptop on the floor. If you must put it down, place it between your feet or against your leg, so that you are constantly aware of it.
- **Pay attention at airports:** Hold on to your laptop until the person in front of you has gone through the metal detector. Then, keep a watchful eye on it as the laptop emerges on the other side of the screener.
- **Keep it out of the car:** Don't leave your laptop in the car not on the seat, not in the trunk. If you must leave it behind, keep it out of sight. Avoid putting it in the trunk just prior to leaving your

car – anyone watching knows it's in there! Don't leave laptops in vehicles for extended periods. Winter temperatures can freeze and split LCD screens, and a hot summer day can melt components.

- **Disguise the bag:** When transporting your laptop, using a laptop carrying case advertises what's inside. Consider using a suitcase, a padded briefcase or backpack instead.
- **Be vigilant in hotels:** A security cable may not be enough. If available, put the laptop inside the in-room safe. At minimum, keep it out of sight (in a drawer or in your suitcase). Consider putting the "Do-Not-Disturb" sign out when you leave.
- Alarms: Consider laptop alarms, hard-drive locks and/or "lo-jack" type devices a program that reports the location of a stolen laptop once it's connected to the Internet. Some machines come with fingerprint readers.

If Your Laptop is Lost or Stolen: Immediately notify: the NIH Help Desk, your supervisor and your Information Systems Security Officer (ISSO). As soon as possible, notify law enforcement personnel, the building security office and your IC property manager.

Protecting data and external media

- **Passwords:** Use a strong log-in password that is not easily guessed. Immediately change the default password on new laptops and <u>never</u> set the log-in dialog box to remember your password. Use a password-protected screen saver that comes on after a few minutes of inactivity.
- Keep your system up-to-date: This includes antivirus and spyware programs. Operating system and application software must be patched with the latest security fixes. <u>Bring your laptop to</u> work at least every 30 days and connect it to the NIH network this will ensure all updates and patches are installed.
- **Back up your data:** Copy data to a CD, DVD, USB flash drive or a local or network server that is backed up on a regular basis. If the data is sensitive, make sure the back-up is secure. For example, if you back up sensitive data to a USB flash drive or other portable device, that device must be encrypted.

NIH policy requirements

The brochure addresses various policies that apply to the use of NIH-owned laptops, including requirements for asset tags and property passes, warning banners, automatic updates of anti-virus software, wireless and remote access to NIHnet.

All government-owned laptop computers must have fully functional encryption software installed. Sensitive information, including personally identifiable information, cannot be stored on any laptop or portable/mobile device unless it is encrypted. *PointSec* encryption software currently in use for Windows 2000, XP, Vista and Linux, will soon be available for Macintosh platforms.

Resources and assistance

While using an NIH-owned laptop has incredible benefits; remember that it's also a privilege that comes with responsibilities. You are accountable for your laptop, the data that resides on it and the security of its connectivity to other sources — most notably NIHnet. Laptops are stolen every day and the vast majority are never recovered. The value of the laptop itself pales in comparison to the incalculable costs of lost data, a breach of sensitive information and/or unauthorized access to NIH networks. Laptop security should be an ever-present concern. When you think it's secure — think again and make doubly sure you have taken every necessary precaution.

If consulting the *NIH Laptop Computer Security Brochure* leaves you with further questions, CIT offers a number of other resources to address security concerns:

Information System Security Officers: <u>http://irm.cit.nih.gov/nihsecurity/scroster.html</u>

Information Security website: <u>http://www.cit.nih.gov/security.html</u>

Information Security and Policies: <u>http://irm.cit.nih.gov/security/sec_policy.html</u>.

If you have further questions or are unsure how best to secure your laptop and the data it contains, ask the NIH Help Desk at <u>http://ithelpdesk.nih.gov</u> or by phone at 301-496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357.

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The zSeries Server for Economy, Reliability, Scalability and Security

When you need a server to host your application, what do you look for? How about reliability, security and scalability? If these issues are important to you, consider using the Titan System. Titan uses an IBM z9-BC (Business Class) zSeries server known for reliability, availability, serviceability, scalability, virtualization, security and lower power consumption.

Reliability- Titan's z9-BC hardware components have extensive self-checking and self-recovery capabilities. The system's software reliability is a result of extensive testing and the ability to make quick updates for detected problems.

Availability – Customers using zSeries servers experience months or even years of system availability between unscheduled down times. Titan can recover from a failed component without impacting the rest of the running system. This applies to hardware recovery (the automatic replacing of failed elements with spares) and software recovery (the layers of error recovery that are provided by the operating system).

Serviceability - The zSeries z9-BC server can determine why a failure occurred, allowing for the replacement of hardware and software elements while minimizing the impact on the operational system.

Scalability – In the IT industry, the only constant is change. Increased customer demands can often trigger a growth in IT infrastructure to cope with increased demand. The degree to which a data center can add capacity without disruption to normal business processes or without incurring excessive overhead (non productive processing) is largely determined by the scalability of the particular hardware architecture. The z9 provides scalability in both hardware and software with the ability to run multiple copies of the z/OS, z/VM, and zLinux operating systems all on the same processor complex.

Virtualization - The concept of running many independent logical machines on one physical machine is not new to a large scale system environment. Mainframe operating systems have been doing virtualization since the mid-1970's. Due to its maturity, the zSeries server can take virtualization to its logical limit, running dozens or even hundreds of server applications in a single physical machine. The zSeries server offers full virtualization at the hardware level and is optimized to have load leveling and resource sharing managed by the hypervisor, not the guest operating system or applications. The zSeries processor architecture is now capable of running logical RedHat and SUSE Linux servers all in one physical zSeries server (see also the "Linux Virtual Servers" article in this issue of *Interface*). This capability can result in decreased provisioning time and network savings for any application user who chooses this computing alternative.

Security - The security-rich holistic design of the zSeries Server mitigates the risk of security breaches and strengthens NIH's mandate for data protection. Originally designed to be shared by thousands of users, the zSeries Server has security built into nearly every level of the computer - from the processor level, to

the operating system, to the application level. This design helps protect System z from malware, viruses and threats from insiders. System z security features enable applications to meet regulatory reporting needs with confidence. These include encryption solutions to secure data from theft or compromise, access control management and extensive auditing features - with the simplicity of centralized management. System z security is one of the many reasons why the world's top data centers rely on the zSeries Server to help secure sensitive business transactions.

Today, the zSeries server is ideally suited to process a wide range of applications running in either the traditional z/OS environment or in the zLinux environment.

Today's mainframe is literally a data center in a box.

z/OS Titan applications

The zSeries server is also ideally suited to process workloads that fall in two categories: batch processing and online transaction processing. The transaction processing can be either web-based or non-web-based.

Batch processing

Titan batch applications can be used to process terabytes of data from high-storage devices and provide valuable output that may include financial reports, files for network transfer or input into databases supported by DB2 and Oracle. Titan batch applications can process up to millions of records reliably and efficiently due to the machine's hardware architecture. To support batch processing on Titan, CIT is equipped with sophisticated web-based job scheduling software that allows either the customer or Data Center staff to schedule, submit, manage and track the execution and output of batch processing.

Titan batch processing should be considered by customers processing and storing large amounts of input data or producing (or planning to produce) a large volume of output. Titan batch applications may include general file utilities, DB2 database management system applications, REXX and SAS applications, reporting applications or the backup of critical files and databases before and after a batch window. Some of the most popular batch jobs currently running on Titan are DB2, REXX, and SAS applications. REXX stands for Restructured eXtended eXecutor and is an interpretive programming language that is designed to be both easy to learn and easy to read. SAS stands for Statistical Analysis System and is an integrated system of software products that support data management, report writing and a host of other functions.

Future issues of *Interface* will present a few more in-depth articles on how REXX, SAS and other tools may be used to meet your information processing requirements.

Online transaction processing

Titan's high reliability, availability and scalability make it a great platform for hosting online applications. Titan already hosts a vast number of transaction systems including Web Sponsor (run via

Shadow Web Server and DB2), CIMS chargeback billing reports, Model 204, TSO, Wylbur, CICS, the Administrative Database via IMS, and many other DB2 applications.

Shadow Web Server is a native Titan web server that provides controlled access to Titan data and applications using a web browser. Shadow Web Server "listens" for web client sessions (URLs). Each inbound session is assigned a thread and matched against pre-defined *rules*, or event procedures, to enforce a controlled transaction process. Rules can perform a variety of functions that include presenting html, processing SQL or running a REXX-language script.

Look for future *Interface* issues that will present more in-depth articles on how to use the many online tools currently available on Titan.

We are here for you, our customers

The zSeries server has undergone a resurgence because of its competitive cost of ownership advantages and the new technologies available that can support Internet applications. An exciting feature of the new release of DB2 is the capability to store and retrieve audio, video, and imaging data into a DB2 database. This version of DB2 is scheduled to be installed at NIH in the near future.

Our goal is to help contribute to more efficient utilization of server capacity, higher people productivity and lower cost of ownership with reduced IT complexity for our customers.

We are eager to help you and look forward to your feedback. If you have any questions or concerns about using this technology, we want to hear from you! Please call the Help Desk (http://ithelpdesk.nih.gov/) at 301-496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357 to arrange for a zServer consultant to contact you. In the future we will be providing more information through *Interface, Titan News*, CIT classes and other means to present additional details on a variety of subjects – to show how you can use the services available on this remarkable architecture to achieve your information processing goals.



Linux Virtual Server Free Pilot Test

Is there a Linux server in or near your work area, taking up valuable space, not to mention using up power and generating heat? CIT is pleased to announce the availability of Linux virtual servers for a free pilot test. As mentioned in the previous issue of *Interface* (issue 240), using virtual servers located in the NIH Data Center instead of stand-alone servers can result in a large reduction in energy use while also freeing up space and keeping work areas cooler. A gcc compiler will be available on request, so any open source software can be installed.

Application environments

Two application environments (both running on Red Hat Linux) have been successfully tested so far: a JAVA based application using the Resin application server and communicating with a backend MS SQL database on a remote host; and a LAMP based application.

LAMP, which stands for Linux, Apache, MySQL, and PHP/PERL, is an interlocking set of technologies on which developers can build and deploy web-based applications.

- Apache is the most widely used web server on the planet. Apache has been an open source effort from its beginnings in 1995 and is controlled by a group called The Apache Software Foundation. Apache remains the de facto reference platform against which all other web servers are judged.
- MySQL is a multithreaded, multiuser, SQL-based database management system with more than 6 million installations.
- PHP, Perl and Python are the programming languages of choice in most LAMP and LAMP-like installations. All are characterized as concise, compact scripting languages that allow a user to execute a program on the web server from within a browser window.

Although these are the only two technologies that have been tested so far, the virtual servers would be available to test running any other open source technologies or applications during the pilot test.

The free pilot test program

Initially the pilot test environment will have the capacity for only a **limited** number of participants, therefore we will consider requests for participation on a first come first served basis. The free pilot test will last for 6 to 9 months and will help us determine if the service should be offered on a production basis and, if so, appropriate charges for the service. If Linux becomes a production service offered by CIT, participants in the pilot will have the opportunity to transition to the production service and avoid any initial set up costs.

Questions?

To request participating in the free pilot test, discuss your requirements or for further information, please contact the NIH Help Desk (http://ithelpdesk.nih.gov/) at 301-496-4357 (6-HELP) (local), 866-319-4357 (toll free), or 301-496-8294 (TTY) and ask to be contacted by a virtual Linux server consultant. We look forward to devoting our best efforts to support you!



Property Risk Mitigation with nVision Property Reports

Did you know that nVision Property Reports can help mitigate your property risks? nVision provides relevant information on laptops and any property that you need to monitor and track. Specifically, the *Property Search (Prop-02)* report displays detailed property information that can be searched by a large variety of selection criteria.

Before viewing these useful reports, you must first register for access to nVision Property. It is also recommended that you attend a training class to gain a full understanding of what these reports can provide for you.

To register for nVision Property or attend training

To learn more about nVision, visit the nVision community page at https://my.nih.gov. Select *nVision* from the *My Communities* menu at the top of your NIH Portal page, and explore the nVision community home page.

To register for nVision and get more information about the registration process, click on the *User Registration* link on the nVision community page.

The nVision community page also offers a list of upcoming classes and links to the CIT Training website, so you can find out about available nVision training.

If you are already registered for nVision Property

Access *Property Search (PROP-02)* and other property reports from the nVision community page at https://my.nih.gov. Select *nVision* from the *My Communities* menu, and then click on *Launch Reports*.

If you have questions or need customer support

Please contact the NIH Help Desk at http://ithelpdesk.nih.gov or by phone at 301-496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357 to receive help using nVision.

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WS_FTP Professional (Version 2007.01) Available

The latest version of WS_FTP Professional has arrived at NIH. The licenses CIT purchased from Ipswitch, the vendor, allow use of WS_FTP Professional version 2007.01 for official government business at no cost to the individual user. Beginning in July, users with a registered Titan user ID and a Resource Access Control Facility (RACF) password will be able to download this software from the Titan server through CIT's Information Systems Designated Procurement (iSDP) website (<u>http://isdp.cit.nih.gov/</u>). If you do not possess a registered Titan user ID and RACF password you must contact the NIH Help Desk (http://ithelpdesk.nih.gov/) at (301) 496-4357 for assistance.

Features

WS_FTP Professional can connect to any computer that has a valid Internet address and is running an FTP, SFTP, or HTTP server program. After a connection is established, you can upload files and folders to the FTP server and download files and folders from the FTP server.

This latest version features:

- File integrity checking, which uses built-in file verification mechanisms, with file checking algorithms for CRC32, MD5, SHA1, SHA256 and SHA512, to validate that transferred files have not been compromised.
- HTTP proxy firewall is now supported. HTTP proxy works for all connection types (FTP, FTP Auth SSL, FTP Implicit SSL, SSH/SFTP, HTTP and HTTPS).
- New custom skins to change the look and feel of your FTP client.
- Utility Wizards that facilitate such tasks as:
 - Backing up important files and folders
 - o Uploading files from Windows Explorer
 - Creating "mirror" folders and directories between your computer and a remote FTP server
 - Using powerful desktop search engines such as Google or Windows search tool, installed on your computer, to search for local files and file content from within the FTP client
 - Automating file transfer and management through FTP commands such as *open, get* and *put*
 - o Scheduling time-consuming or reoccurring tasks to be executed automatically
 - o Downloading files from a web browser

What you will need

In order to download WS_FTP Professional you must have a registered Titan user ID and RACF password.

To install the software on your PC you must have an administrative account (AA) in addition to your regular NIH login account. Due to changes mandated by the Federal Desktop Core Configuration (FDCC) and recently implemented at NIH, only administrative accounts can make system changes, install software and run certain applications on NIH PCs. If you do not have an AA account you will need to contact NIH Help Desk to assist you in installing WS_FTP Professional.

How to download the software

- Go to the CIT website: http://cit.nih.gov.
- Go to the **Quick Links** box on the right-hand side and click on **Software Distribution**.
- Go to the heading **Software** and select **Download**.
- Click on **Connectivity Tools**. You will then be redirected to the Silk Web page on Titan.
- Select the menu item **NIH Connectivity Tools**. You will then be prompted to enter your Titan user ID and password.
- Select the link WS_FTP Pro. Click Agree to accept the end user license agreement.
- Print out the installation instructions.
- Select the link **Download** to download the executable file.
- After you have downloaded the executable file, select the link **Connecting to Titan's FTP Site** and print out the document. This document provides instructions on creating site profiles for connecting to Titan's FTP sites (servers).

The program executable file will install the WS_FTP Professional interface with default FTP site profiles. If you had a previous version of WS_FTP Professional with your configured FTP site profiles, it will include those profiles with the list of default profiles. For security reasons, we recommend that you do not check the box that says "Save Password" to prevent WS_FTP Professional from storing your password when creating a site profile.

If you have questions or need assistance, please call the NIH Help Desk (http://ithelpdesk.nih.gov/) at (301) 496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357.

Updated EOS User's Guide Now Available

An updated *Hosted Unix* (*EOS*) *User's Guide* (March 2008) is now available. You can view this guide online, print off a PDF copy, or order a hard copy from the CIT publications web page [http://publications.cit.nih.gov]. Look for the link to "NIH Data Center User's Guides."

The hosted Unix environment (EOS)

The hosted Unix environment at the NIH Data Center (also referred to as EOS) includes more than 160 servers that host a variety of production and development applications, providing a stable, robust hosting solution for enterprise-wide Unix applications. It features both high-end and mid-tier servers as well as shared and stand-alone servers for Oracle databases and related products, and complete web capabilities.

A new Service Level Agreement (SLA)

CIT recently developed a new Service Level Agreement (SLA) for hosted Unix applications. The *Hosted Unix* (*EOS*) *User's Guide* includes a summary of the responsibilities of CIT and the customer under the new SLA and points to a website where users can view a sample.

Hosted Unix services are available on a fee-for-service basis, with the costs charged to your CIT (Center for Information Technology) account.

More information

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

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Updated Deregistration Official and Account Sponsor Manual

An updated version of the CIT manual *Procedures for Deregistration Officials and Account Sponsors* (April 2008) is now available. You can view this publication online, print off 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.

Summary of manual content

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 an account sponsor or deregistration 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 Help Desk at http://ithelpdesk.nih.gov or by phone at 301-496-4357, 301-496-8294 (TTY) or toll free at 866-319-4357.



Ask the NIH Help Desk

What do I do if my laptop, BlackBerry, other electronic device or media is lost or stolen?

Contact the NIH Help Desk for assistance by calling 301-496-4357 or 866-319-4357.

The NIH Help Desk will need to know the following information:

- 1. your contact information: name, phone number where you can be reached and email address if applicable
- 2. whether the device or media has any Personally Identifiable Information (PII) on it
- 3. whether the device or media is protected by encryption (for example, PointSec)

Help Desk staff will report the incident to security personnel who will provide further instructions.

A special note regarding Blackberry devices

The NIH Help Desk has the ability to lock and clear data from the device remotely as long as the device has wireless coverage. Because of this, we recommend that users whose Blackberry is lost or stolen notify the NIH Help Desk prior to cancelling the wireless service provider service so that the Help Desk staff can first attempt remote data lock and clearance function.

NIH HELP DESK (301) 496-4357 (866) 319-4357 (Toll Free) (301) 496-8294 (TTY)

http://ithelpdesk.nih.gov

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CIT Computer Training is in Session for the Summer

The CIT Computer Training Program is proud to announce the beginning of the Summer Term. We have been busy updating the program over the last few months and some of our processes have changed. For instance, after attending course sessions you will now receive your course completion certificates by email.

Share what you know

Our course offerings are always evolving to keep pace with the ever changing community at NIH. 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 that will benefit the mission of NIH? Are you a project lead rolling out a new or updated program? Contact us, as we may be able to assist you with the opportunity to share what you know to benefit others. Many have volunteered to participate with our training program and we are always looking for new instructors.

Courses to watch for:

IT Professionals

IT professionals will enjoy "Data Center Tours – Division of Computer System Services," "Spend a Day with the Help Desk," "ITIL V3 Foundations - Overview," and more.

Personal Computers

There has been growing demand for Office 2007 in recent months and in response, we now offer 5 new sessions of "Office 2007 – What's New." In addition, a sampling of topics to be given this term are "Basic PC Skills for NIH," "Seeking Information on the Web," "Windows Vista," and many more. There are also sessions of returning favorites including Excel, "Windows XP Tips and Tricks," and "BlackBerry Tips and Tricks."

Statistics

Statisticians and aspiring statistical analysts will enjoy the new statistics courses. They cover "SPSS 16.0 – What's New," and "SAS 9.2 – What's New."

Seminars for Scientists

In order to meet the needs of the diverse scientific community here at NIH, we offer sessions dealing with "Phylogenetics: Annotating our Sequences," "*in silico* Drug Screening: Small Molecule Docking," and "Protocol Development: Relevant Databases, Instruments, and Services Available through the NIH

Library." Returning topics include sessions on microarray data analysis, "Scientific Coding System On-Demand," "AFNI Bootcamp," and many more.

Grants

The always popular, QVR (Introduction, Intermediate, and Advanced) sessions explain the workings of the system here at NIH. There will also be a session on the Electronic Council Book (ECB).

Class schedule updates and other information

Classes will be constantly added to the schedule. You can obtain full course information, register for summer 2008 classes, join our CIT Training Mailing list, and check out your transcript or current application status at our website, <u>http://training.cit.nih.gov</u>.

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 or need information regarding renting computer classrooms, contact us by phone at 301-594-6248 x2 or email at CITTraining@mail.nih.gov.



Dates to Remember

Now . . .

September 1•Labor DaySeptember 22•Autumn begins

Later this year . . .

October 1 A new fiscal year brings new Data Center rates October 13 October 14-17 December 2 A new fiscal year brings new Data Center rates Columbus Day (observed) The NIH Research Festival Disaster recovery off-site test. E T [http://datacenter.cit.nih.gov/disaster]

E EOS (Unix system)

T Titan (OS/390 system)

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

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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].

Publications

The following documents have become available since the last issue of *Interface* and can be obtained from the CIT publications web page [http://publications.cit.nih.gov/]. Publications are provided in hardcopy, online or PDF versions under the "View/Print on Demand" (VPOD) system.

To be notified when new or updated documentation has been added to the VPOD system, join the Listserv list, "CIT-doc-renew" [http://list.nih.gov/archives/cit-doc-renew.html].

General Documentation

Updated

Procedures for Deregistration Officials and Account Sponsors April 2008

Hosted Unix (EOS)

Updated

Hosted Unix (EOS) User's Guide March 2008

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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

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DECA Division of Enterprise and Custom Applications
DCS Division of Customer Support
DCSS Division of Computer System Services
OCIO Office of the Chief Information Officer
OD Office of the Director